

TRAFFIC

OPERATIONS

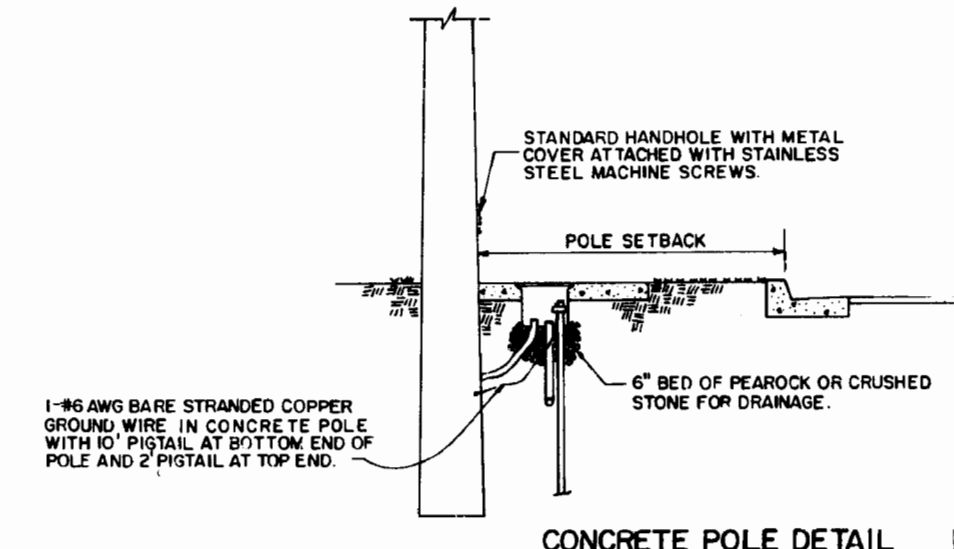
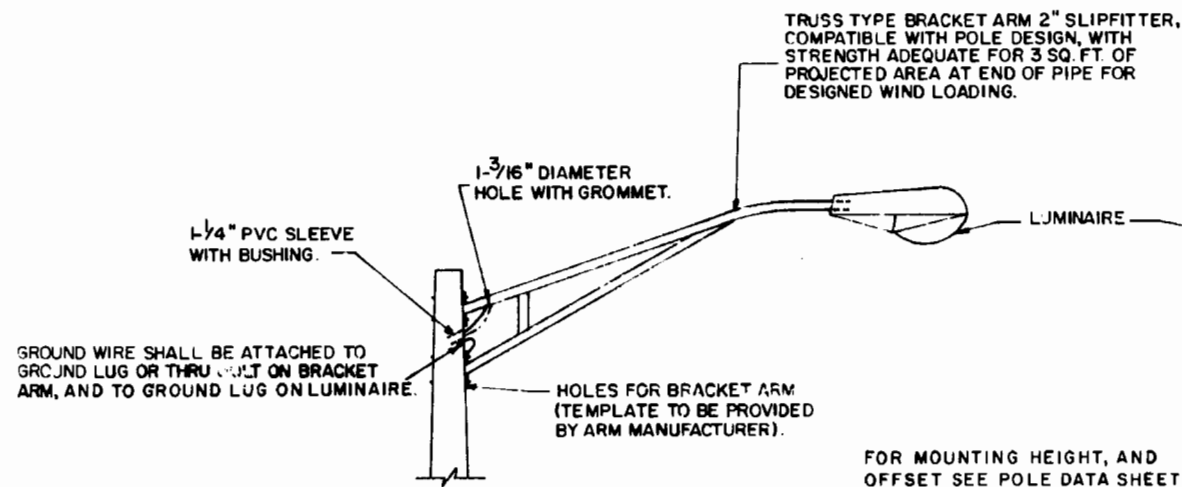
STANDARDS



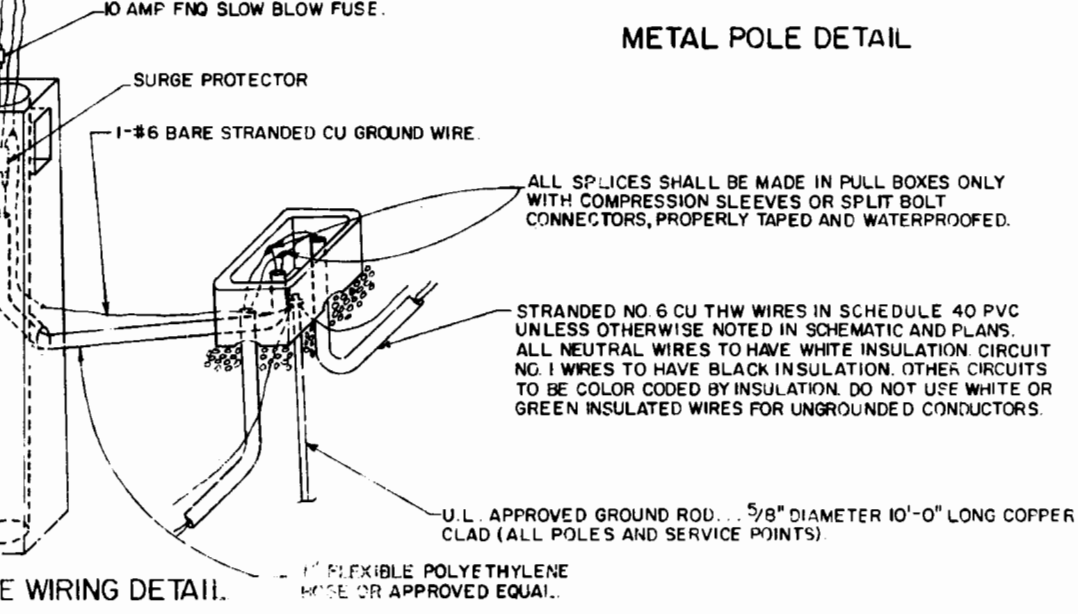
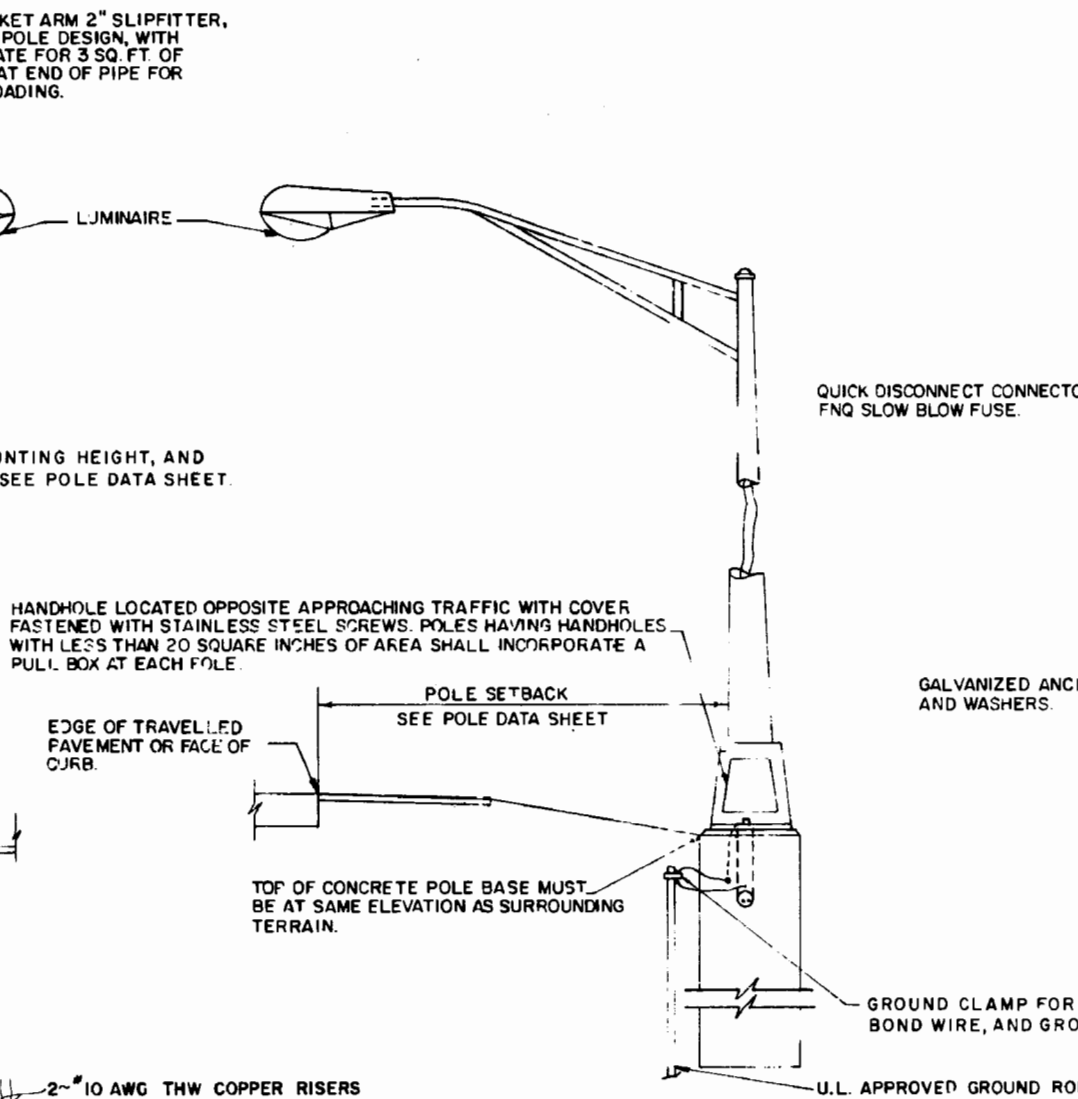
JANUARY 1981

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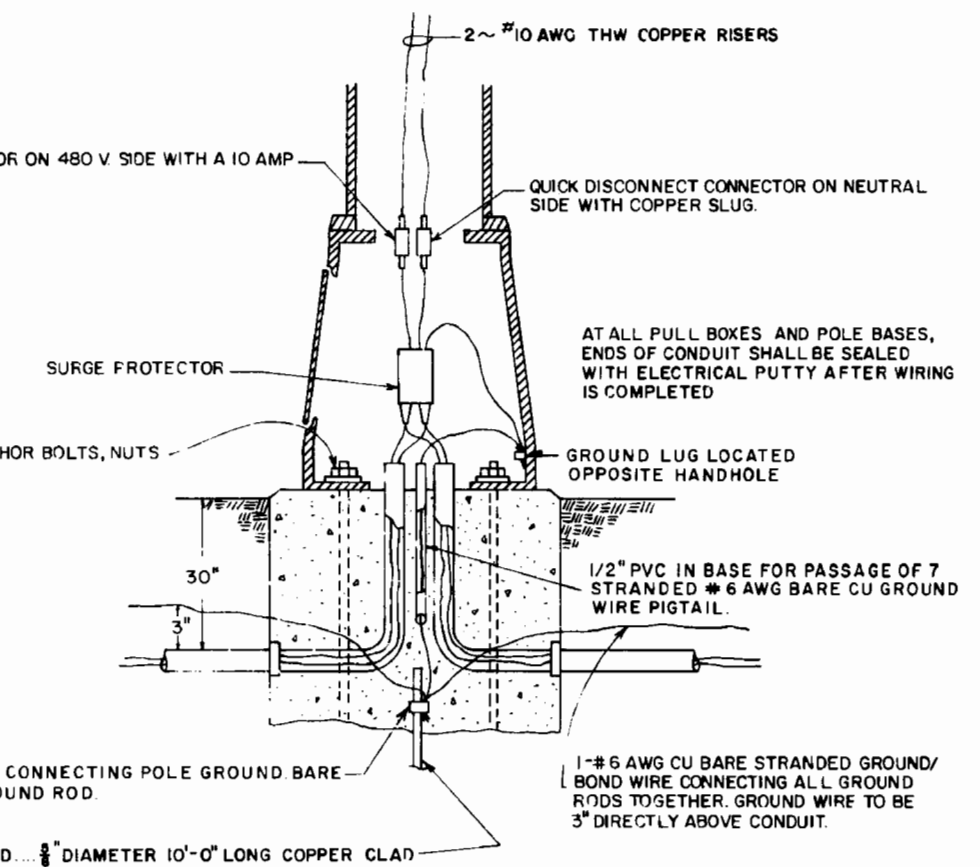
INDEX NO	DESCRIPTION	INDEX NO.	DESCRIPTION
	ROADWAY LIGHTING		SIGNING AND MARKINGS CONT'D
17500	CONVENTIONAL POLE DETAILS	17328	SIGNING FOR TRUCK WEIGHING & INSPECTION STATION (3 SHEETS)
17501	GENERAL NOTES	17344	SCHOOL SIGNING & MARKINGS (6 SHEETS)
17502	HIGHMAST LIGHTING DETAILS (3 SHEETS)	17345	INTERCHANGE MARKINGS (4 SHEETS)
17503	ROADWAY LIGHTING DETAILS	17346	SPECIAL MARKING AREAS (6 SHEETS)
17505	EXTERNAL LIGHTING FOR SIGNS (2 SHEETS)	17349	TRAFFIC CONTROL FOR STREET TERMINATIONS
	SIGNING AND MARKINGS	17350	SIGNING FOR MOTORIST SERVICES
		17351	TYPICAL WELCOME CENTER SIGNING (2 SHEETS)
		17352	TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKINGS (2 SHEETS)
9535	STANDARD ROADSIDE SIGN BREAK AWAY POST & PANEL DETAIL (4 SHEETS)	17355	SPECIAL SIGN DETAILS (3 SHEETS)
10905	DETAILS FOR ADDING SIGN ASSEMBLY TO EXISTING SIGNS	17356	SPAN WIRE MOUNTING DETAILS
10965	BRIDGE SPAN TRUSS FOR OVERHEAD SIGNS, ASSEMBLY DETAILS FOR TYPE A, B OR C TRUSS		
11037	OVERHEAD SIGN STRUCTURES, DETAILS OF SIGN FACES & TRUSS CONNECTION		
11201	FOOTINGS FOR OVERHEAD SIGN TRUSSES, TYPE A, B OR C TRUSS (SHEET 1 OF 2)		TRAFFIC SIGNAL AND EQUIPMENT
11201	FOOTINGS FOR OVERHEAD SIGN TRUSSES, OVERHEAD CANTILEVER (SHEET 2 OF 2)		
11226	TRUSSES FOR OVERHEAD SIGNS, ALUMINUM CANTILEVER		
11671	DETAILS FOR MOUNTING EXIT NUMBERING PANELS TO HIGHWAY SIGNS (HORIZONTAL WIND BEAMS)	17721	CONDUIT INSTALLATION DETAILS (2 SHEETS)
11860	TYPE "C" SINGLE COLUMN GROUND SIGNS (SIGN PROFILE & IDENTIFICATION NUMBERS)	17727	SIGNAL CABLE AND SPAN WIRE INSTALLATION DETAILS
11861	SINGLE COLUMN GROUND SIGNS (60 MPH) (COLUMNS SIZE, COLUMN HEIGHT & COLUMN FOOTINGS)	17733	AERIAL INTERCONNECT
11862	SINGLE COLUMN GROUND SIGNS (70 MPH) (COLUMN SIZE, COLUMN HEIGHT & COLUMN FOOTINGS)	17736	ELECTRIC POWER SERVICE
11863	SINGLE COLUMN GROUND SIGNS (80 MPH) (COLUMN SIZE, COLUMN HEIGHT & COLUMN FOOTINGS)	17764	PEDESTRIAN CONTROL SIGNALS INSTALLATION DETAILS
11864	SINGLE COLUMN GROUND SIGNS (90 MPH) (COLUMN SIZE, COLUMN HEIGHT & COLUMN FOOTINGS)	17781	VEHICLE LOOP INSTALLATION DETAILS (2 SHEETS)
11926	ALUMINUM BASES FOR COLUMN SUPPORTS	17784	PEDESTRIAN DETECTOR ASSEMBLY INSTALLATION DETAILS
17302	TYPICAL SECTIONS FOR SINGLE COLUMN SIGN PLACEMENT	17841	CABINET INSTALLATION DETAILS
17320	ARROW LAYOUTS FOR GROUND & OVERHEAD SIGNS	17870	STANDARD SIGNAL OPERATING PLANS (2 SHEETS)
		17881	ADVANCE WARNING FOR R/R CROSSING
		17882	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES (3 SHEETS)
		17890	TRAFFIC CONTROL DEVICES FOR MOVEABLE SPAN BRIDGES (3 SHEETS)



- 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.



- NOTES:**
- 1) ALLOW ENOUGH SLACK IN ALL WIRES TO ALLOW FUSE HOLDERS, SURGE PROTECTORS AND SPLICES TO BE HANDLED ONE FOOT OFF SIDE POLE OR FULL BOX.
 - 2) A PULL BOX SHALL BE INSTALLED AT EACH CONCRETE POLE LOCATION.
 - 3) ALL MOUNTING HEIGHTS ARE $\pm 2\frac{1}{2}$ FT. UNLESS OTHERWISE NOTED IN PLANS.



FLORIDA DEPARTMENT OF TRANSPORTATION					
CONVENTIONAL POLE DETAILS					
DATE	REVISIONS	INITIALS	DATES	Recommended for approval	
		Designed by G. K.	8-78	by <i>G.K. Price</i> Deputy Traffic Operations Engr.	
		Checked by		Approved by <i>R.E. Magady</i> State Traffic Operations Engr.	
		Quantities by			
		Checked by			
		Supervised by	LESTER JONES	DRAWING NO.	INDEX NO.
				1 OF 1	17500

- 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), LIES 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 LOOPEL 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 I 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.

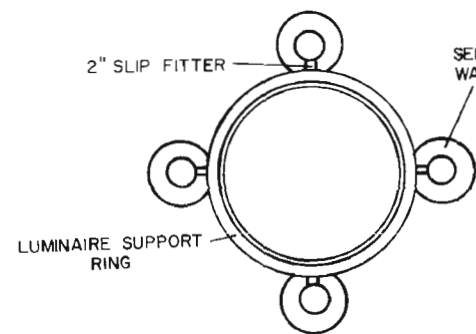
IF A FRANGIBLE METAL BASE IS USED, IT SHALL BE ONE PIECE AND BE DESIGNED TO BREAKAWAY WITHOUT THE AID OF ANY SLIPPING OR SLIDING SURFACES.

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.

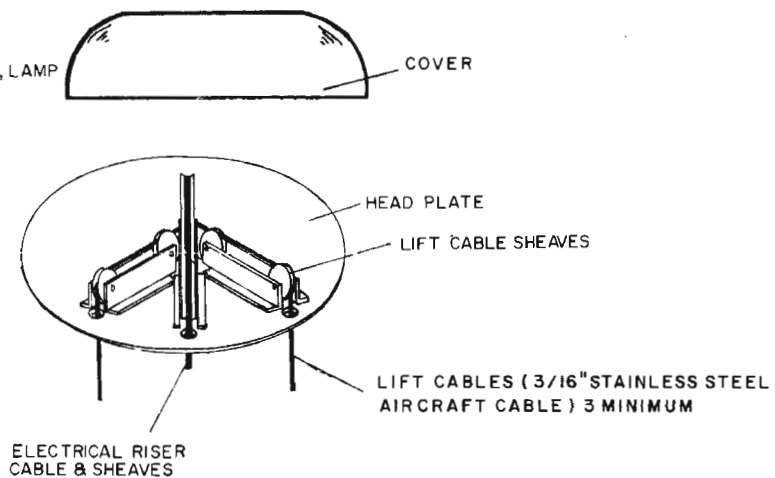
POLES MOUNTED ON BARRIER WALL OR BEHIND BRIDGE RAIL ARE EXEMPT FROM THE ABOVE FRANGIBILITY REQUIREMENTS.

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS HIGHWAY LIGHTING GENERAL NOTES

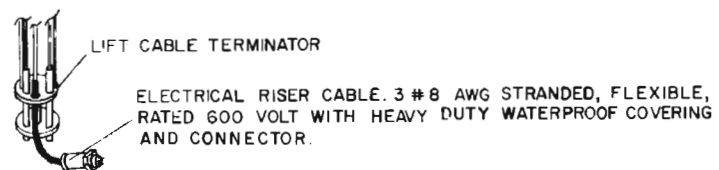
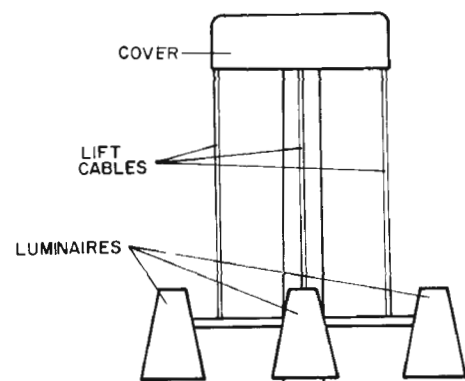
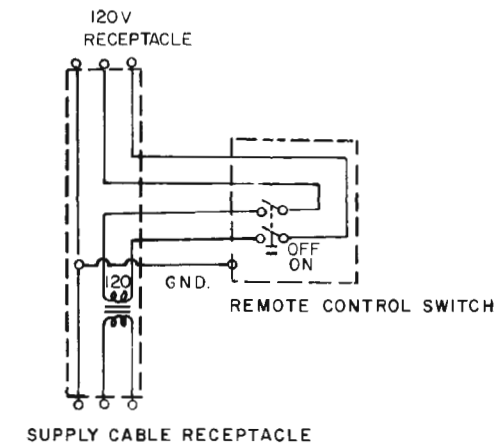
DATE	REVISIONS	INITIALS	DATES	Recommended for approval
		Designed by G. K.	4-25-78	by <i>D.C. Price</i> Deputy Traffic Operations Engr.
		Checked by		Approved by <i>R.E. Maguire</i> State Traffic Operations Engr.
		Quantities by		
		Checked by		
		Supervised by	LESTER JONES	DRAWING NO. INDEX NO. 1 OF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



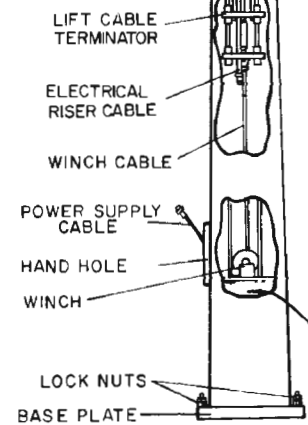
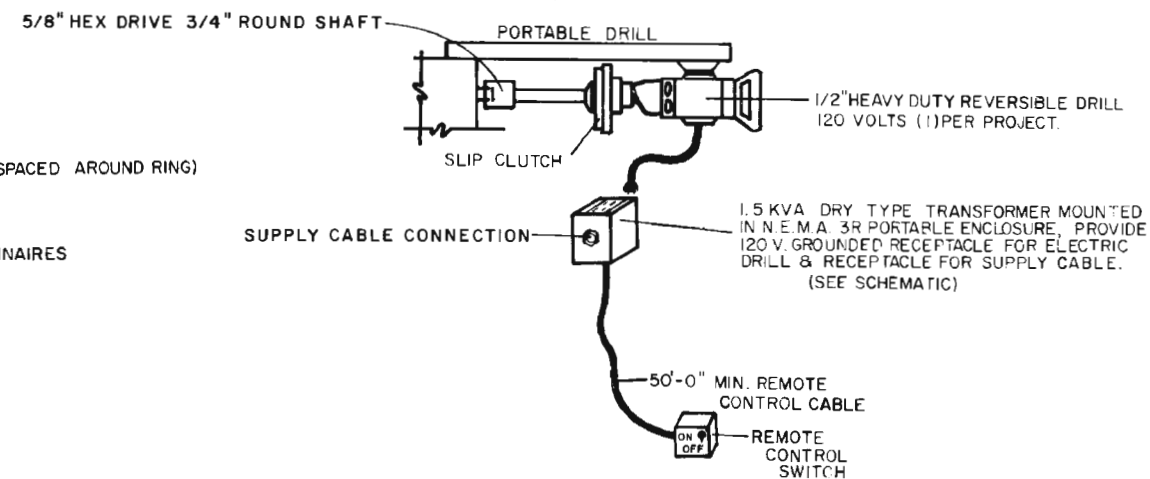
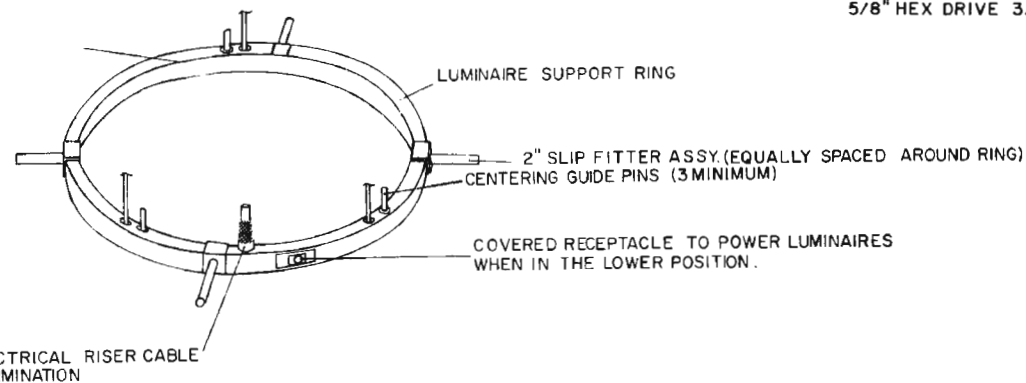
SEE LEGEND FOR NUMBER OF LUMINAIRES, LAMP WATTAGE AND LIGHT DISTRIBUTION.



SCHEMATIC OF REMOTE AUXILIARY POWER UNIT

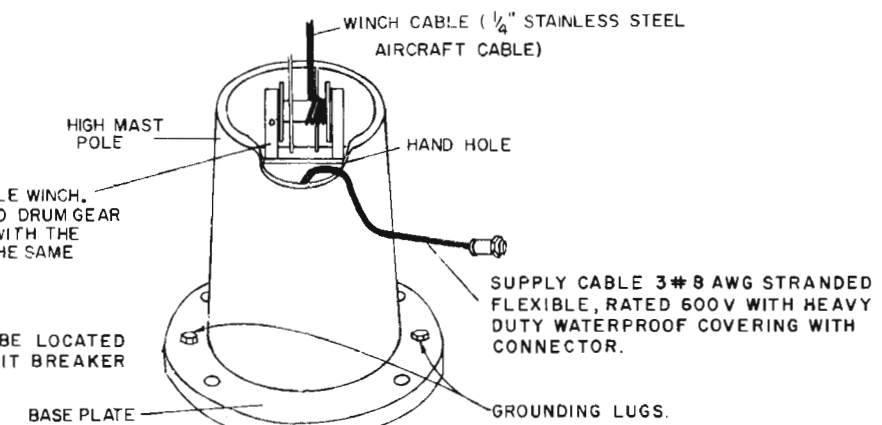


SPRING SUPPORTED CENTERING ARMS PROVIDED TO CENTER THE LUMINAIRE RING.



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.



FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

HIGHMAST LIGHTING DETAILS

REVISIONS			INITIALS	DATES	Recommended for approval by <i>RLC Price</i> Deputy Traffic Operations Eng.
DATE	INITIALS	DESCRIPTION	Designed by		
			Checked by		Approved by <i>RL Magder</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 ± 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 7 X 19 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 TWISTLOCK 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 TWISTLOCK 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.

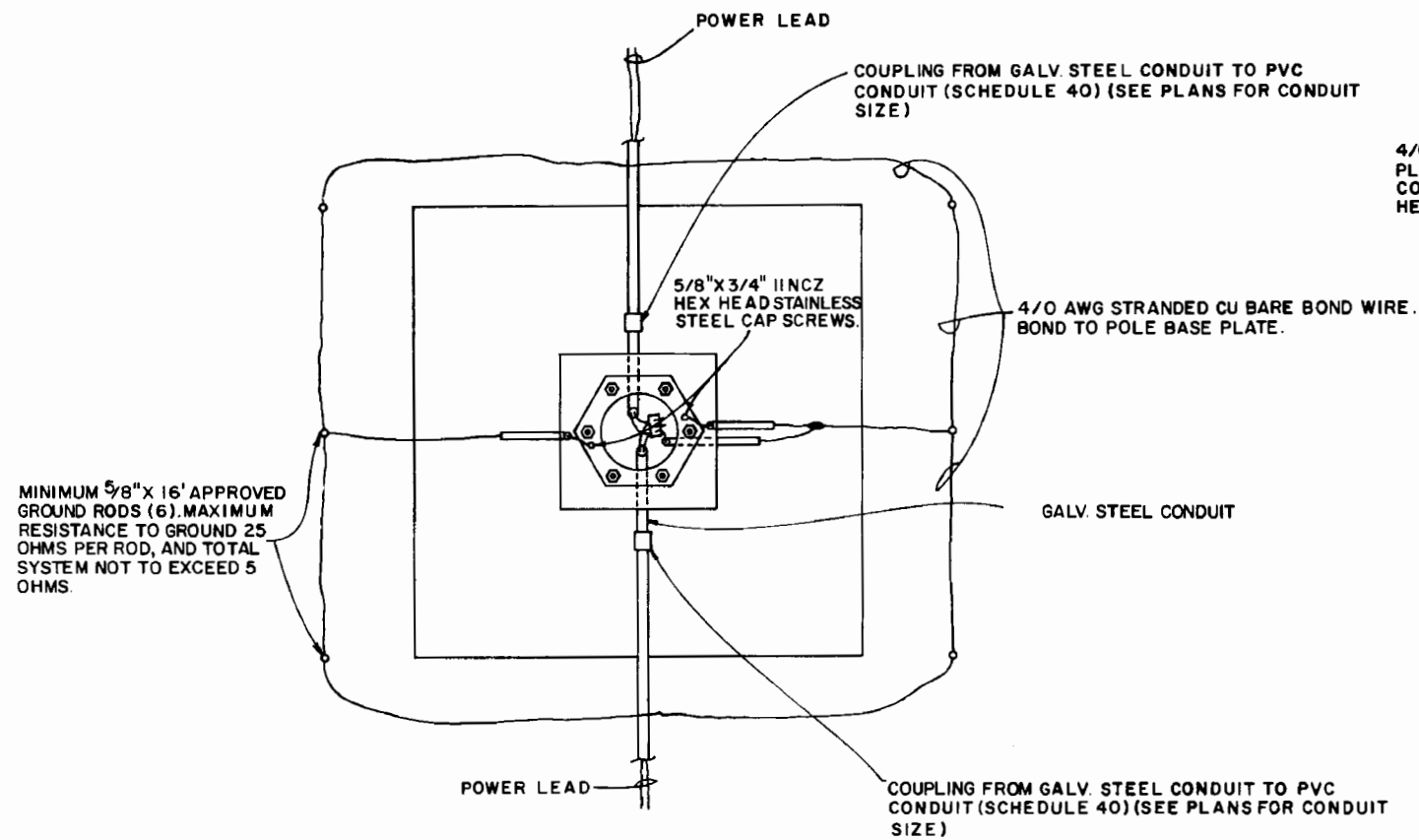
DRAWINGS SHALL BE PROVIDED WITH THE EQUIPMENT WHICH SHOW ASSEMBLY SEQUENCE, LIFT POINT, AND RECOMMENDED ERECTION PROCEDURE. A PERMANENT DECAL OR CARD SHALL BE FIXED ON THE INSIDE OF THE HANDHOLE COVER WHICH DESCRIBES THE SEQUENCE FOR LOWERING THE LUMINAIRES AND THE CAUTIONS.

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" 11NCZ STAINLESS STEEL HEXHEAD CAP SCREW.

FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS
HIGHMAST LIGHTING DETAILS

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

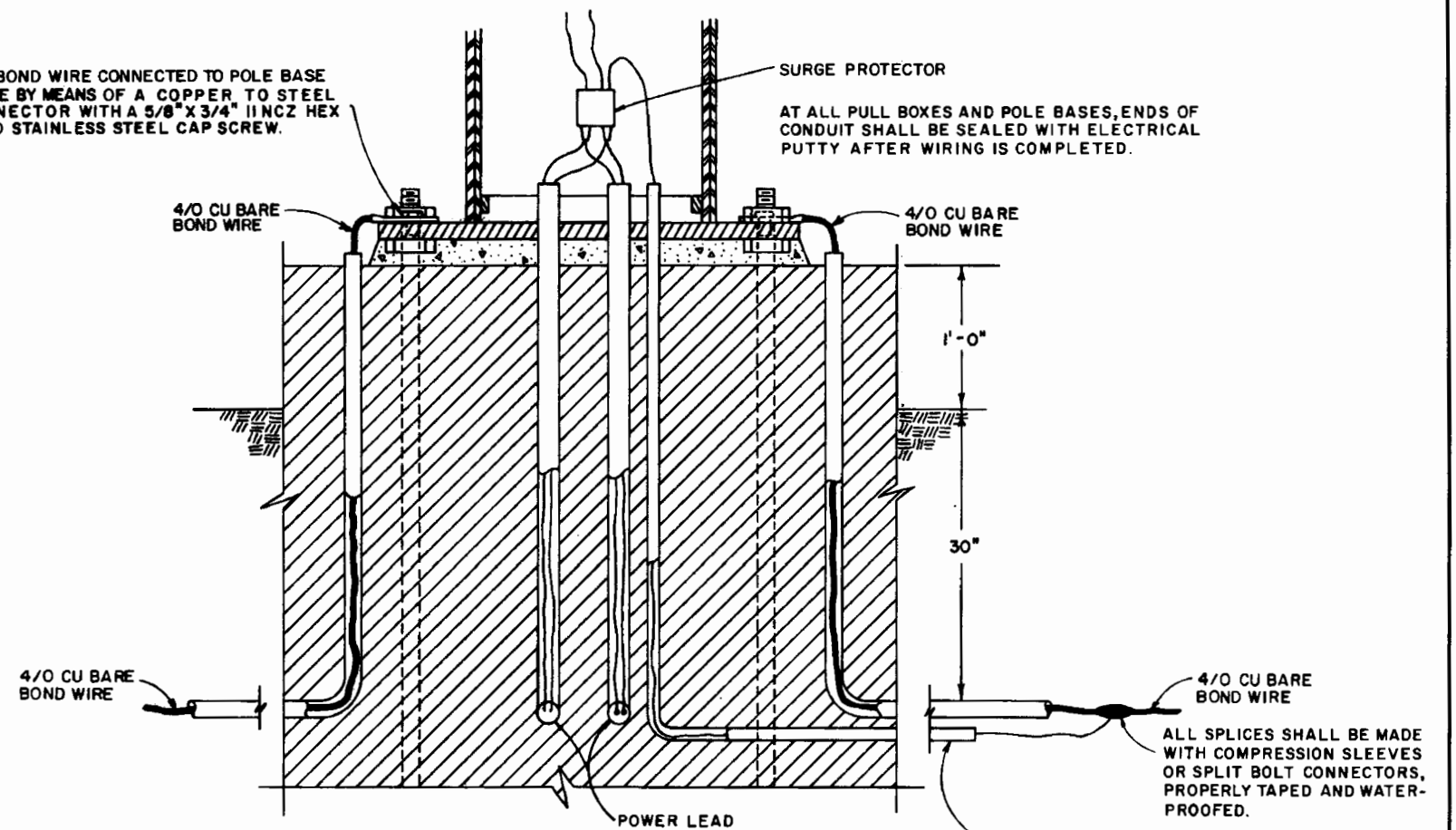


MINIMUM 5/8" X 16' APPROVED GROUND RODS (6). MAXIMUM RESISTANCE TO GROUND 25 OHMS PER ROD, AND TOTAL SYSTEM NOT TO EXCEED 5 OHMS.

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.



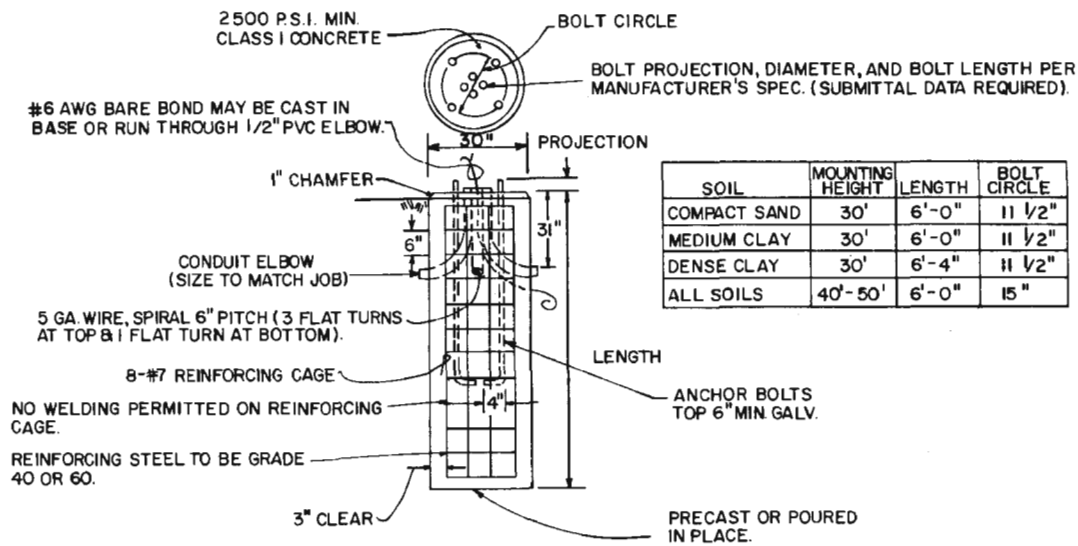
SURGE PROTECTOR SPECIFICATIONS

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 480V. CONDUCTOR OVER THE NEUTRAL CONDUCTOR.
9. UNDERWRITERS LABORATORY APPROVAL NOT REQUIRED.

**FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS**

HIGHMAST LIGHTING DETAILS

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

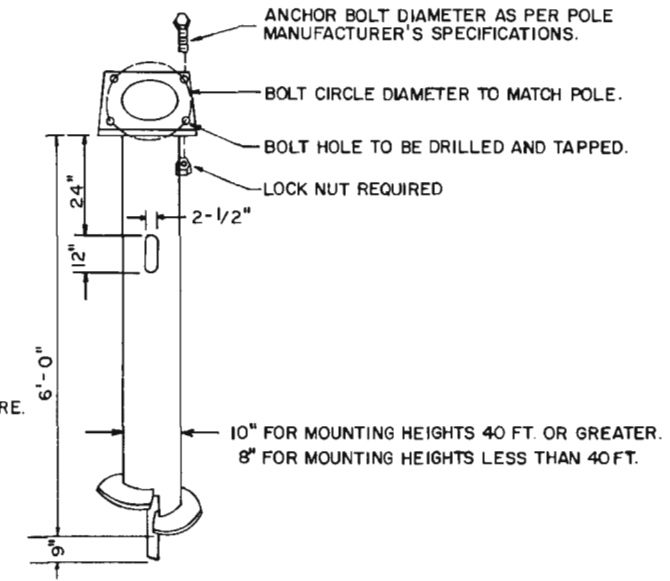


METAL POLE CONCRETE FOUNDATION DETAIL

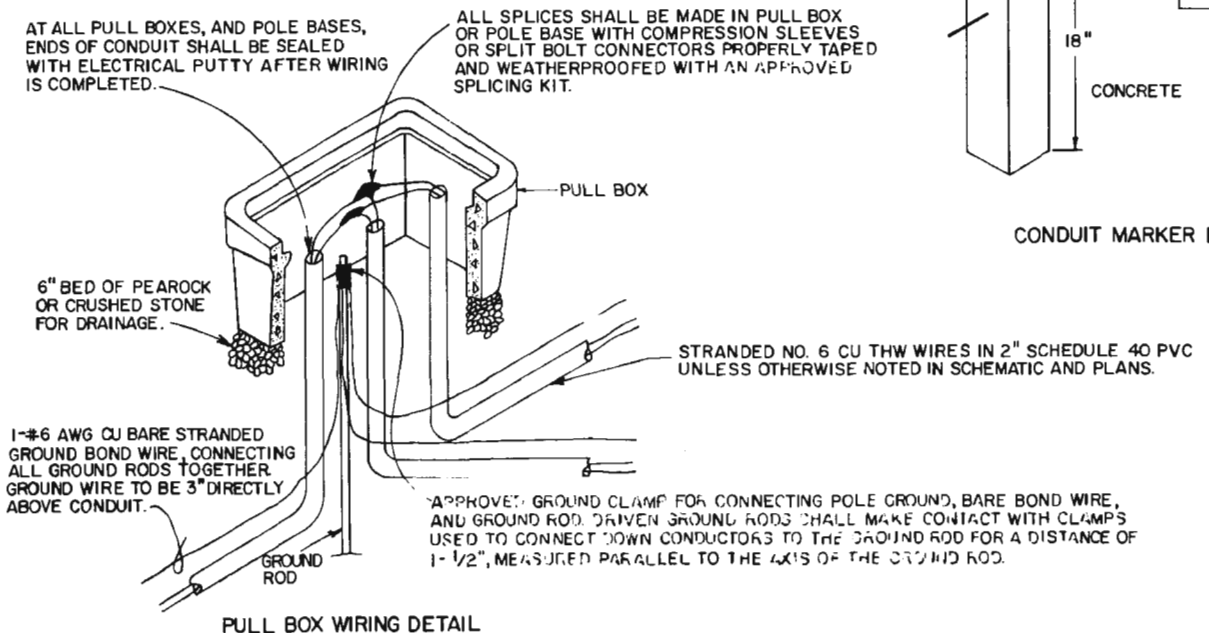
SOIL	MOUNTING HEIGHT	LENGTH	BOLT CIRCLE
COMPACT SAND	30'	6'-0"	11 1/2"
MEDIUM CLAY	30'	6'-0"	11 1/2"
DENSE CLAY	30'	6'-4"	11 1/2"
ALL SOILS	40'-50'	6'-0"	15"

SCREW TYPE FOUNDATION SPECIFICATIONS

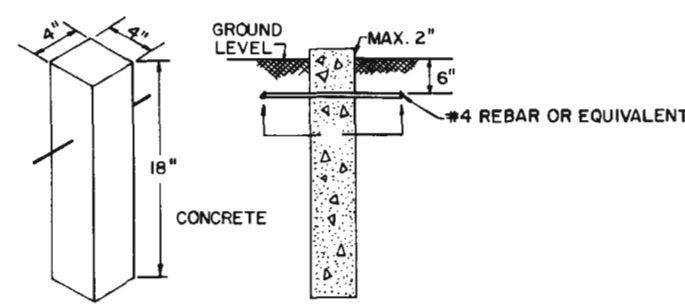
- 1) THE FOUNDATION SHAFT AND BASE PLATE SHALL BE ASTM A-36 STRUCTURAL STEEL, OR BETTER.
- 2) THE ANCHOR BOLTS SHALL BE ASTM A-325, OR BETTER.
- 3) ALL WELDS SHALL BE SUFFICIENT TO WITHSTAND 10,000 FT.-LBS. OF TORQUE, APPLIED ABOUT THE AXIS OF THE FOUNDATION.
- 4) THE FOUNDATION SHALL HAVE A HANDHOLE 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.



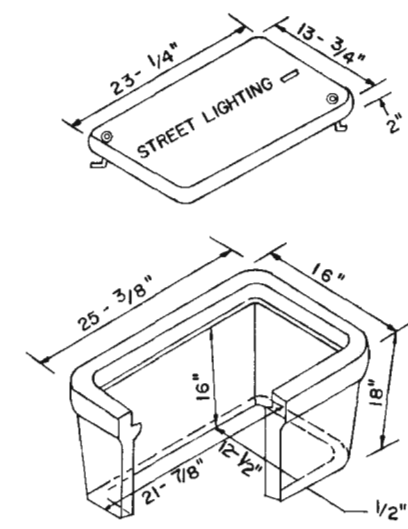
SCREW TYPE FOUNDATION DETAIL



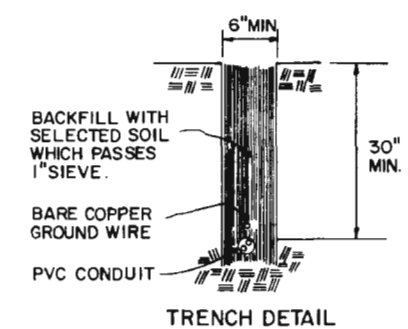
PULL BOX WIRING DETAIL



CONDUIT MARKER DETAIL



PULL BOX DETAIL



TRENCH 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.

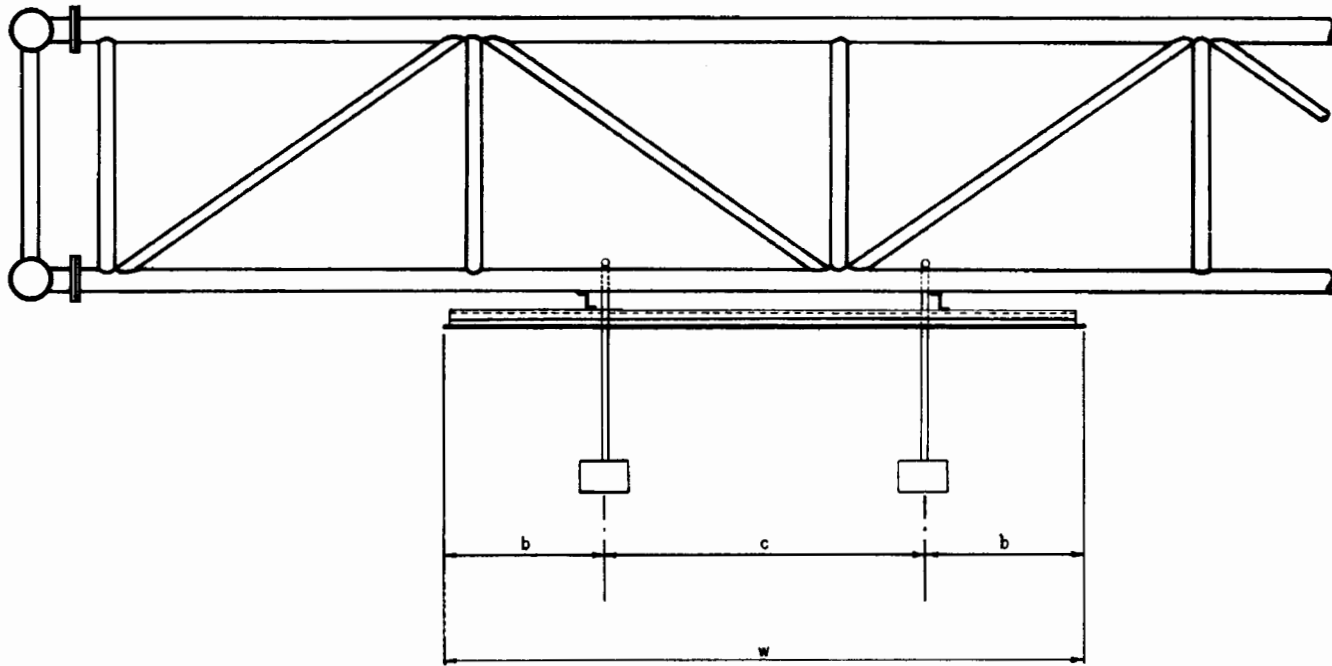
FLORIDA DEPARTMENT OF TRANSPORTATION
 TRAFFIC OPERATIONS

ROADWAY LIGHTING DETAILS

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

SIGN LIGHTING INSTALLATION

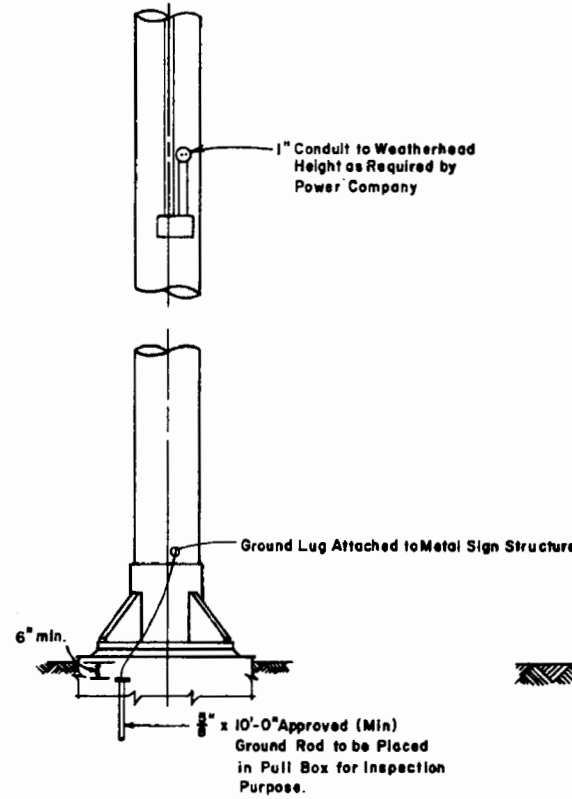
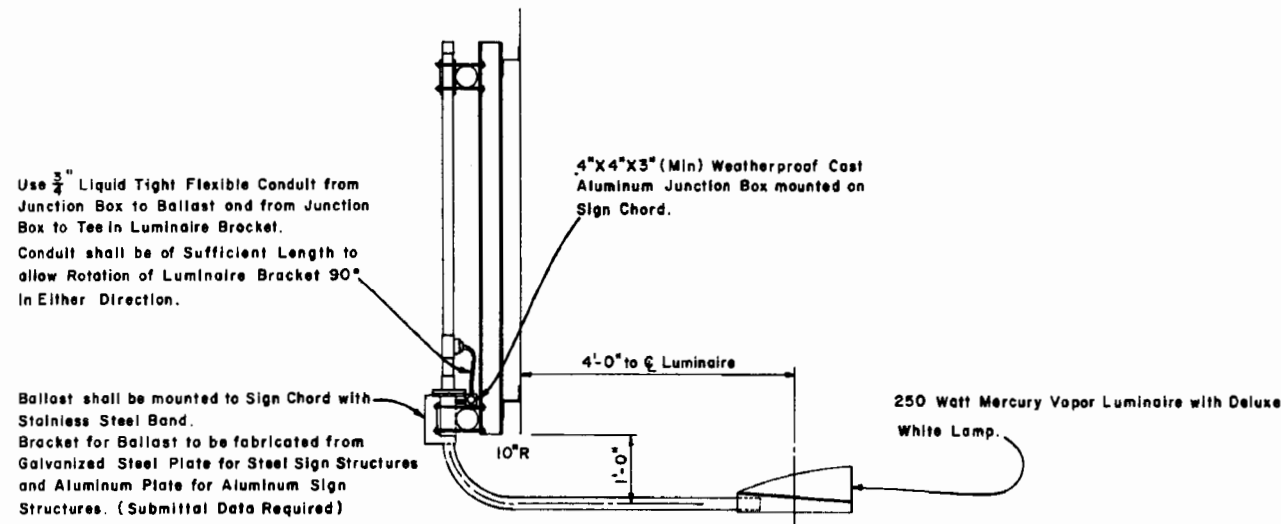
The Roadway Lighting Contractor shall provide a means for sign service entry into a pole base or a pull-box installed in Lighting circuit, and loop 2' of Lighting circuit conductors for connection by Sign Contractor. The sign contractor shall furnish and install luminaires, fused safety switches, conduit, conductors, and all other electrical equipment necessary for connection to Roadway Lighting circuit as provided by Roadway Lighting Contractor. Compression type connectors properly taped and waterproofed shall be used. See Roadway Lighting Plans for sign service locations.



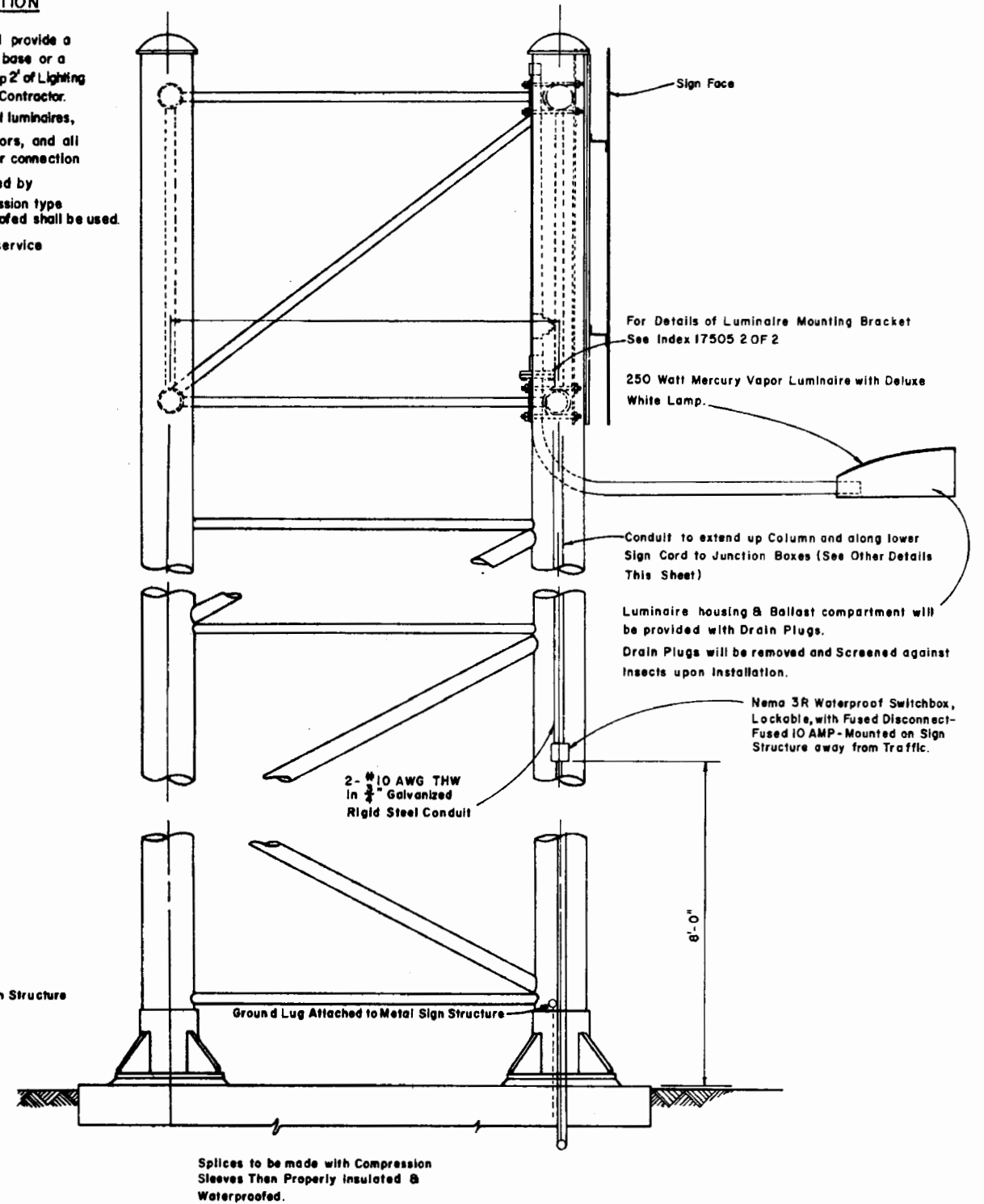
WIDTH OF SIGN FACE	10'-0" or LESS	10'-1" to 21'-0"	21'-1" to 32'-0"	32'-1" to 43'-0"
NUMBER OF FIXTURES	ONE	TWO	THREE	FOUR
EQUATIONS FOR PLACING FIXTURES ALONG SIGN WIDTH	$W = 2b$ $c = 0$	$W = 2b + c$ $c = 2.2b$	$W = 2b + 2c$ $c = 2.2b$	$W = 2b + 3c$ $c = 2.2b$

PLACEMENT OF SIGN LIGHTS

- 1-Luminaire shall be mounted so that the Lamp Center is 4'-3" in Front of the Sign Face.
- 2-Luminaire shall be mounted so that the back of the Fixture is Placed 1'-0" below the Bottom Edge of the Sign Face
- 3-Luminaires from manufacturers who recommended that their Fixture be Tilted shall be Mounted on a Bracket which Provides this Recommended Tilt.
- 4-Photometric Data For The Mercury Vapor Luminaire Proposed for Sign Lighting shall be Submitted for Approval to the Lighting Engineer Florida Department of Transportation.

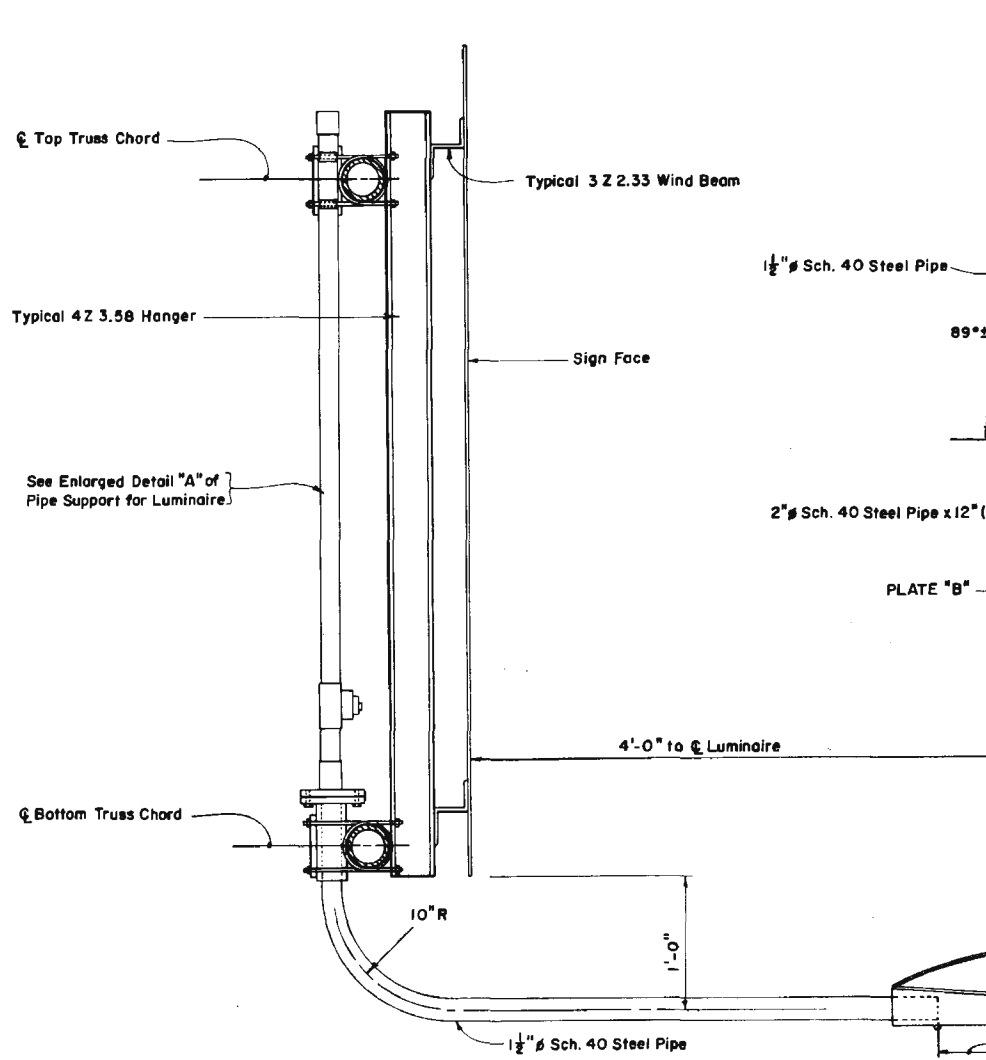


PLAN
OVERHEAD POWER SUPPLY

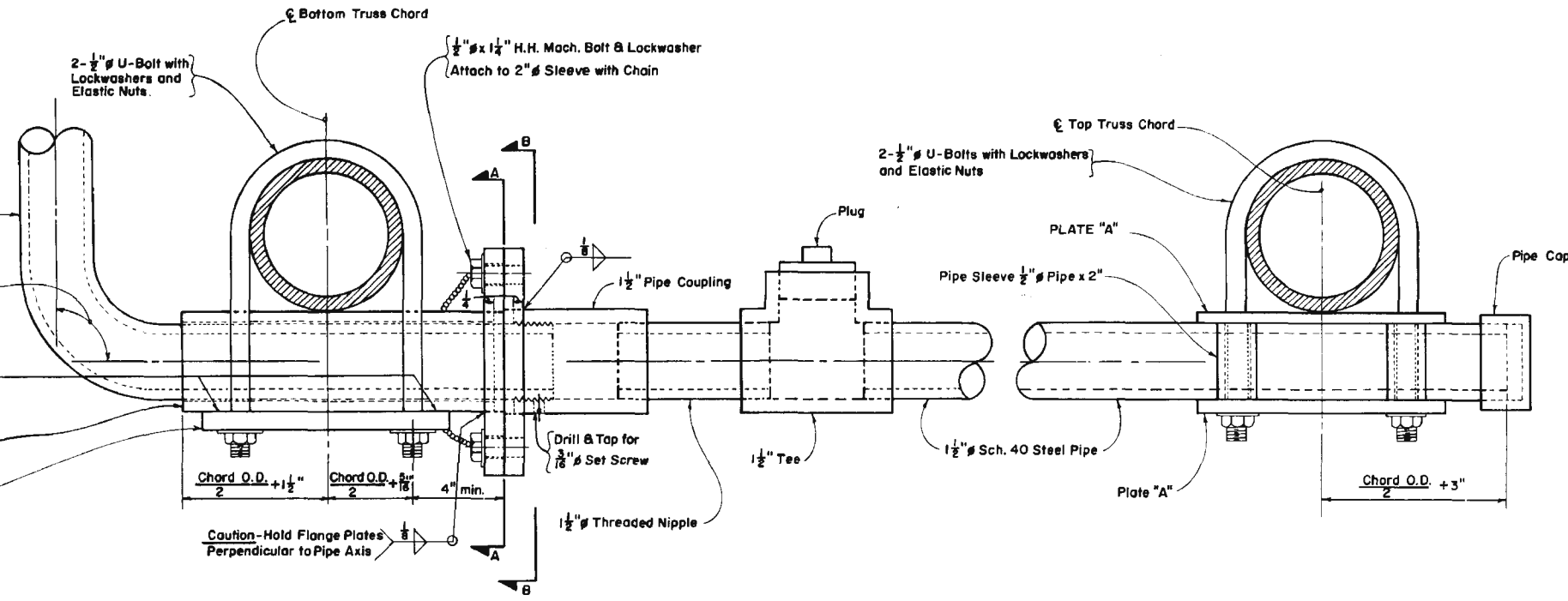


FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS
EXTERNAL LIGHTING FOR SIGNS
(MERCURY VAPOR)

DATE	REVISIONS	INITIALS	DATES	Recommended for approval by
10-6-78	Changed index 17341-A to index 17505	Designed by		by <i>J.C. Price</i> Deputy Traffic Operations Engr.
		Checked by		Approved by <i>R.E. Magada</i> State Traffic Operations Engr.
		Checked by		
		Supervised by	LESTER JONES	DRAWING NO. 1 OF 2 INDEX NO. 17505



SECTION THROUGH SIGN SUPPORT AT LUMINAIRE



DETAIL "A"

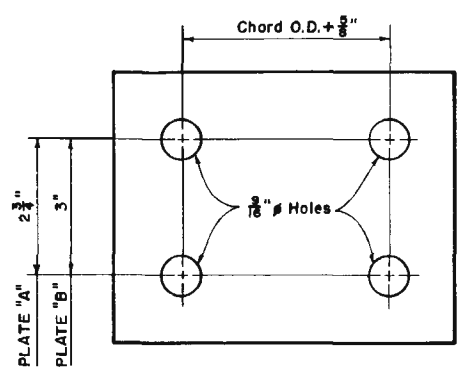
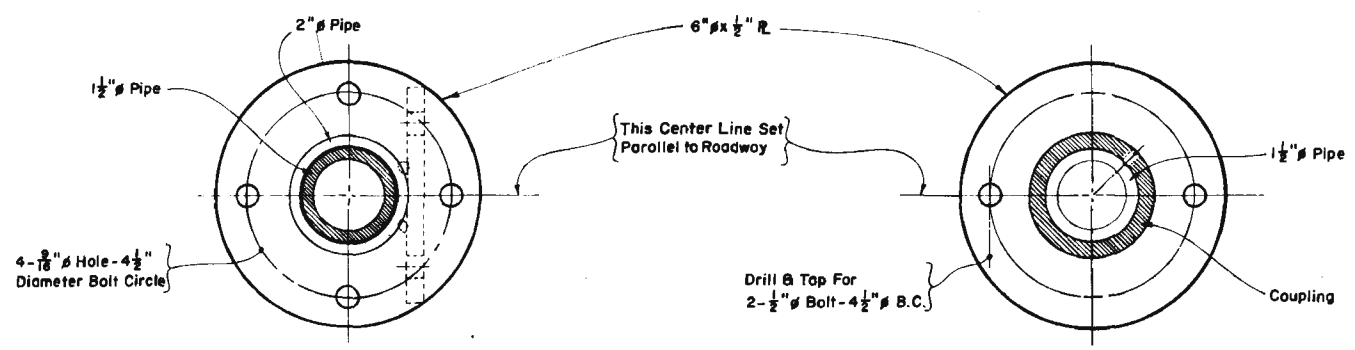


PLATE "A" Chord O.D. + 2 1/2" x 1/4" x 4 3/8"
 PLATE "B" Chord O.D. + 2 1/2" x 3/8" x 5"

NOTES

- 1 - Dimension "A" To Be Established from Type and Make of Luminaire to be Purchased and Used on the Project.
- 2 - The Center Lines of Both Flange Plates and the 1 1/2" Pipe Luminaire Support Arm are to be Set Parallel to the Roadway Before the Set Screws are 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 or 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 A307.
- 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.

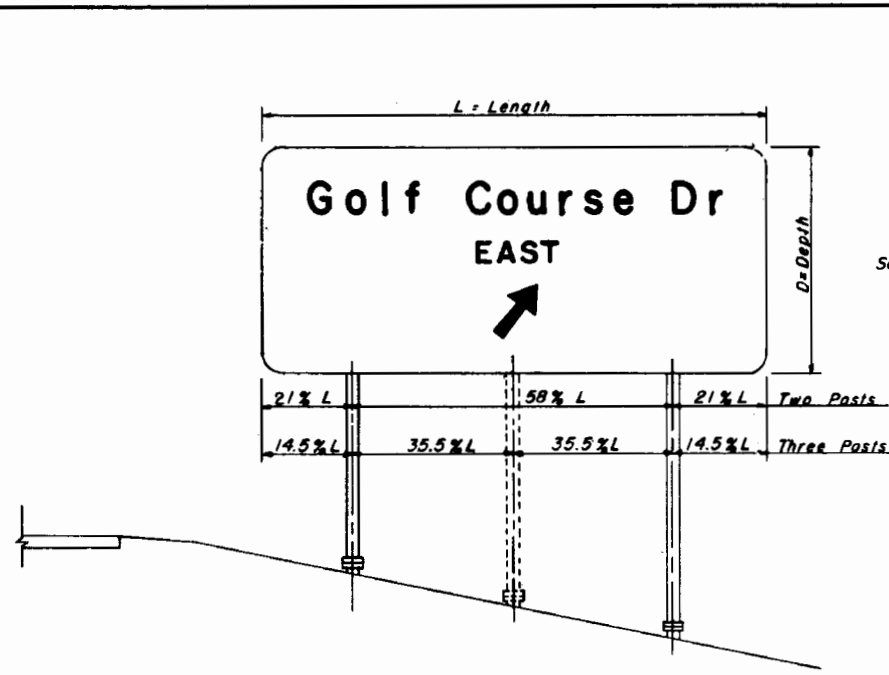


SECTION A-A

SECTION B-B

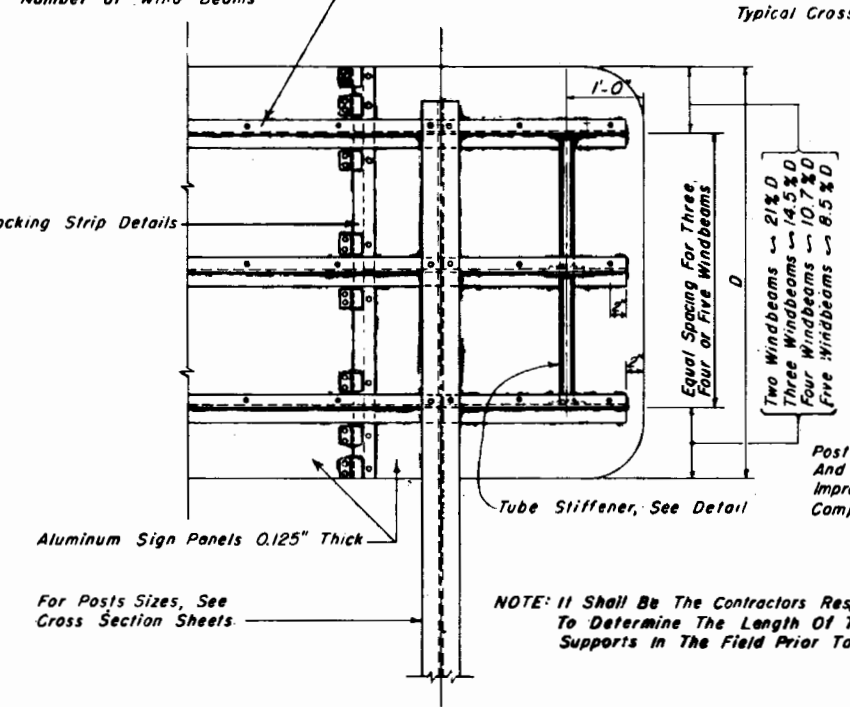
FLORIDA DEPARTMENT OF TRANSPORTATION
 TRAFFIC OPERATIONS
 EXTERNAL LIGHTING FOR SIGNS
 (MERCURY VAPOR)

DATE	REVISIONS	INITIALS	DATES	RECOMMENDED FOR APPROVAL
10-6-78	Changed Index 12270 to Index 17505	Designed by CK		by <i>S. C. Price</i> Deputy Traffic Operations Engr.
		Checked by CWB		Approved by <i>R. E. Magadey</i> State Traffic Operations Engr.
		Quantities by		
		Checked by		
		Supervised by	AJH	
				DRAWING NO. 2 OF 2
				INDEX NO. 17505



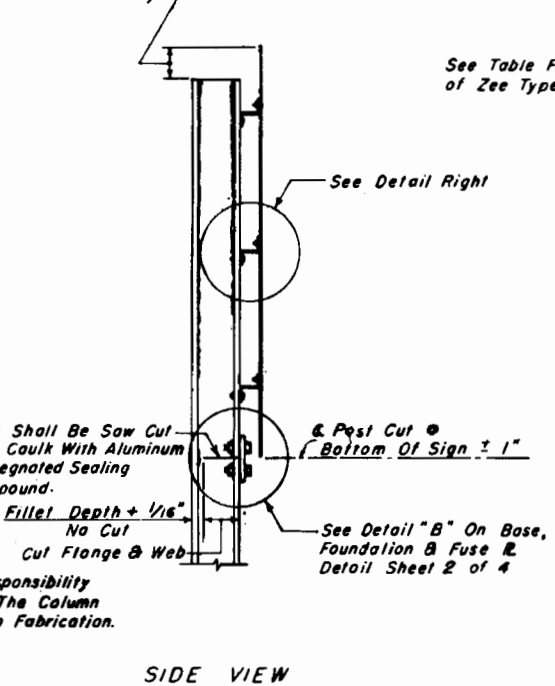
TYPICAL ELEVATION
(For Notes And Dimensions Not Shown, See "Typical Cross Section" Sheets)

See Tables For Size And Number of Wind Beams



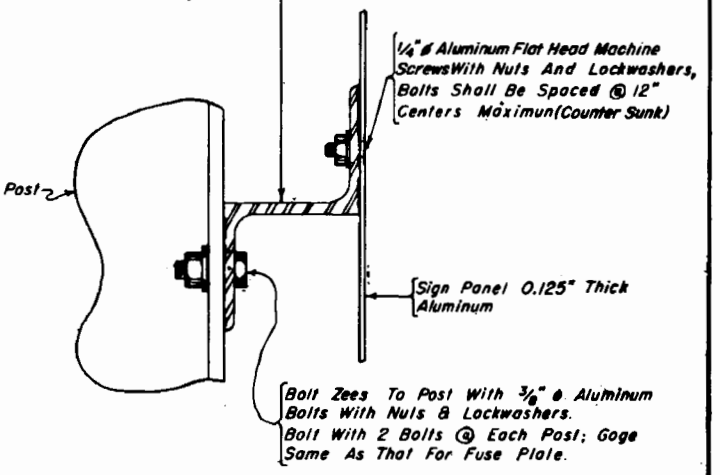
PARTIAL REAR ELEVATION

For Dimension "C" See Typical Cross Section Sheet



SIDE VIEW

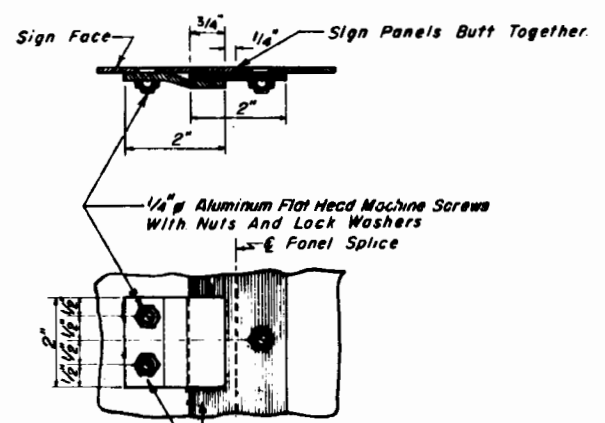
See Table For Size And Number of Zee Type Wind Beams



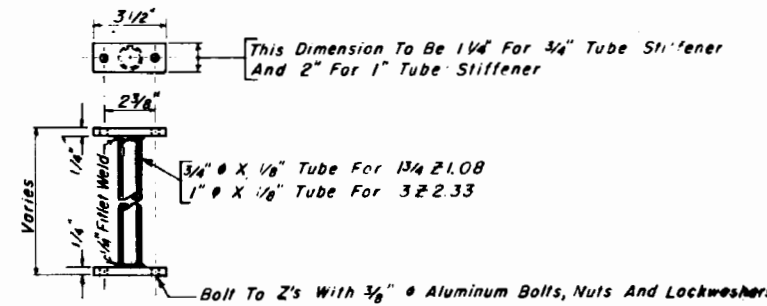
Z TYPE WINDBEAM

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, Banderite 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 Have An Electroplated Zinc Coating Type LS Applied In Accordance With ASTM A-164.
 *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.



BACKING STRIP DETAIL
(Maximum Spacing Of Clips 12")



STIFFENER DETAIL

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"

WIND LOADING CHART BY ZONES

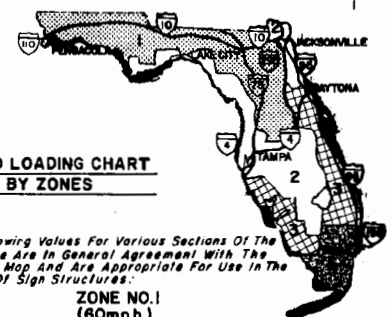
The Following Values For Various Sections Of The Interstate Are In General Agreement With The Isotach Map And Are Appropriate For Use In The Design Of Sign Structures:

ZONE NO. 1 (60 m.p.h.)
 ALACHUA, BRADFORD, BAKER, BAY, CALHOUN, CLAY, COLUMBIA, ESCAMBA, GADSDEN, GLENN, HAMILTON, HOLMES, JACKSON, JEFFERSON, LAFAYETTE, LAKE, LEON, LIBERTY, MADISON, MARION, OKALOOSA, PUTNAM, SANTA ROSA, SUMNER, 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, OKEECHOBEE, ORANGE, OSCEOLA, PASCO, PINELLAS, POLK, SEMINOLE, ST. JOHN, TAYLOR and WAKULLA COUNTIES.

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

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



SIZE OF WIND BEAMS		
SIZE OF ZEE	LENGTH OF SIGN FOR 2 POSTS	LENGTH OF SIGN FOR 3 POSTS
1 3/4 Z108	0' - 14'-0"	14'-1" - 20'-0"
3 Z2.33	14'-1" - 27'-0"	20'-1" - 38'-0"
3 Z3.38	Over 27'	Over 38'

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.

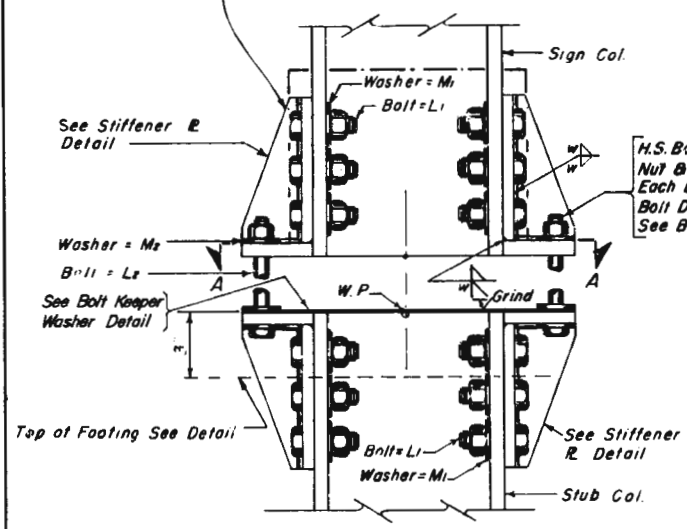
FABRICATOR NOTE IMPORTANT
 All Stiffened Base Plate Flanges And Fuse Plates Shall Be Bolted To Posts Using High Strength Bolts. Bolts Shall Be Tightened In The Shop Following A Method Approved By The Engineer. Tightening Shall Be To Such A Degree So As To Obtain The Following Minimum Residual Tension In Each Bolt:
 HIGH STRENGTH BOLTS (A-325)
 BOLT SIZE MIN. RES. BOLT TENSION

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.

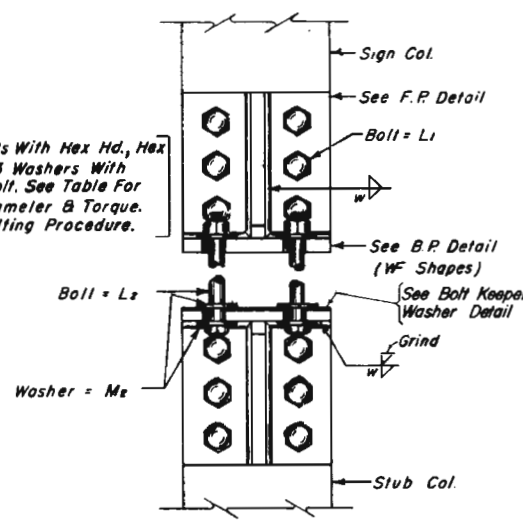
REV. NO.	REV. LENGTH OF WIND BEAMS	REV. DATE	REV. SIZE OF WIND BEAMS
6-73	REV. SHOP DRAWING	6-19-70	
3-74	REV. ROUNDED CORNERS TO PLANT AND MESH STRESSES		
1-76	REV. WIND LOADING		
5-76	DESIGN SPEC. DATE REV. TO 1974		
11-77	REV. DETAIL 'B' NOTE	6-19-68	
11-78	REV. DESIGN LOADS NOTE		
9-80	GENERAL REVISION		

ALUMINUM			
STATE ROAD DEPARTMENT OF FLORIDA BRIDGE DIVISION			
STANDARD ROADSIDE SIGN BREAK-AWAY PANEL DETAIL			
ROAD NO.	COUNTY	PROJECT NO.	
APPROVED BY			
Checked by	HHJ	1-67	
Checked by	CWB	1-67	
Checked by			
Checked by			
Checked by			
Drawing No.	1 of 4		Index No. 9535

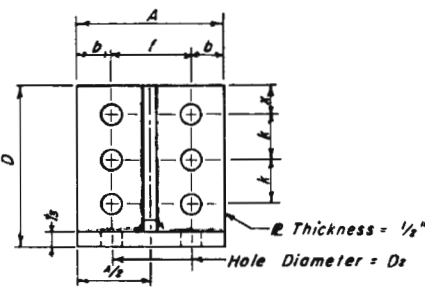
An Alternate Cast Base of Alloy 356 and T6 Temper may be submitted for Consideration in lieu of the Fabricated Base for approval by the Engineer.



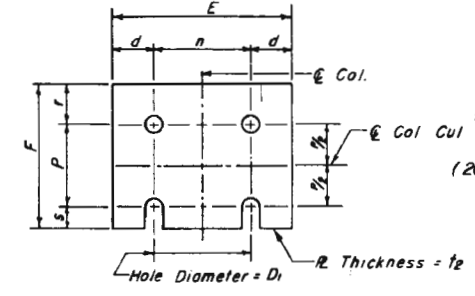
SIGN COL & STUB COL. ELEVATION WF SHAPES



SIGN COL & STUB COL. SIDE ELEVATION

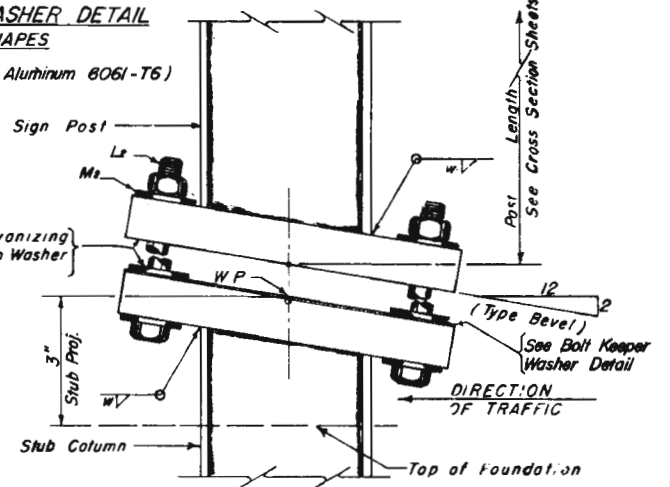


FLANGE PLATE DETAIL

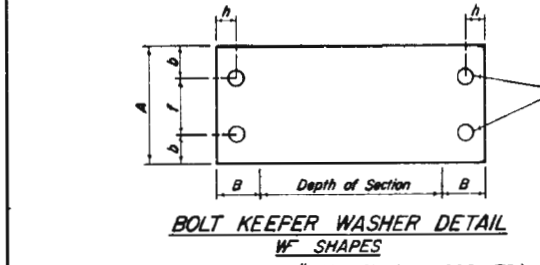


FUSE PLATE DETAIL

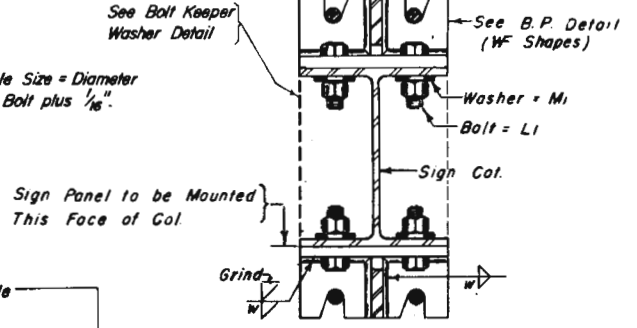
BOLT KEEPER WASHER DETAIL I-BEAM SHAPES (20 Gage or .040" thick Aluminum 6061-T6)



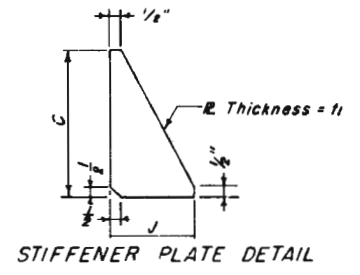
SIGN COL & STUB COL. ELEVATION I-BEAM SHAPES



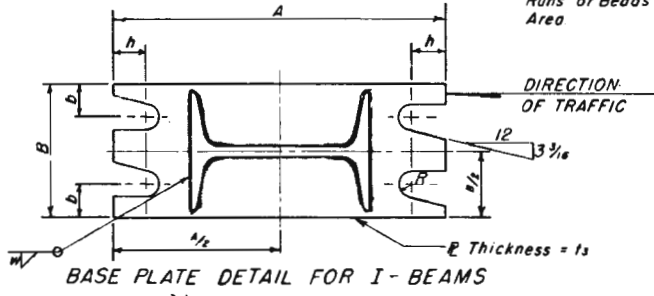
BOLT KEEPER WASHER DETAIL WF SHAPES



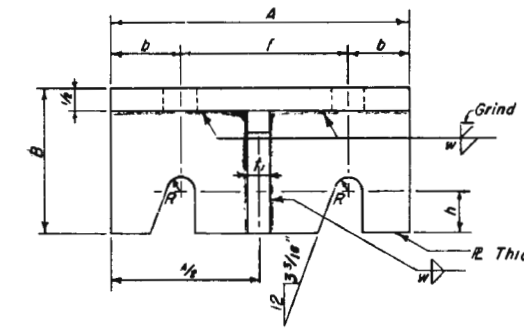
SECTION A-A



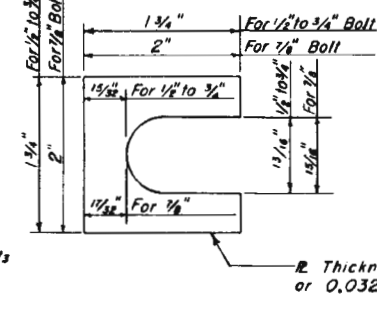
STIFFENER PLATE DETAIL



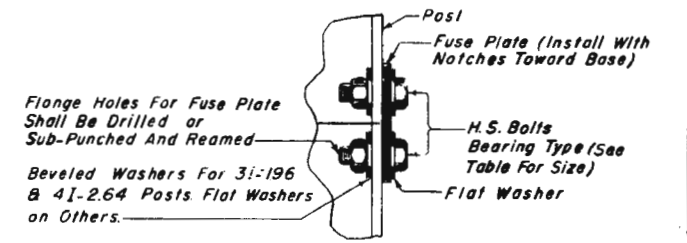
BASE PLATE DETAIL FOR I-BEAMS



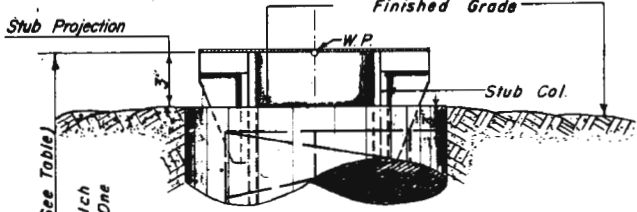
BASE PLATE DETAIL FOR WF SHAPES



SHIM DETAIL Furnish 2 x .012" Thick And 2 x .032" Thick Shims Per Post



DETAIL "B" FUSE PLATE (See Fabricator Note on "Two & Three Posts" Sheets)



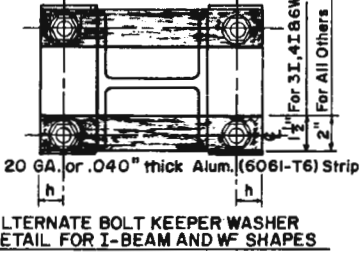
FOUNDATION DETAIL

NOTE: To Prevent Galvanic Corrosion, Reinforcing Steel Shall Not Be In Contact With The Aluminum Stub Column.

DIMENSION SECTION	BASE CONNECTION DATA TABLE															FUSE PLATE DATA TABLE										FOUNDATION DATA TABLE							
	A	B	C	D	I	L1	BOLT SIZE & TORQUE (L1)	M1	M2	D2	R	x	b	f	h	k	t1	t2	w	BOLT SIZE	E	F	P	D1	d	n	r	s	1/2	DIA.	DEPTH	STUB LENGTH	REINFORCING BARS "V"
3 I	1.96	7 1/2	3"																	1 1/2"	3"	3 1/2"	1 1/2"	1 1/2"	3/4"	1 1/2"	3/8"	1 1/2"	3/8"	1'-6"	1'-6"	1'-6"	8 # 4
4 I	2.64	7 1/2	3"																	1 1/2"	3"	3 1/2"	1 1/2"	1 1/2"	3/4"	1 1/2"	3/8"	1 1/2"	3/8"	1'-6"	1'-6"	1'-6"	8 # 4
6 WF	4.16	4"	3 1/2"	5"	5 3/4"	2 3/4"	3/4" B	5/8" Ø - 640 #	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1"	3/4"	2 1/2"	7/8"	1 1/2"	3/8"	3/8"	1 1/2"	4"	3 3/4"	1 1/2"	1 1/2"	3/4"	2 1/2"	1"	7/8"	2'-0"	2'-3"	2'-0"	8 # 4	
8 WF	5.90	5 1/2"	3 1/2"	5"	5 3/4"	2 3/4"	3/4" B		1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/4"	2 3/4"	7/8"	1 1/2"	3/8"	3/8"	1 1/2"	4"	4"	2"	1 1/2"	1 1/2"	2 3/4"	1 1/2"	1"	7/8"	2'-0"	3'-3"	2'-6"	8 # 5	
10 WF	8.32	6 1/2"	3 1/2"	6 1/2"	7 1/4"	2 3/4"	3/4" B		1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 1/2"	3 1/2"	7/8"	2"	3/8"	3/8"	1 1/2"	6 1/2"	4 1/2"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1"	7/8"	2'-0"	4'-6"	2'-5"	8 # 7		
12 WF	11.41	8"	3 1/2"	8"	8 3/4"	2 3/4"	3/4" B	3/8" Ø - 940 #	2"	1 3/4"	1 3/4"	1 3/4"	1 1/2"	2 1/2"	3 1/2"	7/8"	2 1/2"	3/8"	3/8"	1"	7"	5 3/4"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1 1/2"	7/8"	2'-0"	6'-3"	3'-0"	8 # 10	
12 WF	13.84	8"	3 1/2"	8 1/2"	9 1/4"	3"	1" B		2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	3 1/2"	7/8"	2 1/2"	3/8"	3/8"	1 1/2"	8"	6"	3"	1 1/2"	1 1/2"	4 1/2"	1 1/2"	1 1/2"	7/8"	2'-0"	8'-0"	3'-6"	9 # 11	
12 WF	18.34	10"	3 1/2"	10"	10 3/4"	3 1/2"	1" B	3/8" Ø - 1290 #	2 1/4"	2"	1 3/4"	1 3/4"	1 3/4"	2 1/2"	5 1/2"	1"	3 1/4"	3/8"	3/8"	1 1/2"	9"	6 1/2"	3 1/2"	1 1/2"	5 1/2"	1 1/2"	1 1/2"	7/8"	2'-0"	10'-9"	4'-0"	15 # 11	

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 of junction with nut using a center punch to prevent nut loosening.



ALTERNATE BOLT KEEPER WASHER DETAIL FOR I-BEAM AND WF SHAPES

ALUMINUM BASE, FOUNDATION & FUSE PLATE DETAILS

STATE ROAD DEPARTMENT OF FLORIDA
BRIDGE DIVISION

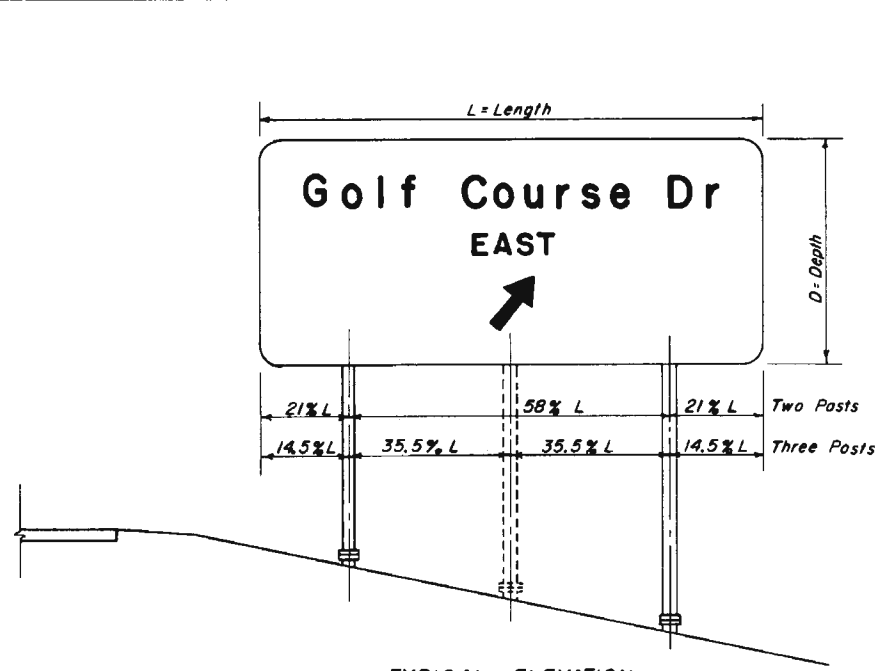
STANDARD ROADSIDE SIGN
BREAK-AWAY POST DETAILS

REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
6-19-68 Bolt Size, Torque & Dim. Added			
6-22-69 Bolt Keeper Washer Detail Added			
8-7-70 Torque Detail Added			
2-7-71 Class II Concrete Added			
1-74 Alternate Cast Base Added			
8-74 Alternate Bolt Keeper Washer Added			
5-76 Design Spec. Date Rev. to 1975			
8-80 GENERAL REVISION			

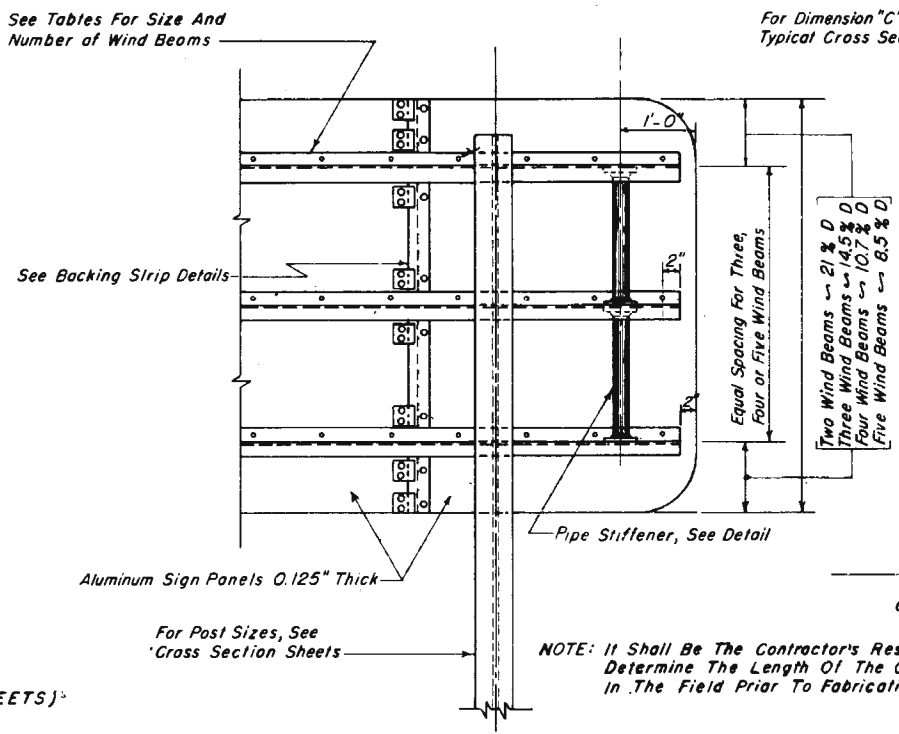
APPROVED BY	DATE
H.H.J.	1-67
C.W.B.	1-67

Checked by: T.W. [Signature]
Assistant State Highway Engineer

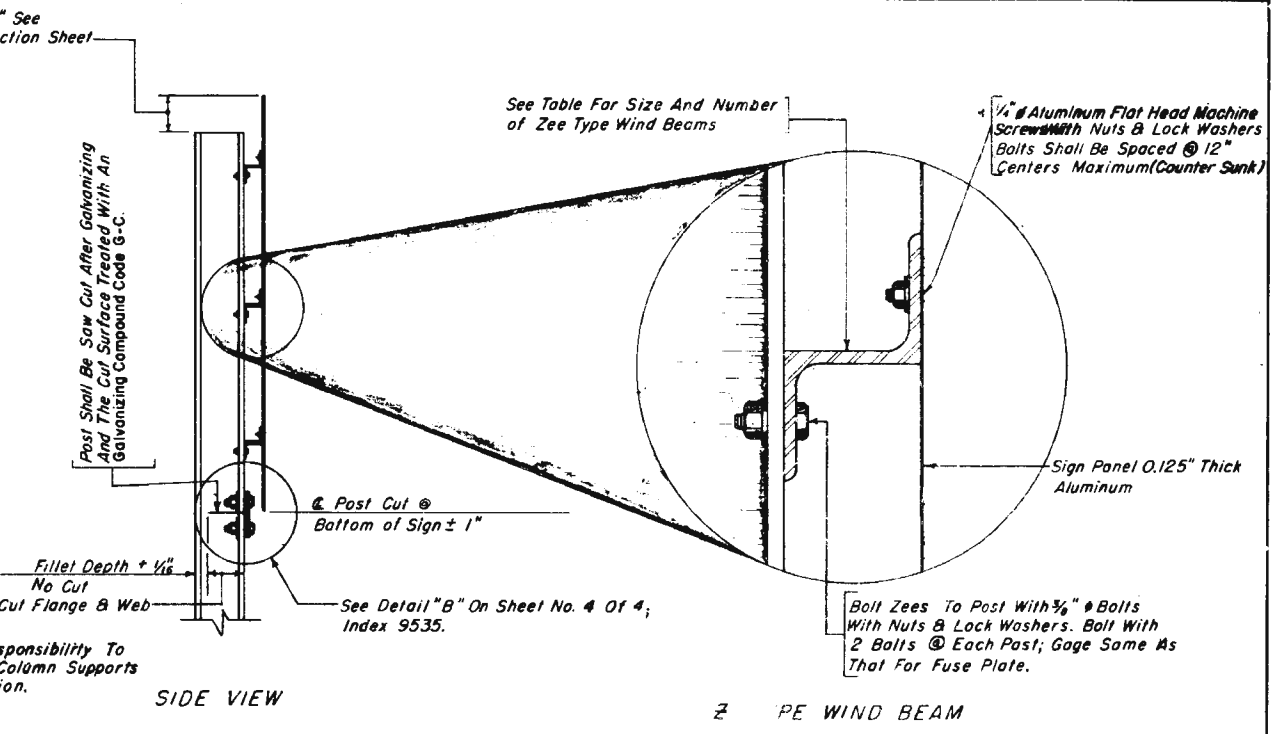
Drawing No. 2 of 4
Index No. 9535



TYPICAL ELEVATION
(FOR NOTES AND DIMENSIONS NOT SHOWN, SEE "TYPICAL CROSS SECTION" SHEETS)



PARTIAL REAR ELEVATION



SIDE VIEW

Z PE WIND BEAM

GENERAL NOTES

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.T.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, ASTM A307 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.

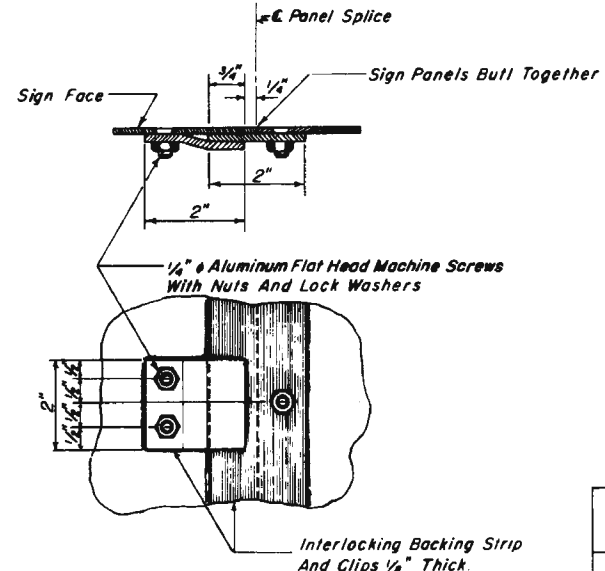
HIGH STRENGTH BOLTS (A-325) SHALL HAVE AN ELECTROPLATED ZINC COATING TYPE LS APPLIED IN ACCORDANCE WITH ASTM A-164.

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).

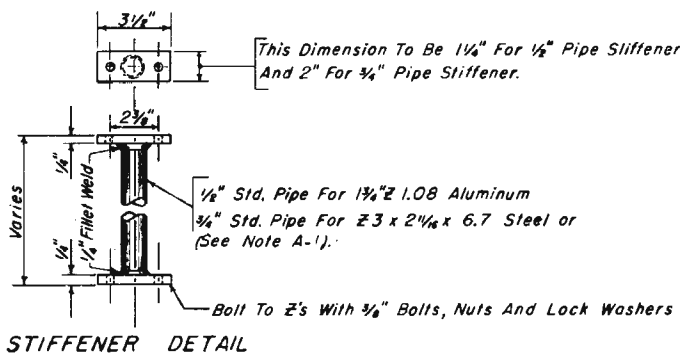
NOTE A-1
At The Contractors Option, Aluminum Zees And Stiffener May Be Used In Lieu of Structural Steel Zees And Stiffeners. See Drawing No. 1 of 4, Index No. 9535 For Aluminum Zee And Stiffener.

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.



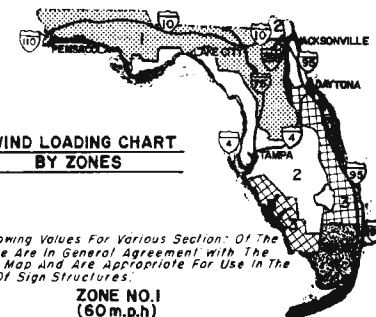
BACKING STRIP DETAIL
(Maximum Spacing Of Clips 12")



STIFFENER DETAIL

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"
80	5	25'-3"

WIND LOADING CHART
BY ZONES



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, ALCHRIST, HAMILTON, HOLMES, JACKSON, JEFFERSON, LAFAYETTE, LAKE, LEON, LIBERTY, MADISON, MARION, OKALOOSA, PUTNAM, SANTA ROSA, SUMNER, SUWANNEE, UNION, WALTON and WASHINGTON COUNTIES.

ZONE NO. 2
(70 m.p.h.)
CITRUS, DESOTO, DIXIE, DUVAL, FLAGLER, FRANKLIN, GLADES, GULF, HARDEE, HENRY, 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, MAHARDEE, MARTIN, PALM BEACH, SARASOTA, ST. LUCIE and VOLUSIA COUNTIES.

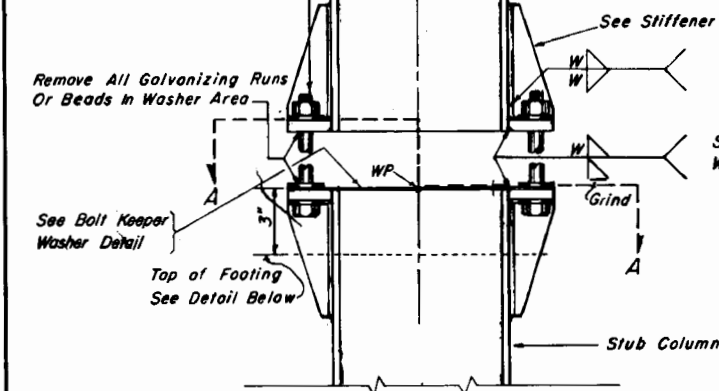
ZONE NO. 4
(90 m.p.h.)
BROWARD, DADE and MONROE COUNTIES.

SIZE OF ZEE	LENGTH OF SIGN FOR 2 POSTS	LENGTH OF SIGN FOR 3 POSTS
* 1 1/2" x 1.08	0' - 14'-0"	14'-1" to 20'-0"
2 3/8 x 2 1/2 x 6.7	14'-1" to 27'-0"	20'-1" to 38'-0"
2 3/8 x 2 1/2 x 9.8	Over 27'	Over 38'

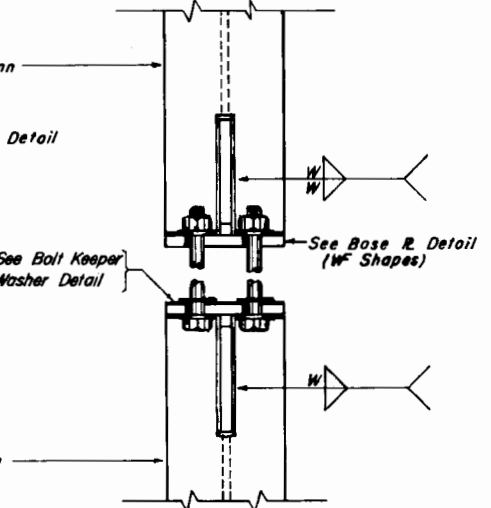
*NOTE:
Aluminum Zee - No Steel Equivalent Available.

STATE ROAD DEPARTMENT OF FLORIDA BRIDGE DIVISION		ROAD NO.	COUNTY	PROJECT NO.
STANDARD ROADSIDE SIGN BREAK-AWAY PANEL DETAIL				
9-80	GENERAL REVISION	12-71	REV. LENGTH OF WIND BEAMS	REVISIONS
5-72	REV. METALIZING NOTE	6-19-68	REV. BOLT & WIND PRESSURE REDUCTION NOTE REMOVED A.A.S.H.O. 1968 CHANGE WIND LOADING SUMMARY	Checked by
3-74	REV. ROUND HD. BOLTS TO FLAT HD. MACH. SCREWS	3-69	REV. WIND LOADING	Checked by
5-76	Design Spec. Date Rev. to 1979	8-70	REV. SIZE OF WIND BMS	Checked by
11-77	Rev. Detail "B" Note			Checked by
1-78	Design Spec. Date Rev.			Checked by
11-78	Rev. Design Loads Note			Checked by
APPROVED BY				INDEX NO.
Checked by				9535
Drawing No.				3 of 4

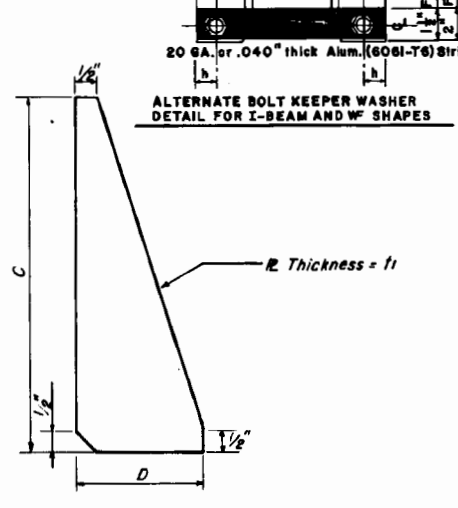
H.S. Bolts With Hex Head, Hex Nut & 3 Washers With Each Bolt See Table For Bolt Diameter And Torque. See Bolting Procedure.



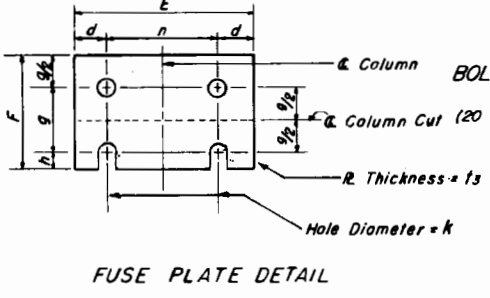
SIGN COL & STUB COL ELEVATION WF SHAPES



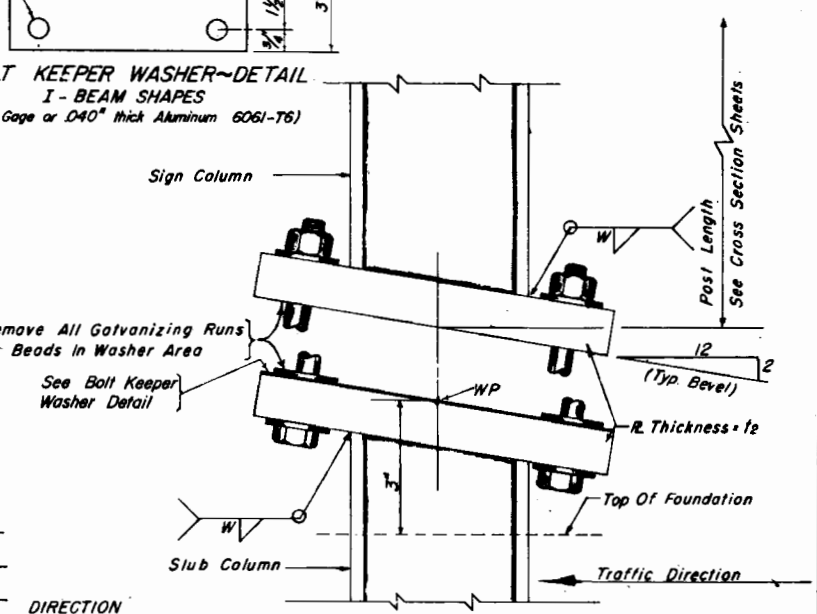
SIGN COL & STUB COL ELEVATION WF SHAPES



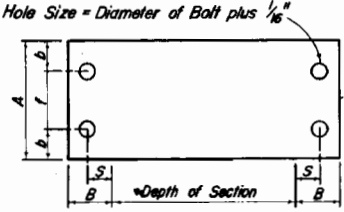
STIFFENER PLATE DETAIL



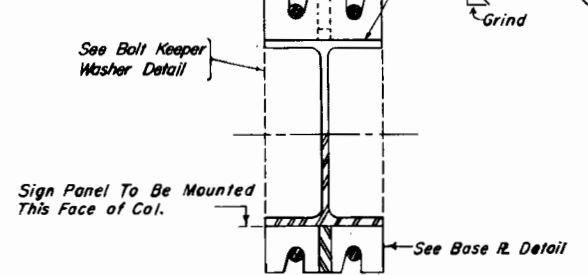
FUSE PLATE DETAIL



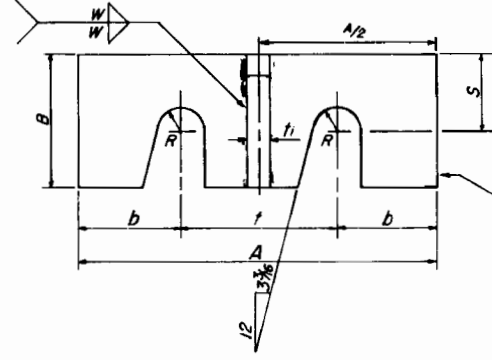
SIGN COL & STUB COL ELEVATION I-BEAM SHAPES



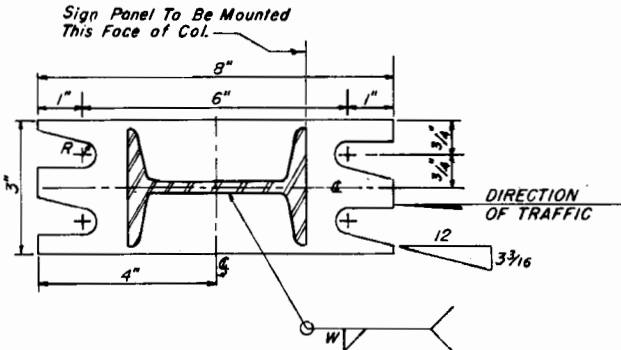
BOLT KEEPER WASHER DETAIL (20 Gage or .040" thick Aluminum 6061-T6)



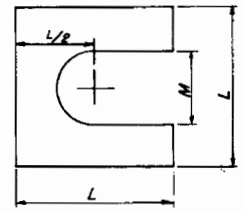
SECTION A-A



BASE PLATE DETAIL WF SHAPES

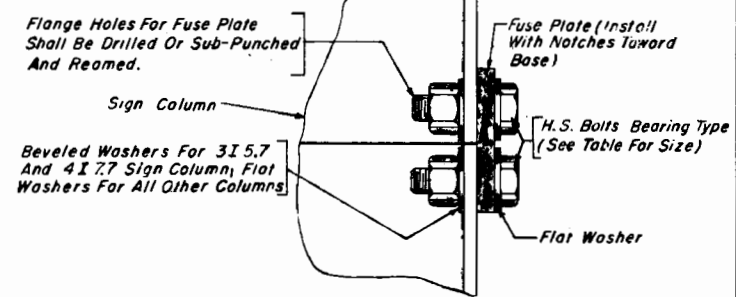


BASE PLATE I-BEAMS



SHIM DETAIL

Furnish 2-.012" ± Thick & 2-.032" ± Thick Shims Per Post



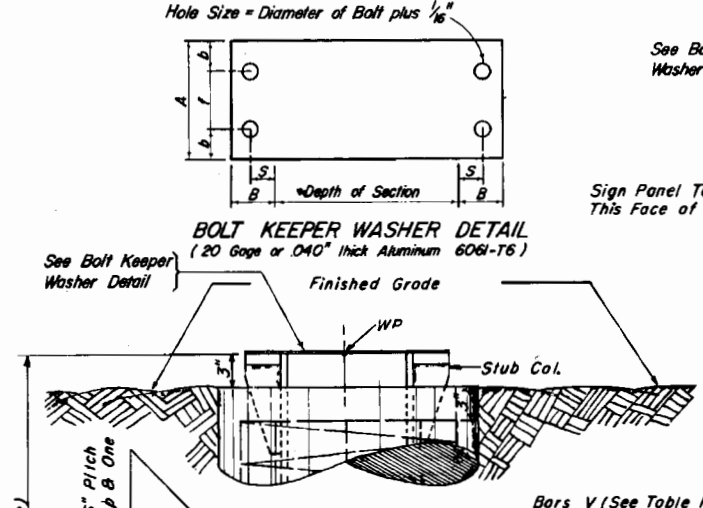
DETAIL "B" FUSE PLATE (See Fabrication Note On Sheet Drawing No. 3 of 4 Index No. 9535)

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.

DIMENSION SECTION	BASE CONNECTION DATA											FUSE PLATE DATA											FOUNDATION DATA				SHIM	
	A	B	C	D	Bolt Size & Torque	R	b	f	s	t ₁	t ₂	W	E	n	d	F	g	h	k	t ₃	Bolt Size	Dia	Depth	Stub Length	Reinf. Bars V	L	M	
3I 5.7					3/8" - 640#	1/2"					1"	1/4"	3"	1 1/2"	3/4"	4 1/8"	2 1/4"	3/4"	1 1/8"	1/2"	3/8"	1'-6"	1'-6"	1'-6"	8-#4	1 1/2"	1 1/2"	
4I 7.7					3/8" - 640#	1/2"					1"	1/4"	3 1/2"	1 3/4"	4 1/8"	2 1/4"	3/4"	1 1/8"	1/2"	3/8"	1'-6"	2'-0"	2'-0"	8-#4	1 3/4"	1 1/2"		
6B 12	4"	2"	4"	2"	3/8" - 640#	1/2"	3/4"	2 1/2"	1 1/2"	1/2"	1/2"	1/4"	4"	2 1/4"	3/4"	4 1/8"	2 1/4"	3/4"	1 1/8"	1/2"	3/8"	2'-0"	2'-9"	2'-3"	8-#5	1 3/4"	1 1/2"	
8W 17	5 1/4"	2"	5 1/4"	2"	3/8" - 640#	1/2"	1 1/4"	2 3/4"	1 1/4"	1/2"	1/2"	1/4"	5 1/4"	2 3/4"	1 1/4"	4 1/8"	2 1/4"	3/4"	1 1/8"	1/2"	3/8"	2'-0"	4'-0"	2'-9"	8-#7	1 1/2"	1 1/2"	
8WF 24	6 1/2"	2 1/4"	6 1/2"	2 1/4"	3/8" - 940#	1 3/16"	1 1/2"	3 1/8"	1 3/8"	1/2"	3/8"	1/8"	6 1/2"	3 1/8"	1 1/2"	6 3/8"	3 1/8"	1 1/8"	1 1/8"	3/8"	1"	2'-0"	5'-6"	3'-3"	8-#9	1 3/4"	1 1/2"	
10WF 33	8"	2 1/2"	8"	2 1/2"	3/8" - 1290#	1 1/2"	1 1/4"	5 1/2"	1 1/2"	1/2"	3/8"	1/8"	8"	4 1/2"	1 1/2"	7 1/4"	4"	1 1/4"	1 1/2"	3/8"	1 1/4"	2'-0"	7'-9"	3'-9"	9-#11	2"	1 1/2"	
12WF 40	8"	2 3/4"	8"	2 3/4"	1" - 1580#	1 1/2"	1 1/4"	5 1/2"	1 3/8"	1/2"	3/8"	1/8"	8"	4"	2"	8 1/2"	4 1/2"	1 1/2"	1 1/2"	3/8"	1 1/4"	2'-0"	10'-0"	4'-6"	14-#11	2 1/4"	1 1/2"	
12WF 45	8"	3"	8"	3"	1" - 1580#	1 1/2"	1 1/4"	5 1/2"	1 3/8"	1/2"	3/8"	1/8"	8"	4"	2"	8 1/2"	4 1/2"	1 1/2"	1 1/2"	3/8"	1 1/4"	2'-0"	10'-0"	4'-6"	14-#11	2 1/4"	1 1/2"	

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

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.



FOUNDATION DETAIL

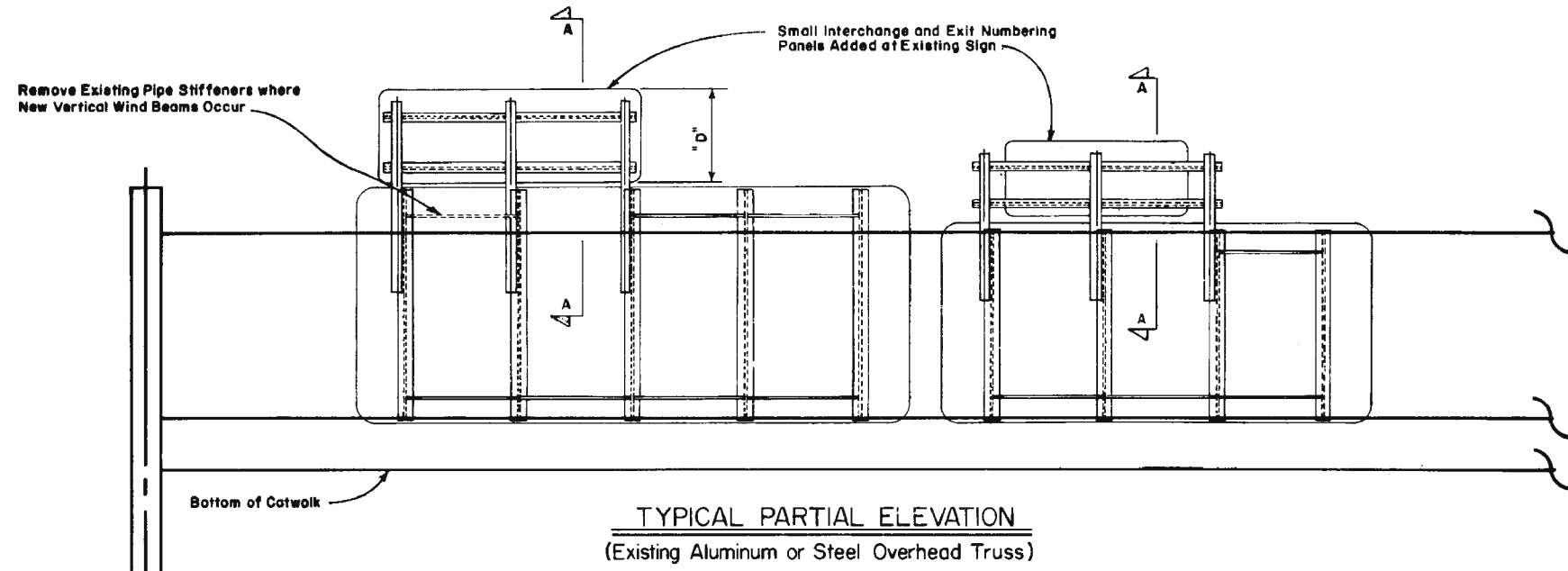


FOUNDATION DETAIL

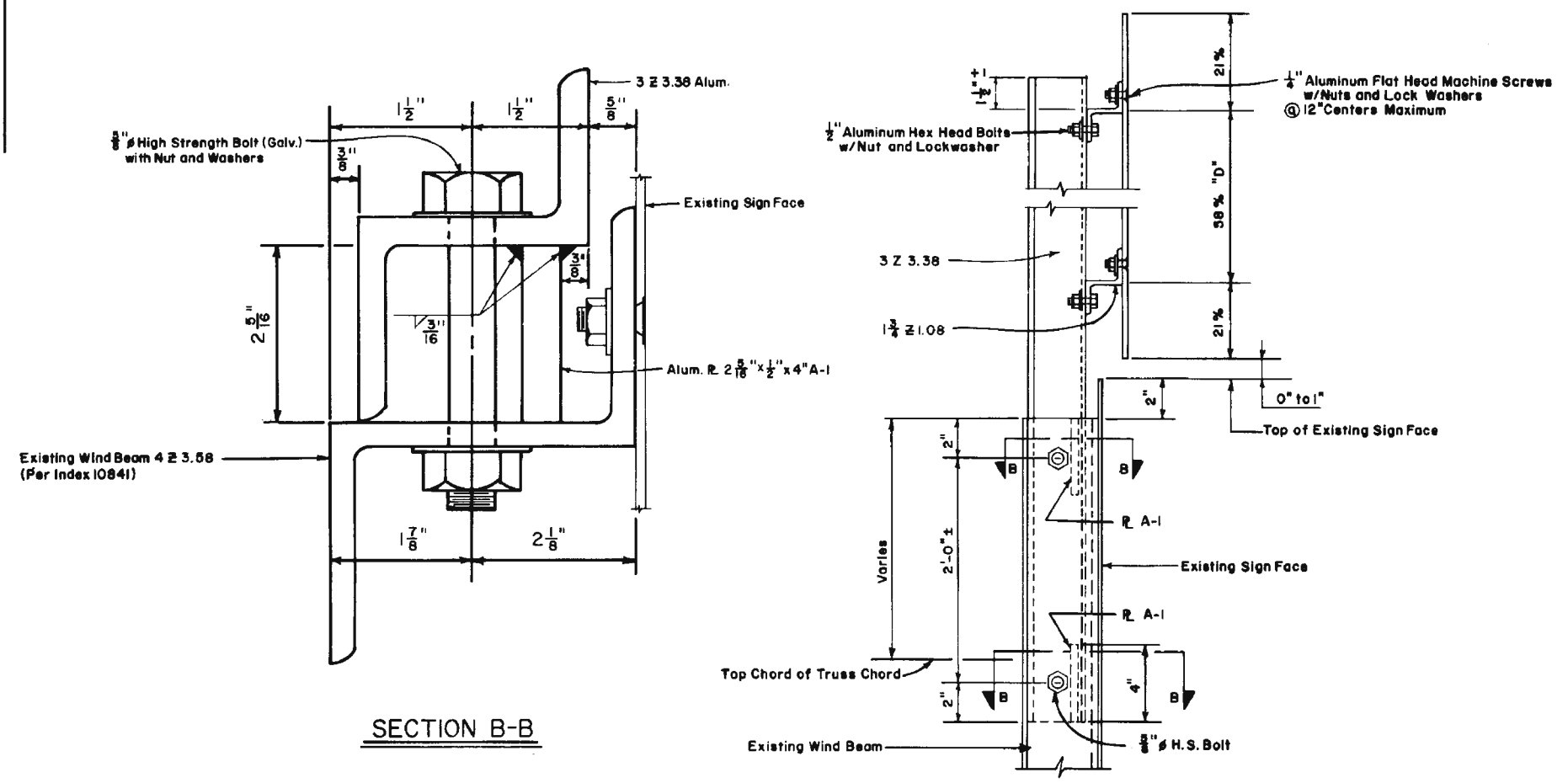
REVISIONS	
Date	Description
8-7-70	TORQUE
8-7-70	Class II Concrete Added
5-78	Design Spec. Date Rev. to 1975
9-80	GENERAL REVISION

REVISIONS	
Date	Description
4-1-68	TORQUE
4-1-68	SECTION & DIM.
6-19-68	BOLT SIZE, TORQUE AND DIM.
9-22-69	BOLT KEEPER WASHER ADDED


STEEL BASE, FOUNDATION & FUSE PLATE DETAILS			
STATE ROAD DEPARTMENT OF FLORIDA			
BRIDGE DIVISION			
STANDARD ROADSIDE SIGN BREAK-AWAY POST DETAILS			
ROAD NO.	COUNTY	PROJECT NO.	
APPROVED BY			
Detailed by		H.M.J.	1-67
Checked by		C.W.B.	1-67
Quantities by			
Checked by			
Traced by			
Drawing No.		Index No.	
4 of 4		9535	



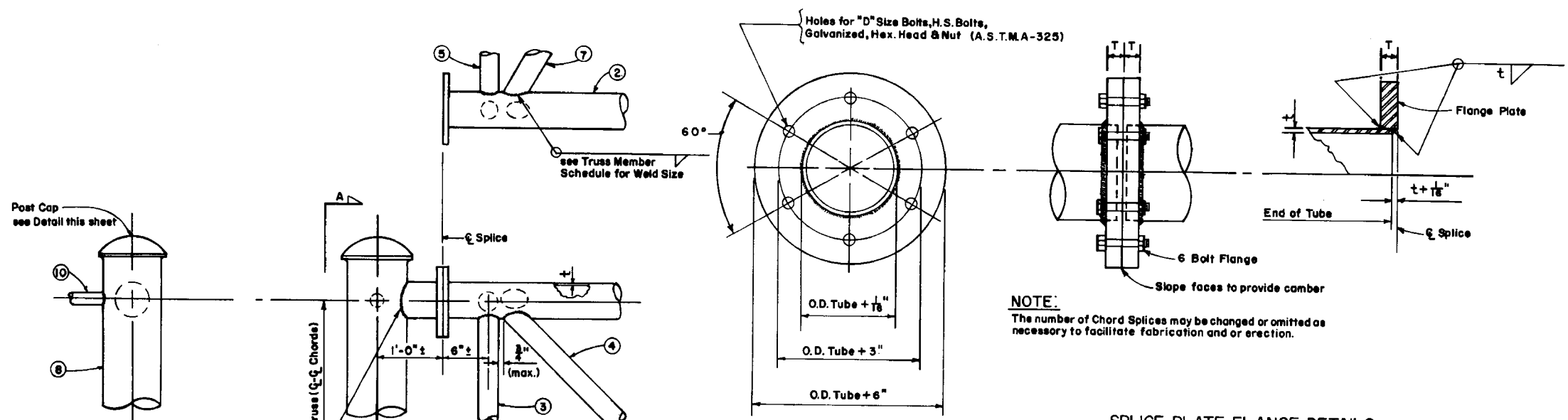
GENERAL NOTES
 (1) For "General Notes" Covering Specification and Material; See Sheets 1 of 4 and 3 of 4, Index 9535



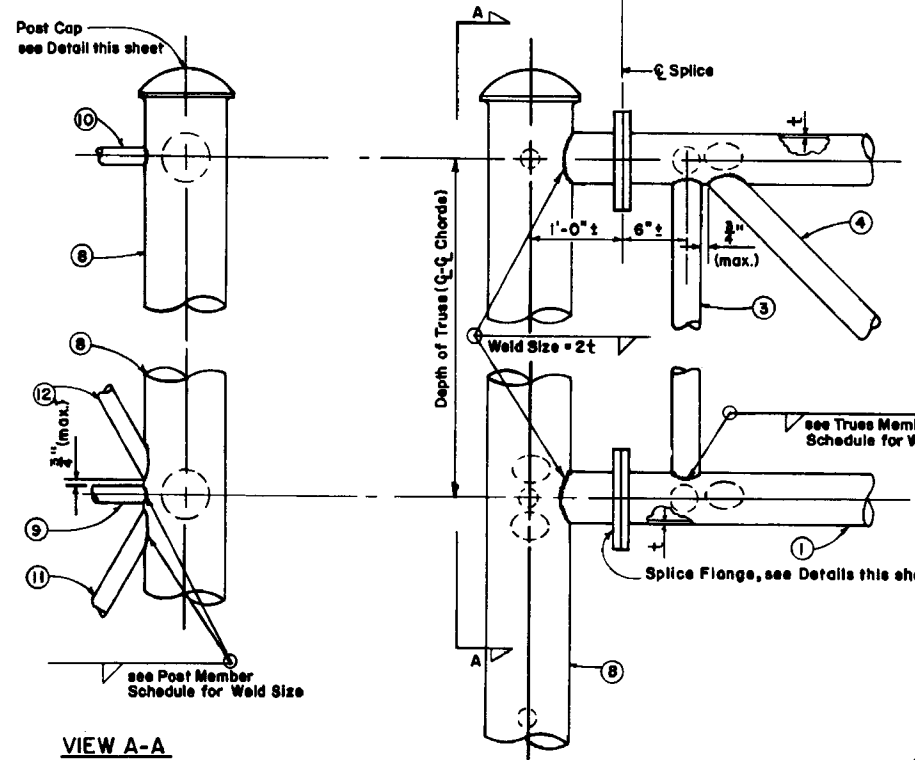
INTERCHANGE AND EXIT NUMBERING FOR SIGNS WITH VERTICAL WIND BEAMS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES												
DETAILS FOR ADDING SIGN ASSEMBLY TO EXISTING HIGHWAY SIGNS												
ROAD NO.		COUNTY		PROJECT NO.								
<table border="1"> <tr> <th>REVISIONS</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVED BY</th> </tr> <tr> <td>5-74</td> <td></td> <td>Rev. Round HD. Bolts to Flat HD. Mech. Screws.</td> <td></td> </tr> </table>					REVISIONS	DATE	DESCRIPTION	APPROVED BY	5-74		Rev. Round HD. Bolts to Flat HD. Mech. Screws.	
REVISIONS	DATE	DESCRIPTION	APPROVED BY									
5-74		Rev. Round HD. Bolts to Flat HD. Mech. Screws.										
Designed by	CWB	Date	11-71	 Deputy Chief Engineer, Structures								
Checked by	JG	Date	11-71									
Quantities by												
Checked by												
Supervised by	AJH	Drawing No.	1 of 1	Index No. 10905								

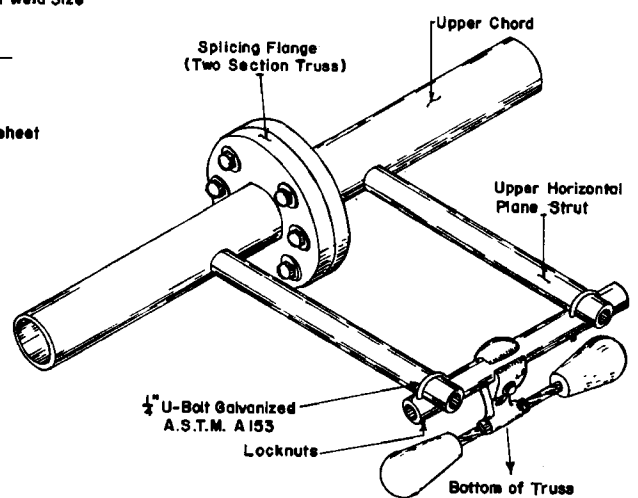
TUBE SIZE	T	BOLT SIZE "D"
2 3/4" x 1/8" to 6 1/2" x 1/4"	1 1/4"	5/8" #
7" x 1/4" to 9" x 1/4"	1 1/2"	3/4" #
7 1/2" x 5/16" to 9 1/2" x 5/16"	1 3/4"	7/8" #



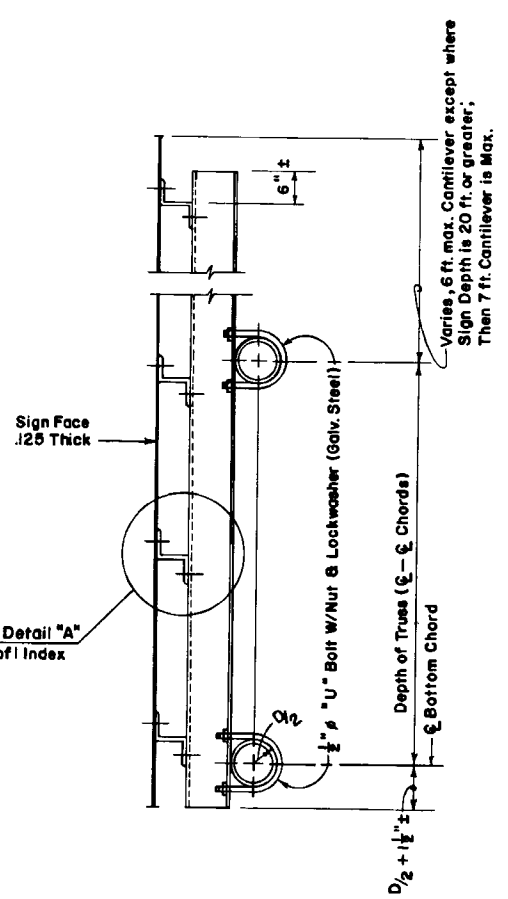
SPLICE PLATE FLANGE DETAILS
Aluminum Alloy 6061-T6 or 5154-H38 or Alloy 356-T7



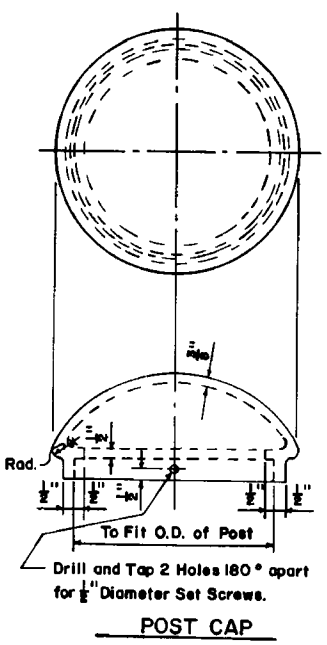
VIEW A-A



STOCKBRIDGE-TYPE DAMPER



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



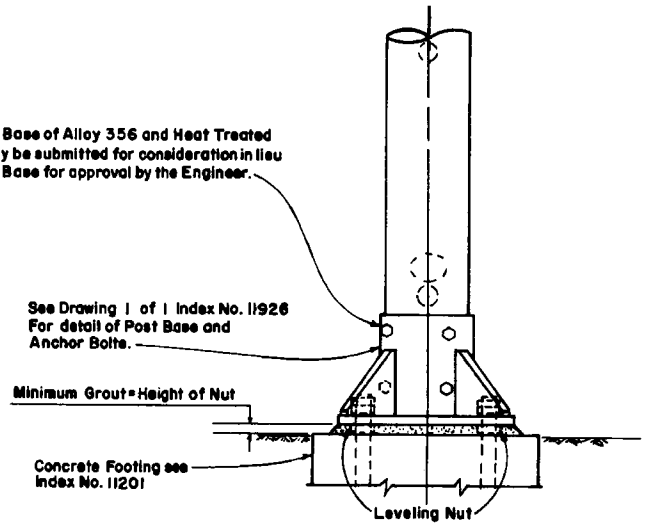
POST CAP
Aluminum Alloy 356-F

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

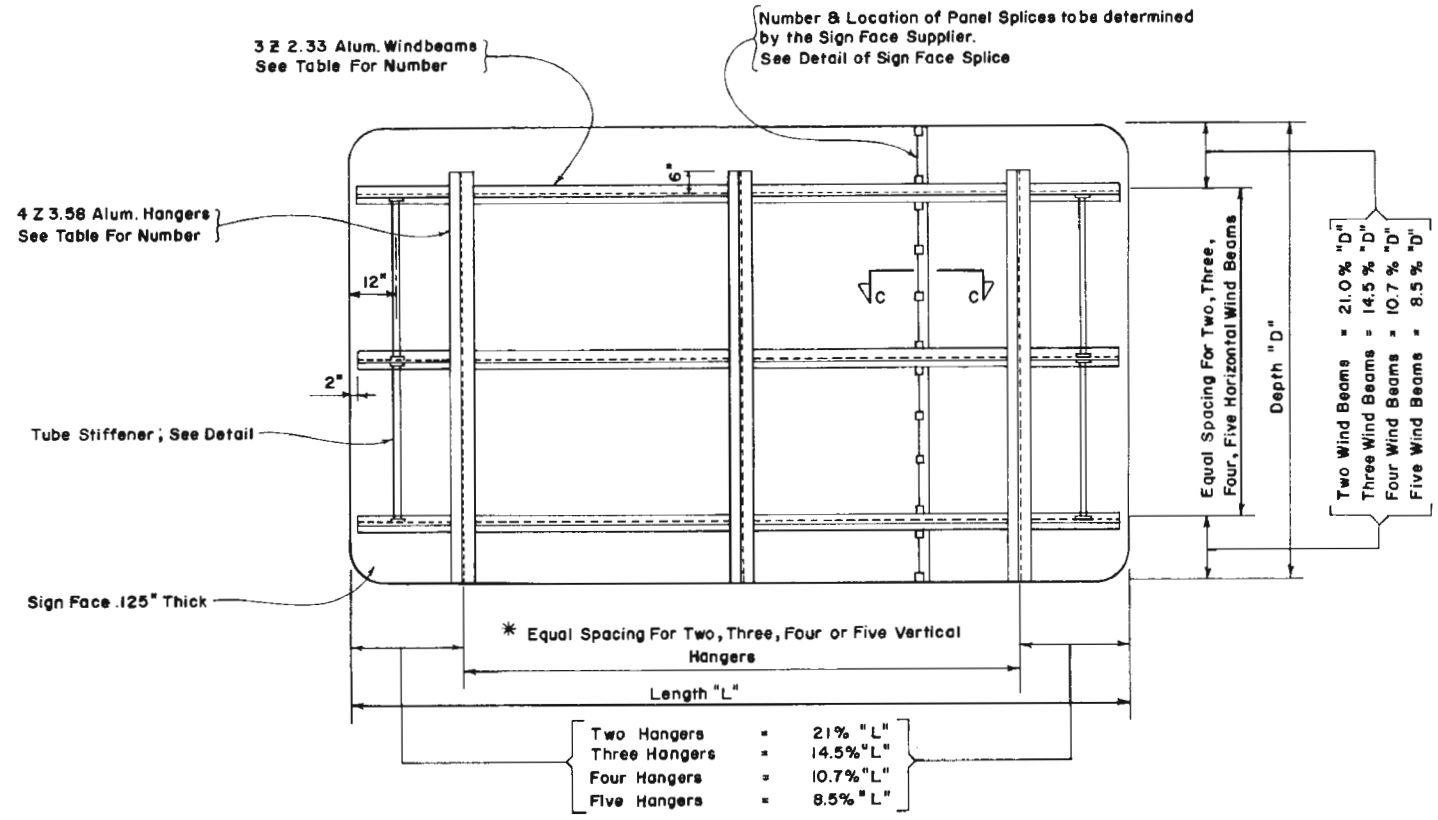
TRUSS MEMBERS		POST MEMBERS	
THICKNESS	WELD SIZE	THICKNESS	WELD SIZE
1/8"	3/16"	1/8"	1/4"
3/16"	1/4"	3/16"	3/16"
1/4"	5/16"	1/4"	3/8"
5/16"	7/16"	5/16"	1/2"
3/8"	1/2"	3/8"	5/8"

ALUMINUM TRUSSES ASSEMBLY DETAILS FOR TYPE A, B or C TRUSS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES

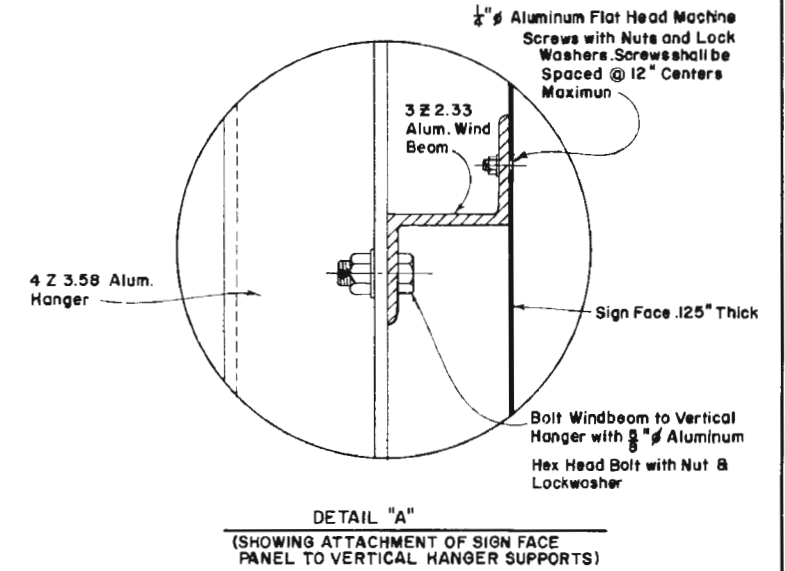
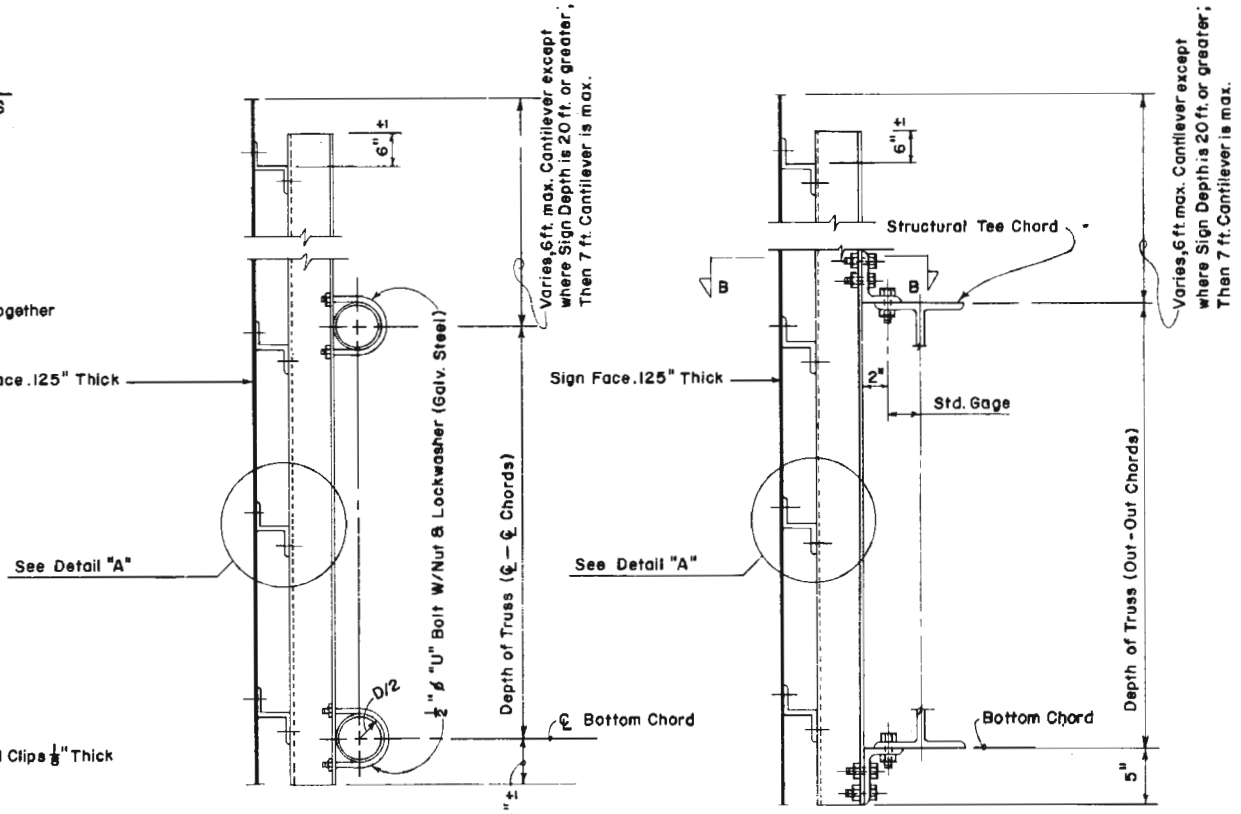
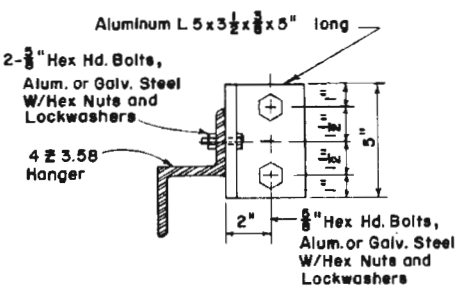
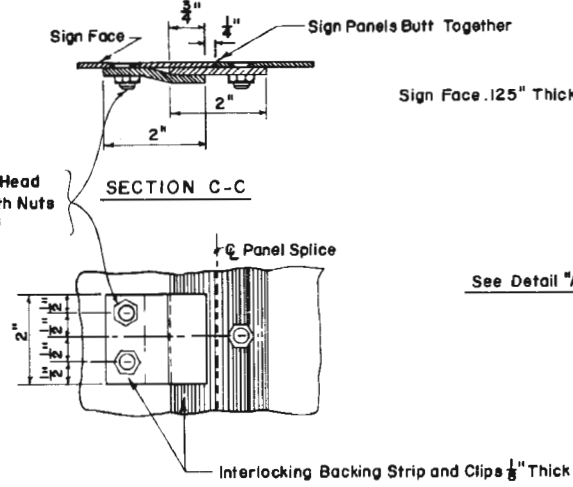
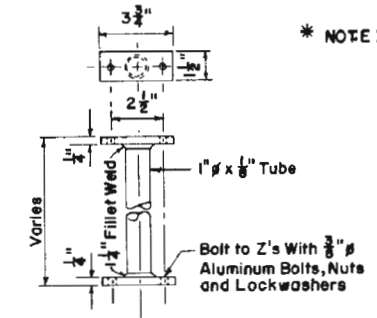
BRIDGE SPAN TRUSS FOR OVERHEAD SIGNS

REV.	DESCRIPTION	DATE	BY	CHKD.	APPROVED BY
4-72	Upper Col. Strut No. 10 Rev. to No. 9		HAV	11-71	 Design Engineer, Structures
5-72	Sign Face & Truss Connection		CWB	11-71	
6-74	INDEX 11485 ADDED				



WIND M.P.H.	NO. BEAMS	MAX. DEPTH	Number of 4 Z 3.58 Vertical Hanger Beams for Sign Length			
			2 HANGERS SIGN LENGTH	3 HANGERS SIGN LENGTH	4 HANGERS SIGN LENGTH	5 HANGERS 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"	

TYPICAL SIGN FACE ELEVATION FOR O.H. TRUSS
 * NOTE: SPACING OF VERTICAL HANGERS MAY BE VARIED SLIGHTLY OR AS NECESSARY TO CLEAR THE TRUSS STRUTS AND DIAGONALS AT PANEL POINTS.

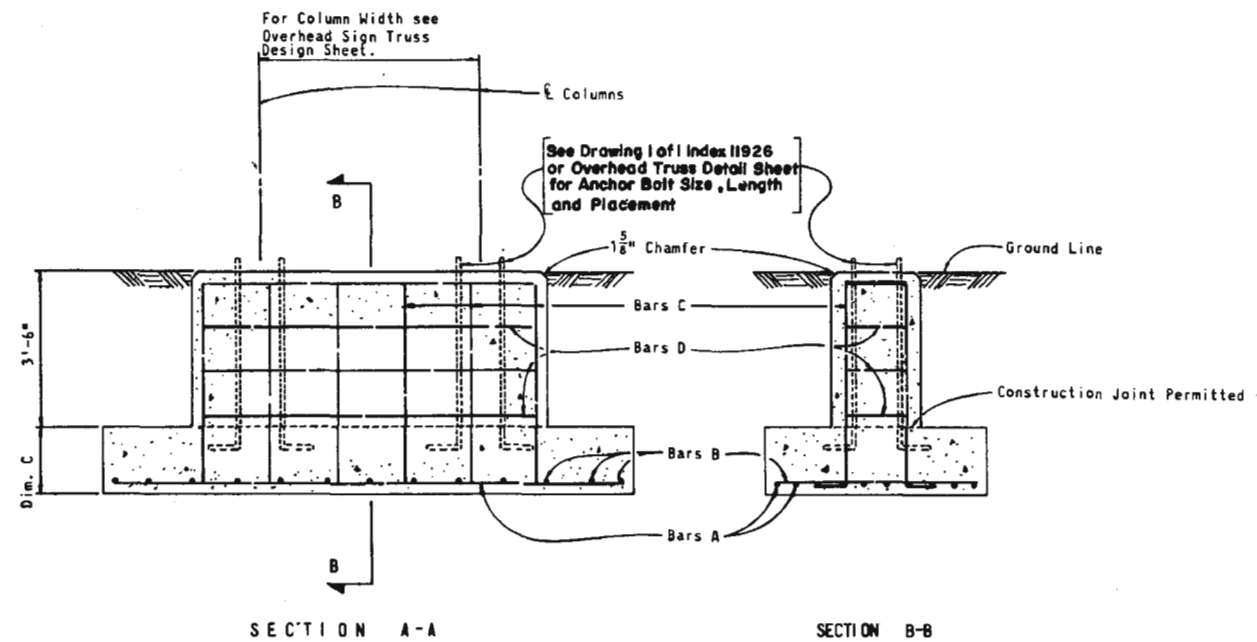
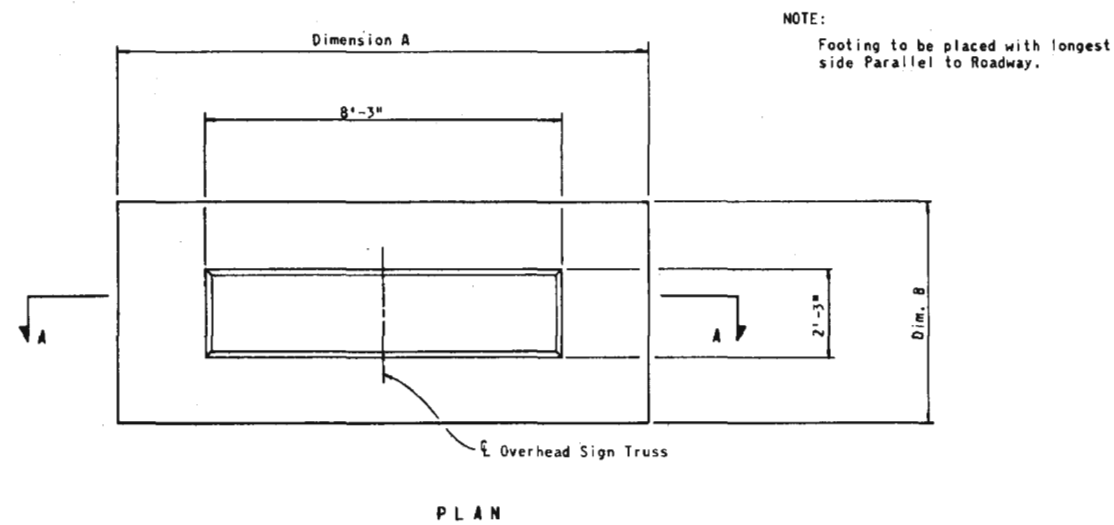


GENERAL NOTES
 (1) For "General Notes" Covering Specification, Materials and Wind Loads, see Sheets 1 of 4 and 3 of 4, Index 9535

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			
5-74	Rev Round HD Bolts to Flat HD. Mach Screws			
5-76	REV. WIND LOADING	Designed by	C.W.B.	5-72
1-78	REV. Truss Connection Note	Checked by	A.J.H.	5-72
		Quantity by		
		Checked by		
		Supervised by		
		APPROVED BY		
		Name		Date
		Checked by		Date
		Quantity by		Date
		Checked by		Date
		Supervised by		Date
		Deputy Design Engineer, Structures		
		Drawing No.		Index No.
		1 of 1		11037

FOOTING DESIGNATION	FOOTING DIMENSIONS			BILL OF VARYING REINFORCING							
	DIMENSIONS			BARS A				BARS B			
	A	B	C	SIZE	LENGTH	SPACING	NO. REQ'D.	SIZE	LENGTH	SPACING	NO. REQ'D.
T-1	9'-0"	3'-6"	1'-6"	6	8'-6"	9"	5	6	3'-0"	17"	7
T-2	11'-6"	4'-3"	1'-6"	6	11'-0"	9"	6	5	3'-9"	12"	12
T-3	13'-0"	5'-0"	1'-6"	6	12'-6"	9"	7	6	4'-6"	15"	11
T-4	14'-6"	5'-6"	1'-6"	7	14'-0"	12"	6	5	5'-0"	12"	15
T-5	15'-6"	6'-0"	1'-9"	8	15'-0"	11"	7	5	5'-6"	12"	16
T-6	16'-6"	6'-3"	1'-9"	8	16'-0"	11 1/2"	7	5	5'-9"	12"	17
T-7	17'-6"	6'-6"	1'-9"	8	17'-0"	12"	7	5	6'-0"	12"	18
T-8	18'-6"	6'-9"	1'-9"	7	18'-0"	7 1/2"	11	5	6'-3"	12"	19
T-9	19'-0"	7'-3"	1'-9"	8	18'-6"	9"	10	6	6'-9"	17"	14
T-10	19'-6"	7'-9"	1'-9"	8	19'-0"	7 1/4"	13	5	7'-3"	12"	20
T-11	20'-0"	7'-9"	2'-0"	8	19'-6"	7 1/4"	13	6	7'-3"	18"	14
T-12	20'-6"	8'-0"	2'-0"	10	20'-0"	12"	9	5	7'-6"	12"	21
T-13	21'-0"	8'-3"	2'-0"	8	20'-6"	7 1/4"	13	5	7'-9"	10 1/4"	25
T-14	21'-6"	8'-6"	2'-0"	10	21'-0"	12"	9	5	8'-0"	12"	22
T-15	22'-0"	8'-9"	2'-0"	10	21'-6"	11"	10	5	8'-3"	10 3/4"	25
T-16	22'-6"	9'-0"	2'-0"	8	22'-0"	6"	18	5	8'-6"	12"	23
T-17	23'-0"	9'-0"	2'-0"	10	22'-6"	8 1/2"	13	5	8'-6"	10"	28
T-18	23'-6"	9'-3"	2'-0"	10	23'-0"	8 3/4"	13	5	8'-9"	12"	24
T-19	24'-0"	9'-3"	2'-0"	11	23'-6"	8 3/4"	13	5	8'-9"	11 3/4"	25
T-20	24'-6"	9'-6"	2'-0"	11	24'-0"	9"	13	5	9'-0"	12"	25
T-21	25'-0"	9'-6"	2'-0"	11	24'-6"	9"	13	6	9'-0"	14"	22
T-22	25'-0"	9'-9"	2'-0"	11	24'-6"	9 1/4"	13	6	9'-3"	14"	22
T-23	25'-0"	10'-0"	2'-0"	11	24'-6"	9 1/2"	13	6	9'-6"	14"	22
T-24	25'-6"	9'-9"	2'-0"	10	25'-0"	6 15/16"	17	5	9'-3"	12"	26
T-25	25'-6"	10'-0"	2'-0"	10	25'-0"	6"	20	5	9'-6"	12"	26
T-26	26'-0"	9'-9"	2'-0"	11	25'-6"	6 15/16"	17	6	9'-3"	18"	18
T-27	26'-0"	10'-0"	2'-0"	10	25'-6"	6"	20	6	9'-6"	18"	18
T-28	26'-6"	10'-0"	2'-0"	10	26'-0"	6"	20	5	9'-6"	12"	27
T-29	27'-0"	10'-0"	2'-0"	10	26'-6"	6"	20	5	9'-6"	13 1/4"	25
T-30	27'-6"	10'-0"	2'-0"	11	27'-0"	6"	20	5	9'-6"	12"	28
T-31	28'-0"	9'-9"	2'-0"	11	27'-6"	6 1/2"	18	5	9'-3"	10"	34
T-32	28'-0"	10'-0"	2'-0"	11	27'-6"	6"	20	5	9'-6"	10"	34
T-33	28'-6"	9'-9"	2'-0"	10	28'-0"	4 3/8"	25	5	9'-3"	12"	29
T-34	28'-6"	10'-0"	2'-0"	11	28'-0"	6"	20	5	9'-6"	12"	29
T-35	29'-0"	9'-9"	2'-0"	10	28'-6"	4 3/8"	25	6	9'-3"	18"	20
T-36	29'-0"	10'-0"	2'-0"	11	28'-6"	6"	20	6	9'-6"	18"	20
T-37	29'-6"	9'-9"	2'-0"	10	29'-0"	4 3/8"	25	5	9'-3"	12"	30
T-38	29'-6"	10'-0"	2'-0"	11	29'-0"	6"	20	5	9'-6"	12"	30
T-39	30'-0"	9'-9"	2'-0"	11	29'-6"	5 1/2"	21	6	9'-3"	14 1/4"	25
T-40	30'-0"	10'-0"	2'-0"	11	29'-6"	5 1/8"	22	6	9'-6"	14 3/4"	25



- NOTES:
- All Reinforcing Steel shall have a 3" Minimum of Concrete Cover and shall be of Grade 60.
 - All exposed edges to be Chamfered 3/4" unless otherwise shown.
 - All Concrete shall be Class II. The Minimum Specified Compressive Strength at 28 days (f'c) shall be 3,400 p.s.i.
 - 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.

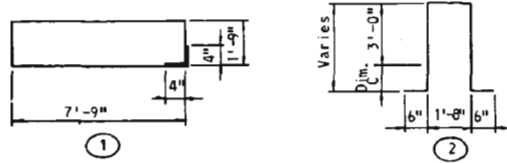
OVERHEAD TYPE A, B or C TRUSSES
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES

FOOTINGS FOR OVERHEAD SIGN TRUSSES

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Date	Description			
7-78	Class II Concrete Added			
8-78	REV. TITLE	Home	Date	APPROVED BY
8-78	Rev. Anchor Bolt Note	Designed by	4/73	T. all d. Q.
11-78	Rev. Concrete Strength	Checked by	4/73	
		Quantity by		
		Checked by		Structural Design Engineer, Structures
		Inspected by	A.J.H.	Sheet No. 1 of 2
				Index No. 11,201

BENDING DIAGRAMS

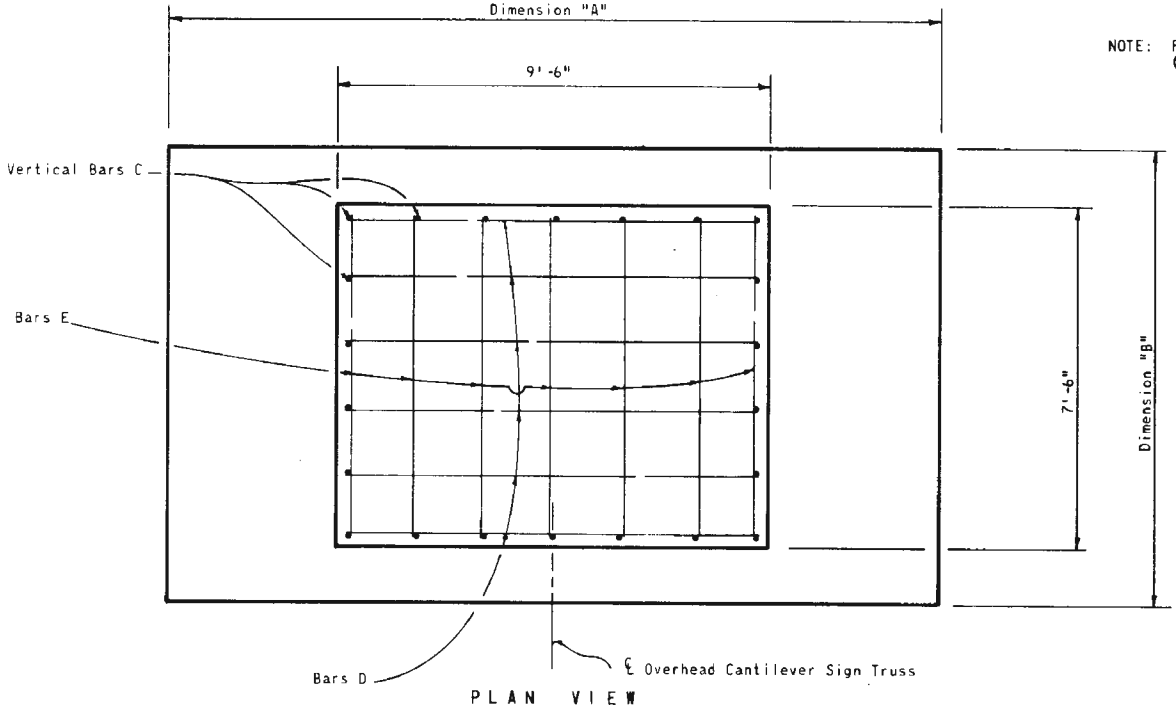
NOTE: All dimensions are out-to-out.



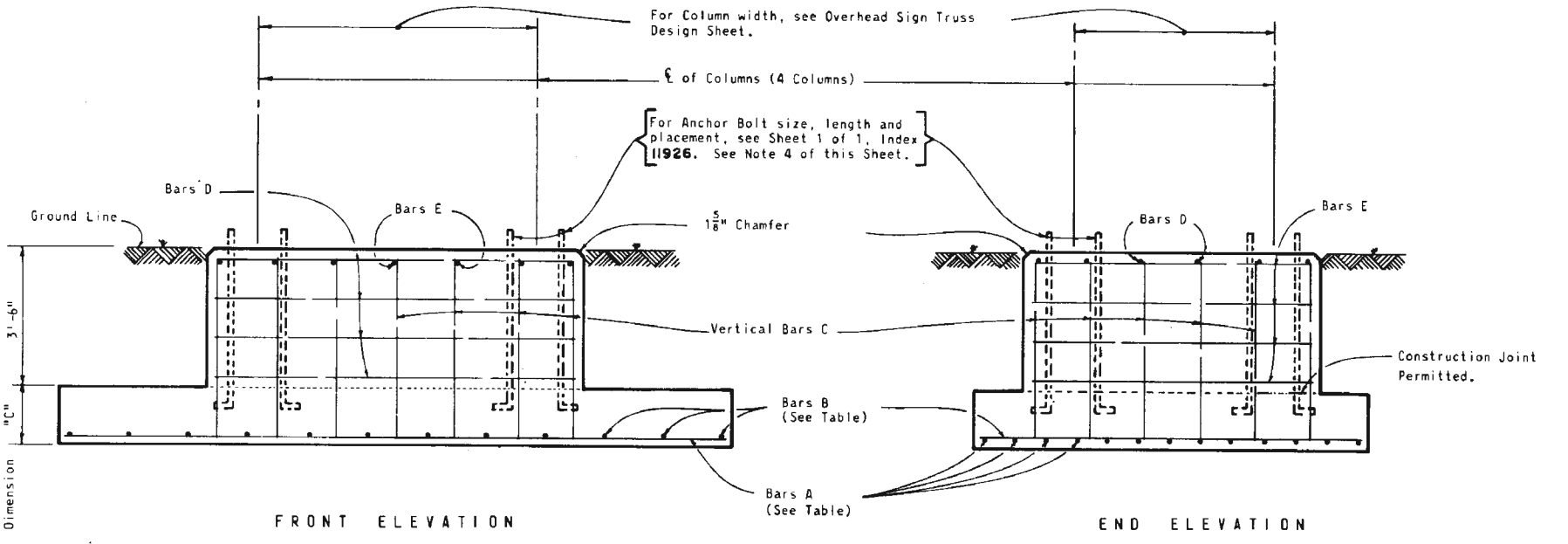
BILL OF CONSTANT REINFORCING

MARK	SIZE	LENGTH	NO. REQ'D.	DIAGRAM NO.
C	4	VARIES	6	2
D	4	19'-8"	4	1

FOOTING DESIGNATION	FOOTING DIMENSION			BILL OF VARYING REINFORCING							
	DIMENSION			BARS A				BARS B			
	A	B	C	SIZE	LENGTH	SPACING	NO. REQ'D.	SIZE	LENGTH	SPACING	NO. REQ'D.
C-1	10'-0"	8'-6"	1'-6"	5	9'-6"	6"	17	5	8'-0"	9 1/2"	13
C-2	11'-0"	8'-6"	1'-6"	7	10'-6"	12"	9	6	8'-0"	14"	10
C-3	12'-0"	9'-3"	1'-6"	6	11'-6"	8 3/4"	13	5	8'-9"	11 1/2"	13
C-4	13'-0"	9'-9"	1'-6"	6	12'-6"	9 3/4"	13	6	9'-3"	15"	11
C-5	14'-0"	9'-9"	1'-6"	6	13'-6"	9 3/4"	13	6	9'-3"	18"	10
C-6	15'-0"	10'-0"	1'-6"	6	14'-6"	9 3/4"	13	6	9'-6"	14 1/2"	13
C-7	16'-0"	10'-0"	1'-6"	7	15'-6"	9 3/4"	13	5	9'-6"	11 5/8"	17
C-8	17'-0"	9'-9"	1'-6"	8	16'-6"	9 3/4"	13	6	9'-3"	18"	12
C-9	17'-6"	9'-9"	1'-9"	8	17'-0"	9 3/4"	13	5	9'-3"	12"	18
C-10	18'-0"	10'-0"	1'-9"	8	17'-6"	9 1/2"	13	5	9'-6"	10"	22
C-11	19'-0"	10'-0"	1'-9"	7	18'-6"	7 1/4"	17	6	9'-6"	17"	14
C-12	20'-0"	9'-9"	1'-9"	9	19'-6"	9 3/4"	13	6	9'-3"	18"	14
C-13	20'-6"	9'-9"	1'-9"	8	20'-0"	6 15/16"	17	5	9'-3"	12"	21
C-14	21'-0"	10'-0"	1'-9"	8	20'-6"	6"	20	5	9'-6"	10 3/4"	25
C-15	22'-0"	9'-9"	1'-9"	9	21'-6"	6 15/16"	17	5	9'-3"	10 3/4"	25
C-16	22'-6"	10'-0"	1'-9"	9	22'-0"	6"	20	5	9'-6"	12"	23
C-17	23'-0"	10'-0"	1'-9"	9	22'-6"	6"	20	5	9'-6"	10"	28
C-18	24'-0"	9'-9"	1'-9"	10	23'-6"	6 15/16"	17	5	9'-3"	11 3/4"	25
C-19	24'-0"	9'-9"	2'-0"	10	23'-6"	6 15/16"	17	5	9'-3"	11 3/4"	25
C-20	24'-6"	9'-9"	2'-0"	10	24'-0"	6 15/16"	17	5	9'-3"	12"	25
C-21	24'-6"	10'-0"	2'-0"	9	24'-0"	6"	20	5	9'-6"	12"	25
C-22	25'-0"	10'-0"	2'-0"	10	24'-6"	6"	20	6	9'-6"	14"	22
C-23	25'-6"	9'-9"	2'-0"	9	25'-0"	4 5/8"	25	5	9'-3"	12"	26
C-24	25'-6"	10'-0"	2'-0"	10	25'-0"	6"	20	5	9'-6"	12"	26
C-25	26'-0"	9'-9"	2'-0"	9	25'-6"	4 5/8"	25	6	9'-3"	18"	18
C-26	26'-0"	10'-0"	2'-0"	10	25'-6"	6"	20	6	9'-6"	18"	18
C-27	26'-6"	9'-9"	2'-0"	11	26'-0"	6 15/16"	17	5	9'-3"	12"	27
C-28	26'-6"	10'-0"	2'-0"	10	26'-0"	6"	20	5	9'-6"	12"	27
C-29	27'-0"	9'-9"	2'-0"	11	26'-6"	6 15/16"	17	6	9'-3"	16 11/16"	20
C-30	27'-0"	10'-0"	2'-0"	11	26'-6"	6"	20	6	9'-6"	16 11/16"	20
C-31	27'-6"	9'-9"	2'-0"	10	27'-0"	4 5/8"	25	5	9'-3"	12"	28
C-32	27'-6"	10'-0"	2'-0"	11	27'-0"	6"	20	5	9'-6"	12"	28
C-33	28'-0"	9'-9"	2'-0"	10	27'-6"	4 5/8"	25	5	9'-3"	10"	34
C-34	28'-0"	10'-0"	2'-0"	11	27'-6"	6"	20	5	9'-6"	10"	34
C-35	28'-6"	9'-9"	2'-0"	10	28'-0"	4 5/8"	25	5	9'-3"	12"	29
C-36	28'-6"	10'-0"	2'-0"	11	28'-0"	6"	20	5	9'-6"	12"	29
C-37	29'-0"	9'-9"	2'-0"	10	28'-6"	4 5/8"	25	6	9'-3"	18"	20
C-38	29'-0"	10'-0"	2'-0"	10	28'-6"	4 3/4"	25	6	9'-6"	18"	20
C-39	29'-6"	9'-9"	2'-0"	10	29'-0"	4 5/8"	25	5	9'-3"	12"	30
C-40	29'-6"	10'-0"	2'-0"	11	29'-0"	4 3/4"	25	5	9'-6"	12"	30



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



- NOTES:
- All Reinforcing Steel shall have a 3" Minimum of Concrete Cover and shall be of Grade 60.
 - All exposed edges to be Chamfered 3/8" unless otherwise shown.
 - All Concrete shall be Class II. The Minimum Specified Compressive Strength at 28 days (f'c) shall be 3,400 p.s.i.
 - 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.

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

OVERHEAD CANTILEVER TRUSSES

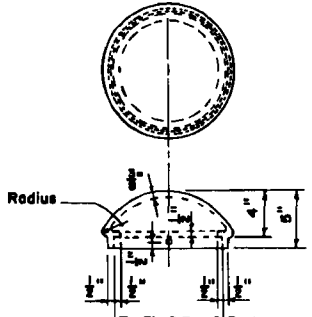
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES

FOOTINGS FOR OVERHEAD SIGN TRUSSES

ROAD NO.	COUNTY	PROJECT NO.

REVISIONS		DESIGNED BY	DATE	APPROVED BY
7-73	Class II Concrete Added	D. K. S.	4/73	<i>T. J. Hall</i> Duty Design Engineer, Structures
8-73	Rev. Anchor Bolt Note	C. W. B.	4/73	
11-73	Rev. Pedestal Dimension B Bill of Constant Reinforcing			
11-78	Rev. Concrete Strength			

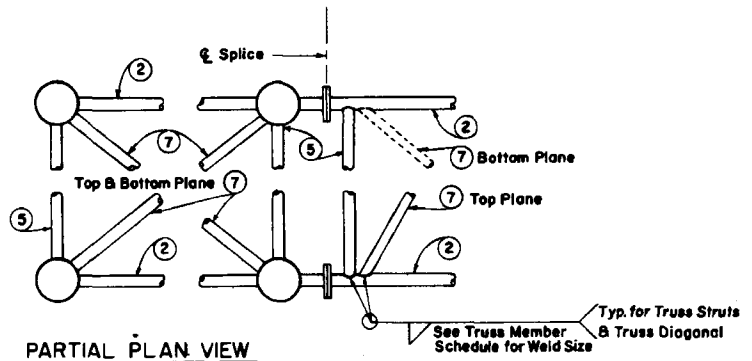
Checked by	Supervised by	2 of 2	11, 201
	A. J. H.		



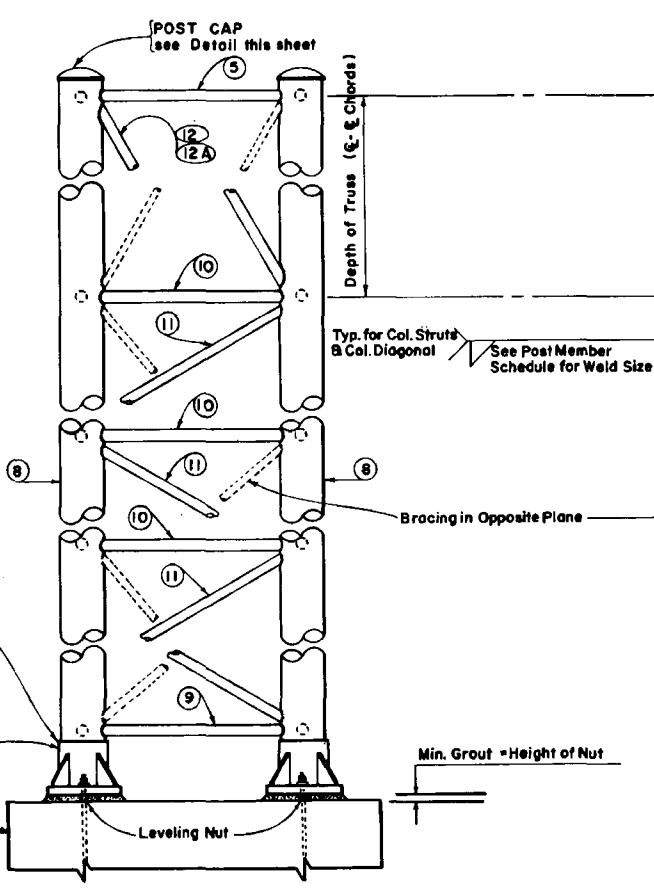
Drill & Tap 2 Holes 180° apart for 1/2" Dia. set screws.

POST CAP
Aluminum Alloy 356-F

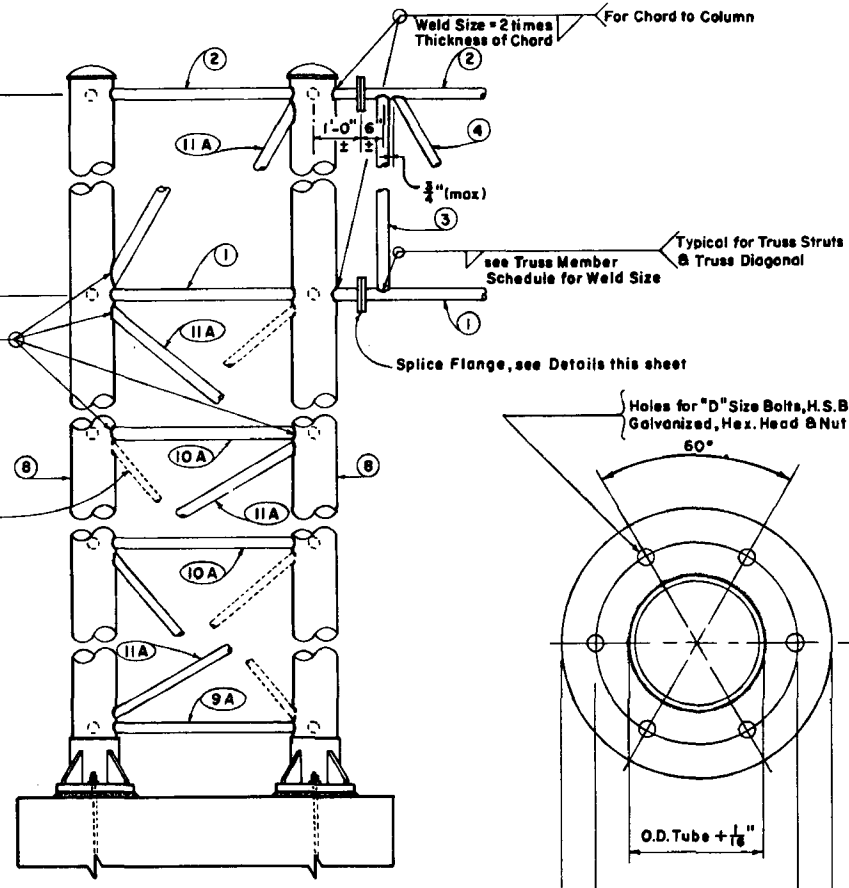
SCHEDULE FILLET WELD SIZE			
TRUSS MEMBERS		POST MEMBERS	
THICKNESS	WELD SIZE	THICKNESS	WELD SIZE
1/8"	3/16"	1/8"	1/4"
3/16"	1/4"	3/16"	5/16"
1/4"	5/16"	1/4"	3/8"
		5/16"	1"
		3/8"	5/8"
		1/2"	3/4"



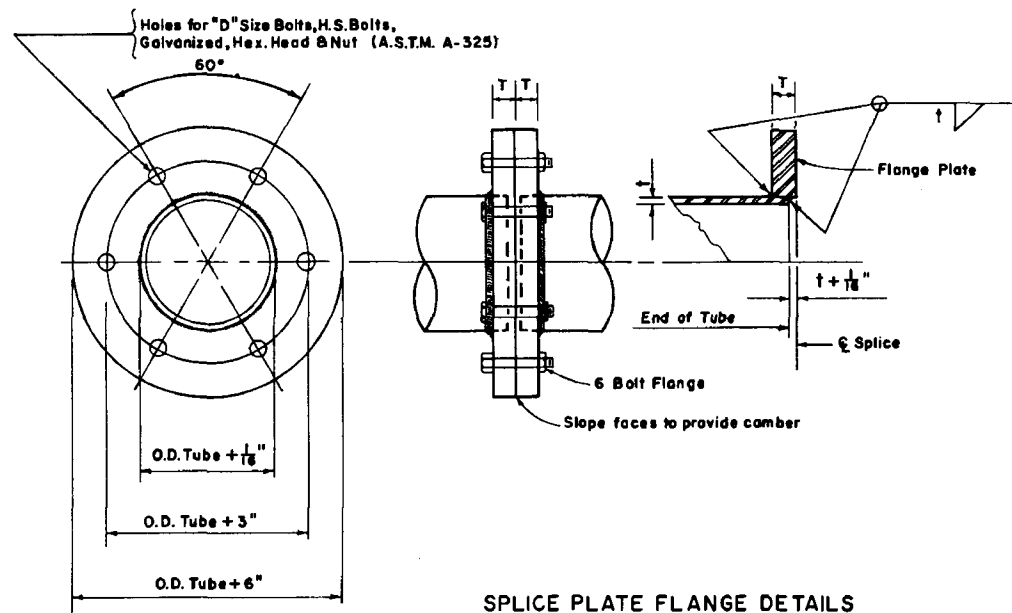
PARTIAL PLAN VIEW



END VIEW



PARTIAL ELEVATION



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

For Detail of Aluminum Base Pl. & Anchor Bolt, See Drawing 1 of 1, Index No. 11926.

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

Concrete Footing see Index No. 11201

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

TUBE SIZE	T	BOLT SIZE "D"
2 1/2" x 1/8" to 6 1/2" x 1/8"	1 1/2"	5/8" #
7" x 1/8" to 9" x 1/8"	1 1/2"	3/4" #
7 1/2" x 1/8" to 9 1/2" x 1/8"	1 1/2"	7/8" #

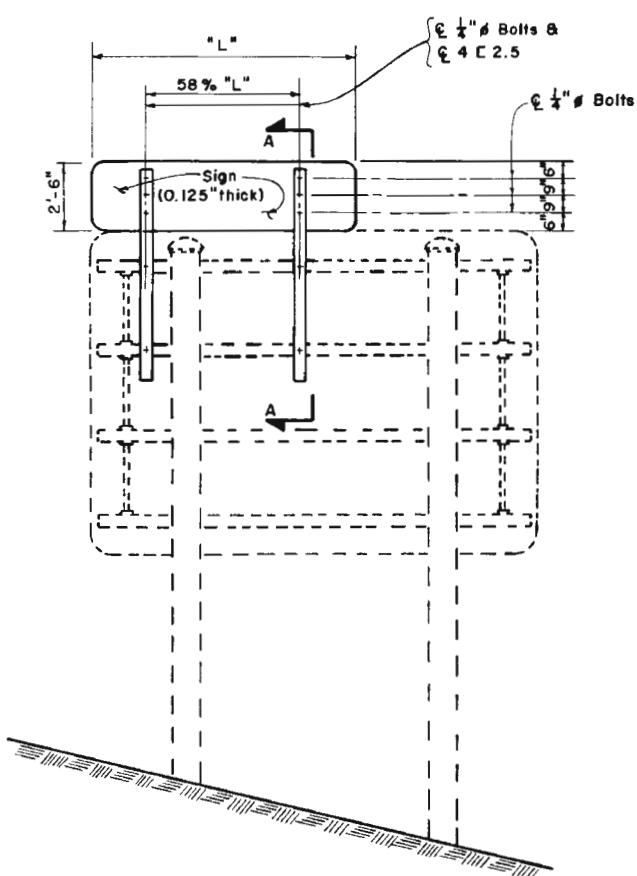
REV. NO.	DESCRIPTION	DATE
5-73	DIMENSION E ADDED	
6-76	Base & Anchor Bolt Detail Added	
3-77	Walkway Detail Note Added	
1-78	Walkway Note Removed	

ALUMINUM CANTILEVER

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES

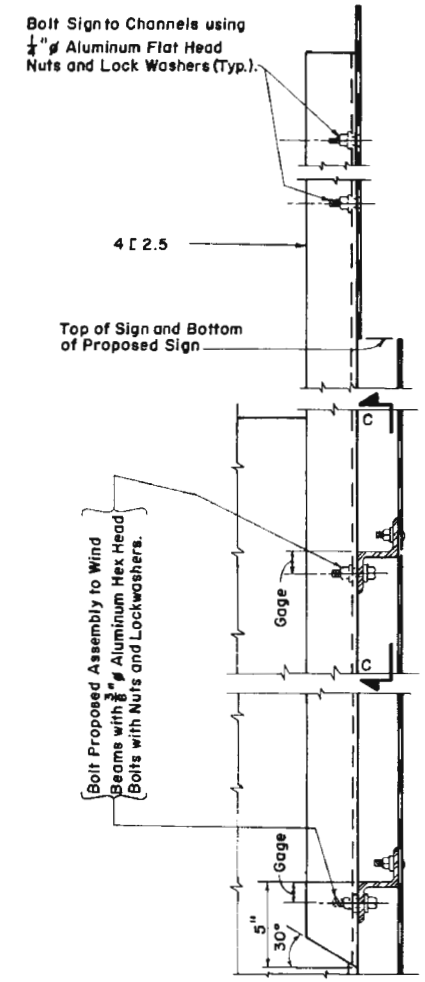
TRUSSES FOR OVERHEAD SIGNS

ROAD NO.	COUNTY	PROJECT NO.
DESIGNED BY	DATE	APPROVED BY
Checked by HAV	3-73	<i>T. Alford</i>
Checked by CWB	3-73	Struct. Engr. License No. 11226
Quantity by		
Checked by		
Supervised by AJH		

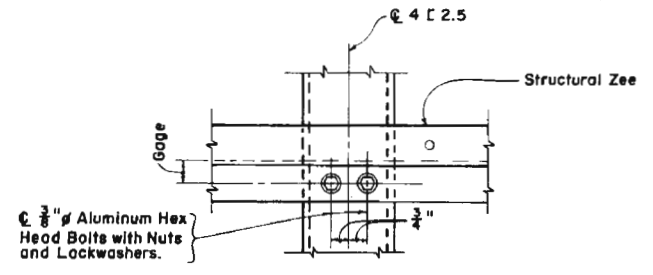


ELEVATION
(Showing Mounting of Proposed Assembly to Type "A" or "B" Ground Sign)

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.

INTERCHANGE AND EXIT NUMBERING FOR SIGNS WITH HORIZONTAL WIND BEAMS

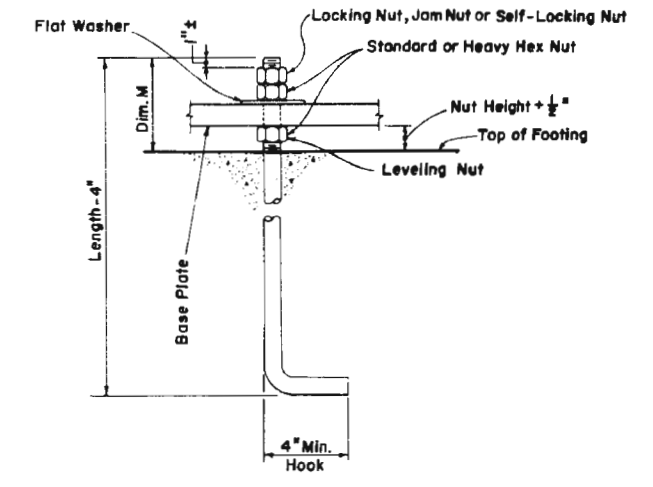
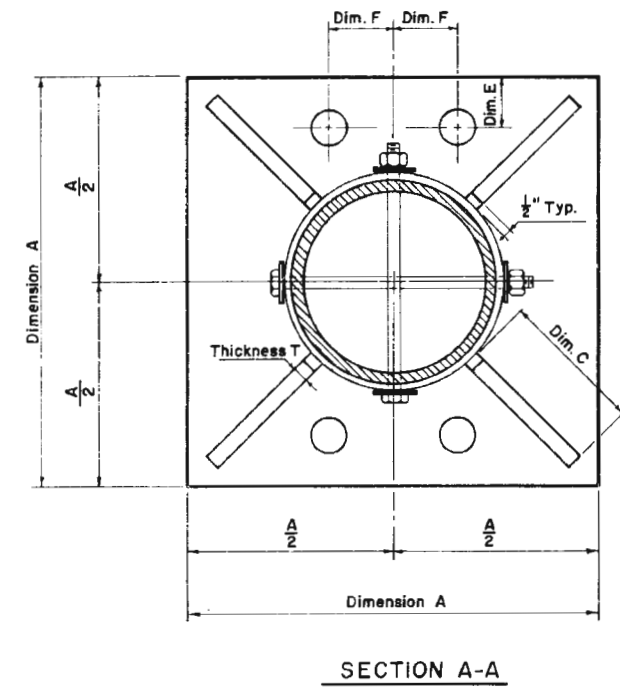
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES			
DETAILS FOR MOUNTING EXIT NUMBERING PANELS TO HIGHWAY SIGNS			
ROAD NO.	COUNTY	PROJECT NO.	
DESIGNED BY	NAME	DATE	APPROVED BY
Checked by	RDS	7-75	<i>J. Albert J.</i>
Checked by	AJH	7-75	
Quantities by			Deputy Design Engineer, Structures
Checked by			Drawing No.
Supervised by			Index No.
		1 of 1	11671

REVISIONS	DATE	DESCRIPTION
5-76	Design Spec. Date Rev. to 1975 & Removed Non-Structural Details	
10-78	Rev 4 C to 2-5	
9-79	Removed "Type C" Elevation & Relocate Exit Numbering Panel	

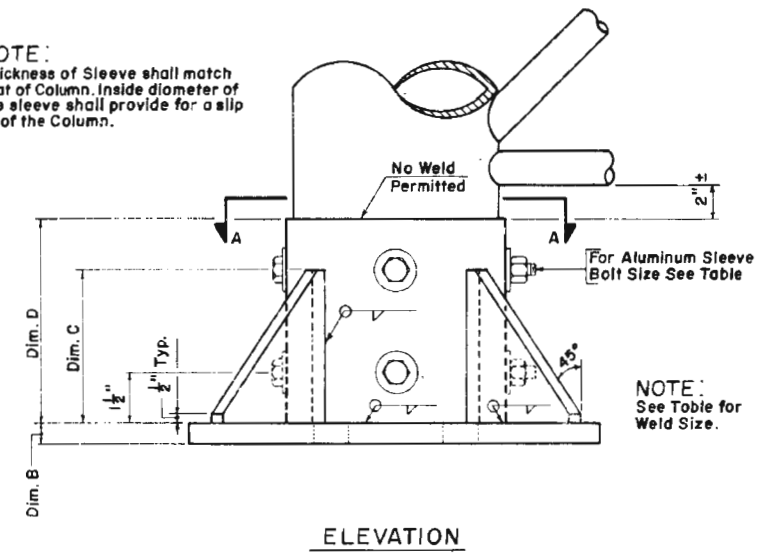
COLUMN SIZE (O.D. x WALL)	PLATE SIZE A	PLATE THICKNESS B	F I N I S H		FILLET WELD SIZE	SLEEVE HEIGHT DIMENSION D	ANCHOR BOLT LOCATION		ANCHOR BOLT HOLE DIAMETER	ANCHOR BOLT DIAMETER & LENGTH	DIMENSION M (NOMINAL)	SLEEVE BOLT DIAMETER
			THICKNESS T	DIMENSION C			DIMENSION E	DIMENSION F				
12" x 3/4"	2'-0"	1 3/8"	1 1/4"	9"	7/16"	1'-0"	3"	3 1/2"	2 3/8"	2 1/4" x 6'-6"	9 3/4"	7/8"
12" x 1/2"	1'-11"	1 1/4"	1 1/8"	8"	7/16"	1'-0"	3"	3 1/2"	2 3/8"	2" x 5'-10"	9"	3/4"
12" x 5/8"	1'-10"	1 1/8"	1"	7 1/2"	7/16"	1'-0"	3"	3 1/2"	2 3/8"	2" x 5'-10"	9"	3/4"
12" x 1/4"	1'-9"	1"	1"	7 1/2"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
11" x 1/2"	1'-10"	1 1/8"	1"	8"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	2" x 5'-10"	9"	3/4"
11" x 3/4"	1'-8"	1"	7/8"	7"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
11" x 1/4"	1'-7"	1"	7/8"	6 1/2"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	1 1/2" x 4'-4"	6 1/2"	3/4"
10 1/2" x 1/2"	1'-9"	1"	1"	7 1/2"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
10 1/2" x 3/8"	1'-7"	1"	7/8"	6 1/2"	7/16"	1'-0"	2"	3 1/2"	2 3/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
10 1/2" x 1/4"	1'-6"	7/8"	3/4"	6"	3/8"	11"	2"	3"	1 13/16"	1 1/2" x 4'-4"	6 1/2"	3/4"
10" x 1/2"	1'-8"	1"	1"	7"	7/16"	11"	2"	3"	2 1/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
10" x 3/8"	1'-7"	1"	7/8"	7"	3/8"	11"	2"	3"	1 13/16"	1 1/2" x 4'-4"	6 1/2"	3/4"
10" x 1/4"	1'-6"	7/8"	3/4"	6"	3/8"	11"	2"	3"	1 13/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
9 1/2" x 1/2"	1'-7"	1"	7/8"	7"	7/16"	11"	2"	3"	2 1/8"	1 1/2" x 5'-1"	7 3/4"	3/4"
9 1/2" x 3/8"	1'-6"	7/8"	3/4"	6 1/2"	3/8"	11"	2"	3"	1 13/16"	1 1/2" x 4'-4"	6 1/2"	3/4"
9 1/2" x 1/4"	1'-5"	7/8"	3/4"	6"	3/8"	11"	2"	3"	1 13/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
9" x 1/2"	1'-7"	1"	7/8"	7"	3/8"	10"	2"	3"	1 13/16"	1 1/2" x 4'-4"	6 1/2"	3/4"
9" x 3/8"	1'-6"	7/8"	3/4"	6 1/2"	3/8"	10"	2"	3"	1 13/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
9" x 1/4"	1'-5"	7/8"	3/4"	6"	3/8"	10"	2"	3"	1 13/16"	1 1/2" x 3'-8"	5 3/4"	3/4"
8 1/2" x 1/2"	1'-7"	1"	7/8"	7"	3/8"	10"	2"	3"	1 13/16"	1 1/2" x 4'-4"	6 1/2"	3/4"
8 1/2" x 3/8"	1'-6"	7/8"	3/4"	6 1/2"	3/8"	10"	2"	3"	1 13/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
8 1/2" x 1/4"	1'-4"	3/4"	3/8"	5 3/4"	3/8"	10"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
8" x 1/2"	1'-6"	7/8"	3/4"	7"	3/8"	9 1/2"	2"	3"	1 11/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
5" x 3/8"	1'-5"	7/8"	3/4"	6"	3/8"	9 1/2"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
8" x 1/4"	1'-4"	3/4"	3/8"	5 3/4"	3/8"	9 1/2"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
7 1/2" x 1/2"	1'-6"	7/8"	3/4"	7"	3/8"	9"	2"	3"	1 11/16"	1 1/2" x 4'-0"	6 1/4"	3/4"
7 1/2" x 3/8"	1'-5"	7/8"	3/4"	6"	3/8"	9"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
7 1/2" x 1/4"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	9"	2"	2 1/4"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
7" x 1/2"	1'-5"	7/8"	3/4"	6"	3/8"	9"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
7" x 3/8"	1'-4"	3/4"	3/8"	5 3/4"	3/8"	9"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
7" x 1/4"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	9"	2"	2 1/4"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
6 1/2" x 1/2"	1'-4"	3/4"	3/8"	5 3/4"	3/8"	8"	2"	2 1/2"	1 3/8"	1 1/4" x 3'-8"	5 3/4"	3/4"
6 1/2" x 3/8"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	8"	2"	2 1/4"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
6 1/2" x 1/4"	1'-2"	3/8"	3/8"	5 1/4"	3/8"	8"	2"	2"	1 5/16"	1" x 2'-11"	5"	3/4"
6" x 1/2"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	8"	2"	2 1/4"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
6" x 3/8"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	8"	2"	2 1/4"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
6" x 1/4"	1'-2"	3/8"	3/8"	5 1/4"	3/8"	8"	2"	2"	1 5/16"	1" x 2'-11"	5"	3/4"
5 1/2" x 1/2"	1'-3"	3/4"	3/8"	5 1/2"	3/8"	7"	2"	2"	1 7/16"	1 1/8" x 3'-4"	5 1/2"	3/4"
5 1/2" x 3/8"	1'-1"	3/8"	3/8"	5"	3/8"	7"	1 3/4"	1 3/4"	1 3/8"	7/8" x 2'-7"	4 3/4"	3/4"
5" x 1/2"	1'-2"	3/8"	3/8"	5 1/4"	3/8"	7"	2"	2"	1 5/16"	1" x 2'-11"	5"	3/4"
5" x 1/4"	1'-1"	3/8"	3/8"	5"	3/8"	7"	1 3/4"	1 3/4"	1 3/8"	7/8" x 2'-7"	4 3/4"	3/4"
4 3/4" x 1/4"	1'-0"	3/8"	3/8"	4 3/4"	3/8"	7"	1 3/4"	1 3/4"	1 3/8"	7/8" x 2'-7"	4 3/4"	3/4"
4 1/2" x 1/4"	1'-0"	1/2"	1/2"	4 3/4"	5/16"	7"	1 3/4"	1 1/2"	1 1/8"	3/4" x 2'-3"	4 1/2"	3/4"
4 1/4" x 1/4"	1'-0"	1/2"	1/2"	4 3/4"	5/16"	7"	1 3/4"	1 1/2"	1 1/8"	3/4" x 2'-3"	4 1/2"	3/4"
4" x 1/4"	1'-0"	1/2"	1/2"	4 3/4"	5/16"	7"	1 3/4"	1 1/2"	1 1/8"	3/4" x 2'-3"	4 1/2"	3/4"

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

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FROM	SHEET
3	FLA.			



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



NOTE: See Table for Weld Size.

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.

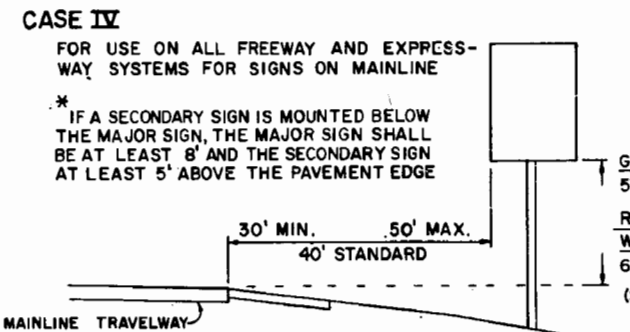
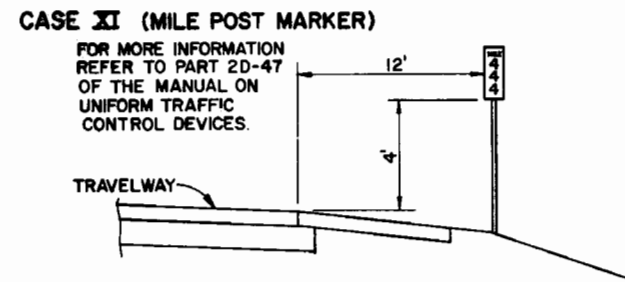
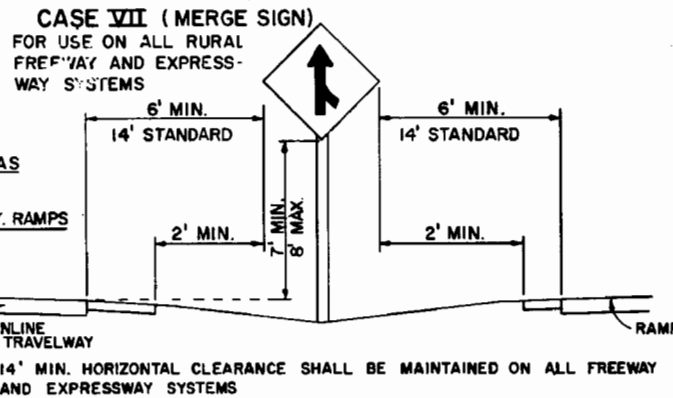
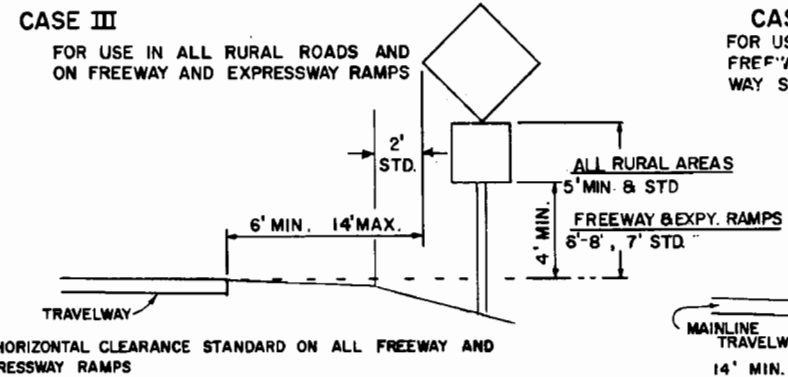
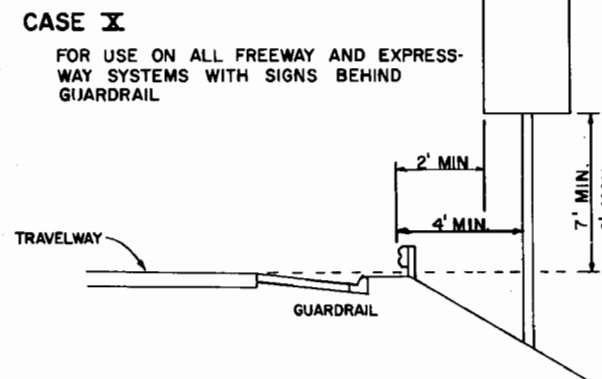
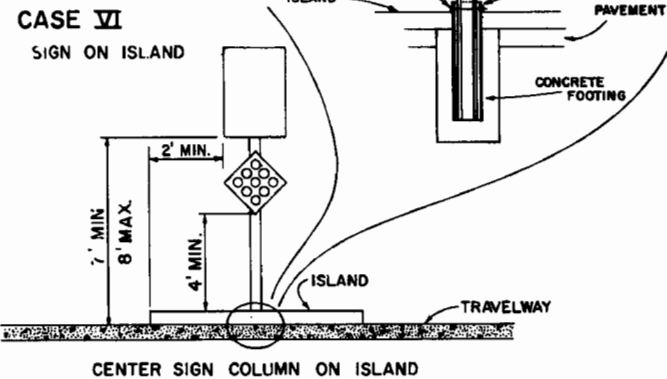
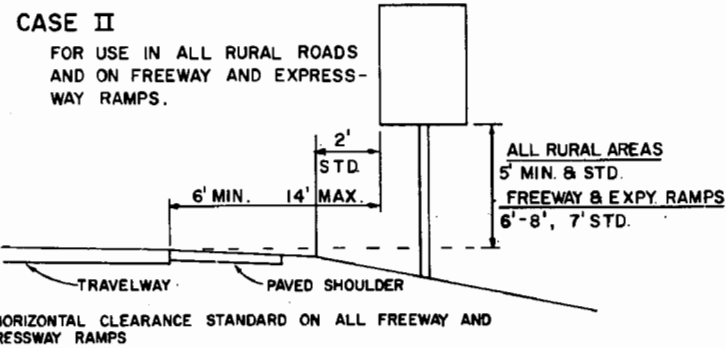
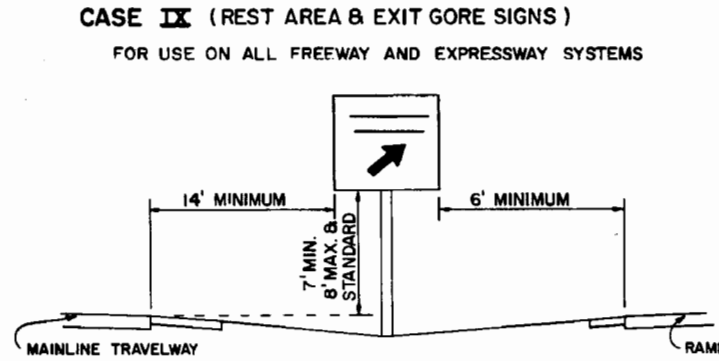
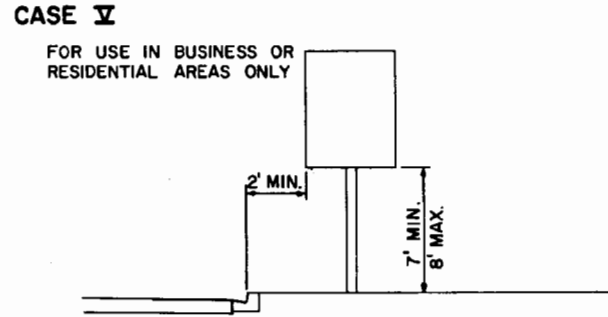
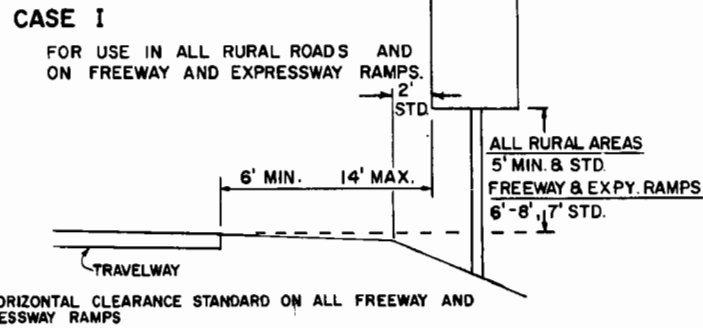
SHEETS AND PLATES: The material used shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the A.S.T.M. Specifications B-209.

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.

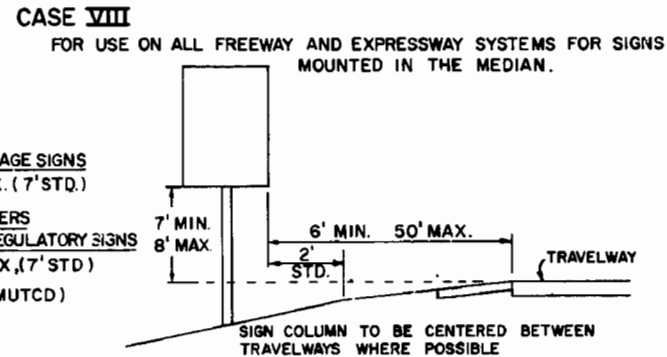
BASES FOR OVERHEAD BRIDGE TRUSS
4 POST CANTILEVER TRUSS
SINGLE POST CANTILEVER

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES			
ALUMINUM BASES FOR COLUMN SUPPORTS			
REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
Dates	Descriptions		
	Names	Dates	APPROVED BY
	Designed by HAV	5-76	<i>T. All</i>
	Checked by CWB	6-76	
	Quantity by		
	Checked by		
	Supervised by AJH		Drawing No. 1 of 1
			Index No. 11926



GUIDE & MILEAGE SIGNS
5' MIN, 8' MAX. (7' STD.)

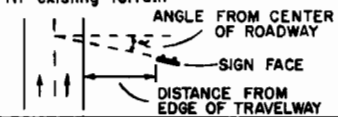
ROUTE MARKERS
WARNING & REGULATORY SIGNS
6' MIN, 8' MAX. (7' STD.)
(SEE 2F-17, MUTCD)



GENERAL NOTES:

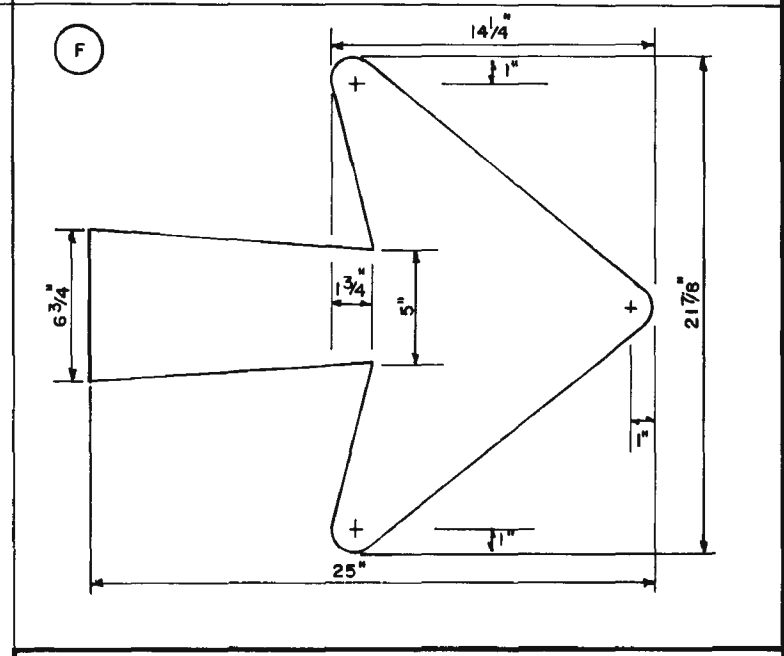
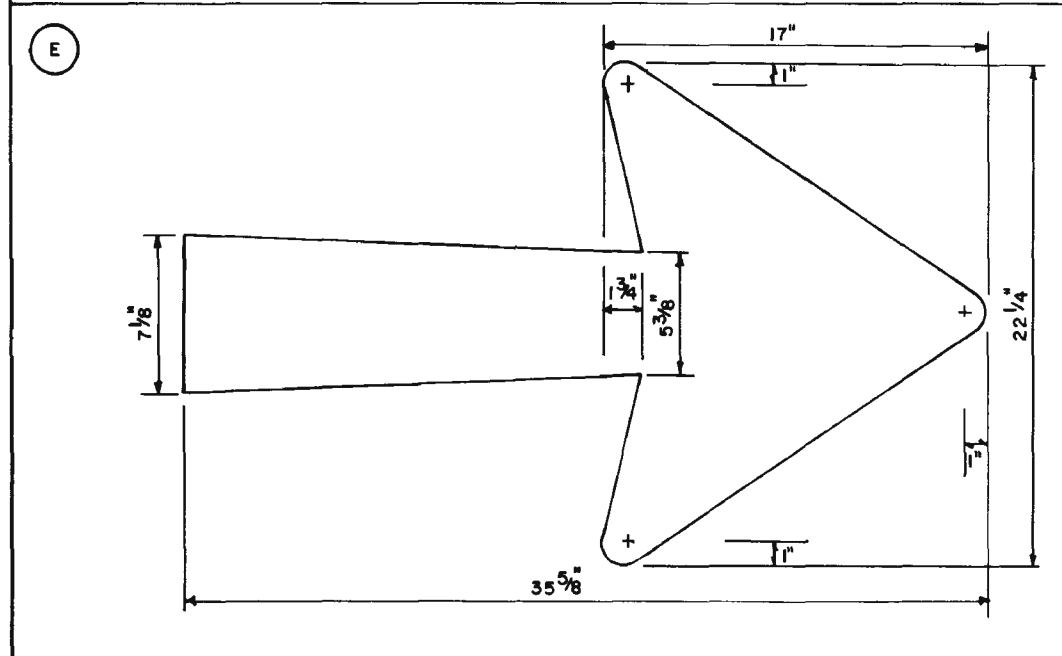
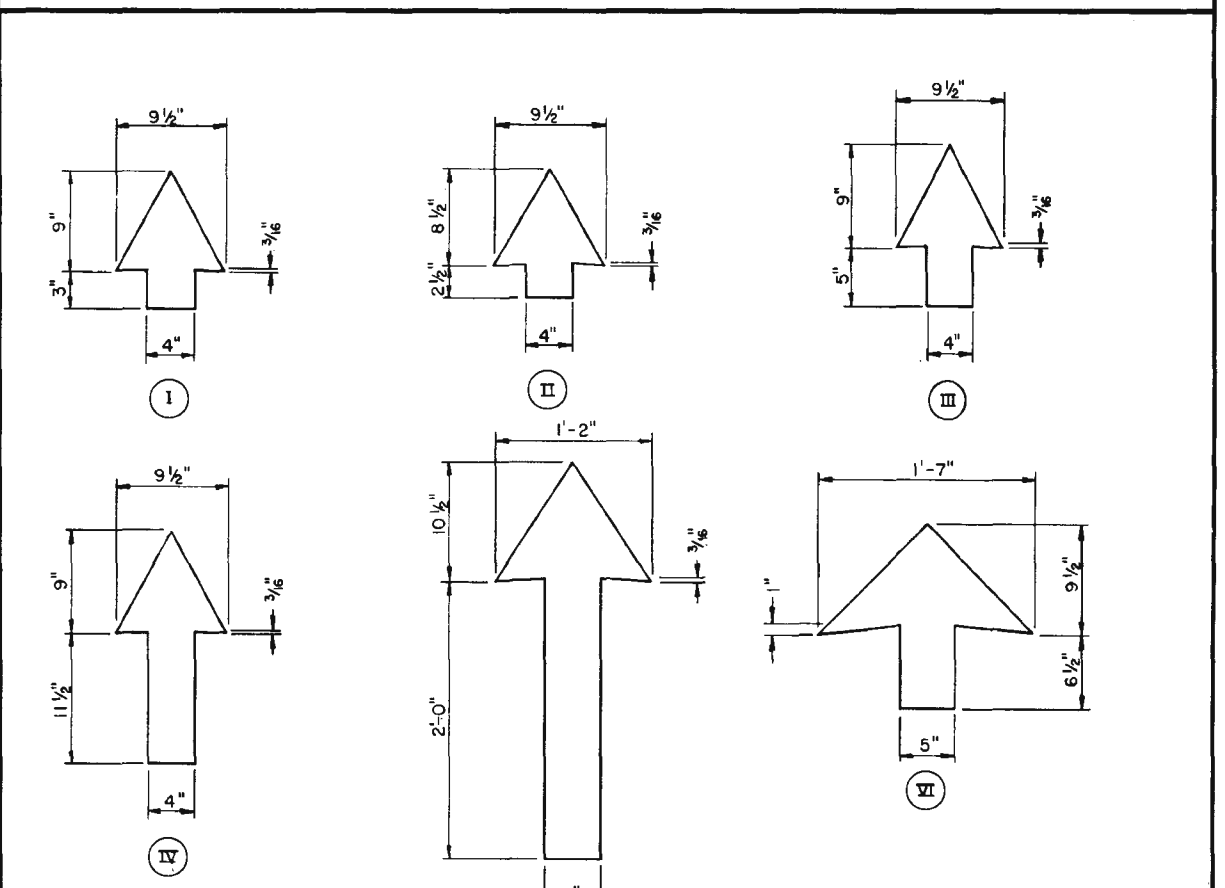
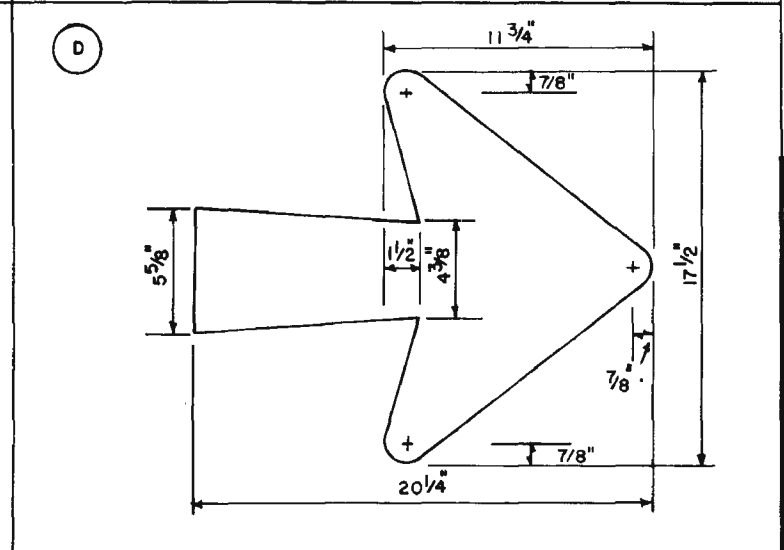
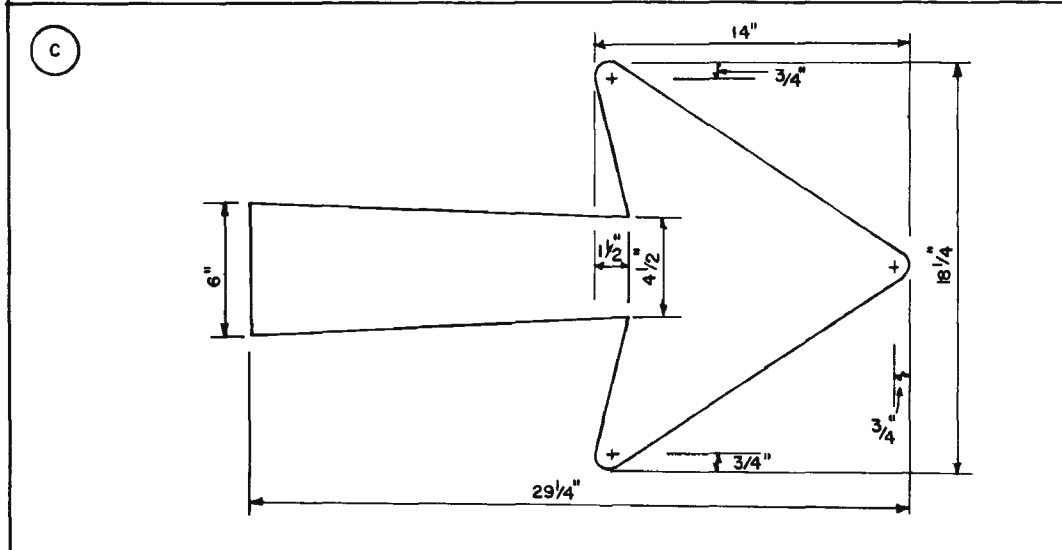
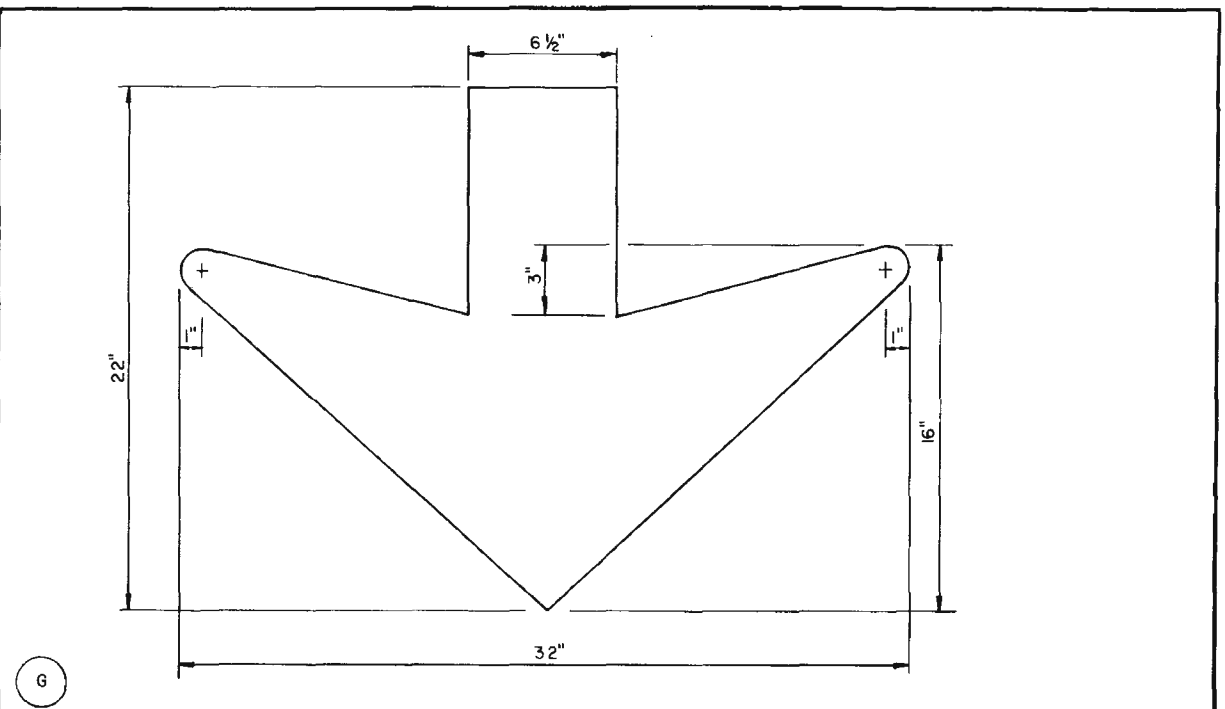
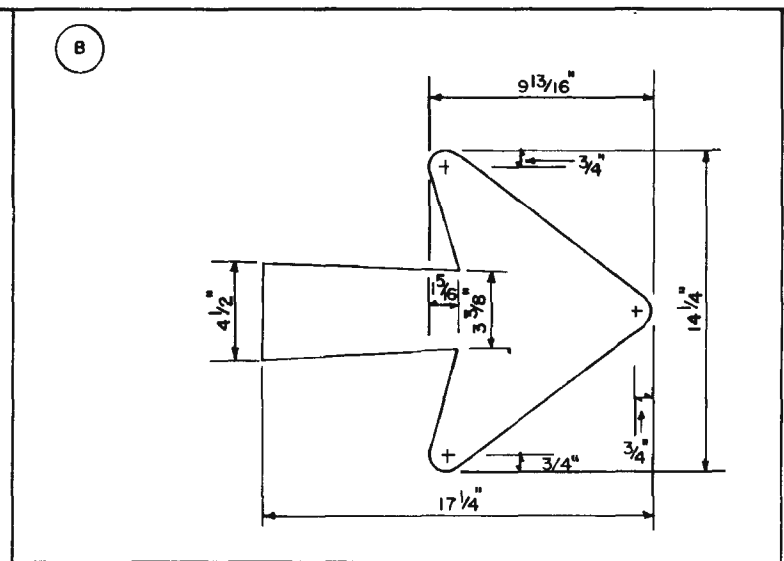
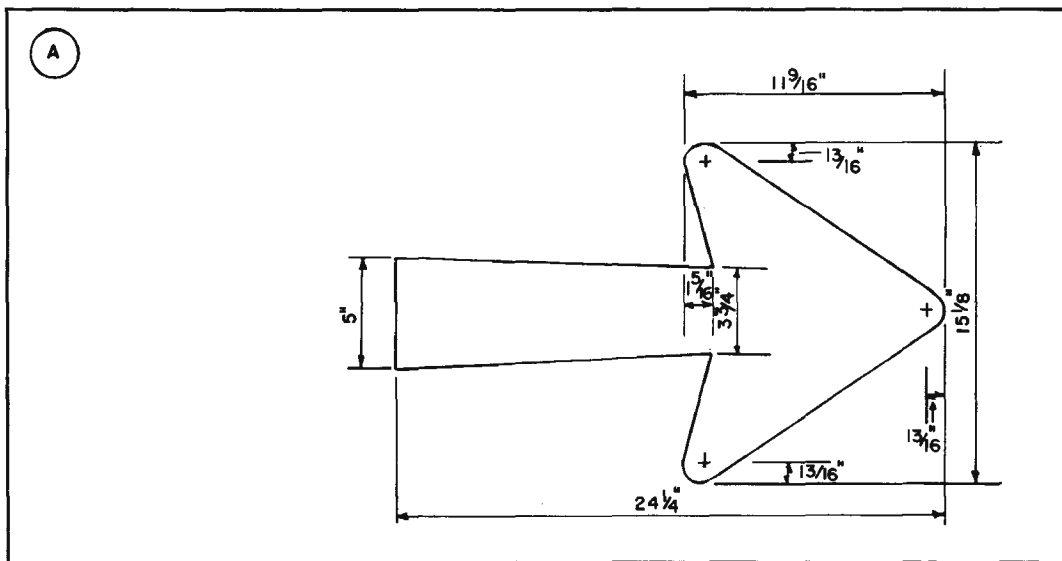
- The Typical sections shown hereon serve as a guide for use in locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.
 - It shall be the CONTRACTORS responsibility 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.
- Horizontal clearance may be altered in the field by the PROJECT ENGINEER to better fit existing terrain



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

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SECTIONS FOR ONE COLUMN SIGN PLACEMENT			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
			BY <i>James C. Price</i> 10/21/79 DEPUTY TRAFFIC OPERATIONS ENGR.
			APPROVED BY <i>R.E. Magallon</i> 10/21/79 STATE TRAFFIC OPERATIONS ENGR.
DETAILED BY	G.W.	3-75	
CHECKED BY			
QUANTITIES BY			
CHECKED BY			
SUPERVISED BY	K.R.	3-75	DRAWING NO. 17302 INDEX NO. 1 of 1

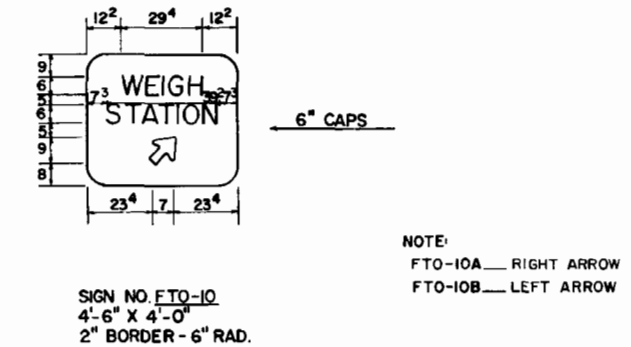
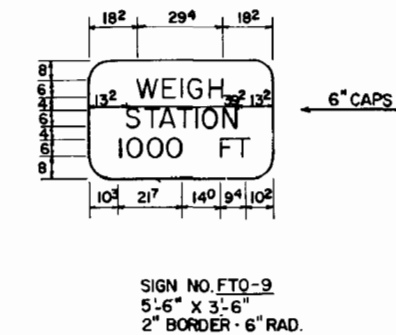
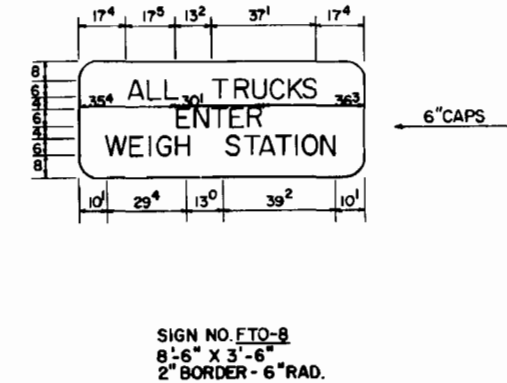
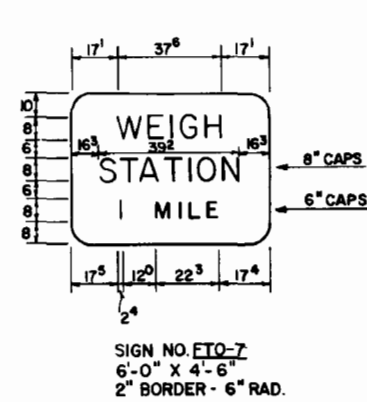
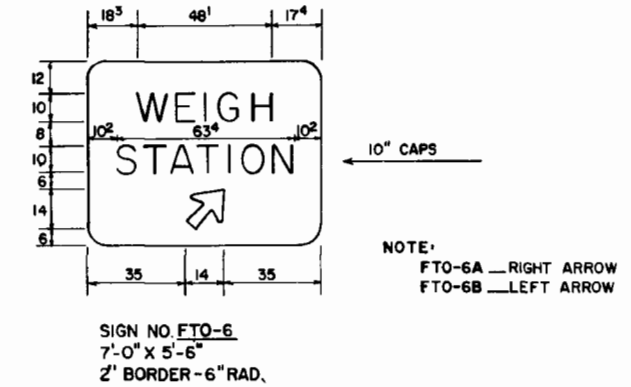
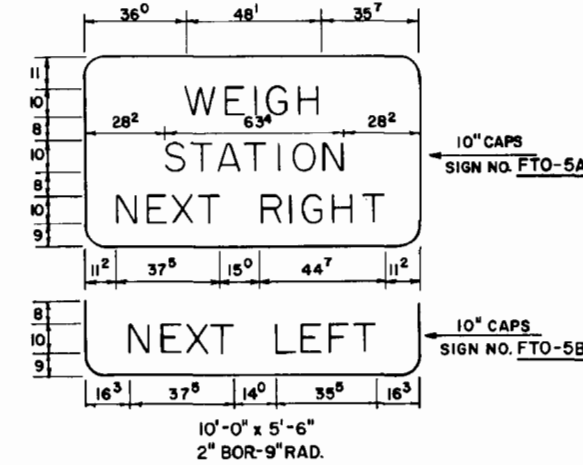
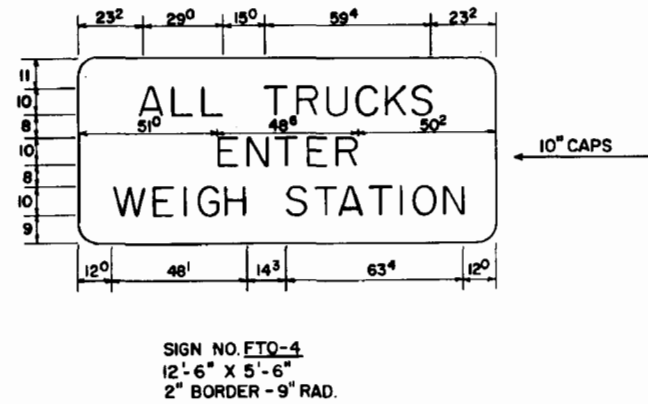
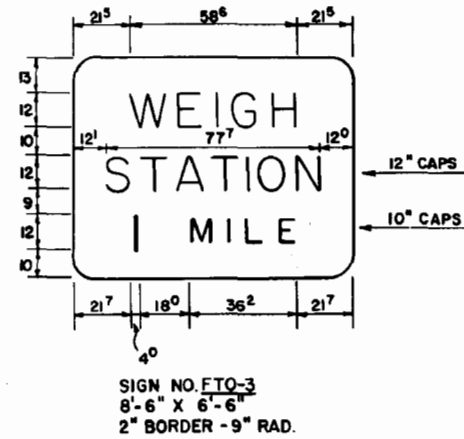


Signs A-G for Guide Sign use.
Signs I-VI for Destination Sign use.

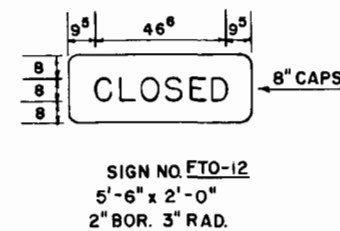
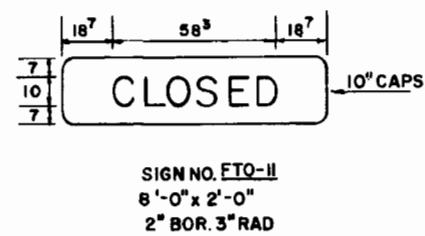
REVISIONS		
DATE	INITIALS	DESCRIPTION
6-7-66		INDEX NO. CHANGE 7326 TO 17320
7-10-78	P.B.	CHANGED TITLE BLOCK & GENERAL REVISION
8-80	K.H.	DESTINATION ARROWS ADDED

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
ARROW LAYOUTS FOR GROUND AND OVERHEAD SIGNS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	
	4-25-62	BY <i>K.G.G.</i> DEPUTY TRAFFIC OPERATIONS ENGR.	
		APPROVED BY <i>K.E. Magaly</i> STATE TRAFFIC OPERATIONS ENGR.	
		DRAWING NO.	INDEX NO.
		1 OF 1	17320

FOR FREEWAY USE



FOR OTHER THAN FREEWAY USE



NOTE
SIGN NO. FTO-11 TO BE USED WITH SIGNS NO. FTO-5A & B, FTO-15A & B.

NOTE
SIGN NO. FTO-12 TO BE USED WITH SIGN NO. FTO-9.

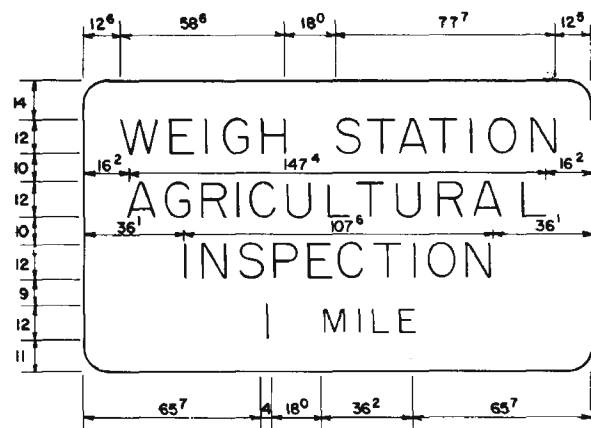
NOTE:

ALL SIGNS TO HAVE GREEN REFLECTORIZED BACKGROUND WITH WHITE LEGEND AND BORDER EXCEPT SIGNS NOS. FTO-4 & FTO-8, WHICH SHALL HAVE WHITE BACKGROUND WITH BLACK LEGEND AND BORDER

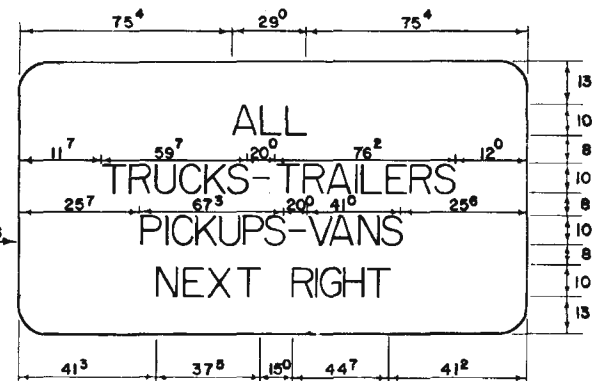
ALL DIMENSIONS SHOWN ARE IN INCHES AND EIGHTHS

REVISIONS		
DATE	INITIALS	DESCRIPTION

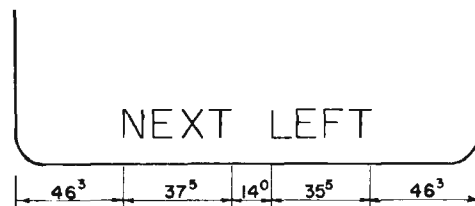
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	
M.F.M.	1-75	BY <i>Larry C. Trice</i> DEPUTY TRAFFIC OPERATIONS ENGR.	
CHECKED BY	K.R.	1-75	APPROVED
QUANTITIES BY			BY <i>L. E. Manada</i> STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY			
SUPERVISED BY	K.R.	1-75	DRAWING NO. 1 of 3 INDEX NO. 17328



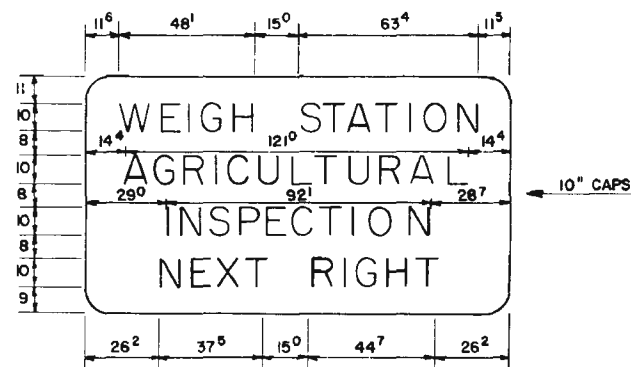
SIGN NO. FTO-13
15'-0" X 8'-6"
2" BORDER - 9" RAD.



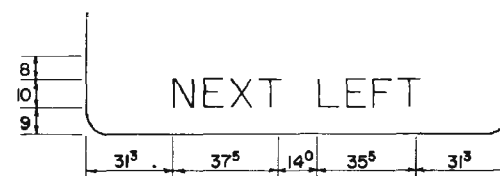
SIGN NO. FTO-14A
15'-0" X 7'-0"
2" BORDER - 9" RAD.



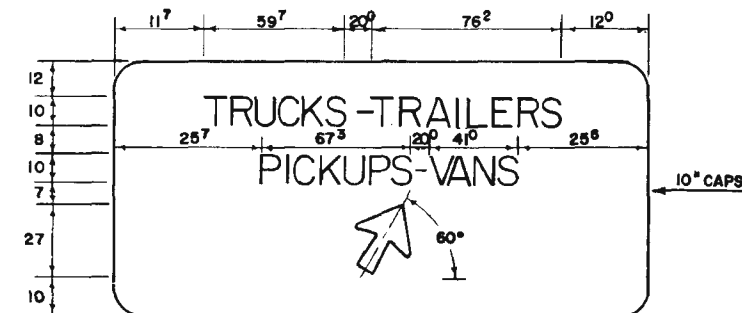
SIGN NO. FTO-14B
15'-0" X 7'-6"
2" BORDER - 9" RAD.



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:
FTO-16A - RIGHT ARROW
FTO-16B - LEFT ARROW

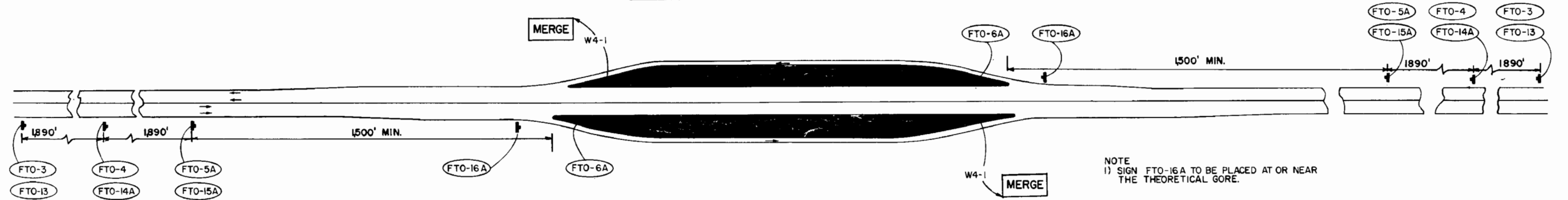
NOTE

ALL SIGNS SHALL HAVE GREEN REFLECTORIZED BACKGROUND WITH WHITE LEGEND AND BORDER, EXCEPT SIGNS FTO-14A&B WHICH SHALL HAVE A WHITE BACKGROUND WITH BLACK LEGEND AND BORDER.

ALL DIMENSIONS SHOWN ARE IN INCHES AND EIGHTS

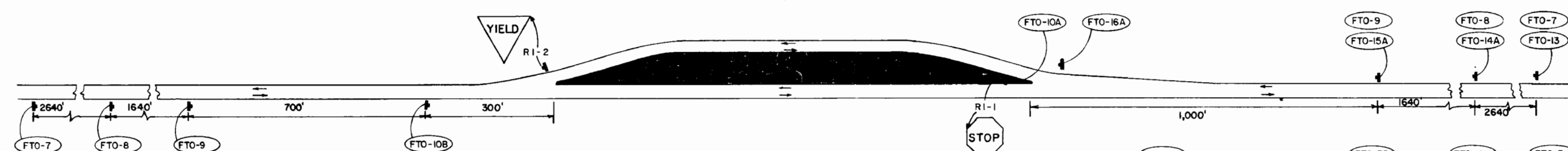
REVISIONS				FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
DATE	INITIALS	DESCRIPTION	INITIALS	DATES	TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS		
10-15-79	K.R.	REVISED SIGN NOS. 10A & 12	M.F.M.	1-75	RECOMMENDED FOR APPROVAL BY <i>Larry C. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR.		
			K.R.	1-75	APPROVED BY <i>Ed Magaley</i> STATE TRAFFIC OPERATIONS ENGR.		
					DRAWING NO. INDEX NO. 2 of 3 17328		

4-LANE DIVIDED INSTALLATION

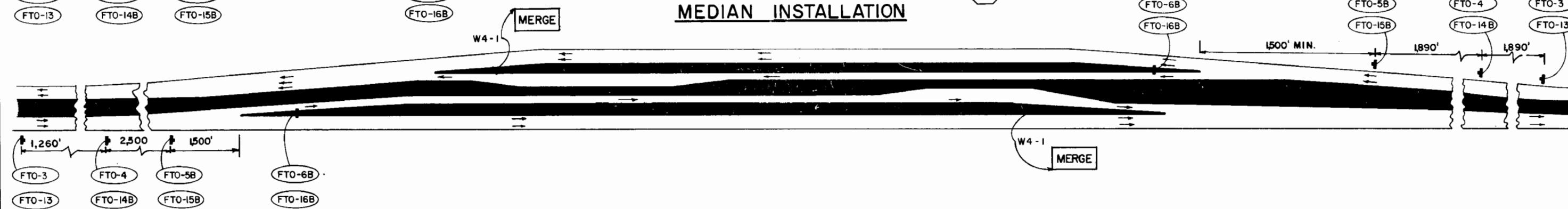


NOTE
1) SIGN FTO-16A TO BE PLACED AT OR NEAR THE THEORETICAL GORE.

2-LANE INSTALLATION



MEDIAN INSTALLATION

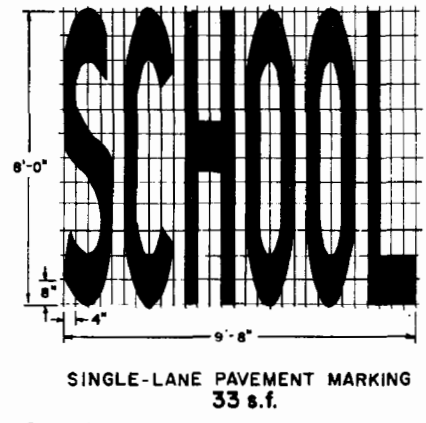
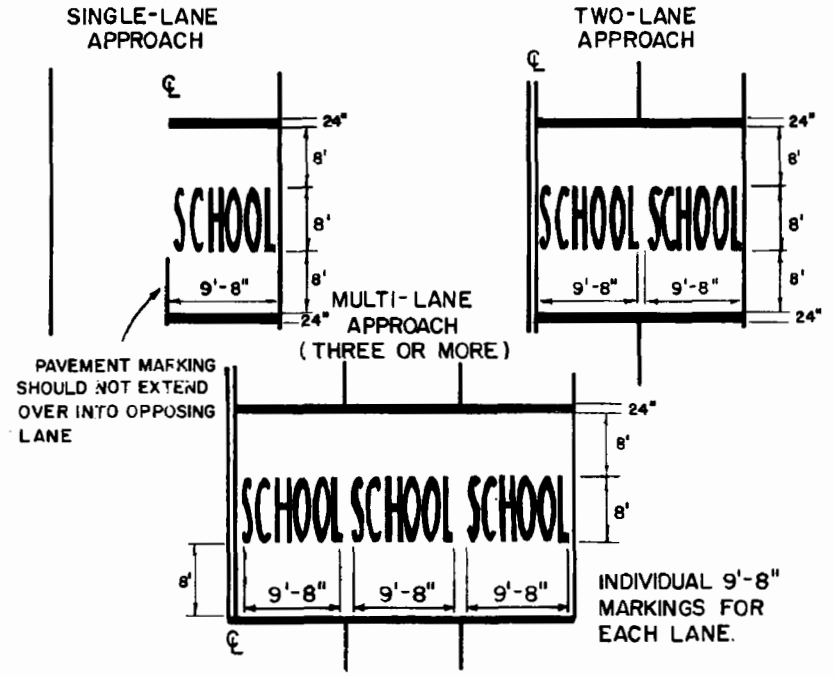


REVISIONS		
DATE	INITIALS	DESCRIPTION
10-15-79	M.C.	REVISE SIGN LOCATIONS
8-80	K.H.	UPDATE SIGN NUMBERS

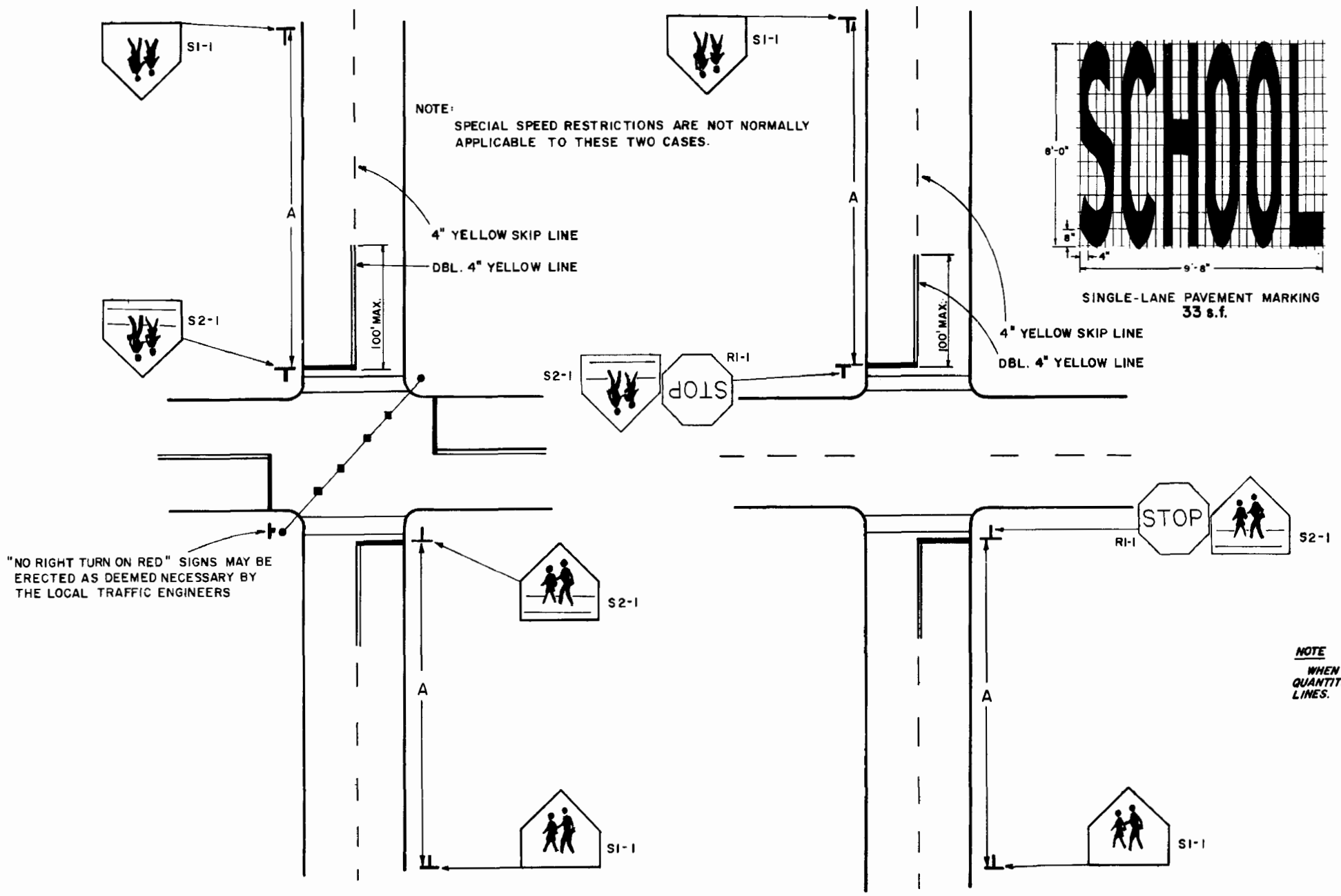
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
10-15-79	M.F.M.	1-75	BY <i>Roger C. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR.
	K.R.	1-75	CHECKED BY
			APPROVED BY <i>R. Magade</i> STATE TRAFFIC OPERATIONS ENGR.
			CHECKED BY
	K.R.	1-75	SUPERVISED BY
			DRAWING NO. 3 OF 3
			INDEX NO. 17328

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

PAVEMENT MARKINGS



NOTE: SPECIAL SPEED RESTRICTIONS ARE NOT NORMALLY APPLICABLE TO THESE TWO CASES.



1. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK AT A SIGNALIZED INTERSECTION

2. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK AT A STOP CONTROLLED INTERSECTION.

NOTE: WHEN COMPUTING PAVEMENT MESSAGE QUANTITIES DO NOT INCLUDE TRANSVERSE LINES.

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

SCHOOL SIGNS & MARKINGS

REVISIONS			INITIALS	DATES	
DATE	BY	DESCRIPTION	Detailed by	CEJ	7-76
9-78	SWR	Added note, B Changed size of transverse line	Checked by	KR	7-76
9-79	JMC	Deleted Fla. Statute No.	Quantities by		
8-80	K.H.	Deleted Educational Plaques	Checked by		
			Supervised by	REM	

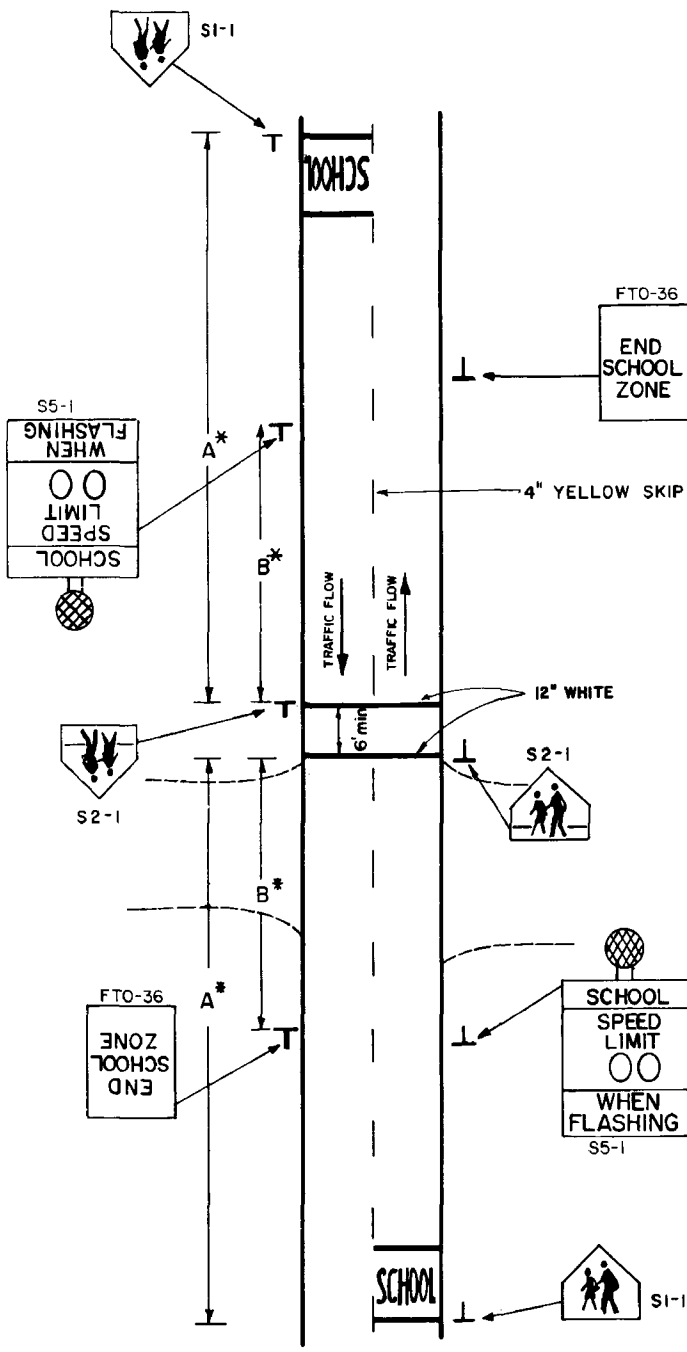
Approved by: *Clay C. Price*
K.E. Magaly
 State Traffic Operations Engr.

DRAWING NO. 1 of 6
 INDEX NO. 17344

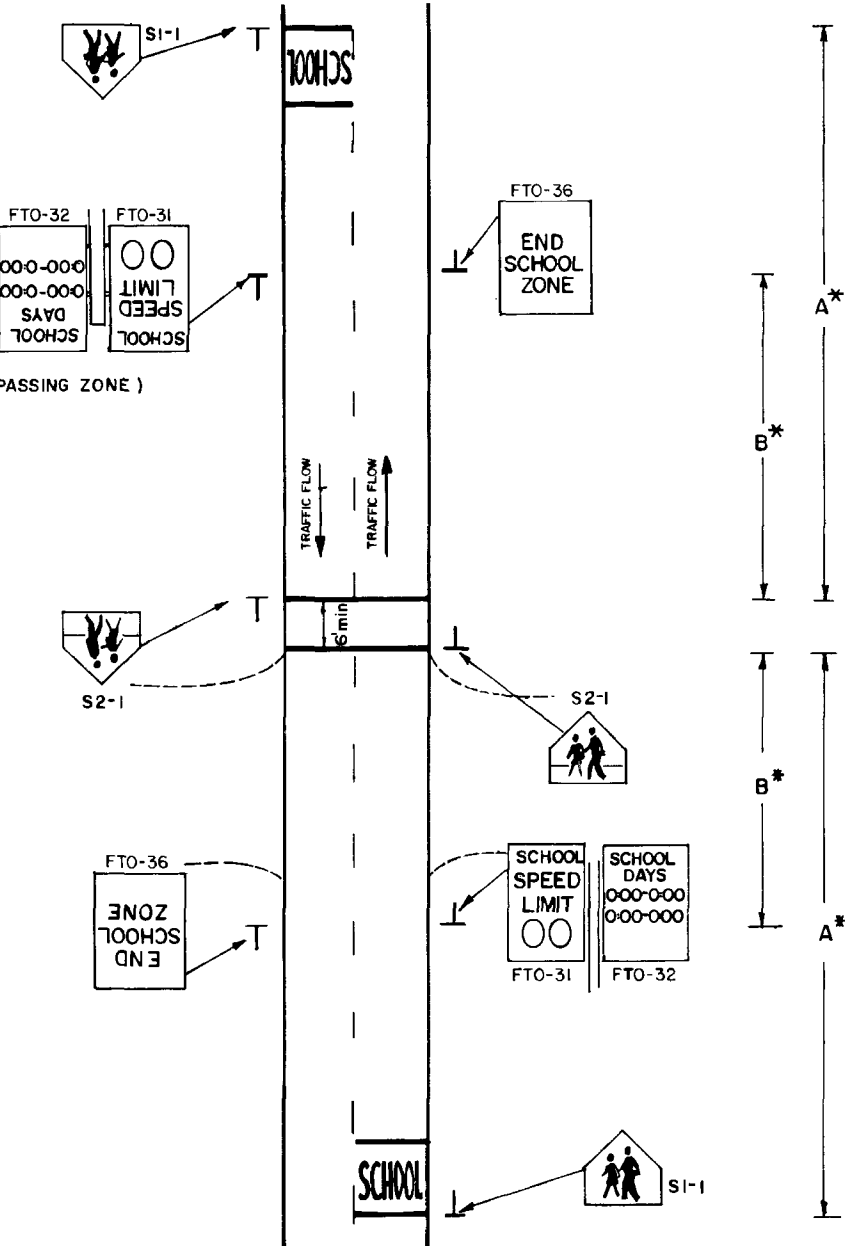
APPROACH SPEED MPH	SUGGESTED DISTANCE IN FEET	
	A	B
25 TO 35	275	50
36 TO 45	350	65
46 TO 55	500	80

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

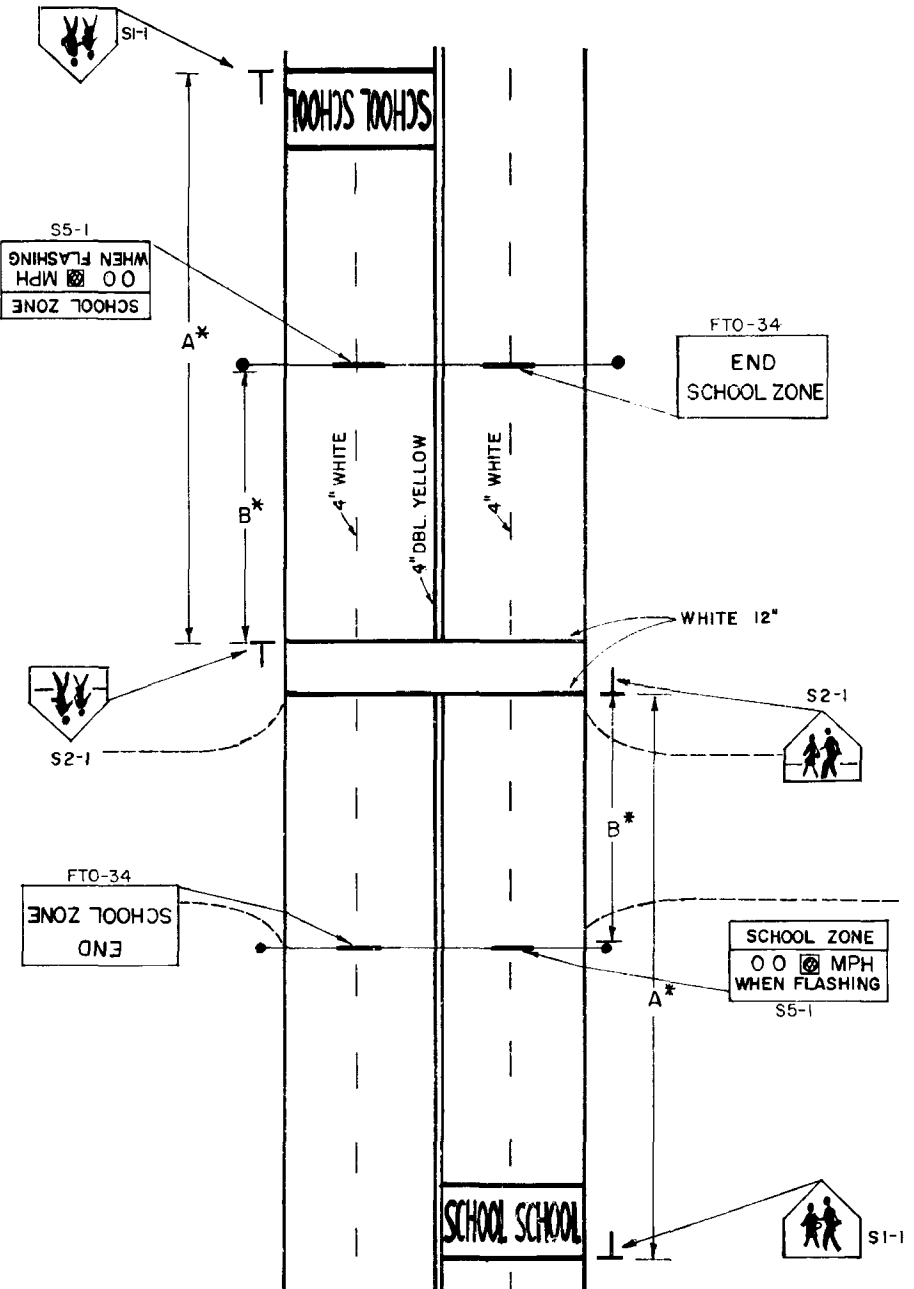
5. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK WITH OVERHEAD FLASHING BEACON SPEED LIMIT SIGNS
(4 LANES UNDIVIDED-2 WAY TRAFFIC)
(MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)



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)



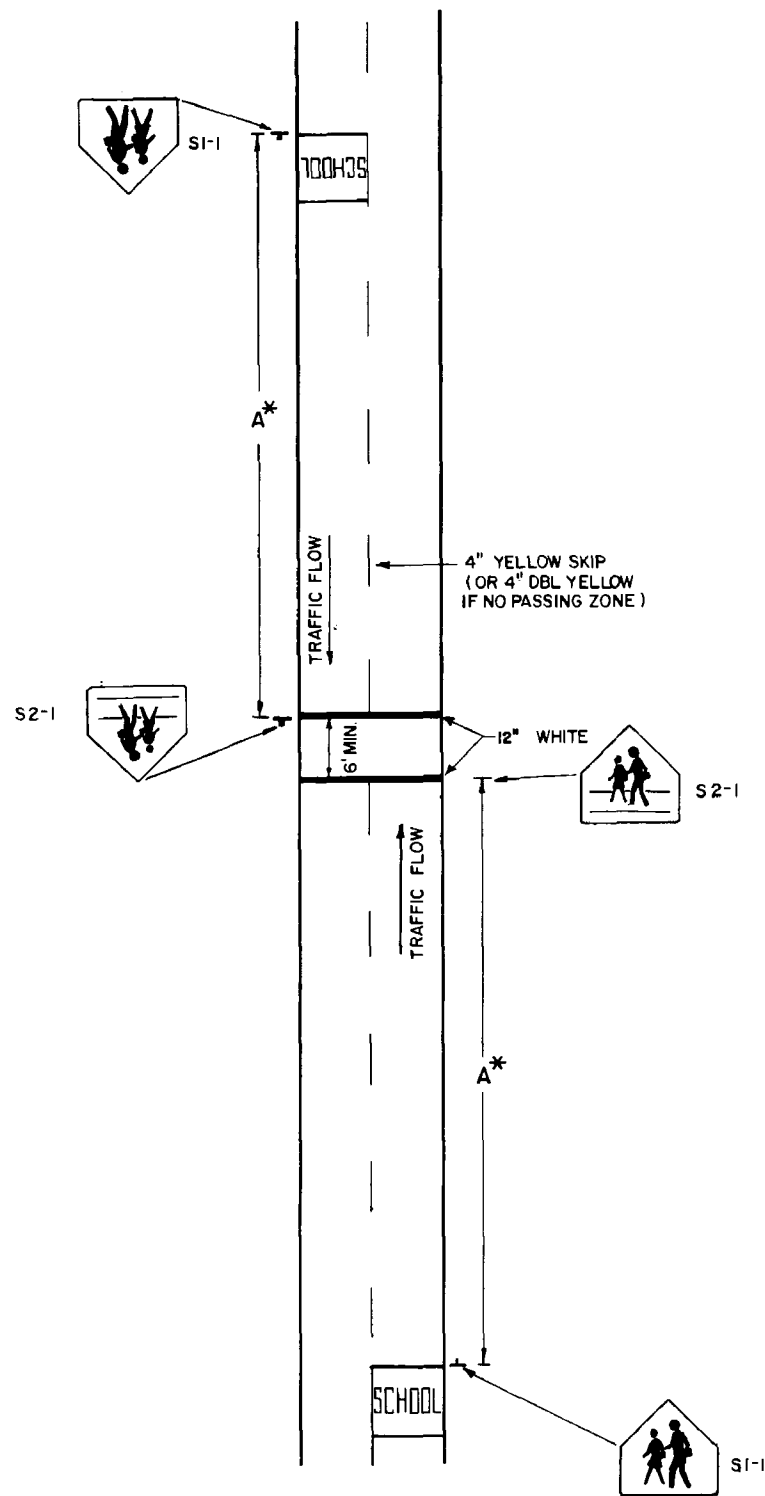
FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

SCHOOL SIGNS & MARKINGS

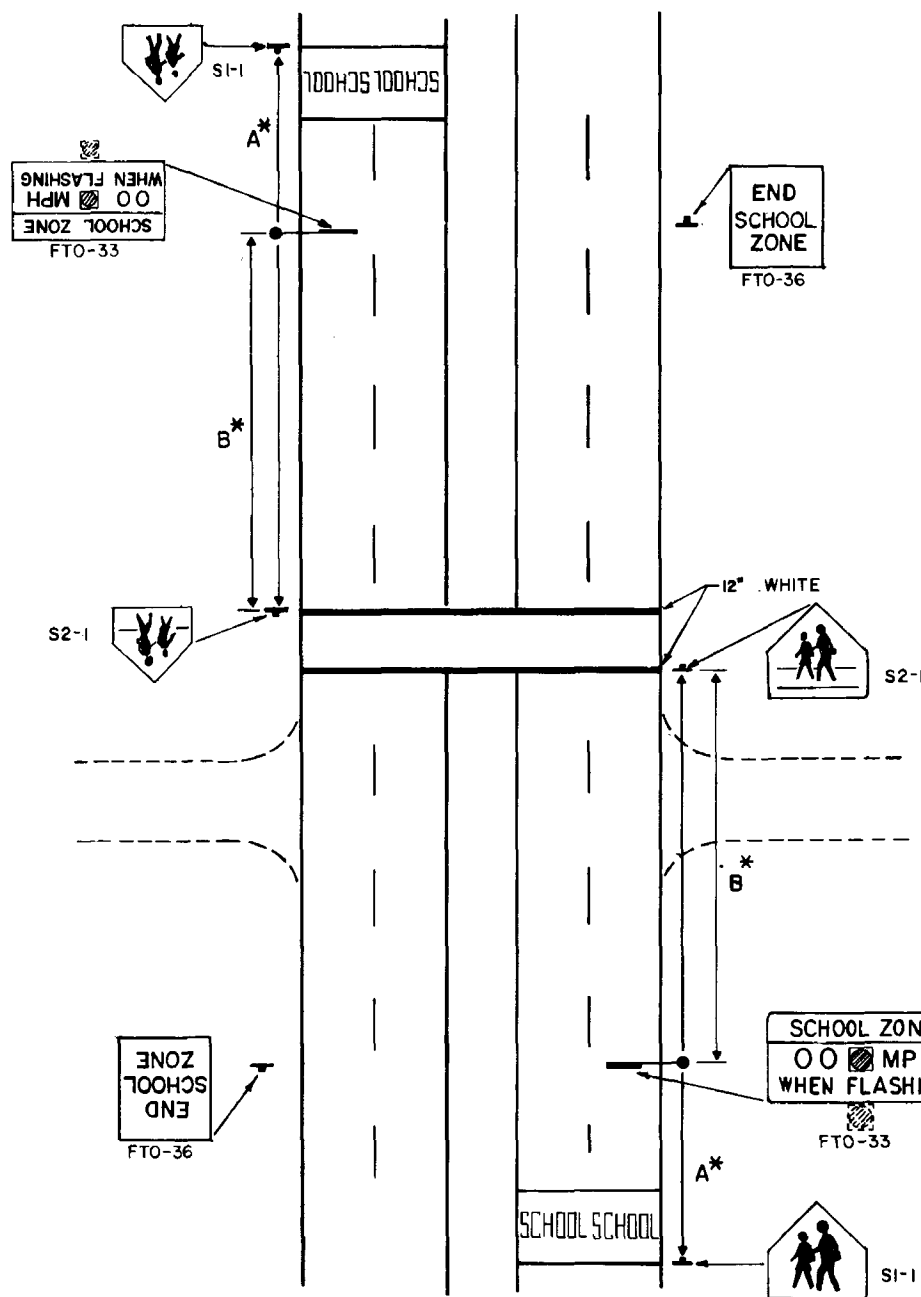
REVISIONS			INITIALS	DATES
9-78	S.W.R.	Changed crosswalk dimensions	Designed by CEJ	7-76
9-79	J.M.C.	Deleted Florida Statute	Checked by KR	7-76
8-80	K. H.	Deleted Educational Plaque	Checked by	
			Supervised by	

Approved by *Larry C. Price*
State Traffic Operations Engr.

DRAWING NO. 2 of 6 INDEX NO. 17344



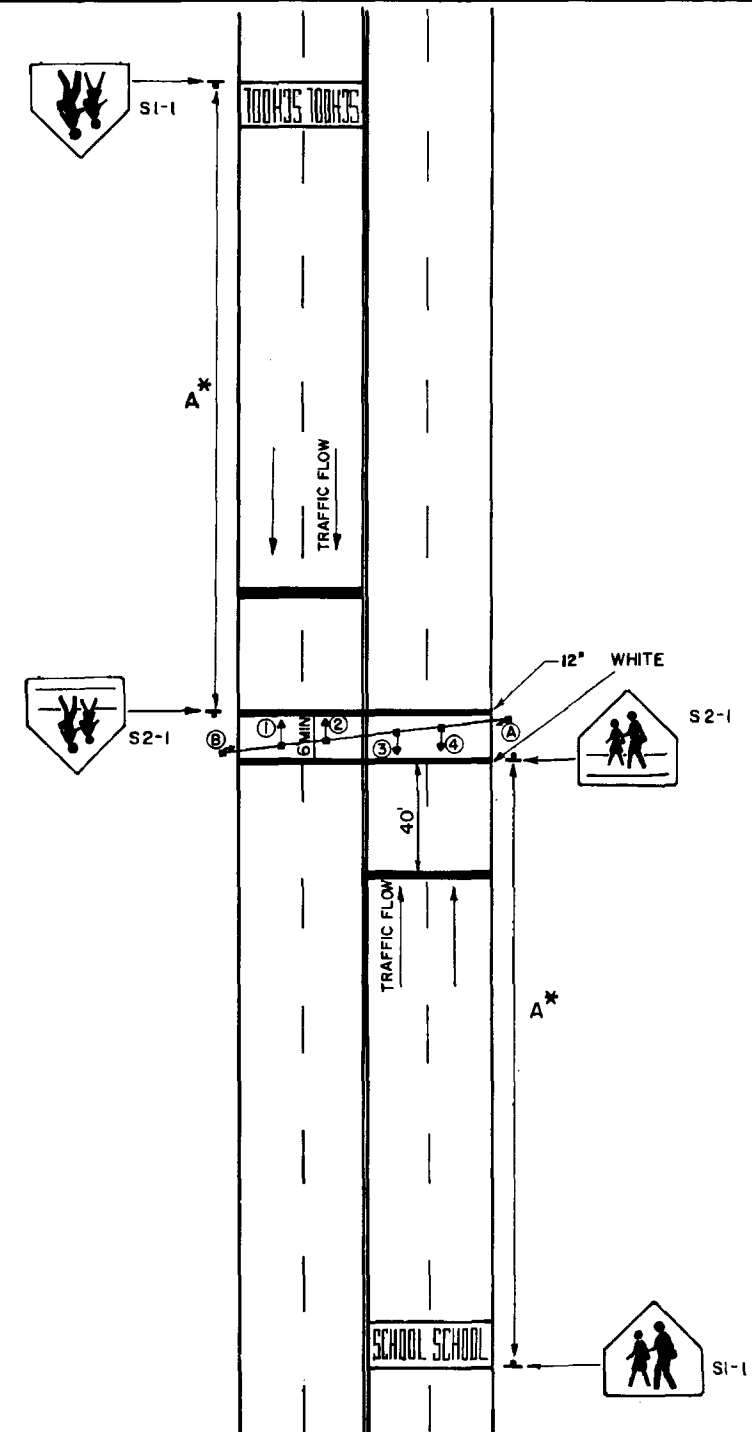
6. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK WITHOUT A SPEED REDUCTION (2 LANES - 2 WAY TRAFFIC)



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.

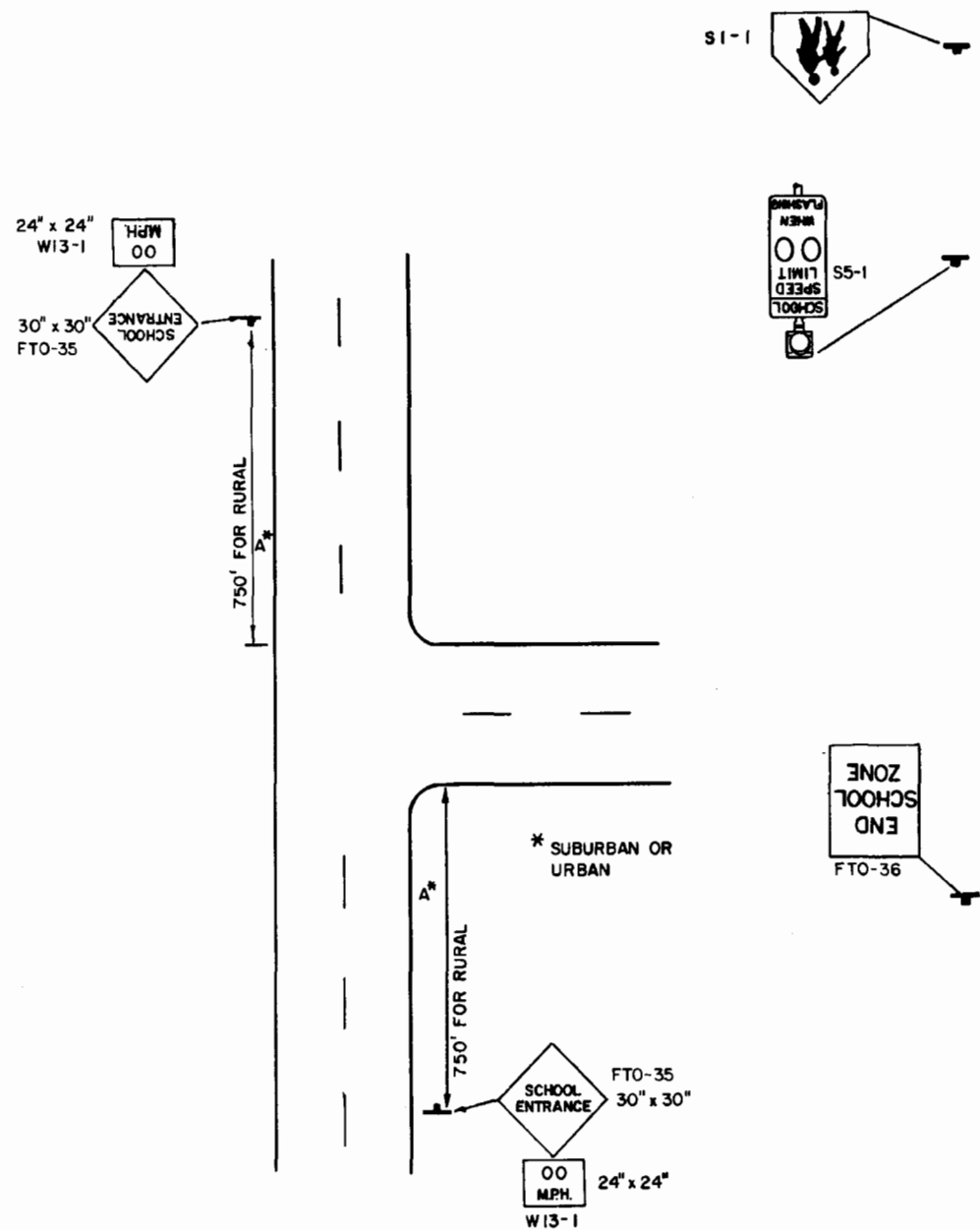


8. TRAFFIC CONTROL DEVICES FOR SIGNALIZED MIDBLOCK SCHOOL CROSSWALK

FLORIDA DEPARTMENT OF TRANSPORTATION
Traffic Operations
SCHOOL SIGNS & MARKINGS

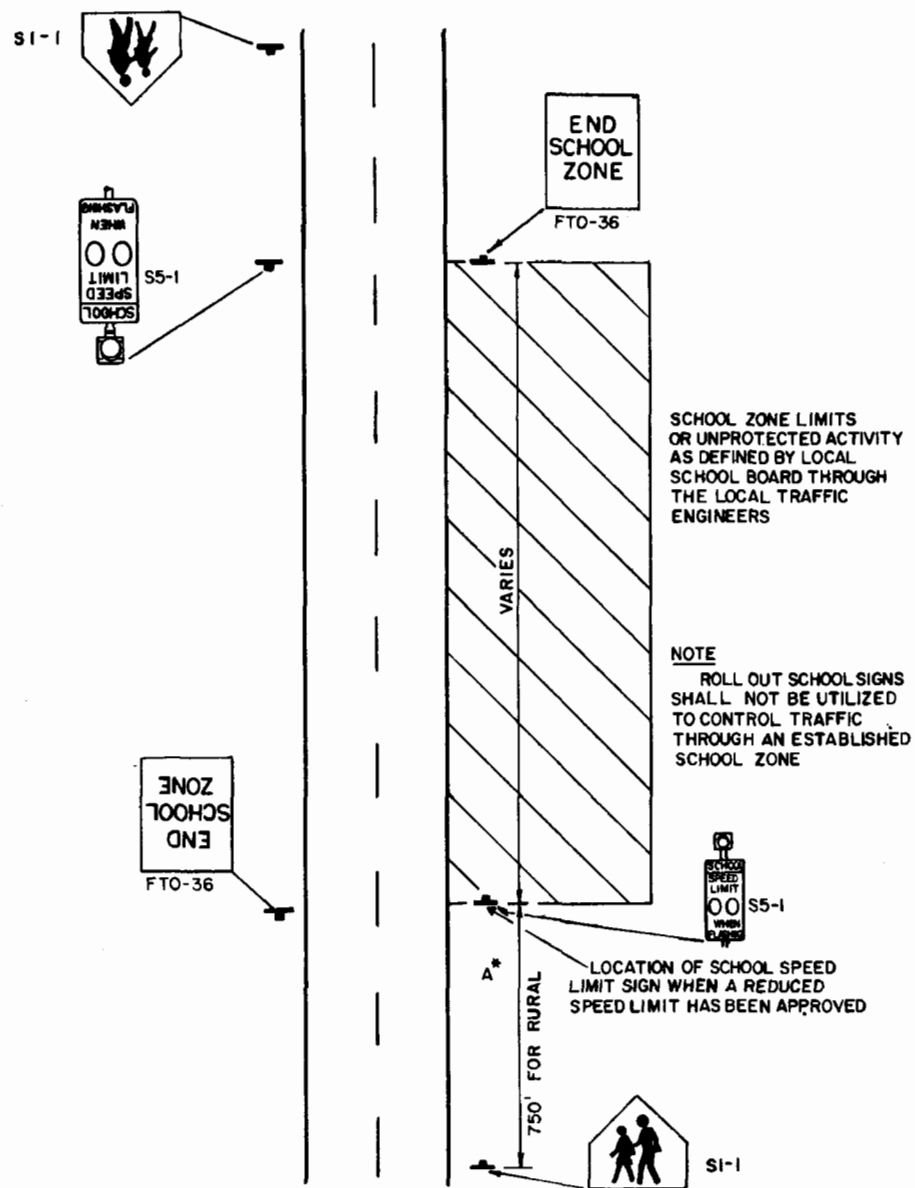
REVISIONS			INITIALS	DATES
DATE	BY	DESCRIPTION	Detailed by	
7-10	FB	REVISED PAVEMENT ON	Checked by	7-76
9-78	SWR	Changed crosswalk dimensions	Quantities by	
9-79	JMC	Deleted Florida Statute	Checked by	
8-80	K.H.	Deleted Educational Plaque	Supervised by	REM

Approved by *Chery C. Price*
State Traffic Operations Engr
DRAWING NO. INDEX NO.
3 OF 6 17344

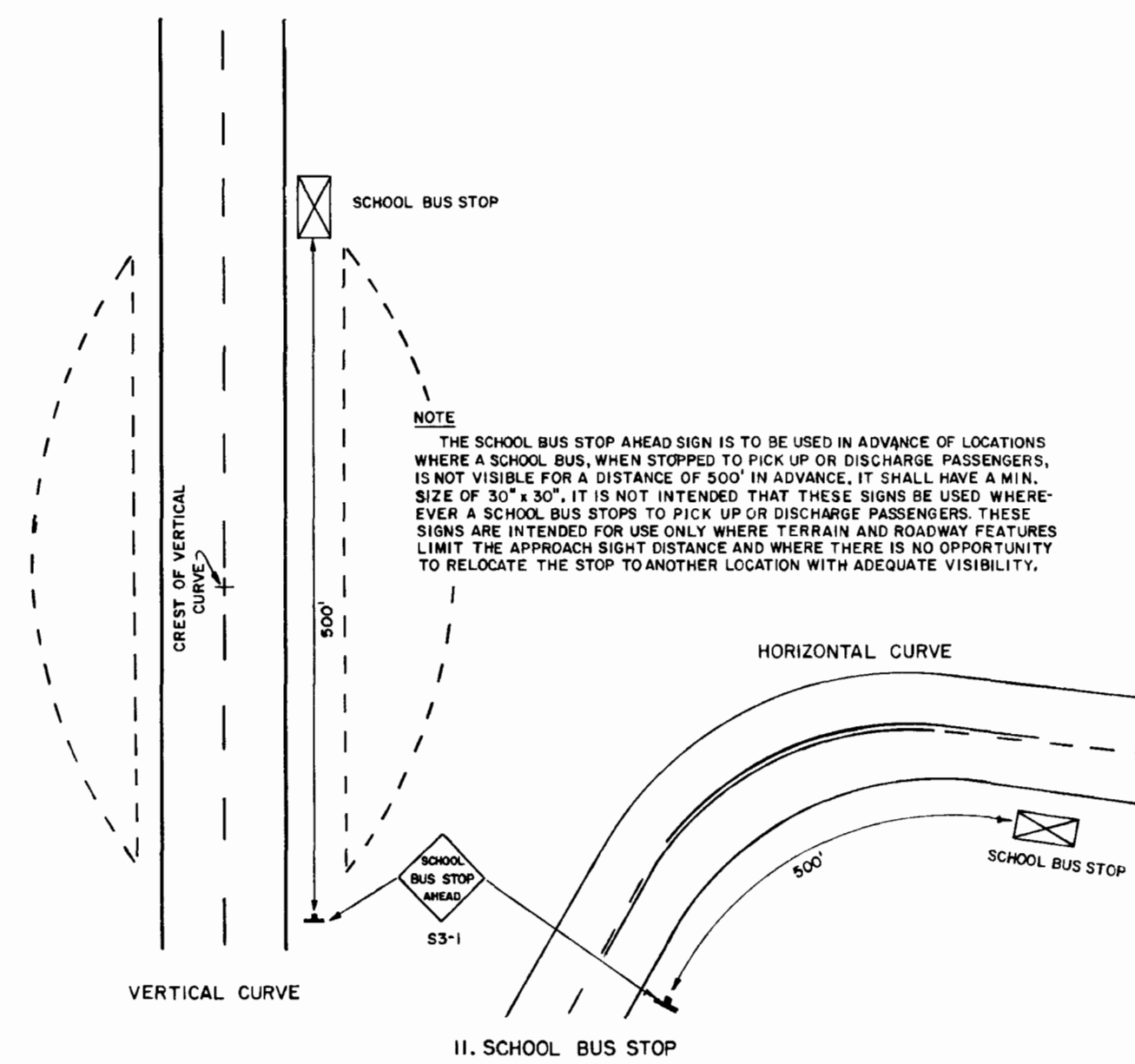


9. TRAFFIC CONTROL DEVICES AT SCHOOL ENTRANCES WHERE THERE ARE LITTLE OR NO WALKING STUDENTS

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.

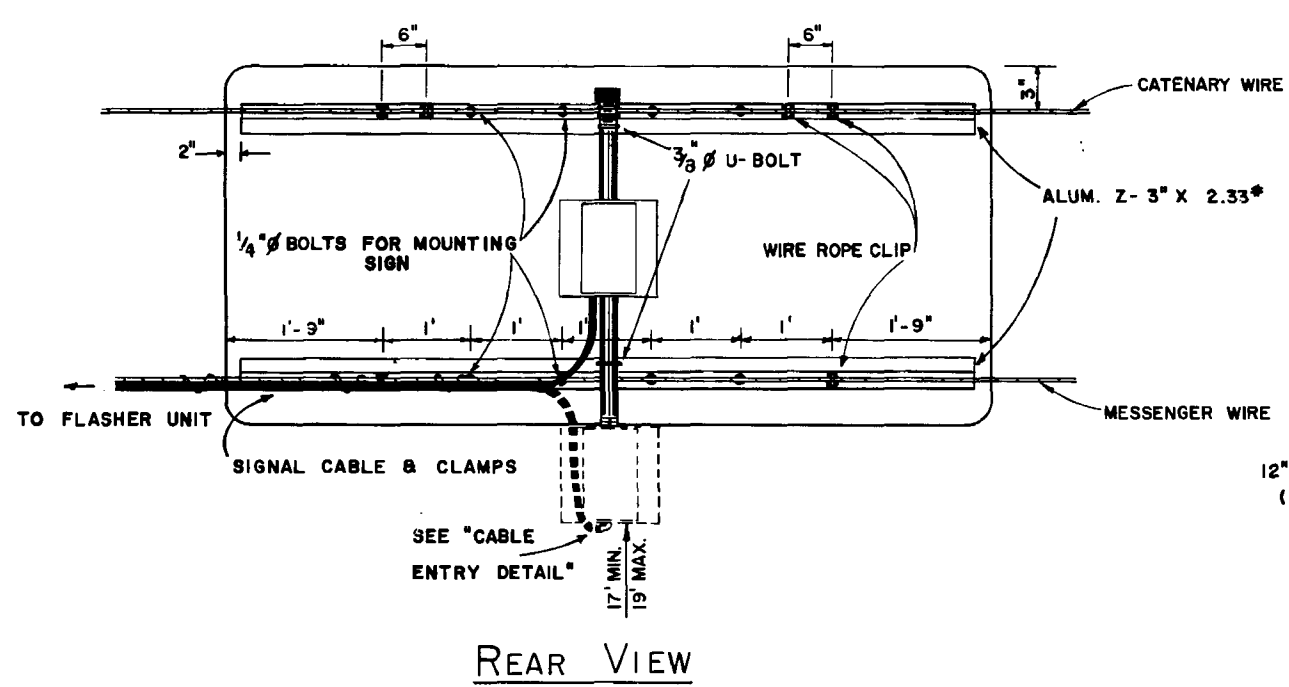


10. TRAFFIC CONTROL DEVICES FOR A TYPICAL SCHOOL ZONE FRONTING THE SCHOOL PROPERTY

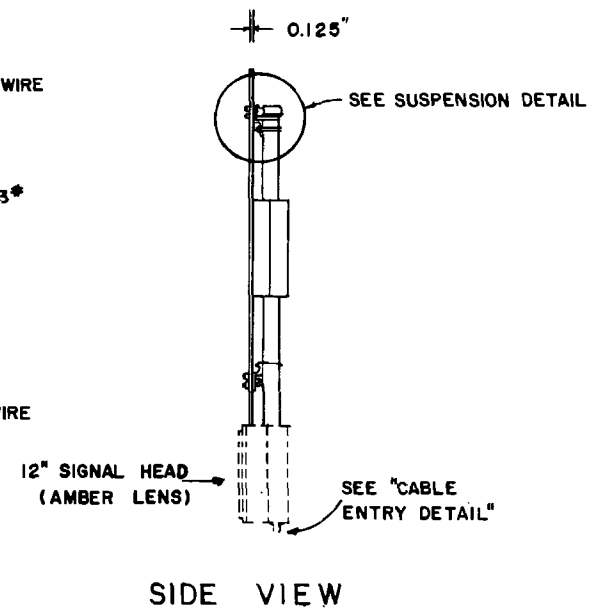


II. SCHOOL BUS STOP

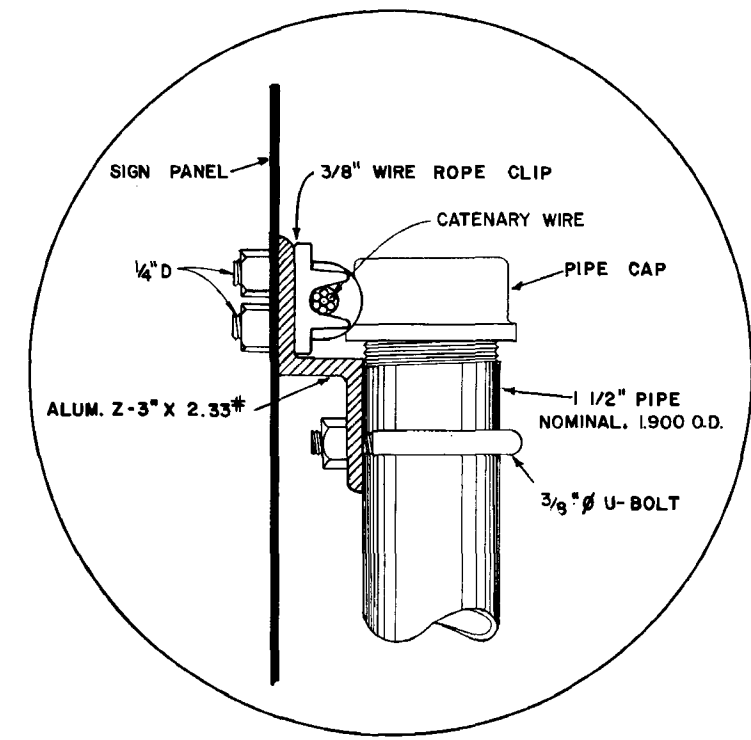
FLORIDA DEPARTMENT OF TRANSPORTATION Traffic Operations						
SCHOOL SIGNS & MARKINGS						
REVISIONS			INITIALS	DATES	<i>Kang C. Price</i> Approved by <i>K.E. Magalaya, Jr.</i> State Traffic Operations Engr.	
DATE	BY	DESCRIPTION	Detailed by	CEJ		7-76
9-5-79	JMC	Deleted Florida Statute	Checked by	KR		7-76
B-80	K.H.	Deleted Educational Plaque	Checked by			
			Supervised by	REM		
			DRAWING NO.	INDEX NO.		
			4 OF 6	17344		



REAR VIEW

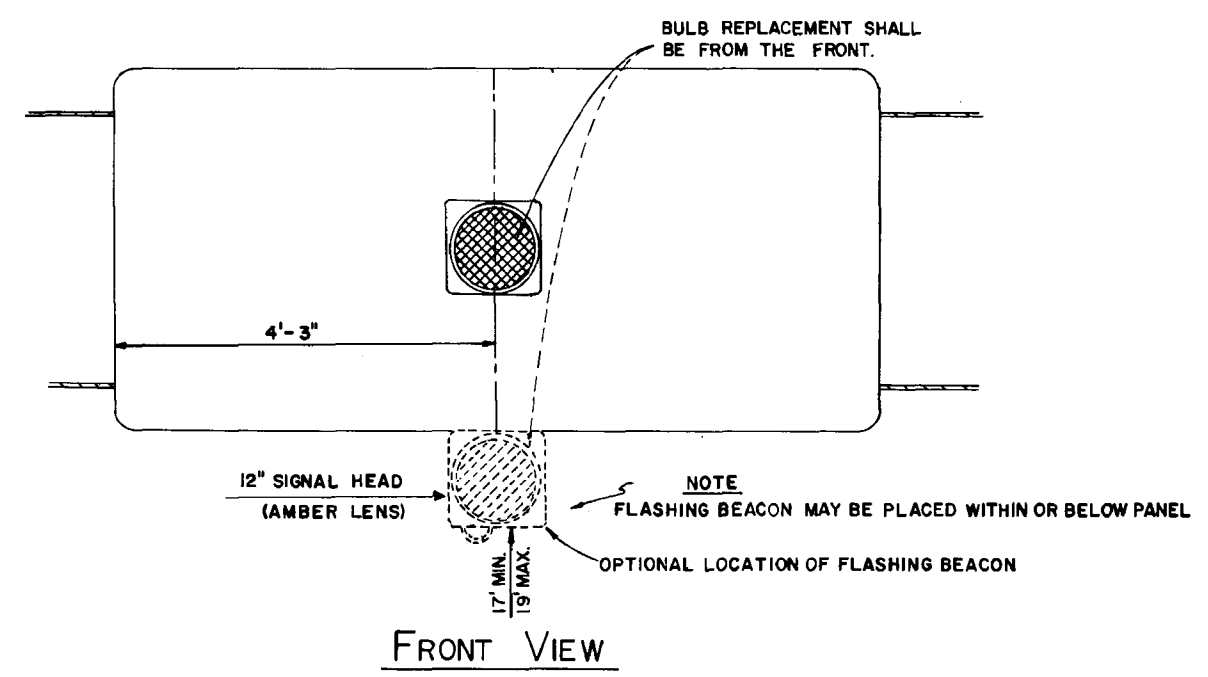


SIDE VIEW

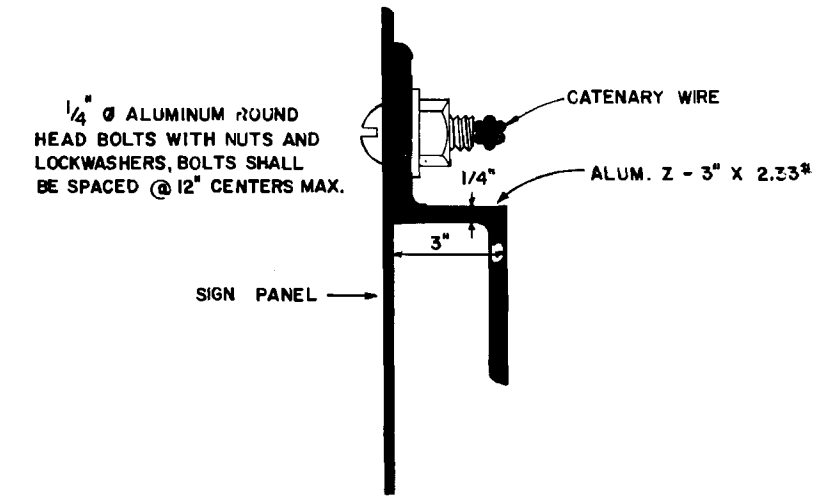


SUSPENSION DETAIL

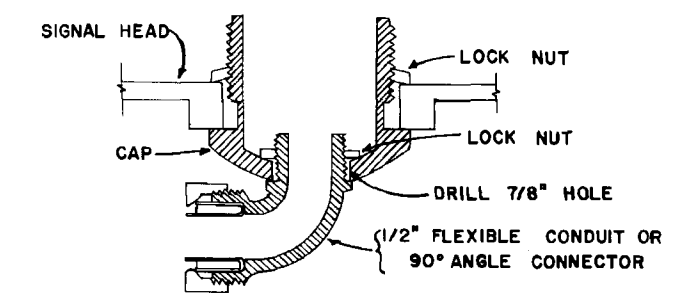
FLASHER UNIT AND CABINET TO BE PLACED ON THE STRAIN POLE SUPPORTING OVERHEAD SIGN ASSEMBLY OR ON SERVICE POLE.



FRONT VIEW



Z SECTION DETAIL



CABLE ENTRY DETAIL

REVISIONS				INITIALS		DATES	
DATE	BY	DESCRIPTION	DETAILED BY	CEJ	7-76		
9-79	J.M.C.	Deleted Florida Statute	CHECKED BY	KR	7-76		
8-80	K.H.	Revise Details	QUANTITIES BY				
			CHECKED BY				
			SUPERVISED BY	REM		DRAWING NO.	INDEX NO.

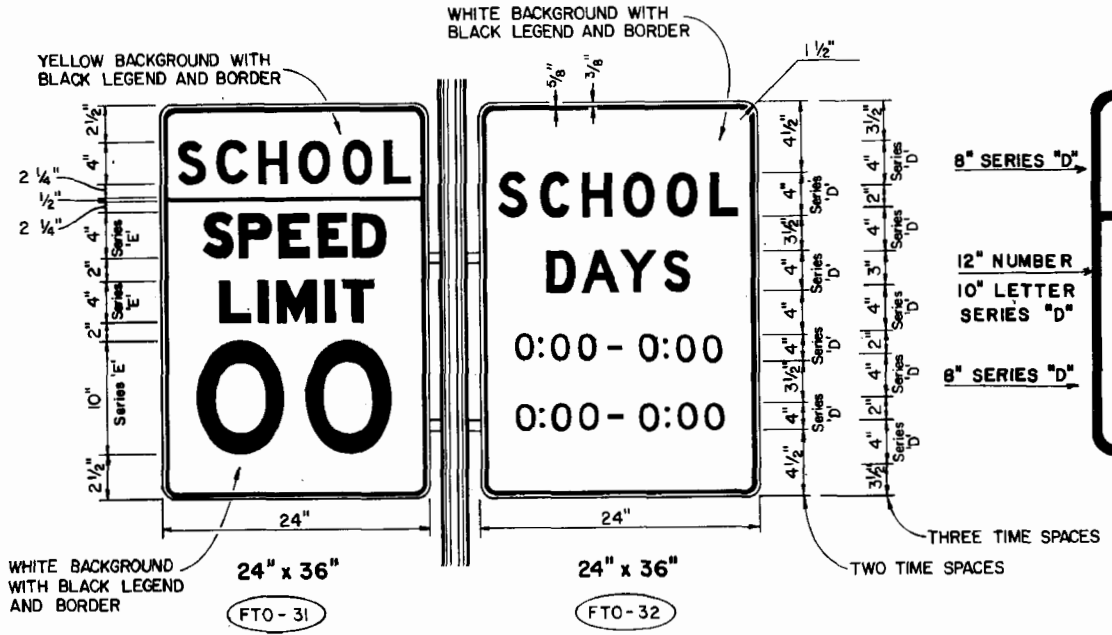
FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

SCHOOL SIGNS & MARKINGS

APPROVED BY *Greg C. Ponce*
STATE TRAFFIC OPERATIONS ENGR.

DRAWING NO. 5 of 6 INDEX NO. 17344

SPEED LIMIT ASSEMBLY

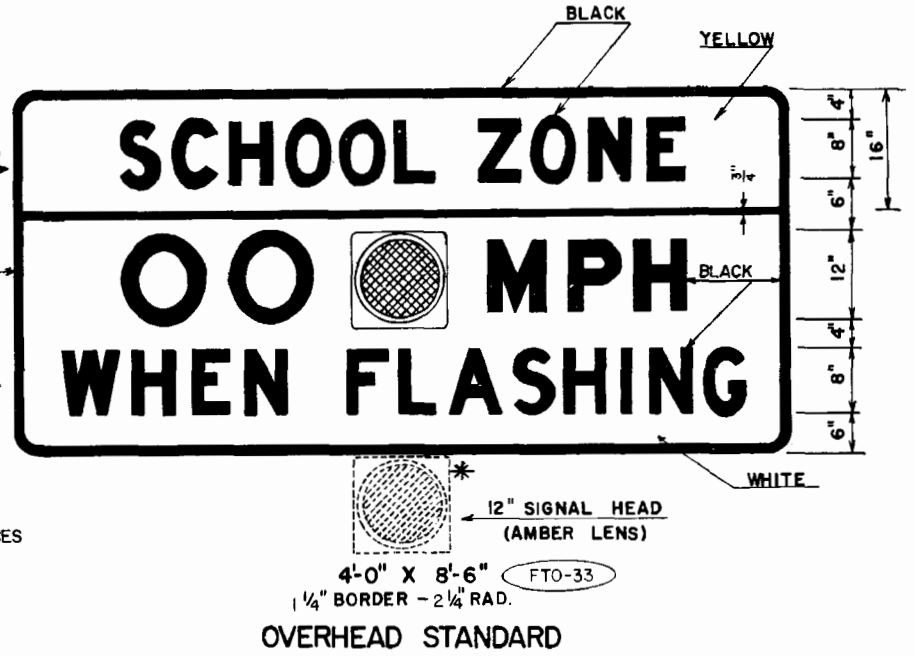


- NOTES:
1. ALL SIGNS SHALL BE REFLECTORIZED.
 2. STANDARD SIZE SIGNS SHOULD BE USED WHENEVER POSSIBLE. MINIMUM SIZES MAY BE USED ONLY ON LOW VOLUME, LOW SPEED (LESS THAN 35 M.P.H.) STREETS. SPECIAL SIZES SHOULD BE USED ON EXPRESSWAY FACILITIES WHERE SPECIAL EMPHASIS IS NEEDED.
 3. THE VALUE OF THE ACTUAL 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. MIN. SET BY LAW.

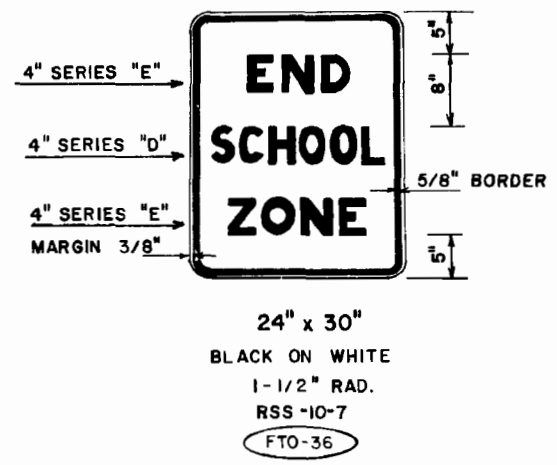
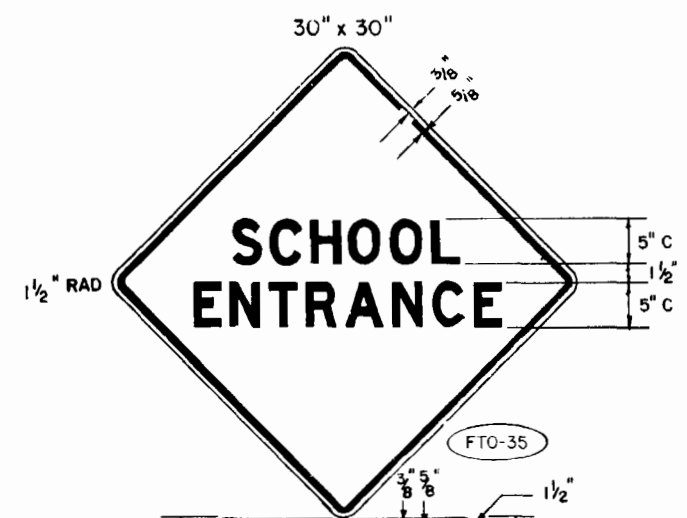
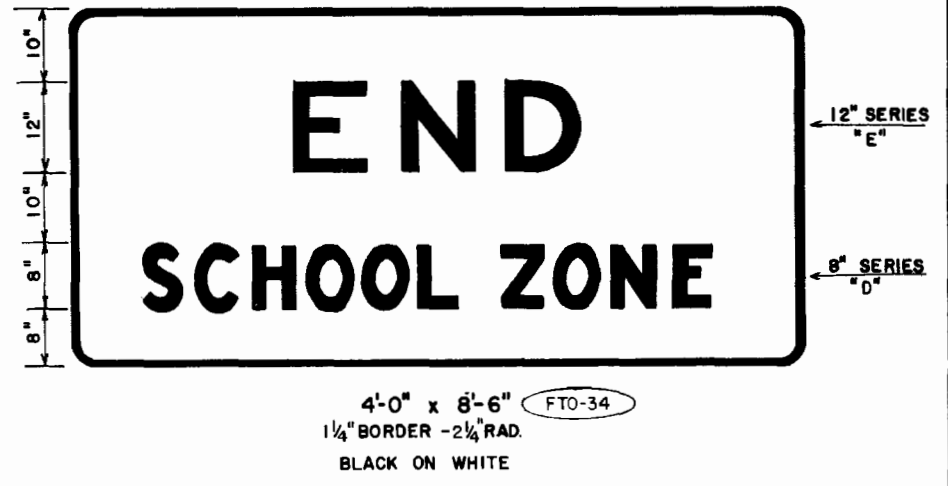
NOTE

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.

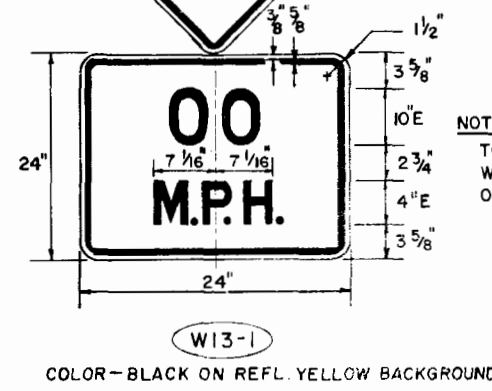


* FLASHING BEACON MAY BE PLACED WITHIN OR BELOW PANEL



NOTE

ALL SIGNS SHALL BE REFLECTORIZED



NOTE

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

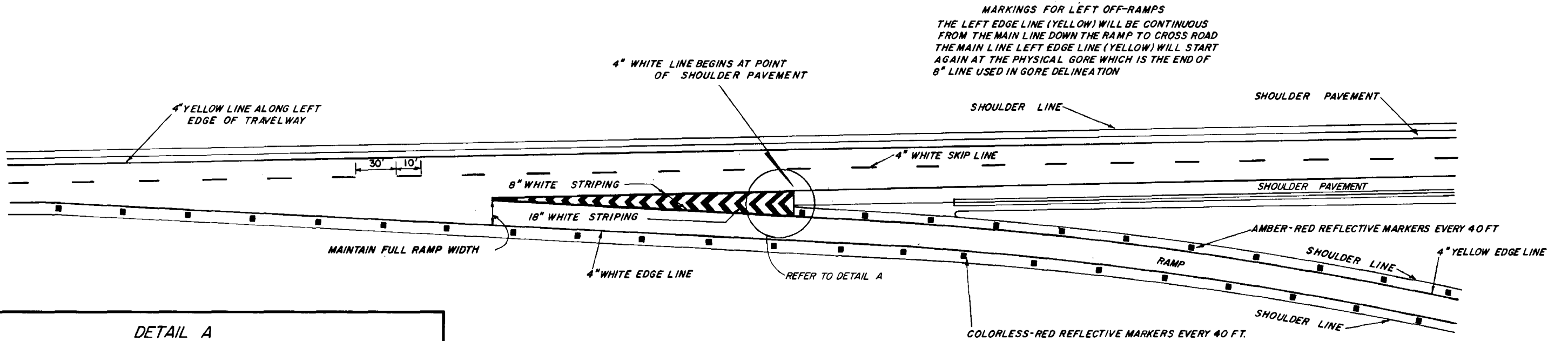
REVISIONS		
DATE	INITIALS	DESCRIPTION
9-8-79	J.M.C.	Deleted Florida Statute
8-80	K.H.	Deleted Ground Mount Standard

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	
DRAWING NO.	INDEX NO.	
6 of 6	17344	

APPROVED BY: *Dary C. Price*

BY: *R.E. Magallon*

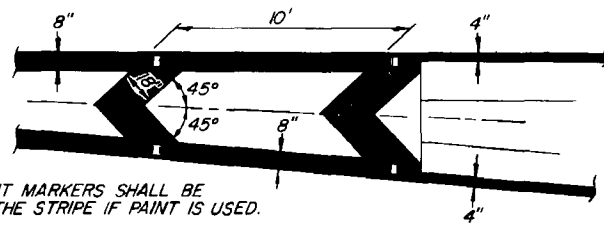
STATE TRAFFIC OPERATIONS ENGR.



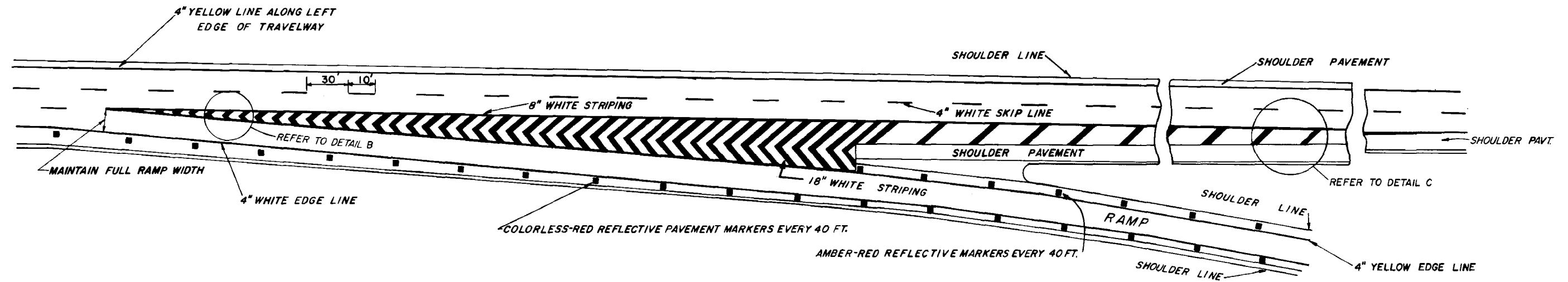
MARKINGS FOR LEFT OFF-RAMPS
 THE LEFT EDGE LINE (YELLOW) WILL BE CONTINUOUS FROM THE MAIN LINE DOWN THE RAMP TO CROSS ROAD THE MAIN LINE LEFT EDGE LINE (YELLOW) WILL START AGAIN AT THE PHYSICAL GORE WHICH IS THE END OF 8" LINE USED IN GORE DELINEATION

DETAIL A

COLORLESS-RED REFLECTIVE PAVEMENT MARKERS TO BE PLACED ON EVERY STRIPE BEGINNING AT NOSE.

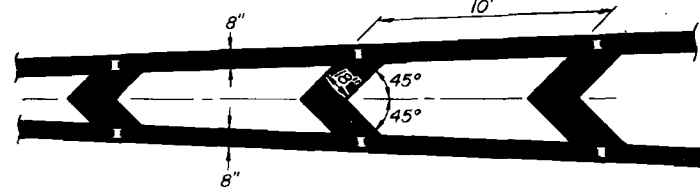


NORMAL TAPERED EXIT
 (TWO THRU LANES)



DETAIL B

COLORLESS-RED REFLECTIVE PAVEMENT MARKERS TO BE PLACED ON EVERY STRIPE BEGINNING AT NOSE.

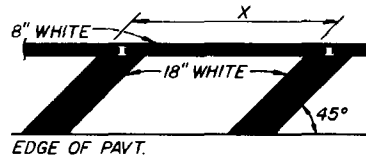


REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED OUTSIDE OF THE STRIPE IF PAINT IS USED.

DETAIL C

"S"	30	35	40	45	50	55
"X"	20'	20'	40'	40'	60'	60'

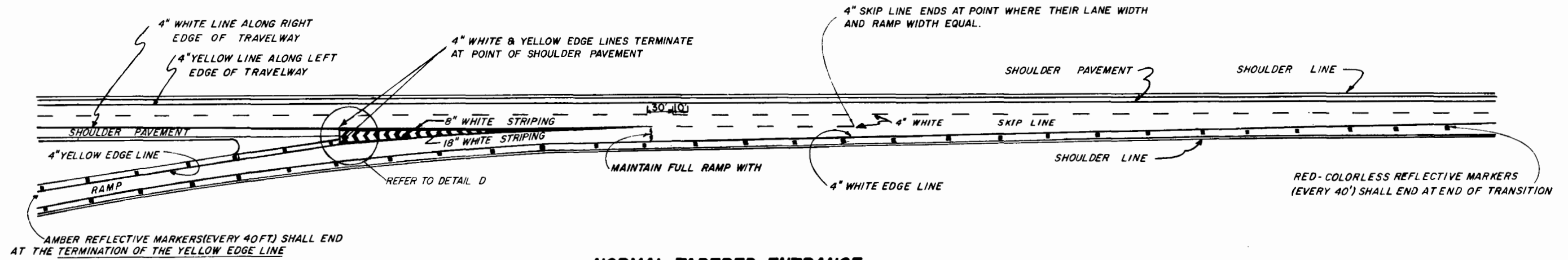
PASSENGER CAR, DAYTIME, POSTED SPEEDS OR 85th PERCENTILE (USE HIGHER VALUE).



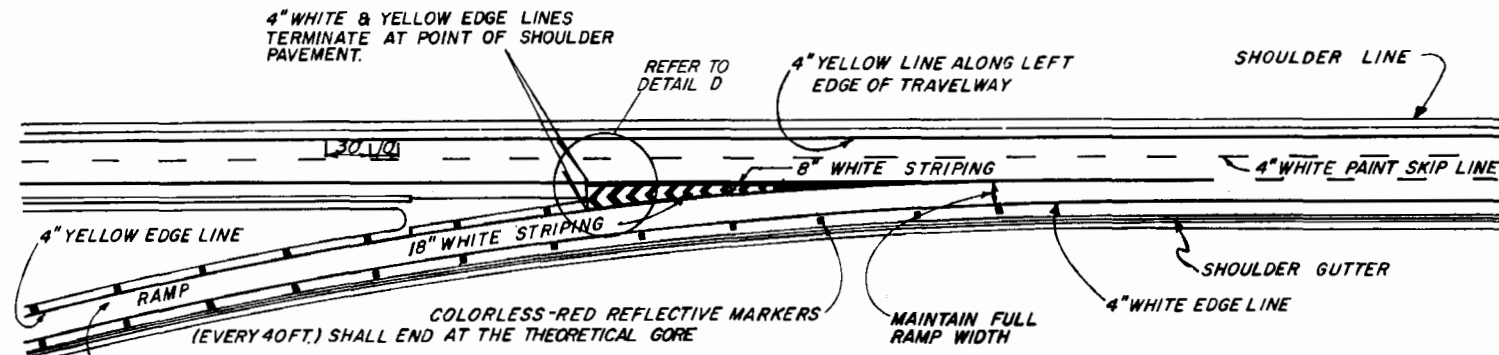
NORMAL TAPERED EXIT ONLY
 (TWO THRU LANES-THREE APPROACH LANES)

REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-12-78	PB	REVISED NOTES & TITLE BLOCK
8-80	KH	REVISED DETAILS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
INTERCHANGE MARKINGS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	APPROVAL
		BY: <i>D.L. Price</i>	
		DEPUTY TRAFFIC OPERATIONS ENGR.	
		APPROVED BY: <i>R. Magaley</i>	
		STATE TRAFFIC OPERATIONS ENGR.	
		Drawing No. 1 OF 4	Index No. 17345



NORMAL TAPERED ENTRANCE

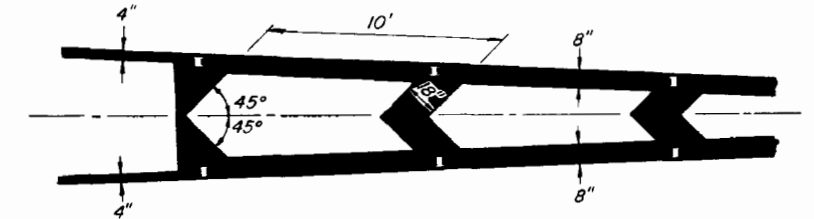


AMBER-RED REFLECTIVE MARKERS (EVERY 40 FT.) SHALL END AT THE TERMINATION OF THE YELLOW EDGE LINE

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

NORMAL TAPERED ENTRANCE WITH ADDED LANE

DETAIL D

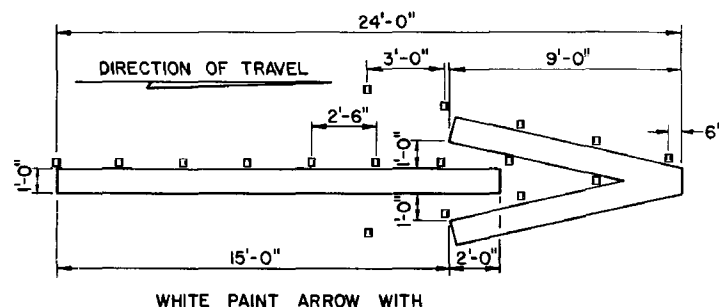
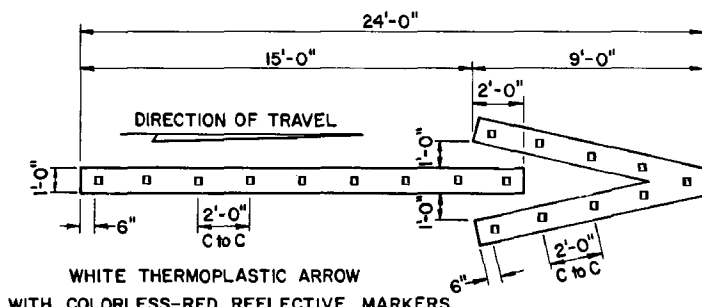
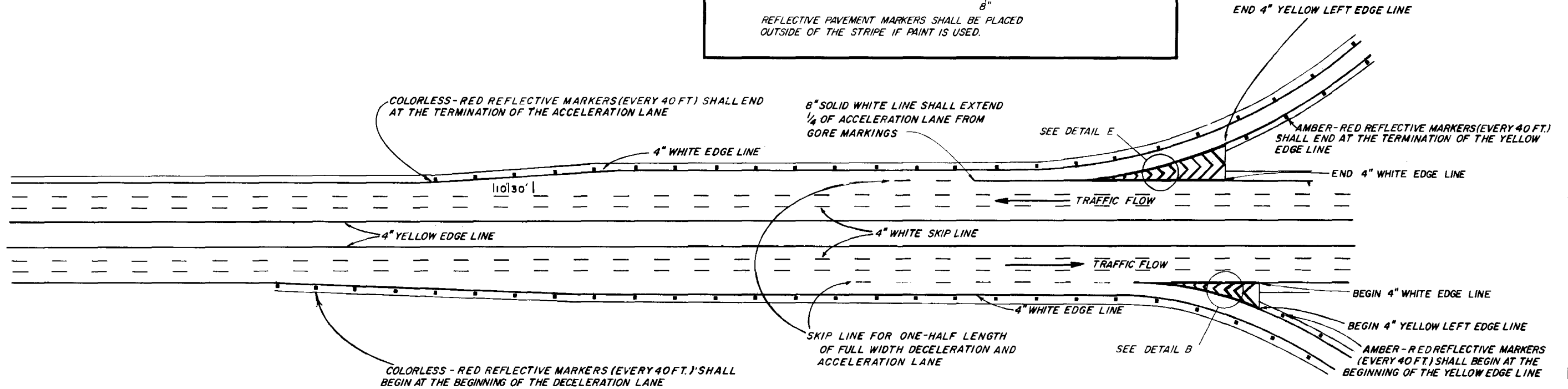
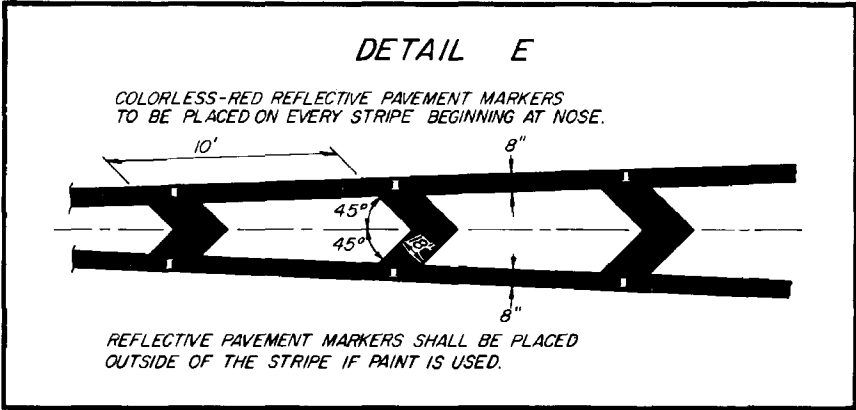


COLORLESS-RED REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED ON EVERY STRIPE BEGINNING AT NOSE.

REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED OUTSIDE OF THE STRIPE IF PAINT IS USED.

REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-11-78	PB	REVISED NOTES & CHANGED TITLE BLOCK
9-7-79	J.M.C.	REVISED 10ft. DIMENSION
8-80	K.H.	REMOVE DETAIL & REVISE DRAWINGS

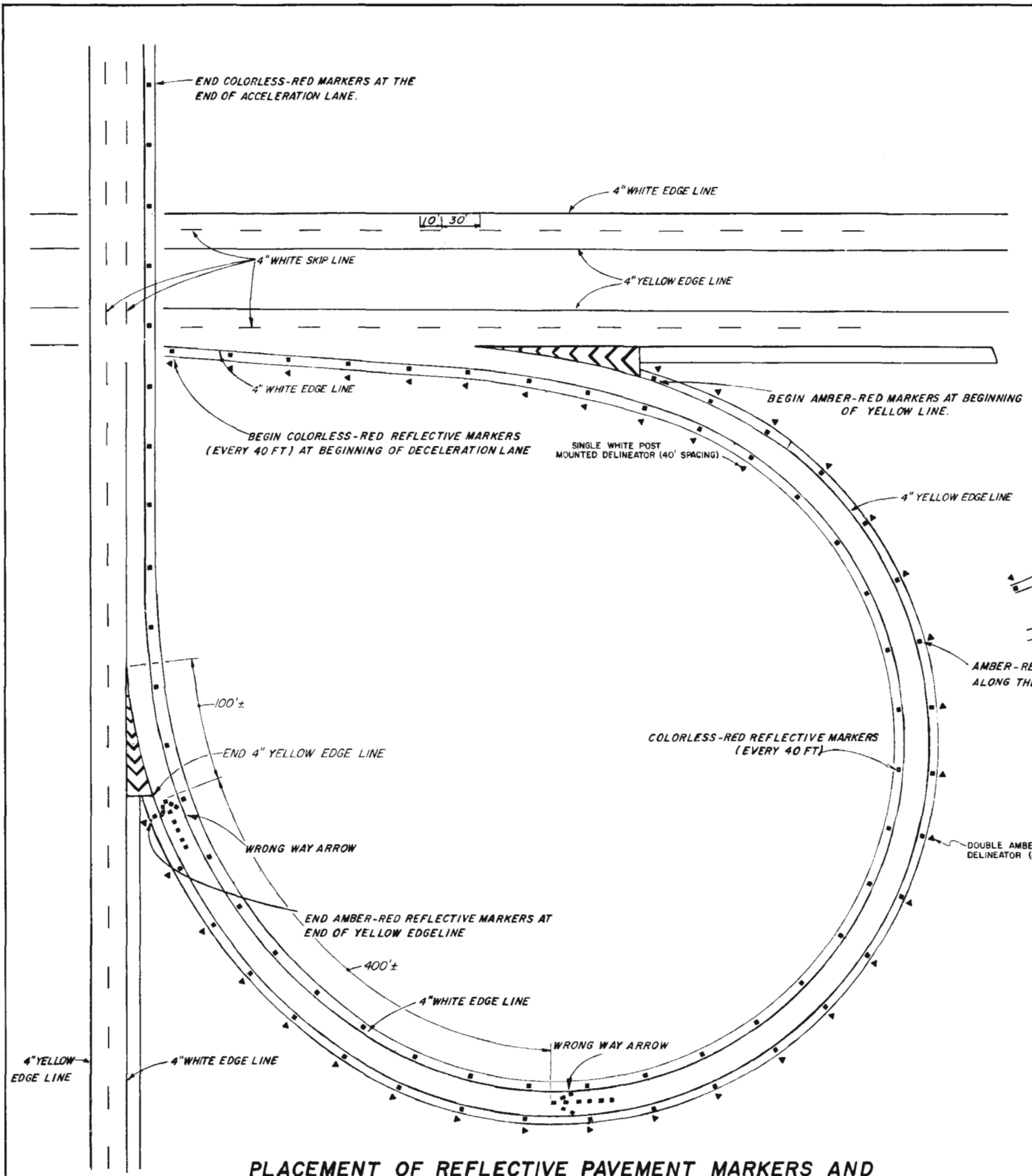
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS				
INTERCHANGE MARKINGS				
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL	APPROVED BY
			BY <i>H.C. Stone</i> DEPUTY TRAFFIC OPERATIONS ENGR.	
			CHECKED BY	APPROVED BY <i>[Signature]</i>
			QUANTITIES BY	STATE TRAFFIC OPERATIONS ENGR.
			CHECKED BY K.R.	
			SUPERVISED BY	DRAWING NO. 2 OF 4 INDEX N.O. 17343



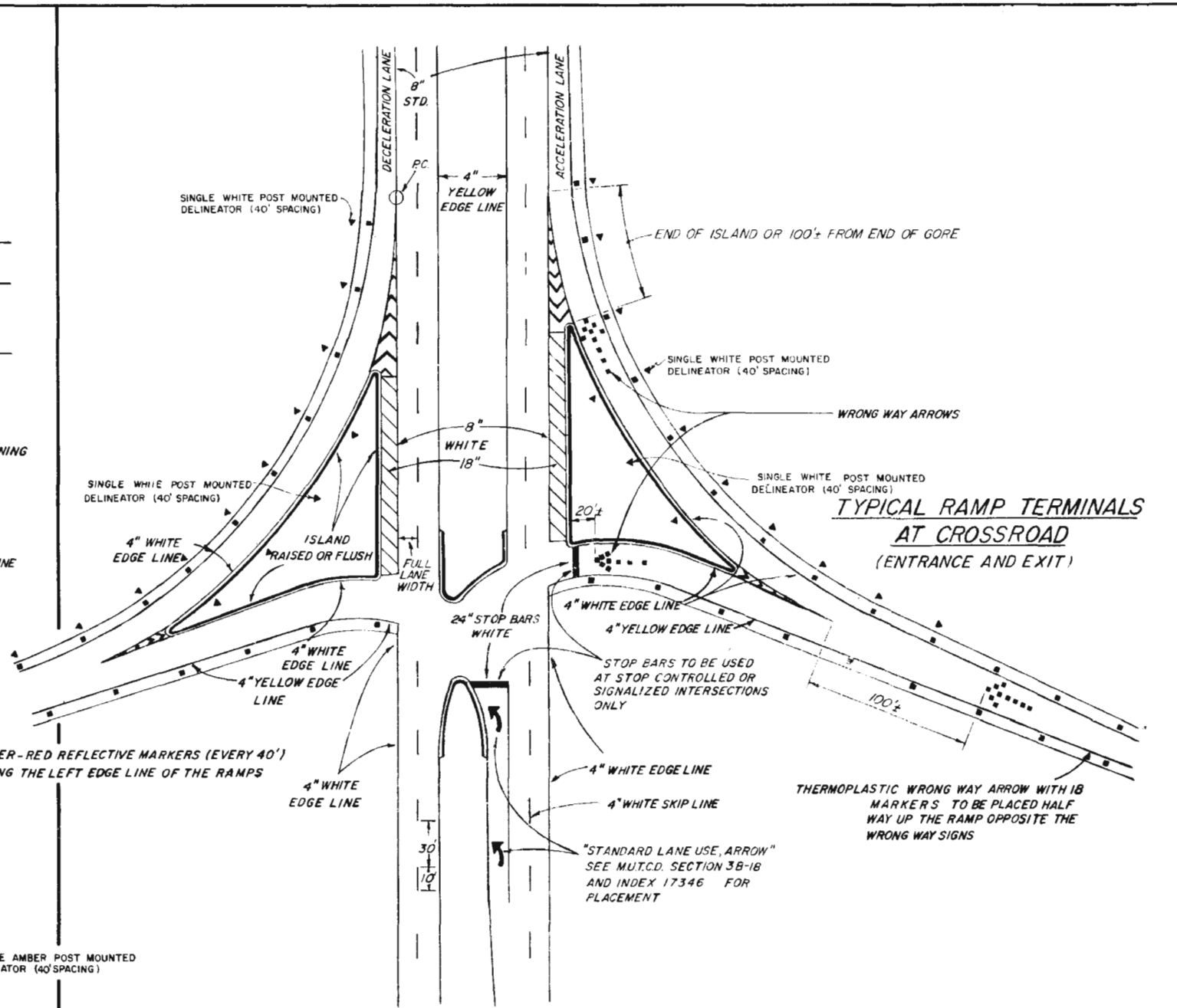
WRONG WAY ARROWS

REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-11-78	P.B.	REVISED NOTES & TITLE BLOCK
9-7-79	J.M.C.	REVISED 10ft. DIMENSION
8-80	K.H.	ARROW DETAIL ADDED

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
INTERCHANGE MARKINGS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	
W.R.B.	9-6-73	By <i>L. O. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR	
		APPROVED	
		By <i>K. I. Magale</i> STATE TRAFFIC OPERATIONS ENGR	
		DRAWING NO.	INDEX NO.
		3 OF 4	17345

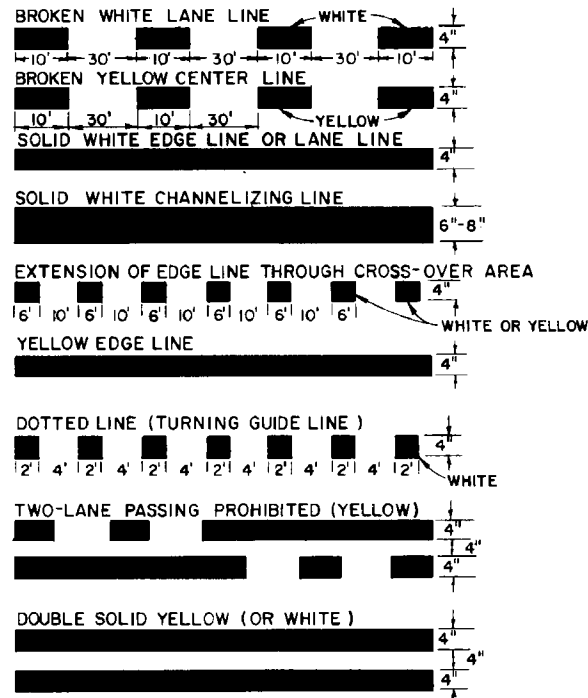


PLACEMENT OF REFLECTIVE PAVEMENT MARKERS AND DELINEATOR POSTS FOR LOOP RAMPS



PLACEMENT OF REFLECTIVE PAVEMENT MARKERS AND DELINEATOR POSTS FOR NON-LOOP RAMPS

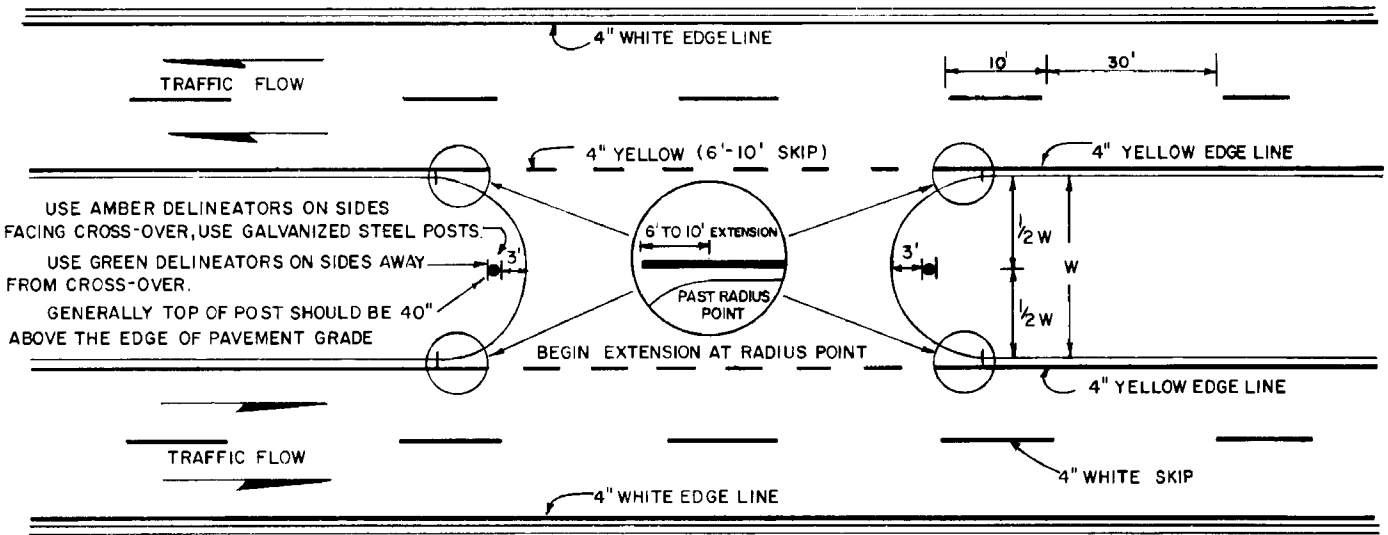
REVISIONS		INTERCHANGE MARKINGS			
Dates	Descriptions	INITIALS	DATES	RECOMMENDED FOR APPROVAL	
9-77	DETAILED BY	W.R.B.	9-6-73	BY <i>J.C. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR APPROVED	
7-13-78	GENERAL REVISIONS	K.R.		BY <i>R.E. M... STATE TRAFFIC OPERATIONS ENGR.</i>	
9-7-79	REVISED Xff. DIMENSION			DRAWING NO. INDEX NO.	
8-30	REMOVE DETAILS			4 OF 4 17345.	



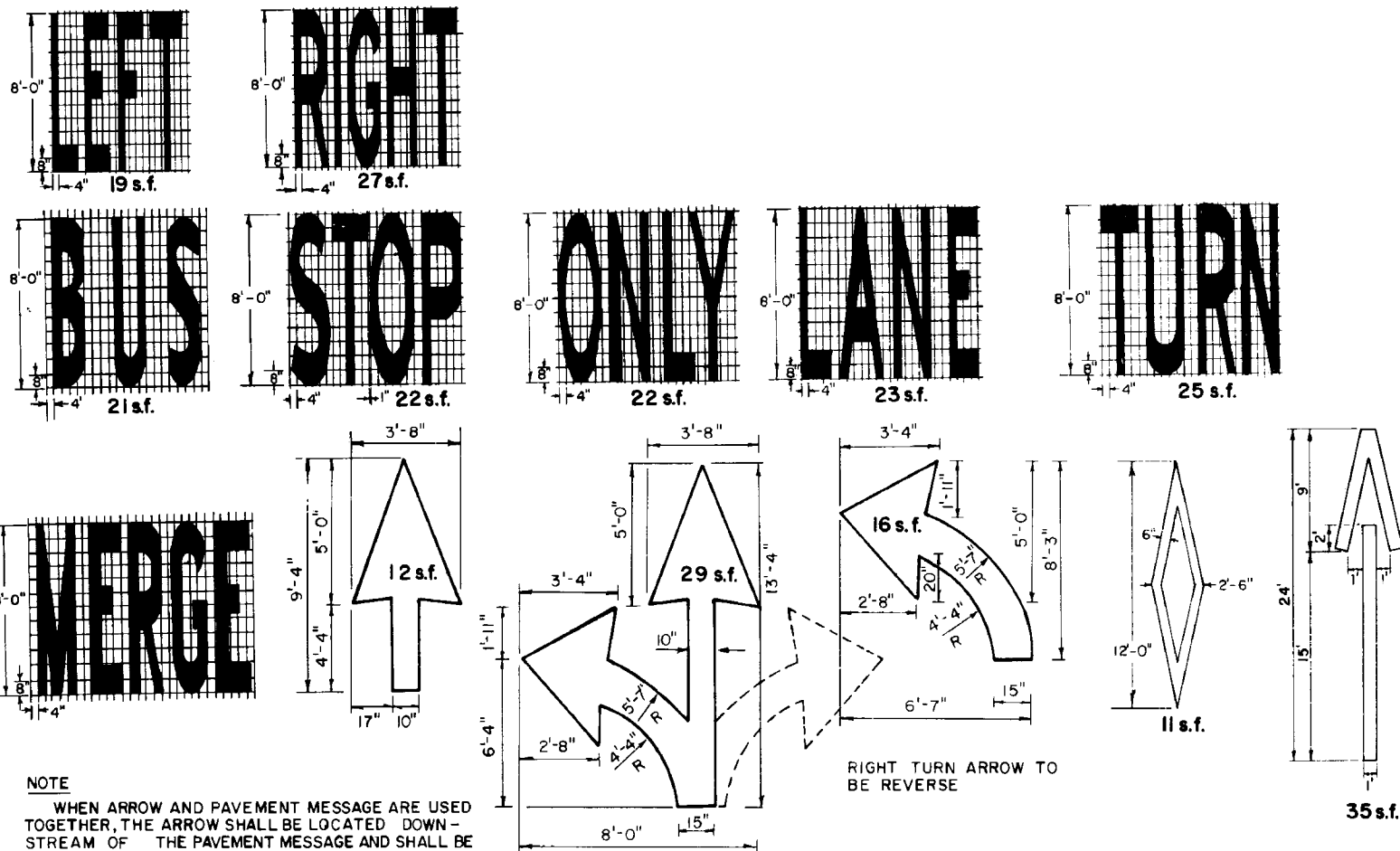
NOTE
FOR DETAILS ON TEMPORARY LINES
SEE MANUAL ON TRAFFIC CONTROLS
AND SAFE PRACTICES, FIGURE 2.19

BASIC COLOR RULE
WHITE LINES SEPARATE FLOWS IN
THE SAME DIRECTION
YELLOW LINES SEPARATE FLOWS
IN THE OPPOSITE DIRECTION

TYPES OF PERMANENT LONGITUDINAL LINES

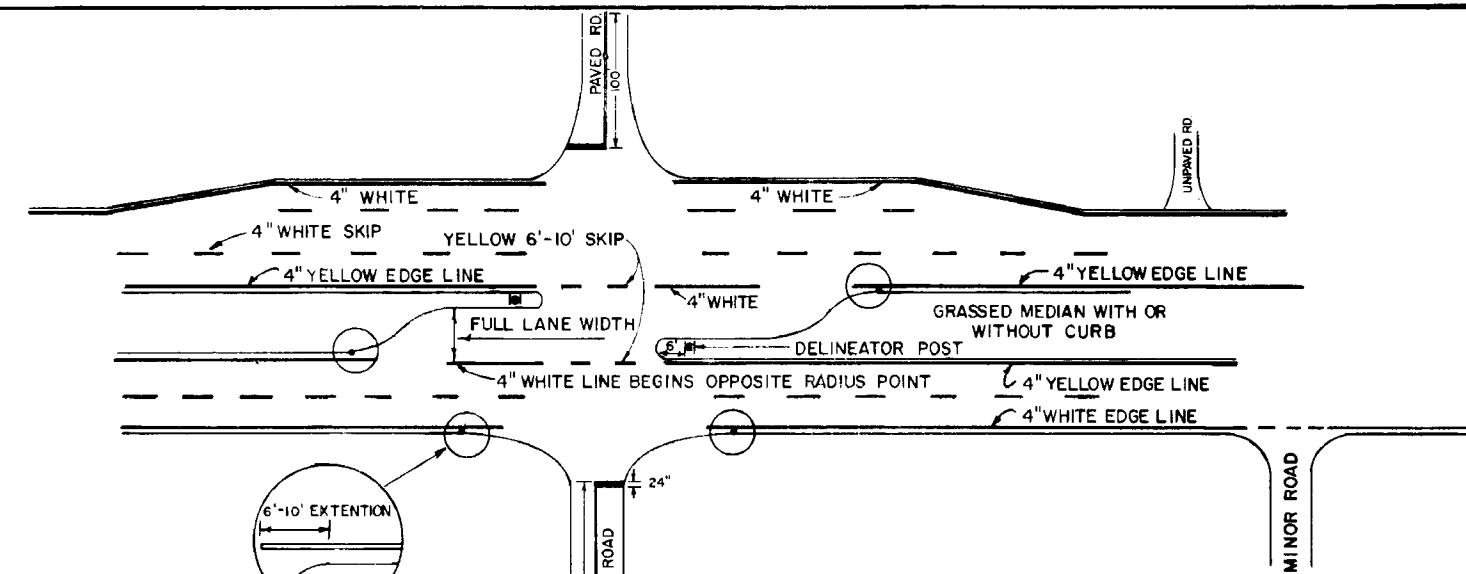


**PAVEMENT MARKINGS AND DELINEATORS
FOR MEDIAN CROSS-OVER**



NOTE
WHEN ARROW AND PAVEMENT MESSAGE ARE USED
TOGETHER, THE ARROW SHALL BE LOCATED DOWN-
STREAM OF THE PAVEMENT MESSAGE AND SHALL BE
SEPARATED FROM THE PAVEMENT MESSAGE BY A
DISTANCE OF 25' (BASE OF THE ARROW
TO THE BASE OF THE MESSAGE).

PAVEMENT ARROW AND MESSAGE DETAILS

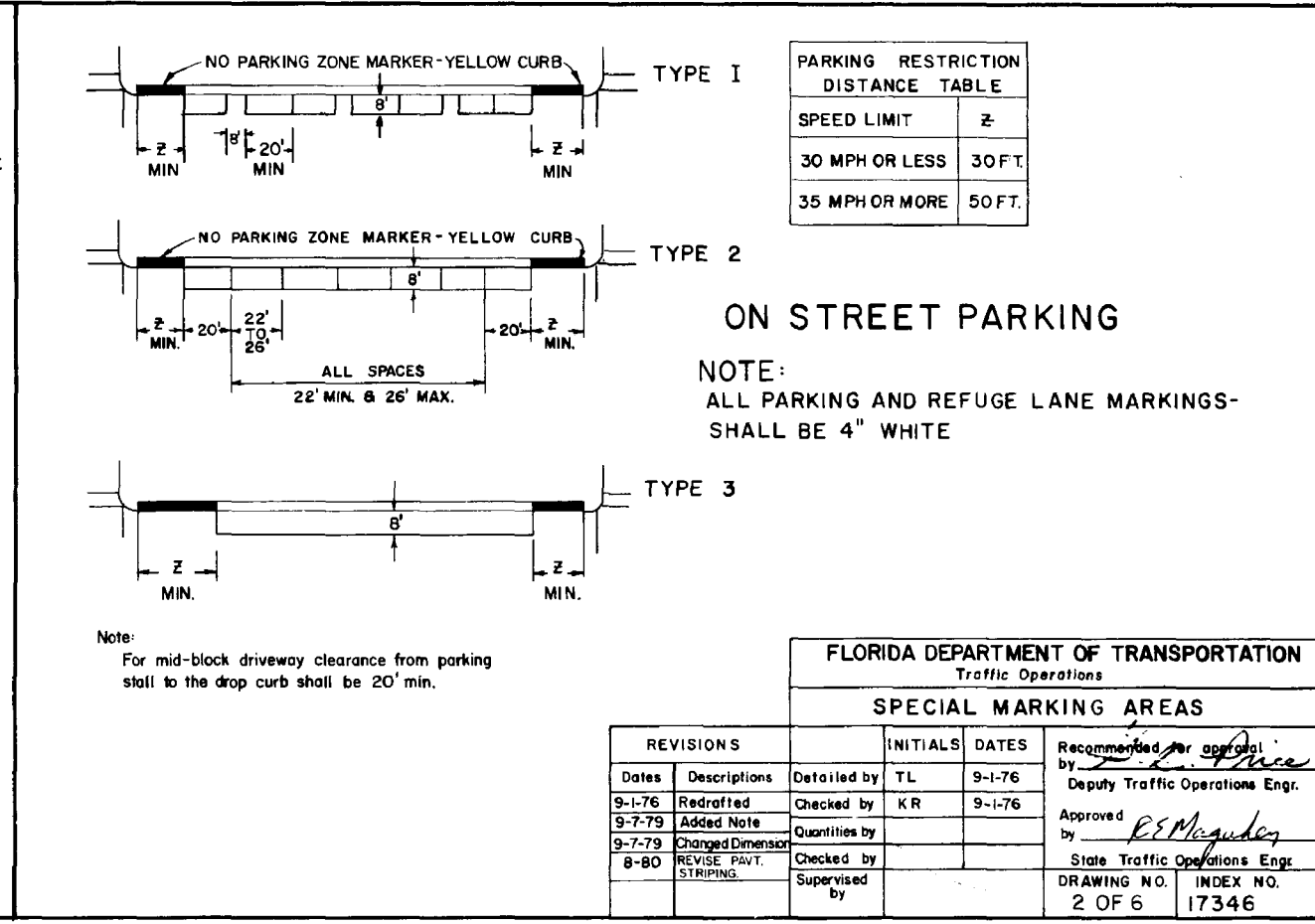
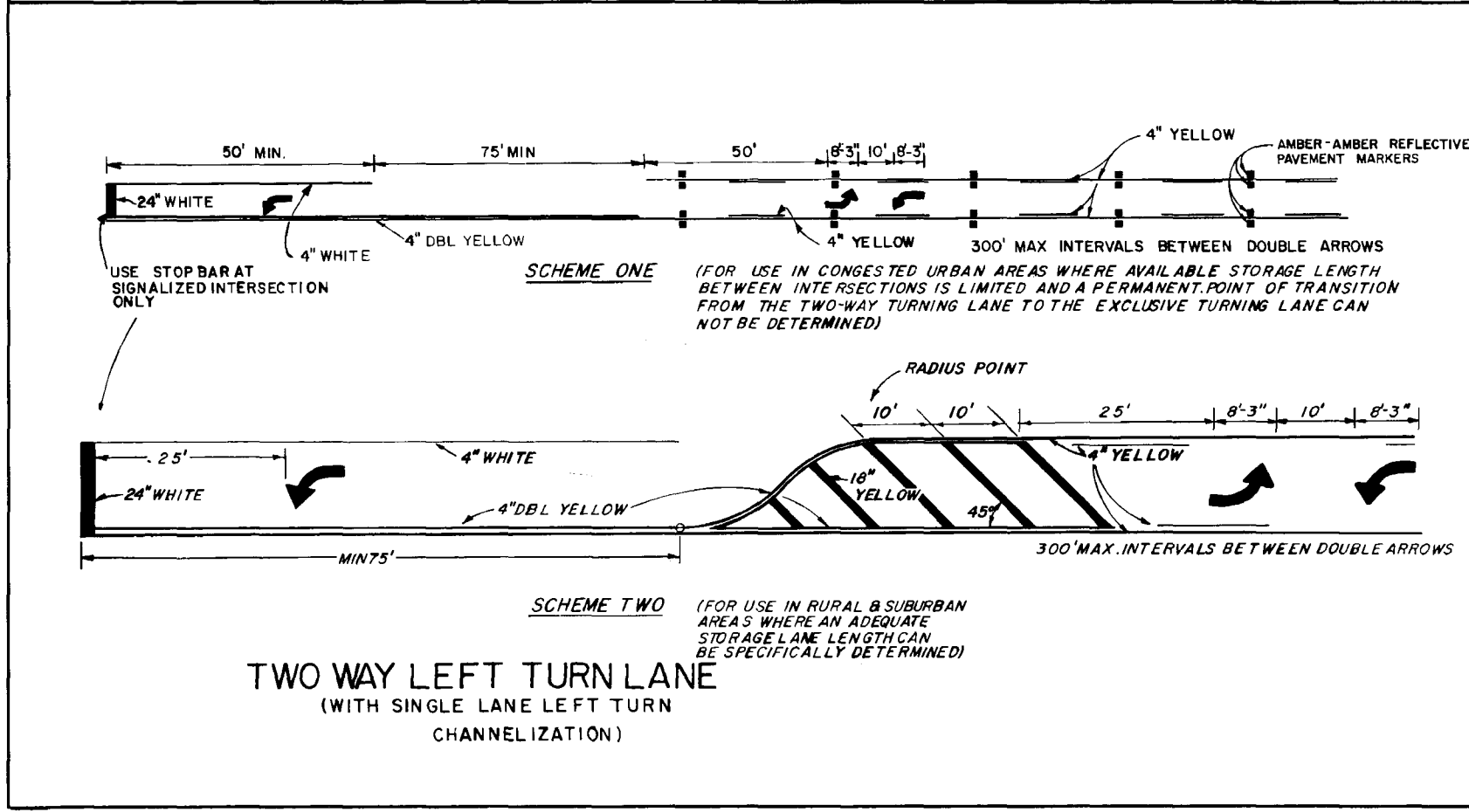
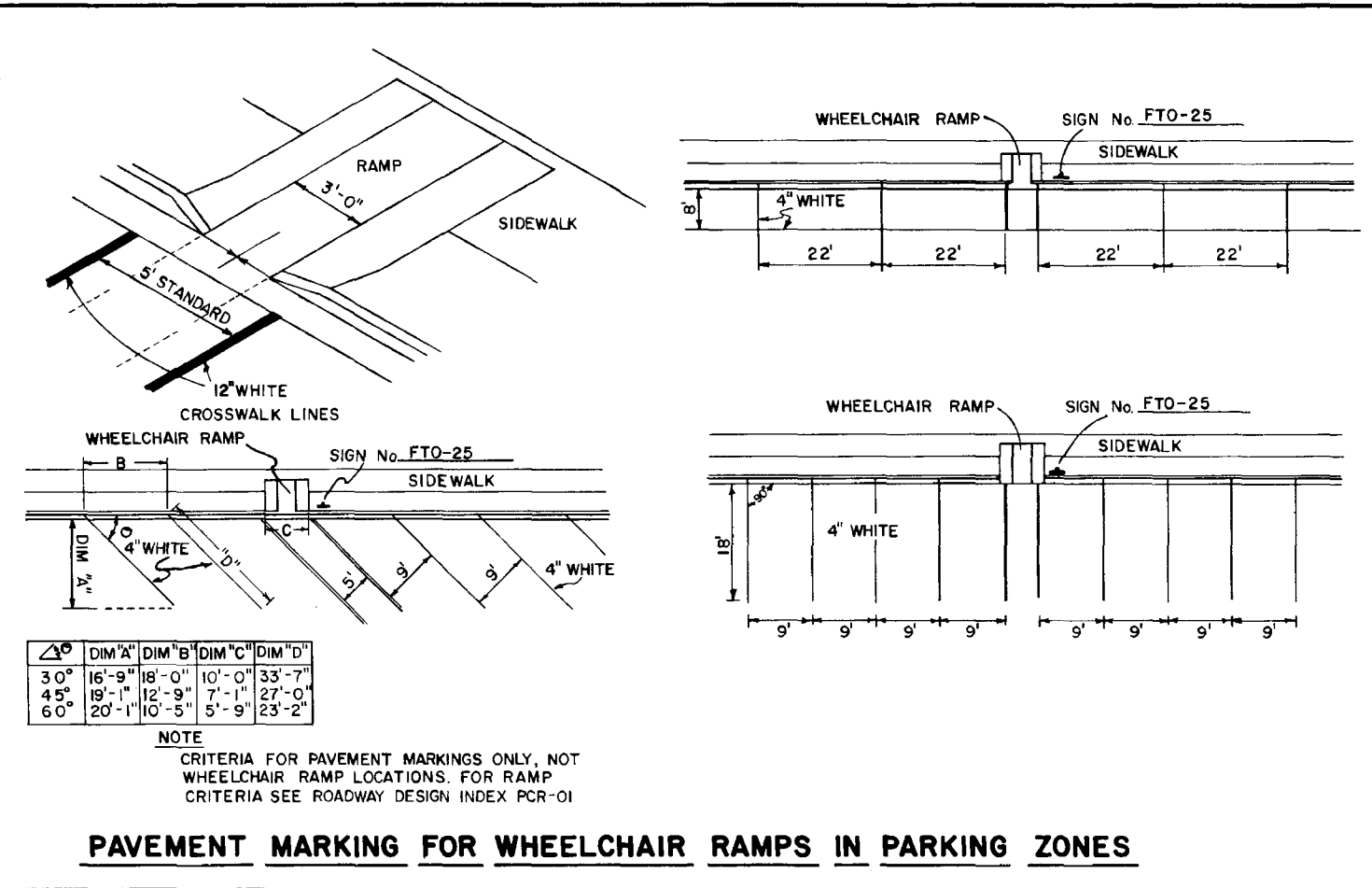
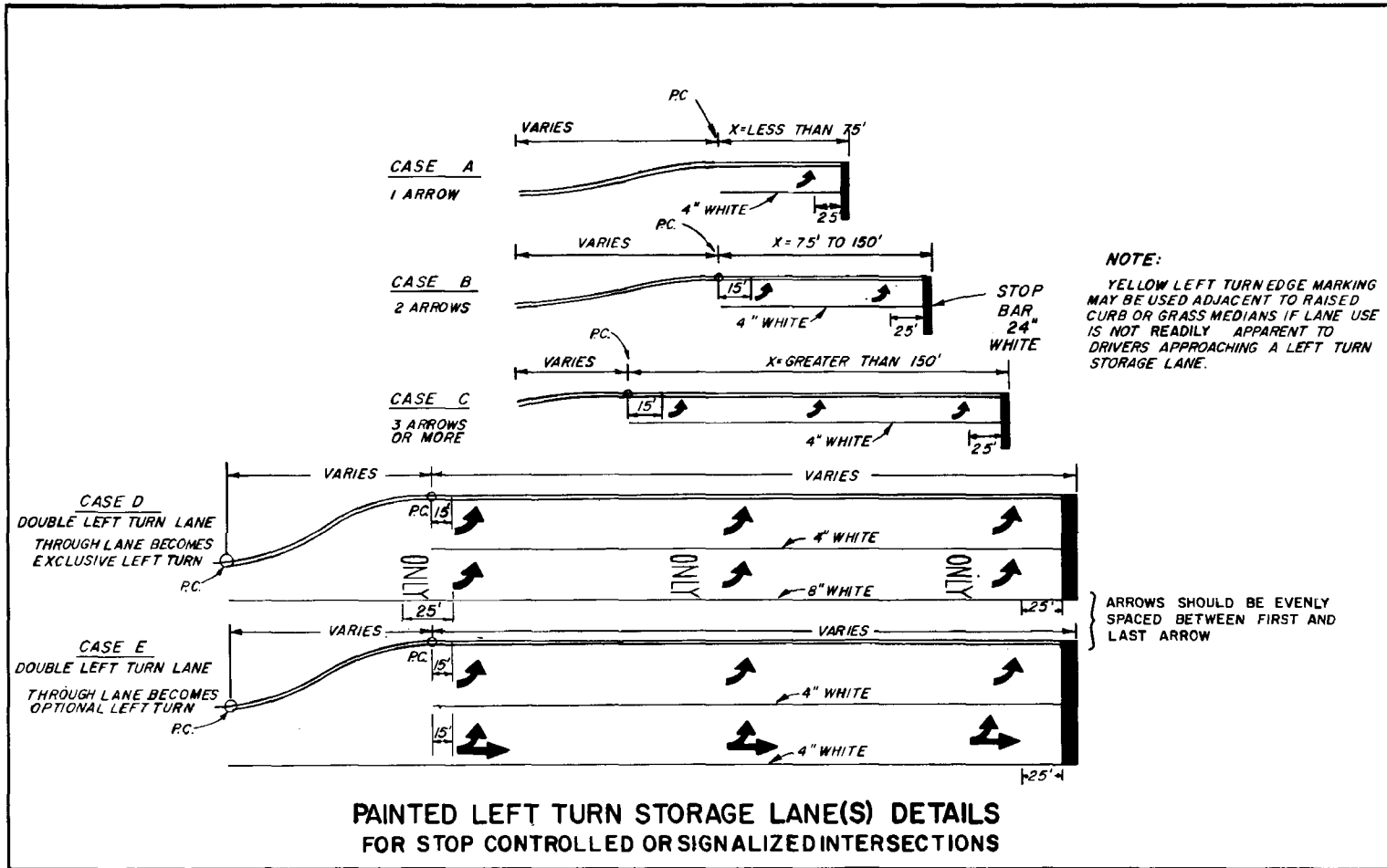


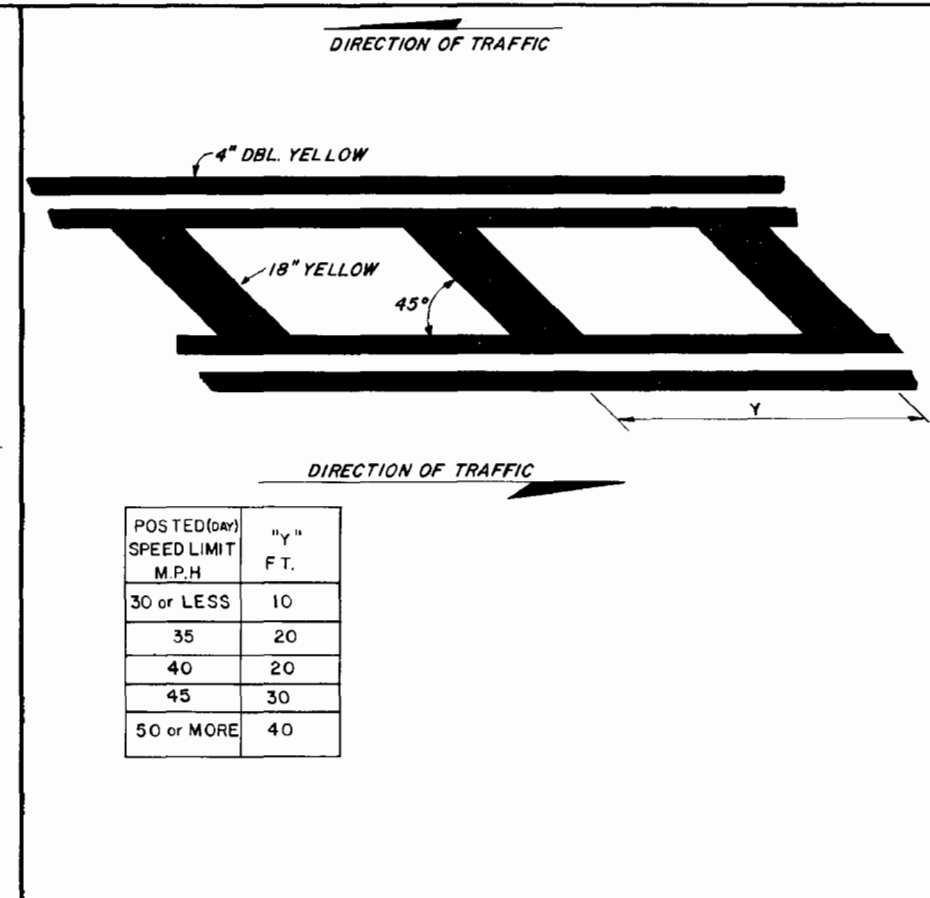
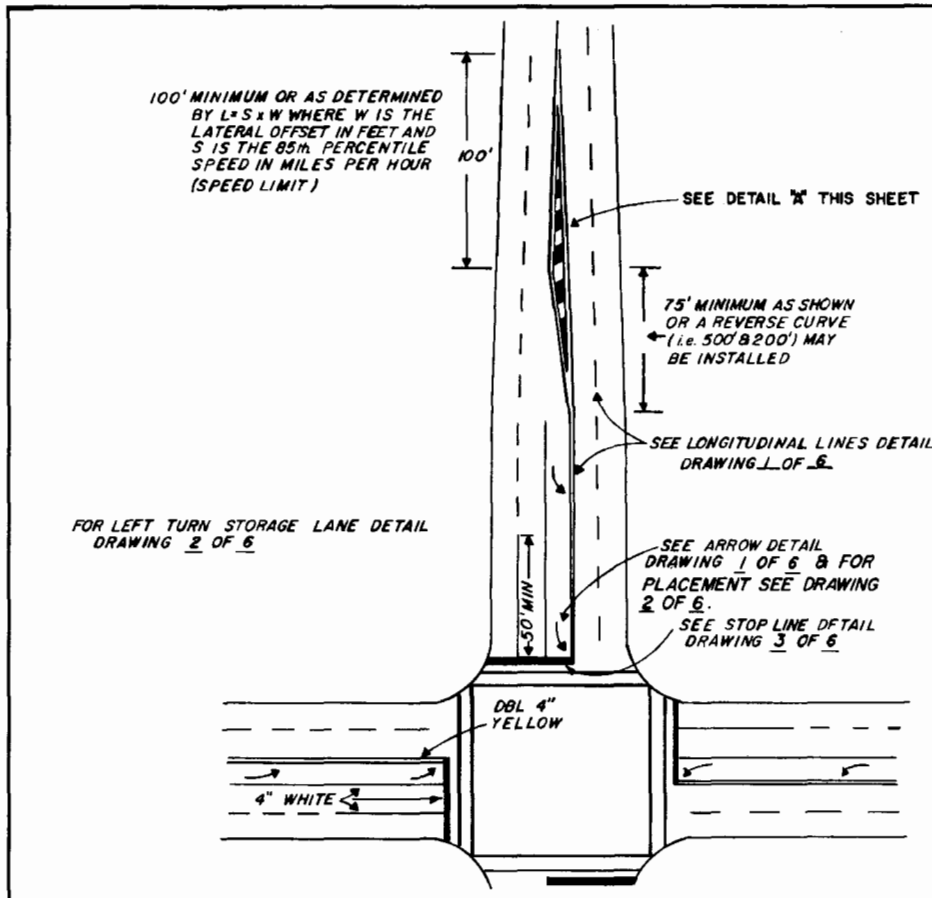
**PAVEMENT MARKINGS FOR INTERSECTIONS
WITH MAJOR AND MINOR ROADS**

FLORIDA DEPARTMENT OF TRANSPORTATION
Traffic Operations

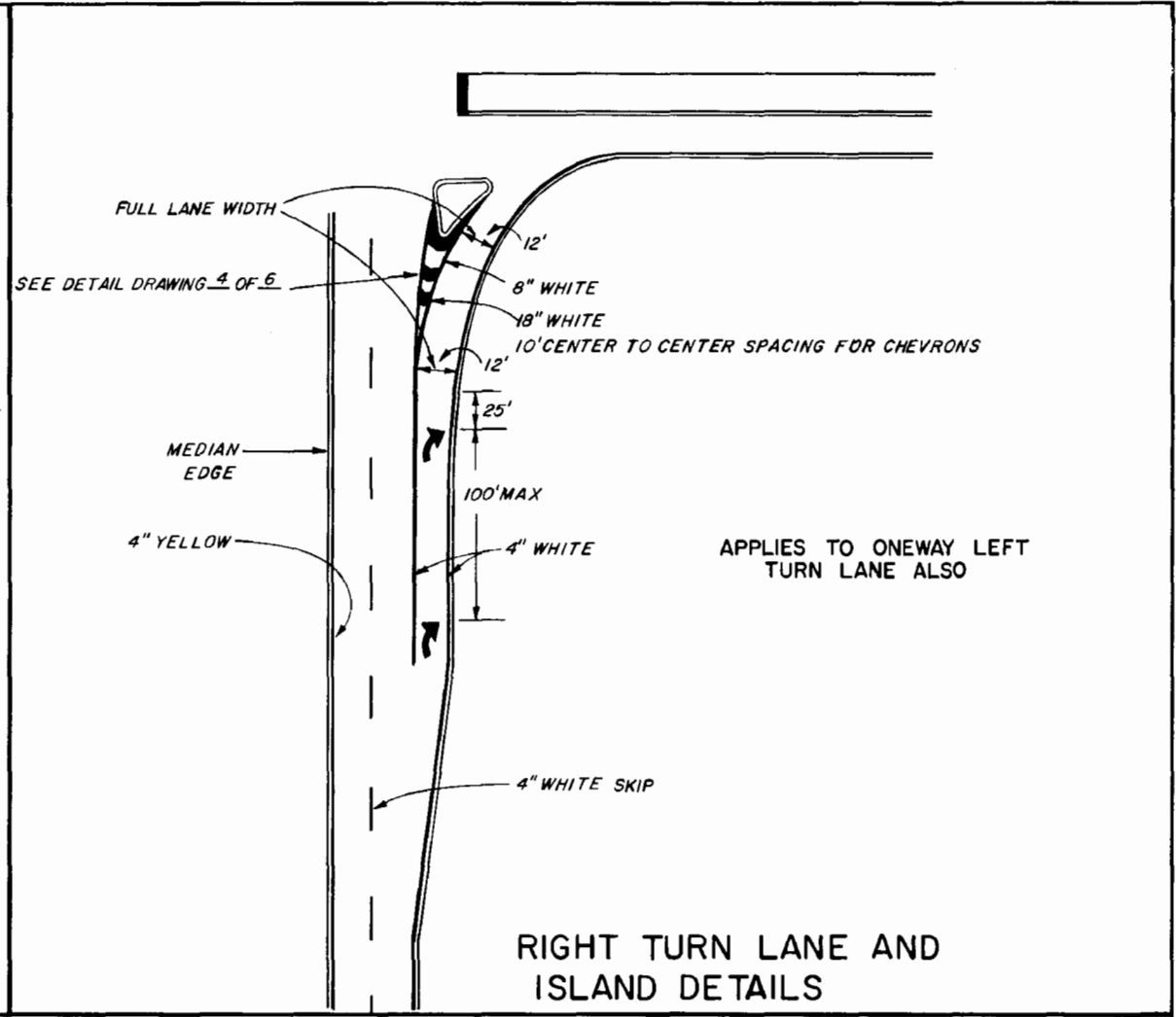
SPECIAL MARKING AREAS

REVISIONS		INITIALS	DATES	Recommended for approval by <i>[Signature]</i> Deputy Traffic Operations Engr.
Dates	Descriptions			
8-16-78	REDRAFTED	Checked by S.M.R.	8-16-78	Approved by <i>[Signature]</i> State Traffic Operations/Engr.
9-27-79	PAVT. MESSAGE & ARROW ADDED. INTERSECTION DETAIL ADDED.	Quantities by		
8-80	REVISE MARKINGS FOR INTERSECTION	Checked by		DRAWING NO. 1 OF 6 INDEX NO. 17346
		Supervised by	K R	





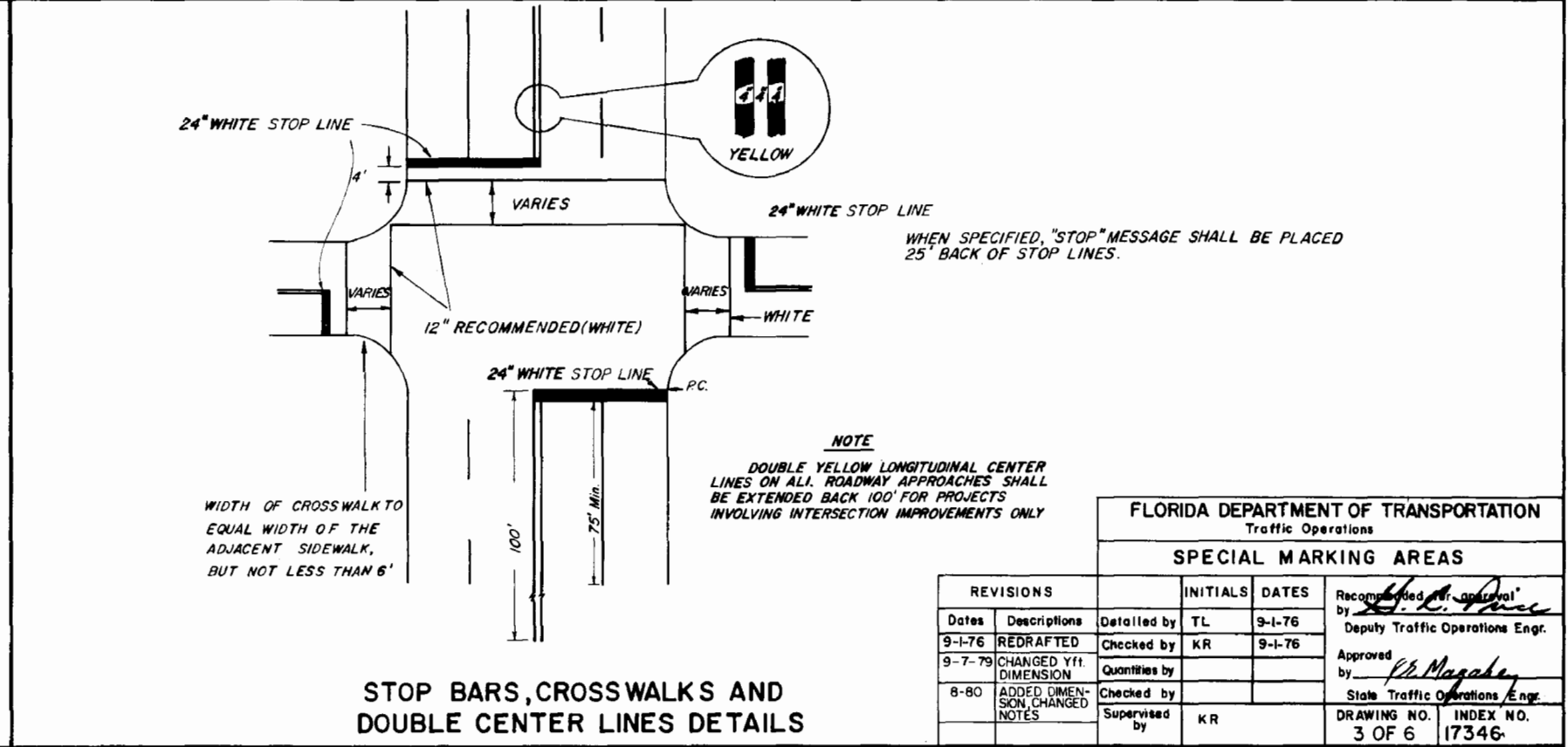
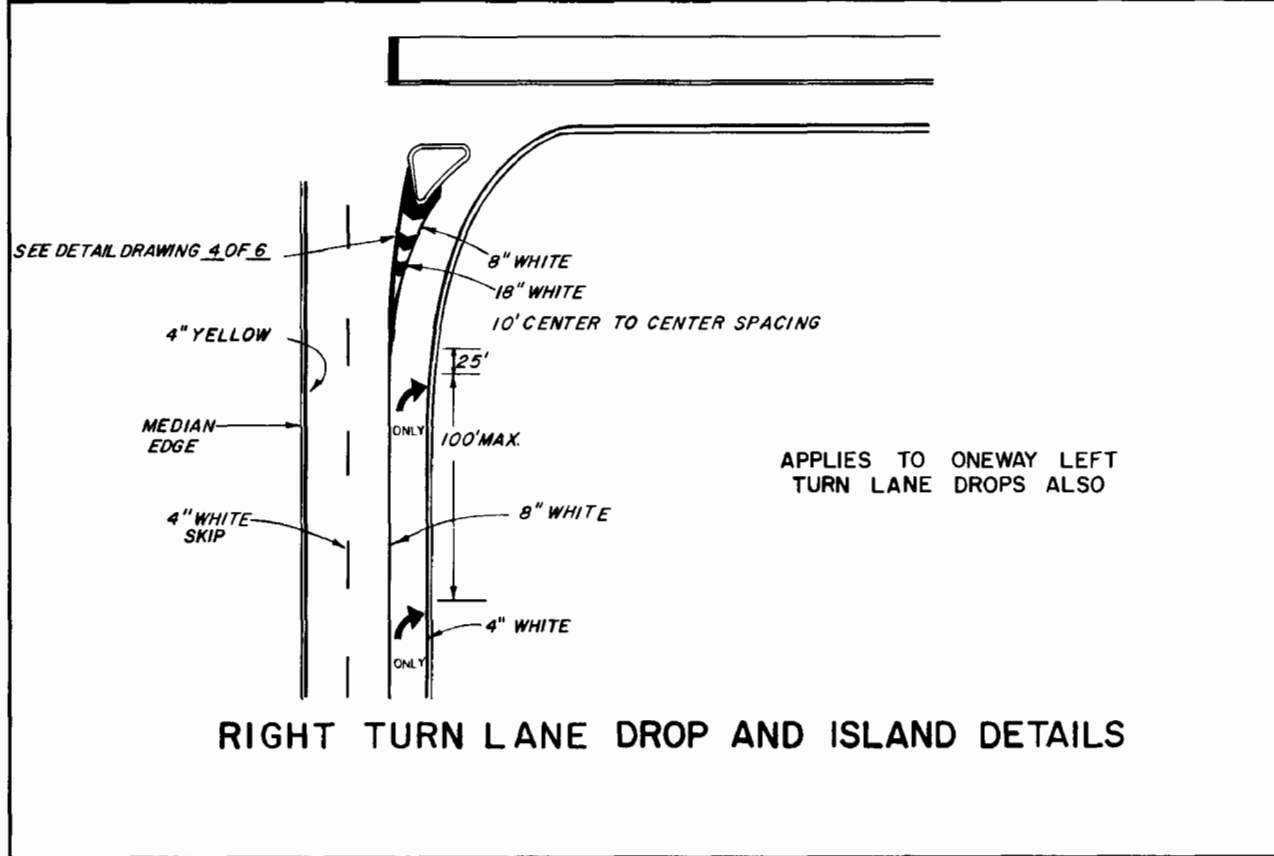
POSTED (DAY) SPEED LIMIT M.P.H.	"Y" F.T.
30 or LESS	10
35	20
40	20
45	30
50 or MORE	40



TYPICAL INTERSECTION 2 THRU LANES PLUS LEFT TURN LANE, WITH CROSSWALK

DETAIL "A"

RIGHT TURN LANE AND ISLAND DETAILS

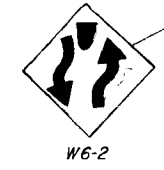


RIGHT TURN LANE DROP AND ISLAND DETAILS

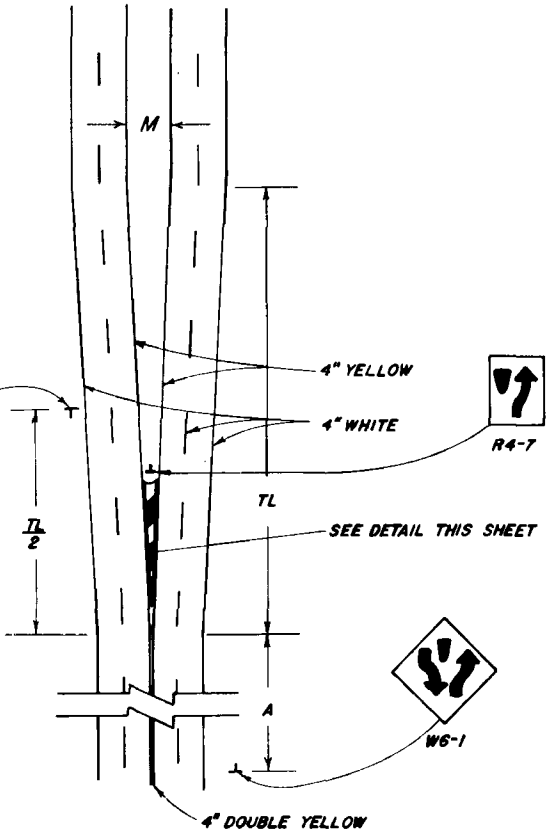
STOP BARS, CROSSWALKS AND DOUBLE CENTER LINES DETAILS

FLORIDA DEPARTMENT OF TRANSPORTATION				Traffic Operations	
SPECIAL MARKING AREAS					
REVISIONS		INITIALS	DATES	Recommended by <i>[Signature]</i>	
9-1-76	REDRAFTED	Checked by	TL	9-1-76	Deputy Traffic Operations Engr.
9-7-79	CHANGED YFL DIMENSION	Quantities by			Approved by <i>[Signature]</i>
8-80	ADDED DIMENSION, CHANGED NOTES	Checked by			State Traffic Operations Engr.
		Supervised by	KR		
				DRAWING NO.	INDEX NO.
				3 OF 6	17346

TAPER LENGTH EQUATION
 $TL = \frac{M}{2} \times S$
 TL = TAPER LENGTH (ft)
 M = MEDIAN WIDTH (ft)
 S = SPEED (M.P.H.)



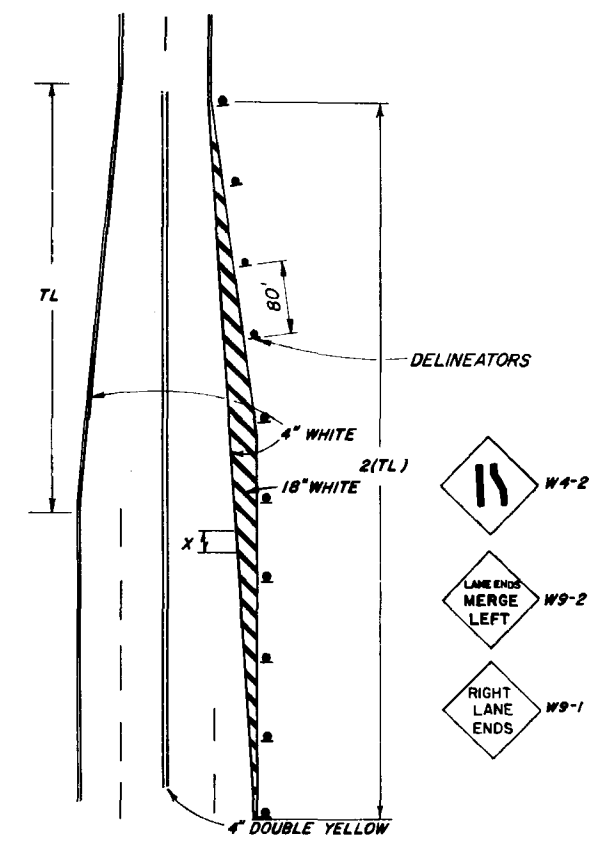
SPEED M.P.H.	A in ft.
55	400
50	350
40	275
30	200
URBAN 50 MIN.	



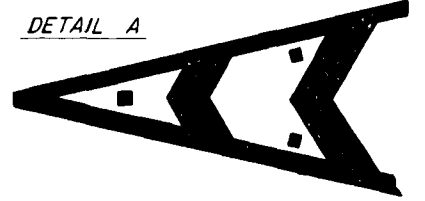
BEGINNING OF A DIVIDED HIGHWAY

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

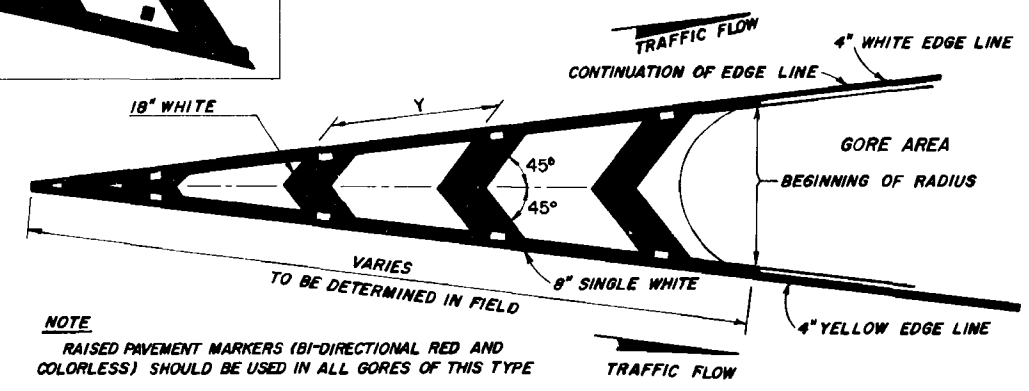
TAPER LENGTH EQUATION
 $TL = 12S$
 TL = TAPER LENGTH (ft)
 S = SPEED (m.p.h.)



4-LANE-2-LANE TRANSITION-NO MEDIAN

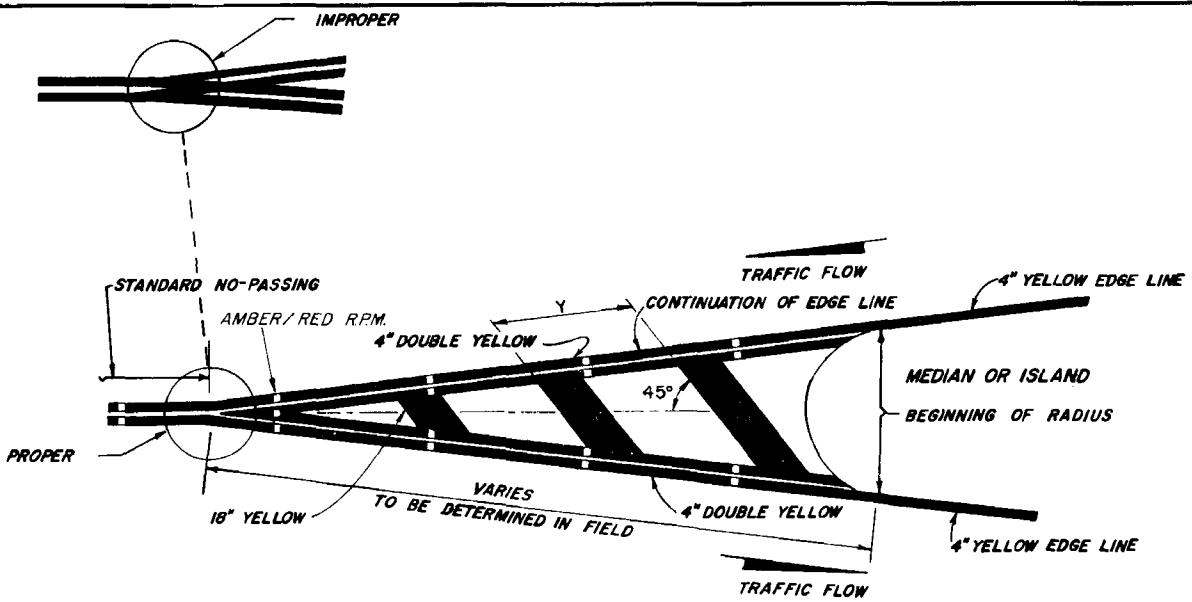


NOTE
 RAISED PAVEMENT MARKERS SHALL BE SET IN THERMOPLASTIC AS SHOWN BELOW, OR SET TWO (2) INCHES INSIDE PAINTED LINE AS SHOWN IN DETAIL A



NOTE
 RAISED PAVEMENT MARKERS (BI-DIRECTIONAL RED AND COLORLESS) SHOULD BE USED IN ALL GORES OF THIS TYPE

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



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

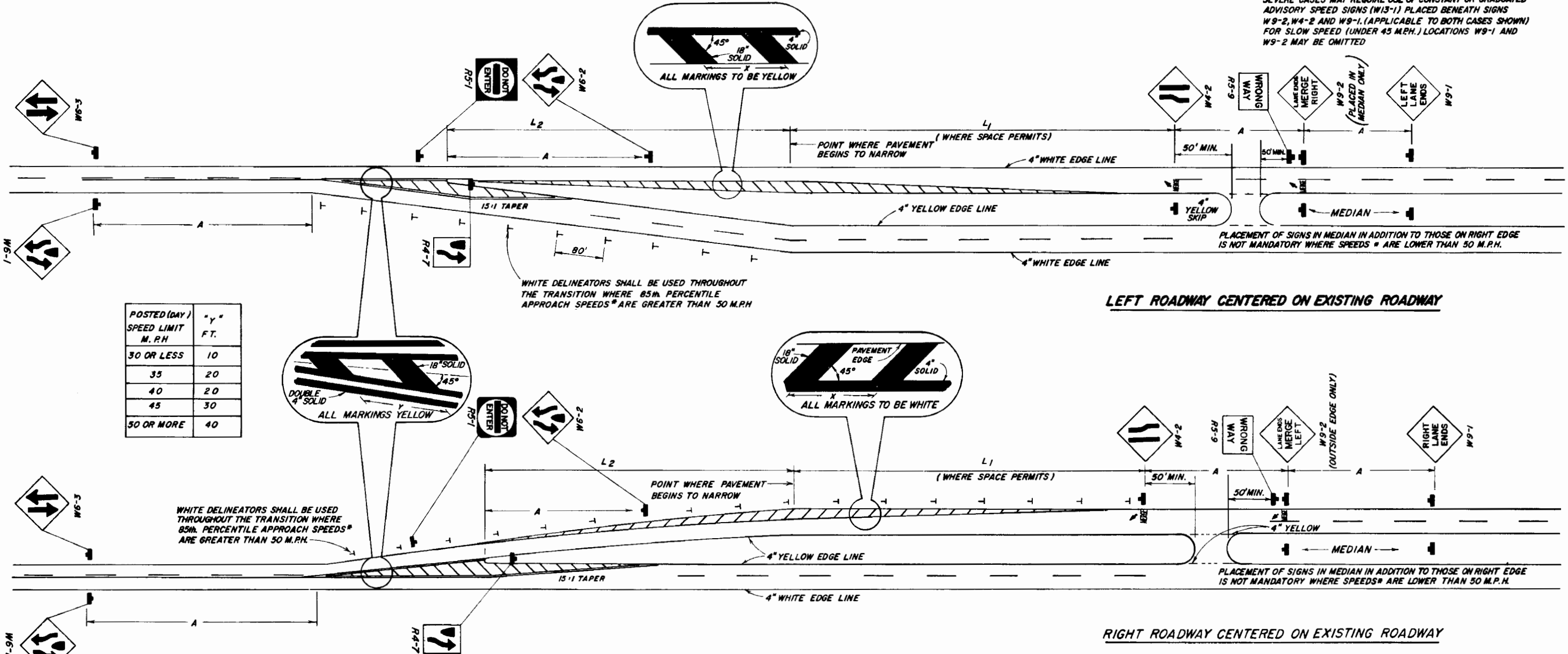
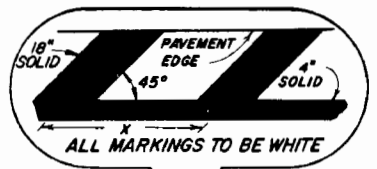
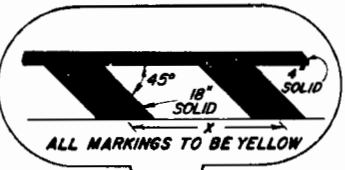
PAVEMENT MARKING FOR TRAFFIC SEPARATION
 (TRAFFIC FLOWS IN OPPOSITE DIRECTION)

FLORIDA DEPARTMENT OF TRANSPORTATION
 Traffic Operations
 SPECIAL MARKING AREAS

REVISIONS			INITIALS	DATES
Dates	Descriptions	Detailed by	SWR	8-19-78
8-19-78	Redrafted	Checked by	KR	8-19-78
8-80	Revise Details	Quantities by		
		Checked by		
		Supervised by		

Recommended for approval by *L. E. Price*
 Deputy Traffic Operations Engr.
 Approved by *R. E. Magadey*
 State Traffic Operations Engr.
 DRAWING NO. 4 OF 6 INDEX NO. 17346

SEVERE CASES MAY REQUIRE USE OF CONSTANT OR GRADUATED ADVISORY SPEED SIGNS (W13-1) PLACED BENEATH SIGNS W9-2, W4-2 AND W9-1. (APPLICABLE TO BOTH CASES SHOWN) FOR SLOW SPEED (UNDER 45 M.P.H.) LOCATIONS W9-1 AND W9-2 MAY BE OMITTED



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

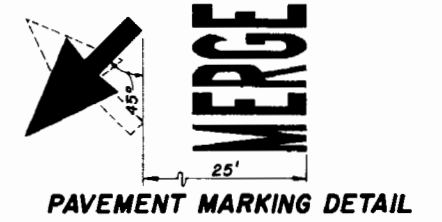
SPEED (M.P.H.)	TRANSITION DISTANCE L ₁							
	LATERAL OFFSET (L ₁ = SxW)							
	8	9	10	11	12	13	14	"X"
30	240	270	300	330	360	390	420	20
35	280	315	350	385	420	455	490	20
40	320	360	400	440	480	520	560	40
45	360	405	450	495	540	585	630	40
50	400	450	500	550	600	650	700	60
55	440	495	550	605	660	715	770	60
60	480	540	600	660	720	780	840	80
65	520	585	650	715	780	845	910	80
70	560	630	700	770	840	910	980	80

PAVEMENT WIDTH TRANSITION (L₂)
 ENDPOINTS OF L₂ ARE THE PHYSICAL NOSE AND POINT AT WHICH PAVED SURFACE BEGINS TO TAPER TO ONE LANE, ON NEWER ROADS L₂ WILL USUALLY BE SIMILAR TO L₁, BUT ON OLDER ROADS MAY BE MUCH LESS. FOR THE RIGHT ROADWAY L₂ BEGINS AT POINT WHERE PAVEMENT WIDTH BEGINS TO NARROW AND CONTINUES TO POINT OF UNIFORM LANE WIDTH.

NOTE
 RAISED PAVEMENT MARKERS ON EDGE LINES THROUGH TRANSITION AREA ARE OPTIONAL.

SPEED (M.P.H.)	"A" (FT.)
70	600
60	475
50	350
40	275
30	200

* PASSENGER CAR, DAYTIME POSTED SPEEDS OR 85th PERCENTILE (USE HIGHER VALUE)



SCHMES FOR TRANSITION FROM 2-LANE TO 4-LANE ROADWAY

* PASSENGER CAR, DAYTIME, POSTED SPEEDS OR 85th PERCENTILE (USE HIGHER VALUE)
 ** LATERAL OFFSET

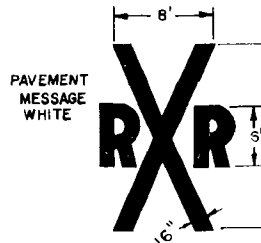
FLORIDA DEPARTMENT OF TRANSPORTATION Traffic Operations			
SPECIAL MARKING AREAS			
REVISIONS		INITIALS	DATES
Dates	Descriptions	Detailed by	8-28-78
8-28-78	REDRAFTED	Checked by	8-28-78
10-15-79	ADDED "MERGE"	Quantities by	
8-80	REVISE DETAILS	Checked by	
		Supervised by	
			K R
Recommended for approval by <i>[Signature]</i>		Deputy Traffic Operations Engr.	
Approved by <i>[Signature]</i>		State Traffic Operations Engr.	
DRAWING NO. 5 OF 6		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.

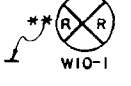
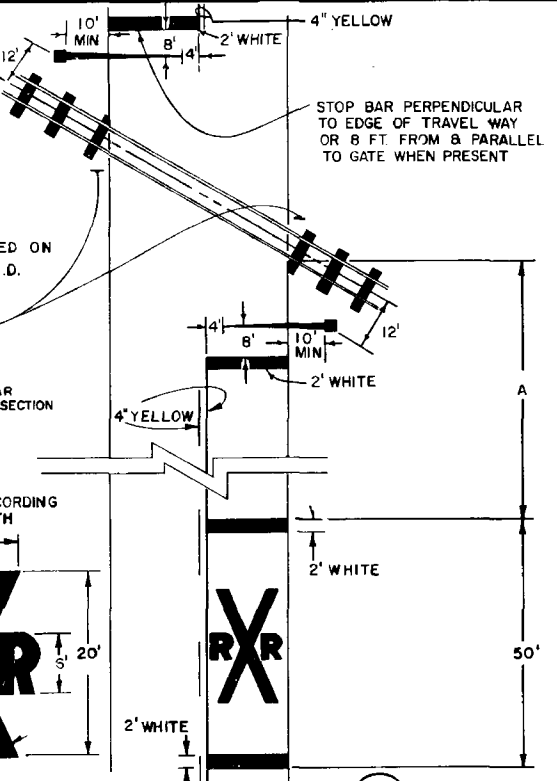
DO NOT STOP ON TRACKS
R8-8
FOR USE NEAR SIGNALIZED INTERSECTION

WIDTH MAY VARY ACCORDING TO LANE WIDTH



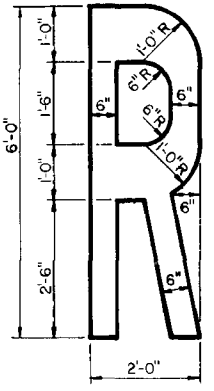
89 s.f.*

* DOES NOT INCLUDE 2' BARS.

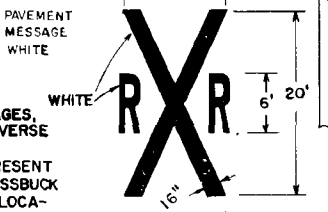


- NOTES**
1. WHEN COMPUTING PAVEMENT MESSAGES, QUANTITIES DO NOT INCLUDE TRANSVERSE LINES.
 2. WHEN DYNAMIC DEVICES ARE NOT PRESENT OR ARE TO BE INSTALLED, THE CROSSBUCK SHALL BE LOCATED AT THE FUTURE LOCATION OF THE RR GATE OR SIGNAL AND GATE IN ACCORDANCE WITH INDEX 17882.

RAILROAD CROSSING AT 2-LANE ROADWAY



WIDTH MAY VARY ACCORDING TO LANE WIDTH



89 s.f.*

* DOES NOT INCLUDE 2' BARS.

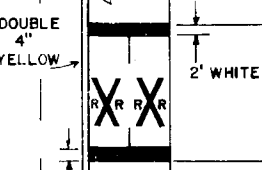
- NOTES**
1. WHEN COMPUTING PAVEMENT MESSAGES, QUANTITIES DO NOT INCLUDE TRANSVERSE LINES.
 2. WHEN DYNAMIC DEVICES ARE NOT PRESENT OR ARE TO BE INSTALLED, THE CROSSBUCK SHALL BE LOCATED AT THE FUTURE LOCATION OF THE RR GATE OR SIGNAL AND GATE IN ACCORDANCE WITH INDEX 17882.

RAILROAD CROSSING AT 4-LANE ROADWAY

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

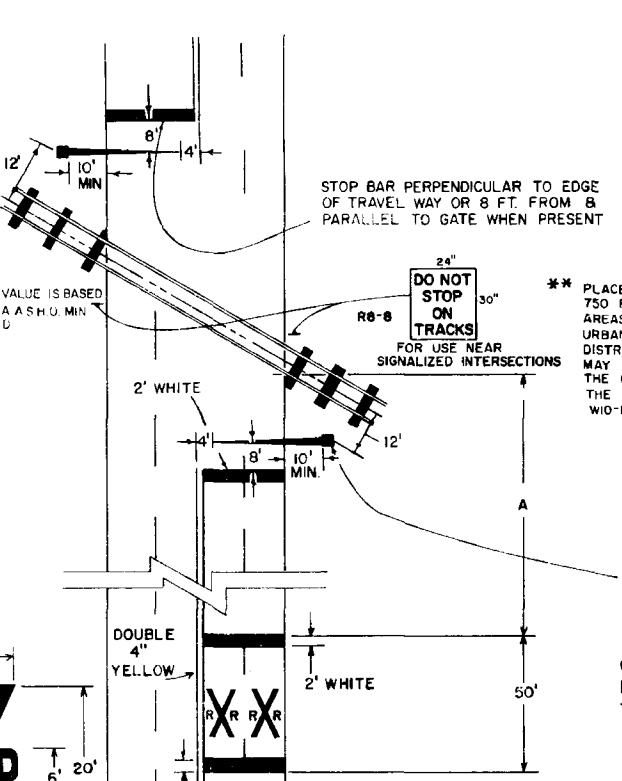
"A" VALUE IS BASED ON A.A.S.H.O. MIN. S.S.D.

DO NOT STOP ON TRACKS
R8-8
FOR USE NEAR SIGNALIZED INTERSECTIONS



89 s.f.*

* DOES NOT INCLUDE 2' BARS.



** PLACEMENT OF THE W10-1 SIGN SHALL NORMALLY BE PLACED 750 FEET OR 1000' 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 WHERE STREET INTERSECTIONS OCCUR BETWEEN THE R.R. PAVEMENT MESSAGE & THE TRACKS AN ADDITIONAL W10-1 & AN ADDITIONAL PAVEMENT MESSAGE SHOULD BE USED.

THE RAILROAD PROTECTION DEVICE IS TO BE LOCATED WITHIN 12 FT. OF THE RAILROAD CENTERLINE

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

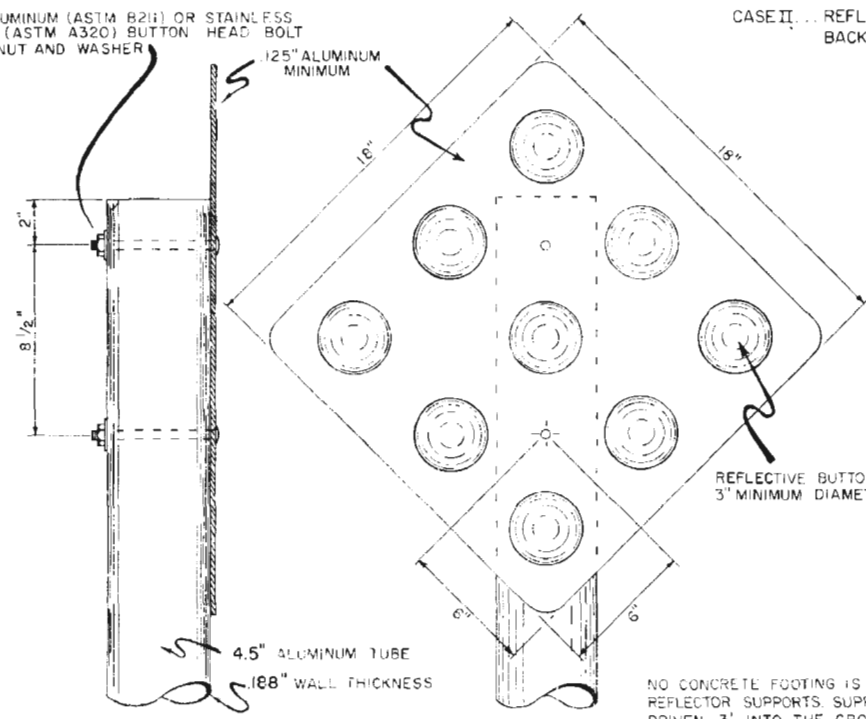
FLORIDA DEPARTMENT OF TRANSPORTATION
Traffic Operations

SPECIAL MARKING AREAS

REVISIONS	INITIALS	DATES	Recommended by	Approval
Dates	Descriptions	Detailed by	T.L.	9-1-76
8-16-78	REDRAFTED	Checked by	K.R.	9-1-76
8-27-79	PAVT. MARKING REMOVED	Quantities by		
8-80	REVISE "R"	Checked by		
	Supervised by		KR	

DRAWING NO. 6 OF 6
INDEX N 17346

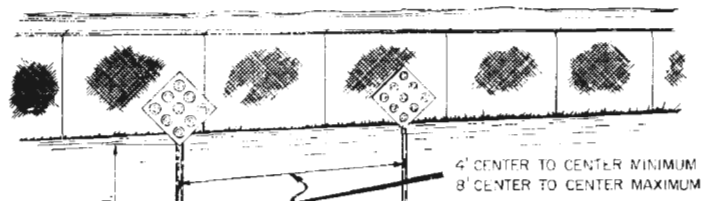
3/8" ALUMINUM (ASTM B211) OR STAINLESS STEEL (ASTM A320) BUTTON HEAD BOLT WITH NUT AND WASHER



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)

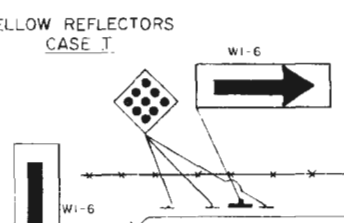
NO CONCRETE FOOTING IS REQUIRED FOR REFLECTOR SUPPORTS. SUPPORTS SHALL BE DRIVEN 3' INTO THE GROUND.



CASE II
RED REFLECTORS

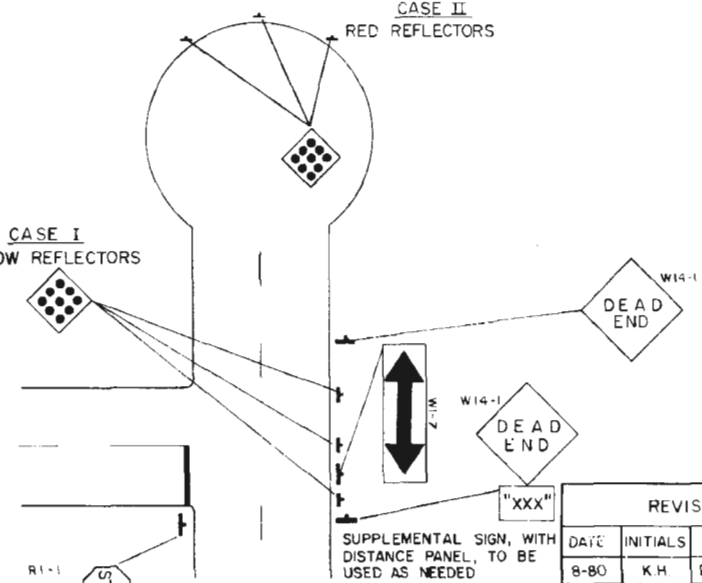
DEAD END SIGN SHALL BE POSTED A SUFFICIENT ADVANCE DISTANCE TO PERMIT THE VEHICLE OPERATOR TO AVOID THE DEAD END BY TURNING OFF IF POSSIBLE, AT THE NEAREST INTERSECTING STREET

YELLOW REFLECTORS
CASE I



CASE II
RED REFLECTORS

CASE I
YELLOW REFLECTORS



NOTE: For Pavement Marking See Index No. 17346
NO GUARDRAIL IS REQUIRED UNLESS SPECIAL FIELD CONDITIONS REQUIRE ITS USE

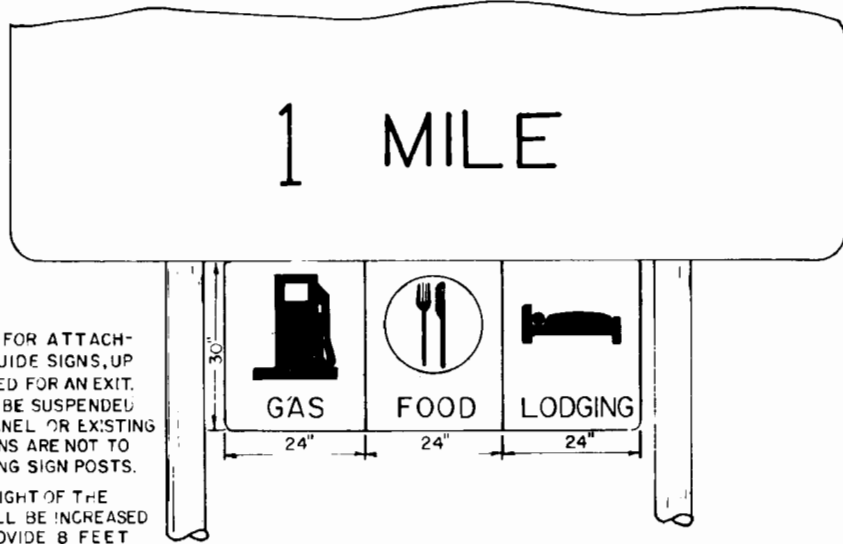
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TRAFFIC CONTROLS FOR STREET TERMINATIONS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	
GW	11-4-74	By <i>Larry C. Puse</i> DEPUTY TRAFFIC OPERATIONS ENGR	
DETAILED BY		APPROVED	
CHECKED BY		By <i>P. J. Magada</i> 10/21/74 STATE TRAFFIC OPERATIONS ENGR.	
QUANTITIES BY		DRAWING NO	INDEX NO
CHECKED BY		1 of 1	17349
SUPERVISED BY			

REVISIONS		
DATE	INITIALS	DESCRIPTION
8-80	K.H.	DELETE SIGN DETAILS

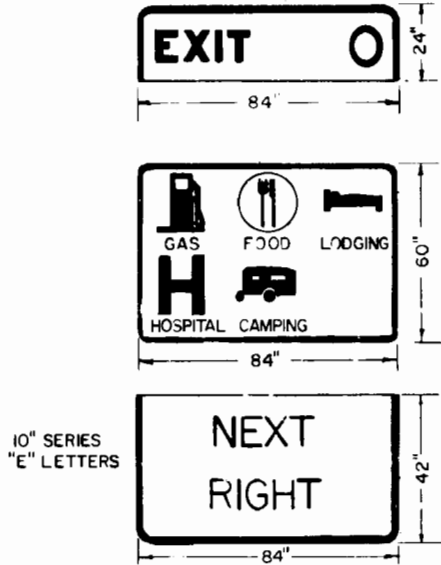
SUPPLEMENTAL SIGN, WITH DISTANCE PANEL, TO BE USED AS NEEDED

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.

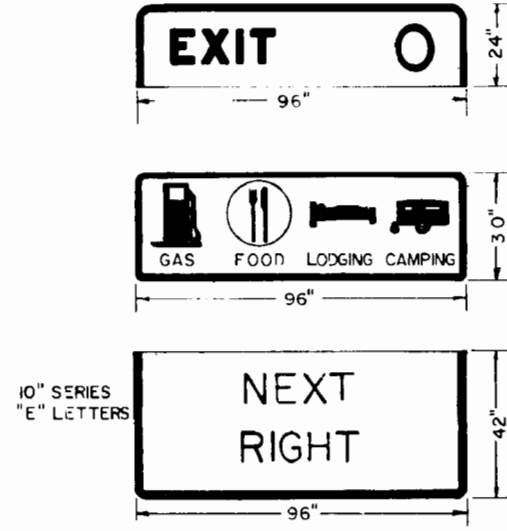
THE MOUNTING HEIGHT OF THE ADVANCE GUIDE SIGN SHALL BE INCREASED WHERE NECESSARY TO PROVIDE 8 FEET BETWEEN THE LEVEL OF THE PAVEMENT EDGE AND THE BOTTOM OF THE GUIDE SIGN, PRIOR TO MOUNTING THE SUPPLEMENTARY PANEL.



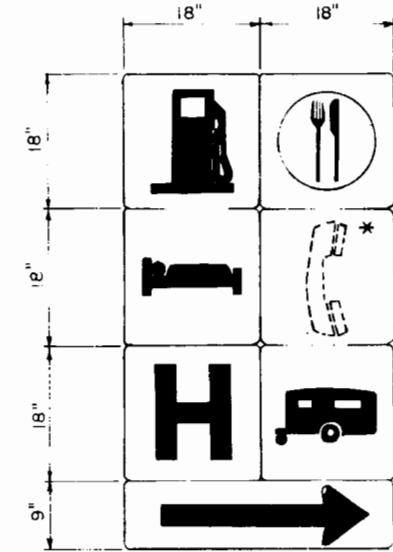
DETAIL "A"
 (1 TO 3 SYMBOLS ON SEPARATE PANELS)



10" SERIES "E" LETTERS
 DETAIL "B"
 (4 TO 6 SYMBOLS)



10" SERIES "E" LETTERS
 DETAIL "C"
 (4 SYMBOLS)



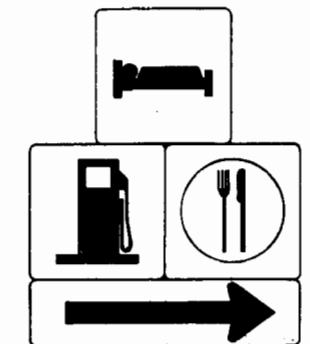
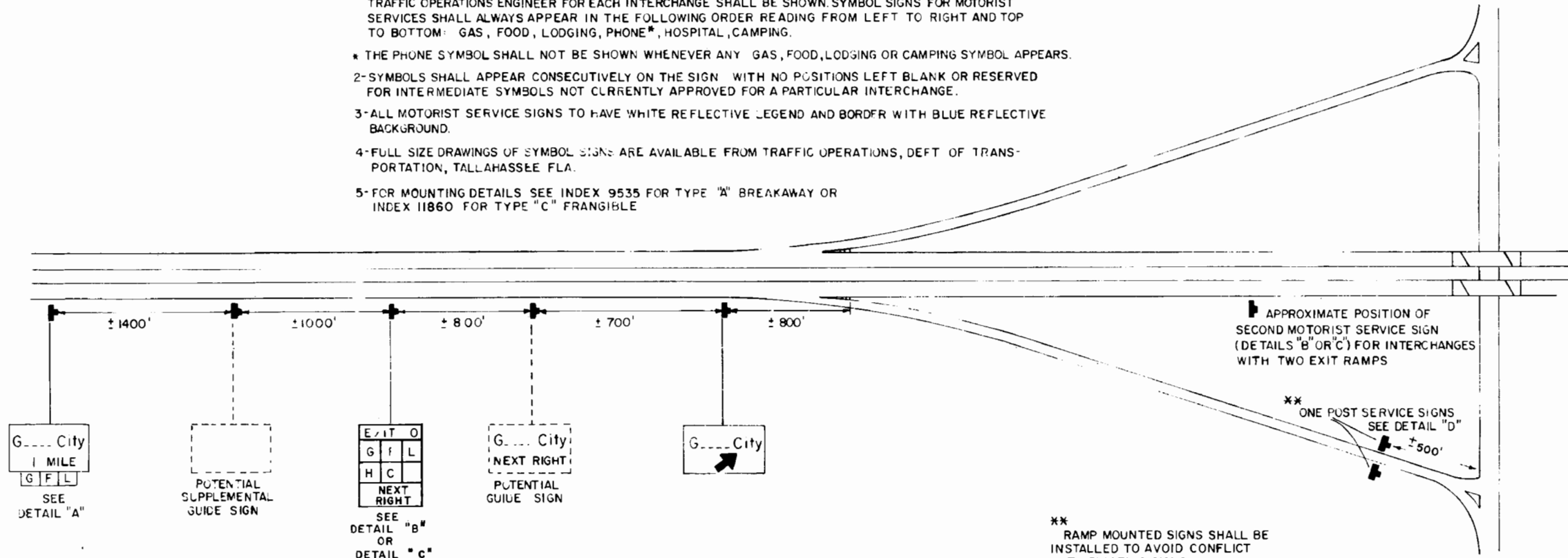
DETAIL "D"
 (EACH SYMBOL ON SEPARATE PANEL)

- 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".

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

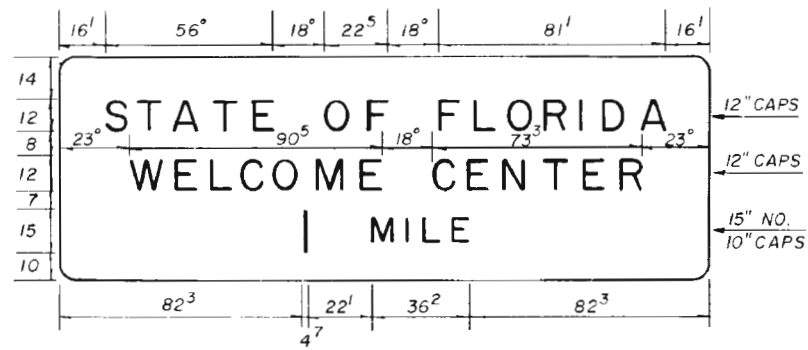
NOTE
 FOR ATTACHMENT DETAILS TO ADVANCE GUIDE SIGN SEE INDEX NO. 11671



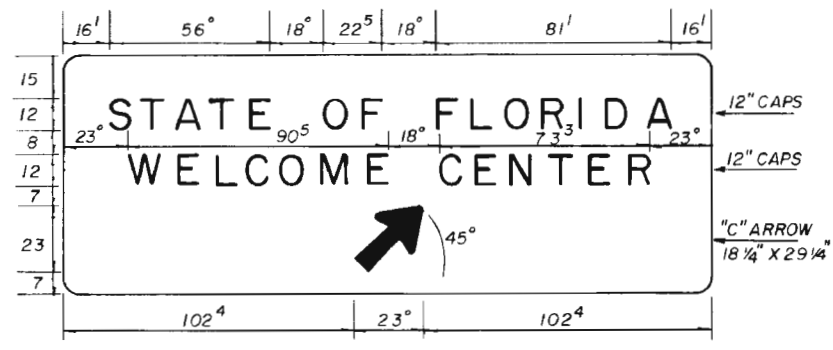
WHEN AN ODD NUMBER OF SYMBOL PANELS ARE USED THE TOP PANEL SHALL BE CENTERED

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

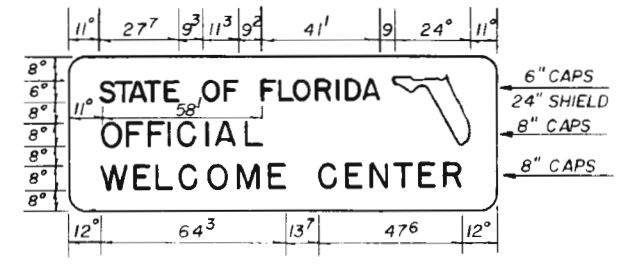
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
SIGNING FOR MOTORIST SERVICES			
DETAILED BY	INITIALS	DATES	RECOMMENDED FOR APPROVAL
CHECKED BY	WB	3-76	BY <i>Dary C. Pua</i> DEPUTY TRAFFIC OPERATIONS ENGR
QUANTITIES BY			APPROVED
CHECKED BY	K.R.	3-76	BY <i>P.E. Magada 10/1/79</i> STATE TRAFFIC OPERATIONS ENGR
SUPERVISED BY	K.R.		DRAWING NO 1 of 1
			INDEX NO 17350



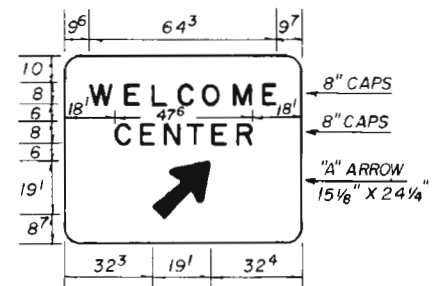
SIGN NO. FTO-17
 6'-6" x 19'-0"
 3" BOR. 9" RAD.
 BLUE REFL. BACKGROUND
 WHITE REFL. LEGEND & BORDER



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

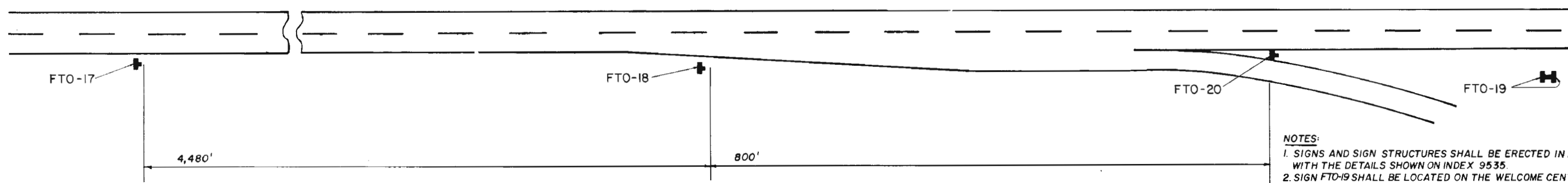


SIGN NO. FTO-19
 4'-6" x 12'-6"
 2" BOR. 9" RAD.
 BLUE REFL. BACKGROUND
 WHITE REFL. LEGEND & BORDER
 ORANGE REFL. STATE SILHOUETTE
 (SIGN NO. FTO-19 TO BE PAID FOR WITH FUNDS OTHER THAN D.O.T.)



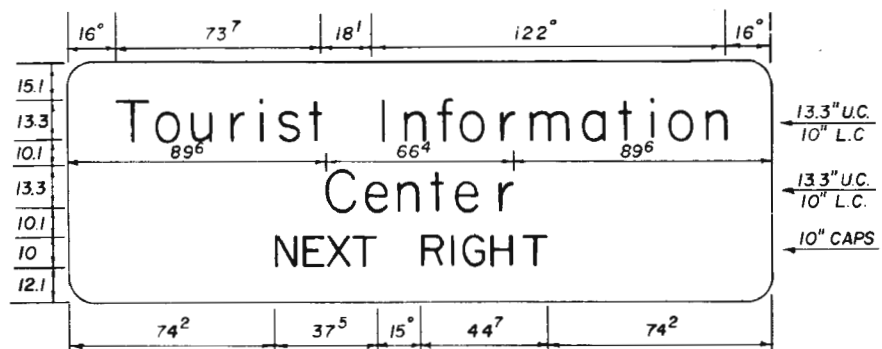
SIGN NO. FTO-20
 5'-6" x 7'-0"
 2" BOR. 9" RAD.
 BLUE REFL. BACKGROUND
 WHITE REFL. LEGEND & BORDER

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



- NOTES:**
- SIGNS AND SIGN STRUCTURES SHALL BE ERECTED IN ACCORDANCE WITH THE DETAILS SHOWN ON INDEX 9535.
 - SIGN FTO-19 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).
 - SIGN FTO-17, 18, 19 SHALL BE LOCATED ON LIMITED ACCESS HIGHWAYS ONLY.
 - DETAIL OF FLORIDA SYMBOL IS AVAILABLE ON REQUEST FROM TRAFFIC OPERATIONS OFFICE OF D.O.T.

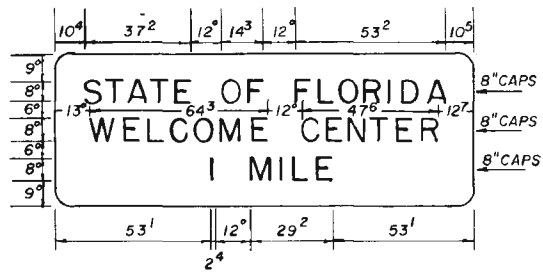
NOTE:
 ROADWAY NOT DRAWN TO SCALE
 DISTANCES SHOWN ARE APPROPRIATE FOR ADEQUATE DRIVER COMMUNICATION BUT MAY BE ALTERED SLIGHTLY IF FIELD CONDITIONS REQUIRE.



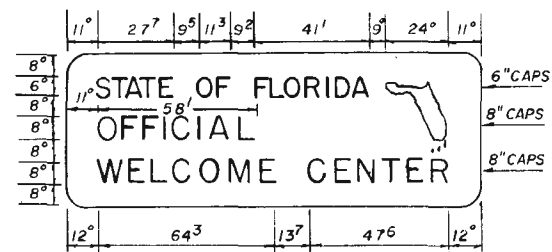
SIGN NO. FTO-21
 7'-0" x 20'-6"
 3" BOR. 9" RAD.
 NOTE: SIGN SHALL HAVE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED LEGEND & BORDER. SIGN FTO-21 SHALL BE USED AS A SUPPLEMENTAL GUIDE SIGN AT INTERCHANGES WHICH HAVE A TOURIST INFORMATION CENTER APPROVED FOR SUCH SIGNING (LOCATE HALF-WAY BETWEEN NORMAL GUIDE SIGNS)

REVISIONS		
DATE	INITIALS	DESCRIPTION

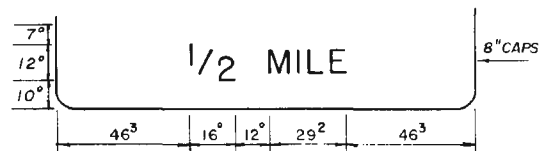
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
WELCOME CENTER SIGNING FOR LIMITED ACCESS HIGHWAYS			
DETAILED BY	INITIALS	DATES	RECOMMENDED FOR APPROVAL
CHECKED BY	W.B.	6-75	By Gary C. Price DEPUTY TRAFFIC OPERATIONS ENGR
QUANTITIES BY			APPROVED
CHECKED BY			By R. Magada STATE TRAFFIC OPERATIONS ENGR
SUPERVISED BY	K.R.	6-75	DRAWING NO. 1 OF 2 INDEX NO. 17351



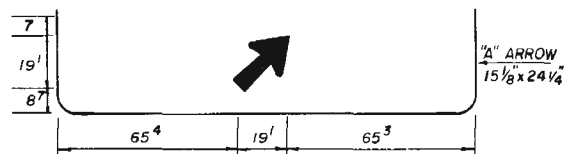
SIGN NO. FTO-22A
 4'-6" x 12'-6"
 2" BOR.-9" RAD.
 BLUE REFL. BACKGROUND
 WHITE REFL. LEGEND & BORDER



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



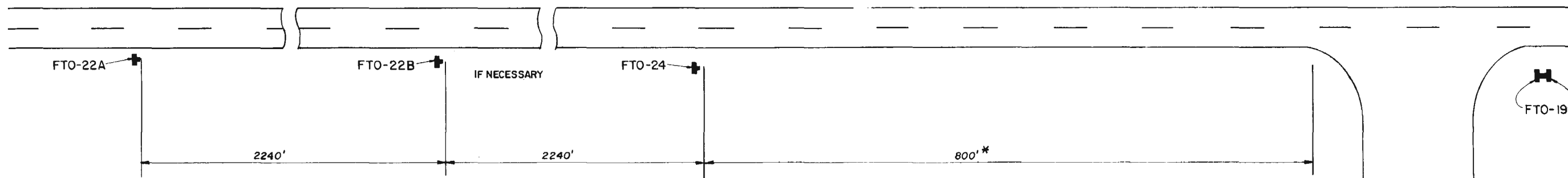
SIGN NO. FTO-22B
 5'-0" x 12'-6"
 2" BOR.-9" RAD.



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 FTO-19 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

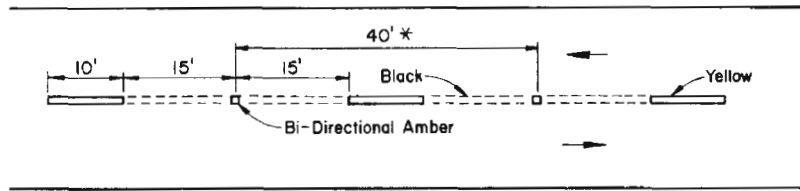
* 800' MAXIMUM FOR RURAL CONDITIONS
 50' MINIMUM FOR CONGESTED AREAS

NOTE
 EITHER ONE BUT NOT BOTH OF SIGNS FTO-22A OR B
 SHOULD BE USED DEPENDING ON SPEED, ROADSIDE
 DEVELOPMENT & GEOMETRIC CONDITIONS.

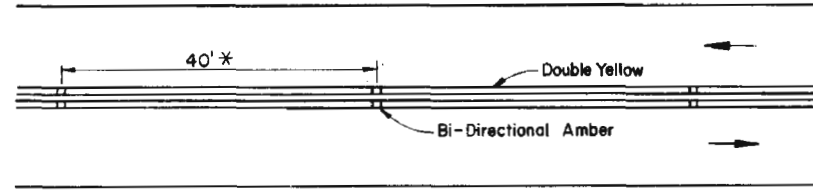
REVISIONS		
DATE	INITIALS	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
WELCOME CENTER SIGNING FOR PRIMARY HIGHWAYS			
RECOMMENDED FOR APPROVAL	INITIALS	DATES	BY
DETAILED BY	W.B.	6-75	Darcy C. Poise DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY			
QUANTITIES BY			
CHECKED BY			
SUPERVISED BY	K.R.	6-75	APPROVED R. S. Magada STATE TRAFFIC OPERATIONS ENGR.
DRAWING NO.	INDEX NO.	DRAWING NO. INDEX NO.	
2 OF 2	17351	2 OF 2 17351	

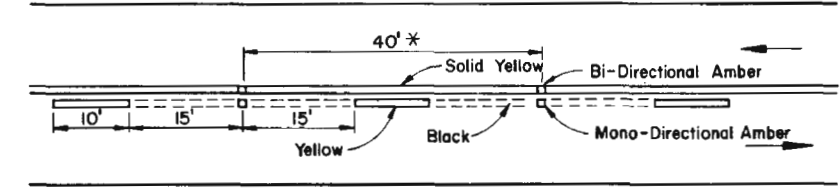
Alternating Skip Line



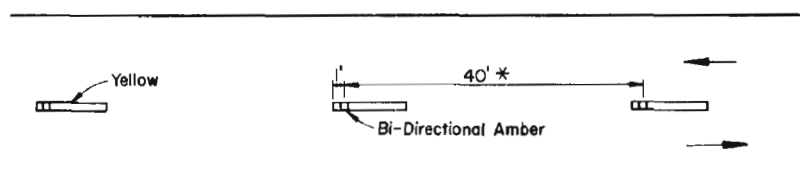
Double Solid Line



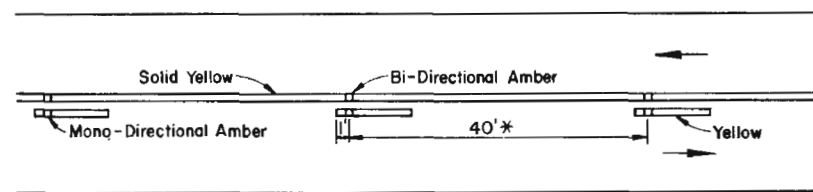
Solid Line With Alternating Skip



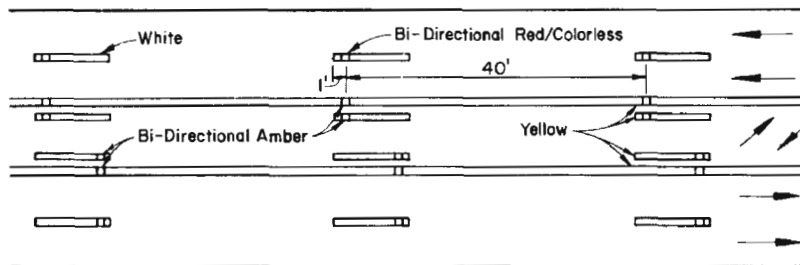
Skip Line



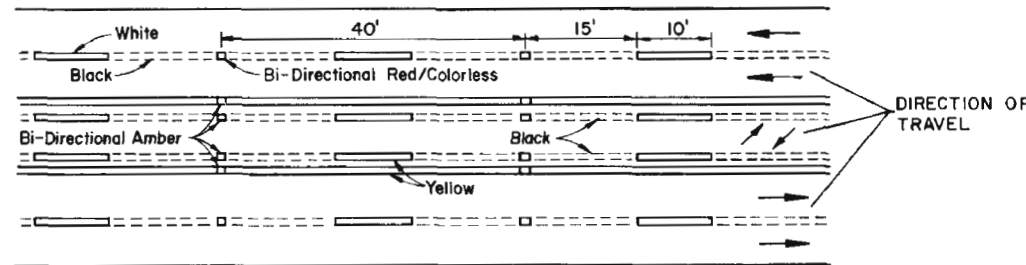
Solid Line With Skip



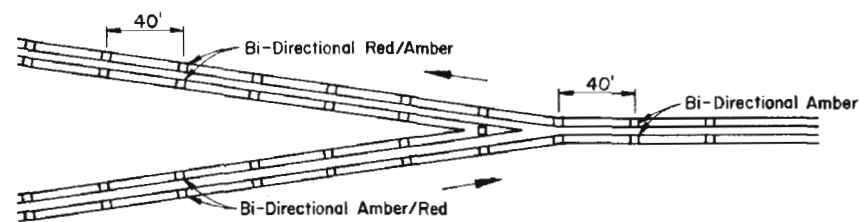
Skip Line With Two Way Left Turn Lane



Alternating Skip Line With Two Way Left Turn Lane

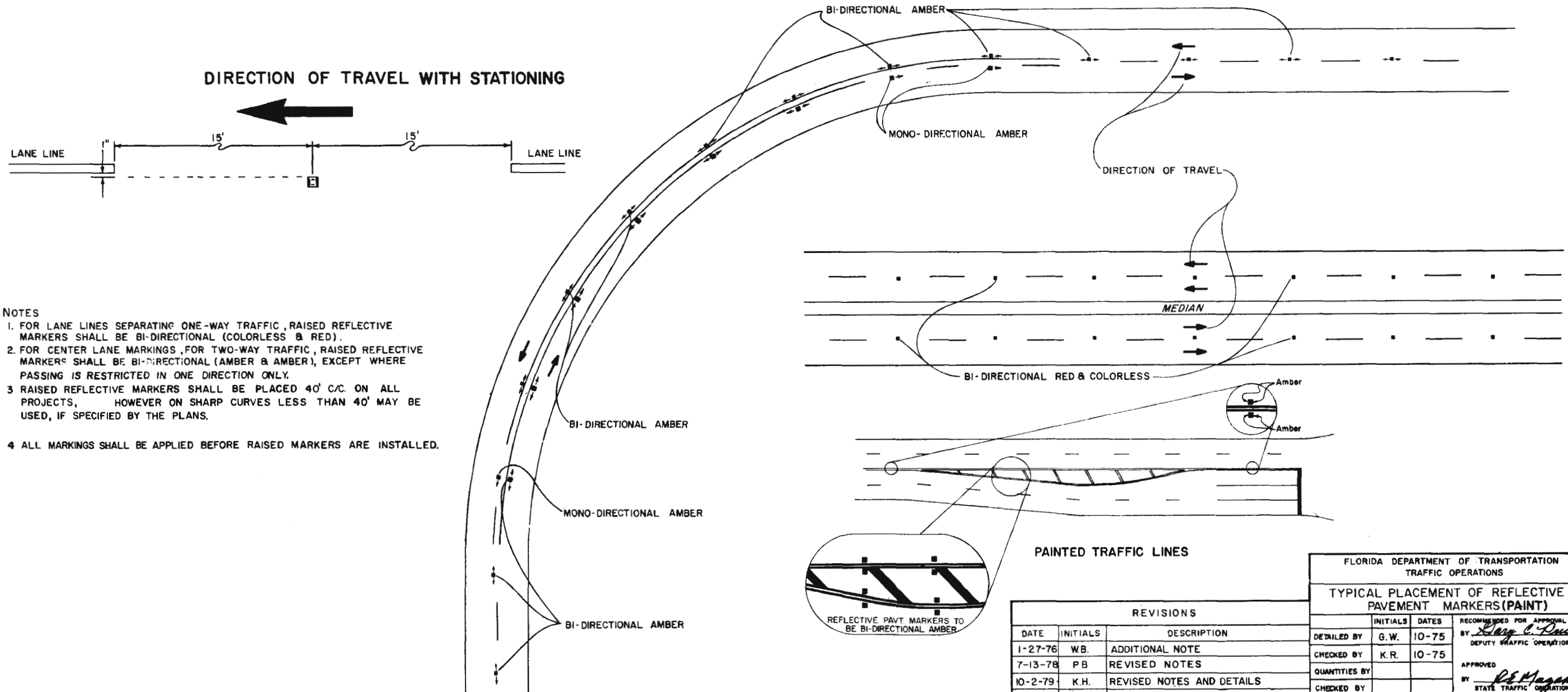
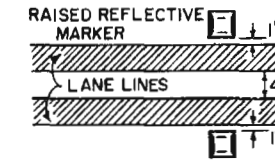


* Note:
 Reflective Pavement Markers shall be placed 40' c/c on all projects, however on sharp curves less than 40' may be used, if specified by the plans.
 For Pavement Arrow Requirements see Index 17346.



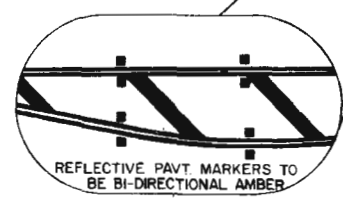
FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS IN THERMOPLASTIC			
	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	K.H.	10-79	BY <i>Larry C. Puce</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY	K.R.	10-79	APPROVED
QUANTITIES BY			BY <i>R. Magallon 10/31/79</i> STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY			Drawing No. Index No.
SUPERVISED BY			1 of 2 17352

REVISIONS		
DATE	INITIALS	DESCRIPTIONS



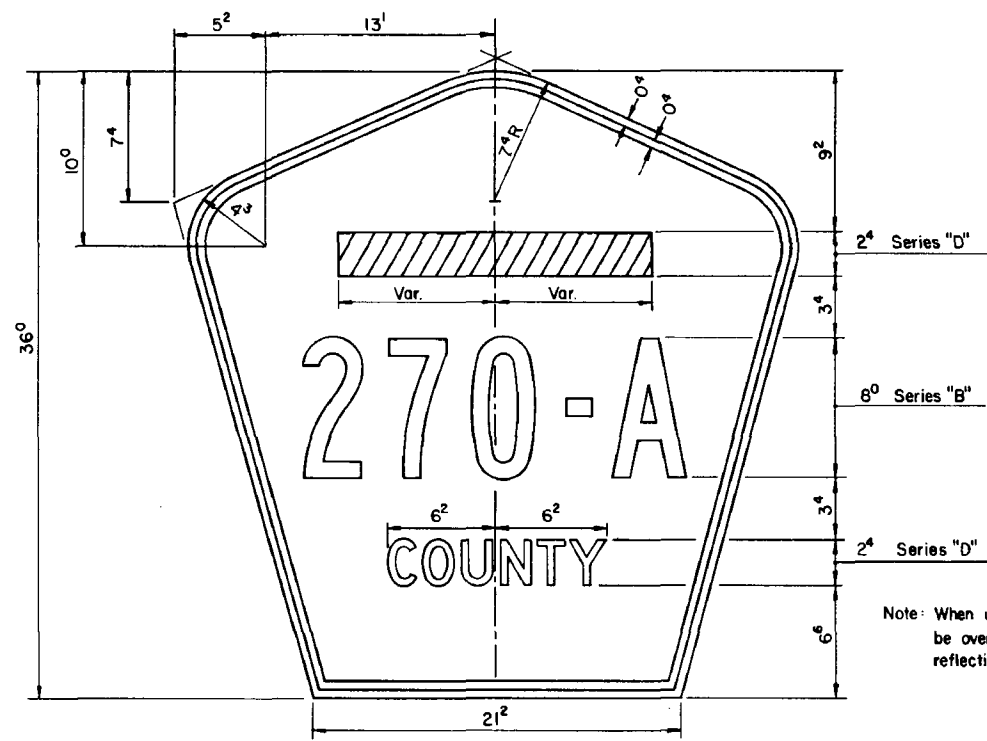
- NOTES
1. FOR LANE LINES SEPARATING ONE-WAY TRAFFIC, RAISED REFLECTIVE MARKERS SHALL BE BI-DIRECTIONAL (COLORLESS & RED).
 2. FOR CENTER LANE MARKINGS, FOR TWO-WAY TRAFFIC, RAISED REFLECTIVE MARKERS SHALL BE BI-DIRECTIONAL (AMBER & AMBER), EXCEPT WHERE PASSING IS RESTRICTED IN ONE DIRECTION ONLY.
 3. 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



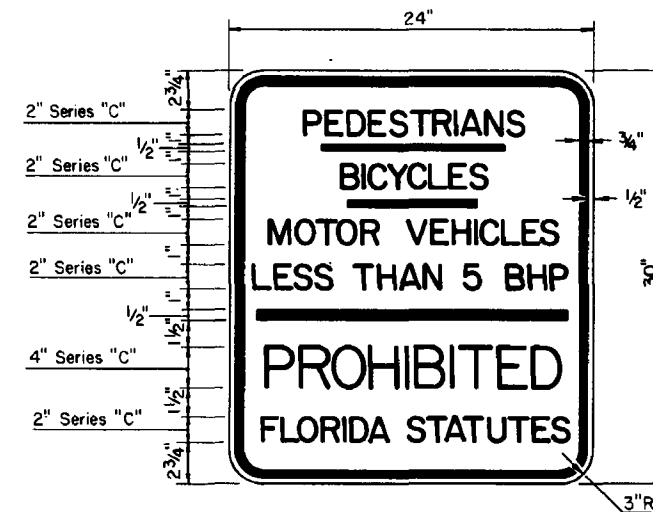
REVISIONS		
DATE	INITIALS	DESCRIPTION
1-27-76	WB.	ADDITIONAL NOTE
7-13-78	PB	REVISED NOTES
10-2-79	K.H.	REVISED NOTES AND DETAILS
8-80	K.H.	REVISE DETAIL

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>Larry C. Deane</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY	K.R.	10-75	APPROVED BY <i>R.E. Magaha 10/11/77</i> STATE TRAFFIC OPERATIONS ENGR.
QUANTITIES BY			
CHECKED BY			
SUPERVISED BY	K.R.	10-75	DRAWING NO. 2 of 2 INDEX NO. 17352



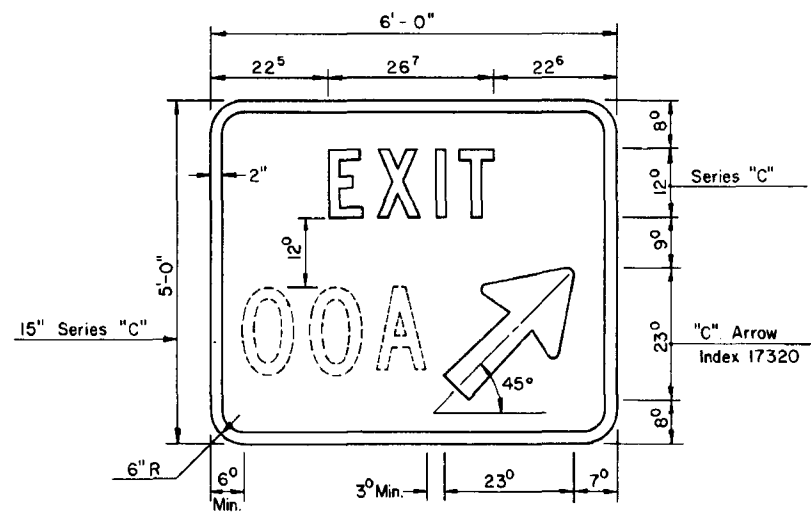
FTO-29
COUNTY ROUTE MARKER DETAIL

Note: When used on a guide sign, shield must be overlaid on a 38" x 38" white reflective background.
 Color: Yellow reflectorized legend and border on blue reflectorized background.



FTO-30

Notes The color of the sign shall be high intensity silver-white reflectorized background with black opaque border and legend.



FTO-31
EXIT PANEL
 (GORE INSTALLATION)

The exit number shall be centered in the space provided on sign panel.
 Color is reflective green background with reflective white legend and border.

REVISIONS		
DATE	INITIALS	DESCRIPTION
8-80	K.H.	REDRAFTED, COUNTY SHLD. REVISED

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
SPECIAL SIGN DETAILS			
INITIALS	DATES	RECOMMENDED FOR APPROVAL	
		BY <i>Darryl C. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR.	
		APPROVED <i>PE Magada</i> STATE TRAFFIC OPERATIONS ENGR.	
		DRAWING NO.	INDEX NO.
		1 of 3	17355



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.



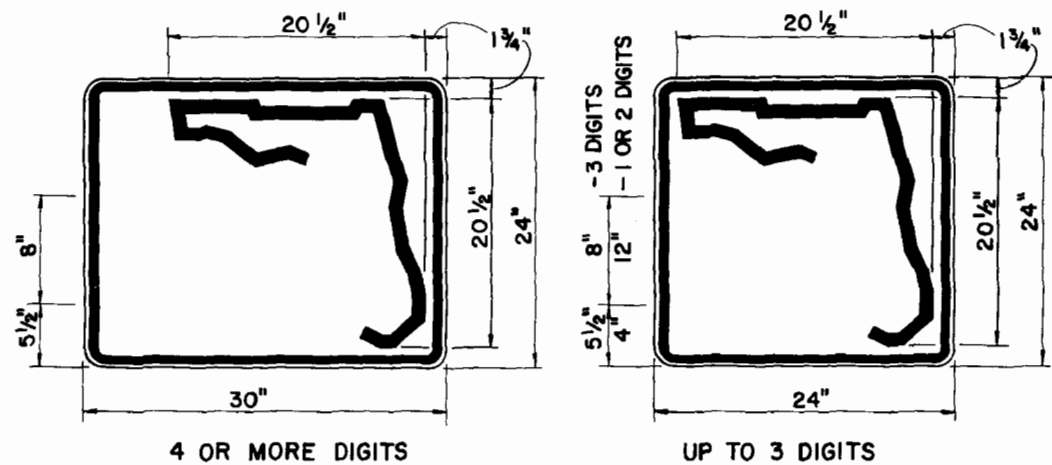
FTO-25

- 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

REVISIONS			INITIALS	DATES	RECOMMENDED FOR APPROVAL
DATE	INITIALS	DESCRIPTIONS			BY
8-80	K.H.	REVISE BORDER DIMENSIONS		10-79	<i>Harry C. Decca</i> DEPUTY TRAFFIC OPERATIONS ENGR.
				10-79	APPROVED -
					BY <i>R.L. Magaden</i> STATE TRAFFIC OPERATIONS ENGR.
					Drawing No. <i>17355</i>
					Index No.



FLORIDA ROUTE MARKER FOR INDEPENDENT USE

FTO-28

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"

- Notes: 1. All state route markers and auxiliaries shall have black opaque legend and border with white reflective background.
2. Full size prints are available from Tallahassee Traffic Operations.

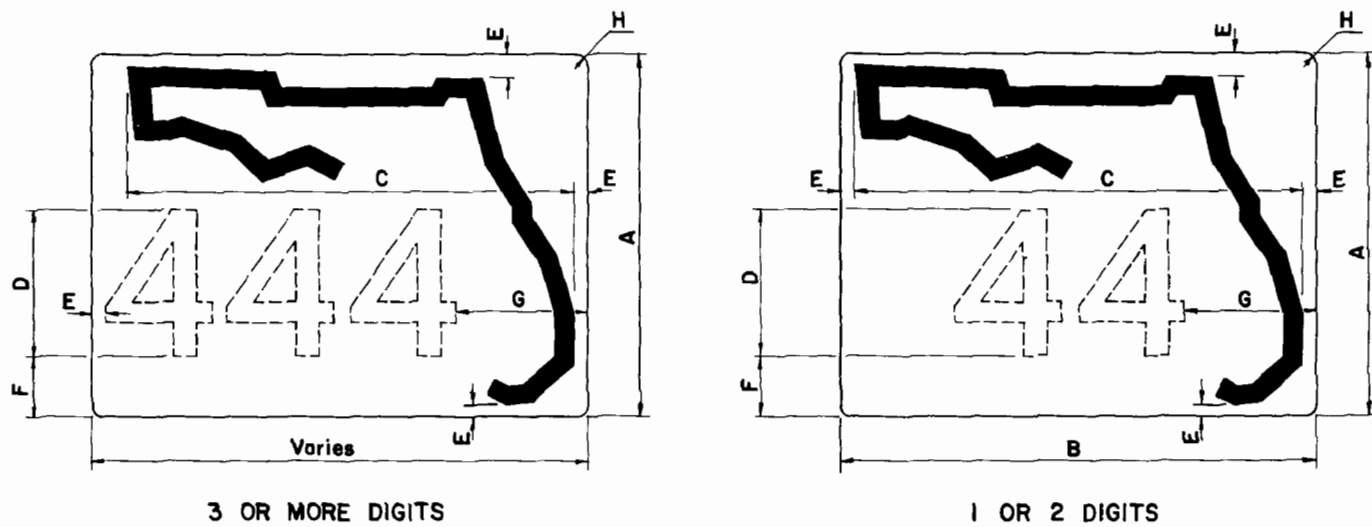
- Notes: 1. Full size prints are available from Tallahassee Traffic Operations.
2. Type 'B' arrow to be positioned as indicated on Signing Plans.
3. Green reflectorized background with White reflectorized legend and border.



- ↑ ARROW VERTICAL
- ↙ ARROW LEFT
- ↖ ARROW 45° LEFT
- ↗ ARROW 45° RIGHT
- ARROW RIGHT
- NO ARROW

DETAIL LAYOUT OF FLORIDA TURNPIKE TRAILBLAZER

FTO-27

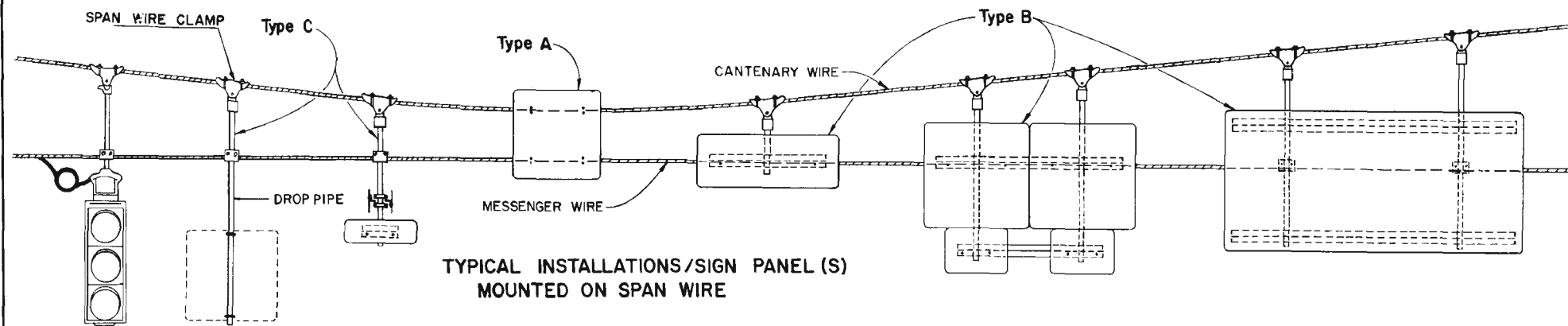


	A	B	C	D	E	F	G	H
24"	24"	28"	26"	10"	1"	4 3/4"	10"	1 1/2"
30"	30"	38"	36"	12"	1"	5"	11"	1 1/2"
36"	36"	45"	41"	15"	2"	7"	12"	2"

- Notes: 1. Florida shield shall have black opaque legend with white reflective background.
2. Full size prints are available from Tallahassee Traffic Operations.

FLORIDA SHIELD FOR GUIDE SIGN USE

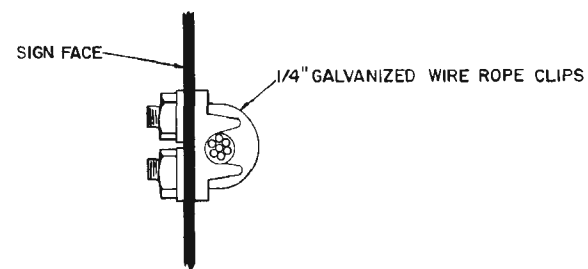
REVISIONS		FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
DATE	INITIALS	DESCRIPTION	INITIALS	DATES	RECOMMENDED FOR APPROVAL
			K. H.	8-80	DETAILED BY: <i>Gay C. Price</i>
			K. R.	8-80	CHECKED BY: DEPUTY TRAFFIC OPERATIONS ENGR.
					APPROVED BY: <i>P. Magala</i>
					STATE TRAFFIC OPERATIONS ENGR.
					DRAWING NO. INDEX NO.
					3 of 3 17365



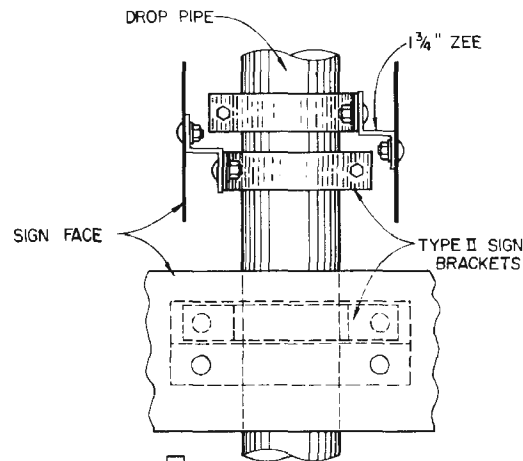
TYPICAL INSTALLATIONS/SIGN PANEL (S) MOUNTED ON SPAN WIRE

- NOTES:
1. OTHER METHODS FOR ATTACHMENT OF THE SIGN TO THE DROP PIPE MAY BE APPROVED BY TALLAHASSEE TRAFFIC OPERATIONS.
 2. LOWER ELEVATIONS OF SIGNS SHALL BE APPROXIMATELY THE SAME.
 3. TYPE A SHALL BE USED FOR CENTER SIGN OF SPAN ONLY.

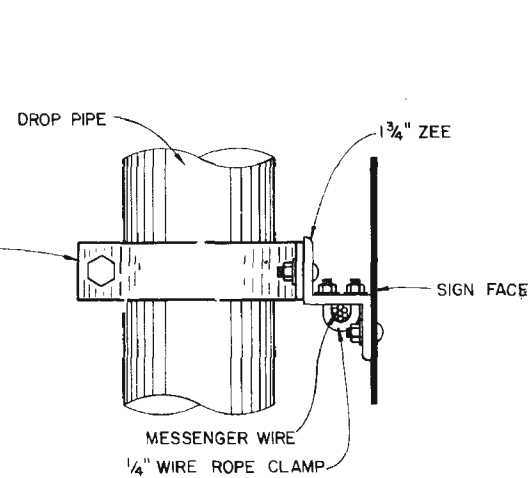
DETAIL/SIGN CLAMP



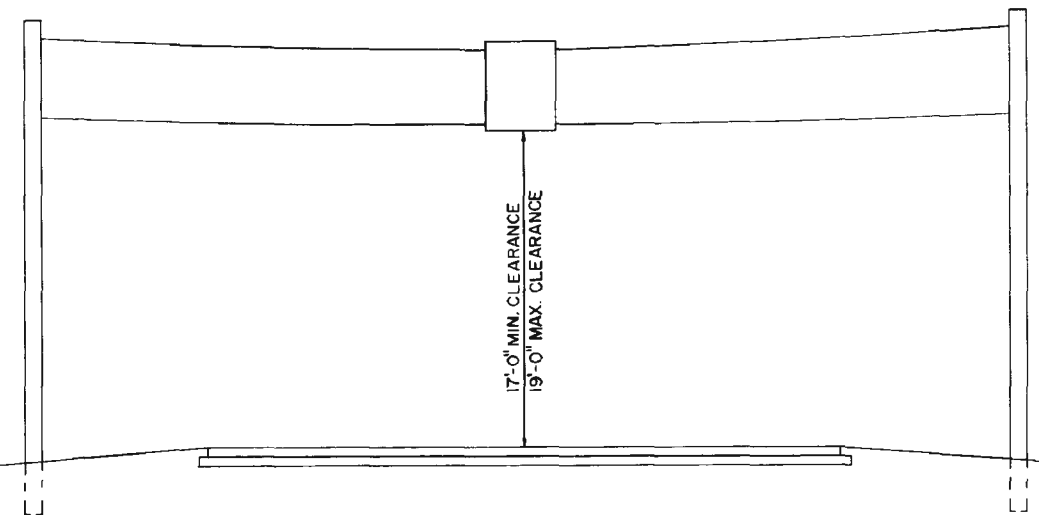
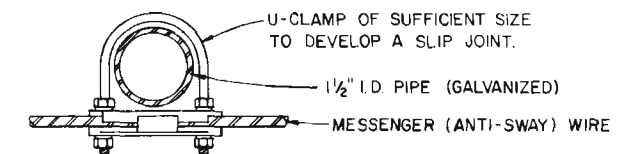
DETAIL / OPPOSING SIGNS ON SINGLE DROP PIPE



DETAIL / SINGLE PANEL ON DROP PIPE AND SPAN WIRE

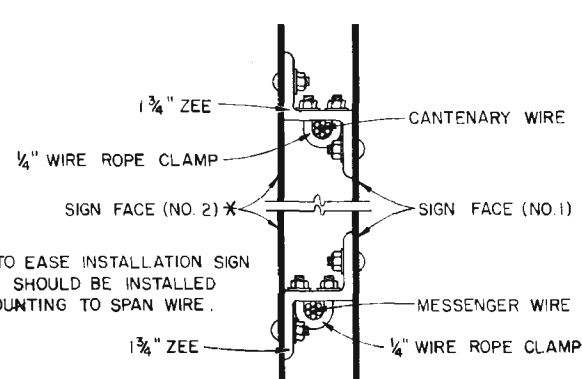


DETAIL / ATTACHMENT OF DROP PIPE TO MESSENGER WIRE



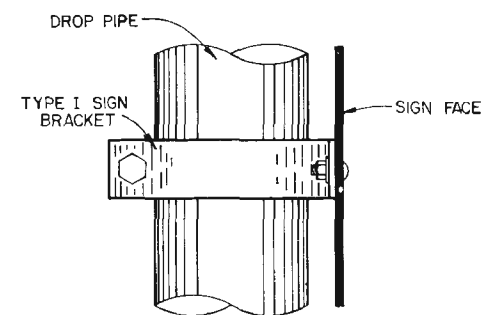
TYPICAL SPAN WIRE INSTALLATION

DETAIL / OPPOSING SIGNS SPAN WIRE MOUNTED



* IN ORDER TO EASE INSTALLATION SIGN FACE NO. 2 SHOULD BE INSTALLED AFTER MOUNTING TO SPAN WIRE.

DETAIL / SINGLE PANEL ON DROP PIPE



FLORIDA DEPARTMENT OF TRANSPORTATION
Traffic Operations

SPAN WIRE MOUNTING DETAILS

REVISIONS		INITIALS	DATES	Recommended for Approval by
8-80	Delete Structure Details & Notes, Add Mounting Details.	T.L.	12-14-76	<i>T.L.</i>
		K.R.	12-14-76	Deputy Traffic Operations Engr.
				Approved by <i>R.E. Magaley</i>
				State Traffic Operations Engr.
		K.R.		Supervised by
				DRAWING NO. 17356
				INDEX NO. 1 OF 1

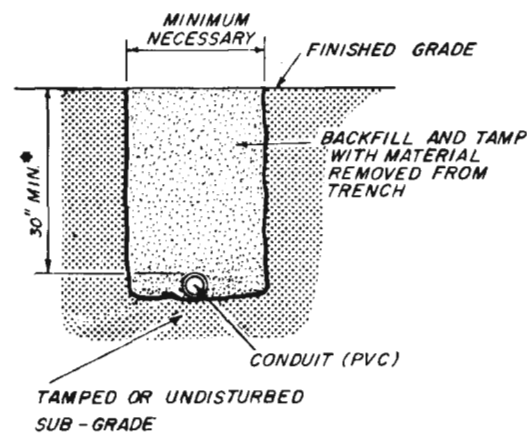


FIGURE - A

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.

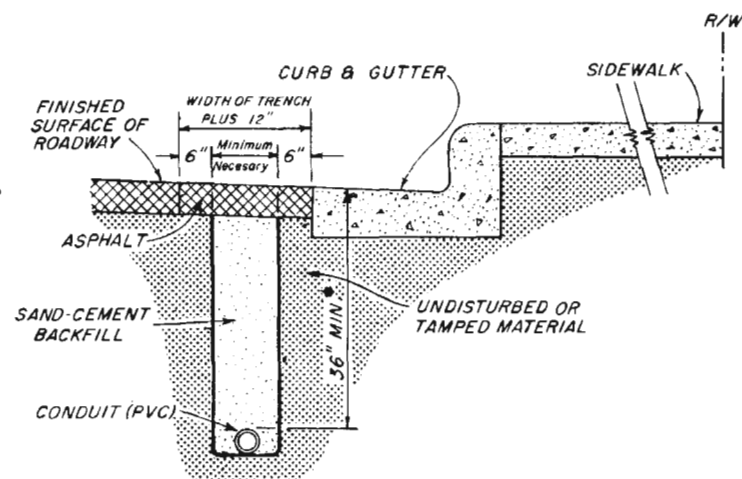


FIGURE - B

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.

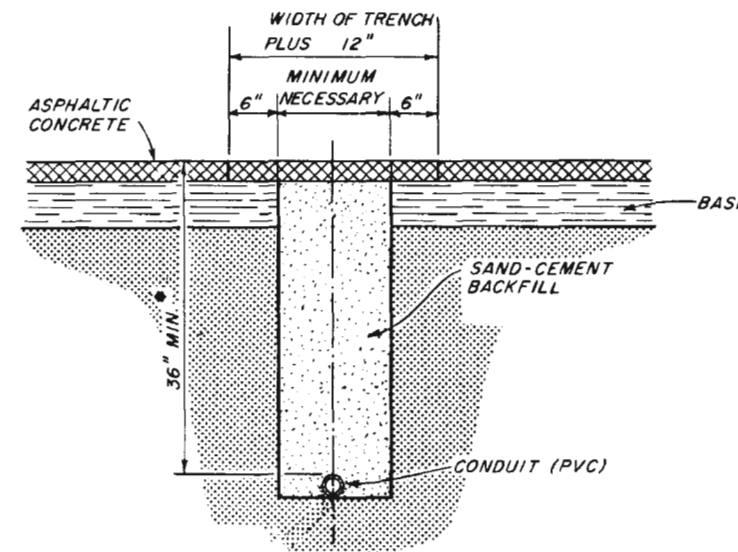


FIGURE - C

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.

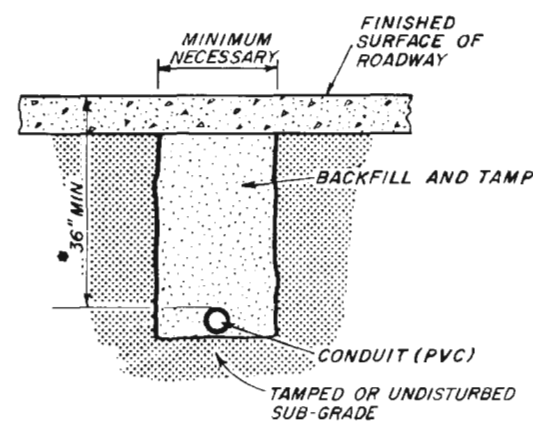


FIGURE - D

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

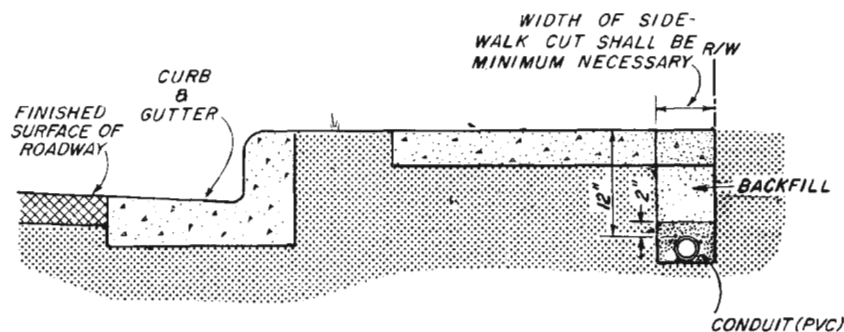


FIGURE - E

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.

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRAFFIC OPERATIONS
 CONDUIT INSTALLATION DETAILS

REVISIONS			INITIALS	DATES	Recommended for approval by <i>Larry C. Price</i> Deputy Traffic Operations Eng. Approved <i>10/10/75</i> by <i>R. E. Magala</i> State Traffic Operations Engr.
DATE	INITIALS	DESCRIPTION	Designed by	Checked by	
4-8-76	CG	ADDITION TO GENERAL NOTE NO. 6 NOTE NO. 3 OF FIGURE E REVISED.	CG	RK	2-26-75
8-11-76	CJ	NOTE ADDED, REVISED GENERAL NOTES 1 & 2, REVISED TITLE BLOCK			
10-31-79	J.M.C.	CHANGED AND REVISED NOTES 2 & 5, DELETED ITEM NO. AND GROUND ROD IN PULL BOX.			
08-18-80	J.M.C.	DELETED FIGURE "F" & GENERAL NOTES.			
09-02-80	J.M.C.	DELETED GROUND-WIRE WITH CONDUIT			
			Supervised by	RVK	
				DRAWING NO.	INDEX NO.
				1 OF 2	17721

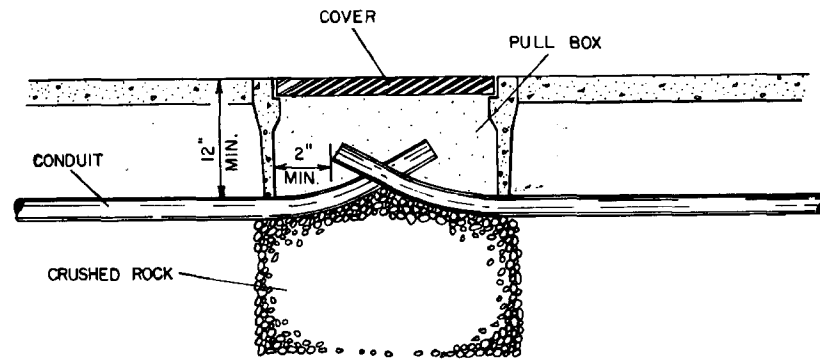
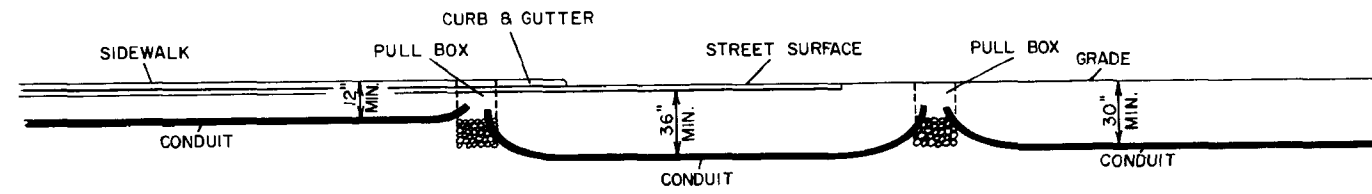
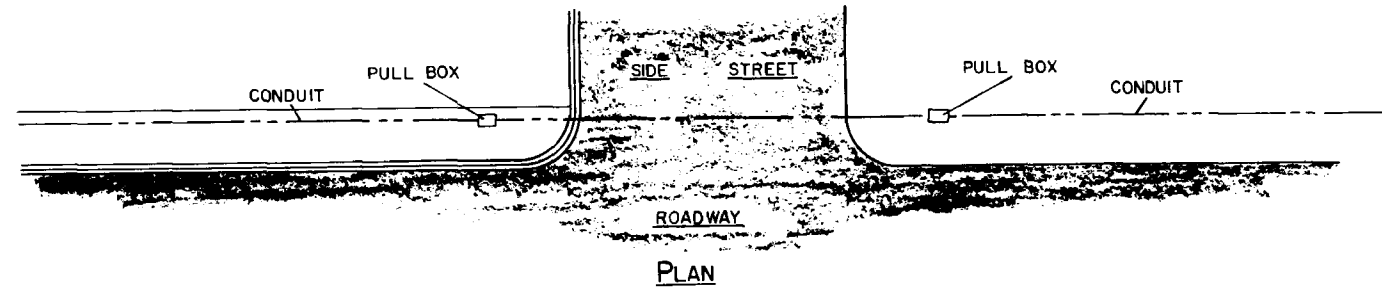


FIGURE A

PULL BOX ENTRY OF CONDUIT UNDER SIDEWALKS



SECTION

FIGURE B

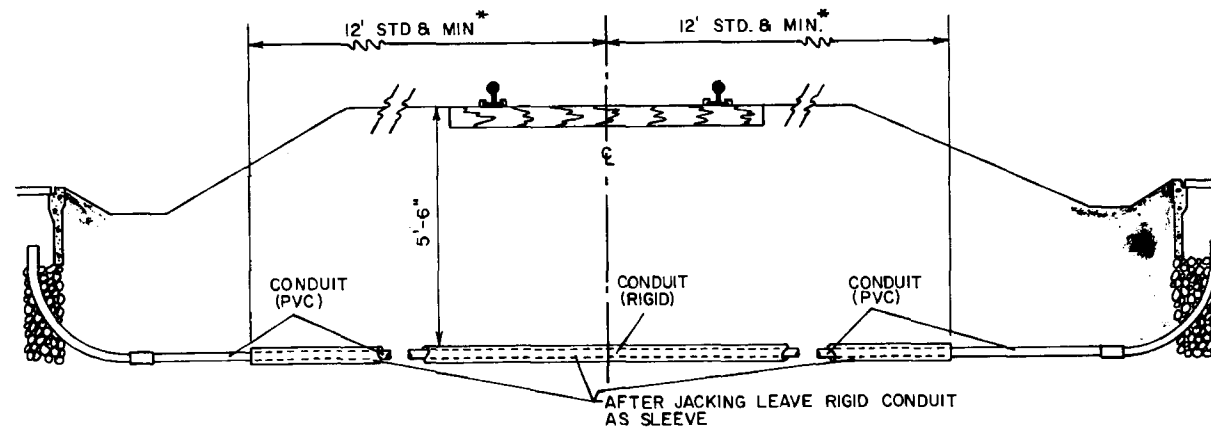
UNDER SIDEWALK

UNDER ROADWAY

UNDER NON TRAFFIC BEARING SURFACE

NOTE:

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

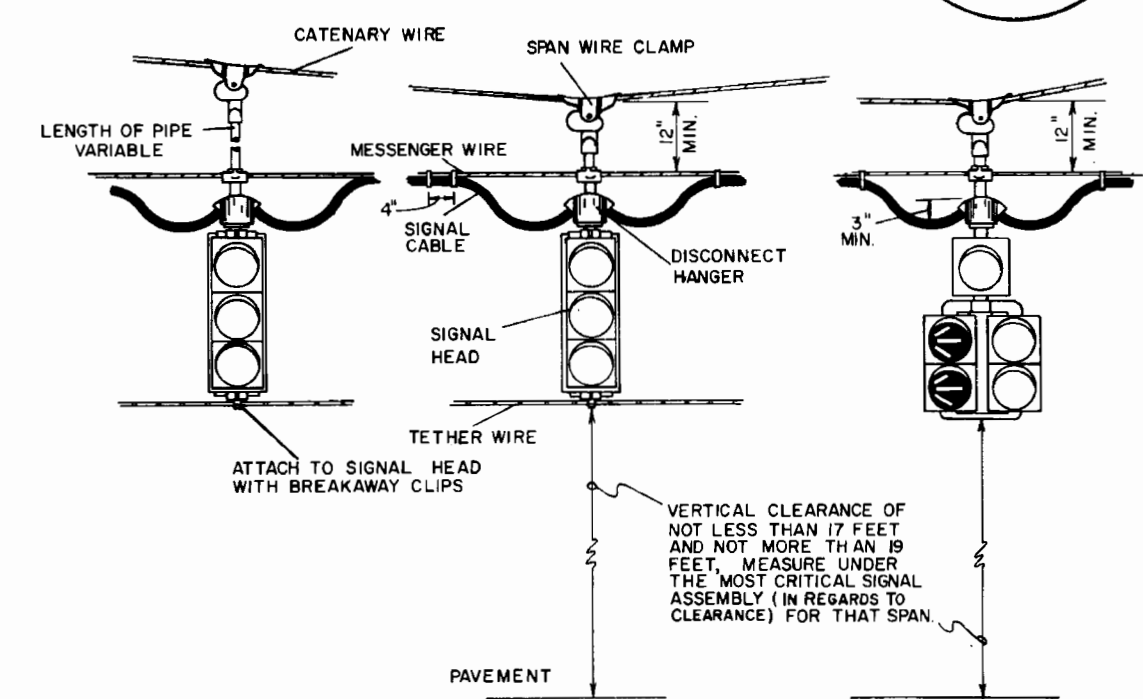
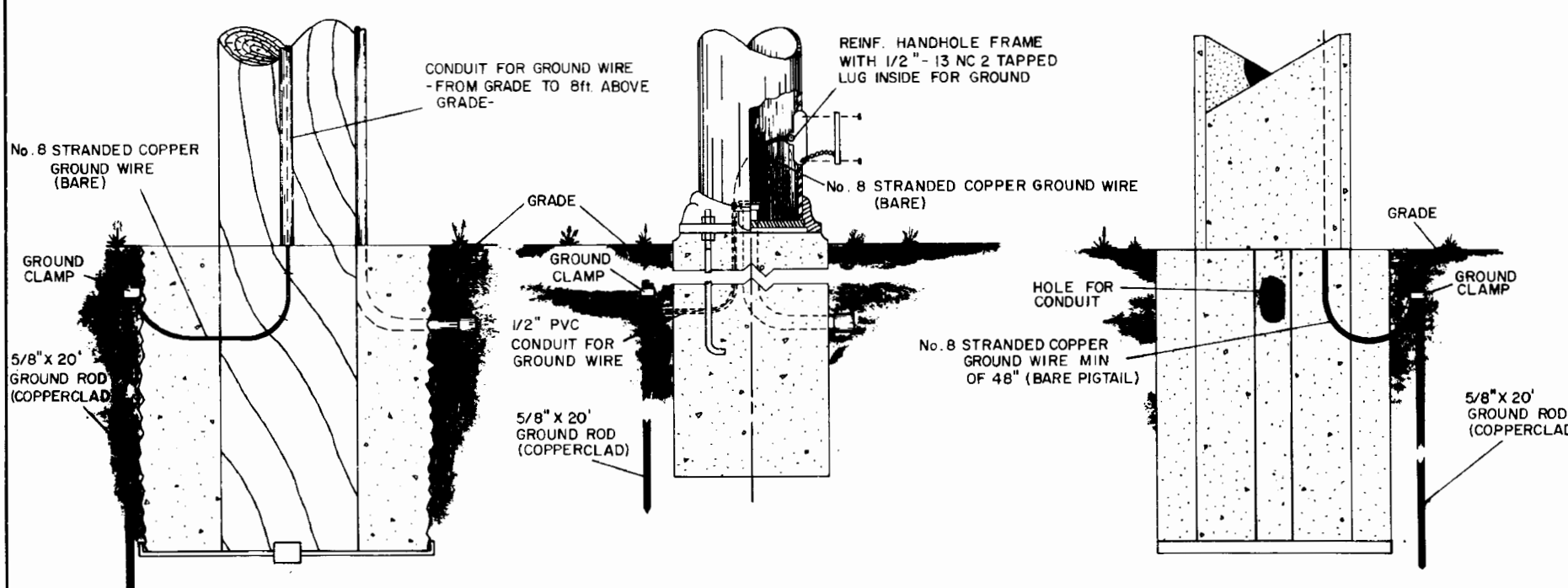
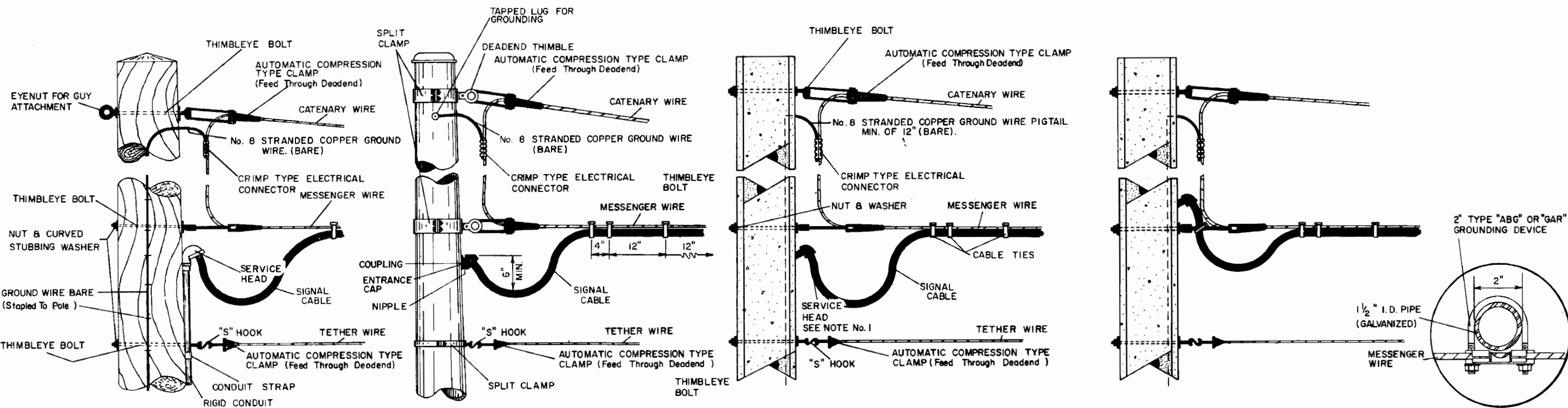


* IN CASE OF MULTIPLE TRACKS, THE MEASUREMENT IS TO BE FROM THE CENTERLINE OF THE OUTSIDE TRACK.

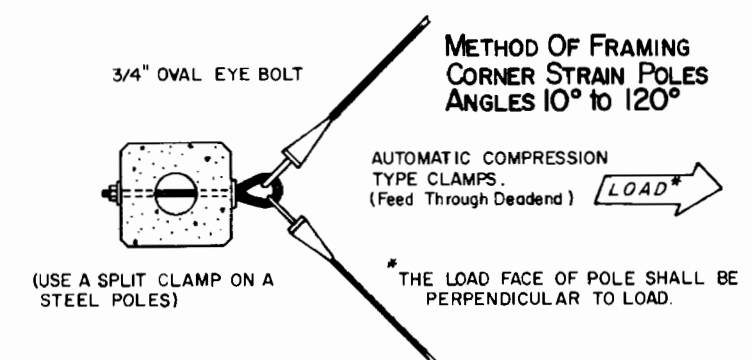
FIGURE C

FOR USE UNDER RAILROADS

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
CONDUIT INSTALLATION DETAILS			
INITIALS	DATES	Recommended for approval	
Redrawn By: Mick	9-05-80	by <i>Kay C. Price</i> Deputy Traffic Operations Eng.	
		Approved by <i>R. Magala</i> State Traffic Operations Eng.	
Supervised by	J.R.M.	DRAWN NO.	INDEX NO.
		2 OF 2	17721



NOTE:
 1. 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.



FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
SIGNAL CABLE & SPAN WIRE INSTALLATION DETAILS			
	INITIALS	DATES	Recommended for approval
Redrawn By	Mick	09-10-80	by <i>Larry G. Duce</i> Deputy Traffic Operations Eng.
			Approved by <i>P. J. Magada</i> State Traffic Operations Eng.
Supervised by	J.R.M.	DRAWING NO.	INDEX NO.
		1 OF 1	17727

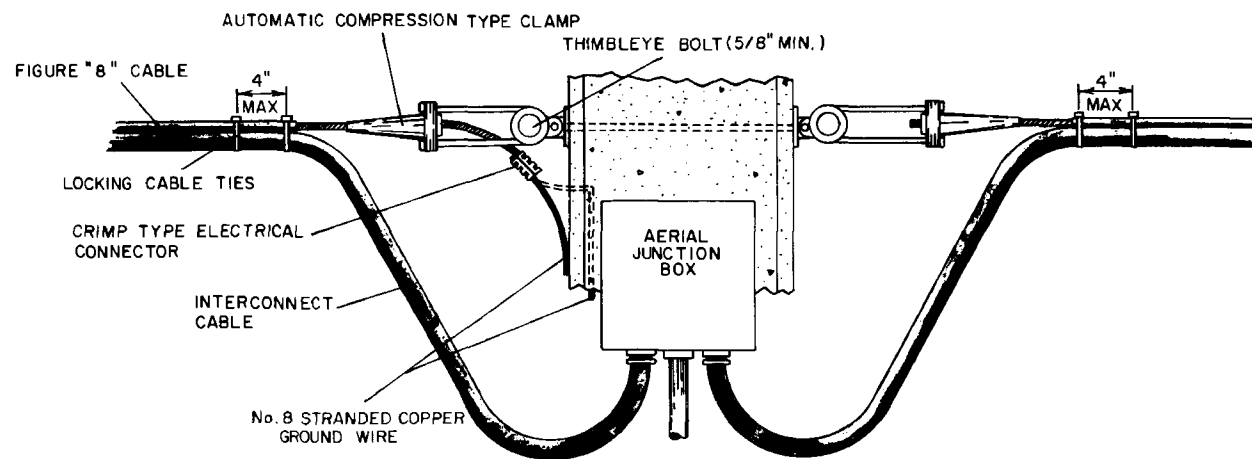


FIGURE A
 CABLE DROP AND
 TERMINATION DETAIL
 AERIAL INTERCONNECT FIGURE "8"

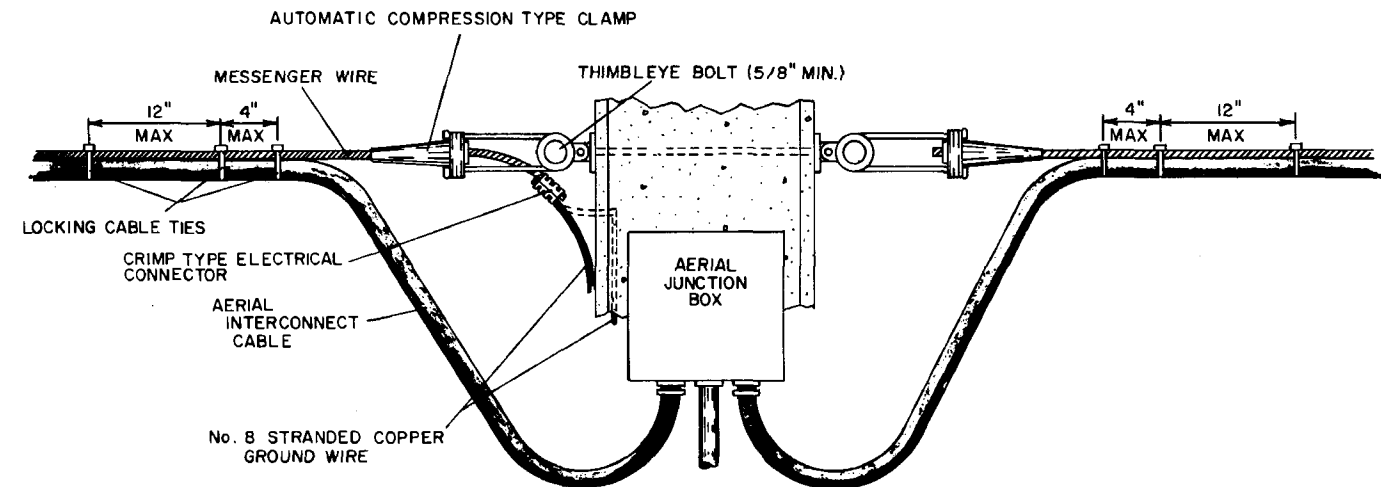


FIGURE B
 CABLE DROP AND
 TERMINATION DETAIL
 AERIAL INTERCONNECT MESSENGER
 WIRE WITH CLAMPS

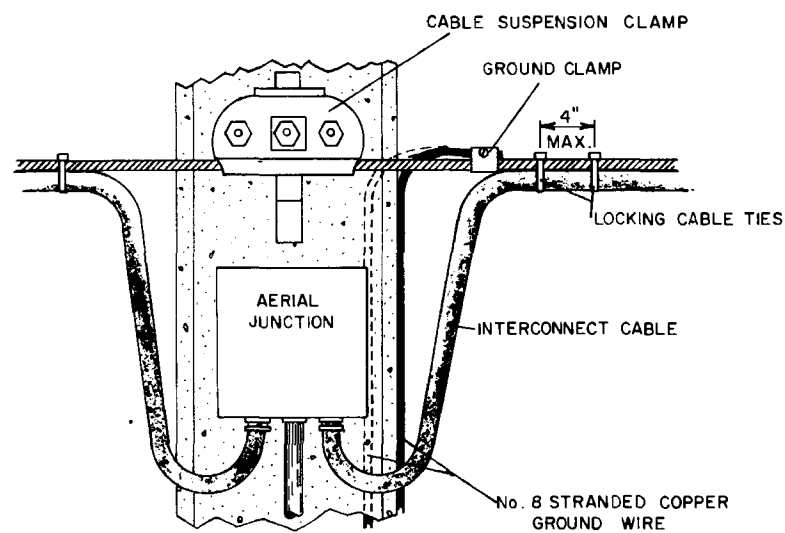


FIGURE C
 CABLE DROP DETAIL
 AERIAL INTERCONNECT MESSENGER
 WIRE WITH CLAMPS

NOTES:

1. THE MESSENGER WIRE OF THE INTERCONNECT CABLES SHALL BE GROUNDED TO THE COPPER GROUND WIRE OF THE POLE OR TO THE EXTERNAL WIRE EXTENDING DOWN THE POLE.
2. WHEN UTILIZING THE EXTERNAL GROUND WIRE TO THE POLE, A PIECE OF 1/2" RIGID CONDUIT SHALL EXTEND UP THE POLE EXTERNALLY TO A POINT EIGHT (8) FEET ABOVE FINISH GRADE TO PROTECT THE GROUND WIRE CONNECTING THE MESSENGER WIRE TO THE GROUND ROD.
3. LOCKING CABLE TIES OR LASHING WIRE WHEN USED SHALL BE PLACED NO FURTHER THAN ONE (1) FOOT APART EXCEPT AT THE POINT OF CABLE DROP OR TERMINATIONS WHERE ONE (1) SHALL BE PLACED AT THE POINT WHERE THE CABLES SEPARATE FROM THE MESSENGER WIRE AND ANOTHER PLACED FOUR (4) INCHES (MAX) FROM THAT TIE. WHEN USING FIGURE "8" INTERCONNECT CABLE ONLY THE LOCKING CABLE TIES SHALL BE USED.
4. IF ACCESSIBLE THE INTERNAL GROUND WIRE OF THE SUPPORT POLE MAY BE USED TO GROUND THE MESSENGER WIRE.

FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
AERIAL INTERCONNECT			
Redrawn by	INITIALS Mick	DATES 09-12-80	Recommended for approval by <i>Larry C. Price</i> Deputy Traffic Operations Eng.
			Approved by <i>J.M. Magoley</i> State Traffic Operations Eng.
Supervised by	J.R.M.	DRAWING NO. 1 OF 1	INDEX NO. 17733

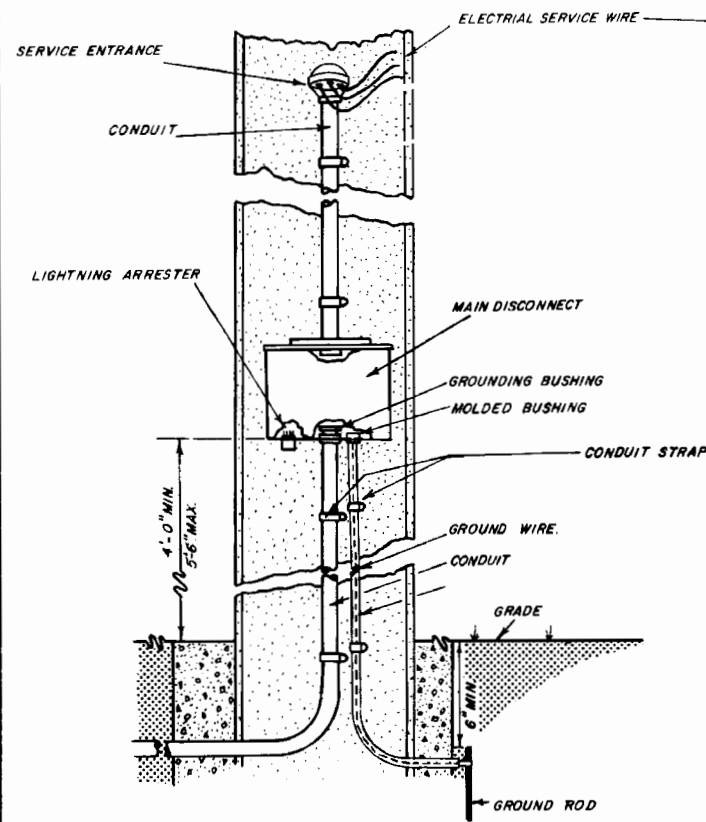


FIGURE A
AERIAL FEED
(NO METER USED)

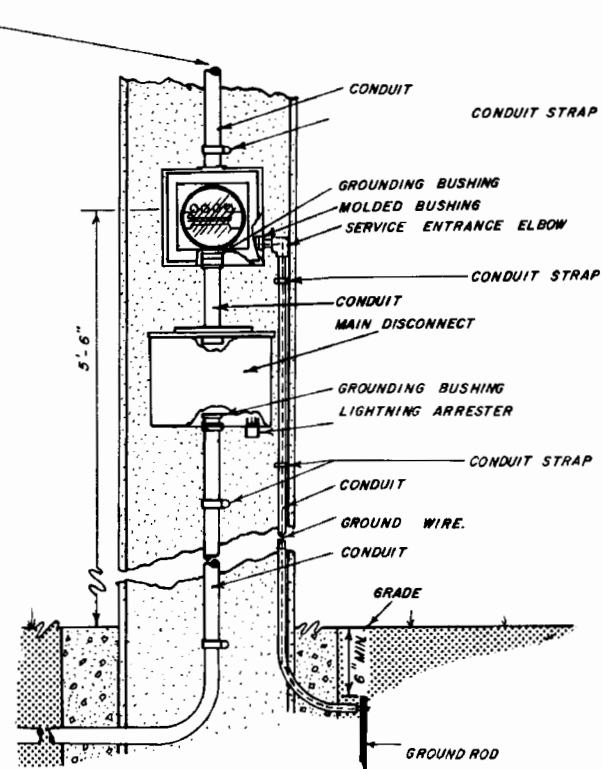


FIGURE B
AERIAL FEED
(METER USED)

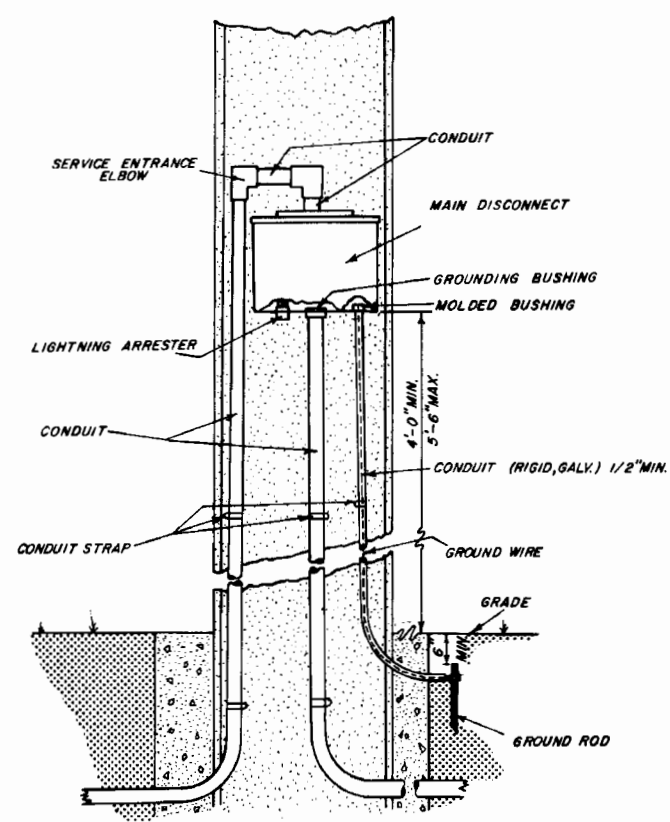


FIGURE C
UNDERGROUND FEED
(NO METER USED)

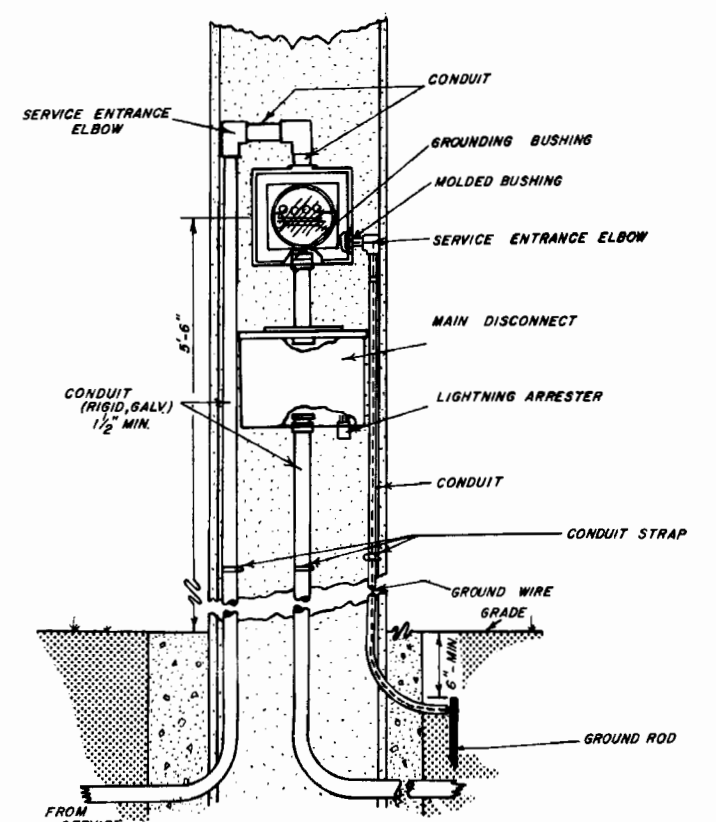


FIGURE D
TYPE "B" UNDERGROUND FEED
(METER USED)

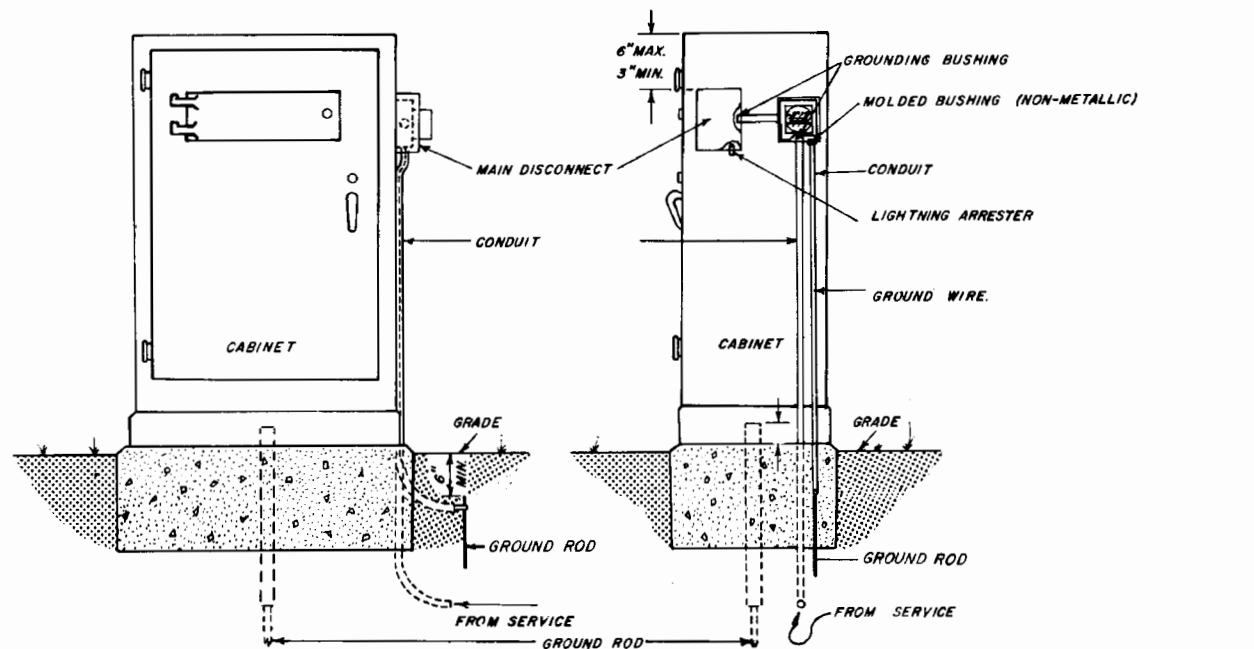


FIGURE E
UNDERGROUND CABINET MOUNTED
(METER USED)

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
ELECTRIC POWER SERVICE			
	INITIALS	DATES	Recommended for approval
Redrawn by	Mick	09-22-80	by <i>Larry C. Price</i> Deputy Traffic Operations Eng.
			Approved
			by <i>R.E. Magaley</i> 10/21/79 State Traffic Operations Eng.
Supervised by	J.R.M.	DRAWING NO.	INDEX NO.
		1 OF 1	17736

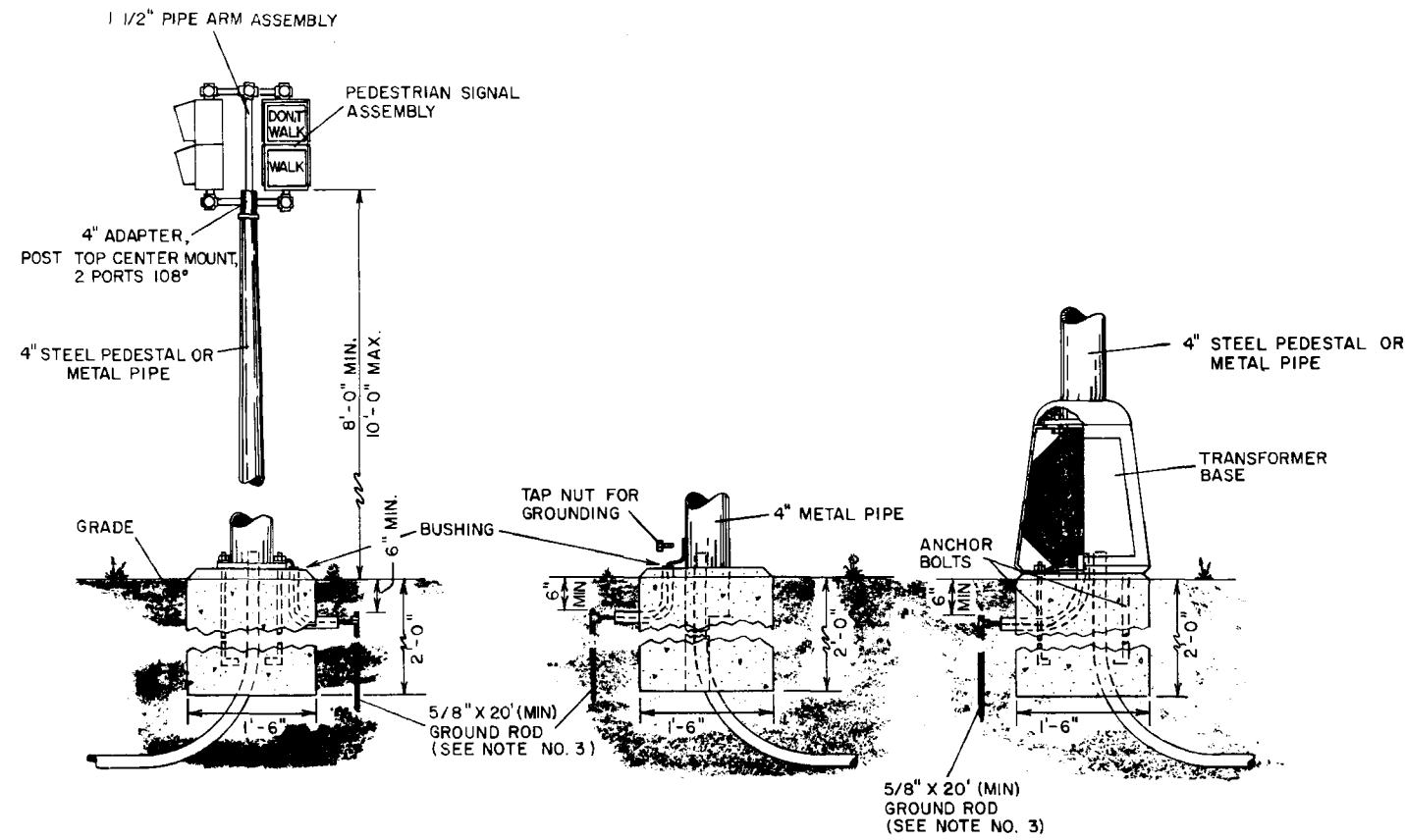


FIGURE A

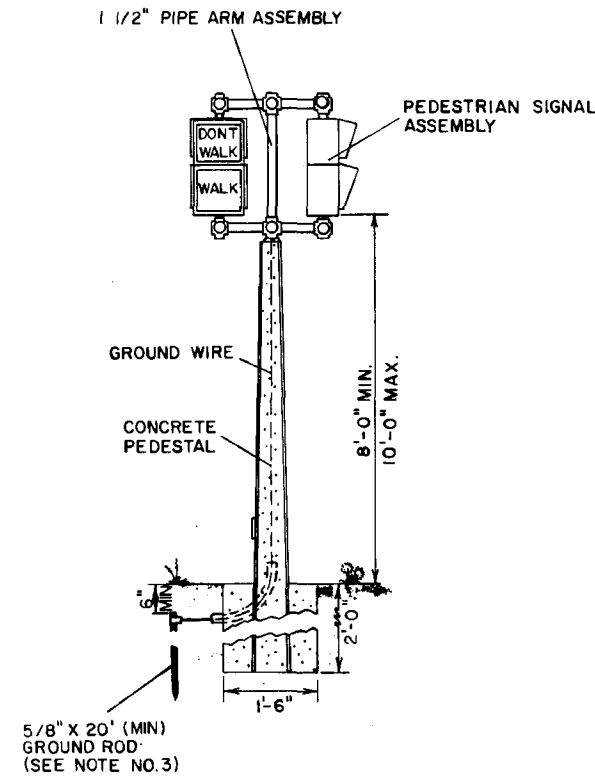


FIGURE B

NOTES:

1. AS AN OPTION, THE CONTRACTOR WILL BE ALLOWED TO INSTALL PEDESTRIAN SIGNALS ON CONCRETE POLES AND PEDESTALS WITH THE USE OF LEAD ANCHORS IN LIEU OF THE STANDARD STEEL BANDS.
2. HOLES DRILLED OR PUNCHED IN METAL POLES OR PEDESTALS SHALL BE THOROUGHLY REAMED, CLEANED OF ALL BURRS AND COVERED WITH TWO (2) COATS OF ZINC RICH PAINT AS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTIONS. GROMMETS OR BUSHINGS SHALL BE INSTALLED IN HOLES.
3. GROUNDING TO BE IN ACCORDANCE WITH SECTION 620 OF THE STANDARD SPECIFICATIONS.

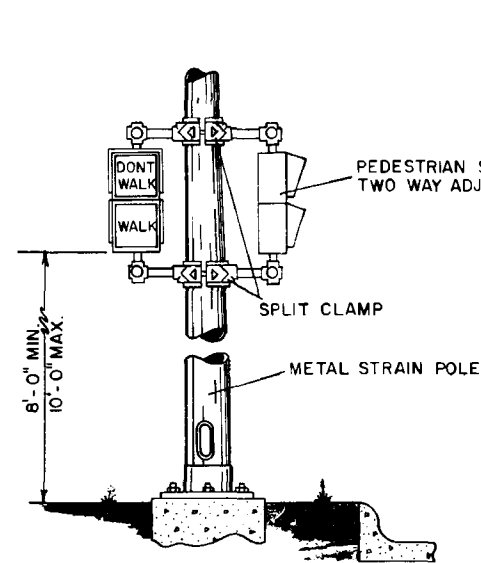


FIGURE C

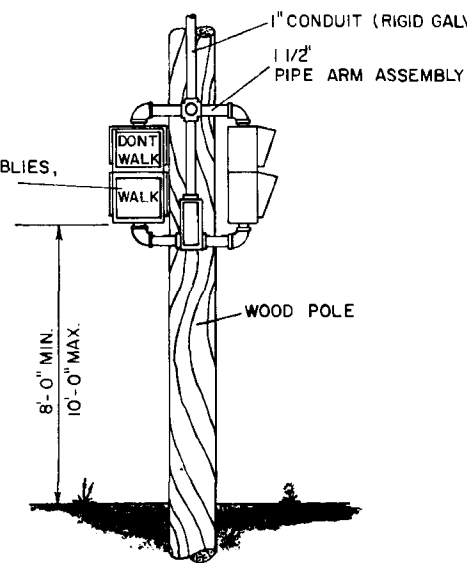


FIGURE D

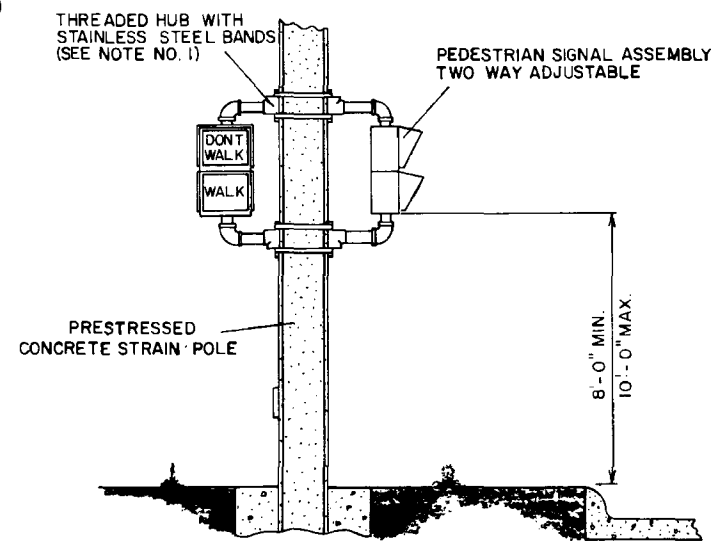
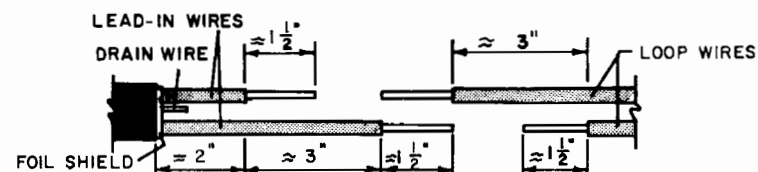


FIGURE E

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
PEDESTRIAN CONTROL SIGNALS INSTALLATION DETAIL			
INITIALS	DATES	Recommended for approval	
Redrawn by Mick	09-15-80	by <i>Dary C. Price</i> Deputy Traffic Operations Eng.	
		Approved by <i>R. Magada</i> State Traffic Operations Eng.	
Supervised by	J.R.M.	DRAWING NO.	INDEX NO.
		1 OF 1	17764

**DETAILS FOR SPLICING
LOOP WIRE TO LEAD-IN WIRE**

STEP 1



STRIP LOOP AND LEAD-IN CABLE CONDUCTORS. IF HEAT SHRINKABLE SILICONE LINED, CROSS LINKED POLY-ETHYLENE INSULATING TUBING IS TO BE USED, SLIP TUBING OVER LEAD-IN CABLE AND INDIVIDUAL CONDUCTORS.

STEP 2



TWIST THE BARE CONDUCTORS TOGETHER.

CRIMP THE BARE CONDUCTORS TOGETHER WITH AN UNINSULATED BUTT CONNECTOR.

STEP 3



SOLDER EACH SPLICE USING RESIN-CORE SOLDER.

SOLDER EACH SPLICE USING RESIN-CORE SOLDER.

STEP 4



WRAP EACH SPLICE WITH SILICONE TAPE. HALF LAP STARTING AT CENTER OF SPLICE AND PROCEEDING TO THE RIGHT (OR LEFT) $\approx \frac{1}{2}$ " PAST END OF SPLICE, THEN PROCEEDING TO THE LEFT (OR RIGHT) $\approx \frac{1}{2}$ " PAST OTHER END OF SPLICE, AND RETURNING TO CENTER. WRAP EACH SPLICE, WITH AN ALL WEATHER HEAVY DUTY ELECTRICAL TAPE IN THE SAME MANNER $\approx \frac{1}{2}$ " PAST EACH END OF SILICONE TAPE.

SLIDE HEAT SHRINKABLE TUBING OVER SPLICES. THE TUBING SHALL COVER ≈ 1 " OF CONDUCTOR INSULATION AT EACH END OF SPLICE. HEAT TUBING AS SPECIFIED BY MANUFACTURER.

STEP 5



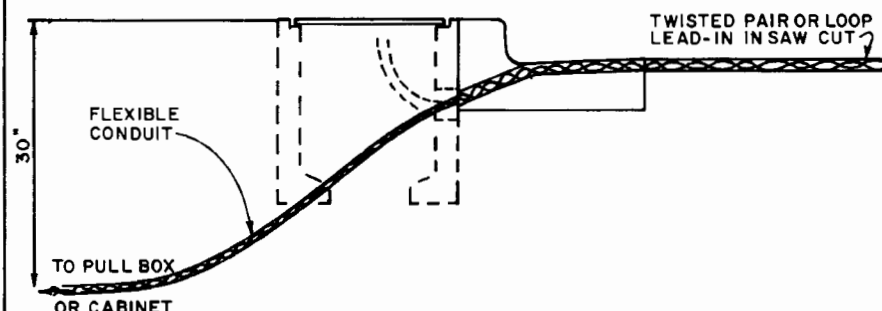
HALF LAP THE TWO SPLICES TOGETHER WITH AN ALL WEATHER HEAVY DUTY ELECTRICAL TAPE ≈ 1 " PAST THE END OF THE LEAD-IN CABLE OUTSIDE COVER AND ≈ 1 " PAST FATHER MOST WRAP OF STEP 4.

SLIDE OUTER HEAT SHRINKABLE TUBING OVER ENTIRE SPLICE AREA. THE TUBING SHALL COVER $\approx 1 \frac{1}{2}$ " OF THE LEAD-IN CABLE OUTSIDE COVER AND ≈ 1 " OF THE LOOP CONDUCTOR INSULATION.

**TWISTED PAIR AND LOOP LEAD-IN
INSTALLATION WITH CURB & GUTTER**

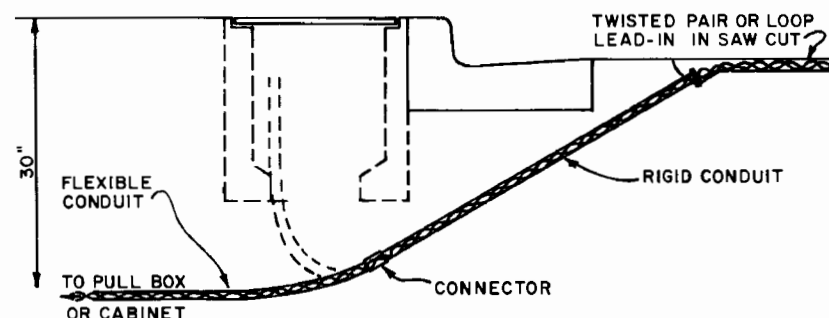
ALTERNATIVE 1

DRILL A HOLE THROUGH THE CURB AT THE POINT WHICH THE REQUIRED SAW CUT DEPTH IS OBTAINED JUST PRIOR TO CUTTING THE TOP INSIDE EDGE OF THE CURB. SLIDE A SECTION OF FLEXIBLE CONDUIT AT LEAST 6" INTO THE HOLE FROM THE BACK SIDE OF THE CURB BUT NOT WITHIN 2" OF THE TOP OF THE HOLE. THE CONDUIT SHALL FIT SNUGGLY WITHIN THE DRILLED HOLE. FILL THE TOP OF THE HOLE WITH LOOP SEALANT TO THE LEVEL OF THE CURB SURFACE. A NONMETALLIC MATERIAL SHOULD BE USED TO PREVENT EXCESSIVE LOOP SEALANT FROM ENTERING THE FLEXIBLE CONDUIT.



ALTERNATIVE 2

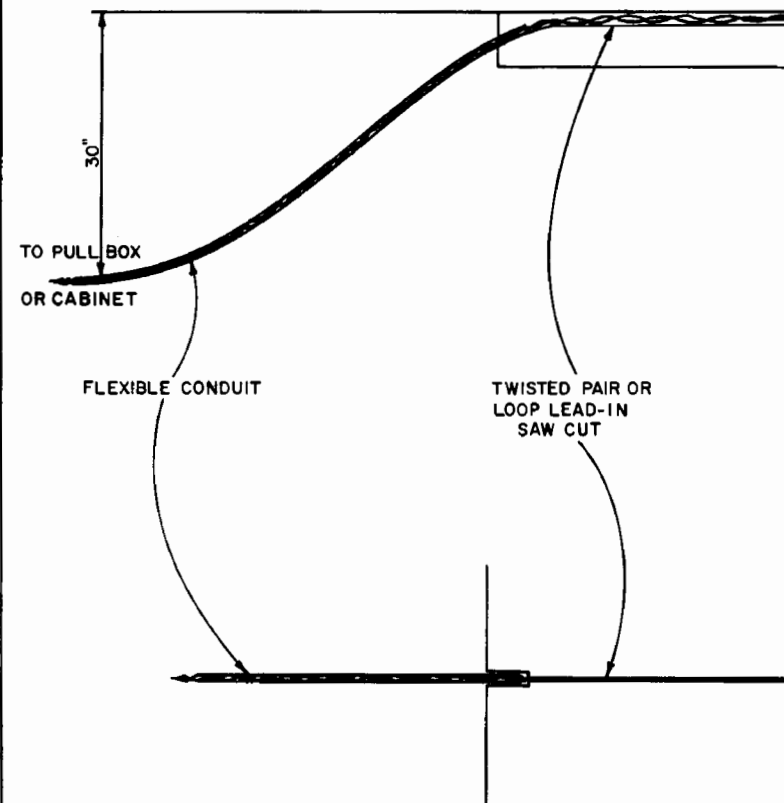
DRILL A HOLE, $\frac{1}{2}$ " TO 1" LARGER IN DIAMETER THAN THE RIGID CONDUIT TO BE USED, THROUGH THE ROADWAY ASPHALT (OR CONCRETE) SURFACE AND BASE AT AN APPROPRIATE ANGLE TO INTERCEPT THE TRENCH OR PULL BOX HOLE. PLACE A PREDETERMINED LENGTH OF RIGID CONDUIT IN THE HOLE AND DRIVE THE CONDUIT INTO THE TRENCH OR HOLE. INSTALL A MOLDED BUSHING (NONMETALLIC) ON THE ROADWAY END OF THE RIGID CONDUIT. THE TOP OF THE RIGID CONDUIT SHALL BE APPROXIMATELY 2" BELOW THE ROADWAY SURFACE. FILL THE HOLE WITH LOOP SEALANT TO THE LEVEL OF THE ROADWAY SURFACE. A NONMETALLIC MATERIAL SHOULD BE USED TO PREVENT EXCESSIVE LOOP SEALANT FROM ENTERING THE FLEXIBLE CONDUIT.



NOTE X
OTHER ALTERNATIVES MAY BE APPROVED BY THE STATE TRAFFIC OPERATIONS ENGINEER

**TWISTED PAIR AND LOOP LEAD-IN
INSTALLATION WITHOUT CURB & GUTTER**

CUT A SLOT IN THE EDGE OF THE ROADWAY OF SUFFICIENT SIZE AND DEPTH TO SNUGGLY PLACE THE END OF THE FLEXIBLE CONDUIT. THE END OF THE CONDUIT SHALL BE AT LEAST 6" INTO THE ROADWAY AND ≈ 2 " BELOW THE TOP OF THE ROADWAY SURFACE. THE DEPARTURE ANGLE OF THE CONDUIT FROM THE ROADWAY SHALL BE 30° TO 45°.



NOTE *
OTHER ALTERNATIVES MAY BE APPROVED BY THE STATE TRAFFIC OPERATIONS ENGINEER

GENERAL NOTES

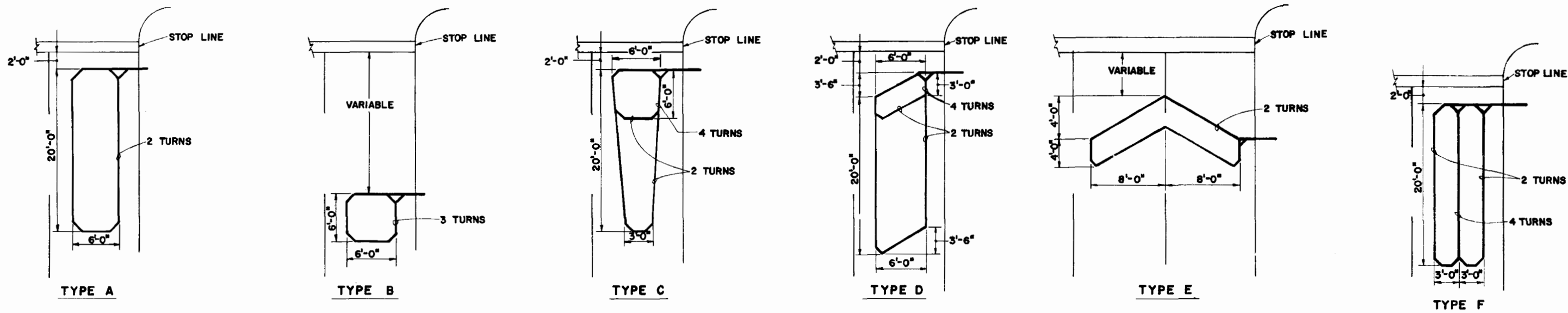
- 1 THE MINIMUM DISTANCE BETWEEN THE TWISTED PAIRS OF LOOP LEAD-IN WIRE IS 6"
- 2 IF THE LOOP LEAD-IN IS 75' OR LESS FROM THE EDGE OF THE LOOP TO THE DETECTOR OR CONTROLLER CABINET, CONTINUE THE TWISTED PAIR TO THE CABINET. IF THE LOOP LEAD-IN IS GRATER THAN 75'; CONTINUE THE TWISTED PAIR TO THE SPECIFIED PULL BOX, SPLICE TO SHIELDED LEAD-IN WIRE AND CONTINUE TO THE DETECTOR OR CONTROLLER CABINET. (THIS NOTE DOES NOT APPLY TO TYPE H).
- 3 THE MAXIMUM SAW CUT DEPTH SHALL BE $1 \frac{1}{2}$ " ON RESURFACING OR NEW ROADWAY CONSTRUCTION PROJECTS REQUIRING LOOP INSTALLATIONS. LOOP AND LEAD-INS MAY BE INSTALLED IN THE ASPHALT BASE PRIOR TO THE PLACEMENT OF THE FINAL ASPHALT WEARING SURFACE, PROVIDED THAT THE BOTTOM OF THE LOOP WIRE IS NOT GREATER THAN 2" BELOW THE FINAL WEARING SURFACE.
- 4 THE WIDTH OF SAW CUTS SHALL BE SUFFICIENT TO ALLOW UNFORCED PLACEMENT OF LOOP WIRES OR LEAD-INS INTO THE SAW CUT BUT NOT GREATER THAN $\frac{1}{4}$ ".
- 5 A NONMETALLIC HOLD DOWN MATERIAL SHALL BE USED TO SECURE LOOP WIRES AND LEAD-INS TO THE BOTTOM OF SAW CUTS. HOLD DOWN MATERIAL SHALL BE PLACED AT APPROXIMATELY ONE FOOT INTERVALS AROUND LOOPS AND TWO FOOT INTERVALS ON LEAD-INS.
- 6 A MINIMUM COVER OF $\frac{3}{4}$ " TO 1" OF SEALANT MATERIAL SHALL BE PROVIDED IN THE SAW CUT BETWEEN THE UPPER MOST LOOP WIRE OR LEAD-IN AND THE ROADWAY WEARING SURFACE.

FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

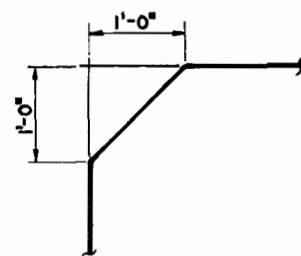
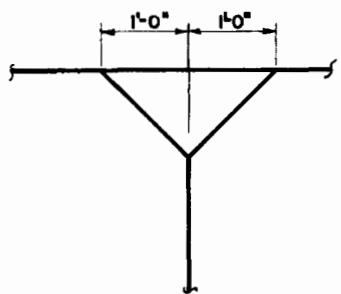
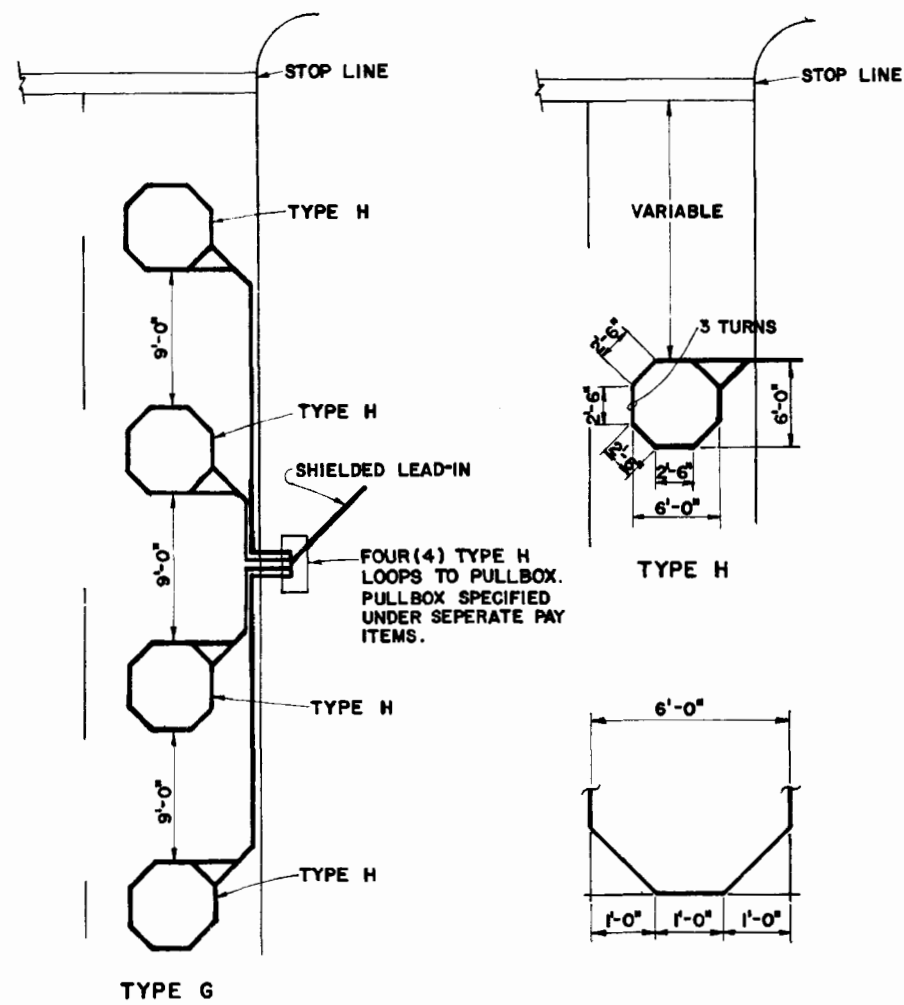
VEHICLE LOOP INSTALLATION DETAILS

REVISIONS			INITIALS	DATES
DATE	INITIALS	DESCRIPTION	Designed by	
06-16-80	J. M. C.	Revised General Notes 4 & 5.	Checked by	
			Quantities by	
			Checked by	
			Supervised by	

Recommended for approval by <i>Harry C. Price</i> Deputy Traffic Operations Eng.
Approved by <i>R. E. Magada 10/21/79</i> State Traffic Operations Eng.
DRAWING NO. 17781
INDEX NO. 1 of 2



STANDARD VEHICLE LOOP TYPES



LOOP CORNER AND LEAD-IN DETAILS

- 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	
Designed by			Recommended for approval by <i>Dary C. Price</i> Deputy Traffic Operations Eng.
Checked by			Approved by <i>R. E. Magaldi</i> State Traffic Operations Eng.
Quantities by			
Checked by			
Supervised by			
		DRAWING NO.	INDEX NO.
		2 of 2	17781

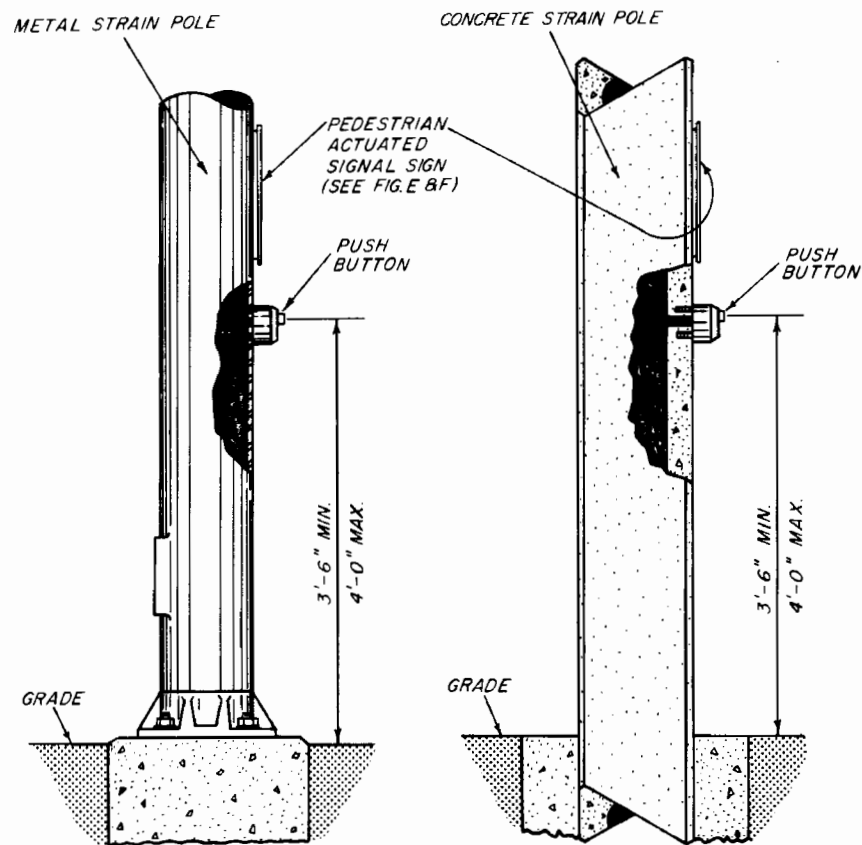


FIGURE A
POLE MOUNTED
DETECTOR STATION

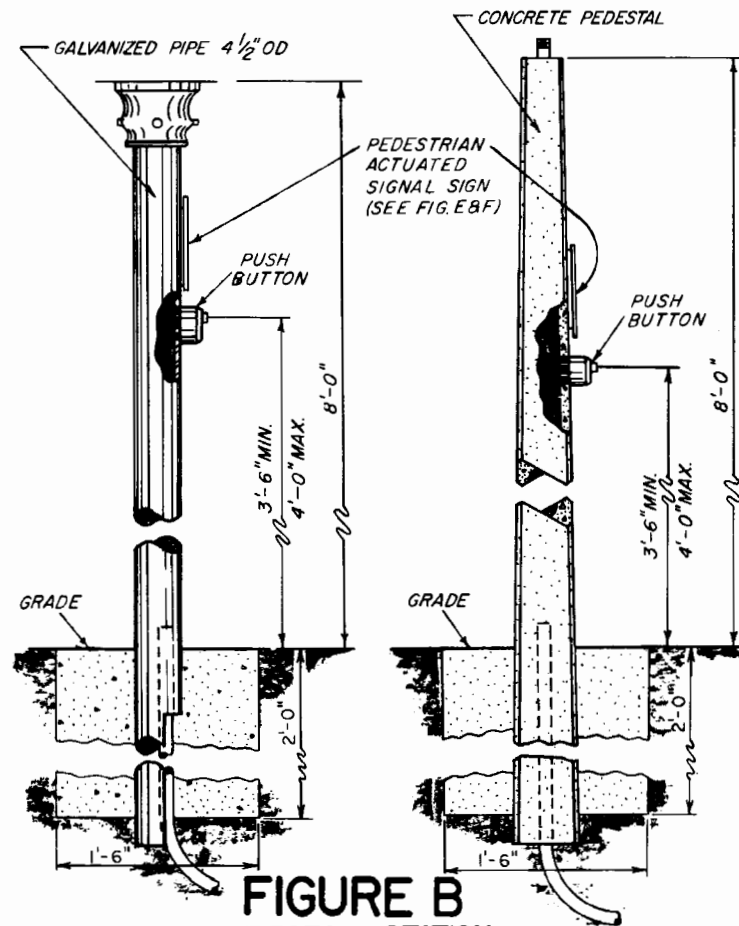


FIGURE B
PEDESTAL STATION
DETECTOR STATION

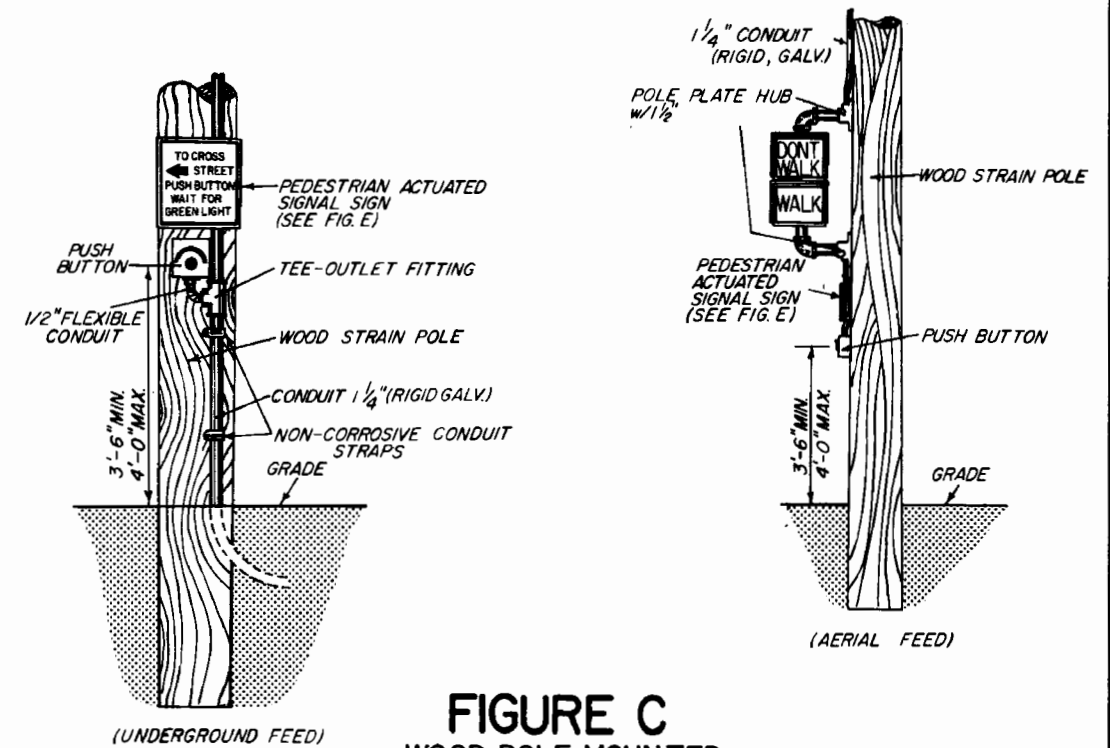


FIGURE C
WOOD POLE MOUNTED
DETECTOR STATION

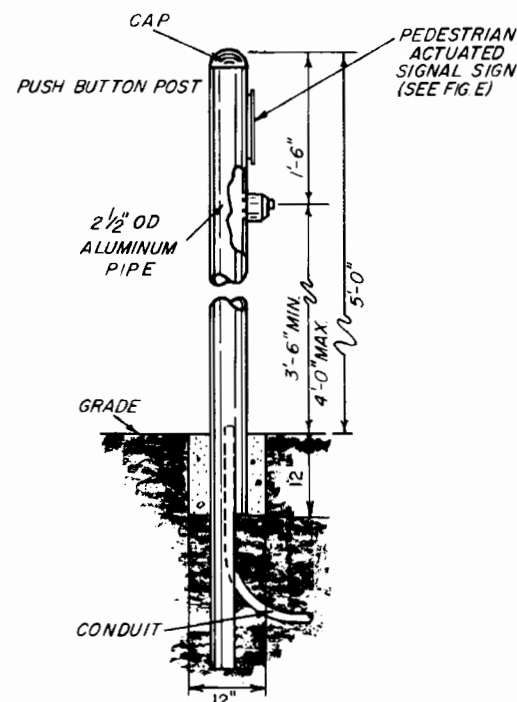
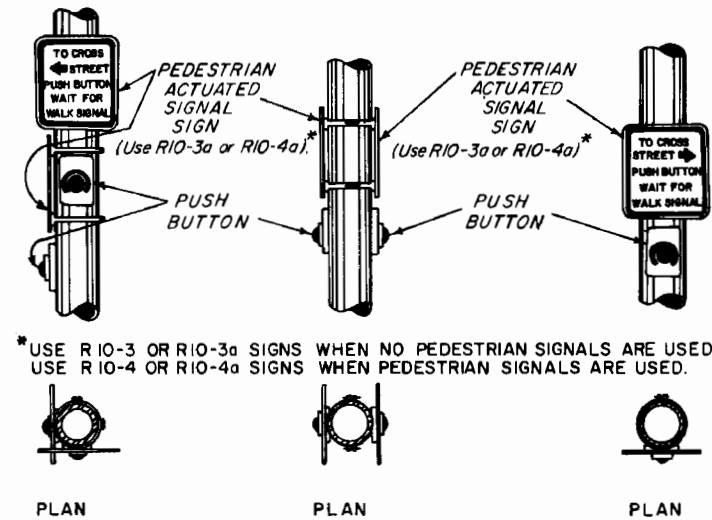


FIGURE D
POST DETECTOR STATION
DETECTOR STATION



* USE R 10-3 OR R 10-3a SIGNS WHEN NO PEDESTRIAN SIGNALS ARE USED.
* USE R 10-4 OR R 10-4a SIGNS WHEN PEDESTRIAN SIGNALS ARE USED.

FIGURE E

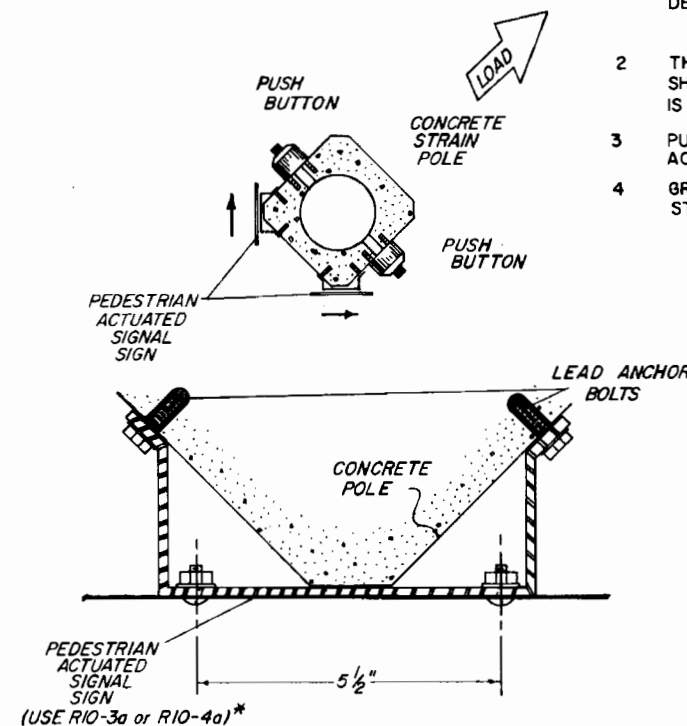


FIGURE F

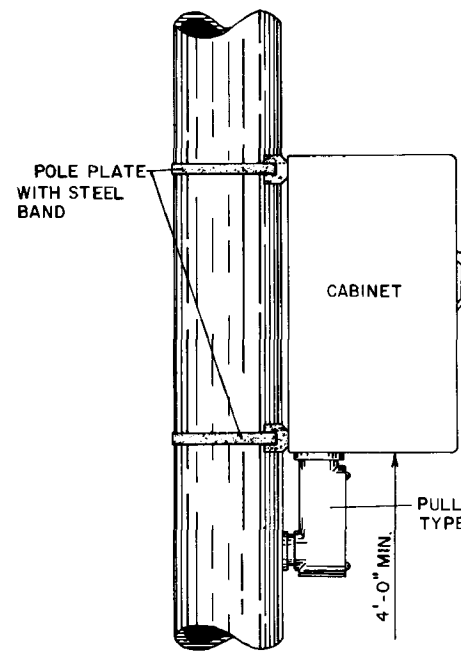
NOTES

1. SIGNS (R10-3a & R10-4a) SHALL BE MOUNTED ABOVE DETECTORS, EXPLAINING THEIR PURPOSE AND USE.
2. THE POSITIONING OF PEDESTRIAN PUSH BUTTON SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSH BUTTON.
3. PUSH BUTTONS AND SIGNS ARE TO BE MOUNTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
4. GROUND TO BE IN ACCORDANCE WITH SECTION B620 OF STANDARD SPECIFICATIONS.

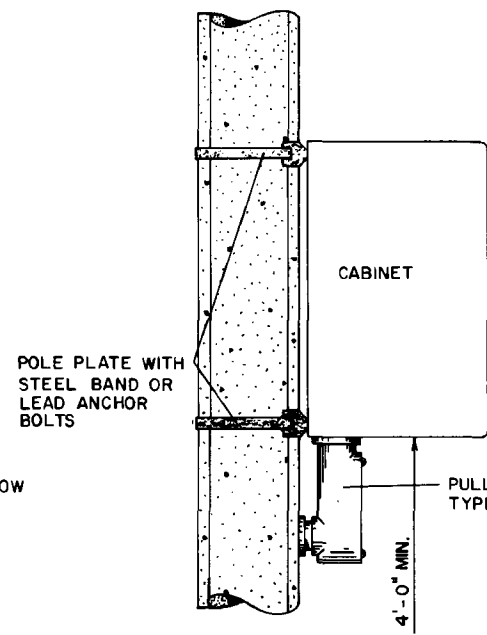
FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

PEDESTRIAN DETECTOR ASSEMBLY INSTALLATION DETAILS

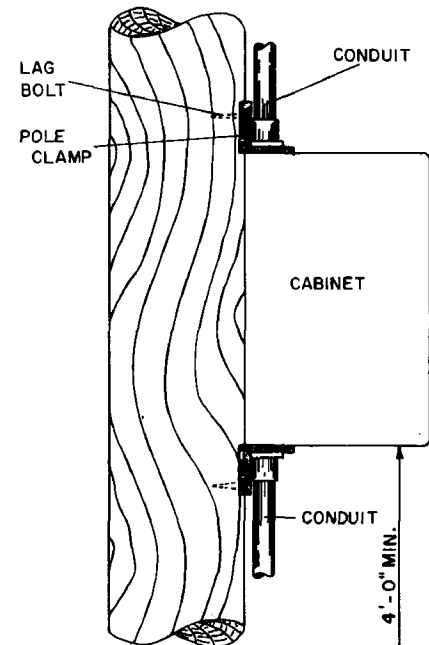
REVISIONS			INITIALS	DATES	Recommended for approval by <i>Gary C. Puse</i> Deputy Traffic Operations Eng. Approved by <i>R.S. Magada</i> State Traffic Operations Eng. DRAWING NO. INDEX NO. 1 OF 1 17784	
DATE	INITIALS	DESCRIPTION	Designed by	J.M.C.		7-13-77
10-31-79	J.M.C.	DELETED ITEM NO. 8 ADDED FIGURE F	Checked by			
08-27-80	J.M.C.	DELETED NOTES 4 & 5, AND REVISED FIGURE F	Quantities by			
			Checked by			
			Supervised by	J.J.		



METAL POLE

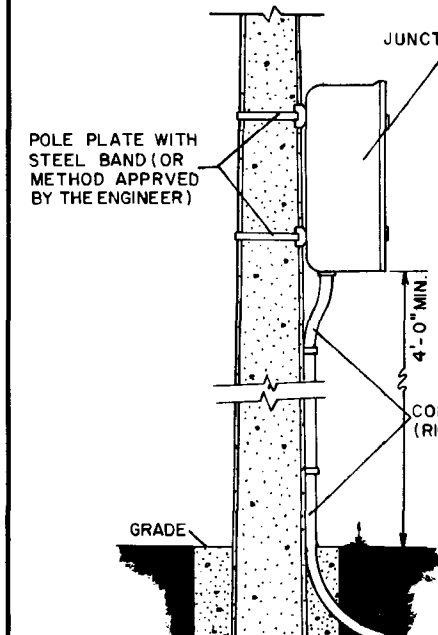


CONCRETE POLE

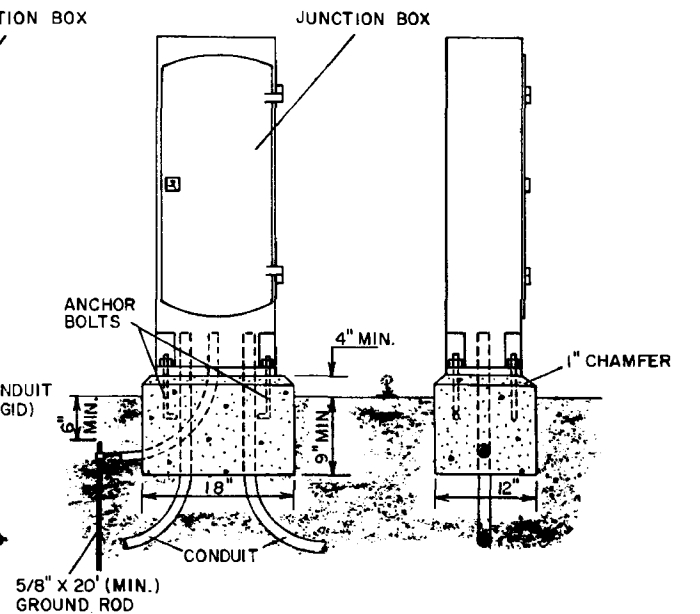


WOOD POLE

POLE MOUNTED CABINET

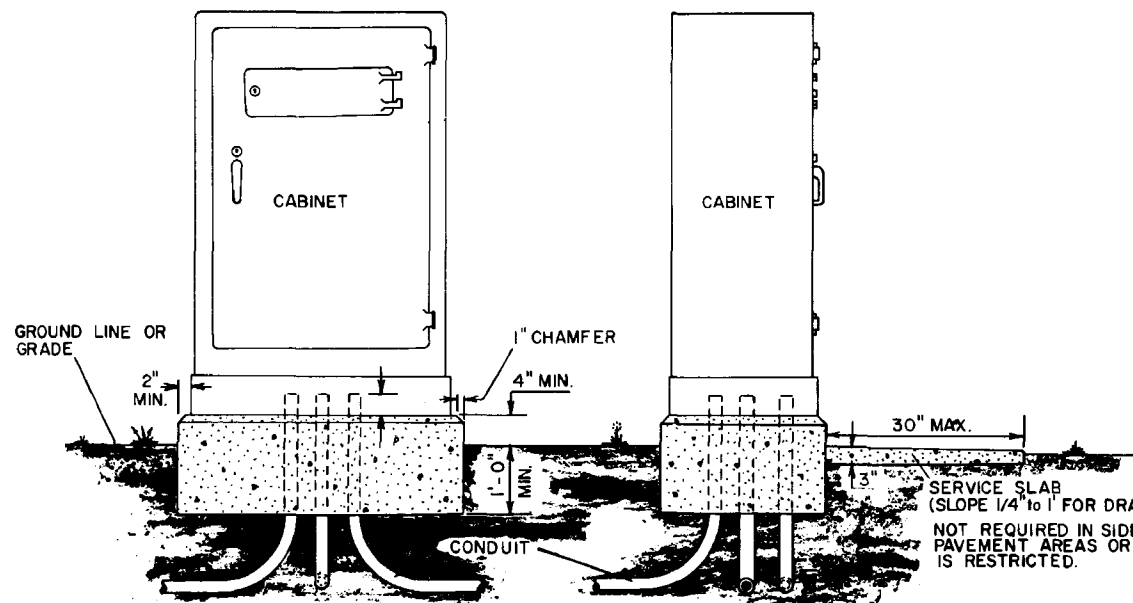


POLE MOUNTED



BASE MOUNTED

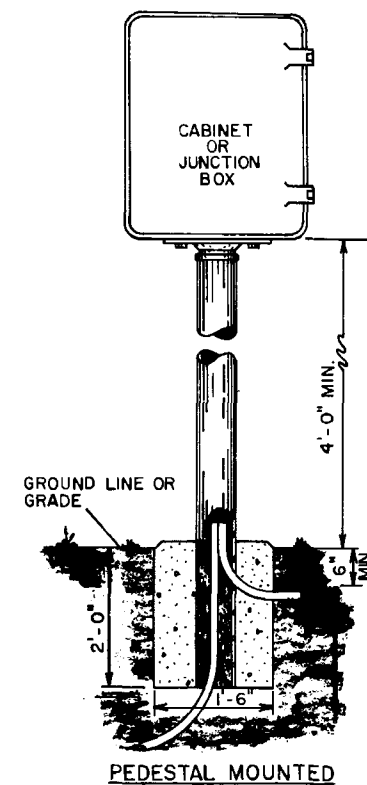
INTERCONNECT JUNCTION BOX



BASE MOUNTED CABINET

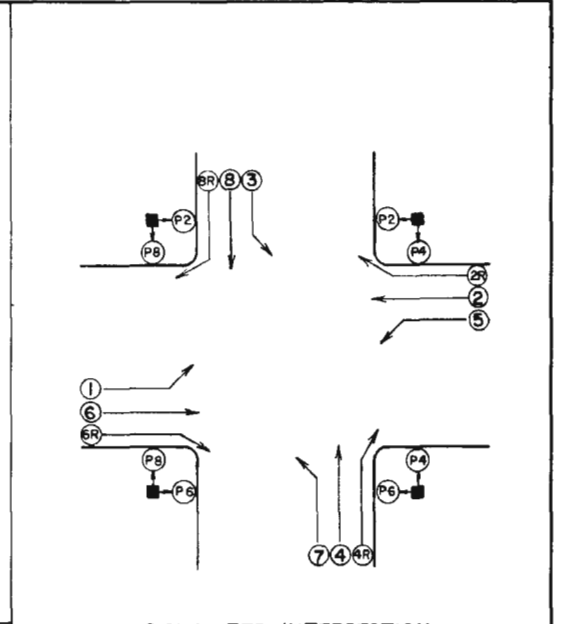
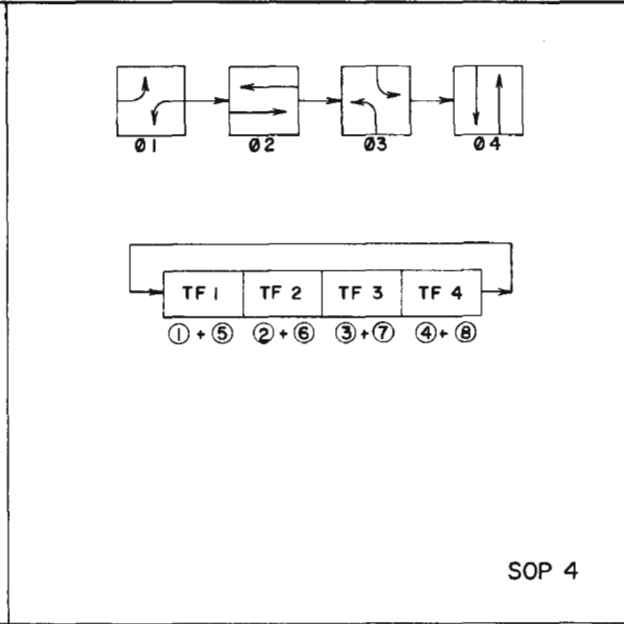
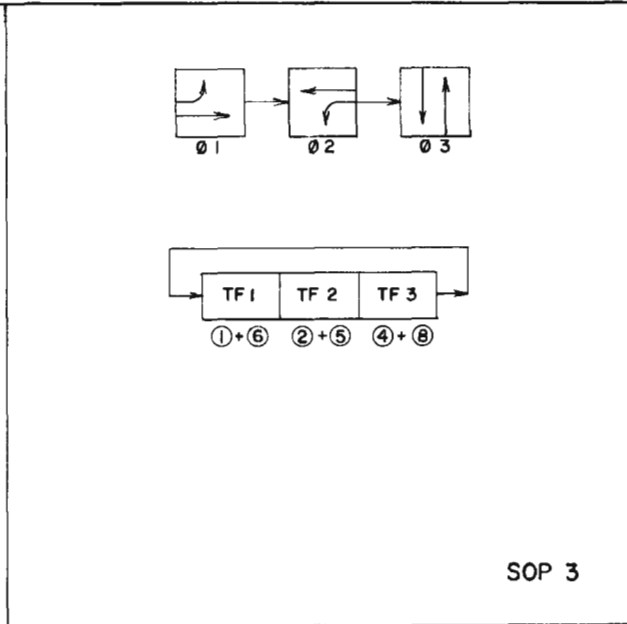
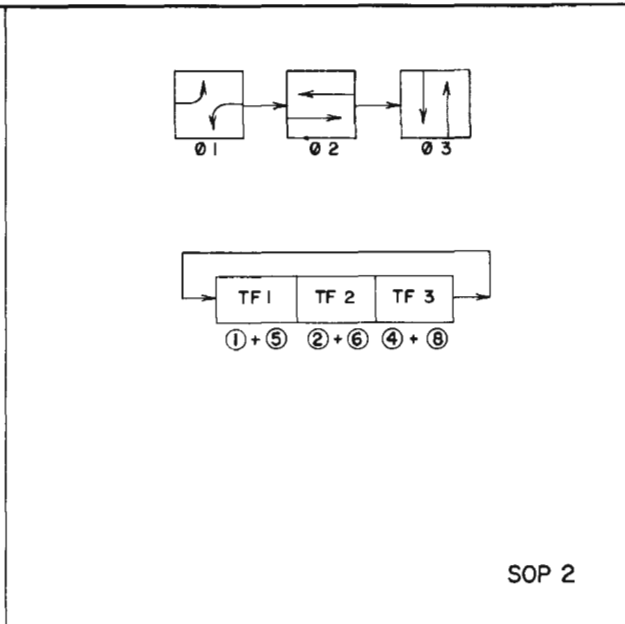
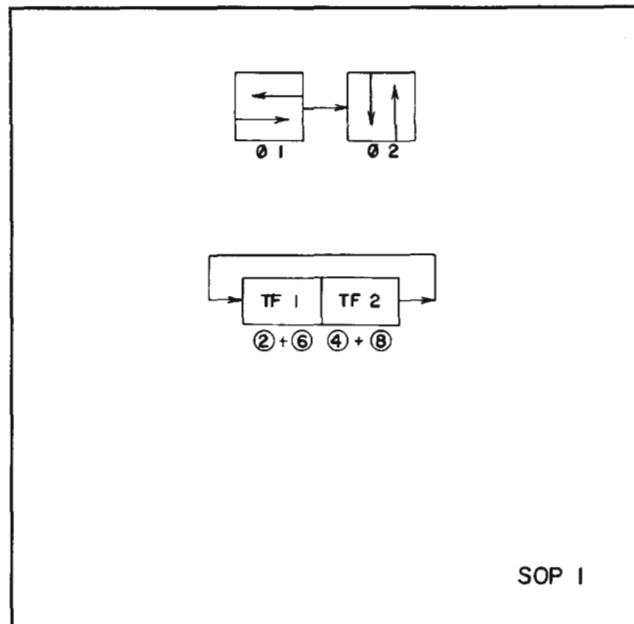
NOTES:

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 OF CONDUIT SHALL BE CAPPED WITH A WEATHER PROOF FITTING.
2. GROUNDING TO BE IN ACCORDANCE WITH SECTION 620 OF THE STANDARD SPECIFICATIONS.



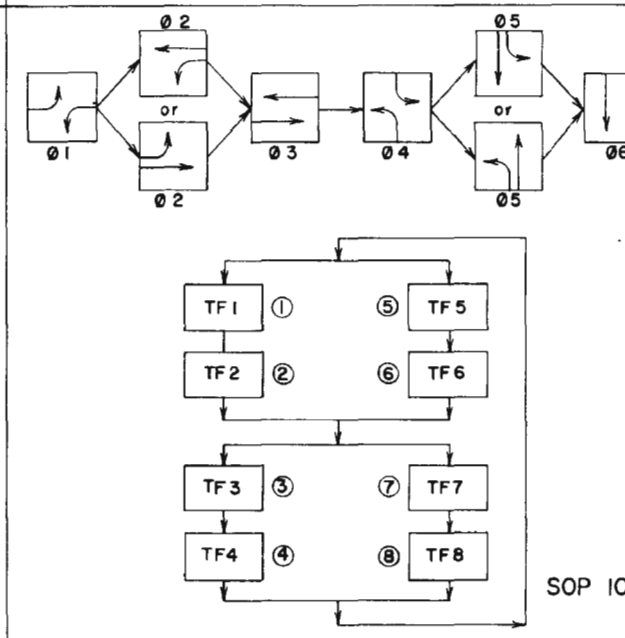
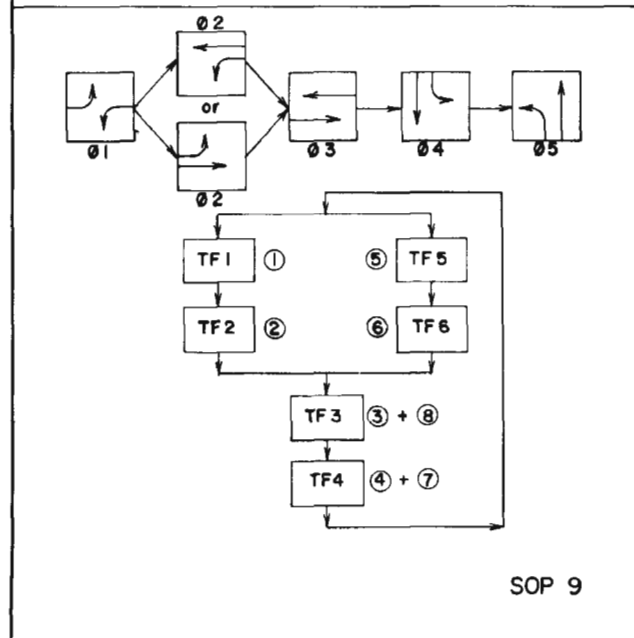
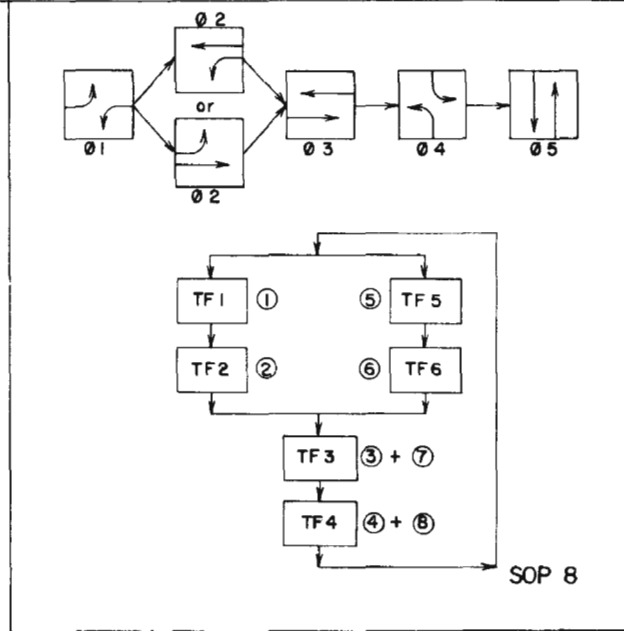
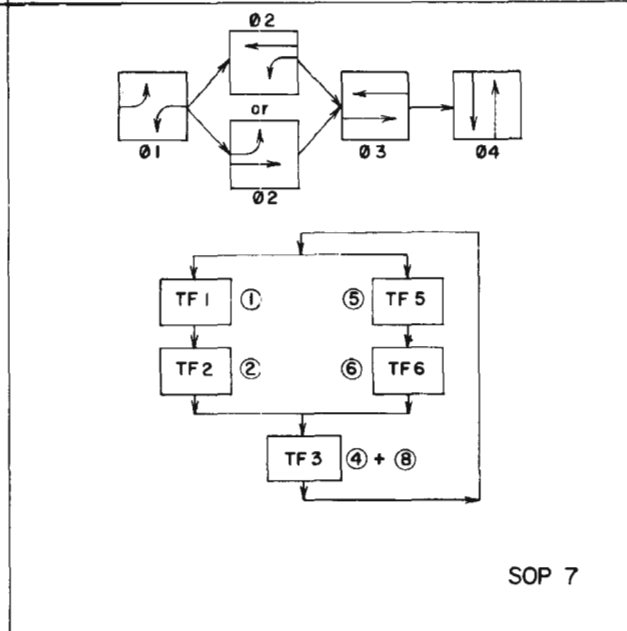
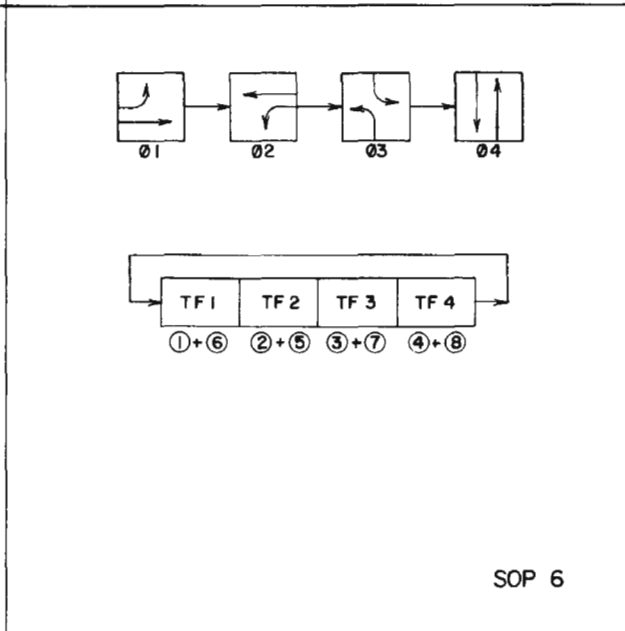
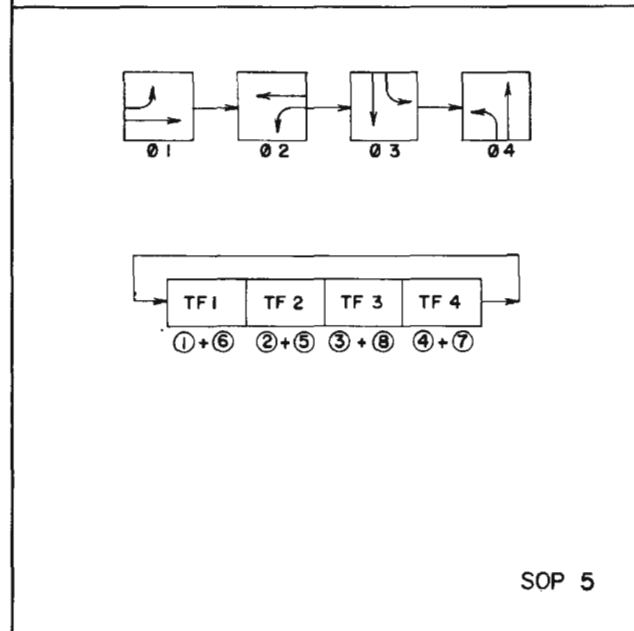
PEDESTAL MOUNTED

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
CABINET INSTALLATION DETAIL			
INITIALS	DATES	Recommended for approval	
Redrawn by Mick	09-17-80	by <i>Darryl C. Price</i> Deputy Traffic Operations Eng.	
		Approved by <i>R. Magaly</i> State Traffic Operations Eng.	
Supervised by J.R.M.	DRAWING NO. 1 OF 1	INDEX NO. 17841	



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

- LEGEND**
- (X) Vehicle Movement Number
 - (P) Pedestrian Movement Number
 - TF X Timing Function Number
 - 0X Phase Number
 - ↔ Green Arrow (Left or Right)
 - ↔ Red Arrow
 - ↔ Yellow Arrow



SIGNAL CLEARANCE TABLE

(Blank Indicates No Clearance Required)

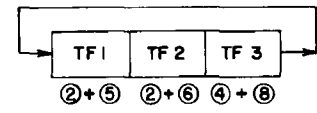
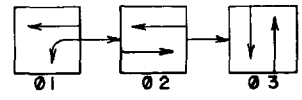
From		SIGNAL INDICATIONS							
To		R	R	G	G	G*	⚡	WALK	DON'T WALK
S	R			Y	Y	⚡	Y		
	⚡			Y	Y	⚡	Y		
	G				Y	⚡			
	⚡*								
I	⚡								
	⚡*								
	WALK								
	DON'T WALK								

* CLEARANCE INDICATION WHEN YELLOW ARROW IS USED.

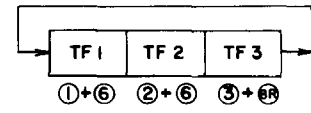
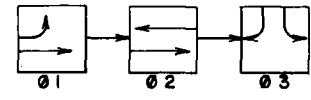
FLORIDA DEPARTMENT OF TRANSPORTATION
 TRAFFIC OPERATIONS

STANDARD SIGNAL OPERATING PLANS

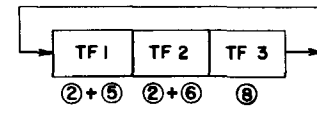
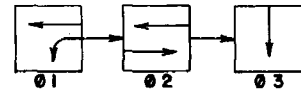
REVISIONS			INITIALS	DATES	Recommended for approval by <i>Larry C. Puce</i> Deputy Traffic Operations Eng.
DATE	INITIALS	DESCRIPTION	Drawn by	J.M.C.	
			Checked by	J.W.J.	
					Approved by <i>A. Magada 10/10/79</i> State Traffic Operations Eng.
					DRAWING NO. INDEX NO.
					1 OF 2 17870



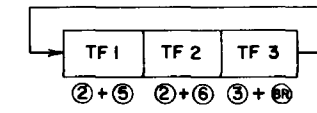
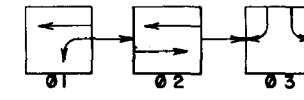
SOP 11



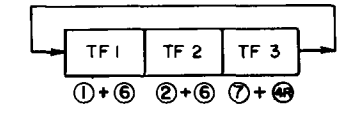
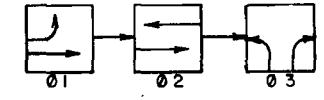
SOP 12



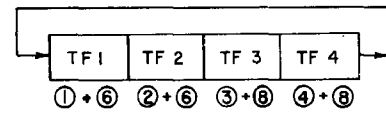
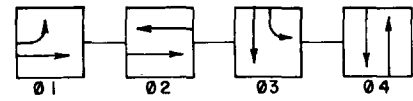
SOP 13
(ONE-WAY STREET INTERSECTION)



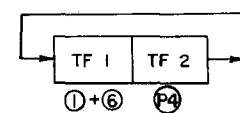
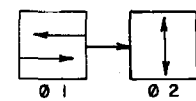
SOP 14
(DIAMOND INTERCHANGE OPERATION)



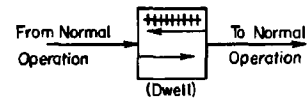
SOP 15
(DIAMOND INTERCHANGE OPERATION)



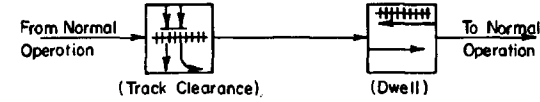
SOP 16



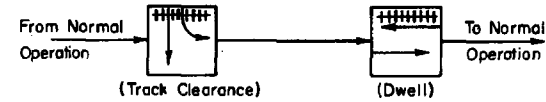
SOP 17
(MID-BLOCK)



POP 1



POP 2



POP 3

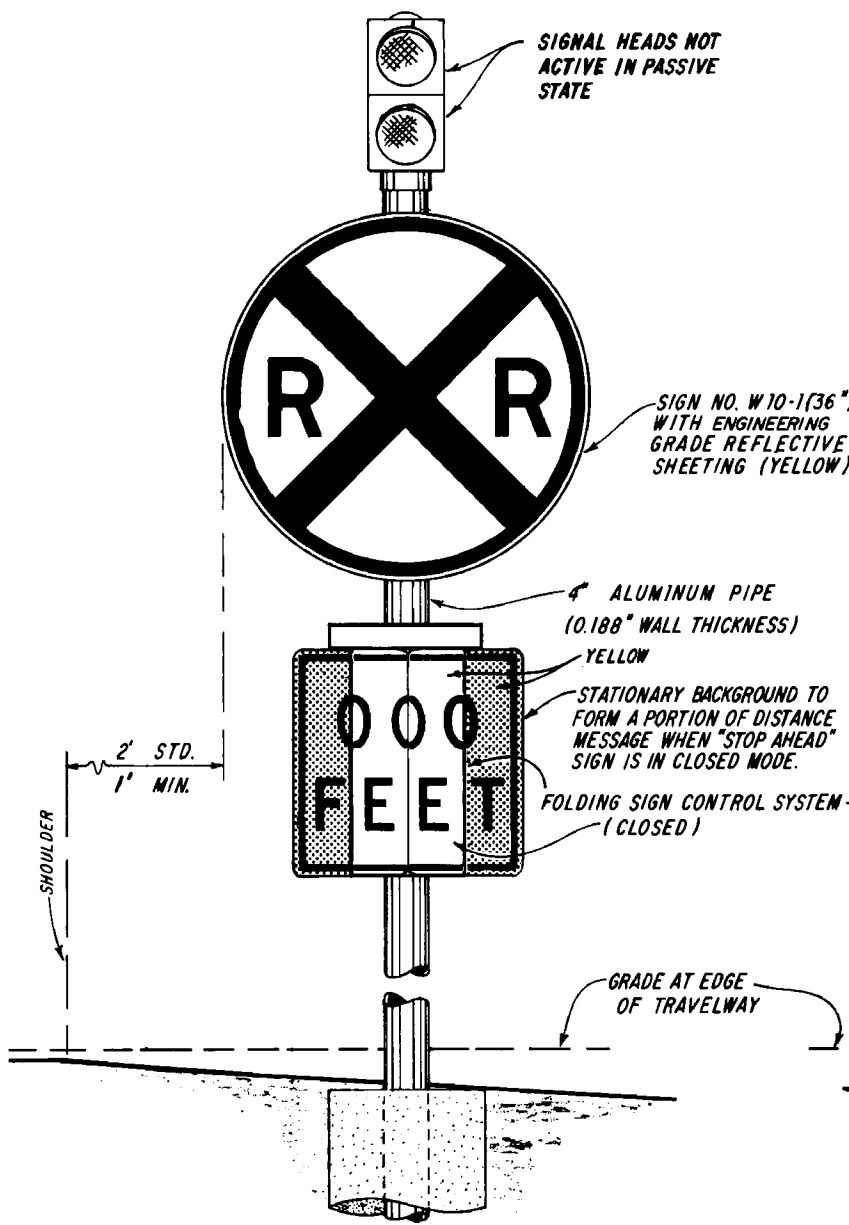
FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

STANDARD SIGNAL OPERATING PLANS

REVISIONS			INITIALS	DATES	Recommended for approval by <i>Harry C. Luce</i> Deputy Traffic Operations Eng.
DATE	INITIALS	DESCRIPTION	Drawn by	J.M.C.	
08-21-80	J.M.C.	ADDED S.O.P. 16	Checked by	J.W.J.	
					Approved by <i>R.L. Magadey</i> State Traffic Operations Eng.
					DRAWING NO. INDEX NO.
					2 OF 2 17870

PASSIVE STATE

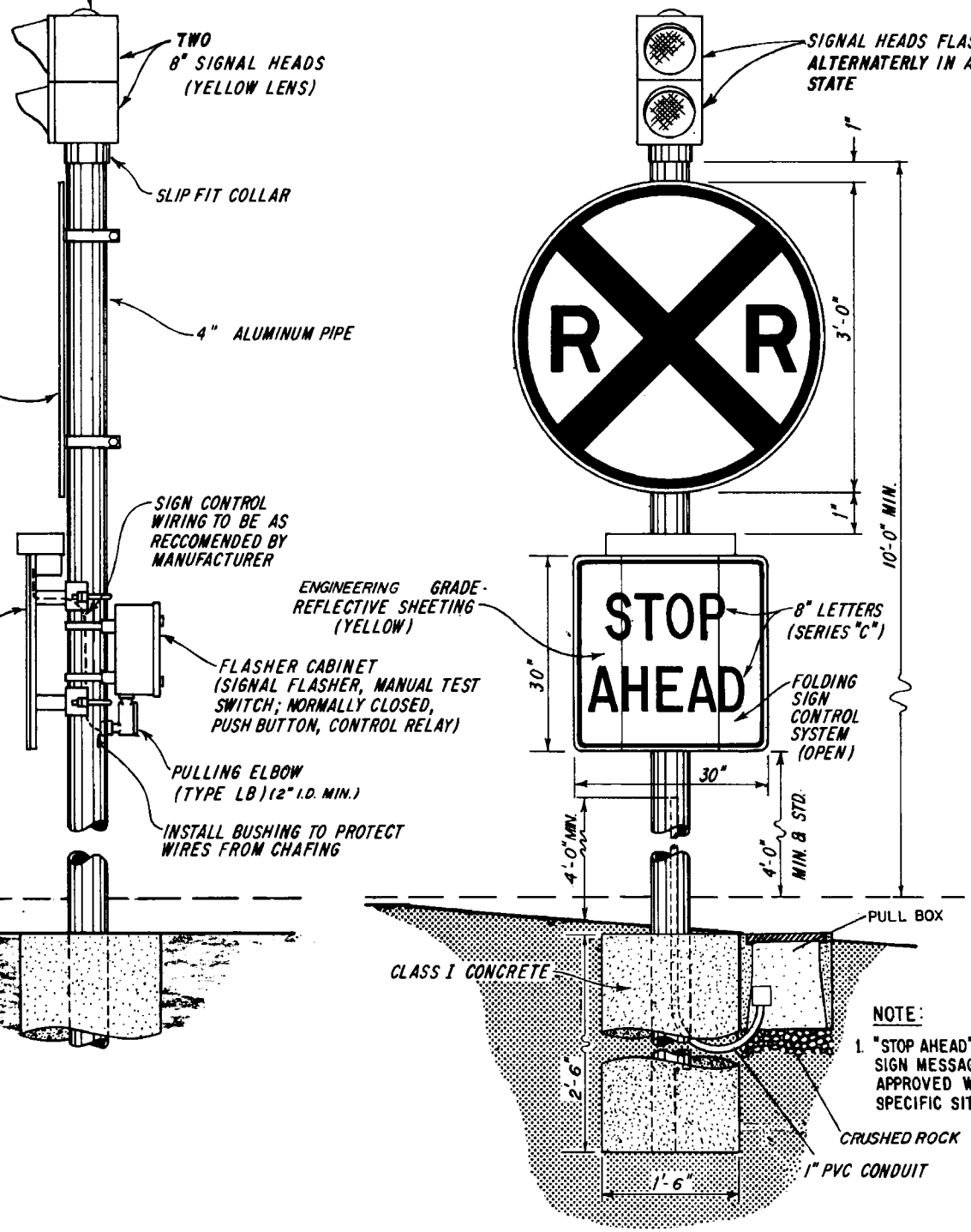
(TRAIN CIRCUIT NOT ACTUATED)



FRONT VIEW

ACTIVE STATE

(TRAIN CIRCUIT ACTUATED)



SIDE VIEW

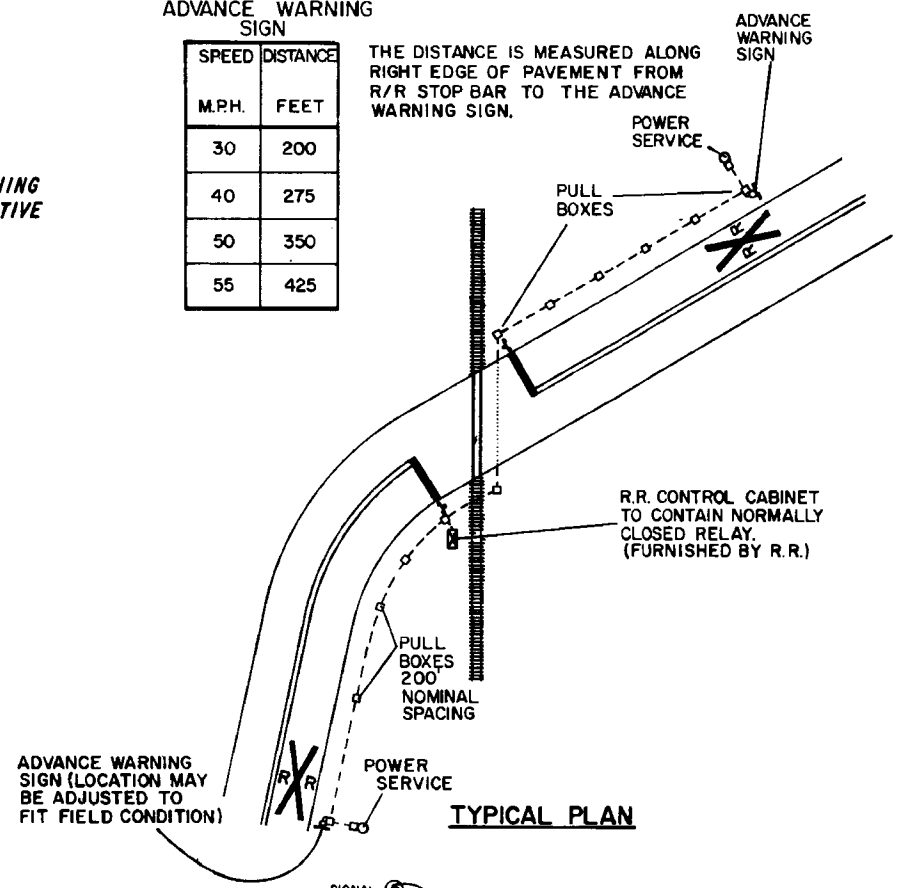
FRONT VIEW

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

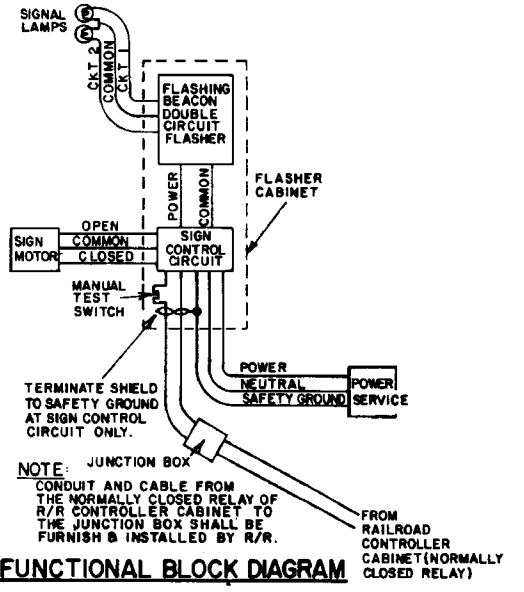
LOCATION OF THE ADVANCE WARNING SIGN

SPEED M.P.H.	DISTANCE FEET
30	200
40	275
50	350
55	425

THE DISTANCE IS MEASURED ALONG RIGHT EDGE OF PAVEMENT FROM R/R STOP BAR TO THE ADVANCE WARNING SIGN.



TYPICAL PLAN



FUNCTIONAL BLOCK DIAGRAM

FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS

ADVANCE WARNING FOR R.R. CROSSING

REVISIONS			INITIALS	DATES
DATE	INITIALS	DESCRIPTION	Designed by	C.G.
8/28/78	J.M.C.	DELETED NOTE NO. 2	Checked by	12/12/75
10/30/79	J.R.W.	DELETED DUPLICATED NOTES AND CLARIFIED OTHER NOTES	Quantities by	
09-04-80	MICK	ADDED PULL BOX, REVISED 4" PEDESTAL	Checked by	
			Supervised by	REM

Recommended for approval by	<i>Clay C. Price</i>	Deputy Traffic Operations Engr.
Approved by	<i>R.S. Magala</i>	State Traffic Operations Engr.
DRAWING NO.	INDEX NO.	
1 OF 1	17881	

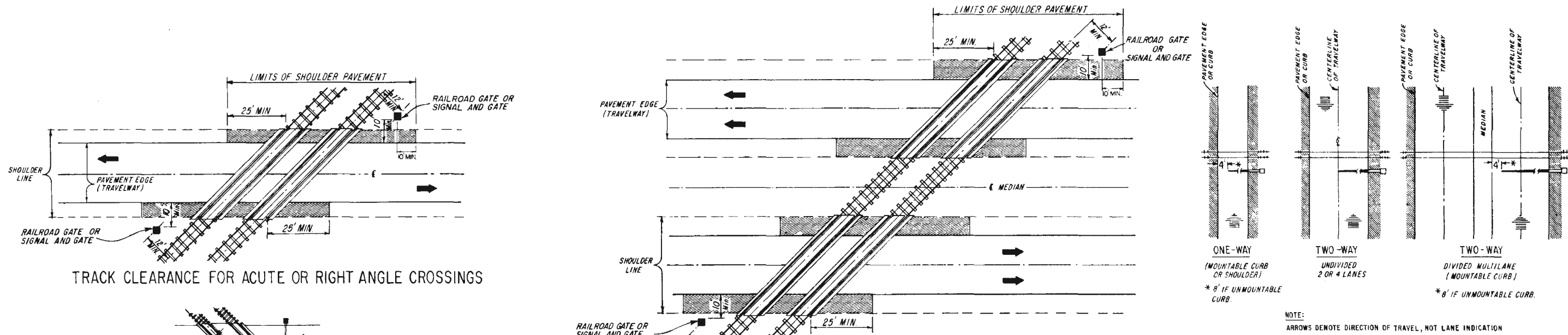
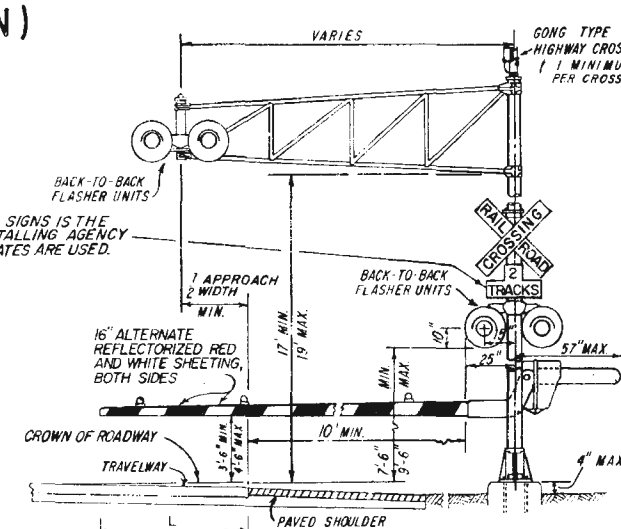
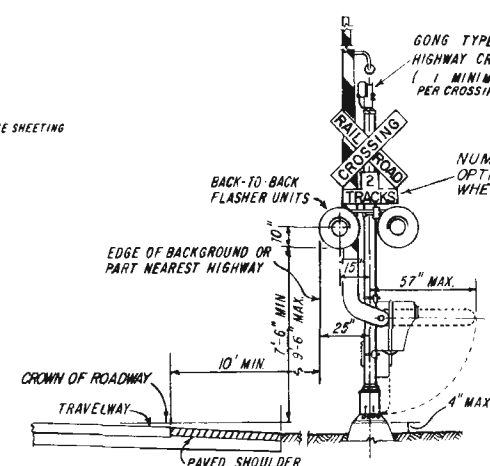
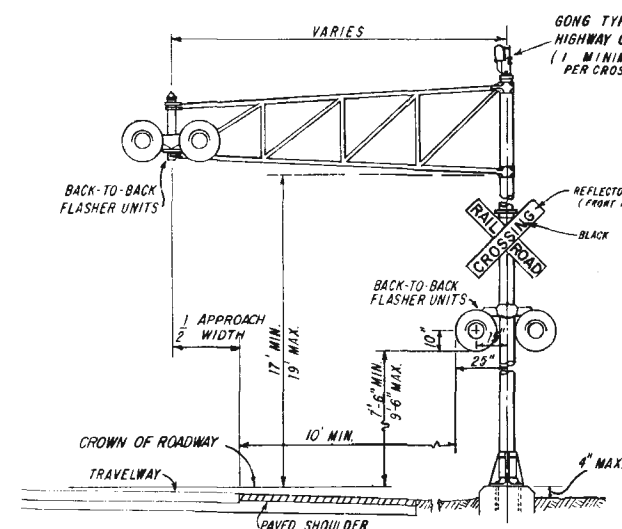
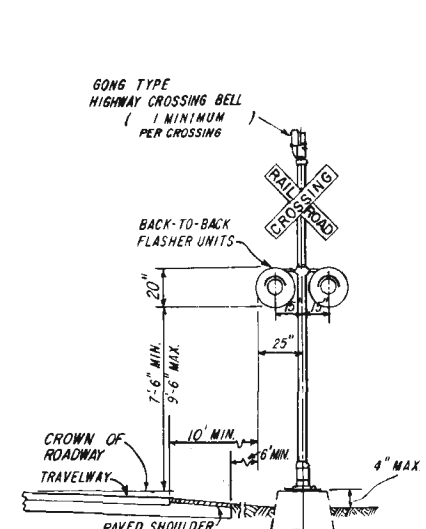


FIGURE 1
GATE LENGTH REQUIREMENTS

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

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



TYPE I

TYPE II

TYPE III

TYPE IV

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

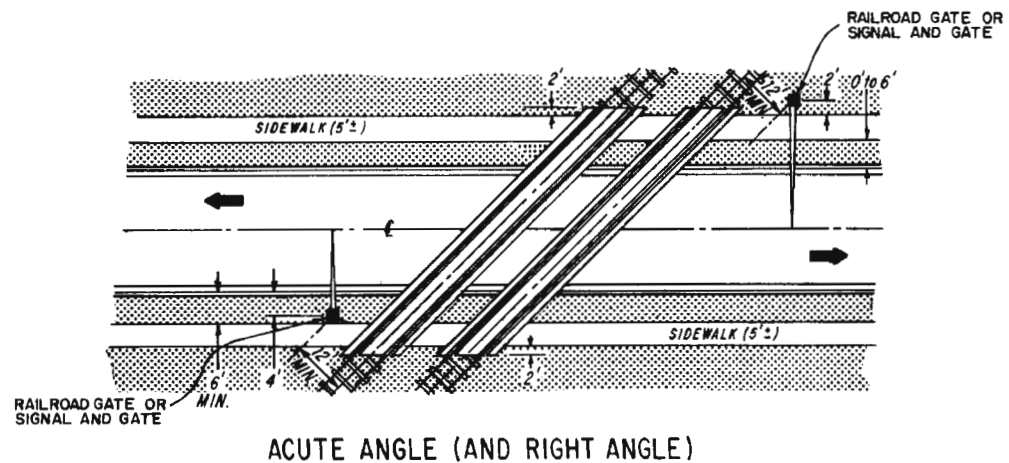
GENERAL NOTES

- 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.

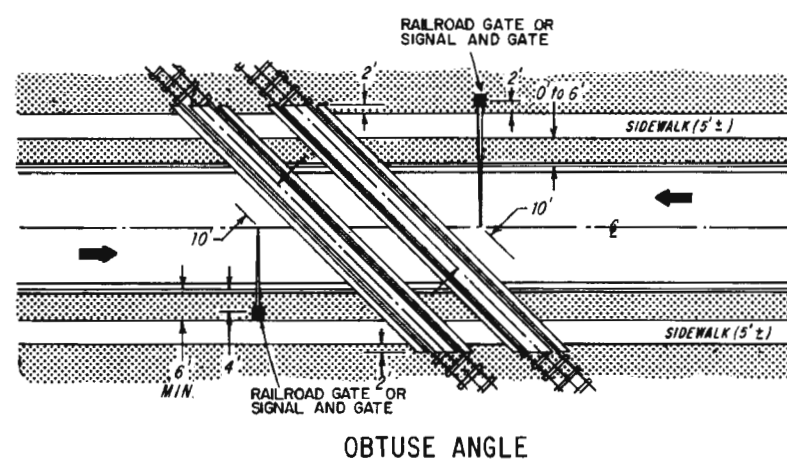
**FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS
RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES**

REVISIONS			INITIALS	DATES
DATE	INITIALS	DESCRIPTION		
7-19-77	J.J.	ADDED GONG TYPE HIGHWAY CROSSING BELL	CG	4-8-76
11-9-77	J.J.	ADDED SHEET 3 OF 3 TO INDEX	RM	4-8-76
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 & III 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	Recommended for approval by <i>Larry C. Puce</i> Deputy Traffic Operations Engr
Checked by	RM	4-8-76	
Quantities by			Approved by <i>R.L. Magala, 10/31/79</i> State Traffic Operations Engr.
Checked by			
Supervised by	REM		DRAWING NO. 1 OF 3
			INDEX NO. 17882



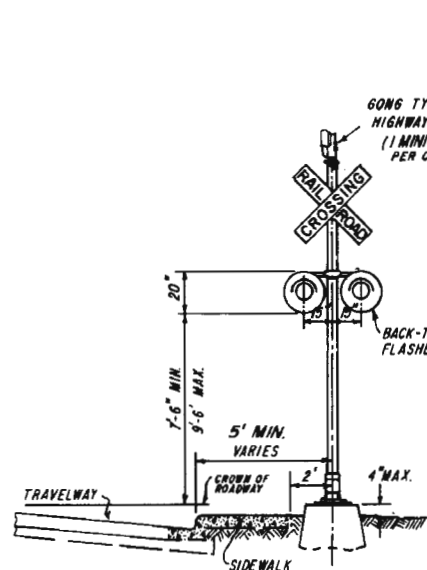
SIGNAL PLACEMENT AT RAILROAD CROSSING
(2 LANES, CURB & GUTTER)



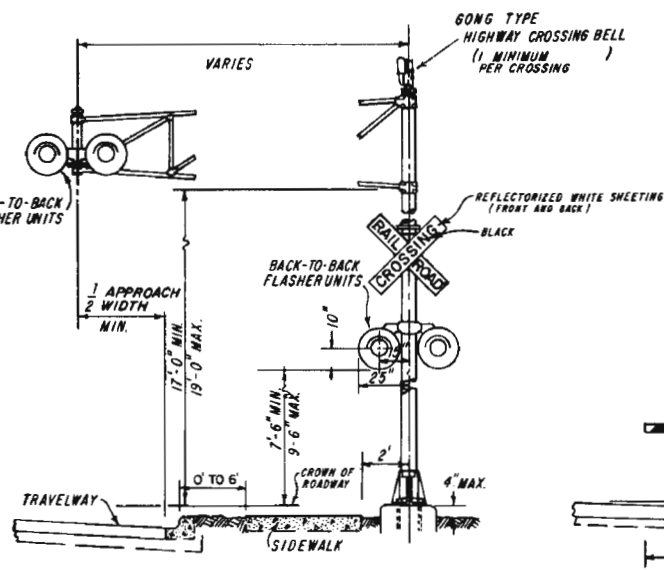
SIGNAL PLACEMENT AT RAILROAD CROSSING
(2 LANES, CURB & GUTTER)

GENERAL NOTES

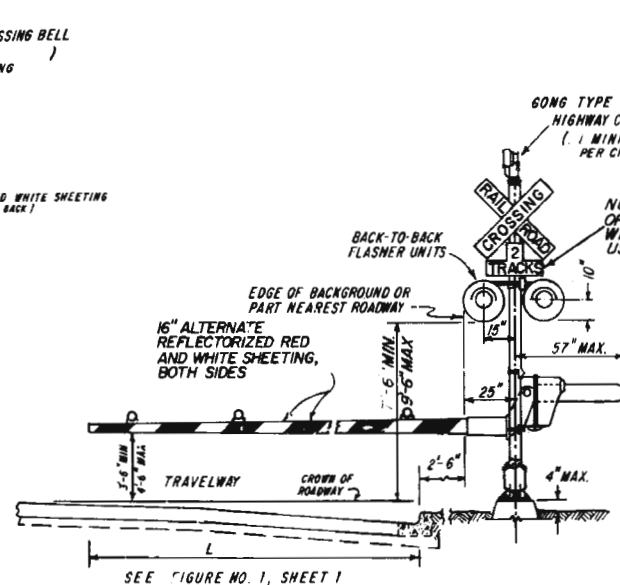
7. THE LOCATION OF FLASHING SIGNALS AND STOP LINES SHALL BE ESTABLISHED BASED ON FUTURE (OR PRESENT) INSTALLATION OF GATES WITH APPROPRIATE TRACK CLEARANCES.
8. WHERE PLANS CALL FOR RAILROAD TRAFFIC CONTROL DEVICES TO BE INSTALLED IN CURBED MEDIANS, THE MINIMUM MEDIAN WIDTH SHALL BE 10 FEET.
9. LOCATION 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.



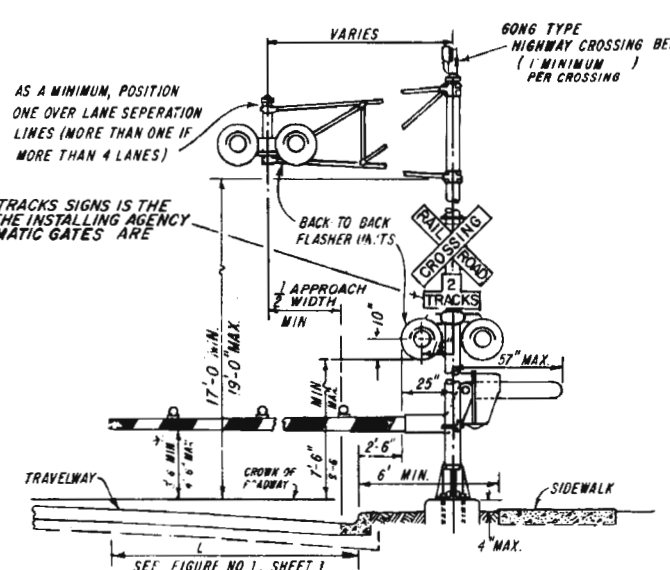
TYPE I



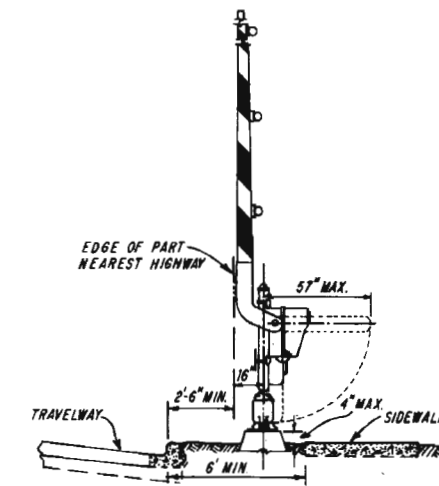
TYPE II



TYPE III



TYPE IV



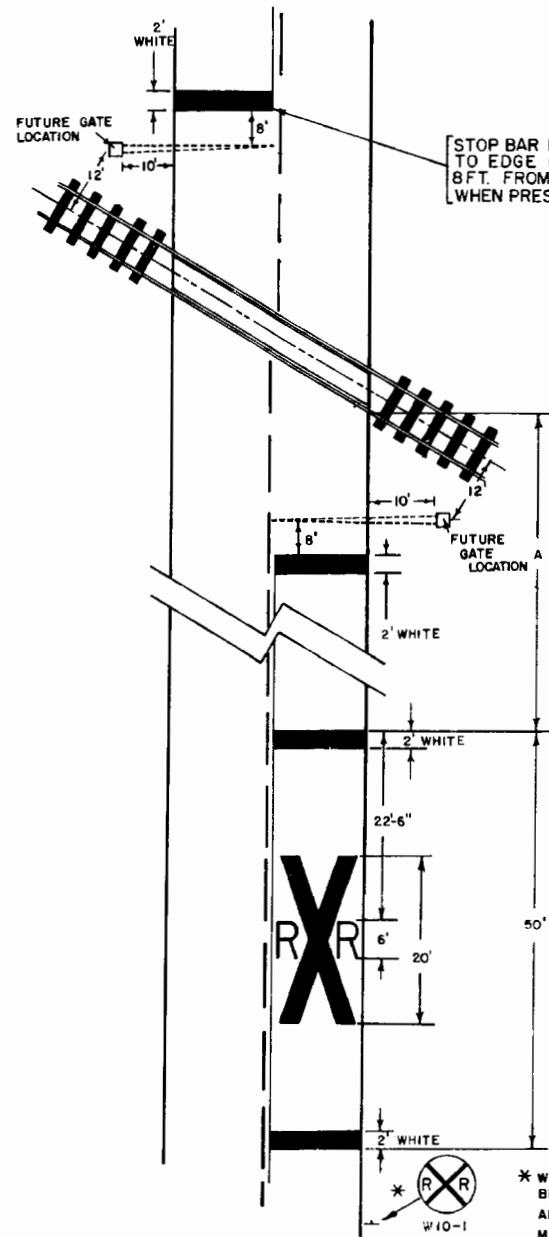
TYPE V

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

REVISIONS				INITIALS	DATES	Recommended for approval by <i>Ray C. Puce</i> Deputy Traffic Operations Engr.
DATE	INITIALS	DESCRIPTION	Designed by	CG	4-8-76	
7-19-77	J.J.	ADDED GONG TYPE HIGHWAY CROSSING BELL	Checked by	RM	4-8-76	Approved by <i>RE Magaden</i> State Traffic Operations Engr.
11-9-77	J.J.	ADDED SHEET 3 OF 3 TO INDEX	Quantities by			
8-27-78	J.M.C.	REVISED NOTES 7 AND 8 AND ADDED NOTE TO NUMBER OF TRACKS SIGNS.	Checked by			Supervised by
10-31-79	J.M.C.	REVISED TYPE II & III OVERHEAD SIGNAL PLACEMENT TO 1/2 APPROACH WIDTH AND ADDED RAILROAD GATES & SIGNAL GATE TO CROSSING.		REM		

DRAWING NO. 2 OF 3
INDEX NO. 17882

RAILROAD CROSSING AT TWO (2)-LANE ROADWAY

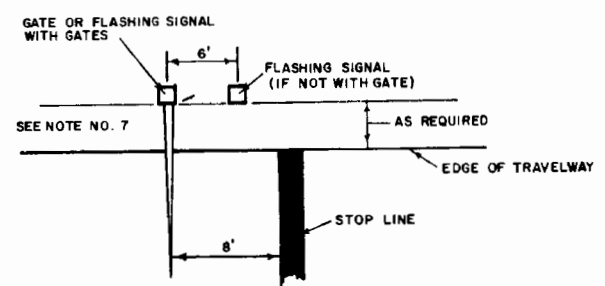


STOP BAR PERPENDICULAR TO EDGE OF TRAVEL WAY OR 8 FT. FROM & PARALLEL TO GATE WHEN PRESENT.

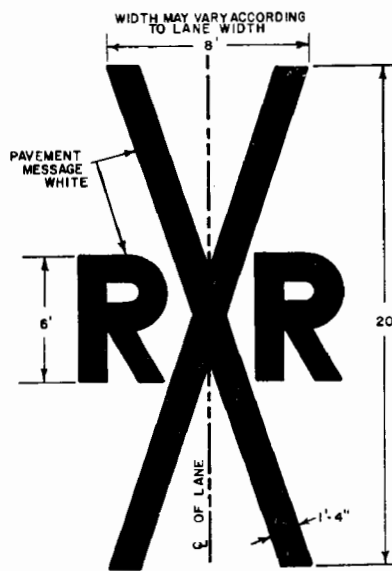
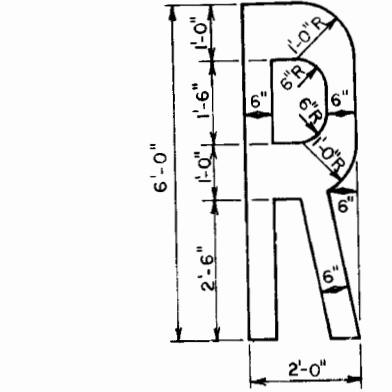
SPEED M.P.H.	"A" IN FT.
55	425
50	350
40	275
30	200
URBAN	50 MIN.

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

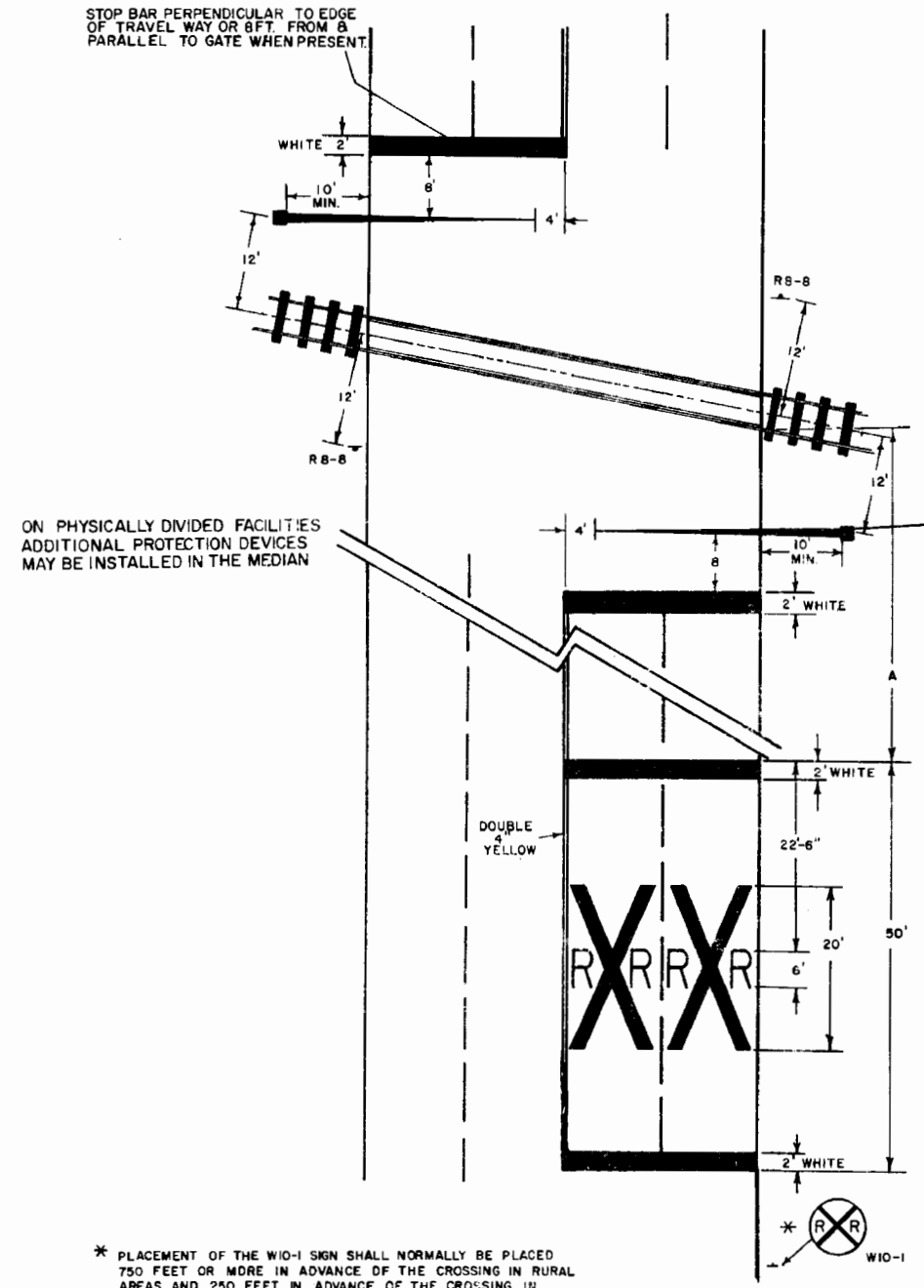
* WHERE STREET INTERSECTIONS OCCUR BETWEEN THE R.R. PAVEMENT MESSAGE & THE TRACKS AN ADDITIONAL W10-1 & AN ADDITIONAL PAVEMENT MESSAGE SHOULD BE USED.



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

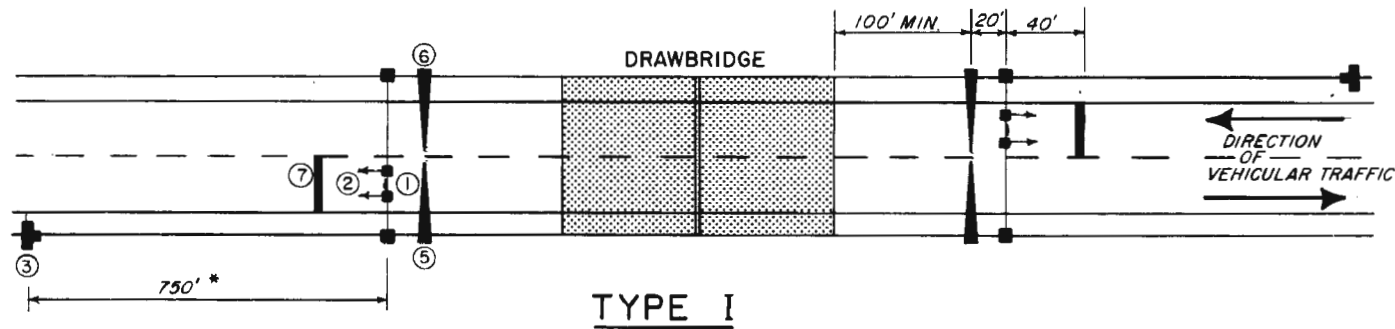
DO NOT STOP ON TRACKS
R8-8 FOR USE NEAR SIGNALIZED INTERSECTIONS
RAILROAD PROTECTION DEVICE IS NOT TO BE LOCATED WITHIN 12' OF THE R/R CENTER LINE.

* 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

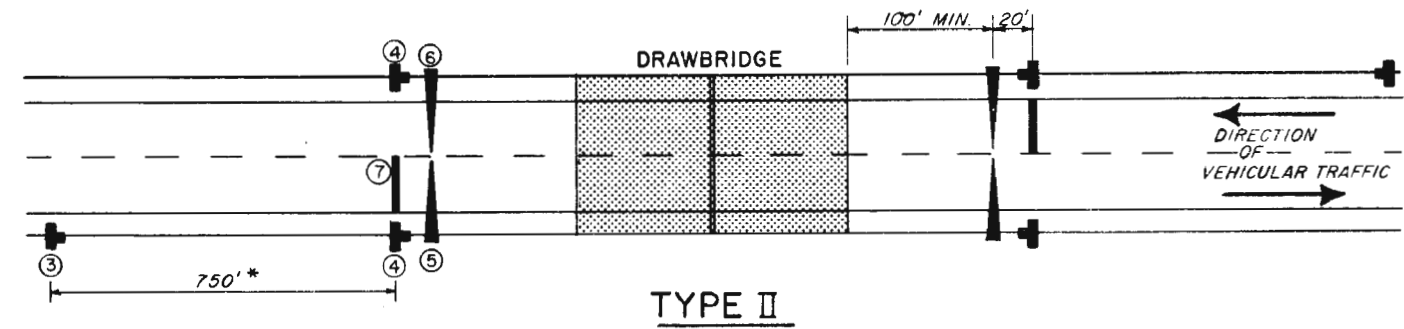
RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES

REVISIONS			INITIALS	DATES	Recommended for approval
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		
09-22-80	J.M.C.	REVISED R/R "X" DIMENSIONS	Supervised by	W.C.C.	
					by <i>Lang C. Price</i> Deputy Traffic Operations Eng.
					Approved by <i>RE Magada</i> State Traffic Operations Eng.
				DRAWING NO.	INDEX NO.
				3 OF 3	17882



TYPE I

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

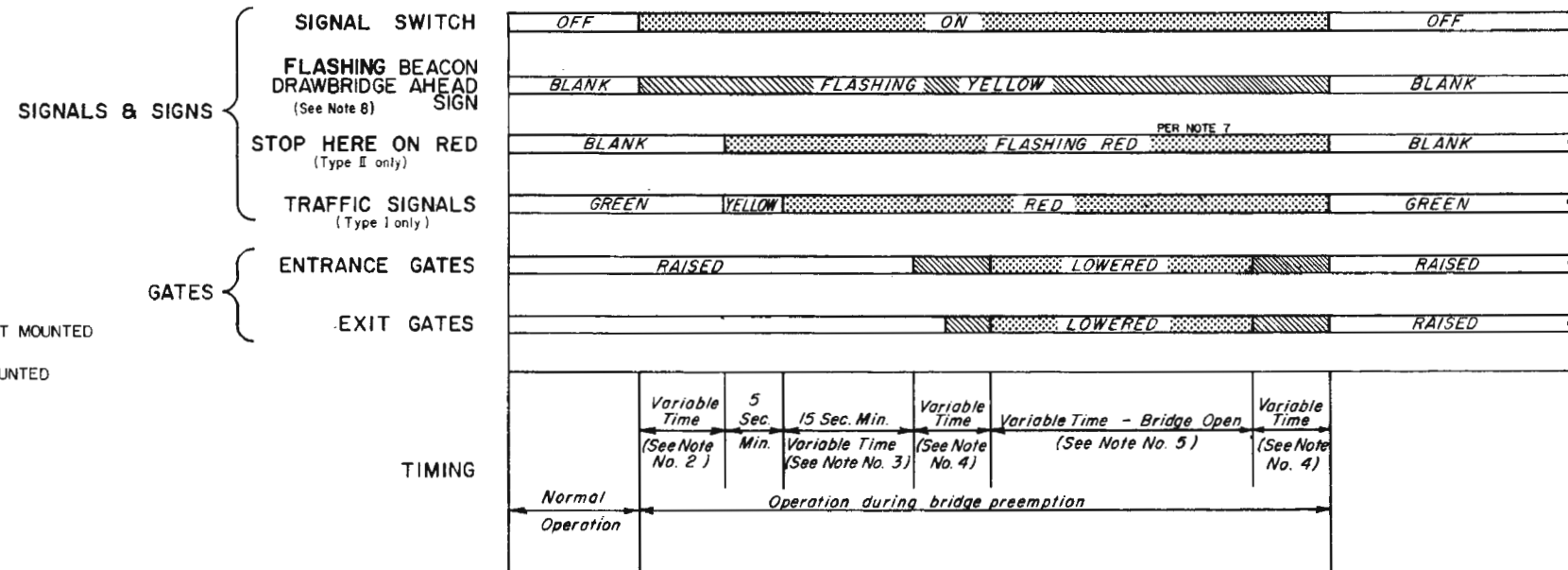


TYPE II

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

* FIELD CONDITIONS MAY REQUIRE ADJUSTMENT OF THIS STANDARD DISTANCE.

SEQUENCE CHART



- LEGEND**
- ① TRAFFIC SIGNALS MONOTUBE SUPPORT MOUNTED
 - ② DRAWBRIDGE SIGN
 - ③ DRAWBRIDGE AHEAD SIGN GROUND MOUNTED
 - ④ STOP HERE ON RED SIGN
 - ⑤ ENTRANCE GATE
 - ⑥ EXIT GATE
 - ⑦ 24" THERMOPLASTIC STOP BAR

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 continuous view of at least one signal indication for approximately 10 sec.
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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS
TRAFFIC CONTROL DEVICES FOR
MOVEABLE SPAN BRIDGE SIGNALS

REVISIONS			INITIALS	DATES
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

Recommended for approval by *Gary C. Puce* Deputy Traffic Operations Eng.
Approved by *R.E. Magaly* 7/20/76 State Traffic Operations Eng.

DRAWING NO.	INDEX NO.
1 OF 3	17890

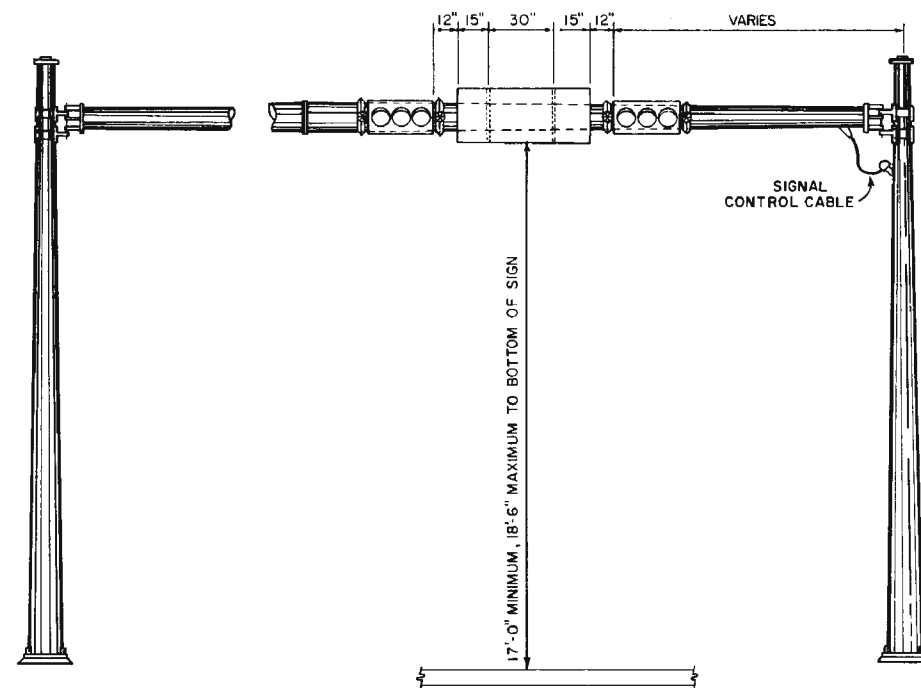
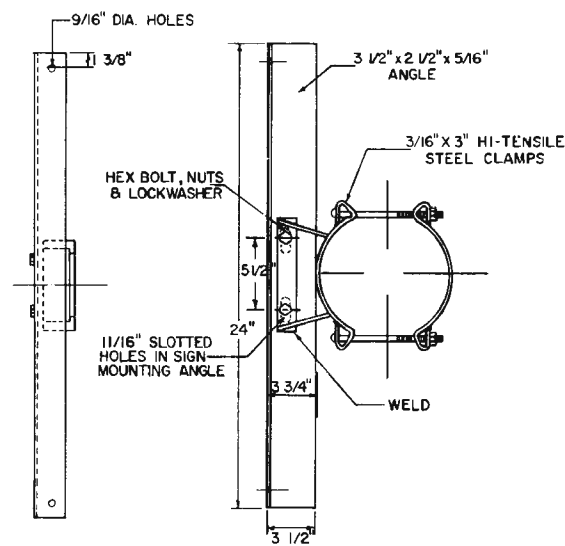


FIGURE - A
MONOTUBE SUPPORT MOUNTING



SIGN PANEL MOUNTING ASSEMBLY

FIGURE - B

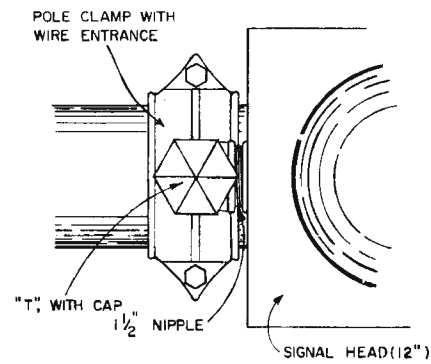


FIGURE - C

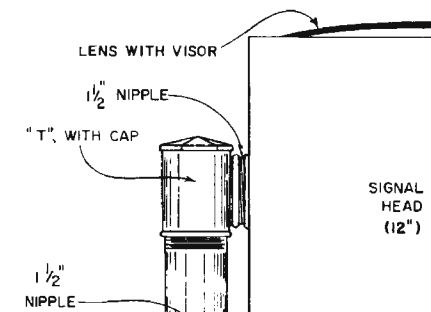


FIGURE - D

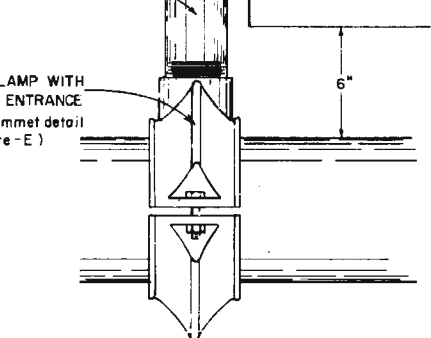


FIGURE - E

SIGNAL HEAD MOUNTING ASSEMBLY

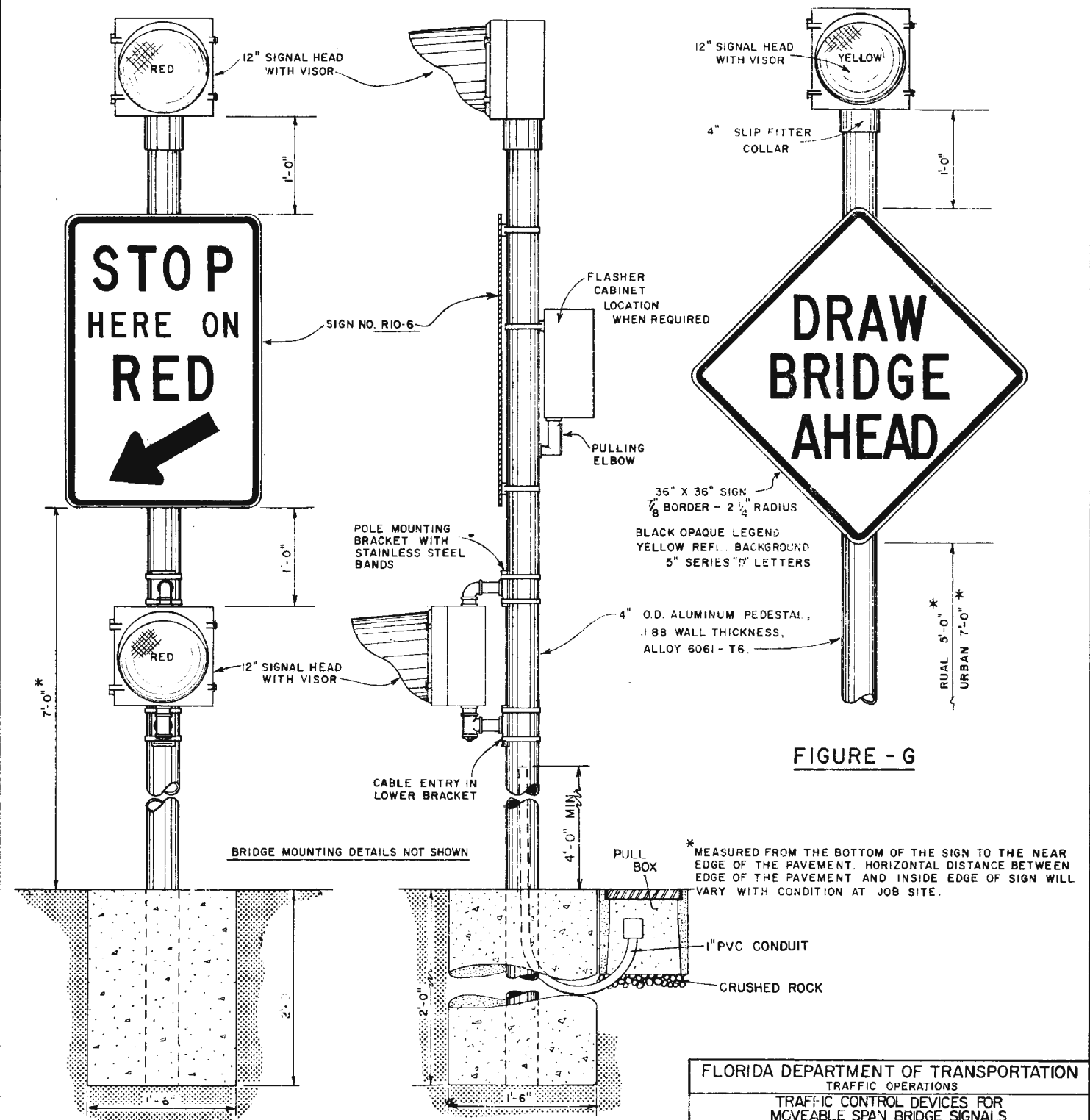
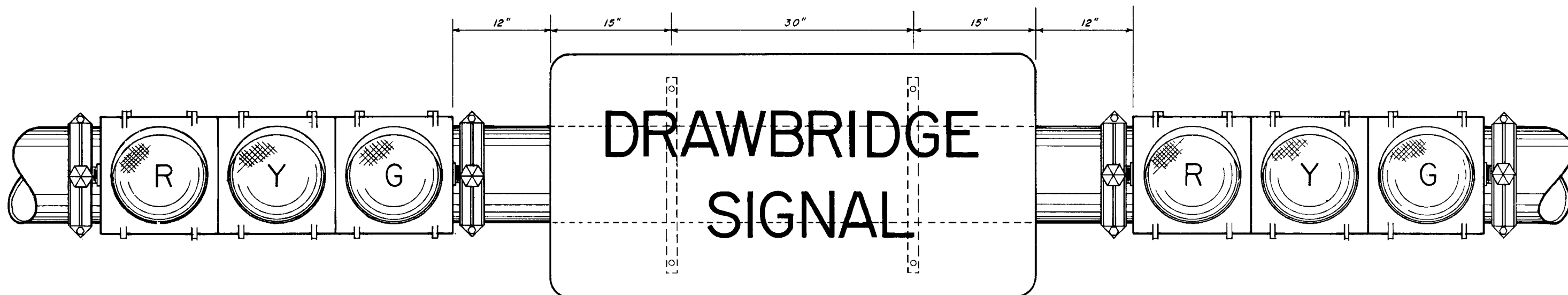


FIGURE - F

REVISIONS		
DATE	INITIALS	DESCRIPTION
7-20-76	CEJ	REMOVE HEADERS & REVISED TITLE BLOCK
09-04-80	MICK	REVISED 4 1/2" PEDESTAL TO 4"

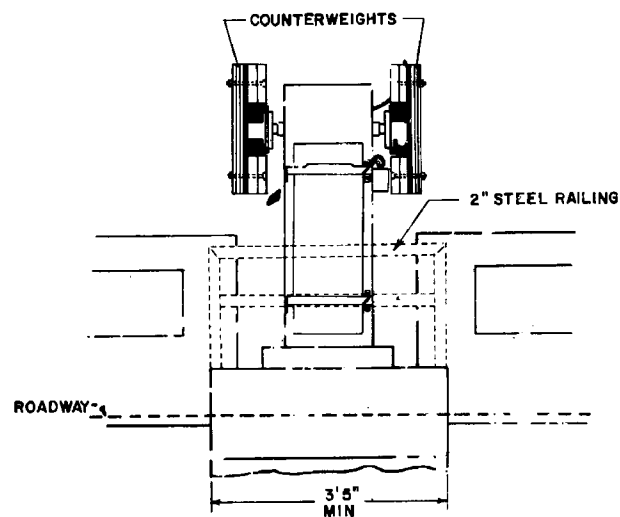
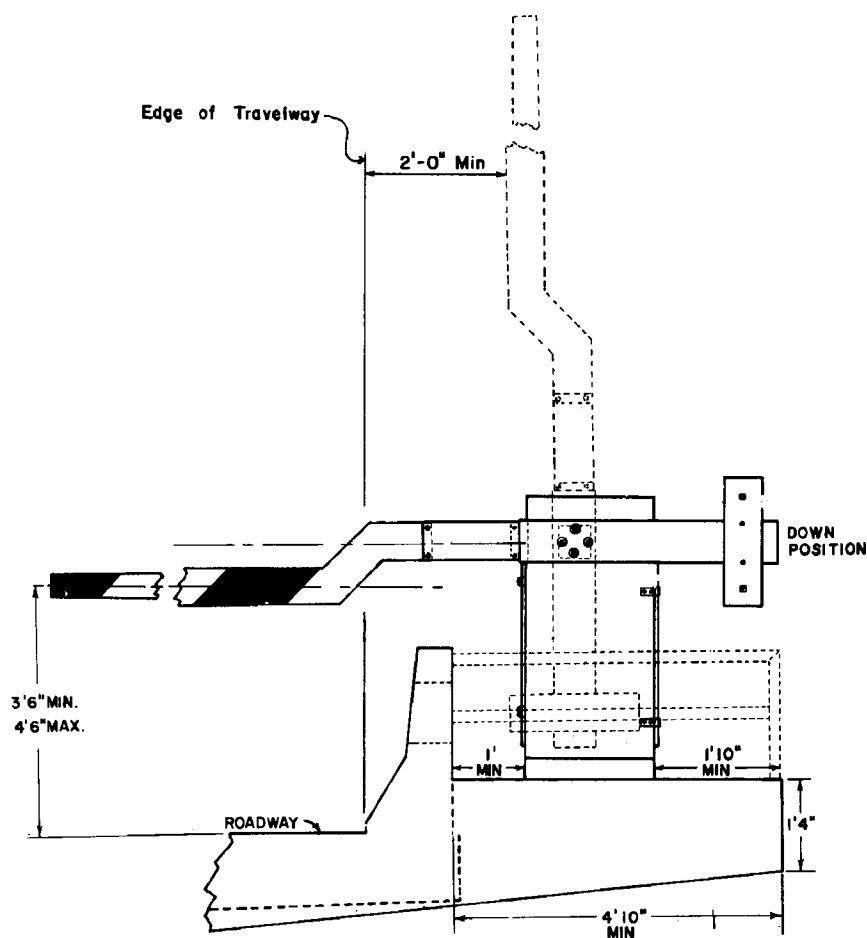
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TRAFFIC CONTROL DEVICES FOR MOVEABLE SPAN BRIDGE SIGNALS			
Designed by	CG	4-7-75	Recommended for approval by <i>Darryl C. Fauce</i> Deputy Traffic Operations Eng.
Checked by	RK	4-7-75	
Quantities by			Approved by <i>R.E. Magaley</i> State Traffic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



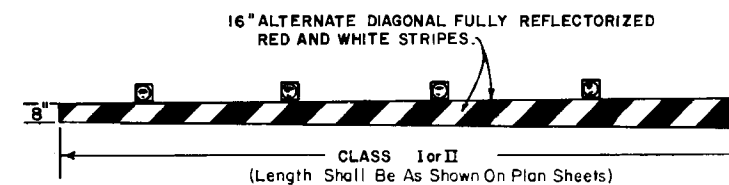
2'-6" X 5'-0"
2" BORDER - 4" RADIUS
6" SERIES "D" LETTERS

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.

REVISIONS		
DATE	INITIALS	DESCRIPTION
12/22/75	CG	DELETED NOTE "AVAILABLE GAINESVILLE WAREHOUSE"
7-20-76	CEJ	ADDED CLASS I & CLASS II TITLE AND REVISE TITLE BLOCK
10-8-78	J.M.C.	REVISED GATE ARM DETAIL.
10-30-79	JJ	Added Cl. from Travelway And 12 V. Lights to Arm

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TRAFFIC CONTROL DEVICES FOR MOVEABLE SPAN BRIDGE SIGNALS			
Designed by	J.M.C.	Recommended for approval by	<i>Gary C. Puce</i> Deputy Traffic Operations Eng.
Checked by		Approved by	<i>R.E. Magada</i> State Traffic Operations Engr.
Quantities by		Supervised by	
Checked by		DRAWING NO.	INDEX NO.
		3 OF 3	17890