SPECIFICATIONS AND NOTES APPLICABLE TO SPAN WIRE TRAFFIC SIGNAL SUPPORT:

ONLY SPAN WIRE TRAFFIC SIGNAL SUPPORTS INCLUDED IN THE AUTHORITY'S APPROVED LIST WILL BE ACCEPTED. AFTER THIS DATE, IF A SPAN WIRE TRAFFIC SIGNAL SUPPORT HAS NOT BEEN INCLUDED IN THE AUTHORITY'S APPROVED LIST, IT WILL BE SUBMITTED FOR EVALUATION APPROVAL AND INCLUSION IN THE APPROVED LIST BEFORE USING IT IN ANY OF OUR CONSTRUCTION PROJECTS. THE CONTRACTOR SHALL NOT BEGIN THE CONSTRUCTION OF ANY SPAN WIRE TRAFFIC SIGNAL SUPPORT IF THE AUTHORITY HAS NOT APPROVED THE STRUCTURE.

DESIGN SPECIFICATIONS AND GENERAL CRITERIA:

DESIGN SPECIFICATIONS

SPAN WIRE TRAFFIC SIGNAL POLE SHALL BE DESIGNED USING THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, THIRD DRAFT, MARCH 1999.

THE WORKING STRESS METHOD SHALL BE USED IN THE DESIGN.

EACH TYPE OF SUPPORT SHALL BE DESIGNED TO WITHSTAND THE FOLLOWING LOADING:

POLE TYPE	DESIGN MOMENT AT FINISHED GRADE (K-ft)
SW 200	200
SW 300	300
SW 360	360

THE EYEBOLTS USED TO CONNECT THE SPAN WIRE TO THE POLE SHALL WITH STAND A MINIMUM ALLOWABLE TENSION LOAD OF 8,500 POUNDS.

GENERAL CRITERIA

THE CONTRACTOR IS RESPONSIBLE FOR SURVEYING THE SPAN WIRE TRAFFIC SIGNAL LOCATION AND OBTAINING ADEQUATE AND ACCURATE SURVEY DATA THAT WOULD ALLOW THE DESIGN AND DIMENSIONING OF THE PROPOSED POLE. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING UNDERGROUND SURVEYS OF THE SIGNAL POLE LOCATION BY MEANS OF TEST PITS OR REMOTE SENSING DEVICES TO ASCERTAIN THE EXISTENCE OR NON EXISTENCE OF CONFLICTS WITH UNDERGROUND OBSTRUCTIONS. IF UNDERGROUND OR OVERHEAD OBSTRUCTIONS EXIST, THE CONTRACTOR WILL OBTAIN THE ENGINEER'S CONSENT TO RELOCATE THE SIGNAL POLE TO MINIMIZE OBSTRUCTIONS AND CONFLICTS. IF UNDERGROUND OBSTRUCTIONS DO NOT PERMIT THE CONSTRUCTION OF A DRILLED SHAFT FOUNDATION, THE CONTRACTOR SHALL DESIGN AND SUBMIT FOR APPROVAL A SUITABLE SPREAD FOOTING FOUNDATION. ALL THESE ACTIONS WILL BE UNDERTAKEN AS A SUBSIDIARY OBLIGATION.

WHEN THE POLE ARE PLACED BEHIND EXISTING GUARD RAIL, A MINIMUM OF 2 METERS OFFSET WILL BE ALLOWED FOR THE METAL BARRIER DEFLECTION.

THE POLE SHALL BE DESIGNED SO THAT A MINIMUM VERTICAL CLEARANCE OF 5.50 METERS (18.5 FEET) SHALL BE MAINTAINED FROM ANY POINT IN THE PAVEMENT OR SHOULDER TO THE LOWEST PORTION OF ANY SIGNAL FACE OR TRAFFIC SIGN.

MATERIAL SPECIFICATIONS:

ALUMINUM SUPPORTS (POLE AND BASE PLATE)

SPECIFICATION FOR ALUMINUM SUPPORTS SHALL CONFORM TO ALUMINUM DESIGN MANUAL OF ALUMINUM ASSOCIATION.

GALVANIZED STEEL SUPPORTS (POLE AND BASE PLATE)

GALVANIZED STEEL SUPPORTS SHALL CONFORM TO THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LASTEST EDITION.

REINFORCED OR PRESTRESSED CONCRETE SUPPORTS

PORTLAND CEMENT CONCRETE USED FOR REINFORCED OR PRESTRESSED CONCRETE SUPPORTS SHALL CONFORM TO THE AUTHORITY STANDARD SPECIFICATION 601.

PORTLAND CEMENT CONCRETE REINFORCING STEEL USED FOR REINFORCED OR PRESTRESSED CONCRETE SUPPORTS SHALL CONFORM TO THE AUTHORITY STANDARD SPECIFICATION 602.

PRE OR POST TENSIONING STEEL USED FOR PRESTRESSED CONCRETE SUPPORTS SHALL CONFORM TO THE AUTHORITY STANDARD SPECIFICATION 630.

REINFORCED STEEL

ALL REINFORCEMENT STEEL SHALL CONFORM TO THE AUTHORITY'S STANDARD SPECIFICATION 602.

ANCHOR BOLTS, WASHER AND NUTS

ANCHOR BOLTS, WASHERS AND NUTS SHALL BE HOT DIP GALVANIZED AND CONFORM WITH AASHTO M314.

CABLES

SPAN WIRE CABLE SHALL COMPLY WITH ASTM A-475 (UTILITIES GRADE). NOMINAL DIAMETER OF STRAND = 7/16", NUMBER OF WIRES IN STRAND = 7, MINIMUM BREAKING STRENGTH OF STRAND = 18,000 POUNDS, AND ZINC COATED CLASS A.

SAFE TETHER SHALL COMPLY WITH ASTM A-475 (UTILITIES GRADE). NOMINAL DIAMETER OF STRAND = 3/16", NUMBEROF WIRES IN STRAND = 7, MINIMUM BREAKING STRENGTH OF STRAND = 2,400 POUNDS, AND ZINC COATED CLASS A.

ALLOY STEEL EYEBOLTS

EYEBOLTS SHALL COMPLY WITH FS41, TYPE 1 OR 2. EYEBOLTS SHALL BE HOT DIP ZINC ACCORDING WITH ASTM A153.

CABLE CLIPS

CABLE CLIPS SHALL COMPLY WITH ASTM F568, CLASS 4-6.

TURNBUCKLES

TURNBUCKLES SHALL COMPLY WITH ASTM F1145, AND HAVE A LENGTH OF 2ft.

CABLE CONES, BRAIDS AND THIMBLES

THE MANUFACTURER SHALL SUBMIT FULL SPECIFICATIONS AND DRAWINGS FOR THE PROPOSED CABLE CONES, BRAIDS AND THIMBLES WITH HIS SHOP DRAWINGS. USE OF THIMBLES AT ALL CABLE CONNECTIONS TO EYEBOLTS AND TURNBUCKLES IS MANDATORY.

SHOP DRAWING REQUIREMENTS:

SHOP DRAWINGS SHALL BE ACCOMPANIED BY A CERTIFICATE FROM THE MANUFACTURER INDICATING THAT THE MATERIALS MEET ALL THE REQUIREMENTS OF THE SPECIFICATIONS. IN THE EVENT THAT ANY ITEM IS NOT EXACTLY IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS, THE CERTIFICATE SHALL IDENTIFY AND EXPLAIN EACH SUCH DIFFERENCE.

THE CERTIFICATE WILL INCLUDE A STATEMENT THAT THE SUPPORTS AND POLES HAS BEEN DESIGNED IN CONFORMANCE WITH THE AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS", THIRD DRAFT, MARCH 1999, OR LATER DRAFTS OF SAID MANUAL; AND THAT DESIGN MEETS THE DESIGN REQUIREMENTS.

THE SHOP DRAWINGS SHALL INCLUDE DETAILED COMPUTATIONS OF THE LOADS AND STRESSES ON ALL COMPONENTS. THE SHOP DRAWINGS SHALL INCLUDE COMPLETE DESIGN COMPUTATIONS AND DETAILING OF THE ANCHOR BOLTS, INCLUDING, BUT NOT LIMITED TO, ANCHOR BOLT SIZE, MATERIALS AND GALVANIZING, NUMBER OF ANCHOR BOLTS AND LENGTH OF EMBEDMENT.

THE CONTRACTOR AND MANUFACTURER WILL SELECT A POLE TYPE WHICH HAS A DESIGN MOMENT AT FINISHED GRADE EQUAL OR GREATER THAN THE ACTUAL MOMENT AT FINISHED GRADE.

USING THE SELECTED POLE TYPE, THE CONTRACTOR SHALL USE THE DRILL SHAFT FOUNDATION PROVIDED THERE ARE NO UNDERGROUND OBSTRUCTION LIMITATIONS. THE FOUNDATION SHALL CONFORM TO THE DETAILS INCLUDED IN THE STANDARD DRAWING FOR THE SELECTED POLE TYPE. IF THE METAL SUPPORT TYPE DOES NOT FIT THE FOUNDATION, THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF SHOP DRAWINGS FOR THE NECESSARY FOUNDATION MODIFICATION AS A SUBSIDIARY OBLIGATION.

ALL WELDING SHALL BE DETAILED IN ACCORDANCE WITH THE DETAILING PRACTICES OF THE AMERICAN WELDING SOCIETY.

ALL METAL MEMBERS SHALL BE FULLY DETAILED INCLUDING FULL DETAILING OF THE CONNECTIONS.

ALL BOLTS, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE FULLY DETAILED AS TO SIZES, TYPES, MATERIALS AND COATINGS.

IF THE ACTUAL SPAN WIRE TRAFFIC SIGNAL POLE EXCEEDS THE STRUCTURAL LIMITS CONTAINED IN THE STANDARD DRAWINGS OR APPROVED LIST, THE CONTRACTOR AND MANUFACTURER SHALL SUBMIT COMPLETE SHOP DRAWINGS, INCLUDING FOUNDATIONS. THE SHOP DRAWINGS SHALL BE CERTIFIED BY THE MANUFACTURER AS MEETING ALL DESIGN AND CONTRACT REQUIREMENTS.

THE RUNNING OF ELECTRICAL CONDUCTS WILL BE MADE WITHIN THE POLE.

EFFECTIVE DATE: DECEMBER 2000

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY AND TRANSPORTATION AUTHORITY

TRAFFIC SIGNALS
SPAN WIRE
SPECIFICATIONS AND NOTES

RECOMMENDED BY:
DEPUTY EXC. DIR. FOR TRAFFIC AND TOLL ROADS
DATE : 7-XII-00

APPROVED BY:
EXECUTIVE DIRECTOR
DATE : 7-XII-00

DATE	REVISION	BY

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