GENERAL NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THAT THE HEIGHT OF THE SIGNALS ABOVE THE ROADWAY SURFACE MEETS THE CDOT CLEARANCE REQUIREMENTS AS SHOWN ON SHEET 2 OF 13 PRIOR TO DRILLING HOLES FOR TETHER AND SPAN WIRE EYEBOLTS.
2. ORIENT SPAN WIRE HOLES ON A STRAIGHT LINE BETWEEN POLES WITHOUT KINKS.
3. POLES SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE SECTION 509.24 OF THE STANDARD SPECIFICATIONS AS CALLED FOR ON THE ROADWAY PLANS.
4. CAISSONS SHALL BE PLACED AGAINST UNDISTURBED EARTH. WET OR CAVING HOLES SHALL BE BACKFILLED WITH FLOW-FILL AND REDRILLED AFTER A THREE DAY CURING PERIOD WITHOUT THE USE OF A CASING.
5. CAISSON CONCRETE SHALL REACH 80% OF THE REQUIRED STRENGTH PRIOR TO INSTALLING SPAN WIRE AND TETHER CABLES.
6. WELDING OF STEEL SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D1.1. ALL AREAS TO BE WELDED SHALL BE GROUND TO BRIGHT METAL. ALL WELDING AND REQUIRED TESTING SHALL BE COMPLETE BEFORE ANY MATERIAL IS GALVANIZED. ALL CIRCUMFERENTIAL WELDS SHALL BE NON-DESTRUCTIVELY TESTED USING THE ENHANCED MAGNETIC PARTICLE METHOD IN ACCORDANCE WITH SUBSECTION 509.18 (D) OF THE STANDARD SPECIFICATIONS. THE ACCEPTANCE CRITERIA IS STATED IN TABLE 6.1 OF ANSI/AWS D1.1. ALL LONGITUDINAL WELDS WITHIN 6 INCHES OF FULL PENETRATION CIRCUMFERENTIAL GROOVE WELDS AND FULL PENETRATION GROOVE WELDS SHALL BE INSPECTED AS SPECIFIED ABOVE. MAXIMUM WELD UNDERCUT SHALL BE 0.01 INCHES.
7. ALL ELECTRICAL CONNECTIONS TO THE SIGNALS SHALL BE GROUNDED IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES.
8. WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH SUBSECTION 105.02 OF THE STANDARD SPECIFICATIONS.
9. DEFINITIONS:
   I.D. = INSIDE DIAMETER
   O.D. = OUTSIDE DIAMETER
   NPS = NOMINAL PIPE SIZE

DESIGN DATA

SPAN WIRE LOADING IS BASED ON THE SIGN AND SIGNAL LOCATIONS SHOWN ON SHEET 2.

THE DESIGNS HEREIN ASSUME THAT SIGNALS ARE INSTALLED WITHIN THE ROADWAY PRISM WITH THE FOLLOWING SOIL PARAMETERS:

SOIL DENSITY= 110 LB./CU.FT
SOIL COHESION= 750 LB./SQ.FT
SOIL ø ANGLE= 30 DEG. FOR MEDIUM DENSE COHESIONLESS SOIL
S.F.= 2.0 FOR FLEXURAL RESISTANCE (OVERTURNING)

CONTACT THE ENGINEER IF ANY OF THE FOLLOWING SOIL CONDITIONS ARE ENCOUNTERED DURING DRILLING:

(A) STRAIN POLES WILL NOT BE INSTALLED WITHIN THE ROADWAY PRISM.
(B)THE SOIL HAS A HIGH ORGANIC CONTENT OR CONSISTS OF SATURATED SILT AND CLAY.
(C) THE SITE WON'T SUPPORT THE WEIGHT OF THE DRILLING RIG.
(D) THE FOUNDATION SOILS ARE NOT HOMOGENOUS.
(E) FIRM BEDROCK IS ENCOUNTERED.

SPAN WIRE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS LUMINAIRES, AND TRAFFIC SIGNALS, FOURTH EDITION, 2001 WITH CURRENT INTERIMS (2006).

A DESIGN WIND VELOCITY OF 110 MPH WAS USED IN THE DESIGN.

AN IMPORTANCE FACTOR OF 0.71 WAS USED IN THE DESIGN.

MATERIAL DATA

ELEMENT	STANDARDS (ASTM/AASHTO; CDOT)	NOTES
SPAN AND TETHER WIRES	A475	SEE NOTE 1
STRAIN POLE	VARIOUS	SEE NOTE 2
EYEBOLTS	A307	SEE NOTE 3
BARS, PLATES AND CURVED WASHERS	A709/M-270	GRADE 36 OR 50
NUTS	A563/M-291	
HARDNED WASHERS	F436	
POLES, BARS AND PLATES	VARIOUS	SEE NOTE 4
POLES	VARIOUS	SEE NOTE 5
CAISSON CONCRETE	CDOT	SEE NOTE 6

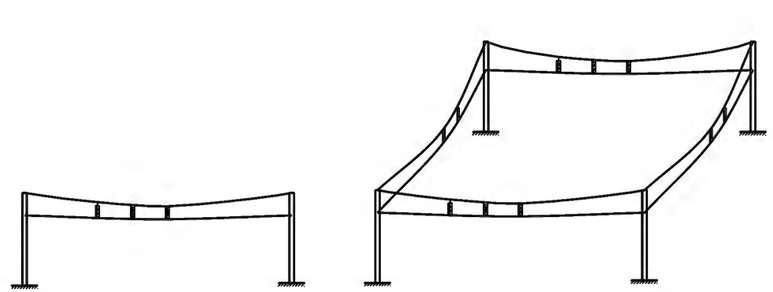
NOTES:

1. SPAN WIRE SHALL BE SEVEN WIRE STRAND, ZINC-COATED STEEL WIRE, UTILITIES GRADE OR BETTER. TETHER WIRE SHALL BE ⅜" ø, SEVEN WIRE STRAND, ZINC-COATED STEEL WIRE, UTILITIES GRADE OR BETTER.
2. STRAIN POLE SHALL BE WELDED OR SEAMLESS STEEL PIPE CONFORMING TO THE SPECIFICATIONS OF ASTM A53 GRADE B, A500 GRADE B, OR A106 GRADE B.
3. SPAN WIRE EYEBOLTS SHALL BE 1"ø. TETHER WIRE EYEBOLTS SHALL BE ¾"ø.
4. POLES, BARS AND PLATES SHALL COMPLY WITH THE DIMENSIONAL TOLERANCES THAT ARE SPECIFIED IN ASTM A500, A501, 595 OR A6, AS APPLICABLE.
5. CERTIFIED MILL TEST REPORTS INCLUDING CHARPY V-NOTCH (CVN) TEST RESULTS, WELD INSPECTION REPORTS AND ENHANCED MAGNETIC PARTICLE TEST REPORTS SHALL BE SUBMITTED TO CDOT STAFF BRIDGE, 2829 W. HOWARD PL., DENVER COLORADO 80204 AS SOON AS THEY BECOME AVAILABLE. CVN TEST RESULTS FOR ASTM A572 GRADES 42, 55 AND 65 STEEL SHALL HAVE A MINIMUM VALUE OF 15 FT-LBS AT 40°F AS PER THE H FREQUENCY TEST REQUIREMENTS IN AASHTO T243 (ASTM A673).
6. CAISSONS SHALL BE CONSTRUCTED WITH AIR ENTRAINED (5 TO 8%) CLASS BZ CONCRETE IN ACCORDANCE WITH SECTION 503 OF THE STANDARD SPECIFICATIONS.

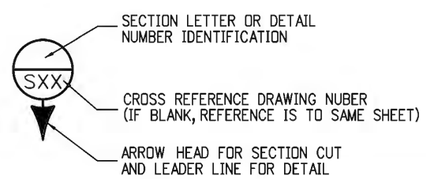
ROADWAY TRAFFIC SIGNAL PLANS SHALL SHOW:

1. STRAIN POLE SIZES AND LOCATIONS (INTERSECTION, X & Y COORDINATES).
2. LENGTH OF SPAN WIRE BETWEEN EACH SET OF STRAIN POLES.
3. TRAFFIC SIGN AND SIGNAL SIZE AND LOCATIONS ALONG EACH SPAN WIRE.
4. SPAN WIRE AND TETHER CABLE SIZES.
5. LANE LINE LOCATIONS UNDER SPAN WIRES.
6. POLE HEIGHT AT EACH CORNER.
7. CAISSON PAY LENGTH.
8. LUMINAIRE LOCATIONS AND ORIENTATION ANGLES.

INDEX



SINGLE SPAN DOUBLE SPAN



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TEMPORARY SPAN WIRE SIGNALS

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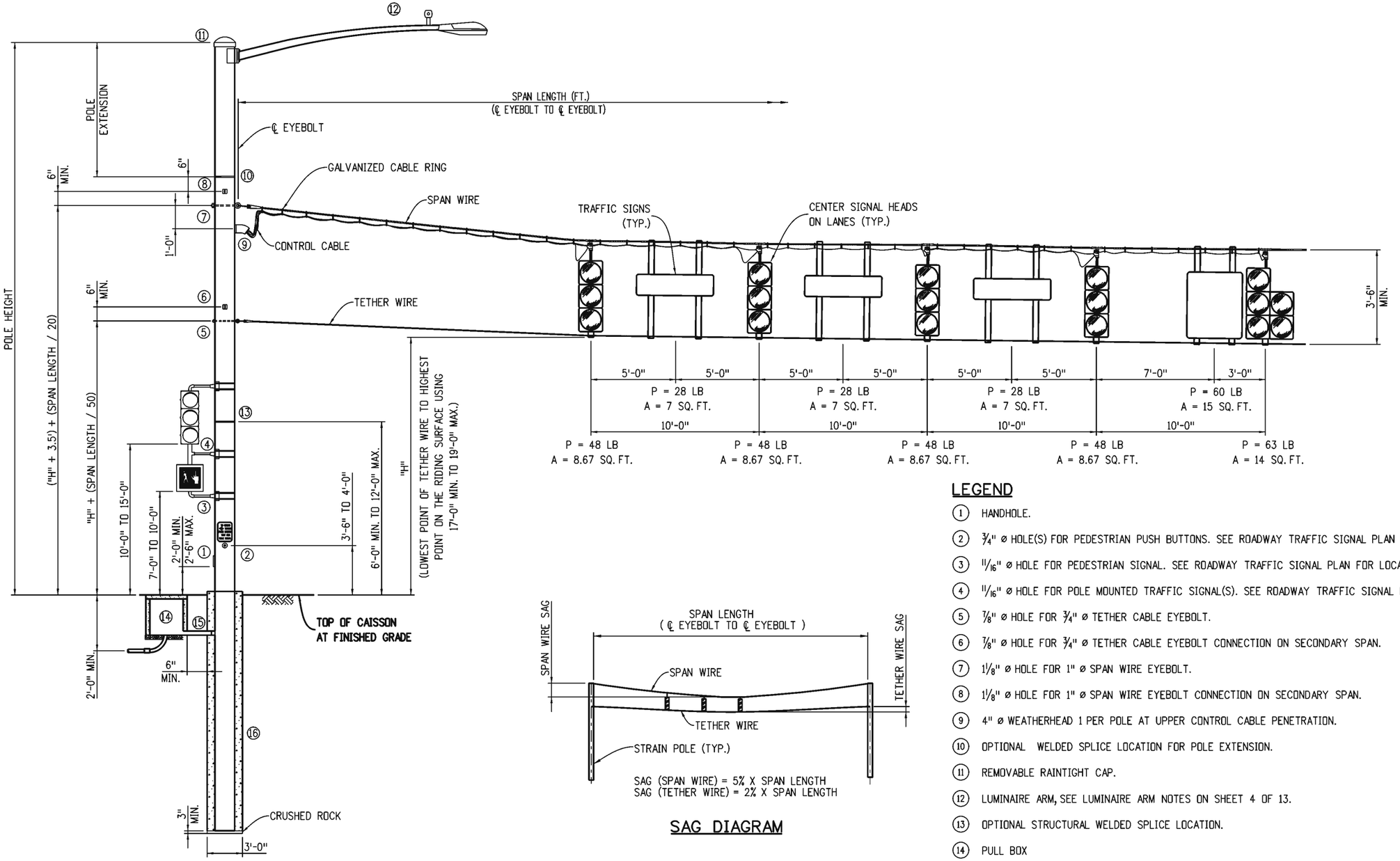

ELEVATION

SAG DIAGRAM

LEGEND

1. HANDHOLE.
2. ¾" ø HOLE(S) FOR PEDESTRIAN PUSH BUTTONS. SEE ROADWAY TRAFFIC SIGNAL PLAN FOR LOCATIONS.
3. 11/16" ø HOLE FOR PEDESTRIAN SIGNAL. SEE ROADWAY TRAFFIC SIGNAL PLAN FOR LOCATIONS.
4. 11/16" ø HOLE FOR POLE MOUNTED TRAFFIC SIGNAL(S). SEE ROADWAY TRAFFIC SIGNAL PLAN FOR LOCATIONS.
5. ⅞" ø HOLE FOR ¾" ø TETHER CABLE EYEBOLT.
6. ⅞" ø HOLE FOR ¾" ø TETHER CABLE EYEBOLT CONNECTION ON SECONDARY SPAN.
7. 1⅛" ø HOLE FOR 1" ø SPAN WIRE EYEBOLT.
8. 1⅛" ø HOLE FOR 1" ø SPAN WIRE EYEBOLT CONNECTION ON SECONDARY SPAN.
9. 4" ø WEATHERHEAD 1 PER POLE AT UPPER CONTROL CABLE PENETRATION.
10. OPTIONAL WELDED SPLICE LOCATION FOR POLE EXTENSION.
11. REMOVABLE RAINTIGHT CAP.
12. LUMINAIRE ARM, SEE LUMINAIRE ARM NOTES ON SHEET 4 OF 13.
13. OPTIONAL STRUCTURAL WELDED SPLICE LOCATION.
14. PULL BOX
15. LOWER CONTROL CABLE PENETRATION
16. FOUNDATION

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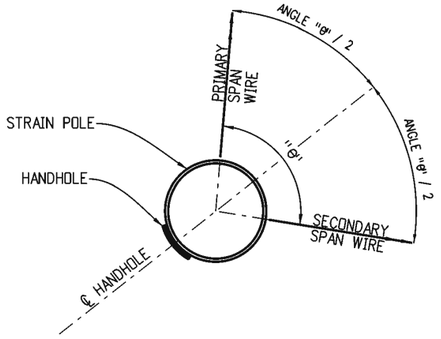
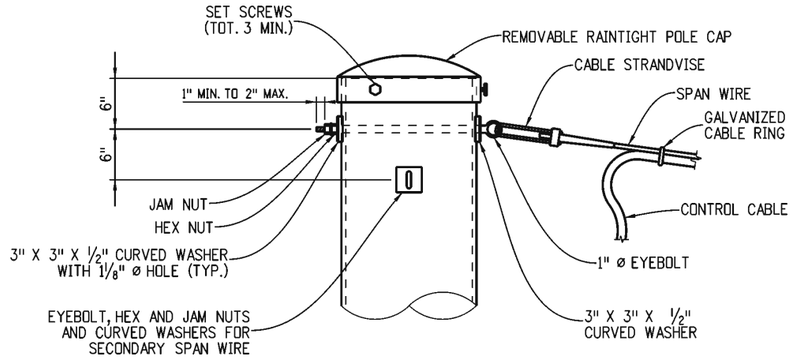
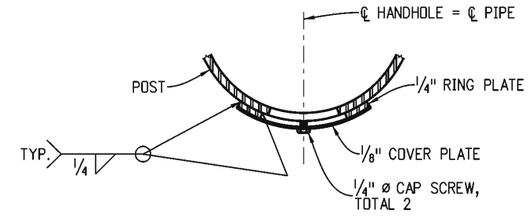


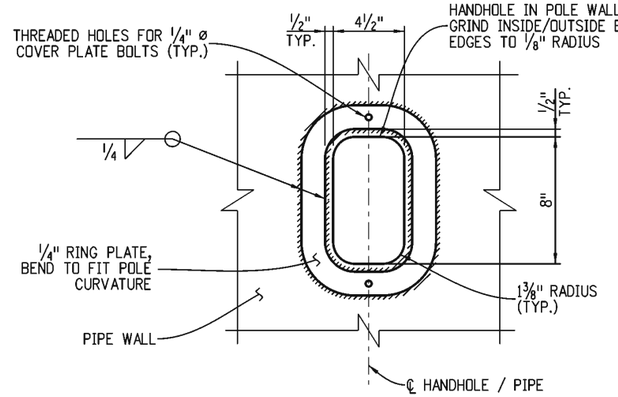
SPAN WIRE ORIENTATION

(EYEBOLTS AND WASHERS NOT SHOWN FOR CLARITY)

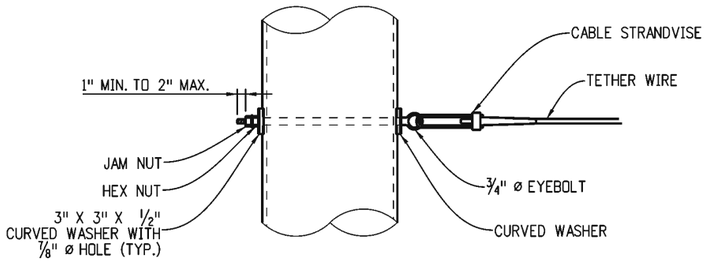


STRAIN POLE WITHOUT LUMINAIRE ARM EXTENSION





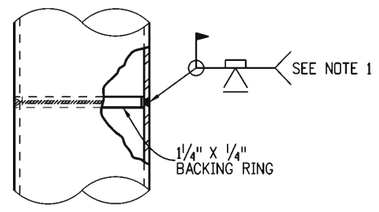
HANDHOLE DETAILS



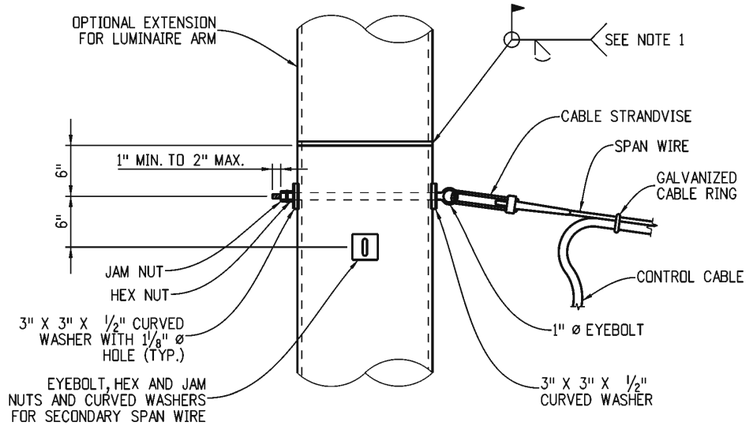
TETHER WIRE CONNECTION TO STRAIN POLE

NOTES:

1. OPTIONAL FIELD WELD: REPAIR DAMAGED HOT-DIP GALVANIZING WITH ZINC-BASED ALLOY SOLDER AS PER ASTM A780 ANNEX A1 OR SPRAYED ZINC METALLIZING AS PER ANNEX A3 TO PROVIDE A MINIMUM COATING THICKNESS OF 3.0 MILLS IN ACCORDANCE WITH TABLE 2 FOR COATING GRADE 75.

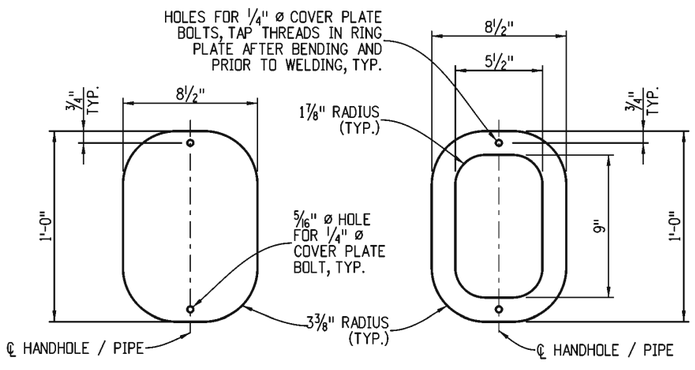


STRUCTURAL WELDED SPLICE



STRAIN POLE WITH LUMINAIRE ARM EXTENSION

SPAN WIRE CONNECTION TO STRAIN POLE



⅛" THICK COVER PLATE

(BEND TO FIT RING PLATE CURVATURE)

¼" THICK RING PLATE

(BEND TO FIT POLE CURVATURE)

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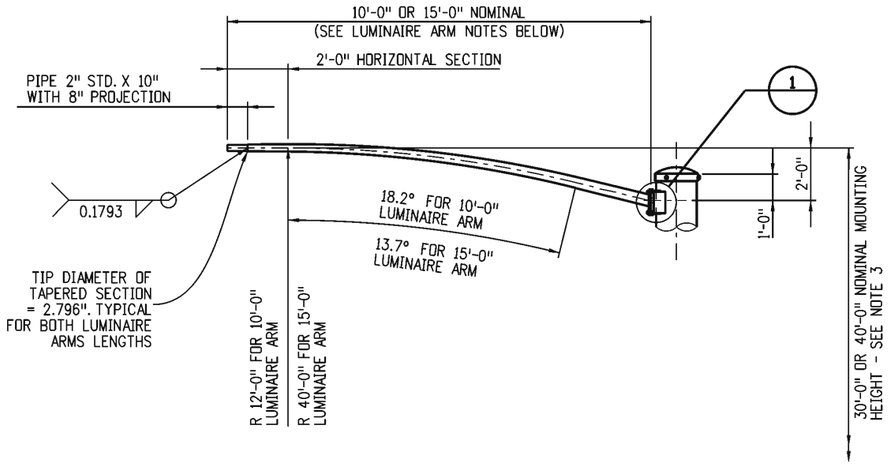
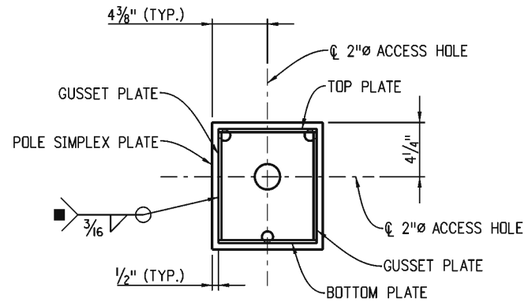
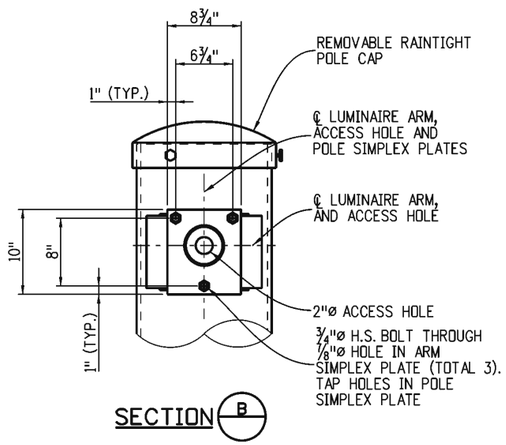


LUMINAIRE ARM



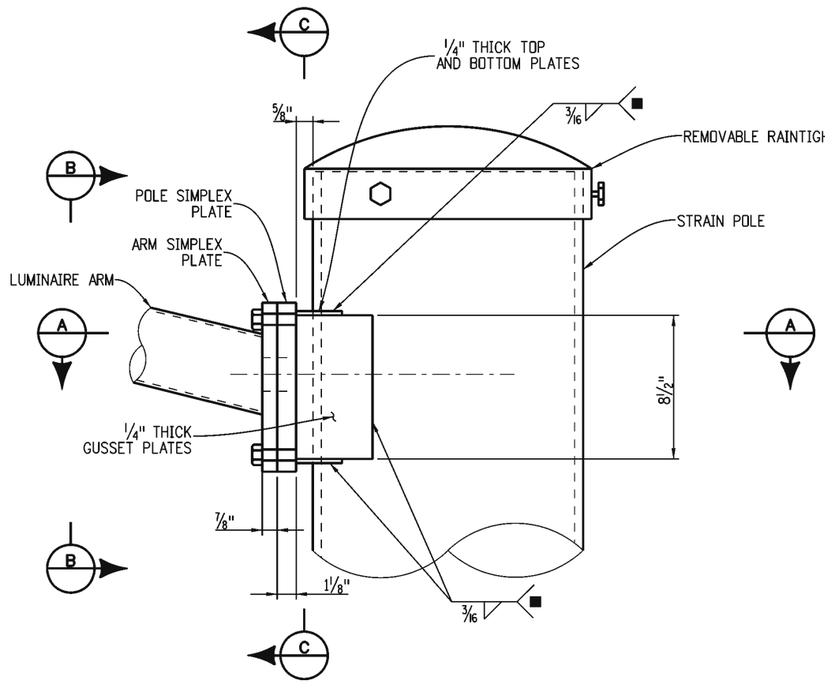
SECTION C



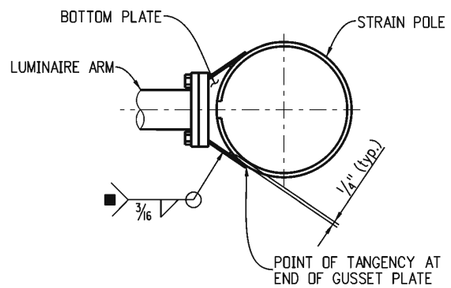
SECTION B

LUMINAIRE ARM NOTES

1. 10'-0" LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793";
   LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.066"
2. 15'-0" LUMINAIRE ARM SHAFT: WALL THICKNESS = 0.1793";
   LINEAR TAPER = 0.14 IN./FT.; DIAMETER AT ARM SIMPLEX PLATE = 4.679".
3. THE 30'-0" OR 40'-0" HEIGHT IS MEASURED FROM THE EDGE OF SHOULDER OR GUTER FLOW LINE TO THE CENTER OF THE LUMINAIRE. POLE ASSEMBLY SHALL BE AT SUFFICIENT LENGTH TO OBTAIN MOUNTING HEIGHT, WITH MAX. PERMISSIBLE MAST ARM RISE OF 2'-0" FROM TOP OF POLE TO CENTER OF LUMINAIRE.



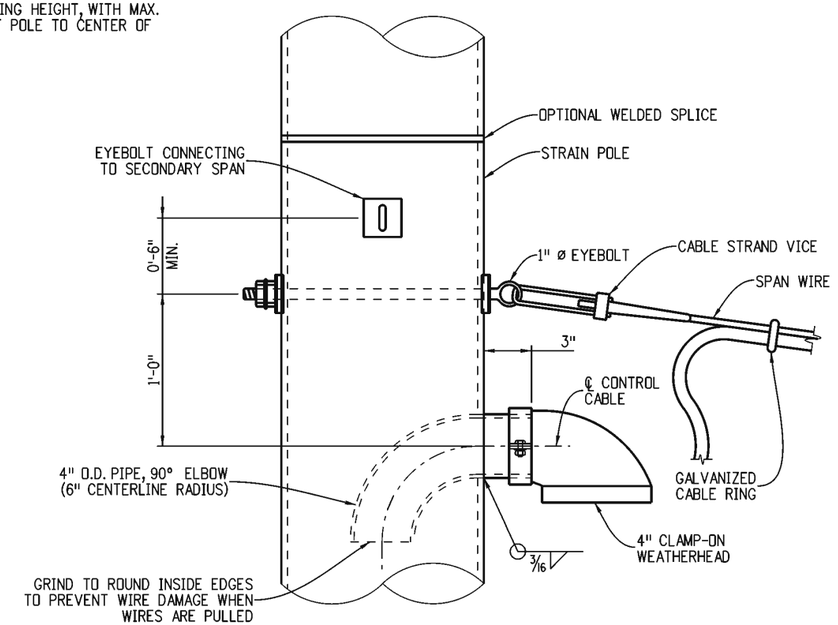
DETAIL 1



SECTION A

(BOTTOM PLATE SHOWN; TOP PLATE SIMILAR)

■ STOP ALL WELDS ½" SHORT OF PLATE EDGES AND BOLT HOLES.



UPPER CONTROL CABLE PENETRATION DETAIL

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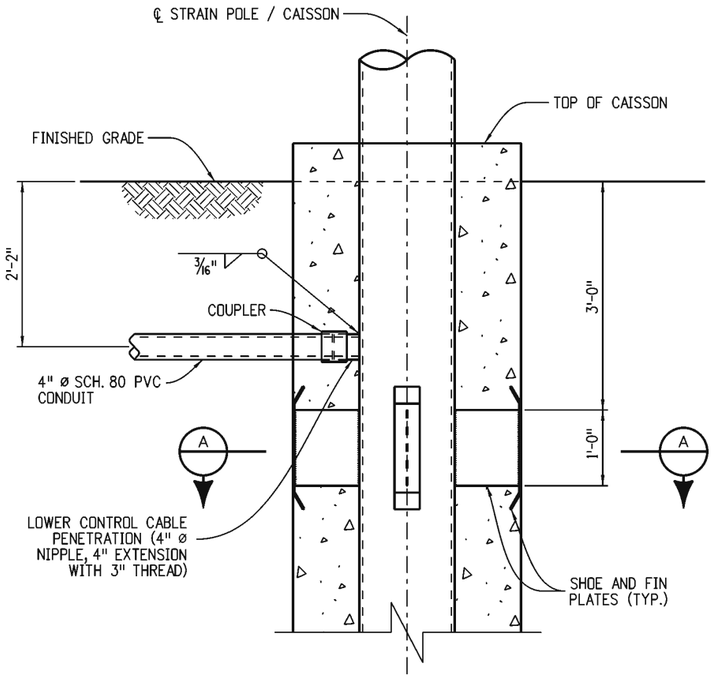
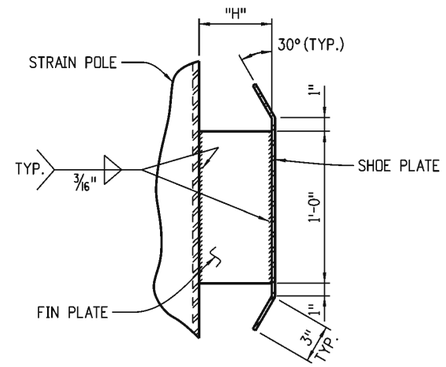


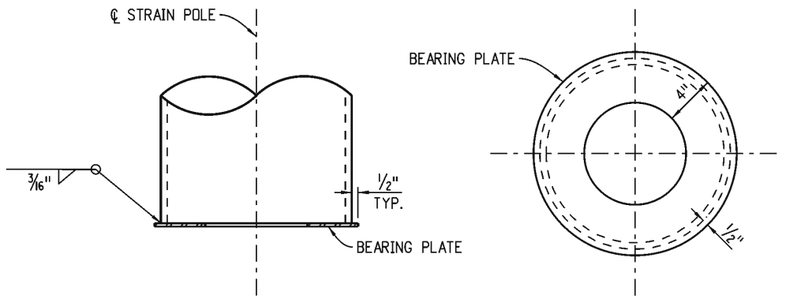
DETAIL 1

(OPTIONAL CENTRALIZER WITH SHOE AND FIN PLATES, AND PULL BOX NOT SHOWN FOR CLARITY)



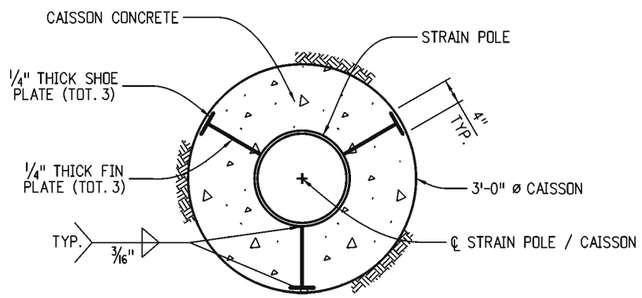
SHOE AND FIN PLATE DETAILS

(1/4" THICK)



BEARING PLATE DETAILS

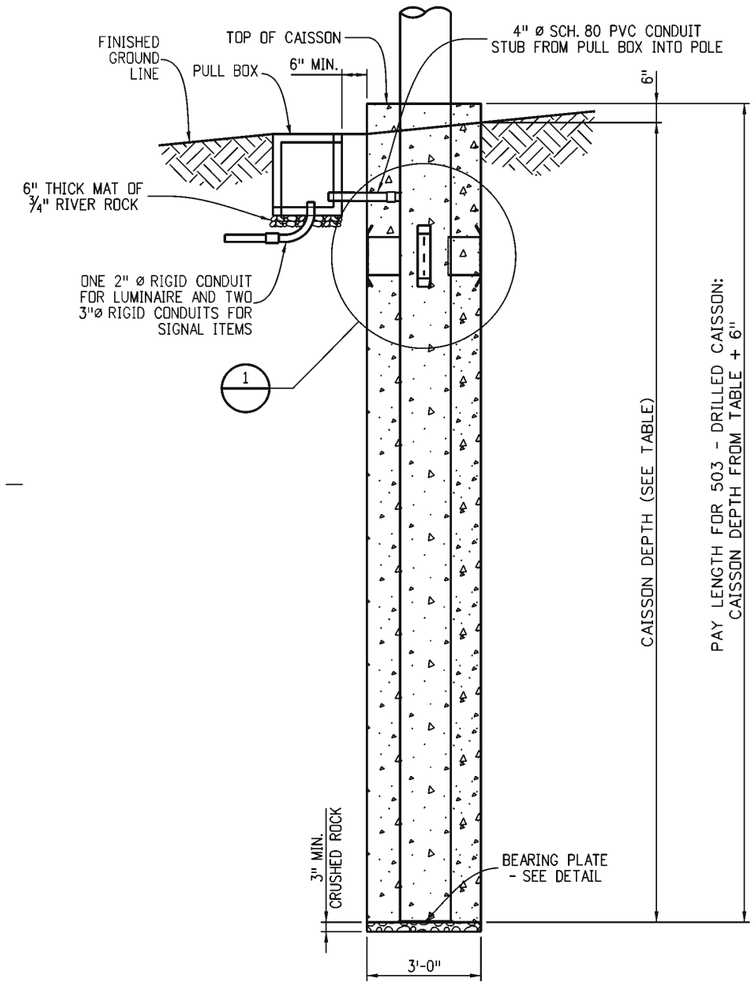
(1/4" THICK)



SECTION A

CAISSON DETAILS

STRAIN POLE SIZES (IN. X IN.)	CAISSON DEPTHS		"H" (IN.)
	COHESIVE SOIL (FT.)	COHESIONLESS SOIL (FT.)	
12.75 x 0.500	14.5	12.5	10 3/4
14 x 0.500	15.5	12.5	10 1/8
16 x 0.500	17.5	13.5	9 1/8
18 x 0.500	18.5	14.5	8 1/8
20 x 0.500	20.5	14.5	7 1/8
24 x 0.500	22.5	15.5	5 1/8
24 x 0.688	23.5	16.5	5 1/8



SPAN WIRE POLE CAISSON

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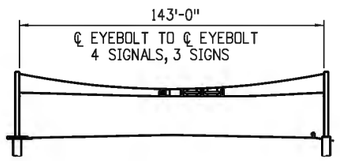
EXAMPLE 1:



SELECT THE STRAIN POLE SIZE, SPAN-WIRE DIAMETER, AND CAISSON DEPTH FOR A SINGLE SPAN INSTALLATION FOUNDED IN COHESIONLESS SOIL AS SHOWN ABOVE.

SOLUTION:

1. DETERMINE THE LOAD KEY AS SHOWN HEREON OR ON SHEETS 7 TO 13.

   4 SIGNALS AND 3 SIGNS = [4] (LOADS FOR 4 SIGNALS AND 4 SIGNS MAX.)

2. DETERMINE THE STRAIN POLE SIZE BY USING SINGLE SPAN STRAIN POLE SELECTION CHART ON SHEET 7.

   FIND THE 143' SPAN LENGTH ON THE HORIZONTAL AXIS OF THE CHART, THEN GO VERTICALLY TO MEET WITH LINE [4]. THE REQUIRED STRAIN POLE SIZE IS 18"ø XS PIPE.

3. DETERMINE THE SPAN WIRE DIAMETER BY USING THE SINGLE SPAN SPAN-WIRE DIAMETER SELECTION CHART ON SHEET 7.

   FIND THE 143' SPAN LENGTH ON THE HORIZONTAL AXIS OF THE CHART, THEN GO VERTICALLY TO MEET WITH LINE [4]. THE REQUIRED SPAN WIRE DIAMETER IS 7/16"ø.

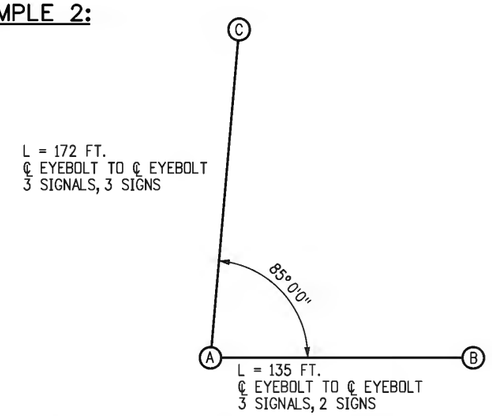
4. DETERMINE THE CAISSON DEPTH BY USING THE TABLE ON SHEET 5.

   LOOK UP THE CAISSON DEPTH FOR COHESIONLESS SOIL AND 18" ø STRAIN POLE. THE REQUIRED CAISSON DEPTH IS 14.5'.

LOAD KEY

- [5] = 5 SIGNALS AND 4 SIGNS MAX.
- [4] = 4 SIGNALS AND 4 SIGNS MAX.
- [3] = 3 SIGNALS AND 3 SIGNS MAX.
- [2] = 2 SIGNALS AND 2 SIGNS MAX.
- [1] = 1 SIGNAL AND 1 SIGN MAX.

EXAMPLE 2:



SELECT THE STRAIN POLE SIZES, SPAN-WIRE DIAMETERS, AND CAISSON DEPTHS FOR A DOUBLE SPAN (L-PLAN BOX) FOUNDED IN COHESIVE SOIL AS SHOWN ABOVE.

SOLUTION:

1. DETERMINE THE LOAD KEYS AS SHOWN HEREON OR ON SHEETS 7 TO 13.

   SPAN AC: 3 SIGNALS AND 3 SIGNS = [3] (LOADS FOR 3 SIGNALS AND 3 SIGNS MAX.)
   SPAN AB: 3 SIGNALS AND 2 SIGNS = [3] (LOADS FOR 3 SIGNALS AND 3 SIGNS MAX.)

2. DETERMINE THE SIZES OF STRAIN POLES Ⓐ, Ⓑ AND Ⓒ.

   FOR POLE Ⓐ USING THE DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 80° ≤ θ < 90° ON SHEET 9:

   EITHER THE HORIZONTAL CHART OR THE VERTICAL CHART CAN BE USED FOR SPAN AC OR SPAN AB. USING THE HORIZONTAL CHART FOR SPAN AC AND THE VERTICAL CHART FOR SPAN AB, LOCATE THE 172' SPAN AC ON THE HORIZONTAL CHART THEN GO VERTICALLY TO MEET WITH LINE [3]. LOCATE THE 135' SPAN AB ON THE VERTICAL CHART THEN GO HORIZONTALLY TO MEET WITH LINE [3]. FROM THESE INTERCEPTION POINTS, GO HORIZONTALLY AND VERTICALLY TO THE SQUARE BOX. THE REQUIRED PIPE DIAMETER FOR POLE Ⓐ IS 20"ø XS PIPE.

   FOR POLES Ⓑ AND Ⓒ, USE THE SINGLE SPAN POLE SELECTION CHART ON SHEET 7 AND FOLLOW THE SAME LOGIC AS SHOWN ON STEP 2 OF EXAMPLE 1 TO DETERMINE THE POLE SIZE. USING THIS LOGIC, THE REQUIRED POLE SIZE IS 16"ø XS PIPE FOR STRAIN POLE Ⓑ AND 18"ø XS PIPE FOR STRAIN POLE Ⓒ.

3. DETERMINE THE SPAN WIRE DIAMETER BY USING THE DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 20"ø POLE Ⓐ ON SHEET 13.

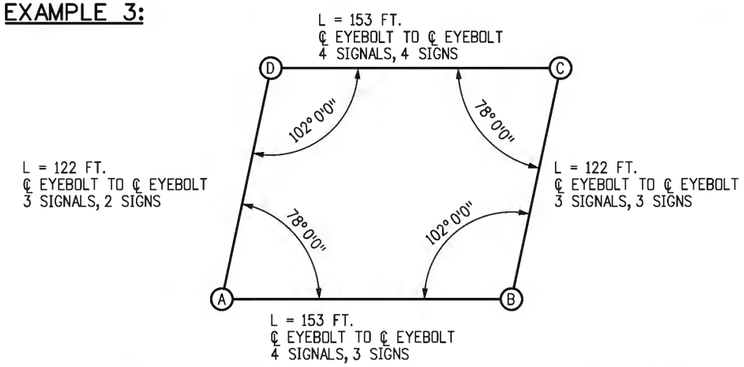
   SPAN AC: LOCATE THE 172' SPAN LENGTH ON THE HORIZONTAL AXIS, THEN GO VERTICALLY TO MEET WITH LINE [3]. THE REQUIRED SPAN WIRE DIAMETER IS 7/16"ø.

   SPAN AB: DO THE SAME FOR THE 135' LONG SPAN AC. THE REQUIRED SPAN WIRE IS 7/16"ø.

4. DETERMINE THE CAISSON DEPTHS BY USING THE TABLE ON SHEET 5.

   LOOK UP THE CAISSON DEPTH FOR COHESIVE SOIL. THE REQUIRED CAISSON DEPTH FOR 20"ø STRAIN POLE Ⓐ IS 20.5', THE REQUIRED DEPTH FOR 16"ø STRAIN POLE Ⓑ IS 17.5', AND THE REQUIRED DEPTH FOR 18"ø STRAIN POLE Ⓒ IS 18.5'.

EXAMPLE 3:



SELECT THE STRAIN POLE SIZES, SPAN WIRE DIAMETERS AND CAISSON DEPTHS FOR CAISSONS FOR A DOUBLE SPAN (RECTANGULAR PLAN BOX) FOUNDED IN COHESIONLESS SOIL AS SHOWN ABOVE.

SOLUTION:

1. DETERMINE THE LOAD KEYS AS SHOWN HEREON OR ON SHEETS 7 TO 13.

   SPAN AB: 4 SIGNALS AND 3 SIGNS = [4] (LOADS FOR 4 SIGNALS AND 4 SIGNS MAX.)
   SPAN BC: 3 SIGNALS AND 3 SIGNS = [3] (LOADS FOR 3 SIGNALS AND 3 SIGNS MAX.)
   SPAN CD: 4 SIGNALS AND 4 SIGNS = [4] (LOADS FOR 4 SIGNALS AND 4 SIGNS MAX.)
   SPAN AD: 3 SIGNALS AND 2 SIGNS = [3] (LOADS FOR 3 SIGNALS AND 3 SIGNS MAX.)

2. DETERMINE THE SIZE OF POLES Ⓐ, Ⓑ, Ⓒ AND Ⓓ.

   FOR POLE Ⓐ USING THE DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 70° ≤ θ < 80° ON SHEET 8:

   EITHER THE HORIZONTAL CHART OR THE VERTICAL CHART CAN BE USED FOR SPAN AB OR SPAN AD. USING THE HORIZONTAL CHART FOR SPAN AB AND THE VERTICAL CHART FOR SPAN AD, LOCATE THE 153' SPAN AB ON THE HORIZONTAL CHART THEN GO VERTICALLY TO MEET WITH LINE [4]. LOCATE THE 122' SPAN AD ON THE VERTICAL CHART THEN GO HORIZONTALLY TO MEET WITH LINE [3]. FROM THESE INTERCEPTION POINTS, GO HORIZONTALLY AND VERTICALLY TO THE SQUARE BOX. THE REQUIRED PIPE DIAMETER FOR POLE Ⓐ IS 24"ø XS PIPE.

   FOR POLE Ⓑ USING THE DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 100° ≤ θ < 110° ON SHEET 10:

   EITHER THE HORIZONTAL CHART OR THE VERTICAL CHART CAN BE USED FOR SPAN AB OR SPAN BC. USING THE HORIZONTAL CHART FOR SPAN AB AND THE VERTICAL CHART FOR SPAN BC, LOCATE THE 153' SPAN AB ON THE HORIZONTAL CHART, THEN GO VERTICALLY TO MEET WITH LINE [4]. LOCATE THE 122' SPAN BC ON THE VERTICAL CHART, THEN GO HORIZONTALLY TO MEET WITH LINE [3]. FROM THESE INTERCEPTION POINTS, GO HORIZONTALLY AND VERTICALLY TO THE SQUARE BOX. THE REQUIRED PIPE DIAMETER FOR POLE Ⓑ IS 20"ø XS PIPE.

   LIKEWISE, STRAIN POLE Ⓒ IS 24"ø XS PIPE AND STRAIN POLE Ⓓ IS 20"ø XS PIPE.

3. DETERMINE THE SPAN-WIRE DIAMETER BY USING THE DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 24"ø POLE ON SHEET 13. FOR THIS CASE, THE 24"ø STRAIN POLES Ⓐ AND Ⓒ CONTROL THE DESIGN.

   SPAN AB: LOCATE THE 153' SPAN LENGTH ON THE HORIZONTAL LINE, THEN GO VERTICAL TO MEET WITH LINE [4]. THE REQUIRED SPAN-WIRE IS 1/2"ø.

   SPANS AD, BC AND CD: DOING THE SAME AS FOR SPAN AB FOR DIFFERENT LOAD KEYS, THE REQUIRED SPAN-WIRE DIAMETERS FOR SPANS AD AND BC IS 7/16" ø, AND 1/2" ø FOR SPAN CD.

4. DETERMINE CAISSON DEPTH BY USING TABLE ON SHEET 5.

   LOOK UP THE CAISSON DEPTH FOR COHESIONLESS SOIL ON SHEET 13. THE REQUIRED CAISSON DEPTH FOR 24"ø STRAIN POLES Ⓐ AND Ⓒ IS 15.5', AND THE REQUIRED DEPTH FOR 20"ø STRAIN POLES Ⓑ AND Ⓓ IS 14.5'.

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TEMPORARY SPAN WIRE SIGNALS

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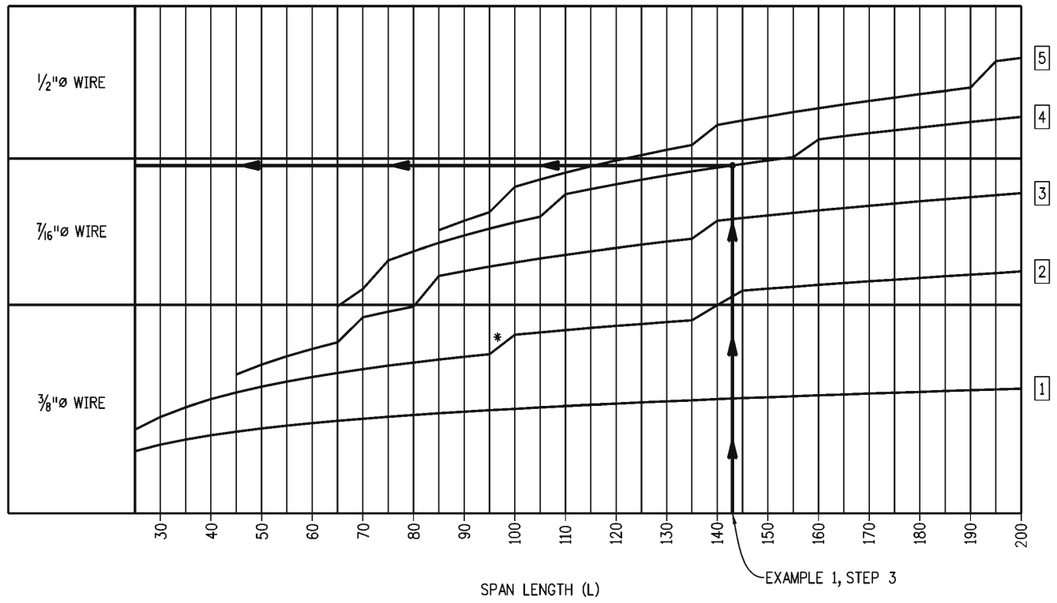
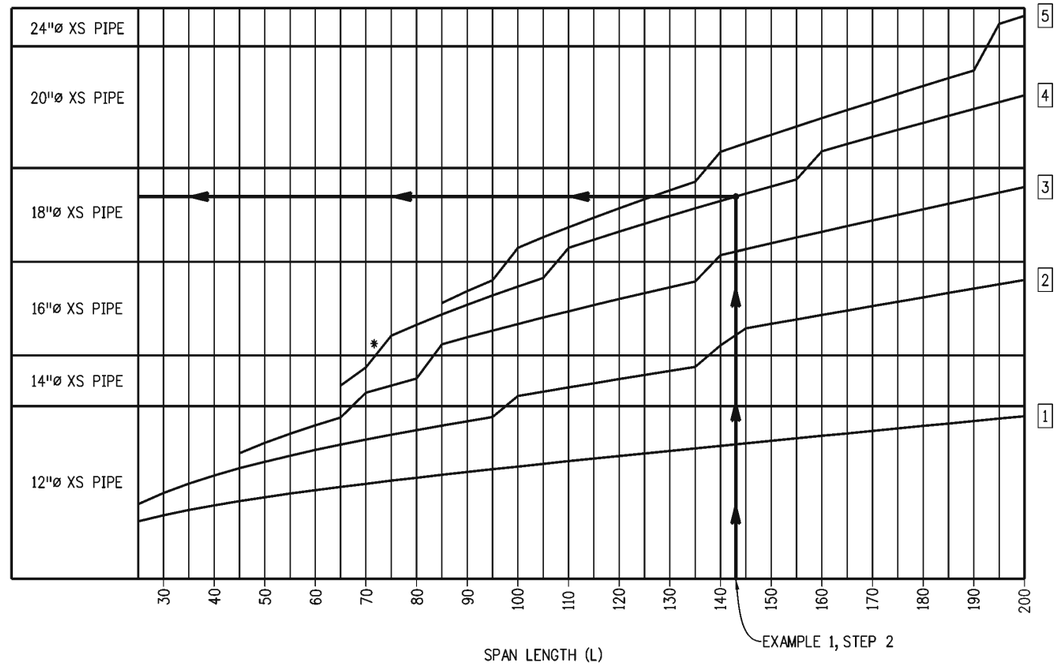
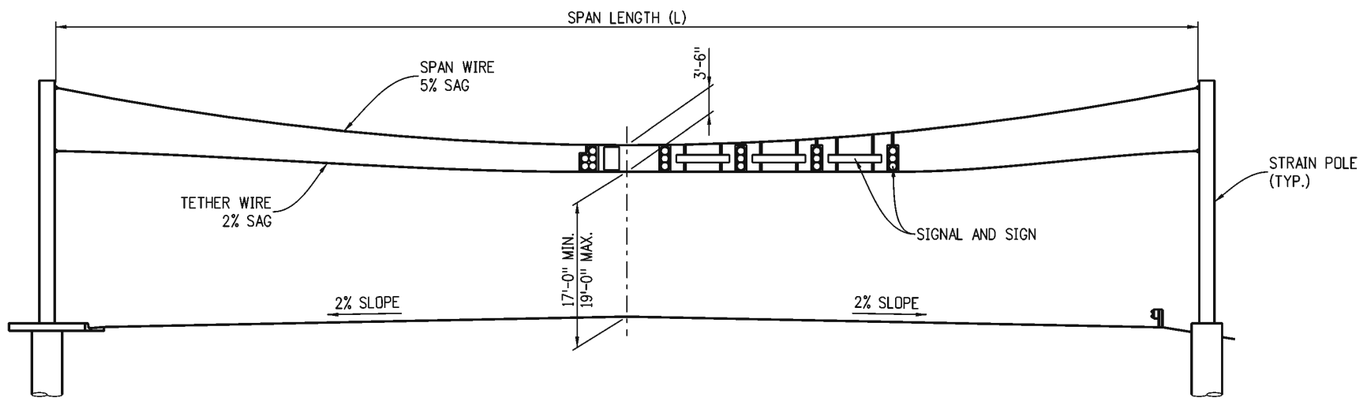
SINGLE SPAN SPAN-WIRE DIAMETER SELECTION CHART



SINGLE SPAN STRAIN POLE SELECTION CHART





ELEVATION

LOAD KEY

- 5 = 5 SIGNALS AND 4 SIGNS MAX.
- 4 = 4 SIGNALS AND 4 SIGNS MAX.
- 3 = 3 SIGNALS AND 3 SIGNS MAX.
- 2 = 2 SIGNALS AND 2 SIGNS MAX.
- 1 = 1 SIGNAL AND 1 SIGN MAX.

LEGEND

* = TYPICAL JUMP CAUSED BY CHANGE IN POLE SIZE USING SPAN LENGTH INCREASEMENT OF 5'.

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Created By: LEC			Traffic & Safety Engineering MKB		Standard Sheet No. 7 of 13
Last Modification Date: 07/28/14				Issued By: Traffic & Safety Engineering Branch July 31, 2019	Project Sheet Number:
Last Modified By: HHB					
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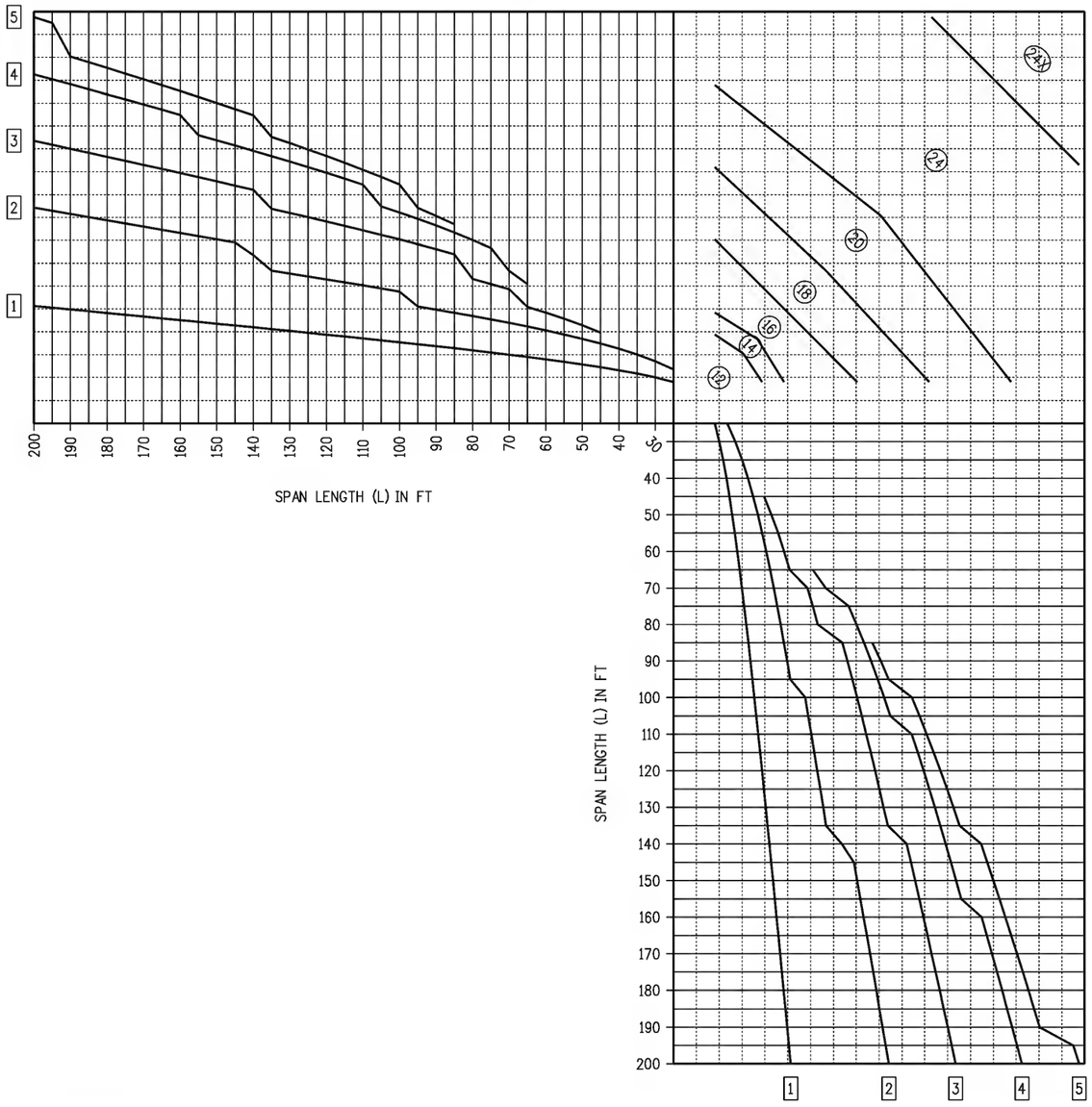
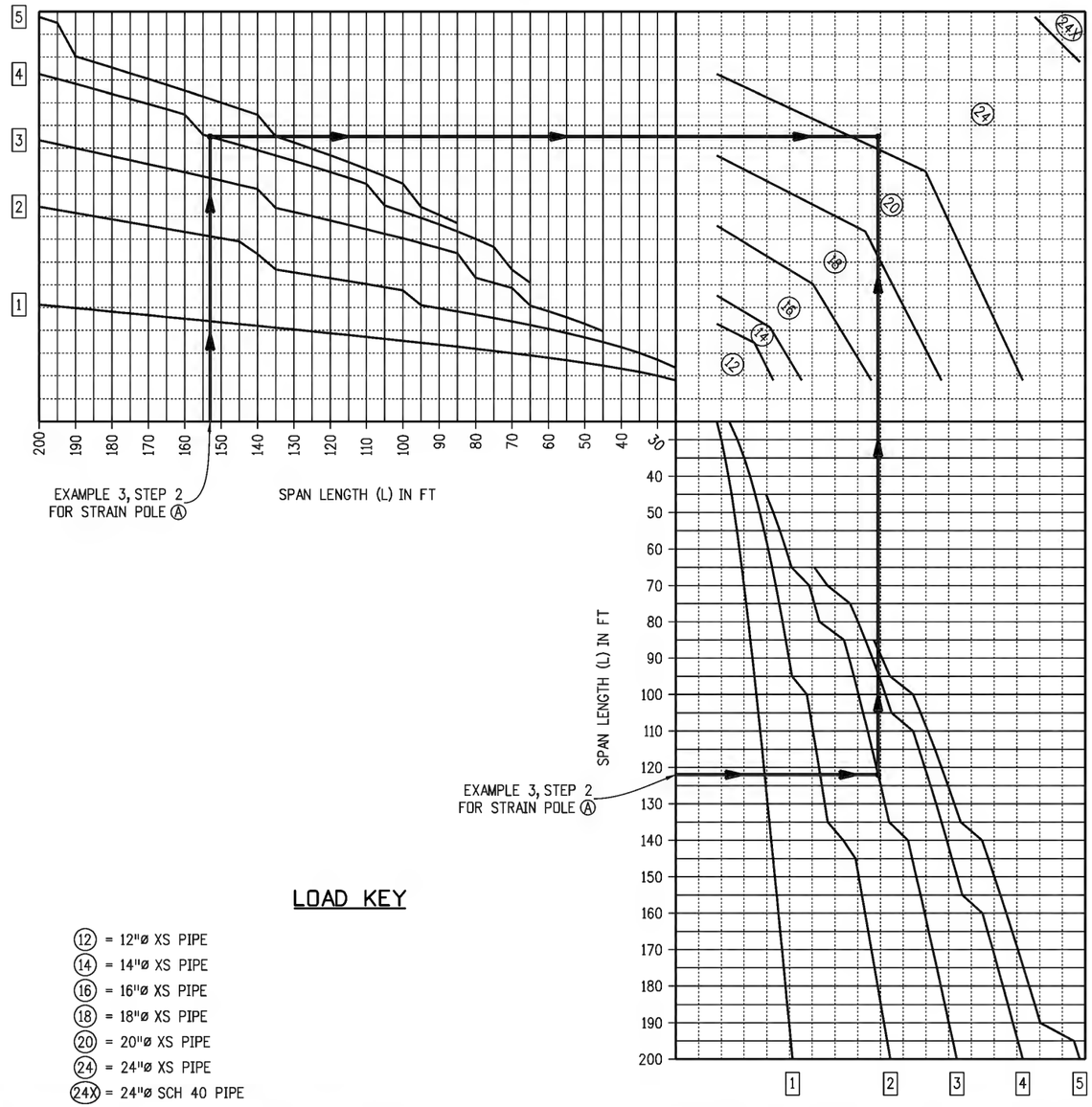
DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 60° ≤ θ < 70°



DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 70° ≤ θ < 80°



LOAD KEY

- (12) = 12"ø XS PIPE
- (14) = 14"ø XS PIPE
- (16) = 16"ø XS PIPE
- (18) = 18"ø XS PIPE
- (20) = 20"ø XS PIPE
- (24) = 24"ø XS PIPE
- (24X) = 24"ø SCH 40 PIPE

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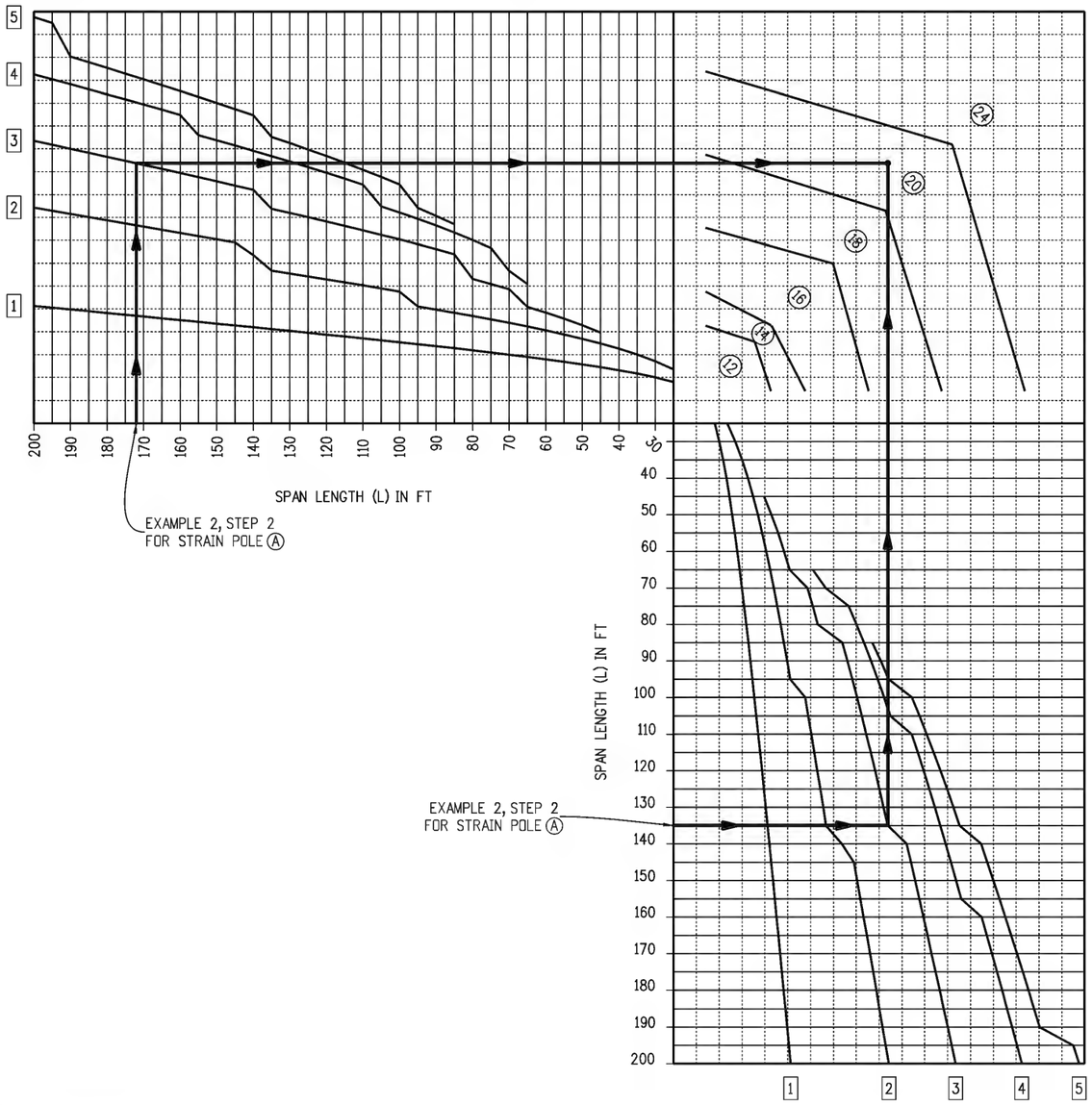
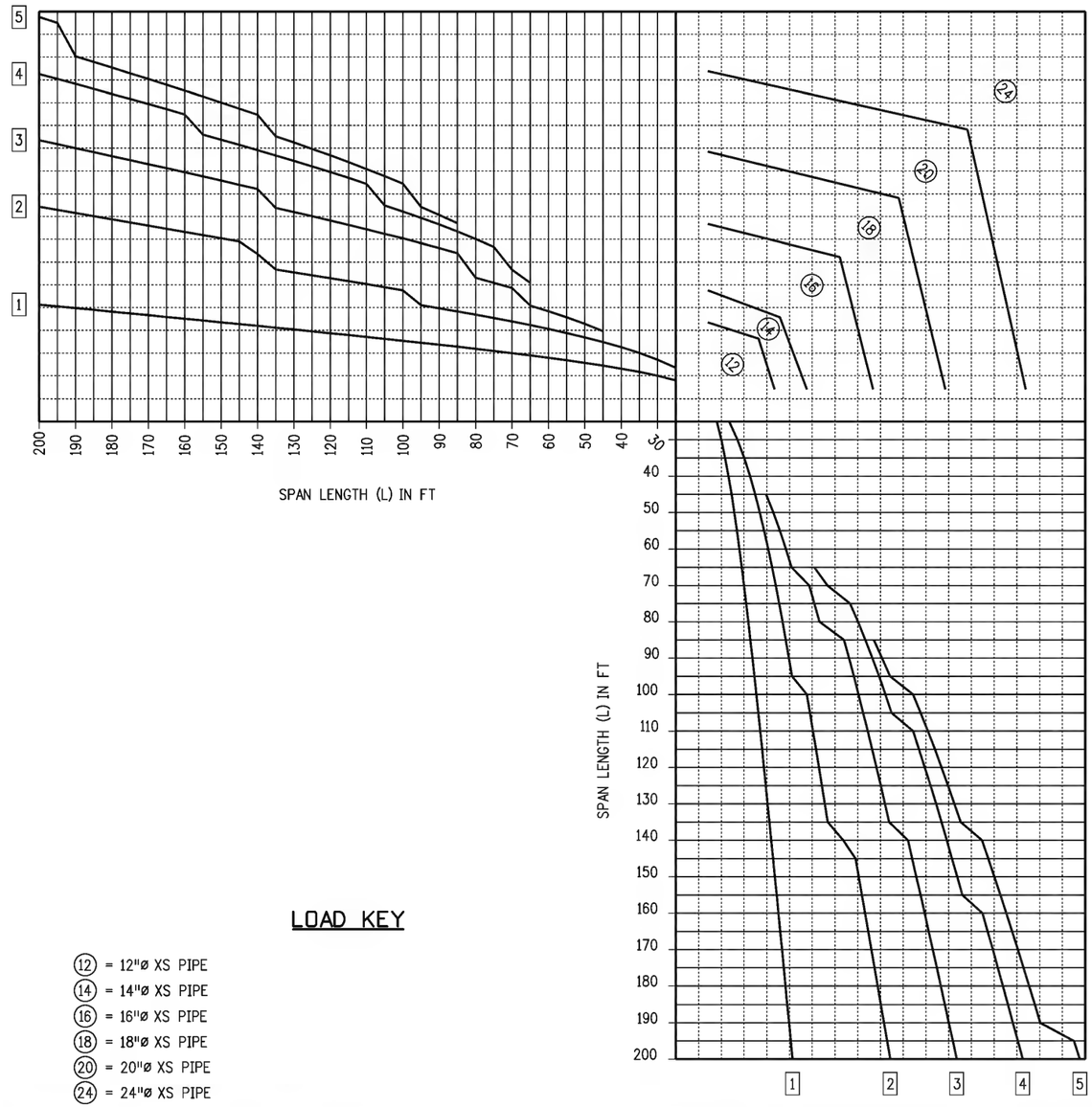
DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 80° ≤ θ < 90°



DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 90° ≤ θ < 100°



LOAD KEY

⑫ = 12"ø XS PIPE
⑭ = 14"ø XS PIPE
⑯ = 16"ø XS PIPE
⑱ = 18"ø XS PIPE
⑳ = 20"ø XS PIPE
㉔ = 24"ø XS PIPE

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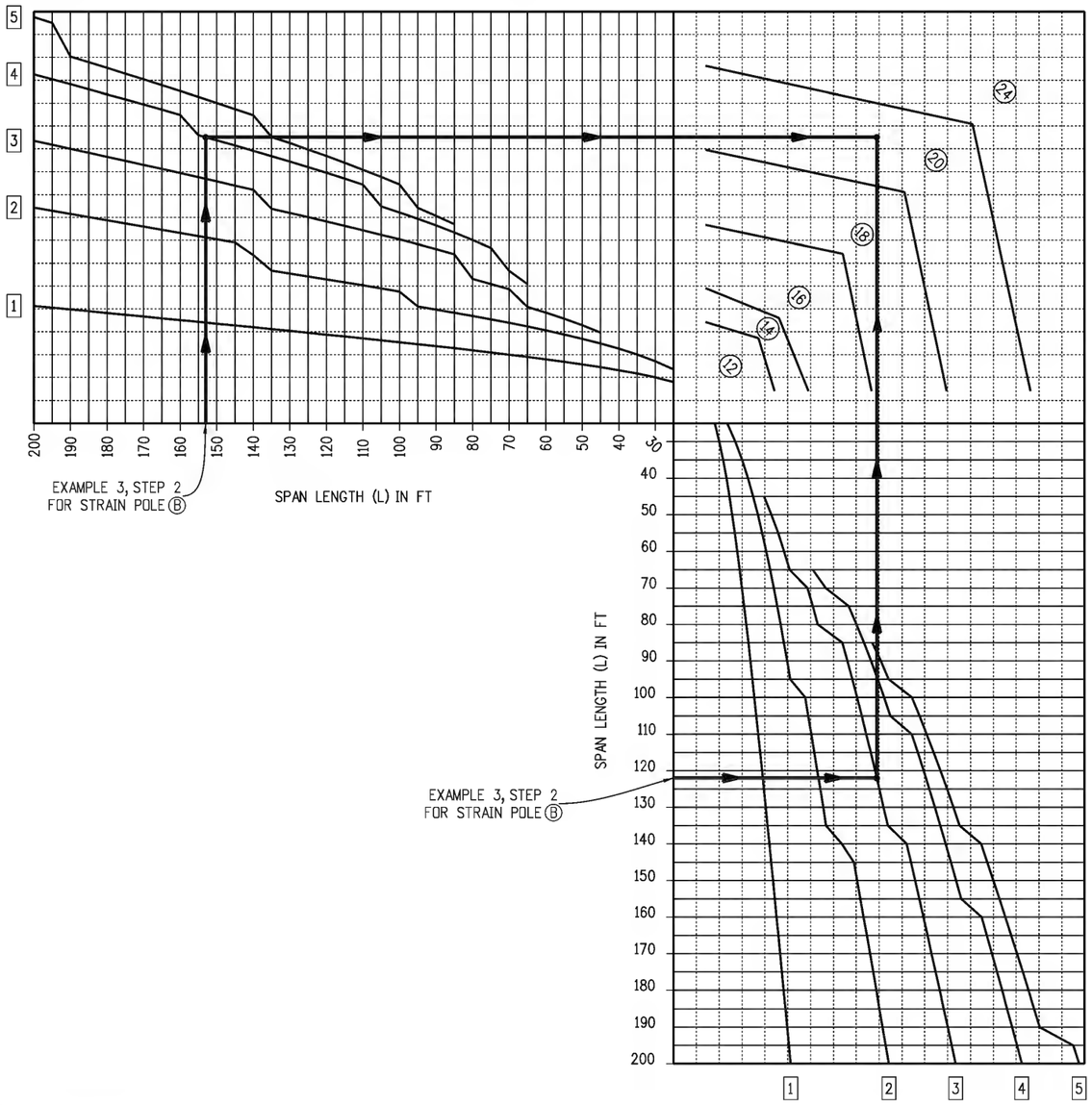
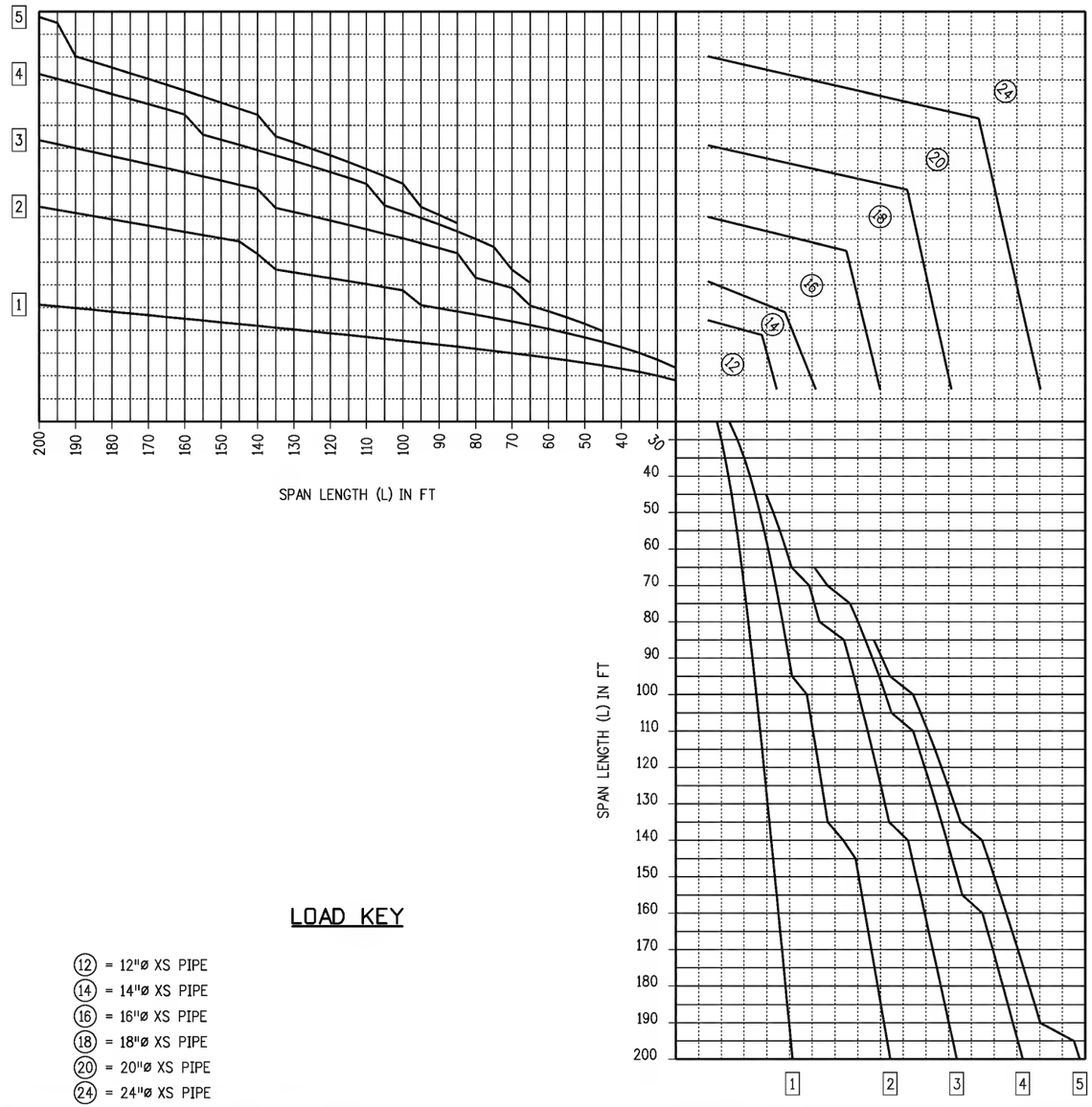
DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 100° ≤ θ < 110°



DOUBLE SPAN STRAIN POLE SELECTION CHART FOR 110° ≤ θ < 120°



LOAD KEY

(12) = 12"ø XS PIPE
(14) = 14"ø XS PIPE
(16) = 16"ø XS PIPE
(18) = 18"ø XS PIPE
(20) = 20"ø XS PIPE
(24) = 24"ø XS PIPE

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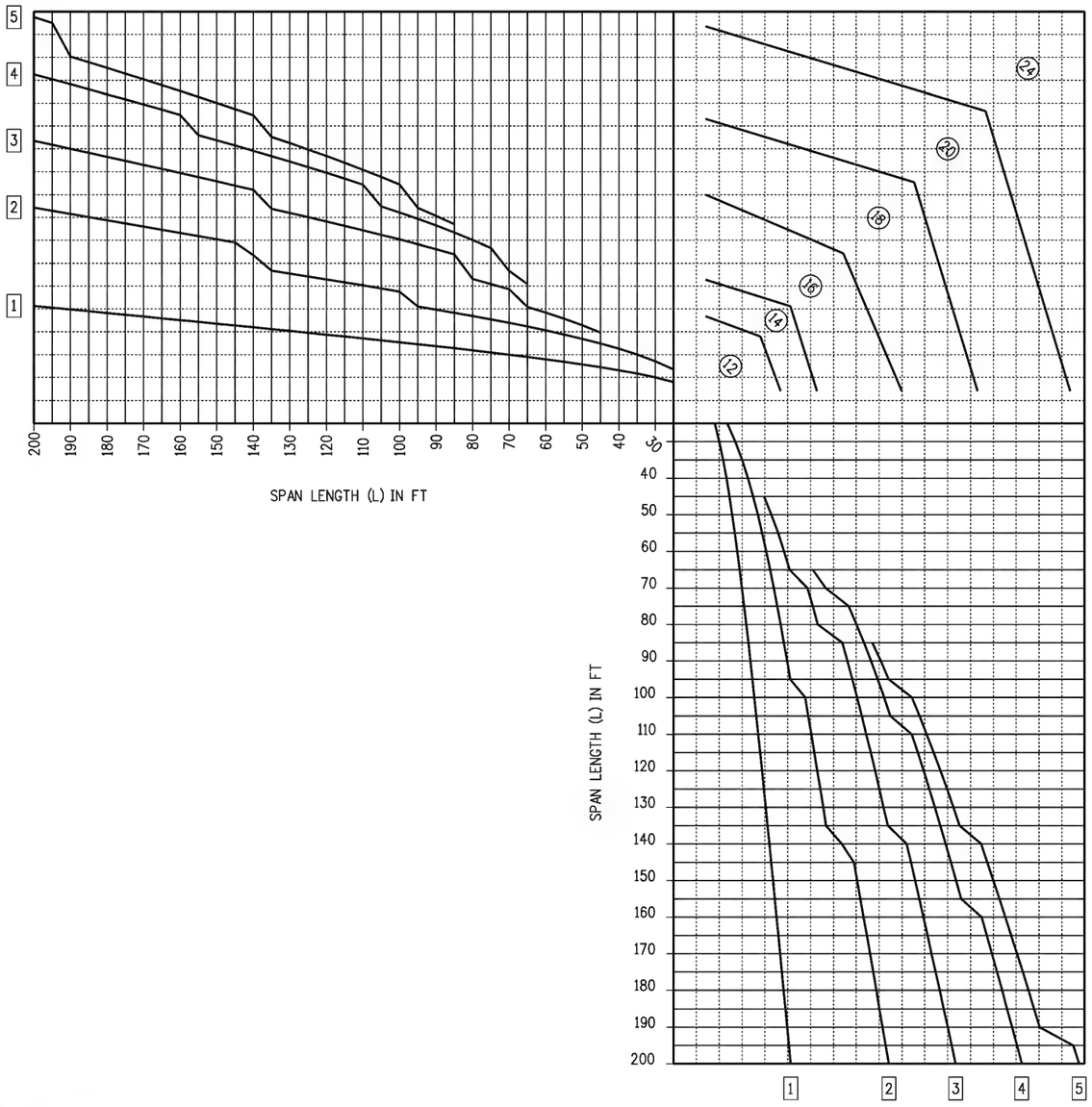
DOUBLE SPAN STRAIN POLE SELECTION CHART FOR θ ≥ 120°



LOAD KEY

(12) = 12"Ø XS PIPE
(14) = 14"Ø XS PIPE
(16) = 16"Ø XS PIPE
(18) = 18"Ø XS PIPE
(20) = 20"Ø XS PIPE
(24) = 24"Ø XS PIPE

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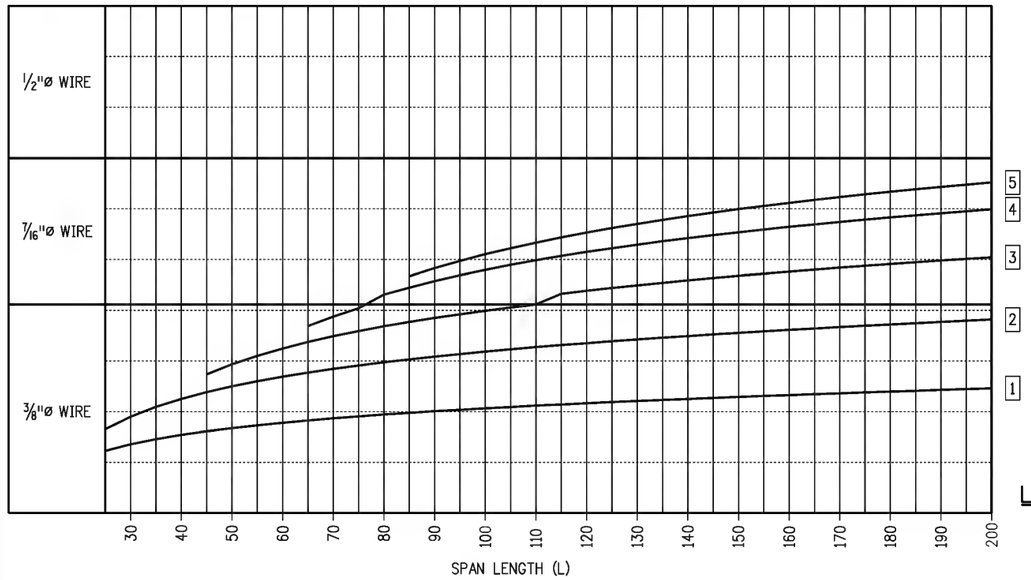
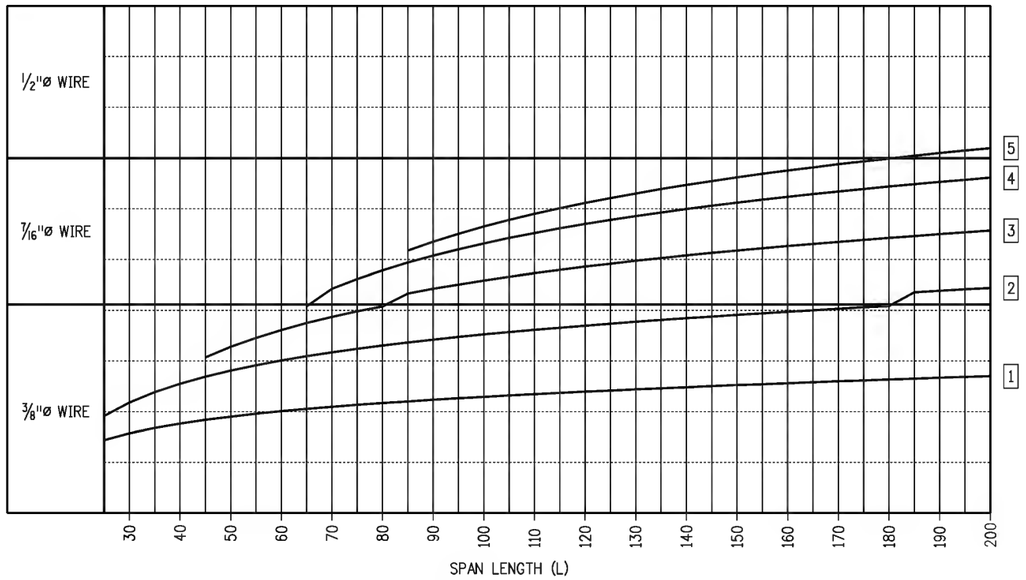
-DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHARTS (1 OF 2)-

DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 12" ø XS POLE

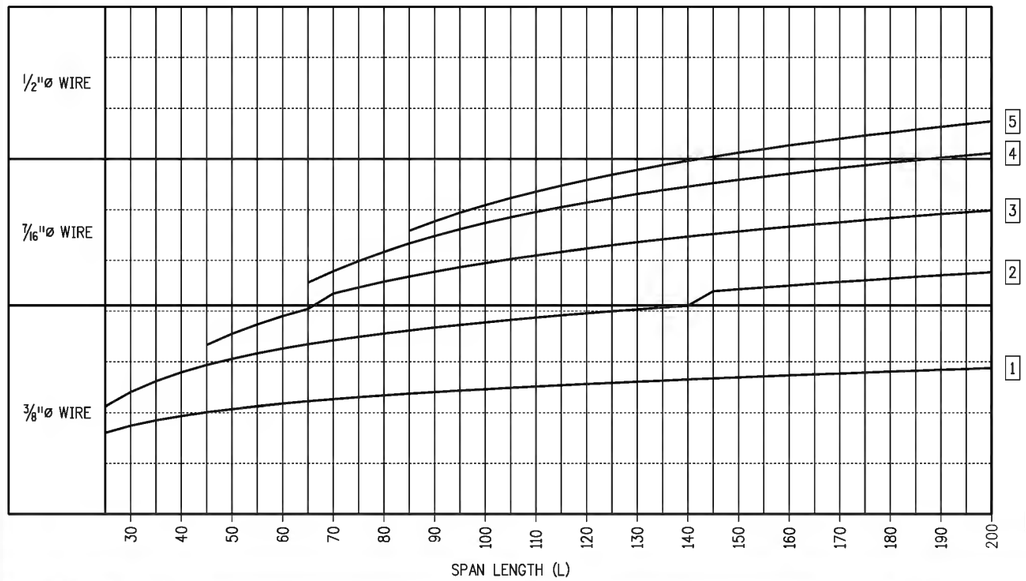


LOAD KEY

DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 14" ø XS POLE

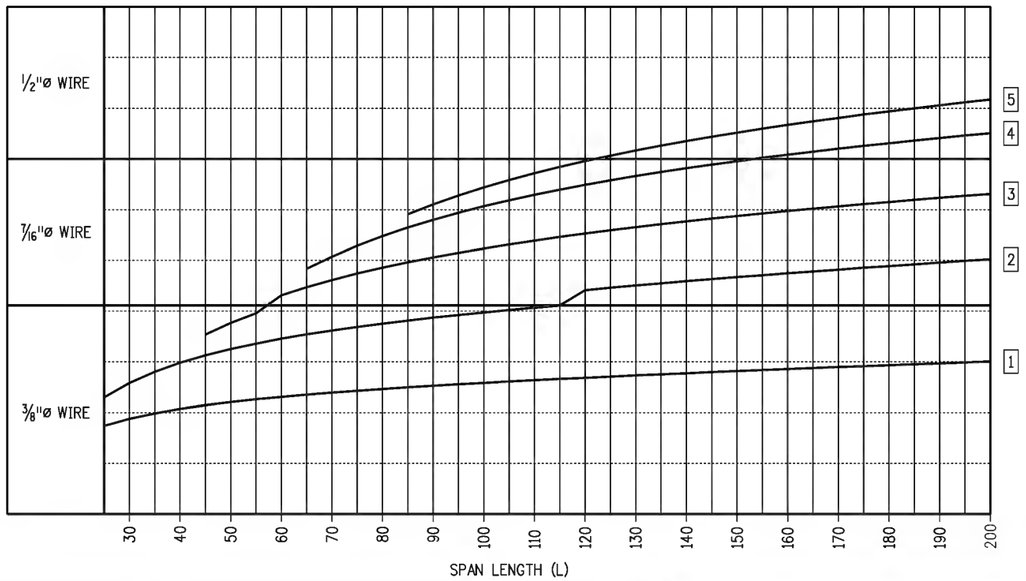


DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 16" ø XS POLE



LEGEND

DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 18" ø XS POLE



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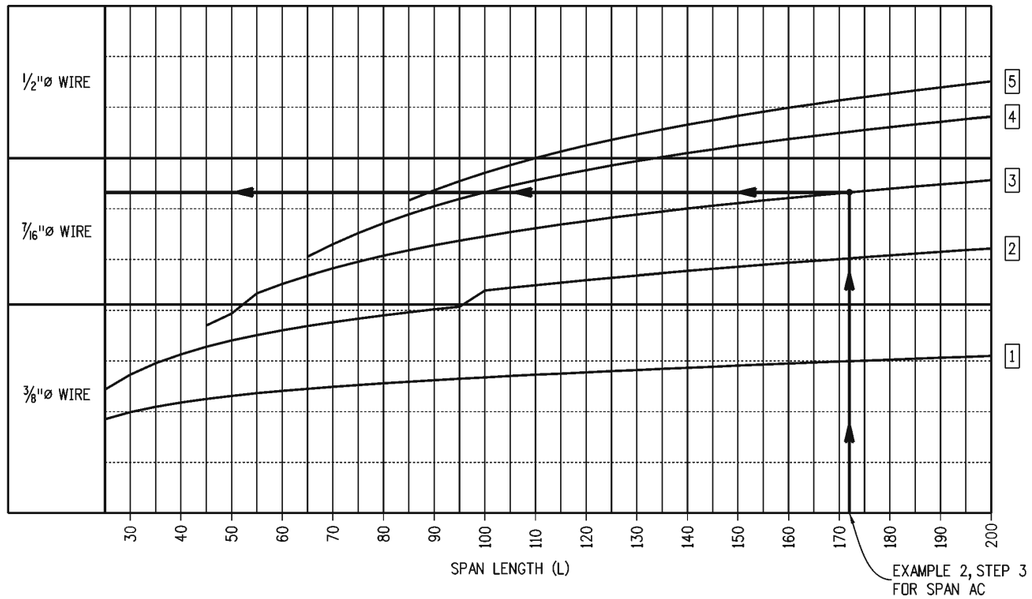
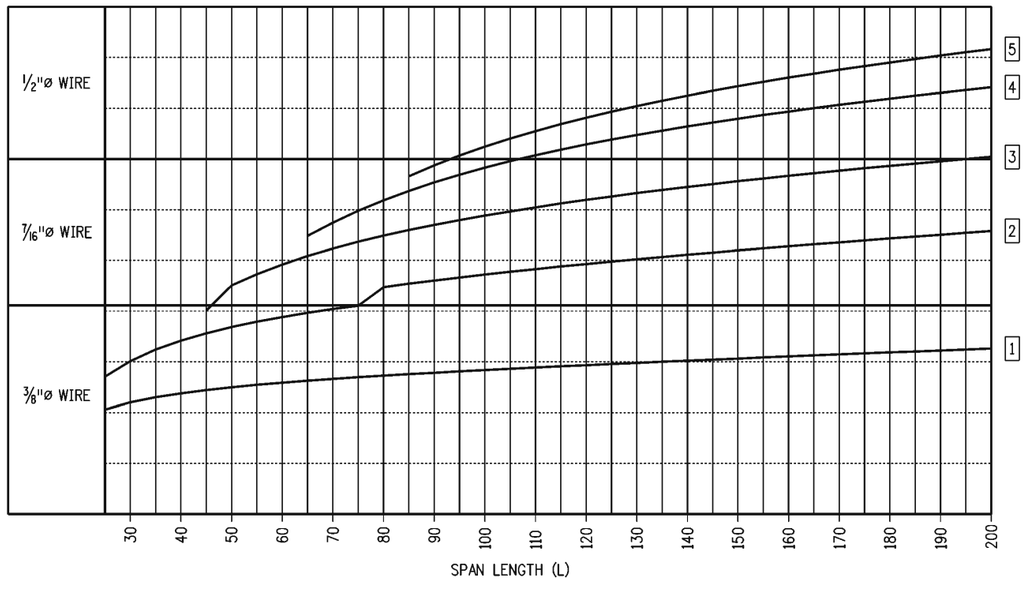
-DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHARTS (2 OF 2)-

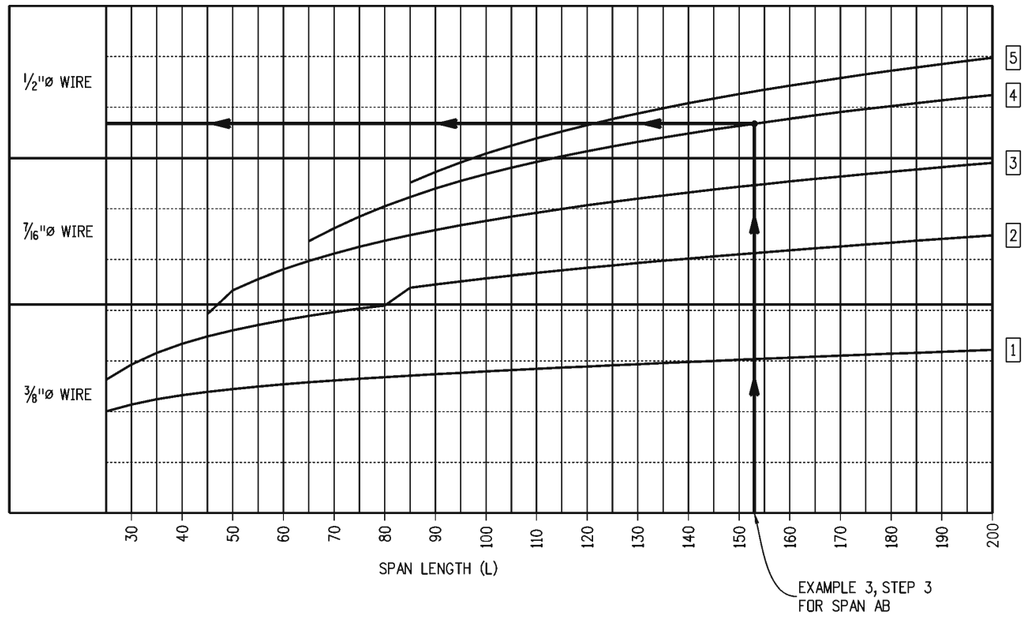
DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 20" ø XS POLE



DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 24" ø SCH 40 POLE



DOUBLE SPAN SPAN-WIRE DIAMETER SELECTION CHART FOR 24" ø XS POLE



LOAD KEY

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- 3 = 3 SIGNALS AND 3 SIGNS MAX.
- 2 = 2 SIGNALS AND 2 SIGNS MAX.
- 1 = 1 SIGNAL AND 1 SIGN MAX.

LEGEND

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