

## OVERHEAD CROSSINGS - RAILWAY

DRAWING NUMBER	SHT.	DRAWING TITLE	DWG REV.	BOM REV.
<b>C-24-24.01</b>	<b>1</b>	<b>APPLICATION REQUIREMENTS</b>	<b>C</b>	-
<b>C-24-24.01</b>	<b>2</b>	<b>APPLICATION REQUIREMENTS</b>	<b>A</b>	-
<b>C-24-24.02</b>	<b>1 - 1</b>	<b>GENERAL CONSTRUCTION REQUIREMENTS</b>	<b>0</b>	-
<b>C-24-24.03</b>	<b>1 - 1</b>	<b>POLE CLASS &amp; SPANS - RURAL</b>	<b>B</b>	-
<b>C-24-24.04</b>	<b>1 - 1</b>	<b>POLE CLASS &amp; SPANS - URBAN</b>	<b>B</b>	-

### *SaskPower* - DISTRIBUTION STANDARDS

DRN.	DESIGN CHK.	APPROVAL	<b>INDEX</b>
CHKD.			
DATE	DATE	DATE	
DATE OF ISSUE: <b>2009/06/29</b>		DRAWING NO: <b>C-24-24-INDEX</b>	<b>SHEET 1 of 1</b>   REV. <b>E</b>

## OVERHEAD RAILWAY CROSSINGS APPLICATION REQUIREMENTS FROM FIELD STAFF

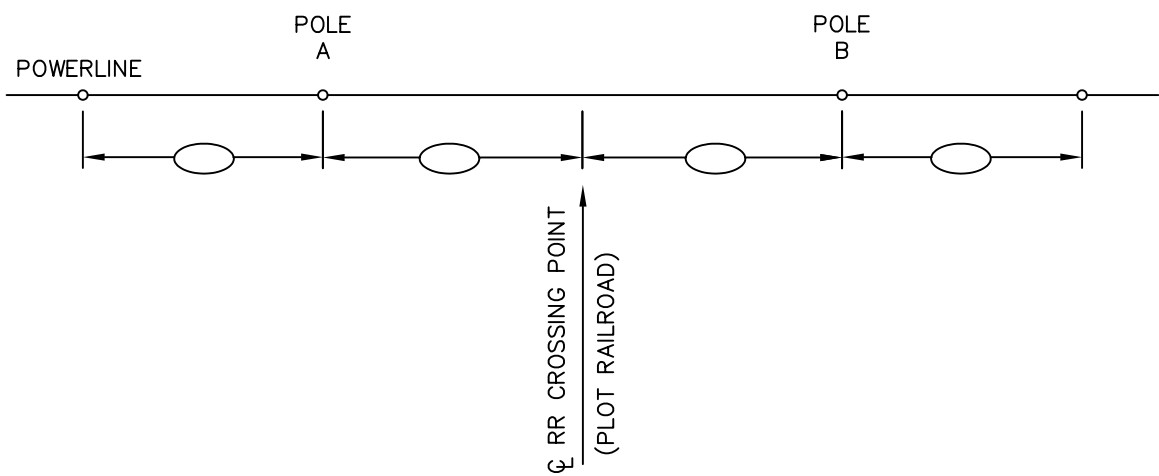
- (1) SHOW ALL DIMENSIONS IN METRES TO ONE DECIMAL.
- (2) DRAW IN THE CENTRE LINE OF THE TELEGRAPH AND MAIN TRACK, AND SHOW THE ANGLE BETWEEN THE POWER LINE AND THE TRACK USING THE PROTRACTOR ON THE BACK OF THE FIELD SHEET.
- (3) SHOW A TIE DIMENSION ALONG THE TRACK TO THE CENTRE LINE OF THE ROAD ALLOWANCE, STREET, SWITCH, OR SECTION LINE:
  - ALL ANCHORS (TYPES OF ANCHORS), GUYS, DIMENSIONS, AND ALL CLEARANCES VERTICAL AND HORIZONTAL.
  - ADJACENT SPANS TO ANCHORED POLES AND DIMENSIONS.
  - PERPENDICULAR DISTANCES FROM THE CENTRE LINE OF THE MAIN TRACK TO THE CROSSING POLES.
  - DIMENSIONS FROM THE CENTRE LINE OF THE MAIN TRACK TO THE TELEGRAPH LINE.
  - COMPLETE TRACK LEVEL MEASUREMENTS.
  - VOLTAGES, TYPE OF CONDUCTOR, MAXIMUM AND ULTIMATE STRENGTH.
- (4) DRAW IN ELEVATOR LEADS AND DIMENSION SPANS AND ANCHORS AND GIVE TIE DIMENSIONS TO THE CENTRE LINE OF THE MAIN TRACK.
- (5) ATTACH STAKING SHEET TO FIELD CHECK SHEET.
- (6) COMPLETE NORTH INDICATIONAL DIRECTION SIGN.
- (7) FIELD CHECKS TO BE SUBMITTED 6 WEEKS PRIOR TO CONSTRUCTION TO THE REGIONAL OFFICE (AS BUILT TO BE INCLUDED WITH SUB PROJECT).
- (8) THE REGIONAL OFFICES ASK FOR 72 HOURS NOTICE PRIOR TO CONSTRUCTION
- (9) ADMINISTRATION FEES AND ANNUAL FEES APPLY.

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### SAMPLE OF RAILWAY CROSSING FORM

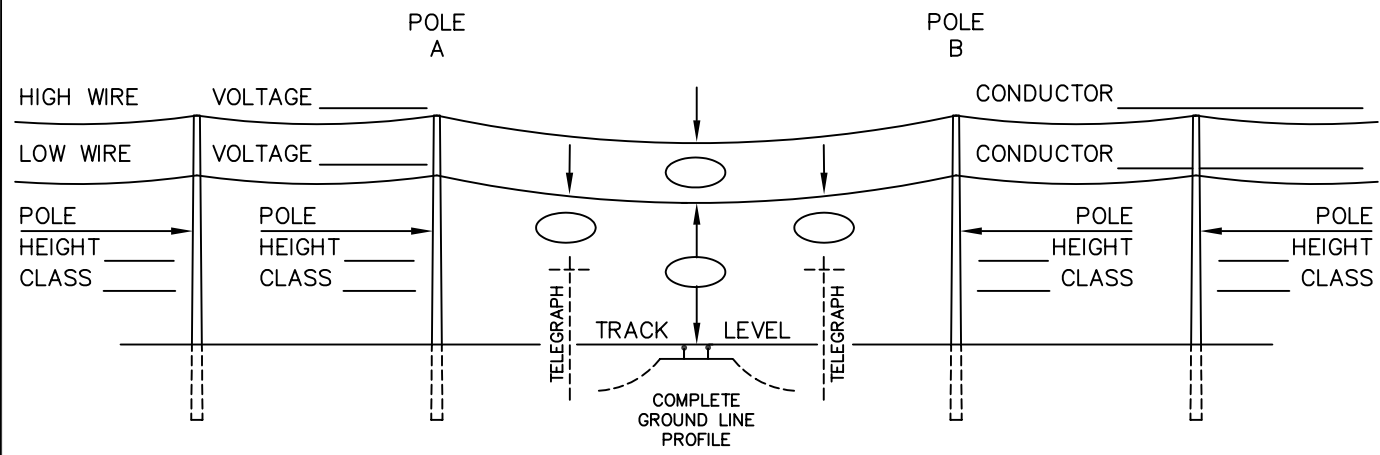
NE SEC. 24 TP. 3 RGE. 7 W 2 M			
<p style="text-align: center;"><b>PLAN EXAMPLE</b></p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">POLE A </div> <div style="text-align: center;">POLE B </div> </div> <p style="text-align: center;">POLE TOP SKETCH</p> <p style="text-align: center;">COMPLETE OR GIVE CONSTRUCTION MANUAL DWG. NO'S</p> <p>FOR ASSISTANCE CALL ENGINEERING RECORDS OR CONTRACT ADMINISTRATION (HEAD OFFICE)</p> <p>CONTRACT OR PROJECT FOREMAN _____</p> <p>JOB ORDER # _____</p> <p>APPLICATION # _____</p> <p style="font-size: 2em; text-align: center;">RRC # _____</p>		
SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS			
DRN. <i>RP</i>	DESIGN CHK.	SAFETY APP.	APPROVAL
CHKD.	DATE	DATE	DATE
DATE OF ISSUE 2009-06-29			DRAWING NO. C-24-24.01
		SHEET 1 of 2	REV. C

LOCATION: \_\_\_\_ SEC. \_\_\_\_ TWP. \_\_\_\_ RGE. \_\_\_\_ W \_\_\_\_ M TOWN \_\_\_\_\_



DATE OF CONSTRUCTION \_\_\_\_\_

PLAN



PROFILE ON  $\zeta$  OF POWERLINE

SAMPLE OF RAILWAY CROSSING FORM

SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS				
DRN. <i>R</i>	DESIGN CHK.	SAFETY APP.	APPROVAL	APPLICATION REQUIREMENTS
CHKD. <i>FTK</i>	DATE	DATE	DATE	
DATE 87-04-23	DATE	DATE	DATE	
DATE OF ISSUE 87-06-01	DRAWING NO. C-24-24.01		SHEET 2 of 2	REV. 0

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## CROSSINGS – RAILWAY

1. AS REQUIRED BY CSA STANDARDS CAN3 – C22.3 No. 1 M85 – "OVER HEAD SYSTEMS", ALL CIRCUITS CROSSING OR PARALLELING RAILROAD TRACKS AND FACILITIES REQUIRE A GRADE 1 CONSTRUCTION. IF ANY PART OF A LINE COULD FAIL SUCH THAT A CONDUCTOR OR ANY PART OF THE STRUCTURE COULD INTERFERE WITH NORMAL USE OF ANY PART OF THE RAILWAY FACILITIES, THEN THAT LINE MUST BE BUILT TO GRADE 1 CONSTRUCTION REQUIREMENTS.
2. TABLES ON DRAWINGS C-24-24.03 AND C-24-24.04, GIVE THE STRUCTURE STRENGTH REQUIREMENTS TO MEET GRADE 1 CONSTRUCTION. STRUCTURES OUTSIDE THE ZONE REQUIRING GRADE 1 CONSTRUCTION CAN MEET OUR NORMAL CONSTRUCTION REQUIREMENTS. IN-LINE GUYING OF TANGENT STRUCTURES IS NOT REQUIRED FOR CONDUCTORS WITH AN ULTIMATE TENSILE STRENGTH (UTS) GREATER THAN 13 kN. THIS INCLUDES PRIMARY CONDUCTORS 1/0 ACSR AND LARGER.
3. USE OF DEFLECTION AND CORNER STRUCTURES FOR ANGLES OF 30° AND LARGER SHOULD BE AVOIDED. THE SAFETY FACTOR REQUIRED FOR VERTICAL LOADING CONSIDERATIONS WOULD REQUIRE THE USE OF CLASS 1 POLES. THIS IS NOT PRACTICAL. IF THESE CORNER STRUCTURES CANNOT BE AVOIDED, THEN USE OVERHEAD GUYING (DWG. A-32-05).
4. ALL DEFLECTIONS WITHIN 5 SPANS OR 0.8 km (WHICHEVER IS LESS) OF THE CROSSING, MUST BE GUYED.
5. POLES SHOULD BE LOCATED OUTSIDE OF THE RAILWAY RIGHT OF WAY. THE FENCE LINE IS NOT NECESSARILY THE RIGHT OF WAY LINE. SPC IS OBLIGED TO PAY AN ANNUAL RENTAL FEE FOR ANY POLE IN THE RIGHT OF WAY.
6. POLE STUBS ARE NOT PERMITTED AT CROSSING POLES OR THOSE PARALLELING WITHIN THESE REQUIREMENTS.
7. CONDUCTOR SPLICES SHOULD BE AVOIDED IN THE CROSSING SPAN AND BOTH ADJOINING SPANS.
8. PRIMARY TAPS SHOULD BE AVOIDED. WHERE NECESSARY THEY SHOULD BE THE COMPRESSION OR AMPACT TYPE.

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### SASKATCHEWAN POWER CORP. – DISTRIBUTION ENGINEERING STANDARDS

DRN. <i>DK</i>	DESIGN CHK.	SAFETY APP.	APPROVAL	GENERAL CONSTRUCTION REQUIREMENTS	
CHKD. <i>FTK</i>	DATE	DATE	DATE		
DATE 87-05-30					
DATE OF ISSUE 87-06-01	DRAWING NO. C-24-24.02		SHEET 1 of 1	REV. 0	

## SINGLE CIRCUIT (90m RS)

CONDUCTOR	ALLOWABLE SPAN LENGTH			
	POLE CLASS			
	CL 2	CL 3	CL 4	CL 5
	m	m	m	m
1/0 ACSR – RAVEN	—	—	106	86
3/0 ACSR PIGEON	—	106	101	80
4/0 ACSR PENGUIN	—	106	92	—

## DOUBLE CIRCUIT (60m RS)

CONDUCTOR	ALLOWABLE SPAN LENGTH			
	POLE CLASS			
	CL 2	CL 3	CL 4	CL 5
	m	m	m	m
1/0 ACSR – RAVEN	—	72	57	47
3/0 ACSR PIGEON	72	69	53	44
4/0 ACSR PENGUIN	72	63	49	—

## NOTE:

1. MAXIMUM ALLOWABLE SPAN LENGTHS OF 106m AND 72m FOR SINGLE AND DOUBLE CIRCUIT LINES ARE DUE TO THE LIMITATIONS OF THE RULING SPANS OF 90m AND 60m RESPECTIVELY.
2. TABLES ARE BASED ON THREE PHASE CIRCUITS. FOR SINGLE PHASE, USE THE SINGLE CIRCUIT REQUIREMENT ABOVE.
3. GRADE 1 CONSTRUCTION.

## SaskPower – DISTRIBUTION STANDARDS

DRN. <i>DK</i>	DESIGN CHK.	SAFETY APP.	APPROVAL	POLE CLASS AND SPANS (RURAL) AT RAILWAY CROSSINGS
CHKD. <i>FTK</i>				
DATE 91-06-26	DATE	DATE	DATE	
DATE OF ISSUE			DRAWING NO. C-24-24.03	SHEET 1 of 1
				REV. B

## SINGLE CIRCUIT (60m RS)

CONDUCTOR	ALLOWABLE SPAN LENGTH		
	POLE CLASS		
	CL 2	CL 3	CL 4
	m	m	m
1/0 ACSR – RAVEN	72	64	50
3/0 ACSR – PIGEON	72	62	48
266.8 AL – DAISY	72	61	47
336.4 AL – TULIP	72	59	46
477 AL – COSMOS	71	57	44

## DOUBLE CIRCUIT (60m RS)

CONDUCTOR	ALLOWABLE SPAN LENGTH		
	POLE CLASS		
	CL 2	CL 3	CL 4
	m	m	m
1/0 ACSR – RAVEN	60	48	37
3/0 ACSR – PIGEON	58	46	36
266.8 AL – DAISY	55	44	34
336.4 AL – TULIP	54	43	33
477 AL – COSMOS	51	41	32

## NOTE:

1. MAXIMUM ALLOWABLE SPAN LENGTH OF 72m IS DUE TO THE LIMITATIONS OF THE RULING SPAN.
2. TABLES ARE BASED ON THREE PHASE CIRCUITS. FOR SINGLE PHASE, USE THE SINGLE CIRCUIT REQUIREMENT ABOVE.
3. STRUCTURES ASSUME SINGLE OR DOUBLE CIRCUIT PRIMARY AS INDICATED, PLUS SECONDARY OF 3/0 Qx AND MAXIMUM COMMUNICATIONS CIRCUIT LOADING.
4. GRADE 1 CONSTRUCTION.

*SaskPower* – DISTRIBUTION STANDARDS

DRN. <i>DK</i>	DESIGN CHK.	SAFETY APP.	APPROVAL	POLE CLASS AND SPANS (URBAN) AT RAILWAY CROSSINGS	
CHKD. <i>FTK</i>					
DATE 91-06-26	DATE	DATE	DATE		
DATE OF ISSUE			DRAWING NO. C-24-24.04	SHEET 1 of 1	REV. B