

**Draft Conditions of Approval**  
**Summerhaven Wind LP – Leave to Construct Proceeding**  
**EB-2011-0027**

**1.0 General Requirements**

- 1.1 Summerhaven Wind LP (“Summerhaven” or the “Applicant”) shall construct the 9 km of 230 kV overhead transmission line (the “Transmission Line”) and associated facilities (the “Transmission Facilities”) and restore the Transmission Facilities’ land in accordance with its Leave to Construct application, evidence and undertakings, except as modified by the Board’s Decision and Order and by these Conditions of Approval.
- 1.2 Unless otherwise ordered by the Board, authorization for Leave to Construct shall terminate December 31, 2012 unless construction of the Transmission Facilities has commenced prior to that date.
- 1.3 Summerhaven shall implement all the recommendations included in the Decision from the Ministry of Environment regarding the *Renewable Energy Approvals under Part V.O.1* of the Act made pursuant to the *Environmental Protection Act*, R.S.O. 1990,c. E.19.
- 1.4 Summerhaven shall satisfy the Independent Electricity System Operator (“IESO”) requirements and recommendations as reflected in the System Impact Assessment document dated November 4, 2010, (“SIA”) and such further and other conditions which may be imposed by the IESO with the exception of Recommendation (1) at page 7 of the SIA that a common switching station be built for the Applicant's project and the Port Dover and Nanticoke Wind Farm.
- 1.5 Summerhaven shall satisfy Hydro One Networks Inc.’s requirements as reflected in the Customer Impact Assessment document dated November 9, 2010, and such further and other requirements or conditions which may be imposed by Hydro One Networks Inc.
- 1.6 Summerhaven shall advise the Board's designated representative of any proposed material change in the Transmission Facilities, including but not limited to material changes in the proposed route, construction techniques, construction schedule, restoration procedures, or any other material impacts of construction. Summerhaven shall not make a material change without prior approval of the Board or its designated representative. In the event of an emergency, the Board shall be informed as soon as practicable.
- 1.7 Summerhaven shall obtain all necessary approvals, permits, licences, certificates and easement rights required to construct, operate and maintain the Transmission Facilities, and shall provide copies of all such written approvals, permits, licences and certificates and any related reports or documentation upon the Board’s request.

**2.0 Reliability Considerations - Transmission and Distribution Lines**

- 2.1 The Applicant is required to design and construct that portion of the Transmission Line that runs parallel to the HCHI Upgrades (defined below) on the south side of Concession Rd 5 for a certain distance (the “Adjacent Length”) to accommodate (such specific

accommodation measures described in sections 2.2, 2.3, 2.5, 2.9 and 2.13 below) Haldimand County Hydro Inc.'s ("HCHI") proposed two 27.6 kV 3 phase circuits (the "HCHI Upgrades", as further outlined in Schedule 'A' attached hereto) (the paralleling of the HCHI Upgrades and the Transmission Line is referred to herein as the "Co-location Option").

- 2.2 Under the Co-location Option, the Transmission Line pole locations, pole heights, and clearances along the Adjacent Length shall, in accordance with all applicable codes and standards, accommodate the HCHI Upgrades.
- 2.3 Under the Co-location Option, the Transmission Line along the Adjacent Length must be located on private property as described in the Application<sup>1</sup> and
  - (a) In the event the HCHI Upgrades are on schedule to be constructed prior to the Transmission Line, the Transmission Line poles shall be placed at a minimum distance that is the lesser of: (x) 5 metres from the south edge of the municipal right of way known as Concession Rd 5; and (y) 6.3 metres from the centreline of the HCHI Upgrades;
  - (b) In the event the Transmission Line is on schedule to be constructed prior to the HCHI Upgrades, the Transmission Line Poles shall be a minimum distance of 3.3 meters from the south edge of the municipal right of way known as Concession Rd 5.
- 2.4 Along the Adjacent Length, the Transmission Line must be designed in accordance with applicable codes and standards to accommodate the distribution neutral height of 25 feet (7.62 metres) above the crown of the road.
- 2.5 Under the Co-location Option and in the event that the Transmission Line is on schedule to be constructed<sup>2</sup> prior to the HCHI Upgrades, HCHI shall locate its distribution poles such that a minimum distance of 6 metres is maintained between any distribution pole and any Transmission Line pole, unless otherwise agreed to between HCHI and the Applicant. Under the Co-location Option, and in the event that the HCHI Upgrades is on schedule to be constructed prior to the construction of the Transmission Line, the Applicant shall locate its Transmission Line poles such that a minimum distance of 6 metres is maintained between any Transmission Line pole and any distribution pole, unless otherwise agreed to between HCHI and the Applicant.
- 2.6 With the potential exception of the crossing of the Transmission Line at Concession Rd 4 due to environmental considerations, all road crossings shall be designed and built in accordance with applicable codes and standards to provide adequate clearance for the HCHI Upgrades, whether or not the Co-location Option is selected by HCHI. Should issues arise between HCHI and the Applicant regarding the crossing of the Transmission Line at Concession Rd 4, the Applicant and HCHI will cooperate to ensure selection of an acceptable configuration to both parties and that meets applicable codes and standards, provided however that a configuration that contemplates the entry into any provincially significant wetland or other ecologically sensitive areas shall not be deemed acceptable.

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<sup>1</sup> Application, Exhibit B-6-1, filed 2011-03-02.

<sup>2</sup> e.g. the design of the Transmission Line has been finalized.

- 2.7 The Applicant shall make every commercially reasonable effort to avoid locating guy wire anchors within a municipal road right-of-way.
- 2.8 Where any span guys for the Transmission Line cross over municipal roadways, appropriate clearances under the span guys, such clearances to be determined in accordance with applicable codes and standards, must be provided in order to allow HCHI to construct the HCHI Upgrades, including maintaining a neutral height of 25 feet (7.62 metres) above the crown of the road.
- 2.9 In order for HCHI to construct the HCHI Upgrades, the Applicant shall provide HCHI with all necessary information related to the location of any span guys for the Transmission Line that cross over the municipal roadways.
- 2.10 The Applicant shall carry out and make available to HCHI a primary circuit baseline neutral voltage survey (the "Baseline Survey") to establish a baseline on the primary circuit prior to commercial operation of the Transmission Line, and a primary circuit post-energization neutral voltage survey (the "Post-Energization Survey") that would be based on field measurement. For any areas that are identified as requiring mitigation, the Applicant and HCHI will cooperate to decide on the appropriate mitigation steps, which the Applicant will undertake at its own cost, provided that the Applicant shall not be required to undertake any mitigation measures on any aspect of HCHI's existing and future distribution infrastructure that does not already meet the prescribed standards established by the Distribution System Code, Electrical Safety Code and such other standards and codes as may be applicable. Furthermore, in the event that the HCHI Upgrades are constructed after the Baseline Study but prior to energization of the Transmission Line and HCHI wants a Post-Energization Study to be carried out on the HCHI Upgrades by the Applicant, HCHI shall cover the Applicant's cost to carry out the new Baseline Study on the HCHI Upgrades.
- 2.11 Should HCHI select the Co-location Option and should HCHI choose to use additional grounding at the distribution poles for the stretch of the HCHI Upgrades that run the Adjacent Length as recommended by the Applicant,<sup>3</sup> the Applicant will absorb the cost of the difference between the standard design as specified in the HCHI Upgrades and the proposed design noted in the Applicant's Reply Submission.
- 2.12 The Applicant shall bear the cost of installing neutral decoupling devices on HCHI's existing infrastructure at relevant customer points of interconnection (the "Customer Interconnection Points") as agreed to by the Applicant and HCHI, acting reasonably. It is anticipated that this would pre-empt any possibility that unacceptable animal contact voltage may arise as a result of the Transmission Line. In principle, should installation of such devices prove to be insufficient or inadequate at any of the Customer Interconnection Points, the Applicant will be responsible for any reasonable costs incurred by HCHI to mitigate and reduce the level of the animal contact voltage to within the acceptable level as set out in the Distribution System Code,<sup>4</sup> provided that HCHI has implemented the Applicant's recommendation for ground rod specification as outlined in the Applicant's Reply Submission.<sup>5</sup>

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<sup>3</sup> Applicant's Reply Submission, July 27, 2011, paragraph 40.

<sup>4</sup> Distribution System Code, last revised February 7, 2011 and any amendments thereto, Section 4.7.

<sup>5</sup> July 27, 2011 at paragraph 40.

- 2.13 The Applicant will be responsible for the additional cost of over sizing lightning arresters on the HCHI Upgrades, to take into account the expected voltage rise due to induction as recommended in the Applicant's Reply Submission.<sup>6</sup>
- 2.14 The Applicant and HCHI shall make best efforts to address all issues that arise in respect of the design and construction of the Transmission Facilities where such design and construction impact upon the Adjacent Length. If the parties are unable to resolve any disputes and to the extent such disagreement impacts materially upon the construction of the Transmission Facilities, the Applicant shall notify the Board's designated representative of such disagreement.

### **3.0 Transmission Facilities and Communications Requirements**

- 3.1 The Board's designated representative for the purpose of these Conditions of Approval shall be the Manager, Electricity Facilities and Infrastructure Applications.
- 3.2 Summerhaven shall designate a person as Project manager and shall provide the name of the individual to the Board's designated representative. The Project manager will be responsible for the fulfillment of the Conditions of Approval on the construction site. Summerhaven shall provide a copy of the Order and Conditions of Approval to the Project manager, within ten (10) days of the Board's Order being issued.
- 3.3 Summerhaven shall develop, as soon as possible and prior to the start of construction, a detailed construction plan. The detailed construction plan shall cover all material construction activities. Summerhaven shall submit five (5) copies of the construction plan to the Board's designated representative at least ten (10) days prior to the commencement of construction. Summerhaven shall give the Board's designated representative ten (10) days written notice in advance of the commencement of construction.
- 3.4 Summerhaven shall furnish the Board's designated representative with all reasonable assistance needed to ascertain whether the work is being or has been performed in accordance with the Board's Order.
- 3.5 Summerhaven shall, in conjunction with Hydro One and the IESO, and other parties as required, develop an outage plan which shall detail how proposed outages will be managed. Summerhaven shall provide five (5) copies of the outage plan to the Board's designated representative at least ten (10) days prior to the first outage. Summerhaven shall give the Board's designated representative ten (10) days written notice in advance of the commencement of outages.
- 3.6 Summerhaven shall furnish the Board's designated representative with five (5) copies of written confirmation of the completion of Transmission Facilities construction. This written confirmation shall be provided within one month of the completion of construction.

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<sup>6</sup> Applicant Reply Submission, July 27, 2011, Schedule C-Peak Induction Study, Section VI – Mitigation, Section D – Surge Arresters

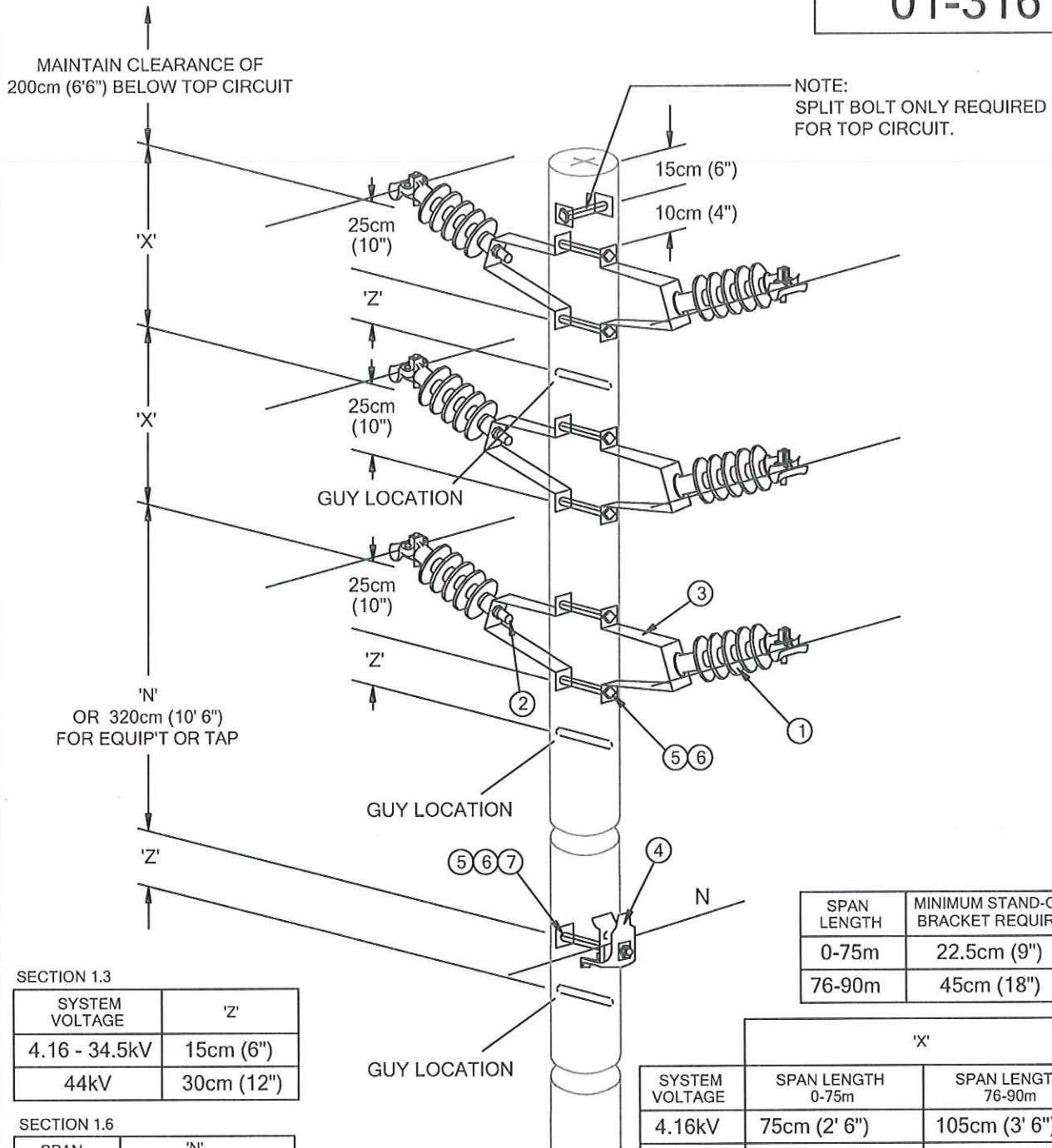
#### **4.0 Monitoring and Reporting Requirements**

- 4.1 Both during and for a period of twelve (12) months after the completion of construction of the Transmission Facilities, Summerhaven shall monitor the impacts of construction, and shall file five (5) copies of a monitoring report with the Board within fifteen (15) months of the completion of construction of the Transmission Facilities. Summerhaven shall attach to the monitoring report a log of all comments and complaints related to construction of the Transmission Facilities that have been received. The log shall record the person making the comment or complaint, the time the comment or complaint was received, the substance of each comment or complaint, the actions taken in response to each if any, and the reasons underlying such actions.
- 4.2 The monitoring report shall confirm Summerhaven's adherence to Condition 1.1 and shall include a description of the impacts noted during construction of the Transmission Facilities and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction of the Transmission Facilities. This report shall describe any outstanding concerns identified during construction of the Transmission Facilities and the condition of the rehabilitated Transmission Facilities' land and the effectiveness of the mitigation measures undertaken. The results of the monitoring programs and analysis shall be included and recommendations made as appropriate. Any deficiency in compliance with any of the Conditions of Approval shall be explained.

**SCHEDULE 'A'**



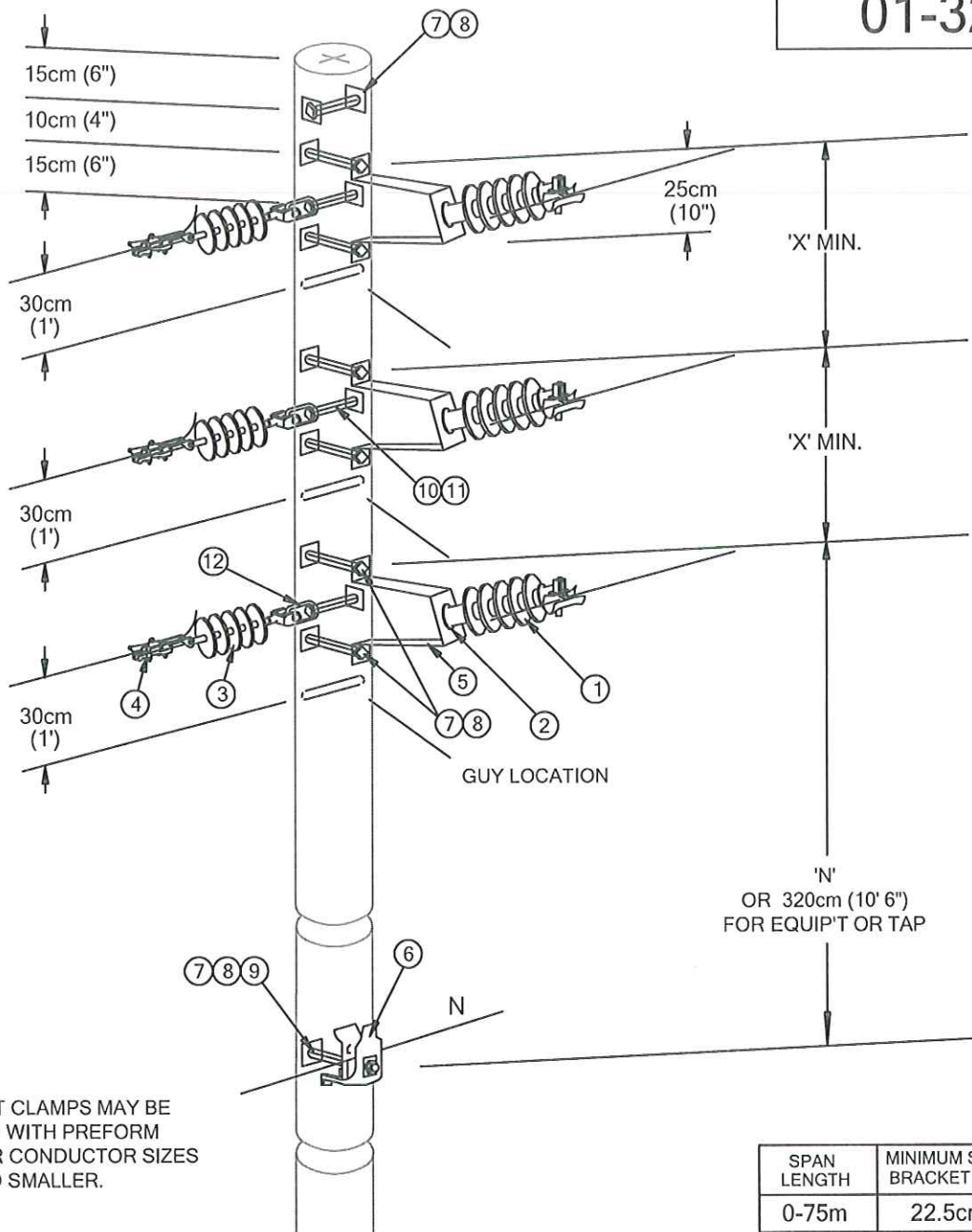
# 01-316



Title: PRIMARY 3-PHASE 2-CCT, TANGENT  
or LINE ANGLE 0° to 15° or UNDER-BUILT  
4.16 to 44kV, MAX SPAN 90m

SIZE A	FILE NAME: 01-316.DWG	DWG NO. 01-316	REV 3
SCALE NTS	DATE: 2008-07-14	SHEET 1	

# 01-323



NOTE:  
WAVESEAT CLAMPS MAY BE  
REPLACED WITH PREFORM  
GRIPS FOR CONDUCTOR SIZES  
OF 3/0 AND SMALLER.

## SECTION 1.6

SPAN LENGTH	'N' * MIN CLEARANCE
0-45m	1.5m (5')
46-60m	1.8m (6')
61-70m	2.1m (7')
71-90m	2.4m (8')

SPAN LENGTH	MINIMUM STAND-OFF BRACKET REQUIRED
0-75m	22.5cm (9'')
76-90m	45cm (18'')

SYSTEM VOLTAGE	'X'	
	SPAN LENGTH 0-75m	SPAN LENGTH 76-90m
4.16kV	75cm (2' 6'')	105cm (3' 6'')
8.32kV	120cm (4')	150cm (5')

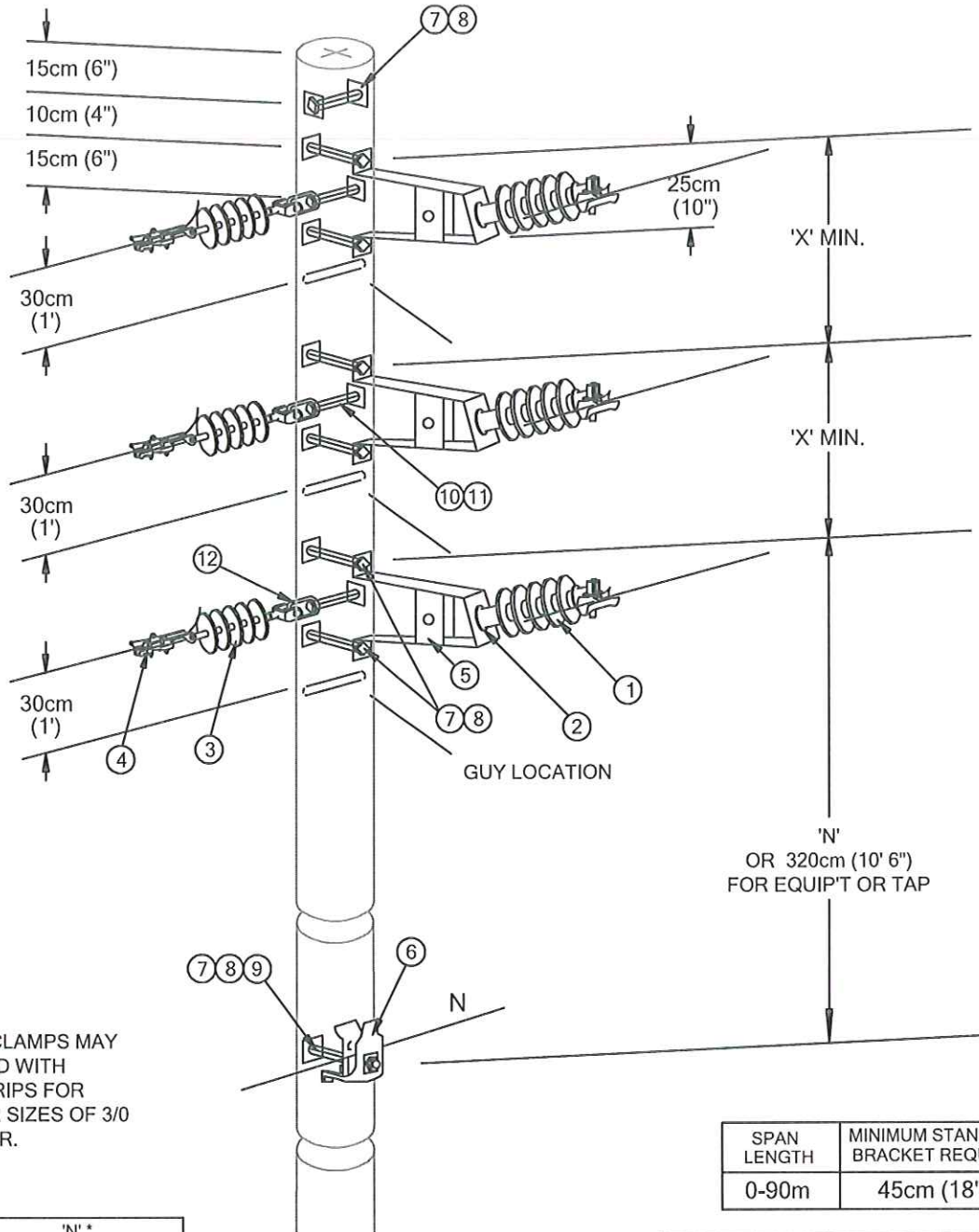


Title: PRIMARY 3-PHASE VERTICAL DEADEND  
AND TANGENT  
4.16 to 8.32kV, MAX SPAN 90m

SIZE	FILE NAME:	DWG NO.	REV
A	01-323.DWG	01-323	1
SCALE	DATE:	SHEET	
NTS	2008-07-14	1	



01-324



NOTE:  
WAVESEAT CLAMPS MAY  
BE REPLACED WITH  
PREFORM GRIPS FOR  
CONDUCTOR SIZES OF 3/0  
AND SMALLER.

SECTION 1.6

SPAN LENGTH	'N' * MIN CLEARANCE
0-45m	1.5m (5')
46-60m	1.8m (6')
61-70m	2.1m (7')
71-90m	2.4m (8')

SPAN LENGTH	MINIMUM STAND-OFF BRACKET REQUIRED
0-90m	45cm (18'')

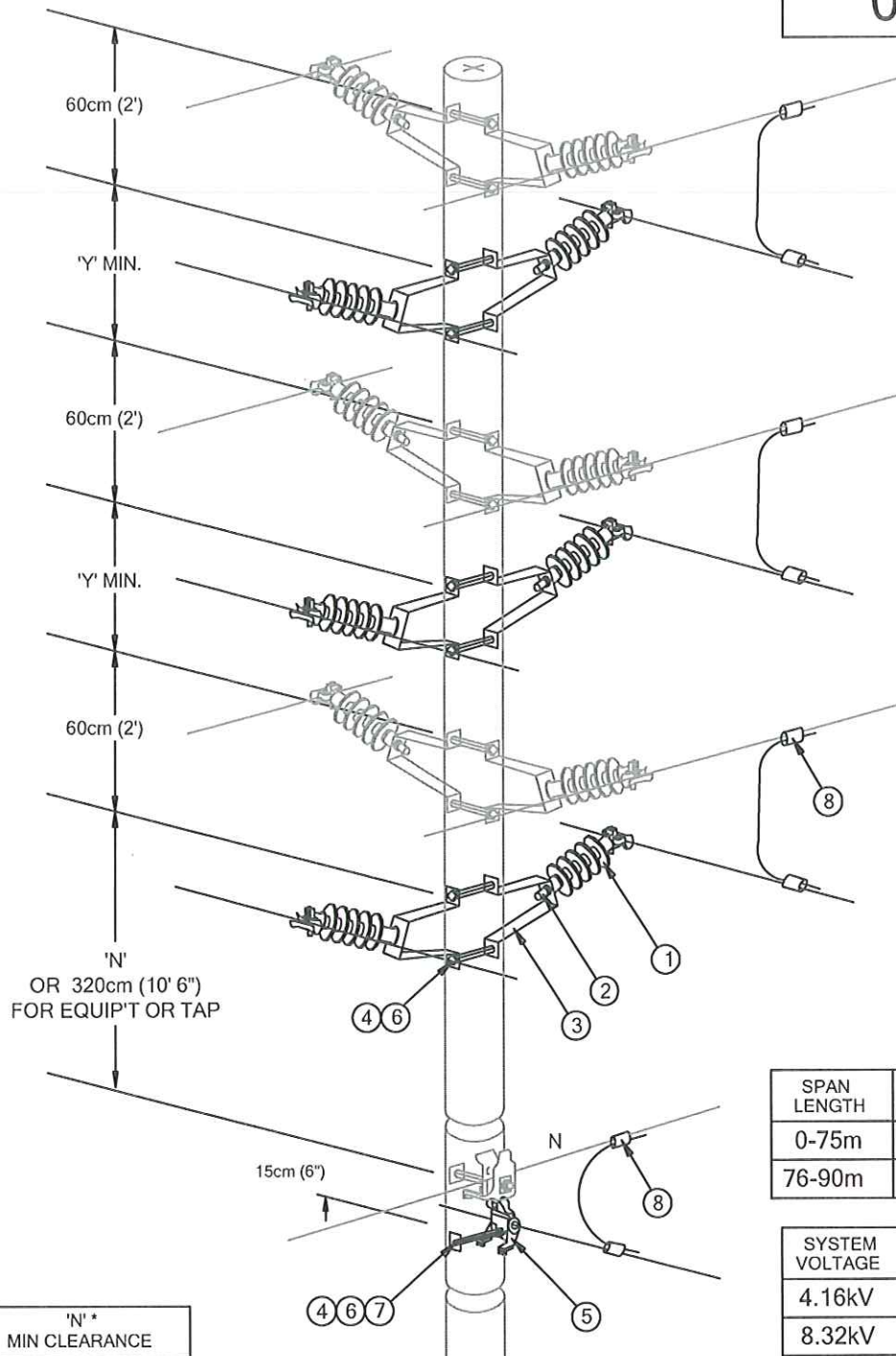
SYSTEM VOLTAGE	'X'	
	SPAN LENGTH 0-75m	SPAN LENGTH 76-90m
13.8kV	120cm (4')	150cm (5')
27.6kV	150cm (5')	180cm (6')



Title: PRIMARY 3-PHASE VERTICAL DEADEND AND TANGENT  
13.8 to 27.6kV, MAX SPAN 90m

SIZE	FILE NAME:	DWG NO.	REV
A	01-324.DWG	01-324	0
SCALE	DATE:	SHEET	
NTS	2006-06-26	1	

01-334



SECTION 1.6

SPAN LENGTH	'N' * MIN CLEARANCE
0-45m	1.5m (5')
46-60m	1.8m (6')
61-70m	2.1m (7')
71-90m	2.4m (8')

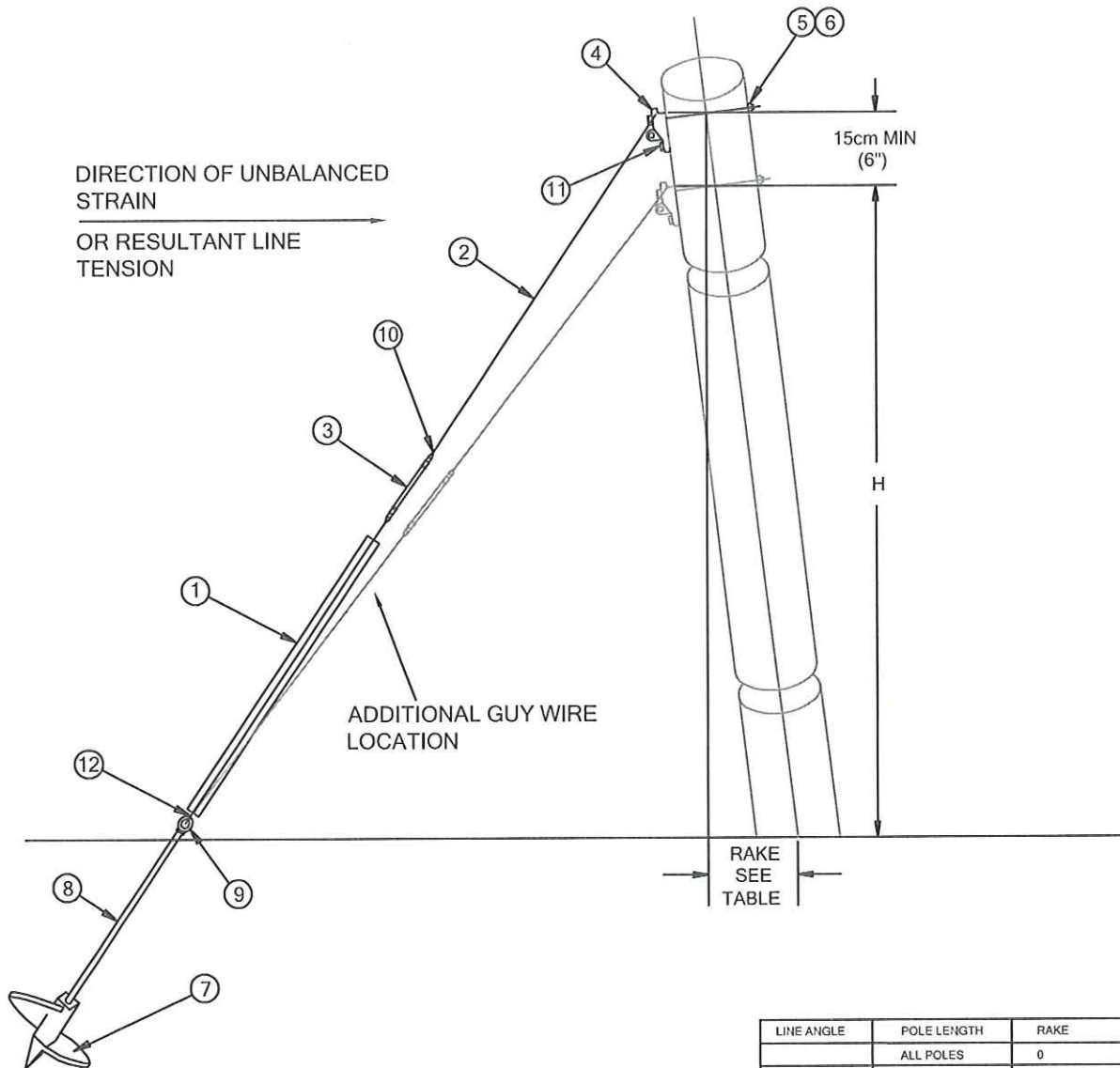
SPAN LENGTH	MINIMUM STAND-OFF BRACKET REQUIRED
0-75m	22.5cm (9")
76-90m	45cm (18")

SYSTEM VOLTAGE	'Y'
4.16kV	60cm (2')
8.32kV	60cm (2')
13.8kV	60cm (2')
27.6kV	70cm (2' 4")
34.5kV	80cm (2' 8")
44kV	90cm (3')



Title: PRIMARY 3-PHASE 2-CCT CROSSOVER LINE TAP  
4.16 to 44kV, MAX SPAN 90m

SIZE	FILE NAME:	DWG NO.	REV
A	01-334.DWG	01-334	1
SCALE	DATE:	SHEET	
NTS	2008-07-14	1	



## NOTE:

1. ANCHOR TYPE TO SUIT SOIL CONDITIONS SEE TABLE 06-12 OF SECTION 06.
2. ITEM 12 - CLAMP, GUY, 3-BOLT CAN BE SUBSTITUTED WITH ITEM 10 - GRIP, GUY WIRE, 3/8" (9mm)

LINE ANGLE	POLE LENGTH	RAKE
	ALL POLES	0
UP TO 15 °	12.2m (40ft)	40cm (1' 4")
	13.7m (45ft)	40cm (1' 4")
	15.2m (50ft)	50cm (1' 8")
OVER 15 °	16.8m (55ft)	50cm (1' 8")
	18.3m (60ft)	60cm (2' 0")
	19.8m (65ft)	60cm (2' 0")
	21.3m (70ft)	70cm (2' 3.5")
	22.9m (75ft)	70cm (2' 3.5")
	24.4m (80ft)	80cm (2' 7.5")

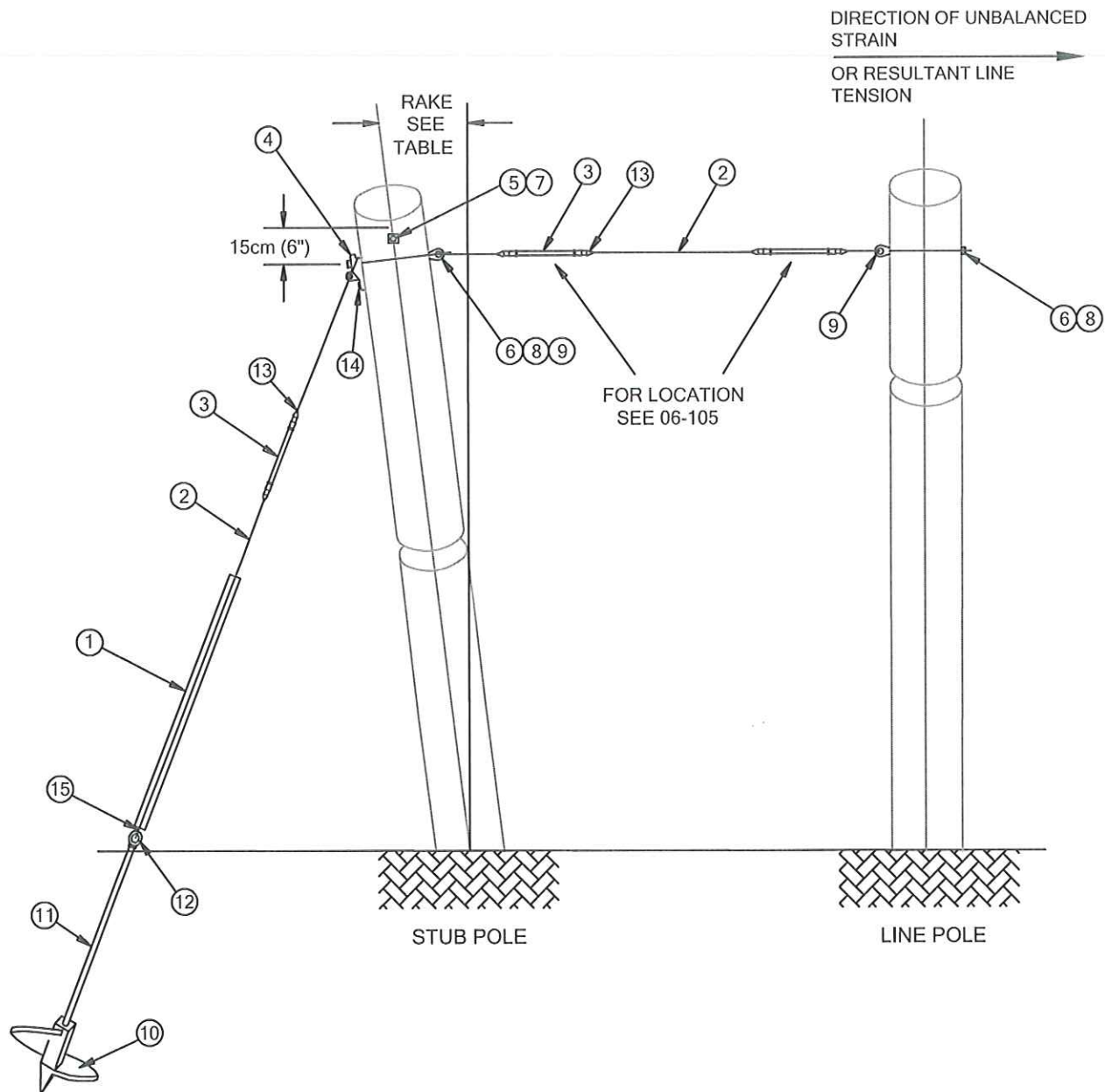


Title:

DOWN GUY(S)

SIZE	FILE NAME:	DWG NO.	REV
A	06-100.DWG	06-100	0
SCALE	DATE:	SHEET	
NTS	2006-06-26	1	

# 06-104



NOTE:  
 1. ANCHOR TYPE TO SUIT SOIL CONDITIONS SEE TABLE 06-12 OF SECTION 06.  
 2. ITEM 16 - CLAMP, GUY, 3-BOLT CAN BE SUBSTITUTED WITH ITEM 14 - GRIP, GUY WIRE, 3/8" (9mm)

STUB LENGTHS	RAKE
9.1m (30ft)	60cm (2' 0")
10.7m (35ft)	70cm (2' 3 1/2")
12.2m (40ft)	80cm (2' 7 1/2")

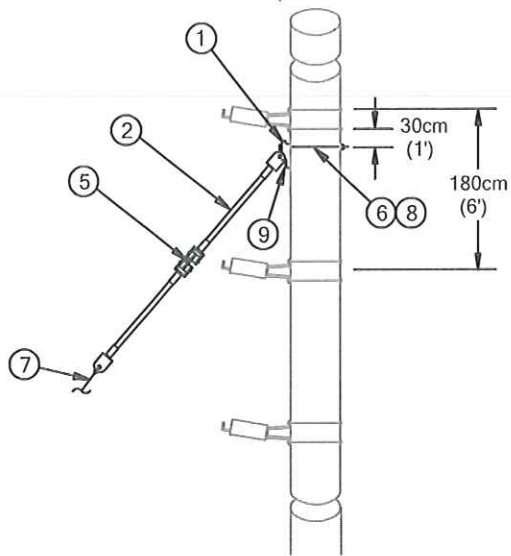


Title:

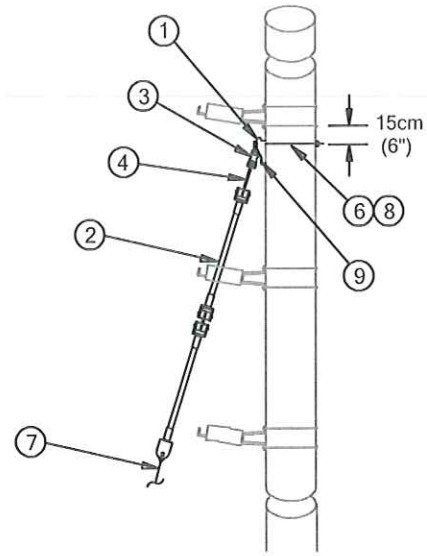
SPAN and ANCHOR GUY

SIZE A	FILE NAME: 06-104.DWG	DWG NO. 06-104	REV 0
SCALE NTS	DATE: 2006-06-26	SHEET 1	

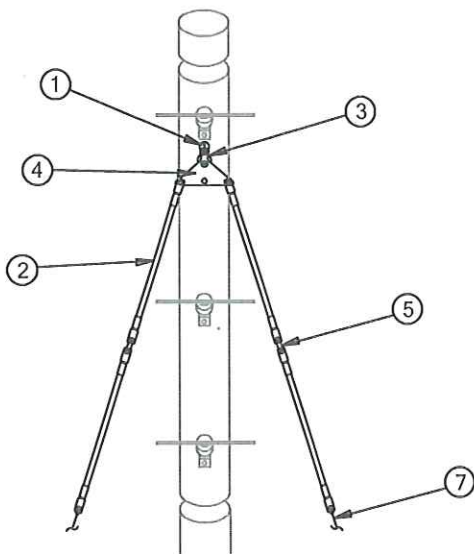




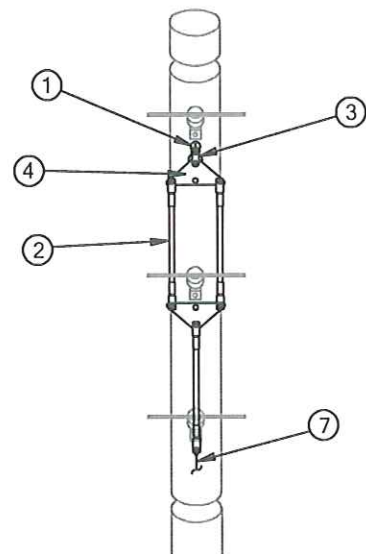
**FIG. 1**  
GUYING DOUBLE CIRCUIT  
BETWEEN PHASES



**FIG. 2**  
GUYING DOUBLE CIRCUIT  
BETWEEN PHASES

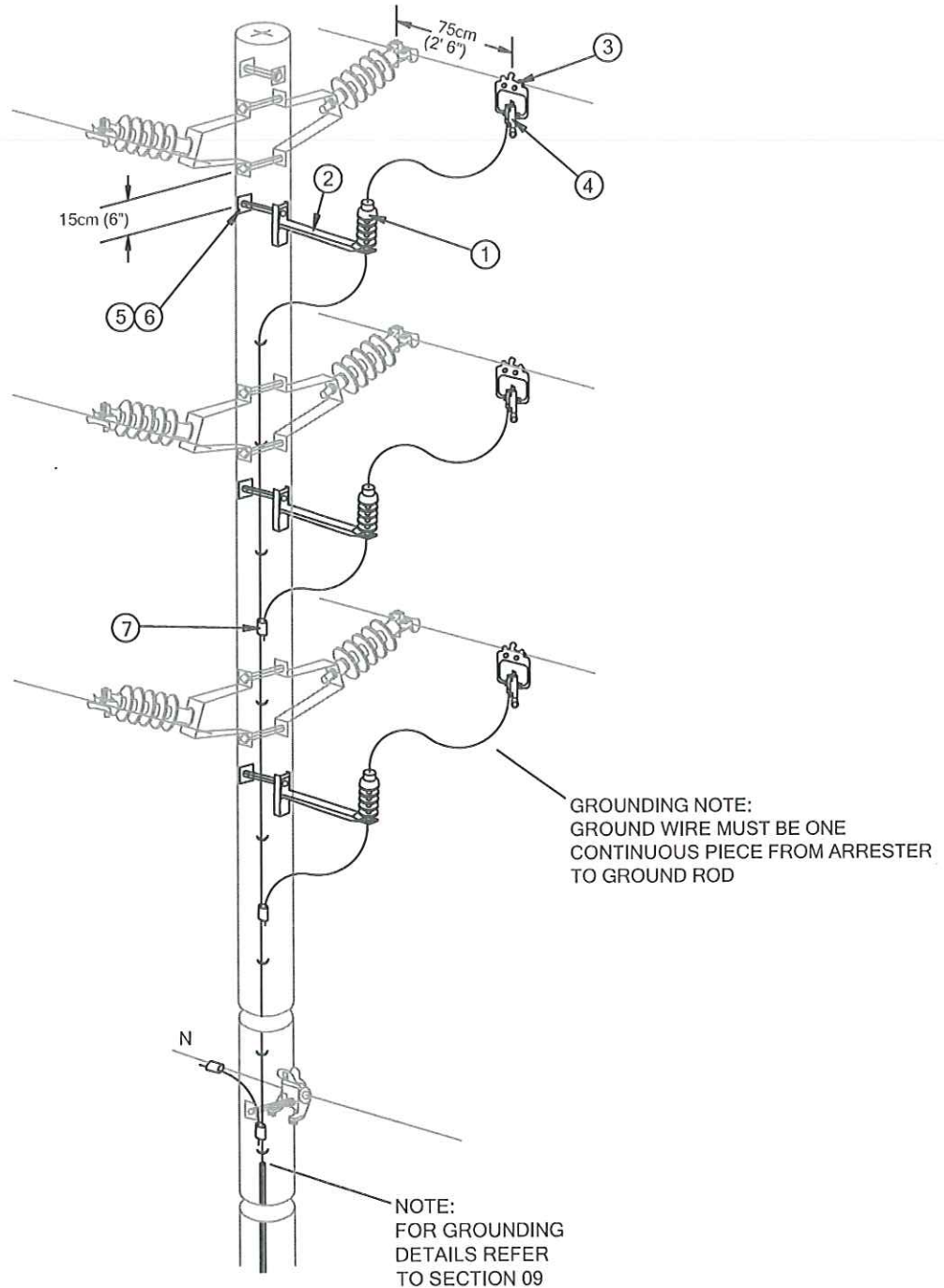


**FIG. 3**  
GUYING TO TWO ANCHORS



**FIG. 4**  
GUYING TO ONE ANCHOR

07-302



NOTES:  
1. REFER TO THE LATEST ESC  
BULLETIN 36-8-X AND  
MANUFACTURER APPLICATION  
NOTES FOR LIGHTNING  
ARRESTER APPLICATIONS.



Title: ARRESTER INSTALLATION  
3-PHASE (VERTICAL)  
4.16 to 44kV

SIZE	FILE NAME:	DWG NO.	REV
A	07-302.DWG	07-302	1
SCALE	DATE:	SHEET	
NTS	2007-09-19	1	



# 08-100

SYSTEM VOLTAGE	'X'	'Y'	'Z'
2.4kV	75cm (2' 6")	105cm (3' 6")	320cm (10' 6")
4.8kV	75cm (2' 6")	105cm (3' 6")	320cm (10' 6")
8kV	75cm (2' 6")	105cm (3' 6")	320cm (10' 6")
16kV	75cm (2' 6")	105cm (3' 6")	320cm (10' 6")
*16kV	105cm (3' 6")	150cm (5')	410cm (13' 6")
20kV	105cm (3' 6")	150cm (5')	410cm (13' 6")

\* 16kV HAS OPTIONAL FRAMINGS FOR USE WITH LARGER DISCONNECTS

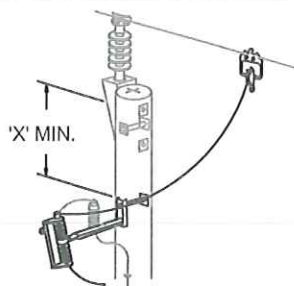


Figure A - 1-PHASE TANGENT FRAMING

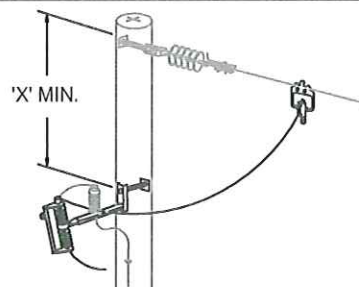


Figure B - 1-PHASE DEADEND FRAMING

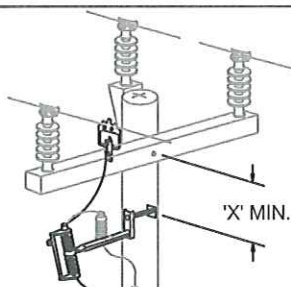


Figure C - 3-PHASE CROSSARM FRAMING

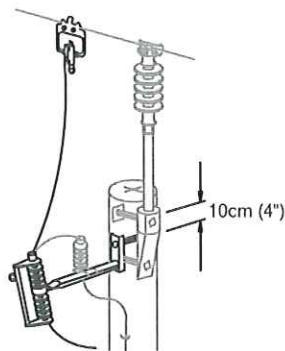
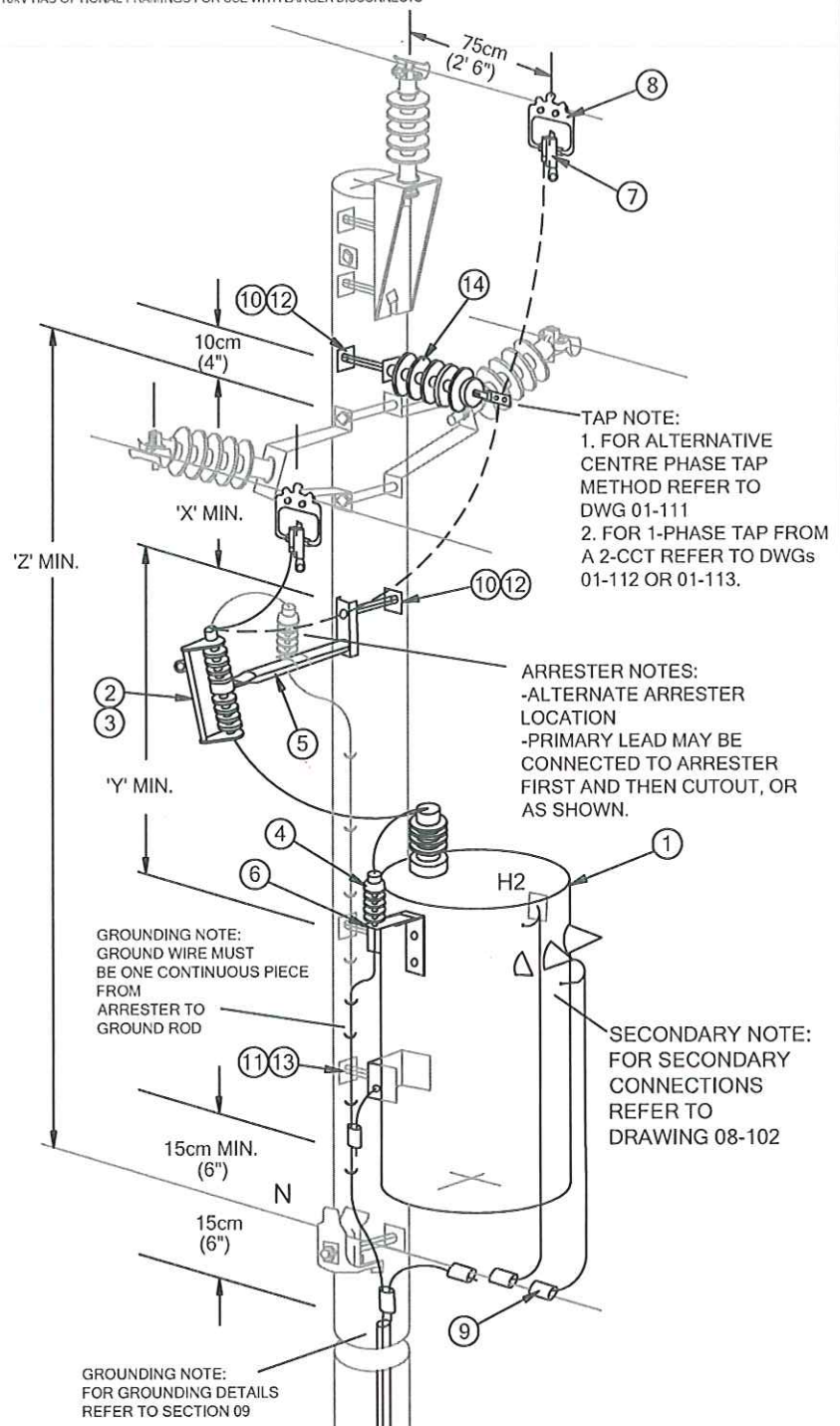


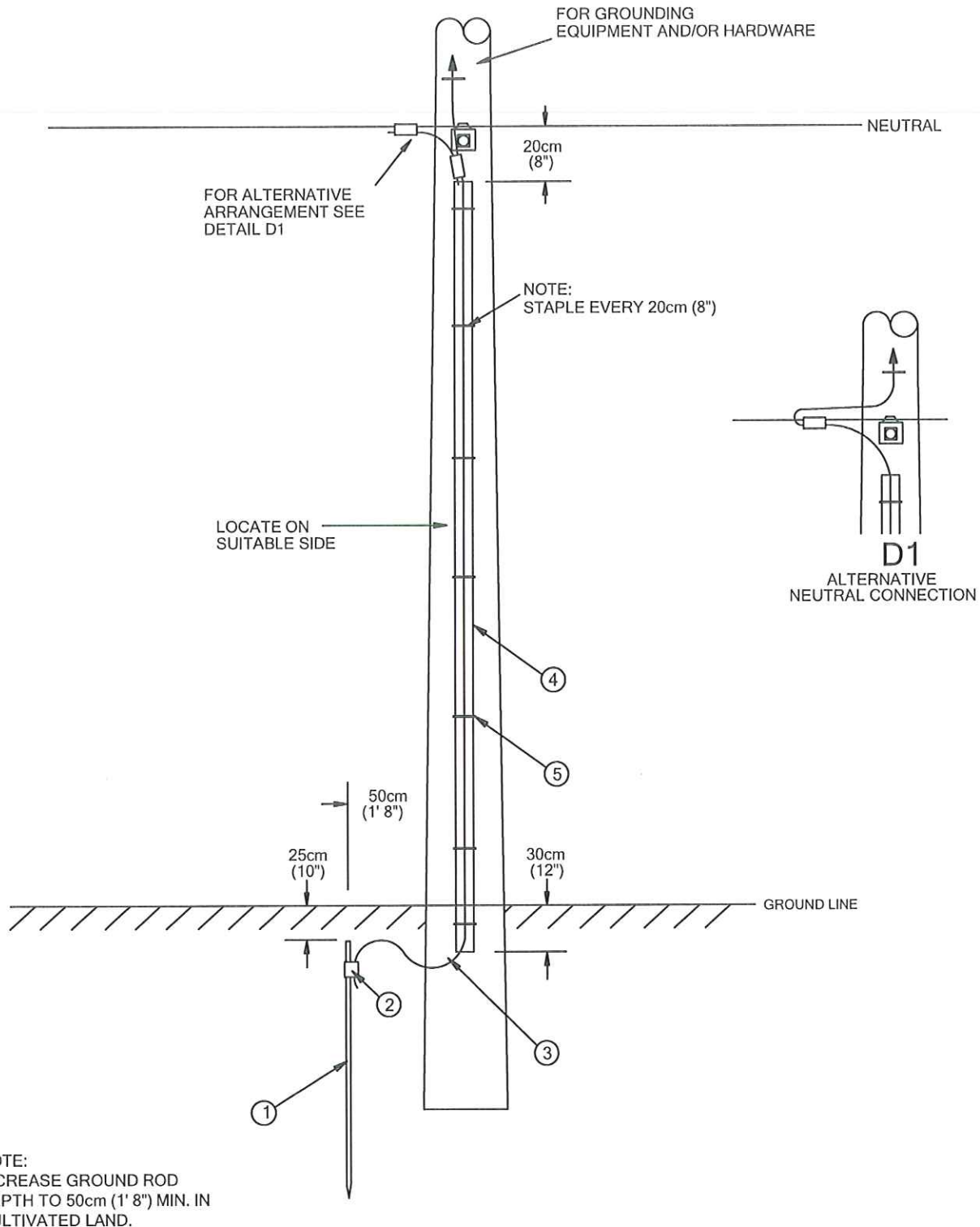
Figure D - 1-PHASE TANGENT FRAMING WITH POLE TOP EXTENSION



Title: 1-PHASE TRANSFORMER INSTALLATION  
(Utility Pole)  
10 to 100kVA 2.4 to 20kV

SIZE	FILE NAME:	DWG NO.	REV
A	08-100.DWG	08-100	1
SCALE	NTS	DATE: 2007-04-05	SHEET 1

09-100



Title:

GROUNDING FOR OVERHEAD  
INSTALLATIONS ON WOOD POLES

SIZE  
A

FILE NAME:

09-100.DWG

DWG NO.

09-100

REV  
2

SCALE

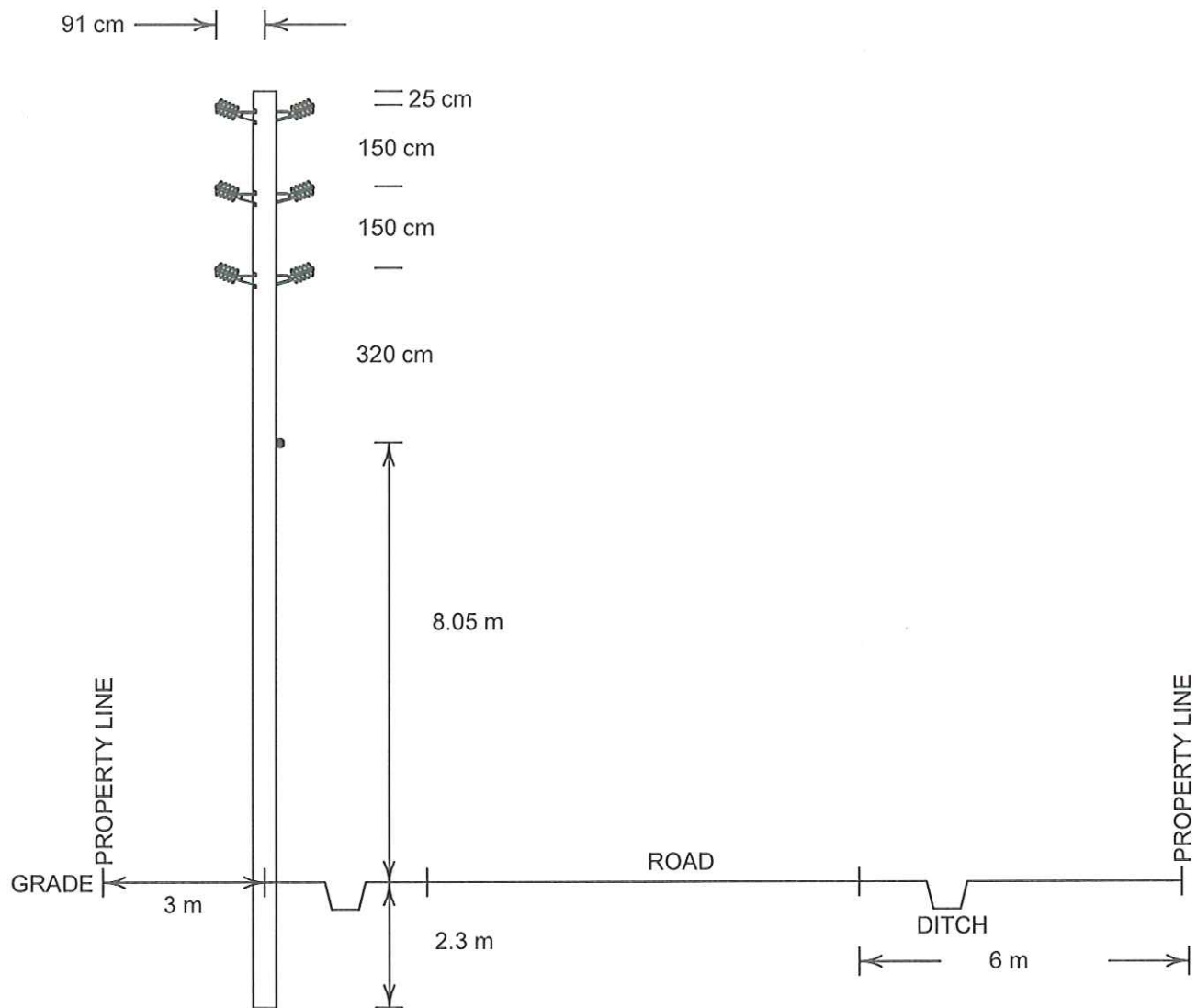
NTS

DATE:

2008-03-18

SHEET

1



**Title:**

CROSS SECTION "A" CONCESSION ROAD 5

APPROVED BY:

SIZE  
LET

FILE NAME:  
CROSS SECTION "A".DWG

DWG NO.

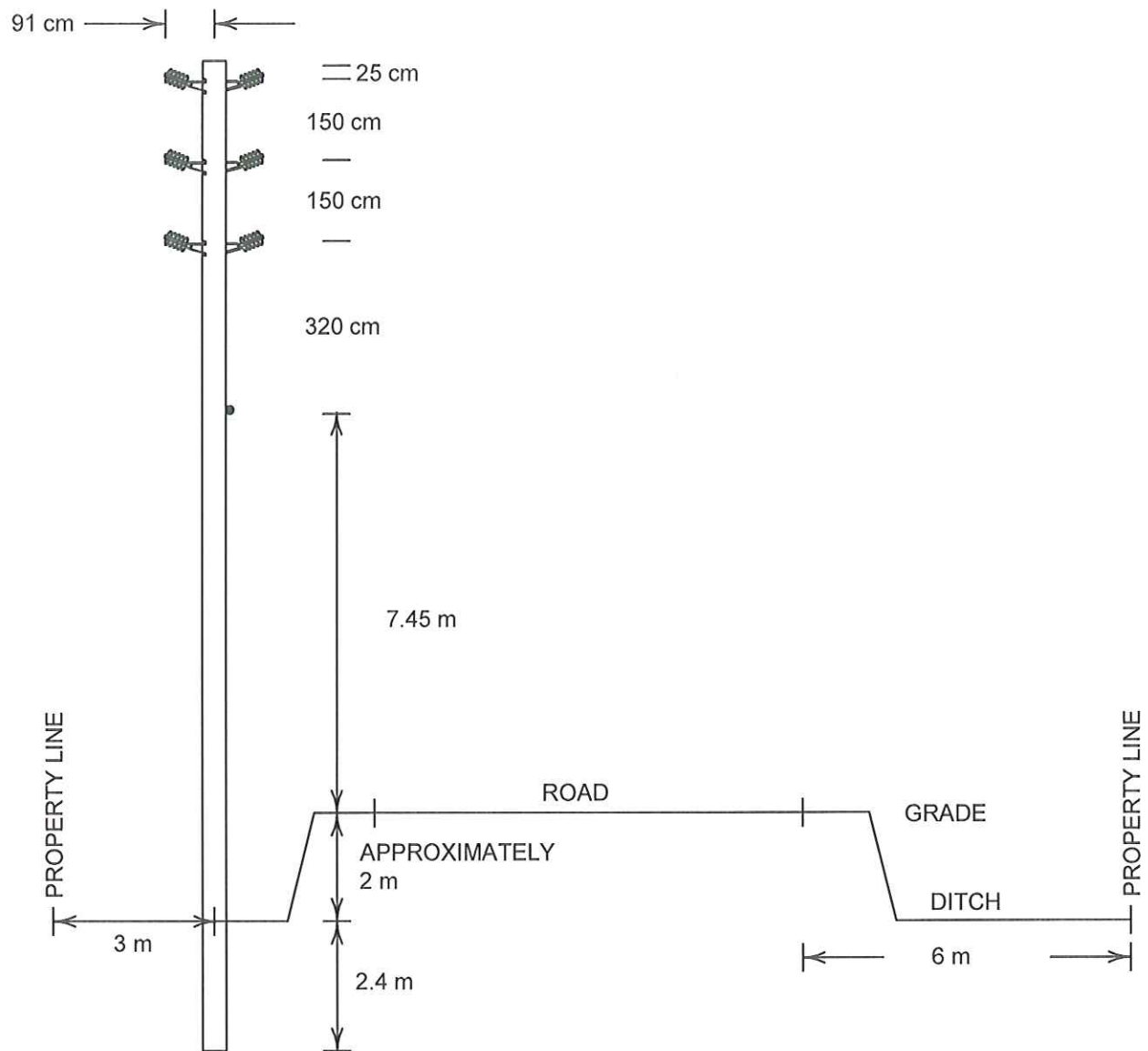
REV

DRAWN BY: J.L.

SCALE:  
NTS

DATE:  
JULY 7, 2011

SHEET  
1 OF 1



Title:

CROSS SECTION "B" SANDUSK RD.

APPROVED BY:

SIZE  
LET

FILE NAME:  
CROSS SECTION "B".DWG

DWG NO.

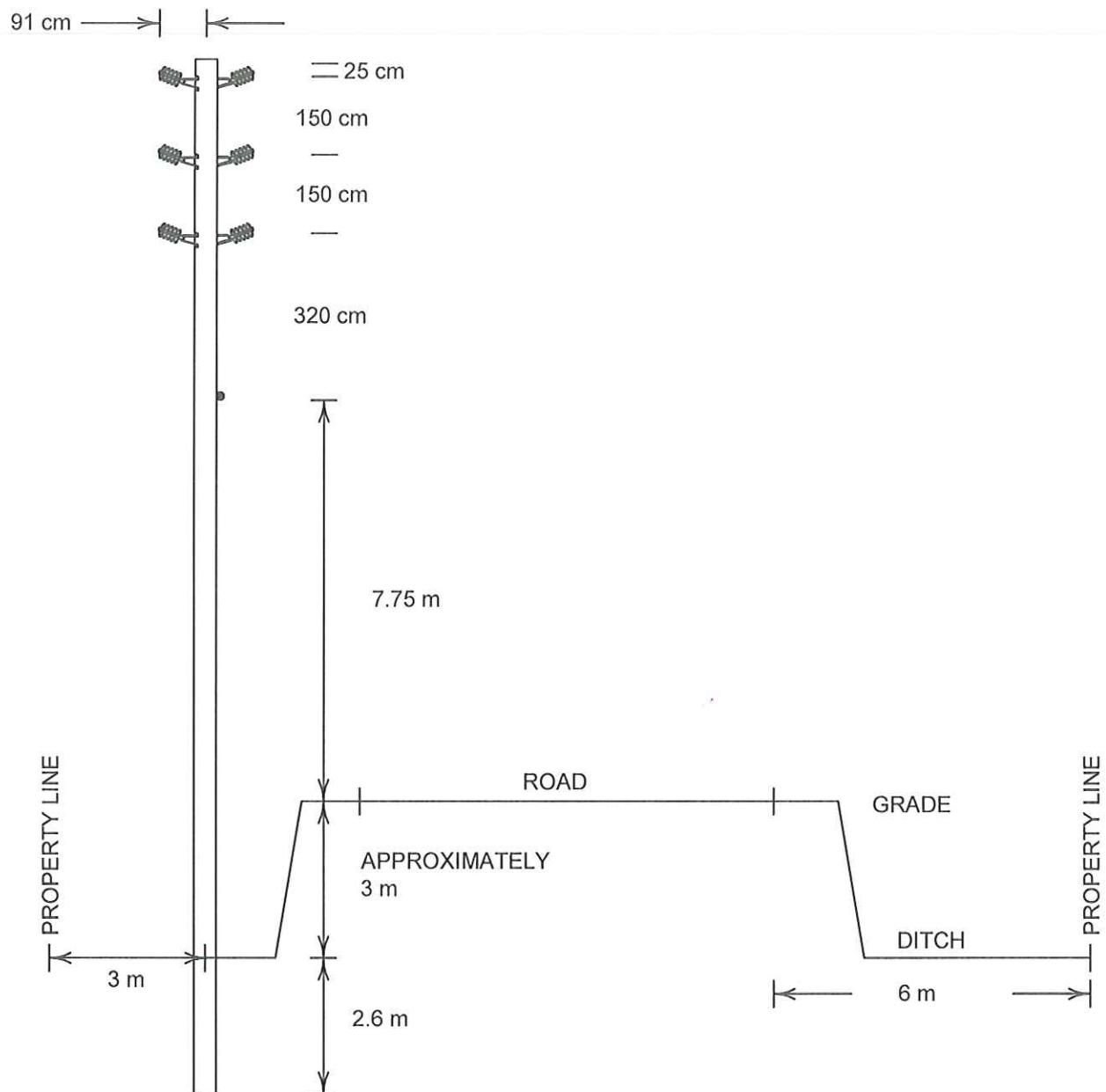
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SCALE:  
NTS

DATE:  
JULY 7, 2011

SHEET  
1 OF 1



Title:

CROSS SECTION "C" CONCESSION ROAD 4

APPROVED BY:

SIZE  
LET

FILE NAME:

DWG NO.

REV

DRAWN BY: J.L.

SCALE:  
NTS

DATE:  
JULY 7, 2011

SHEET  
1 OF 1