

Building set backs for Westside properties

The governing document for airports is TP312 version 5. It can be downloaded at <https://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm>

The system of classification is now based on Aircraft Group Number (AGN). Merritt Regional Airport Saunder's field has a runway width of 23m. Our airport can handle an AGN of II.

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CHAPTER 3. PHYSICAL CHARACTERISTICS

3.1 RUNWAYS

3.1.1 General

Width of Runways

3.1.1.1 The runway has the minimum width specified in Table 3.1.1.1, except where an aircraft is approved in the aircraft flight manual to operate on a narrower runway.

Table 3.1.1.1—Minimum Runway Width (in metres)		
Aircraft Group Number <i>Table 1-1 Column III</i>	Non-Instrument / Non-Precision Runways	Precision Runways
I	18	23
II	23	30
III (A & B)	30	30
IV	45	45
V (2)	45	45
VI (2)	60	60

Note: Some aircraft may require additional width to comply with their operational standards.

An AGN aircraft has a wing span less than 24 meters and a main gear span less than 6 meters.

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Table 1-1: Runway Environment		
Column I	Column II	Column III
Aircraft Group Number	Wing Span	Outer Main Gear Span (a)
I (for approach speed CAT C or D use AGN IIIB)	Less than 14.94 m	Less than 4.5 m
II (for approach speed CAT C or D use AGN IIIB)	14.94 m up to but not including 24.10 m	4.5 m up to but not including 6 m
IIIA (for approach speed CAT C or D use AGN IIIB)	24.10 m up to but not including 36.00 m	6 m up to but not including 9 m
IIIB (includes groups I - IIIA with C & D approach speeds)	24.10 m up to but not including 36.00 m	6 m up to but not including 9 m
IV	36.00 m up to but not including 52.12 m	9 m up to but not including 14 m
V	52.12 m up to but not including 65.23 m	9 m up to but not including 14 m
VI	65.23 m up to but not including 79.86 m	14 m up to but not including 16 m

(a) – Distance between the outside edges of the main gear wheels.

Note: Table 1-1 includes consideration of the higher approach speeds that occur in the runway environment.

Example on use of the tables: An aircraft has a wingspan of 20 m, a gear span of 4.7 m and a design approach speed of 129 kt (as per 1.3*stall speed). A standard references the use of Column II (wingspan) of Table 1-1 for its application. The aircraft falls into AGN II when referencing across the columns; however, the associated note directs the use of AGN IIIB due to the approach speed being in the C category. For Table 1-2, the AGN is read directly across from the column referenced in the appropriate standard.

The B in the classification has to do with the weight the surface can handle. Ours is a range of 60-120MN/m³

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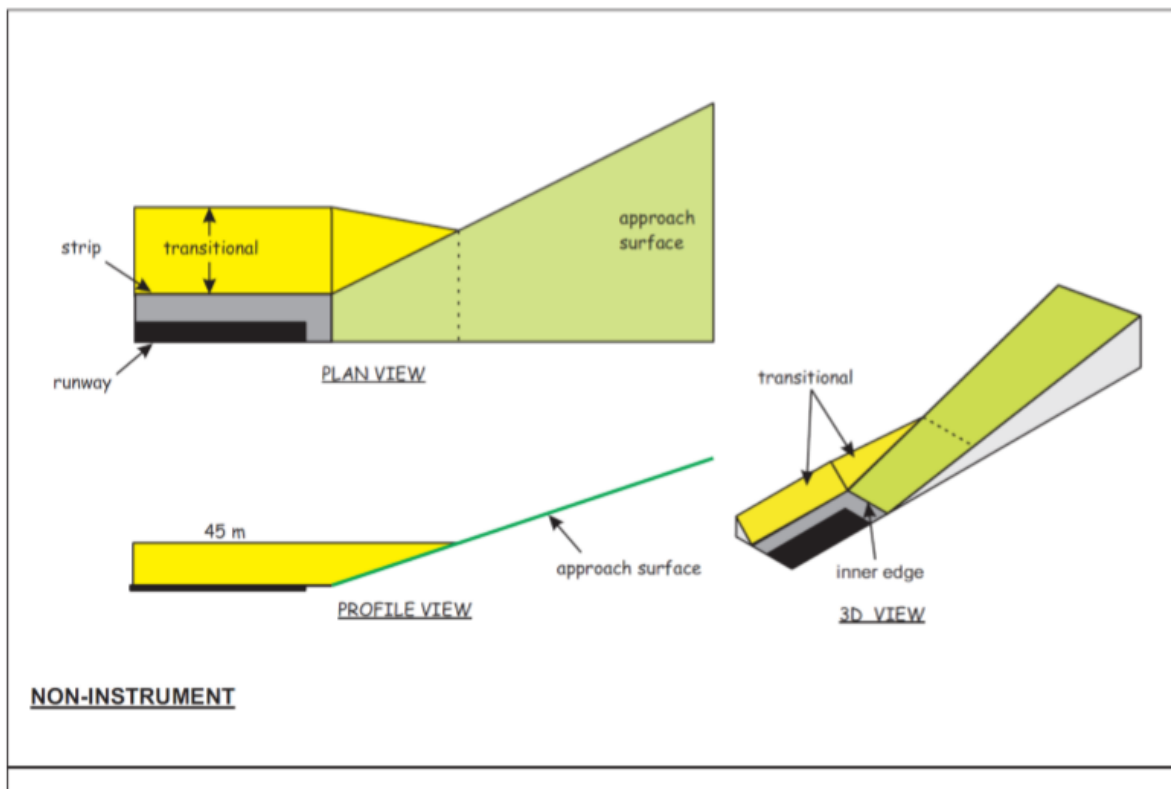
Pavement Type for ACN-PCN Determination	Codes
Rigid Pavement	R
Flexible Pavement	F
<i>If the actual pavement construction is composite or non-standard, a note is included to that effect (see example 2 below).</i>	
Subgrade Strength Category	
<u>High Strength</u> : characterized by $k=150 \text{ MN/m}^3$ and representing all k values above 120 MN/m^3 for rigid pavements, and by CBR=15 and representing all CBR values above 13 for flexible pavements.	A
<u>Medium Strength</u> : characterized by $k=80 \text{ MN/m}^3$ and representing a range in k of 60 to 120 MN/m^3 for rigid pavements, and by CBR=10 and representing a range in CBR of 8 to 13 for flexible pavements.	B
<u>Low Strength</u> : characterized by $k=40 \text{ MN/m}^3$ and representing a range in k of 25 to 60 MN/m^3 for rigid pavements, and by CBR=6 and representing a range in CBR of 4 to 8 for flexible pavements.	C
<u>Ultra Low Strength</u> : characterized by $k=20 \text{ MN/m}^3$ and representing all k values below 25 MN/m^3 for rigid pavements, and by CBR=3 and representing all CBR values below 4 for flexible pavements.	D
k = the bearing modulus determined at the slab/base course interface CBR = California bearing ratio	

We are a non-instrument airport. This means we have no landing system to aid aircraft on their approach path.

Westside properties would be affected by transition zone requirements, not the approach path requirements.

See picture below

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The approach slope is 4%. The transitional area has a slope of 50% starting the runway strip for a 2b non-instrument airport.

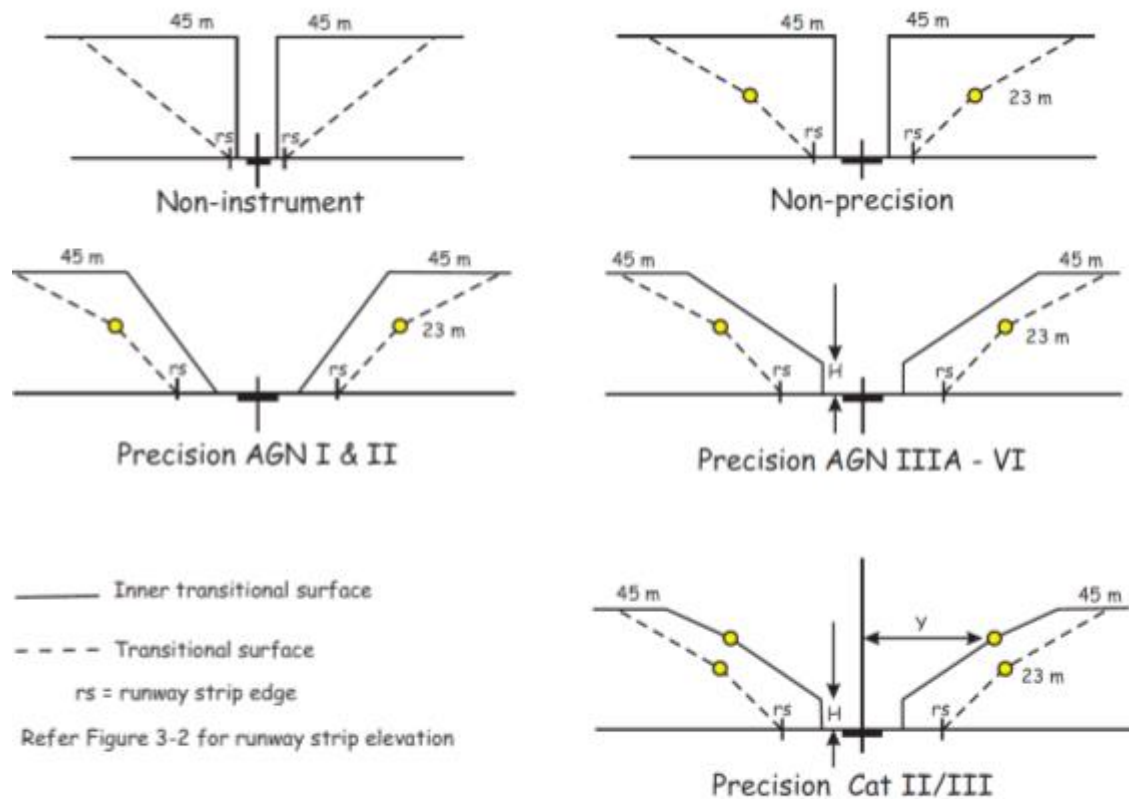


Figure 4-5: Transitional and inner transitional surfaces

The transitional surface runs at a 50% for the edge of the runway strip. Runway strip. A defined area, which includes the runway and stopway where provided, intended to protect aircraft flying over it during take-off or landing operations.

Merritt Runway strip is 40 meters from center line.

Location

3.1.5.2 The runway safety area extends each side of the runway centreline and extended centreline within the strip, to the minimum distances specified in Table 3.1.5.2.

Table 3.1.5.2—Runway Safety Area							
Minimum distances of each side of centreline and extended centreline (in metres)							
Aircraft Group Number <i>Table 1-1 Column II</i>	I	II	IIIA	IIIB	IV	V	VI
Non-instrument	30	40	40	75	75	75	75
Non-precision	40	40	40	75	75	75	75
Precision	40	45	45	75	75	75	75

See table 4-1(a)

Note: Units for Tables 4-1 (a) through (e) are in metres unless otherwise specified

Table 4-1(a)—Obstacle Limitation Surfaces								
NON-INSTRUMENT								
Aircraft Group Number - Table 1-1 Column II		I	II	IIIA	IIIB	IV	V	VI
Approach: Length of inner edge each side of centreline		30	40	40	75	75	75	75
Distance from threshold		30	60	60	60	60	60	60
Divergence		10 %	10 %	10 %	10 %	10 %	10 %	10 %
First section	Length	2 500	2 500	2 500	3 000	720	720	720
	Slope	5 %	4 %	4 %	3.33 %	2.5 %	2.5 %	2.5 %
Second section	Length	-	-	-	-	2 280	2 280	2 280
	Slope	-	-	-	-	2.9 %	2.9 %	2.9 %
Total length		2 500	2 500	2 500	3 000	3 000	3 000	3 000
Transitional:	First segment	20 %	20 %	20 %	14.3 %	14.3 %	14.3 %	14.3 %
	Second segment	-	-	-	-	-	-	-
Inner Transitional: Distance from centreline		30	40	40	61	61	61	61
	Slope	vertical	vertical	vertical	vertical	vertical	vertical	vertical
NON-PRECISION								
Approach: Length of inner edge each side of centreline		75	75	75	122	122	122	122
Distance from threshold		60	60	60	61	61	61	61
Divergence		10 %	10 %	10 %	15 %	15 %	15 %	15 %
First section	Length	2 500	2 500	2 500	720	720	720	720
	Slope	3.33 %	3.33 %	3.33 %	2.5 %	2.5 %	2.5 %	2.5 %
Second section	Length	-	-	-	4 280	4 280	4 280	4 280
	Slope	-	-	-	2.9 %	2.9 %	2.9 %	2.9 %
Total length		2 500	2 500	2 500	5 000	5 000	5 000	5 000
Transitional:	Slope first segment	25 %	25 %	25 %	25 %	25 %	25 %	25 %
	Slope second segment	14.3 %	14.3 %	14.3 %	14.3 %	14.3 %	14.3 %	14.3 %
Inner Transitional: Distance from centreline		40	40	61	61	61	61	61
	Slope	vertical	vertical	vertical	vertical	vertical	vertical	vertical
PRECISION								
Approach: Length of inner edge each side of centreline		122	122	122	122	122	122	122

Notice the Obstacle limitation Surfaces are vertical 40 meters from the center line on a Non-instrument Aircraft group number of II.

Table 4-1(b)—Modified Obstacle Limitation Surfaces							
NON-INSTRUMENT (Transitional slopes - 33%)							
Aircraft Group Number - Table 1-1 Column II	I	II	IIIA	IIIB	IV	V	VI
Approach				Not available			
Length of inner edge each side of centreline	45	45	45				
Distance from threshold	30	60	60				
Point of origin of divergence beyond the strip end	150	150	150				
Divergence	10 %	10 %	10 %				
Length	2 500	2 500	2 500				
Slope	5%	4%	4%				
Total Length	2 500	2 500	2 500				
Transitional							
Slope	33 %	33 %	33 %				
Inner Transitional							
Slope	vertical	vertical	vertical				
Distance from each side of centreline line	30	30	40				

Table 4-1(c)—Modified Obstacle Limitation Surfaces							
NON-INSTRUMENT (Transitional slopes - 50%)							
Aircraft Group Number - Table 1-1 Column II	I	II	IIIA	IIIB	IV	V	VI
Approach				Not available			
Length of inner edge each side of centreline	60	60	60				
Distance from threshold	30	60	60				
Point of origin of divergence beyond the strip end	300	300	300				
Divergence	10 %	10 %	10 %				
Length	2 500	2 500	2 500				
Slope	5 %	4 %	4 %				
Total Length	2 500	2 500	2 500				
Transitional							
Slope	50 %	50 %	50 %				
Inner Transitional							
Slope	vertical	vertical	vertical				
Distance from each side of centreline line	30	30	40				

Conclusion from TP312 Version 5 in regards to development of the west side properties set backs.

After 40 meters from the center line there the height restriction fall away quite quickly at a slope of 50%. Even with the strictest transitional slope of 33% that starting at 30 meters from the center line, most hangars and commercial building will be able to built on the west side properties.



Red – the runway safety area or strip

Yellow –Building restrictions at a slope of 50%

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