ES473 Topographic Measurements and Slope Profiling Exercise

Using the attached copy of the northeast quadrant of the Falls City Quadrangle, complete the following map-related activities.

1. Using a ruler and graphical scale of the map, determine the fractional scale. Show all of your math work and unit algebra. Place answer below.

   SCALE 1: _____

2. What is the contour interval of the map?   _____ ft

3. Examine the course of the Little Luckiamute River. Using a colored pencil, carefully highlight the trace of the main channel of the Little Luckiamute.

   A.   Which direction is the river flowing?

4. Calculate the gradient of the Little Luckiamute channel, between points 2 and 3. Fill in the data table below. Show all of your math work.

Elevation of Point 2 _____ Ft   Distance Between Pt. 2 and 3 _____ Ft

Elevation of Point 3 _____ Ft   Stream Gradient _____ Ft / Ft

Elevation Difference between pt. 2 and 3 _____ Ft   Stream Gradient_____ Ft / Mi

5. Determine the hillslope gradient between points X-Y and points M-N. Show all of your math work and unit algebra.

Elevation Difference X-Y _____ ft   Horizontal Distance X-Y_____ ft

Gradient X- Y _____ degrees   Gradient X-Y _____ percent

Elevation Difference M-N _____ ft   Horizontal Distance M-N _____ ft

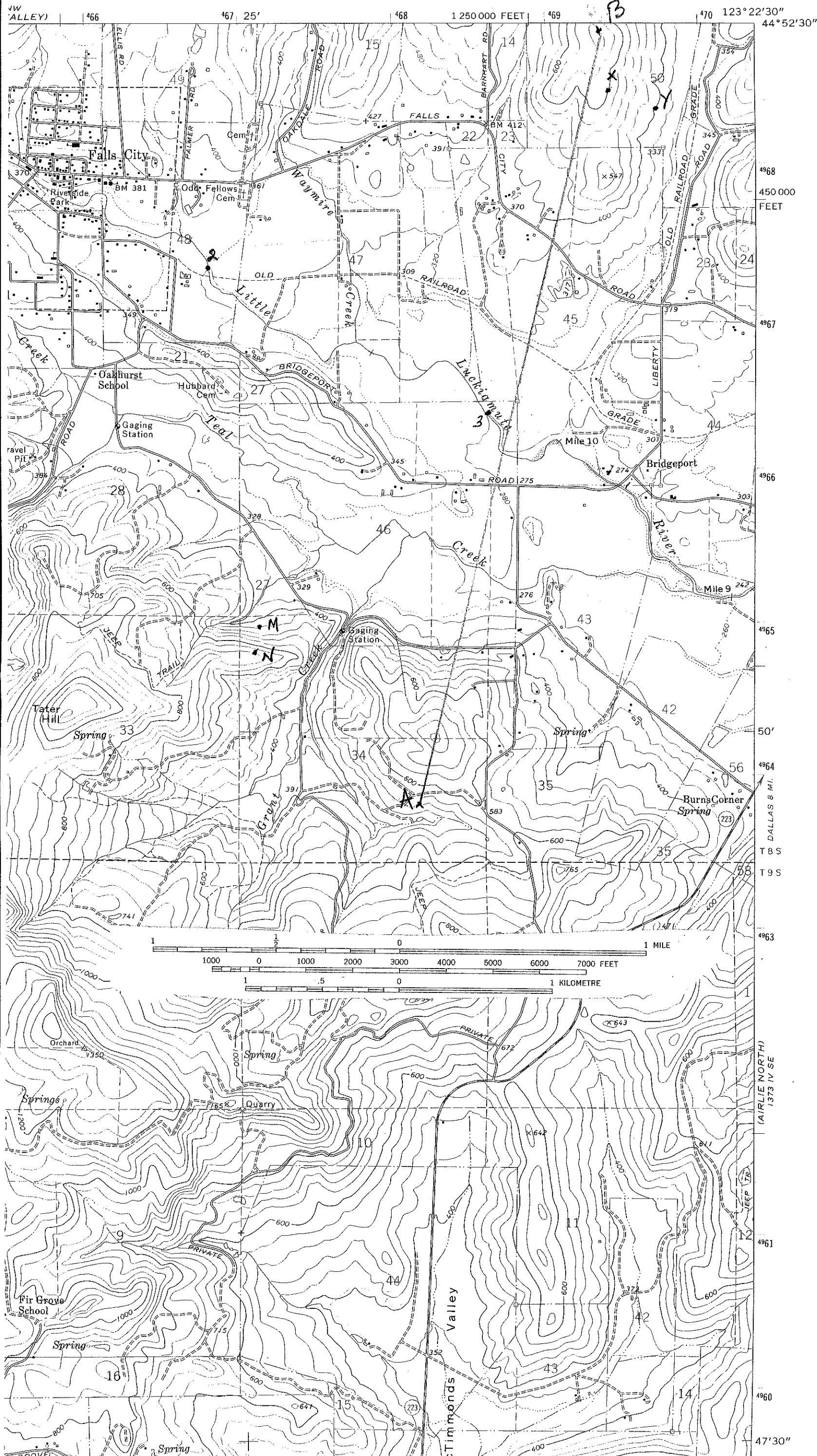Gradient M-N _____ degrees   Gradient M-N _____ percent

Which hillslope segment is steeper X-Y or M-N?

6. Draw a topographic profile alon line A-B using the attached graph paper.

FALLS CITY QUADRANGLE
OREGON—POLK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 DALLAS 15' QUADRANGLE

1373 IV NE
(DALLAS)

123°22'30"
44°52'30"

Falls City
Riverside Park
BM 381
Odd Fellows Cem
Oakhurst School
Hubbard Cem
Gaging Station
Gravel Pit
Tater Hill
Spring

Bridgeport
Mile 10
Mile 9
Burns Corner
Spring

450 000 FEET

50'

T 8 S
T 9 S

DALLAS 8 MI.

Orchard
Spring
Springs
Quarry
Fir Grove School
Spring
Timmonds Valley

(AIRLIE NORTH)
1373 IV SE

47'30"

1		1/2		0							1 MILE
1000	0	1000	2000	3000	4000	5000	6000	7000 FEET			
1		.5		0				1 KILOMETRE			

PROFILE TOPOGRAPHY (FARM CITY) QUADRANGLE

ELEVATION (FEET)

1000

800

600

400

200

0

A
SOUTH

B
NORTH