FOR 373/573
FOREST ROAD PROJECT

PURPOSE:

The purpose of this project is to provide the student with a realistic experience in the procedures and calculations involved in the layout of a simple horizontal curve on a secondary forest road.

BACKGROUND:

The field measurements of the proposed road on the Heiberg Forest are shown in the attached *Field Notes and map*.

The Road Standards to be utilized in the layout of the road include:

- there must be a straight section of road, at least 50 feet in length, between consecutive curves (you may want to use more than 50 feet in your calculations to account for measurement errors made in the field)
- all curves must have a radius of <u>at least</u> 100 feet; you should try to maximize curve radius for all curves; also, all curve radii should be in multiples of 10 feet

PROCEDURE:

1. Each crew will calculate curve geometry for their assigned curve, given the attached field survey data. These calculations should be completed prior to lab on **September 22, 2011**.

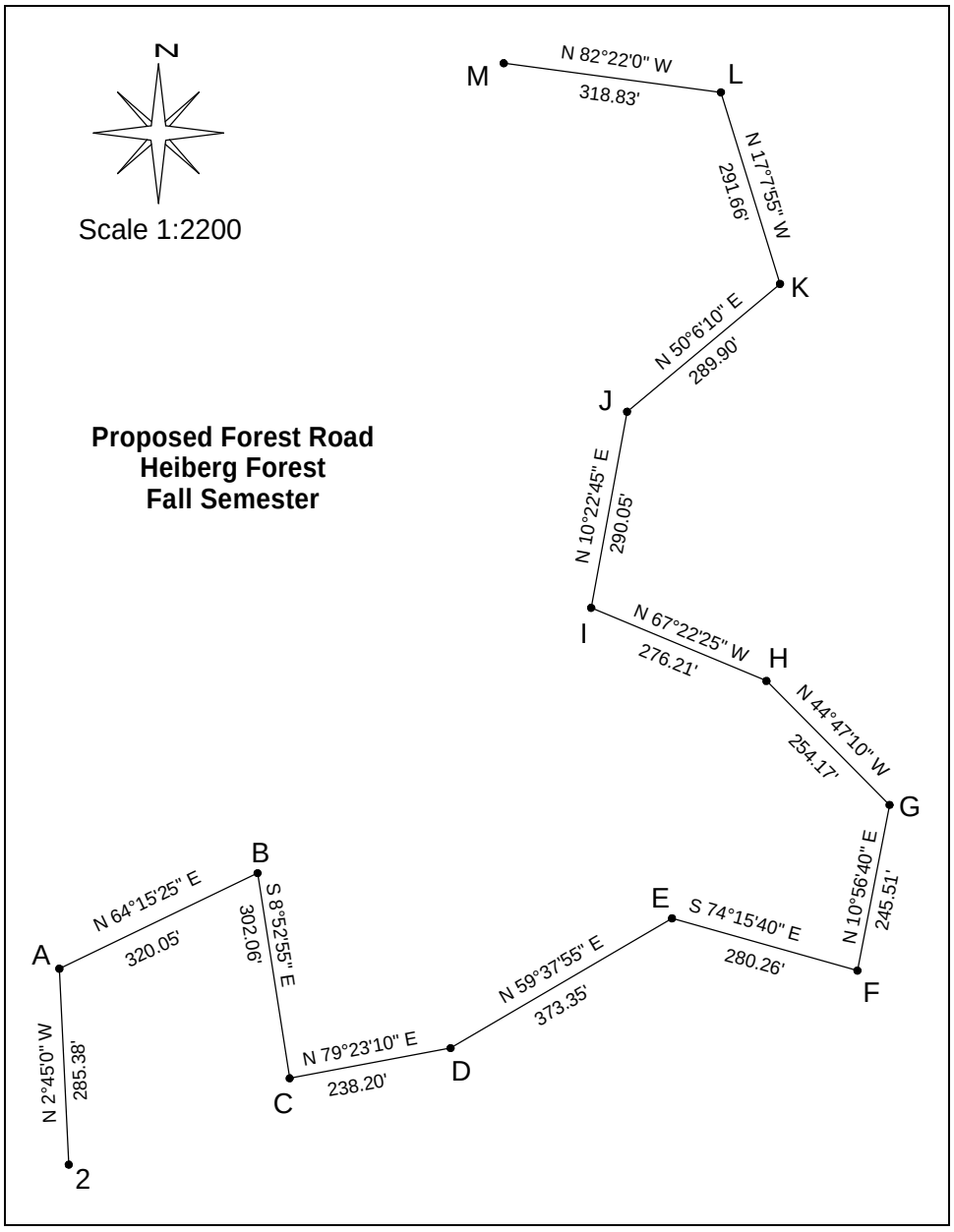
2. Each crew will calculate the stationing of all points in their road segment. On curves, you must use both the tangent offset method and the chord offset method. The survey flags must be labeled accordingly. A stationing spacing of 50 feet will be used on straight sections and 25 feet will be used for curves. In addition to this 25-foot stationing, stationing for the point on the curve corresponding to the curve external and the stationing for the PC and the PT should be calculated. These calculations should be completed prior to lab on **September 22, 2011**.

3. In the field, each crew will establish stations for tangents and curves. The curve will have stations based on both offset methods. Each flag should have the proper notation. The stations will be checked in the field.

4. Each crew will prepare a map of their road section. The map will include the location of: (1) the proposed road centerline and (2) all existing roads that intersect the proposed road. The map should be neat and include all features normally found on a map. Maps should be either scribed or computer generated. PC's and PT's and their stationing should be labeled.

Proposed Forest Road - Field Notes

Station	Bearing					Horizontal Distance (ft.)	Vertical Distance (ft.)	Note
2								Start
	N	2°	45’	0”	W	285.38	9.19	
∟**A**								PI
	N	64°	15’	25”	E	320.05	12.92	
B								PI
	S	8°	52’	55”	E	302.06	6.55	
∟**C**								PI
	N	79°	23’	10”	E	238.20	12.66	
D								PI
	N	59°	37’	55”	E	373.35	17.22	
∟**E**								PI
	S	74°	15’	40”	E	280.26	16.45	
F								PI
	N	10°	56’	40”	E	245.51	-26.40	
∟**G**								PI
	N	44°	47’	10”	W	254.17	-12.74	
H								PI
	N	67°	22’	25”	W	276.21	0.11	
∟**I**								PI
	N	10°	22’	45”	E	290.05	-20.76	
J								PI
	N	50°	6’	10”	E	289.90	-29.68	
∟**K**								PI
	N	17°	7’	55”	W	291.66	11.17	
L								PI
	N	82°	22’	0”	W	318.83	32.22	
M								End


N
Scale 1:2200
Proposed Forest Road
Heiberg Forest
Fall Semester
M
L
N 82°22'0" W
318.83'
N 17°7'55" W
291.66'
K
N 50°6'10" E
289.90'
J
N 10°22'45" E
290.05'
I
N 67°22'25" W
276.21'
H
N 44°47'10" W
254.17'
G
N 10°56'40" E
245.51'
F
S 74°15'40" E
280.26'
E
N 59°37'55" E
373.35'
D
N 79°23'10" E
238.20'
C
S 8°52'55" E
302.06'
B
N 64°15'25" E
320.05'
A
N 2°45'0" W
285.38'
2

FOR 373 Forest Road Lab
Fall Semester

PI's marked with ½" metal conduit labeled with 1" circular disks--red flag-stakes are also used to mark the conduit pipes. GPS coordinates have been determined for each conduit location (NAD83) based on an instrument survey tied to the USGS FORREST monument.

Road Segment Assignments

Crew #1: Curve 2 – A – B	Eric, Brian, Amanda
Crew #2: Curve B – C – D	Adam, Travis, Cody, Ellen
Crew #3: Curve D – E – F	Andrew, Jessica, Shawn, Mick
Crew #4: Curve F – G – H	Aaron, Joshua, Rich, Seth
Crew #5: Curve H – I – J	Nathan, Daniel, Paul, Kelly
Crew #6: Curve J – K – L	Blaine, Nathan, Jeff, Lindsay