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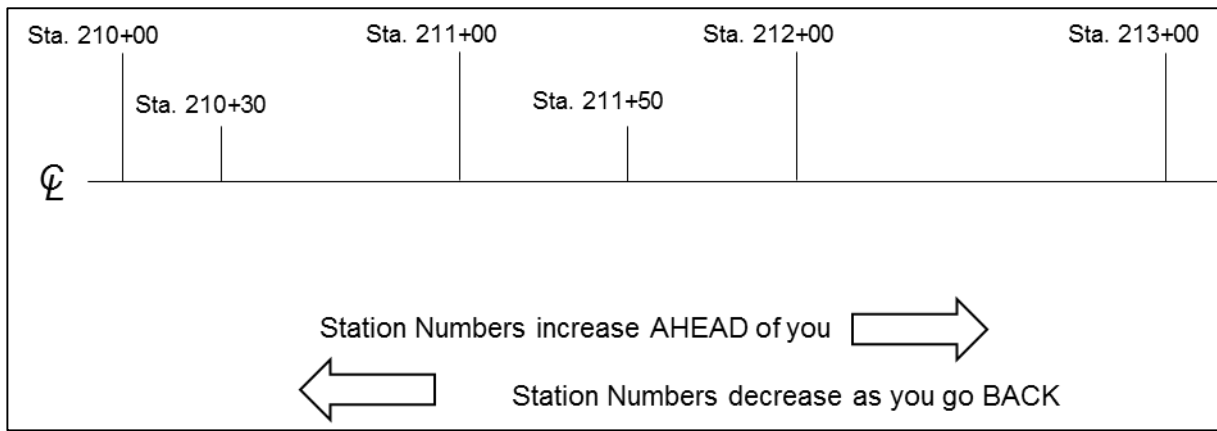
Plan Reading

Worksheets

Companion to the Friend South
Saline County Plans

Stationing Exercise - #1

On the plan part of a Plan and Profile sheet, the station numbers are usually written along the centerline (\mathcal{C}) of construction. On a project, AHEAD means moving in the direction of **increasing** stationing or the station numbers get larger, (i.e. from Sta. 120+00 to Sta. 121+00). BACK means going in the direction of **decreasing** stationing or the station numbers get smaller, (i.e. from Sta. 120+00 to Sta. 119+00).



Look at the sketch, then answer the questions below.

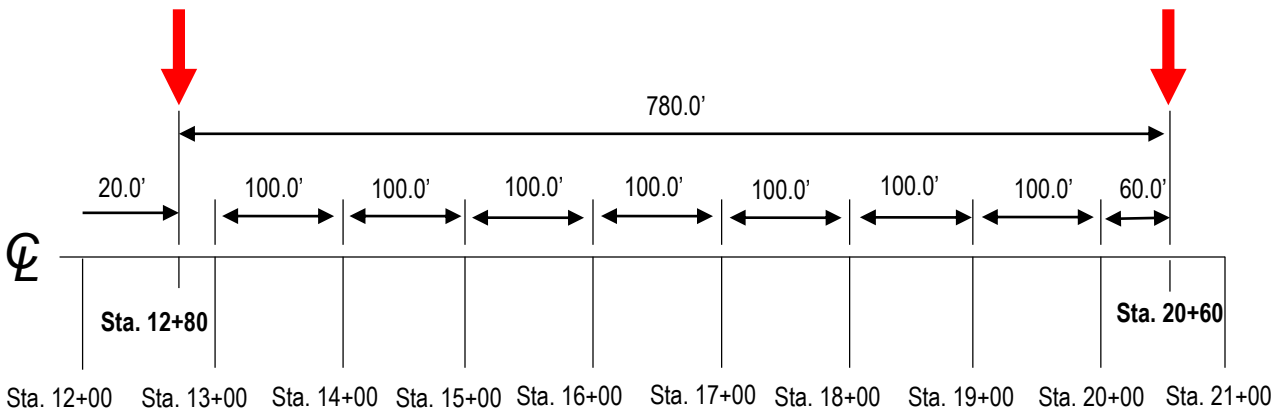
1. How far is it from Sta. 210+00 to Sta. 211+00? _____ feet
2. How far is it from Sta. 210+00 to Sta. 210+30? _____ feet
3. How far is it from Sta. 210+30 to Sta. 211+00? _____ feet
4. What is the Sta. Number of a point on \mathcal{C} 50 feet AHEAD of Sta. 211+00? _____
5. What is the Sta. Number of a point on \mathcal{C} 50 feet BACK of Sta. 212+00? _____
6. What is the distance between Sta. 211+50 and Sta. 212+50? _____ feet

Stationing Exercise - #2

To find the distance between any two stations (on the same project) simply subtract the smaller station number from the larger one, ignoring the plus sign. The resulting answer is in feet.

Find the distance between Sta. 12+80 and Sta. 20+60. Write the numbers like this without the "+".

$$\begin{array}{r} 2,060 \text{ feet} \\ - 1,280 \text{ feet} \\ \hline 780 \text{ feet} \end{array}$$



From Sta. 12+80 to 13+00	=	20 feet
From Sta. 13+00 to 20+00	=	700 feet
From Sta. 20+00 to 20+60	=	60 feet

Total	=	780.0 feet
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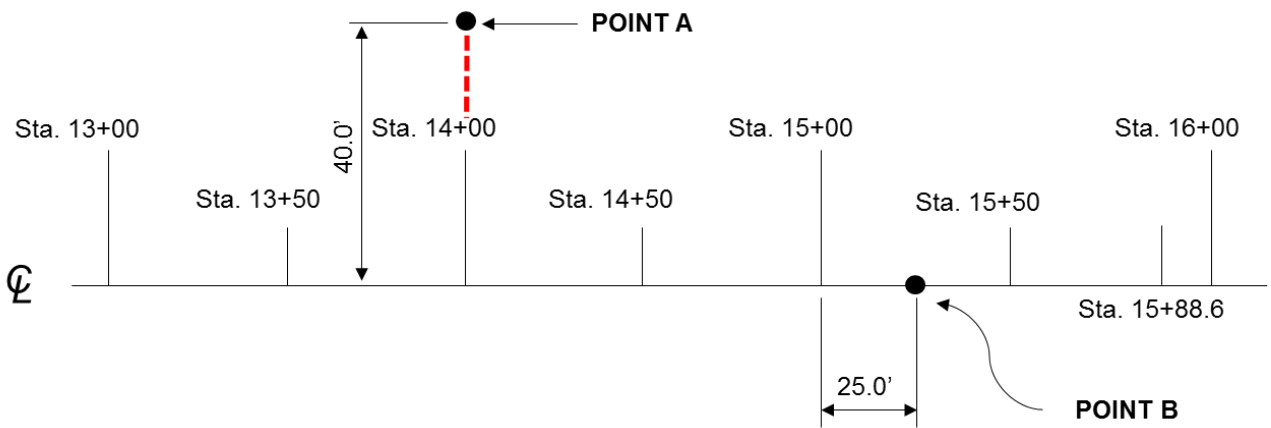
Answer the following questions:

1. What is the distance from Sta. 14+10 to Sta. 15+00? _____ feet
2. What is the distance between Sta. 80+10 and Sta. 85+20? _____ feet
3. What is the distance between Sta. 48+76.2 and Sta. 51+24.8? _____ feet

Stationing Exercise - #3

- If you are walking along the centerline of a project, reading the station numbers on the stakes, and these numbers are increasing as you go, there is a good chance you are walking toward the _____ or _____.
(east/west) (north/south)

Stationing Exercise - #4



- What is the station and offset of Point A on the sketch above? _____
- What is the station and offset of Point B on the sketch above? _____
- Station numbers generally increase toward the _____ or _____
- How many feet is it from Sta. 15+88.6 to Sta. 14+00? _____ feet
- Is Sta. 13+00 AHEAD of or BACK of Sta. 14+00? _____
- How many feet is it from Sta. 13+50 to Sta. 16+00? _____ feet

Exercise #6 – Con't.

Turn to Sheet 4, Friend South

3. What is the change in elevation from the inlet to the outlet of the culvert pipe at Sta. 15+08?
4. What is the drainage area for this culvert pipe?
5. What structure is to be built at Sta. 15+15 Right?

Exercise #7

Turn to Bridge Plans

1. What class of concrete is used for the slabs, diaphragms and rails? _____
2. What shall be the 28-day strength? _____
3. The reinforcing steel shall conform to what requirements? _____
4. How many tons of Type B rock riprap for the project? _____
5. How many pounds of structural steel for the substructure? _____
6. At what station is the centerline of the bridge? _____
7. What is the centerline abutment to centerline abutment length of the bridge? _____
8. What is the bridge clear roadway width? _____
9. How many spans does the bridge have? _____
10. What is the width of the concrete bridge rail? _____
11. What waterway does the bridge cross? _____
12. What is the drainage area? _____
13. What is the design year storm? _____
14. How many piles are used for the bridge? _____
15. What are the Design Pile Bearings in tons/PILE? _____

PLAN READING REVIEW & EXERCISES

Exercise #5

Turn to TITLE SHEET, Plans for Construction, Friend South to answer the following questions:

1. What is the project number? _____
2. The project begins at station _____
3. The project ends at station _____
4. What is the project length?
 - a. In feet?
 - b. In miles?
5. What material makes up the surface course?
6. The new surface course has a depth of ____ and a width of ____
7. What is the total length of the new surface course?
8. The work on this project consists of what groups?
9. Conditions stipulated in the Army Corps of Engineers nationwide permit apply to the vicinity of Station _____
10. The project is located between which two sections?

Exercise #6

Turn to Sheet 3, Friend South Plan

1. There is a Bench Mark (BM) at Sta. 21+87
 - a. What is the BM?
 - b. What is the BM number?
 - c. What is the BM elevation?
 - d. What is its location in relation to the centerline?
2. There is an existing bridge at Sta. 15+91
 - a. What type of bridge is it?
 - b. What is its length?
 - c. What is its width?
 - d. What is to be done with this bridge?

Exercise #8

Right of Way

1. Refer to Parcel (Tract) #1
 - a. Owners name _____
 - b. Legal description _____
 - c. Amount of additional (new taking) for ROW _____
 - d. Amount for Permanent Easement _____
 - e. Amount for Temporary Easement _____
2. For this project, how much additional new ROW is being acquired? _____
3. How much property is being used for Permanent Easements? _____
Temporary Easements? _____
4. Locate Temporary Easement #4
 - a. TE #4 used for _____
 - b. Owners name _____
 - c. Size (acres) of TE #4 _____

Exercise #9

General Questions

1. The Index of Sheets is found where? _____
2. Where can you find Bridge Items Group 6? _____
3. A drawing depicting a section of the road from a bird's eye view is a _____ view
4. A drawing depicting the vertical plane along the longitudinal centerline of the road, expressed in elevation or gradient is a _____ view
5. How many feet is it from Station 1+00 to Station 2+50? _____
6. Bench mark information can be found on which sheet? _____
7. Detour information can found on which sheet? _____
8. You are walking along the centerline of a project and the station numbers are getting smaller. You are most likely walking in which direction? _____
9. A township usually contains how many square miles? _____
10. A list of property owners is found on which sheet? _____