

CHAPTER SEVEN

Review Quiz

Things you have learned in this course are going to help you do a better job as an Inspector. This Review Quiz is designed to help you find out how well you learned the material. It is also designed to prepare you for the Examination.

Listed below are instructions on how to take the quiz.

1. Do not take this quiz immediately after you finish the course.
2. Do not cram the night before you take the quiz. Remember that the objective is not to test your memory. The objective is to help you evaluate how well you have learned the material and how well you can think through your everyday work problems.
3. When you take the quiz, make sure that you will not be disturbed for about two hours.
4. Attempt all questions.
5. You may refer to the course material if you get stuck on a question. But first try to reason out the problem.
6. Finally, keep track of your wrong answers. Instructions on how to grade yourself follow the Review Quiz. If you score less than 90% on the quiz, do not be disappointed. Go back and study the course materials once again and retake the quiz.

GOOD LUCK

7

REVIEW QUIZ

Box culverts are constructed of _____ and _____.

If a box culvert is 8' x 4', the first number refers to _____ and the second number refers to _____.

Columns are the vertical supports of _____.

Intermediate substructures that consist of piles and caps only are called _____.

Piers are comprised of four main parts, _____, _____, _____ and _____.

The "roadway" of a bridge is called a _____.

Bearing devices are placed on the _____.

What are the broad types of bridges constructed by the Department: _____, _____, _____, _____.

What is the most common type of bridge used by the Department?

For concrete precast post-tensioned beam bridges, _____ are encased in the concrete to allow strands to be threaded through at the job site.

True or false: segmental bridges can only be constructed in a straight alignment.

How are the forms held in place for a cast-in-place post-tensioned box girder?

Can a complete plate girder be produced by rolling a single plate of steel?

Flat slab bridges can be used for span lengths as long as _____ feet.

True or false: precast prestressed slabs are cast in place at the job site in their final position.

Bascule bridges have complex _____ and _____ systems.

New _____ and _____ bridges are no longer built by the Department.

Suspension bridges that have a cable pattern that looks like a spider web are called what?

If you find computation book errors who should you report them to?

What is your responsibility as it relates to the concrete quality control plan?

True or false: the contractor may start drilled shaft construction no more than ten days before the installation plan is approved.

True or false: experienced inspectors do not need to use checklists since they always remember everything that is required.

Use the diagram on the next page to answer the following questions:

What is the finished grade elevation of the bridge at centerline?

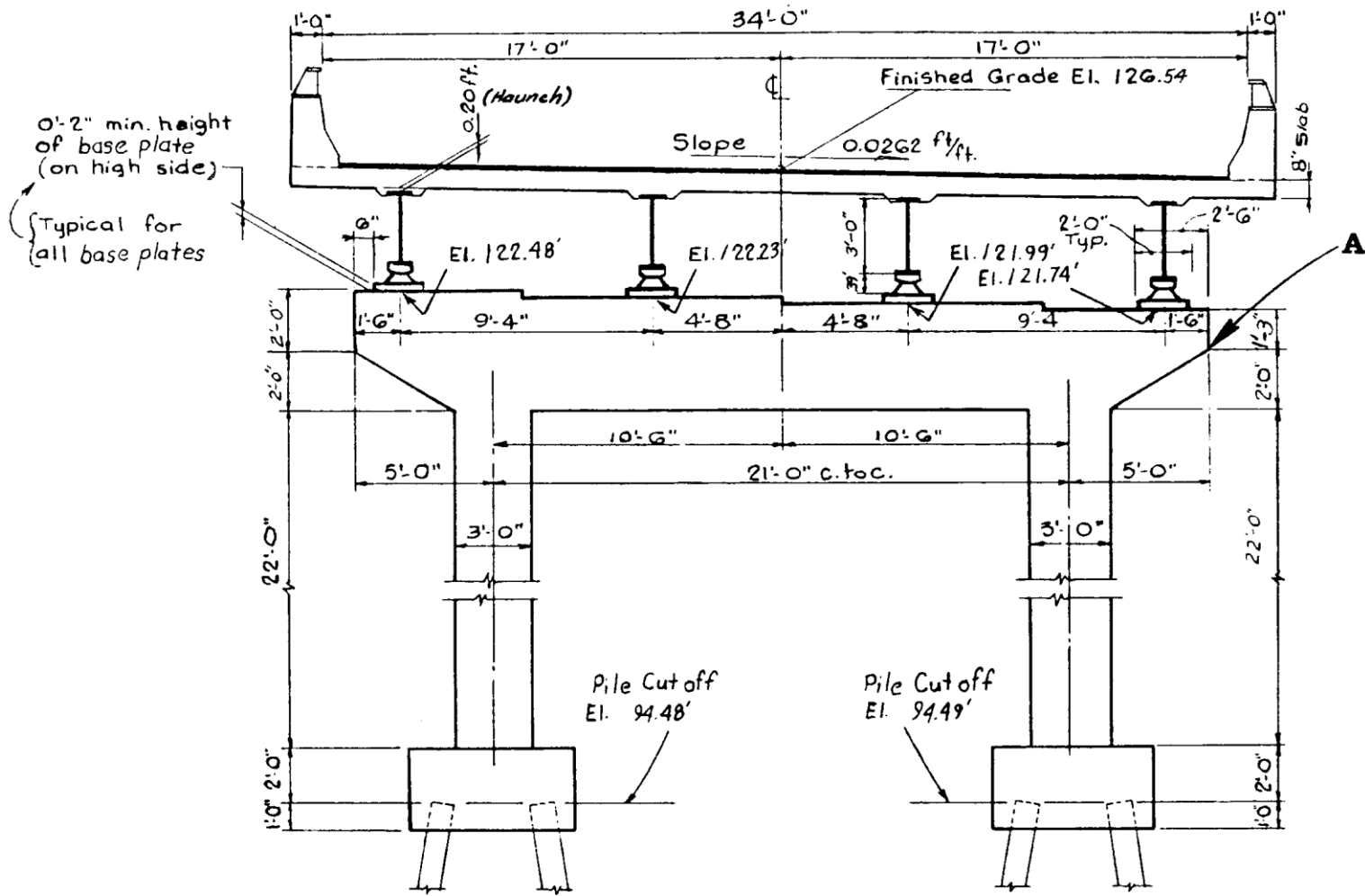
What are the elevations of the tops of the footings?

Left:

Right:

Determine the elevation of the cap at Point A.

What is the distance between the columns, centerline to centerline?



What three dimension checks must be made on a steel girder or pile?

What action should be taken if you find girders that are shorter than the shop drawings?

In what units are the following materials measured?

Steel:

Concrete:

What section of the plans shows the correct number of bars for a structure?

Match the following:

- ___ A. Discussion of federal and state water pollution standards
- ___ B. Information on the location of utilities
- ___ C. Plotting of soil data for bridges

- 1. Plans
- 2. Preconstruction Conference
- 3. Boring data sheets

Why should you be familiar with the materials delivery schedule?

Use this table to answer the questions below.

Bar Designation English / (Metric)	Weight in lbs./LF	Bar Designation English / (Metric)	Weight in lbs./LF
#4 (13)	0.668	#9 (29)	3.400
#5 (16)	1.043	#10 (32)	4.303
#6 (19)	1.502	#11 (36)	5.313
#7 (22)	2.044	#14 (43)	7.650
#8 (25)	2.670	#18 (57)	13.600

What is the weight of seven 8 ft No. 6 (19) bars?

Your total estimated weights can be compared to the estimated weights shown on the _____ tables in the plans.

For answers to questions about utilities relocations, consult your _____.

Traffic maintenance must comply with the _____.

Does the above mentioned reference describe the maximum amounts of traffic control?

Which of the following would you expect to be discussed at the preconstruction conference?

- A. Method of staking
- B. Safety regulations
- C. Work hours
- D. Anticipated delays

Box culvert flow line grade is set from _____.

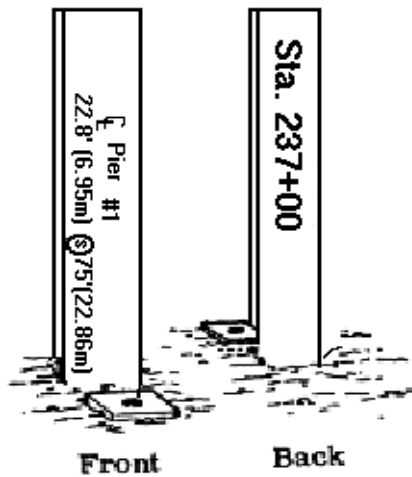
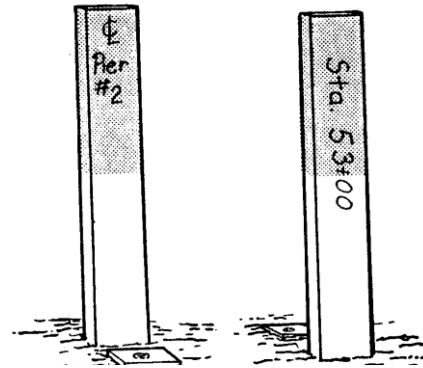
Bridge centerline stakes are established from _____ and are set by the
.

Reference control stakes are established from _____ and are set by the
.

Substructure centerline stakes are established from _____ and are set by the
.

The stake on the right is located on the _____ of _____ at _____.

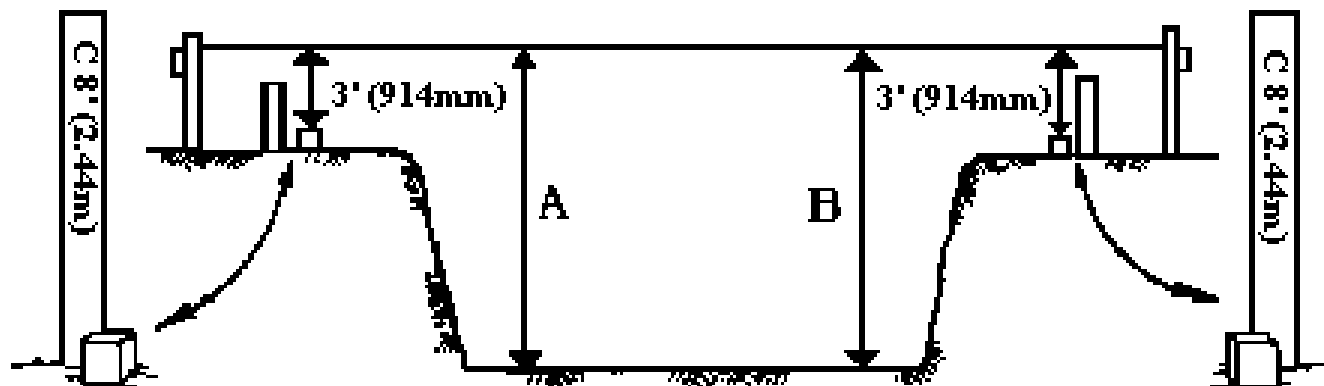
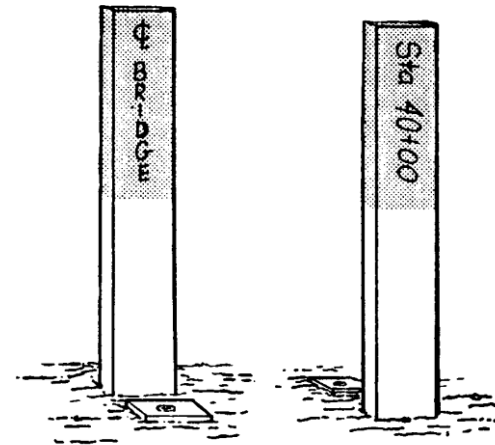
The stake below is _____ 75 ft from _____ at _____



Where is the stake on the right located?

Could the same spot be marked by nail driven into the pavement?

What are the distances labeled A and B below?



Wet materials are excavated with _____ buckets.

_____ are used for digging shallow vertical cuts.

Foundation piles must be driven _____ pit excavation.

What two points must you ensure compliance with when muck is undercut and backfilled?

- 1.
- 2.

When rock is encountered, the proper construction procedures will be given by the _____.

Muck may be placed on slopes, provided there is a clear distance of 6 feet between the _____ and _____.

Under normal conditions, elevations of foundations are found in the _____.

A special exception to the statement above is when excavation takes place in _____.

Excavation in a stream bed must be continued at least _____ feet below the permanent bed, unless:

- A. there is danger of undermining.
- B. the stream is over 5 ft deep.
- C. a firm footing on rock is encountered first.

Pit excavations must be large enough to contain the _____.

Backfill density around structures must not be less than _____% of _____.

Backfill lifts should not be more than _____ deep, unless hand tampers are used and the lifts must be no more than _____.

Falsework must be strong enough to support _____, _____, _____, and _____.

Metal ties used in forms must be broken off at least _____ inside the concrete surface.

The inside of forms should be soaked with _____, then they should be coated with a thin film of clear _____.

If lumber that is used for forms is too dry, it will _____.

Lumber that is too green will _____, causing joints to open.

If too much oil is used on wooden forms, the concrete will be _____.

When reinforcing steel is delivered, you must check the producer's _____, and the _____.

A Number 8 (25) reinforcing steel bar has a _____ inch (millimeter) diameter.

Is it O.K. to tack weld reinforcing steel bars rather than to tie them?

Overlap distances in bar splices must not be less than _____ bar diameters, unless shown otherwise on the plans.

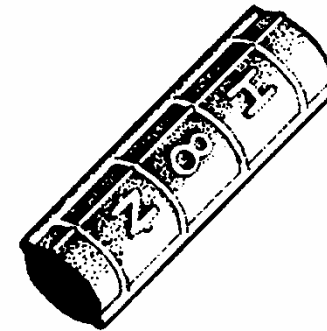
Splicing reinforcing steel is allowed only if indicated in the _____ or if authorized by the _____.

Can uneven distribution of reinforcing steel cause the concrete to crack -- the structure to fall?

Generally, all reinforcing steel bending is done in the shop, without the use of heat. True or false?

Why are steel bars supported by chairs or mortar blocks?

What information can you obtain from the steel bar shown to the right?



THE END!

TO GRADE YOURSELF ON THE REVIEW QUIZ, TOTAL YOUR INCORRECT ANSWERS. THERE ARE ABOUT 110 ANSWERS IN THE QUIZ.

IF YOU SCORED LESS THAN 90% -- THAT'S MORE THAN 11 INCORRECT ANSWERS -- GO BACK AND STUDY THE PARTS OF THE COURSE THAT GAVE YOU TROUBLE. THEN, TAKE THE REVIEW QUIZ AGAIN. WHEN YOU CAN ANSWER THE REVIEW QUIZ QUESTIONS CORRECTLY, YOU WILL HAVE NO TROUBLE WITH THE EXAMINATION.

ANSWERS TO QUESTIONS

Page 7-2

- Portland cement concrete, reinforcing steel
- span, height
- pier caps
- bents
- piles, footings, columns, caps
- deck
- beam seats

Page 7-3

- beams or girders, slabs, draw or movable and suspension
- concrete precast prestressed beam
- ducts
- false
- by falsework
- no
- 40'
- false, they are produced in a plant off site
- electrical, mechanical
- vertical lift, swing
- cable stayed
- Project Administrator
- make sure the Contractor goes by the plan
- false, plan must be approved before work starts
- false, all inspectors need to use checklists

Page 7-4

- 126.54ft
- 96.48ft
- 96.49ft
- 120.49ft
- 21ft 0in

Page 7-6

- length, width, height (depth)
- report them to your Project Administrator
- pounds (kilograms), cubic yards (cubic meters),
- bill of reinforcing steel bars
- A. 2
- B. 1 and 2
- C. 3

Page 7-7

- to have enough time to inspect the materials before use
- 84.11 lbs
- estimated quantities
- contract plans

Page 7-8

- FDOT Traffic Design Standards covering maintenance of traffic Index No. 600 and Manual on Uniform Traffic Control Devices
- no, minimum
- A, B, C, D
- grade stakes
- centerline control points, survey crew
- bridge centerline stakes, survey crew
- centerline control points, survey crew

Page 7-9

- centerline, pier #2, sta. 53 + 00
- offset, centerline pier#1, sta. 237+00

Page 7-10

- on the centerline of a bridge at sta. 40 + 00
- yes
- 11.0ft

Page 7-11

- perforated
- backhoes
- after
- 1. proper depth
- 2. backfill material approval
- Engineer
- roadway grading limits, muck
- plans
- stream beds

Page 7-12

- 4; A, C
- footing forms
- 100, maximum density
- 8in, 4in
- forms, fresh concrete, reinforcing steel, construction equipment
- 1 inch
- water, oil
- warp
- shrink

Page 7-13

- discolored
- delivery tickets, heat number tags
- 1 inch
- No
- 30
- plans, Project Administrator
- Yes
- True
- To maintain proper cover and spacing

Page 7-14

- 1. Manufacturer's symbol -- H
- 2. #8 (25) bar size
- 3. N type of steel
- 4. Grade 60 (400 metric) as designated by the vertical line to the right