SITE ZONING VIGNETTE

BEN RUDGERS. COPYRIGHT 2010.
Welcome to NCARBland.

Ignore your professional experience!

And whatever you do...

Don't try to use Architecture!

The ARE always looks like something you've seen before.

It isn't.

It isn't a building.

It isn't a roof.

It isn't a stair.

Those are not trees.

There are no occupants to get caught in a fire.

Because there are no fires.

It is a test, and only a test.

It is not a building.

from – The Toa te ARE
Site Zoning Vignette Introduction:

This vignette is used to determine if you are minimally competent to read and interpret NCARBland’s zoning code, and able create simple diagrams development restrictions on a specific site.

NCARBland’s zoning code is limited in quite limited in scope, but makes up for it with byzantine complexity.

What you need to prepare for the Site Zoning Vignette:

- areFAQ.com Study Guide: Site Zoning Vignette
- NCARB ARE Study Guide: Programming, Practice, & Planning
- NCARB’s practice software.

There is no extra credit for not killing trees,
For aligning windows and toilet rooms,
For adding room for flashing,
Or installing an extra door.

Your solution will be scored by a machine and that's it.
No one will ever see your test solution and comment on your brilliance.

You will not have a chance to explain why what you did is better or how your interpretation is reasonable.

You will not have a chance to explain your design.

Design doesn’t enter into it.

The computer will just score what is there in the way it was programmed.

from – The Toa te ARE
Use this guide as a starting point for your preparation.

The process of completing the Site Zoning vignette is simple if you complete the four tasks in order.

The written material in this guide is intended to assist you in understanding what the Site Zoning vignette is really all about.

The practice activities are intended to assist you in learning the mechanics required to complete each task. Think about the exercises as providing opportunities for drill rather than simulations of the entire vignette.

**Four Tasks.**

1. Drafting the surface improvement restrictions onto the lot plan
2. Drafting the building area restrictions onto the lot plan.
3. Drafting the existing grade profile at the section line onto the grid.
4. Drafting the maximum building envelope at the section line onto the grid.

THIS IS REALLY STINKING IMPORTANT.
WHILE YOU READ THE FOLLOWING FEW PAGES, YOU MAY FIND IT HELPFUL TO LOOK AT:  
NCARB ARE Study Guide: Programming, Practice, & Planning
Site Zoning has only one solution.

Because this solution is a simple line drawing, there is no ambiguity about drafting conventions. The only variation between correct solutions is from the tolerances built into the NCARB drawing tools.

Keep in mind that you are using the computer to draw, not to draft. That’s why you don’t need AutoCad for the ARE.

Using the scoring tolerance is not an error. See the explanatory text at the bottom of sample passing solution on page 10 of NCARB ARE STUDY GUIDE: PROGRAMMING, PRACTICE, & PLANNING? There is dimensional inaccuracy, but the solution demonstrates the candidate’s understanding that the secondary construction area extends into the easement.

Now compare it to the sample failing solution. Notice that the solution doesn’t successfully demonstrate that the candidate understands the secondary construction area requirements.

The NCARB ARE STUDY GUIDE sample solutions are intended to indicate what is required to pass, what is permissible, and what is clearly wrong.

Because Site Zoning has only one solution, there is little forgiveness for errors.

Don’t worry about being a fraction of a degree off on an angular dimension.

The most important goal is to make your intent clear.
What does the vignette test?

The ARE Tests Reading Comprehension. REALLY!

Ever get the idea that NCARB writes questions in an overly complex way? They do it on purpose – not to be sadistic but to test your reading skills.

Sure we’re all “visual people.” Hopefully, it helps us design handsome buildings. But your state board doesn’t license architects to promote aesthetics and good taste. It licenses architects to protect the public’s health, safety, and welfare. And you can’t do that if you can’t read and interpret the complexity inherent in building and zoning codes.

JOE D’s Test Tip:

The ARE isn’t the internet. Read everything carefully before you draw...

Be as the race car at the turn.
Brake hard first
Then go fast.

Speedy Will Draw Here!

Speedy is Reading and Taking Notes!
You must understand these NCARBland Specific Terms:
Some terms found only in the NCARBland zoning code. They are generic placeholders for many site development restrictions other than building setbacks typical of most zoning codes.

**Maximum Building Envelope:** The vertical and horizontal boundaries in which Building Construction is allowed at the **Section Line.**

**Secondary Construction Area:** The portions of a lot where surface improvements are allowed.

**Surface Improvement:** I don’t know and I don’t care, and neither should you. The only concern is where they are allowed and where are they prohibited by NCARBland’s zoning code.

You must understand these Generic Terms:
These are terms from the real world, and amazingly they are also used in the vignette!

**Site plan:** A document that describes how a parcel of land is to be improved.

**Section Line:** A graphic element indicating the location and view direction of a cut surface.

**Grid:** A rectangular array of squares or rectangles of equal size, such as in a crossword puzzle.

**Portion:** An allocated amount.

**Lot:** A legally distinct plot of land created by a plat.

**Easement:** A portion of plot of land where a person other than the Owner has the legal right to use the Owner’s property.

**Benchmark:** A surveyor's mark made on some stationary object and shown on a map; used as a reference point.

**Elevation:** The height above a reference level.

**Buildable Area:** The portion of a site remaining after minimum front, rear, and side yards are provided.

**Setback:** A zoning tool used to insure that streets and yards are provided more open space and adequate light and air.

**Front Yard:** A yard across the full width of a plot, extending from the front line of a building to the rear property line.

**Rear Yard:** A yard across the full width of a plot, extending from the rear line of a building to the rear property line.

**Side Yard:** The yard between the side line of a building and the adjacent property line, extending from the front property line to the rear property line.

**Profile:** A representation of an object or structure seen from the side.

**Existing Grade:** The ground surface’s elevation prior to cutting and filling.
YOU MAY FIND IT HELPFUL TO LOOK AT YOUR COMPUTER WHILE YOU READ THE FOLLOWING FEW PAGES.
Analysis of Initial Graphic Elements

**Points:**
- Benchmark: The benchmark is used in developing the building profiles.

**Lines:**
- Property Lines: The property lines are used in developing the Secondary Construction Area and Buildable Area of each lot.
- Site Features: The Site Features are used in developing the Secondary Construction Area and Buildable Area of each lot.
- Contour Lines: The Contour Lines are used in developing the Grade Line.
- Section Line: The Section Line is Used to develop the Grade Line and in developing each of the building profiles.

**Area:**
- Easement: The Easement is used in developing the Buildable Area of each lot.

**Orientation:**
- Street names: Street Names are used in developing the Buildable Area of each lot.
- North Arrow: The North Arrow is used in developing the Building Profile of each lot.
- Grid: The Grid is used in developing the Existing Grade Line and the Building Profile of each lot.

Can you identify all the graphic elements in the drawing on the next page?
The North Arrow is here...and yes it's not real obvious stuck all the way down at the bottom corner of the screen.

Theoretically, NCARB can change the arrow so that north is not up.

I don't think they will, but practice checking it every time you practice.
Analysis of Written Material Provided in Vignette

**Directions**

There is a description of the work screen. It says:

- On the work screen, you will see a site plan of an existing property that has been divided into two new lots.
- On the grid below the site plan....

There is a description of what you should draw.

- The area suitable for the construction of surface improvements and the area suitable for construction of buildings only.
- You are required to draw the profile of the existing grade and to draw the profile of the maximum building envelope for each lot.

There is a warning that you should read the program.

- Before beginning your solution, you should review the program that can be accessed through the Vignette Index screen and familiarize yourself with the site plan and grid on the work screen.

And there is the standard for passing the vignette.

- Your completed work should conform to the program and the site conditions.
Program

There is a description of the four tasks.

**Four Tasks.**
1. Drafting the surface improvement restrictions onto the lot plan.
2. Drafting the building area restrictions onto the lot plan.
3. Drafting the existing grade profile at the section line onto the grid.
4. Drafting the maximum building envelope at the section line onto the grid.

REMEMBER ME? I APPEARED IN "PREPARATION PROCESS."

These are the types of development restrictions.

1. **Secondary Construction Area restrictions**
   a. From Property lines
   b. From Site Features
   c. In Easement areas (in theory, but do not occur in the practice vignette).

2. **Building Area restrictions**
   a. From Property lines
   b. From Site Features
   c. In Easement Areas

3. **Building Height restrictions.**
   a. Start Point
   b. From Benchmark
   c. From Grade line
   d. From Property line.

4. **Components**
   a. Vertical Extent
   b. Lateral Extent
   c. Angular Extent
Procedure

1. Take Notes

**Take notes on graphic screen**
You start out on the graphics screen so just go ahead and start taking notes here.

**Orientation**
I was amazed by how stupid I could be in the testing room. Get yourself oriented first.

1. **Draw Compass Rose**: Label compass rose with North, South, West, and East.
2. **Draw Site Diagram with street labels**: Just to make sure you read them!
3. **Create a list of elevations for each contour crossed by section line**: Order the list of contours from left to right.
4. **Indicate Benchmark in this list**.
5. **Check notes carefully**.

**Take notes on Text Screen**
1. Create list of surface improvement area restrictions for Lot A
2. Create list of surface improvement area restrictions for Lot B
3. Create list of building area restrictions for Lot A
4. Create list of building area restrictions for Lot B
5. Create list of building height restrictions
6. Check notes carefully

**WHY TAKE NOTES?**
1. **TO MAKE SURE YOU HAVE READ EVERYTHING**.
2. **TO MAKE SURE YOU HAVE UNDERSTOOD EVERYTHING**.
3. **SO THAT YOU DON'T NEED TO FLICK BACK AND FORTH BETWEEN THE SCREENS**.

**HOW TO TELL IF YOUR NOTES ARE ANY GOOD:**
1. **CAN YOU DRAW THE ENTIRE VIGNETTE SOLUTION FROM YOUR NOTES AND WITHOUT SWITCHING SCREENS?**

**YOU CAN PRACTICE TAKING NOTES ON THE OFFICIAL NCARB VIGNETTES!!!**

**LOOK AT YOUR NOTES. ARE THEY COMPLETE AND CLEAR ENOUGH THAT YOU CAN SOLVE THE VIGNETTE WITHOUT PEEKING AT THE TEXT SCREEN?**

**IF NOT, THEN YOUR NOTES NEED WORK.**
2. **Complete Tasks 1 and 2**
   1. Sketch many circles to define setback from site features
   2. Sketch four rectangles defining surface improvement setbacks for lot A
   3. Sketch four rectangles defining surface improvement setbacks for lot B
   4. Draw surface improvements area lot A
   5. Draw surface improvements area lot B
   6. Sketch Four rectangles defining building setbacks for lot A
   7. Sketch four rectangles defining building setbacks for lot B
   8. Draw building area lot A
   9. Draw building area lot B

3. **Complete Task 3**
   1. Sketch a line from each point where the section line crosses a contour line to the bottom of the grid
   2. Zoom on grid
   3. Draw grade line from line from left to right using list of elevations crossed by contour line.

---

**TASK 1. Drafting the surface improvement restrictions onto the lot plan**

**TASK 2. Drafting the building area restrictions onto the lot plan.**

**TASK 3. Drafting the existing grade profile at the section line onto the grid.**

**TASK 4. Drafting the maximum building envelope at the section line onto the grid.**
Complete Task 4
1. Zoom out
2. Erase lines sketched for Task 3.
3. Sketch a line from each point where the section line crosses the edge of a building area to the bottom of the grid.
4. Sketch lines for each of the building height restrictions.
5. Draw Building Envelope for lot A
6. Draw Building Envelope for lot B
7. Check Work.

Wearing Black – Must be an Architect.

If I knew how to do all that, I wouldn't need this book!

This is just schematics, I will add the details later.
Scored Elements

There are seven scored elements drawn using four different tools. Two elements are dependent upon previously drawn elements.

1. **Secondary Construction Areas Drawn on Site Plan**
   
   Tool: Secondary Construction Area Tool.

   - Secondary Construction Area Lot A
   - Secondary Construction Area Lot B

2. **Buildable Areas Drawn on Site Plan**
   
   Tool: Buildable Area Tool.

   - Buildable Area Lot A
   - Buildable Area Lot B

3. **Grade Line Drawn on Grid**
   
   Tool: Grade Tool

   - Existing Grade

4. **Building Profile Drawn on Grid**
   
   Tool: Building Profile Tool

   - Building Profile Lot A
   - Building Profile Lot B

---

Miss one of these...
And you will
Almost Certainly
FAIL!!

AND
THAT WILL
SUCK.
One more thing:

IF YOU DRAW THE BUILDABLE AREA INCORRECTLY, YOU ARE LIKELY TO DRAW THE BUILDING PROFILE INCORRECTLY!

Work Product Dependencies

1. Correctly Drawing Building Profile Lot A depends upon correctly drawing Buildable Area Lot A.
2. Correctly Drawing Building Profile Lot B depends upon correctly drawing Buildable Area Lot B.
AREFAQ Guide:

Part II Taking Notes

Site Zoning Vignette.
Take notes on graphic screen

1. Draw Compass Rose:
2. Draw Site Diagram with street labels: Just to make sure you read them!
3. Create a list of elevations for each contour crossed by SECTION LINE. Order the list of contours from left to right.
4. Indicate Benchmark in this list.
5. Review your notes carefully.

Did you know it’s easy to reverse east and west? Say “North South West East” to avoid it.

Elevations at Section Line

1. 105 BM
2. 110
3. 115
4. 120
5. 125
6. 120
7. 125
8. 130
9. 135
10. 140
11. 145

They’re Right!

You will have to check it yourself
JOE D's Test Tip:

The ARE isn't the internet. Learn how to use the INDEX button to navigate the text screens.

You can ignore it during testing because you're reading this guide!

Initial text screen: Practice Using it!

Tips Screen: Read it when you practice! Then you can ignore it when you test.
**Take notes on The Directions Screen:**

1. Count the items of information.
2. Make a list that reflects each item.
3. If an item isn't really important, don't waste time writing it out, but count it and acknowledge it so that you can check your work.
4. Check your work.

---

**BREAK IT DOWN INTO SIMPLE STEPS**

**DIRECTIONS**

1. **Two Lots**
2. **Surface Improvements**
3. **Build Area**
4. **Grade Line**
5. **Build Envelop**
6. ---
7. ---

---

**YOUR NOTES MIGHT LOOK LIKE THIS**

---

**JOE D's Test Tip:**

Use your finger to count the items on the screen. Leave fingerprints on the monitor.

For $200, they can buy some Windex.
Take notes on The Program Screen

1. Count the items so you can acknowledge each piece of information.
2. Create list of surface improvement area restrictions for Lot A
3. Create list of surface improvement area restrictions for Lot B
4. Create list of building area restrictions for Lot A
5. Create list of building area restrictions for Lot B
6. Create list of building height restrictions
7. Check notes carefully

REMEMBER THE FOUR TASKS?

Let’s write them down!

Program

Task 1
1. draw surf. improve Lot A

Task 2
2. draw surf. improve Lot B

Task 3
3. draw construct area Lot A

Task 4
4. draw construct area Lot B

5. draw grade at section line
6. max envelop at section line Lot A
7. max envelop at section line Lot B
8. no surf improvements within 5′ of property line
9. no buildable in setback
10. front yard from main
11. setback front 25′
12. setback rear 30′
13. sides 10′
14. no build or surface improve within 25′ of lake
15. no build in easement
16. max height from west 65′ = 45 above BM
17. max height from east line lot B = 20 above property line grade
18. max height 20′ above BM
19. max height 30 degrees from 20′ above BM
Program

1. draw surf. Improve Lot A
2. draw surf. Improve Lot B
3. draw construct area Lot A
4. draw construct area Lot B
5. draw grade at section line
6. max envelop at section line Lot A
7. max envelop at section line Lot B
8. no surf improvements within 5' of property line
9. no buildable in setback
10. front yard from main
11. setback front 25
12. setback rear 30
13. sides 10
14. no build or surface improve within 25' of lake
15. no build in easement
16. max height from west 65' - 45 above BM
17. max height from east line lot B = 20 above property line grade
18. max height 80 above BM
19. max height 30 degrees from 20 above BM

1. Add arrows → to indicate the direction of anything you can.
2. Perform your addition now.
3. Check everything several times
4. Break down any compound statement

14a. No buildable area within 25' of lake
14b. No surface improvements within 25' of lake

West 65 Max ht = 105+45 = 150

Lot B East 40' Max ht = 145+20 = 165

Max ht = 105+30 = 135

Max ht = 30 degrees from 105+20 = 125
A complete list of requirements:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>draw surface improvements Lot A</td>
</tr>
<tr>
<td>2</td>
<td>draw surf improvements Lot B</td>
</tr>
<tr>
<td>3</td>
<td>draw construction area lot A</td>
</tr>
<tr>
<td>4</td>
<td>draw construction area lot B</td>
</tr>
<tr>
<td>5</td>
<td>draw grade line at section</td>
</tr>
<tr>
<td>6</td>
<td>draw max envelope for lot A</td>
</tr>
<tr>
<td>7</td>
<td>draw max envelope for lot B</td>
</tr>
<tr>
<td>8</td>
<td>No surface improvements within 5' of property lines</td>
</tr>
<tr>
<td>9</td>
<td>no buildable area in lot A setbacks</td>
</tr>
<tr>
<td>10</td>
<td>Front setback lot A = 25'</td>
</tr>
<tr>
<td>11</td>
<td>Front setback lot B = 25'</td>
</tr>
<tr>
<td>12</td>
<td>Rear setback lot A = 30'</td>
</tr>
<tr>
<td>13</td>
<td>Rear setback lot B = 30'</td>
</tr>
<tr>
<td>14</td>
<td>Left setback lot A = 10'</td>
</tr>
<tr>
<td>15</td>
<td>Left setback lot B = 10'</td>
</tr>
<tr>
<td>16</td>
<td>Right setback lot A = 10'</td>
</tr>
<tr>
<td>17</td>
<td>Right setback lot B = 10'</td>
</tr>
<tr>
<td>18</td>
<td>Lot A no surface improvements within 25' of lake</td>
</tr>
<tr>
<td>19</td>
<td>Lot A no buildable area within 25' of lake</td>
</tr>
<tr>
<td>20</td>
<td>Lot A no buildable area in easement</td>
</tr>
<tr>
<td>21</td>
<td>Lot B no buildable area in easement</td>
</tr>
<tr>
<td>22</td>
<td>Maximum height: From west for 65' max elevation is 150'</td>
</tr>
<tr>
<td>23</td>
<td>Maximum height: From east for 40' Lot B maximum elevation 165'</td>
</tr>
<tr>
<td>24</td>
<td>Maximum height for everything 185'</td>
</tr>
<tr>
<td>25</td>
<td>Maximum height: From west max height defined by 30 degree line starting at elevation 125</td>
</tr>
</tbody>
</table>

Do your notes cover all of the requirements?

What's a four letter word starting with "F" that means, "I took the test but my notes didn't cover all the requirements?"
**Dumb Answers:**

*Why do I have take notes when I can just flip back and forth between the screens?* You don’t have to. I won’t even try to force you to. In fact if you really like flipping back and forth between screens, you might even get the chance to flip back and forth again in six months. Lol.

*But it seems like a lot of work, doesn’t it waste time?* Remember Speedy? If he goes full throttle into a corner he winds up off the track and his car gets towed to the garage not the winner’s circle.

*But how do notes help?* There are lots of ways to screw up.

1. You can be unaware of a requirement. Counting the requirements, assigning a number to it, and acknowledging it, reduces the odds.
2. You can be aware of a requirement, but fail to execute it such as forgetting to draw the grade line. Having notes which say "draw grade line" will help you catch it when you check your work.
3. You can misunderstand a requirement, for example reading "construction of buildings is prohibited in the easement" and assume it means surface improvements are prohibited. Taking notes forces you to read carefully and reduces the chance that you will misunderstand a requirement. And if you misunderstand it while taking notes, then you will misunderstand it while flipping screens. (the way to avoid that misunderstanding is this guide).

---

**Figure 1** speedy didn’t apply the brakes (car is like ARE software).

**I still don’t see the point.** Read the haiku in blue.

The program and directions contain the answer.

When your notes contain the program and directions, they contain the answer.

When your drawing reflects your notes, it contains the answer.

Yes it’s not really haiku, but is in blue.

**What’s a four letter word starting with “F” that means, “I took the test but my notes didn’t cover all the requirements?”** Fail.
Part III Drawing The Vignette

Site Zoning Vignette.
Complete Task 1

1. Sketch many circles to define setback from site features
2. Sketch four rectangles defining surface improvement setbacks for lot A
3. Sketch four rectangles defining surface improvement setbacks for lot B
4. Draw surface improvements area lot A
5. Draw surface improvements area lot B

TASK 1. Drafting the surface improvement restrictions onto the lot plan

TASK 2. Drafting the building area restrictions onto the lot plan.

TASK 3. Drafting the existing grade profile at the section line onto the grid.

TASK 4. Drafting the maximum building envelope at the section line onto the grid.
This is the initial view of the graphics screen.

Remember, the grid at the bottom represents conditions at the section line.

Turn on the full screen cursor.
Figure 4: Use Layers control

Layers control allows you to hide information which you are not currently using.

Figure 5: Turn off Contours Layer

Tasks one and two do not rely on contour information, so turn the Contours Layer off.
The Lake High Water Line creates a **special setback condition** in the vignette. All vignettes are probably constructed to include a special setback condition to test the candidate’s ability to handle site specific requirements beyond general yard setbacks.

You should expect to have a **special setback condition** in your test vignette.

If you did not find a **special setback condition** in the vignette program, it may mean that you have missed a requirement in the program.

Joe D’s Test Tip
A good zoom will show the entire **special setback condition** and the entire area to which it applies.

**REMEMBER SKETCHED ELEMENTS ARE IGNORED FOR SCORING!**

**YOU DON’T HAVE TO TURN THEM OFF.**
Place the cursor on the **special setback condition** before you start to sketch the circle.

Drag until the radius meets the required special setback distance.

**The test software provides interactive feedback to make sure you get it right.**
Figure 12: Continue Drawing 25'-0" Circles Centered on Lake High Water Line to Define Setback

The test software will keep the radius set for the circle. All you need to do is click on the special setback condition to continue adding circles.

Do not worry if you cannot click each circle perfectly on special setback condition. Your vignette solution does not require anal retentive perfection.

Remember the software was designed to replace manual drafting.

Figure 13: View Zoomed Out

The special setback condition is the most complex part of tasks one and two.
To continue Task One, Layout the rest of Secondary Construction Area limits.

Start with Lot A.
Figure 16: Sketch Rectangle 5'-0" x 5'-0" at Corner to Define Secondary Construction Area

Start the rectangle at the intersection of the property lines.

Use the interactive feedback to draw the rectangle to the required size (5' from each property line).

FOR THIS VIGNETTE:
DO NOT ADD A FUDGE FACTOR TO ANY DIMENSIONAL REQUIREMENT.
NEVER EVER!!!
Continue sketching rectangles to define the secondary construction area of Lot B.

**Figure 18:** Pan Using Scroll Bars to Lot B and Sketch 5'-0" x 5'-0" Rectangles in All Four Corners

**Figure 19:** Pick the Draw Tool and Choose Secondary Construction Area

To finish up Task One, draw the secondary construction areas.

For Lot B, simply draw from the inside corner of each sketch rectangle in sequence.
Great Question: Why can the secondary construction area overlap the drainage easement?

Stupid Answer: Because the program does not explicitly prohibit it...even if it might not be a good idea to place paving within the easement out in the real world.

Great Question: Then do I have to overlap the drainage easement with the secondary construction area?

Stupid Answer: Yes.

The Lot A secondary construction area will follow the corners of the three rectangles and be tangent to the collection of circles required by the special setback condition.

Along the special setback condition the secondary construction area does not need to be perfect...in fact it can't be, the vignette snap points won't allow it.

But more importantly the scoring does not require it to be AutoCAD perfect.
Figure 22: Here is a Reasonable Result For Lot A

Here's the Result.

It is acceptably close along the Lake High Water Line.

It overlaps the Drainage Easement.

Figure 23: The "Move, Adjust" Tool Will Show you the Control Handles for the Secondary Construction Area Object

You don't need to use "Move, Adjust" at this point in the actual vignette.

I just used it to give you some idea about how many control points is sufficient.
End of Task 1
Complete Task 2

1. Sketch Four rectangles defining building setbacks for lot A
2. Sketch four rectangles defining building setbacks for lot B
3. Draw building area lot A
4. Draw building area lot B

<table>
<thead>
<tr>
<th>TASK 1. Drafting the surface improvement restrictions onto the lot plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASK 2. Drafting the building area restrictions onto the lot plan.</td>
</tr>
<tr>
<td>TASK 3. Drafting the existing grade profile at the section line onto the grid.</td>
</tr>
<tr>
<td>TASK 4. Drafting the maximum building envelope at the section line onto the grid.</td>
</tr>
</tbody>
</table>
Figure 24: Select Rectangel from the Sketch Menu

Use rectangles to establish the setbacks for the Buildable Area.

Figure 25: Side Yard Rectangle is 10'-0" Wide and Extends to Lake High Water Line Setback

Start the rectangle in the corner of Lot A.

Extend the rectangle up into the special setback condition.

Use the interactive feedback to get the correct width.
Figure 26: Sketch Front Yard Setback. Rectangle is 25'-0" in Height and Extends Lot Width

Figure 27: Rectangle for Rear Yard is 30'-0" in Height and Extends Lot Width
Figure 28: Use Sketch Tool Measure Option to Measure Width of Utility Easement

Figure 29: Utility Easement is 15'-0" wide...Because the Easement is wider than The Side Yard Setback, it Will Control the Buildable Area
Along the **special setback condition** the alignment does not have to be perfect.

Don't waste time trying to make it AutoCAD.

It's not.
Figure 32: Use Scroll Bar to Pan to Lot B. Select Rectangle from the Sketch Menu

Figure 33: Draw Rectangle for 10'-0" Wide Side Yard
Figure 34: Use Move, Adjust Tool to Stretch Rectangle for Lot A Rear Setback Across Lot B

You could also just sketch an additional rectangle.

However developing skill with the “Move, Adjust” tool will help in the long run...particularly over the course of all eleven ARE vignettes.

Figure 35: Use Move, Adjust Tool to Stretch Rectangle for Lot A Front Setback Across Lot B
Figure 36: Select Buildable Area From the Draw Tool

Figure 37: Draw Buildable Area for Lot B

If both lots look this simple, check your notes, you may have missed something.
End of Task 2
**Task 3**
1. Sketch a line from each point where the section line crosses a contour line to the bottom of the grid.
2. Zoom on grid.
3. Draw grade line from line from left to right using list of elevations crossed by contour line.

---

**TASK 1.** Drafting the surface improvement restrictions onto the lot plan.

**TASK 2.** Drafting the building area restrictions onto the lot plan.

**TASK 3.** Drafting the existing grade profile at the section line onto the grid.

**TASK 4.** Drafting the maximum building envelope at the section line onto the grid.
Figure 38: Use Layers Tool to Turn off Buildable Area and Secondary Construction Area. Turn Contours On.

Task Three does not require any information from the Buildable Area, and we are completely done with Secondary Construction Area, so we can turn both off for now.

Figure 39: Zoom to Show Section Line and Section Grid

Get a good view which includes the Section Grid and the section line.
Figure 40: Select Line from the Sketch Menu

Sketch lines to help locate the elevation control points on the grid.

Figure 41: Sketch a Line from the Point where the 110' Contour Crosses the Section Line

Start here at intersection

Ortho On
Figure 42: Sketch a Line from the Point where the 115' Contour Crosses the Section Line

Second line from this intersection

Third line from this intersection

Figure 43: Sketch a Line from the Point where the 120' Contour Crosses the Section Line
Figure 44: Sketch a Line from the Point where the 125' Contour Touches the Section Line

Sketch line from point of tangency.

Figure 45: Sketch a Line from the Point where the 120' Contour Touches the Section Line

Sketch line from point of tangency.
Sketch more lines from intersections

Figure 46: Continue Sketching Lines Where the Contours Touch the Section Line

Figure 47: Select the Draw Tool and Choose Grade
Figure 48: Use your Figure 49: Draw the Grade Line

Elevations at Section Line

1. 105 BM
2. 110
3. 115
4. 120
5. 125
6. 120
7. 125
8. 130
9. 135
10. 140
11. 145

There are the notes you took earlier.
You checked and re-checked them before you started drawing.
Use them to set the elevation of each point along the contour line.
This lets you draw without having to pan or read the contours.
If your notes are not good enough to trust, Practice taking notes...don't practice flipping back and forth.

When you Practice Reduce the vignette to a series of simple mechanical steps...like counting.
These are easy to perform under pressure and serve as built in checks of your work!
When you create a numbered list, you can count the items on the screen against it.

Joe D's Test Tip:
End Task 3
**Task 4**

1. Zoom out
2. Erase lines sketched for previous tasks.
3. Sketch a line from each point where the section line crosses the edge of a building area to the bottom of the grid.
4. Sketch lines for each of the building height restrictions.
5. Draw Building Envelope for Lot A
6. Draw Building Envelope for Lot B
7. Check Work.

---

**TASK 1. Drafting the surface improvement restrictions onto the lot plan**

**TASK 2. Drafting the building area restrictions onto the lot plan.**

**TASK 3. Drafting the existing grade profile at the section line onto the grid.**

**TASK 4. Drafting the maximum building envelope at the section line onto the grid.**
Task 4 is the most complex part of the vignette. Getting it correct depends on:

1. Depicting conditions at the cut line.
2. Correctly drawing the buildable area.
3. Correctly interpreting the height limits.

Use your notes for the height limits...you have already checked them and rechecked them.

- West 65 Max ht = $105 + 45 = 150$
- Lot B East 40' Max ht = $145 + 20 = 165$
- Max ht = $105 + 80 = 185$
- Max ht = 30 degrees from $105 + 20 = 125$

Figure 50: Zoom in on the Section Grid

YOUR NOTES!
Figure 51: Choose Sketch Tool and Select Line

Figure 52: Sketch the Max Elevation Line at 185'

Your Note!

Max ht = 105+80 = 185

Restriction is full width

Full width @ 185'

At this elevation

The 185' height limitation extends from side to side across both lots.

It is the most general condition so that's where to start.
Figure 5.3: Sketch the Level Height Restriction from the Benchmark

Sketch a line starting from left and go 65' at elevation 150'

From left for 65' @ 150'  
From left for 65' @ 150'

Check length and angle

Start at this end
65 Max ht = 105 + 45 = 150

Go this direction

At this elevation

Go this far

YOUR NOTE!
Figure 54: Sketch the Height Restriction from the Grade at East Property Line

From right for 40' @ 165'

Sketch a line starting from right and go 40' at elevation 165'

Lot B East 40' Max ht = 145+20 = 165
Sketch a line starting from left and at elevation 125' and going upward at an angle of 30 degrees.

Don't worry if you are a fraction of a degree off.

It's ok...even if it's frustrating.

Remember, the software isn't AutoCAD and was designed to replace manual drafting.

Start at this end

Max ht = 30 degrees from 105+20 = 125

Your note!

Go this direction
At this angle
At this elevation
Figure 56: Zoom Out and Use Layer Tool to Turn off Contours Layer and to Turn on Buildable Area Layer

Figure 57: Use Erase Tool to Remove Sketch Circles where Section Line Intersects Buildable Area and to Erase Lines Where Section Line Intersects Contours

**Cleanup? But I'm Losing Work!**

Cleaning up the sketch lines makes it easier to draw the Building Profiles...and the Building Profiles are CRITICAL.

You can use the crosshairs of the full screen cursor and your list of elevations to check the Grade Line later.

The Buildable Area and Secondary Construction Area are as close to the Lake High Water Line as they need to be...erasing the circles might even keep you from obsessing on it.

Besides, you can always resketch the elements for fun.
The Building Profiles Depict the horizontal and vertical extents \textit{@ the Section Line}

The source of most mysterious failures of this vignette is failing to draw the Lot A profile at the Section Line.
Figure 60: Sketch a Rectangle Defining the Buildable Area of Lot A at the Section Line

START THE BUILDING PROFILE
AT THE SECTION LINE

Figure 61: Sketch a Rectangle Defining the Buildable Area of Lot B at the Section Line
To stretch a rectangle using the "Move, Adjust" Tool, you must click on an edge.

Then drag and click again.

Using the "Move, Adjust" Tool to stretch rather than moves allows the width (X) to Remain constant.
Figure 64: Zoom in on The Section Grid

Figure 65: Use the Draw Tool to Draw the Building Profile for Lot A
Figure 66: Building Profile For Lot A

You do not have to trace the Grade Line with the Building Profile Line.

NCARB knows that the building will sit on the ground.

Figure 67: Use the Draw Tool to Draw the Building Profile for Lot B
Figure 68: Building Profile for Lot B

Figure 69: You can Use the Layer Tool to Turn on the Secondary Construction Layer - but if You Don’t It Will Not Change the Scoring

Turning on the other layers will help you check your work..
End Task 4

Figure 70: Completed Solution

Check your work.
Check your work.
Check your work.
Part IV: Exercise

Site Zoning Vignette.
Directions:
This exercise was designed primarily to allow you an opportunity to practice taking notes.
On the next page you will see a property that will be divided into two lots.
On a separate sheet of paper …graph paper might be a good choice… draw a plan showing:
1. The areas in which surface improvements are allowed
2. The buildable areas.

Also draw a section showing:
3. The existing grade line.
4. The building profiles.
Pick whichever section line you wish to represent.

One square = 10'

Draw the solution based on your notes.

Program:
An exercise was set up to allow you to practice taking notes.
Your notes should reflect the following restrictions.
Surface improvements are prohibited within 10’ of the property line.

Construction of buildings is prohibited within the following setbacks (all setbacks are measured from the property lines).

Front: 30'
Side: 20'
Rear: 40'

Front yard setbacks shall be from Bottom Street.
Construction of Buildings is prohibited within 30' of the special setback condition and within the easement.
Construction of Surface improvements is prohibited within 20' of the special setback condition.
The maximum height limit between 0 and 60 feet of the west property line of Lot A shall be 40 feet above the grade at the property line.
The maximum building height limit within 50 feet of the east property line of Lot B shall be 60 feet above the benchmark.
The maximum building height shall be 90 feet above the benchmark.
The maximum building envelope is restricted to an elevation defined by a 45 degree line rising toward the easement from a point at an elevation 30 feet above the benchmark.

Tips:
This is an exercise in taking notes and learning to rely on those notes. It is designed to be harder than the actual test, and to make less sense from a real world perspective. Remember the test vignettes are abstract exercises not real paying jobs. Just do what it asks.
**Dumb Answers:**

*Where are the solutions to the vignette?* In the program.

*What kind of answer is that?* The most important skill you can have for the ARE graphic vignettes is the ability to check your own work and find the mistakes. I won’t be there in the test center with you to check your work, so you might want to practice doing it for yourself.

*But how can anyone know if they made an error in interpretation?* You have all the time in the world to make certain that you have interpreted the practice vignette requirements correctly.

*OK, it may be BS, but how do I best use the exercise?*

Preparing for the test involves study and practice.

The first goal of your preparation should be developing a deeper understanding of the vignette. The Part I of this study guide is all about that.

The second part of your preparation should be developing a framework for solving the problem. That’s Part II of the Study Guide.

The third part of your preparation should be developing a method for solving the problem. That’s Part III.

The fourth part is applying and improving your method and that’s Part IV.

Practice the mechanical process of taking notes on the vignette. You should get to the point where you can produce comprehensive notes on the graphic element and the text elements in less than fifteen minutes. Seven to ten minutes to produce accurate and complete notes is certainly doable and is probably a good target.
Figure 71: The

Figure 72: End

Sample Failing Solutions

KEEP PRACTICING!

Draw stupid shit with the "move, adjust" tool.

It is worth a little time getting used to the fact it's not AutoCAD.

Being comfortable with it will pay off over the course of all eleven vignettes.

Joe D's Test Tip: