**Site Planning Study Guide:**
(225 Minutes/3.75 hours)

**General Comments:**
1. Creativity and beauty are not scored on this exam.
2. Time is a critical factor – don’t strive for perfection.
3. Reasons for failure:
   - Miss program elements or don’t follow instructions
   - Fail to solve problem
   - Don’t finish
   - Don’t try to improve program

**Section 1:**

**Site Design Vignette – (90 Minutes/1 Hour 30 minutes): (Only Problem)**

1. Review Program and take notes – 10 minutes
2. Turn on grid
3. Draw restrictions/setbacks
4. Loosely place buildings and scale blocks of elements
5. Calculate parking 1, 2 or 3 rows
   - Block it out
   - Assume all regular size
6. Sketch in roads
7. Design
8. Draw
9. Check – 15 minutes
   - Ensure program items are not missed!
   - Trees:
     - Shade = Use deciduous trees
     - Wind = Use conifers
   - Keep trucks away from residential
   - Parking:
     - 5/8/8/9’
     - Flow through = allows cars to continuous move past all spaces without leaving the site or backing up.
     - Consider backup safety
     - Passenger side drop offs.

**Calculating Parking:**

\[
\text{Rough Width of Rows} = \frac{\text{Total width of all stalls / # of rows (you decide – 2, 3, or 4 typical)}}{\text{You decide – 2, 3, or 4 typical}}
\]

\[
\text{Rough Width of Rows} = \frac{((\#HC \text{ stalls x stall width})+ (\# \text{ of regular stalls x stall width}))}{\# \text{ of rows}}
\]

\[
\text{eg) } = \frac{(3 \times 12') + (30 \times 9')} {4} = 306/4 = 76.5'
\]

Therefore, 76.5/9’ = approx 8 stalls per row. Add 29’ x 2 to each end to get approximate rectangle size (so 77’ + 29 + 29 = 135’ (actually works out to 132’ but 135 will give you a sense if
it fits ).
**Drive Through Parking Configurations:** (24' drive lanes, 9' x 18' reg stalls, 12' x 18' HC stalls)

<table>
<thead>
<tr>
<th>Rough Rectangle:</th>
<th>Stall Yield:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 157x107’ – 3 row</td>
<td>● 3 row = 33-36</td>
</tr>
<tr>
<td>● 157x125’ – 4 row</td>
<td>● 4 row = 48-49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rough Rectangle:</th>
<th>Stall Yield:</th>
</tr>
</thead>
<tbody>
<tr>
<td>198’ wide by (162’ + 36’ for 2 end rows)</td>
<td>● 3 row = 47-50</td>
</tr>
<tr>
<td>198x107’ – 3 row</td>
<td>● 4 row = 62-63</td>
</tr>
<tr>
<td>198x125’ – 4 row</td>
<td></td>
</tr>
<tr>
<td>Rough Rectangle:</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>● 132x107’ – 3 row</td>
<td></td>
</tr>
<tr>
<td>● 132x125’ – 4 row</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stall Yield:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 3 row = 24-27</td>
</tr>
<tr>
<td>● 4 row = 33-36</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Rough Rectangle:</th>
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</thead>
<tbody>
<tr>
<td>● 168x107’ – 3 row</td>
</tr>
<tr>
<td>● 168x125’ – 4 row</td>
</tr>
</tbody>
</table>

168’ wide by 
(132’ + 36’ for 2 end rows)

<table>
<thead>
<tr>
<th>Stall Yield:</th>
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</thead>
<tbody>
<tr>
<td>● 3 row = 38-41</td>
</tr>
<tr>
<td>● 4 row = 47-50</td>
</tr>
</tbody>
</table>

Not as efficient as longer rows (2nd diagram)
Parking Widths (18’ rows with 24’ drives)

15 MINUTE MANDATORY BREAK
Section 2:

Site Zoning – (60 Minutes/1 Hours): (1st Problem)
1. Turn on Grid
2. Separate and copy plan and section information
3. Plan: - ?? minutes
   ● Zoom in and mark our site improvement areas with sketch lines
   ● Use circles along curvy areas
   ● Draw secondary construction area
   ● Sketch out setbacks or other restrictions
   ● Sketch out buildable area
1. Sections:
   ● Zoom in and track down sketch lines for contours
   ● Draw Grade Line!!!!
   ● Erase sketch lines
   ● Zoom in and track set backs down
   ● Sketch height restrictions
     ○ Trick don’t miss this (i.e. Any portion of bldg below 160’ elev shall maintain a 20’ setback from property line = notches bottom flors, but shows as buildable area in plan.
   ● Draw in buildable area.

Definitions:
Site Improvements = Areas where surface improvements are allowed

Building Construction = Area where buildings are allowed.

Easements = Site improvements typically allowed in easements unless noted otherwise.
Site Grading Vignette – (30 Minutes/1/2 Hour): (2\textsuperscript{nd} Problem)

1. Figure out which scenario applies (see below i.e flat/sloped pad).
2. Draw rough sketch lines for path of water.
3. Adjust contours accordingly.
4. Use circles to check slope but make sure interval is correct i.e.) \( \frac{1}{2}', 1', 2', 5' \)
   
   \[ \text{Eg, } 20\% = \frac{20}{100} \quad \text{Therefore } 1/5 \]

Scenarios:

1. Flat Pad:
   Bring next lowest elevation around and create swales on both sides – Regrade all around.
   - Use circles to check distances
   - Look at contour intervals 1, 2, or 5’ typ.
   - Don’t forget to check \( \frac{1}{2} \) slope between pad and 1\textsuperscript{st} contour line.

2. Sloped Pad:
   Create gulleys around.
   Double V at top above pad.
3. **Road:**
Usually crown in middles with gulleys at sides.
Even intervals to contours (spacing).

**Slope and Checking:**

1 foot contour intervals:
25% slope \( \frac{25}{100} = \frac{1}{x} \) Therefore \( x = 4 \)
- Therefore draw a circle with 4’ radius to check.
20% slope \( \frac{20}{100} = \frac{1}{x} \) Therefore \( x = 5 \)
- Therefore draw a circle with 5’ radius to check.

1/2 foot contour intervals:
20% slope \( \frac{20}{100} = \frac{0.5}{x} \) Therefore \( x = 2.5' \)
- Therefore draw a circle with 2’ 6” radius to check.

**Definitions:**
- **Swale** = Ditch
- **Berm/Crown** = Bump