Taper-Plus Training Seminar

Day 1

1. Review tutorial lessons #1-7.

    Tutorial 1   Installing Taper-Plus
                          Setting Options
                          Creating a Roof Shape
                          Adding Drains to a Roof

    Tutorial 2   Creating Arc Segments
                          Creating Angled Lines
                          Adding a Low Area Between Drains
                          Adding a Simple Cricket

    Tutorial 3   Creating a Four-Sided Cricket
                          Creating a To Wall Cricket
                          Creating a V-Shape Cricket
                          Adjusting Crickets
                          Creating an Expanded Sump
                          Producing an Estimate
                          Generating a Report

    Tutorial 4   Creating a Single-Slope Letter Scheme
                          Creating a Multislope Letter Scheme
                          Entering an Itemized Fill Material
                          Entering an Itemized Taper Material

    Tutorial 5   Using Help Lines
                          Entering Drains on an Angled Building
                          Adding Crickets to an Angled Building

    Tutorial 6   Dividing a Single Roof into Multiple Sections
                          Aligning Panels
                          Matching Panel Letters/Thicknesses

    Tutorial 7   Creating an Interior Roof Section
                          Adding Crickets to an Interior Roof Section

2. Perform "on your own" projects to practice the skills acquired.

Day 2

1. Using a Digitizer

2. Advanced Roof Splitting

3. Adding Dimensions and Notes

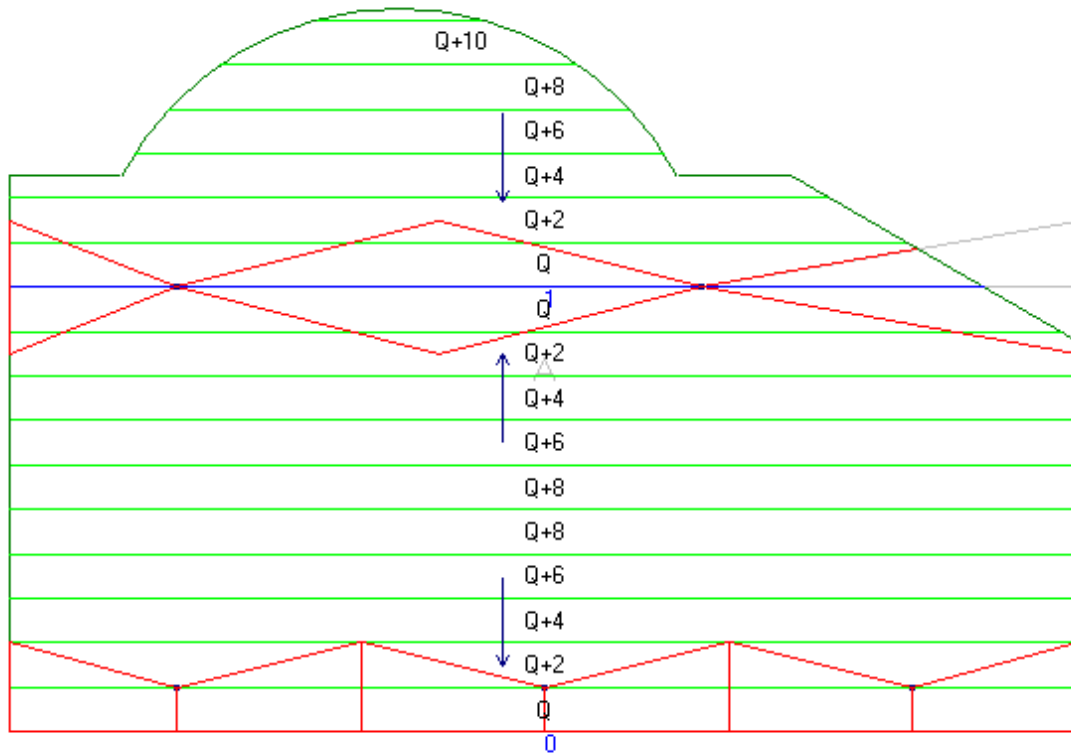4. Customizing Header Layout and Borders

Note that Project #13 thru Project #16 are good examples of splitting roofs in order to solve gridding problems, however these examples are fairly irrelevant when using Taper-Plus version 9.0 (and greater) due to the fact that gridding problems are unlikely to occur.
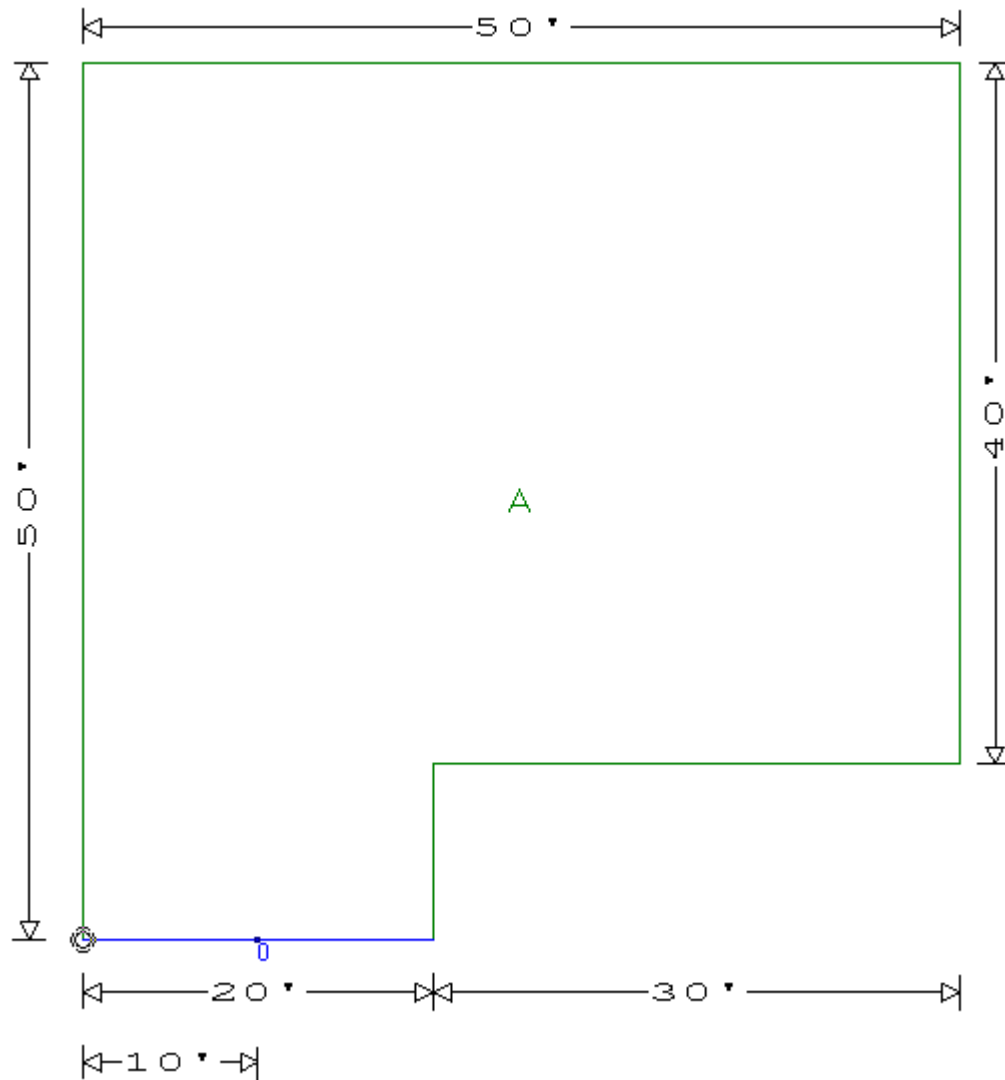
Project #1 - Kiel Center

1. Low bottom edge.
2. Low horizontal line wall-to-wall through the top 2 drains.
3. Add four-sided and to-wall crickets on the bottom edge.
4. Add wide and full crickets on top edge.

The Solution?

1. Add a low area between the drains.
2. Extend low area past roof wall (using **Manual Expand Low Area**) to remove the valley.
3. Extend the cricket past the wall (using **Point Adjust**) to preserve symmetry.
4. Add a low area on the bottom edge
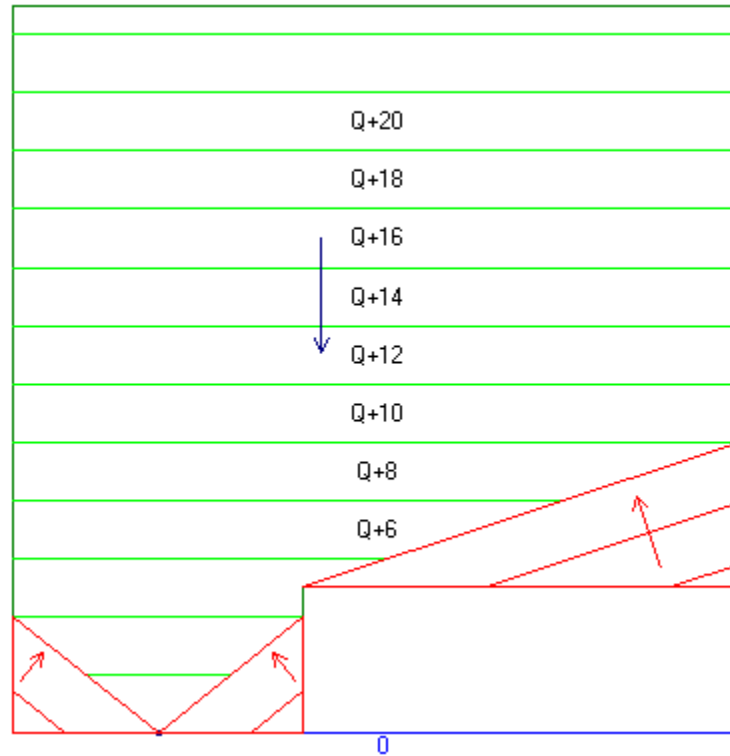5. Add a pair of to-wall crickets, and two four-sided crickets on the bottom edge.

> **Tip:** If you leave the sloped edge to the end (i.e. to close the roof section) you won't have to calculate the angle.
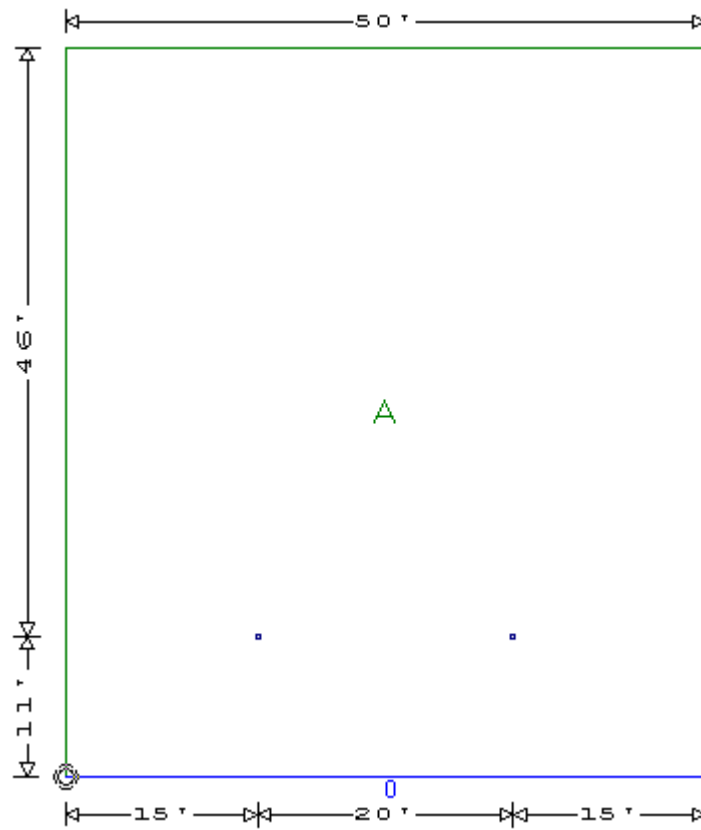
Project #2 - Whistler Community Center

1. Add a single drain on the bottom edge.
2. Add a low area to the bottom edge.
3. Add crickets as necessary.
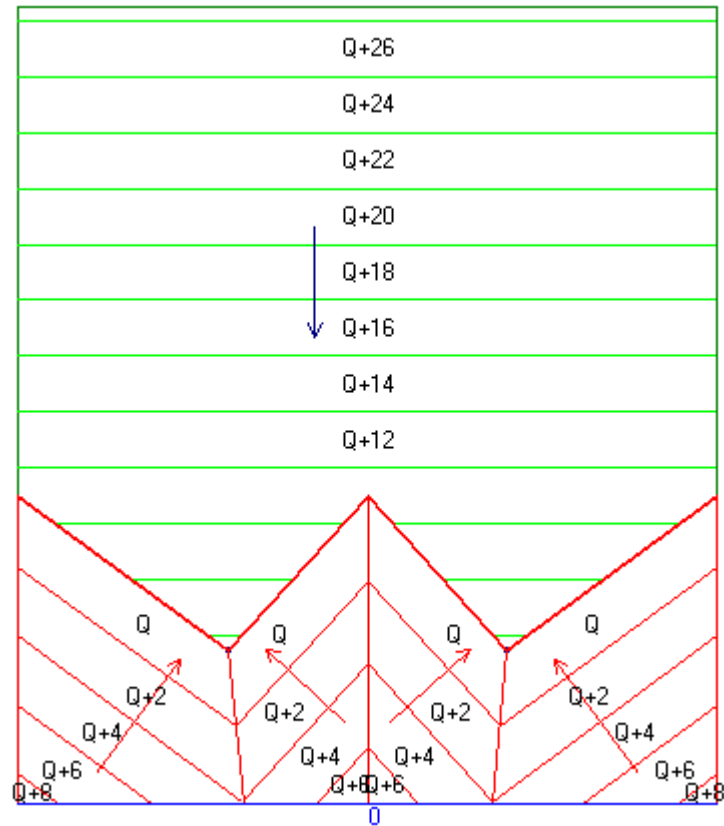
The Solution?

1. Extend the low area outside roof edge (using **Manual Expand Low Area**) so that the whole roof section will grid correctly.

2. Add a V-shape cricket and a quarter cricket to the bottom edges. Or use corner crickets.
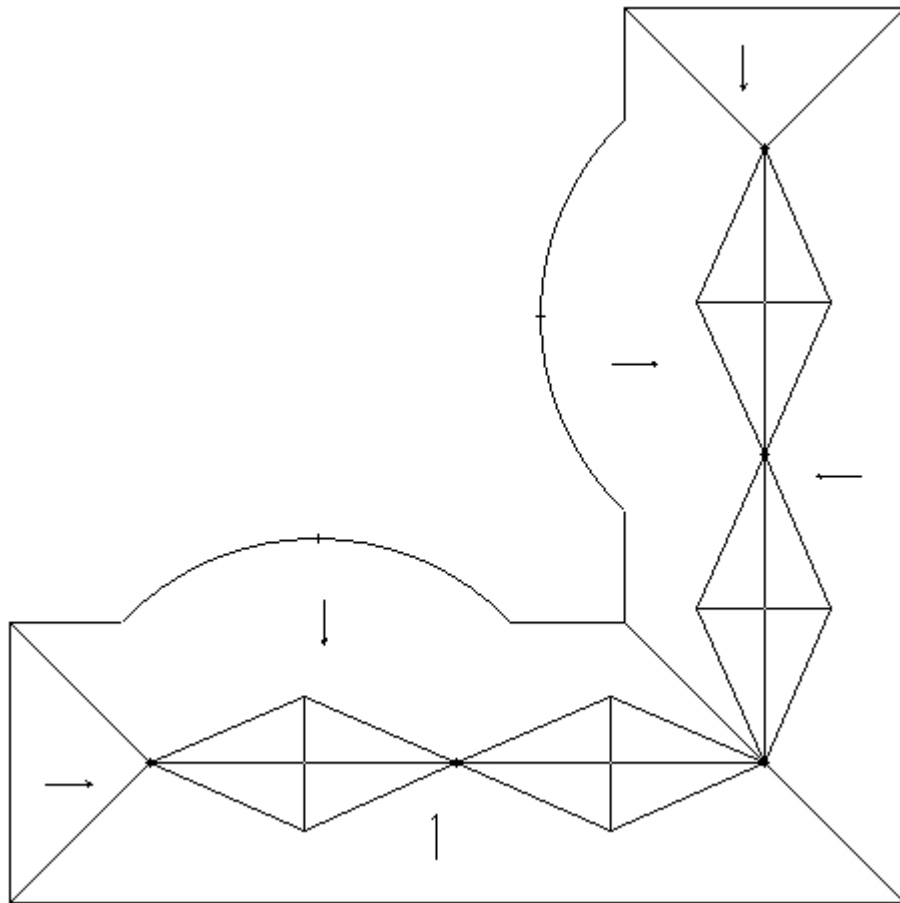
Project #3 – Solaris Library

1. Place a low area on the bottom edge.
2. Add two four-sided crickets and a to-wall cricket to divert the water toward the drain. Give the crickets a width of 22 feet.
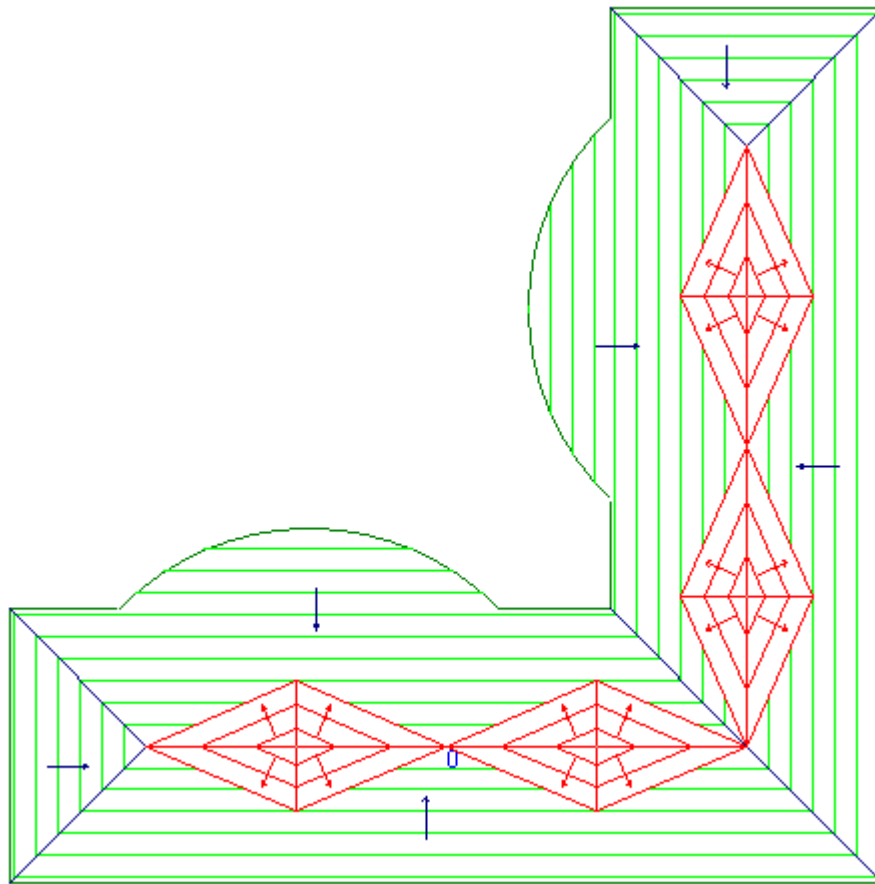
The Solution?

1. Add a V-Shape cricket, or add 2 four-sided crickets and a to-wall cricket.
2. Use the **valley/hip adjust** option to align the cricket panels.
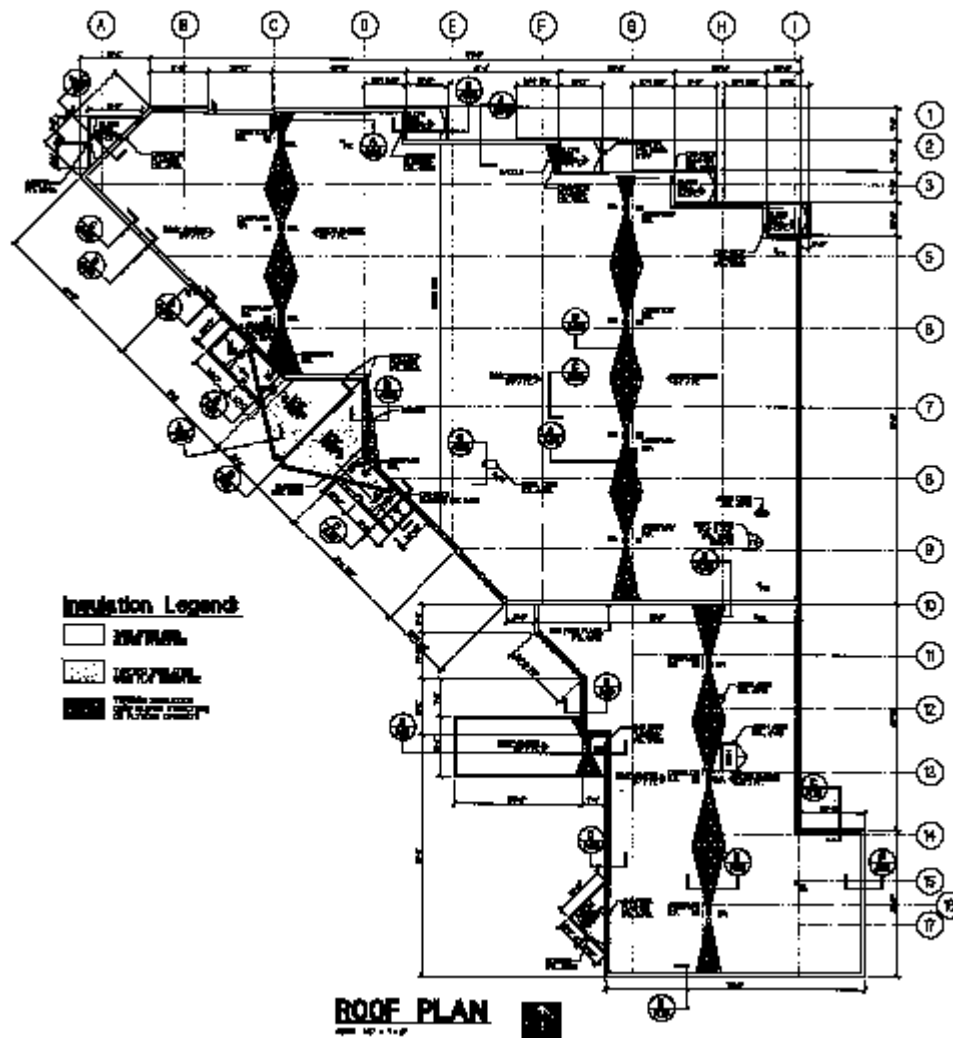
Project #4 – Carr Courthouse

Import a DXF image [carr.dxf] to help you create this roof.

The Solution?

1. **Import** a DXF image, then use the **Attach** tool to create the roof section.

   For the arcs, attach to the first point of the arc, then place the cursor over the second point, press **Shift + left mouse button** and select the end point of the arc. Finally, attach to the midpoint of the arc.

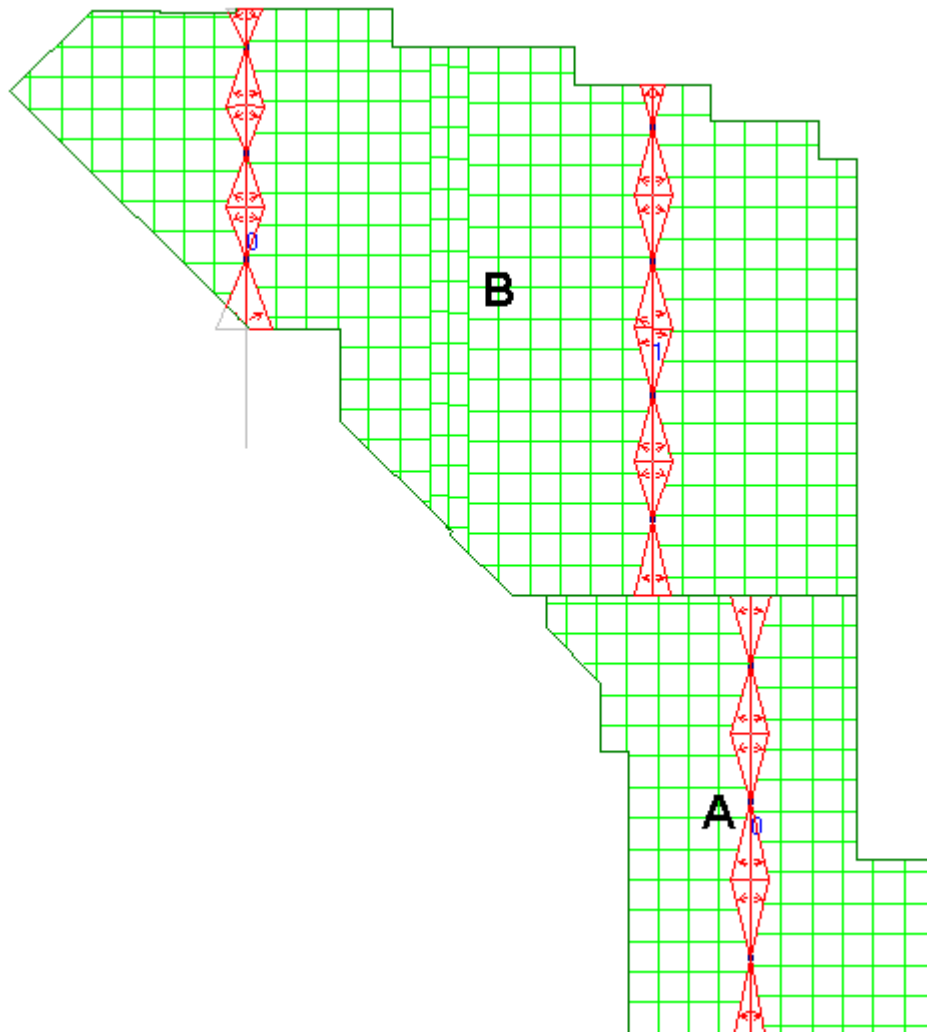2. Use the Attach tool to create the low area and the crickets.

   Advanced option – **Export** the finished roof as a DXF image.

ROOF PLAN

Project #5 – Cedar Falls Library

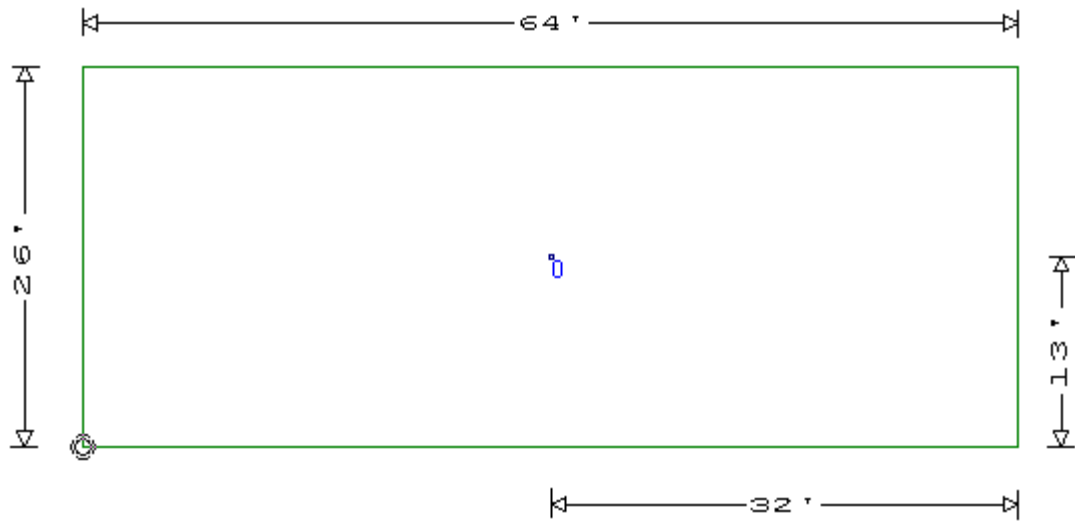Import a plan image [cedarfalls.pln] to help you create this roof.

The Solution?

1. **Import** a plan image, then trace around it to create 2 roof sections.

> **Tip #1:** Use the **Plan Image Window** to see the plan image in more detail. This will improve the accuracy in which you enter points.
>
> **Tip #2:** After you have created the roof, you may have to **Point Adjust** any points that were not entered accurately.
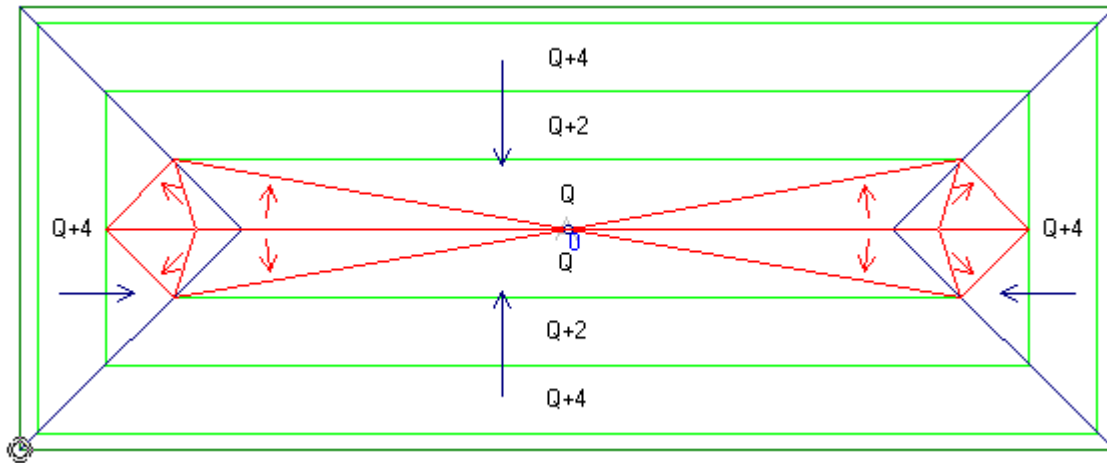
2. If you have time, add drains, low areas and crickets, as indicated on the e-plan.

Project #6 - Beacon Building

1. Create a constant elevation around the perimeter of the roof, using low areas only.
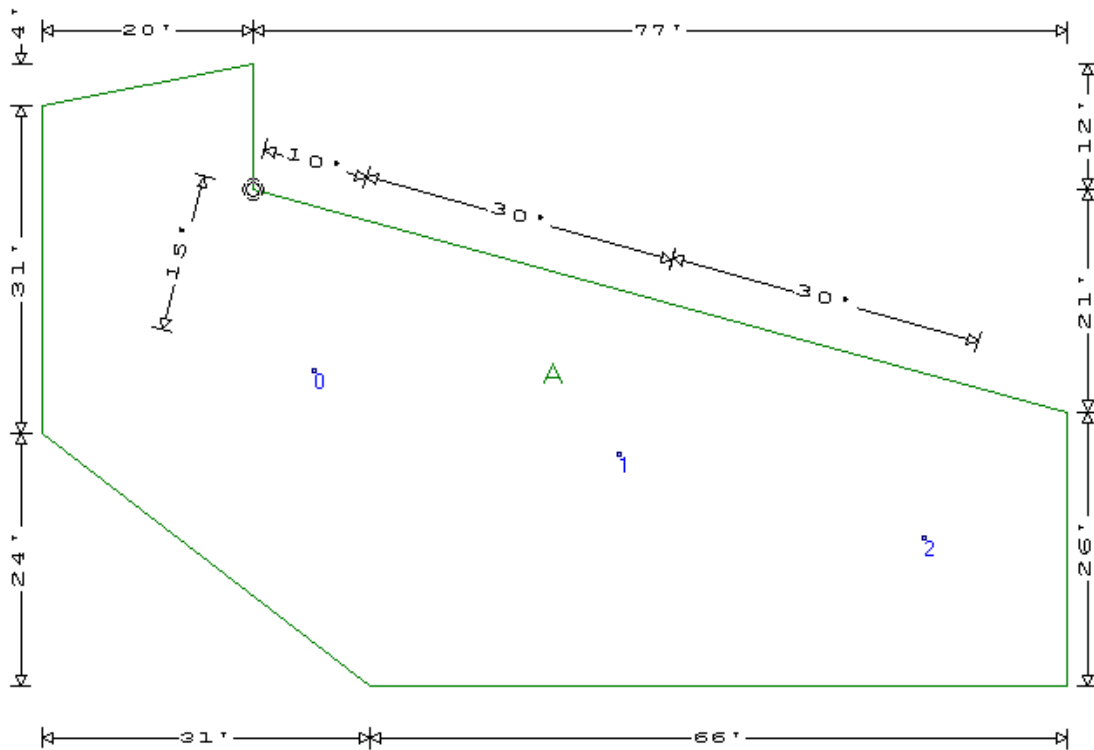2. Add crickets, if necessary.

The Solution?

1. Expand the low area 18 feet either side of the drain.
2. Add two full crickets to direct water toward the drain.

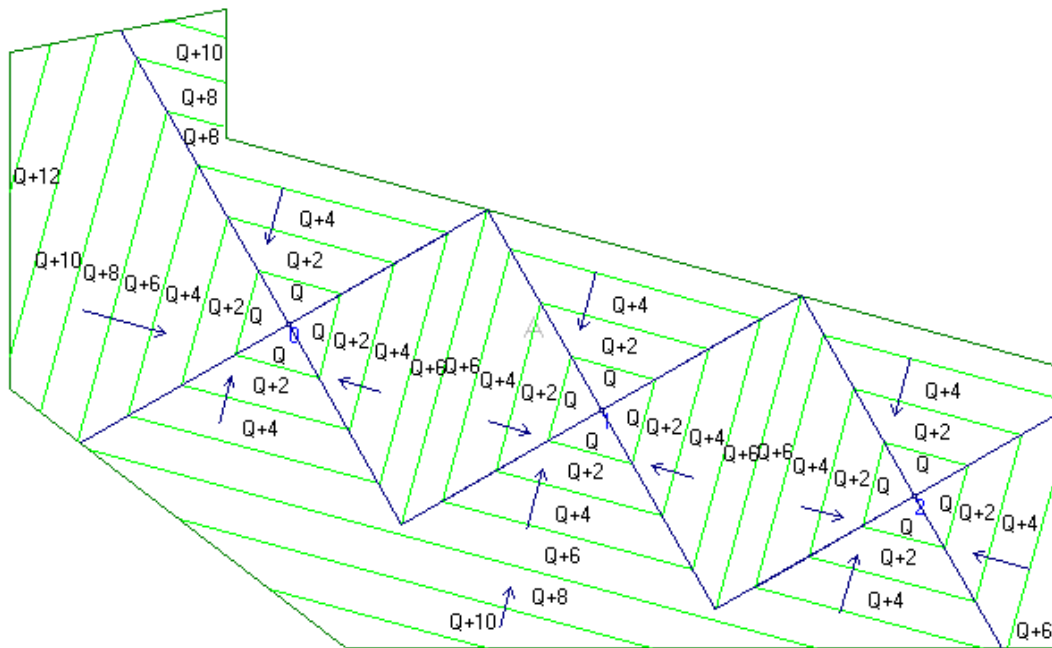Advanced option – Eliminate the partial panels at the perimeter.

3. Create a sump at the low area (using **manual expand low area**) so that only full-width panels are used.
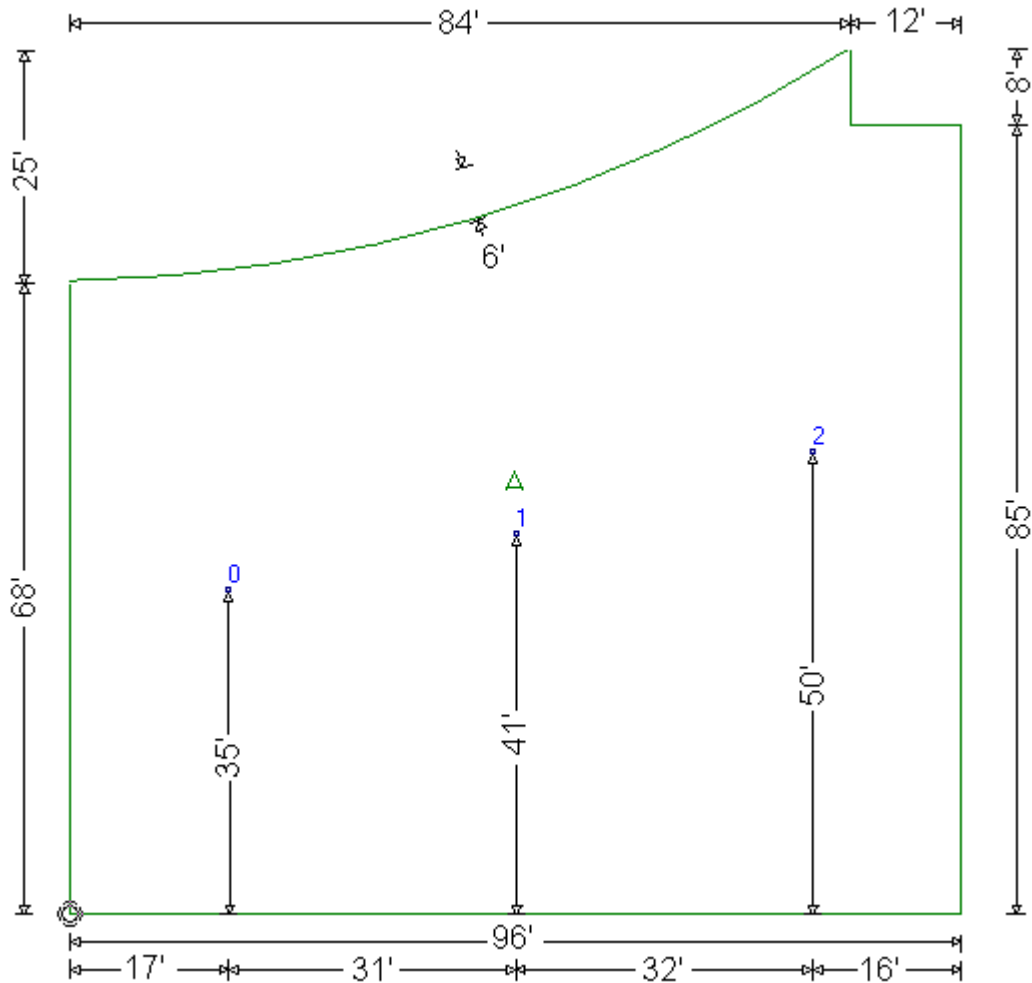
Project #7 – Cloverdale Plaza

1. Place a low area on each of the drains.
2. Orient the rows of taper material along the longest sloped edge.
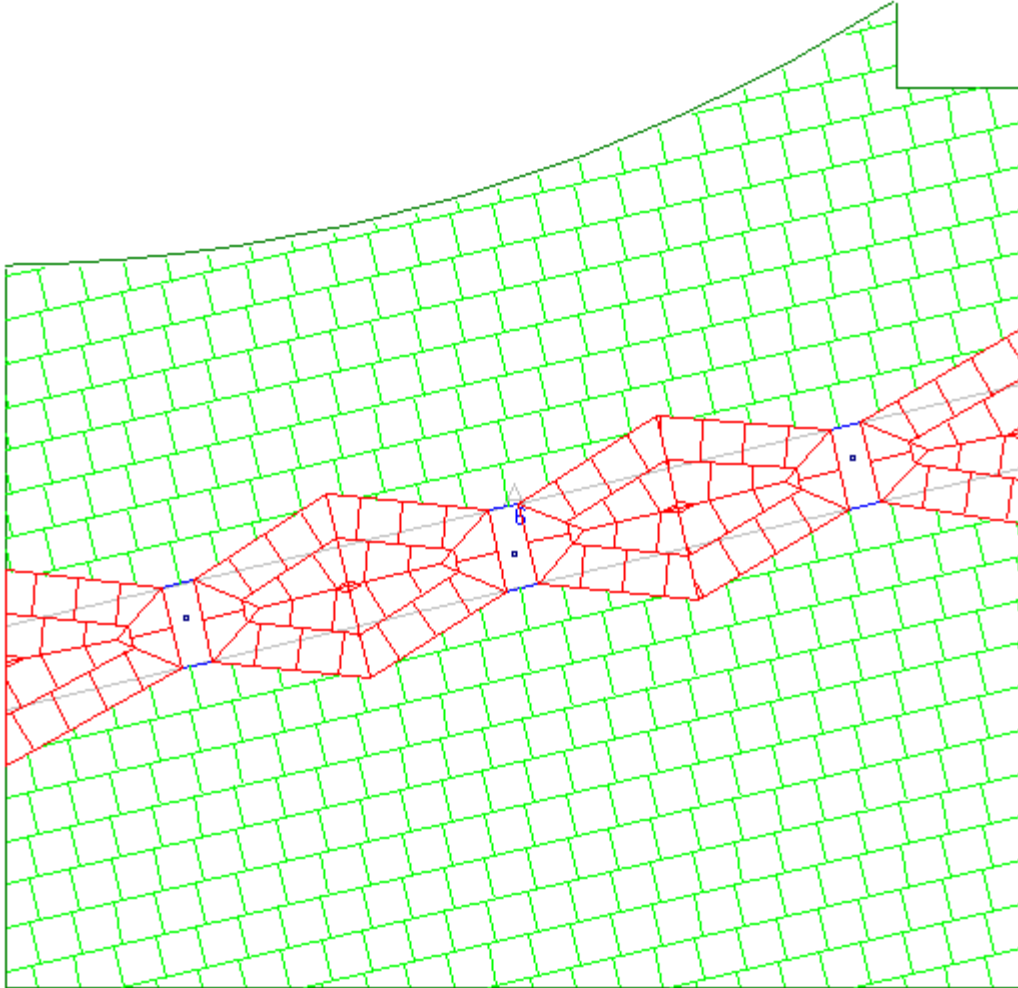
The Solution?

1. Use parallel and perpendicular help lines to place the drains parallel to the (top) angled edge. Can also use set working angle.

2. Use the **Set Low/High Area Orientation** option to orient the rows along the longest sloped edge.
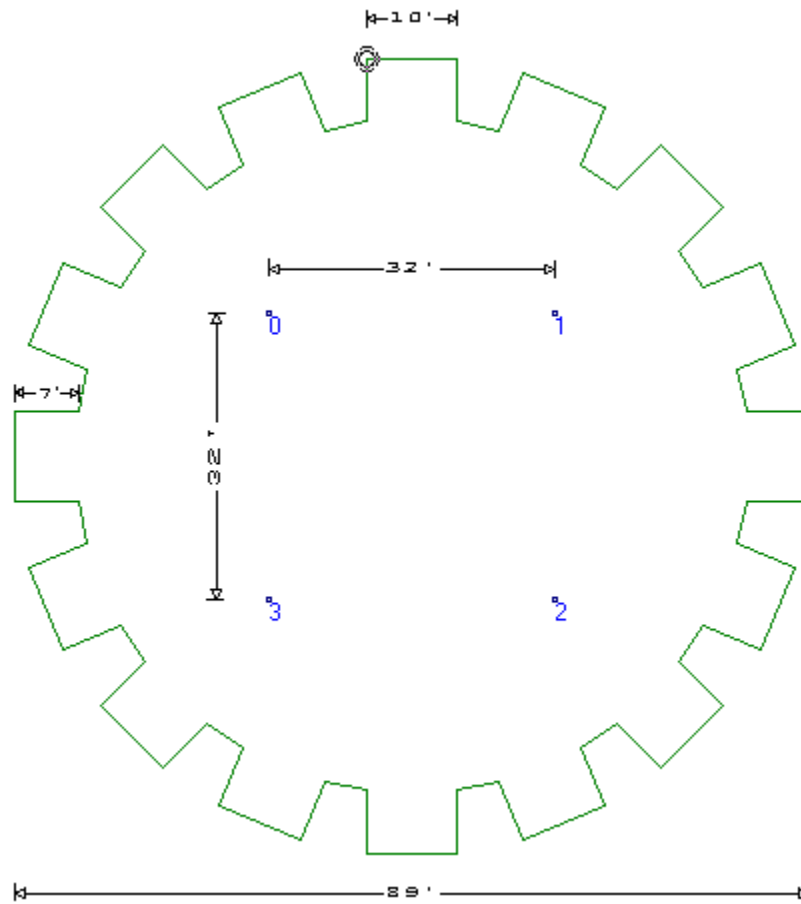
Project #8 - Fox Theater

1. Create 3'x6' sumps around each drain.

2. Add crickets between the sumps and from the sumps to the wall along the horizontal.

3. Tapered material should slope towards the drains, without the use of additional crickets.
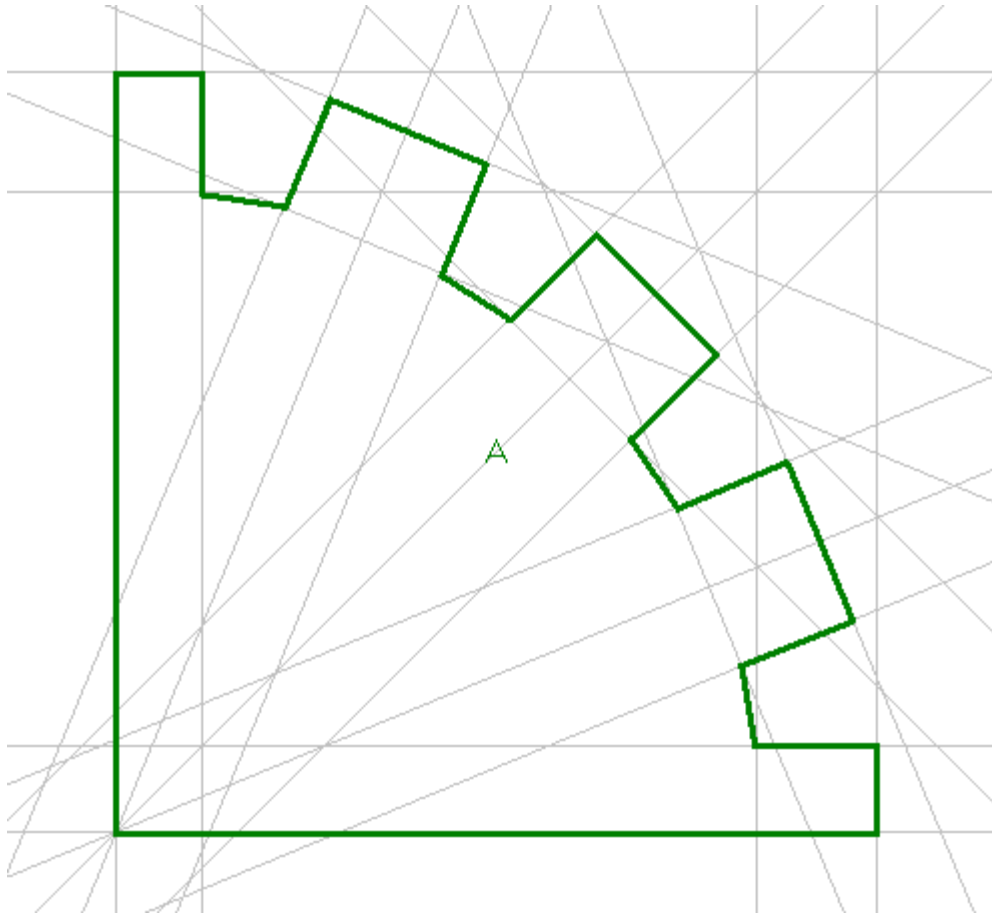
The Solution?

1. Use help lines to create a low area sump that encompasses all the drains and the 3'x 6' sumps, and extend it to each wall.

2. Add snub-nosed crickets, and adjust as necessary.
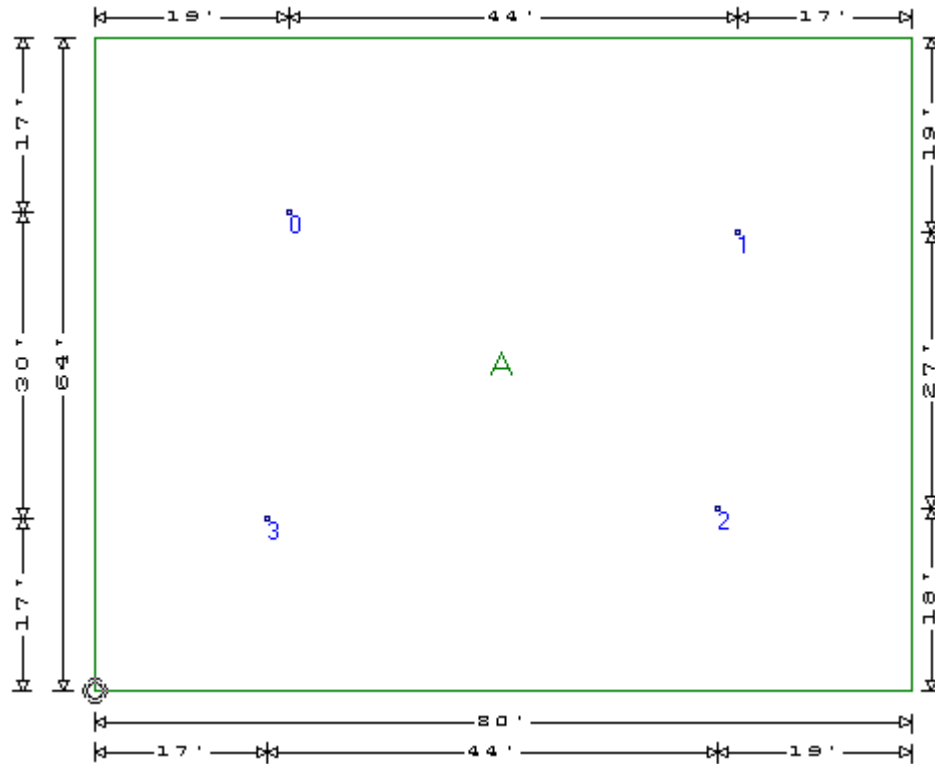
Project #9 – Corbitt Center

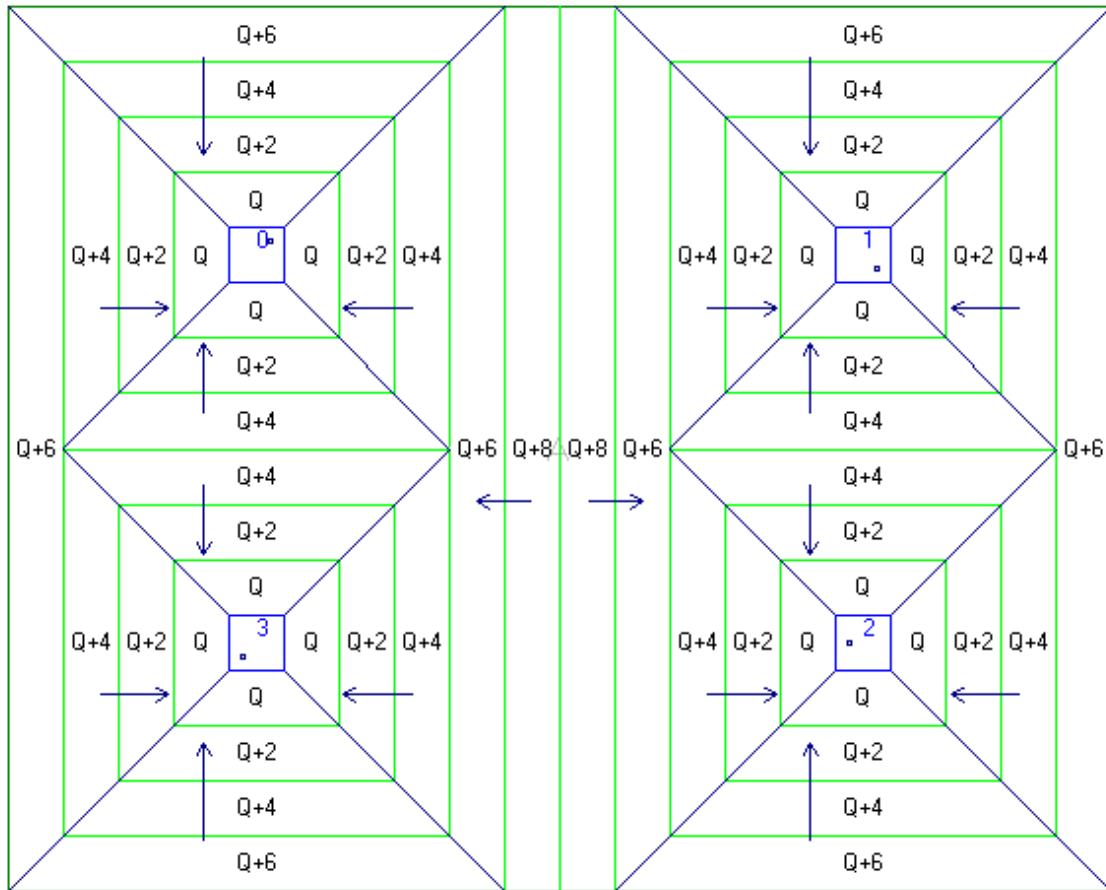1. Place a low area on each of the drains.

The Solution?

1. Use **parallel** and **perpendicular** help lines to create the shape above.
2. Use **Mirror** to create another three sections that are like this one.
3. Use **Attach** to create a new roof section that encompasses all four roof sections.
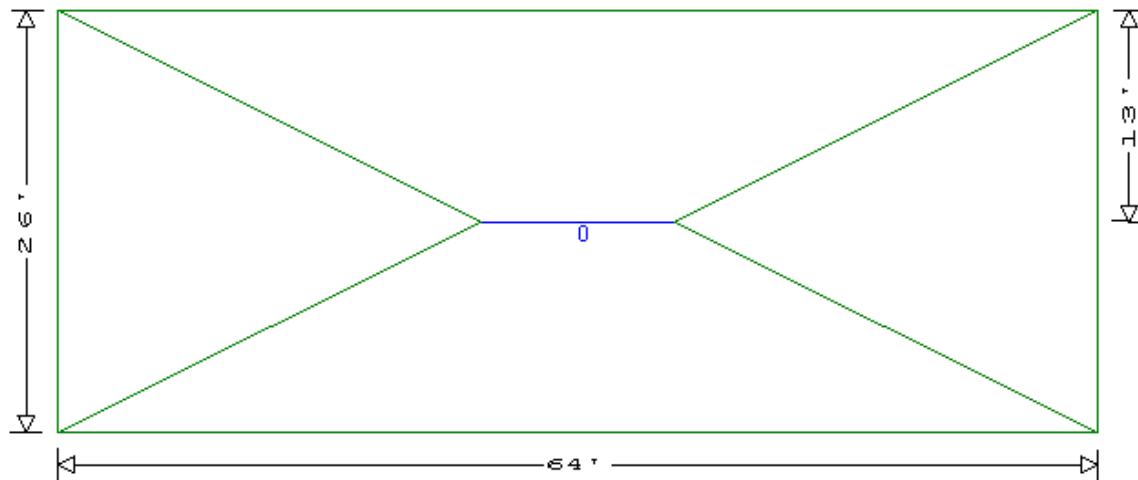4. Delete the first four roof sections.

Project #10 – Chan Center

1. Place a low area on each drain.

The Solution?

1. Create a sump around each drain. Use help lines to determine their initial placement.
2. Expand the sumps to 3-foot squares (to eliminate the wasted partial panels).

Project #11 – Beacon Building 2

1. Create a constant elevation around the perimeter of the roof. Use ¼ slopes taper material for the top and bottom sections. Use ⅛ sloped taper material for the left and right sections.

2. Add a single drain in the center of the roof.

3. Add crickets, if necessary.

The Solution?

1. Split the roof into 3 sections. Section A has a ¼ slope, Sections B & C each have ⅛ slope.
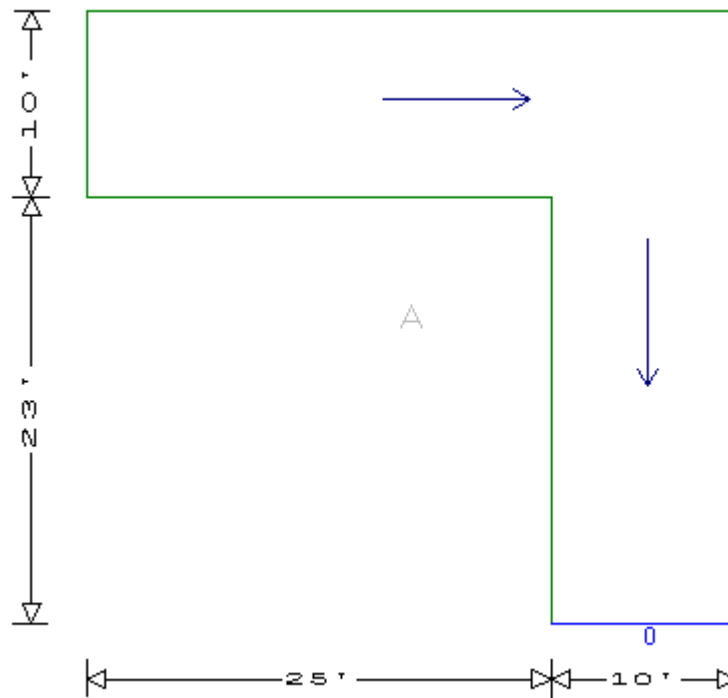
2. Expand the horizontal low area to remove the unnecessary valleys that you occur in Section A.

3. Add low areas to Sections B and C at the inner point of each section. Expand each of these low areas to the upper and lower walls.

4. Add two full crickets to direct water toward the drain. Since the crickets will not appear outside the roof section that they are drawn in, you will have to add them to both sections A & B and A &C in order to draw them correctly.
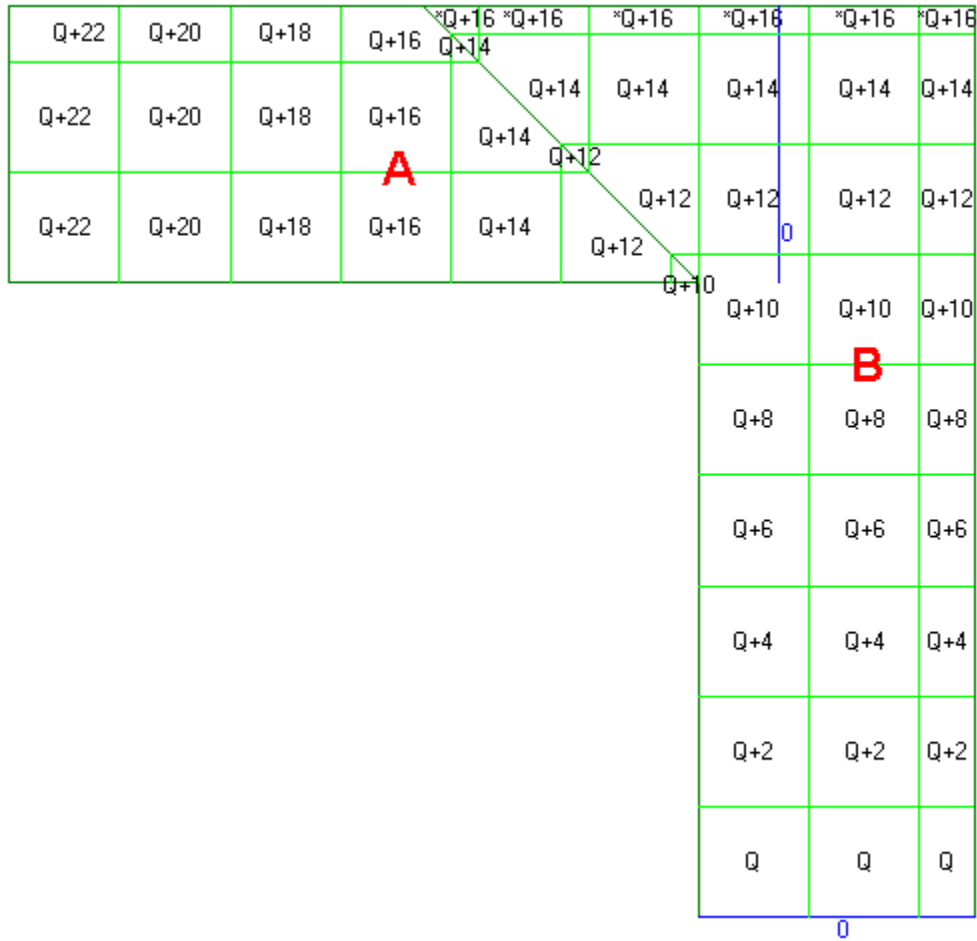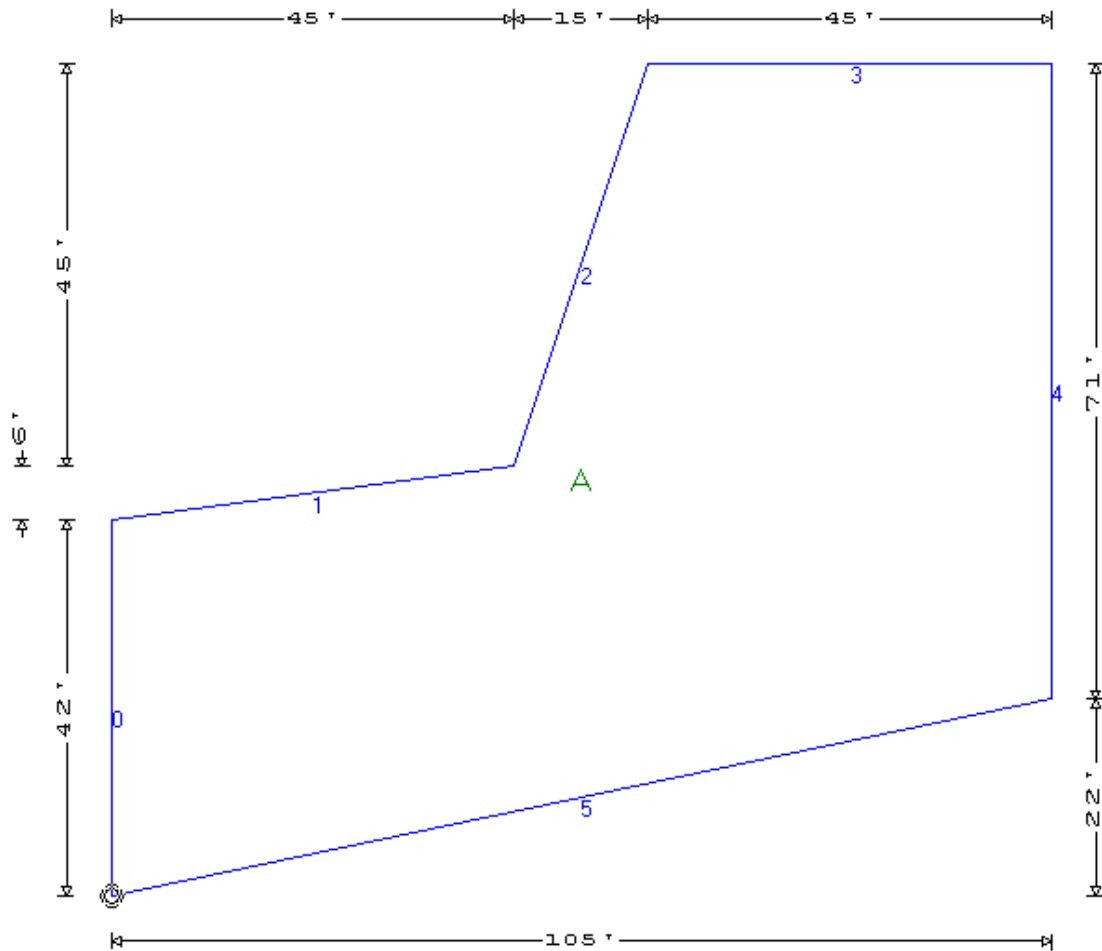
Project #12- Airways Building

1. Add a low area on the bottom edge.
2. Divert the water around the corner (without using a cricket).
3. Add crickets, if necessary.
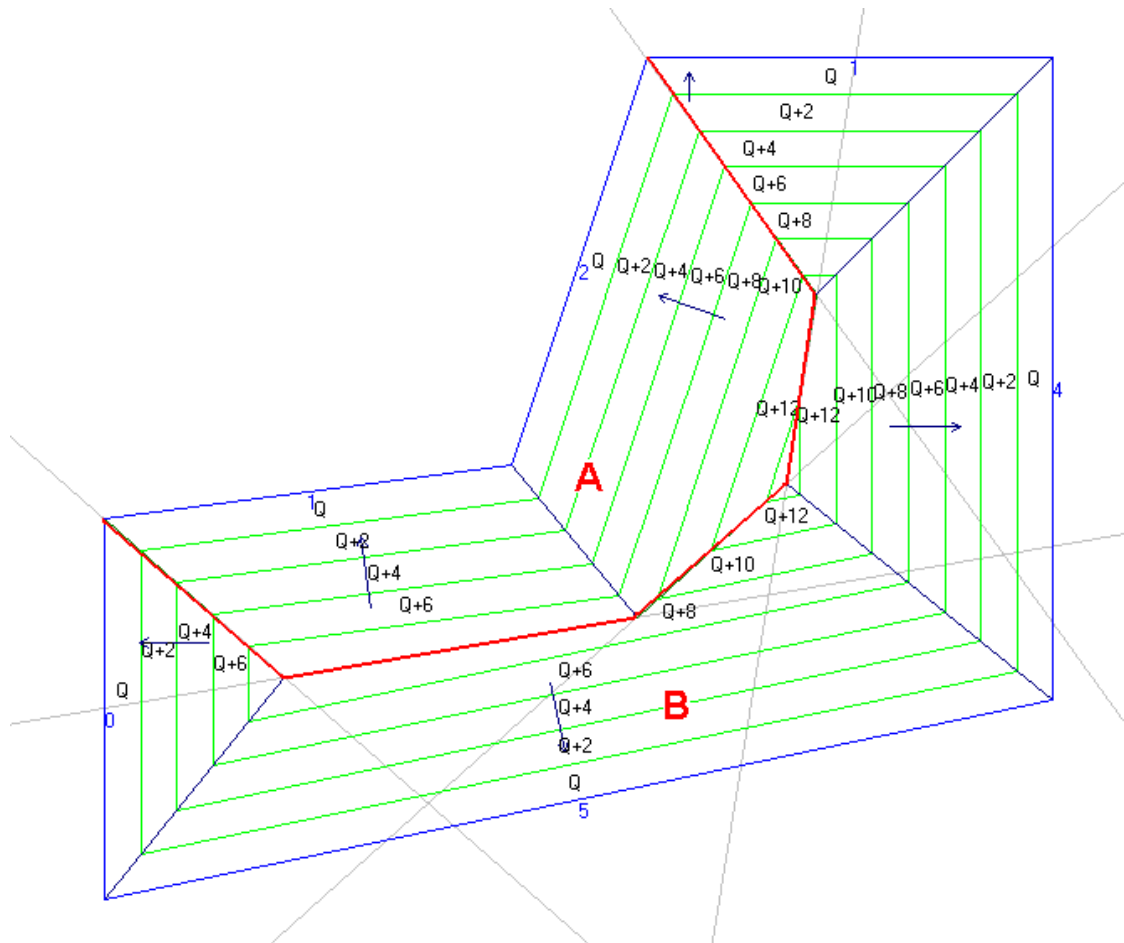
   Use ISO2 letter scheme.

The Solution?

Q+22	Q+20	Q+18	Q+16	*Q+16 *Q+16 Q+14	*Q+16	*Q+16	*Q+16	*Q+16
Q+22	Q+20	Q+18	Q+16	Q+14 Q+14	Q+14	Q+14	Q+14	Q+14

A

Q+22	Q+20	Q+18	Q+16	Q+14		Q+12	Q+12	Q+12	Q+12

Q+12 Q+12

Q+10

	Q+10	Q+10	Q+10

B

Q+8	Q+8	Q+8
Q+6	Q+6	Q+6
Q+4	Q+4	Q+4
Q+2	Q+2	Q+2
Q	Q	Q

0

1. Split the roof into 2 sections.
2. Add a low area to the right side of Section A.
3. Move this low area thirty three feet to the right.

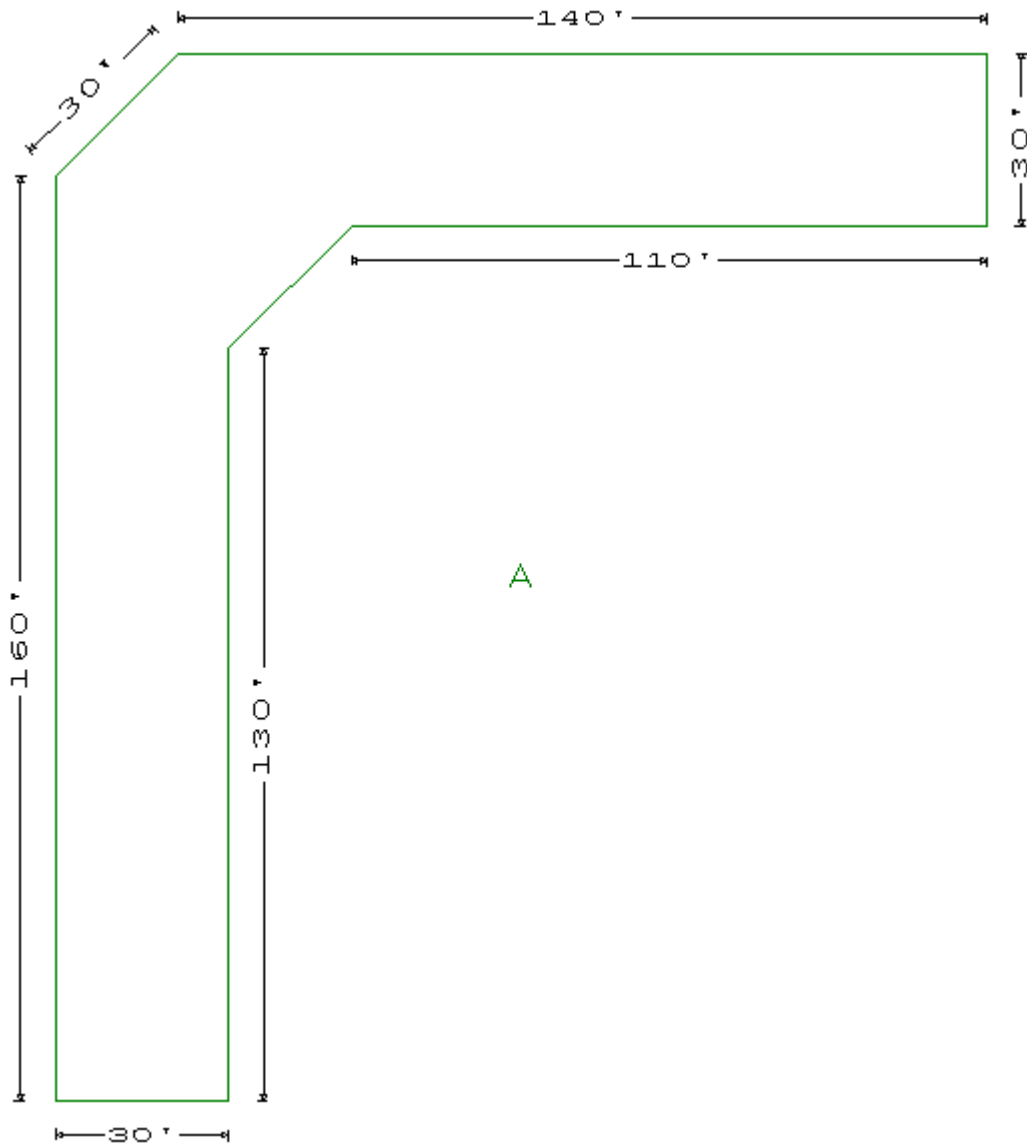# Project #13 – IBM Office

1. Place a low area on each roof edge.

The Solution?

1. To avoid overgridding, split the roof into 2 sections along the hip and ridge lines.
2. Use help lines (bi-sect option) to determine where to split the roof.
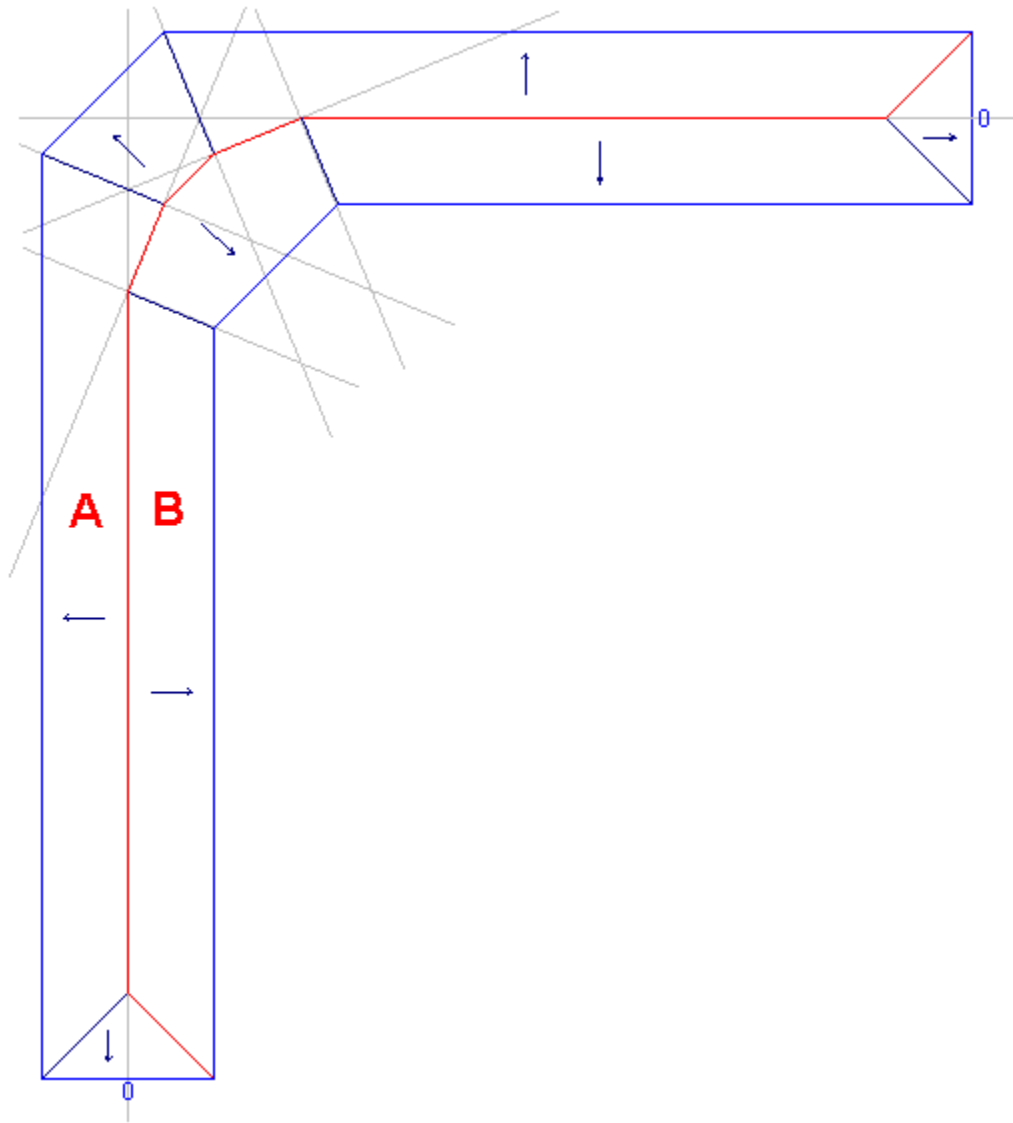
Note that gridding problems are unlikely to occur in Taper-Plus version 9.0 (and greater).
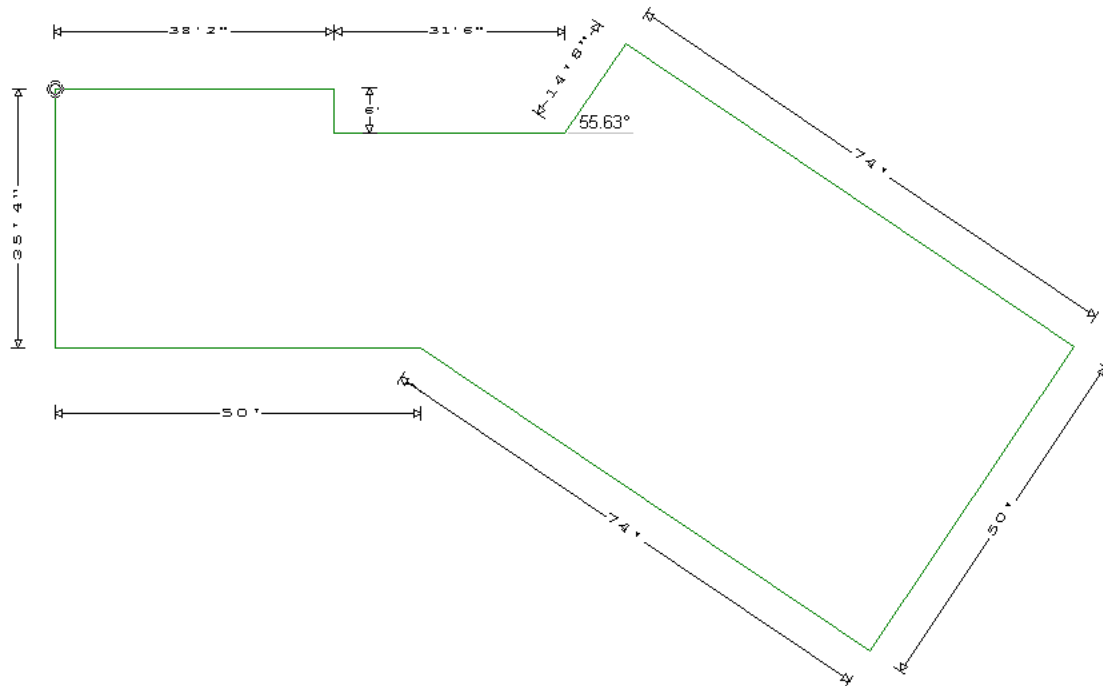
Project #14 – Gulf Building

1. Place a low area on each of the roof edges.

The Solution?

1. Split the roof into two sections (A and B) using help lines to determine where you should split the roof. Whenever possible, split the roof along a hip, valley or ridge rather than in the middle of a roof panel.

Note that gridding problems are unlikely to occur in Taper-Plus version 9.0 (and greater).

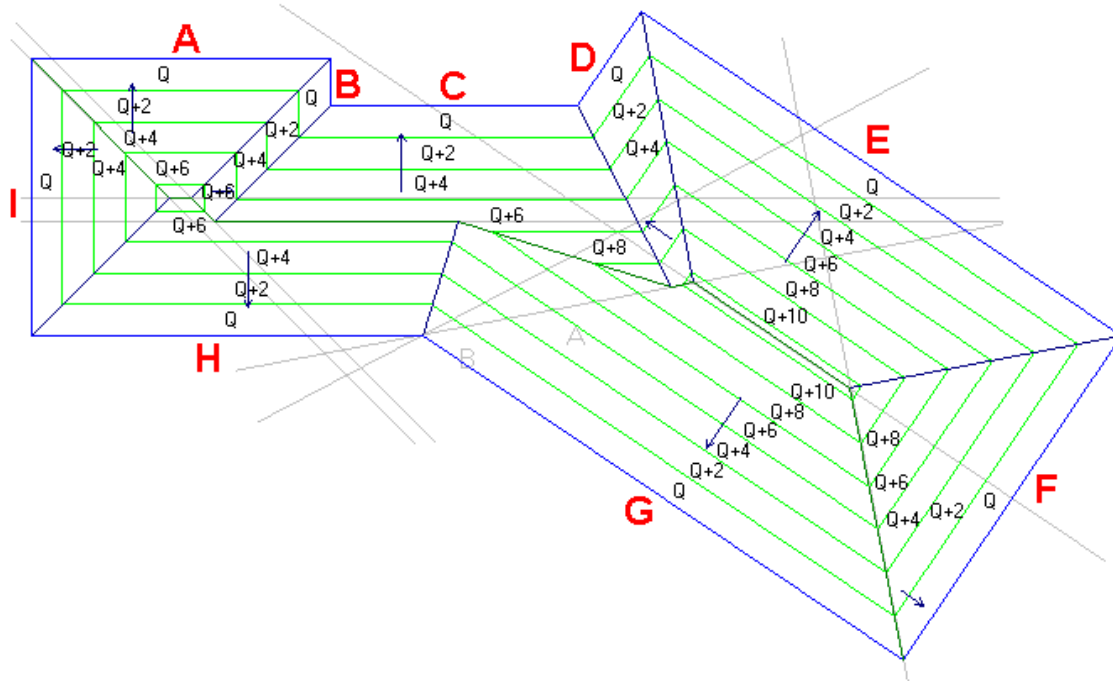# Project #15 - Randolph High School

1. Low all edges

14' 8" @ 56°
74' @ 326°
50' @ 236°
74' @ 146°

The Solution?

A
Q
Q+2
Q+4
Q+2
Q+2
Q+4
Q+4
Q+6
Q+4
Q+6
Q+6
Q+4
Q+2
Q
B   C
D
Q
Q
Q+2
Q+2
Q+4
Q+4
E
Q
Q+2
Q+6
Q+4
Q+8
Q+6
Q+8
Q+10
Q+10
Q+8
Q+6
Q+4
Q+2
Q
Q+8
Q+6
Q+4 Q+2 Q
F
G
H
I

1. Split the roof using help lines that bisect ALL edges that interfere with each other.

    Create help lines that intersect edges A-I

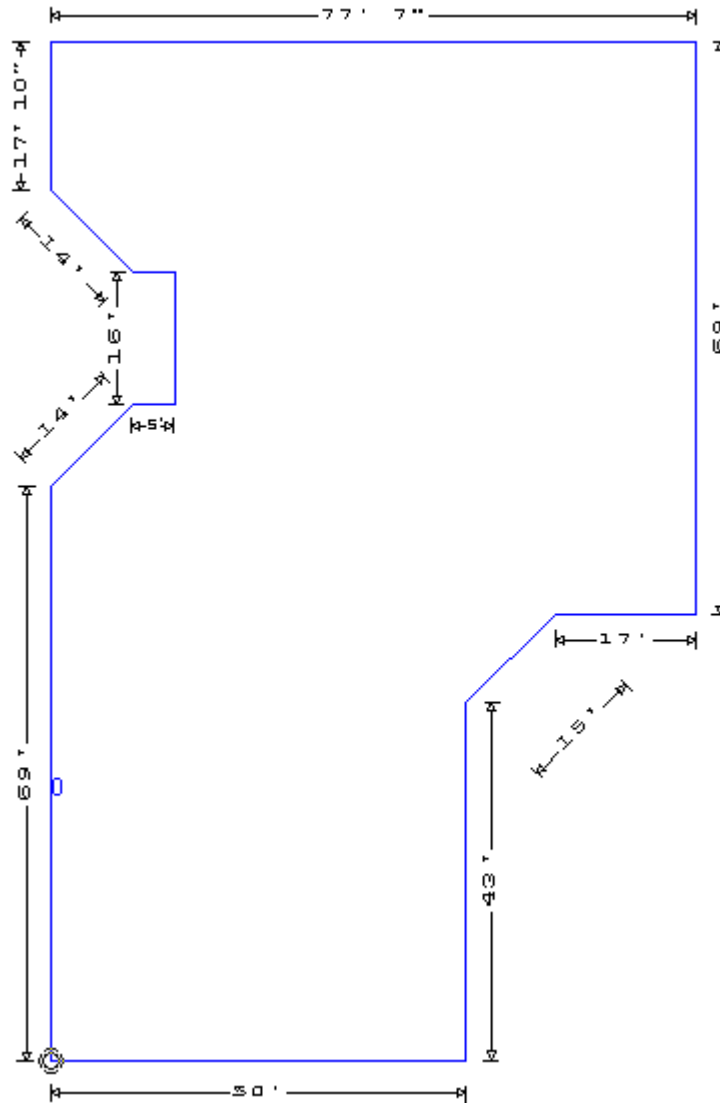   A-H

    B-H

    C-H

    C-G

    D-G

    E-G

    F-G

Note that gridding problems are unlikely to occur in Taper-Plus version 9.0 (and greater).

Project #16 – Smallville Hospital

1. Low all edges.

The Solution?

1. Split the roof into 5 sections, using help lines to determine where to split the roof.

Section A

Edges 4-8
      5-8
      6-8
      6-7
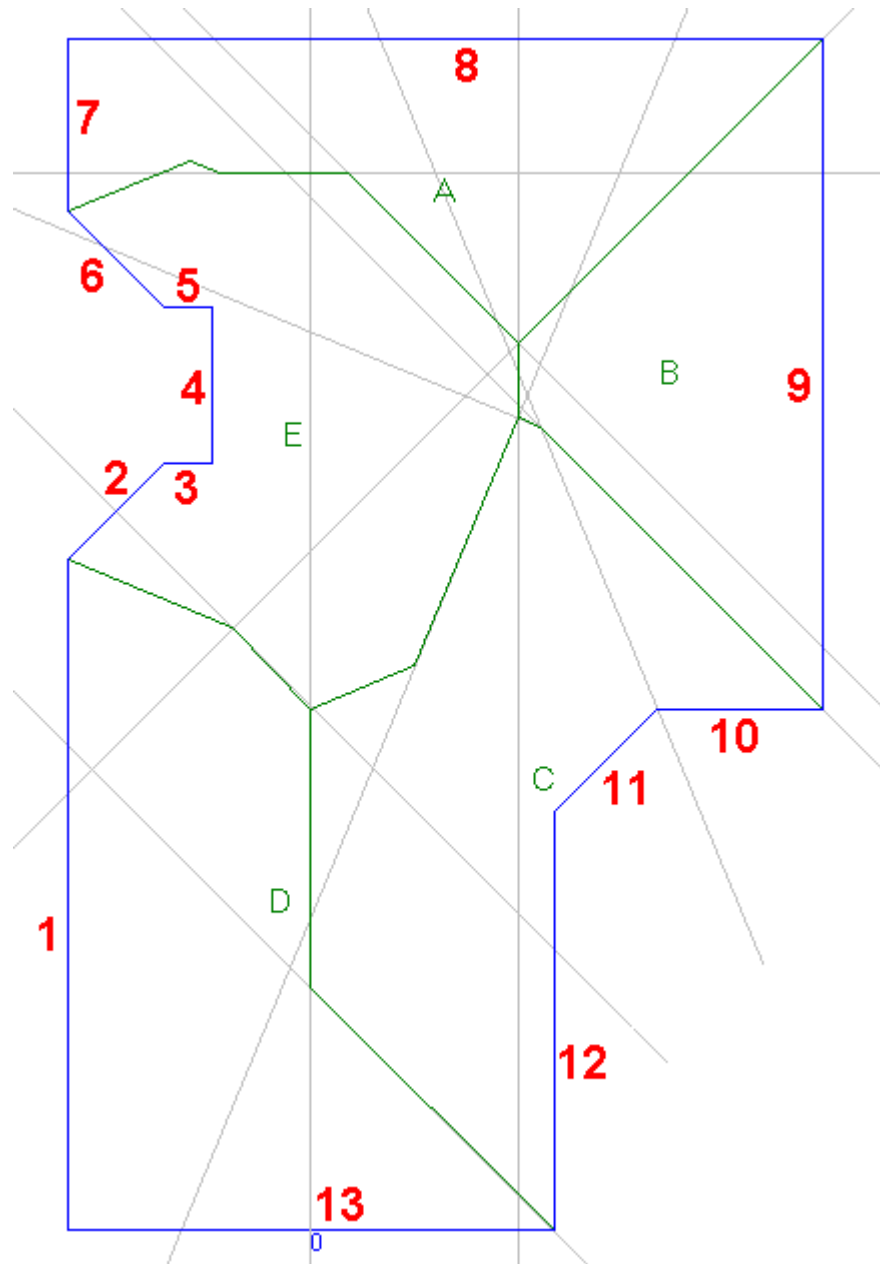
Section B

Edges 4-9
      8-9
      9-10
      9-11

Section C

Edges 3-11
      4-11
      1-12
      12-13

Section D

Edges 1-2
      1-3

Note that gridding problems are unlikely to occur in Taper-Plus version 9.0 (and greater).