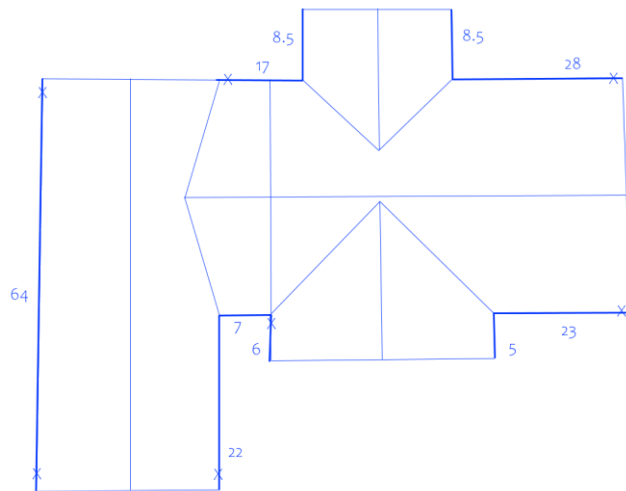


Calculating Materials for Lindab Rainline Installations

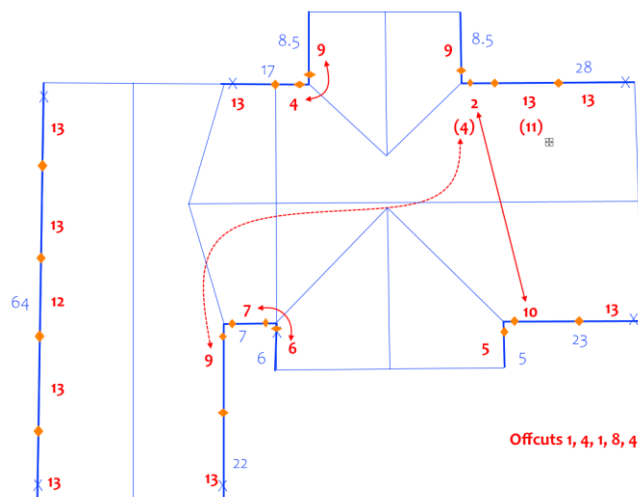
Following is the process we have found most useful for installers and homeowners to calculate the materials needed for an installation. This works for plan take-offs, drawing from photographs and for drawing from scratch during a site visit. Technology such as Google, Bing and municipal GIS systems are useful for roof plans of existing building to give you a starting point.

With time and practice, the roof details, valley, ridges and gables will no longer need drawn for your own installations. For laying out for retail DIY clients, it is best to leave them in. The better their experience, the more referrals you get. The terms gutters and eavestroughs are used synonymously.

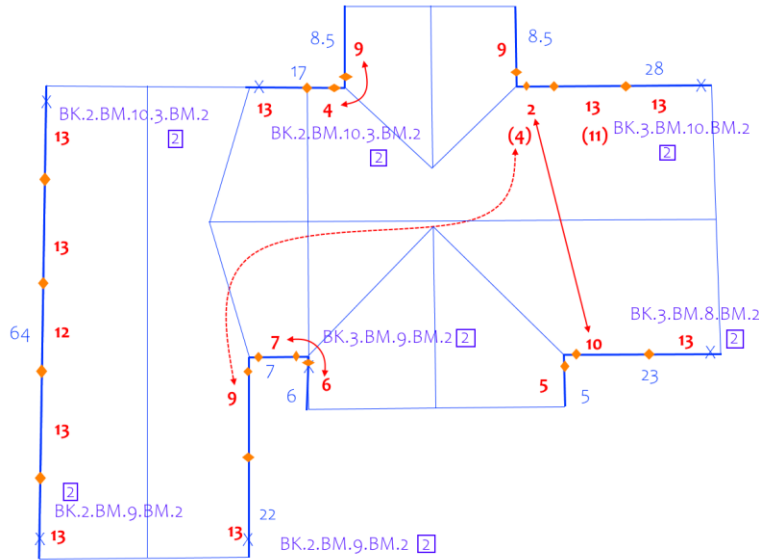
1. Draw out the gutter lines and board measurements. Numbers go on the face side of each gutter. Understand that overhang may be needed at some end caps and corner sections will provide some extra material. Trying to be too exact will not allow for mis-cuts, errors, damage or measuring mistakes. Exact measurements will allow for more exact planning and ordering.



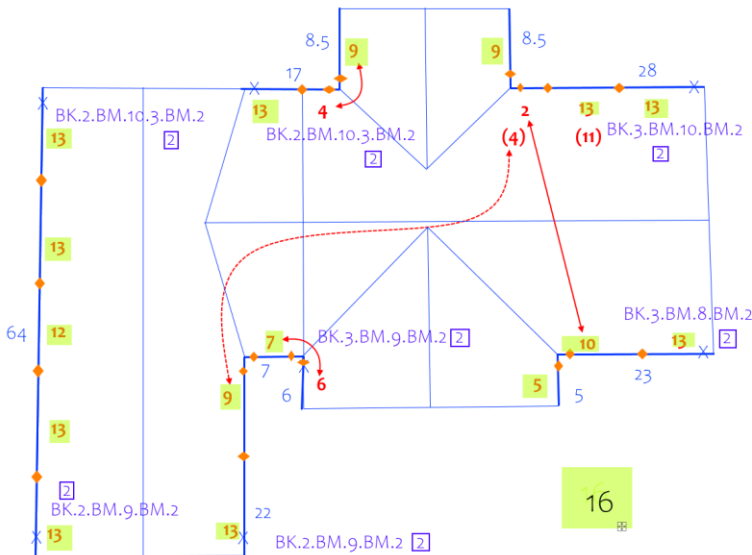
2. Now write in the measurements again, by section, no piece being larger than 13 feet. Determine which off-cuts can be best used to create the smaller sections (arrows). For greatest strength, use longer off-cuts and trim down a full section rather than splicing in a piece that is not supported by at least 2 hangers (see dotted line and section in upper right of drawing).



3. Mark all of the joints between gutter sections and corner sections. Here I have used orange diamonds.
4. As the pipes have numerous components, it is best when starting out or creating a plan for a retail client to write the pipe out in the order parts are used, starting at the outlet. Straps are summarized with a square around them. For areas with no drain tiles, finish a pipe with a BM elbow and a 2 foot kicker to drain away from the foundation. If no kicker is needed use a UTK elbow. If a drain tile is present, use an RT drain trap or FUTK in line leaf catcher with a tile cover at the bottom.

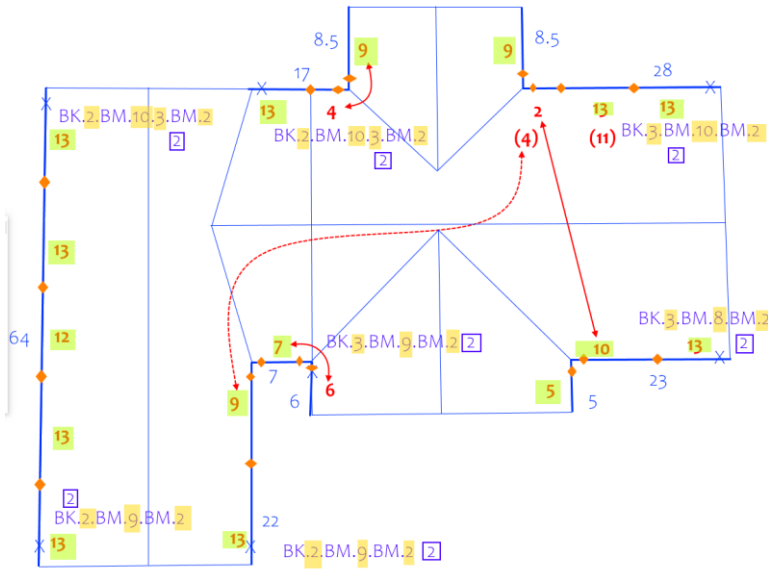


5. Cross out or highlight a copy of your map when counting parts.
R gutter count how many full sections are needed. Only count one end of measurements linked by an arrow.



6. RG end caps these are universal so just count each end
7. HFT, KFK, KLK or other hanger choice counts will vary with the spacing you choose. 24 inch is common and strong but spacing may be tightened up in high snow load areas. Add up your total footage, divide by 2 if using 24 inch spacing (2.5 for 30 inch spacing, 1.5 for 18 inch) and add two hangers per corner section.

8. Count your corners, breaking down by RVY (90 degree outside corner), RVI (90 degree inside corner), RVY135 (outside bay miters 45 degree), RVI135 (inside bay miters 45 degrees), and custom angle corners (can be ordered – must be measured by protractor or traced from board angle and the tracing sent to Precision Gutters for building)
9. RSK gaskets Add up all joint locations marked on your diagram
10. OMV outlets Add up all outlets
11. REF roof edge flashing – if using HFT hangers the REF should be used for concealing the fasteners, protecting the boards and presenting a fully finished product. Look at your gutter lengths and add up the ten foot sections needed for the flashing, round up for overlap.
12. DSP pipe Come in ten foot lengths. Add up the lengths you noted and combine off-cuts to use up lengths. Highlight or mark off to ensure you hit them all.



13. Add up your elbows by type. BK, BM, SOKN, UTK, GROR, BM45, BM85
14. Add up pipe straps (numbers in boxes)
15. This is the bare minimum material order required. Having extra RSK, BM, R and DSP is advised and recommended to ensure you do not run short due to mistakes, mis-measurements or changes.
16. Hanger, pipe strap and pipe screws come in multiples of 25
 - a. HFT & RSKR = 2 per hanger, code 1134 JS1000
 - b. KFK & SKK (KLK)= 2 per hanger, code 1131, 1.5" stainless button head TEK
 - c. KR D, SSVU = 2 per hanger or strap, code 1134, colour matched JS1000
 - d. K21 = 2 per hanger, Pancake head screws
 - e. Secure elbows, pipe and components together= code 1429, ½ inch colour match TEK. Add up
 - i. OMV
 - ii. BK
 - iii. BM x2
 - iv. Junctions between pipe sections like top left in example BK.2.BM.10.3.BM.2

Summary

R	16	17
RG	10	
HFT	100	in the sample $(64+17+8.5+8.5+28+23+5+6+7+22) + (5 \times 2) = 199 / 2 = 99.5$
RVI	5	
RSK	19	21
OMV	7	
REF	20	
DSP	11	12
BK	7	
BM	14	16
SSVU	14	15
1134	200	
1134	50	
1429	50	

The Summary is the projected minimum possible order to complete the job as assessed. The red numbers are the suggested order quantities. Note that if you have built up some leftover stock or are stocking material, this may not be needed. An extra piece of gutter or pipe covers you for cutting mistakes or damage. Extra gaskets allow you to splice in some sections if needed. BM elbows are universal and allow for any offset not carefully assessed per as-built conditions.

Using this technique for doing your add-ups will also make it easier for us to assist you in reviewing any that you would like help with. Photographs of each side of a structure are always very helpful to clarify pipe details and requirements.