Specifications for Residential Architecture

ArCH™

Specifications for Residential Architecture

Made available to ArCH: Architects Creating Homes, LLC, by special arrangement between HOME ARCHITECTS® & ArCH.

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Table of Contents

Specifications for Residential Architecture

Preface/ About

ArCH = Architects Creating Homes. ArCH was established to *IMPROVE RESIDENTIAL ARCHITECTURE* .
ArCH is here: http://www.archomes.org/
ArCHspec™ is here:
http://www.archomes.org/product/archspec-architectural-residential-specifications
ArCHsuite™, which includes ArCHspec™ is here:
http://www.archomes.org/product/archsuite

ArCH helps Licensed Architects who focus on residential architecture so that they can improve their practices. ArCH helps Architects to better serve their Clients while helping them provide better designs and documents that assist Contractors in building better projects.

ArCH is the leader in creating and providing residential specifications to Licensed Architects. ArCH is an American organization of Licensed Architects, although many of the ArCHproducts, available on the ArCHstore, can assist Architects globally, adjusted for each Country & State of practice.

Never before has there been such a concentrated focus on improving the practice of Residential Architecture. ArCH is the only independent American professional society composed solely of Licensed Architects who focus on residential architecture.

It is BECAUSE of the previous lack of focus on residential projects by Licensed Architects that ArCH was formed and is now so aggressively pursuing the improvement of home design practice. In this regard, ArCH now has available a specification system called ArCHspec™. ArCHspec™ is oriented primarily toward single family residential projects. Although, with some revisions, ArCHspec™

could serve other uses, as determined by the Licensed Architects editing their copy of ArCHspec™. Most of this e-book makes references to ArCHspec™.

The Architects in ArCH are from all over the United States of America: from California through North Carolina and from Chicago, Iowa & Boston, down through Louisiana and Fort Lauderdale. ArCH is composed of Architects licensed to practice by State Boards of Architecture in at least one State in the USA. ArCHmembers are men, women, young, old and in-between, of diverse races and multi-cultural backgrounds.

However, what brings these diverse professionals together is that they all believe that there needs to be an increased focus on improving residential architecture. Many members have a great deal of experience in the design and specification of residential projects. Some ArCHmembers are both Licensed General Contractors and Licensed Architects. Some are both Licensed Architects and Licensed Home Inspectors. There are Architects representing Design-Build Firms. There are Architects who are sole proprietors. There are Architects in larger architectural firms that also design commercial structures and multi-family projects, in addition to Single Family Residences. ArCH has substantial brain power regarding the design and construction of the places in which people live, and its membership is working every day to *IMPROVE RESIDENTIAL ARCHITECTURE*.

Specifications for Residential Architecture

1. Why Specifications for Residential Architecture

SINGLE FAMILY RESIDENTIAL:
NUMBER OF NEW HOMES A YEAR IN THE US MARKET IMPACTED BY ARCHITECTS

Specifications for residential projects in the past has been a subject that was either ignored or debated. However, it is becoming understood that residential projects are among the most complex types of facilities for which an Architect can design and prepare technical documents. Yes: we are talking about primarily SFR (Single Family Residential), which is the most popular type of living arrangement for people in the USA. But let's not trust this assumption. Let's look at some statistics:

The 2013 Housing Profile of the United States, American Housing Survey Factsheets, published by HUD (U.S. Housing and Urban Development) and conducted by the U. S. Census Bureau, documented that for the sampling of metro areas, that Single-Family Residential (SFR) Detached Housing accounts for about 64.2% of all housing in the USA. There are 132,832,000 housing units (of all

types) in the USA as of 2013. That means that there are about 85+ million SFR houses in the USA as of that date.

But what about NEW construction? The U.S. Census Bureau posted a July, 2015 news release (along with the U.S. Department of HUD) that there is an estimated annual rate of 1,343,000 new privately-owned housing units authorized by building permits. If this trend is steady, then the USA presently has a yearly build rate of about 1.34 million new SFR a year. If that were divided equally among all states (which it is not), that would be an average of 26,860 new SFR homes being built a year in each State. The USA has 3,806,000 square miles. If the distribution of new SFR projects being built each year was uniform (which it is not), that would be about 3 new homes per year being built in each square mile of area throughout the USA.

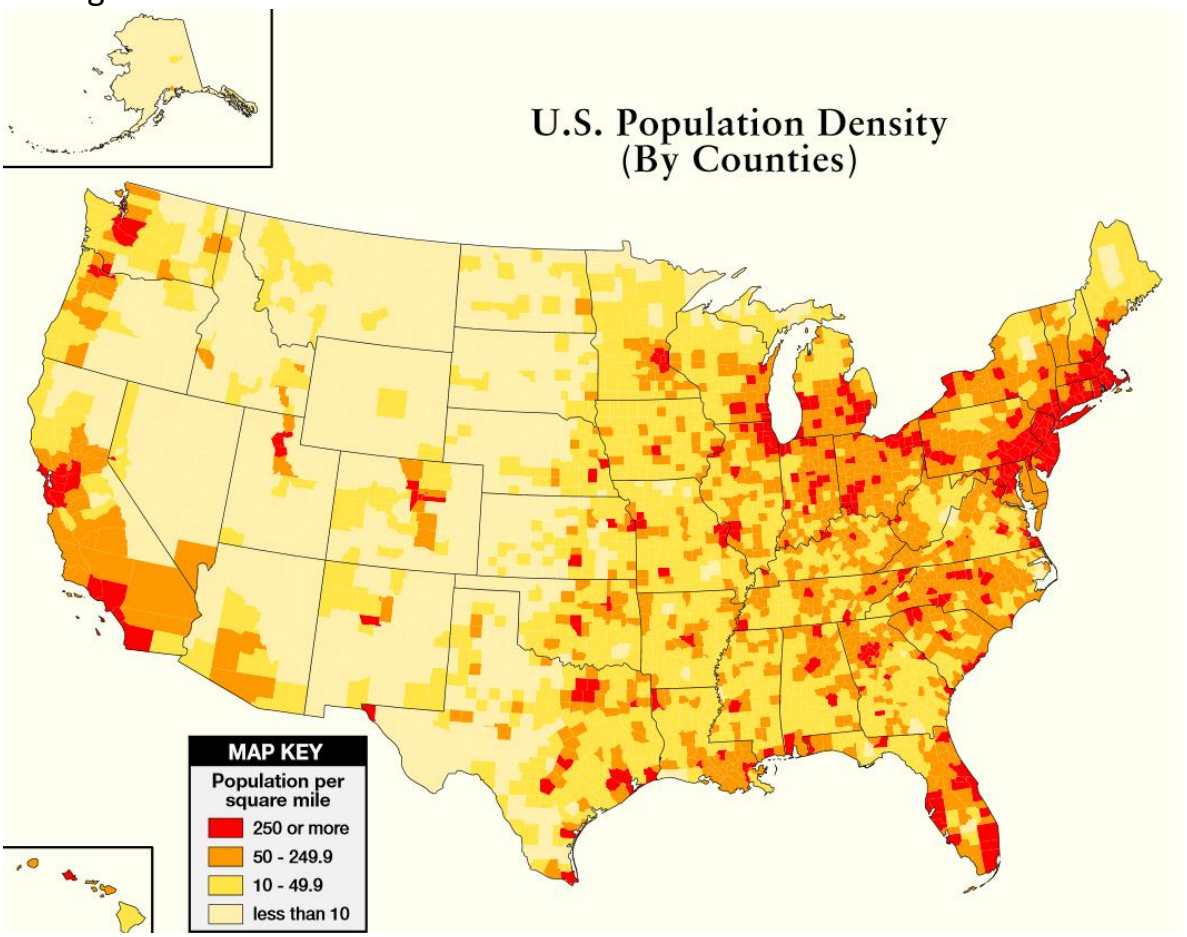


Image above courtesy of U.S. Census Bureau.

Since the distribution throughout the scarcely populated areas are significantly less in remote areas of Montana, Wyoming, New Mexico, North Dakota, South Dakota, Nevada, Utah, Alaska, Nebraska, South Dakota, western Kansas, western Oklahoma and portions of western Texas, Arizona and other remote regions, it can therefore be safely assumed that the distribution of housing starts closely parallels population density. Looking at a US Census Population Density map by County, it appears that perhaps 50% to 40% of the USA is sparsely populated. Being conservative, then 60% would be more densely populated, throughout the Midwest, eastern states and California up through western Washington (State). If that is true, then perhaps the housing start number per county, on a per square mile basis, might be closer to 5+ new SFR per square mile in more densely populated areas and 1 or less in sparsely populated areas.

NCARB (National Council of Architectural Registration Boards) estimates the number of State-resident, licensed Architects in the USA at 105,847. If this is true, this means there is an average of .027811 Architects per square mile in the USA, if distribution were uniform, which it is not. The average county size in the U.S. is 997.6 square miles. This means that, statistically, there is about 27.7 Architects per county across the USA, if they were distributed evenly (which they are not). Therefore, if there were 3 new homes per square mile in each average county, that would = 2,992+ new homes being built a year in each "average" U.S. county, and that there would be only about 28 Architects (of all types, including many of them focused on commercial projects, not residential) to design those homes, or about 106.8 new home designs a year each Architect would need to produce if Architects were designing all of the new SFR projects. That's quite a workload. And if perhaps only 15% of the architectural firms were focused on residential projects (or 4.2 per county), that would be closer to 712 new home projects each residential Architect would need to design and produce each year. That would be a pretty tough demand.

But not every homeowner hires an Architect to design their home. They SHOULD, but they do not. We're going to go out on a limb here, based on about 40 years' worth of personal experience as an Architect, and guessing that perhaps 2% to 5% of all of the new homes each year in the USA are designed by Architects. We

really don't know if those statistics exist. Going with this guesstimate, that could = 1,343,000 x .05 = a high of perhaps **67,150** of new Architect-designed homes a year in the USA, to a low of perhaps 1,343,000 x .02 =**26,860** of new Architect-designed homes a year in the USA.

Now let's divide by 15,877 Architects (figuring that perhaps 15% of all Licensed Architects in the USA actively design homes for Clients (105,847 x 15%)).
The U.S. Bureau of Labor Statistics indicates that only about 20% of all Architects are self-employed. This means that 80% of all Architects work at companies of 2 or more people. Most of these larger companies (but not all) are usually more commercial-governmental project oriented. (Image above courtesy of U.S. Bureau of Labor Statistics).

Back to the numbers: 67,150 / 15,877 = 4.22 homes to 26,860 / 15,877 = 1.69 homes designed by each residential Architect per year average in the USA. Interesting numbers there. That seems to indicate that an average Architect in an average location, all things being equal, probably won't be designing too many homes each year, if the percentages guesstimated about their practices are accurate. Perhaps 1.7 to 4 or 5 new homes a year per Architect. However, when you total up all of them, those are still new homes in the tens of thousands each year, created by Architects.

The case with most residential Architectural firms, whom this author knows, who belong to ArCH, and who have practices spanning the entire USA, are designing more like about 3 to 15 home projects a year, with perhaps 60% of those being renovations. That's not surprising, understanding that there will always be more existing homes standing than new homes being built in the USA, from now

forward. And the larger residential architectural firms, having 4 to 7 to 10 staff members have been reporting 15 to 35 projects a year, however, many of those are very small renovation type projects. However, if you divide 35 projects by 7 staff members, this = 5 projects per staff member, so perhaps the averages may not be that far off. Sole practitioners may experience 1 to 5 new home SFR projects a year, possibly more, in renovations are included. This will of course vary, based on where the Architect is located and their marketing presence in society. As usual, the truth probably lies somewhere between the statistical averages and the conclusions drawn in this e-book, with exceptions for practices outside the normal ranges. For instance, there may be firms in Manhattan or Chicago with much more business, due to the presence of more affluent people. However, much of those projects might be tenant renovations and fit-outs in high-rises. It all depends on the location and the marketing success of each Architect.

The point about all these statistics is that those homes designed by Architects should be better than those created without their assistance. Architects should be bringing a value to those homeowners who engage them to design their houses, especially if they would like to see an increase in the percentage of new homeowners hiring Architects. There is a huge, untapped market there. (Image courtesy of U.S. Bureau of Labor Statistics).

And after all, if the conservatively guesstimated 2% to 5% of new homes being built a year are designed by Architects, there still are about 26,860 to 67,150 new Architect-designed homes being built a year in the USA. That's a lot. Those projects deserve to be handled professionally, appreciatively and with care, as

shining examples of what everyone's homes could be, if they all hired Architects to design their houses.
BOTTOM LINE: THERE ARE TENS OF THOUSANDS OF NEW HOMES DESIGNED IN AMERICA EACH BY ARCHITECTS. THERE COULD BE HUNDREDS OF THOUSANDS MORE EACH YEAR (to over a million), IF ARCHITECTS FOUND A WAY TO PRESENT THEIR SERVICES AS A BETTER VALUE, THAT NO OTHERS COULD MATCH.
Providing specifications could be one of those values. And: if any ten Clients were asked, we wonder how many would already assume that their Architects were including specifications? There is a phrase out there: "plans & specs." Most people seem familiar with that. NOT having specs could become a terrible risk for Architects and their Clients, and the Contractors, and the basis for many lawsuits these days.

COMPLEXITY OF SINGLE FAMILY RESIDENTIAL PROJECTS

Because SFR projects are among the most complex types of projects that an Architect can undertake, it makes sense that the Architect provide specifications for the homes they design.

After all, Architects routinely provide specifications for Warehouses, Industrial Facilities, Office Buildings, Educational Facilities, Auditoriums, Dormitories (which are a version of residential) and most other project types, most of which are Not as complex as Single Family Residential architecture (see Complexity Chart above). There are numerous online references, such as State purchasing agencies, architectural organizations and others that have Levels of Complexity charts that make these distinctions. There is more going on per square foot in a house than in just about any other type of project. Compare a residential kitchen or bathroom with an office building (even a high-rise). There is no comparison: the house is much more complex. Perhaps highly detailed laboratories or hospital operatories or ICUs (Intensive Care Units) might come close to the level of complexity in a house, and no Architect would ever not provide specifications for those facilities.

Why society, Contractors, homeowners and even commercial Architects themselves routinely dismiss the design of homes as being simple, straightforward and of no consequence is mystifying. There are lawsuits across America every year, regarding improper home design & improper home construction. From the survivors. We don't know the numbers, but we wonder how many lawsuits result every time a storm blows down hundreds or thousands of non-Architect designed houses? Do these names bring back those memories of substandard housing: Andrew, Sandy, Wilma, Camille, Ike, Ivan, Isabel, Charley, Irene, Hugo, Donna?
We wonder how many deaths of loved ones it takes for people to fully appreciate the higher quality and stronger designs Clients will receive from an Architect-designed house project? If any member of those unfortunate families have survived?

Surely we, as Architects can start explaining to Clients how we SPECIFY and draw details illustrating how we design stronger homes. And that's just one example. How about mold prevention, because Architects know how to SPECIFY and detail better methods of moisture barriers and better details for roofing, gutters, downspouts and water management around a house and site and around basements? And that Architect-designed homes have better roofing

underlayment, better sealants and more durable details, mainly because they are SPECIFIED. If you have Clients with COPD, Architects could save their lives, by including SPECIFICATIONS about better moisture control, and including options for mold-free non-paper-backed products. And there are countless more examples. All of them cannot be shown on drawings. We would never stop drawing, if we tried. That's why Architects started using specifications. Those include all those items that we don't have the time or space to show on the drawings. That boilerplate keeps our projects safer and more durable and one of the main reasons anyone might want to engage an Architect to design their home. It's not just about attractive aesthetic design, which is of course a great reason as well to hire an Architect: curb appeal.

HISTORY OF ARCHITECTURAL SPECIFICATIONS

The Code of Hammurabi, dating back to about 1754BC, includes references to laws about Building Codes and quality of construction and penalties for the Builder for failure of those structures. While more a set of rules and laws, this is likely the most ancient source of specifications, in a rudimentary sense, existing on Earth, created some 3,769 years ago, by the 6th Babylonian king, Hammurabi, to bring order from the chaos and lawlessness that existed. His edicts are literally "written in stone."

As the City of London became more densely populated as an urban center, Building Codes began to be enacted to deal with public nuisances starting around 1189. Much of these dealt with matters of sanitation and fire. For instance, after a major fire in 1212 (probably

involving great loss of life, pain and suffering), thatched roofs were banned by the city's first mayor, Henry Fitzailwin. Since then, building codes have developed around the world. Architects referenced building codes and expanded upon them in their drawings and listing of notes, which often improved upon the then existing codes, which, as humanity has seen, were and often are inadequate to deal with the realities of both commercial and residential design and construction issues. For instance, before September 11, 2001, what building codes said anything about high-rise structures being able to resist flying a large airplane into them? The new Architects for the replacement building in New York City set their own standards far above what codes required and included such language in their specifications. Architects are part of this slow and steady ramp up into more prepared architectural circumstances.

In the 1700s to late 1800s, building construction specifications typically consisted of a listing and description of the work and materials to be incorporated into a building. T.L. Donaldson (an Architect and Professor of Architecture and Construction at University College, London) produced a book in 1860 ("Handbook of Specifications: Practical Guide to the Architect, Engineer, Surveyor and Builder") in which he indicated a listing of specifications, based on the type of work being done by trade. This was divided into two main divisions, with the first list of items (6 in all) being rough or structural in nature, and the second list being more related to finishing (9 in all).

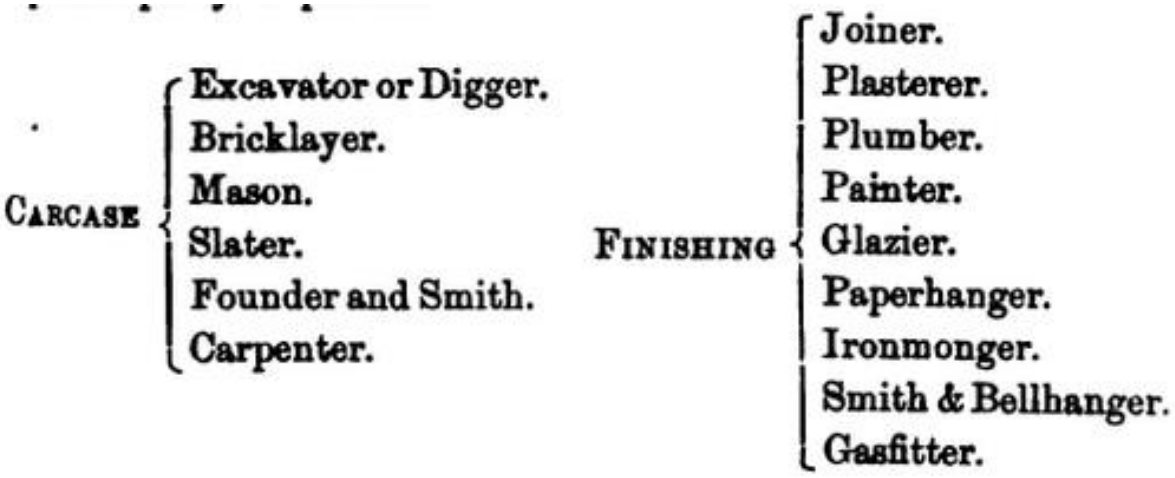


Image courtesy New York Public Library, online.

Near the end of the 1800s, specifications for larger buildings began expanding the specification Divisions into additional Divisions, including Masonry, Carpentry, Mechanical and other work, with additional subsections under each main Division. Many of today's separate sections were lumped into other more historic sections. As more General Contractors sublet the work of the various specialized sections of the project, specifications were adjusted to describe the work contained in those increasingly specialized trades. Sort of like computer operating systems that existed prior to MS Windows, specifications in the early 1900s became chaotic, with Architects and Engineers having their own systems that did not relate to any other system, as construction materials and systems continued to expand in number and complexity. Specifications became novel-book length.

After World War Two, as more advanced materials and systems were created, and a building boom spread across the USA, there became an increased need for a specification system that would be recognized by all parties. CSI (Construction Specifications Institute) was founded in 1948. CSI began creating a numbering system. In 1963, they released a 16 Division system of specifications. This system was readily assimilated throughout the USA and beyond. This remained the recognized and easily understood system, until 2004, when CSI decided to expand the tried and true 16 Division system into 50 Divisions, especially due to pressures caused by expanding product types for commercial buildings.

Unfortunately, we know of no one that actually can recite all of the new 50 Divisions by memory. While we understand the reason for expanding the 16 Division format for commercial construction, the residential design and construction world doesn't appreciate all those newer confusing Divisions. For instance: drywall laborers might understand that they are working in Division 9 and that his section can be found in there. But trying to find one's way through 50 Divisions with multiple subsections is rather daunting, especially to field personnel. And we DO want field personnel to be consulting the specifications, otherwise, what use are they?

Therefore, ArCHspec™ consists of the historic main 16 Divisions of specifications, plus a Division 0 and a Division 17. All of the 16 core Divisions are what they have been since 1963, with over half a century of understanding established with various subcontractors, suppliers, and Contractor practices.
Residential Contractors were interviewed while ArCHspec™ was being written. No Residential Contractors or Subcontractors knew the "new 50" commercial sections or where their work could be found within them. They all appreciated the shorter, 16 Division familiar historic organization for residential projects.

WHY SPECIFICATIONS FOR RESIDENTIAL PROJECTS

Now that you know some of the History of architectural specifications, the Number of homes being built each year in the USA, and the Complexity of residential projects, you may have developed a little more respect for the need for specifications for residential projects. Let's drive those nails home and explain this.

Homes today are complex. There are often 50 subcontractors for every house project these days. For Architects to try to use notes on their drawings to identify all of the items involved becomes virtually impossible. The drawings become covered with lines and lines of notes, making the drawings themselves difficult to read. Specifications for residential projects helps to allow for a repository somewhere for all of these identifying words to be placed. In the SPECIFICATIONS.

Sure, drawings can still have notes, but let's try to keep them short. And have those notes refer to the specifications and to more verbose notes listed on related, but separate sheets. And here's another great idea: having the

Specifications link to the Drawings. You'll see how that happens as you read on in this e-book. Creating a Specification System that allows Architects to have cleaner drawings, and simultaneously to be able to include more information for more complex construction is a miracle that ArCHspec™ and ArCHnotes™ addresses, as you will see later in this e-book.

However, it is important to document the case for specifications to be included in residential projects. Please review the following for a few good reasons why:

1. LESSONS LEARNED.
There are countless lessons Architects learn as they design through their lifetimes. ArCHspec™ contains hundreds of those lessons learned so that individual Architects don't have to try to remember all of those lessons. They are already built-into the specifications. What sort of lessons learned? It would seem likely that the Architect of the Parthenon probably was aware that it was not a good idea to build on top soil. So, he probably directed the Builders (which might have been the Architect back then) to remove the top 18" of organic soil (or to whatever depth such deposits may have existed under the proposed structure) and debris from the earth before the foundations for that important structure were installed. And perhaps even had heavy carts filled with stone, marched across the soil, pulled by oxen, to compact the ground on which the structure would bear. And when that Architect died, were his lessons learned recorded anywhere? Now, centuries later, they are: in something called SPECIFICATIONS. Never to be forgotten again. And that's just one lesson. ArCHspec™ has hundreds of those, representing the best practices involving construction for residences today. So if you, as an Architect, have important lessons learned, what happens when you no longer practice or die? Wouldn't you want those to continue on? This is part of how civilization improves conditions. Specifications are a great place in which to keep those.
This is a good reason for all projects (including residential) to have specifications.

2. BEST PRACTICES.
Similar to Lessons Learned, but more public in nature and shared by other Architects, Engineers and Contractors.

This is a good reason for all projects (including residential) to have specifications.

3. NORMAL BOILERPLATE

Industry accepted specification information related to material quality, structural properties, grade stamps, mix designs, performance requirements, source, number of coats, type of material, chemical composition, thickness, sequence, if/then requirements, warrantees, procedural practices and much more. All the things that help you sleep better at night and protect your Client. And protect the General Contractor with respect to all of his/her subcontractors and suppliers. Without these, you won't know the quality of anything and may end up with a cardboard roof with balsawood beams and no flashing.

This is a good reason for all projects (including residential) to have specifications.

4. IDENTIFICATION OF YOUR INTENTIONS

Since you are the Architect, you can refer to things on the drawings and link those to the Specifications. No more "I didn't know that was included! That'll be extra." Cover your Client, your design and help the Contractor and his providers to know your intentions. Make sure that everything is identified. Ever had a Contractor say: "I thought those were just lines or marks on the page. I didn't know those represented anything. I didn't see anything anywhere telling me what those were supposed to be. So: if you want that, I'll create a change order." And then having your Client say: "If you didn't properly identify your intentions, then YOU pay for that; unless you'd like to hear from my Attorney." What an unpleasant situation. Don't let that happen to you. Providing specifications can help avoid this unfortunate set of circumstances.

This is a good reason for all projects (including residential) to have specifications.

5. GREAT LOCATION FOR ALL THE WORDS THAT YOU CAN'T POSSIBLY FIT ON YOUR DRAWINGS

This is a good reason for all projects (including residential) to have specifications.

6. BID FORMS HELP CONTRACTOR PROPOSALS TO BE APPLES TO APPLES
For instance: ArCHspec™ comes with electronic Bid Forms, keeping Contractor price proposals in the same format. If you, as an Architect, have ever had to deal with different types of proposals from different Contractors on Bid Date, with all of them taking liberties so you and your Client can't possibly understand the value of one to the other, you'll want this feature. Good residential specifications can provide you with this.
This is a good reason for all projects (including residential) to have specifications.

7. CONFORMANCE WITH YOUR FIRM'S ENERGY REQUIREMENTS
ArCHspec™ includes the latest IECC (International Energy Conservation Code) requirements for each aspect of a residence, and then also allows you to indicate what your firm may require that, in your own good judgement, may exceed those minimal standards. Your firm may require better energy provisions than Code minimums. Having specifications to help you clearly state this can make all the difference in the world: making your company truly better than the average.
This is a good reason for all projects (including residential) to have specifications.

8. OTHER STANDARDS THAT YOU CONTROL.
There are structural and other requirements, hundreds, too numerous to mention in this short e-book. Needless to say: having the best residential specifications on Earth gives you the control you need to set each of the parameters of your projects. Without them: who sets those standards? The Contractor?
This is a good reason for all projects (including residential) to have specifications.

NEED FOR SPECIFICATIONS TO BE LINKED TO THE DRAWINGS
The drawings and specifications need to reference each other in an unequivocal manner. For instance: ArCHspec™ has each of its paragraphs numbered, in a CSI-like manner. As an example, paragraph 08550-110 refers to EMERGENCY EGRESS WINDOWS (EEW). Therefore, the Architect can use the spec paragraph # 08550-110 on the drawings and point at certain windows that are emergency egress

windows, making the reference coordinated between the specs and drawings. ArCH also suggests including the brief summary of the paragraph:
08550-110 EMERGENCY EGRESS WINDOWS
when space on the drawing permits, to assist Contractors, Subcontractors and their suppliers in quickly understanding what the item is, and if they want to "drill down deeper" into the specifications, they know where in the specs that paragraph is located in Division 8. Without this type of organized and coordinated notation, how would an Architect identify such special windows? Indeed: would they be forgotten? Because having a good specification itself acts as a comprehensive QC/QA (Quality Control/Quality Assurance) checklist, as the specifications are being edited for each project. Otherwise things are sure to be overlooked and problems will occur. Some of these situations may result in an embarrassing change order. However, at its worst, someone could die during a fire on a 2nd floor, because they could not get out of a window. Now we are starting to understand how having specifications, especially well-coordinated good ones, MADE for residential architecture can not only reduce problems, but could in fact save lives.
Do you agree that this is yet another good reason for there to be specifications for residential projects?

NEED FOR DRAWING NOTES TO BE LINKED TO THE DRAWINGS, ORGANIC NOTE LIST, AND TO THE SPECIFICATIONS

There will always be the need for two types of notes: Organic and SpecNotes. "Organic" notes cover the sort of circumstances that no specification could possibly account for, such as: "6-304 Align this post here, with loft beam above." This is why, along with ArCHspec™ comes ArCHnotes™, which usually takes the form of 1 to 2 sheets in the set, organized with a similar CSI listing of Divisions as the main 16 in the specifications, but much simpler, with the "6" prefix in this example standing for Division 6 Carpentry (and related items).
This numbered notation system allows for more verbose notes to adequately be contained on the Numbered Note sheets, with numbers linking those notes to the drawings. Once again, where space on the drawings allows, at least a brief 1 to 4 word summary of the note in text would be appropriate, to help the Contractor understand what the note is about in its simplest terms.

The SpecNotes™ used in the 08550-110 example above, links the drawings to the specs directly, but can also be part of the ArCHnotes™, when desired. This tells the General Contractor and his Subcontractors and suppliers in general what the note is referring to, and if they want to research more thoroughly, to investigate the ArCHnotes™ list and the specifications themselves to discover everything there is to know about those items, if they wish.
Conversely, NOT having any such organized notation system breeds chaos and either not enough information on the drawings, or too much text on the drawings (which can't possibly contain all the information in the specifications). Furthermore, without a master list of notes, the notes will become redundant from drawing to drawing and they will also morph, or change, throughout the set, oddly evolving and becoming different, so as to confuse the builders. It is far better to have one comprehensive list of numbered notes, linked to the specifications, so that these things are referred to once and in exactly the same manner for all instances, throughout the drawings. This type of consistency throughout a set of documents will greatly enhance the understanding of the Contractor and his 50+ subcontractors as they become more familiar with the requirements of the documents.

2. ArCHspec™ Organization of Residential Specifications

As mentioned above, the organization of ArCHspec™ is classic CSI organization (Construction Specifications Institute), with a twist at the beginning and end. While retaining the traditional 16 Divisions, there is a Division 0 and Division 17 in ArCHspec™.

(Note 1: there are typically multiple sub Sections within each Division (see below))
(Note 2: number of sections will be increasing into the future. Actual number of residential specification sections may vary from count indicated below, as specifications are constantly being updated, merged and created).

Note 3: the actual CONTENT of the ArCHspec™ sections is different from any other specification system you have ever seen. Much will be somewhat familiar, however different, with many sections totally new, as ArCHspec™ was created primarily for Architects who are creating SFR (Single Family Residential) projects. And, since very little in the way of specifications before ArCHspec™ was oriented to address the specialized needs of SFR projects, new sections and content were created to specifically deal with those particular needs. This is NOT large commercial specifications adjusted for residential projects. Rather, this is a custom created specification system purposely made for SFR architectural work.

If you're looking for the Part 1, Part 2, Part 3 format of other, large commercial projects, you won't find that here. ArCH determined that this tended to inflate the size of the overall specification, when applied to hundreds of specification sections. And, the language tended to become a bit redundant, when this was examined. Therefore, ArCHspec™ instead primarily examines what is important for each specification section and if it is a material or system, ArCHspec™ declares either the performance requirements and/or the Architect-approved manufacturers, model numbers, main product characteristics, installation requirements and possibly cleaning.

However, ArCHspec™ has only one section early in the specifications, in Division 1 (Section 01981) that states one time, that ALL products, materials, systems and components shall have certain requirements required by the manufacturer's written instructions for Ordering, Pre-Engineering, Fabrication, Shipping, Delivery, Handling, Installation, Cleaning, Protection, Finishing, Sealing and for Warrantees. It is stated that this one section applies to ALL other sections in the Specifications.

That one act just saved several hundred paragraphs in the entire spec, as most commercial specifications repeat this verbiage in nearly every other Section throughout the entire specifications. There's really no reason for that. There is a similar Division 1 section referring to Tolerances. And another regarding Drawing Conditions Requiring Adapting to field circumstances. These sorts of paragraphs being made applicable to the entire specification, saves a great deal of space in the overall specification, and no doubt several sheets when being printed out. This type of word-smithing and compaction helps to keep ArCHspec™ as compact as possible and avoids the repetitiousness of larger commercial specification systems. ArCH wanted ArCHspec™ to be as compact as was reasonably possible and still be functional.

ArCHspec™ MAIN DIVISIONS:

Division 0 SCOPE, PRICING, BID FORMS (4 sections)
Division 1 GENERAL REQUIREMENTS (20 sections)
Division 2 SITE WORK (12 sections)
Division 3 CONCRETE (2 sections)
Division 4 MASONRY (3 sections)
Division 5 METALS (4 sections)
Division 6 WOOD, CABINETRY, PLASTICS, SIDING (20 sections)
Division 7 THERMAL & MOISTURE PROTECTION (17 sections)
Division 8 DOORS & WINDOWS (13 sections)
Division 9 FINISHES (7 sections)
Division 10 SPECIALTIES (15 sections)
Division 11 EQUIPMENT (1 section)
Division 12 FURNISHINGS (1 section)
Division 13 SPECIAL CONSTRUCTION (1 section)
Division 14 CONVEYING SYSTEMS (Not Included, but will be added in future)
Division 15H HVAC (1 section)
Division 15P PLUMBING (4 sections)
Division 16 ELECTRICAL (11 sections)
Division 17 DATA SYSTEMS (1 section)

(Note: classic “engineering” sections such as 15 & 16 are not written from an engineer’s point of view, but rather, from that of the residential Architect for normal SFR projects. Special large, unusual residential projects will require special attention from the Architects and Engineers to adjust the Sections to adequately cover such more complex systems)

CURRENT ArCHspec INDIVIDUAL SECTIONS (may be changed without notice)

Presently: 137 sections in the following Divisions:
(note: this number is constantly changing (typically expanding) due to updates)

Division 0 SCOPE, PRICING, BID FORMS

00100 SCOPE OF THIS PROJECT
00320 BASE BID PRICING QUOTATION (BID) FORM
00380 GC FURTHER COST REDUCTIONS
00392 OWNER OPTIONAL UPGRADE PRICING QUOTATION (BID) FORM (from GC)
(note: this is now brief, as it includes an electronic link to another ArCH spreadsheet bid form, the “4in1” form, that is now included as part of ArCHspec™).

Division 1 GENERAL REQUIREMENTS

01003 PERMITTING
01006 DOCUMENT REPRODUCTION & COPYRIGHT
01007 LOCATION OF PROJECT
01010 WARRANTIES/ CLOSEOUT MANUALS
01012 CONTRACTOR & OWNER SUBSTITUTIONS
01014 PROJECT SAFETY
01016 CODES
01018 SHOP DRAWING & SUBMITTAL REQUIREMENTS
01020 CLEAN UP
01022 SUBSTITUTIONS

01024 FLOOR LOADS (residential(& MISC.))
01026 ROOF & WALL LOADS, WIND, SNOW SEISMIC
01700 PROJECT CLOSEOUT
01800 HEALTHY BUILDING SPECIFICATION (Base Bid)(note: among other common sense requirements, this also contains a provision that requires the GC to test for Radon and to test the potable water quality).
01810 ADVANCED ADDITIONAL HEALTHY BUILDING
SPECIFICATION ITEMS (Optional) (among other features, this allows adding non-mold producing building materials, adding a radon removal system, electrostatic dust removal from the air stream and other healthy items).

01900 ENERGY STAR CERTIFICATION (optional)
01950 GENERAL ENERGY EFFICIENCY/ THERMAL TIGHTNESS REQUIREMENTS (Base Bid)
01981 ORDERING, PRE-ENGINEERING, FABRICATION, SHIPPING, DELIVERY, HANDLING, INSTALLATION, CLEANING, PROTECTION, FINISHING, SEALING, WARRANTEES
01986 DRAWING CONDITIONS REQUIRING ADAPTING
01989 TOLERANCES

Division 2 SITE WORK

02110 SITE CLEARING
02200 EARTH WORK
02281 TERMITE AND ANT CONTROL
02480 LANDSCAPE WORK (includes Paving)
02525 COLORED INTERLOCKING CONCRETE PAVER STONES
02530 FIREPIT AT EXTERIOR
02532 STONE WALKWAY & TERRACE PAVERS
02534 PORTLAND CEMENT CONCRETE PAVING
02550 SITE UTILITIES (septic, well, site piping, some others)
02560 UNDERGROUND SITE DRAIN PIPING
02770 CURBS & GUTTER SITE WORK
02990 SITE ADDRESS (something often overlooked, resulting in fire trucks and other first responders not knowing where the house is located, unless this in included).

Division 3 CONCRETE

03310 CAST IN PLACE CONCRETE
03400 PRECAST CONCRETE

Division 4 MASONRY

04200 CONCRETE MASONRY UNITS
04300 GENUINE NATIVE STONE WORK
04350 CULTURED STONEWORK

Division 5 METALS

05100 METAL FABRICATIONS
05120 STRUCTURAL STEEL
05400 COLD FORMED METAL FRAMING
05500 MISC. CONNECTORS

Division 6 WOOD, CABINETRY, PLASTICS, SIDING

06100 ROUGH FRAMING
06150 TIMBER FRAMING
06172 WOOD MANTELS AT FIREPLACES
06192 PREFABRICATED WOOD TRUSSES
(light-framed) & LVLs & Engineered Posts
06200 SIDING OF VARIOUS TYPES
06210-c CEMENTITIOUS WALL SIDING: SIMULATED SHINGLES
06212 CEMENTITIOUS WALL SIDING: VERTICAL
RANDOM BOARD & BATTEN
06213 CEMENTITIOUS WALL SIDING: HORIZONTAL LAP SIDING
06215 CEMENTITIOUS SIDING PRODUCTS
COMPOSITION, INSTALLATION, HANDLING, STORING, CUTTING, PRECAUTIONS:
JAMES HARDIE PRODUCTS
06250 PLYWOOD EXTERIOR & INTERIOR SIDING & TRIMS
06400-dd ARCHITECTURAL CABINETRY- BASE BID PRICING: PINE PREFABRICATED
modular cabinetry, Stock Prefinished Hardwood Doors
06410 CLOSET SHELVING, MISC. SHELVING, INTERIOR PANTRY STORAGE UNITS

06415 COUNTERTOPS (granite)
06515 STEPS (Base Bid)
06520 STAIR HANDRAILS & GUARDRAILS & HANDRAIL HARDWARE (interior & exterior)
06600 FINISH CARPENTRY & STANDING AND RUNNING WOOD TRIM (also includes attic access panels, carpentry at exterior screening and other items)
06640 WOOD PLANTER BOXES
06650 WOOD CEILINGS
06998 WOOD FLOORING
06999 WOOD FINISH FLOORING: INSTALLATION, FINISHING & PROTECTION FOR ALL WOOD FINISH FLOORING

Division 7 THERMAL & MOISTURE PROTECTION

07200 INSULATION
(note: includes one of a kind graphic IECC Climate Zone code checks and Energy Level settings for all areas: floors, walls, ceilings, crawlspace, etc. and URL linkage to your own Project Page for this project and to the ArCH website ArCHomesData energy values/data page form for easy download)
07210 VAPOR BARRIERS, WATER BARRIERS, & AIR INFILTRATION BARRIERS
(*Note: also includes excellent section on Encapsulated Unvented Crawlspace, including Code sections that allow this*).
07215 SYNTHETIC FIBERMESH DRAINAGE & VENTING PLANE FOR WALLS
(*Note: this is Code in Canada. Only a question of time before America gets fed up with moldy walls until it becomes a requirement here as well. Put your firm ahead of the curve. Start specifying this now.*)
07220 FLASHING TAPES
07300 ROOFING GENERAL REQUIREMENTS
07310 ROOFING (ASPHALT COATED FIBERGLASS SHINGLES)
07320 RIDGE VENT & ZINC MOLD PREVENTION STRIP
07400 (WURM) WATERPROOF UNDERLAYMENT ROOFING MEMBRANE (peel & stick) Base Bid Pricing system
(Note: this can help prevent roof leaks in your project roofing before they start. Start specifying a better quality underlayment for your projects).
07420 FLASHING
(Note: this section contains many graphic details indicating how flashings can be

installed).
07427 SOFFITS
07430 GUTTERS & DOWNSPOUTS
07900 SEALANTS
07950-1 FOUNDATION/ BASEMENT WALL WATERPROOF MEMBRANE (at exterior)
07950-2 FOUNDATION WALL DRAINAGE MAT (at exterior)
07950-3 FOUNDATION WALL GRAVEL DRAINAGE (at exterior)
07953 BASEMENT INTERIOR UNDERGROUND WALL WATERPROOFING COATING at concrete or concrete block *(Note: hard to find information and specifications for 2 different optional systems to help stop leaking at in the interior side of Basements.)*
07975 CMU CAVITY WALL WATERPROOFING

Division 8 DOORS & WINDOWS

DOORS

08210 WOOD DOORS (side hinged types)
Interior Doors
08250 STEEL DOORS (side hinged types) exterior
08260 WOOD DOORS (side hinged types) exterior
08280 VINYL DOORS (sliding) exterior
08310 GARAGE DOORS (includes operating systems)
08498 EXTERIOR DOOR INSTALLATION

WINDOWS

08500 WINDOW & EXTERIOR DOOR INSTALLATION
08502 WINDOW GENERAL REQUIREMENTS
08510 VINYL WINDOWS
08550 CODE REQUIRED SECONDARY MEANS OF EGRESS THROUGH WINDOWS
08710 DOOR HARDWARE *(includes Door Hardware Schedule, pre-populated for typical situations)*
08800 GLASS & GLAZING
08900 FRAMELESS TEMPERED GLASS SHOWER ENCLOSURES

Division 9 FINISHES

09001 FINISHES GENERAL, APPLIES TO ALL FINISHES
09200 STUCCO *(both thin & thick systems)*
09250 GYPSUM DRYWALL (Standard, Base Bid Pricing Paper-Backed)
09252 GYPSUM DRYWALL (Non-Paper Backed)
09255 GYPSUM DRYWALL INSTALLATION
09300 TILE
09900 PAINTING

Each ArCHspec™ buyer is welcome to add more Sections to cover any specialized finishes your practices desires.

Division 10 SPECIALTIES

10220 LOUVERS & VENTS
10355 EXTERIOR ALUMINUM FRAMED SCREENING OF OUTDOOR LIVING SPACES
10520 FIRE EXTINGUISHERS
10800 TOILET ACCESSORIES
10900-A FIREPLACE GENERAL REQUIREMENTS
(*Note: includes a Schedule of All Fireplace Units for This Project*)
10900 PREFABRICATED FIREPLACES OF PREFORMED PUMICE
10902 SPECIAL MECHANICAL EXHAUST FOR 2-WAY FIREPLACES
10903 FIREPLACE MODELS & FEATURES
10904 EXPOSED METAL CHIMNEY CAPS
10905 PREFABRICATED METAL GAS OR WOOD BURNING FIREPLACES
10910 UPGRADE OPTION: CMU SHELL WALLS & CAPPING OF TOP EXHAUST SPACE, BOULDER STONE *(not included at present time)*
10914 EXPOSED PREFABRICATED SPARK ARRESTOR CHIMNEY FLUE METAL CAPS
10924 CAPPING OF CHIMNEY HOUSING AT FLUE
10935 FIREPLACE RECIRCULATING FEATURE
10941 GAS IGNITION

Division 11 EQUIPMENT

11400 KITCHEN & LAUNDRY EQUIPMENT

Division 12 FURNISHINGS

12500 WINDOW TREATMENTS

Division 13 SPECIAL CONSTRUCTION

13150 SWIMMING POOLS (Private Below Grade)

Division 14 CONVEYING SYSTEMS *(Not Included presently, but will be added in future)*

Division 15H HVAC *(note: not engineering oriented: architectural, however, this is a reasonably detailed section)*

15010 HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)

Division 15P PLUMBING (note: not engineering oriented: architectural)

15400 PLUMBING *(in addition to normal residential plumbing, this includes option for Whole House Water Filter System and many other sections, such as a tankless HWH (Hot Water Heater) schedule with GPM, number of units and locations.*
15405 CRAWLSPACE DEHUMIDIFICATION
15410 PROPANE GAS SYSTEM
15500 FIRE SPRINKLER SYSTEM

Division 16 ELECTRICAL (note: not engineering oriented: architectural)

16010 ELECTRICAL SYSTEMS
16020 ELECTRICAL CONVENIENCE OUTLETS
16022 AIR SEALED ELECTRICAL CONVENIENCE OUTLET BOXES & SWITCH BOXES *(Note: these boxes provide for better air seals in exterior walls)*
16025 SWITCHING
16510 LIGHTING
16610 SURGE SUPPRESSION
16721 BASE BID SMOKE DETECTION & CARBON MONOXIDE (CO) DETECTION & ALARM SYSTEM
16722 CENTRAL ALARM SYSTEMS
16910 LIGHTNING PROTECTION SYSTEM

16960 HEATED FLOOR SYSTEM
16980 EMERGENCY ELECTRICAL POWER GENERATOR

Division 17 DATA SYSTEMS

17000 DATA SYSTEMS

Are there are a few sections that your firm is used to using that are not there? That's part of the beauty of ArCHspec™: delete or add whatever you want! Easy to do. Over time, each firm will make it their own, as they continue to edit the specifications over the years.

SAMPLE SCREEN IMAGES OF ArCHspec™

FOCUSED ATTENTION

Focused attention only on what changes for each new project = less time spent on specifications. Most critical custom data entry locations are coded red, within red rectangles (prints in black) so that users can easily find what needs to change for each project and leave the boilerplate on autopilot (once the Architect has checked each section for a firm's practice needs). This laser-like focus on what needs to change and what doesn't saves users dozens of hours and helps Architects produce better residential specifications, because they are less likely to omit something that has to be adjusted for each project, when there's a red rectangle around it and the text that needs changing is in red.

FOUNDATION WALL CONNECTIONS

06100-85 WOOD SILL PLATE AT TOP OF FOUNDATION WALL

SILL PLATE: Provide continuous 2x___ p.t. #2 SYP sill plate of sufficient width to completely cover the top and width of the foundation wall top (in locations where floor or roof framing is bearing on the sill plate. If only a wood framed wall is attached here, the wall width is adequate). Use additional pieces of 2x wood as required to make-up entire width so that sill plate matches width of foundation wall. This facilitates the connection of Simpson straps and clips to the sill plate from above floor joists. See sections. Sill plate to be 1-1/2" thick.

FOUNDATION ANCHOR BOLTS: Bolt to foundation wall with

15" long, 1/2" diameter galvanized steel wedge anchor bolts at 18" o.c.

Contractor may, instead cast "L" anchor bolts of galvanized steel in place if builder prefers, using same embedment length. NOTE: If structural engineering specifically indicates other requirements for size, spacing & type or anchors, comply with structural engineering.

06520-120 GUARDRAILS - WOOD

GUARDrails to be: #2 SYP at interiors, p.t. #2 SYP at exterior. Guardrails will be where shown, but in no case not less than as required by code.

Code Reference: 2015 IRC (or latest enforced State/AHJ edition & similar reference sections) R312 GUARDS AND WINDOW FALL PROTECTION (page 66).

Top of the top rail of the guardrail shall be 36" above the floor surface or higher, per drawings for single family residential projects. See drawings & details.

Unless otherwise shown or detailed, GUARDrails are NOT HANDrails, because GUARDrails typically have larger member sizes that do not allow people to properly grasp them, which is a requirement of HANDrails. In other words, a common practice of using GUARDrails as HANDrails violates Code and will not be acceptable. Loads: see chart below:

LOADS: (not required to be acting simultaneously):	
GUARDrail top rail, anywhere along its length to resist:	200 pound point load.
GUARDrailing system evenly distributed load over its entire face to resist:	50 pounds per square foot (at 1SF areas).

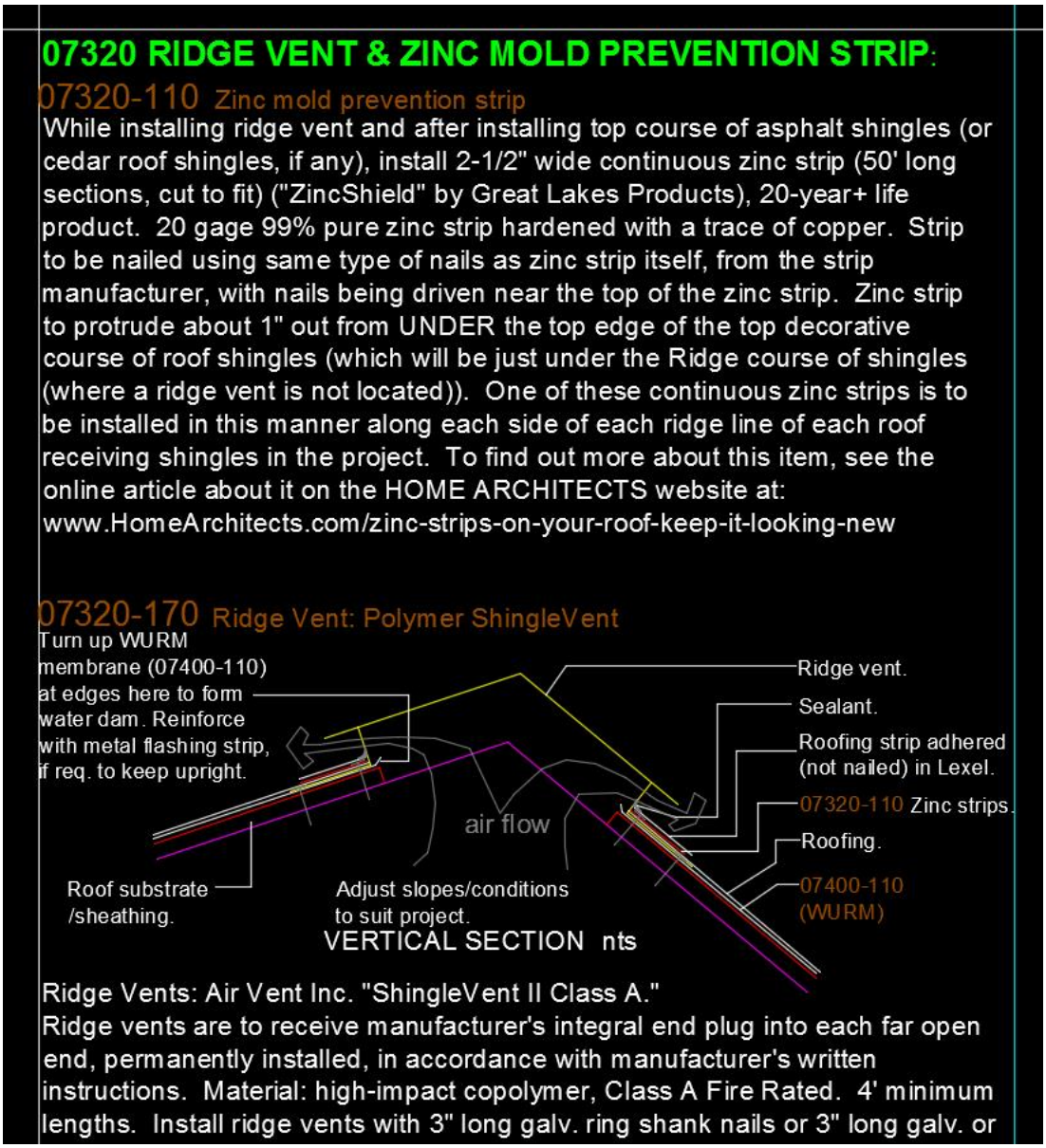
Coordinate with:

Drawing detail(s): A12. 6rail-1-b

or similar detail(s) provided in this set of documents.

THUMBNAIL (“Cameo”) DETAILS

There are compact mini-details created by Licensed Architects with decades of experience directly adjacent to and part of some of the Sections. These illustrate, right next to the text of the specifications, what the words mean, in terms of location, materials, assembly and in some cases, dimensions. Since the specification sections have unique CSI-related (similar to Construction Specification Institute) numbers, these details can be referenced on the Drawings, using the spec paragraph numbers, just like an Architect would reference any other detail in a project.



Actual screen capture of ArCHspec section involving Division 7 Ridge Vent. Note how effectively ArCH's "thumbnail" details help to explain the text of the specification. And, the thumbnails can be edited to suit each firm's preferences. Although, many may find the capable arrangements suited to best practices. And also note specialized knowledge throughout the ArCHspec about such items as the zinc mold prevention strip, which is not commonly known, but which is economical and effective at inhibiting mold growth on Client roofs. Using ArCHspec can be a learning experience for many Architects, gaining outstanding information that will help improve projects.

3. Location of Specifications

Many people would have a knee-jerk reaction and say: "in a separate book, of course." And they would be wrong. At least about ArCHspec™. The complete set of specifications in ArCHspec™ is in AutoCAD on the sheets at the end of the set of drawings, presently formatted for 24"x36", the most popular sized architectural sheet size.

Why:
Many separate books of specs become "lost." As in: "What specs? I didn't ever see any of those. And I for sure didn't include any money to cover anything in anything like that!" Or they might become a door stop in the construction trailer, if they are even there.
How to prevent this sorry state of affairs: put the specs on the printed sheets, and in the set where they can't possibly be misplaced or forgotten and where they can do the most good. That would be IN the set of documents with the drawings. ArCHspec™ puts them in a Division 15, at the end of the set, where they are easy to find by anyone, after they are printed in a Construction Document (CD) set.

But what about before they are printed? Where do the specs go when designing the project and preparing the CDs? It couldn't be simpler: ArCH suggests that you use the ArCHspec™ file as the basis for each of your AutoCAD projects and work in Modelspace exclusively, with everything in one file, so that you can easily zoom around the file, seeing everything there: Survey, Site Plans, Title Sheets, Index, Floor Plans, Roof Plan, Elevations, Building Sections, Wall Sections, Details, Structural Engineer's work, Door Schedule, Finish Schedule, Electrical Schematics, ArCHnotes™, and of course, the Specifications. In this manner, you can easily zoom in and out and pan between your in-progress drawings and the Notes and the Specifications, linking and coordinating between them all for a totally integrated work experience.

This works, if you are in 2D. If you are in a 3D environment, you will likely need to have some alternate method, such as running AutoCADLT in another window in 2D, while using Revit or other program in another window, or whatever hybrid solution works for you. The main idea: have the specifications OPEN, while you are developing the drawings so that you can link intelligent notes between the Drawings, the Numbered Notes and the Specification paragraphs so that they are all part of the integrated project.
When printing, just keep in mind that each sheet will be in a particular scale. And each sheet's scale can be whatever you want it to be, different from the other sheets on the file.

However, if you are determined to want the specifications in a separate file, in a separate printout, you are welcome to do so. ArCH only has ArCHspec™ available on AutoCAD files, however (currently ACAD2013-2017LT (which will be updated as new versions of AutoCad are released)), so it will be up to you to convert, copy, paste and reformat to suit your wishes. ArCH does not guarantee compatibility with any software other than AutoCAD2013-2017 (LT or full AutoCAD), using W7/W8/W10 on a PC. If you are on a Mac, chances are that you will have formatting and compatibility issues that are beyond ArCH's ability to control or solve and if you choose to do this, you are on your own. Also keep in mind that ArCH is constantly updating ArCHspec™, so if you want to enjoy the latest

specifications, you might want to work in AutoCAD, so that you can easily update your specs when updates are issued. Note that AutoDesk has a version of AutoCAD for the Mac. While ArCH is not a seller of software or operating systems, AutoDesk has informed ArCH that the best bet for using ArCHspec™ on a Mac might be to run AutoCAD for the Mac. In that manner, at least you would be taking an AutoCAD file and opening it on another AutoCAD software expressly made for a Mac. But those are your choices and ArCH cannot guarantee complete success in anything other than ArCHspec's native environment, as described above.

NOTE ABOUT LENGTH OF SPECIFICATIONS FOR RESIDENTIAL PROJECTS

Architects may be thinking: "Gosh; I don't want to have a 1,000 page book of specs for my medium-sized house project." And you won't. ArCHspec™ is a masterpiece of compaction, with only the meat & potatoes of what is necessary. Architects can create a specification for a highly detailed Kitchen, Laundry, Pantry & home Bar renovation project with about (4) 24" x36" drawing sheets worth of specifications. That's the equivalent of between 20 to 25 8-1/2" x 11" word-processed pages.
Or a custom 3,000 to 4,500 HSF (Heated Square Feet) new home in about 10 to 14 sheets. That's the equivalent of between 70 to 98 8-1/2" x 11" word-processed pages.
And for a 4 story castle, with many more systems, more will likely be required. It really depends on what the Architect has included in the design.

That's really not so much, when you think about the thick books many commercial architectural firms create for schools, hospitals, museums, office buildings and other similar facilities (often 1,000 to 2,000 8-1/2" x 11" word processed pages).

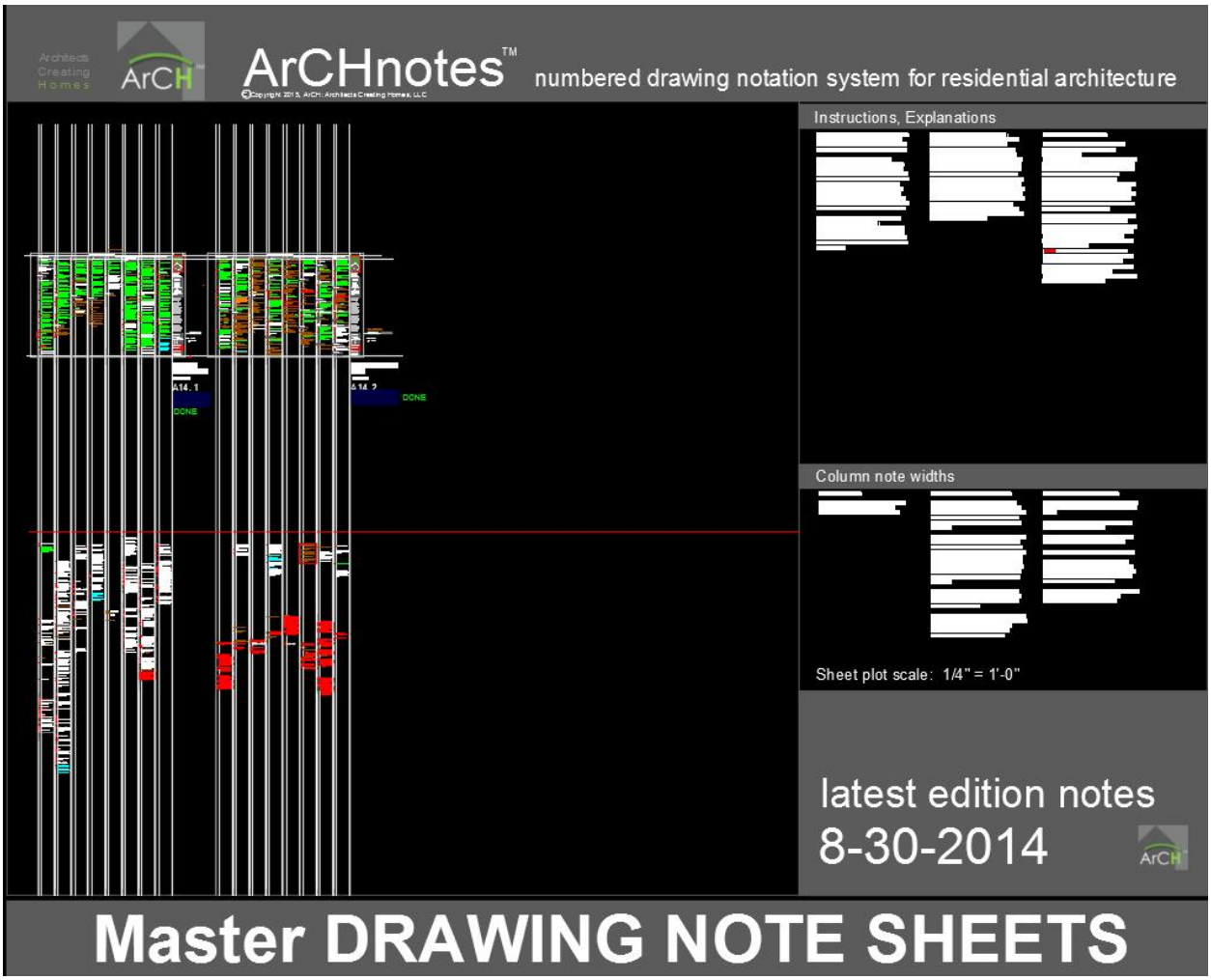
And each Architect controls how long their specification is for each project.

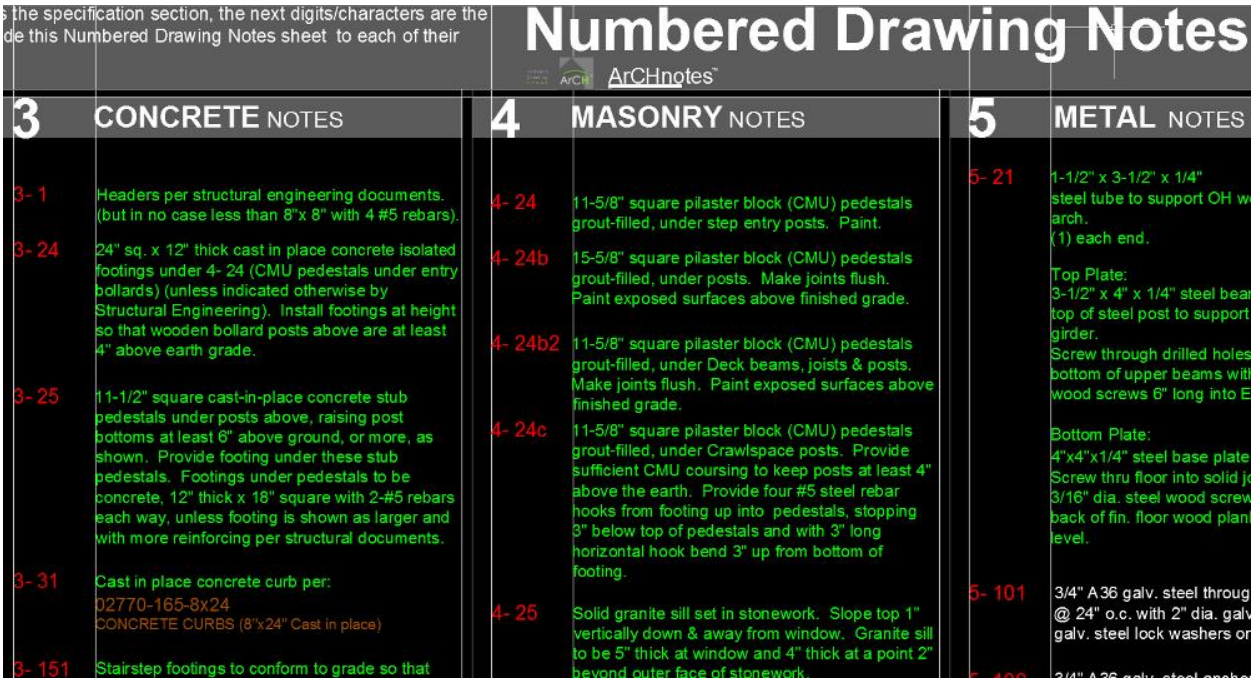
ArCHspec™ includes approximately (and presently) 14.5+ 24”x36” formatted sheets of architectural residential specifications, in 10 point Arial text. Each sheet has been estimated to contain roughly 7 pages of 8-1/2” x 11” text. This results in roughly (95) 8-1/2” x 11” sheets of text. And, there are 18 Divisions with a total of about 137 sections (this number is constantly changing, usually there will be more in the future). That’s a lot of information, however, when compared to other specification systems; a miracle of compaction. Architects designing homes may not (probably won’t) always use all of these sections, and they may include/create others. ArCH is continuing to work on bringing more sections to the product over time (about twice this amount of data is in the works and will be brought into future editions).

So: users are paying not only for volume, but the intelligence of compaction included in the “design” of the information, that results in it being more condensed than traditional verbose specifications. You are paying not only for quantity, but quality of information for custom residential projects.

4. ArCHnotes™

ArCHnotes™ are the easy to use LINK BETWEEN YOUR DRAWINGS AND YOUR NOTES & SPECIFICATIONS. ArCH felt it was high time to finally establish a Numbered Drawing Note System that helped to link the various trades to their work and to their specification Division and Sections.


ArCHnotes™
numbered drawing notation system for residential architecture
Instructions, Explanations
Column note widths
Sheet plot scale: 1/4" = 1'-0"
latest edition notes
8-30-2014
Master DRAWING NOTE SHEETS



the specification section, the next digits/characters are the
de this Numbered Drawing Notes sheet to each of their

Numbered Drawing Notes

ArCHnotes™

3 CONCRETE NOTES

3- 1 Headers per structural engineering documents. (but in no case less than 8"x 8" with 4 #5 rebars).

3- 24 24" sq. x 12" thick cast in place concrete isolated footings under 4- 24 (CMU pedestals under entry bollards) (unless indicated otherwise by Structural Engineering). Install footings at height so that wooden bollard posts above are at least 4" above earth grade.

3- 25 11-1/2" square cast-in-place concrete stub pedestals under posts above, raising post bottoms at least 6" above ground, or more, as shown. Provide footing under these stub pedestals. Footings under pedestals to be concrete, 12" thick x 18" square with 2-#5 rebars each way, unless footing is shown as larger and with more reinforcing per structural documents.

3- 31 Cast in place concrete curb per:
02770-165-8x24
CONCRETE CURBS (8"x24" Cast in place)

3- 151 Stairstep footings to conform to grade so that

4 MASONRY NOTES

4- 24 11-5/8" square pilaster block (CMU) pedestals grout-filled, under step entry posts. Paint.

4- 24b 15-5/8" square pilaster block (CMU) pedestals grout-filled, under posts. Make joints flush. Paint exposed surfaces above finished grade.

4- 24b2 11-5/8" square pilaster block (CMU) pedestals grout-filled, under Deck beams, joists & posts. Make joints flush. Paint exposed surfaces above finished grade.

4- 24c 11-5/8" square pilaster block (CMU) pedestals grout-filled, under Crawlspace posts. Provide sufficient CMU coursing to keep posts at least 4" above the earth. Provide four #5 steel rebar hooks from footing up into pedestals, stopping 3" below top of pedestals and with 3" long horizontal hook bend 3" up from bottom of footing.

4- 25 Solid granite sill set in stonework. Slope top 1" vertically down & away from window. Granite sill to be 5" thick at window and 4" thick at a point 2" beyond outer face of stonework.

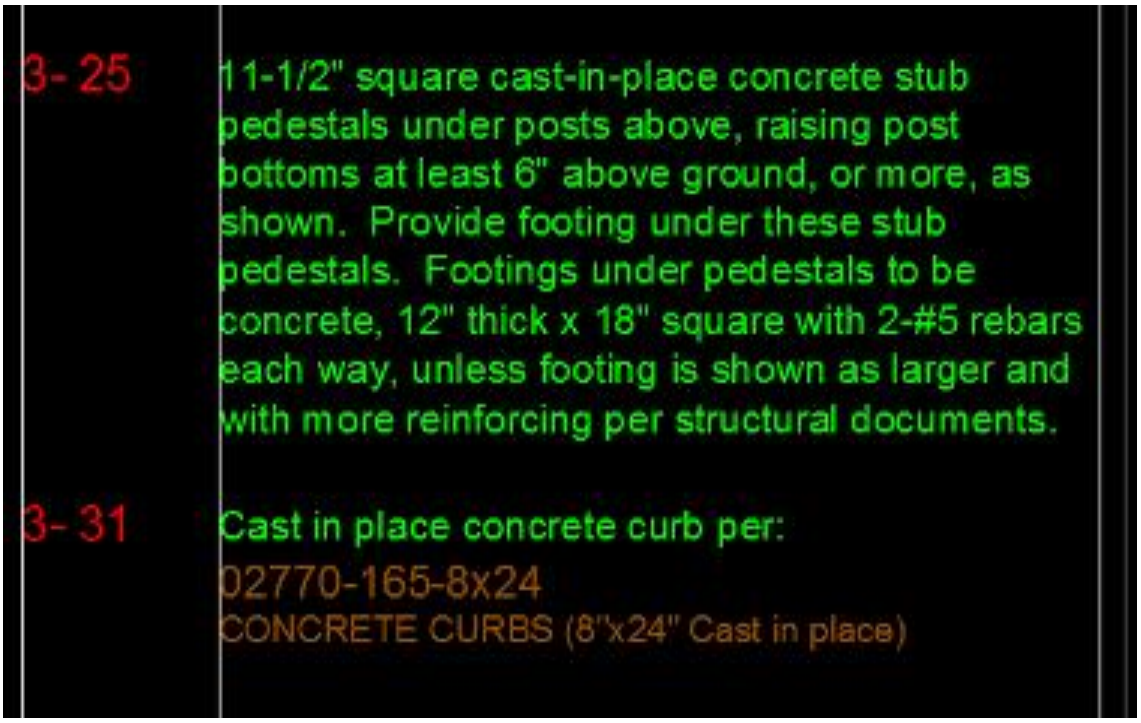
5 METAL NOTES

5- 21 1-1/2" x 3-1/2" x 1/4" steel tube to support OH w arch.
(1) each end.

Top Plate:
3-1/2" x 4" x 1/4" steel bea top of steel post to support girder.
Screw through drilled holes bottom of upper beams wit wood screws 6" long into E

Bottom Plate:
4"x4"x1/4" steel base plate Screw thru floor into solid j 3/16" dia. steel wood screw back of fin. floor wood plan level.

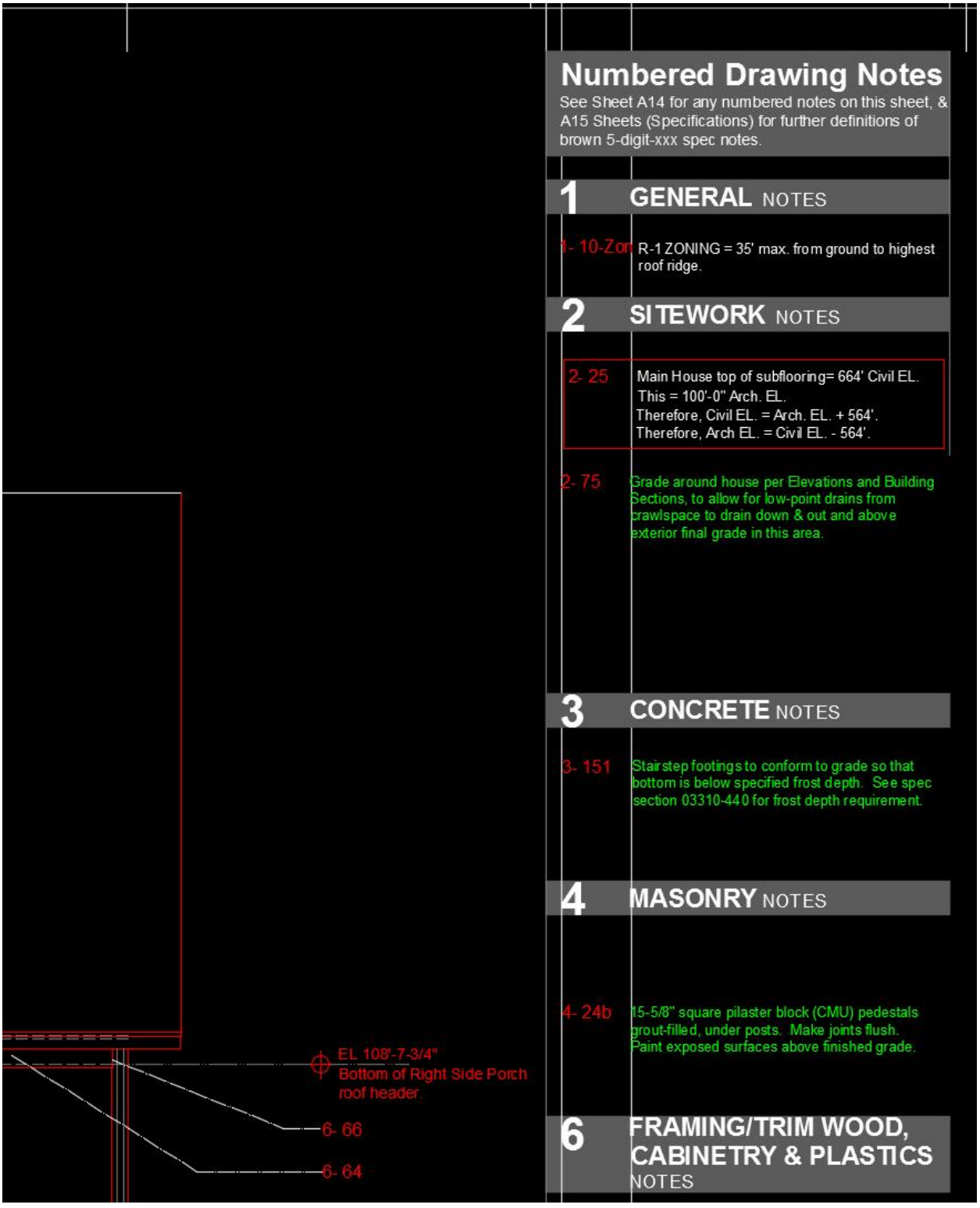
5- 101 3/4" A36 galv. steel throug @ 24" o.c. with 2" dia. galv galv. steel lock washers or



Architects can use AutoCAD to edit the red notes to be whatever is desired, in each note Division, then copy and paste those onto your drawings. Also, the brown SpecNotes™ (associated with ArCHspec™) indicate what specification paragraph that note relates to, for use on your ArCHnotes™ and directly on your drawings, making it crystal clear what the Contractor is to use and where. Direct link back to the specifications! Note: the brown colored notes will print bold dithered with black & white printers, and brown bold on color printers & plotters. The red "organic" notes print in black.

Here's an example (below illustrating how the ArCHnotes appear in a note column on your drawings and how you use them on the drawing:

(Continued on next page):


Numbered Drawing Notes
See Sheet A14 for any numbered notes on this sheet, & A15 Sheets (Specifications) for further definitions of brown 5-digit-xxx spec notes.
1 GENERAL NOTES
1- 10-Zon R-1 ZONING = 35' max. from ground to highest roof ridge.
2 SITEWORK NOTES
2- 25 Main House top of subflooring= 664' Civil EL.
This = 100'-0" Arch. EL.
Therefore, Civil EL. = Arch. EL. + 564'.
Therefore, Arch EL. = Civil EL. - 564'.
2- 75 Grade around house per Elevations and Building Sections, to allow for low-point drains from crawlspace to drain down & out and above exterior final grade in this area.
3 CONCRETE NOTES
3- 151 Stairstep footings to conform to grade so that bottom is below specified frost depth. See spec section 03310-440 for frost depth requirement.
4 MASONRY NOTES
4- 24b 15-5/8" square pilaster block (CMU) pedestals grout-filled, under posts. Make joints flush. Paint exposed surfaces above finished grade.
6 FRAMING/TRIM WOOD, CABINETRY & PLASTICS NOTES
EL 108'-7-3/4"
Bottom of Right Side Porch roof header
6- 66
6- 64

This allows Architects to have as much verbiage as desired for the note, but have only a brief note number on your drawing (which can also be amplified with a few simple words, if desired), for cleaner, clearer drawings, unencumbered (without too much text on the drawings).

5. Conclusion

MAIN THOUGHT:
What this small e-book attempts to accomplish is to help practicing Architects understand the need to have specifications for their residential projects, and what appears to be the best specification system to accomplish that.

1. A brief history summary of specifications has been reviewed, which establishes that building codes have always been woefully inadequate to deal with all of the issues in architectural projects, of which residential projects have many. It is up to Architects to advance better design and construction through their experience and through their "lessons learned" in their specifications, for which there is inadequate room on their drawing sheets.

2. A case has been made that commercial specifications are too large and verbose to work well for SFR projects.

3. The national organization ArCH: Architects Creating Homes has been discussed, including how their goal of Improving Residential Architecture extends into creating a specification system tailored particularly for residential architecture. This system is called ArCHspec™. Several of the features of this system were reviewed, illustrating how well ArCHspec™ is suited to assist Architects creating SFR projects.

4. A case has been made that identifies residential architecture as among the most complex project types an Architect can design and specify.

5. Data has been presented from the U.S. Census Bureau regarding population density and the number of households building new homes each year and how Architects are only designing a portion of those (which still numbers in the tens of thousands each year) and how Architects should want to present their services as a better value in order to increase the percentage of households that engage an Architect to design their home, which could, if properly communicated, increase from a few tens of thousands to the hundreds of thousands. Providing specifications is one suggested value that might assist this effort.

6. A case has been made that convincingly explains why specifications should be provided for residential architecture. Specifications are an excellent repository of lessons learned, best practices and boilerplate that helps architects to better protect their Clients, their projects, their own practice and Contractors. Also, specifications act as a QC/QA checklist, insuring that Architects check and coordinate the various drawings with the respective associated specification sections.

7. A notation system was explained that links Drawings to Numbered Notes and to the Specifications, in an organized, logical and coherent manner, based on CSI traditional and well-known Divisions. This notation system: ArCHnotes™ is included along with ArCHspec™, in the same electronic file.

BOTTOM LINE:
It would be a good idea if all Architects provided specifications for all of their projects, both commercial and residential.

ArCHspec™ is here:
http://www.archomes.org/product/archspec-architectural-residential-specifications
ArCHsuite™, which includes ArCHspec™ is here:
http://www.archomes.org/product/archsuite