Nov 18, 2025

Don’t Get Burned by Bad Plans + Specs!

Introduction:

Nick Spicher:

- +6 Years MEP Industry
- +6 Years ASHRAE Member
- Annapolis, MD
- Mechanical Engineer (University of Kentucky)
- ASHRAE Student Activities, E-Week, YEA, etc
- Hobbies: skiing, scuba diving, Kentucky, Orioles, Ravens

Case Study #1: Hensel Phelps Construction Co. v. United States (Federal Circuit, 1989)

- Scope: $33M Jet Engine Blade Repair Facility (Oklahoma)
- Conflict: Specs required 18 in. non-expansive fill; drawing note showed 36 in.
- Court: Hensel Phelps claimed order-of-precedence clause which states “In case of difference between drawings and specifications, the specifications shall govern.”
- Decision: Court held the order-of-precedence clause (18 in).

HENSEL PHELPS
Plan. Build. Manage.

VS.

ASHRAE®

Rules of Thumb:

1. Specs are legally most important document (not plans or drawings or equipment schedules).
2. Frontend and backend pain.
    a. Frontend: pain before job is awarded.
    b. Backend: pain after job is awarded (avoid this …).
3. Three places need to match (great shape):
    a. Drawings.
    b. Equipment Schedules.
    c. Specifications.

Terminology For Today:

1. Plans = Drawings + Equipment Schedules.

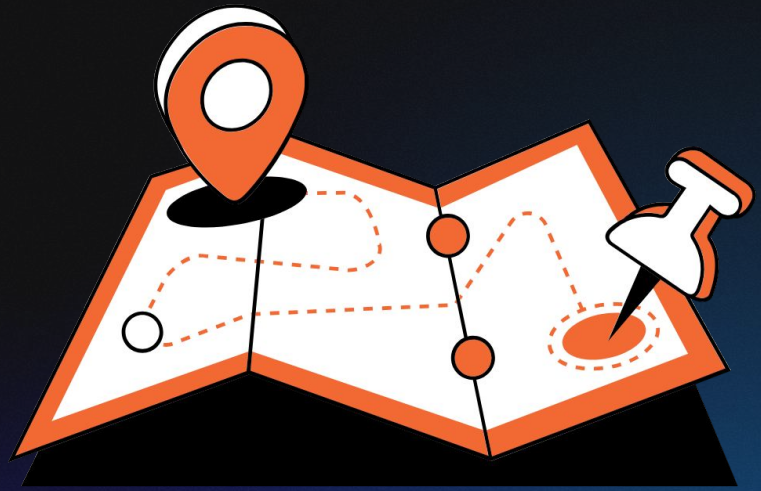
2. Drawings = the visual layouts: where equipment sits, how piping/ducts connects, etc.

3. Equipment Schedules = the reference tables (flow rates, GPM, horsepower, efficiencies).

4. Specifications (specs) – spec book (PDF).

Presentation Roadmap:

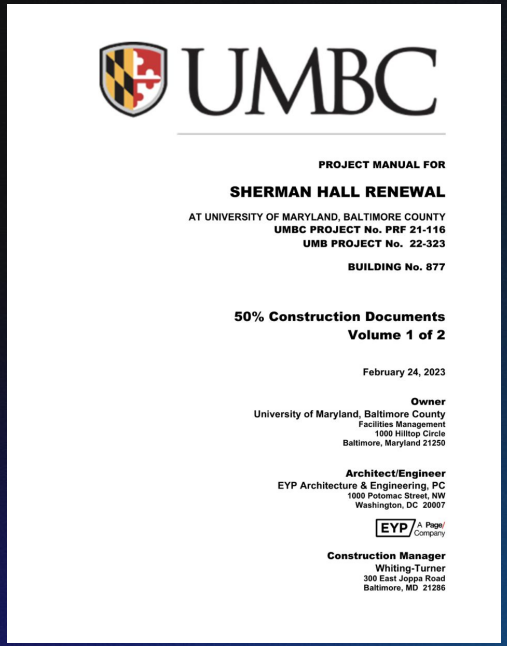
Section 1 - Drawings
Section 2 - Equipment Schedules
Section 3 - Specifications (deep dive)
Section 4 - Tying Everything Together



Section 3 - Specifications

Topics:

1. Core Spec Structure
2. What Strong Specs Include
3. Common Spec Mistakes
4. Copy/Paste Pitfalls
5. Coordination Language
6. Future-Proofing (new refrigerants…)
7. Microsoft Word vs Specification Software
8. Good vs. Bad Spec Example



UMBC

PROJECT MANUAL FOR

SHERMAN HALL RENEWAL

AT UNIVERSITY OF MARYLAND, BALTIMORE COUNTY
UMBC PROJECT No. PRF 21-116
UMB PROJECT No. 22-323

BUILDING No. 877

50% Construction Documents
Volume 1 of 2

February 24, 2023

Owner
University of Maryland, Baltimore County
Facilities Management
1000 Hilltop Circle
Baltimore, Maryland 21250

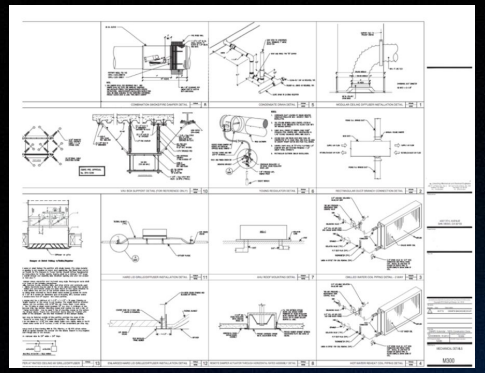
Architect/Engineer
EYP Architecture & Engineering, PC
1000 Potomac Street, NW
Washington, DC 20007

EYP A Page/ Company

Construction Manager
Whiting-Turner
300 East Joppa Road
Baltimore, MD 21286

Section 1 - Drawings

What Drawings Do Well:



Drawings excel at layout clarity.

- Equipment locations, routing, connections, and physical coordination.
- Example: The drawings shows how ductwork clears structure and other trades.

Field crews and contractors often rely on drawings first — not specs.

“If it’s not drawn, it often doesn’t get built.”

Where Drawings Fall Short:

- Drawings are visual — not contractual definitions of quality, efficiency, performance, etc.
- Often missing: accessories, warranty, and specific details.
- Notes may be too general or copied from old projects.

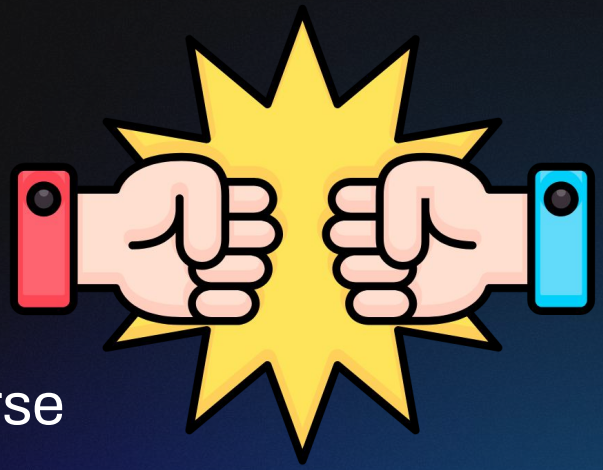
Example:

- Drawing shows a pump but doesn’t mention needed accessories or warranty.
- Cooling tower shown but not the construction material (galvanized steel, 304 SS, 316 SS) that’s needed.

When Drawings & Specs Collide (Part 1):

Example:

- Drawing : “Disconnects by Division 26.”
- Spec (23 05 13 – Motors and Starters): “Provide factory-mounted disconnect switches on all packaged equipment.”

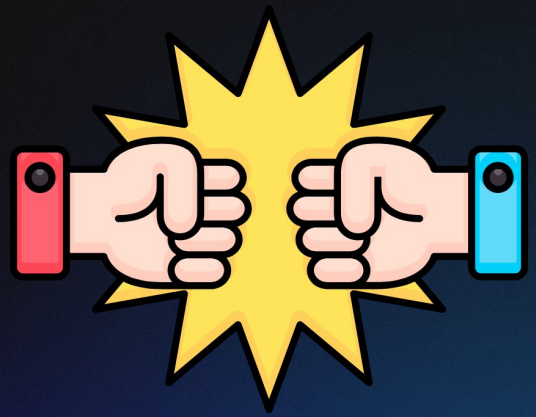


- Contractors/sales people typically bid worse case (both included disconnects).
- The job became (a lot) more expensive because the documents were not clear.

When Drawings & Specs Collide (Part 2):

Example:

- Drawing: Engineer detailed spring isolators for AHUs and pumps.
- Spec (23 05 48 – Vibration Control): “Provide rubber-in-shear isolators for equipment under 15 HP.”

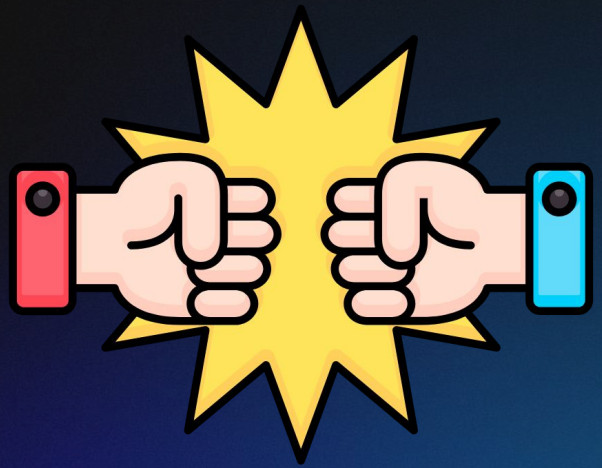


- Lighter isolation caused field issues .. leads to multiple field visits / calls to triple check you’re right this time (backend pain).

When Drawings & Specs Collide (Part 3):

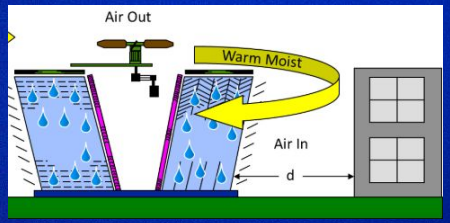
Example:

- Drawing: Condensate drain line shown with “CP” tag for condensate pump.
- Spec (23 21 23 – Hydronic Pumps): No mention of condensate pumps or accessories.



- Condensate pumps are easy to leave unclear and they can add up quickly.
- Lead to multiple RFIs.
- Or worse, they are get forgotten, then long manufacturer lead time when needed asap.

Spec Language To Add (Part 1):

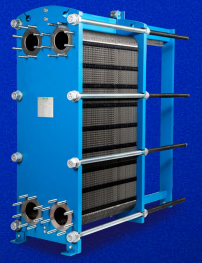


Cooling Tower - Airflow Intake & Tower Placement:

- Bad tower placement potentially pulls warm discharge air back into the tower, reducing capacity and creating icing problems during peak conditions.

- Spec Language to Add:
  “Locate towers to prevent recirculation; maintain a minimum horizontal separation of 25 feet from building air intakes. Consider prevailing winds, tower height, and discharge velocity in design.”

Spec Language To Add (Part 2):

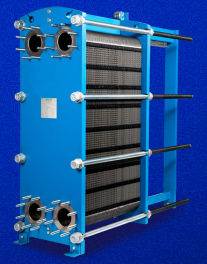


P&F Heat Exchangers - Plate Removal Clearance:

- Plate-and-frame heat exchangers require full plate removal for cleaning, inspection, and gasket replacement. Improperly designed layouts force contractors to cut piping or move equipment during service.

- Spec Language to Add:
  “Provide clear service space equal to the full plate removal length plus required maintenance clearance. Install units so plates can be removed without disconnecting piping. Provide access on the tightening-bolt side.”

Spec Language To Add (Part 3):



P&F Heat Exchangers - 20% Spare Capacity:

- Plate-and-frame units lose performance as fouling builds. Extra plate capacity allows future expansion and restores performance without major shutdowns or repiping.

- Spec Language to Add:
  “Provide heat exchanger frame sized to accommodate at least 20% additional plates beyond the initial design. Include allowance for future tightening and expansion without repiping.”

Section 2 - Equipment Schedules

What Equipment Schedules Do Well (Part 1):

- Provide a quick snapshot of system performance (CFM, GPM, HP, EER, COP).
- Make comparisons easy between equipment types and selections.
- Help coordinate across disciplines — mechanical, electrical, controls.
- Allow fast quantification for bidding and takeoffs.

SCHEDULE OF AIR COOLED WATER

CHILLER REF.	CAPACITY-TR	AMPS/TEMP-F	CHILLED WATER FLOW US GPM	ΔT F°
CHILLER 1	60+-3%	110	204	10
CHILLER 2	60+-3%	110	204	10

SCHEDULE OF CH. WATER CIRCULATION PUMPS

PUMP REF.	HEAD OF PUMP	CHILLED WATER FLOW G.P.M.	REMARKS
P1 & P2	TO BE CALCULATED BY CONTRACTOR	408	

SCHEDULE OF WALL / WINDOW EXHAUST FAN

FAN REF.	HEAD OF PUMP	CFM	REMARKS
EXF-1	150	32	WINDOW/WALL EXTR. FAN WITH ELECTRIC SHUTTER
EXF-2	150	27	
EXF-1	250	28	

SCHEDULE OF FAN COIL UNITS

FAN REF.	T.H. MBH	S.H. MBH	C.F.M.	QTY	REMARKS
FC-1	9.6	8.4	400	8	
FC-2	13.8	12.4	500	2	
FC-3	17.7	15.4	600	–	LOW STATIC DUCTED TYPE
FC-4	21.4	19.6	1000	–	
FC-5	25	24	1200	–	
FC-6	13.7	12.1	500	8	
FC-7	18.4	15.9	600	2	
FC-8	23.7	21.4	1000	2	
FC-9	28.3	26.1	1200	21	
FC-10	35.0	31.0	1400	20	CASSETTE CEILING TYPE
FC-11	40.8	35.6	1600	8	
FC-12	46.6	40.4	1800	2	
FC-13	–	–	–	–	
FC-14	50.7	45.4	2000	1	
FC-15	7.2	6.4	300	1	
FC-16	9.6	8.4	400	2	
FC-17	13.8	12.4	500	1	
FC-18	17.7	15.4	600	2	LOW STATIC DUCTED
FC-19	21.4	19.6	1000	2	
FC-20	25	24	1200	–	

What Equipment Schedules Do Well (Part 2):

- Easy apples-to-apples comparison - good for coordination and bidding.
- Keeps large equipment lists organized.
- Helps ensure capacity matches design loads.
- “Schedules are the engineer’s snapshot.”

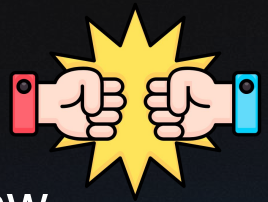
DAMPER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	AIR TYPE	CONTROL TYPE	BLADE TYPE	AIR		ELECTRICAL	PHYSICAL	NOTES
						MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE DROP (IN. H20)	VOLT/PH	WIDTH/ HEIGHT (IN)	
OD-1			OUTSIDE AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	
OD-2			OUTSIDE AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	
OD-3			OUTSIDE AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	
RD-1			RETURN AIR	MODULAT	OPPOSED	25000	0.1	24/1	120/30	
RD-2			RETURN AIR	MODULAT	OPPOSED	25000	0.1	24/1	120/30	
RD-3			RETURN AIR	MODULAT	OPPOSED	25000	0.1	24/1	120/30	
RLD-1			RELIEF AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	
RLD-2			RELIEF AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	
RLD-3			RELIEF AIR	MODULAT	OPPOSED	35000	0.1	24/1	168/30	

Where Equipment Schedules Fall Short:

- Schedules create conflicts if not aligned with drawings + specs (the schedule + spec seem to conflict the most).
- Often lack detail (no warranty, not all accessories, no no space requirements, no construction material, etc).
- Schedules can look complete but mislead if not cross-checked with drawings + specs.

When Schedules & Specs Collide (Part 1):



The mechanical schedule showed:

- Chiller CH-1: 500 ton, water-cooled, 0.65 kW/ton, screw compressor.

The specification (Section 23 64 00 – Centrifugal Chillers) was a copy from an older job, requiring:

- Water-cooled, 0.58 kW/ton, variable-speed centrifugal compressor.

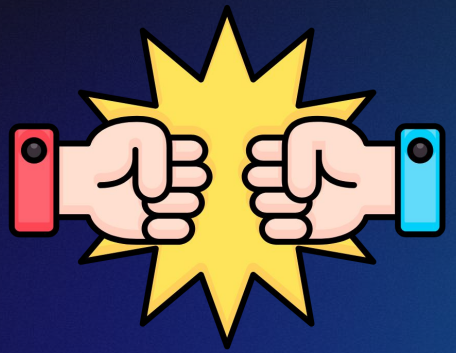
What Happens:

- Bidder based pricing on cheapest option to win work. Thinking they can fight during submittal process.

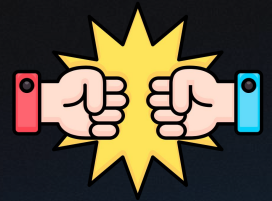
When Schedules & Specs Collide (Part 2):

What Happens:

- Owner realized mid-bid the scope didn’t match the actual design intent.
- Bids were inconsistent, re-bid required, design delayed 3 weeks.
- Engineer’s credibility took a hit because the spec didn’t reflect the current design direction.



When Schedules & Specs Collide (Part 3):



The equipment schedule listed:

- End suction pumps: 7.5 HP, 400 GPM, 60 ft head.

The specification (Section 23 21 23 – Hydronic Pumps) stated:

- End suction pumps, 10 HP, VFD coupling, bronze fitted, etc.
- No mention of 7.5 HP — spec not updated after redesign.

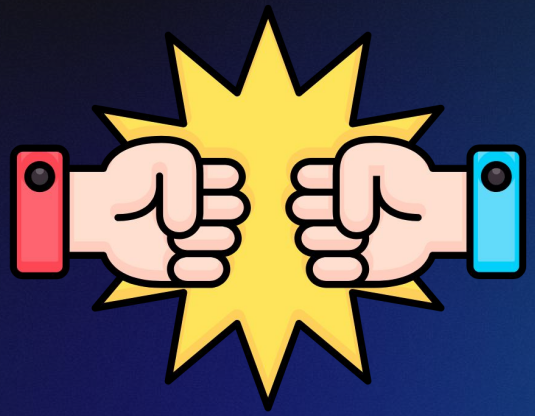
What Happens:

- Contractor won job bidding 10 HP pump to match the spec (wrose case).
- Electrical drawings and panels were designed for 7.5 HP per the schedule.

When Schedules & Specs Collide (Part 4):

What Happens:

- Submittal triggered a conflict: larger motor = larger breaker, conduit, wire size, and higher inrush current.
- Resulted in submittal rejection, recoordination meeting with electrical, and a potential change order for added cost (all backend pain).



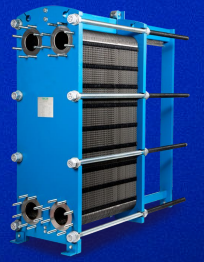
Spec Language To Add (Part 1):

Boilers – Minimum Turndown Ratio:

- Contractor submits a boiler with poor turndown (like 3:1) which causes short-cycling and nuisance lockouts.
- Boiler turndowns are easy to NOT update or leave off spec.
- Boiler turndown differs from different types of boilers too.

- Spec Language to Add:
  “Provide condensing boilers with minimum 10:1 turndown ratio at full modulation. Boiler shall maintain stable combustion at low fire without cycling. Submit factory combustion curves and CO/NOx data.”

Spec Language To Add (Part 2):



P&F Heat Exchangers - Pressure Drop:

- High pressure drop reduces flow and hurts heat-transfer performance. Clear limits protect pump sizing and ensure the exchanger performs at its scheduled duty.
- PD is the variable manufacturers / contractors play w/ the most.

- Spec Language to Add:
  “Limit heat exchanger pressure drop to a maximum of X ft of head on the primary side and X ft of head on the secondary side at design flow. Provide P/T ports on each connection for commissioning verification.”

Spec Language To Add (Part 3):

Condenser Water Pumps - NPSH Details:

- Condenser water pumps are the most prone to cavitation b/c they operate with warm water, low suction pressure, and elevation differences from the tower basin. Even small NPSH gaps cause impeller damage, vibration, noise, and seal failures.

- Spec Language to Add:
  “Provide condenser water pump with NPSH Available ≥ NPSH Required + X ft at design flow. Coordinate with tower basin elevation, piping friction loss, entering water temperature, and system fill pressure.”

Section 3 - Specs

What Specifications Do Well:

- Capture details not shown on drawings and schedules (accessories, material of construction, startup, commissioning, warranty, etc).
- Standardize expectations across all bidders and trades.
- Serves as the legal contract language when disputes arise.

Drawings show what’s built.

Specs decide how well it’s built — and who’s responsible.

Common Spec Mistakes (Part 1):

- Copy-paste language from old projects (“zombie specs”).
- Contradicting info between drawings/specs.
- Outdated standards, refrigerants, and codes.
- Needed accessories not included.
- Specs that havent been updated for years.

Example:

- Spec calls for R-22 refrigerant → outdated.
- If you cite ASHRAE 90.1-2007, the contractor can claim compliance — even if it fails today’s efficiency laws.

Common Spec Mistakes (Part 2):

4. Maximum Continuous Operating Temperature: **[225 deg F] [250 deg F] <Insert temperature>**.
5. Inlet and Outlet Size: **<Insert NPS>**.
6. Impeller Size: **<Insert inches>**.
7. Motor Speed: **<Insert rpm>**.
8. Motor Horsepower: **<Insert value>**.
9. Electrical Characteristics:

    a. Volts: **[120] [240] [208] [460] <Insert value>** V.
    b. Phase: **[Single] [Three]**.
    c. Hertz: 60 Hz.
    d. Full-Load Amperes: **<Insert value>** A.
    e. Minimum Circuit Ampacity: **<Insert value>** A.
    f. Maximum Overcurrent Protection: **<Insert value>** A.

Too Specific vs Too Vague:

- Need balance between too specific vs too vague.
- Too Specific: Limits bidders, locks you to one brand, drives up cost, you might look bias, etc.
- Too Vague: Creates loopholes, invites low-end substitutions.
- Keep in mind: a lot of contractors bid BOD only.

Advice:

- Engage vendors early for pricing and technical alignment.
- Be mindful when a specific manufacturer is trying to box you in (it's typically done with specific accessories / performance
- Have multiple: acceptable manufacturers (model #s).

Copy/Paste Pitfalls:

- Copy/paste = silent killer.
- Specs don’t match current codes.
- Specs don’t match schedule (common).
- Bad (obvious) errors = credibility loss.

Parkside Development - Parcel 9B

Washington, District of Columbia

PROJECT MANUAL

Volume 1 | Divisions 00 - 14

70% CD Set

22 April 2022

BKV GROUP

BOARMAN KROOS VOGEL GROUP, INC.

Minneapolis | Chicago | Washington DC | Dallas

Architecture / Engineering / Interior Design / Landscape

1054 31st Street NW Canal Square, Suite 410
Washington DC 20007
(202) 595-3173

BKV Commission Nos. 2317.07

© 2022

Examples:

- Elevator spec left in HVAC book.
- Fan spec still references AMCA 210-85 (obsolete).
- Project issued in 2025 still calls for R-22 or R-410A refrigerant.

What Strong Specs Include:

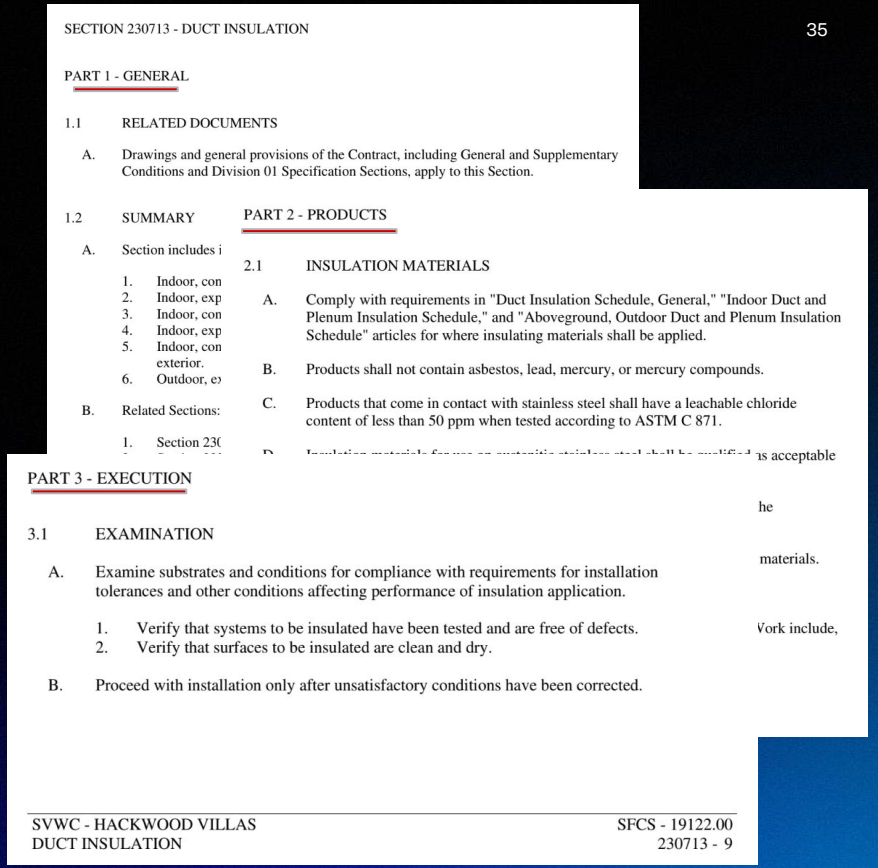
- Strong specs make it hard for the contractor to cut corners.
- Strong specs include performance criteria with measurable values (HP, efficiency, material grade, etc).
- Referenced standards (ASHRAE, AHRI, UL, SMACNA).
- Accessories and coordination notes to close scope gaps.

Examples:

- Heat exchangers can be AHRI or non AHRI (call this out).
- Cooling towers can be CTI certified or non CTI certified.
- Specs: 30% complete, 70% complete, 100% complete.

Core Spec Structure:

- Typically every division follows this skeleton.
- Part 1: General
- Part 2: Products
- Part 3: Execution
- Specs must cover product requirements and installation expectations.
- Mini specs (on drawings) are not always written this way.



SECTION 230713 - DUCT INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes i

1. Indoor, con
2. Indoor, exp
3. Indoor, con
4. Indoor, exp
5. Indoor, con exterior.
6. Outdoor, ex

B. Related Sections:

1. Section 23(

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Duct Insulation Schedule, General," "Indoor Duct and Plenum Insulation Schedule," and "Aboveground, Outdoor Duct and Plenum Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable

PART 3 - EXECUTION

he

3.1 EXAMINATION

materials.

A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

1. Verify that systems to be insulated have been tested and are free of defects.
2. Verify that surfaces to be insulated are clean and dry.

Work include,

B. Proceed with installation only after unsatisfactory conditions have been corrected.

SVWC - HACKWOOD VILLAS
DUCT INSULATION

SFCS - 19122.00
230713 - 9

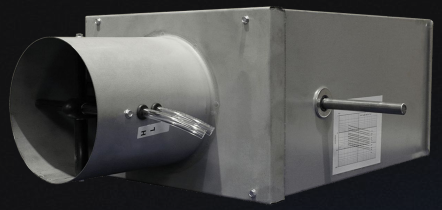
Coordination Language (Part 1):

- Specs must reference other trades.
- Include cross-references: “Coordinate with Div 26, Div 25, Div 23.”
- Clarify who provides VFDs, starters, sensors, and controls.
- One line in the spec can prevent RFIs and change orders.

Example:

- Mechanical specs call for temperature sensors. Controls spec assumes sensors by BAS integrator.
- “Temperature sensors furnished by Division 25, installed by Division 23.” This helps save time + money.

Coordination Language (Part 2):



VAV Boxes – Electric Reheat Coordination:

- Common problem: mechanical assumes Division 26 provides the coil; electrical assumes Division 23 provides it → no coils get installed. Projects stall during startup.

Spec Language to Add:

- “Electric reheat coils for VAV terminals shall be furnished by Division 23 and powered by Division 26. Provide voltage, MCA, MOCP, and feeder requirements in the submittal. BAS contractor shall integrate discharge-air temperature control.”

Coordination Language (Part 3):

Fire/Smoke Dampers:

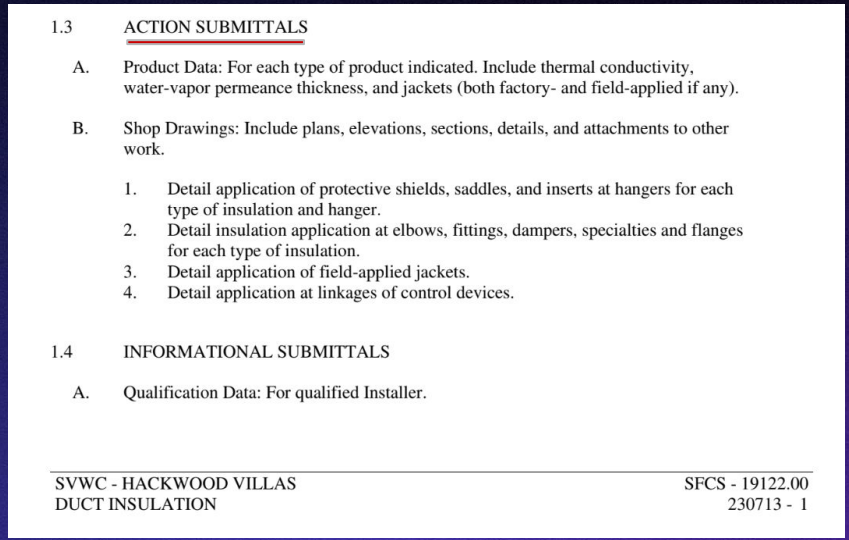
- Mechanical draws the damper. Electrical assumes fire alarm powers it. Fire alarm assumes mechanical programs it.
- Result - the damper gets installed but has no power, no control, or no programming — and fails inspection.

Spec Language to Add:

- “Division 23 shall furnish and install all fire and smoke dampers. Division 26 shall provide power wiring & conduit to each damper actuator. Division 28 shall connect dampers to the fire alarm system, program logic, verify fail-safe operation during testing.”

Specifying Submittals Correctly (Part 1):

- Submittals are your last line of defense.
- Require performance curves, startup reports, points list, drawings, and O&M manuals.
- Weak submittal language = contractor submits “closest match.”
- Weak submittal language = multiple rounds of submittals (delays project) (wasted time)



1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied if any).

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail insulation application at elbows, fittings, dampers, specialties and flanges for each type of insulation.
3. Detail application of field-applied jackets.
4. Detail application at linkages of control devices.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

Specifying Submittals Correctly (Part 2):

VFD Submittals: Mechanical vs Electrical vs Controls:

- Where VFD submittals don't include harmonics data, don't match motor HP, or don't include control interfaces.
- Electricians install them, but controls can't integrate them = major startup issues.

Spec Language to Add:

- "VFD submittals shall include: HP rating, voltage, MCA/MOCP, and enclosure type. Harmonic mitigation requirements (input reactors or filters). BAS integration details (run status, speed reference, alarms). Cooling requirements and mounting clearances Short-circuit current rating (SCCR)."

Specifying Submittals Correctly (Part 3):

AHU Submittals: Performance vs Drawings vs Controls:

- Mechanical submits only airflow and tonnage.
- Electrical needs MCA/MOCP to size breakers.
- Controls needs BAS integration points.

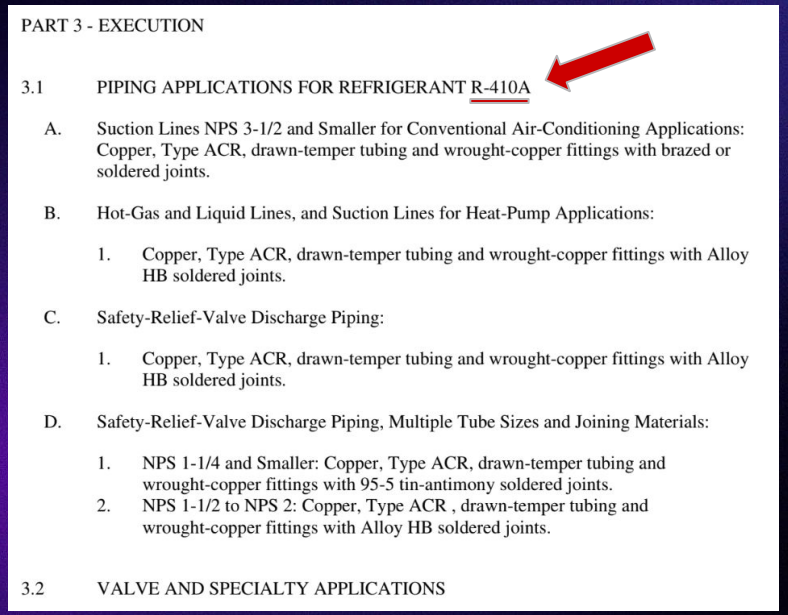
- Result - Best cause is submittals get delayed by weeks. Worse case, AHUs show up with wrong motor sizes, wrong voltage, or missing control accessories.

Specifying Submittals Correctly (Part 4):

Spec Language to Add:

- “AHU submittals shall include: Certified airflow and ESP data. Motor HP, MCA, MOCP, voltage, and phase. Filter type, leakage class, and sound data. BAS points list, factory controls, and wiring diagrams. Submittal shall be rejected if any item is missing.”

Future-Proofing (Part 1):



PART 3 - EXECUTION

3.1 PIPING APPLICATIONS FOR REFRIGERANT R-410A

A. Suction Lines NPS 3-1/2 and Smaller for Conventional Air-Conditioning Applications: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.

B. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications:

1. Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.

C. Safety-Relief-Valve Discharge Piping:

1. Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.

D. Safety-Relief-Valve Discharge Piping, Multiple Tube Sizes and Joining Materials:

1. NPS 1-1/4 and Smaller: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with 95-5 tin-antimony soldered joints.
2. NPS 1-1/2 to NPS 2: Copper, Type ACR , drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.

3.2 VALVE AND SPECIALTY APPLICATIONS

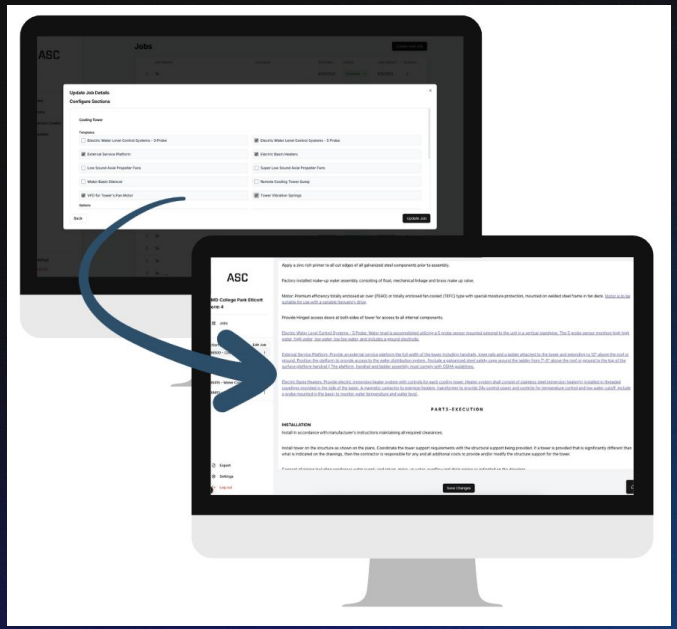
- R-410A → out by 2025/2030.
- Energy code efficiency requirements change every few years.
- Don’t lock project into soon-to-be-obsolete rules.
- Anticipate refrigerant changes, new efficiency codes.

Future-Proofing (Part 2):

Example:

- R-410A is being phased out — if you write “R-410A,” your spec will be obsolete in months to couple years.
- Instead (Option 1): “Provide refrigerant compliant with EPA AIM Act and ASHRAE 34 classification for low-GWP refrigerants.”
- Instead (Option 2): “Equipment shall comply with latest version of ASHRAE 90.1 and IECC adopted at time of permit.”

Microsoft Word vs Specification Software:



Microsoft Word

Spec Software

ASHRAE

Microsoft Word vs Specification Software:

- Most specs are still written in Word - huge risk of errors.
- Spec software helps enforce current standards, keep your spec detailed per job, and reduce contradictions.

- Microsoft Word = manual, fragmented, formatting nightmare and error-prone.
- Specification platforms = structured, linked, and updated. Change a value once, it updates everywhere.

Microsoft Word vs Specification Software:

Examples:

- You change pump efficiency requirements in one spot but forget to change it in another.
- Constant worry one thing is missing or not up-to-date.
- Spending hours formating specs throughout the year.

Note:

- Microsoft Word was built for essays — not engineering contracts.
- Specification software keeps your project consistent and defensible. It’s also not that expensive per job.

Section 4 -
Tying Everything Together

Why Specs Usually Prevail:

- In arbitration/litigation, words in a contract are enforceable; pictures are open to interpretation.
- Judges/arbitrators trust written instructions more than symbolic ones.
- “Specs are the tiebreaker.”

Case Study #2: Specs Add Work Not Shown on Every Plan (ASBCA, 2024)

- Parties/Place: Korte Construction Company vs. DoD (ASBCA No. 63148) — Air Force Hanger project.
- Conflict: Specs said extend base-wide chilled water/hot water/compressed air to slab edge and provide future connection locations; drawings didn't picture every stub.
- Decision: Board emphasized FAR 52.236-21—when drawings and specs differ, specs govern.
- Decision: Korte lost via motion for summary judgment; government's interpretation held.

Case Study #3: Vibration Isolation Scope (1997)

- Parties/Place: General contractor Hensel Phelps (HPCC) & mechanical subcontractor T&S vs. GSA — NOAA facility, Colorado
- Conflict: Government later insisted on vibration isolation on plumbing piping; contractor had priced isolation for HVAC/hydronic only based on spec text.
- Decision: The Board read Section 15241 as hydronic/HVAC only, not plumbing; the written spec scope controlled.
- Takeaway: Accessories must be written.

Rules of Thumb:

1. Specs are legally most important document (not plans or drawings or equipment schedules).
2. Frontend and backend pain.
    a. Frontend: pain before job is awarded.
    b. Backend: pain after job is awarded (avoid this …).
3. Three places need to match (great shape):
    a. Drawings.
    b. Equipment Schedules.
    c. Specifications.

Contact Information:

- Email: nick@ascspecification.com
- Phone Number: 443-668-6667

Thank you!