SECTION 05400

COLD-FORMED METAL FRAMING

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\*\* NOTE TO SPECIFIER \*\* ClarkDietrich; load-bearing metal studs, joists, track and other components for walls, floors and roofs.
This section is based on the products of ClarkDietrich, which is located at:
9050 Centre Pointe Dr. Suite 400
West Chester, OH 45069
Toll Free Tel: 800-543-7140
Tel: 513-870-1100
Fax: 513-870-1300
Email: [request info (info@clarkdietrich.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=ClarkDietrich&coid=31460&rep=&fax=513-870-1300&message=RE:%20Spec%20Question%20(05400cla):%20%20&mf=)
Web: <https://www.clarkdietrich.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos31/arc31460.html) ] for additional information.
ClarkDietrich is the leading manufacturer of cold-formed steel framing and finishing products for commercial and residential construction. ClarkDietrich has been growing to meet the continued needs of our customers and we bring with us a long and respected history in the steel framing industry. ClarkDietrich provides a wide selection of cold-formed steel framing and finishing products including drywall and structural framing, clips and connectors, floor joists, metal lath, fire-rated assemblies, shaftwall framing products, numerous deflection systems and an extensive line of metal, vinyl, veneer, paper-faced, plaster and stucco beads and trims. ClarkDietrich companies and divisions include ClarkDietrich Engineering Services [CDES], ClarkDietrich ClipExpress, Strait-Flex, and Structa Wire Corp. ClarkDietrich operates sixteen manufacturing and service locations throughout North America.
ClarkDietrich also provides total cold-formed steel design services. ClarkDietrich Engineering Services [CDES] is a full-service engineering consulting firm specializing in cold-formed steel. CDES offers services including sealed shop drawings and calculations for curtainwall (non-bearing) and full load-bearing designs; http://www.clarkdietrich.com/services/bim-services Building Information Modeling (BIM) Services; preliminary sizing; pre-bid engineering pricing; and technical assistance and LEED compliance with ClarkDietrich products. CDES is the largest group of design engineers devoted solely to cold-formed steel framing design and is licensed in 49 states and operates in four locations: McDonough, GA; Bristol, CT; Crown Point, IN; and Carlsbad, CA.
ClarkDietrich has grown to what we are today so that we can be closer to our customers while offering them the quality products and service they have come to expect from us over the years. ClarkDietrich works to bring its years of experience in the industry to our customers through knowledgeable sales people and a management team committed to the success of our customers. We recognize that our reputation rests upon quality products competitively delivered when they are needed. What's inside those walls not only counts, it is what we build our reputation on. But, this is only the beginning; we will continue to work to be our customers' preferred supplier by adding additional products so that we can be the industry's first choice from framing to finishing, coast to coast.
Try our new SubmittalPro: Gathering the information you need for your technical submittal has never been easier. You can quickly view information about any of our products as individual PDFs, or you can select all the products you need and create the final submittal as a single PDF. You don't even need to login.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Cold-formed metal framing for walls.
		2. Cold-formed metal framing for floors.
		3. Bridging, bracing, clips and other accessories.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 09260 - Gypsum Board Assemblies.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			2. ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
			3. ASTM A 1003 - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
			4. ASTM B 633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
			5. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inch to 0.112 inch in thickness.
			6. ASTM C 955 - Standard Specification for Cold-Formed Steel Structural Framing Members.
			7. ASTM C 1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
			8. ASTM C 1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
		2. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members.
		3. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing.
		4. AWS D.1.3 - Structural Welding Code - Sheet Steel.
	1. DESIGN REQUIREMENTS
		1. Design steel in accordance with American Iron and Steel Institute Publication S100 "Specification for the Design of Cold-Formed Steel Structural Members", except as otherwise shown or specified.
		2. Design loads: As indicated on the Structural Drawings.
		3. Design framing systems to withstand design loads without deflections greater than the following:

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Exterior Walls: Lateral deflection of: L/240.
		2. Exterior Walls: Lateral deflection of: L/360.
		3. Exterior Walls: Lateral deflection of: L/600.
		4. Interior Load-Bearing Walls: Lateral deflection of: L/240.
		5. Interior Load-Bearing Walls: Lateral deflection of: L/360.
		6. Interior Load-Bearing Walls: Lateral deflection of: L/600.
		7. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change (range) of 67 degrees C (120 degrees F).
			1. Design framing system to accommodate deflection of primary building structure and construction tolerances.
		8. Design exterior non-load-bearing curtain wall framing to accommodate lateral deflection without regard to contribution of sheathing materials.
	1. SUBMITTALS
		1. Submit under provisions of Section 01300 - Administrative Requirements.
		2. Product Data: Submit manufacturer's product literature, data sheets and installation recommendations for specified products.
		3. Sustainable Design Submittals:
			1. LEED v4 Submittals:
				1. MR Credit: Building Product Disclosure and Optimization - Environmental Product Declarations: Provide Type III EPDs from manufacturers that have third-party verified environmental impact data.
				2. MR Credit: Building Product Disclosure and Optimization - Sourcing of Raw Materials: Provide recycled content of products showing the percentage of postconsumer and/or preconsumer recycled content by weight and its associated cost.
				3. MR Credit: Building Product Disclosure and Optimization - Material Ingredients: Provide Health Product Declarations (HPDs) from manufacturers with full disclosure of known hazards in compliance with the Health Product Declaration Open Standard.
				4. MR Credit: Construction and Demolition Waste Management: Include a statement indicating percentage of materials diverted from disposal in landfills and incinerators, and where recyclable resources are directed back to the manufacturing process.
		4. Manufacturer certification of product compliance with codes and standards.
		5. Structural Calculations: Submit structural calculations prepared by manufacturer for approval. Submittal shall be sealed by a professional engineer registered in the state of the project.
			1. Description of design criteria.
			2. Engineering analysis depicting stress and deflection (stiffness) requirements for each framing application.
			3. Selection of framing components, accessories and welded connection requirements.
			4. Verification of attachments to structure and adjacent framing components.
			5. Engineer shall have a minimum of 5 years experience with projects of similar scope.
		6. Shop Drawings:
			1. Submit shop drawings prepared by the cold-formed metal framing manufacturer showing plans, sections, elevations, layouts, profiles and product component locations, including anchorage, bracing, fasteners, accessories and finishes.
			2. Show connection details with screw types and locations, weld lengths and locations, and other fastener requirements.
			3. Where prefabricated or pre-finished panels are to be provided, provided drawings depicting panel configurations, dimensions and locations.
			4. Shop Drawings shall be signed and sealed by a registered PE (professional cold-formed specialty engineer) registered in the state of the project.
	2. QUALITY ASSURANCE
		1. Contractor shall provide effective, full time quality control over all fabrication and erection complying with the pertinent codes and regulations of government agencies having jurisdiction.
		2. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
		3. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.
		4. Manufacturer Qualifications: Member in good standing of the Steel Framing Industry Association (SFIA).
			1. Products to be certified under an independent third party inspection program administered by an agency accredited by IAS to ICC-ES AC98 IAS Accreditation Criteria for Inspection Agencies.
		5. Welding Standards: Comply with applicable provisions AWS D1.1 "Structural Welding Code - Steel" and AWS D1.3 "Structural Welding Code-Sheet Steel."
		6. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure."
	3. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
		2. Protect and store materials protected from exposure to rain, snow or other harmful weather conditions. Products to be handled per AISI S202 "Code of Standard Practice for Cold-Formed Steel Structural Framing."
	4. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer, Metal Framing: ClarkDietrich, which is located at: 9050 Centre Pointe Dr. Suite 400; West Chester, OH 45069; Toll Free Tel: 800-543-7140; Tel: 513-870-1100 ; Fax: 513-870-1300; Email: info@clarkdietrich.com; Web: [https://www.clarkdietrich.com](http://https://www.clarkdietrich.com) .
			1. ClarkDietrich; 4601 North Point Boulevard, Baltimore, MD 21219. Tel: (410) 477-4000.
			2. ClarkDietrich; 4200 Cedar Blvd., Baytown, TX 77520. Tel: (281) 383-1617.
			3. ClarkDietrich; 780 James P. Casey Road, Bristol, CT 06010. Tel: (866) 921-0023.
			4. ClarkDietrich; 6510 General Drive, Riverside, CA 92509. Tel: (951) 360-3500.
			5. ClarkDietrich; 1685 Tide Court, Woodland, CA 95776. Tel: (530) 668-1987.
			6. ClarkDietrich; 501 Steward Road, Suite 100, Rochelle, IL 61068. Tel: (800) 659-0745.
			7. ClarkDietrich; 330 Greenwood Place, McDonough, GA 30253. Tel: (678) 304-5500.
			8. ClarkDietrich; 10340 Denton Drive, Dallas, TX 75220. Tel: (214) 350-1716.
			9. ClarkDietrich; 38020 Pulp Drive, Dade City, FL 33523. Tel: (352) 518-4400.
			10. ClarkDietrich; 1985 North River Road NE, Warren, OH 44483. Tel: (330) 372-5564.
			11. ClarkDietrich; 1455 Ridge Road, Vienna, OH 44473. Tel: (330) 372-4014.
			12. ClarkDietrich; 3851 Corporate Centre Drive, O'Fallon, MO 63368. Tel: (888) 747-0220.
			13. ClarkDietrich; 8000 NW 79th Place, Miami, FL 33166. Tel: (305) 477-6464.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600 - Product Requirements.
	1. COMPONENTS

\*\* NOTE TO SPECIFIER \*\* Review ClarkDietrich technical literature, code requirements and load and span tables. Load carrying applications are design dependent and should be reviewed by a design professional familiar with the system and the requirements of the project. Select from the following product criteria as required for the project requirements.

* + 1. Structural Studs: Cold-formed steel C-studs; by ClarkDietrich.

\*\* NOTE TO SPECIFIER \*\* Select the designation and criteria information based upon the shape and size stud required for the project. If more than one, identify the application or location where used or verify the designation is indicated on the drawings. Delete size if not required.

* + - 1. Flange Size: 1-3/8 inch (35 mm) width, 3/8 inch (9.5 mm) return.
			2. Flange Size: 1-5/8 inch (41 mm) width, 1/2 inch (12.7 mm) return.
			3. Flange Size: 2-inch (51 mm) width, 5/8 inch (15.9 mm) return.
			4. Flange Size: 2-1/2 inch (64 mm) width, 5/8 inch (15.9 mm) return.
			5. Flange Size: 3-inch (76 mm) width, 5/8 inch (15.9 mm) return.
			6. Flange Sizes: As indicated on drawings.

\*\* NOTE TO SPECIFIER \*\* Select required web depth. If more than one size is required, identify the location where each product will be used on the Contract Drawings. 250, 350 depths available only with 162 Flange. 362 to 925 depths available only up to 250 Flange. Delete web depth if not required.

* + - 1. Web Depth: 2 1/2 inch (64 mm) 250 depth.
			2. Web Depth: 3 1/2 inch (89 mm) 350 depth.
			3. Web Depth: 3 5/8 inch (92 mm) 362 depth.
			4. Web Depth: 4 inch (102 mm) 400 depth.
			5. Web Depth: 5 1/2 inch (140 mm) 550 depth.
			6. Web Depth: 6 inch (152.4 mm) 600 depth.
			7. Web Depth: 7 1/4 inch (184 mm) 725 depth.
			8. Web Depth: 8 inch (203 mm) 800 depth.
			9. Web Depth: 9 1/4 inch (235 mm) 925 depth.
			10. Web Depth: 10 inch (254 mm) 1000 depth.
			11. Web Depth: 11 1/2 inch (292 mm) 1150 depth.
			12. Web Depth: 12 inch (305 mm) 1200 depth.
			13. Web Depth: 13 1/2 inch (342.9 mm) 1350 depth.
			14. Web Depth: 14 inch (355.6 mm) 1400 depth.
			15. Web Depth: As indicated on drawings.

\*\* NOTE TO SPECIFIER \*\* Delete all but one of the following three sub-paragraphs based on the requirements of the design. Use the third paragraph if the design engineer may choose the yield strength.

* + - 1. Minimum Yield Strength: 33 ksi (227 MPa) for 18 gauge and lighter.
			2. Minimum Yield Strength: 50 ksi (345 MPa) for 16 gauge and heavier.
			3. Minimum Yield Strength: As required for design.

\*\* NOTE TO SPECIFIER \*\* Delete all but one metal thickness (gauge). If more than one is used, identify the application or location for each.

* + - 1. Minimum Base-Steel Thickness: 20 gauge, 0.0329 inch (0.84 mm).
			2. Minimum Base-Steel Thickness: 18 gauge, 0.0428 inch (1.09 mm).
			3. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37 mm).
			4. Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			5. Minimum Base-Steel Thickness: 12 gauge, 0.0966 inch (2.45 mm).
		1. Structural Track: Cold-formed steel track; by ClarkDietrich.

\*\* NOTE TO SPECIFIER \*\* Select the flange lengths required for the project. If more than one, identify the application or location where used.

* + - 1. Flange/Leg Length: 1 1/4 inch (32 mm).
			2. Flange/Leg Length: 1 1/2 inch (38 mm).
			3. Flange/Leg Length: 2 inch (51 mm).
			4. Flange/Leg Length: 2 1/2 inch (63 mm).
			5. Flange/Leg Length: 3 inch (76 mm).
			6. Flange/Leg Length: 3 1/2 inch (89 mm).

\*\* NOTE TO SPECIFIER \*\* Select required web depth. If more than one size is required, identify the location where each product will be used on the Contract Drawings.

* + - 1. Web Depth: 2 1/2 inch (64 mm) 250 depth.
			2. Web Depth: 3 1/2 inch (89 mm) 350 depth.
			3. Web Depth: 3 5/8 inch (92 mm) 362 depth.
			4. Web Depth: 4 inch (102 mm) 400 depth.
			5. Web Depth: 5 1/2 inch (140 mm) 550 depth.
			6. Web Depth: 6 inch (152.4 mm) 600 depth.
			7. Web Depth: 7 1/4 inch (184 mm) 725 depth.
			8. Web Depth: 8 inch (203 mm) 800 depth.
			9. Web Depth: 9 1/4 inch (235 mm) 925 depth.
			10. Web Depth: 10 inch (254 mm) 1000 depth.
			11. Web Depth: 11 1/2 inch (292 mm) 1150 depth.
			12. Web Depth: 12 inch (305 mm) 1200 depth.
			13. Web Depth: 13 1/2 inch (342.9 mm) 1350 depth.
			14. Web Depth: 14 inch (355.6 mm) 1400 depth.
			15. Web Depth: Track Web Size to match stud web size.

\*\* NOTE TO SPECIFIER \*\* Delete all but one of the following three sub-paragraphs based on the requirements of the design. Use the third paragraph if the design engineer may choose the yield strength.

* + - 1. Minimum Yield Strength: 33 ksi (227 MPa) for 18 gauge and lighter.
			2. Minimum Yield Strength: 50 ksi (345 MPa) for 16 gauge and heavier.
			3. Minimum Yield Strength: As required for design.
			4. Material thickness to match stud/joist thickness unless design dictates heavier thickness.

\*\* NOTE TO SPECIFIER \*\* MaxTrak®-Provides a positive attachment for overall strength and allows for vertical movement caused by normal head-of-wall and floor extension or compression. Delete if not required.

* + 1. Slotted Deflection Track: ClarkDietrich MaxTrak (SLT), MaxTrak 2D (SLT/H) or BlazeFrame DSL.
			1. Standard leg of 2-1/2 inches (63.5 mm).
			2. Standard vertical slot of 1-1/2 inches (38.1 mm) in leg.

\*\* NOTE TO SPECIFIER \*\* Delete metal thickness (gauge) not required. If more than one is used, identify the application or location for each.

* + - 1. Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			2. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37 mm).
			3. Minimum Base-Steel Thickness: 18 gauge, 0.0428 inch (1.09 mm).
			4. Minimum Base-Steel Thickness: 20 gauge, 0.0329 inch (0.84 mm).

\*\* NOTE TO SPECIFIER \*\* Minimum yield strength of 33 ksi for 18 gauge and lighter. Minimum yield strength of 50 ksi for 16 gauge and heavier. Delete yield strength not applicable.

* + - 1. Minimum yield strength of 33 ksi for 18 gauge and lighter.
			2. Minimum yield strength of 50 ksi for 16 gauge and heavier.

\*\* NOTE TO SPECIFIER \*\* Deflection and Drift Clips: Used to attach exterior curtain-wall studs to the building structure and provide for vertical and/or lateral building movement independent of the cold-formed steel framing. Select the gauge(s) and/or sizes required for the project. If more than one size or gauge is used, identify the application or location for each product. Delete if not required for project.

* + 1. Deflection and Drift Clips:

\*\* NOTE TO SPECIFIER \*\* Delete deflection and drift clips if not required.

* + - 1. Fast Top Clip: Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			2. Fast Strut Clip: Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			3. FastClip Slide Clip: Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			4. Flat Tail Slide Clip: Minimum Base-Steel Thickness: 10 gauge, 0.1180 inch (3 mm).
			5. Drift FastClip Slide Clip: Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm) or 12 gauge, 0.0966 inch (2.45 mm).
			6. Drift Head-of-Wall Clip: Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72mm).
			7. Drift Rail and Clip: Minimum Base-Steel Thickness: 12 gauge, 0.0966 inch (2.45mm).

\*\* NOTE TO SPECIFIER \*\* Clip Angles EasyClip™ Series - Rigid connection clips and supports are used in a variety of ways to secure cold-formed framing members to each other or to the building structure. Select the gauge(s) and sizes by type required for the project. If more than one size or gauge is used, identify the application or location for each product. Delete if not required.

* + 1. Clip Angles (Support Clips) EasyClip Series:

\*\* NOTE TO SPECIFIER \*\* Delete thickness if not required.

* + - 1. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37 mm).
			2. Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (1.72 mm).
			3. Minimum Base-Steel Thickness: 12 gauge, 0.0966 inch (2.45 mm).

\*\* NOTE TO SPECIFIER \*\* Delete series if not required.

* + - 1. Series: EasyClip A Series.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 3 by 3 by 3 inches (76.2 by 76.2 by 76.2 mm).
				2. Size: 3 by 3 by 6 inches (76.2 by 76.2 by 152 mm).
			1. Series: EasyClip U Series.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 1-1/2 by 1-1/2 by 3-3/8 inches (38.1 by 38.1 by 85.7 mm).
				2. Size: 1-1/2 by 1-1/2 by 5-3/4 inches (38.1 by 38.1 by 146 mm).
				3. Size: 1-1/2 by 1-1/2 by 7-3/4 inches (38.1 by 38.1 by 197 mm).
				4. Size: 1-1/2 by 1-1/2 by 9-3/4 inches (38.1 by 38.1 by 248 mm).
			1. Series: EasyClip X Series.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 2 by 2 by 3-3/8 inches (50.8 by 50.8 by 85.7 mm).
				2. Size; 2 by 2 by 5-3/4 inches (50.8 by 50.8 by 146.0 mm).
				3. Size: 2 by 2 by 7-3/4 inches (50.8 by 50.8 by 196.8 mm).
				4. Size: 2 by 2 by 9-3/4 inches (50.8 by 50.8 by 247.6 mm).
			1. Series: EasyClip S Series.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 1-1/2 by 1-1/2 by 3 inches (38.1 by 38.1 by 76.2 mm).
				2. Size: 1-1/2 by 1-1/2 by 5 inches (38.1 by 38.1 by 127 mm).
				3. Size: 1-1/2 by 1-1/2 by 7 inches (38.1 by 38.1 by 178 mm).
				4. Size: 1-1/2 by 1-1/2 by 9 inches (38.1 by 38.1 by 229 mm).
				5. Size: 1-1/2 by 1-1/2 by 11 inches (38.1 by 38.1 by 279 mm).
			1. Series: EasyClip E Series.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 4 by 1-1/2 by 3 inches (101 by 38.1 by 76.2 mm).
				2. Size: 4 by 1-1/2 by 5 inches (101 by 38.1 by 127 mm).
				3. Size: 4 by 1-1/2 by 7 inches (101 by 38.1 by 178 mm).
				4. Size: 4 by 1-1/2 by 9 inches (101 by 38.1 by 229 mm).
				5. Size: 4 by 1-1/2 by 11 inches (101 by 38.1 by 279 mm).
		1. SwiftClip Support Clips: ClarkDietrich's Pre-punched support clips.

\*\* NOTE TO SPECIFIER \*\* Select SwiftClip Profiles required in this project. Delete others not required.

* + - 1. SwiftClip LS-Series: 1-1/2 inch (38.1 mm) Leg x 1-1/2 inch (38.1 mm) Leg, length and thickness per design.
			2. SwiftClip LE-Series: 1-1/2 inch (38.1 mm) Leg x 3 inch (76.2 mm) Leg, length and thickness per design.
			3. SwiftClip LA-Series: 3 inch (76.2 mm) Leg x 3 inch (76.2 mm) Leg, length and thickness per design.

\*\* NOTE TO SPECIFIER \*\* Select the sizes required for the project. If more than one size or gauge is used, identify the application or location for each product. Delete if not required.

* + 1. U-Channel:

\*\* NOTE TO SPECIFIER \*\* Delete size if not required. FastBridge Clip used with 1-1/2" U-Channel.

* + - 1. Size: 3/4 inch (19.1 mm).
			2. Size: 1-1/2 inches (38 mm).
			3. Length: Manufacturer's standard length.
			4. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37 mm).
			5. ClarkDietrich, U-Channel and FastBridge Clip (FB33, FB43, FB68).
		1. Furring Channel: ClarkDietrich Furring Channel for furring existing walls and suspended ceiling applications.

\*\* NOTE TO SPECIFIER \*\* Select Furring Channel required in this project. Delete others not required.

* + - 1. Size: 7/8 inch (22 mm) Furring Channel 20 gauge, 0.0329 inch (0.84mm).
			2. Size: 7/8 inch (22 mm) Furring Channel 18 gauge, 0.0428 inch (1.09 mm).
			3. Size: 7/8 inch (22 mm) Furring Channel 16 gauge, 0.0538 inch (1.37 mm).
			4. Size: 1-1/2 inches (38 mm) Furring Channel 20 gauge, 0.0329 inch (0.84mm).
			5. Size: 1-1/2 inches (38 mm) Furring Channel 18 gauge, 0.0428 inch (1.09 mm).
			6. Size: 1-1/2 inches (38 mm) Furring Channel 16 gauge, 0.0538 inch (1.37 mm).
			7. Size: As required by design.

\*\* NOTE TO SPECIFIER \*\* Bridging/Spacer Bar TradeReady® Spazzer® - Pre-notched bridging and bracing bar for structural walls to provide resistance to stud rotation and minor axis bending under wind and axial loads. The Spazzer® 5400 bridging and spacer bar uses shear to bridge steel studs and is used as an alternative to U-Channel and clip angle attachments. Delete if not required.

* + 1. Bridging/Spacer Bar: ClarkDietrich, TradeReady Spazzer 5400 Bridging and Spacing Bar.
			1. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37 mm).
			2. Size: 1-1/4 by 1-1/4 by 50 inches (32 by 32 by 1270 mm) long pre-notched at 12, 16 or 24 inches (305, 406 or 610 mm) centers.
			3. ClarkDietrich TradeReady Spazzer Bar Guard: Minimum Base-Steel Thickness of 18 gauge, 0.0428 inch (1.09 mm).
			4. ClarkDietrich TradeReady Grommet.
		2. Web Stiffeners:
			1. Subject to compliance with requirements, provide ClarkDietrich; EasyClip Quick Twist Web Stiffener.
			2. Minimum Base-Steel Thickness: 12 gauge 0.0966 inch (2.45 mm).
			3. Width: 3-1/2 inches (88.9 mm) or 6 inches (152.4 mm).

\*\* NOTE TO SPECIFIER \*\* Lengths may range from 5-3/4 inches to 11-3/4 inches (146 to 299 mm).

* + - 1. Length: As shown on drawings.

\*\* NOTE TO SPECIFIER \*\* TradeReady® Floor System - Comprised of the TradeReady® Joist with large extruded holes, the TradeReady® Rim Joist with pre-punched layout tabs and embedded stiffening ribs, and pre-cut structural blocking. Select the size required for the project. Delete if not required.

* + 1. Floor Joists: Cold-formed galvanized steel C-Joist:

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - 1. Size: 7-1/4 inches (184 mm) deep, with 1-3/4 inches (45 mm) flange, and 4-1/4 by 7 inches (108 by 178 mm) oval holes.
			2. Size: 8 inches (203 mm) deep, with 1-3/4 inches (45 mm) flange, and 4-1/4 by 7 inches (108 by 178 mm) oval holes.
			3. Size: 9-1/4 inches (235 mm) deep, with 1-3/4 inches (45 mm) flange, and 6-1/4 by 9 inches (159 by 229 mm) oval holes.
			4. Size: 10 inches (254 mm) deep, with 2 inches (51 mm) flange and 6-1/4 by 9 inches (159 by 229 mm) oval holes.
			5. Size: 11-1/4 inches (286 mm) deep, with 1-3/4 inches (45 mm) flange, and 6-1/4 by 9 inches (159 by 229 mm) oval holes.
			6. Size: 12 inches (305 mm) deep, with 2 inches (51 mm) flange, and 8 inches (203 mm) diameter round holes.
			7. Size: 14 inches (356 mm) deep, with 2 inches (51 mm) flange, and 10 inches (254 mm) diameter round holes.

\*\* NOTE TO SPECIFIER \*\* Load Bearing Headers - ClarkDietrich RedHeader PRO™ or ClarkDietrich Heavy Duty Stud (HDS). Structural components or assemblies that carry and redistribute loads over door, window or other wall, floor or roof openings.

* + 1. Load-Bearing Headers:

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. ClarkDietrich Heavy Duty Stud (HDS) and Header Bracket (HDSC), cold-formed galvanized one-piece load-bearing header.

\*\* NOTE TO SPECIFIER \*\* Delete size if not required.

* + - * 1. Size: 3-5/8 by 3 by 1-1/16 by 3/4 inches (92.1 by 76.2 by 27.0 by 19.1 mm).
				2. Size: 4 by 3 by 1-1/16 by 3/4 inches (101.6 by 76.2 by 27.0 by 19.1 mm).
				3. Size: 6 by 3 by 2-1/4 by 3/4 inches (152 by 76.2 by 57.2 by 19.1 mm).
				4. Size: 8 by 3 by 2-1/4 by 3/4 inches (203.2 by 76.2 by 57.2 by 19.1 mm).

\*\* NOTE TO SPECIFIER \*\* Delete thickness if not required.

* + - * 1. Minimum Base-Steel Thickness: 20 gauge, 0.0329 (0.84 mm).
				2. Minimum Base-Steel Thickness: 18 gauge, 0.0428 (1.09 mm).
				3. Minimum Base-Steel Thickness: 16 gauge, 0.0538 (1.37 mm).
				4. Minimum Base-Steel Thickness: 14 gauge, 0.0677 (1.72 mm).
				5. Minimum Base-Steel Thickness: 12 gauge, 0.0966 (2.45 mm).
				6. Minimum Base-Steel Thickness: Matching Steel Studs.

\*\* NOTE TO SPECIFIER \*\* Delete if not required. Header/Jamb Flange Size 3-1/2" only available on 16 gauge and heavier.

* + - 1. ClarkDietrich RedHeader PRO, cold-formed galvanized steel one piece header and jamb studs. Material: Galvanized steel meeting or exceeding the requirements of ASTM C 955 and AISI S240 for conditions indicated below:
				1. Header Clip: HDSC. Attachment screw pattern per manufacturer's printed literature.
				2. Header/Jamb Flange Length: 3-inch (76mm) flange.
				3. Header/Jamb Flange Length: 3-1/2 inch (89mm) flange.
				4. Minimum Yield Strength: 33 ksi (227 MPa).

\*\* NOTE TO SPECIFIER \*\* Delete thickness if not required.

* + - * 1. Minimum Base-Steel Thickness: 20 gauge, 0.0329 inch (0.84mm).
				2. Minimum Base-Steel Thickness: 18 gauge, 0.0428 inch (1.09mm).
				3. Minimum Base-Steel Thickness: 16 gauge, 0.0538 inch (1.37mm).
				4. Minimum Base-Steel Thickness: 14 gauge, 0.0677 inch (7.72mm)
				5. Minimum Base-Steel Thickness: 12 gauge, 0.0966 inch (2.45mm).
				6. Minimum Base-Steel Thickness: As required by design.
		1. Framing Component Accessories: Provide the following accessories as required for a complete system.
			1. Flat strapping.
			2. Angles, plates, sheets.
			3. Custom brake-formed shapes.
			4. Partial Wall Framing.
				1. Subject to compliance with requirements, provide ClarkDietrich; Pony Wall (PW), 12 gauge, 0.0966 inch (2.45mm).
		2. Fasteners: Self-drilling, self-tapping screws; Steel, complying with ASTM C 1513; Galvanized coating, plated or oil-phosphate coated complying with ASTM B 633 as needed for required corrosion resistance.
		3. Touch-Up Paint: Complying with ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings. Zinc rich, containing 95-percent metallic zinc.
	1. MATERIALS
		1. Cold-Formed Steel Sheet: Complying with ASTM A 1003/A 1003M; unless indicated otherwise.

\*\* NOTE TO SPECIFIER \*\* Select CP60 coating designator for typical structural applications. Select CP90 coating designator where additional protective coating is required for the project. Note that G90/CP90 is a special order and may result in additional cost and extended delivery times and should be specified in severely corrosive environments.

* + 1. Protective Coating: CP60 coating designator minimum (G60, A60, AZ50, GF30), complying with ASTM C 955 and AISI S240.
			1. Where required: CP90 coating designator minimum (G90, AZ50, GF45), complying with ASTM C 955 and AISI S240.
	1. FABRICATI0N
		1. General: Framing components may be pre-assembled into panels prior to erecting.
		2. Fabricate panels square, with components attached in a manner so as to prevent racking or distortion.
		3. Cut all framing components squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Hold members positively in place until properly fastened.
		4. Provide insulation as specified elsewhere in all double jamb studs and double header members, which will not be accessible to the insulation contractor.
		5. Axially Loaded Studs:
			1. Install studs to have full bearing against inside track web (1/8 inches (3.2 mm) maximum gap) prior to stud and track attachment.
			2. Splices in axially loaded studs are not permitted.
		6. Fasteners: Fasten components using self-tapping screws or welding.

\*\* NOTE TO SPECIFIER \*\* Delete references to welding connections when framing components are lighter than 18 gauge.

* + 1. Welding: Welding is permitted on 18 gauge or heavier material only.
			1. Specify welding configuration and size on the Structural Calculation submittal.
			2. Qualify welding operators in accordance with Section 6.0 of AWS D.1.3.
			3. Touch up all welds with zinc-rich paint in compliance with ASTM A 780.
1. EXECUTION
	1. EXAMINATION
		1. Prior to installation, inspect previous work of all other trades. Verify that all work is complete and accurate to the point where this installation may properly proceed in strict accordance with framing shop drawings.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. ERECTION
		1. General Erection Requirements:
			1. Install cold-formed framing in accordance with requirements of ASTM C 1007.

\*\* NOTE TO SPECIFIER \*\* Delete references to welding connections when framing components are lighter than 16 gauge.

* + - 1. Weld in compliance with AWS D.1.3.
			2. Install in compliance with applicable sections of the AISI S240 "North American Standard for Cold-Formed Steel Structural Framing."
		1. Wall Systems:
			1. Erect framing and panels plumb, level and square in strict accordance with approved shop drawings.
			2. Handle and lift prefabricated panels in a manner so as not to cause distortion in any member.
			3. Anchor track securely to the supporting structure as shown on the erection drawings. Install concrete anchors only after full compressive strength has been achieved. Provide a sill sealer or gasket barrier between all concrete and steel connections.
			4. Butt all track joints. Securely anchor abutting pieces of track to a common structural element, or butt-weld or splice them together.
			5. Align and plumb studs, and securely attach to the flanges or webs of both upper and lower tracks except when vertical movement is specified.
			6. Install jack studs or cripples below window sills, above window and door heads, at freestanding stair rails and elsewhere to furnish support, securely attached to supporting members.
			7. Attach wall stud bridging in a manner to prevent stud rotation. Space bridging rows according to manufacturer's recommendations.
			8. Frame wall openings to include headers and supporting studs as shown in the drawings.
			9. Provide temporary bracing until erection is completed.
			10. Provide stud walls at locations indicated on plans as "shear walls" for frame stability and lateral load resistance.
			11. Where indicated in the drawings, provide for structural vertical movement using a vertical slide clip or other means in accordance with manufacturer's recommendations.
		2. Steel Joists:
			1. Locate joists directly over bearing studs within 3/4 inch (19 mm) or provide a suitable load distribution member at the top track.
			2. Provide web stiffeners at reaction points where indicated in drawings.
			3. Provide joist bridging as shown in drawings.
			4. Provide end blocking where joist ends are not otherwise restrained from rotation.

\*\* NOTE TO SPECIFIER \*\* Include the following article when a project is located in seismic resistance or high wind exposure category zones as defined by the authority having code jurisdiction; thereby requiring Special Inspections for the structural system. Coordinate this provision with any Special Inspections requirements stipulated in Section 01 40 00 - Quality Requirements. The inspection is conducted by the Owner's Special Inspector (IBC 2000 chapter 17 and BOCA 96 chapter 17) but must be scheduled by the Contractor.

* 1. FIELD QUALITY CONTROL
		1. Inspection: Periodic special inspections are required by local code authorities.
			1. Owner will hire and pay inspection agency.
			2. Submit schedule showing when the following activities will be performed and resubmit schedule when timing changes.
			3. Notify inspection agency not less than 3 days before the start of any of the following activities.
			4. Inspections are required during welding operations, screw attachment, bolting, anchoring and other fastening of components within the force resisting structural system, including struts, braces, and hold-downs.
	2. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION