

|                |  |                |                                      |                |                        |
|----------------|--|----------------|--------------------------------------|----------------|------------------------|
| ±              | PLUS OR MINUS                              | EW             | EACH WAY                             | NTS            | NOT TO SCALE           |
| AFF            | ABOVE FINISH FLOOR                         | Va             | FACTORED SHEAR                       | # No.          | NUMBER                 |
| ALT            | ALTERNATE                                  | FFE            | FINISH FLOOR ELEVATION               | O.C.           | ON CENTER              |
| ACI            | AMERICAN CONCRETE INSTITUTE                | FLR            | FLOOR (ing)                          | OPNG           | OPENING                |
| APA            | AMERICAN PLYWOOD ASSOC.                    | FD             | FLOOR DRAIN                          | PSF            | POUNDS PER SQUARE FOOT |
| ASTM           | AMERICAN SOCIETY FOR TESTING AND MATERIALS | FDN            | FOUNDATION                           | PSI            | POUNDS PER SQUARE INCH |
| AWS            | AMERICAN WELDING SOCIETY                   | FOB            | FACE OF BRICK                        | PL             | PLATE                  |
| AB             | ANCHOR BOLT                                | FOC            | FACE OF CONCRETE                     | PWD            | PLYWOOD                |
| ARCH           | ARCHITECTURAL                              | FOM            | FACE OF MASONRY                      | PLF            | POUNDS PER LINEAL FOOT |
| @              | AT   | FOS            | FACE OF STUDS                        | P.T.           | PRESSURE-TREATED       |
| BPL            | BEARING PLATE                              | Ft             | FOOT                                 | REINF          | REINFORCING            |
| Fb             | BENDING STRESS                             | FTG            | FOOTING                              | REV            | REVISION (s) (ed)      |
| BOT            | BOTTOM                                     | FV             | FIELD VERIFY                         | RD             | ROOF DRAIN             |
| BOF            | BOTTOM OF FOOTING                          | GALV           | GALVANIZED                           | Fv             | SHEAR STRESS           |
| BOW            | BOTTOM OF WALL                             | GA             | GAUGE                                | S.B.           | SHORT BAR              |
| BLDG           | BUILDING                                   | GC             | GENERAL CONTRACTOR                   | SIM            | SIMILAR                |
| CLR            | CLEAR (ance)                               | HVAC           | HEATING-VENTILATING-AIR-CONDITIONING | SP             | SPACER (es)            |
| CO             | CLEAN OUT                                  | HGT            | HEIGHT                               | SPEC           | SPECIFICATION (s)      |
| COL            | COLUMN                                     | HORIZ          | HORIZONTAL                           | SQ             | SQUARE                 |
| CONC           | CONCRETE                                   | IN             | INCH (es)                            | STD            | STANDARD               |
| F <sub>c</sub> | CONCRETE COMPRESSIVE STRENGTH              | INSUL          | INSULATION                           | STL            | STEEL                  |
| CMU            | CONCRETE MASONRY UNIT                      | INT            | INTERIOR                             | SJI            | STEEL JOIST INSTITUTE  |
| CONN           | CONNECTION                                 | LB             | LONG BAR                             | THRU           | THROUGH                |
| CONST          | CONSTRUCTION                               | LLH            | LONG LEG HORIZONTAL                  | T&G            | TONGUE AND GROOVE      |
| CONT           | CONTINUOUS                                 | LLV            | LONG LEG VERTICAL                    | TOM            | TOP OF MASONRY         |
| CJ             | CONTROL JOINT                              | MAS            | MASONRY                              | TOP            | TOP OF PLATE           |
| CFT            | CUBIC FOOT                                 | F <sub>m</sub> | MASONRY COMPRESSIVE STRENGTH         | TOSL           | TOP OF SLAB            |
| CYD            | CUBIC YARD                                 | MO             | MASONRY OPENING                      | TOS            | TOP OF STEEL           |
| ∅              | DIAMETER                                   | MAX            | MAXIMUM                              | TOW            | TOP OF WALL            |
| DIAG           | DIAGONAL                                   | MDO            | MEDIUM DENSITY OVERLAY               | TYP            | TYPICAL                |
| DIM            | DIMENSION                                  | MTL            | METAL                                | VIF            | VERIFY IN FIELD        |
| DWG            | DRAWING                                    | MIN            | MINIMUM                              | VERT           | VERTICAL               |
| EA             | EACH                                       | MPH            | MILES PER HOUR                       | WWM            | WELDED WIRE MESH       |
| ELEV           | ELEVATION                                  | MISC           | MISCELLANEOUS                        | WO             | WITHOUT                |
| EQ             | EQUAL                                      | E              | MODULUS OF ELASTICITY                | w/             | WITH                   |
| (E)            | EXISTING                                   | NOM            | NOMINAL                              | WD             | WOOD                   |
| EXT            | EXT  | NIC            | NOT IN CONTRACT                      | F <sub>y</sub> | YIELD STRESS           |

F4 ABBREVIATIONS

- COLD-FORMED METAL FRAMING (CFMF) UNITS INCLUDE C-SHAPED STEEL STUDS, T-SHAPED TRACKS FOR LOAD AND NON-LOAD BEARING WALLS AND C-SHAPE JOISTS.
- THE FOLLOWING COLD-FORMED FRAMING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT LOCATION STATE. DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER OF RECORD FOR REVIEW FOR THE FOLLOWING ELEMENTS:
  - EXTERIOR NON-LOAD-BEARING CURTAIN-WALL FRAMING, INCLUDING PARAPETS, ALONG WITH WINDOW/DOOR HEADER, JAMB AND SILL ELEMENTS.
  - MISCELLANEOUS SUPPORT FRAMING AT EXTERIOR CEILINGS AND SOFFITS, AS DETAILED.
  - CEILING JOIST FRAMING ALONG WITH ANY NECESSARY OPENINGS FOR MECHANICAL AND PLUMBING ELEMENTS.
  - SOFFIT FRAMING.
  - HEADERS, JAMBS AND SILLS FOR DOOR AND WINDOW OPENINGS IN BOTH BEARING AND NON-LOAD BEARING WALLS.
  - ALL NECESSARY ACCESSORIES AND CONNECTIONS FOR THESE WALLS AND ROOF ELEMENTS.
- ALL COMPONENTS SHALL CONFORM TO AISI "SPECIFICATIONS FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND ASTM A446. ALL STUD WALL COMPONENTS, CEILING JOISTS, RAFTERS AND ACCESSORIES SHALL BE G-60 GALVANIZED (ASTM A525).
- INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED OR WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.
- TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE TEMPORARY BRACING AS REQUIRED MAINTAINING A PLUMB STRUCTURE UNTIL ERECTION IS COMPLETE. DO NOT REMOVE BRACING UNTIL WORK IS PERMANENTLY STABILIZED.
- FIELD CUTTING OF LIGHT GAUGE FRAMING MEMBERS MAY BE DONE BY SAWING OR SHEARING. TORCH CUTTING OF LIGHT GAUGE MEMBERS IS UNACCEPTABLE.
- SPLICING OF WALL STUDS IS NOT ALLOWED, UNLESS OTHERWISE STATED.
- WELDS SHALL CONFORM TO AWS D1.1, AWS D1. AND AISI MANUAL SECTION E2. WELDS SHALL BE TOUCHED-UP USING A ZINC-RICH PAINT. WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS.
- NOTCHING OR COPING OF STUDS IS NOT ALLOWED, UNLESS OTHERWISE STATED.
- USE A MINIMUM OF THREE STUDS AT THE CORNER OF ALL EXTERIOR WALLS.
- FASTEN BOTH FLANGES OF STUDS TO TOP AND BOTTOM TRACK, EXCEPT AT DEFLECTION TRACK LOCATIONS, UNLESS OTHERWISE STATED.
- SQUARELY AND TIGHTLY SEAT STUDS AGAINST WEBS OF TOP AND BOTTOM TRACK, EXCEPT AT DEFLECTION TRACK LOCATIONS.
- PROVIDE AT LEAST 10' OF UNPUNCHED STEEL AT ALL BEARING POINTS.
- THE FRAMING ERECTOR IS TO ENSURE PUNCH OUT ALIGNMENT WHEN ASSEMBLING LATERAL BRACING AND FIELD CUTTING STUDS TO LENGTH. LATERAL BRACING MUST BE INSTALLED AT THE TIME THE WALL IS ERECTED. FAILURE TO INSTALL LATERAL BRACING AT THIS TIME MAY COMPROMISE THE STRUCTURAL INTEGRITY OF THE FRAMING ASSEMBLY AND/OR BUILDING.
- ALL HEADERS AND BUILT-UP BEAMS ARE TO BE CONSTRUCTED WITH CONTINUOUS, UNPUNCHED MATERIAL ONLY. SPLICING HEADER MEMBERS IS NOT ALLOWED, UNLESS OTHERWISE STATED.
- STUDS SHALL BE SO POSITIONED THAT STUDS ALIGN ABOVE AND BELOW FLOOR AND ROOF FRAMING JOISTS.
- FOR SPECIFIC REQUIREMENTS AND WARRANTY INFORMATION ON SYSTEMS OR MATERIAL OR MATERIALS CONNECTED AND APPURTENANT TO THE COLD FORMED STEEL FRAMING INCLUDING WINDOWS, CAULKING AND FLASHING, REFER TO MANUFACTURER'S DATA. THE INTEGRITY OF THE BUILDING ENVELOPE, INCLUDING SIDING, FLASHING, ETC. TO PREVENT WATER PENETRATION/DAMAGE, IS IN NO WAY THE RESPONSIBILITY OF THE ENGINEER.
- DETAILS OF ALL FINISHES ARE FOR ARRANGEMENT AND REFERENCE. FOR SPECIFIC REQUIREMENTS, METHODS, MATERIAL AND EXECUTION STANDARDS, REFER TO TECHNICAL DATA FROM PRODUCT MANUFACTURER. IN THE EVENT OF CONFLICT, MANUFACTURER'S INSTRUCTION SHALL DICTATE.
- DESIGN PERFORMED IN ACCORDANCE WITH THE AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS".
- FRAMING ANALYSIS ASSUMES THE EXTERIOR CLADDING IS LATERALLY ATTACHED TO EACH STUD AND JAMB. FRAMING ANALYSIS IS LIMITED TO THE UNIFORM DISTRIBUTION OF LOAD TO THE STUDS AND DOES NOT INCLUDE REVIEW OF THE EFFECTS OF LOCAL FORCES RESULTING FROM THE ATTACHMENT OF EXTERIOR CLADDING (I.E. WINDOW STOREFRONT, ATTACHMENT CLIPS, ETC.).
- ALL MEMBERS INDICATED ON THE CONTRACT DOCUMENTS ARE TO CONSIDERED MINIMUM PER STRUCTURAL DESIGN. INCREASES IN FLANGES AND GAUGES AS DESIRABLE OR AS OTHERWISE REQUIRED THROUGH COORDINATION BETWEEN OTHER TRADES, IS GENERALLY ACCEPTABLE PROVIDED AVAILABLE SPACE REQUIREMENTS ARE MAINTAINED.

**MATERIALS:**

- ALL LIGHT GAUGE FRAMING MEMBERS SHALL BE MANUFACTURED FROM STEEL THAT MEETS THE REQUIREMENTS OF AISI SPECIFICATIONS, LATEST EDITION.
- ALL DIAGONAL STRAP BRACING SHALL BE OF A FLAT STOCK. MATERIAL FROM A COILED STOCK IS NOT ALLOWED. F<sub>y</sub> = 50 KSI
- FRAMING COMPONENTS SHALL BE GALVANIZED PER ASTM A653, MINIMUM COATING PER PROJECT SPECIFICATIONS.
- GALVANIZED STUDS, TRACKS, RAFTERS AND ACCESSORIES SHALL BE FORMED FROM THE FOLLOWING YIELD STRENGTH AND ITS RESPECTIVE GAUGE: 33 MIL-33 KSI, 43 MIL-33 KSI, 54 MIL AND HEAVIER - 50 KSI, UNLESS NOTED OTHERWISE.

**CONNECTIONS:**

- FASTENING OF COMPONENTS SHALL BE WITH SELF-TAPPING SCREWS OR WELDING OF SUFFICIENT SIZE TO MEET OR EXCEED THE DESIGN LOADS AND TO ASSURE THE STRENGTH OF THE CONNECTION.
- FASTENER PENETRATION THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN THREE EXPOSED THREADS. MINIMUM SPACING AND EDGE DISTANCE OF SCREW FASTENERS SHALL NOT BE LESS THAN 5/8"
- STUDS SHALL BE SEATED SQUARELY IN TRACK WITH STUD FLANGES ABUTTING THE TRACK FLANGES. STUDS SHALL BE PLUMBED, ALIGNED AND SQUARELY ATTACHED TO FLANGES OF TOP AND BOTTOM TRACK WITH 2-#10 TEK SCREWS MINIMUM UNLESS NOTED ON PLANS.

- AT TRACK BUTT JOINTS, TRACK MUST BE ANCHORED TO A COMMON STRUCTURAL ELEMENT WITHIN 6 INCHES OF END OF TRACK.
- SELF-TAPPING SCREWS SHALL HAVE A PROTECTIVE COATING AT LEAST EQUIVALENT TO CADMIUM OR ZINC PLATING (ASTM A165 TYPE NS) FOR USE IN EXTERIOR ASSEMBLIES.
- SCREW DESIGN VALUES ARE BASED ON AISI/LGSEA PUBLISHED VALUES.
- POWDER ACTUATED FASTENERS (PAF'S), EXPANSION ANCHOR SYSTEM, MASONRY SCREW SYSTEMS, AND ADHESIVE ANCHOR SYSTEMS DESIGN VALUES ARE BASED ON HILTI PUBLISHED VALUES, UNLESS OTHERWISE STATED.
- ALL WELDED CONNECTIONS ARE TO BE PERFORMED BY A QUALIFIED WELDER IN ACCORDANCE WITH THE LATEST VERSION OF AISI D1.3 SPECIFICATIONS FOR WELDING SHEET STEEL IN STRUCTURES. REFER TO AWS D19.0 FOR WELDING ZINC COATED STEEL.
- PROVIDE BRIDGING AT 4' ON-CENTER VERTICAL MAXIMUM SPACING. PROVIDE BLOCKING AS INDICATED AS REQUIRED BY AISI.
- ALL FIELD ABRASIONS TO MEMBERS FROM FIELD WELDING SHALL BE TOUCHED UP WITH ZINC-RICH PAINT.

**CFMF FASTENERS AND CONNECTORS:**

| CONNECTOR        | SUBSTRATE               | DESCRIPTION                                  | PRODUCT                        |
|------------------|-------------------------|--|--------------------------------|
| SCREWS           | METAL TRACK             | #12 x 5/8" PAN HEAD                          | GENERIC                        |
|                  | STUD-TO-STUD            | #12 x 5/8" HEX HEAD                          | GENERIC                        |
|                  | METAL TO STRUCT. STEEL  | #12-24 x 1 1/4" HEX HEAD, #5 TIP             | BUILDDEX "TEKS" HILTI KWIK-PRO |
| P.A.F.'s         | WOOD FRMG or PLWD       | #12-20 x 2 3/4" PHILLIPS FLAT HEAD, #4 WINGS | BUILDDEX "TEKS" HILTI KWIK-PRO |
|                  | CONCRETE or GROUDED CMU | 0.157"∅ x 1 1/4"                             | HILTI X-U                      |
| STRUCTURAL STEEL |                         | 0.157"∅ x 5/8"                               | HILTI X-U                      |

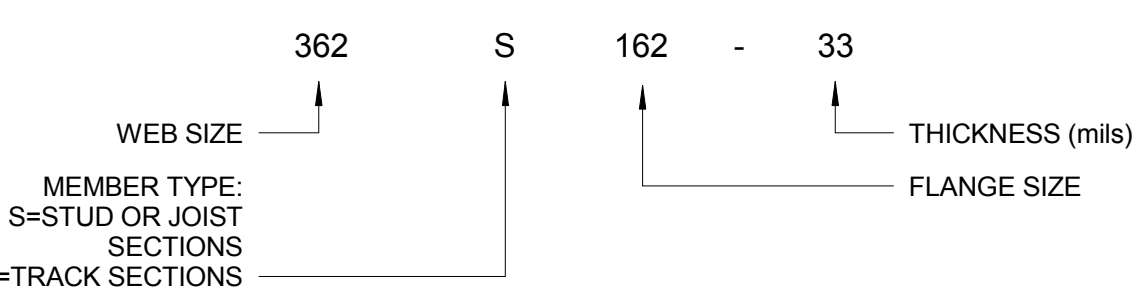
**NOTES:**

- SEE SECTIONS AND DETAILS FOR LOCATION AND NUMBER OF CONNECTORS

**MEMBER IDENTIFICATION:**

**NOTES:**

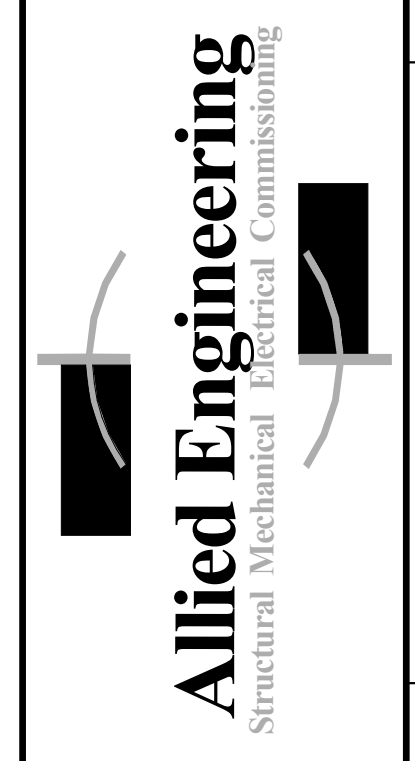
- MEMBER TYPES AND SIZES SHOWN IN THIS DRAWING SET FOLLOW THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) STANDARDS. ANY MANUFACTURER WHOSE PRODUCT GEOMETRIES MEET OR EXCEED SSMA STANDARDS ARE ACCEPTABLE.



THE LAST TWO NUMBERS INDICATE THE STEEL THICKNESS

| SSMA    | GAUGE | DESIGN  | MINIMUM |
|---------|-------|---------|---------|
| 33 mils | 20    | 0.0346" | 0.0329" |
| 43 mils | 18    | 0.0451" | 0.0428" |
| 54 mils | 16    | 0.0566" | 0.0538" |
| 68 mils | 14    | 0.0713" | 0.0677" |
| 97 mils | 12    | 0.1017" | 0.0966" |

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|                |            |
|----------------|------------|
| Date:          | -          |
| Drawn By:      | PEB        |
| Checked By:    | JPM        |
| Project Mgr.:  | WPF        |
| Project No.:   | 15028      |
| Card File:     | 15028S.rvt |
| Graphic Scale: | 0" = 1'    |

STRUCTURAL - NOTES  
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**S-001**

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