

**ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS**

- ANCHOR BOLTS, REINFORCING STEEL, THREADED RODS, STAIR HANDRAILS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE WITH ADHESIVE OR MECHANICAL POST-INSTALLED ANCHOR ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER.
- PRE-APPROVED MANUFACTURERS ARE HILTI, SIMPSON STRONG-TIE, AND POWERS. WHERE DETAILS INDICATE SPECIFIC ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS, IT IS ACCEPTABLE AT THE CONTRACTOR'S OPTION TO SUBMIT AN ALTERNATE SIMILAR PRODUCT PROVIDED BY A DIFFERENT MANUFACTURER AS LONG AS THE MANUFACTURER'S DATA PROVIDES EQUIVALENT LOAD CAPACITY TO THE ANCHOR SPECIFIED.
- MANUFACTURER'S DATA FOR ALL ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. SUBMITTALS FOR ADHESIVE ANCHOR PRODUCTS SHALL INCLUDE ICC-ES EVALUATION REPORTS. STRICTLY FOLLOW THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS.
- ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE STEEL MEMBER BEING INSTALLED.
- ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF ADHESIVE. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LAITANCE, DUST, DIRT, AND OIL.
- CONTRACTOR PERFORMING ADHESIVE WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE ADHESIVE MATERIALS, AND SHALL HAVE NO LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF ADHESIVE RELATED WORK REQUIRED IN THIS PROJECT. A CERTIFICATION FROM THE MANUFACTURER ATTESTING TO THE TRAINING SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT ALONG WITH THE PROPOSAL TO DO THE WORK.

**NON-LOAD BEARING COLD ROLLED STEEL (METAL STUDS)**

- ALL METAL STUDS, HEADERS, AND ACCESSORIES SHALL BE MADE OF THE MINIMUM TYPE, SIZE, GAUGE, AND SPACING SHOWN ON DRAWINGS.
- ALL STRUCTURAL MEMBERS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE, "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" (S100-07 & S200-07).
- ALL THE COLD FORMED MEMBERS SHALL COME FROM A SINGLE MANUFACTURER; ONLY MANUFACTURERS WHO ARE MEMBERS OF THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) OR THE STEEL FRAMING INDUSTRY ASSOCIATION (SFIA) WILL BE ACCEPTED. THE INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.
- MINIMUM YIELD STRENGTH (FY) FOR STUDS IS 33 KSI FOR 18 GA (43 MILS) AND 20 GA (33 MILS) MATERIALS, AND 50 KSI FOR 12 GA (97 MILS), 14 GA (68 MILS), AND 16 GA (54 MILS) MATERIALS.
- SUBMIT SHOP DRAWINGS FOR ALL LOAD BEARING COLD FORMED METAL FRAMING. SHOP DRAWINGS SHALL INDICATE PLACING OF ALL FRAMING MEMBERS SHOWING TYPE, SIZE, GAUGE, NUMBER, LOCATION AND SPACING. THEY SHALL ALSO INDICATE SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
- SHOP DRAWINGS SHALL SHOW SIZE AND LENGTH OF WELDS FOR ALL WELDED CONNECTIONS AND TYPE, SIZE AND NUMBER OF SCREWS FOR ALL SCREWED CONNECTIONS. SUBMIT MANUFACTURER'S DATA GIVING STRENGTH VALUES FOR SCREWS USED.
- ALL STUDS, TRACK, BRIDGING AND ACCESSORIES SHALL BE FORMED FROM STEEL HAVING A G-60 GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A653 AND A955. ALL ACCESSORIES SHALL BE FORMED FROM STRUCTURAL QUALITY STEEL WITH MINIMUM YIELD STRENGTH OF 50 KSI.
- A MINIMUM LENGTH OF 10" OF UNPUNCHED STEEL IS REQUIRED AT BOTH ENDS OF STUDS. NO PUNCHING HOLES OF ANY SIZE IS PERMITTED IN THESE 10". NO CUTTINGS OF THE STUD FLANGE IS PERMITTED.
- BOTH STUD FLANGES SHALL BE ATTACHED TO THE TOP AND BOTTOM TRACK WITH (2) #10 SCREWS EACH SIDE.
- SPLICES IN STUDS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.
- MULTIPLE STUD "COLUMNS" SHALL BE WELDED TOGETHER IN GROUPS OF AT LEAST TWO STUDS WITH 2" WELD TOP AND BOTTOM AND 1" WELD AT 24"OC BOTH SIDES IN BETWEEN.
- TRACK SPLICES WITHIN A PANEL/WALL MUST BE SECURELY ANCHORED TO A COMMON ELEMENT (IE. STUD OR HEADER), OR BUTT-WELDED TOGETHER, OR SPLICED WITH STUD MATERIAL SECURELY FASTENED TO TRACK ON BOTH SIDES OF SPLICE.
- LATERAL BRIDGING SHALL BE USED TO RESIST TORSIONAL FORCES IN THE LOAD-BEARING STUDS. BRIDGING SHALL BE 2 1/2"-18 GA (43 MILS) FLAT STRAPS, SCREW ATTACHED TO BOTH FLANGES OF EACH STUD WITH SOLID BLOCKING REQUIRED AT 8"OC (MAX) AND ADJACENT TO EACH OPENING. BLOCKING MAY BE MADE FROM MATCHING GAUGE STUDS ATTACHED WITH 16 GA (54 MILS) CLIP ANGLES WITH (2) #10 SCREWS INTO EACH FLANGE.
- ACCEPTABLE BRIDGING ALTERNATE IS COLD ROLLED CHANNELS 1 1/2" CRC CHANNEL IN 3 5/8" OR 4" STUDS AND 2 1/2" CRC IN 6" STUDS WELDED TO THE OUTER EDGE OF PUNCHOUTS WITH 1/4" MINIMUM WELD.
- BRIDGING IS TO BE PLACED AT NO MORE THAN 4'-0"OC VERTICALLY.
- INSTALL DOUBLE STUDS AT EVERY INTERRUPTION (IE. PLUMBING CHASES).
- MINIMUM TRACK FASTENINGS SHALL BE 0.177" DIAMETER POWDER ACTUATED FASTENERS (PAFS) SPACED 16"OC FOR WALLS (UNO), WITH 1 1/2" MINIMUM PENETRATION INTO CONCRETE.
- VOIDS BENEATH TRACK SHALL NOT BE PERMITTED. CONTRACTOR SHALL PROVIDE A LEVEL SLAB (WITHIN ACI 117 TOLERANCES, REFERENCE CONCRETE NOTES), WHERE UNEVENNESS OF SUPPORTING FLOOR PREVENTS CONTINUOUS SOLID BEARING. PANEL OR TRACK SHALL BE LEVELED BY PLACING MORTAR OR GROUT BENEATH TRACK.
- VERTICAL DEFLECTION CLIPS ARE REQUIRED TO BE CAPABLE OF ACCOMMODATING UPWARD AND DOWNWARD VERTICAL DISPLACEMENT OF THE STRUCTURE THROUGH POSITIVE MECHANICAL ATTACHMENT TO STUD WEB, MECHANICAL ATTACHMENT TO STRUCTURE AND SCREW ATTACHMENT TO STUD WEB USING STEP-BUSHINGS TO PERMIT FRICTIONLESS VERTICAL MOVEMENT. CONNECTORS TO BE TESTED IN ACCORDANCE TO ICC AC621 CRITERIA AND HOLD A VALID ICC-ES EVALUATION SERVICE REPORT TO BE ACCEPTABLE.
- HEADERS SHALL BE CONSTRUCTED OF UNPUNCHED STUDS. SHEAR SHALL BE TRANSFERRED BY FULL BEARING ON JACK STUDS OR BY SHEAR PLATES. SHEAR PLATES SHALL BE 16 GA (54 MILS) MINIMUM.
- REFER TO ARCHITECTURAL PLANS FOR NON-LOAD BEARING WALLS.

**STEEL STAIRS**

- STEEL STAIRS AND LANDINGS AND ALL CONNECTIONS SHALL BE DESIGNED BY THE SUPPLIER FOR A LIVE LOAD OF 100 PSF. TREADS SHALL BE DESIGNED FOR A 300 POUND POINT LOAD DISTRIBUTED OVER 4 SQUARE INCHES. ALL HANDRAILS SHALL BE DESIGNED FOR A LATERAL LOAD OF 50 PLF APPLIED TO THE TOP OF THE RAIL OR A 200 POUND LOAD AT ANY POINT IN ANY DIRECTION, WHICHEVER GOVERNS THE DESIGN. ALL STAIR SHOP DRAWINGS SHALL BEAR THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA. CALCULATIONS SHALL BE SUBMITTED UPON REQUEST.

**ROOF ANCHORS**

- ROOF ANCHORS, ANCHOR LAYOUT, AND ALL CONNECTIONS SHALL BE DESIGNED BY THE ROOF ANCHOR SUPPLIER.
- THE STRUCTURAL DRAWINGS SHOW A SCHEMATIC ROOF ANCHOR LAYOUT PROVIDED BY THE ARCHITECT. ROOF ANCHOR LOCATIONS THAT VARY FROM LOCATIONS SHOWN MUST BE COORDINATED BY THE CONTRACTOR AND SUPPLIER. TO ENSURE ADEQUATE ANCHOR SUPPORT. REVISED ANCHOR LOCATIONS AND ADDITIONAL SUPPORT STRUCTURE MUST BE SUBMITTED TO THE EOR FOR REVIEW.
- THE SUPPORTING STRUCTURE AT THE ROOF ANCHOR LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED ASSUMING A 24" TALL ANCHOR POST WITH A 5,000 LB POINT LOAD APPLIED IN ANY DIRECTION AT THE TOP OF THE ANCHOR POST.

**REPRODUCTION**

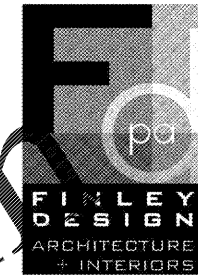
- THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR THERE ON.

**ABBREVIATIONS**

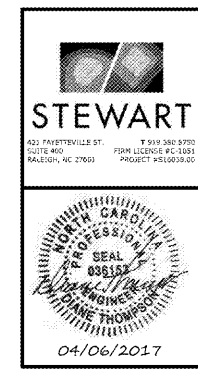
|           |                                            |
|-----------|--------------------------------------------|
| @         | AT                                         |
| &         | AND                                        |
| Ø         | DIAMETER                                   |
| AB        | ANCHOR BOLTS                               |
| ACI       | AMERICAN CONCRETE INSTITUTE                |
| ADDL      | ADDITIONAL                                 |
| ADH       | ADHESIVE                                   |
| AFB       | ABOVE FINISHED FLOOR                       |
| AISC      | AMERICAN INSTITUTE OF STEEL CONSTRUCTION   |
| AISI      | AMERICAN IRON AND STEEL INSTITUTE          |
| ALT       | ALTERNATE                                  |
| ARCH      | ARCHITECT'S / ARCHITECTURAL                |
| ASTM      | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| AWS       | AMERICAN WELDING SOCIETY                   |
| B/ or BOT | BOTTOM                                     |
| BCX       | BOTTOM CHORD EXTENSION                     |
| BFF       | BELOW FINISHED FLOOR                       |
| BLDG      | BUILDING                                   |
| BM        | BEAM                                       |
| BOS       | BOTTOM OF STEEL                            |
| BRG       | BEARING                                    |
| BTWN      | BETWEEN                                    |
| CANT      | CANTILEVER                                 |
| CJ        | CONTROL JOINT                              |
| CL        | CENTERLINE                                 |
| CLR       | CLEAR                                      |
| CMU       | CONCRETE MASONRY UNIT                      |
| COL       | COLUMN                                     |
| CONC      | CONCRETE                                   |
| CONN      | CONNECTION                                 |
| CONST JT  | CONSTRUCTION JOINT                         |
| CONT      | CONTINUOUS                                 |
| CONTR     | CONTRACTOR                                 |
| COORD     | COORDINATE                                 |
| CTRD      | CENTERED                                   |
| d         | NAILS (PENNY)                              |
| DBA       | DEFORMED BAR ANCHOR                        |
| DFL       | DEFLECTION                                 |
| DEPR      | DEPRESSION / DEPRESSED                     |
| DET       | DETAIL                                     |
| DIAG      | DIAGONAL                                   |
| DIM       | DIMENSION                                  |
| DIST      | DISTANCE                                   |
| DWG(S)    | DRAWING(S)                                 |
| DWL(S)    | DOWEL(S)                                   |
| EA        | EACH                                       |
| EE        | EACH END                                   |
| EF        | EACH FACE                                  |
| EI        | EXPANSION JOINT                            |
| ELEV      | ELEVATION                                  |
| EMBED     | EMBEDDED / EMBEDMENT                       |
| ENGR      | ENGINEER                                   |
| EOD       | EDGE OF DECK                               |
| EOS       | EDGE OF SLAB                               |
| EQ        | EQUAL                                      |
| EQUIP     | EQUIPMENT                                  |
| EW        | EACH WAY                                   |
| EXIST     | EXISTING                                   |
| EXP       | EXPANSION                                  |
| EXT       | EXTERIOR                                   |
| FDN       | FOUNDATION                                 |
| FFE       | FINISHED FLOOR ELEVATION                   |
| FOM       | FACE OF MASONRY                            |
| FOW       | FACE OF WALL                               |
| FS        | FASISIDE                                   |
| FTG       | FOOTING                                    |
| GA        | GAUGE                                      |
| GALV      | GALVANIZED                                 |
| HD        | HARDED                                     |
| HI        | HIGH                                       |
| HORIZ     | HORIZONTAL                                 |
| HSS       | HOLLOW STRUCTURAL SECTION                  |
| INT       | INTERIOR                                   |
| JT        | JOINT                                      |

**ABBREVIATIONS**

|         |                          |
|---------|--------------------------|
| K       | KIP(S)                   |
| KB      | KNEE BRACE               |
| KSI     | KIPS PER SQUARE INCH     |
| LB      | LONG BAR                 |
| LBS     | POUNDS                   |
| LRH     | LONG LEG HORIZONTAL      |
| LLV     | LONG LEG VERTICAL        |
| LOW     | LOW                      |
| LOC     | LOCATION                 |
| LSH     | LONG SIDE HORIZONTAL     |
| LSV     | LONG SIDE VERTICAL       |
| LWC     | LIGHT WEIGHT CONCRETE    |
| MAX     | MAXIMUM                  |
| MCC     | MOMENT CONNECTION        |
| MECH    | MECHANICAL               |
| MFR     | MANUFACTURER             |
| MID     | MIDDLE                   |
| MIN     | MINIMUM                  |
| MISC    | MISCELLANEOUS            |
| MOW     | MIDDLE OF WALL           |
| MP      | MASONRY PLASTER          |
| No or # | NUMBER                   |
| NS      | NEAR SIDE                |
| NTS     | NOT TO SCALE             |
| NWC     | NORMAL WEIGHT CONCRETE   |
| OC      | ON CENTER                |
| OPNG    | OPENING                  |
| OPP     | OPPOSITE HAND            |
| PAF     | POWDER ACTUATED FASTENER |
| PED     | PEDESTAL                 |
| PL      | PLATE                    |
| PSF     | POUNDS PER SQUARE FOOT   |
| PSI     | POUNDS PER SQUARE INCH   |
| PT      | PRESSURE TREATED         |
| P-T     | POST-TENSIONED           |
| REF     | REFERENCE                |
| REINF   | REINFORCING              |
| REQD    | REQUIRED                 |
| SB      | SHORT BAR                |
| SCHD    | SCHEDULE                 |
| SIM     | SIMILAR                  |
| SOG     | SLAB ON GRADE            |
| SPEC(S) | SPECIFICATION(S)         |
| SQ      | SQUARE                   |
| STD     | STANDARD                 |
| STIFF   | STIFFENER                |
| STR     | STRUT                    |
| STR     | STRUCTURE                |
| T/      | TOP                      |
| TCX     | TOP CHORD EXTENSION      |
| TOC     | TOP OF CONCRETE          |
| TOP     | TOP                      |
| TOS     | TOP OF SLAB              |
| TOW     | TOP OF WALL              |
| TYP     | TYPICAL                  |
| UNO     | UNLESS NOTED OTHERWISE   |
| VERT    | VERTICAL                 |
| VF      | VERIFY IN FIELD          |
| W/      | WITH                     |
| WWF     | WELDED WIRE FABRIC       |
| WP      | WORK POINT               |



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**REVISIONS**

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CHECKED BY: JCP

GENERAL NOTES AND ABBREVIATIONS

SO.1

Order Plans