1.0 CODES AND STANDARDS:

1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.

1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7-16.

1.3 "Building Code Requirements for Structural Concrete (ACI 318-14)" American Concrete Institute 2014.

1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.

1.5 "Structural Welding Code - Steel (AWS D1.1)" and "Structural Welding Code - Reinforcing Steel (AWS D1.4)", American Welding Society.

1.6 "Specification for the Design of Cold-Formed Steel Structural Members", American Iron and Steel Institute (AISI), S100-12.

1.7 "Building Code Requirements for Masonry Structures", ACI 530-13, ASCE 5-13, TMS 402-13.

1.8 "Design Manual For Floor Decks and Roof Decks", Steel Deck Institute, latest edition.

2.0 DESIGN LOADS:
Project Located in: City of Winnabow, County of Brunswick, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS		
Location	**Uniform (psf)**	**Concentrated (lbs) (Over 2.5'x2.5')**
Roof Loads:		
Dead Load	20	
Live Load	20	300
Floor Loads:		
Dead Load First Floor	50	
Dead Load Equipment Platform	50	
Floor Live Loads:		
Mezzanine	60	2000
Ground Floor	100	

2.2 Drifting Snow Loads per Referenced Code.

Pg = 10 psf
I = 1.10
Ce = 0.9
Ct = 1.0

2.3 Risk Category = III

2.4 Wind Loads per Referenced Code.

Basic Design Wind Speed:
3-second Gust PER ASCE
V = 155 mph
Exposure "C"

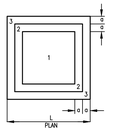
Main Wind Force Resisting System:
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85
Calculated Wind Base Shear (MWFRS) = Vx = 70k Vy = 390k

Components & Cladding

Components and Cladding Wind Pressure (psf)

Walls	Area < 10ft²		< 20ft²		Area < 50ft²		Area < 100ft²		Area < 100ft²	
Zone 4	58.6	-63.6	56.1	-61.1	52.4	-57.4	48.9	-54.9	43.7	-48.7
Zone 5	58.6	-78.5	56.1	-73.5	52.4	-66.1	48.9	-61.1	43.7	-48.7
Roof	**Area < 10ft²**		**Area < 20ft²**		**Area < 50ft²**		**Area < 100ft²**		**Area < 500ft²**	
Zone 1	28.8	-73.5	26.8	-70.0	25.3	-67.5	23.8	-63.6	23.8	-63.6
Zone 2	28.8	-88.4	26.8	-83.4	25.3	-75.0	23.8	-68.5	23.8	-68.5
Zone 3	28.8	-153.0	26.8	-138.1	25.3	-120.7	23.8	-108.3	23.8	-108.3

Notes:
1. Areas noted are effective wind areas as per ASCE 7, 26.2 definitions.
2. See figures below for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are strength design wind pressures. Allowable stress design wind pressures may be calculated by factoring the pressures by 0.6.
5. Design pressures for effective wind areas between those noted in schedule may be interpolated.
6. Tributary area = greater of LxW or LxL/3.
7. Deflections may be calculated based on 42% of these loads.



Corner Zone Dimensions

a = 8ft

2.5 Seismic Loads per Referenced Code.

Risk Category = III
Site class = "D" (Per Geotechnical Report)
Spectral Response Coefficients:
SDS = 0.182g
SD1 = 0.117g
Cs = 0.057

Seismic Design Category = "B"
Seismic Importance Factor = 1.25
Basic Seismic - Force - Resisting System
Building Frame System - Cold Formed Steel Wall systems using flat strap bracing

RX=RY=4.0, OX=OY=2.0, CDX=CDY=3.5
Design Base Shear Vx = Vy = 47k
Building Height Limit = NL
Analysis Procedure - per Referenced Code.
Equivalent Lateral Force Procedure

2.6 Guardrail designed per Referenced Code, Chapter 16 IBC

Guardrail:
Uniform load = 50 plf, any direction
Concentrated load = 200 lbs, any direction
Intermediate Rail: (all those except handrail)

2.7 Flood Loads:
Project is not located in a flood zone.

3.0 FOUNDATIONS:

3.1 Foundation design is based on geotechnical report #22:32616 by ECS Southeast, LLP Wilmington, NC dated January 16, 2023. This report is available in the project manual. The recommendations contained in this report are herein made part of the requirements of these contract documents.

3.2 Footings shall bear on strata capable of sustaining a minimum bearing pressure of 2000 psf.

3.3 Top of footing (T/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.

3.4 Bottom of exterior footings, grade beams and walls shall bear at a minimum depth of 1'-0" below final grade for frost protection.

3.5 Testing and Inspection:
a. All areas to have slabs on grade shall be proof rolled in accordance with and under observation of the Geotechnical Engineer and approved prior to preparation for concrete placement.
b. All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any concrete placement.
c. Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing strata.
d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.

3.6 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.

3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report Material shall be a clean, low plastic soil with a plasticity index less than 10, liquid limit less than 40, and unit weight of 120 pcf (+ 5 pcf)

3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 96 percent Standard Proctor (ASTM D-698) except that the top 12 inches shall be compacted to a minimum of 98 percent Standard Proctor. Moisture shall be controlled to within 2 percent above or below optimum content.

3.9 Remove all topsoil and organic materials. The stripping should extend at least 10' beyond the proposed construction limits.

3.10 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

4.0 CONCRETE:

4.1 Concrete Strength:
All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.

4.2 Concrete shall have a 28 day compressive strength and density as follows:
a. Footings and Interior Slab-on-grade.....3,000psi, Density = ±145pcf
b. Exterior Slab on Grade.....4,000psi, Density = ±145pcf
c. CMU Grout Fill.....3,000psi pea gravel mix, Density = ±145pcf, Slump 8"-11" or grout per Structural Masonry Notes, this sheet.

4.3 Concrete Mix Designs:
a. Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the start of work.
b. Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301-05, Section 4, Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
c. Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #89 stone for masonry grout.
d. Water reducing admixture shall be used in all concrete.
e. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
f. Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301-05 Section 4.

4.4 Curing:
See specifications for curing method options and apply within two (2) hours after completion of finishing to all concrete flatwork and walls, U.N.O., other than footings and grade beams.

4.5 Use a non-corrosive, non-chloride accelerating admixture in concrete exposed to temperatures below 40 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. Place and cure concrete in accordance with ACI 306.

4.6 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 90 degrees.

4.7 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.

4.8 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.

4.9 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.

4.10 Base plates, anchor rods, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3" of concrete.

4.11 Fill slabs, not shown on the structural drawings, shall be reinforced with a minimum of WWM W2.0xW2.0x6x6 - see plan notes, unless noted otherwise on other drawings.

4.12 Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values equal to ⅔ of the overall flatness and levelness values.
b. The composite F(F) and F(L) numbers shall be measured and reported within 72 hours after completion of slab concrete finishing operations and before removal of any supporting shores.

4.13 Non-shrink grout shall be pre-mixed, non-corrosive, non-metallic, non-staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.

4.14 Provide concrete grout - not mortar - for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.

4.15 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.16 Unless otherwise shown in the architectural drawings, provide 3/4-inch chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.

4.17 Concrete cover for cast-in-place concrete reinforcement:
Concrete cast against & permanently exposed to earth:.....3 Inches
Concrete exposed to earth or weather:
No. 6 through No. 18 Bars:.....2 Inches
No. 5 Bar and smaller:.....1½" Inches
Concrete not exposed to weather or in contact with ground:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾" Inches
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½" Inches

5.0 REINFORCING STEEL:

5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.

5.2 Field bending of concrete reinforcing steel is not permitted.

5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'-6" at all splices.

5.4 Bar Splices:

	f'c = 3,000psi		f'c = 4,000psi		f'c = 5,000psi	
Bar Size	**Ld (in)**	**Class "B" Lap Splice (in)**	**Ld (in)**	**Class "B" Lap Splice (in)**	**Ld (in)**	**Class "B" Lap Splice (in)**
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56

1. Values are based on normal weight concrete.
2. Ld = minimum embed of rebar
3. Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.

6.0 STRUCTURAL MASONRY:

6.1 All structural masonry shall conform to ACI 530 standards as appropriate to the material.

6.2 Concrete Masonry Units (CMU):
a. Units shall be lightweight cellular units conforming to ASTM C 90, Grade N-2. Concrete masonry net area unit strength shall be no less than 2,000psi in accordance with ASTM C 140, with a unit weight not exceeding 95 pcf.
b. Design compressive strength of CMU (fm) = 2,000psi.

6.3 Mortar shall conform to ASTM C 270. Mortar shall be type "S" and shall conform to the ASTM C270 proportion requirements.

6.4 Neither type "N" mortar nor masonry cement shall be used as part of the lateral force resisting system.

6.5 Grouting:
a. Grout shall conform to ASTM C476 as specified by proportion. Masonry grout shall conform to the ASTM proportion requirements for coarse grout with a slump of 8 to 11 inches. Contractor may substitute grout with pea gravel concrete masonry fill, see note 4.2 this sheet.
b. All bond beams shall be filled with grout and reinforced as indicated on the drawings (details or schedules). Mortar fill is not permitted.
c. All masonry wall cells or cavities indicated as reinforced shall be grouted for the full height of the wall, unless specifically noted otherwise on the drawings. Unreinforced walls indicated as grouted shall be grouted full height, unless specifically noted otherwise. Mortar fill is not permitted.
d. All masonry cells or cavities below grade shall be grouted solid unless specifically noted otherwise on the drawings. Mortar fill is not permitted.
e. Vertical grouting shall be low lift or high lift as follows:
(1) Low lift grouting shall be used for all cavity walls and may be used for all walls at the option of the Contractor. Lifts shall not exceed 4'-0" in height.
(2) High lift grouting is permissible only for filling of cellular masonry units and shall not exceed 12'-8" in height. Clean out holes shall be provided at the base of each grouted cell.
f. Grouting shall be stopped 1-1/2" below the top of a course to form a key at the joint.
g. Grouting of masonry beams or lintels shall be done in one continuous operation.
h. Consolidate pours with mechanical vibrator and reconsolidate by mechanical vibration after initial water loss and settlement has occured.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

6.6 Masonry Reinforcing:
a. Foundation dowels may slope a maximum of 1:6 to align with wall cavities or vertical CMU cores. Greater slopes will require replacement of the foundation dowels.
b. Spliced reinforcing shall be lapped a length calculated per IBC 2107.5 OR 15" OR as shown on drawings, whichever is greatest. All splices shall be wired together.
c. Vertical reinforcing bars shall have a minimum clearance of ¼" from masonry and shall be held in position top and bottom and at intervals not exceeding 4'-0". Accessories for such support shall be used. Provide "AA Wire Products Company" (or approved equal) Rebar Positioner AA225 or AA239 for vertical bars and AA238 for horizontal bars or approved equal products from other suppliers.
d. Horizontal joint reinforcing shall be lapped no less than 6" all splices, including corners and tees where no control joint is used.
e. All horizontal joint reinforcing shall stop at control joints.
f. Horizontal reinforcing in bond beams shall be continuous through control joints.
g. All CMU walls shall have joint reinforcing @ 16"o.c. All joint reinforcing shall have (2) 9 gauge (0.148"ø or W1.7) side rods & cross rods @ 16"o.c.

6.7 Masonry contractor shall provide for and coordinate with other trades for placement of all items to be embedded or built into the masonry.

MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	**SPLICE LENGTH**
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"

7.0 COLD-FORMED STEEL FRAMING:

7.1 All members shall be designed in accordance with the American Iron and Steel Institute (AISI) "Specifications for the Design of Cold-formed Steel Structural Members", Latest Edition.

7.2 All framing members shall be formed from corrosion-resistant steel corresponding to the requirements of ASTM A446, with a minimum yield strength of 33 ksi for joists and studs and 33 ksi for runners.

7.3 All members shown are standard designations of Steel Stud Manufacturers Association (SSMA)

7.4 Design of members indicated in structural drawings is based on minimum properties of products produced per SSMA standards of members specified. No substitution of materials is acceptable for use without prior approval of the structural engineer. Substitutions shall meet or exceed all properties produced per SSMA standards of members specified.

7.5 All shop drawing submittals shall show layout, spacing, sizes, thicknesses and types of cold-formed metal framing, fabrication, and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details and attachment to adjoining work.

7.6 Shop drawings, design calculations and other structural data shall be prepared and sealed by a qualified engineer. The Structural Engineer shall be legally qualified to practice in the jurisdiction where the project is located and shall be experienced in providing engineering services of the kind indicated.

7.7 All framing components shall be cut squarely for attachment to perpendicular members or as required for an angular fit tight against abutting members. All load bearing stud/walls shall be factory assembled into panels with studs bearing squarely and fully in top and bottom tracks.

7.8 Fastening components shall be by self-drilling screws or by welding as defined below UNO on the drawings.

7.9 Screwed connections:
a. Screws shall be type S-12 or type S-4 for all framing members per manufacturer's recommendations.
b. A minimum of three (3) exposed threads shall penetrate through at joined materials.
c. Corrosion-resistant cadmium-plated screws shall be used for screws attaching metal lath, masonry ties, and other exterior materials.

7.10 Welded connections:
a. Gas metal arc welding (GMAW) shall be used for 20 ga. Or lighter members. AWSE-70S-3, E-70S-E, E-70S-6 wire electrodes .030"-.035" diameter shall be used with carbon dioxide, argon-oxygen or argon-carbon dioxide shielding. Welding equipment 60-100 amperes at 25 volts using 220-volt 3-phase electric service.
b. Shielded metal arc welding (SMAW) shall be used for 18 ga' and heavier members. AWS E-6012, E-6013, or E-7014 electrodes of 3/32" or 1/8" diameter shall be used. Welding equipment heat setting shall be varied dependent on material thickness.
c. All welds shall be touched up with zinc rich paint, or paint similar to that used by the framing member manufacturer.

7.11 Alignment of studs (plumbness) and walls (straightness) shall be within 1/960 of their respective heights and lengths.

7.12 Studs shall be plumbed, aligned, and securely attached to top and bottom runners. Splices in studs are not permitted.

7.13 Where manufacturer's recommendations for erection, attachment, assembly, bracing, alignment, or other installation, or assembly requirements are more stringent than indicated in these drawings, the manufacturer's recommendations shall apply.

STEEL THICKNESS						
Gauge:	**Mils**	**Design Thickness**		**Minimum Thickness**		**Yield Strength**
		Inches	**mm**	**Inches**	**mm**	**ksi**
20	33	0.0346	0.879	0.0329	0.836	33
18	43	0.0451	1.146	0.0428	1.087	33
16	54	0.0566	1.438	0.0538	1.367	50
14	68	0.0713	1.811	0.0677	1.720	50
12	97	0.1017	2.583	0.0966	2.454	50

8.0 STEEL DECK:

8.1 Steel roof deck shall be galvanized, Type B, 1 1/2" deep, 20 gauge, U.N.O.

8.2 For steel roof deck spans, mechanically fasten side laps at mid-span using "Buildex", self-tapping TEKS No. 10 or larger machine screws or as noted on plan.
Provide additional sidelap fasteners where noted on plan.
Fasten roof deck to supporting members as noted on plan.

8.3 Do not hang pipes or ducts from steel roof deck. Fasten roof deck to supporting members as noted on plan.

9.0 CONSTRUCTION AND SAFETY:

9.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry.
This should include, but not be limited to the following:
Shoring to protect new as well as existing structures.
Necessary Scaffolding.
Material Handling Equipment.
Trench Boxing.

10.0 SPECIAL INSPECTIONS:

10.1 Refer to Specification Section 014533 for all Special Inspections requirements.

11.0 SHOP DRAWING SUBMITTAL:

11.1 See Project Manual

11.2 Contractor shall submit Electronic copies (PDF format) of each shop drawing for review. Shop drawings shall be reviewed by the Contractor prior to submission to the Engineer. The Contractor shall allow 10 working days for shop drawing approval.

12.0 SUPPLEMENTAL FRAMING:

12.1 Provide supplemental framing for the support of pipes, conduits, light fixtures, etc. Supplemental framing shall consist of slotted steel channels, steel angles, hanger rods, and appropriate hardware. Finish for framing and hardware shall be galvanized or rust-inhibiting acrylic enamel paint.

12.2 Slotted Steel Channels: For exterior use, hot-dipped galvanized finish. For interior use, manufacturer's standard finish.

12.3 Steel Angles: for exterior use, hot-dipped galvanized. For interior use, prime with rust-inhibitive primer and finish paint two coats of alkyd enamel.

12.4 Hanger Rods: Galvanized carbon steel threaded rods.

12.5 Fastening Hardware: Finish shall match connected parts.

ABBREVIATIONS

@	AT	HT	HIP TRUSS
&	AND	IFM	INSIDE FACE OF MASONRY
AB	ANCHOR BOLTS	INT	INTERIOR
ACI	AMERICAN CONCRETE INSTITUTE	JBE	JOIST BEARING ELEVATION
ADDL	ADDITIONAL	JT	JOINT
AFF	ABOVE FINISHED FLOOR	K	KIP-S
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	KB	KICKER BRACE
		KSI	KIPS PER SQUARE INCH
AISI	AMERICAN IRON AND STEEL INSTITUTE	(L)	LONG SIDE REINFORCEMENT
		LB	LONG BAR
ALT	ALTERNATE	LBS	POUNDS
ARCH	ARCHITECTS - ARCHITECTURAL	LLH	LONG LEG HORIZONTAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LLV	LONG LEG VERTICAL
		LO	LOW
AWS	AMERICAN WELDING SOCIETY	LOC	LOCATION
B, BOTT	BOTTOM	LWC	LIGHT WEIGHT CONCRETE
BCX	BOTTOM CHORD EXTENSION	MAX	MAXIMUM
BFF	BELOW FINISHED FLOOR	MC	MOMENT CONNECTION
BLDG	BUILDING	MECH	MECHANICAL
BM	BEAM	MFR	MANUFACTURER
BOS	BOTTOM OF STEEL	MID	MIDDLE
BRG	BEARING	MIN	MINIMUM
BTWN	BETWEEN	MISC	MISCELLANEOUS
CFS	COLD FORMED STEEL	MOW	MIDDLE OF WALL
CJ	CONTRACTION JOINT	MP	MASONRY PILASTER
CL	CENTERLINE	d	NAILS - PENNY
CLR	CLEAR	No	NUMBER
CMU	CONCRETE MASONRY UNITS	NS	NEAR SIDE
COL	COLUMN	NTS	NOT TO SCALE
CONC	CONCRETE	NWC	NORMAL WEIGHT CONCRETE
CONN	CONNECTION	OC	ON CENTER
CONST JT	CONSTRUCTION JOINT	OFB	OUTSIDE FACE OF BRICK
CONT	CONTINUOUS	OFM	OUTSIDE FACE OF MASONRY
CONTR	CONTRACTOR	OFS	OUTSIDE FACE OF STUD
CSJ	COMPOSITE STEEL JOIST	OPNG	OPENING
CTRD	CENTERED	OPP	OPPOSITE HAND
DBA	DEFORMED BAR ANCHOR	PEBS	PRE-ENGINEERED BUILDING SUPPLIER
DD	DELEGATED DESIGN		
DEFL	DEFLECTION	PED	PEDESTAL
DEPR	DEPRESSION - DEPRESSED	PL	PLATE
DET	DETAIL	PSF	POUNDS PER SQUARE FOOT
DIAG	DIAGONAL	PSI	POUNDS PER SQUARE INCH
ø	DIAMETER	PSL	PARALLEL STRAND LUMBER
DIM	DIMENSION	PLF	POUNDS PER LINEAR FOOT
DIST	DISTANCE	PT	PRESSURE TREATED
DWG(S)	DRAWING(S)	REF	REFERENCE
DWL(S)	DOWEL(S)	REINF	REINFORCING
EA	EACH	REQD	REQUIRED
ELEV	ELEVATION	(S)	SHORT SIDE REINFORCEMENT
EMBED	EMBEDDED - EMBEDMENT	SB	SHORT BAR
ENG	ENGINEER	SCHD	SCHEDULE
EOR	ENGINEER OF RECORD	SF	STEP FOOTING
EQ	EQUAL	SIM	SIMILAR
EQUIP	EQUIPMENT	SOG	SLAB ON GRADE
EF	EACH FACE	SPEC(S)	SPECIFICATION(S)
EJ	EXPANSION JOINT	SPF	SPRUCE PINE FUR
EOD	EDGE OF DECK	SQ	SQUARE
EOM	EDGE OF MASONRY	STD	STANDARD
EOS	EDGE OF SLAB	STIFF	STIFFENER
EOW	EDGE OF WALL	STIRR	STIRRUP
EW	EACH WAY	STL	STEEL
EXIST	EXISTING	STR	STRUCTURAL
EXP	EXPANSION	SW	SHEAR WALL
EXT	EXTERIOR	SYP	SOUTHERN YELLOW PINE
FDN	FOUNDATION	T	TOP
FFE	FINISHED FLOOR ELEVATION	TCX	TOP CHORD EXTENSION
FS	FAR SIDE	TOC	TOP OF CONCRETE
FTG	FOOTING	TOS	TOP OF STEEL
GA	GAUGE	TOW	TOP OF WALL
GALV	GALVANIZED	TYP	TYPICAL
GT	GIRDER TRUSS	UNO	UNLESS NOTED OTHERWISE
HD	HEADED	VB	VEHICLE BARRIER
HI	HIGH	VERT	VERTICAL
HORIZ	HORIZONTAL	VIF	VERIFY IN FIELD
HSS	HOLLOW STRUCTURAL SECTION	W	WITH
		WWF	WELDED WIRE FABRIC

DO NOT SCALE DIGITAL OR HARD COPIES OF THESE DRAWINGS:

Unless Specifically Noted - Drawings, Plans, Sections, Details, Etc. are a graphic representation of the framing conditions and/or requirements.
Rebar lengths, bends & etc. SHALL NOT be determined by scaling any drawings included in this set of documents. Lengths & sizes shall be determined by the schedules only, or specifically requested if not numerically shown. Submit a written request to Woods Engineering, PA if further clarification is needed.

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Date: 2024.05.03 14:43:22-04'00'

PROJECT TITLE

TOWN CREEK ELEMENTARY SCHOOL 2024 ADDITION - PHASE 2

6330 LAKE PARK DRIVE SE,
WINNABOW, NC 28479

DSP #: 100
DPI SCHOOL #: 339
ISSUED FOR PERMIT

SHEET TITLE

GENERAL NOTES

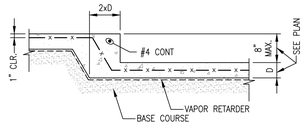
ISSUE BLOCK

Mark	Date	Description

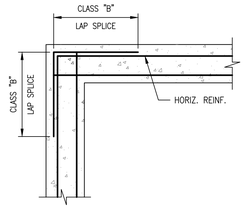
PROJECT NO: 2022264.00
DATE: 05.06.2024
SCALE: As indicated
DRAWN BY: MBK | PROJ MGR: ALS

S1.01

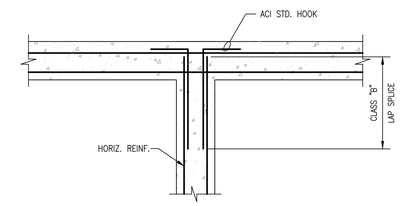
2/1/2023 3:41:55 PM Autodesk Docs://Town Creek Elementary School Addition/ST_TOWN CREEK_v22.rvt



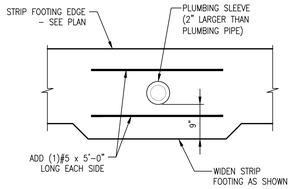
TYPICAL SLAB STEP
SCALE: 3/4" = 1'-0"



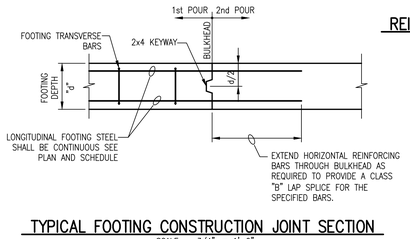
② FOOTING CORNERS



② FOOTING INTERSECTION

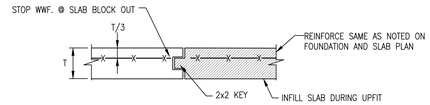


PLAN DETAIL OF VERTICAL PIPE PENETRATION AT STRIP FOOTING
SCALE: 3/4" = 1'-0"

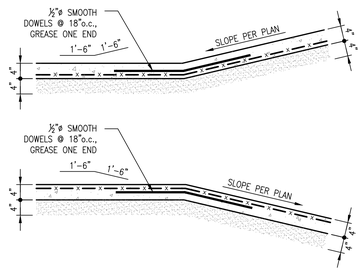


TYPICAL FOOTING CONSTRUCTION JOINT SECTION
SCALE: 3/4" = 1'-0"

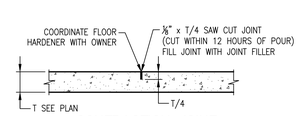
TYPICAL CORNER REINFORCING FOR CONCRETE FOOTINGS
SCALE: 3/4" = 1'-0"



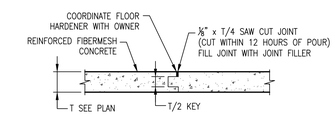
TYPICAL SLAB CONSTRUCTION JOINT @ SLAB BLOCKOUT
NOT TO SCALE



TYPICAL RAMP AT SLAB ON GRADE
SCALE: 3/4" = 1'-0"



CONTRACTION JOINT
SCALE: 1" = 1'-0"
WITHOUT WIRE MESH



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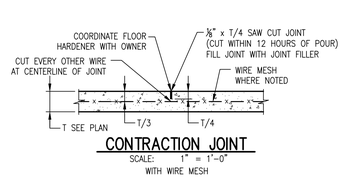
WITHOUT WIRE MESH



CONTRACTION JOINT
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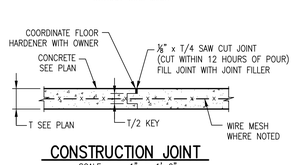
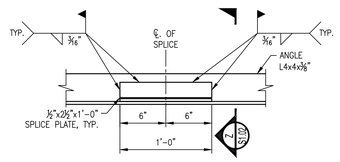
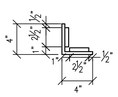
WITH WIRE MESH



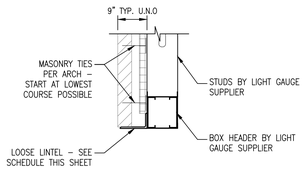
CONSTRUCTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



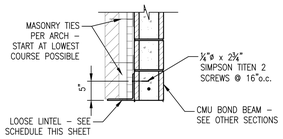
TYPICAL ANGLE SPLICE DETAIL
SCALE: 1 1/2" = 1'-0"



Z–Z
SCALE: 1 1/2" = 1'-0"



LOOSE LINTEL DETAIL
SCALE: 3/4" = 1'-0"

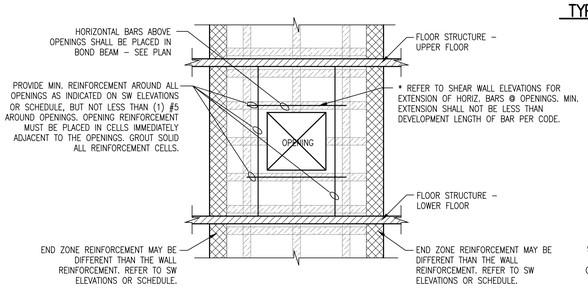


LOOSE LINTEL DETAIL "H"
SCALE: 3/4" = 1'-0"

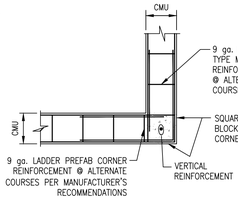
STEEL LINTEL SCHEDULE

CLEAR OPENING	ONE ANGLE FOR EA 4"WYTHE	MIN BRG	MAX. HEIGHT OF BRICK
0'-8" TO 6'-0"	L7" x 4" x 5/16" LLH	8"	9'-0"
6'-0" TO 8'-0"	8"x5"x5/16" BENT PLATE LLH	8"	9'-0"
8'-0" TO 10'-0"	7"x8"x5/16" BENT PLATE LLH	8"	9'-0"
10'-0" TO 12'-0"	9"x8"x5/16" BENT PLATE LLV	8"	9'-0"

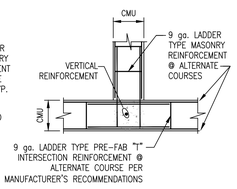
NOTES:
1. WHERE LINTELS BEAR ON HOLLOW MASONRY UNITS FILL ALL CORES UNDER BEARING WITH GROUT FROM BOTTOM OF LINTEL TO 16" MINIMUM BELOW.
2. THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.
3. LINTELS ARE DESIGNED TO CARRY THE MAXIMUM HEIGHT OF BRICK LISTED IN SCHEDULE. IF STACKED BRICK HEIGHT EXCEEDS LISTED VALUE, THEN CONTACT STRUCTURAL ENGINEER FOR ALTERNATE DESIGN.
4. ALL STEEL LINTELS SHALL BE HOT DIP GALVANIZED AND PAINTED.
5. SEE DETAIL BELOW FOR REQUIREMENTS



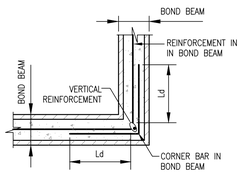
TYPICAL CMU OPENING ELEVATION
NOT TO SCALE



TYPICAL CMU CORNER
DETAIL "B"
SCALE: 3/4" = 1'-0"

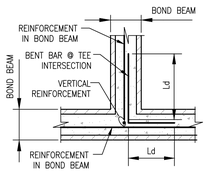


TYPICAL CMU INTERSECTION
DETAIL "C"
SCALE: 3/4" = 1'-0"

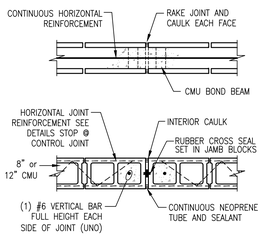


TYPICAL BOND BEAM REINFORCING
DETAIL "D"
SCALE: 3/4" = 1'-0"

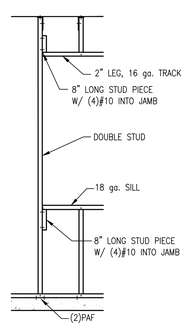
NOTE: TRUSS TYPE REINFORCEMENT SHOWN, HOWEVER LADDER OR TRUSS TYPES ARE ACCEPTABLE.



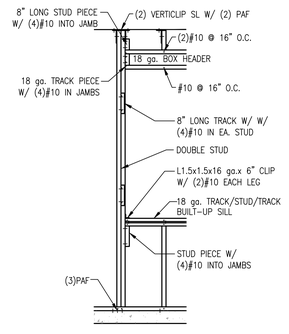
TYPICAL BOND BEAM INTERSECTION REINFORCING
DETAIL "E"
SCALE: 3/4" = 1'-0"



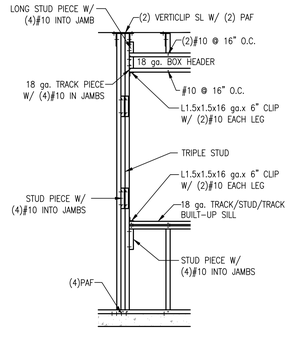
TYPICAL CONTROL JOINT
DETAIL "F"
SCALE: 3/4" = 1'-0"



TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 3'-4"
SCALE: 1/2" = 1'-0"



TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 6'-4"
SCALE: 1/2" = 1'-0"



TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 8'-8"
SCALE: 1/2" = 1'-0"

TYPICAL LIGHT GAUGE CONSTRUCTION DETAILS FOR LOAD BEARING EXTERIOR WALLS

NOTE: THESE DETAILS ARE GENERIC AND ARE FOR GENERAL INFORMATION AND BUDGET PRICING. ACTUAL DESIGN BY LIGHT GAUGE SUPPLIER AND ENGINEER.

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Digitally signed by Adam L. Sisk, PE, SE
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Date: 2024.05.03 14:43:28-04'00'

PROJECT TITLE

TOWN CREEK ELEMENTARY SCHOOL 2024 ADDITION - PHASE 2

6330 LAKE PARK DRIVE SE,
WINNABOW, NC 28479

DSP #: 100
DPI SCHOOL #: 339
ISSUED FOR PERMIT

SHEET TITLE

TYPICAL DETAILS

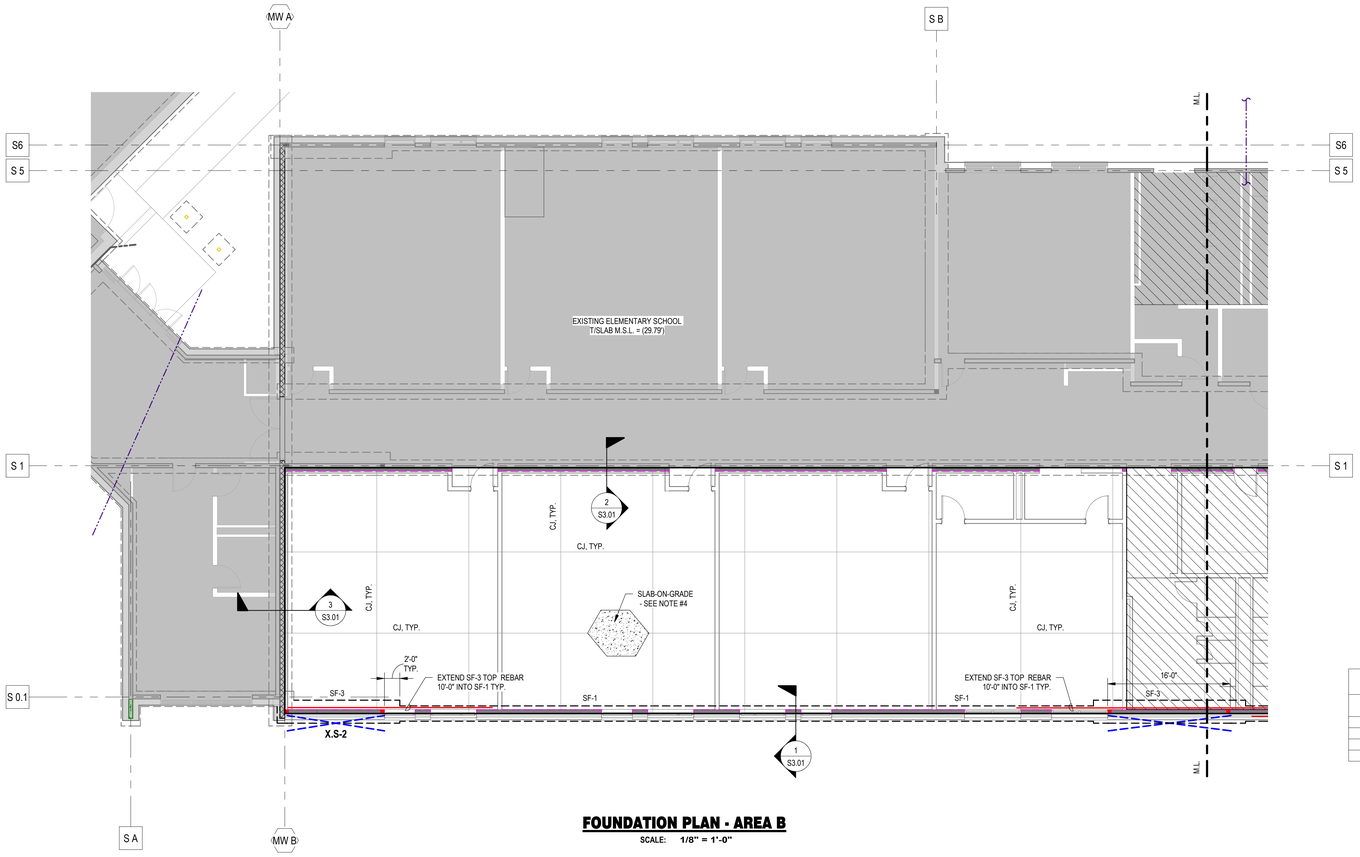
ISSUE BLOCK

Mark	Date	Description

PROJECT NO: 2022264.00
DATE: 05.06.2024
SCALE: As indicated
DRAWN BY: MBK | PROJ MGR: ALS

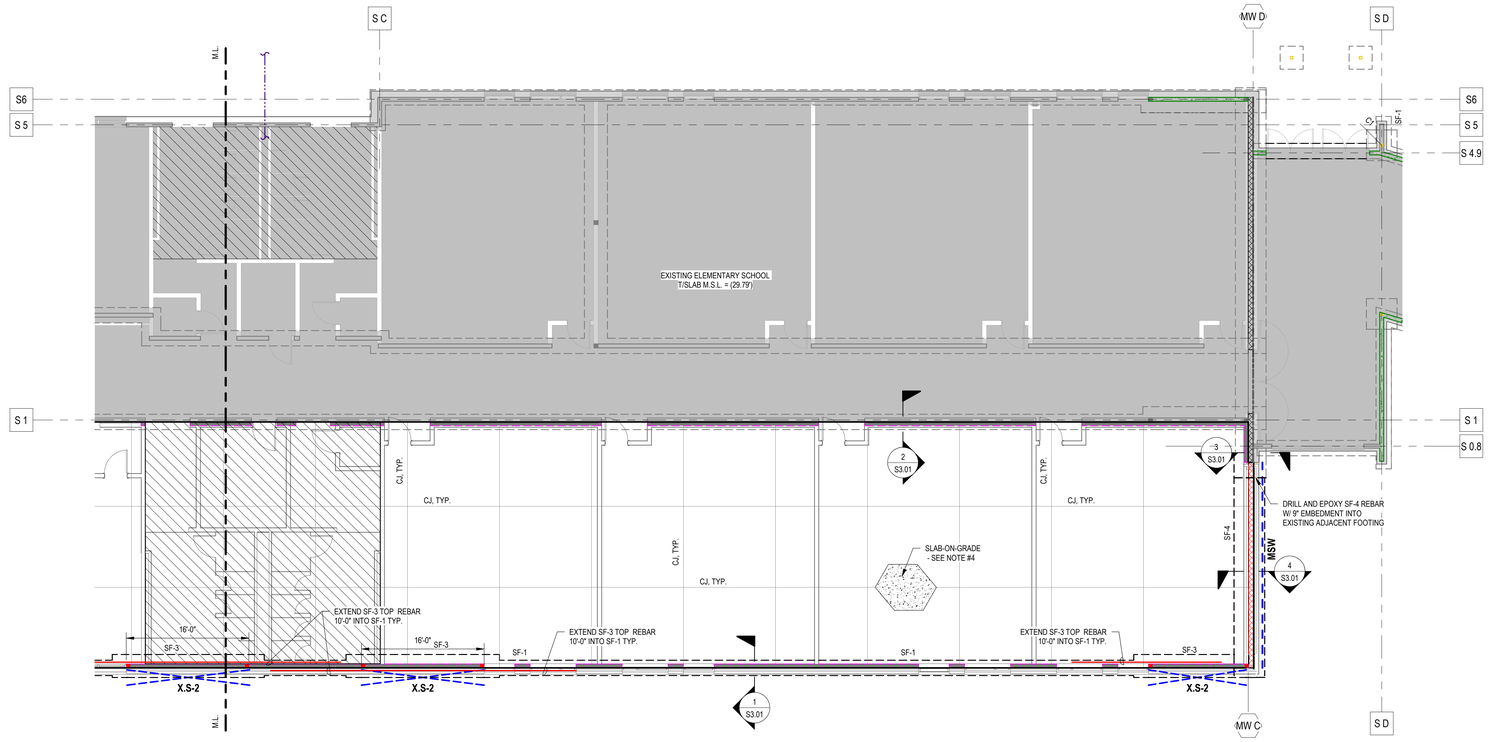
S1.02

2/1/2023 3:41:55 PM Autodesk Docs://Town Creek Elementary School Addition/ST_TOWN CREEK_v22.rvt



FOUNDATION PLAN - AREA B

SCALE: 1/8" = 1'-0"



FOUNDATION PLAN - AREA A

SCALE: 1/8" = 1'-0"

FOUNDATION LEGEND

- SF-X — STRIP FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS. SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN EACH DIRECTION
- CFS LOAD BEARING WALL = 600S162-54 @ 16"o.c. WITH (2) 600S162-54 AT EACH TRUSS BEARING LOCATION ALIGN STUDS WITH ROOF TRUSSES FINAL DESIGN BY DD
- MSW — INDICATES 8" SOLID GROUTED CMU MASONRY SHEAR WALLS WITH #6 @16"o.c. VERTICALS - SEE NOTES AND DETAILS ON S1.0 & S5.0 SHEETS
- M.L. — INDICATES MATCH LINE
- X.S. — INDICATES X-STRAPPING LOCATIONS SEE S5.0 SHEETS
- INDICATES 2" SLAB DEPRESSION COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS
- X-STRAPPING COMPRESSION STUDS SEE 5.0 SERIES SHEETS FOR SCHEDULE

STRIP FOOTING (SF-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		TYP LOCATION
		TOP BARS	BOTTOM BARS	
SF-1	2'-0" x 2'-0" x CONT.	-	(3) #5 CONT.	TYP EXTERIOR
SF-3	3'-0" x 2'-0" x CONT.	(3) #5 CONT.	(3) #6 CONT.	TYP @ X-STRAPPING
SF-3A	3'-0" x 2'-0" x CONT.	(4) #5 CONT.	(4) #6 CONT.	CMU WALL & X-STRAPPING
SF-4	4'-0" x 2'-0" x CONT.	(6) #5 CONT.	(6) #6 CONT.	CMU FIREWALL

FOUNDATION NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0" = 29.79' M.S.L. OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
3. FOOTINGS SHALL BE MONOLITHIC WITH SLAB, U.N.O.
4. INTERIOR SLAB-ON-GRADE SHALL BE 4" THICK 3000 psi CONCRETE REINFORCED WITH WWM6x6xW2.0xW2.0 ON 15 mil VAPOR RETARDER, ON 6" DRAINAGE LAYER ON WELL COMPACTED SUB GRADE. EXTERIOR (BROOM FINISHED) SLABS ON GRADE SHALL BE 4" THICK 4,000 psi CONCRETE REINFORCED WITH WWF6X6XW2.9XW2.9 FLAT SHEETS ON 10 MIL VAPOR BARRIER ON 6" DRAINAGE LAYER ON COMPACTED SUB-GRADE. DRAINAGE LAYER PER GEOTECHNICAL REPORT SHALL CONSIST OF GRAVEL (GP) OR SAND CONTAINING <5% FINES PASSING #200 SIEVE (SP, SW)
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
6. RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER:
   a. DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE.
   b. IF THE UTILITY LINE IS < 2'-0" BELOW THE STRIP FOOTING, THEN ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
   c. IF THE UTILITY LINE IS ≥ 2'-0" BELOW BOTTOM OF FOOTING, THEN STEEL PIPE IS NOT REQUIRED. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
7. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAINWALL (O.F.CW.) TO OUTSIDE FACE OF BRICK (O.F.B) UNLESS NOTED OTHERWISE.
8. SEE S5.0 SHEETS FOR SHEARWALL AND X-STRAPPING INFORMATION AND REQUIREMENTS.
9. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

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Date: 2024.05.03 14:43:33-04'00'

PROJECT TITLE

TOWN CREEK ELEMENTARY SCHOOL 2024 ADDITION - PHASE 2

6330 LAKE PARK DRIVE SE,
WINNABOW, NC 28479

DSP #: 100
DPI SCHOOL #: 339
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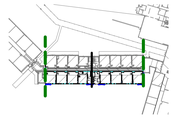
SHEET TITLE

FOUNDATION PLAN



KEY PLAN

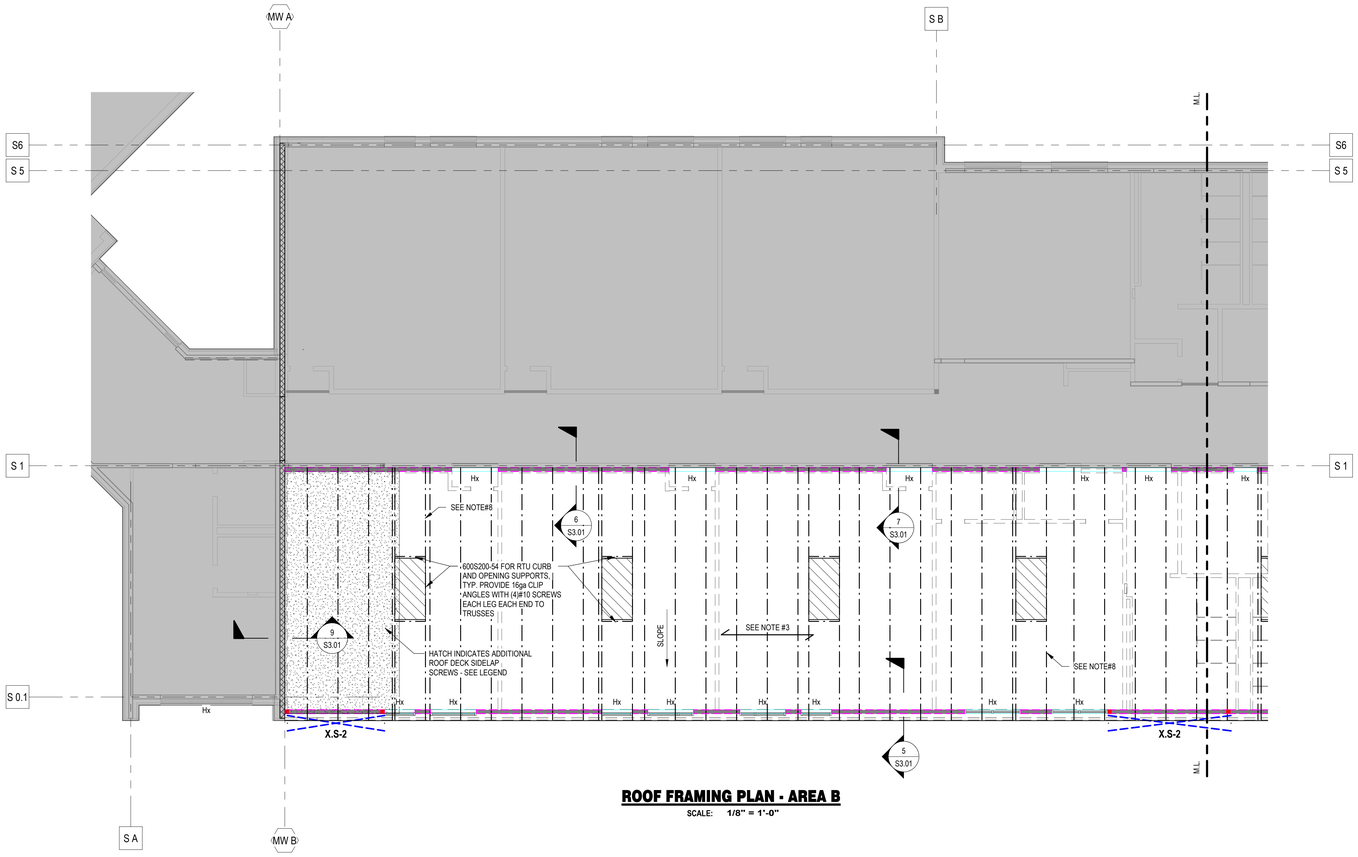
ISSUE BLOCK

Mark	Date	Description

PROJECT NO: 2022264.00
DATE: 05.06.2024
SCALE: As indicated
DRAWN BY: MBK | PROJ MGR: ALS

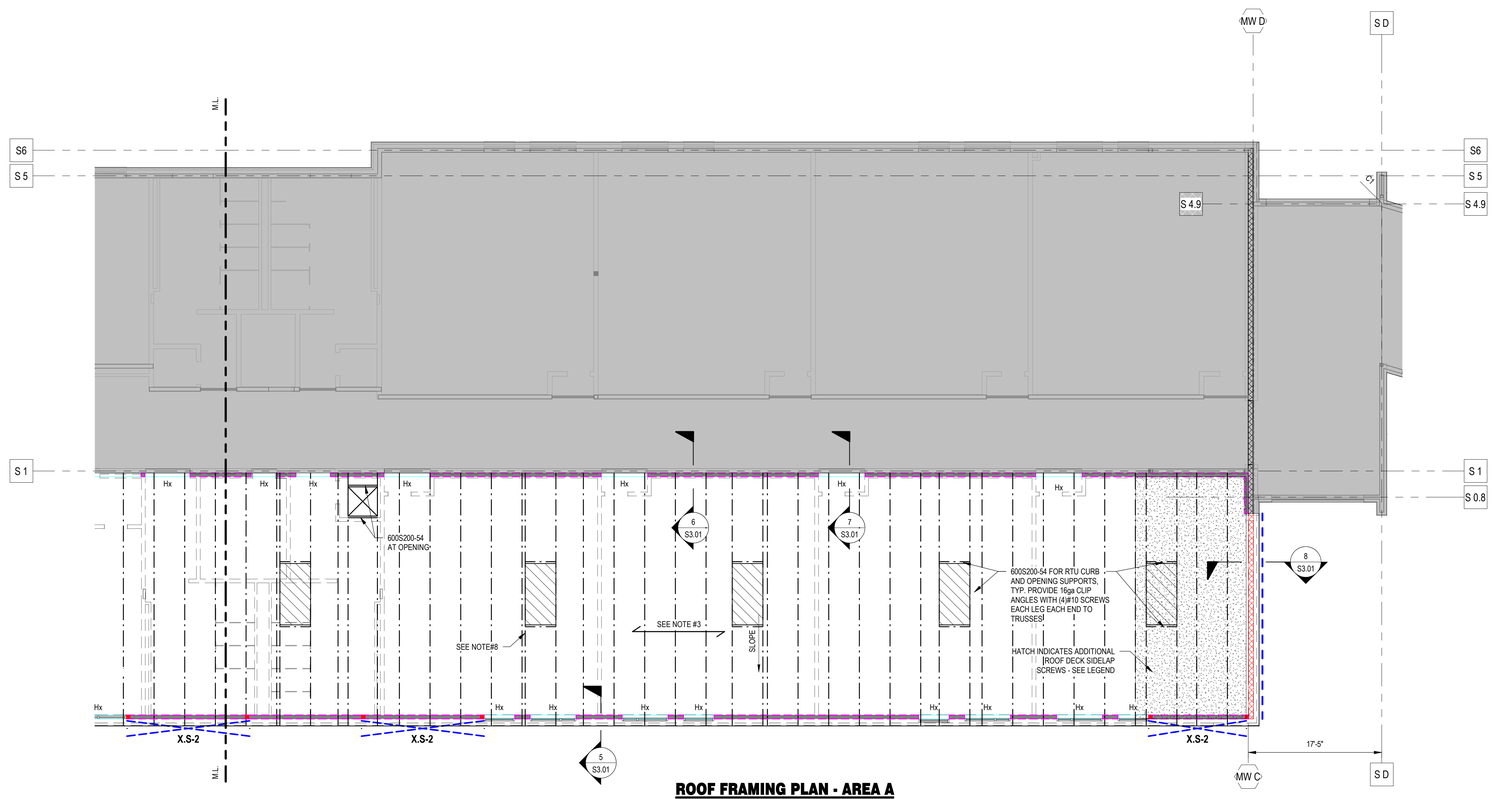
S2.01

5/3/2024 11:57:07 AM Autodesk Docs://Town Creek Elementary School Addition/ST_TOWN CREEK Phase2_v22.rvt



ROOF FRAMING PLAN - AREA B

SCALE: 1/8" = 1'-0"



ROOF FRAMING PLAN - AREA A

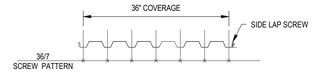
SCALE: 1/8" = 1'-0"

ROOF FRAMING LEGEND

- CFS LOAD BEARING WALL = 600S162-54 @ 16"o.c. WITH (2) 600S162-54 ALIGNED WITH EACH ROOF TRUSS BEARING. LOCATION FINAL DESIGN BY DD
- MSW — INDICATES 8" SOLID GROUTED CMU MASONRY SHEAR WALLS WITH #5 @16"o.c. VERTICALS - SEE NOTES AND DETAILS ON S1.0 & S5.0 SHEETS
- METAL ROOF TRUSSES @ 48"o.c. U.N.O.
- Hx — HEADER - BY DD
- M.L. — INDICATES MATCH LINE
- X.S. — INDICATES X-STRAPPING LOCATIONS SEE S5.0 SHEETS
- PROVIDE (4) #10 SIDELAP SCREW PER SPAN AT HATCHED LOCATIONS ON PLAN
- X-STRAPPING COMPRESSION STUDS SEE 5.0 SERIES SHEETS FOR SCHEDULE

ROOF FRAMING NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. ELEVATIONS SHOWN ON PLAN ARE REFERENCED TO DATUM ELEVATION (0'-0") - SEE S2.01.
3. TYPICAL ROOF DECK IS 1 1/2" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
4. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH #12 TEK SCREW TO TRUSSES IN A 36/7 PATTERN U.N.O. PROVIDE (1)#10 SIDELAP SCREW PER SPAN, U.N.O. ON PLAN. PROVIDE (4) #10 SIDELAP SCREW PER SPAN AT HATCHED LOCATIONS ON PLAN.



5. ALL TRUSSES SHALL BE DESIGNED FOR A NET UPLIFT PRESSURE OF 30 psf (ASD).
6. SEE S5.0 SHEETS FOR X-BRACING AND SHEAR WALL INFORMATION.
7. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
8. ROOF TRUSS DESIGNER TO ACCOUNT FOR LOADS FROM RTU's. SEE MECHANICAL DRAWINGS FOR EQUIPMENT WEIGHTS AND LOCATIONS

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WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

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Date: 2024.05.03 14:43:38-04'00'

PROJECT TITLE

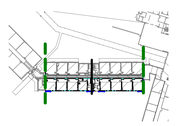
TOWN CREEK ELEMENTARY SCHOOL 2024 ADDITION - PHASE 2

6330 LAKE PARK DRIVE SE,
WINNABOW, NC 28479

DSP #: 100
DPI SCHOOL #: 339
ISSUED FOR PERMIT

SHEET TITLE

ROOF FRAMING PLAN



KEY PLAN

ISSUE BLOCK

Mark	Date	Description

PROJECT NO: 2022264.00
DATE: 05.06.2024
SCALE: 1/8" = 1'-0"
DRAWN BY: MBK | PROJ MGR: ALS

S2.02

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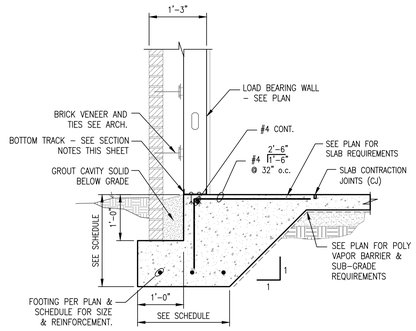
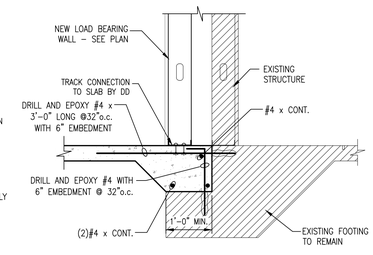
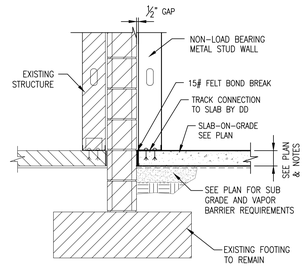


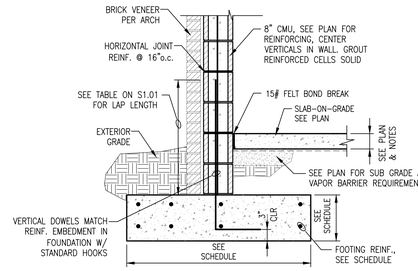
SECTION 1–1
SCALE: 3/4" = 1'-0"



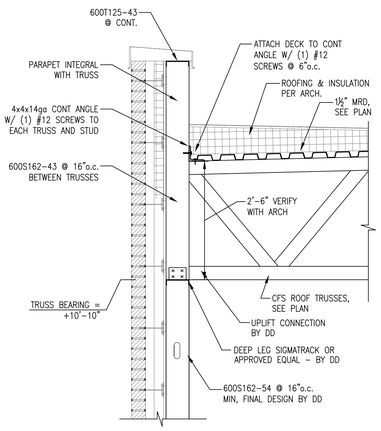
SECTION 2–2
SCALE: 3/4" = 1'-0"



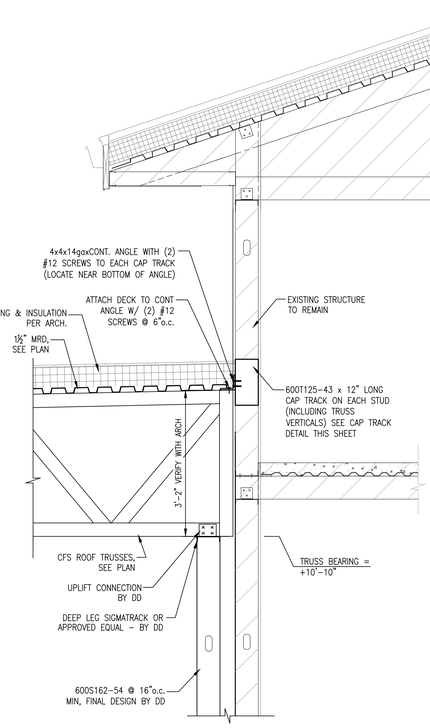
SECTION 3–3
SCALE: 3/4" = 1'-0"
TYP. AT EXISTING CMU



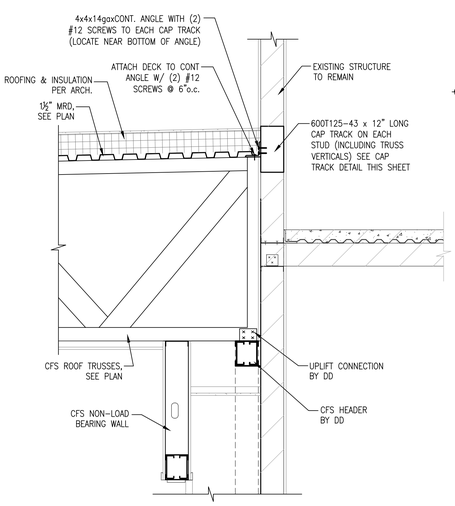
SECTION 4–4
SCALE: 3/4" = 1'-0"
TYP. AT EXTERIOR 8" CMU



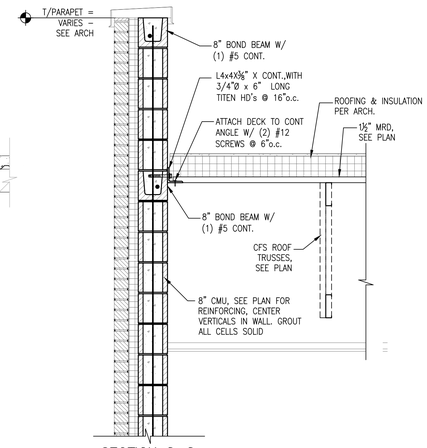
SECTION 5–5
SCALE: 3/4" = 1'-0"



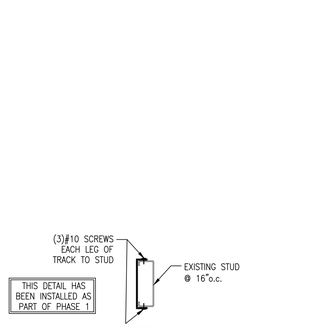
SECTION 6–6
SCALE: 3/4" = 1'-0"



SECTION 7–7
SCALE: 3/4" = 1'-0"



SECTION 8–8
SCALE: 3/4" = 1'-0"



SECTION 9–9
SCALE: 3/4" = 1'-0"

CAP TRACK
SCALE: 1 1/2" = 1'-0"
REF: SECTION 6–6 / S3.01

SECTION NOTES

1. DO NOT SCALE SECTIONS. SEE PLANS AND SCHEDULES FOR SIZES NOT SHOWN.
2. REBAR IS SHOWN FOR REFERENCE ONLY. SEE PLANS AND SCHEDULES FOR REINFORCEMENT REQUIREMENTS. WHERE REINFORCEMENT IS SPECIFIED IN SECTIONS IT IS IN ADDITION TO SCHEDULES.
3. IF A HOOK IS SHOWN ON REINFORCEMENT A STANDARD HOOK PER ACI IS REQUIRED U.N.O.
4. IF A DISCREPANCY EXISTS BETWEEN THE SECTIONS AND PLAN THE MORE STRINGENT REQUIREMENTS SHALL APPLY
5. ALL CMU SHALL HAVE W1.7 HORIZONTAL JOINT REINFORCEMENT @ 16"o.c. U.N.O.
6. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
7. EPOXY FOR CONCRETE SHALL BE HILTI HY-200 OR APPROVED EQUAL.
8. EPOXY FOR CMU SHALL BE HILTI HY-270 OR APPROVED EQUAL.
9. ALL COLD-FORMED METAL FRAMING SHOWN IS FOR PRICING ONLY – FINAL DESIGN BY DD.
10. ALL METAL LOAD BEARING WALLS – TOP AND BOTTOM TRACKS SHALL ALLOW FOR FULL STUD BEARING. TRACKS SHALL BE SIGMA TRACK BY THE STEEL NETWORK OR APPROVED EQUAL. TRACK GAUGE TO MATCH STUDS.
11. LIGHT GAUGE SUPPLIER SHALL PROVIDE A CONTINUOUS UPLIFT LOAD PATH FROM ROOF TRUSS CONNECTION TO THE CONCRETE FOOTINGS– STIFFCLIP AC600 OR EQUAL.

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Date: 2024.05.03 14:43:43-04'00'

PROJECT TITLE

TOWN CREEK ELEMENTARY SCHOOL 2024 ADDITION - PHASE 2

6330 LAKE PARK DRIVE SE,
WINNABOW, NC 28479

DSP #: 100
DPI SCHOOL #: 339
ISSUED FOR PERMIT

SHEET TITLE

SECTIONS AND DETAILS

ISSUE BLOCK

Mark	Date	Description

PROJECT NO:	2022264.00
DATE:	05.06.2024
SCALE:	As indicated
DRAWN BY: MBK	PROJ MGR: ALS

S3.01

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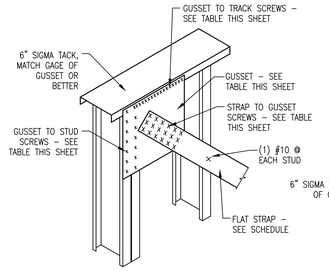
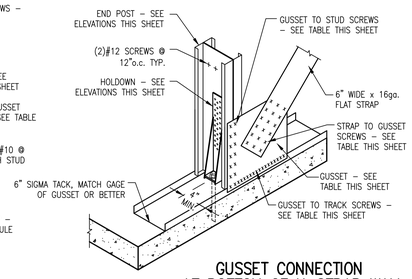


GUSSET CONNECTION
AT TOP OF X-STRAP
SCALE: 3/4" = 1'-0"



GUSSET CONNECTION
AT BOTTOM OF X-STRAP WALL
SCALE: 3/4" = 1'-0"

X-Strapping Schedule					
X.S.-2					
Floor	**X-Strap on Both Sides of Wall**	**Simpson Holdown @ Each End**	**Compression Stud Post Each Holdown**	**Bottom of Truss to Track Connection**	**Track to Slab Connection**
Foundation - Roof	16ga x 6" Wide	S/HD10S	(2)-600S300-68 Back to Back	(2)-Rows #12 Screws @ 6" o.c.	(2) Hilti X-U @ 6" o.c.
NOTE: ALL STRAPS THICKER THAN 18GA SHOULD HAVE FY=50 KSI					
X-Strap and Gusset Connection Schedule					
Strap Size	**Gusset Thickness**	**#12 Screw Strap to Gusset**	**#12 Screw Gusset to Studs**	**#12 Screw Gusset to Track**	
16ga x 6"	16ga	18	16	16	
14ga x 9"	14ga	29	26	26	

X-STRAP NOTES

1. MINIMUM SCREW SPACING = 1"
2. WHERE MULTIPLE HOLDOWNS ARE SPECIFIED PROVIDE A MINIMUM 16" SPREAD BETWEEN ANCHOR BOLTS – ADJUST GUSSET PLATE SIZE AS REQUIRED TO ATTACH TO BOTH SHEAR WALL POSTS

CAST IN PLACE HOLD DOWN ANCHOR ROD EMBEDMENT	
ROD SIZE	**EMBEDMENT**
⅝"ø	12"
¾"ø	16"
1"ø	18"

– ALL EXTERIOR HOLDOWN RODS SHALL BE CAST–IN–PLACE AS SHOWN ON SECTIONS ON SHEET S3.01

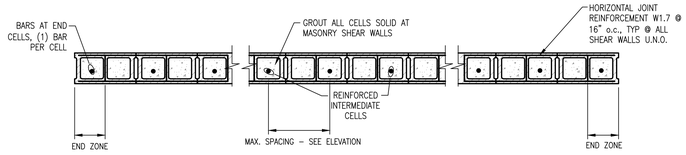
POST INSTALLED SHEAR WALL ROD EPOXY EMBEDMENT	
ROD SIZE	**EMBEDMENT**
½"ø	7"
⅝"ø	9"
¾"ø	11"
⅞"ø	15"
1"ø	18"
1⅛"ø	22"

– EPOXY SHALL BE HILTI HY–200
– ALL EXTERIOR HOLDOWN RODS SHALL BE CAST–IN–PLACE AS SHOWN ON SECTIONS ON SHEET S3.01

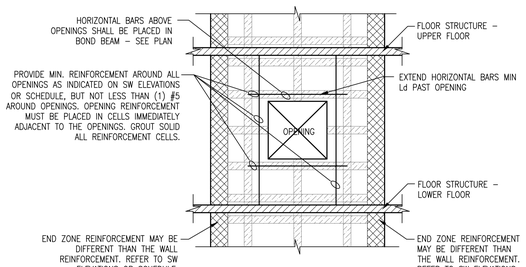
CMU SHEAR WALL NOTES

1. SHEAR WALLS 8" CMU, U.N.O. PROVIDE (2) #6 BAR AT EACH WALL CORNER & AT EACH WALL INTERSECTION – U.N.O. ON WALL SCHEDULE OR ELEVATIONS. GROUT SOLID.
2. SPLICING BETWEEN VERTICAL BARS SHALL BE NO LESS THAN INDICATED BY TABLE. SEE THIS SHEET FOR REQUIRED SPLICE LENGTH ACCORDING TO BAR SIZE
3. T & B = TOP & BOTTOM
4. ANY EMBED DOWELS REQUIRED THAT ARE NOT SHOWN ON PLANS OR ELEVATIONS SHALL BE SAME SIZE AND SPACING AS REINFORCEMENT FOR THE NEXT FLOOR. MATCH REINFORCED CELLS ON THE FLOOR BELOW WHERE POSSIBLE.
5. ALL WALL DIMENSIONS SHOWN ON THE ELEVATIONS AND ASSOCIATED SECTIONS ARE FOR REFERENCE ONLY. COORDINATE ALL FINAL DIMENSIONS WITH ARCHITECTURAL PLANS. IF SIGNIFICANT CONFLICT EXISTS, CONTACT STRUCTURAL ENGINEER AND ARCHITECT FOR RESOLUTION.
6. SEE ELEVATION FOR SHEAR WALL VERTICALS. REINFORCEMENT THAT STOPS AT OPENINGS OR DOESN'T CONTINUE ON THE FLOOR ABOVE SHALL BE TERMINATED WITH STANDARD HOOK & FULLY ENGAGED IN BOND BEAM.
7. ALL CMU WALLS SHALL HAVE W1.7 HORIZONTAL JOINT REINFORCEMENT @ 16"o.c.
8. GROUT SHALL BE HELD DOWN 1½" BELOW TOP OF A COURSE TO FORM A KEY AT THE JOINT. SEE STRUCTURAL MASONRY NOTES ON S1.01 FOR ADDITIONAL INFORMATION.
9. SEE TYPICAL OPENING DETAIL ON THIS SHEET FOR TYPICAL REINF.
10. DUCT OPENINGS SHALL NOT BE LOCATED WITHIN 2'–0" OF ANY SHEAR WALL END, U.N.O. – OPENINGS SHOULD NOT INTERRUPT ANY CONTINUOUSLY REINFORCED DOOR JAMBS.
11. DO NOT PROVIDE CONTROL JOINTS IN CMU SHEAR WALLS, U.N.O. ON PLAN.
12. SEE S1.0 SERIES SHEETS FOR CMU NOTES & TYPICAL DETAILS.

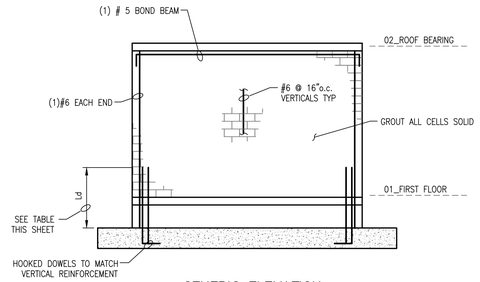
MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	**SPLICE LENGTH**
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"



TYPICAL REINFORCED 8" CMU SHEAR
WALL SECTION WITH HORIZONTAL JOINT REINFORCEMENT
SCALE: 3/4" = 1'–0"



TYPICAL CMU OPENING ELEVATION
NOT TO SCALE



GENERIC ELEVATION
SPECIAL REINFORCEMENT
SCALE: 3/16" = 1'–0"
(SEE PLAN FOR SW LOCATIONS)

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SHEAR WALL SECTIONS & DETAILS

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Mark	Date	Description

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