GENERAL STRUCTURAL NOTES

A. GENERAL REQUIREMENTS

1. STRUCTURAL DESIGN IS AND CONSTRUCTION MUST BE IN ACCORDANCE WITH THE FOLLOWING.

UFC 1-200-01	GENERAL BUILDING REQUIREMENTS, 8 OCTOBER 2019
UFC 3-301-01	STRUCTURAL ENGINEERING, 1 OCTOBER 2019
IBC 2018	2018 INTERNATIONAL BUILDING CODE (AS MODIFIED BY UFC 3-301-01)
ASCE 7-16	MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
ACI 301-10	SPECIFICATIONS FOR STRUCTURAL CONCRETE
ACI 315-99	DETAILS AND DETAILING OF CONCRETE REINFORCEMENT
ACI 318-14	BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AISC 303-16	CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
AISC 360-16	SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (15TH EDITION MANUAL, LRFD)
AISI S100-12	NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS
AWS D1.1	AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE - STEEL
SJI 100-2015	STEEL JOIST INSTITUTE STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS, 44TH EDITION
SDI MANUAL	STEEL DECK INSTITUTE, DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS

2. DESIGN LOADS:

ROOF LOADS
SUPERIMPOSED DEAD LOAD: AS CALCULATED
LIVE LOAD: 20 PSF

WIND LOADS
DESIGN WIND PRESSURE, p = qGCp
RISK CATEGORY II, EXPOSURE C
ULTIMATE DESIGN WIND SPEED (3-SEC. GUST): 107 MPH
NOMINAL DESIGN WIND SPEED = 83 MPH
INTERNAL PRESSURE COEFFICIENT: +/- 0.18

EARTHQUAKE LOADS
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7, 12.8
SEISMIC BASE SHEAR, V = Sds x W / (R/I)
W = DEAD LOAD
RESPONSE MODIFICATION FACTOR R=3
STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
SEISMIC IMPORTANCE FACTOR, I = 1.0
RISK CATEGORY: II
MAPPED SPECTRAL RESPONSE ACCELERATIONS: Ss = 0.244g, S1 = 0.093g
SPECTRAL RESPONSE ACCELERATIONS: Sds = 0.26g, Sd1 = 0.15g
SITE CLASS: D
SEISMIC DESIGN CATEGORY: C

SNOW LOADS - GROUND SNOW LOAD = 5 PSF

FUTURE LOADS - NONE

3. THESE GENERAL NOTES APPLY TO ALL STRUCTURAL WORK EXCEPT WHERE THEY CONFLICT WITH DETAILS OR NOTES SPECIFICALLY SHOWN.
4. RESOLVE CONFLICTS ON DRAWINGS AND SPECIFICATIONS WITH THE CONTRACTING OFFICER BEFORE PROCEEDING WITH CONSTRUCTION.
5. THE STRUCTURAL DRAWINGS SHOW ONLY THE BASIC STRUCTURE. THEREFORE, REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND CIVIL DRAWINGS FOR NON-STRUCTURAL ITEMS WHICH REQUIRE SPECIAL PROVISIONS DURING CONSTRUCTION.
6. TYPICAL CONDITIONS: WHERE A SECTION OR DETAIL IS SHOWN FOR ONE CONDITION, IT MUST APPLY TO ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT SPECIFICALLY MARKED ON THE PLANS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON STRUCTURAL PLANS.
8. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, TELECOMMUNICATIONS, AND ELECTRICAL DRAWINGS FOR SLEEVES, OPENINGS, ANCHOR BOLTS AND INSERTS, EMBEDDED ITEMS OTHER THAN REINFORCING STEEL, AND ANCHORAGES FOR ATTACHMENT OF NON-STRUCTURAL ITEMS WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
9. THE SIZES AND LOCATIONS OF ALL EQUIPMENT FOUNDATIONS AND PADS, AND PENETRATIONS THROUGH THE STRUCTURE, MUST BE COORDINATED BY THE GENERAL CONTRACTOR WITH THE MECHANICAL, ELECTRICAL, TELECOMMUNICATIONS, AND PLUMBING CONTRACTORS.
10. SIZES AND LOCATIONS OF PENETRATIONS SHOWN FOR UTILITIES ARE APPROXIMATE. COORDINATE NUMBER, SIZES, AND LOCATIONS OF OPENINGS WITH THE CORRESPONDING TRADES.
11. REFER TO CIVIL DRAWINGS FOR UTILITY STRUCTURES, PAVEMENT, WALKS, AND OTHER STRUCTURES OUTSIDE THE BUILDING LINE NOT SHOWN ON STRUCTURAL DRAWINGS THAT REQUIRE REINFORCED CONCRETE WORK.
12. THE CONTRACTOR MUST VERIFY ALL CONDITIONS AND DIMENSIONS OF EXISTING CONSTRUCTION PRIOR TO FABRICATION OF STRUCTURAL AND REINFORCING STEEL ITEMS ATTACHED TO OR BUILT ADJACENT TO EXISTING CONSTRUCTION. REPORT SIGNIFICANT DEVIATIONS TO THE ENGINEER AND ARCHITECT OF RECORD PRIOR TO FABRICATION OR INSTALLATION OF THE NEW CONSTRUCTION.
13. LINEWORK SHOWN IN THESE STRUCTURAL DRAWINGS THAT IS SCREENED (SUBDUED, NOT BOLD) INDICATES EXISTING CONSTRUCTION. SOLID (BOLD) LINEWORK INDICATES NEW CONSTRUCTION.
14. ALL HOLES CUT THROUGH EXISTING CONCRETE SLABS, WALLS, AND WALL PANELS MUST BE CAREFULLY AND CLEANLY CUT, FULL-DEPTH, SO AS TO PREVENT SPALLING. USE DIAMOND BLADED SAWS AND CORING BITS. DO NOT OVERCUT CORNERS OF RECTANGULAR SAWN OPENINGS. HOLES MUST BE CUT ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD, AND MUST BE NO LARGER THAN THE ABSOLUTE MINIMUM SIZE NECESSARY.

B. FOUNDATIONS AND SLABS-ON-GROUND

1. FOUNDATIONS: CONVENTIONAL SHALLOW STRIP FOUNDATIONS. DESIGN IS SIMILAR TO EXISTING FOUNDATIONS. DESIGN OF FOUNDATIONS IS BASED ON RECOMMENDATIONS PROVIDED IN A REPORT ENTITLED "20C19028.00 ARTC BLDG 640, ANNISTON, AL_GEOTECH REPORT - 091820", BY SCHNABEL ENGINEERING, LLC, COLUMBIA, SC., PHONE: 803-796-6240
2. NET ALLOWABLE BEARING CAPACITY = 150 PSF.
3. EXCEPT WHERE INDICATED OTHERWISE, INSTALLATION OF COMPACTED BACKFILL MUST BE DONE SIMULTANEOUSLY ON BOTH SIDES OF WALLS TO PRECLUDE UNBALANCED SOIL LOADS. PLACE FILL USING HAND DIRECTED COMPACTION EQUIPMENT. DO NOT USE HEAVY CONSTRUCTION EQUIPMENT ADJACENT TO THE FOUNDATION.
4. DO NOT PERMIT FOUNDATION BEARING SOIL TO BECOME SATURATED OR DRY EXCESSIVELY. CONCRETE FOR CONVENTIONAL SHALLOW FOUNDATIONS MUST BE PLACED AS SOON AFTER THE COMPLETION OF THE EXCAVATIONS AS POSSIBLE. IF A DELAY OF MORE THAN ONE DAY IS EXPECTED FOR FOUNDATION CONCRETE PLACEMENT IN ANY EXCAVATION, PLACE A 2 INCH THICK LEAN CONCRETE (f'c = 2000 PSI MIN.) "MUD SEAL" ATOP THE EXPOSED BEARING SOILS.

B. FOUNDATIONS AND SLABS-ON-GROUND (CONT.)

5. ELEVATIONS SHOWN ON FOUNDATION PLANS ARE TO TOPS OF FOOTINGS.
6. SLABS ON GROUND MUST BE PLACED OVER A 15 MIL MINIMUM THICKNESS PUNCTURE RESISTANT VAPOR BARRIER (SEE SPECIFICATIONS), ON A 6 INCH MINIMUM THICK CAPILLARY WATER BARRIER ON STRUCTURAL FILL (SEE CIVIL FOR REQUIREMENTS). TURN THE VAPOR BARRIER UP AT INTERSECTING VERTICAL SURFACES AND UTILITY PENETRATIONS AND SEAL WITH VAPOR BARRIER MANUFACTURER'S STANDARD, COMPATIBLE TAPE. SEAL ALL JOINTS WITH TAPE TO PROVIDE A CONTINUOUS UNBROKEN VAPOR BARRIER BETWEEN THE SUBGRADE AND THE SLAB ABOVE.
7. SAWN JOINTS IN CONCRETE SLABS MUST BE MADE THE SAME DAY AS PLACEMENT, AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE, AND IN NO CASE LATER THAN 12 HOURS AFTER CONCRETE PLACEMENT.
8. COORDINATE EXACT LOCATIONS OF SLAB CONTROL AND CONSTRUCTION JOINTS WITH ARCHITECTURAL FLOOR FINISHES TO ENSURE SLAB JOINTS DO NOT READ THROUGH FINISHES.
9. BACKFILL FOR FOUNDATION AND RETAINING WALLS MUST BE A FREE-DRAINING SATISFACTORY SOIL MATERIAL. BACKFILL MUST BE COMPACTED SUFFICIENTLY TO PREVENT SUBSIDENCE OF SURFACE ADJACENT TO WALL.
10. ALL UTILITIES ENTERING THE BUILDING MUST BE ROUTED BENEATH FOOTINGS. SEE DETAIL B6/CU-503.

C. CONCRETE AND REINFORCING STEEL

1. CONCRETE FOR BUILDING AND SITE STRUCTURES MUST BE NORMAL WEIGHT (W=145 PCF) WITH 3500 PSI 28-DAY COMPRESSIVE STRENGTH (f'c).
2. CONCRETE EXPOSED TO WEATHER MUST HAVE A TOTAL AIR CONTENT BETWEEN 4.5% AND 7.5%.
3. FURNISH MATERIALS, MIX, PLACE, FINISH, AND CURE ALL CONCRETE IN ACCORDANCE WITH ACI 301 AND ACI 318.
4. CONCRETE REINFORCING BAR COVER MUST BE AS INDICATED IN TABLE "CAST IN PLACE CONCRETE COVER FOR REINFORCING BARS".
5. NO PIPING OR ELECTRICAL CONDUITS ARE ALLOWED TO BE EMBEDDED HORIZONTALLY WITHIN THE THICKNESS OF CONCRETE SLABS.
6. CHAMFER ALL EXPOSED EDGES, UNLESS INDICATED OTHERWISE, WITH A 1/2" RADIUSED EDGE.
7. BARS FOR CAST IN PLACE CONCRETE MUST BE PER ASTM A 615, GRADE 60.
8. DETAILING OF REINFORCING MUST BE IN ACCORDANCE WITH ACI 318 AND ACI 315.
9. SECURE ALL REBARS IN THE CORRECT POSITION PRIOR TO PLACING CONCRETE. TOLERANCES FOR PLACEMENT OF REBARS MUST BE IN ACCORDANCE WITH ACI 301.
10. REINFORCING STEEL SHOWN IN SECTIONS AND DETAILS ARE A SCHEMATIC INDICATION THAT REINFORCING EXISTS. SEE SCHEDULES, SECTION NOTES, AND GENERAL NOTES FOR ACTUAL REINFORCING REQUIRED.

D. STRUCTURAL STEEL

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH AISC 360, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (LRFD DESIGN) AND THE AISC AND THE AISC "STEEL CONSTRUCTION MANUAL", 15TH EDITION.
2. STEEL GRADES:
   A. ANGLES AND MISCELLANEOUS PLATES - ASTM A36 (Fy = 36 KSI)
   B. STRUCTURAL TUBING (SQ., RECT., ROUND) - ASTM A500, GRADE C; OR ASTM A1085
   C. CHANNELS - ASTM A36 (Fy = 36 KSI), OR ASTM A572, GRADE 50 (Fy = 50 KSI)
   D. W SHAPES - ASTM A992, (Fy = 50 KSI)
3. ALL BOLTS MUST BE 3/4 INCH DIAMETER, HIGH STRENGTH, ASTM F3125 (GRADE F1852 (TWIST-OFF)), TYPE 1, IN FULLY TENSIONED BEARING CONNECTIONS, UNLESS INDICATED OR REQUIRED OTHERWISE. BOLT TIGHTNESS MUST BE VERIFIED BY THE USE OF APPROVED TWIST OFF BOLTS.
4. ALL WELDING MUST BE IN ACCORDANCE WITH ANSI/AWS D1.1 STRUCTURAL WELDING CODE. WELDING ELECTRODES MUST BE E70 SERIES.
5. EXCEPT AS OTHERWISE INDICATED ON DRAWINGS, ALL CONNECTIONS MUST BE BOLTED FRAMED BEAM CONNECTIONS (DOUBLE ANGLE) AS GIVEN IN TABLES 10-1 AND 10-2 OF THE AISC STEEL CONSTRUCTION MANUAL, OR SINGLE-PLATE SHEAR CONNECTIONS (AISC MANUAL, TABLES 10-10), AT THE CONTRACTOR'S OPTION. CONNECTIONS MUST BE SIZED AND DESIGNED BY THE CONTRACTOR TO ACCOMMODATE, AT A MINIMUM, 125% OF THE UNFACTORED BEAM END REACTIONS INDICATED IN KILOPOUNDS (KIPS, k) ON THE FRAMING PLANS. REGARDLESS OF PLAN DESIGNATION, NO CONNECTION MAY BE DESIGNED FOR LESS THAN 10 KIPS.
6. MINIMUM WELD SIZE MUST BE 3/16" FILLET WELDS ALL AROUND, UNLESS INDICATED OTHERWISE.
7. SHOP CONNECTIONS MUST BE WELDED AND FIELD CONNECTIONS MUST BE WELDED OR BOLTED AS INDICATED OR APPROVED ON SHOP DRAWINGS.
8. NO SHOP SPLICE OR OTHER CONNECTION WILL BE PERMITTED UNLESS SHOWN ON APPROVED SHOP DRAWINGS.
9. NATURAL CAMBER IN BEAMS MUST BE INSTALLED CROWN UP.
10. THE ERECTOR MUST PROVIDE ALL TEMPORARY SHORING AND BRACING REQUIRED FOR STABILITY UNTIL STRUCTURES ARE COMPLETE.

E. COLD-FORMED STEEL MEMBERS

1. ALL LIGHT GAUGE STEEL FRAMING AND SUBFRAMING SUPPORT SYSTEMS (SEE SPECIFICATIONS FOR EXTENT) MUST BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND THE COLD FORMED STEEL DESIGN MANUAL.
2. CALCULATIONS AND SHOP DRAWINGS MUST BE PRODUCED, SEALED, AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER. INCLUDE DESIGN OF CONNECTIONS TO PRIMARY SUPPORTING STEEL STRUCTURE.
3. INDICATED LIGHT GAUGE STEEL FRAMING MEMBERS MUST BE HOT-DIPPED GALVANIZED, G-60 COATING WEIGHT, AND MUST CONFORM TO ASTM DESIGNATION C 955 AND A 653. MINIMUM YIELD POINT, UNLESS INDICATED OTHERWISE, MUST BE 50 KSI FOR 16 GA. AND HEAVIER AND 33 KSI FOR 18 GA. AND LIGHTER.
4. FRAMING MEMBERS MUST HAVE THE MINIMUM STRUCTURAL PROPERTIES INDICATED ON THE STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SECTION 05 40 00. MAXIMUM SPACING OF MEMBERS MUST BE 16". MINIMUM REQUIREMENTS FOR PERIMETER WALLS ARE 18 GAUGE C-SHAPED STUDS, 2.5" AND 6" DEEP X 1.625" WIDE WITH 1/2" WIDE RETURN LIPS.
5. MINIMUM REQUIREMENTS FOR JAMBS ON PERIMETER WALLS ARE (2) 18 GAUGE C-SHAPED 6" DEEP X 1.625" WIDE WITH 1/2" WIDE RETURN LIPS. THE JAMBS MUST RUN THE FULL HEIGHT OF THE WALL.
6. MINIMUM REQUIREMENTS FOR HEADERS ON PERIMETER WALLS ARE BOXED HEADERS, (2) 18 GAUGE C-SHAPED STUDS 3.625" DEEP X 1.625" WIDE WITH 1/2" WIDE RETURN LIPS AND (2) 18 GAUGE TRACKS 6" DEEP X 1.25" WIDE WITH 1/2" WIDE RETURN LIPS.
7. MINIMUM REQUIREMENTS FOR SILLS ON PERIMETER WALLS ARE 18 GAUGE TRACKS 6" DEEP X 1.25" WIDE WITH 1/2" WIDE RETURN LIPS.
8. DEFLECTION OF FRAMING (STUD WALLS) MUST NOT EXCEED L/240 UNDER LOAD FROM INDICATED WIND SPEED.
9. SUBMIT SHOP DRAWINGS AND CALCULATIONS STAMPED BY A LICENSED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL OF COLD-FORMED STEEL MEMBERS AND ASSEMBLIES PRIOR TO FABRICATION. INCLUDE DESIGN OF CONNECTIONS TO PRIMARY SUPPORTING STEEL STRUCTURE.

F. STEEL ROOF DECK

1. COLD-ROLLED METAL DECK FOR ROOFS MUST BE GALVANIZED STEEL (G60 COATING), ASTM A653 OR A792, DESIGNED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI) "MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."
2. DECK SUPPORTED ON OPEN WEB STEEL JOISTS MUST BE THE NON-COMPOSITE TYPE, 1.5" DEEP, TYPE F TO MATCH EXISTING DECK PROFILE (FIELD VERIFY), WITH THE FOLLOWING MINIMUM PROPERTIES PER 12" OF WIDTH:
   A. 1.5" DEEP 22 GA. I= 0.113 IN4 S= 0.112 IN3 Fy= 33 KSI
3. OTHER COMBINATIONS OF PROPERTIES AND YIELD STRENGTHS THAT PROVIDE EQUIVALENT PERFORMANCE MAY BE SUBMITTED FOR APPROVAL.
4. STEEL ROOF DECKS ARE REQUIRED TO ACT AS DIAPHRAGMS. REFER TO "TYPICAL ROOF DECK FASTENER SCHEDULE" FOR ATTACHMENT PATTERN.
5. DO NOT WELD ROOF DECK TO OPEN WEB STEEL JOISTS. USE INDICATED SCREW CONNECTIONS.
6. DO NOT SUPPORT ANY MATERIALS OF CONSTRUCTION FROM STEEL ROOF DECK.

G. CONCRETE MASONRY

1. MASONRY MUST BE AS DETAILED ON THE ARCHITECTURAL, CIVIL, AND STRUCTURAL DRAWINGS.
2. CONCRETE MASONRY UNITS MUST BE MEDIUM WEIGHT HOLLOW NON-LOAD BEARING TYPE CONFORMING TO ASTM C90, TYPE 1, GRADE N. COMPRESSIVE STRENGTH f'm IN AVERAGE THREE UNITS MUST BE 2000 PSI MINIMUM AT 28 DAYS.
3. MORTAR MUST BE ASTM C270, TYPE S.
4. GROUT MUST BE ASTM C476, MINIMUM COMPRESSIVE STRENGTH = 2000 PSI AT 28 DAYS. INDIVIDUAL GROUT LIFTS MUST NOT EXCEED 4 FEET IN HEIGHT.
5. HORIZONTAL MASONRY JOINT REINFORCEMENT MUST BE PROVIDED AT 16" ON CENTER VERTICAL SPACING IN ALL CMU WALLS.
6. REINFORCING BAR GUIDES TO CENTER VERTICAL REINFORCING IN MASONRY WALLS MUST BE PROVIDED.
7. ALL CONCRETE MASONRY UNITS MUST BE LAID IN RUNNING BOND, UNLESS NOTED OTHERWISE. PROVIDE CONTINUOUS BOND BEAMS AS SHOWN ON THE STRUCTURAL DRAWINGS, SPACED NO FURTHER THAN 4'-0" ON CENTER VERTICALLY.
8. ALL BLOCK CELLS AND CAVITIES BELOW GRADE MUST BE FILLED SOLID WITH GROUT OR FINE AGGREGATE CONCRETE.
9. BRACE ALL MASONRY WALLS DURING CONSTRUCTION TO RESIST LATERAL LOADS.
10. SHOP DRAWINGS FOR REINFORCING BARS MUST INCLUDE ELEVATION VIEWS OF EXTERIOR WALLS TO INDICATE BAR PLACEMENT IN WALLS INCLUDING AROUND ALL OPENINGS.
11. DO NOT INTERRUPT BOND BEAM REINFORCEMENT AT WALL JOINTS.

H. FUTURE EXPANSION

NO PROVISION FOR SUPPORT OF FUTURE HORIZONTAL OR VERTICAL CONSTRUCTION IS MADE. FUTURE ADJACENT ADDITIONS MUST BE STRUCTURALLY INDEPENDENT, AND SEPARATED BY BUILDING JOINTS.

US Army Corps of Engineers
Mobile District

Symbol	No.	Description	Date	Approved

Revisions

ALABAMA LICENSED PROFESSIONAL ENGINEER No. [illegible] DAVID C. COOPER 06/29/21

U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS MOBILE, ALABAMA	Designed By: SHR	Date: 06-29-2021
	Drawn By: SHR	File No.
ss&a CLARKNEXSEN	Checked By: JCS	I.S.O. Sheet File Name:
	Reviewed By:	Solicitation Number:

ARTC - B640 RENOVATION
FEMA - DHS - CDP, ANNISTON, AL

GENERAL STRUCTURAL NOTES

SHEET IDENTIFICATION
S-001
SHEET 27 of 442

ABBREVIATIONS

A

ABT.	ABOUT
ABV.	ABOVE
ACI	AMERICAN CONRETE INSITUTE
ADD./ADD'L	ADDITIONAL
ADD'L	ADDITIONAL
A.F.F.	ABOVE FINISH FLOOR
A.I.S.C.	AMERICAN INSITUTE OF STEEL CONSTRUCTION
ALT.	ALTERNATE, ALTERNATIVE
ARCH.	ARCHITECT, ARCHITECTURAL
ASSY.	ASSEMBLY
A.W.S.	AMERICAN WELDING SOCIETY

B

B/, B.O., BOT.	BOTTOM
BD.	BOARD
B.F.F.	BELOW FINISH FLOOR
BLDG.	BUILDING
B.L.E.	BRICK LEDGE ELEVATION
BRG.	BEARING
BP	BASEPLATE
BS	BOTH SIDES
BTW.	BETWEEN

C

CANT.	CANTILEVER
C/C	CENTER TO CENTER
C.F.S.	COLD-FORMED STEEL
C.J.	CONTRACTION JOINT CONSTRUCTION JOINT CONTROL JOINT
C.I.P.	CAST-IN-PLACE
CL	CENTER LINE
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
COMP.	COMPOSITE
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
C.R.	COLD-ROLLED STEEL
C.S.	COLUMN STRIP
CTR.	CENTER
CY	CUBIC YARD

D

DBA	DEFORMED BAR ANCHOR
DBL.	DOUBLE
DEG.	DEGREE
DEPR.	DEPRESSION
DIA., Ø	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
D.L.	DEAD LOAD
DN.	DOWN
DWGS	DRAWINGS
DWL	DOWEL

E

EA.	EACH
E.F.	EACH FACE
E.G.	FOR EXAMPLE
EIFS	EXTERIOR INSULATED FINISHED SYSTEM
E.J.	EXPANSION JOINT
EL., ELEV.	ELEVATION
EMB.	EMBED
E.O.D.	EDGE OF DECK
EQ.	EQUAL
E.S.	EACH SIDE
E.W.	EACH WAY
(E), EX., EXIST.	EXISTING
EXP.	EXPANSION

F

f'c	CONCRETE STRENGTH
FDN.	FOUNDATION
FIN.	FINISH
FL.	FLOOR
FLG.	FLANGE
F.O., F/	FACE OF
FRMG.	FRAMING
F.S.	FOOTING STEP
FS	FAR SIDE
FTG.	FOOTING
FUT.	FUTURE
F.V.	FIELD VERIFY
Fy	STEEL YIELD POINT

G

GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRADE BEAM
GRTG.	GRATING
GYP.	GYPSUM

H

HI	HIGH
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
H.R.	HAND RAIL
H.S.	HEADED STUD
H.S.B.	HIGH STRENGTH BOLTS
HSS	HOLLOW STRUCTURAL SECTION
HT., HGT.	HEIGHT

I

INFO	INFORMATION
I.J.	ISOLATION JOINT

J

J.B.E.	JOIST BEARING ELEVATION
JT.	JOINT

K

K, KG	KILOGRAM
KIP	1000 POUNDS
kN	KILONEWTONS
KSI	KIPS PER SQUARE INCH

L

L	ANGLE
L.	LONG
LB	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOW
LONG	LONGITUDINAL
L.P.	LOW POINT

M

M	METER
mm	MILLIMETER
MAX.	MAXIMUM
MAT'L	MATERIAL
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MFR., MANUF.	MANUFACTURER
MIL	1/1000"
MIN.	MINIMUM
MIRR.	MIRROR
MISC	MISCELLANEOUS
M.L.	MASONRY LEDGE
M.L.E.	MASONRY LEDGE ELEVATION
M.O.	MASONRY OPENING
MPa	MEGAPASCALS
MPH	MILES PER HOUR
M.S.	MIDDLE STRIP

N

(N)	NEW
N/S	NORTH/SOUTH
N	NEWTON
N.O., #	NUMBER
NOM.	NOMINAL
NS	NEAR SIDE
N.T.S.	NOT TO SCALE

O

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OPPOSITE HAND
OPP.	OPPOSITE
OPNG.	OPENING
OSL.	OUTSTANDING LEG
OWJ	PREFABRICATED OPEN WEB JOIST

P

P.A.F.	POWER ACTUATED FASTENER
P.J.F.	PREFORMED JOINT FILLER
Pa	PASCAL
PED.	PEDESTAL
PERIM.	PERIMETER
PL	PLATE
PSI	POUNDS PER SQUARE INCH

R

R, RAD.	RADIUS
REINF.	REINFORCE, REINFORCING, REINFORCED, REINFORCEMENT
REM.	REMAINDER
REQ'D	REQUIRED
RET.	RETAINING
REV.	REVERSE, REVISION

S

SAD	SEE ARCHITECTURAL DRAWINGS
SCHED.	SCHEDULED
S.J.I.	STEEL JOIST INSTITUTE
SIM.	SIMILAR
S.M.D.	SEE MECHANICAL DRAWINGS
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
S.O.G., SOG	SLAB ON GROUND
SPEC.	SPECIFICATION
S.S.	STAINLESS STEEL
STD.	STANDARD
STIFF.	STIFFENER
STL.	STEEL
STRUC.	STRUCTURAL, STRUCTURE
SUD	SUBSURFACE DRAIN
SYM.	SYMMETRICAL
SYS.	SYSTEM

T

T	THICK
T&B	TOP AND BOTTOM
THD	THREADED (ROD)
T.O., T/	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.G.	TOP OF GRATING
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL/TOP OF SLAB
T.O.W.	TOP OF WALL
T&S	TEMPERATURE AND SHRINKAGE
TYP.	TYPICAL

U

U.N.O.	UNLESS NOTED OTHERWISE
U.O.N.	UNLESS OTHERWISE NOTED

V

VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD

W

W/	WITH
WDW	WINDOW
WF	WIDE FLANGE STRUCTURAL STEEL
W.J.	WALL JOINT
WO/	WITHOUT
WP, W.P.	WORKING POINT
WT.	WEIGHT
WWF	WELDED WIRE FABRIC

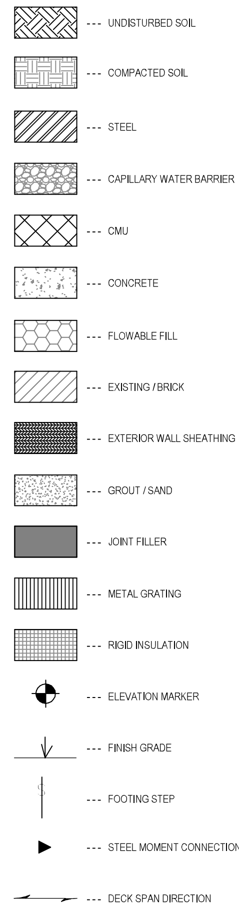
X

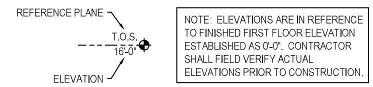
XFMR	TRANSFORMER

SYMBOLS

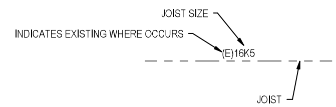
℄	CENTERLINE
±	PLUS OR MINUS
@	AT
Ø	DIAMETER
℘	PLATE

PLAN LEGEND

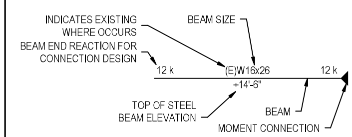




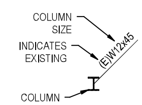
ELEVATION MARK



JOIST MARKS



BEAM MARKS



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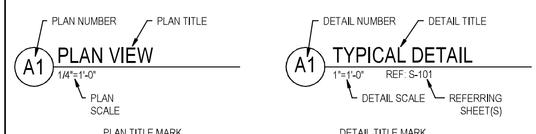

TITLE MARKS

US Army Corps of Engineers
Mobile District

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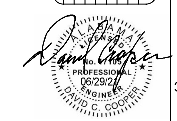
Revisions				



U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS MOBILE, ALABAMA	Designed By: SHR	Date: 06-29-2021
	Drawn By: SHR	File No.
ss&a CLARKNEXSEN	Checked By: JCS	I.S.O. Sheet File Name:
	Reviewed By:	Solicitation Number:

ARTC - B640 RENOVATION
FEMA - DHS - CDP, ANNISTON, AL

ABBREVIATIONS & LEGEND

SHEET IDENTIFICATION
S-002
SHEET 28 of 442

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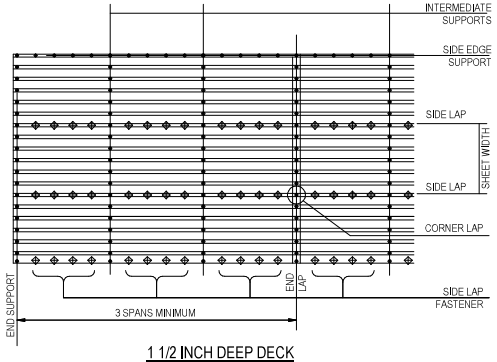
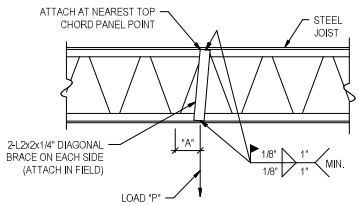


1 1/2 INCH DEEP DECK

ROOF DECK FASTENER SCHEDULE	
LOCATION	CONNECTION DESCRIPTIONS
END SUPPORT/END LAP	#12 TEK SCREW @ 12" O.C.
INTERMEDIATE SUPPORT	#12 TEK SCREW @ 12" O.C.
SIDE LAP	3 #10 TEKS/SPAN, 4 SPACES
SIDE EDGE SUPPORT	#12 TEK SCREW @ 12" O.C.
CORNER LAP	#12 TEK SCREW TO ENGAGE ALL 4 SHEETS

NOTES:
1. SEE GENERAL NOTES FOR DECK PROPERTIES.
2. TEK SCREWS BY ITW BUILDEX, OR APPROVED EQUAL.

A2 TYPICAL ROOF DECK FASTENER SCHEDULE
NOT TO SCALE



NOTES:
1. DIAGONAL BRACE IS NOT REQUIRED FOR "A" LESS THAN TWO INCHES.
2. PROVIDE DIAGONAL BRACE AT LOCATION OF CONCENTRATED LOADS SUCH AS HEAVY PIPES, MECHANICAL UNITS, HEAVY LIGHTS, AND ANY OTHER CONCENTRATED LOADS
3. P=CONCENTRATED LOAD GREATER THAN 100 LBS.

A4 TYPICAL JOIST REINFORCEMENT
NOT TO SCALE

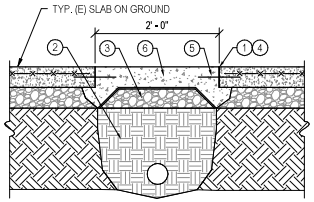
BAR SIZE	EMBEDMENT LENGTH (IN.)		TENSION LAP SPLICE LENGTH (IN.)	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	22"	17"	29"	23"
#4	29"	22"	38"	29"
#5	36"	28"	47"	37"
#6	43"	33"	56"	43"
#7	63"	48"	81"	63"
#8	72"	55"	94"	72"

1. LENGTHS INDICATED HERE ARE BASED ON ACI 318-14, 25.4.2.2 WITH MATERIAL PROPERTIES OF fy=60 KSI, f'c=3000 PSI.
2. TOP BARS ARE ANY HORIZONTAL BARS POSITIONED WHERE 12" OR MORE OF CONCRETE IS CAST BELOW.
3. SPLICE LENGTHS INDICATED ARE CLASS B TENSION LAP SPLICES.
4. THESE LAP SPLICE LENGTHS APPLY ONLY TO BARS THAT HAVE A CLEAR SPACING AND A CLEAR COVER OF NOT LESS THAN ONE BAR DIAMETER AND HAVE STIRRUPS AND TIES THROUGHOUT THE SPLICE LENGTH NOT LESS THAN THE CODE MINIMUM OR TO BARS THAT HAVE A CLEAR SPACING NOT LESS THAN TWO BAR DIAMETERS AND A CLEAR COVER OF NOT LESS THAN ONE BAR DIAMETER. LAP SPLICE LENGTHS FOR BARS WITH CLOSER SPACING OR LESS CLEAR COVER SHALL BE CALCULATED BY ACI 318-14, 25.4.2.2.

C4 TYPICAL REBAR LAP SPLICE SCHEDULE
NOT TO SCALE

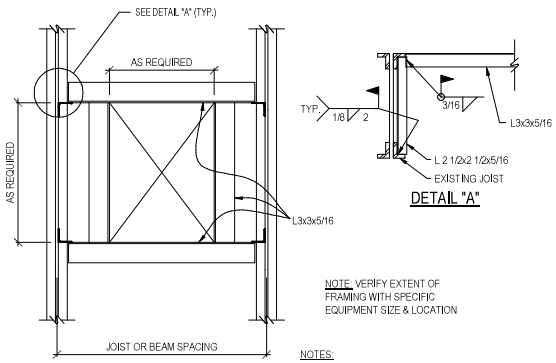
THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS OTHERWISE SHOWN ON THE DRAWINGS	
STRUCTURAL ELEMENT	COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH #6 OR LARGER #5 BARS OR SMALLER	 2" 1 1/2"
CONCRETE EXPOSED TO WEATHER #6 OR LARGER #5 BARS OR SMALLER	 2" 1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR CONTACT WITH GROUND	1 1/2"

A6 CAST IN PLACE CONC. COVER FOR REINFORCING BARS
NOT TO SCALE



NOTES:
1. REMOVE EXISTING CONCRETE FOR INSTALLATION OF UTILITIES SHOWN ON MECHANICAL, ELECTRICAL AND PLUMBING CONTRACT DRAWINGS OR SHOP DRAWINGS. SAW CUT EXISTING SLAB ON GROUND FULL-DEPTH (EACH SIDE) WHERE UTILITY LINE IS TO BE REMOVED AND/OR REPLACED. UNDERCUT EXISTING SLAB.
2. REMOVE AND REPLACE EXCAVATED MATERIAL WITH IMPORTED STRUCTURAL FILL OR FLOWABLE CONCRETE FILL (SEE CIVIL FOR REQUIREMENTS).
3. ADD 4" CAPILLARY WATER BARRIER. COVER WITH VAPOR BARRIER.
4. COAT EXISTING SLAB EDGES WITH BONDING AGENT.
5. DOWELS INTO EXISTING SLAB SHALL BE #4 x 8" @ 36" MAX. O.C. SET 4" IN EPOXY ADHESIVE.
6. PLACE NEW CONCRETE, FILLING UNDERCUT.

C6 TYPICAL SLAB-ON-GROUND REMOVAL & REPAIR DETAIL
NOT TO SCALE



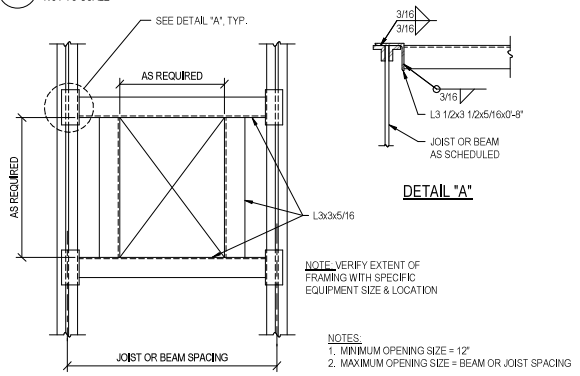
DETAIL "A"

NOTE: VERIFY EXTENT OF FRAMING WITH SPECIFIC EQUIPMENT SIZE & LOCATION

NOTES:
1. MINIMUM SIZE OPENING = 12".
2. MAXIMUM SIZE OPENING = BEAM OR JOIST SPACING.

PLAN

F2 TYPICAL LARGE OPENING IN EXISTING ROOF DECK
NOT TO SCALE



DETAIL "A"

NOTE: VERIFY EXTENT OF FRAMING WITH SPECIFIC EQUIPMENT SIZE & LOCATION

NOTES:
1. MINIMUM OPENING SIZE = 12"
2. MAXIMUM OPENING SIZE = BEAM OR JOIST SPACING

PLAN

F4 TYPICAL FRAMING AT NEW ROOF OPENING
NOT TO SCALE

US Army Corps of Engineers
Mobile District

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Symbol No.

ALABAMA
PROFESSIONAL ENGINEER
DAVID C. COOPER
06/29/21

Designed By: SHR
Drawn By: SHR
Checked By: JCS
Reviewed By:
Date: 05-29-2021
File No.
I.S.O. Sheet File Name:
Solicitation Number:

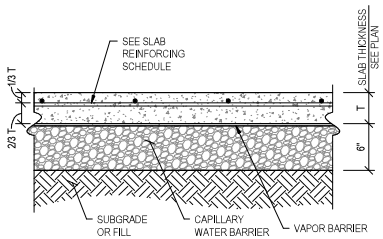
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

ss&a
CLARKNEXSEN

ARTC - B640 RENOVATION
FEMA - DHS - CDP, ANNISTON, AL

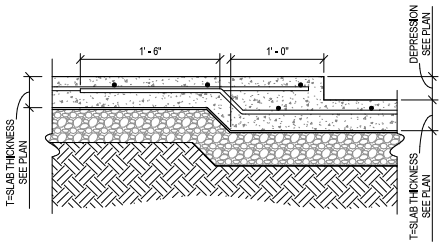
TYPICAL DETAILS

SHEET IDENTIFICATION
S-003
SHEET 29 of 442

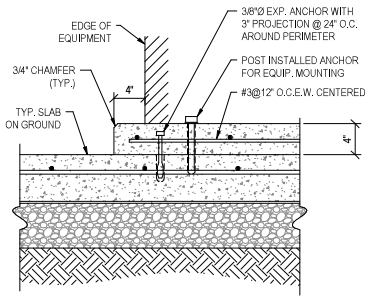


T, SLAB THICKNESS	SLAB REINFORCING
4"	#3@12" O.C.E.W.
5"	#3@12" O.C.E.W.

A2 TYPICAL SLAB ON GROUND
NOT TO SCALE

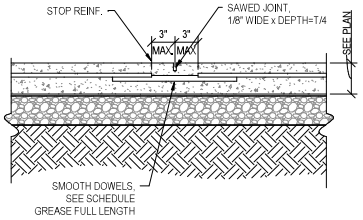


C2 TYPICAL DEPRESSED SLAB ON GROUND
NOT TO SCALE

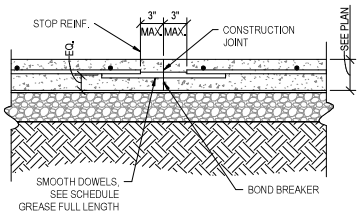


NOTES:
1. SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SPECIFIC LOCATION FOR HOUSEKEEPING PADS.

F2 TYPICAL HOUSEKEEPING PAD
NOT TO SCALE



TYPICAL SOG CONTRACTION JOINT

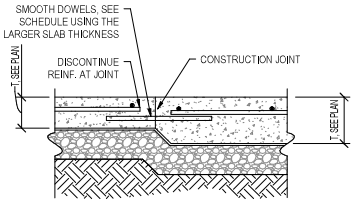


TYPICAL SOG CONSTRUCTION JOINT

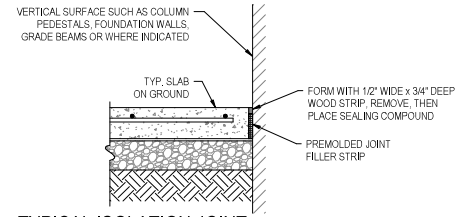
T, SLAB THICKNESS	DOWELS AT JOINTS
4"	3/4"Ø x 16" LONG @ 16" O.C.
5"	3/4"Ø x 16" LONG @ 16" O.C.

NOTE:
1. THESE JOINST ARE LABELED "C.J." ON PLANS. CONTRACTOR SHALL ESTABLISH LOCATION AND LAYOUT OF EACH JOINT TYPE (CONTRACTION OR CONSTRUCTION) BASED ON THE EXTENT OF CONCRETE PLACEMENT, UNLESS INDICATED OTHERWISE.
2. REMOVE ALL JOINT FORMWORK PRIOR TO SECOND CONCRETE PLACEMENT.

C6 TYPICAL SLAB ON GROUND JOINTS
NOT TO SCALE



E6 TYPICAL JOINT AT CHANGE IN SLAB THICKNESS
NOT TO SCALE



G6 TYPICAL ISOLATION JOINT
NOT TO SCALE

US Army Corps of Engineers
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06/29/21
ENGINEER
DAVID C. COOPER

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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

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CLARKNEXSEN

ARTC - B640 RENOVATION
FEMA - DHS - CDP, ANNISTON, AL

TYPICAL DETAILS

SHEET IDENTIFICATION
S-004
SHEET 30 of 442

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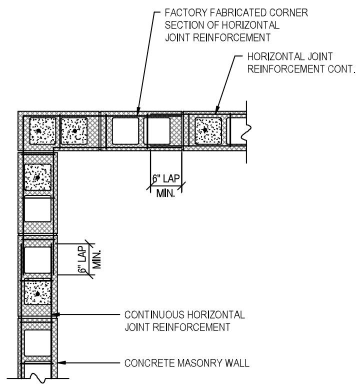
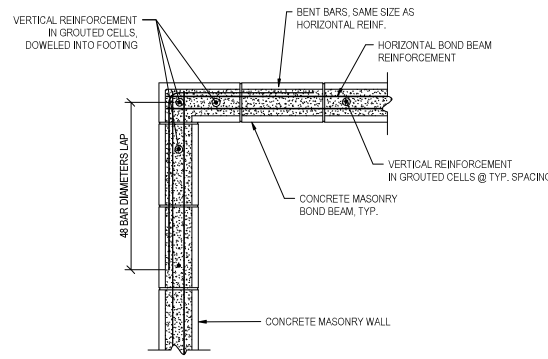
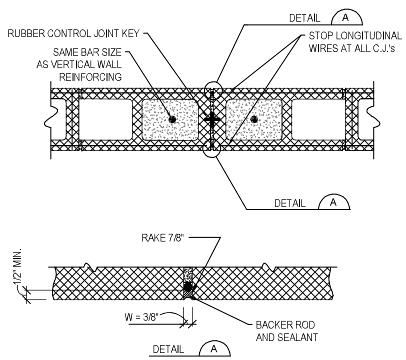


A2 TYPICAL BED JOINT REINFORCEMENT AT CMU WALL CORNER
NOT TO SCALE



C2 TYPICAL CMU BOND BEAM REINFORCEMENT AT CMU WALL CORNER
NOT TO SCALE



A4 TYPICAL CMU CONTROL JOINT
NOT TO SCALE

US Army Corps of Engineers
Mobile District

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Revisions

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PROFESSIONAL ENGINEER
ALABAMA
06/29/21

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ARTC - B640 RENOVATION
FEMA - DHS - CDP, ANNISTON, AL

TYPICAL DETAILS

SHEET IDENTIFICATION
S-005
SHEET 31 of 442

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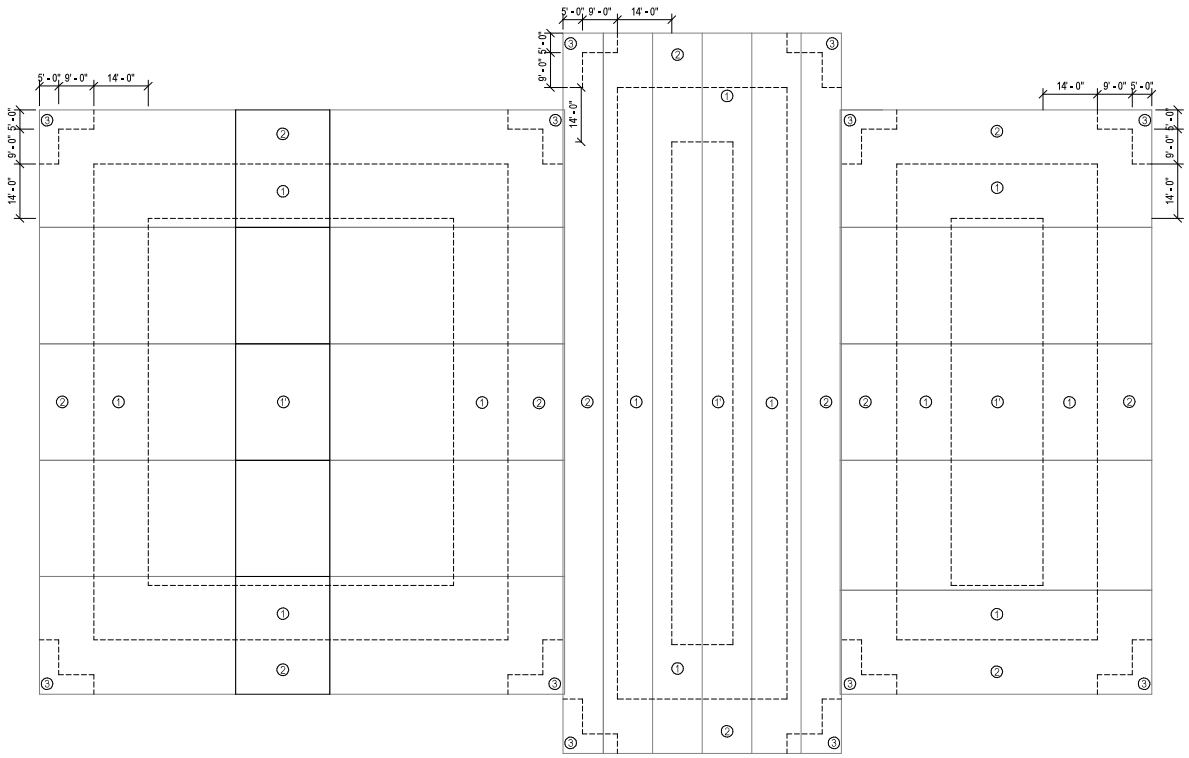

ZONE	SERVICE WIND PRESSURES
①	-15 PSF
①	-25 PSF
②	-35 PSF
③	-45 PSF

NOTES:
1. THIS DIAGRAM IS INTENDED FOR USE BY THE ROOFING SYSTEM SUPPLIER TO DETERMINE THE ATTACHMENT OF THE ROOFING ASSEMBLY, INCLUDING ALL MATERIALS ABOVE THE STEEL STRUCTURAL DECK.
2. DASHED LINES SHOW ZONE BOUNDARIES.
3. INDICATED PRESSURES ARE SERVICE LOADS, CALCULATED PER ASCE 7-16, CHAPTER 30, FOR AN ULTIMATE DESIGN WIND SPEED OF 107 MPH PER STRUCTURAL LOAD DATA TOOL FOR UFC 3-301-01 WITH NO INTERNAL PRESSURE COEFFICIENT APPLIED.
4. PRESSURES ARE FROM LOAD COMBINATION 0.6W.
5. EFFECTIVE WIND AREA = 10 SF.

A6 WIND UPLIFT PRESSURES AT ROOF

NOT TO SCALE

PLAN NORTH

US Army Corps of Engineers
Mobile District

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ALABAMA
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ARTC - B640 RENOVATION
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WIND UPLIFT PRESSURES AT ROOF

SHEET IDENTIFICATION
S-006
SHEET 32 of 442

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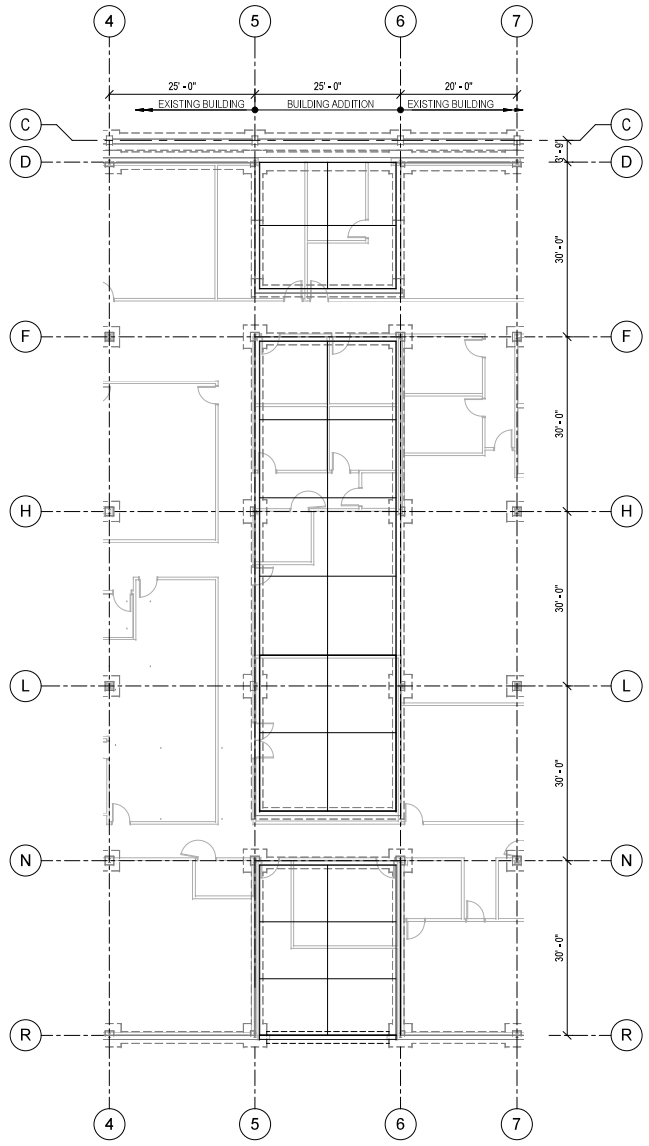
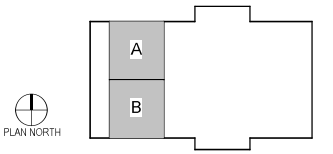


A6 FOUNDATION AND SLAB ON GROUND PLAN - COMPOSITE

SCALE: 3/32" = 1'-0"



FOUNDATION AND SLAB KEY PLAN

PLAN NORTH

0 6' 12' 24'

SCALE: 3/32"=1'-0"

US Army Corps of Engineers
Mobile District

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ARTC - B640 RENOVATION
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FOUNDATION AND SLAB ON GROUND PLAN - COMPOSITE

SHEET IDENTIFICATION
S-111
SHEET 33 of 442

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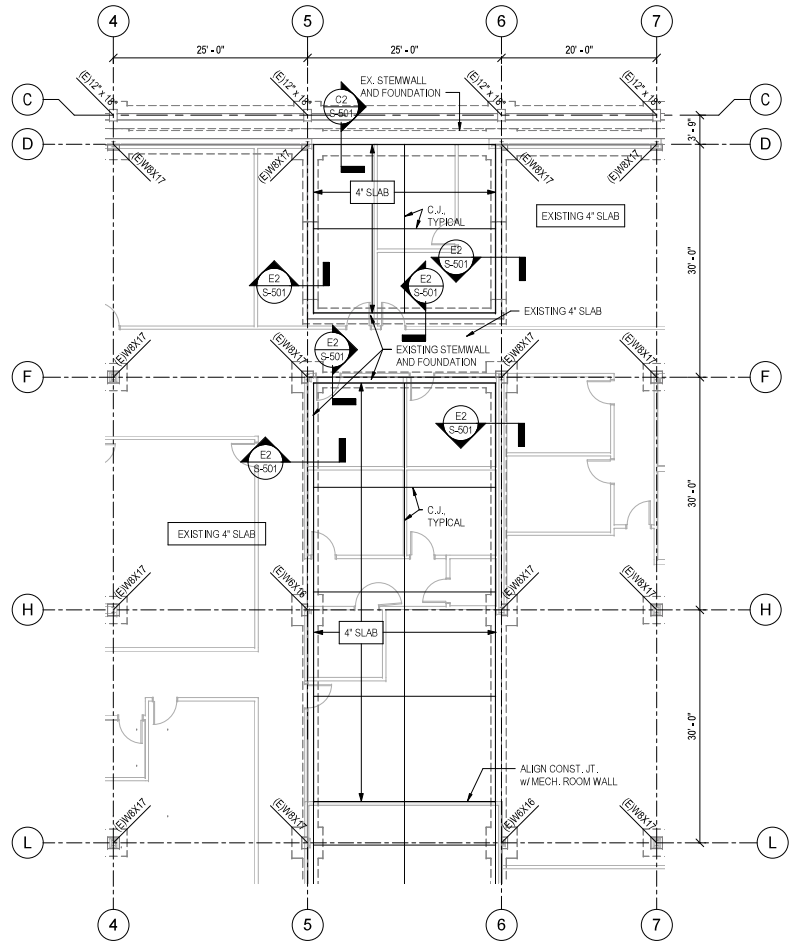
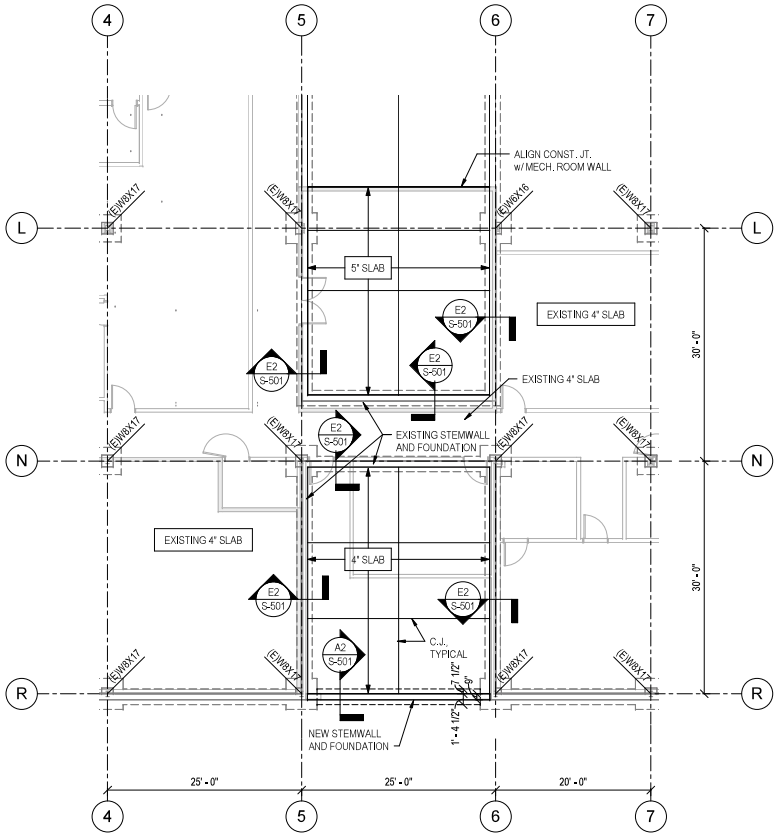


A5 FOUNDATION AND SLAB ON GROUND PLAN - BLOCK A

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

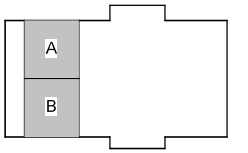


E5 FOUNDATION AND SLAB ON GROUND PLAN - BLOCK B

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

NOTES:
1. TOP OF EXISTING SLAB REFERENCE ELEVATION = 113'-6" U.N.O. (SEE CIVIL FOR SITE ELEVATIONS).
2. SPACE CRACK CONTROL JOINTS EVENLY WITHIN EACH STRUCTURAL BAY, UNLESS INDICATED OTHERWISE.

PLAN NORTH



FOUNDATION AND SLAB KEY PLAN

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

US Army Corps of Engineers
Mobile District

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DAVID C. COOPER
06/29/21

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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MOBILE, ALABAMA

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ARTC - B640 RENOVATION
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FOUNDATION AND SLAB ON GROUND PLAN - BLOCK A AND BLOCK B

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SHEET 34 of 442

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