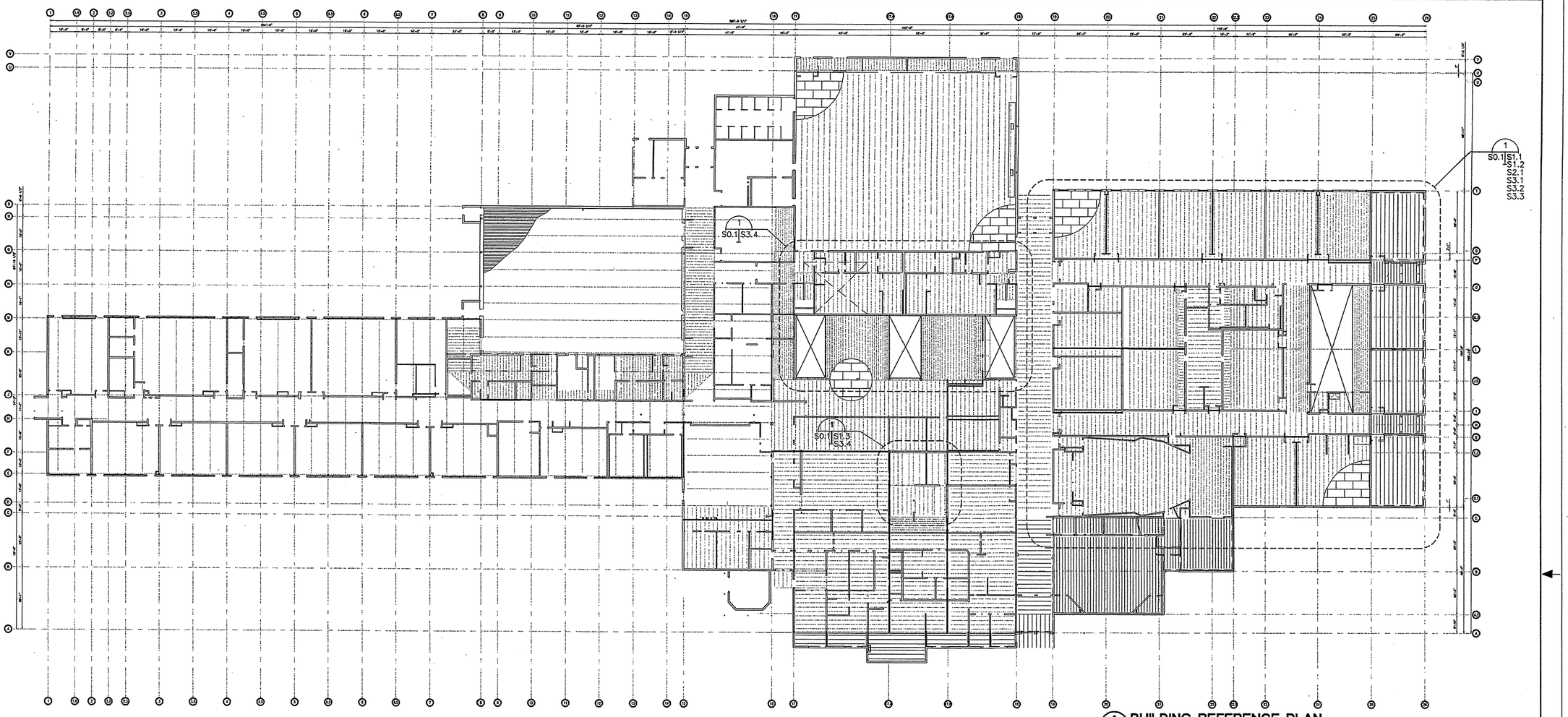
CORPS OF ENGINEERS

U. S. ARMY



1 BUILDING REFERENCE PLAN
S0.1 S0.1
SCALE: 1"=20'-0"

GENERAL STRUCTURAL NOTES

CODE:

THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 1994 UNIFORM BUILDING CODE (UBC).

GENERAL:

INFORMATION SHOWN ON THE DRAWINGS RELATING TO THE EXISTING STRUCTURE HAS BEEN ASSUMED FROM RECORD DRAWINGS, AND MAY NOT BE ACCURATE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. NOTIFY THE OWNER IN WRITING OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.

THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS, AND SUBCONTRACTORS PRIOR TO CONSTRUCTION. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, SLABS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES, AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

DESIGN LOADS:

ROOF: SNOW — 53 PSF + DRIFTING
FLOOR: EXIT FACILITIES — 100 PSF
FLOOR — 125 PSF
WIND LOADS:
DESIGN WIND SPEED — 70 MPH
EXPOSURE CATEGORY — B
IMPORTANCE FACTOR — 1.00
SEISMIC LOADS:
SEISMIC ZONE — 3
Rw OFFICE — 8
IMPORTANCE FACTOR — 1.00

FOUNDATIONS:

BEARING PRESSURES ARE 3,000 PSF FOR TOTAL VERTICAL DESIGN LOADS AND A BEARING PRESSURE OF 4,000 PSF FOR TOTAL VERTICAL LOADS PLUS WIND AND SEISMIC LOADS. REFER TO THE DRAWINGS FOR DETAILS OF EXCAVATION, BACKFILL, AND COMPACTION.

LEAN CONCRETE:

LEAN CONCRETE SHALL BE MIXED USING FINE AGGREGATE CONFORMING TO ASTM C-33. TWO SACKS OF CEMENT PER YARD, 10% AIR CONTAINMENT USING AN ADMIXTURE CONFORMING TO ASTM C-260 AND WATER. MIX WITH SUFFICIENT WATER TO PRODUCE 10" SLUMP.

CONCRETE:

MIXING AND PLACING OF CONCRETE AND SELECTION OF MATERIALS SHALL BE IN ACCORDANCE WITH THE ACI CODE, SECTION 318-83. NORMAL WEIGHT CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. THE CONCRETE MIX SHALL CONSIST OF COARSE AGGREGATE CONFORMING TO ASTM C 33 (3/4" MAX SIZE), TYPE "I" CEMENT, A MAXIMUM WATER/CEMENT RATIO OF 0.45 AND AIR ENTRAINMENT OF 5% (EXPOSED). ADMIXTURES MAY BE USED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANCHOR BOLTS SHALL BE ASTM A307, 3/4" MIN. UNLESS NOTED OTHERWISE.

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO ASTM A-615-82, GRADE 60. ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH ACI 318-83 AND ACI 315. HOLD IN PLACE WITH CURED CONCRETE BLOCKS OR CHAIRS. MINIMUM COVER FOR REINFORCING STEEL SHALL BE:

CONCRETE PLACED AGAINST EARTH — 3"
FORMED SURFACE — 1 1/2"
INTERIOR EXPOSED SURFACE — 3/4"

FOR CONTINUOUS REINFORCING, USE A MINIMUM LAP SPLICE FOR:

BAR SIZE	3,000 PSI
#4	20"
#5	20"
#6	22"

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL, 9TH EDITION. STRUCTURAL STEEL SHALL CONFORM TO ASTM A572, GRADE 50. TUBE STEEL SECTIONS SHALL BE ASTM A500, GRADE B. BOLTS SHALL BE 3/4"ø, ASTM A325, UNLESS NOTED OTHERWISE. ALL WELDS SHALL BE 3/16" MINIMUM, UNLESS NOTED OTHERWISE, AND SHALL BE BY CERTIFIED WELDERS USING ELECTRODES CONFORMING TO ASTM A-233, CLASS E70. APPLY ONE COAT OF PRIMER PAINT CONFORMING WITH THE STEEL STRUCTURE PAINTING COUNCIL (SSPC) TO ALL STEEL MEMBERS EXCEPT THOSE SECTIONS TO BE EMBEDDED IN CONCRETE. PROVIDE SHOP DRAWINGS WITH DETAILS FOR REVIEW.

LIGHT GAGE STEEL FRAMING:

ALL METAL STUDS, JOISTS, AND ACCESSORIES SHALL BE DESIGNED IN ACCORDANCE WITH THE "AMERICAN IRON AND STEEL INSTITUTE SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 1986 EDITION. MEMBERS SHALL BE ASTM A446, GRADE D (Fy=50 KSI) FOR 14 AND 16 GAGE, AND ASTM A446, GRADE A (Fy=33 KSI) FOR 18 GAGE AND LIGHTER. FASTENERS SHALL BE #10 SELF DRILLING, SELF TAPPING SCREWS, OR AS INDICATED ON THE DRAWINGS. PROVIDE SHOP DRAWINGS WITH DETAILS FOR REVIEW.

PLYWOOD:

PLYWOOD PANELS SHALL BE STAMPED WITH THE 'APA' GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION AND SHALL MEET U.S. PRODUCT STANDARDS P.S. 1-83. ALL PLYWOOD SHALL BE EXPOSURE 1.

ROOF SHEATHING SHALL BE APA 3/4", C-D, PANEL IDENTIFICATION INDEX 48/24. INSTALL WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. STAGGER END PANEL JOINTS. NAIL ALL SUPPORTED PANEL EDGES WITH 10d NAILS AT 4" O.C. AND INTERMEDIATE SUPPORTS WITH 10d NAILS AT 12" O.C., UNLESS NOTED OTHERWISE.

WALL SHEATHING SHALL BE APA 1/2", C-D PANEL IDENTIFICATION INDEX 32/16. STAGGER END PANEL JOINTS. ALL PANEL EDGES SHALL BE BLOCKED WITH 2" NOMINAL OR WIDER WOOD FRAMING. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS. NAIL ALL PANEL EDGES PER SHEAR WALL SCHEDULE.

DIMENSIONAL LUMBER:

ALL DIMENSIONAL LUMBER SHALL CONFORM TO WESTERN WOODS PRODUCTS ASSOCIATION GRADING RULES FOR HEM-FIR. MINIMUM GRADE FOR NOMINAL 2" AND 4" LUMBER SHALL BE NO. 2, Fb=1,000 PSI SINGLE MEMBER USE; BEAMS AND STRINGERS SHALL BE NO. 1, Fb = 1,050 PSI; POSTS AND TIMBERS SHALL BE NO. 1, Fb = 975 PSI. ALL LUMBER SHALL BE DELIVERED TO THE SITE WITH A MOISTURE CONTENT OF 19% OR LESS AND SHALL BE PROTECTED FROM THE WEATHER TO PREVENT ANY MOISTURE GAIN. STORE ALL LUMBER ON DUNNAGE TO PREVENT CONTACT THE THE GROUND. PRESERVATIVE TREATED LUMBER SHALL BE TREATED IN CONFORMANCE WITH THE AMERICAN LUMBER STANDARDS COMMITTEE (ALSC), SPECIFICATION C-2.

GLUE LAMINATED TIMBERS:

GLUED LAMINATED TIMBERS SHALL COMPLY WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION STANDARD 103-79 "STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED TIMBER". COMBINATIONS SHALL BE 22F-V4. SHIPPING PROTECTION SHALL CONFORM TO AITC STANDARD 11-65. PROVIDE UNITS WITH A CAMBER OF 1/780 OF THE SPAN LENGTH.

DIMENSIONAL LUMBER:

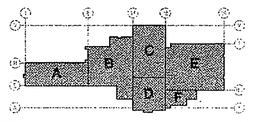
WOOD FRAMING SHALL CONFORM TO STANDARD BUILDING PRACTICE PER THE 1994 UNIFORM BUILDING CODE (94 UBC). SPACING OF ANCHOR BOLTS PER DETAIL 5/S4.1 TYP. MINIMUM SPACING 8" OR DEPTH OF EMBEDMENT WHICH EVER IS GREATER AND MAXIMUM SPACING 24". EXPANSION OR EPOXY BOLTS CAN BE USED FOR ANCHOR BOLTS BUT NOT AT THE HOLD DOWNS, USE ALL THREAD W/ EPOXY AT HOLD DOWN LOCATIONS. COATINGS OF ANCHOR BOLTS AND ALL THREAD NOT REQUIRED.
FIRE BLOCKING REQUIRED IN ALL FRAMING AT 10' UNLESS NOTED OTHERWISE. STAINLESS NAILS REQUIRED ON EXTERIOR WALL FRAMING ONLY. PNEUMATIC NAILERS WILL BE ALLOWED IF THEY MEET THE LOAD REQUIREMENTS OF THE HAND DRIVEN EQUALIVENT, VINYAL COATED "SINKERS" SHALL NOT BE USED.

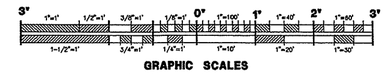
THE CONTRACTOR SHALL REVIEW, STAMP WITH HIS APPROVAL, DATE, AND SIGN ALL SHOP DRAWINGS REQUIRED BY THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING TO THE OWNER. AT THE TIME OF SUBMISSION, THE CONTRACTOR SHALL INFORM THE OWNER IN WRITING OF ANY DEVIATION IN THE SHOP DRAWINGS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

SPECIAL INSPECTION:

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION DURING CONSTRUCTION PER UNIFORM BUILDING CODE CHAPTER 17.

1. ALL CONCRETE REINFORCING PLACEMENT PRIOR TO PLACEMENT OF CONCRETE.
2. ALL BOLTS INSTALLED IN CONCRETE PRIOR TO PLACEMENT OF CONCRETE.
3. ALL COMPLETE PENETRATION WELDS PERFORMED IN A FABRICATING SHOP OR IN THE FIELD SHALL BE RADIOGRAPHICALLY OR ULTRASONICALLY TESTED.
4. ALL SHOP WELDS OTHER THAN COMPLETE PENETRATION WELDS SHALL BE VISUALLY INSPECTED.
5. ALL FILLET WELDS MADE IN THE FIELD SHALL BE VISUALLY INSPECTED.
6. PERIODIC INSPECTIONS OF ROOF AND FLOOR DECKING SHALL BE PERFORMED.





GRAPHIC SCALES

REFERENCE NO. S0.1

REV.	DATE	C.O.	ACTION	DESCRIPTION	BY	APP'D.

CONTRACTOR _____ CONTRACT NO. _____
CITY _____ STATE _____

RECOMMENDED: _____ PRIME CONTRACTOR
APPROVED: _____ RESIDENT ENGINEER
DATE:

USKH — A quarter century of design for Alaskans

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

DESIGNED: MNA
DRAWN: DJR
TRACED:
CHECKED: BEH
SUBMITTED:
DR. SECT.

BEN EIELSON JR./SR. HIGH SCHOOL - PHASE 3
EIELSON AIR FORCE BASE, ALASKA
STRUCTURAL
AREA "E" - REFERENCE PLAN AND GENERAL STRUCTURAL NOTES

RECOMMENDED: CHIEF, MILITARY TECHNICAL ENGINEERING BRANCH
APPROVED: CHIEF ENGINEERING DIVISION
DATE:
SCALE: NONE
SPEC. NO.
DRAWING NUMBER 29-02-38
SHEET OF