G. STRUCTURAL - GENERAL

G1 SCOPE

THE NOTES ON THIS SHEET ARE GENERAL AND APPLY TO THE "S" SERIES OF STRUCTURAL DRAWINGS

G2 APPLICABLE SPECIFICATIONS AND CODES

CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2006 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS.

G3 DIMENSIONS STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

G4 PROVISIONS FOR EQUIPMENT

STRUCTURAL DRAWINGS SHALL BE READ ALONG WITH MECHANICAL, EQUIPMENT, AND ELECTRICAL DRAWINGS TO ENSURE PROPER INTERFACE REGARDING EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, PIPE SLEEVES, RECESSES, ETC. PRIOR TO CASTING CONCRETE.

G5 CONSTRUCTION LOADS

STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, STRUCTURES SHALL BE PROTECTED BY BRACING AND SUPPORTS AS NEEDED. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND MAINTENANCE OF SUCH TEMPORARY SUPPORTS.

F. STRUCTURAL DESIGN

F1 DESIGN CODE

DESIGN IS IN ACCORDANCE WITH THE 2006 INTERNATIONAL BUILDING CODE AND ASCE 7-05. EXCEPT WHERE OTHER APPLICABLE LOCAL CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE

F2 FOUNDATION DESIGN

DESIGN IS BASED ON TABLE 1804.2 IN THE2006 IBC (1) ALLOWABLE BEARING PRESSURE = 3000 PSF ON NATIVE COMPACTED MATERIAL (2) LATERAL PASSIVE PRESSURE = 200 PCF (3) BASE FRICTION COEFFICIENT = 0.35

L. DESIGN LOADS

- A. LIVE (1) ROOF = 20 PSF (NON-REDUCIBLE)
- B SNOW

IMPORTANCE FACTOR = 1.0 ROOF SNOW LOAD PF = 50 PSF (PER BUILDING DEPT) (2)

- C. WIND
- OCCUPANCY CATEGORY: II (1) (2) IMPORTANCE FACTOR: 1.0
- (3)BASIC WIND SPEED: 105 MPH
- WIND EXPOSURE: C (5) Kzt = 1.0
- D. SEISMIC (1) OCCUPANCY CATEGORY = II
- (2) IMPORTANCE FACTOR = 1.0
- SITE CLASS: D S1 = 0.268
- SS = 0.560 S1 = 0.268 SDS = 0.505 SD1 = 0.333 (5)
- SEISMIC DESIGN CATEGORY: SDC = D
- EQUIVALENT LATERAL FORCE CANTILEVERED COLUMN SYSTEM
 - R = 1.5 Cs = 0.34

C. CONCRETE

C1 APPLICABLE CODE

CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2005 EDITION OF THE ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI-318.

C2 CONCRETE SPECIFICATIONS

THE NOTES BELOW SHALL SERVE AS MINIMUM REQUIREMENTS, CONCRETE SHALL CONFORM TO CBJ STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE, UNLESS NOTED OTHERWISE IN PROJECT DOCUMENTS

C2.1 DESIGN STRENGTHS

CAST-IN-PLACE CONCRETE: f/c = 4000 psi @ 28 DAYS, 5% AIR ENTRAINMENT. MAX W/C=0.45, 1 1/2" COARSE AGGREGATE, ADD PLASTICIZER AS NEEDED, MAX SLUMP W/O PLASTICIZER SHALL BE 4" AND 8" WITH PLASTICIZER

- C3 REINFORCING STEEL DETAILS
- DETAILING, FABRICATION AND ERECTION OF REINFORCING STEEL, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH DETAILS AND DETAILING OF CONCRETE REINFORCEMENT ACI 315.
- C4 CONCRETE COVER

CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.

C5 MOISTEN SUBGRADE

MOISTEN SUBGRADE BEFORE PLACING CONCRETE, WHERE CONCRETE IS NOT PLACED DIRECTLY ON PLASTIC SHEETING.

C6 SPECIAL WEATHER CONCRETING FOR SPECIAL WEATHER CONCRETING (HOT & COLD CONCRETING) SEE REPORTS OF ACI

COMMITTEE 305, "HOT WEATHER CONCRETING", AND ACI 306, "COLD WEATHER CONCRETING." **C7 CONCRETE FINISHES**

CONCRETE FINISHES SHALL CONFORM TO PROJECT SPECIFICATIONS.

C8 CURING

APPLY LIQUID MEMBRANE CURING COMPOUND TO HORIZONTAL SURFACES AS SOON AS POSSIBLE AFTER FINISHING. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS LIQUID CURING COMPOUNDS SHALL NOT BE APPLIED TO SURFACES WHICH ARE TO RECEIVE

C9 CONTROL JOINTS

SEALANT. THE ELASTOMERIC JOINT SEALANT SHALL CONFORM TO ASTM C920, TYPE S OR M, GRADE NS, CLASS 50

C10 CONSTRUCTION JOINTS

LOCATION OF ANY CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL HAVE THE APPROVAL OF THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE CONSTRUCTION JOINTS SHALL BE DETAILED AS SHOWN ON THE DRAWINGS, UNLESS A METAI KEYED FORM IS USED, ALL CONSTRUCTION JOINTS SHALL BE ROUGHENED TO A MINIMUM 1/4 AMPLITUDE. ALL JOINT SURFACES SHALL BE THOROUGHLY CLEANED TO REMOVE GREASE, LOOSE CONCRETE, AND LAITANCE OR OTHER BOND REDUCING MATERIAL. APPLY BONDING AGENT ASTM C1059 TYPE II PRIOR TO PLACING FRESH CONCRETE.

C11 ISOLATION AND EXPANSION JOINTS

PREFORMED EXPANSION JOINT FILLER SHALL BE NONEXTRUDING, RESILIENT BITUMINOUS TYPE CONFORMING TO ASTM D1751. MATERIAL THICKNESS SHALL BE 1/4 INCH FOR ISOLATION JOINTS AND 1/2 INCH FOR EXPANSION JOINTS, UNLESS NOTED OTHERWISE.

C12 DOWELS

DOWELS SHALL BE AT LEAST THE SAME SIZE AND SPACING AS BARS WITH WHICH THEY ARE LAPPED. THE DOWEL EMBEDMENT SHALL BE MINIMUM 6* UNLESS NOTED OTHERWISE IN DETAILS C13 BAR SPLICES

SPLICES OF REINFORCING STEEL BAR SHALL BE AS SHOWN IN TYPICAL DETAILS DRAWINGS AND ACI 318. SPLICES SHALL BE CLASS B UNLESS OTHERWISE NOTED. THE LENGTH OF LAP SPLICE OF BARS OF DIFFERENT DIAMETER SHALL BE BASED ON THE SMALLER DIAMETER. BAR SPLICES MAY ALSO BE MADE BY WELDING IN ACCORDANCE WITH AWS SPEC D 1.4 IF APPROVED BY THE REGISTERED DESIGN PROFESSIONAL

C14 RESTRICTED BAR ANCHORAGE

IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITED EXTENT OF THE ADJACENT CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.

C15 STANDARD HOOKS

BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318

C16 CHAMFERS

EXCEPT AS OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.

C17 CAST-IN-PLACE CONCRETE ANCHORS

ANCHORS SHALL BE HEADED BOLTS OF ASTM F1554 GRADE 36 MATERIAL WITH ASTM A563 HEAVY HEXAGONAL NUTS AND ASTM A36 PLATE WASHERS WITH MINIMUM SIZE CONFORMING TO TABLE 14-2 OF THE CURRENT AISC STEEL CONSTRUCTION MANUAL, UNLESS NOTED OTHERWISE. ALTERNATELY, ANCHORS SHALL BE THREADED AND NUTTED ROD CONFORMING TO ASTM F1554 GRADE 36 OR ASTM A36, WITH THE EMBEDDED NUT THREADED ON AND WELDED TO THE ROD. ALL MATERIALS EXPOSED TO MOISTURE OR WEATHER SHALL BE HOT DIP GALVANIZED UNLESS NOTED OTHERWISE

C18 POST-INSTALLED MECHANICAL ANCHORS

MECHANICAL (EXPANSION, SCREW) ANCHORS AND THEIR PROPERTIES SUCH AS DIAMETER SPACING, CDGE DISTANCE, EMBEDMENT AND MATERIAL/FIGH SHALL CONFORM TO DETAILS IN THESE DRAWINGS. AT CONTRACTOR'S OPTION, AN EQUIVALENT ALTERNATE MECHANICAL ANCHOR MAY BE SUBSTITUTED, PROVIDED THE ALTERNATE PRODUCT SUBMITTAL IS SUPPLEMENTED WITH CALCULATIONS INDICATING THAT THE PRODUCT MEETS OR EXCEEDS PROPERTIES OF THE ORIGINAL PRODUCT. THE SUPPLEMENTAL CALCULATIONS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PROJECT LOCATION ACCEPTABLE MECHANICAL ANCHORS SHALL BE ICC APPROVED FOR SEISMICLOADS AND USE IN CRACKED AND UNCRACKED CONCRETE. SUBMITTAL SHALL INCLUDE PRODUCT ESR REPORT

C19 POST-INSTALLED ADHESIVE ANCHORS

ADHESIVE (CHEMICAL, EPOXY) ANCHORS AND THEIR PROPERTIES SUCH AS DIAMETER, SPACING, EDGE DISTANCE, EMBEDMENT AND MATERIAL/FINSH SHALL CONFORM TO DETAILS IN THESE DRAWINGS. AT CONTRACTOR'S OPTION, AN EQUIVALENT ALTERNATE ADHESIVE ANCHOR MAY BE SUBSTITUTED, PROVIDED THE ALTERNATE PRODUCT SUBMITTAL IS SUPPLEMENTED WITH CALCULATIONS INDICATING THAT THE PRODUCT MEETS OR EXCEEDS PROPERTIES OF THE ORIGINAL PRODUCT. THE SUPPLEMENTAL CALCULATIONS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PROJECT LOCATION. ACCEPTABLE ADHESIVE ANCHORS SHALL BE LCC APPROVED FOR SEISMIC LOADS AND LISE IN CRACKED AND UNCRACKED CONCRETE. SUBMITTAL SHALL INCLUDE PRODUCT ESR REPORT

C20 INSTALLATION OF POST-INSTALLED ANCHORS

ALL MECHANICAL AND ADHESIVE ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE TO ALL INCLUMENTS AND ADJUST AND AND A STATE AND A STATE

CITY/BOROLIGH OF THEEAH

DEPARTMENT OF ENGINEERING

ALASKA'S CAPITAL CITY

S. STEEL

S1 CODES AND SPECIFICATIONS

STEEL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS AS CONTAINED IN THE 13TH EDITION OF THE AISC STEEL CONSTRUCTION MANUAL

S2 MATERIAL

BARS, PLATES, ANGLES, AND CHANNELS SHALL CONFORM TO ASTM A36 W SECTIONS SHALL CONFORM TO ASTM A992 HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B BOLTS SHALL CONFORM TO ASTM A325 UNLESS NOTED OTHERWISE HEAVY HEXAGONAL NUTS SHALL CONFORM TO ASTM A563 WASHERS SHALL CONFORM TO ASTM F436 UNLESS NOTED OTHERWISE

S3 WELDING - GENERAL

WELDING SHALL CONFORM TO AWS D1.1-04 "STRUCTURAL WELDING CODE - STEEL." ELECTRODE SHALL BE E70XX GROUP, LOW HYDROGEN, LIGHT GAUGE STEEL WELDING SHALL CONFORM TO AWS D1.3-98. WELDING SHALL BE CONDUCTED BY WELDERS CERTIFIED BY THE AWS.

S4 WELDING - SEISMIC FORCE RESISTING SYSTEMS

IN ADDITIONAL TO THE GENERAL WELDING REQUIREMENTS, THE FOLLOWING REQUIREMENTS APPLY TO WELDS USED IN MEMBERS AND CONNECTIONS WHICH ARE PART OF A SEISMIC LOAD RESISTING SYSTEM. WELDING SHALL CONFORM TO AWS D1.8 "STRUCTURAL WELDING CODE -SEISMIC SUPPLEMENT." WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AISC 341 APPENDIX W. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION AS REQUIRED IN AWS D1 1 AND AWS D1 8 AND SHALL BE APPROVED BY THE ENGINEER, WELDS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 0 °F, AS DETERMINED BY THE APPROPRIATE AWS CLASSIFICATION TEST METHOD OR MANUFACTURER CERTIFICATION. WELDING ELECTRODES AND ELECTRODE-ELUX COMBINATIONS SHALL MEET THE REQUIREMENTS OF H16 (16mL MAXIMUM DIFFUSIBLE HYDROGEN PER 100 GRAMS DEPOSITED WELD METAL) AS TESTED IN ACCORDANCE WITH AWS A4.3.

S5 DEMAND CRITICAL WELDS

WELDS SPECIFIED AS "DEMAND CRITICAL" OR "DC" ON THE DRAWINGS SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT MINUS 20 °F AS DETERMINED APPROPRIATE BY THE AWS CLASSIFICATION TEST METHOD OF MANUFACTURER CERTIFICATION.

S6 LOWEST ANTICIPATED SERVICE TEMPERATURE THE LOWEST ANTICIPATED SERVICE TEMPERATURE (LAST) IS -22 °F



MACT MALLU JOHN C. McGLEN No. CE 4456 PROPESSION



DOWL HKM

DATE: MAR. 2012

I. SPECIAL INSPECTION

I1 CODE

SPECIAL INSPECTION SHALL CONFORM TO SECTION 1704 AND 1707 OF THE 2006 INTERNATIONAL BUILDING CODE AND ANY LOCAL AMENDMENTS. SPECIAL INSPECTIONS SHALL BE CARRIED OUT ACCORDING TO THE 'STATEMENT OF SPECIAL INSPECTIONS'. LABORA GRIES FOR MATERIAL TESTING AND/OR AGENCIES FOR TESTING SERVICES SHALL BE SELECTED BY, ENGAGED BY, AND RESPONSIBLE TO THE ARCHITECT. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL PROJECT REPRESENTATIVE, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT INDICATING THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION PER IBC CHAPTER 17. THESE INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR. SEE STATEMENT OF SPECIAL INSPECTION FOR COMPLETE REQUIREMENTS.

ITEM	DESCRIPTION
INSPECTION OF REINFORCING STEEL, INCLUDING PLACEMENT	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.4
INSPECTION/OBSERVING SPECIMEN SAMPLING OF FRESH CONCRETE FOR TESTING	FREQUENCY: CONTINUOUS REFERENCE: IBC 2006 TABLE 1704.4
CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	FREQUENCY: CONTINUOUS REFERENCE: IBC 2006 TABLE 1704.4
VERIFYING USE OF REQUIRED DESIGN MIX	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.4
INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS.	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.4
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	FREQUENCY: PERIODIC REFERENCE: IBC 2006 SECTION 1704.4
MECHANICAL ANCHORS INSTALLED IN CONCRETE FOR PROPER APPLICATION TECHNIQUES AS REQUIRED BY MANUFACTURER	FREQUENCY: PERIODIC REFERENCE: IBC 2006 SECTION 1704.13.3
ERECTION OF PRECAST MEMBERS	FREQUENCY: PERIODIC REFERENCE: IBC 2006 SECTION 1704.4
MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS AND WASHERS: MANUFACTURERS CERTIFICATE OF COMPLIANCE AND IDENTIFICATION MARKINGS CONFORMING TO ASTM STANDARDS SPECIFIED IN APPROVED CONSTRUCTION DOCUMENTS	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3
INSPECTION OF HIGH-STRENGTH BOLTING BEARING-TYPE CONNECTIONS (JOINTS DESIGNATED AS SNUG TIGHT)	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3
INSPECTION OF HIGH-STRENGTH BOLTING SLIP CRITICAL CONNECTIONS	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3
INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS: BRACING AND STIFFENING, MEMBER LOCATIONS, APPLICATION OF JOINT DETAILS AT EACH CONNECTION	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3
VERIFYING MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY AND THAT EXCAVATIONS ARE EXTENDED TO PROPER DEPTH	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.7
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.7
VERIFYING USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	FREQUENCY: CONTINUOUS REFERENCE: IBC 2006 TABLE 1704.7
COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	FREQUENCY: CONTINUOUS REFERENCE IBC 2006 TABLE 1704.3 AWS D1.1, AISC 341
MULTIPASS FILLET WELDS	FREQUENCY: CONTINUOUS REFERENCE IBC 2006 TABLE 1704.3 AWS D1.1, AISC 341
SINGLE PASS FILLET WELDS > 5/16*	FREQUENCY: CONTINUOUS REFERENCE: IBC 2006 TABLE 1704.3 AWS D1.1, AISC 341
SINGLE PASS FILLET WELDS $\leq 5/16^{\circ}$	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3 AWS D1.1
FLOOR AND ROOF DECK WELDS	FREQUENCY: PERIODIC REFERENCE: IBC 2006 TABLE 1704.3 AWS D1.3 AISC 341
COLD FORMED STEEL FRAMING COMPONENTS OF THE LATERAL LOAD RESISTING SYSTEM.	FREQUENCY: PERIODIC REFERENCE: IBC 2006 SECTION 1707.4
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GENERAL STRUCTURAL NOTES



