

GENERAL STRUCTURAL NOTES

A. GENERAL

- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPETENCE NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, LAGGING, SHORING, BRACING, FORMWORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS NOTED HEREIN IS NOT EXCEEDED.
- DESIGN OF ITEMS NOT PART OF THE PRIMARY STRUCTURAL SYSTEM (SUCH AS STAIRS, RAILINGS, NON-STRUCTURAL WALLS) AND PRE-FABRICATED STRUCTURAL ITEMS (SUCH AS FLOOR ROOF TRUSSES) SHALL BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS. REFER TO SUBMITTALS SECTION FOR ITEMS THAT MUST BE SUBMITTED FOR REVIEW AND FOR SUBMITTAL REQUIREMENTS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCHIT. DRAWINGS AND RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHIT., MECH., PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
- TYPICAL DETAILS AND NOTES SHALL APPLY, THOUGH NOT NECESSARILY INDICATED AT A SPECIFIC LOCATION ON PLANS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. DETAILS MAY SHOW ONLY ONE SIDE OF CONNECTION OR MAY OMIT INFORMATION FOR CLARITY.
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
- ALL INSPECTIONS REQUIRED BY THE BUILDING CODES, JURISDICTION, OR THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN INSPECTION.

B. BASIS FOR DESIGN

- BUILDING CODE: INTERNATIONAL BUILDING CODE 2006
- WIND LOADS: 30 MPH BASIC WIND SPEED EXPOSURE B INTERNAL PRESSURE COEFFICIENT (GCp1) = 0.18 IMPORTANCE FACTOR = 1.0 COMPONENT AND CLADDING WIND PRESSURE PER ASCE7-02, METHOD 2
- SEISMIC LOADS: SITE CLASS D SEISMIC DESIGN CATEGORY D R = 3 S_s = 58 S₁ = 18 S_{0.5} = 52 S_{0.1} = 25 IMPORTANCE FACTOR = 1
- SNOW LOADS: NONE

C. FOUNDATION

- FOUNDATIONS DESIGNED PER RECOMMENDATIONS BY OWENS GEOTECHNICAL INC. REPORT NO. E-08-030, DATED APRIL 9, 2008 AND ADDENDUM LETTER DATED AUGUST 19, 2009. SITE PREPARATION, GRADING, TESTS, INSPECTIONS, FIELD OBSERVATIONS, OR APPROVAL FROM THE GEOTECHNICAL ENGINEER RECOMMENDED BY THE GEOTECHNICAL REPORT AND ANY ADDENDA SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF FOUNDATIONS.
- ALLOWABLE DEAD PLUS LIVE LOAD SOIL PRESSURE = 2000 PSF.
- TRENCHES AND EXCAVATIONS UNDER OR ADJACENT TO FOUNDATIONS SHALL BE PROPERLY BACKFILLED AND COMPACTED.

D. CONCRETE

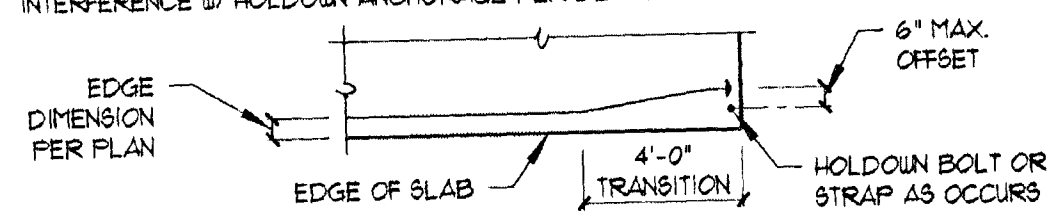
- ALL CONCRETE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318 AND ACI 301, EXCEPT AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
- DUE TO MODERATE SULFATE CONTENT OF THE ON-SITE SOILS, MIN. 28 DAY COMPRESSIVE STRENGTH (F_c) SHALL BE 4500 PSI AND MAX. WATER/CEMENT RATIO SHALL BE 0.50 FOR ALL CONCRETE IN CONTACT WITH SOIL. (FOUNDATION DESIGN BASED ON 2500 PSI.)
- CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY, STAMPED BY AN APPROPRIATELY LICENSED SPECIALTY ENGINEER, AND APPROVED BY THE ENGINEER OF RECORD. MIX DESIGNS SHALL INCLUDE THE PROJECT NAME AND INDICATE THEIR USE WITHIN THE STRUCTURE. MIX DESIGNS SHALL BE PROPORTIONED TO MINIMIZE SHRINKAGE AND HAVE FRESH SHRINKAGE CHARACTERISTICS OF 0.05% OR LESS BASED ON TESTING PER ASTM C815.
- ALL CONCRETE SHALL BE NORMAL WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARD ROCK AGGREGATES CONFORMING TO ASTM C33 UNO. WHERE LIGHTWEIGHT CONCRETE IS SPECIFIED, CONCRETE SHALL BE 110 POUNDS PER CUBIC FOOT USING AGGREGATES CONFORMING TO ASTM C330. LARGEST NOMINAL AGGREGATE SIZE SHALL BE 1-1/2" OR GREATER FOR SLABS ON GRADE AND 3/4" OR GREATER FOR ALL OTHER CONCRETE UNO.
- MAX. SLUMP SHALL BE 3 INCHES (EXCEPTION: WHERE ADMIXTURES/PLASTICIZERS HAVE BEEN INCLUDED IN MIX DESIGN TO IMPROVE WORKABILITY, SLUMP LIMIT SHALL BE BASED ON ADMIXTURE MFR'S RECOMMENDATIONS). MIX WATER SHALL BE CLEAN AND POTABLE.
- PORTLAND CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH EARTH. TYPE II CEMENT MAY BE USED ELSEWHERE. CEMENT SHALL BE TYPE V WITH POZZOLAN WHERE CONCRETE IS IN CONTACT WITH SOIL CONTAINING VERY SEVERE SULFATE EXPOSURE.
- FLY ASH MAY BE USED IN CONCRETE, SUBJECT TO APPROVAL BY THE ARCHITECT, PROVIDED THE FOLLOWING CONDITIONS ARE MET:
 - FLY ASH SHALL COMPLY WITH ASTM C618.
 - CEMENT CONTENT SHALL BE REDUCED A MINIMUM OF 15 PERCENT UP TO A MAXIMUM OF 25 PERCENT WHEN COMPARED TO AN EQUIVALENT CONCRETE MIX DESIGN WITHOUT FLY ASH. FLY ASH CONTENT SHALL NOT COMPRISE MORE THAN 35 PERCENT OF THE TOTAL CEMENTITIOUS CONTENT. THE WATER/CEMENT RATIO SHALL BE CALCULATED BASED ON THE TOTAL CEMENTITIOUS MATERIAL IN THE MIX.
 - CLASS F FLY ASH SHALL BE USED IN SULFATE RESISTANT CONCRETE WITH F_c EQUAL TO OR GREATER THAN 4000 PSI. CLASS C FLY ASH MAY BE USED ELSEWHERE.
 - SHOULD THE CONTRACTOR ELECT TO USE EARLY STRENGTH CONCRETE TO ACHIEVE THE SPECIFIED COMPRESSIVE STRENGTH, F_c AT LESS THAN 28 DAYS, THE CONCRETE MIX DESIGN SHALL BE PROPORTIONED TO DEVELOP THE 28 DAY COMPRESSIVE STRENGTH AT THE REQUIRED AGE. THE CONTRACTOR SHALL SUBMIT TEST DATA FOR REVIEW BY THE STRUCTURAL ENGINEER TO SUBSTANTIATE THE CONCRETE STRENGTH AT THE REQUIRED AGE.
- THE TIME BETWEEN CONCRETE BATCHING AND PLACEMENT SHALL BE IN ACCORDANCE WITH ASTM C94.

D. CONCRETE (CONT'D)

- CONCRETE MIXING, PLACEMENT AND QUALITY SHALL BE PER IBC SECTION 1905. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. SLABS ON GRADE NEED BE VIBRATED ONLY AROUND AND UNDER FLOOR DUCTS OR SIMILAR ELEMENTS. REMOVE ALL BARS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FEET.
- PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH DUE TO COLD OR HOT WEATHER IN ACCORDANCE WITH ACI 308 AND 309. CONTRACTOR SHALL TAKE SPECIAL CURING PRECAUTIONS TO MINIMIZE SHRINKAGE CRACKING OF CONCRETE SLABS.
- ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCEMENT, DOUELS, BOLTS, ANCHORS, SLEEVES, ETC. SHALL BE SECURELY POSITIONED IN THE FORMS.

E. POST-TENSIONED CONCRETE SLAB ON GRADE

- INFORMATION IN THIS SECTION APPLIES ONLY TO THE CONSTRUCTION OF POST-TENSIONED CONCRETE SLABS AND FOUNDATIONS ON GRADE. ITEMS NOT SPECIFICALLY DIMENSIONED ON PLANS SHALL BE LOCATED ACCORDING TO APPROVED ARCHIT. PLANS AND DETAILS.
- INTERIOR TENDON LOCATIONS (AWAY FROM EDGE OF SLAB OR OPENING) SHALL BE PLACED AT THE APPROXIMATE LOCATION DIMENSIONED ON PLAN. INTERIOR TENDONS MAY BE MOVED LATERALLY APPROXIMATELY 18 INCHES FROM GIVEN DIMENSIONS TO AVOID EMBEDS, BLOCKOUTS, ETC. SPACING BETWEEN TENDONS SHALL NOT EXCEED 4'-6". TENDON LOCATIONS NOT DIMENSIONED ON PLANS SHALL BE PLACED AT APPROXIMATELY EQUAL SPACES BETWEEN DIMENSIONED CONTROL POINTS. DEAD END OR STRESSING END OF EXTERIOR TENDONS MAY BE OFFSET UP TO 6" TO AVOID INTERFERENCE W/ HOLD-DOWN ANCHORAGE PER DETAIL BELOW.



- ALL TENDON INTERSECTIONS SHALL BE CENTERED IN SLAB DEPTH UNO.
- SECURE DEAD ENDS AND STRESSING ENDS TO FORMS. SECURE ALL TENDONS AT EACH INTERSECTION WITH THE APPROPRIATE CHAIR OR DOBBIE BLOCKS. PLASTIC CHAIRS WHICH PROVIDE SADDLE OR SIDE CLIPS WHICH RESTRAIN TENDON MOVEMENT NEED ONLY BE TIED AT EVERY THIRD INTERSECTION. DOBBIE BLOCK OR OTHER CHAIRS WHICH ALLOW TENDONS TO MOVE LATERALLY SHALL BE TIED AT EACH TENDON INTERSECTION. ALL TENDON INTERSECTIONS AT PERIMETER OF SLAB.
- PLACEMENT OF REBAR SHALL BE COORDINATED WITH PLACEMENT OF REBAR FOR POST-TENSIONING TENDONS. TENDON PLACEMENT HAS PRIORITY OVER REBAR.
- CONCRETE CONTRACTOR SHALL ENSURE THAT WORKMEN EXERCISE GREAT CARE SO AS NOT TO DISTURB LOCATIONS OF TENDONS DURING CONCRETE PLACEMENT.
- IN AN EFFORT TO REDUCE SHRINKAGE CRACKS, PARTIAL STRESSING (25% OF TOTAL JACKING FORCE) THE DAY AFTER CONCRETE PLACEMENT IS RECOMMENDED FOR ALL TENDONS. FULL TENDON STRESSING MAY PROCEED WHEN CONCRETE STRENGTH REACHES 2000 PSI. STRESS SLABS AS EARLY AS POSSIBLE TO REDUCE SHRINKAGE CRACKS. THE POST-TENSIONED SLAB DOES NOT HAVE THE STRENGTH TO ACCOMMODATE HEAVY LOADS UNTIL THE TENDONS ARE FULLY STRESSED. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THE SLAB IS NOT OVERLOADED PRIOR TO STRESSING THE TENDONS.
- ALL TENDON STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF PERSON PROPERLY TRAINED AND EXPERIENCED IN POST-TENSIONING STRESSING OPERATIONS. ALL TENDONS SHALL BE STRESSED BY MEANS OF A HYDRAULIC JACK EQUIPPED WITH A RECENTLY CALIBRATED (WITHIN 60 DAYS) PRESSURE GAUGE. EACH JACK SHALL BE ACCOMPANIED BY A CURRENT, CERTIFIED CALIBRATION CHART. TENDON STRESSING OPERATOR SHALL MAINTAIN RIGID CONTROL OF GAUGE PRESSURE READINGS AND ELONGATION MEASUREMENTS. MEASURED ELONGATION SHALL CORRESPOND TO THE CALCULATED ELONGATION BY PLUS OR MINUS 10 PERCENT. ANY DISCREPANCIES IN TENDON ELONGATION OR STRESSING OPERATIONS SHALL BE REPORTED TO THE ENGINEER BEFORE CUTTING THE STRESSING ENDS. ON SHORT TENDONS (25 FEET IN LENGTH OR LESS) GAUGE PRESSURE GOVERNS OVER ELONGATION. MAX. TEMPORARY JACKING FORCE SHALL NOT EXCEED 33 KIPS.
- ANCHORAGE OF POST-TENSIONING TENDONS SHALL BE MONOSTRAND-TYPE ANCHOR SYSTEM WITH CURRENT ICC APPROVAL USING A DUCTILE IRON CASTING OF AT LEAST 225 INCHES BY 45 INCHES OF BEARING. POCKET-FORMERS SHALL BE USED ON ALL STRESSING ENDS. THE POCKET-FORMER SHALL PROVIDE ADEQUATE CONCRETE COVERAGE FOR THE ANCHOR AS NOTED ON THE PLANS OR DETAILS. COATING POCKET-FORMERS WITH OIL OR SIMILAR MATERIALS FOR EASE OF REMOVAL IS ACCEPTABLE. ALL DEAD END ANCHORAGES SHALL BE SHOP FABRICATED. PRECASTED WEDGES, FABRICATION AND MANUFACTURE OF THE INBENDED SYSTEM SHALL BE IN ACCORDANCE WITH THE GUIDE SPEC'S AS OUTLINED BY THE POST-TENSIONING INSTITUTE.
- TENDONS MAY BE STRESSED FROM EITHER END UNO.

F. REINFORCING STEEL

- REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 318 AND CRSI'S MANUAL OF STANDARD PRACTICE (LATEST EDITIONS).
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR ASTM A706 (A706 REQUIRED FOR ALL REINFORCING TO BE WELDED) AND SHALL BE GRADE 60 (F_y = 60 KSI) DEFORMED BARS UNO. REINFORCING IN SLABS ON GRADE MAY BE GRADE 40 (F_y = 40 KSI) DEFORMED BARS FOR ALL BARS 4" AND SMALLER UNO, ON PLANS OR DETAILS.
- PRESTRESSING STEEL SHALL CONFORM WITH ASTM A416, GRADE 270, SEVEN-WIRE LOW RELAXATION STRAND WITH A GUARANTEED ULTIMATE TENSILE STRENGTH OF 413 KIPS. ALL MATERIAL SHALL BE CLEAN AND FREE FROM RUST. NOMINAL DIA. SHALL BE 1/2 INCH. NOMINAL AREA SHALL BE 0.153 SQ. INCHES.
- ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR." ARE TO CENTER OF STEEL. CLEAR COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS, UNO, ON PLANS OR DETAILS:

EXPOSURE CONDITION:	COVER:
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER (INCLUDES SLABS ON GRADE) NO. 3 AND SMALLER	1 1/2"
NO. 6 AND LARGER	2"
- LAP SPICES OF REINFORCING STEEL SHALL CONFORM TO ACI 318, SECTION 17.2, OR LAP SCHEDULE WHERE PRESENT, UNO. NO. 3 AND SMALLER REINFORCING BARS SHALL BE BENT CORNER BARS TO MATCH AND LAP WITH HORIZ. BARS AT ALL CORNERS AND INTERSECTIONS UNO. VERT. WALL BARS SHALL BE SPICED AT OR NEAR FLOOR LINES. SPICE TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDELS, BEAMS, GRADE BEAMS, ETC. UNO, ON PLANS OR DETAILS.
- MECHANICAL SPICE COUPLERS SHALL HAVE CURRENT ICC APPROVAL AND SHALL BE CAPABLE OF DEVELOPING 125% OF THE STRENGTH OF THE BAR.

- ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE UN-BENT AND RE-BENT. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED UNLESS SPECIFICALLY NOTED.
- WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS. SEE WELDING SECTION OF G.S.N. FOR ADDITIONAL REQUIREMENTS.

F. REINFORCING STEEL (CONT'D)

- REINFORCING BAR SPACINGS SHOWN ON PLANS ARE MAX. ON CENTER DIMENSIONS. DOUOL ALL VERT. REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. MIN. CLEAR SPACING BETWEEN PARALLEL REINFORCEMENT SHALL BE THE LARGER OF 1-1/2 TIMES NOMINAL BAR DIA. OR 1-1/3 TIMES MAX. AGGREGATE SIZE OR 1-1/2". CLEAR SPACING LIMITATION APPLIES ALSO TO CLEAR DISTANCE BETWEEN A CONTACT LAP SPICE AND ADJACENT SPICES OR BARS.

G. STRUCTURAL STEEL

- STRUCTURAL STEEL MEMBERS SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UNO:

SHAPE:	STANDARD:	F _y
PIPES	ASTM A53, GRADE B	35 KSI
HOLLOW STRUCT. SECTIONS (RECT.)	ASTM A500, GRADE B	46 KSI
HOLLOW STRUCT. SECTIONS (ROUND)	ASTM A500, GRADE B	42 KSI

H. STRUCTURAL STEEL WELDING

- ALL WELDING OF STRUCTURAL STEEL SHALL CONFORM TO AWS D11 AND FOLLOW THE FREQUALIFIED JOINT DETAILS INCLUDED THEREIN. WELDING OF JOINTS THAT INCLUDE REINFORCING STEEL SHALL CONFORM TO AWS D14.
- WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS. CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. ALL COMPLETE JOINT PENETRATION (CJP) WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.
- ALL WELDING SHALL USE E70 SERIES ELECTRODES UNO. WELDS BETWEEN REINFORCING BARS SHALL USE E90 SERIES ELECTRODES (E70 SERIES ELECTRODE REQUIREMENT STILL APPLIES TO WELDS BETWEEN REINFORCING BARS AND STRUCTURAL STEEL).
- WELDING SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D11. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER METAL MANUFACTURER. THE WPS SHALL BE SUBMITTED TO THE OWNER'S TESTING AGENCY FOR REVIEW PRIOR TO FABRICATION AND ERECTION. COPIES OF THE WPS SHALL BE ON SITE AND AVAILABLE TO ALL WELDERS AND THE SPECIAL INSPECTOR.
- WELD LENGTHS CALLED OUT ON PLANS OR DETAILS ARE MINIMUM NET EFFECTIVE LENGTHS UNO.
- ALL MISC. FILLET WELDS NOT NOTED, INCLUDING THOSE FOR STIFFENERS, MISC. PLATES, ETC. SHALL BE PER AWS D1.1, TABLE 1.4.
- WELDS SHALL BE SEQUENCED TO MINIMIZE RESIDUAL STRESS DUE TO WELD SHRINKAGE.

I. MASONRY

- ALL MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH IBC 2104 AND ACI 530.1.
- MASONRY COMPRESSIVE STRENGTH (F_m) SHALL BE 1500 PSI UNO. AND SHALL BE VERIFIED BY THE PRISM TEST METHOD OUTLINED IN IBC 2105.2.2.2. AS A MINIMUM, 28 DAY COMPRESSIVE STRENGTHS OF INDIVIDUAL COMPONENTS (I.E. BLOCK, GROUT, AND MORTAR) SHALL BE AS NOTED BELOW. GREATER STRENGTHS SHALL BE USED AS REQUIRED FOR COMBINED SYSTEM TO ACHIEVE SPECIFIED VALUE OF F_m. MIN. BLOCK STRENGTH SPECIFIED IS ON NET AREA.

F _m :	BLOCK:	GROUT:	MORTAR:	MORTAR TYPE:
1500 PSI	1900 PSI	2000 PSI	1800 PSI	TYPE S
2000 PSI	2800 PSI	2800 PSI	1800 PSI	TYPE S
2800 PSI	3750 PSI	3750 PSI	2500 PSI	TYPE M
- STRUCTURAL MASONRY SHALL BE HOLLOW, MEDIUM WEIGHT (115 PCF), LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO IBC 2103.1. BLOCK TEST DATA BY A CERTIFIED LABORATORY SHALL BE SUBMITTED FOR REVIEW. ALL BLOCKS SHALL BE PLACED IN RUNNING BOND CONSTRUCTION UNO, WITH ALL VERTICAL CELLS IN ALIGNMENT.
- GROUT SHALL CONFORM TO REQUIREMENTS OF IBC 2103.2. USE SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. FLY ASH IS NOT PERMITTED IN GROUT. ONLY SOLID GROUT CELLS WITH REINFORCING UNLESS REQUIREMENT TO SOLID GROUT ENTIRE WALL IS SPECIFICALLY NOTED ON PLANS OR SCHEDULE. BETWEEN GROUT LINES, FORM HORIZONTAL CONSTRUCTION JOINTS PER IBC 2104.12.1.
- MORTAR MIX SHALL CONFORM TO REQUIREMENTS OF IBC 2103.8. SEE TABLE ABOVE FOR MORTAR TYPE.
- GROUT AND MORTAR MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY, STAMPED BY AN APPROPRIATELY LICENSED SPECIALTY ENGINEER, AND APPROVED BY THE ENGINEER OF RECORD. MIX DESIGNS SHALL INCLUDE THE PROJECT NAME AND INDICATE THEIR USE WITHIN THE STRUCTURE.

J. SPECIAL INSPECTION

- IN ADDITION TO STANDARD INSPECTIONS BY THE BUILDING OFFICIAL REQUIRED PER IBC SECTION 1704, THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION FOR THE TYPES OF WORK LISTED IN THIS SECTION.
- THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE SPECIAL INSPECTOR AT LEAST 24 HOURS NOTICE PRIOR TO PERFORMING ANY WORK REQUIRING SPECIAL INSPECTION.
- THE SPECIAL INSPECTOR SHALL INSPECT THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED CONTRACT DRAWINGS AND SPEC'S. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN, IF UNCORRECTED, TO THE ENGINEER AND THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPEC'S AND THE APPLICABLE CODE PROVISIONS.
- INSPECTORS SHALL INSPECT FROM AN APPROVED SET OF CONTRACT DRAWINGS. SHOP DRAWINGS SHALL NOT BE USED IN LIEU OF THE APPROVED CONTRACT DRAWINGS FOR INSPECTION PURPOSES.
- TYPES OF WORK TO BE INSPECTED BY THE SPECIAL INSPECTOR ARE AS FOLLOWS:
 - STEEL CONSTRUCTION AND WELDING PER IBC SECTION 1104.3 AND TABLE 1104.3.

STANDARD ABBREVIATIONS

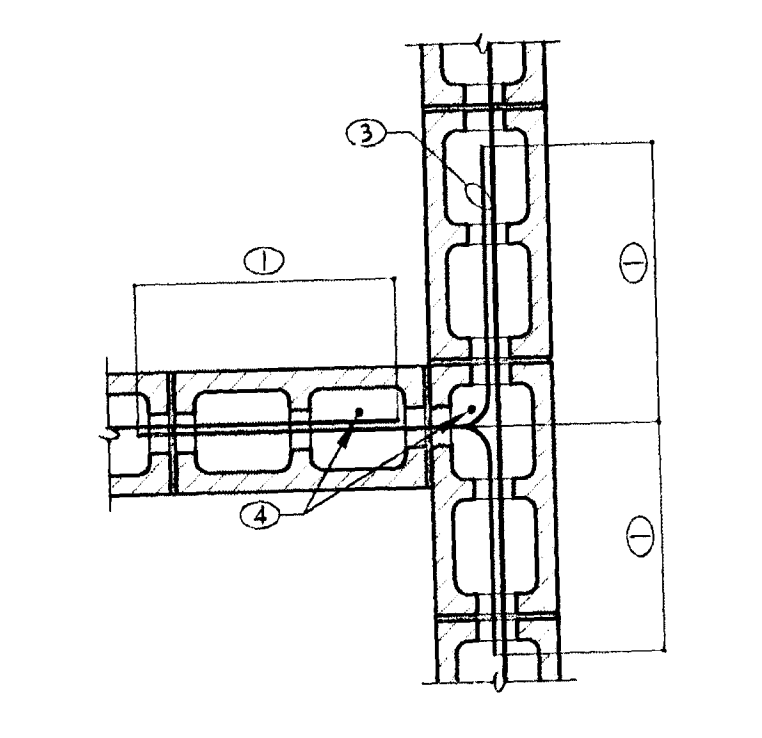
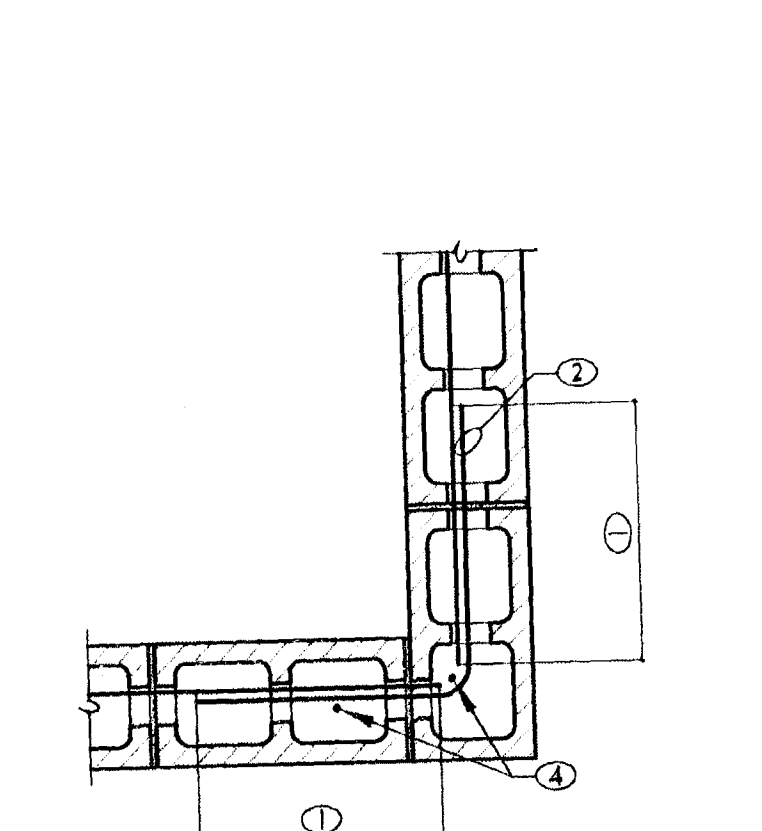
AB.	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AC308	ALL COMMON SURFACES
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT.	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AR.	ANCHOR ROD
ARCHL.	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BF.	BOUNDARY FASTENERS
BFF.	BELOW FINISH FLOOR
BOT.	BOTTOM
BRG.	BEARING
C.J.	CONTROL JOINT
C.J.P.	CONCRETE JOINT PENETRATION CENTER LINE
E.	CLEAR DIMENSION TO FACE OF REBAR
CLR.	COLLUM
COL.	CONTINUOUS
CONT.	CONCRETE REINFORCING STEEL INSTITUTE
CRSI	DIAMETER
DIA.	DIAGONAL
DIAG.	DRAWING
DUG.	EACH FACE
EF.	ELEVATION
ELECT.	ALL
EOR.	ENGINEER OF RECORD
EQ.	EQUAL
EW.	EACH WAY
FF.	FINISH FLOOR
FT.	FOOTING
GA.	GAUGE
GLB.	GLULAM BEAM
G.S.N.	GENERAL STRUCTURAL NOTES
G.T.	GRIDDER TRUSS
HORIZ.	HORIZONTAL
HSS.	HOLLOW STRUCTURAL SECTION
ICC.	INTERNATIONAL BUILDING CODE
ID.	INTERNATIONAL CODE COUNCIL
INFO.	INSIDE DIAMETER
JT.	JOINT
K.	KIP (1000 LBS)
K.O.	KNOCKOUT
KSI	KIPS PER SQUARE INCH
LLH.	LONG LEG HORIZONTAL
LLV.	LONG LEG VERTICAL
LVL.	LAMINATED STRAND LUMBER
LVL.	LAMINATED VENEER LUMBER
MFR.	MANUFACTURER
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OD.	OUTSIDE DIAMETER
OPP.	OPPOSITE
PL.	PLATE
PL.	POUNDS PER LINEAR FOOT
PLYUD.	PLYWOOD
PSF.	POUNDS PER SQUARE FOOT
PSI.	POUNDS PER SQUARE INCH
P.S.L.	PARALLEL STRAND LUMBER
RCBC.	RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS
REQ'D.	REQUIRED
S.M.	SIMILAR
S.M.S.	SEISMIC LOAD RESISTING SYSTEM
SPEC.	SPECIFICATION
STD.	STANDARD
SU.	SHEAR WALL
T & B.	TOP AND BOTTOM
T & G.	TONGUE AND GROOVE
THRU.	THROUGH
T.O.	TOP OF
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
UNO.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W.	WITH
W/O.	WITHOUT
WT.	WEIGHT

01

TYPICAL REBAR LAP SCHEDULE

1901-01 010523

NO SCALE

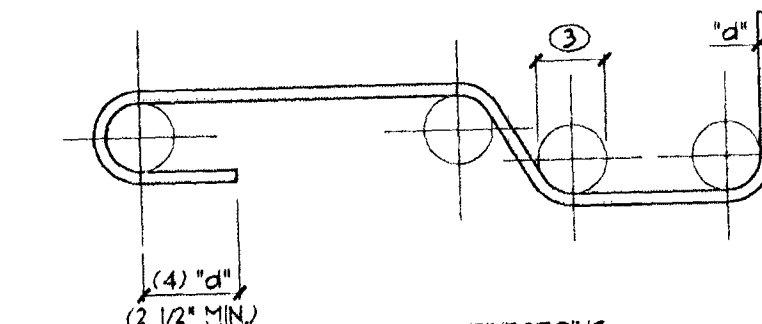
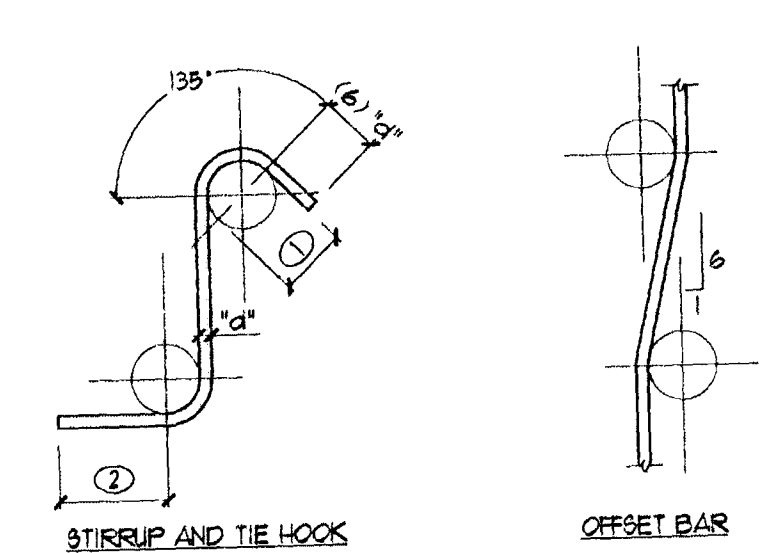


02

TYPICAL MASONRY WALL INTERSECTION

1901-16 TRP04046

NO SCALE



03

STANDARD REBAR BEND DETAILS

201-01 010226

NO SCALE

- BAR SPACING IS MEASURED AS CENTER TO CENTER BAR SPACING. NOTIFY ENGINEER WHERE BAR SPACING IS LESS THAN MIN. SPACING NOTED IN SCHEDULE.
- TOP BARS ARE HORIZONTAL BARS SO PLACED THAT 12 INCHES OR MORE OF FRESH CONCRETE IS CAST IN MEMBER BELOW SPICE.
- MECHANICAL SPICE COUPLER PER G.S.N. REQUIRED.


- ALL TABULATED VALUES ARE IN UNITS OF INCHES UNO.
- CONCRETE LAP LENGTHS BASED ON ACI 318-05 SECTION 17.2.3 WITH CLASS B LAP SPICE PER SECTION 17.2.3 FOR NORMAL WT. CONCRETE AND UNCOATED BARS.
- CONCRETE STRENGTHS SHOWN ARE FOR DESIGN PURPOSES ONLY. SEE G.S.N. FOR ACTUAL CONCRETE SPECIFICATIONS.
- MASONRY LAP LENGTHS PER 2006 IBC SECTION 2108.

- LENGTH PER TYPICAL REBAR LAP SCHEDULE.
- BENT REBAR SIZE TO MATCH HORIZ. WALL REIN.
- BENT REBAR SIZE TO MATCH HORIZ. WALL REIN. ALTERNATE DIRECTIONS.
- VERTICAL REIN. PER G.S.N.

- WHERE WALL HORIZ. REIN. ARE AT DIFFERENT ELEVATIONS FROM EACH OTHER PROVIDE BENT BAR IN SOLID-GROUTED CELLS AT EACH HORIZ. BAR SIM. TO THIS DETAIL.
- INTERSECTION AT DOUBLE W/ THE CUT MASONRY SIMILAR.

- MINIMUM FINISHED BEND DIA. FOR STRIPPERS AND TIES ONLY (4) "d" FOR 5 BAR AND SMALLER (6) "d" FOR 5 THRU 8. TYPICAL
- (6) "d" FOR 9 AND SMALLER (12) "d" FOR 9 THRU 18.
- MINIMUM FINISHED BEND DIA. FOR ALL REINFORCING EXCEPT STRIPPERS AND TIES (6) "d" UP TO 8 BAR (8) "d" FOR 9 THRU 11, (12) "d" FOR 14 AND 18.

- "d" = BAR DIA.
- ALL REINFORCEMENT SHALL BE BENT COLD UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
- REINFORCING PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS SPECIFICALLY NOTED ON PLANS OR DETAILS.



REVISIONS

CONSULTANT

Cardno WRG

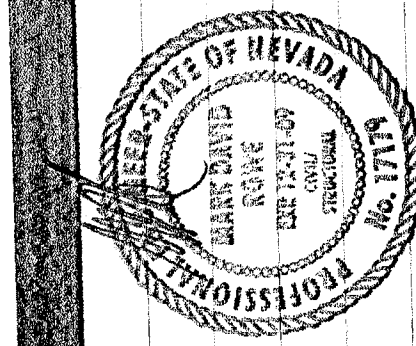
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G.S.N. AND TYPICAL DETAILS



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