

GENERAL NOTES

DESIGN CRITERIA

CODE: INTERNATIONAL BUILDING CODE (IBC) 2006
CLARK COUNTY UNIFORM STANDARD AND SPECIFICATIONS

LIVE LOADS

ROOF..... 20 PSF

BASIC WIND SPEED..... 90 MPH
WIND EXPOSURE..... B
WIND IMPORTANCE FACTOR, I 1.0

SEISMIC USE GROUP I
SPECTRAL RESPONSE COEFFICIENT, S_{ds} 0.513
SPECTRAL RESPONSE COEFFICIENT, S_{d1} 0.247
SEISMIC SITE CLASS D

STRUCTURAL SYSTEM

CANTILEVERED COLUMNS (SHADE STRUCTURE)
SEISMIC DESIGN BASE SHEAR 4.5 K

GENERAL CONDITIONS

1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE STRUCTURAL ENGINEER IN WRITING OF ANY DISCREPANCIES HE MAY FIND BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK.

2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

3. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE THE NOTES, DRAWINGS, AND/OR SPECIFICATIONS DIFFER, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

4. IF A SPECIFIC DETAIL IS NOT SHOWN FOR ANY PART OF THE WORK, THE CONSTRUCTION SHALL BE THE SAME AS FOR SIMILAR WORK.

5. WORKING DIMENSIONS SHALL NOT BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THESE DRAWINGS.

6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER OF ANY CONDITION THAT, IN HIS OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS TO THE STRUCTURE.

7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT HIS WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION. NOTIFY ENGINEER OF ALL FIELD CHANGES PRIOR TO INSTALLATION.

8. REFER TO THE ARCHITECTURAL DRAWINGS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

9. ALL CONSTRUCTION SHALL BE DONE WITH MATERIALS, METHODS, AND WORKMANSHIP ACCEPTED AS GOOD PRACTICE BY THE CONSTRUCTION INDUSTRY AND IN CONFORMANCE WITH THE PROVISIONS OF THE 2006 EDITION OF THE "INTERNATIONAL BUILDING CODE" (IBC) AND STANDARDS REFERENCED THEREIN.

10. PIPES, DUCTS, SLEEVES, OPENINGS, POCKETS, CHASES, BLOCK-OUTS, ETC., SHALL NOT BE PLACED IN SLABS, FOUNDATIONS, ETC., NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR SUCH ITEMS, UNLESS SPECIFICALLY DETAILED ON THESE STRUCTURAL DRAWINGS.

11. ALTERNATE ASSEMBLIES AND MATERIALS WILL BE CONSIDERED FOR REVIEW. ENGINEER MAY REQUEST PAYMENT FOR REVIEW.

FOUNDATION

1. STRUCTURAL DESIGN COMPLIES WITH SOILS REPORT DATED JUNE 07, 2006, BY TERRACON CONSULTING ENGINEERS AND SCIENTISTS.

SOIL BEARING PRESSURE.....3,000 PSF (CEMENTED SOILS)
5,000 PSF (CEMENTED SOILS
WITH 24" EMBEDMENT)
2,000 PSF (NATIVE UNCEMENTED
SOIL OR COMPACTED FILL)
2,750 PSF (NATIVE UNCEMENTED
SOIL OR COMPACTED
FILL WITH 24" EMBEDMENT)

LATERAL EARTH PRESSURE ON RETAINING WALLS

ACTIVE
FOR UNRESTRAINED WALLS.....35 PCF
FOR RESTRAINED WALLS.....65 PCF
PASSIVE.....300 PCF

COEFFICIENT OF BASE FRICTION.....0.40

2. SUBGRADE PREPARATION, DRAINAGE PROVISIONS, AND OTHER RELEVANT SOIL CONSIDERATIONS ARE TO BE IN ACCORDANCE WITH SAID SOILS REPORT.

3. THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE OBSERVATION AND TESTING SERVICES DURING FOUNDATION SOILS EXCAVATION, BACKFILL, GRADING, COMPACTION AND SUBGRADE PREPARATIONS. THE GEOTECHNICAL ENGINEER SHALL INSPECT, PROVIDE TEST REPORTS, AND PROVIDE A LETTER OF ACCEPTANCE TO THE BUILDING DEPARTMENT AND THE ENGINEER STATING THAT ALL FOUNDATION SOILS PREPARATION, EXCAVATION, BACKFILL, COMPACTION AND SUBGRADE PREPARATION IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SOILS REPORT PRIOR TO PLACEMENT OF FOUNDATION CONCRETE.

SHOP DRAWINGS

SUBMIT TWO SETS OF PRINTS AND ONE SET OF REPRODUCIBLES FOR REVIEW PRIOR TO FABRICATION FOR THE FOLLOWING:

1. CONCRETE AND MASONRY REINFORCEMENT STEEL
2. STRUCTURAL STEEL
3. MISCELLANEOUS STEEL

CONCRETE

1. CONCRETE SHALL CONFORM TO THE INDICATED REFERENCE CODES AND STANDARDS EXCEPT AS MODIFIED BELOW:

ACI-301 - "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE"
ACI-318 - "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
ACI-308R - "HOT WEATHER CONCRETING"
ACI-308R - "COLD WEATHER CONCRETING"
ACI-304 - "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"

2. CONCRETE MIX SPECIFICATIONS

LOCATION	MIN f _c (PSI)	TEST AGE (DAYS)	MAX W/C RATIO (a)	AIR (b)	MAX ALLOW. AGGREGATE(e)	NOTES
FOOTINGS	4000	28	0.50	---	1"	
EXTERIOR EXPOSED SLAB ON GRADE	4000	28	0.45	5%	1"	
WALLS	4000	56	0.50	---	3/4"	

a. FLY ASH MAY BE ADDED TO ANY OF THE MIX DESIGNS SPECIFIED. MAXIMUM FLY ASH ADDED SHALL BE LIMITED TO 25% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIAL.

b. TOTAL AIR CONTENT IS SPECIFIED IN THE TABLE ABOVE. AIR CONTENT TOLERANCE SHALL BE $\pm 1\frac{1}{2}\%$ AND SHALL BE MEASURED AT THE POINT OF PLACEMENT. (AFTER PUMPING IF APPLICABLE) ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN APPROVED ADMIXTURE TO ENTRAIN AIR - 5% TOTAL AIR REQUIRED. CONCRETE THAT CAN BE SUBJECTED TO FREEZING AND THAWING DURING CONSTRUCTION SHALL BE AIR ENTRAINED.

c. WATER/CEMENT (W/C) RATIO SHALL BE BASED ON THE TOTAL CEMENTITIOUS MATERIAL. CEMENTITIOUS MATERIALS INCLUDE CEMENT, FLY ASH, SILICA FUME, AND BLAST FURNACE SLAG.

d. CONCRETE SHALL INCLUDE AN APPROVED NON-METALLIC FIBER REINFORCING PER THE MANUFACTURERS RECOMMENDATIONS.

e. MAX AGGREGATE SIZE MAY BE SMALLER BUT NOT LARGER THAN THE SIZE INDICATED.

3. ALL CONCRETE MIXES SHALL SATISFY THE MORE STRINGENT OF THE MIX SPECIFICATIONS REQUIREMENTS. FOR EXAMPLE: A MIX WITH THE SPECIFIED W/C RATIO MAY RESULT IN A STRENGTH GREATER THAN THE f_c REQUIRED.

4. MIXING: COMPLY WITH ACI-301. DO NOT EXCEED THE AMOUNT OF WATER SPECIFIED IN THE APPROVED MIX. PROPORTIONS OF AGGREGATE TO CEMENT SHALL BE SUCH AS TO PRODUCE A DENSE, WORKABLE MIX, WHICH CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER.

5. CONCRETE PROPORTIONS SHALL BE DETERMINED IN ACCORDANCE WITH THE PROVISIONS OF ACI 318, SECTION 5.2. ESTABLISH PROPORTIONS ON THE BASIS OF FIELD EXPERIENCE OR TRIAL MIXTURES OR BOTH. THE CONCRETE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTITATING STRENGTH DATA IN ACCORDANCE WITH IBC 1905.3.

6. PROVIDE A 3/4 INCH CHAMFER AT ALL EXPOSED CONCRETE EDGES, UNLESS INDICATED OTHERWISE ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.

7. SLUMP SHALL BE DETERMINED BY THE CONTACTOR. THE MIX DESIGN SHALL INDICATE THE SLUMP AND IT SHALL BE MEASURED AT THE JOBSITE WITH A TOLERANCE OF +1" AND -2". GREATER SLUMP MAY BE ACHIEVED BY USING APPROVED ADMIXTURES. DO NOT ADD WATER TO THE MIX UNLESS SPECIFICALLY ALLOWED BY THE MIX DESIGN. TOTAL WATER (BATCH AND SITE ADDED) MAY NOT EXCEED THE WATER IN THE APPROVED MIX DESIGN.

8. ACCELERATED SET, OR HIGH EARLY STRENGTH MAY BE ACHIEVED BY USING APPROVED ADMIXTURES. ALL ADMIXTURES SHALL BE CHLORIDE FREE.

9. CURING: REFERENCE ACI 308 - STANDARD PRACTICE FOR CURING CONCRETE AND ACI-301 SECTION 5 - STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE. THE CURING SHALL BE SUCH THAT THE MOISTURE CONTENT AND TEMPERATURE IS MAINTAINED IN A MANNER TO DEVELOP THE DESIRED STRUCTURAL PROPERTIES AND DURABILITY OF THE CONCRETE. THE CURING METHOD SHALL KEEP THE CONCRETE MOIST FOR SEVEN DAYS MINIMUM.

SLABS ON GRADE - MOISTEN SURFACE AND COVER WITH PLASTIC IN DIRECT CONTACT WITH THE CONCRETE IMMEDIATELY AFTER FINISHING. ALTERNATIVELY, APPLY A LIQUID MEMBRANE-FORMING CURING COMPOUND.

LIQUID MEMBRANE-FORMING CURING COMPOUNDS SHALL BE COMPATIBLE WITH FUTURE FLOOR FINISHES OR BE REMOVED PRIOR TO APPLICATION OF THE FLOOR FINISHES.

SPECIAL CURING PROCEDURES MAY BE ELIMINATED IF THE FORMS REMAIN IN CONTACT WITH THE CONCRETE FOR A MINIMUM OF 7 DAYS.

10. JOINTING: PROVIDE ADEQUATE JOINTING TO MINIMIZE EFFECTS OF VOLUME CHANGE. JOINTS SHOWN MAY BE ADJUSTED AT CONTRACTOR'S OPTION, WITH PRIOR APPROVAL FROM ENGINEER.

11. NON-SHRINK GROUT SHALL BE CEMENT BASED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF f_c = 5,000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C109.

CONCRETE INSERTS

CONCRETE INSERTS SHALL BE HILTI HDI DROP IN ANCHOR OR APPROVED EQUAL. SUBMIT ICC REPORTS ON ALL FASTENERS.

EPOXY ADHESIVES - CONCRETE

1. EPOXY ADHESIVE SHALL BE HILTI HIT-RE 500-SD (ICC REPORT #ESR-2322) OR ENGINEER-APPROVED EQUAL.

2. INSTALLATION AND SPECIAL INSPECTION PER ICC REPORT.

3. DO NOT DISTURB ROD BETWEEN SPECIFIED GEL TIME AND CURE TIME.

4. CONTINUOUS SPECIAL INSPECTION OF INSTALLATION REQUIRED AT EPOXIED HOLDOWN ANCHORAGE.

EPOXY ADHESIVES - CONCRETE MASONRY

2. EPOXY ADHESIVE SHALL BE HILTI HIT-HY-150 MAX (ICC REPORT #ESR-1967) OR ENGINEER-APPROVED EQUAL.

3. HOLE DIAMETER, DEPTH, AND CLEANING SHALL BE PER MANUFACTURER RECOMMENDATIONS.

4. DO NOT DISTURB ROD BETWEEN SPECIFIED GEL TIME AND CURE TIME.

5. CONTINUOUS SPECIAL INSPECTION OF INSTALLATION REQUIRED.

REINFORCING STEEL

2. REFERENCE STANDARDS: ACI "DETAILING MANUAL" (SP-66); CRSI MANUAL OF STANDARD PRACTICE (MSP-1)

3. MATERIALS: REINFORCING STEEL, TYPICAL: ASTM A615, GRADE 60. REINFORCING STEEL INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.

4. LAP SPLICES: LAP CONTINUOUS REINFORCING BAR 48 BAR DIAMETERS, UNLESS OTHERWISE NOTED. PROVIDE CORNER BARS FOR ALL HORIZONTAL REINFORCEMENT.

5. COVER:
CAST AGAINST EARTH:
FOOTINGS.....3 INCHES
SLABS.....2 INCHES

CAST AGAINST FORMED SURFACES:
WEATHER FACE
#5 BARS AND SMALLER.....1-1/2 INCHES
#6 BARS AND LARGER.....2 INCHES

REINFORCING STEEL WELDING

1. REFERENCE STANDARDS: *ANSI/AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.

2. MATERIALS: GRADE 40 (ASTM A615) OR GRADE 60 (ASTM A706). ALL GRADE 60 WELDED REINFORCING BARS WILL BE REJECTED UNLESS A MILL CERTIFICATE IS SUBMITTED TO THE ENGINEER OF RECORD INDICATING COMPLIANCE WITH ASTM A706. USE ONLY CERTIFIED WELDERS. USE ONLY FRESH E70XX ELECTRODES (AWS A5.1 OR A5.5).

3. BENDS IN WELDED REINFORCING STEEL ARE TO COMPLY WITH ACI STANDARDS. BENDS MUST NOT OCCUR WITHIN 3" OF ANY WELD. PROVIDE SPECIAL INSPECTION PER IBC.

CONCRETE CRACKING

CONTRACTOR SHALL PROVIDE A BUDGET FOR CRACK MITIGATION AT A RATE OF 0.009 LINEAR FEET PER SQUARE FEET OF SLAB FOR A PERIOD OF TWO YEARS.

CONCRETE MASONRY

1. SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY f_m = 1500 PSI (UNIT STRENGTH METHOD). COMPLIANCE WITH SPECIFIED COMPRESSIVE STRENGTH (f_m) SHALL BE DETERMINED PER IBC SECTION 2105.3. MATERIALS SHALL CONFORM TO STANDARDS OF IBC SECTION 2103.

2. CEMENT FOR MORTAR AND GROUT SHALL BE TYPE 1 PORTLAND CEMENT CONFORMING TO ASTM C150; AGGREGATE PER ASTM C144 FOR MORTAR, ASTM C404 FOR GROUT; HYDRATED LIME PER ASTM C207; QUICK LIME PER ASTM C5; WATER CLEAN AND POTABLE. NO ADMIXTURES WILL BE PERMITTED IN MORTAR AND GROUT, EXCEPT AS NOTED.

3. CONCRETE MASONRY UNITS SHALL BE TYPE 1, NORMAL WEIGHT AND HAVE A NET AREA COMPRESSIVE STRENGTH = 1900 PSI IN ACCORDANCE WITH ASTM C-90.

4. MORTAR SHALL BE TYPE S PER IBC, FRESHLY PREPARED AND UNIFORMLY MIXED, IN ACCORDANCE WITH ASTM C 270. MINIMUM COMPRESSIVE STRESS OF MORTAR IN 28 DAYS SHALL BE 1800 PSI. MASONRY CEMENT MORTARS SHALL NOT BE USED.

MORTAR PROPORTIONS BY VOLUME: REFERENCE IBC TABLE 2103.8(1)

TYPE	PORTLAND CEMENT	HYDRATED LIME	AGGREGATE
S	1.0	OVER 1/4 TO 1/2	NOT LESS THAN 2% NOT MORE THAN 3 TIMES THE SUM OF THE VOLUMES OF CEMENTITIOUS MATERIALS.

ONLY APPROVED STUDIOS
MATERIALS AND METHODS
WILL BE ACCEPTABLE.
SUBMIT SPECIFICATIONS FOR
APPROVAL

Steel shop fabrication to be done by an approved fabricator (certified by City of Las Vegas, City of Los Angeles, ICC or AISC). All field welding to be inspected by a City of Las Vegas approved special inspection agency. Call CLV Inspections Area Supervisor (229-8814) for instructions.

SPECIAL INSPECTION REQUIRED FOR BOLTS AND/OR RISERS IN EPOXY GROUT. CALL CITY OF LAS VEGAS EXPRESS INSPECTIONS AT 226-5113.

ABBREVIATIONS:

AB ANCHOR BOLT
ALT ALTERNATE
APPROX APPROXIMATE
BTM BOTTOM
BOT BOTTOM
BRG BEARING
BTW BETWEEN
CJ CONTROL JOINT
CJP COMPLETE JOINT PENETRATION

CLR CLEAR
CMU CONCRETE MASONRY UNIT
COL COLUMN
CONC CONCRETE
CONN CONNECTION
CONSTR CONSTRUCTION
CONT CONTINUOUS
CONTR CONTRACTOR
CTR CENTER
DET DETAIL
DIA DIAMETER
DIAG DIAGONAL
DIM DIMENSION
DL DEAD LOAD
EA EACH
EF EACH FACE
ELEV ELEVATION
EQ EQUAL
EQUIP EQUIPMENT
ES EACH SIDE
EW EACH WAY
EXIST EXISTING
FDN FOUNDATION
FF FINISH FLOOR
FG FINISH GRADE
FLFR FLUSH FRAME
FLG FLANGE
FLR FLOOR
FP FULL PENETRATION
FT FOOT
FTG FOOTING
FS FAR SIDE
GA GAUGE
GALV GALVANIZED
GR GRADE
HOR HORIZONTAL
HT HEIGHT
ICBO INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS

IF INSIDE FACE
IN INCH
JT JOINT

LL LIVE LOAD
LOC LOCATION
LT LIGHT
MAX MAXIMUM
MECH MECHANICAL
MFR MANUFACTURER
MIN MINIMUM
MISC MISCELLANEOUS
ML MICRO-LAM (LAMINATED VENEER LUMBER)

NO NUMBER
NS NEAR SIDE
NTS NOT TO SCALE
OC ON CENTER
OH OPPOSITE HAND
OPNG OPENING
OSB ORIENTED STRAND BOARD
OF OUTSIDE FACE
PCF POUNDS PER CUBIC FOOT
PSF POUNDS PER SQUARE FOOT
PSI POUNDS PER SQUARE INCH
R RADIUS
REF REFERENCE
REINF REINFORCING
REQD REQUIRED
S SHEET
SCHD SCHEDULE
SEC SECTION
SQ SQUARE FOOT
SF STRUCTURAL
SFF FINISH FLOOR

SHT SHEET
SIM SIMILAR
SPCS SPACES
SPEC SPECIFICATIONS
STD STANDARD
STL STEEL
STRUCT STRUCTURAL
T TOP
THK THICK
TOC TOP OF CONCRETE
TOS TOP OF STEEL
TOW TOP OF WALL
TS TUBE STEEL
TYP TYPICAL
UNO UNLESS NOTIFIED OTHERWISE
UT ULTRASONIC TESTING
VERT VERTICAL
W WITH
WHS WELDED HEADED STUD
WT WEIGHT

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REVISIONS	NO.	DATE	DESCRIPTION	APPROVED

DEPARTMENT OF PUBLIC WORKS

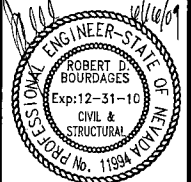
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TITLE: NEON BONEYARD PARK
CITY OF LAS VEGAS

SHADE AND SIGN STRUCTURE
GENERAL NOTES

DRAWN BY: JG / MB
DESIGNED BY: CM
CHECKED BY: SA / RDB
PROJECT NO: 06089
SCALE:



Sheet

S1
16 of 37
CLV DRAWING NO.
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