STRUCTURAL GENERAL NOTES

A GENERAL

1 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.

2 DO NOT SCALE THE DRAWINGS.

3 NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES AND THE TYPICAL DETAILS.

4 ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
THE 2012 EDITION OF THE INTERNATIONAL BUILDING CODE, AND OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND IN THE PROJECT SPECIFICATIONS.

5 SEE THE ARCHITECTURAL DRAWINGS FOR POST BASE AND POLE FOUNDATION LOCATION.

6 SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
PIPES, SLEEVES, HANGERS, TRENCHES, DUCT PENETRATION ETC., EXCEPT AS SHOWN OR NOTED.
ELECTRICAL CONDUIT RUNS
CONCRETE INSERTS FOR ELECTRICAL OR MECHANICAL FIXTURES.
SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOUNTS.

7 THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.

8 THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED, TO BRACING AND SHORING FOR LOADS DUE TO HYDROSTATIC, EARTH, WIND OR SEISMIC FORCES, CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

9 NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN THE STRUCTURAL MEMBERS.

10 ALL SPECIFICATIONS AND CODES NOTED SHALL BE THE LATEST APPROVED EDITIONS AND REVISIONS BY THE GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THIS PROJECT.

11 CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EARTH WORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, UTILITIES, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

12 SHOP DRAWINGS SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW SHALL CONSIST OF AT LEAST TWO SETS, ONE SET TO BE RETAINED FOR OUR RECORD.

13 STRUCTURAL DESIGN CRITERIA
a) FLOOR LIVE LOADS – NOT APPLICABLE
b) ROOF LIVE LOAD – NOT APPLICABLE
c) ROOF SNOW LOAD – NOT APPLICABLE
d) WIND DESIGN DATA

BASIC WIND SPEED (3 SECOND GUST)	V=120 MPH
RISK CATEGORY	IV
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	GCpi=±0.18

e) EARTHQUAKE DESIGN DATA

SEISMIC IMPORTANCE FACTOR	IE=1.50
RISK CATEGORY	IV
MAPPED SPECTRAL RESPONSE ACCELERATION	SS=0.461g S1=0.162g
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENT	SDS=0.440g SD1=0.233g
SEISMIC DESIGN CATEGORY	SDC=D

f) FLOOD LOAD – NOT APPLICABLE
g) SPECIAL LOADS – NONE

14 THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CLARK COUNTY, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENT.

B FOUNDATION

1 FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY:
GRISHAM CONSULTING SERVICES
REPORT CS-12038
DATED 8/2/2012

COPIES ARE AVAILABLE FOR REVIEW AT THE ARCHITECT'S OFFICE.

2 FOOTINGS ARE DESIGNED BASED ON A NET ALLOWABLE SOIL PRESSURE OF 1500 PSF.

3 CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, SEEPAGE, ETC.

4 CONTRACTOR SHALL PROVIDE FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN THE EARTH BANKS AND ANY EXISTING STRUCTURE.

5 EXCAVATIONS FOR FOOTINGS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE CONCRETE AND REINFORCING. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER WHEN THE EXCAVATIONS ARE READY FOR INSPECTION. THE GEOTECHNICAL ENGINEER SHALL SUBMIT A LETTER OF COMPLIANCE TO THE OWNER.

6 FOOTINGS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON THE DRAWINGS. SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE GEOTECHNICAL ENGINEER, FOOTING ELEVATIONS OR FOOTING DESIGNS WILL BE ALTERED BY CHANGE ORDER.

7 ALL ABANDONED FOOTINGS, UTILITIES, ETC., THAT INTERFERE WITH THE NEW CONSTRUCTION SHALL BE REMOVED.

C REINFORCING STEEL FOR CONCRETE

1 ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE' (ACI 318) AND THE 'MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION' BY CRSI AND WCRSI, AS MODIFIED BY THE PROJECT DRAWINGS AND SPECIFICATIONS.

2 DEFORMED REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60, EXCEPT TIES, STIRRUPS AND REINFORCING BARS IN NON-STRUCTURAL CONCRETE SUCH AS SLABS ON GRADE, WHICH MAY BE GRADE 40, UNLESS NOTED OTHERWISE.

3 ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

4 SPLICES SHALL BE MADE ONLY AS AND WHERE INDICATED ON THE STRUCTURAL DRAWINGS.

D CONCRETE

1 ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE', ACI 318, AND THE 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS', ACI 301, LATEST EDITIONS, WITH MODIFICATIONS AS NOTED ON THE DESIGN DRAWINGS OR SPECIFICATIONS.

2 CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BEAR THE WET SEAL OF A CIVIL ENGINEER LICENSED IN THE STATE OF NEVADA FOR REVIEW BY THE STRUCTURAL ENGINEER. THE MIX DESIGNS SHALL STATE THE PROJECT NAME AND THE INTENDED USAGE OF THE CONCRETE.

3 SCHEDULE OF STRUCTURAL CONCRETE 28-DAY STRENGTHS AND TYPES:

LOCATIONS IN STRUCTURE	STRENGTH, PSI	TYPE
FOOTINGS	4500	HARD ROCK

4 PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE V IN CONTACT WITH SOIL AND TYPE II ELSEWHERE. CONCRETE EXPOSED TO SOILS CONTAINING SULFATES SHALL COMPLY WITH IBC SECTION 1904.1.

5 CONCRETE MIXES MAY CONTAIN FLY ASH. THE FLY ASH SHALL CONFORM TO ASTM C618 CLASS F AND THE LOSS OF IGNITION SHALL BE LIMITED TO 2%. THE ADDITION RATE SHALL NOT BE LESS THAN 15% OF THE CEMENT WEIGHT. THE CONTRACTOR SHALL SUBMIT ALL CERTIFICATES SHOWING THE FLY ASH CONFORMS TO THE ABOVE CRITERIA.

6 AGGREGATE FOR HARD ROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C33 AND PROJECT SPECIFICATIONS. EXCEPTIONS MAY BE USED ONLY WITH PERMISSION OF THE STRUCTURAL ENGINEER.

7 GROUT UNDER BASEPLATES. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7500 PSI AT 28 DAYS. FLY ASH WILL NOT BE PERMITTED IN GROUT.

8 CONCRETE MIXING OPERATIONS, ETC., SHALL CONFORM TO ASTM C94.

9 PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 304 AND PROJECT SPECIFICATIONS. SANDBLAST ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.

10 CLEAR COVERAGE OF CONCRETE OVER REINFORCING BARS SHALL BE AS FOLLOWS:

	MINIMUM COVER, INCHES
a) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3

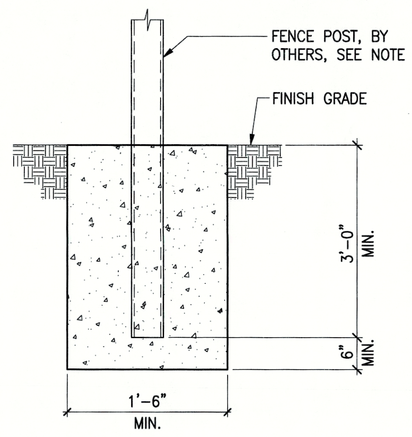
11 ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.

12 MECHANICAL PIPES AND ELECTRICAL CONDUITS WHICH PASS THROUGH SLAB ON GRADE, CONCRETE ON STEEL DECK, FRAMED CONCRETE FLOORS AND WALLS DO NOT REQUIRE SLEEVES, UNLESS OTHERWISE INDICATED IN THE PROJECT SPECIFICATIONS, MECHANICAL OR ELECTRICAL DRAWINGS. IF SLEEVES ARE REQUIRED, INSTALL SLEEVES BEFORE PLACING CONCRETE. DO NOT CUT ANY REINFORCING WHICH MAY INTERFERE WITH SLEEVE PLACEMENT. CORING OPENINGS IN CONCRETE IS NOT PERMITTED. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS. NO PIPES OR ELECTRICAL CONDUIT SHALL PASS THROUGH CONCRETE BEAMS OR COLUMNS UNLESS SPECIFICALLY DETAILED.

13 MODULUS OF ELASTICITY OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C469, SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1 OF ACI 318 FOR THE SPECIFIED CONCRETE 28-DAY STRENGTH.

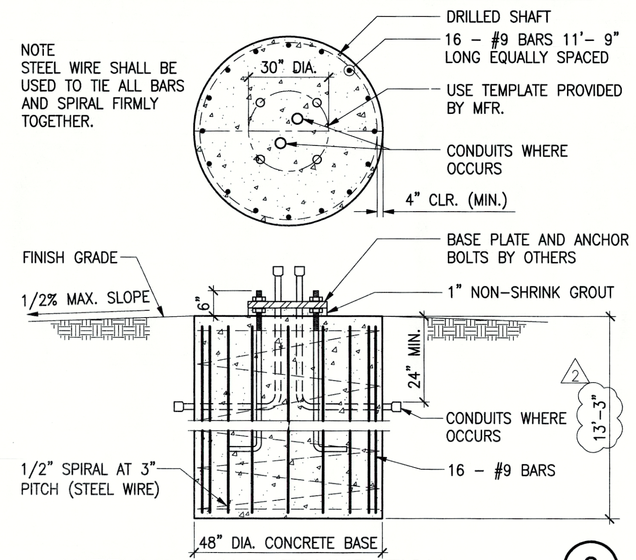
SPECIAL INSPECTION/QAA IS REQUIRED

1. **Post-installed anchors (that City of Las Vegas' staff performs)** (expansion anchors and/or concrete screws and/or epoxy anchors) in hardened concrete per the Evaluation Report (I.C.C. and/or I.A.P.M.O. and/or City of Los Angeles and manufacturer's specifications) **call the City of Las Vegas' Express Inspections at 702-229-6014 to schedule.** A post-installed anchors inspection is scheduled as a #160 Express Inspection and charged at one hundred sixty dollars ($160.00) per hour for dispatch scheduled 160 inspections with one (1) hour minimum.
2. **Other special inspections (that City of Las Vegas' staff performs)** as indicated on the approved structural plans are scheduled as a #155 City of Las Vegas' Express Inspections and charged at three hundred seventeen dollars ($317.00) per dispatch scheduled inspection with two (2) hours minimum for 155 inspections. **Call the City of Las Vegas' Express Inspections at 702-229-6014 to schedule.**
3. **Approved steel fabricator** is a fabricator that is approved by the American Institute of Steel Construction (A.I.S.C.) and/or Clark County Department of Building and Fire Prevention Bureau's Building Official, Las Vegas, Nevada (CC) and/or International Accreditation Services (I.A.S.) and/or International Code Council (I.C.C.) and/or International Association of Plumbing and Mechanical Officials (I.A.P.M.O.) and/or City of Los Angeles.
4. If the steel fabricator is not an approved steel fabricator, then **inspection of non-approved fabricator's fabrication facility is required by a third party QAA/special inspection agency** (per IBC Sections 1704.2.4, 1704.2.5, 1704.2.5.1, Clark County Technical Guidelines and/or AISC 341 and/or AISC 360 and/or and if approved by the City of Las Vegas, other nationally recognized code/standard evaluation/listing agency).
5. **Approved precast and pre-stressed concrete fabricator** is a fabricator that is approved by the Precast/Prestressed Concrete Institute (P.C.I.) and/or Clark County Department of Building and Fire Prevention Bureau's Building Official, Las Vegas, Nevada (CC) and/or International Accreditation Services (I.A.S.) and/or International Code Council (I.C.C.) and/or International Association of Plumbing and Mechanical Officials (I.A.P.M.O.) and/or City of Los Angeles.
6. All work falling within the categories identified on the approved structural plans, calculations and specifications shall be inspected and/or tested in accordance with the provisions of Chapter 17 of the International Building Code (I.B.C.), City of Las Vegas' adopting ordinances and IBC referenced standards.
7. If a **third party QAA/special inspections** (special inspections that the City of Las Vegas staff does not perform) are required as identified in approved structural plans, calculations and specifications then each special inspection agency shall be approved by the Clark County Department of Building and Fire Prevention Bureau's Building Official (Clark County Building Official) and pursuant to the Clark County's Technical Guidelines (TG) including, but not limited to TG-016 and TG-016A, prior to permit issuance and prior to performing any duties. Special inspectors shall display approved identification, as stipulated by the Clark County Building Official, when performing the function of a special inspector.
8. Special inspection and testing shall meet the minimum requirements of I.B.C. Chapter 17 and, including, but not limited to Clark County's Technical Guidelines TG-016 and TG-016A, City of Las Vegas' adopting ordinances and I.B.C. referenced standards.
9. If a **third party QAA/special inspections** (special inspections that the City of Las Vegas staff does not perform) are required as identified on the approved structural plans, calculations and specifications then all **Final QAA/Special Inspection reports are to be submitted** (for review and approval) to the City of Las Vegas' area Inspection Supervisor at the City of Las Vegas Development Services Center, 333 N. Rancho Dr., 2nd Floor, Las Vegas, NV 89106. The review fee is one hundred seventy six dollars ($176.00) per hour with a one hour minimum.
10. If there are **deferred submittals**, then all deferred submittals require engineering design (plans, calculations and specifications) by a Nevada Licensed Civil or Structural Engineer.
11. If there are **deferred submittals**, then all deferred submittals are to be reviewed and approved with no exceptions noted by the Engineer of Record.
12. If there are **deferred submittals** then inspection holds e.g. shear (109 inspection) and/or framing (120 inspection) and/or building final (140 inspection), will be in place until all deferred submittals are reviewed, approved (by the City of Las Vegas' staff) and fees are paid. Please allow up to four (4) weeks for review and approval process.



NOTE
1 FOR NUMBER OF POSTS AND EXACT LOCATION, SEE ARCH DRAWING.

FENCE POST BASE (1)



ANTENNA POLE FOUNDATION (2)

JOB

RECEIVED
MAY 11 '16 3 17 3 10
CITY OF LAS VEGAS

PLANS APPROVED
STRUCTURAL
Building & Safety Dept.
City of Las Vegas, Nevada
NMM MAY 11 2016
Does Not Include Electrical, Architectural, Plumbing, Mechanical or Civil Improvements Noted On Site Improvement Plans. Plan Is Approved As Noted. Plan Is Not a Permit to Violate Any Ordinance.

JORGE A. CAMBORA, JR. Exp. 6/30/16 CIVIL No. 017780 PROFESSIONAL ENGINEER STATE OF NEVADA
05-10-16

M.A. Engineering, Inc.
Structural Engineering Consulting
3281 S. Highland, Suite 813
Las Vegas, NV 89109
(702) 735-2777 Fax (702) 735-3026
JOB NO.15124

NEW RADIO COMMUNICATION TOWER AND SECURITY FENCE
DEPARTMENT OF PUBLIC WORKS
EMERGENCY OPERATIONS CENTER – LOGISTICAL SUPPORT FACILITY
7551 SAUER DRIVE LAS VEGAS, NEVADA 89128

REV	DATE	DESCRIPTION
1	3/28/16	CITY COMMENTS
2	5/11/16	CITY COMMENTS

POLE SECTION AND GENERAL NOTES

DATE	03.07.2016
DRAWN BY	MGT
ENGINEER	IP
JOB NO.	15124

AS BUILT

S2.01

SHEET 5