

GENERAL NOTES

I. GENERAL

1. ARCHITECTURAL, STRUCTURAL AND MEP DRAWINGS MUST BE USED IN CONJUNCTION DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

2. ALL METHODS OF CONSTRUCTION, NOTES, ETC. INDICATED ON DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

A. DESIGN CRITERIA:
1. BUILDING CODES AND DESIGN STANDARDS:
- THE INTERNATIONAL BUILDING CODES / 2003
- MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, ASCE 7-02
- BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-02
- LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL, BUILDINGS, DECEMBER 1, 1989

B. LIVE LOAD (FOR REDUCTION FOR ELEMENTS SUPPORTING TWO OR MORE LOADS)
TYPICAL GARAGE FLOOR 40 PSF, 3,000 LBS ON 4.5'x4.5' AREA (UON)
ROOF LIVE LOAD SNOW LOAD GOVERNS

C. SNOW LOAD
GROUND SNOW LOAD Ps = 50 PSF
FLAT-ROOF SNOW LOAD Ps = 40 PSF
SNOW EXPOSURE FACTOR Ce = 1.0
SNOW LOAD IMPORTANCE FACTOR I = 1.0
THERMAL FACTOR Ct = 1.2

D. WIND LOAD
BASIC WIND SPEED V = 100 MPH
IMPACT IMPORTANCE FACTOR I = 1.0
WIND EXPOSURE B
SEISMIC LOAD
SEISMIC IMPORTANCE FACTOR I = 1.00
SEISMIC USE GROUP Ss = 0.37
MAPPED SPECTRAL RESPONSE Sa = 0.10
ACCELERATIONS D
SITE CLASS Sm = 0.371
SPECTRAL RESPONSE COEFFICIENTS Ss = 0.160

E. SEISMIC LOAD
SEISMIC DESIGN CATEGORY C
BASIC SEISMIC FORCE RESISTING SYSTEM R = 8.0
DESIGN BASE SHEER 800 kips
SEISMIC RESPONSE COEFFICIENT Cs = 0.039
RESPONSE MODIFICATION FACTOR Rm = 3
SELECTION IMPORTANCE FACTOR I = 1.0
ANALYSIS PROCEDURE ANALYTICAL LATERAL FORCE PROCEDURE

F. HANDRAIL AND GUARDRAIL LOADS:
HANDRAILS 200 LB CONCENTRATED
GUARDRAILS 200 LB CONCENTRATED IN ANY DIRECTION
50 LB/FT IN ANY DIRECTION AT TOP
6,000 POUNDS APPLIED 18" ABOVE DECK (1 50 FT AREA)

G. VEHICULAR BARRIERS
UNDER NO CIRCUMSTANCES SHALL THE CONSTRUCTION LOAD ON THE STRUCTURE EXCEED THE DESIGN LOAD WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE ENGINEER.

H. SHOP DRAWINGS
1. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS REVIEW, SCHEDULES AND SHOP AND SETTING DRAWINGS, OWING ALL NECESSARY DETAILS FOR THE PROPER FABRICATION AND PLACING OF REINFORCING AND STRUCTURAL STEEL. THESE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO SUBMISSION AND SHALL BE USED FOR CONSTRUCTION ONLY AFTER THEY ARE RELEASED BY THE ENGINEER.

2. THE REVIEW OF THE DRAWINGS BY THE ENGINEER WILL INDICATE ONLY THAT THE GENERAL METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY. IT SHALL NOT BE CONSIDERED AS PERMITTING ANY DEPARTURE FROM THE CONTRACT REQUIREMENTS OR AS RELIEVING THE CONTRACTOR OF THE RESPONSIBILITY FOR ERRORS THAT MAY BE PRESENT IN HIS/HER DRAWINGS.

3. THE CONTRACTOR SHALL EMPLOY A COMPETENT CONSTRUCTION ENGINEER, WHOSE QUALIFICATIONS ARE APPROVED BY THE ENGINEER, TO CHECK AND COORDINATE THE PLACING OF ALL STRUCTURAL COMPONENTS.

4. NO FABRICATION SHALL BE STARTED UNTIL THE ENGINEER APPROVES IN WRITING THE SHOP DRAWINGS COVERING THE WORK.

I. FOUNDATIONS
FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH THE SPECIFICATION SECTION OF THE GEOTECHNICAL ENGINEERING REPORT 30322-00, PREPARED BY HALEY & ALDRICH, DATED NOVEMBER 08, 2000.

1. THE STRUCTURE IS TO BE SUPPORTED ON STEEL H-PILES, THE FOLLOWING DESIGN CAPACITIES SHALL BE USED: HP14x17 340 kips
2. BACKFILL BENEATH FOUNDATIONS SHALL CONSIST OF WELL GRADED SAND AND GRAVEL AND SHALL BE PLACED IN LAYERS NOT TO EXCEED 9" AND COMPACTED TO AT LEAST 95 % OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

3. NO FOOTING SHALL HAVE ITS BASE HIGHER THAN HALF THE SHORTEST HORIZONTAL DISTANCE TO THE NEAREST FOOTING OR EXCAVATION, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

4. PROVIDE ALL NECESSARY SHEETING, SHORING, AND BRACING AS REQUIRED TO PREVENT LATERAL AND VERTICAL DISPLACEMENT OF EXISTING SOIL.

5. DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL CONCRETE HAS OBTAINED AT LEAST 75% OF ITS SPECIFIED MINIMUM DESIGN STRENGTH.

6. BACKFILL OPERATION BEHIND RETAINING WALLS SHALL START ONLY AFTER WALLS HAVE ATTAINED THEIR DESIGN STRENGTH.

7. FOR WALLS AND GRADE BEAMS HAVING FILL ON EACH SIDE, BACKFILL OPERATIONS SHALL PROCEED SIMULTANEOUSLY IN UNIFORM LIFTS, DIFFERENTIAL ELEV OF THE TOP OF LIFTS ON EACH SIDE SHALL NOT EXCEED 2'-0".

8. PROVIDE SLEEVES AND/OR OPENINGS IN WALLS FOR PLUMBING, ELECTRIC AND OTHER SERVICES AS REQUIRED TO CLEAN, AND COARSE SAND AND GRAVEL BASE UNDER ALL SLABS ON GRADE AND FOOTINGS.

9. TWO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.

10. THE SOIL BELOW FOOTINGS SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.

11. PRIOR TO PRODUCTION PILE DRIVING, THE CONTRACTOR SHALL INSTAL INDICATOR PILES AT LOCATIONS SHOWN ON DRAWING S1.00. EACH INDICATOR PILE SHALL BE DYNAMICALLY LOAD TESTED USING PDA EQUIPMENT IN ACCORDANCE WITH SPECIFICATION SECTION 02360.

12. A MAXIMUM OF ONE (1) SPLICE PER PILE SHALL BE ALLOWED. SPLICING AND WELDING OF PILES SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02360.

IV. CONCRETE
1. CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318-02 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND SPECIFICATION SECTION 03300.

2. LOCATION, SPREAD AND CONTINUOUS FOOTINGS 4,000 PSI
WALLS AND PILES 4,000 PSI
SLABS ON GRADE 5,000 PSI
SUPPORTED SLABS, BEAMS 4,000 PSI
ALL OTHER CONCRETE, (UON) 4,000 PSI
CONCRETE EXPOSED TO WEATHER OR FROZEN SHALL BE AIR-ENTRAINED.

9. REVIEW PROPOSED TECHNIQUES FOR INSTALLING REINFORCED BLOCK MASONRY AS WELL AS PROPOSED BLOCK TYPES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.

10. PROVIDE HORIZONTAL 2-W#7 MESH JOINT REINFORCEMENT AT 16" ON CENTER VERTICAL AT OPENINGS GREATER THAN 1'-0" WIDE. PROVIDE HORIZONTAL REINFORCEMENT IN THE FIRST TWO HORIZONTAL JOINT ABOVE AND BELOW THE OPENING.

11. PROVIDE BOND BEAMS WITH FOLLOWING MINIMUM HORIZONTAL REINFORCEMENT IN ALL CMU WALLS UNLESS OTHERWISE NOTED:
A. EXTERIOR WALLS:
1" CMU #4@16" O.C.
1" CMU #4@15" O.C. OR #4@12" O.C.
B. INTERIOR PARTITION WALLS 16 FEET OR LESS IN HEIGHT, OR WALLS WHICH ENCLOSE STAIRWELLS, ELEVATOR SHAFTS, OR EXITS:
#4@15" O.C. OR 2 - W#7 MESH JOINT REINFORCEMENT @ 16" O.C. (#4 BAR TO BE PROVIDED WITHIN 16" OF THE OPENING.)

C. AT LEAST 1 - #4 BAR TO BE PROVIDED AT THE TOP AND BOTTOM OF ALL OPENINGS TO EXTEND THE GREATER OF 24 IN. OR BAR DIAMETERS PAST THE OPENING. PROVIDE THE FOLLOWING MINIMUM VERTICAL REINFORCEMENT IN ALL 12. PROVIDE THE FOLLOWING MINIMUM VERTICAL REINFORCEMENT IN ALL MASONRY WALLS UNLESS OTHERWISE NOTED:
A. EXTERIOR WALLS:
1" CMU #4@12" O.C.
1" CMU #4@15" O.C.
B. INTERIOR PARTITION WALLS 16 FEET OR LESS IN HEIGHT:
1" CMU #4@12" O.C.
1" CMU #4@15" O.C. (#4 TO BE LOCATED WITHIN 16" OF ENDS OF WALLS)

C. PARTITION WALLS:
#4@12" O.C. (#5 TO BE LOCATED AT CORNERS, WITHIN 16" OPENINGS, WITHIN 8" OF MOVEMENT JOINTS AND ENDS OF WALLS, AND AT 4'-0" O.C. MIN.)
13. PROVIDE 2" SFT JOINT BETWEEN TOP OF CMU WALLS AND BOTTOM OF PRECAST DOUBLE-TEEs AND STEEL BEAMS. JOINT TO BE FIRE-RATED WHERE REQUIRED.

VII. STRUCTURAL STEEL
1. STRUCTURAL STEEL CONSTRUCTION, FABRICATION AND ERECTION SHALL CONFORM TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STEEL BUILDINGS, 1989, AND SPECIFICATION SECTION 05100.

2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:
A. ROLLED SHAPES, COLUMNS, BEAMS, TEES, AND GRIDDERS ASTM A992
B. CHANNELS ASTM A36
C. ANGLES, PLATES, STAR STRINGERS ASTM A36
D. HOLLOW ROUND SHAPES ASTM A513
3. UON, ALL BOLTED FASTENERS SHALL BE ASTM A325N BEARING TYPE HIGH STRENGTH BOLTS. ALL BOLTS TO BE HOT-DIP GALVANIZED.

4. SLIP CRITICAL CONNECTIONS, AS SHOWN, SHALL BE ASTM A325 SC BOLTS. (REOD AT ALL MOMENT CONNECTIONS)
5. WELDED CONNECTIONS SHALL CONFORM TO AWS D1.1, "STRUCTURAL WELDING CODE" USING ETIOX LOW HYDROGEN ELECTRODES CONFORMING TO AWS SPECIFICATION A5.1.
6. COMPOSITE STEEL BEAMS ARE DESIGNED BASED ON INCREASED CONSTRUCTION.
7. DETAILS, FABRICATION AND ERECTION SHALL CONFORM TO THE SPECIFICATIONS AND TO THE LATEST STANDARD SPECIFICATIONS OF AISC.

8. ALL CONNECTIONS SHALL BE AS SHOWN ON THE DRAWINGS AND/OR AS DESCRIBED IN THE SPECIFICATIONS.
9. THE CONTRACTOR SHALL TAKE SPECIAL NOTE THAT THE HORIZONTAL STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE INTERACTION BETWEEN THE STEEL AND THE PRECAST DOUBLE TEE DECK. EACH SECTION OF THE STRUCTURE IS STABLE ONLY AFTER THE DOUBLE TEE DECK IS ERECTED AND THE BRACING CONNECTIONS AND COLUMN SPLICES HAVE BEEN COMPLETED. TEMPORARY GUYS AND BRACINGS SHALL BE PROVIDED AS REQUIRED IN THE AISC SPECIFICATIONS CONSIDERING THIS BUILDING AS A NON SELF-SUPPORTING FRAME.

10. MOMENT CONNECTIONS SHALL BE MADE UP AFTER THE PRECAST DOUBLE TEES HAVE BEEN ERECTED.
11. STEEL H-PILES SHALL BE NEW AND SHALL BE FABRICATED OF GRADE 50 (50 KSI) STEEL.

VIII. METAL DECK
1. METAL DECK WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF AISC "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND STEEL DECK INSTITUTE "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK," "SPECIFICATIONS AND COMMENTARY FOR COMPOSITE STEEL FLOOR DECK," AND SPECIFICATION SECTION 05100.

2. STEEL ROOF DECK SHALL BE 1/2" DEEP, DESIGN THICKNESS OF 0.0474" (10GA) WIDE RIBBED LATEX FABRICATED WITH ZINC COATED STEEL SHEETS COMPLYING WITH QUALITY SOL GRADE 33 KSI WITH COATING DESIGNATION G90 (UON).

3. STEEL FLOOR DECK TYPE SHALL BE 2" DEEP, DESIGN THICKNESS OF 0.0474" (10GA) COMPOSITE FLOOR DECK FABRICATED WITH ZINC COATED STEEL SHEETS COMPLYING WITH ASTM A663, QUALITY SO, GRADE 33 KSI WITH COATING DESIGNATION G90 (UON).

4. HEADED STUD SHEAR CONNECTORS SHALL BE 3/4" DIAMETER, 4" LONG AND SHALL CONFORM TO ASTM A108, GRADE DESIGNATION 1015 (UON). FIELD WELDING OF STUDS SHALL CONFORM WITH AWS D1.1 CODE.

IX. CONCRETE ANCHORS
1. EXPANSION TYPE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM E-488, "STANDARD TEST METHODS FOR STRENGTH OF ANCHORS IN CONCRETE AND MASONRY ELEMENTS" AND ICCB ES AC-01, ACCEPTANCE CRITERIA FOR EXPANSION ANCHORS IN CONCRETE AND MASONRY ELEMENTS.

2. ADHESIVE TYPE ANCHORS SHALL FURTHER CONFORM TO THE REQUIREMENTS OF ASTM E-1512, "STANDARD TEST METHODS FOR TESTING BOND PERFORMANCE OF ADHESIVE BONDING ANCHORS AND ICCB ES AC-08, ACCEPTANCE CRITERIA FOR ADHESIVE ANCHORS IN CONCRETE AND MASONRY ELEMENTS.

3. PROVIDE TYPE AND EMBEDMENT OF ANCHOR INDICATED. THE ANCHORS SHALL HAVE MINIMUM SAFETY FACTOR OF 4:1.

4. ANCHOR INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S CURRENT PRINTED INSTRUCTIONS.

5. A QUALIFIED MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING THE FIRST INSTALLATION TO ENSURE CORRECT PROCEDURES ARE BEING FOLLOWED.

6. REMOVE DUST AND DEBRIS FROM DRILLED HOLES USING COMPRESSED AIR OR VACUUM AT THE BOTTOM OF THE HOLE. REMOVE ANY STANDING WATER FROM HOLES TO RECEIVE ADHESIVE ANCHORS.

7. PROVIDE STUD TYPE ANCHORS FROM ONE OF THE FOLLOWING MANUFACTURERS:
A. KIMW-BOLT II MADE BY HULTI, INC., TULSA, OK
B. POWER-GRIP MADE BY POWERS RAWL, NEW ROCHELLE, NY
8. PROVIDE ADHESIVE ANCHORS FROM ONE OF THE FOLLOWING MANUFACTURERS:
A. HULTI HIT HY-150 ADHESIVE ANCHORING SYSTEM, HULTI, INC., TULSA, OK
B. ADICUT 100 ANCHORING SYSTEM, POWERS RAWL, NEW ROCHELLE, NY.

X. CONSTRUCTION GENERAL NOTES
1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODES AND DESIGN STANDARDS TO SUPPORT IN-PLACE DESIGN LOADS IN A COMPLETED STRUCTURE. PROVIDE ADDITIONAL SUPPORTS OR TEMPORARY SHORING/BRACINGS FOR THE STRUCTURE, AS NEEDED, DUE TO THE FORCES DURING CONSTRUCTION.

2. PRINCIPAL OPENINGS THROUGH THE ROOF AND FLOORS ARE SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE OTHER OPENINGS, INSERTS, SLEEVES, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS WITH ARCHITECTURAL AND MEP DRAWINGS.

3. THE STRUCTURE SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC REQUIREMENTS FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (ASS CODE OF STANDARD PRACTICE).

4. PRECAST CONCRETE SHALL NOT BE ERECTED UNTIL COL BASE PLATES HAVE BEEN FULLY GROUTED AND ATTAINED A COMPRESSIVE STRENGTH OF NO LESS THAN 3,000 PSI.

ABBREVIATIONS

Table of abbreviations including AB ANCHOR BOLT, ACI AMERICAN CONCRETE INSTITUTE, ADD ADDENDUM, ADDR ADDITIONAL, ANSC AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., ALT ALTERNATE, APPROX APPROXIMATELY, ARCH ARCHITECT, ARCHITECTURAL, ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS, ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS, etc.

Table of abbreviations including D DEEP, DBL DOUBLE, DEG DEGREE, DEM DEMOLISH, DEMOLITION, DEPR DEPRESSION, DET DETAIL, DET DRY FILM THICKNESS, DIA DIAMETER, DIAG DIAGONAL, DIM DIMENSION, DL DEAD LOAD, DN DOWN, etc.

Table of abbreviations including E EAST, EA EACH, EAF EACH FACE, EJ EXPANSION JOINT, EL ELEVATION, ELEC ELECTRIC, EMB EMBEDDED, EMBEDMENT, ENGR ENGINEER, EQ EQUAL, EQUALLY, EQ SP EQUALLY SPACED, EQPT EQUIPMENT, EST ESTIMATE(D), EW EACH WAY, EXIST EXISTING, EXT EXTERIOR, etc.

Table of abbreviations including FC SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE, FD FLOOR DRAIN, FIN FINISH, FIN FLOOR FINISH, FL FLOOR, FLOOR LINE, FLUSH, FIN FINISH, FT FEET OR FOOT, FTG FOOTING, F/F FACE TO FACE, GA GAGE, GALV GALVANIZED, GB GRADE BEAM, GC GENERAL CONTRACTOR, GYP GYPSUM, etc.

Table of abbreviations including HORIZ HORIZONTAL, HP HIGH POINT, HT HEIGHT, HVAC HEATING, VENTILATION AND AIR CONDITIONING, IN INCH, INCL INCLUDE, INFO INFORMATION, INT INTERIOR, INV INVERT, JT JOINT, etc.

Table of abbreviations including W WEST OR WIDE, WD WIDTH, WP WORK POINT, WWF WELDED WIRE FABRIC, WT WEIGHT, WM-WM WIDE FLANGE BEAM, W-CM WIDE FLANGE COLUMN WITH (COAB FORM), W/O WITHOUT, etc.

DRAWING LIST

Table listing drawing sheets: S0.01 GENERAL NOTES & INFORMATION, S1.00 FOUNDATION PLAN, S1.01 GROUND FLOOR STRUCTURAL PLAN, S1.02 FIRST FLOOR STRUCTURAL PLAN, S1.03 SECOND FLOOR STRUCTURAL PLAN, S1.04 THIRD FLOOR STRUCTURAL PLAN, S1.05 FOURTH FLOOR STRUCTURAL PLAN, S1.06 FIFTH FLOOR STRUCTURAL PLAN, S1.07 ROOF FLOOR STRUCTURAL PLAN, S2.01 COLUMN SCHEDULE, S3.01 FOUNDATION SECTIONS & DETAILS, S4.01 EXTERIOR SECTIONS, S4.02 INTERIOR SECTIONS, S4.03 RETAIL SECTIONS & DETAILS, S4.04 GENERAL DETAILS, S4.01 PRECAST DOUBLE TEE SECTIONS & DETAILS, S7.01 TYPICAL DETAILS.

LEGEND

Legend symbols and descriptions: F# (---) FOOTING MARK (B/FTG EL), P# (---) FORMED PIER MARK (T/P EL), P# (---) DRILLED PIER MARK (T/P/C EL), etc.

MATERIAL SYMBOLS

Material symbols table: CAST-IN-PLACE CONCRETE, PRECAST CONCRETE, PRECAST CONCRETE WASH SHEET, MASONRY, BRICK, METAL, RIGID INSULATION, GRAVEL OR CRUSHED STONE, EARTH, etc.

DRAFTING SYMBOLS

Drafting symbols table: TITLE SCALE 1/8"=1'-0", SECTION NUMBER 1, SECTION ON WHICH SECTION OR DETAIL IS REFERENCED, SECTION NUMBER 2, SHEET ON WHICH SECTION IS DRAWN, DETAIL DESIGNATION A, SHEET ON WHICH DETAIL IS DRAWN.