

**ABBREVIATIONS:**

#	INCH
&	NUMBER, POUND
'	AND
	FEET
(E)	EXISTING
(N)	NEW
@	AT
A=	AXIAL FORCE
AB	ANCHOR BOLT
ABV	ABOVE
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDENDUM, ADDITION
ADJ	ADJUST, ADJUSTABLE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVG	AVERAGE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BW	BETWEEN
BALC	BALCONY
BD	BOARD
BEV	BEVEL
BKR	BACKER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOC	BOTTOM OF CURB
BOT/BTM	BOTTOM
BOW	BOTTOM OF WALL
BP	BASEPLATE
BRDG	BRIDGE, BRIDGING
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
BU	BUILT-UP
C	CHANNEL
C=	COMPRESSION FORCE
CEM	CEMENT, CEMENTITIOUS
CGS	CENTER OF GRAVITY OF STRAND
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE, COMPENSATION
CONC	CONCRETE
COND	CONDITION
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
CTR	CENTER
CTRL	CONTROL
CTSK	COUNTERSINK
CJ	CUBIC
CUST	CUSTOM
CY	CUBIC YARD
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DEFL	DEFLECTION
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIA - Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DKG	DECKING
DL	DEAD LOAD
DWG	DRAWING
DWGS	DRAWINGS
DWL	DOWEL
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATED FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
ENGR	ENGINEER
EOD	EDGE OF DECK
EOP	EDGE OF PLATE
EOR	ENGINEER OF RECORD
EOS	EDGE OF SLAB
EQ	EQUAL
EQPT	EQUIP
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F TO F	FACE TO FACE
Fc	CONCRETE COMPRESSIVE STRENGTH
FAB	FABRICATIONS/FABRICATED
FB	FLAT BAR
FD	FLOOR DRAIN
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FIN	FINISH
FLR	FLOOR
FNDN	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FR	FIRE RATED, FIRE RESISTIVE
FRM	FRAMED, FRAMING
FRT	FIRE RETARDANT TREATED
FT	FOOT, FEET
FTG	FOOTING
FUT	FUTURE
Fy	YIELD STRESS
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GLU-LAMINATED
GLB	GLU-LAMINATED BEAM
GND	GROUND
GR	GRADE
GYP	GYPNUM
GYP BD	GYPNUM BOARD
HAS	HEADED ANCHOR STUD
HCP	HOLLOW CORE
HDR	HOLLOW CORE PLANK
HEX	HEXAGONAL
HI	HIGH
HORIZ	HOLLOW METAL
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING - VENTILATION - AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IJ	ISOLATION JOINT
IN	INCH, INCHES
INFO	INFORMATION
INSP	INSPECTION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
JT	JOINT, JOINTS
k	KILOPOUND (1000 POUNDS)
K-FT	KIP-FOOT (1000 POUND - FEET)
KIP	KILOPOUND (1000 POUNDS)
L	ANGLE, LEFT, LENGTH
LAM	LAMINATE, LAMINATED
LAT	LATERAL
LB	POUND
LF	LINEAL FEET, LINEAR FOOTAGE
LG	LONG
LIN	LINEAR
LIN FT	LINEAL FEET, LINEAR FOOTAGE
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNTL	LINTEL
LONG	LONGITUDINAL
LS	LONG SLOTTED
LSH	LONG SIDE HORIZONTAL
LSL	LAMINATED STRAND LUMBER
LSV	LONG SIDE VERTICAL
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MISCELLANEOUS CHANNEL
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL
MTL	METAL
MUL	MULLION
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORMAL WEIGHT

OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
OWSJ	OPEN WEB STEEL JOIST
P/L	PROPERTY LINE
PAF	POWDER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
Pd	DRIFTED SNOW LOAD
PE	PROFESSIONAL ENGINEER
PEMB	PRE ENGINEERED METAL BUILDING
PERF	PERFORATE, PERFORATED, PERFORMANCE
PERIM	PERIMETER
PERP	PERPENDICULAR
Pf	FLAT ROOF SNOW LOAD
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINIER FOOT
PLWD	PLYWOOD
PMEJ	PREMOLDED EXPANSION JOINT
PMF	PREMOLDED FILLER
PNL	PANEL
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
Ps	SLOPED ROOF SNOW LOAD
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
PTD	PAINTED
QTY	QUANTITY
R	RISER
R=	BEAM END SHEAR REACTION
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFER - REFERENCE
REINF	REINFORCING
REQ'D	REQUIRED
REV	REVISION
RO	ROUGH OPENING
SCHED	SCHEDULE
SCL	STRUCTURAL COMPOSITE LUMBER
SE	STRUCTURAL ENGINEER
SECT	SECTION
SF	SQUARE FEET
SGL	SINGLE
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SIMP	SIMPSON STRONG TIE
SL	SNOIW LOAD
SOG	SLAB ON GRADE
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SYS	SYSTEM
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/	TOP OF
T=	TENSION FORCE
TAN	TANGENT
THK	THICK
THRD	THREADED
TOB	TOP OF BEAM
TOC	TOP OF COLUMN, TOP OF CURB, TOP OF CONCRETE
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOL	TOP OF LINTEL, LANDING
TOL	TOLERANCE
TOP	TOP OF PIER, TOP OF PLATE
TOPV	TOP OF PAVEMENT
TOS	TOP OF STEEL, TOP OF SLAB
TOW	TOP OF WALL
TRANS	TRANSVERSE
TRANSL	TRANSLUCENT
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
VERT	VERTICAL
VFY	VERIFY
VIF	VERIFY IN FIELD
W	SNOW DRIFT WIDTH
WITH	WITH
W/O	WITHOUT
WCJ	WALL CONTRACTION JOINT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WR	WATER RESISTANT, WATER RESISTIVE
WS	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

**PROJECT DESCRIPTION:**

- PRE-ENGINEERED METAL BUILDING.

**GENERAL:**

- THE STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THE ENTIRE SET OF CONTRACT DOCUMENTS (INCLUDING THE PROJECT SPECIFICATIONS) INTO THEIR WORK.
- THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
- VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS.
- DETAILS ON THESE PLANS ARE INTENDED TO DEPICT THE GENERAL CONSTRUCTION METHODS FOR THIS STRUCTURE. CONNECTIONS, DETAILS, AND CONDITIONS NOT SPECIFICALLY SHOWN THAT ARE SIMILAR TO THOSE THAT ARE SPECIFIED SHALL BE ASSUMED ONE AND THE SAME. IF QUESTIONS REGARDING THE APPLICATION OF DETAILS ARE ENCOUNTERED, NOTIFY THE ARCHITECT/ENGINEER FOR CLARIFICATION IN A TIMELY MANNER PRIOR TO BID OPENING.

**CODE REQUIREMENTS:**

- CONFORM TO 2018 INTERNATIONAL BUILDING CODE AS ADOPTED W/ AMMENDMENTS BY THE 2020 NYS BUILDING CODE.
- ALL REFERENCE TO OTHER CODES AND STANDARDS (ACI, ASCE, ASTM, ETC.) SHALL BE FOR THE EDITIONS LISTED IN CHAPTER 35 OF THE IBC.

**TEMPORARY CONDITIONS:**

- THE STRUCTURE HAS BEEN DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT REQUIRED AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
- CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

**DESIGN CRITERIA:**

- DESIGN CRITERIA ASSUMED FOR PRELIMINARY FOUNDATION DESIGN - VERIFICATION REQUIRED UPON RECEIPT OF MANUFACTURER'S ENGINEERED SHOP DRAWINGS AND BASE REACTION CALCULATIONS. DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE IBC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWANCES WERE USED FOR DESIGN, WITH LIVE LOADS (LL) REDUCED IN ACCORDANCE WITH THE IBC:

A. RISK CATEGORY	III	
<b>B. DEAD LOADS</b>	UNIFORM	
1. ROOF		
• 6" INSULATED METAL ROOF PANEL		6 PSF
• COLLATERAL		20 PSF
• TOTAL ROOF DEAD LOAD		26 PSF
<b>C. LIVE LOADS</b>	UNIFORM	CONCENTRATED
1. ROOF	20 PSF	2000 LBS
<b>D. SNOW LOADS</b>	UNIFORM	
1. GROUND SNOW LOAD, Pg	40 PSF	
2. FLAT ROOF SNOW LOAD, Pf	37 PSF	
3. EXPOSURE FACTOR, Ce	1.0	
4. THERMAL FACTOR, Ct	1.2	
5. IMPORTANCE FACTOR, Is	1.1	
6. SLOPE FACTOR, Cs	1.0	
7. SLOPED ROOF SNOW LOAD, Ps & Pbal	37 PSF	
8. UNBALANCED SLOPED ROOF SNOW LOAD		
A. WINDWARD - FROM EAVE TO RIDGE		0 PSF
B. LEEWARD - FROM RIDGE TO EAVE		44 PSF
9. SNOW DRIFT		N/A
<b>E. WIND LOADS</b>		
1. WIND VELOCITY, V <sub>ULT</sub>	120 MPH	
2. WIND VELOCITY, V <sub>ASD</sub>	93 MPH	
3. EXPOSURE CATEGORY	C	
4. INTERNAL PRESSURE COEFFICIENT, GC <sub>pi</sub>	+/-0.18	
5. COMPONENTS & CLADDING PRESSURES - STRENGTH LEVEL	UNIFORM	
• ZONE 1 - ROOF INTERIOR		+20/-63 PSF
• ZONE 2r - ROOF RIDGE		+20/-92PSF
• ZONE 2e - ROOF EAVE		+20/-63 PSF
• ZONE 2n - ROOF RAKE		+20/-63 PSF
• ZONE 3r - ROOF RIDGE CORNER		+20/-109PSF
• ZONE 3e - ROOF EAVE CORNER		+20/-92 PSF
• ZONE 4 - WALL SURFACE		+34/-37 PSF
• ZONE 5 - WALL CORNER		+34/-46 PSF
• OVERHANG		
• ZONE 1 - ROOF INTERIOR		-77 PSF
• ZONE 2r - ROOF RIDGE		-106 PSF
• ZONE 2e - ROOF EAVE		-78 PSF
• ZONE 2n - ROOF RAKE		-106 PSF
• ZONE 3r - ROOF RIDGE CORNER		-141 PSF
• ZONE 3e - ROOF EAVE CORNER		-124 PSF
<b>F. SEISMIC LOADS</b>		
1. SITE CLASS	D (ASSUMED)	
2. IMPORTANCE FACTOR, I <sub>e</sub>	1.25	
3. SEISMIC DESIGN CATEGORY	B	
4. EARTHQUAKE SPECTRAL RESPONSE, S <sub>s</sub>	0.171	
5. EARTHQUAKE SPECTRAL RESPONSE (1 SECOND), S <sub>1</sub>	0.053	
6. DESIGN SPECTRAL RESPONSE, S <sub>DS</sub>	0.183	
7. DESIGN SPECTRAL RESPONSE (1 SECOND), S <sub>D1</sub>	0.086	
8. SEISMIC RESISTING SYSTEM		
• STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE	3.0	
9. RESPONSE MODIFICATION FACTOR, R	3	
10. DEFLECTION AMPLIFICATION FACTOR, Cd	0.076	
11. SEISMIC RESPONSE COEFFICIENT, Cs	25 KIPS (ASD WIND)	
12. BASE SHEAR, V	EQUIVALENT LATERAL FORCE PER ASCE 7-16 SECTION 12.8	
13. ANALYSIS PROCEDURE		

**FOUNDATIONS:**

- FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT, DATED xx, 202x AND ADDENDA PREPARED BY x. REPORT (PROJECT) # x. SOIL BEARING PRESSURE NOT TO EXCEED x000 PSF FOR FOOTINGS WITHIN BUILDING FOOTPRINT. REFER TO GEOTECHNICAL REPORT FOR ALL PROJECT REQUIREMENTS PERTAINING TO EARTHWORK, INCLUDING BUT NOT LIMITED TO, EXCAVATION, BACKFILLING, COMPACTION, AND MATERIALS.
- FOUNDATION SYSTEM - CONCRETE WALLS, COLUMN PIERS, SLABS-ON-GRADE AND SPREAD FOOTINGS.
- ALL FOOTINGS SHALL BE A MINIMUM OF 48" BELOW LOWEST FINI GRADE (OR FLOOR SLAB) FOR EXTERIOR FOOTINGS AND 12" FOR INTERIOR FOOTINGS FOR BEARING ON MEDIUM PLASTICITY SOILS, OR FROST DEPTH.
- FOUNDATION UNITS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- THE CONTRACTOR SHALL REVIEW ALL GEOTECHNICAL ENGINEER RECOMMENDATIONS PRIOR TO THE COMMENCEMENT OF ANY SITE WORK.
- STRUCTURAL FILL MATERIALS, PLACEMENT, AND COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- IMPORTED ENGINEERED STRUCTURAL FILL PLACED AS FILL BENEATH PROPOSED FOUNDATIONS/SLABS-ON-GRADE, AND AS BACKFILL, SHALL BE A MATERIAL CONSISTING OF PREDOMINATELY GRANULAR SOILS, FREE FROM ORGANIC MATTER, CLAY, ICE, DEBRIS, OR OTHER DELETERIOUS MATERIAL; SUCH AS NYS DOT SUBBASE MATERIAL ITEMS 304.12 OR 304.14. THE PROPOSED MATERIAL FOR ENGINEERED FILL SHALL BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER.
- PLACEMENT OF ALL FILL SHALL BE OBSERVED AND TESTED FOR RELATIVE COMPACTION BY A QUALIFIED TECHNICIAN UNDER THE GUIDANCE OF THE GEOTECHNICAL ENGINEER. MINIMUM TESTING FREQUENCY SHALL BE ESTABLISHED BY THE GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER PRIOR TO COMMENCEMENT OF FILLING OPERATIONS.
- ALL GENERAL EXCAVATIONS AND FOOTINGS SHALL BE INSPECTED AND APPROVED PRIOR TO THE PLACEMENT OF ANY SOIL BACKFILL AND/OR CONCRETE.
- ALL FILL, BACKFILL AND COMPACTION ACTIVITIES, PARTICULARLY DURING WET WEATHER CONDITIONS, SHALL FOLLOW RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
- PLACE BACKFILL AND FILL MATERIALS IN HORIZONTAL LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 6" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
- ALL FOUNDATION ELEMENTS ARE TO BE PLACED ON UNDISTURBED APPROVED NATIVE SOIL OR ON 1'-0" MINIMUM APPROVED COMPACTED STRUCTURAL FILL. STRUCTURAL FILL SHALL EXTEND 1'-0" MINIMUM BEYOND THE FOUNDATION ELEMENT AND THEN DOWNWARD TO NATURAL SOILS AT A SLOPE OF 2 HORIZ. TO 1 VERT.
- BACKFILL AND FILL MATERIALS SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY ACCORDING TO THE MODIFIED PROCTOR TEST (ASTM D-1557).
- BACKFILL AGAINST FOUNDATION WALLS BELOW GRADE SO THAT THE DIFFERENCE IN THE FILL LEVEL ON OPPOSITE SIDES OF THE WALL DOES NOT EXCEED 1'-0" AT ANY TIME.
- EACH PRIME CONTRACTOR SHALL PROVIDE ALL TRENCHING WORK REQUIRED FOR ITS CONTRACT, INCLUDING TRENCH EXCAVATION, AND BACKFILL (WITH ACCEPTABLE FILL, SEE GEOTECHNICAL REPORT) TO WITHIN 1'-0" OF FINISH GRADE/FLOOR. ALL TRENCHING WORK WITHIN THE BUILDING FOOTPRINT SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. GENERAL CONTRACTOR MUST ACCEPT, IN WRITING, THE QUALITY OF THE TRENCH BACKFILL OF OTHER PRIME CONTRACTORS BEFORE BEGINNING WORK OVER THE TOP OF THE TRENCH.
- EXCAVATION AND BACKFILL OPERATIONS SHALL BE MAINTAINED IN A DRY CONDITION. SURFACE AND INFILTRATING WATER SHALL BE REMOVED BY SITE GRADING AND PUMPING FROM PUMPS AS REQUIRED.
- NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL.
- PROTECT IN-PLACE FOUNDATIONS AND SLABS FROM FROST PENETRATION UNTIL THE PROJECT IS COMPLETED.
- THE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION SAFETY. EXCAVATIONS MUST BE PERFORMED IN ACCORDANCE WITH THE CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS.
- PROVIDE TEMPORARY OR PERMANENT SUPPORTS WHETHER SHORING, SHEETING OR BRACING SO THAT NO HORIZONTAL MOVEMENT OR VERTICAL SETTLEMENT OCCURS TO EXISTING STRUCTURES, STREETS OR UTILITIES ADJACENT TO THE PROJECT SITE.

**CONCRETE:**

- ALL CONCRETE WORK SHALL CONFORM TO "ACI 318 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND CHAPTER 19 OF THE NEW YORK STATE BUILDING CODE.
  - CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28-DAY CYLINDER TESTS PER ASTM C39, UNLESS NOTED OTHERWISE, AND SHALL BE AS INDICATED IN SPECIFICATION 03300 & BELOW
- | LOCATION                  | EXPOSURE CLASS | AIR CONTENT | F <sub>c</sub> | MAX W/C RATIO |
|---------------------------|----------------|-------------|----------------|---------------|
|                           | F S W C        | CONTENT     | psi            |               |
| INT SLAB-ON-GRADE         | F0 S0 W0 C0    | 1.0% - 3.0% | 4000           | 0.50          |
| EXT SLAB-ON-GRADE         | F3 S0 W0 C2    | 4.5% - 7.5% | 5000           | 0.40          |
| PIERS/FDN/RETAINING WALLS | F2 S0 W0 C1    | 4.5% - 7.5% | 4500           | 0.45          |
| FOOTINGS                  | F0 S1 W0 C1    | 1.0% - 3.0% | 4000           | 0.50          |
- MINIMUM CEMENT CONTENT PER CUBIC YARD SHALL BE AS INDICATED IN ACI 301 TABLE 4.2.2.1 & SPECIFICATION 033000.
  - THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS, ALONG WITH TEST DATA COMPLIANT WITH ACI-318 CHAPTER 5, A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE.
  - UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (±145 PCF) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I / II. MAXIMUM AGGREGATE SIZE SHALL BE 1-1/2" FOR FOOTINGS AND 3/4" FOR WALLS AND SLABS, CONFORMING TO ASTM C33.
  - NO WATER MAY BE ADDED TO CONCRETE IN THE FIELD UNLESS IT CONFORMS TO THE APPROVED MIX DESIGN AND IS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER.
  - CONCRETE MIX SHALL INCLUDE XYPEX C-SERIES INTEGRAL CRYSTALLINE WATERPROOFING ADDITIVE AT LOCATIONS INDICATED. COORDINATE DOSAGE RATE AND SPECIFIC PRODUCT FORMULATION WITH XYPEX'S TECHNICAL SERVICE DEPARTMENT, BASED ON THE FINAL APPROVED CONCRETE MIX DESIGN. INCORPORATE PRODUCT INTO CONCRETE BATCHING OPERATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONCRETE SAMPLES FROM PROJECT SHALL EXHIBIT NO MEASURABLE WATER LEAKAGE WHEN PRESSURE TESTED TO 150 PSI IN ACCORDANCE WITH U.S. ARMY CORPS OF ENGINEERS CRD-C48-73.
  - A WATER REDUCING ADMIXTURE CONFORMING TO ASTM C494 USED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS SHALL BE INCORPORATED INTO CONCRETE MIX DESIGNS. A HIGH RANGE WATER REDUCING ADMIXTURE CONFORMING TO ASTM C494 TYPE "F" OR TYPE "G" MAY BE USED IN CONCRETE MIXES, PROVIDED THAT THE SLUMP DOES NOT EXCEED 10-INCHES.
  - CONCRETE SHALL BE PLACED IN ONE CONTINUOUS OPERATION WHEREVER PRACTICAL. CONSTRUCTION JOINTS IN BEAMS, JOISTS, AND SLABS SHALL BE LOCATED AT MID-SPAN WITH REINFORCING CONTINUING THROUGH AS IF THE JOINT DID NOT OCCUR. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL BE LOCATED MIDWAY BETWEEN COLUMNS OR PILASTERS.
  - SLEEVES, OPENING, CONDUITS, AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACING CONCRETE. CONDUITS EMBEDDED IN SLABS SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN ONE-THIRD THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON-CENTER.
  - THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR THE LAYOUT OF CONSTRUCTION AND CONTROL JOINTS FOR CONCRETE SLABS-ON-GRADE. THE JOINTS SHALL BE LOCATED AT MAXIMUM 10'-0" ON-CENTER, EACH WAY, FORMING RECTANGLES WITH A LENGTH TO WIDTH RATIO NOT EXCEEDING 1.5 IN ANY DIRECTION. CONTROL JOINTS SHALL INTERSECT AT COLUMN BLOCKOUTS, AT ENDS OF BEARING WALLS, AND AT ALL RE-ENTRANT CORNERS IN THE SLAB.
  - ALL BOLTS AND/OR ANCHOR RODS EMBEDDED INTO CONCRETE SHALL CONFORM TO ASTM SPECIFICATION F1554 GRADE 36 UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
  - ANCHOR RODS ARE TO BE LOCATED BY MEANS OF TEMPLATE. ANCHOR RODS SHALL NOT BE HAND SET OR WET SET.
  - ANCHOR RODS AND EMBEDDED ITEMS SHALL BE SET IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE SECTION 7.5.
  - WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.
  - PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CONCRETE EDGES, UNLESS NOTED OTHERWISE.
  - PREPARATION, CONSTRUCTION, AND PROTECTION OF CONCRETE DURING COLD WEATHER OR HOT WEATHER SHALL CONFORM TO ACI 318 26.5.4, 26.5.5, AND ACI 306R AND 305R.

WARNING: IT IS A VIOLATION OF NEW YORK EDUCATION LAW