BUILDING DESIGN LOADS

- I. RISK CATEGORY FOR DETERMINING IMPORTANCE FACTORS FOR ALL LOADS IS TAKEN AS
- "CATEGORY IV" PER NYS BUILDING CODE TABLE 1604.5. VERTICAL LOADS A. DEAD LOADS SUPERIMPOSED DEAD LOADS ON JOISTS: (I) ROOFING, INSULATION, DECK = 6 PSF (2) MEP (LIGHTS, CONDUITS, ETC.) = 4 PSF SUSPENDED CEILING = 2 PSF AS SHOWN ON PLANS (4) ROOFTOP MECHANICAL EQUIPMENT B. LIVE LOADS (FLOORS): UNIFORM LOAD = 100 PSF (2) CONCENTRATED LOAD = 2000 LBS C. SNOW LOAD: IMPORTANCE FACTOR, I = GROUND SNOW LOAD, Pg = 30.0 PSF SNOW EXPOSURE FACTOR. C. = 1.0 (4) ROOF THERMAL FACTOR, $C_{\rm f} =$ 10 CALCULATED FLAT ROOF SNOW LOAD, Pf = 25.2 PSF SNOW DRIFTING LOAD EFFECTS SHALL BE INCLUDED 3. LATERAL LOADS: A. WIND LOAD IMPORTANCE FACTOR, I = 128 MPH BASIC WIND SPEED (SPECIAL WIND REGION) = (3) EXPOSURE CATEGORY = (4) TOPOGRAPHIC FACTOR, K_{zt} = 1.00 B. SEISMIC LOAD: IMPORTANCE FACTOR, I = 1.5 0.294 Ss = 0.061 0.46

GENERAL NOTES

S_{MS} =

 $S_{DS} =$

SITE CLASS =

(9) SEISMIC DESIGN CATEGORY =

(4)

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE 2015 (NYS BC) AND ITS REFERENCE DOCUMENT, ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".

0.147

0.307

0.098

TBD

TBD

- PROVIDE TEMPORARY BRACING AS REQUIRED TO SUPPORT LOADS TO WHICH NEW AND EXISTING STRUCTURES MAY BE SUBJECT DURING CONSTRUCTION.
- 3. CONTRACTOR SHALL FIELD MEASURE AND VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ELEVATIONS AND ANGLES IN THE FIELD. ANY UNUSUAL CONDITIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION, PRIOR TO THE PURCHASE, FABRICATION, OR ERECTION OF ANY MATERIALS.
- 4. CONTRACTOR SHALL SUBMIT ERECTION AND DETAILED SHOP DRAWINGS OF ALL STRUCTURAL MATERIALS FOR REVIEW, INCLUDING: STRUCTURAL STEEL FRAMING.
 - CONCRETE REINFORCING SHOP DRAWINGS.

REQUIREMENT(S) SHALL GOVERN. NOTIFY ENGINEER.

- DATA SHEETS ON ALL STRUCTURAL MATERIALS, INCLUDING BUT NOT LIMITED TO: (I) CONCRETE MIX DESIGNS (2) DRILLED AND/OR ADHESIVE ANCHORS
- (3) ANCHOR BOLTS (4) CONCRETE CURING

(5) REBAR

5. IF THERE IS A CONFLICT BETWEEN SPECIFICATIONS AND PLANS, MORE STRINGENT

EXCAVATION, FOUNDATION, AND BACKFILLING

- REFERENCE "GEOTECHNICAL REPORT BY COLLIERS ENGINEERING & DESIGN", DATED (TBD), FOR SOIL BORING INFORMATION.
- 2. ALL FOUNDATION DESIGNS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 3,000 PSF. 3. GRANULAR AND COHESIVE SOILS WERE ENCOUNTERED DURING GEOTECHNICAL EXPLORATION. FOUNDATIONS SHOULD BE SUPPORTED ON STRUCTURAL FILL OR ON NATIVE GRANULAR SOILS AND NOT ON COHESIVE SOILS. AS SUCH, COHESIVE SOILS SHOULD BE OVER-EXCAVATED A MINIMUM OF I FT AND REPLACED WITH STRUCTURAL FILL, WHICH SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY. ALL FOOTING EXCAVATIONS SHALL BE FINISHED BY HAND.
- BACKFILL SHALL BE PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO A MINIMUM DENSITY OF 95% (UNDER SLABS-ON-GRADE AND FOOTINGS) AND 90% ELSEWHERE OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557 MODIFIED PROCTOR
- BACKFILL SHALL CONSIST OF NON-EXPANSIVE, FREE-DRAINING, WELL GRADED SAND AND GRAVEL FREE OF DEBRIS AND ORGANIC MATERIAL. FILL UNDER SLAB-ON-GRADE SHALL BE IN CONFORMANCE WITH ASTM D448, SIZE 10. ON-SITE SOILS ARE NOT SUITABLE FOR RE-USE AS BACKFILL. CONTRACTOR SHALL PROVIDE BORROW BACKFILL MATERIAL AS REQUIRED.
- BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL CONCRETE HAS CURED 7 DAYS TO SUPPORT THE BACKFILL AND THE SUPERIMPOSED LOADS OF THE PLACING AND COMPACTING FOUIPMENT, HEAVY CONSTRUCTION FOUIPMENT SHALL NOT APPROACH CLOSER TO THE WALL THAN A DISTANCE EQUAL TO THE HEIGHT OF THE WALL. USE HAND COMPACTION EQUIPMENT WITHIN A DISTANCE EQUAL TO THE HEIGHT OF THE FILL ABOVE THE FOOTINGS.
- 7. CONTRACTOR WILL BE RESPONSIBLE FOR, AND SHALL SAFEGUARD AND PROTECT, ALL EXCAVATIONS AND EXISTING STRUCTURES DURING CONSTRUCTION OF FOUNDATIONS BY PROPER SAFEGUARDS WHICH MAY INCLUDE BRACING.
- 8. ALL EXCAVATIONS AND BACKFILL OPERATIONS SHALL CONFORM WITH CURRENT OSHA REQUIREMENTS AND STANDARDS.
- 9. THE DESIGN AND OPERATION OF THE GROUNDWATER CONTROLS DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. COARSE AGGREGATE, WHERE SHOWN, SHALL BE No. 2 PER NYSDOT.

GEOFOAM

GEOFOAM SHALL BE IN ACCORDANCE WITH ASTM D6817 STANDARD SPECIFICATION FOR RIGID CELLULAR POLYSTYRENE GEOFOAM, EPS 12, WITH 2.2 PSI (MINIMUM) COMPRESSIVE STRENGTH.

CONCRETE

- I. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301, "SPECIFICATIONS FOR CONCRETE BUILDINGS", LATEST EDITIONS.
- 2. ALL CONCRETE SHALL HAVE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, UNLESS OTHERWISE NOTED. CONCRETE SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ACI STANDARDS. MAXIMUM SLUMP SHALL BE 4 INCHES.
- 3. CONCRETE MIX DESIGN FOR 1ST FLOOR SLAB-ON-GRADE SHALL BE AS FOLLOWS:
 - 5% ±1% WATER-CEMENTITIOUS MATERIALS RATIO: 0.40 6" ±2" CEMENT CONTEN 550 LB MINIMUM FLY ASH CONTENT: 10% OR LESS
 - NOT REOUIRED CORROSION INHIBITORS: MICROFIBER REINFORCEMENT: I.0 LBS PER CUBIC YARD; FIBROUS REINFORCING MATERIAL SHALL BE 100% VIRGIN POLYPROPYLENE FIBRILLATED FIBERS CONTAINING NO REPROCESSED OLEFIN MATERIALS AND
 - SPECIFICALLY MANUFACTURED TO USE AS CONCRETE SECONDARY REINFORCEMENT, MANUFACTURED BY FIBERMESH
 - (432) 892-7243, OR EQUAL.
- 4. ALL CONCRETE, INCLUDING FOUNDATIONS, SLABS-ON-GRADE, AND ELEVATED FLOOR SLABS, SHALL BE NORMAL WEIGHT CONCRETE, 145-150 PCF±. CONCRETE SHALL BE READY MIXED PER ASTM C94. JOB SITE MIXING SHALL NOT BE PERMITTED.
- 5. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH ASTM A615, GR 60, EPOXY COATED.
- 6. ALL REINFORCING BARS SHALL BE SPLICED A MINIMUM OF 40 BAR DIAMETERS. ALL REINFORCING BARS SHALL BE CONTINUOUS AROUND CORNERS.
- 7. WELDED WIRE FABRIC (WWF) SHALL CONFORM WITH ASTM A185, EPOXY COATED. WIRE FABRIC SHALL BE TIED WITH WIRE AND OVERLAPPED TWO SQUARES AT EDGES.
- 8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED OVER REINFORCEMENT, UNLESS OTHERWISE NOTED ON THE DRAWINGS: A CONCRETE CAST AGAINST EARTH: 3 INCHES B. CONCRETE EXPOSED TO EARTH OR WEATHER: 2 INCHES C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER: SLABS AND WALLS: I INCH
- 9. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND SUPPORTED IN FORMS AND SPACED WITH ACCESSORIES FOLLOWING THE REQUIREMENTS OF THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315. PLACING OF BARS SHALL CONFORM TO THE LATEST CRSI RECOMMENDED PRACTICES FOR PLACING REINFORCING
- 10. NO ADMIXTURE SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE USE OF CALCIUM CHLORIDE IS PROHIBITED.
- 11. AFTER CONCRETING HAS STARTED, IT SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL PLACING OF A PANEL OR SECTION, AS DEFINED BY ITS BOUNDARIES OR PREDETERMINED **JOINTS, IS COMPLETED**
- 12. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS SUCH AS MECHANICAL VIBRATION DURING PLACEMENT AND THOROUGHLY WORKED AROUND REINFORCEMENT.
- 13. BEARING GROUT SHALL BE NON-SHRINK, NON-METALLIC, CEMENTITIOUS GROUT WITH A MIN. COMPRESSIVE STRENGTH OF 5000 PSI.
- 14. ALL BOLTS, SLEEVES, AND OTHER EMBEDDED ITEMS SHALL BE SET BEFORE CONCRETE IS PLACED. SEE MECHANICAL, ELECTRICAL, AND EQUIPMENT VENDORS' DRAWINGS FOR SIZES AND LOCATIONS
- 15. CONCRETE FINISHES:
- I. FORMED SURFACES EXPOSED TO VIEW SMOOTH RUBBED FINISH. 2. SLAB FINISH - TROWEL FINISH. 3. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFER.

CONCRETE CURING

- I. PROPER CURING OF CONCRETE IS OF THE UTMOST IMPORTANCE. BEGINNING IMMEDIATELY AFTER PLACEMENT, CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR AT LEAST 7 DAYS. THE MATERIALS AND METHODS OF CURING SHALL BE SUBJECT TO ACCEPTANCE BY THE ENGINEER. UNSATISFACTORY FINISHED CONCRETE THAT RESULTS FROM FAILURE TO FOLLOW THE SPECIFIED CURING PROCEDURES MAY BE REQUESTED BY THE OWNER OR ENGINEER TO BE REMOVED AND REPLACED. ALL COSTS ASSOCIATED WITH REMOVAL AND REPLACEMENT OF CONCRETE WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 2. SLABS IT IS MANDATORY THAT 7 DAYS OF WET CURING ON ALL MAT SLABS AND FORMED SLABS BE PERFORMED. USE SOAKER HOSE, WET BURLAP AND PLASTIC SHEETS OVER BURLAP ON ALL EXPOSED SURFACES FOR 7 DAYS MINIMUM.
- 3. WALLS COVER TOP OF WALL FORMS WITH WET BURLAP AND PLASTIC SHEETS. MOISTURE LOSS FROM SURFACES PLACED AGAINST WOODEN FORMS OR METAL FORMS EXPOSED TO HEATING BY THE SUN SHALL BE MINIMIZED BY KEEPING THE FORMS WET UNTIL THEY CAN BE SAFELY REMOVED. AFTER FORM REMOVAL THE CONCRETE SHALL BE CURED FOR AT LEAST 7 DAYS.
- 4. COLD WEATHER WHEN THE MEAN DAILY OUTDOOR TEMPERATURE IS LESS THAN 40°F. THE TEMPERATURE OF THE CONCRETE SHALL BE MAINTAINED BETWEEN 50°F AND 70°F FOR THE REQUIRED CURING PERIOD, WHEN NECESSARY, ARRANGEMENTS FOR HEATING, COVERING, INSULATING, OR HOUSING THE CONCRETE WORK SHALL BE MADE IN ADVANCE OF PLACEMENT AND SHALL BE ADEQUATE TO MAINTAIN THE REQUIRED TEMPERATURE WITHOUT INJURY TO THE CONCRETE DUE TO CONCENTRATION OF HEAT.
- 5. HOT WEATHER WHEN NECESSARY, PROVISION FOR WINDBREAKS, SHADING, AND/OR COVERING WITH A LIGHT-COLORED MATERIAL SHALL BE MADE IN ADVANCE OF CONCRETE PLACEMENT. SUCH PROTECTIVE MEASURES SHALL BE TAKEN AS QUICKLY AS CONCRETE HARDENING AND FINISHING OPERATIONS WILL ALLOW. TEMPERATURE OF CONCRETE AT PLACEMENT SHALL NOT EXCEED 85°F.

CONCRETE TESTING

- I. MAKE 7-DAY AND 28-DAY COMPRESSION TESTS.
- 2. TEST FOR SLUMP AND AIR ENTRAINMENT DURING CONCRETE PLACEMENT FROM SAME LOAD SAMPLED FOR COMPRESSION TESTS.
- 3. TEST FOR EACH NOT LESS THAN ONCE PER DAY, NOT LESS THAN ONCE PER 50 CUBIC YARDS OF CONCRETE, OR NOT LESS THAN ONCE PER 5,000 SQUARE FEET OF SLABS, WHICHEVER PRODUCES THE GREATER NUMBER OF TESTS.
- 4. CONTRACTOR SHALL SAMPLE AND TEST AT CERTIFIED LABORATORY AT CONTRACTOR'S
- 5. PROVIDE TEST REPORTS TO OWNER'S ENGINEER.

MASONRY

- ALL MASONRY WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE "SPECIFICATIONS FOR MASONRY STRUCTURES", ACI 530.1 AND THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530, LATEST EDITIONS.
- 2. CONCRETE MASONRY UNITS (CMU) SHALL BE NORMAL-WEIGHT UNITS, CONFORMING TO ASTM C90, GRADE N-I, AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI. AGGREGATE SHALL BE IN ACCORDANCE WITH ASTM C33. SEE DRAWINGS FOR SIZES
- 3. MINIMUM CLAY BRICK COMPRESSIVE STRENGTH SHALL BE 3000 PSI.
- 4. ALL CMU's SHALL BE LAID IN RUNNING BOND, UNLESS OTHERWISE SPECIFICALLY NOTED ON THE DRAWINGS.
- MORTAR FOR CMU'S SHALL BE IN CONFORMANCE WITH ASTM C70, TYPE M. ALL MORTAR SHALL BE MADE WITH CLEAN, POTABLE WATER, SAND PER ASTM CI44, AND TYPE I PORTLAND CEMENT PER ASTM C150.
- 6. CONCRETE GROUT FOR FILLING CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. MAXIMUM AGGREGATE SIZE SHALL BE 3/8".
- GROUT ALL CELLS OF CMU CONTAINING REINFORCEMENT, BOLTS, OR AS INDICATED TO BE GROUTED SOLID ON THE DRAWINGS. GROUT CORES SOLID UNDER CONCENTRATED LOADS AND LINTEL BEARING POINTS FOR A MINIMUM OF 16" (TWO CORES). WOOD, PAPER, OR CARDBOARD SHALL NOT BE USED AS GROUT DAMS.
- 8. CARE SHALL BE TAKEN TO MINIMIZE MORTAR PROTRUSIONS INTO CORES THAT ARE TO BE GROUTED.
- 9. VERTICAL REINFORCEMENT SHALL BE SECURED IN ITS PROPER LOCATION BY TYING TO HORIZONTAL BARS. VERTICAL REINFORCEMENT SHALL BE PLACED PRIOR TO INSTALLATION OF UNITS TO ENSURE PROPER PLACEMENT.
- 10. CONSOLIDATE GROUT WITH A MECHANICAL VIBRATOR TO ENSURE COMPLETE CONSOLIDATION OF THE GROUT FOR THE ENTIRE HEIGHT.
- 11. ALLOW 24 HOURS MINIMUM FOR MASONRY TO SET BEFORE GROUTING. POUR GROUT IN FOUR-FOOT LAYERS, ONE HOUR BETWEEN EACH POUR, ALLOW A MINIMUM OF SEVEN DAYS FOR FINISHED WALL TO SET BEFORE BACKFILLING.
- 12. PROVIDE PREFABRICATED JOINT REINFORCING, WITH A MINIMUM OF ONE CROSS WIRE FOR EACH 2.67 SQUARE FEET OF WALL AREA, SPACED VERTICALLY AT 16" O.C. ABOVE GRADE, AND 8" O.C. BELOW GRADE, U.N.O. CROSS WIRES SHALL NOT BE SMALLER THAN 9ga. LONGITUDINAL WIRES ARE TO BE EMBEDDED IN THE MORTAR. ALL HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS AT CORNERS AND BENDS. PREFABRICATED JOINT
- REINFORCING SHALL BE HOT-DIP GALVANIZED, AND MAY BE: A. "DA3100 TRUSS" BY DUR-O-WAL
- B. "#120 TRUSS-MESH" BY HOHMANN & BARNARD C. OR EOUAL AS APPROVED BY THE ENGINEER
- 13. PROVIDE MASONRY ANCHORS AT ALL STRUCTURAL STEEL COLUMNS ADJACENT TO CMU WALLS. MASONRY ANCHORS SHALL BE HOT-DIP GALVANIZED PREFABRICATED SECTIONS. ANCHORS SHALL BE INSTALLED IN PAIRS, AND MAY BE:
 - A. "DA-604" BY DUR-O-WAL "#354 NOTCHED COLUMN ANCHOR" BY HOHMANN & BARNARD OR EQUAL AS APPROVED BY THE ENGINEER.
- 14. MASONRY PROTECTION COVER TOP OF UNFINISHED MASONRY WORK TO PROTECT IT FROM THE WEATHER.
- 15. COLD WEATHER CONSTRUCTION:
 - A. IMPLEMENT THE FOLLOWING REQUIREMENTS WHEN:) THE AMBIENT TEMPERATURE FALLS BELOW 40°F. OR
 - THE TEMPERATURE OF MASONRY UNITS IS BELOW 40°F. B. DO NOT LAY MASONRY UNITS HAVING A TEMPERATURE BELOW 20°F. REMOVE VISIBLE
 - ICE ON MASONRY UNITS BEFORE THE UNITS ARE LAID IN THE MORTAR. C. HEAT MORTAR SAND OR MIXING WATER TO PRODUCE MORTAR TEMPERATURES BETWEEN 40°F AND 120°F AT THE TIME OF MIXING. MAINTAIN MORTAR ABOVE
 - FREEZING UNTIL USED IN MASONRY. D. WHEN AMBIENT TEMPERATURE IS BETWEEN 25°F AND 20°F USE HEAT SOURCES ON BOTH SIDES OF THE MASONRY UNDER CONSTRUCTION AND INSTALL WIND BREAKS
 - WHEN WIND VELOCITY IS IN EXCESS OF 15 MPH. E. WHEN AMBIENT TEMPERATURE IS BELOW 20°F, PROVIDE AN ENCLOSURE FOR THE
 - MASONRY UNDER CONSTRUCTION AND USE HEAT SOURCES TO MAINTAIN TEMPERATURES ABOVE 32°F WITHIN THE ENCLOSURE.
 - F. WHEN MEAN DAILY TEMPERATURE IS BETWEEN 40°F AND 32°F, PROTECT COMPLETED MASONRY FROM RAIN OR SNOW BY COVERING WITH A WEATHER-RESISTIVE
 - MEMBRANE FOR 24 HOURS AFTER CONSTRUCTION. G. WHEN MEAN DAILY TEMPERATURE IS BETWEEN 32°F AND 25°F, COMPLETELY COVER COMPLETED MASONRY WITH A WEATHER-RESISTIVE MEMBRANE FOR 24 HOURS AFTER CONSTRUCTION
 - H. WHEN MEAN DAILY TEMPERATURE IS BETWEEN 25°F AND 20°F, COMPLETELY COVER COMPLETED MASONRY WITH INSULATING BLANKETS OR EQUAL PROTECTION FOR 24 HOURS AFTER CONSTRUCTION.
 - I. WHEN MEAN DAILY TEMPERATURE IS BELOW 20°F, MAINTAIN MASONRY TEMPERATURE ABOVE 32°F FOR 24 HOURS AFTER CONSTRUCTION BY ENCLOSURE WITH SUPPLEMENTARY HEAT, BY ELECTRIC HEATING BLANKETS, BY INFRARED HEAT LAMPS,
 - OR BY OTHER ACCEPTABLE METHODS. DO NOT LAY GLASS UNIT MASONRY DURING COLD WEATHER CONSTRUCTION PERIODS AS DEFINED IN ARTICLE 1.8C1 A OR B. MAINTAIN TEMPERATURE OF GLASS UNIT MASONRY ABOVE 40°F FOR THE FIRST 48 HOURS AFTER CONSTRUCTION.

EPOXY MATERIALS FOR CONCRETE CONSTRUCTION

- I. EPOXY MATERIAL FOR USE AS BONDING AGENT BETWEEN EXISTING AND NEW CONCRETE, OR FOR ANCHORAGE OF REINFORCING DOWELS INTO EXISTING CONCRETE SHALL BE A HIGH-MODULUS, HIGH STRENGTH EPOXY BONDING/GROUTING ADHESIVE.
- 2. BONDING EPOXY MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-881 AND AASHTO M-235 STANDARDS
- 3. BONDING EPOXY SHALL BE "HILTI HY-150" BY HILTI OR "SIKADUR 32, HI-MOD" AS MANUFACTURED BY SIKA CHEMICALS CO. (I-800-933-7452, www.sikaUSA.com) OR EQUAL AS APPROVED BY THE ENGINEER
- 4. ALL DETAILS OF MATERIAL INSTALLATION, INCLUDING PREPARATION OF SURFACES, DRILLING FOR EMBEDDED REINFORCING BARS, AND HANDLING, MIXING, & APPLICATION OF FPOXY MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

FIELD-INSTALLED ANCHORS AND FASTENERS

- I. DRILLED ADHESIVE ANCHORS FOR CONCRETE OR GROUT-FILLED MASONRY CONSTRUCTION: A. DRILLED ADHESIVE ANCHORS FOR CONCRETE OR GROUT-FILLED MASONRY CONSTRUCTION SHALL BE HILTI TYPE "HIT HY-150 MAX" ADHESIVE ANCHORS, OR EQUAL AS APPROVED BY THE ENGINEER. (HILTI: I-800-879-8000, www.us.hilti.com) B. ANCHORS SHALL BE SUPPLIED WITH HILTI TYPE "HAS" THREADED ROD ANCHOR BAR
 - WITH HEX NUT AND PLATE WASHERS AS SPECIFIED ON THE DRAWINGS. ALL HARDWARE SHALL BE GALVANIZED. C. SIZES AND SPACING OF ANCHORS SHALL BE AS SHOWN ON THE DRAWINGS AND
 - D. ALL DETAILS OF ADHESIVE ANCHOR INSTALLATION, INCLUDING ANCHOR EMBEDMENT. DRILLED HOLE SIZE, AND CURING SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 2. DRILLED ADHESIVE ANCHORS FOR NON-GROUTED MASONRY CONSTRUCTION: (IF REQUIRED) A. DRILLED ADHESIVE ANCHORS FOR MASONRY CONSTRUCTION SHALL BE HILTI TYPE "HIT HY-20" ADHESIVE ANCHORS, OR EQUAL AS APPROVED BY THE ENGINEER. (HILTI:
 - I-800-879-8000, www.us.hilti.com) B. ANCHORS SHALL INCLUDE SCREEN TUBE FOR ADHESIVE, SUITABLE FOR USE ON HOLLOW CONCRETE BLOCK CONSTRUCTION (CMU) IN ACCORDANCE WITH
 - MANUFACTURER'S RECOMMENDATIONS. ANCHORS SHALL BE SUPPLIED WITH HILTI TYPE "HAS" THREADED ROD ANCHOR BAR, WITH HEX NUT AND PLATE WASHERS AS SPECIFIED ON THE DRAWINGS. ALL
 - HARDWARE SHALL BE GALVANIZED D. SIZES AND SPACING OF ANCHORS SHALL BE AS SHOWN ON THE DRAWINGS AND
 - E. ALL DETAILS OF ADHESIVE ANCHOR INSTALLATION, INCLUDING ANCHOR EMBEDMENT. DRILLED HOLE SIZE, AND CURING SHALL BE IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

STRUCTURAL STEEL

- STRUCTURAL AND MISCELLANEOUS STEEL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
- 2. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION - ALLOWABLE STRESS DESIGN", LATEST EDITION.
- 3. STRUCTURAL STEEL MATERIALS: A. ALL STRUCTURAL STEEL "W" SHAPES SHALL CONFORM TO ASTM A992.
- B. ALL OTHER SHAPES, BARS, AND PLATES SHALL CONFORM TO ASTM A36 (MINIMUM). C. ALL STRUCTURAL STEEL "HSS" SHAPES SHALL CONFORM TO ASTM A500,
- 4. ALL STRUCTURAL STEEL WITH ASSOCIATED ANCHORAGE/HARDWARE, EXPOSED TO WEATHER, SHALL BE GALVANIZED.
- 5. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING WELDS OR HIGH-STRENGTH BOLTS. CONNECTION MATERIALS SHALL BE AS FOLLOWS: A. WELDS SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) STANDARD DI.I, "STRUCTURAL WELDING CODE - STEEL", LATEST EDITION. WELDING ELECTRODES SHALL BE E70-SERIES UNLESS OTHERWISE NOTED. B. HIGH STRENGTH BOLTS - ASTM A325, TYPE X, GALVANIZED.
 - C. ANCHOR BOLTS HEADED BOLTS PER ASTM F1554 GRADE 36, GALVANIZED.
- 5. SHOP AND FIELD WELDING SHALL BE PERFORMED BY WELDERS THAT ARE CERTIFIED (AWS "STANDARD QUALIFICATION PROCEDURE") TO PERFORM THE TYPE OF WORK REQUIRED. WELDS SHALL CONFORM TO AWS DI.I. PROVIDE THE MINIMUM WELD SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9th EDITION, WHEN WELD SIZES ARE NOT SHOWN. FIELD WELDS SHALL BE TESTED IN CONFORMANCE WITH AWS D1.1
- 6. STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- 7. ALL ASPECTS OF STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R, "STEEL ERECTION" SECTIONS 1926.750 THRU 761, AND APPENDICES A THRU H.
- 8. WHERE CONNECTION DETAILS ARE NOT SHOWN, THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SHALL SUBMIT DETAILS ON SHOP DRAWINGS FOR APPROVAL. THE CONNECTIONS SHALL BE SUFFICIENT TO SUPPORT 100% OF THE CAPACITY OF THE BEAM ASSUMED UNIFORMLY LOADED AT THE INDICATED SPAN. THE MINIMUM STRUCTURAL BOLT SIZE SHALL BE 3/4"Ø. A MINIMUM OF TWO BOLTS SHALL BE USED IN ALL CONNECTIONS.
- 9 THE DRAWINGS REPRESENT THE PERMANENT FRAMING AND FINAL DETAILS WHERE SHOWN THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, TEMPORARY BRACING, SHORING, AND RECOMMENDED ERECTION PROCEDURES.
- 10 FINISHING OF STEEL
- A. UNLESS OTHERWISE NOTED, ALL STEEL SECTIONS, SHAPES, PLATES, AND FABRICATIONS SHALL RECEIVE FABRICATOR'S STANDARD PRIME PAINT FINISH, AS COMPATIBLE WITH FINISH PAINTING IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- B. WHERE SPECIFICALLY SPECIFIED ON THE DESIGN DRAWINGS, STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123
- C. ALL STEEL HARDWARE FOR USE ON GALVANIZED STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 D. GALVANIZED STEEL DAMAGED DURING SHIPMENT, ERECTION, OR FIELD WELDING
- SHALL BE REPAIRED USING "ZRC COLD GALVANIZING COMPOUND" OR EQUAL AS APPROVED BY THE ENGINEER. (1-800-831-3275, www.zrcworldwide.com) E. PRIME-PAINTED STEEL DAMAGED DURING SHIPMENT, ERECTION, OR FIELD WELDING
- SHALL BE TOUCHED UP USING THE SAME PAINT MATERIALS AND PROCEDURES AS USED FOR ORIGINAL SHOP FINISHING. STEEL FABRICATOR SHALL PROVIDE SUFFICIENT ADDITIONAL PAINT FOR THE REQUIRED FIELD TOUCH-UPS.

METAL DECK

- I. DECK SHALL BE MANUFACTURED, ERECTED AND FASTENED IN COMPLETE ACCORDANCE WITH THE APPROVED SHOP DRAWINGS, AND WITH THE RECOMMENDATIONS OF THE STEEL DECK INSTITUTE (SDI) "MANUAL OF CONSTRUCTION WITH STEEL DECK".
- 2. ALL ASPECTS OF DECK INSTALLATION SHALL BE IN COMPLETE ACCORDANCE WITH THE APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R, "STEEL ERECTION", SECTIONS 1926.750-761 AND APPENDICES A THRU H. MAXIMUM UNSECURED AREA OF DECK AT ANY TIME DURING CONSTRUCTION SHALL NOT EXCEED 3000 Sq.Ft.
- 3. STRUCTURAL METAL DECK SHALL BE CORRUGATED GALVANIZED STEEL DECK WITH PROFILES AND MATERIAL THICKNESSES AS INDICATED ON THE DRAWINGS.
- 4. DECK SHALL BE FABRICATED OF ASTM A653, GRADE 33 STEEL MATERIAL, WITH YIELD STRESS, Fy = 33 KSI MINIMUM.
- 5. GALVANIZING SHALL BE PER ASTM A653, G90 CLASSIFICATION.
- 6. ALL ROOF DECK SHALL BE INSTALLED WITH ALL PANELS SPANNING MINIMUM OF THREE (3) SUPPORT BEAMS ("2-SPAN CONDITION") IN ALL LOCATIONS.
- 7. DECK SHALL BE WELDED TO STEEL FRAMING OR JOISTS, IN ACCORDANCE WITH THE
- APPROVED SHOP DRAWINGS AND SDI AND FM STANDARDS.
- 8. DECK ATTACHMENT DETAILS: A. DECK ATTACHMENT SHALL BE "36/4" PATTERN IN ACCORDANCE WITH SDI STANDARDS.
- B. DECK ATTACHMENT TO STEEL FRAMING SHALL BE BY MEANS OF
- 5⁄8" WELDS @ 12" O.C. (TYPICAL) C. SIDE LAP "STITCH FASTENING" SHALL BE BY MEANS OF #10 "BUILDEX" SCREWS @ 3'-0" O.C. MAX.
- D. METAL DECK SHALL BE PROVIDED IN THE LONGEST POSSIBLE SECTIONS TO MINIMIZE THE NUMBER OF END SPLICES
- REQUIRED, WHERE END LAPS ARE REQUIRED, PANELS SHALL BE LAPPED BY 2" MINIMUM. NO ADDITIONAL FASTENING OF
- END LAPS IS REQUIRED, OTHER THAN AS NOTED ABOVE.

OPEN-WEB STEEL JOISTS

FABRICATION AND INSTALLATION OF ALL STEEL JOISTS SHALL CONFORM TO THE LATEST SPECIFICATIONS OF, AND THE JOISTS SHALL BE APPROVED BY THE STEEL JOIST INSTITUTE (SJI).

9. STEEL DECK SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

- ALL ASPECTS OF STEEL JOIST DETAILING, FABRICATION, AND ERECTION SHALL BE IN COMPLETE ACCORDANCE WITH ALL REQUIREMENTS OF APPLICABLE OSHA STANDARDS, INCLUDING 29CFR PART 1926, SUBPART R, "STEEL ERECTION", SECTIONS 1926.750 THRU 761 AND APPENDICES A THRU H.
- 3. MINIMUM BEARING LENGTHS FOR ALL JOISTS SHALL BE IN ACCORDANCE WITH SJI STANDARDS.
- 4. PROVIDE BRIDGING IN ACCORDANCE WITH SJI STANDARDS FOR SIZE, SPACING, CONFIGURATION, AND NUMBER OF BRIDGING ROWS FOR THE INDICATED JOIST SPANS AND JOIST CHORD SIZES.
- 5. ALL BRIDGING SHALL BE PROVIDED BY THE JOIST MANUFACTURER.
- 6. ANY BRIDGING CUT BY OTHER TRADES SHALL BE REPLACED AS CLOSE AS POSSIBLE TO THE ORIGINAL LINE, AND CARRIED TO THE SECOND JOIST EACH SIDE OF THE CUT. ALL BRIDGING SHALL BE WELDED TO STRUCTURAL STEEL BEAMS AT ENDS.
- 7. ALL CLIPS AND CONNECTIONS SHALL BE SHOP-WELDED.
- 8. NO FIELD WELDING TO JOISTS (EXCEPT BRIDGING) SHALL BE ALLOWED WITHOUT SPECIFIC APPROVAL OF THE ENGINEER, OR AS NOTED IN THE DETAILS.
- 9. NO JOISTS SHALL BE MODIFIED IN FIELD WITHOUT SPECIFIC PERMISSION OF THE ENGINEER.
- 10. ALL DUCTS AFFECTING OR PASSING THROUGH JOISTS SHALL BE INDICATED ON SHOP DRAWINGS. ADJUST SPACING AND BRIDGING AS REOUIRED
- 11. ALL STEEL JOISTS SHALL BE PAINTED WITH TT-P-636 (RED OXIDE). SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS. ALL AREAS OF FINISH DAMAGED DURING SHIPPING, ERECTION, OR WELDING SHALL BE TOUCHED UP IN FIELD TO MATCH THE SHOP PAINT.
- 12. NO LOADS EXCEEDING 40 LBS. MAY BE HUNG FROM JOISTS WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE ENGINEER. LOADS LESS THAN 40 LBS. MAY BE HUNG AT BOTTOM PANEL POINTS ONLY. ANY COSTS INCURRED IN REINFORCING OF JOISTS SHALL BE THE RESPONSIBILITY OF THE PRIME CONTRACTOR REQUIRING ADDED LOADS.
- 13. SIZES SHOWN ARE MINIMUM SIZES REQUIRED. FINAL SIZES MAY HAVE TO BE ADJUSTED PER FINAL MANUFACTURER DESIGN.
- 14. SUBMITTALS PRIOR TO START OF FABRICATION: A. CATALOG USED FOR THE MANUFACTURE OF JOISTS, INDICATING THE LOADING TABLES AND SIZES OF ALL MEMBERS USED.
 - INCLUDE ERECTION PLAN WITH LAYOUT, DESIGNATION, NUMBER, TYPE, LOCATION, AND SPACING OF IOISTS • INCLUDE JOINING AND ANCHORAGE DETAILS, BRACING, BRIDGING, AND JOIST
 - ACCESSORIES; SPLICE AND CONNECTION LOCATIONS AND DETAILS; AND ATTACHMENTS TO OTHER CONSTRUCTION. • INDICATE LOCATIONS AND DETAILS OF BEARING PLATES TO BE EMBEDDED IN OTHER CONSTRUCTION.
- C. COMPREHENSIVE ENGINEERING ANALYSIS OF SPECIAL JOINTS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR ITS PREPARATION.

STRUCTURAL SPECIAL INSPECTIONS

- PROVIDE SPECIAL INSPECTIONS OF MATERIALS AND WORK AS REQUIRED, IN ACCORDANCE WITH NYS BC CHAPTER 17, AS NOTED BELOW.
- 2. SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE CODE OFFICIAL, AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CODE OFFICIAL AND TO THE ENGINEER OR ARCHITECT OF RECORD. A FINAL REPORT OF INSPECTIONS SHALL BE SUBMITTED, DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY NOTED DISCREPANCIES.
- INSPECTIONS:
- A. STRUCTURAL STEEL CONSTRUCTION (SEC. 1705.2). B. CONCRETE CONSTRUCTION (SEC. 1705.3) C. MASONRY CONSTRUCTION (SEC. 1705.4)

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