GENERAL

THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS ONLY. THE METHODS, MEANS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS, TIEDOWNS AND OTHER ITEMS NEEDED FOR ERECTION.

THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS.

THE GENERAL NOTES ON THE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE FULL WRITTEN MATERIAL SPECIFICATIONS (IF ANY) FOR THE PROJECT. IF A DISCREPANCY OCCURS BETWEEN THE DRAWINGS AND SPECIFICATIONS, SEE FAR CLAUSE 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.

NO PENETRATIONS THROUGH STRUCTURAL ELEMENTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, SHALL BE MADE WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

CONCRETE MIX DESIGN SUBMITTAL

THE CONTRACTOR SHALL SUBMIT FOR THE REVIEW OF THE STRUCTURAL ENGINEER A MIX DESIGN FOR EACH PROPOSED CLASS OF CONCRETE. EACH MIX DESIGN SHALL BE IDENTIFIED BY A MIX NUMBER OR OTHER UNIQUE IDENTIFICATION. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGNS NOR USE ANY CONCRETE OTHER THAN THE APPROVED MIX DESIGNS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. MIX DESIGN SUBMITTALS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. MIX DESIGN NUMBER OR UNIQUE IDENTIFICATION AND INTENDED LOCATION OF PLACEMENT.
2. CEMENT TYPE, PROPORTION AND NAME OF MANUFACTURER.
3. FLY ASH PROPORTION (WHEN USED), LABORATORY ANALYSIS CERTIFICATION, AND NAME AND LOCATION OF SUPPLIER.
4. COURSE AGGREGATE PROPORTION, GRADATION REPORT, NAME AND LOCATION OF SUPPLIER.
5. FINE AGGREGATE PROPORTION, GRADATION REPORT, NAME AND LOCATION OF SUPPLIER.
6. MIXING WATER PROPORTION AND SOURCE.
7. ADMIXTURE DOSAGES, PRODUCT NAME(S) AND MANUFACTURER NAME(S).
8. FIBER REINFORCEMENT DOSAGE (WHEN USED), PRODUCT NAME AND MANUFACTURER NAME.
9. DESIGN 28-DAY COMPRESSIVE STRENGTH (F'C).
10. DESIGN SLUMP RANGE.
11. DESIGN AIR-ENTRAINMENT (FOR CONCRETE REQUIRING ENTRAINED AIR).
12. STATISTICAL ANALYSIS OF LABORATORY STRENGTH TEST DATA IN ACCORDANCE WITH "STANDARD DEVIATION" DETERMINATION OUTLINED IN ACI 318.

SHOP DRAWING SUBMITTALS

THE CONTRACTOR SHALL PREPARE DETAILED SHOP DRAWINGS TO ENABLE HIM TO FABRICATE, ERECT AND CONSTRUCT ALL PARTS OF THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THESE SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS, ACCURACY AND FIT OF WORK.

ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE STRUCTURAL ENGINEER. DRAWINGS SUBMITTED WITHOUT CONTRACTOR'S REVIEW WILL BE RETURNED UNCHECKED.

SUBMIT HARD COPIES OR ELECTRONIC VERSIONS OF SHOP DRAWINGS. FOR HARD COPY OPTION, SUBMIT A MINIMUM OF TWO COPIES OF SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW (ONE COPY SHALL BE RETAINED BY THE STRUCTURAL ENGINEER). FOR ELECTRONIC OPTION, SUBMIT SHOP DRAWINGS IN ADOBE PDF FORMAT.

SUBMIT SHOP DRAWINGS FOR EACH OF THE FOLLOWING ITEMS:

1. CONCRETE REINFORCEMENT
2. CONCRETE MASONRY REINFORCEMENT
3. STRUCTURAL STEEL (INCLUDING DESIGN CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS CONSTRUCTED FOR ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS)
4. STEEL DECK
5. PRECAST CONCRETE COMPONENTS (PRECAST LINTELS, ARCHITECTURAL PRECAST)

PRODUCT DATA SUBMITTALS

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL PRODUCT DATA FOR THE SPECIFIC ITEMS LISTED BELOW. CONTRACTOR SHALL NOT USE PRODUCTS OTHER THAN THOSE SUBMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

MANUFACTURER'S TRADE NAMES AND NUMBERS USED HEREIN ARE ONLY TO IDENTIFY COLORS, FINISHES, TEXTURES, AND PATTERNS AS A BASIS OF DESIGN. PRODUCTS OF AUTHORIZED EQUAL MANUFACTURER'S EQUIVALENT TO COLORS, FINISHES, TEXTURES, AND PATTERNS OF MANUFACTURERS LISTED THAT MEET REQUIREMENTS OF TECHNICAL SPECIFICATIONS IN EVERY RESPECT MAY BE ACCEPTABLE WITH SUBMITTAL OF A COMPLETED SUBSTITUTION REQUEST CONTAINING ALL PRODUCT DATA, TESTING AND ACTUAL SAMPLES, AND UPON APPROVAL IN WRITING BY CONTRACTING OFFICER.

SUBMIT HARD COPIES OR ELECTRONIC VERSIONS OF PRODUCT DATA. FOR HARD COPY OPTION, SUBMIT A MINIMUM OF TWO COPIES OF PRODUCT DATA TO THE STRUCTURAL ENGINEER FOR REVIEW (ONE COPY SHALL BE RETAINED BY THE STRUCTURAL ENGINEER). FOR ELECTRONIC OPTION, SUBMIT PRODUCT DATA IN ADOBE PDF FORMAT.

1. FIBER REINFORCEMENT FOR CONCRETE
2. DIAMOND PLATE DOWELS FOR SLABS ON GRADE
3. CONCRETE CURING COMPOUND
4. CONCRETE JOINT SEALANT
5. WATER STOPS
6. MASONRY JOINT REINFORCEMENT
7. EXPANSION ANCHORS
8. ADHESIVE ANCHORS
9. NON-SHRINK GROUT

FOUNDATIONS

FOUNDATION EXCAVATIONS AND SOIL RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PROJECT NUMBER 4-15-0210 PREPARED BY PATRIOT ENGINEERING AND ENVIRONMENTAL, INC. DATED MARCH 19, 2015.

FOUNDATIONS HAVE BEEN DESIGNED BASED ON ASSUMED ALLOWABLE CAPACITIES INDICATED BELOW. CONTRACTOR SHALL ENGAGE A LICENSED GEOTECHNICAL ENGINEER TO REVIEW THE SOIL CONDITIONS AT THE SITE AS NECESSARY TO CONFIRM THE ALLOWABLE CAPACITIES PRIOR TO PLACEMENT OF THE FOUNDATIONS. CONFIRMATION OF THE ACCEPTABILITY OF THE SOILS SHALL BE REPORTED IN WRITING TO THE STRUCTURAL ENGINEER.

IF ACTUAL ALLOWABLE CAPACITIES ARE FOUND TO BE LESS THAN THE ASSUMED VALUES, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER IMMEDIATELY AND SHALL NOT PROCEED WITH FOUNDATION CONSTRUCTION WITHOUT REVIEW BY THE STRUCTURAL ENGINEER.

FOOTING DESIGN NET ALLOWABLE BEARING PRESSURE:

WALL FOOTINGS: 2500 PSF

FOUNDATIONS AND SOILS RELATED WORK SHALL BE INSPECTED BY A LICENSED GEOTECHNICAL ENGINEER. WRITTEN FIELD REPORTS SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER AS SOON AS THEY BECOME AVAILABLE.

FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, SHALL BE REPORTED TO THE STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

EXCAVATIONS FOR SPREAD FOOTINGS, COMBINED FOOTINGS, CONTINUOUS FOOTINGS AND MAT FOUNDATIONS SHALL BE CLEANED AND HAND TAMPED TO UNIFORM SURFACE AND SHALL BE PROTECTED AND MAINTAINED UNIFORM UNTIL CONCRETE IS PLACED.

BELOW-GRADE WALLS

DO NOT BACKFILL AGAINST BELOW-GRADE CONCRETE (OR MASONRY) WALLS UNTIL THE CONCRETE (OR MASONRY ASSEMBLAGE) HAS REACHED ITS 28-DAY COMPRESSIVE STRENGTH.

WHERE BACKFILL IS REQUIRED ON BOTH SIDES OF BELOW-GRADE WALLS, BACKFILL EVENLY ON EACH SIDE OF EACH WALL TO PREVENT UNBALANCED SOIL LOADS AGAINST THE WALL.

UNLESS NOTED OTHERWISE, DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL THE BASEMENT AND GROUND FLOOR SLABS HAVE BEEN COMPLETELY INSTALLED AND REACHED THEIR 28-DAY COMPRESSIVE STRENGTH AND ALL FLOOR FRAMING AND SLAB CONNECTIONS TO THE BASEMENT WALLS HAVE BEEN COMPLETELY INSTALLED.

WHERE BASEMENT WALLS OCCUR, BACKFILL EVENLY ON ALL SIDES OF THE BUILDING TO PREVENT UNBALANCED SOIL LOADS AGAINST THE BASEMENT STRUCTURE, UNLESS NOTED OTHERWISE.

CONCRETE

REINFORCED CONCRETE HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318) AND COMMENTARY (ACI 318R).

MIXING, TRANSPORTING, AND PLACING OF CONCRETE SHALL CONFORM TO THE LATEST EDITION OF THE SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301). READY-MIXED CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C94. IN CASE OF A DISCREPANCY, THE PLANS AND SPECIFICATIONS SHALL GOVERN.

CEMENT SHALL CONFORM TO ASTM C150, TYPE I, UNO.

FLY ASH SHALL CONFORM TO ASTM C618, CLASS C OR F. THE RATIO OF THE AMOUNT (BY WEIGHT) OF FLY ASH TO TOTAL CEMENTITIOUS MATERIALS IN THE MIX SHALL NOT EXCEED 25 PERCENT.

NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C33.

WATER-REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494.

AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260 AND SHALL BE CERTIFIED BY THE MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES.

CALCIUM CHLORIDE ADMIXTURES OR ADMIXTURES CONTAINING MORE THAN 0.1 PERCENT CHLORIDE IONS SHALL NOT BE USED.

IN COLD WEATHER CONDITIONS, MIXING, PLACING, FINISHING, CURING AND PROTECTION OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 306R, COLD WEATHER CONCRETING.

IN HOT WEATHER CONDITIONS, MIXING, PLACING, FINISHING, CURING AND PROTECTION OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 305R, HOT WEATHER CONCRETING.

USE OF CONSTRUCTION JOINTS AT LOCATIONS OTHER THAN THOSE INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

SLUMP FOR PUMPED CONCRETE SHALL BE MEASURED AT POINT OF DISCHARGE.

NORMAL WEIGHT CONCRETE SHALL BE USED IN THE FOLLOWING AREAS AND SHALL HAVE THE PROPERTIES AS SHOWN BELOW:

FOUNDATIONS

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI
2. MAXIMUM SLUMP: 4 INCHES
3. MINIMUM CEMENTITIOUS MATERIALS CONTENT: 470 LB./CU. YD. (USE TYPE II SULFATE RESISTANT CEMENT)
4. MAXIMUM SLUMP FOR CONCRETE CONTAINING HIGH-RANGE WATER-REDUCING ADMIXTURE: 8 INCHES (AFTER ADMIXTURE IS ADDED TO CONCRETE WITH 2 TO 4 INCH SLUMP).
5. MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO: 0.48
6. MAXIMUM COARSE AGGREGATE SIZE: 1 1/2 INCHES
7. AIR CONTENT: N/A

RETAINING WALLS AND CURBS/SIDEWALKS/SLABS EXPOSED TO DE-ICERS

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI
2. MAXIMUM SLUMP: 4 INCHES
3. MINIMUM CEMENTITIOUS MATERIALS CONTENT: 517 LB./CU. YD. (USE TYPE II SULFATE RESISTANT CEMENT)
4. MAXIMUM SLUMP FOR CONCRETE CONTAINING HIGH-RANGE WATER-REDUCING ADMIXTURE: 8 INCHES (AFTER ADMIXTURE IS ADDED TO CONCRETE WITH 2 TO 4 INCH SLUMP).
5. MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO: 0.45
6. MAXIMUM COARSE AGGREGATE SIZE: 1 INCH
7. AIR CONTENT: 6.0% +/- 1%

SLABS ON GRADE

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI
2. MAXIMUM SLUMP: 4 INCHES
3. MINIMUM CEMENTITIOUS MATERIALS CONTENT: 470 LB./CU. YD. (USE TYPE II SULFATE RESISTANT CEMENT)
4. MAXIMUM SLUMP FOR CONCRETE CONTAINING HIGH-RANGE WATER-REDUCING ADMIXTURE: 8 INCHES (AFTER ADMIXTURE IS ADDED TO CONCRETE WITH 2 TO 4 INCH SLUMP).
5. MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO: 0.48
6. MAXIMUM COARSE AGGREGATE SIZE: 1 INCH
7. AIR CONTENT: 6% +/- 1%
8. HIGH RANGE WATER REDUCING ADMIXTURE AND FIBER REINFORCING REQUIRED

CONCRETE SLABS ON GRADE

SLABS ON GRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION (ACI 302.1R).

PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE.

PROVIDE CURING OF CONCRETE SLABS IMMEDIATELY AFTER FINISHING USING A SPRAYED ON DISSIPATING-RESIN LIQUID CURING COMPOUND CONFORMING TO ASTM C309, UNLESS NOTED OTHERWISE. ALL SCUFFS OR ABRASIONS TO THE CURING MEMBRANE SHALL BE RECOATED DAILY. OTHER CURING METHODS MAY BE USED WITH APPROVAL BY THE STRUCTURAL ENGINEER.

UNLESS SHOWN OR NOTED OTHERWISE, PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS-ON-GRADE AT A MAXIMUM SPACING OF 36 TIMES THE SLAB THICKNESS. PROVIDE JOINTS AT ALL COLUMN LOCATIONS. LOCATE JOINTS TO ELIMINATE RE-ENTRANT CORNERS AND TO CREATE SQUARE OR RECTANGULAR SECTIONS WITH MAXIMUM LONG SIDE TO SHORT SIDE RATIO OF 1.5 TO 1,

CONTROL JOINTS IN SLABS ON GRADE SHALL NOT RECEIVE JOINT FILLER MATERIAL UNLESS NOTED OTHERWISE.

REINFORCING STEEL

REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI.

REINFORCING BAR DETAILING, FABRICATING, AND PLACING SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING STANDARDS: ACI 301, ACI 315, ACI 318 AND ACI DETAILING MANUAL (SP66).

UNLESS A GREATER AMOUNT OF COVER IS INDICATED ON THE DRAWINGS, PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3 INCHES
#6 BARS AND LARGER EXPOSED TO EARTH OR WEATHER:	2 INCHES
#5 BARS AND SMALLER EXPOSED TO EARTH OR WEATHER:	1-1/2 INCHES
BEAM AND COLUMN TIES, STIRRUPS AND SPIRALS:	1-1/2 INCHES
ELEVATED SLAB BARS NOT EXPOSED TO EARTH OR WEATHER:	3/4 INCH

REINFORCING STEEL SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER.

WHERE LAP SPLICE LENGTHS ARE NOT SHOWN OR NOTED, PROVIDE A CLASS "B" LAP.

ALL 90 DEGREE AND 180 DEGREE BENDS SHOWN ON THE DRAWINGS SHALL BE STANDARD HOOKS, UNLESS NOTED OTHERWISE.

PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT CORNERS OF ALL WALLS AND GRADE BEAMS. LAP SPLICE CORNER BARS WITH STRAIGHT BARS.

UNLESS OTHERWISE SHOWN OR NOTED, PROVIDE 2-#5 BARS (ONE EACH FACE) AROUND UNFRAMED OPENINGS IN CONCRETE WALLS AND GRADE BEAMS. PLACE BARS PARALLEL TO THE SIDES OF THE OPENING AND EXTEND 24" BEYOND CORNERS.

FIBER REINFORCEMENT

FIBER REINFORCEMENT SHALL BE 3/4" LONG, VIRGIN (NON-RECYCLED) NYLON OR POLYPROPYLENE FIBERS, INTRODUCED INTO THE CONCRETE MIX AT THE BATCH PLANT, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DOSAGE SHALL BE 1.5 POUNDS PER CUBIC YARD OF CONCRETE.

CONCRETE TESTING

MAKE ONE SET OF TEST CYLINDERS IN ACCORDANCE WITH ASTM C31 FOR EACH DAY'S POUR AND FOR EACH 100 CUBIC YARDS. EACH SET SHALL INCLUDE ONE SPECIMEN TESTED AT 7 DAYS, 2 SPECIMENS TESTED AT 28 DAYS AND ONE SPECIMEN RETAINED IN RESERVE TO BE TESTED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. SPARE CYLINDER MAY BE DISCARDED 90 DAYS AFTER CASTING UNLESS DIRECTED OTHERWISE BY THE STRUCTURAL ENGINEER. THIS SET OF TEST CYLINDERS SHALL BE PROTECTED AGAINST FREEZING.

WHEN THE AMBIENT TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEGREES DURING THE COURSE OF A CONCRETE POUR OR SUBSEQUENT CURING PROCESS, AN ADDITIONAL SET OF CONCRETE TEST CYLINDERS SHALL BE MADE AND TESTED. THESE CYLINDERS SHALL BE STORED IMMEDIATELY ADJACENT TO, AND CURED UNDER THE SAME CONDITIONS AS THE BUILDING CONCRETE. SPECIAL CURING BOXES ARE NOT PERMITTED FOR THESE TEST CYLINDERS.

FORWARD COPIES OF TEST RESULTS TO THE ARCHITECT, STRUCTURAL ENGINEER, READY-MIX SUPPLIER AND CONTRACTOR WITHIN 24 HOURS AFTER TESTING.

MASONRY

CONCRETE MASONRY HAS BEEN DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES (ACI 530).

CONCRETE MASONRY SHALL CONSIST OF HOLLOW UNITS CONFORMING TO THE REQUIREMENTS OF ASTM C90, WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI. CONCRETE MASONRY ASSEMBLAGES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'M) OF 1,500 PSI AT 28 DAYS.

MORTAR SHALL BE TYPE S PROPORTIONED IN ACCORDANCE WITH ASTM C270.

GROUT FOR REINFORCED MASONRY SHALL BE PROPORTIONED IN ACCORDANCE WITH ASTM C476. COARSE AND FINE AGGREGATES SHALL CONFORM TO ASTM C404. USE COARSE GROUT FOR ALL GROUTING EXCEPT HIGH-LIFT POURS DEFINED BY ACI 530-05 TABLE 1.16.1, WHERE FINE GROUT SHALL BE USED.

PROVIDE 9-GAUGE GALVANIZED STEEL WIRE JOINT REINFORCEMENT IN ALL MASONRY CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS AND BE LAPPED EIGHT INCHES AT SPLICES. CUT REINFORCEMENT AT ALL CONTROL AND EXPANSION JOINTS. SPACE REINFORCEMENT AT 8" ON CENTER FOR PARAPETS AND BELOW GROUND FLOOR ELEVATION, ELSEWHERE SPACE REINFORCEMENT AT 16 INCHES ON CENTER. PROVIDE HOOK & EYE REINFORCING FOR MASONRY VENEER ANCHORS AT 16" OC EACH WAY AND 8" OC AT OPENINGS.

BEAMS AND LINTELS SHALL BEAR A MINIMUM OF 8 INCHES ONTO SUPPORTING MASONRY, UNLESS NOTED OTHERWISE. BEARING FOR ALL BEAMS, LINTELS, JOISTS, ETC. SHALL BE GROUTED SOLID A MINIMUM OF ONE COURSE (8 INCHES) BELOW BEARING ELEVATION, UNLESS NOTED OTHERWISE.

EXPANSION ANCHORS

EXPANSION ANCHORS SHALL BE CARBON STEEL ANCHORS AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR AN EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER AND SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

EXPANSION ANCHORS SHALL NOT BE INSTALLED IN CONCRETE UNTIL IT HAS ATTAINED ITS SPECIFIED MINIMUM 28 DAY COMPRESSIVE STRENGTH.

ADHESIVE ANCHORS

ADHESIVE ANCHORS SHALL BE HILTI "HIT HY200" FOR SOLID SUBSTRATE AND HILTI "HIT HY70" FOR HOLLOW SUBSTRATE OR AN EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER, UNLESS NOTED OTHERWISE ON PLANS. ANCHORS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS BY INSTALLERS TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

MINIMUM EMBEDMENT DEPTH SHALL BE 8 BOLT DIAMETERS UNLESS NOTED OTHERWISE.

NON-SHRINK GROUT

GROUT SHALL BE A NON-METALLIC, SHRINKAGE RESISTANT (WHEN TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ASTM C827 OR C1107-C621), PREMIXED, NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING PORTLAND CEMENT, SILICA SANDS, SHRINKAGE COMPENSATING AGENTS AND FLUIDITY IMPROVING COMPOUNDS. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'C) OF 5,000 PSI IN 28 DAYS.

WATERSTOPS

SELF-EXPANDING STRIP WATER STOPS SHALL BE VOLCLAY WATERSTOP-RX 101 UNLESS NOTED OTHERWISE. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

PVC WATERSTOPS

PROVIDE FACTORY MADE WATERSTOP FABRICATIONS FOR ALL CHANGES OF DIRECTION, INTERSECTIONS, AND TRANSITIONS LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR THE FIELD.

PROVIDE HOG RINGS OR GROMMETS SPACED AT 12 INCHES ON CENTER ALONG LENGTH OF WATERSTOP.

PROVIDE TEFLON COATED THERMOSTATICALLY CONTROLLED WATERSTOP SPLICING IRONS FOR FIELD BUTT SPLICES.

FIELD BUTT SPLICES SHALL BE HEAT FUSED WELDED USING A TEFLON COATED THERMOSTATICALLY CONTROLLED WATERSTOP SPLICING IRON AT APPROXIMATELY 380 DEGREES F. FOLLOW APPROVED MANUFACTURER RECOMMENDATIONS.

LAPPING OF WATERSTOP, USE OF ADHESIVES, OR SOLVENTS SHALL NOT BE ALLOWED.

CENTER WATERSTOP IN JOINT AND SECURE WATERSTOP IN CORRECT POSITION USING HOG RINGS OR GROMMETS SPACED AT 12 INCHES ON CENTER ALONG THE LENGTH OF THE WATERSTOP AND WIRE TIE TO ADJACENT REINFORCING STEEL.

MASTIC COATING

MASTIC COATING FOR PROTECTION OF INDICATED ITEMS SHALL BE BITUMASTIC 50 COAL TAR MASTIC BY CARBOLINE OR EQUIVALENT SUBSTITUTE APPROVED BY THE STRUCTURAL ENGINEER. INSTALL AT LOCATIONS INDICATED ON DRAWINGS.

UNLESS NOTED OTHERWISE, APPLY MASTIC TO A COATING THICKNESS OF 18 MILS. PROVIDE FULL COVERAGE OVER ITEMS INDICATED TO RECEIVE COATING.

STEEL JOISTS

MATERIALS: ALL STEEL IN (CK, CH, ORDLN) JOISTS ARE TO HAVE A MAXIMUM FY = 50,000 PSI. THE MINIMUM ALLOWABLE STEEL IS FY = 36,000 PSI.

SPECIFICATIONS: FABRICATION AND ERECTION ARE TO BE IN ACCORDANCE WITH REQUIREMENTS OF THE STEEL JOIST INSTITUTE (SJI).

MANUFACTURER IS TO BE A MEMBER OF SJI.

BRIDGING: SPACING SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS, BUT NOT LESS THAN THAT REQUIRED BY SJI. UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING BRIDGING:

K-SERIES: USE HORIZONTAL BRIDGING, EXCEPT USE DIAGONAL CENTER ROW WHERE FIVE ROWS ARE SHOWN FOR SPANS OVER 40 FEET.

HORIZONTAL BRIDGING MAY BE WELDED TO THE JOISTS.

DIAGONAL BRIDGING IS TO BE BOLTED TO THE JOISTS AND AT THEIR POINT OF INTERSECTION. ENDS OF DIAGONAL BRIDGING ARE TO BE ANCHORED WITH HORIZONTAL BRIDGING UNLESS SHOWN OTHERWISE. HORIZONTAL BRIDGING IN NO MORE THAN TWO CONSECUTIVE BAYS MAY BE USED TO PROVIDE PASSAGE FOR DUCTWORK.

ANCHOR BRIDGING TO INTERSECTING STRUCTURAL STEEL OR MASONRY WALLS.

BEARING: WELD ALL JOISTS TO SUPPORTING STEEL WITH 1 1/2 INCHES OF 3/16"Ø INCH FILLET WELD FOR OPEN-WEB STEEL JOISTS AND 2 INCHES OF 1/4-INCH FILLET WELD FOR LONG-SPAN JOISTS, EACH SIDE OF BEARING. JOISTS ARE TO BE FIELD-BOLTED AT COLUMN LINES. EXTEND BOTTOM CHORDS OF THE SAME JOISTS AND BOLT THEM TO THE BEAM OR COLUMN.

EXTEND ALL JOISTS A MINIMUM OF ONE INCH PAST CENTERLINE OR SUPPORTING MEMBER WHERE POSSIBLE. BEARINGS ARE TO BE IN ACCORDANCE WITH DRAWINGS OR, WHERE SPECIAL INSTRUCTION IS NOT GIVEN, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF SJI.

MISCELLANEOUS: ADJACENT JOISTS OF THE SAME DEPTH ARE TO HAVE WEB MEMBERS IN LINE TO PERMIT PASSAGE OF MECHANICAL DUCTS.

SEE DRAWINGS FOR SPECIAL BEARING SHOES, EXTENDED ENDS AND OTHER JOIST DETAILS.

STRUCTURAL STEEL

STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE ANSI/AISC 360 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST EDITION WITH AMENDMENTS, AND THE AISC 303 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, LATEST EDITION WITH AMENDMENTS.

STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, 50 KSI.

STRUCTURAL STEEL PLATES AND ROLLED SHAPES OTHER THAN WIDE-FLANGE SHAPES SHALL CONFORM TO ASTM A36, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B.

STRUCTURAL PIPE SHALL CONFORM TO ASTM A53, GRADE B.

ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.

STEEL STUDS SHALL CONFORM TO ASTM A108.

BOLTED CONNECTIONS SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION. BOLTED CONNECTIONS FOR STRUCTURAL STEEL MEMBERS SHALL BE MADE WITH 3/4" DIAMETER A325 BOLTS, UNLESS NOTED OTHERWISE. BOLTED CONNECTIONS SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION, EXCEPT BOLTED CONNECTIONS IN BRACE ELEMENTS ARE TO BE FULLY PRETENSIONED WITH CLASS A FAYING SURFACES.

WELDING PROCEDURES SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY'S STRUCTURAL WELDING CODE FOR STEEL ANSI/AWS D1.1.

WELDED CONNECTIONS USING ASTM A992 STEEL AS A BASE METAL SHALL BE MADE WITH E70XX LOW HYDROGEN ELECTRODES. UNLESS OTHERWISE SHOWN OR NOTED ON THE DRAWINGS, OTHER WELDED CONNECTIONS MAY BE MADE WITH STANDARD E70XX ELECTRODES.

STRUCTURAL STEEL THAT RECEIVES FINISH PAINT SHALL BE SHOP-PRIMED WITH A RUST-INHIBITING PRIMER, UNLESS NOTED OTHERWISE ON THE DRAWINGS. CONTRACTOR SHALL VERIFY PRIMER IS COMPATIBLE WITH FINISH COAT SYSTEM SPECIFIED BY THE ARCHITECT. COORDINATE FINISH PAINTING REQUIREMENTS WITH THE ARCHITECT.

STRUCTURAL STEEL THAT IS NOT EXPOSED IN THE FINISHED CONSTRUCTION AND DOES NOT RECEIVE FINISH PAINT SHALL NOT BE SHOP-PRIMED, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

STRUCTURAL STEEL NOTED TO BE GALVANIZED SHALL BE HOT-DIP GALVANIZED IN CONFORMANCE WITH ASTM A123.

DO NOT PAINT OR GALVANIZE THE FOLLOWING SURFACES:
1. SURFACES TO BE WELDED.
2. SURFACES TO RECEIVE BOLTED SLIP-CRITICAL CONNECTIONS.
3. SURFACES TO RECEIVE SHEAR STUD CONNECTIONS.
4. SURFACES TO RECEIVE SPRAYED-ON FIREPROOFING.

ALL ABRASIONS TO GALVANIZED SURFACES OR SURFACES TO RECEIVE AN ARCHITECTURAL FINISH COAT SHALL BE TOUCHED-UP AFTER ERECTION IS COMPLETE. FOR PAINTED STEEL, USE A PRIMER EQUIVALENT TO THE SHOP PAINT. FOR GALVANIZED STEEL, USE A ZINC-RICH COLD-GALVANIZING PAINT.

DESIGN CONNECTIONS NOT SHOWN IN ACCORDANCE WITH THE ASD SPECIFICATION AND MANUAL OF STEEL CONSTRUCTION. UNLESS NOTED OTHERWISE ON THE DRAWINGS, DESIGN BEAM CONNECTIONS NOT SHOWN, TO SUPPORT A MINIMUM OF A 10 KIP SHEAR REACTION. PROVIDE NO LESS THAN 2 BOLTS IN ANY SINGLE LINE OF BOLTS, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

PROVIDE L4X4X1/4 FRAMED OPENINGS FOR ALL ROOF PENETRATIONS 12 INCHES OR LARGER ALONG ANY SIDE, UNLESS LARGER FRAMING IS INDICATED. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR PENETRATIONS. COORDINATE FRAMED OPENING SIZES AND LOCATIONS WITH THE MECHANICAL AND PLUMBING CONTRACTORS.

GALVANIZE ALL EXPOSED STEEL.

STEEL ROOF DECK

PROVIDE AND ERECT STEEL DECK IN ACCORDANCE WITH THE LATEST EDITION OF THE STEEL DECK INSTITUTE'S SPECIFICATIONS AND CODE OF STANDARD