GR GENERAL REQUIREMENTS

GR-1 AS USED IN THESE GENERAL NOTES:
"DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON.
"SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.
"CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS
"SER" IS DEFINED AS THE STRUCTURAL ENGINEER OF RECORD FOR THE STRUCTURE IN ITS FINAL CONDITION.
"DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S ARCHITECT AND SER.
"MEP" INCLUDES, BUT IS NOT LIMITED TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION.
"CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, STRUCTURAL STEEL FABRICATOR OR STRUCTURAL STEEL ERECTOR.
"BASE BUILDING STRUCTURE" IS DEFINED AS THE STRUCTURAL FRAME DESIGNED BY THORNTON TOMASETTI.
"STRUCTURE IN ITS FINAL CONDITION" MEANS ALL STRUCTURAL ELEMENTS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS ARE INSTALLED AND COMPLETELY CONNECTED AND INSPECTED WITH NO OUTSTANDING NON-COMPLIANCE ISSUES.
"DELEGATED DESIGN" MEANS A SCOPE OF WORK THAT MEETS PERFORMANCE CRITERIA ESTABLISHED IN THE CONTRACT DOCUMENTS AND IS TO BE COMPLETED BY THE CONTRACTOR'S LICENSED ENGINEER.
"SERVICE LEVEL" LOADS ARE DEFINED AS NOMINAL OR UNFACTORED LOADS TO BE COMBINED USING ALLOWABLE STRESS LOAD COMBINATIONS
"STRENGTH LEVEL" LOADS ARE DEFINED AS FACTORED LOADS TO BE COMBINED USING STRENGTH DESIGN LOAD COMBINATIONS

GR-2 THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.

GR-3 THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.

GR-4 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A [PROFESSIONAL/~~STRUCTURAL]~~ ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.

GR-5 LATERAL LOAD RESISTANCE AND STABILITY OF THE STRUCTURE IN ITS FINAL CONDITION IS PROVIDED BY SHEAR WALLS, MOMENT FRAMES AND LATERAL STABILITY OF OTHER ELEMENTS IS PROVIDED THROUGH FLOOR SLABS; ROOF DECK; AND IN FLOOR BRACING.

GR-6 THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS.

GR-7 THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.

GR-8 IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.

GR-9 APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

GR-10 ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

GR-11 ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.

GR-12 CENTERLINES OF COLUMNS AND FOUNDATIONS COINCIDE WITH GRID LINE INTERSECTIONS, UON.

GR-13 CENTERLINES OF GRADE BEAMS AND WALLS COINCIDE WITH CENTERLINES OF FOUNDATIONS, UON.

GR-14 CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UON.

GR-15 THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.

GR-16 THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.

GR-17 THE CONTRACTOR SHALL COORDINATE THE BOTTOM OF BASE PLATE ELEVATIONS WITH THE AS-BUILT TOP OF SUPPORT ELEVATIONS.

GR-18 THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS. OPENINGS REQUIRED BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE SER.

GR-19 ELEVATIONS INDICATED ON STRUCTURAL DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE ARCHITECTURAL/CIVIL DRAWINGS.

GR-20 SEE ARCHITECTURAL, CIVIL, MEP, CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION RELATING TO THE COORDINATION OF STRUCTURAL COMPONENTS INCLUDING, BUT NOT LIMITED TO:

<u>CIVIL</u>:
PROJECT DATUM
SITING OF BUILDING GRID LINES WITH RESPECT TO CITY BENCHMARKS
SITE PREPARATION
BACKFILLING MATERIALS AND REQUIREMENTS
PAVING AND SITE ELEMENTS OUTSIDE OF BUILDING ENVELOPE
NEW AND EXISTING SITE UTILITIES

<u>ARCHITECTURAL</u>:
PLAN DIMENSIONS AND PROJECT DATUM
SLAB EDGE DIMENSIONS
FINISH ELEVATIONS
WATERPROOFING AND DAMP-PROOFING DETAILS
RAMP GEOMETRY, PITS, SLAB SLOPES AND DEPRESSIONS
EXACT OPENING SIZES FOR PIPES, DUCTS, ETC.
CONCRETE FINISHES AND TOPPING SLABS
CONCRETE CURBS AND HOUSEKEEPING PADS
INTERIOR NON-STRUCTURAL MASONRY PARTITIONS
FIRE RATINGS
METAL PAN STAIRS AND SUPPORTS

<u>MEP</u>:
PIPE AND DUCT SIZES FOR OPENING AND SLEEVE COORDINATION
FLOOR DRAINS
UNDERFLOOR AND PERIMETER DRAINAGE SYSTEMS
EQUIPMENT CURBS
CONDUITS AND EMBEDMENTS IN WALLS AND SLABS

CD CODES AND DESIGN CRITERIA

CD-1 PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:

NEW YORK STATE BUILDING CODE, 2020 EDITION

<u>STRUCTURAL CONCRETE:</u>
"BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
THE AMERICAN CONCRETE INSTITUTE (ACI 318-14)

<u>STRUCTURAL STEEL:</u>
"SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", (AISC 360-16) CONFORMING TO THE PROVISIONS OF LOAD RESISTANCE FACTOR DESIGN, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC-LRFD)

CD-2 <u>LIVE LOADS (SERVICE LEVEL):</u>

CLASSROOMS	REF. S-003
LOBBIES & CORRIDORS	REF. S-003
ROOF MECHANICAL	SEE PLAN FOR DESIGN WEIGHTS
ROOFS	REF. S-003
HANDRAIL/GUARDRAIL/GRAB BARS:	50 LBS/FT OR 200 LBS (MIN)

CD-3 <u>SUPERIMPOSED DEAD LOADS (SERVICE LEVEL):</u>

HANGING LOADS (BELOW ROOF)	REF. S-003
ROOFING + INSULATION	REF. S-003

CD-4 RISK CATEGORY: III

CD-5 <u>SNOW (AND RAIN) LOADS (SERVICE LEVEL):</u>

FLAT ROOF SNOW LOAD (Pf):	33 PSF
GROUND SNOW LOAD (Pg)	30 PSF
SNOW EXPOSURE FACTOR (Ce):	1.0
SNOW LOAD IMPORTANCE FACTOR (Is):	1.1
THERMAL FACTOR (Ct):	1.0
SNOW DRIFTING PER CODE	
RAIN (INCHES/HOUR)	3.0

CD-6 <u>WIND LOAD DESIGN DATA (STRENGTH LEVEL):</u>

MAIN WIND FORCE RESISTING SYSTEM	
BASIC WIND SPEED, V	125 MPH
BASIC WIND SPEED CONVERTED, Vasd	97 MPH
EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	± 0.18
WIND LOAD IMPORTANCE FACTOR (Iw)	1.0
DESIGN BASE SHEAR	102 KIPS

<u>COMPONENT AND CLADDING DESIGN PRESSURES a=**5'-6"**</u>
EFFECTIVE WIND AREA= 10 SF WALL= 35 PSF WALL END ZONE= 45 PSF

<u>ROOF EFFECTIVE WIND AREA = SEE LOADING DIAGRAM</u>

CD-7 <u>SEISMIC LOAD DESIGN DATA (STRENGTH LEVEL):</u>

SEISMIC IMPORTANCE FACTOR (I_s)	1.25
S_s	0.295 g
S_1	0.061 g
S_{DS}	0.308 g
S_{D1}	0.098 g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
LATERAL SYSTEM DESCRIPTION	LIGHT FRAME WALLS WITH SHEAR PANELS
SEISMIC RESPONSE COEFFICIENT (Cs)	2.5
RESPONSE MODIFICATION FACTOR (R)	3
ANALYSIS PROCEDURE DESCRIPTION	EQUIVALENT LATERAL FORCE
DESIGN BASE SHEAR	132 KIPS

CMU COMPONENT IMPORTANCE FACTOR (Ip) 1.5

CD-9 IN CASES WHERE THE CONTRACTOR DETERMINES THAT SUSPENDED OR FLOOR MOUNTED EQUIPMENT LOADS EXIST WHICH EXCEED DESIGN LOADS INDICATED ON CONTRACT DOCUMENTS, CONTRACTOR SHALL SUBMIT LOAD DATA TO DESIGN PROFESSIONALS FOR REVIEW PRIOR TO PROCEEDING WITH WORK.

CD-10 DISTRIBUTE THE MAXIMUM LOAD HUNG FROM ANY STRUCTURAL MEMBER FOR DUCTWORK, PIPING ETC OVER THE MEMBER'S TRIBUTARY AREA IN A WAY THAT THE MEP DESIGN SUPERIMPOSED DEAD LOADS LISTED IN CONTRACT DOCUMENTS ARE NOT EXCEEDED. THE CONTRACTOR SHALL COORDINATE THE LOADS OF ALL TRADES AND PROVIDE ADDITIONAL SUPPORT OR DISTRIBUTION FRAMING AS REQUIRED TO ACHIEVE THE ALLOWABLE LOAD DISTRIBUTION.

CD-11 ESCALATOR SUPPORTS AND PITS ARE BASED ON ESCALATOR TYPES INDICATED ON ARCHITECTURAL CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT FOR REVIEW ANY PLANNED CHANGE TO ESCALATORS TO DESIGN PROFESSIONALS PRIOR TO SUBMITTING CORRESPONDING STRUCTURAL SHOP DRAWINGS FOR ACTION.

CD-12 ELEVATOR GUIDERAIL SUPPORTS, MACHINE ROOMS, PITS, AND PENTHOUSES ARE BASED ON ELEVATOR TYPES INDICATED ON ARCHITECTURAL CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT FOR REVIEW ANY PLANNED CHANGE TO ELEVATORS TO DESIGN PROFESSIONALS PRIOR TO SUBMITTING CORRESPONDING STRUCTURAL SHOP DRAWINGS FOR ACTION.

CD-13 STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS.

CD-14 SERVICEABILITY

LIVE LOAD DEFLECTION IS LESS THAN **L/360**

LONG-TERM TOTAL DEFLECTION IS LESS THAN **L/240**

EXTERIOR EDGE BEAMS HAVE BEEN DESIGNED TO LIMIT LIVE LOAD MIDSPAN VERTICAL DEFLECTION TO 1/360 OF THE SPAN OR 3/8", WHICHEVER IS LESS.

EXTERIOR EDGE BEAMS HAVE BEEN DESIGNED TO LIMIT DEAD PLUS SUPERIMPOSED DEAD LOAD MIDSPAN VERTICAL DEFLECTION TO 1/**[XXX]** OF THE SPAN OR **[X"]**, WHICHEVER IS LESS.

LATERAL DRIFT DUE TO WIND LOADS IS LESS THAN OR EQUAL TO H/400

CD-15 CONNECTIONS OF SYSTEMS DESIGNED BY CONTRACTOR'S ENGINEER SUCH AS, BUT NOT LIMITED TO, CLADDING, STAIRS, ELEVATORS, ESCALATORS, PRECAST, AND MEP LOADS ARE ASSUMED TO IMPOSE VERTICAL AND/OR HORIZONTAL LOADS ON THE BASE BUILDING STRUCTURAL MEMBERS WITHOUT GENERATING TORSION IN THE SUPPORTING STRUCTURAL MEMBERS. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL SUPPLEMENTARY BRACING MEMBERS AS REQUIRED TO PREVENT TORSION ON THE BASE BUILDING STRUCTURE.

CD-16 FOR FIRE RATING AND FIREPROOFING ASSEMBLY EVALUATIONS, CONSIDER THE FOLLOWING ASSEMBLIES RESTRAINED: COMPOSITE WIDE-FLANGE STEEL FRAMING, INTERIOR BAYS OF CONTINUOUS CAST-IN-PLACE CONCRETE CONSTRUCTION. CONSIDER ALL OTHER ASSEMBLIES UNRESTRAINED.

CD-17 THERE HAVE BEEN NO LOAD RESTRICTION FACTORS APPLIED TO THE STRUCTURAL DESIGN FOR THE PURPOSES OF SELECTING FIREPROOFING ASSEMBLIES.

DI DELEGATED DESIGN ITEMS

DI-1 THE CONTRACTOR SHALL EMPLOY OR RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THIS PROJECT IS LOCATED TO DESIGN AND DETAIL DELEGATED DESIGN ITEMS TO MEET THE PERFORMANCE AND DESIGN CRITERIA ESTABLISHED AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:

LIGHT GAGE METAL FRAMING STRUCTURAL LOAD BEARING WALL SYSTEM
STRUCTURAL STEEL CONNECTIONS
STEEL JOISTS, BRIDGING AND CONNECTIONS
STEEL ROOF DECK

SU SUBMITTALS

SU-1 THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO DESIGN PROFESSIONALS. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:

1. THE SHOP DRAWING IS REQUESTED.
2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
3. THE DESIGN PROFESSIONALS' COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
6. SUBMITTAL IS COMPLETE.
7. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST
8. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION NUMBER.

THE SER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS.

SU-2 THE SER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SU-3 FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE CONTRACTOR, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER'S ENGINEER, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE CONTRACTOR'S ENGINEER.

SU-4 THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR STRUCTURAL REVIEW AS OUTLINED IN THE SPECIFICATIONS:

031000	S	CALC	CONCRETE FORMWORK
032000	S		CONCRETE REINFORCING LAYOUT
033000			CONCRETE MIX DESIGNS
033000	S		CONCRETE CONSTRUCTION JOINT LAYOUT
051000	S		STRUCTURAL STEEL
051000	S	CALC	STRUCTURAL STEEL CONNECTIONS
051000	S		SHEAR STUD LAYOUT
052000	S	CALC	STEEL JOISTS, BRIDGING AND CONNECTIONS
053000	S	CALC	STEEL ROOF DECK
054000	S	CALC	COLD-FORMED METAL FRAMING

S = SHOP DRAWINGS REQUIRED

CALC = SUPPORTING CALCULATIONS REQUIRED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.

SU-5 THE ITEMS IN THIS SECTION REFER TO LOADS IMPOSED BY CONTRACTOR DESIGNED SYSTEMS, SPECIFICALLY:

COLD-FORMED METAL FRAMING
EXTERIOR CLADDING SYSTEMS
METAL STAIRS
ARCHITECTURAL ORNAMENTATION (FLAGPOLES, BANNERS, MASTS, ETC.)

WHERE CONTRACTOR LOADS IMPOSED DO NOT EXCEED AND/OR CONNECTION CONDITIONS DO NOT DIFFER FROM WHAT IS INDICATED IN THE STRUCTURAL DRAWINGS, SUBMIT FOR RECORD A LETTER SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED STATING THE FOLLOWING:

"THE CONTRACTOR DESIGNED SYSTEM HAS BEEN DESIGNED TO IMPOSE LOADS ON THE BASE BUILDING STRUCTURE THAT ARE WITHIN THE LOAD LIMITS AND AT THE LOCATIONS INDICATED ON THE STRUCTURAL DRAWINGS."

WHERE CONTRACTOR LOADS IMPOSED FOR THE FOLLOWING ITEMS EXCEED AND/OR CONNECTION CONDITIONS DIFFER FROM WHAT IS SHOWN IN THE STRUCTURAL DRAWINGS, SUBMIT FOR APPROVAL TO SER LOADS IMPOSED ON THE PRIMARY STRUCTURAL FRAME DUE TO THE DEAD, LIVE, AND WIND/SEISMIC LOADS INDICATED ON THE CONTRACT DOCUMENTS.

SUBMITTAL SHALL LIST THE DESIGN LOADS USED AND BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. SUBMITTAL SHALL INCLUDE LOCATION, MAGNITUDE AND DIRECTION OF UNFACTORED IMPOSED LOADS, GRAPHICALLY REPRESENTED IN THEIR APPROPRIATE LOCATIONS ON A COPY OF THE CONTRACT DOCUMENT STRUCTURAL FRAMING PLANS OR ELEVATIONS AS APPROPRIATE. DETAIL REFERENCES IN THE CONNECTIONS APPLICABLE AT EACH LOCATION SHALL BE NOTED ON THE SUBMITTAL DRAWINGS.

FOR EXTERIOR WALL ASSEMBLIES, THE LOADS IMPOSED SUBMITTAL SHALL BE COMPREHENSIVE INDICATING THE LOADS IMPOSED ON THE BASE BUILDING STRUCTURE AND SHALL INCLUDE THE REACTIONS BASED ON THE ACTUAL LOADS OF THE ENTIRE ASSEMBLY, INCLUDING BUT NOT LIMITED TO GLAZING, CLADDING, METAL STUD BACKUP, AND MULLIONS.

FOR MEP SYSTEMS, THE LOADS IMPOSED SUBMITTAL SHALL BE COMPREHENSIVE INDICATING THE LOADS IMPOSED ON THE BASE BUILDING STRUCTURE AND SHALL INCLUDE THE REACTIONS BASED ON THE ACTUAL LOADS OF THE ENTIRE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEM, INCLUDING BUT NOT LIMITED TO PIPING, DUCTS, ELECTRICAL RACEWAYS, AND EQUIPMENT WEIGHTS.

A SUBSTITUTION REQUEST MAY BE REQUIRED WHERE CONTRACTOR LOADS IMPOSED EXCEED AND/OR CONNECTION CONDITIONS DIFFER FROM THE BASIS OF DESIGN.

FN FOUNDATIONS

FN-1 THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY CARLIN SIMPSON ASSOCIATES DATED JULY 14, 2021.

FN-2 FOUNDATIONS HAVE BEEN DESIGNED BASED ON THE FOLLOWING DESIGN VALUES FROM THE GEOTECHNICAL REPORT (SERVICE LEVEL):

BEARING STRATUM	VIRGIN SOIL/NEW COMPACTED FILL
NET ALLOWABLE BEARING CAPACITY:	4,000 PSF

SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS AND INFORMATION. DESIGN VALUES SHALL BE FIELD VERIFIED BY QUALIFIED GEOTECHNICAL ENGINEER RETAINED BY THE OWNER.

FN-3 THE CONTRACTOR SHALL VERIFY FOUNDATION INSTALLATION AND CONSTRUCTION IS IN CONFORMANCE WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT.

FN-4 CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION. WHERE NECESSARY, SHEET AND SHORE THE EXCAVATION WITH ALL REQUIRED TIEBACKS AND BRACING AS DETERMINED BY CONTRACTOR'S ENGINEER.

CM CONCRETE MATERIALS

CM-1 CONCRETE STRENGTH SHALL MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS (f' c), UON:

FOOTINGS, PILE CAPS AND PIERS	4,000 PSI
GRADE BEAMS	4,000 PSI
FOUNDATION WALLS, PILASTERS, BUTTRESSES	4,000 PSI
NON-SHRINK GROUT	8,000 PSI
SLAB ON GRADE	4,000 PSI
CONCRETE HOUSEKEEPING PADS, AND FILL SLABS	4,000 PSI LIGHTWEIGHT

CM-2 PROVIDE NORMALWEIGHT CONCRETE WITH CURED DENSITY OF 145 +/- 5 PCF, AND AGGREGATE CONFORMING TO ASTM C33, UON. WHERE INDICATED, PROVIDE LIGHTWEIGHT CONCRETE WITH CURED DENSITY OF 112+/-3 PCF AND AGGREGATE CONFORMING TO ASTM C330.

CM-3 THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.

CM-4 ALL CAST-IN-PLACE CONCRETE WILL EXPERIENCE DIFFERING VARIATIONS OF CRACKING. ANY ELEMENT EXPOSED TO DIRECT WEATHER AND/OR TEMPERATURE VARIATIONS DURING CONSTRUCTION OR IN THE FINAL CONDITION IS TO BE TREATED AND REGULARLY MAINTAINED TO PREVENT PROPAGATION OF CRACKS AND WATER PENETRATION. THE CONTRACTOR SHALL DEVELOP A REGULAR MAINTENANCE PROGRAM AND SUBMIT IT TO THE OWNER.

RE CONCRETE REINFORCEMENT

RE-1 ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS VERIFY WITH THE SER.

RE-2 REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UON:

DEFORMED BARS:	ASTM A615 GRADE 60
WELDABLE DEFORMED BARS:	ASTM A706
EPOXY COATED DEFORMED BARS:	ASTM A615 / A775
WELDED WIRE REINFORCEMENT	ASTM A1064
EPOXY COATED WELDED WIRE REINFORCEMENT	ASTM A1064 / A884

RE-3 DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315, UON.

RE-4 WHERE A 90-DEG, 135 –DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS UON.

RE-5 DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT UON.

RE-6 REINFORCEMENT SHALL HAVE CONCRETE PROTECTION (CLEAR COVER) PER ACI 318 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

RE-7 LAP REINFORCEMENT ONLY AT LOCATIONS AS SPECIFICALLY DETAILED ON THE DRAWINGS EXCEPT REINFORCEMENT MARKED AS CONTINUOUS CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR USING TENSION LAP SPLICES (LTS). SEE LAP SPLICE AND EMBEDMENT SCHEDULE.

RE-8 UNLESS OTHERWISE NOTED ALL LAP SPLICES ARE TO BE TENSION LAP SPLICES PER LAP SPLICE AND EMBEDMENT SCHEDULE.

RE-9 PROVIDE MECHANICAL SPLICES FOR BARS LARGER THAN #11 OR WHERE INDICATED. PROVIDE TENSILE, PRE-QUALIFIED, WELDED OR THREADED MECHANICAL SPLICES UON.

RE-10LAP WELDED WIRE REINFORCEMENT TWO PANEL SPACINGS, UON.

RE-11PROVIDE LAP SPLICE LOCATIONS AS FOLLOWS, UON:
A. GRADE BEAM / WALL (TOP HORIZONTAL REINFORCEMENT): AT CENTER OF SPAN
B. GRADE BEAM / WALL (BOTTOM HORIZONTAL REINFORCEMENT): AT SUPPORTS
C. WALL INSIDE FACE (VERTICAL REINFORCEMENT): AT SUPPORT
D. WALL OUTSIDE FACE (VERTICAL REINFORCEMENT): AT STORY MIDHEIGHT OF WALL FOR BELOW GRADE FOUNDATION WALLS, AT SUPPORT FOR OTHER WALLS
E. UNLESS OTHERWISE NOTED TERMINATE BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.

RE-12PROVIDE EPOXY COATED REINFORCEMENT AND ACCESSORIES IN AREAS OF DIRECT EXPOSURE TO THE ENVIRONMENT, CHEMICALS, OR DE-ICING FOR THE AREAS INDICATED ON THE DRAWINGS.

CJ CONCRETE CONSTRUCTION JOINTS

CJ-1 PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI-318. SUBMIT SHOP DRAWINGS SHOWING PROPOSED CONSTRUCTION JOINT LOCATIONS, DETAILS AND THE PLACEMENT SEQUENCE FOR THE SER'S APPROVAL PRIOR TO PROCEEDING WITH WORK.

CJ-2 UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS, HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE PERMITTED IN FOOTINGS, PILE CAPS, MAT FOUNDATIONS, GRADE BEAMS, BEAMS, UPTURNED BEAMS, SLABS, AND WALLS WITHOUT PRIOR WRITTEN APPROVAL FROM THE SER BEFORE CONSTRUCTION.

CJ-3 PLACE VERTICAL CONSTRUCTION JOINTS TO PROVIDE A 60 FT MAXIMUM LENGTH OF CONCRETE PLACEMENT AND LOCATE AS FOLLOWS:
A. FOUNDATION WALLS: MINIMUM OF 8 FT FROM ANY WALL INTERSECTION, PILASTER, PIER, OR WALL OPENING
B. BEAMS AND GRADE BEAMS: WITHIN THE MIDDLE THIRD OF THE CLEAR SPAN AVOIDING LAP SPLICES, SUBJECT TO SER APPROVAL.

CJ-4 PROVIDE CONTINUOUS WATERSTOPS AT ALL CONSTRUCTION JOINTS EXPOSED TO SOIL OR WATER, AS DESCRIBED IN THE SPECIFICATIONS AND WHERE INDICATED IN THE ARCHITECTURAL DOCUMENTS.

SS STRUCTURAL STEEL

SS-1 STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS. SEE ADDITIONAL MATERIAL REQUIREMENTS RELATED TO MATERIAL TOUGHNESS BELOW:

ASTM A6 ROLLED W SHAPES AND CHANNELS:	ASTM A572 OR A992, MINIMUM YIELD STRENGTH 50 KSI
ANGLES FOR TRUSSES AND BRACES:	ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI
MISCELLANEOUS ANGLES:	ASTM A36, MINIMUM YIELD STRENGTH 36 KSI
HOLLOW STRUCTURAL SECTIONS:	ASTM A500 GRADE B, MINIMUM YIELD STRENGTH 42 KSI FOR ROUND AND 46 KSI FOR RECTANGULAR HSS
PLATES:	ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI

SS-2 CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS OR AS NEEDED FOR CONNECTION DESIGN:

ANGLES:	ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI UON
WTs:	ASTM A572 OR A992, MINIMUM YIELD STRENGTH 50 KSI
PLATES:	ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI UON
BOLTS:	ASTM F3125 GRADES A325 AND F1852 OR A490 AND F2280 OR AS INDICATED IN DETAILS
NUTS:	ASTM A563
WASHERS:	ASTM F436
ANCHOR RODS:	ASTM F1554 GRADE 55 WITH WELDABILITY SUPPLEMENT S1
HEADED STUDS	ASTM A108, GRADE 1010 THROUGH 1020 HEADED STUD TYPE, COLD-FINISHED CARBON STEEL, AWS D1.1, TYPE B 3/4" DIAMETER UON
WELD ELECTRODES:	MINIMUM TENSILE STRENGTH 70 KSI

SS-3 WHERE NO CAMBER IS INDICATED, FABRICATE BEAMS SO THAT ANY NATURAL CAMBER IS UPWARD AFTER ERECTION.

SS-4 SPLICES SHALL BE ALLOWED ONLY AT LOCATIONS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS UNLESS APPROVED OTHERWISE BY THE SER IN WRITING.

SS-5 FOR STEEL MEMBERS AND EMBEDMENTS EXPOSED TO WEATHER, PROVIDE HOT-DIPPED GALVANIZED FINISH OR APPROVED ZINC RICH EXTERIOR COATING SYSTEM.

SS-6 PROVIDE HOLES IN ALL STEEL AS REQUIRED TO PREVENT ANY ACCUMULATION OF WATER. ALL PENETRATIONS THROUGH MAIN MEMBERS SHALL NOT EXCEED 1 1/8" DIA. AND SHALL BE GROUND SMOOTH. THESE DRAINS MUST BE KEPT CLEAN AND OPEN.

SS-7 SHOW ALL COPES, HOLES, OPENINGS AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR ERECTION OR THE WORK OF OTHER TRADES ON THE SHOP DRAWINGS FOR APPROVAL BY THE DESIGN PROFESSIONALS.

SS-8 FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN PROFESSIONALS.

SS-9 THE FOLLOWING STRUCTURAL STEEL SHAPES AND ELEMENTS MUST MEET ADDITIONAL MINIMUM MATERIAL TOUGHNESS REQUIREMENTS THROUGH CHARPY V-NOTCH (CVN) IMPACT TESTING VALUES AND ADDITIONAL MATERIAL PROPERTIES INDICATED:

<u>ASTM A6 HOT-ROLLED W SHAPES</u>
ALL STRUCTURAL STEEL INCLUDED IN THIS CATEGORY TO BE FULLY KILLED AND PRODUCED TO A FINE GRAIN PRACTICE PER SUPPLEMENTARY REQUIREMENT S28, AND SURFACES OF RE-ENTRANT CORNERS/INTERNAL RADII ARE TO BE GROUND TO BRIGHT METAL, SEE PROJECT SPECIFICATIONS.

<u>ALL OTHER ASTM A6 HOT-ROLLED SHAPES</u>

USED AS HANGERS WITH FLANGE THICKNESS EXCEEDING 1 1/2 INCHES REGARDLESS OF MEANS OF CONNECTION:
- WITH SERVICE TEMPERATURES MAINTAINED ABOVE 50 DEG F, 30 FT-LB @ 40 DEG F
- EXPOSED TO TEMPERATURES IN SERVICE BELOW 50 DEG F, 40 FT-LB @ LAST BUT NOT HIGHER THAN 40 DEG F
- TESTING TO BE IN ACCORDANCE WITH SUPPLEMENTARY REQUIREMENT S5 WITH CVN IMPACT TEST LOCATION IN THE FLANGE OR LEG PER ASTM A673 EXCEPT THE SPECIMEN SHALL BE LOCATED AT THE MID-DEPTH OF THE MATERIAL THICKNESS.

<u>HSS SHAPES</u>

USED AS TRUSS MEMBERS OR HANGERS REGARDLESS OF THICKNESS OR MEANS OF CONNECTION:
- WITH SERVICE TEMPERATURES MAINTAINED ABOVE 50 DEG F, 25 FT-LB @ 40 DEG F
- EXPOSED TO TEMPERATURES IN SERVICE BELOW 50 DEG F, 40 FT-LB @ LAST BUT NOT HIGHER THAN 40 DEG F

<u>PLATES AND SHAPES BUILT-UP FROM PLATES</u>

ALL PLATE TESTING TO BE PERFORMED IN ACCORDANCE WITH WITH ASTM A673 AND PERFORMED AT FREQUENCY P. ALL STRUCTURAL STEEL INCLUDED IN THIS CATEGORY TO BE FULLY KILLED AND PRODUCED TO A FINE GRAIN PRACTICE PER SUPPLEMENTARY REQUIREMENT S28.

1. COLUMN BASE PLATES WITH THICKNESS EXCEEDING 2 INCHES THAT ARE CONNECTED TO COLUMNS IN THE SEISMIC FORCE RESISTING SYSTEM WITH DEMAND CRITICAL WELDS:
   - WITH SERVICE TEMPERATURES MAINTAINED ABOVE 50 DEG F, 30 FT-LB @ 40 DEG F
   - EXPOSED TO TEMPERATURES IN SERVICE BELOW 50 DEG F, 40 FT-LB @ LAST BUT NOT HIGHER THAN 40 DEG F

<u>WELD METAL</u>

2. WELD METAL USED AS PART OF THE SEISMIC FORCE RESISTING SYSTEM:
   - WITH SERVICE TEMPERATURES MAINTAINED ABOVE 50 DEG F, 20 FT-LB @ -20 DEG F AND 50 FT-LB @ 0 DEG F
   - EXPOSED TO TEMPERATURES IN SERVICE BELOW 50 DEG F, 20 FT-LB @ -40 DEG F AND 60 FT-LB @ 0 DEG F

3. WELD METAL USED FOR CJP WELDS:
   - WITH SERVICE TEMPERATURES MAINTAINED ABOVE 50 DEG F, 40 FT-LB @ 40 DEG F AND 20 FT-LB @ 0 DEG F
   - EXPOSED TO IN SERVICE TEMPERATURES BELOW 50 DEG F, 50 FT-LB @ 40 DEG F AND 30 FT-LB @ 0 DEG F

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Project No. B17-DAYCARE

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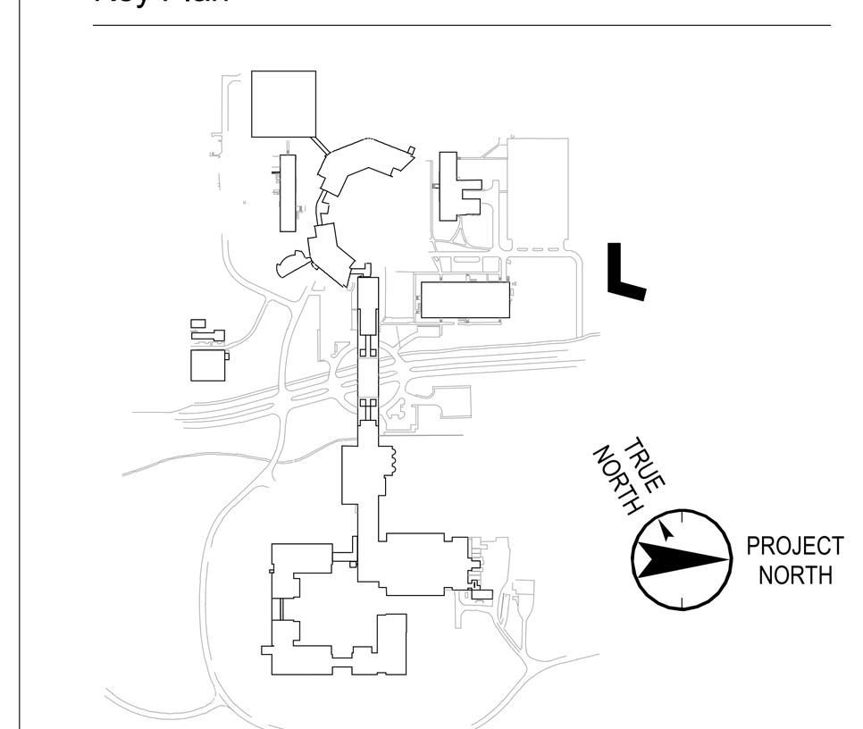
Key Plan



No.	Date	Description
	05.20.2022	ISSUED FOR PERMIT
	06.20.2022	100% CONSTRUCTION DOCUMENTS
	07.01.2022	100% CONSTRUCTION DOCUMENT- 1

Plot Date: 11/10/21

Professional Seal and Signature

Vendor Name: GENSLER
Vendor Project No.: 006.3608.000
Discipline: Drawn By: Author

GENERAL NOTES I

Scale: Floor:

S-001

FILE: BIM 360://006.3608.000 - Regeneron, Day Care Facility Tarrytown/N21270.00-Regeneron_R20.rvt PLOTTED ON 11/10/21