GENERAL NOTES

SPECIFICATIONS — REFER TO PROJECT SPECIFICATIONS FOR DETAILED REQUIREMENTS FOR MATERIAL AND WORKMANSHIP.

SHOP DRAWINGS — THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND COORDINATION DRAWINGS FOR THE ENGINEER'S APPROVAL AS STATED IN THE SPECIFICATIONS.

SIMILAR CONDITIONS — IN THE EVENT THAT CERTAIN DETAILS OF THE CONSTRUCTION ARE NOT FULLY SHOWN OR NOTED ON THE DRAWINGS, THEIR CONSTRUCTION SHALL BE OF THE SAME TYPE AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED, SUBJECT TO THE STRUCTURAL ENGINEER'S APPROVAL.

DRAWINGS BY OTHERS — SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:

A. SIZE AND LOCATION OF ALL NON-LOAD BEARING PARTITIONS, AND ROOF TOP PARAPETS.
B. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, INSERTS, ETC., EXCEPT AS SHOWN.
C. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS, EXCEPT AS SHOWN.
D. FLOOR AND ROOF FINISHES.
E. DETAILS OF ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS).

SEE MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, & TELECOMMUNICATION DRAWINGS FOR THE FOLLOWING:

A. PIPE AND DUCT RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS, EXCEPT AS SHOWN OR NOTED.

ELEVATIONS & DIMENSIONS — ALL ELEVATIONS AND DIMENSIONS SHOWN FOR NEW CONSTRUCTION ARE BASED ON THE DESIGN DRAWINGS FOR THE EXISTING BUILDINGS. FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS BEFORE PROCEEDING WITH CONSTRUCTION.

BUILDING CODE — 2003 INTERNATIONAL BUILDING CODE (2003 IBC)

PROJECT DESCRIPTION — PARKING GARAGE SHALL BE DESIGNED AS A 10-STORY TALL STRUCTURE. ONLY 7-STORIES SHALL BE CONSTRUCTED AS PART OF THIS CONTRACT. PARKING GARAGE SHALL HAVE ADEQUATE CAPACITY, BOTH VERTICAL AND LATERAL, TO ACCOMMODATE 3-STORY FUTURE VERTICAL ADDITION.

A – DESIGN LOADS

A1) LIVE

PARKING GARAGE FLOORS (PASSENGER CARS ONLY)	50 PSF
PUBLIC AREAS (LOBBYS, ATRIUMS, ETC.)	100 PSF
STAIRWAYS (EGRESS)	100 PSF
CORRIDORS	100 PSF
MINIMUM ROOF LIVE LOAD (SNOW GOVERNS, SEE BELOW)	20 PSF

A2) DEAD — ALL PERMANENT STATIONARY CONSTRUCTION.
SUPERIMPOSED ON ALL DRIVING SURFACES 10 PSF

A3) SEISMIC

SEISMIC USE GROUP I
OCCUPANCY IMPORTANCE FACTOR, I = 1.0
SITE CLASS D
0.2 SEC SPECTRAL ACCELERATION, S_S = 0.40
1.0 SEC SPECTRAL ACCELERATION, S_1 = 0.10
SITE COEFFICIENT, F_A = 1.48
SITE COEFFICIENT, F_V = 2.40
SEISMIC DESIGN CATEGORY C

STRUCTURAL SYSTEMS:
N/S DIRECTION, REINF. CONC. SHEAR WALLS (NON-LOAD BEARING) R = 5.0; C_D = 4.5
E/W DIRECTION, REINF. CONC. SHEAR WALLS (LOAD BEARING) R = 4.5; C_D = 4.0

ANALYSIS PROCEDURE – EQUIVALENT LATERAL FORCE (PER CODE)

A4) WIND

BASIC WIND SPEED = 100 MPH (3-SEC GUST SPEED)
EXPOSURE CATEGORY B
IMPORTANCE FACTOR, I = 1.0
MEAN ROOF HEIGHT, H = 105 FT (FOR 10-STORY TALL GARAGE)

A5) SNOW

GROUND SNOW = 60 PSF
THERMAL FACTOR, C_T = 1.2
IMPORTANCE FACTOR, I = 1.0
FLAT ROOF SNOW = 51 PSF
DRIFT LOADING = (PER ASCE 7-02)

A6) LIVE LOAD REDUCTION — PERMITTED UP TO 20% MAX FOR MEMBERS SUPPORTING 2 OR MORE FLOORS.

B – FOUNDATIONS

B1) GEOTECHNICAL REPORTS — THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING, UNDERSTANDING & IMPLEMENTING THE RECOMMENDATIONS OUTLINED IN THE FOLLOWING GEOTECHNICAL REPORTS BY S.W. COLE, INC.:

I) "GEOTECHNICAL ENGINEERING SERVICES PROPOSED PARKING GARAGE, MAINE MEDICAL CENTER FACILITY, CRESCENT AND CONGRESS STREETS, PORTLAND, MAINE", DATED 31 MARCH 2004.
II) "GEOTECHNICAL ENGINEERING SERVICES PRELIMINARY INVESTIGATION PROPOSED PARKING GARAGE, MAINE MEDICAL CENTER FACILITY CRESCENT AND CONGRESS STREETS, PORTLAND, MAINE", DATED 2 APRIL 2002.
III) "GEOTECHNICAL ENGINEERING INVESTIGATION PROPOSED MEDICAL OFFICE BUILDING AND PARKING GARAGE WOMEN AND INFANTS FACILITY CHARLES STREET, PORTLAND, MAINE", DATED 29 MARCH 2002.

COPIES OF THE GEOTECHNICAL REPORT ARE AVAILABLE FROM THE PROJECT ARCHITECT. WHERE RECOMMENDATIONS IN THESE REPORTS VARY FROM INFORMATION CONTAINED IN THESE DRAWINGS & THE PROJECT SPECIFICATIONS, THE DRAWINGS AND SPECIFICATIONS SHALL GOVERN.

B2) SOIL BEARING — CONCRETE SPREAD & STRIP FOOTINGS ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 5,000 PSF AT A DEPTH OF 4.5 FEET BELOW THE EXISTING GRADE. BEAR ALL FOOTINGS ON CONCRETE MUD MAT OR UNDISTURBED SOIL, U.O.N.

B3) EXCAVATION — ALL FOUNDATION EXCAVATION TO BE INSPECTED BY THE GEOTECHNICAL ENGINEER. EXCAVATE TO LINES AND GRADES TO PROPERLY INSTALL FOUNDATIONS ON UNDISTURBED SOIL APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE REQUIRED BEARING CAPACITY. THE ELEVATIONS SHOWN ON THE DRAWINGS ARE ANTICIPATED AND ACTUAL ELEVATIONS ARE TO BE ESTABLISHED IN THE FIELD BY THE GEOTECHNICAL ENGINEER, BUT IN NO CASE SHALL THE BOTTOM OF FOOTING BE LOCATED LESS THAN 4.5 FEET BELOW THE LOWEST ADJACENT SURFACE EXPOSED TO FREEZING. THE DIFFERENCE IN ELEVATION BETWEEN THE BOTTOMS OF ADJACENT FOOTINGS SHALL BE EQUAL TO OR LESS THAN THE HORIZONTAL DISTANCE BETWEEN THEM. ANY ADJUSTMENT OF FOOTING ELEVATIONS DUE TO FIELD CONDITIONS MUST HAVE THE PRIOR APPROVAL OF THE ENGINEER.

B4) UTILITIES AND OTHER UNDERGROUND STRUCT. — FOOTINGS TO BEAR BELOW AN IMAGINARY REFERENCE LINE DRAWN UPWARD AND OUTWARD ON A 1V:1H SLOPE FROM THE BOTTOM OF ANY ADJACENT UTILITIES OR OTHER UNDERGROUND STRUCTURES.

B5) DEWATERING SYSTEM — A DEWATERING PROGRAM SHALL BE USED TO REMOVE EXCESS WATER FROM THE EXCAVATION ON A CONTINUOUS BASIS UNTIL THE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND IS OPERATIONAL.

B6) FOOTING SUBGRADE PREPARATION AND FILL — FOLLOW RECOMMENDATIONS OF GEOTECHNICAL REPORT INCLUDED IN PROJECT MANUAL. PLACE ALL SPREAD AND STRIP FOOTINGS ON 4" LEAN CONCRETE (1,000 PSI) "MUD" MAT. ALL FOOTINGS SHALL EXTEND AT LEAST 4'-6" BELOW GRADE FOR FROST PROTECTION.

B7) SLAB SUBGRADE PREPARATION AND FILL — FOLLOW RECOMMENDATIONS OF GEOTECHNICAL REPORT INCLUDED IN PROJECT MANUAL. PLACE SLAB ON GRADE ON A BED OF GRANULAR FILL.

B8) BACKFILL UNDER SLAB-ON-GRADE — PROOF-ROLL EXISTING SOILS PER SPECIFICATION #02200 "EARTHWORK". BACKFILL WHERE REQUIRED BELOW SLABS-ON-GRADE WITH APPROVED GRANULAR SOIL PLACED IN 6 IN. LAYERS AND COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS DEFINED BY ASTM D-1557, METHOD D.

B9) BACKFILL AGAINST CANTILEVERED RETAINING WALLS — DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL WALL CONCRETE IS AT FULL DESIGN STRENGTH. BACKFILL WITH APPROVED MATERIAL PLACED IN 6 IN. LAYERS AND COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS DEFINED BY ASTM D-1557, METHOD D.

B10) BACKFILL AGAINST FOUNDATION WALLS — DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL WALL CONCRETE IS AT FULL DESIGN STRENGTH AND UNTIL SLABS AT BASE AND TOP OF WALL ARE IN PLACE, AND HAVE REACHED THEIR DESIGN STRENGTH. U.O.N. IN GEOTECHNICAL REPORT, BACKFILL WITH APPROVED MATERIAL PLACED IN 6 IN. LAYERS AND COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS DEFINED BY ASTM D-1557, METHOD D.

B11) FOUNDATION PLACEMENT & PROTECTION — PROTECT ALL SOIL BEARING SURFACES FROM FREEZING BEFORE AND AFTER FOUNDATION CONSTRUCTION. IF CONSTRUCTION IS PERFORMED DURING FREEZING WEATHER, BACKFILL FOOTINGS TO A SUFFICIENT DEPTH (UP TO FOUR AND ONE HALF FEET) AS SOON AS POSSIBLE AFTER CONSTRUCTION. ALTERNATIVELY, USE APPROVED INSULATING BLANKETS OR OTHER APPROVED MEANS FOR PROTECTION AGAINST FREEZING. DO NOT PLACE FOUNDATION CONCRETE IN WATER OR ON FROZEN GROUND. PROTECT IN-PLACE FOUNDATIONS AND SLABS FROM FROST PENETRATION UNTIL THE PROJECT IS COMPLETE.

B12) DE-ICING — DO NOT USE SALT OR CHLORIDE-COMPOUNDS TO DE-ICE SITE.

C – EARTH RETENTION SYSTEM

NOT IN THIS CONTRACT – SEE PACKAGE "D" – GARAGE EARTH RETENTION, DATED 15 APRIL 2004

D – CAST-IN-PLACE CONCRETE

D1) CONCRETE STRENGTH — PROVIDE THE FOLLOWING 28 DAY COMPRESSIVE STRENGTH FOR CIP FIELD CONCRETE:
I) 4,000 PSI (MIN.) NORMAL WEIGHT FOR ALL CAST-IN-PLACE CONCRETE FOUNDATIONS AND SLABS-ON-GRADE.
II) 5,000 PSI (MIN.) FOR ALL CAST-IN-PLACE CONCRETE COLUMNS, PEDESTALS, PILASTERS AND FOUNDATIONS WALLS.
III) 4,000 PSI (MIN.) NORMAL WEIGHT FOR ALL CONCRETE IN METAL PAN STAIRS.

D2) PORTLAND CEMENT — ASTM C150, TYPE II. WATER CEMENT RATIO AS REQUIRED FOR DESIGN STRENGTH.

D3) AGGREGATE — NORMAL WEIGHT: ASTM C33, WITH MAXIMUM SIZE OF 1 IN. LIGHTWEIGHT: ASTM C330

D4) WATER — POTABLE

D5) SLUMP — 4 INCH MAXIMUM. PRIOR TO ADDITION OF ADMIXTURES.

D6) ADMIXTURES — SEE SPECIFICATIONS. ASTM C260 AIR-ENTRAINING AGENT AS REQUIRED FOR A TOTAL ENTRAINED AIR CONTENT OF 6% (±1%) FOR ALL CONCRETE EXPOSED TO FREEZING. ASTM C494 WATER REDUCING AGENT IN ALL CONCRETE. DO NOT USE CALCIUM CHLORIDE. USE CORROSION-INHIBITING ADMIXTURE FOR ALL DRIVING SURFACES IN PARKING GARAGE.

D7) STEEL REINFORCEMENT — ASTM A615 GRADE 60.
ASTM A185 FOR WELDED WIRE FABRIC (WWF). USE FLAT SHEETS ONLY (NO ROLLS)
PROVIDE #6 CHAIR BARS, HIGH CHAIRS, TIES, CLIPS, SLAB BOLSTERS AND OTHER ACCESSORIES WHERE NOT SPECIFIED ON THE DRAWINGS IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315 OR CRSI-WRSI MANUAL OF STANDARD PRACTICE. USE PLASTIC TIPS ON ALL CHAIRS PLACED ON THE SIDES OF CONCRETE FORMWORK.
FIELD WELDING OF CROSSING BARS ("TACK" OR "SPOT" WELDING) IS NOT PERMITTED.
DO NOT CUT BARS OR OMIT BARS BECAUSE OF SLEEVES OR OPENINGS IN FLOORS, EXCEPT AS SPECIFICALLY DETAILED IN DRAWINGS.

D8) OPENINGS — OPENINGS, POCKETS, ETC. LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, OR WALLS, UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

D9) REINFORCEMENT AT OPENINGS — PROVIDE 2 – #6 AT EACH SIDE OF ALL OPENINGS IN WALLS AND SLABS AND EXTEND 2 FT-6 IN. BEYOND THE OPENING OR AS DETAILED, EXCEPT VERTICAL BARS AT SIDES OF OPENINGS IN WALLS ARE TO EXTEND FROM FLOOR TO FLOOR. BARS MAY BE MOVED ASIDE AT OPENINGS OR SLEEVES, BUT DO NOT CUT OR OMIT.

D10) MINIMUM CONCRETE COVER

CONCRETE PLACED AGAINST EARTH:	3 IN.
SLABS-ON-GRADE BOTTOM:	1-1/2 IN.
SLABS-ON-GRADE TOP:	1 IN.
SLABS-ON-GRADE TOP EXPOSED TO WATER OR WEATHER:	2 IN.
FORMED CONCRETE EXPOSED TO EARTH, WATER OR WEATHER:	2 IN.
FORMED SLABS, TOP AND BOTTOM:	1 IN.
INTERIOR FACES OF WALLS:	1 IN.
COLUMNS OR PIERS (MAIN REINFORCEMENT):	1-1/2 IN.

D11) WALLS AND GRADE BEAMS — PLACE WALLS AND GRADE BEAMS IN LEVEL, FULL HEIGHT LIFTS WITH CONSTRUCTION JOINTS WHERE INDICATED ON ARCHITECTURAL AND STRUCTURAL DRAWINGS. PROVIDE OPENINGS FOR WATER, ELECTRICAL, AND OTHER SERVICES AS REQUIRED. PROVIDE KEYS AND DOWELS AT ALL CONSTRUCTION JOINTS.

D12) SPLICING OF REINFORCEMENT — AS SHOWN IN TABLE ON THIS SHEET, BUT NOT LESS THAN 40 BAR DIAMETERS FOR SLABS AND BEAM BOTTOM BARS, AND NOT LESS THAN 48 BAR DIAMETERS FOR WALLS AND BEAM TOP STEEL. PROVIDE A LAP OF 8 IN OR 1-1/2 SPACES, WHICHEVER IS LARGER, FOR WWF. TIE WIRES TOGETHER AT LAP.

D13) MINIMUM REINFORCEMENT — REINFORCE ALL WALLS LESS THAN 8" THICK WITH AT LEAST #4 @ 12 IN. EACH WAY EACH FACE AND 2 – #6 EACH EDGE, UON. REINFORCE ALL WALLS 8" TO 12" THICK WITH AT LEAST #5@12" O.C., E.W., E.F. W/ 2-#7 EACH EDGE, UON. REINFORCE ALL WALLS THICKER THAN 12" WITH AT LEAST #6@12" O.C., E.W., E.F. W/ 2-#8 EACH EDGE, UON. IN SLABS, PROVIDE AT LEAST 0.0018 TIMES THE AREA OF CONCRETE IN EACH DIRECTION. REINFORCE ALL SLAB-ON-GRADE WITH MINIMUM W5xW5-6x6

D14) SHOP DRAWINGS — SUBMIT FOR ENGINEER'S APPROVAL COMPLETE BENDING AND PLACING DETAILS OF ALL REINFORCING STEEL INCLUDING WELDED WIRE FABRIC, INDICATING POSITION OF SPLICES. INCLUDE ACCESSORY DRAWINGS. INCLUDE PRECISE LOCATIONS OF ALL SLEEVES CAST INTO CONCRETE TO ACCOMMODATE PLUMBING AND ELECTRICAL WORK.

D15) STANDARD SPECIFICATIONS — COMPLY WITH THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE:

- ACI 301 STRUCTURAL CONCRETE FOR BUILDINGS
- ACI 302 CONCRETE FLOOR AND SLAB CONSTRUCTION
- ACI 304 MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE
- ACI 305 HOT WEATHER CONCRETING
- ACI 306 COLD WEATHER CONCRETING
- ACI 315 DETAILING REINFORCING STEEL
- ACI 318 GENERAL DESIGN OF ITEMS NOT OTHERWISE SPECIFIED
- ACI 347 FORMWORK
- ACI 362 DESIGN OF DURABLE PARKING STRUCTURES
- CRSI MANUAL OF STANDARD PRACTICE

D16) CONSTRUCTION JOINTS — PROVIDE KEYS AND DOWELS AT ALL CONSTRUCTION JOINTS. PROVIDE DOWELS WITH AN AREA EQUAL TO THE WALL OR SLAB REINF, BUT NOT LESS THAN 0.003 TIMES THE CONCRETE CROSS SECTIONAL AREA AT THE CONSTRUCTION JOINT. SUBMIT THE PROPOSED LOCATION OF CONSTRUCTION JOINTS TO THE DESIGNER FOR APPROVAL. MAXIMUM SPACING OF CONSTRUCTION JOINTS TO BE 60 FT. FOR WALLS AND STRUCTURAL FLOORS AND 80 FT. FOR SLABS ON GRADE.

D17) FOUNDATION DOWELS — PROVIDE HOOKED DOWELS TO MATCH SIZE AND SPACING OF LONGITUDINAL BARS IN WALLS UON.

D18) SURFACE TREATMENT — ROUGHEN ALL EXISTING CONCRETE SURFACES COMMON WITH NEW CONCRETE TO AN AMPLITUDE OF 1/4" (MIN.).

D19) STRUCTURAL TESTING & INSPECTION — A MINIMUM OF THREE (3) CYLINDERS SHALL BE TAKEN NOT LESS THAN ONCE A DAY NOR LESS THAN ONCE FOR 100 CUBIC YARDS OF CONCRETE FOR COMPRESSIVE STRENGTH TESTING. TESTING IS TO BE PAID FOR BY THE OWNER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT LEAST 24 HOURS PRIOR TO CASTING ANY CONCRETE SO THAT STRUCTURAL TESTING & INSPECTION CAN BE COORDINATED. ABSOLUTELY NO CONCRETE IS TO BE CAST PRIOR TO REBAR BEING INSPECTED AND APPROVED.

D20) EMBEDDED ITEMS — ALL CONDUIT, PIPING, DUCTWORK, ETC. TO BE EMBEDDED WITHIN CIP SLABS, WALLS, BEAMS OR COLUMNS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS AND SHALL BE SUBJECT TO APPROVAL BY THE EOR. APPROVED EMBEDDED ITEMS SHALL BE LOCATED AND EVENLY DISTRIBUTED IN SUCH A MANNER TO PREVENT ADVERSELY AFFECTING THE STRENGTH OF CONCRETE MEMBERS.

D21) FOOTING SUBGRADE — NO CONCRETE FOOTING SHALL BE POURED UNTIL SUBGRADE FOR SAME HAS BEEN APPROVED BY A LICENSED PROFESSIONAL ENGINEER.

D22) HIGH-STRENGTH GROUTING — 8000 PSI 28-DAY COMPRESSIVE STRENGTH.

D23) CURING COMPOUNDS — DO NOT USE CURING COMPOUNDS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

D24) SHEAR KEYS — UNLESS OTHERWISE NOTED ON THE DRAWINGS, SHEAR KEYS BELOW WALL BOTTOMS SHALL BE 4" WIDE BY 3" DEEP. SHEAR KEYS AT WALL TOPS SHALL BE 3" WIDE BY 2" DEEP. DO NOT USE EPS MATERIAL FOR FORMING KEYS UNLESS IT IS FIRMLY ATTACHED TO RIGID BACKUP MATERIALS.

D25) HOUSEKEEPING PADS AND CURBS — PADS AND CURBS MAY BE SHOWN ON PLAN IN CERTAIN INSTANCES FOR REFERENCE ONLY. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS AND COORDINATE WITH EQUIPMENT MANUFACTURER'S REQUIREMENTS AND LOCATION. USE SAME CONCRETE AS BASE SLAB U.O.N. MAXIMUM PAD THICKNESS IS 6 INCHES, U.O.N.

D26) DOWELS FOR PRECAST COLUMNS AND SHEAR WALLS — CIP CONCRETE CONTRACTOR SHALL USE TEMPLATES, PROVIDED BY THE PRECAST FABRICATOR, TO PRECISELY LOCATE VERTICAL DOWELS EXTENDING UP FROM CIP FOUNDATION WALLS THAT MATE WITH PRECAST COLUMNS AND SHEAR WALLS ABOVE.

E – PRECAST CONCRETE (USED IN PRETOPPED DOUBLE TEES, SHEAR WALLS, COLUMNS, SPANDREL BEAMS, INVERTED T-BEAMS, PLANKS & ELEVATOR & STAIR CORES).

E1) CONCRETE STRENGTH — PROVIDE THE FOLLOWING 28 DAY COMPRESSIVE STRENGTH FOR PRECAST CONCRETE:
I) 6,000 PSI (MIN.) FOR COLUMNS AND SHEAR WALLS.
II) 5,000 PSI (MIN.) FOR DOUBLE TEE'S, SPANDRELS AND PLANKS.
SUBMIT CONCRETE MIX DESIGNS FOR APPROVAL BY ARCHITECT PRIOR TO CASTING ANY CONCRETE.

ASTM C150, TYPE I OR TYPE III.

E3) AGGREGATE — NORMAL WEIGHT: ASTM C33, WITH MAXIMUM SIZE OF 3/4 IN.

E4) ADMIXTURES — AN APPROVED WATER REDUCING AGENT OR SUPER-PLASTICIZER IS PERMITTED FOR REACHING DESIRED COMPRESSIVE STRENGTHS AND MAINTAINING WORKABILITY. USE AN ASTM C260 AIR ENTRAINING ADMIXTURE FOR ALL PRECAST CONCRETE SUBJECTED TO FREEZE-THAW CONDITIONS. USE CORROSION-INHIBITING ADMIXTURE FOR ALL DRIVING SURFACES IN PARKING GARAGE.

E5) STEEL REINFORCEMENT — ASTM A615, GRADE 60 U.O.N.

E6) PRESTRESSING STEEL — GRADE 270 LOW RELAXATION STRANDS

E7) CURING — COMPLY WITH THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE (ACI) CITED UNDER "CAST-IN-PLACE CONCRETE" AND THE RECOMMENDATIONS OF THE PRECAST CONCRETE INSTITUTE (PCI).

E8) SHOP DRAWINGS AND DESIGN CALCULATIONS — SUBMIT FOR DESIGNER'S APPROVAL COMPLETE SHOP DRAWINGS AND STRUCTURAL DESIGN CALCULATIONS FOR ALL PRECAST CONCRETE WORK, INCLUDING ANY INSERTS FOR HOISTING. INCLUDE ACCESSORY DRAWINGS. FABRICATION OF PRECAST ITEMS SHALL NOT BEGIN UNTIL SHOP DRAWINGS AND DESIGN CALCULATIONS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER OF RECORD (EOR). STRUCTURAL DESIGN CALCULATIONS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE.

E9) HANDLING & STORAGE — HANDLE AND TRANSPORT ALL PRECAST ITEMS IN A MANNER SO AS TO PREVENT CRACKS, CHIPS, SPALLS, OR OTHER DEFORMITIES. STORE PRECAST ITEMS AT PRECAST PLANT OR ON THE JOB SITE, PRIOR TO ERECTION, SO AS TO PREVENT DAMAGE FROM MOISTURE, FREEZING, OR DISCOLORATION.

E10) EXTERIOR SURFACES — SEE SPECIFICATIONS FOR EXTERIOR SURFACES OF PRECAST ELEMENTS. THE PRECAST MANUFACTURER AND CONSTRUCTION MANAGER SHALL ENSURE THAT ALL EXTERIOR SURFACES ARE UNIFORM, ABSENT OF ANY DEFECTS, AND WILL ACCEPT THE SPECIFIED ARCHITECTURAL FINISH.

E11) GROUTING — USE 10,000 PSI (MIN.) NON-SHRINK GROUT UNDER ALL PRECAST CONCRETE SHEAR WALLS & COLUMNS TO ENSURE UNIFORM CONTACT WITH MEMBERS BELOW, TYP UON.

E12) BEARING PADS — BEARING PADS SHALL BE USED AROUND PERIMETER OF PRECAST ELEVATOR & STAIR CORES AS NECESSARY TO PROVIDE ADEQUATE BEARING PRIOR TO GROUTING BETWEEN CORES. BEARING PADS SHALL BE USED AS NEEDED FOR SPANDREL BEAM, DOUBLE TEE AND SHEAR WALL CONNECTIONS ACCORDING TO REQUIREMENTS IN SPECIFICATIONS. SUBMIT BEARING PAD PRODUCT INFORMATION FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD (EOR) PRIOR TO USE.

E13) REINFORCING BAR/DOWEL SPLICES — USE NMB SPLICE SLEEVE SYSTEM FOR ALL VERTICAL CONNECTIONS BETWEEN PRECAST MEMBERS AND CIP FOUNDATION WALLS. DOWEL SLEEVES MUST BE VACUUMED COMPLETELY FREE OF ALL MATERIAL PRIOR TO FILLING WITH HIGH-STRENGTH GROUT. GROUTING OF DOWEL SLEEVES SHALL BE CONDUCTED UNDER CONTINUOUS SPECIAL INSPECTION BY OWNER'S TESTING LAB.

E14) STEEL CONNECTION MATERIALS — USE STAINLESS STEEL (ASTM A666) FOR DOUBLE TEE FLANGE TO FLANGE CONNECTIONS. USE GALVANIZED STEEL (ASTM A123) FOR ALL OTHER CONNECTION ACCESORIES AND ASSEMBLIES.

E15) ENGINEERED ERECTION PLAN — PRECAST FABRICATOR SHALL SUBMIT, FOR REVIEW AND APPROVAL BY THE EOR, AN ENGINEERED ERECTION PLAN, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE. ERECTION WILL NOT BEGIN UNTIL ENGINEERED ERECTION PLAN HAS BEEN APPROVED.

F – STRUCTURAL STEEL

F1) STRUCTURAL SHAPES — WIDE FLANGE SHAPES AND CHANNELS: ASTM A992, OR ASTM A572 GRADE 50 (Fy = 50,000 PSI) ANGLES, BARS AND PLATES; ASTM A36 UON

F2) HOLLOW STRUCTURAL SECTIONS (HSS) — ASTM A500 – GRADE B (FY = 46,000 PSI).

F3) PIPE — ASTM A53 TYPE E GRADE B OR ASTM A501

F4) ANCHOR BOLTS — ASTM A307 OR ASTM F1554 GRADE 36 BOLTS UON ON THE DRAWINGS.

F5) WELDING ELECTRODES — CONFORM TO AWS SPECIFICATIONS FOR ELECTRODES BASED ON WELDING PROCESS AND THE TYPE AND GRADE OF STEEL.

F6) PAINT — SHOP PRIME ALL STEEL NOT ENCASED IN CONCRETE OR TO BE FIREPROOFED. FOR ALL EXPOSED STEEL, USE A THREE COAT PAINT SYSTEM WITH A ZINC-RICH PRIMER, AN EPOXY INTERMEDIATE COAT, AND A PROTECTIVE TOP COAT, OR HOT-DIP GALVANIZE THE STEEL AFTER FABRICATION IS COMPLETE.

F7) FABRICATION — SHOP FABRICATE MISCELLANEOUS STEEL ITEMS TO GREATEST EXTENT POSSIBLE. SUBMIT COMPLETE SHOP DRAWINGS, FROM FIELD DIMENSIONS, FOR DESIGNER'S APPROVAL. DO NOT START FABRICATION OF STRUCTURAL STEEL MEMBERS UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER OF RECORD (EOR).

F8) ERECTION — PROVIDE BEARING PLATES AND WALL ANCHORS OR ANCHOR BOLTS FOR ALL BEAMS RESTING ON CONCRETE AND ALL OTHER NECESSARY CONNECTING HARDWARE. SET ANCHOR BOLTS USING TEMPLATE. DO NOT FIELD CUT OR FIELD MODIFY ANY STRUCTURAL STEEL WITHOUT PRIOR WRITTEN APPROVAL BY ARCHITECT FOR EACH SPECIFIC CASE.

F9) STANDARD SPECIFICATIONS — COMPLY WITH THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF :
AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN.
THE AISC CODE OF STANDARD PRACTICE.
AWS STRUCTURAL WELDING CODE – STEEL.

ABBREVIATIONS

ABBREVIATION	WORD OR PHASE	ABBREVIATION	WORD OR PHASE
ASD	ALLOWABLE STRESS DESIGN	JT	JOINT
ALT.	ALTERNATE	K	KIP (1000 POUNDS)
ACI	AMERICAN CONCRETE INSITITUTE	KSF	KIPS/SQUARE FOOT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LBS	POUNDS
AISI	AMERICAN IRON AND STEEL INSTITUTE	LE	LEFT END
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LW	LIGHTWEIGHT
AWS	AMERCIAN WELDING SOCIETY	LWC	LIGHTWEIGHT CONCRETE
AB	ANCHOR BOLT	LRFD	LOAD & RESISTANCE FACTOR DESIGN
ARCH.	ARCHITECT	LLH	LONG LEG HORIZONTAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	LLV	LONG LEG VERTICAL
@	AT RATE OF	LP	LOW POINT
BAL.	BALANCE	LSH	LONG SLOTTED HOLE
BM	BEAM	MFR	MANUFACTURER
B OR BOT.	BOTTOM	MATL	MATERIAL
BEW	BOTTOM EACH WAY	MAX.	MAXIMUM
B.E.	BOUNDARY ELEMENT	MECH.	MECHANICAL
BSMT.	BASEMENT	MIN.	MINIMUM
CIP	CAST-IN-PLACE	NF	NEAR FACE
CG	CENTER OF GRAVITY	NWC	NORMAL WEIGHT CONCRETE
CTRD.	CENTERED	N	NORTH
℄ OR CL	CENTERLINE	NTS	NOT TO SCALE
CO	CLEAN OUT	NO. OR #	NUMBER
CLR.	CLEAR	O.C.	ON CENTER
COL.	COLUMN	O.H.	OPPOSITE HAND
CONC.	CONCRETE	OPNG	OPENING
CMU	CONCRETE MASONRY UNIT	PCI	PRECAST CONCRETE INSTITUTE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	PCS	PIECES
CONN.	CONNECTION	PL. OR LP	PLATE
CONST.	CONSTRUCTION	PVC	POLYVINYL CHLORIDE
CONST. JT.	CONSTRUCTION JOINT	PSF	POUNDS/SQUARE FOOT
CJ	CONTROL JOINT	PSI	POUNDS/SQUARE INCH
CY	CUBIC YARD	PC	PRECAST
CONT.	CONTINUOUS	REF.	REFERENCE
DEPR.	DEPRESSION	REINF.	REINFORCE OR REINFORCEMENT
DET.	DETAIL	REM.	REMAINDER
DIA. OR ø	DIAMETER	RE	RIGHT END
DIM.	DIMENSION	RD	ROOF DRAIN
DIR.	DIRECTION	RO	ROUGH OPENING
DO	DITTO	S.A.D.	SEE ARCHITECTURAL DRAWINGS
DWLS	DOWELS	SECT.	SECTION
DN	DOWN	SER	STRUCTURAL ENGINEER OF RECORD
DWG	DRAWING	SC	SHEAR CONNECTOR OR SLIP CRITICAL BOLT
EA.	EACH	SHT	SHEET
EE	EACH END	SLV	SHORT LEG VERTICAL
EF	EACH FACE	SIM.	SIMILAR
ES	EACH SIDE	SPA.	SPACES
EW	EACH WAY	SOG	SLAB-ON-GRADE
E	EAST	S	SOUTH
EL.	ELEVATION	SQ.	SQUARE
ELEV.	ELEVATOR	SS	STAINLESS STEEL
EOR	ENGINEER OF RECORD	STD	STANDARD
EQ.	EQUAL	STL	STEEL
EX.	EXISTING	SDI	STEEL DECK INSTITUTE
EXP. BOLT	EXPANSION BOLT	STIFF	STIFFENER
EXP. JT OR EJ	EXPANSION JOINT	STR.	STRUCTURAL
EXT.	EXTERIOR	SP	SUMP PIT
FF	FAR FACE	SUP	SUPPORT
FT OR '	FEET	SYM	SYMMETRICAL
FIN.	FINISH	SCHED.	SCHEDULE
FIN. FL.	FINISH FLOOR	T	TOP
FL.	FLOOR	T & B	TOP & BOTTOM
FD	FLOOR DRAIN	TEMP	TEMPERATURE OR TEMPORARY
FTG.	FOOTING	TOC	TOP OF CONCRETE
FND	FOUNDATION	TOS	TOP OF STEEL
FP	FULL PENETRATION WELD	TOW	TOP OF WALL
FY	YIELD STRENGTH OF STEEL	TYP.	TYPICAL
GALV.	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GA	GAUGE	V OR VERT.	VERTICAL
GENL	GENERAL	VEF	VERTICAL EACH FACE
GR.	GRADE	VIF	VERTICAL INSIDE FACE
GB	GRADE BEAM	V.I.F.	VERIFY IN FIELD
HP	HIGH POINT	VOF	VERTICAL OUTSIDE FACE
HS	HIGH STRENGTH	WWF	WELDED WIRE FABRIC
HSS	HOLLOW STRUCTURAL SECTION	W	WEST
H OR HORIZ	HORIZONTAL	W/	WITH
HEF	HORIZONTAL EACH FACE	WP	WORKING POINT
HIF	HORIZONTAL INSIDE FACE		
HOF	HORIZONTAL OUTSIDE FACE		
IN. OR "	INCH		
INCL.	INCLUSIVE OR INCLUDING		
INFO.	INFORMATION		

CLASS B TENSION SPLICE — Fy=60000 PSI

MINIMUM SPLICE and DEVELOPMENT LENGTH SCHEDULE

(UNLESS OTHERWISE SHOWN ON DRAWINGS)

			#3	#4	#5	#6	#7	#8	#9	#10	#11
f'c=4000 PSI	SPLICE LENGTH	TOP BARS	24"	32"	40"	48"	70"	80"	90"	102"	113"
		OTHER BARS	18"	25"	31"	37"	54"	62"	70"	78"	87"
	DEVELOPMENT LENGTH	TOP BARS	18"	25"	31"	37"	54"	62"	70"	78"	87"
		OTHER BARS	14"	19"	24"	28"	42"	47"	54"	60"	67"
			#3	#4	#5	#6	#7	#8	#9	#10	#11
f'c=5000 PSI	SPLICE LENGTH	TOP BARS	22"	29"	36"	43"	63"	72"	81"	91"	101"
		OTHER BARS	17"	22"	28"	33"	48"	55"	62"	70"	78"
	DEVELOPMENT LENGTH	TOP BARS	17"	22"	28"	33"	48"	55"	62"	70"	78"
		OTHER BARS	13"	17"	21"	25"	37"	42"	48"	54"	60"

1. AVOID SPLICES IN REGIONS OF MAXIMUM MOMENT. IF THIS IS NOT POSSIBLE STAGGER SPLICES SO THAT NOT MORE THAN 50% OF THE BARS ARE SPLICED WITHIN A REQUIRED SPLICE LENGTH OTHERWISE INCREASE SPLICE LENGTH BY 30%.
2. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST IN THE MEMBER BELOW THE REINFORCEMENT. WALL REINFORCING IS CLASSIFIED AS OTHER BARS.

SYMBOL LEGEND

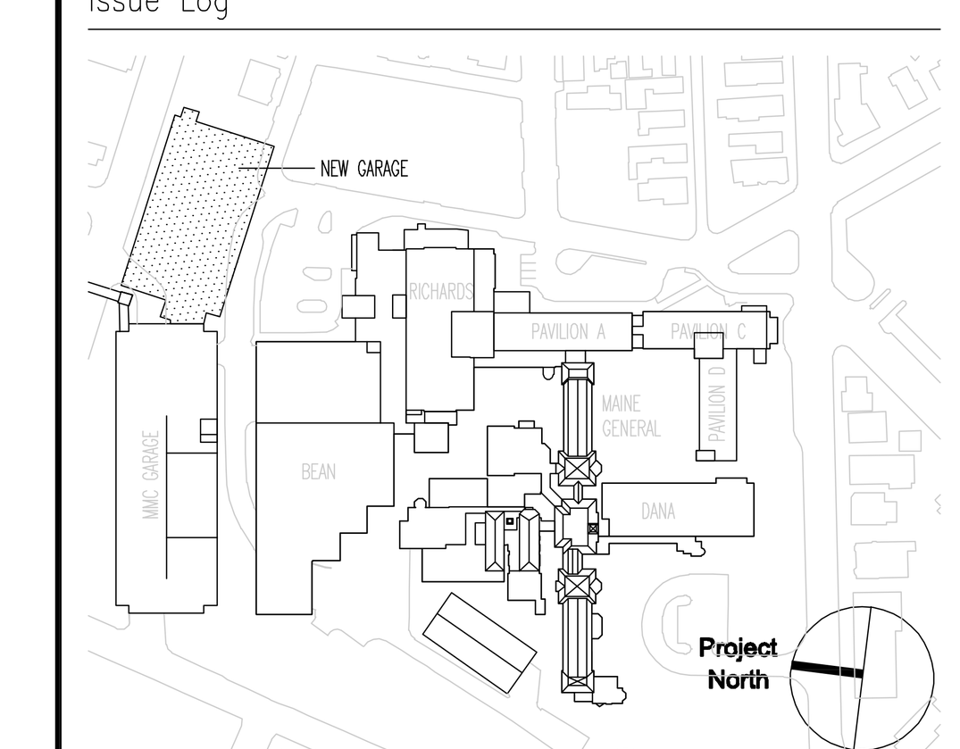
- SLAB INFILL
- PRECAST CONCRETE
- CAST-IN-PLACE CONCRETE
- SLAB OR ROOF DECK OPENING
- COMPACTED FILL OR UNDISTURBED SOIL
- GRANULAR FILL

General Notes:

SGH
Simpson Gumpertz & Heger Inc.
Consulting Engineers
www.sgh.com
Boston, MA — 41 Seyon Street, Building 1, Suite 500, Waltham, MA 02453 — Telephone: (781) 907 9000 Facsimile: (781) 907 9009
San Francisco, CA — The Landmark at One Market, Suite 600, San Francisco, CA 94105 — Telephone: (415) 495 3700 Facsimile: (415) 495 3550
Washington, DC — 1355 Piccard Drive, Suite 220, Rockville, MD 20850 — Telephone: (301) 417 0999 Facsimile: (301) 417 9825

MARK	ISSUE DATE	DESCRIPTION
PERMIT	09/16/04	PERMIT SET
BID	05/17/04	BID SET

Issue Log



Key Plan

TRO
ARCHITECTURE
PLANNING
ENGINEERING
INTERIOR DESIGN
The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1134
617-969-9400

Maine Medical Center
Pkg E - Garage Foundation and Precast
Portland, ME MMC Project No. 21845

Drawing Title
GENERAL NOTES

0' 4' 8' 16' 32'

Commission No.	4678	Date Issued	05/17/04
Scale	1/8"=1'-0"	Sheet Number	PKG-E
Drawn By	SWW		S001
Approved By	JHT/JJZ		
Filename	S001		