GENERAL NOTES:

1. THE NOTES ON THESE DRAWINGS ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES. INCONSISTENCIES BETWEEN THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, CHASES, INSERTS, REGLETS, SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.
3. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
4. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS, OR TIEDOWNS. SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
5. SECTIONS AND DETAILS SHOWN ON ANY STRUCTURAL DRAWINGS SHALL BE CONSIDERED TYPICAL FOR SIMILAR CONDITIONS.
6. ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

DESIGN NOTES

1. THIS BUILDING IS DESIGNED TO COMPLY WITH THE 1999 EDITION OF THE BOCA NATIONAL BUILDING CODE.
2. FLOOR LIVE LOADS ARE AS FOLLOWS:
   A. LOBBIES, STAIRS & FIRST FLOOR COORIDORS– 100 PSF
   B. STORAGE, MECHANICAL & ELECTRICAL ROOMS– 125 PSF
   C. OFFICE AREAS – 2ND THROUGH 5TH FLOORS– 80 PSF
   D. PARKING GARAGE – 50 PSF AND 2000# CONCENTRATED LOAD
3. DEAD LOADS = ACTUAL WEIGHTS OF COMPONENTS PLUS 5 psf ALLOWANCE FOR MISCELLANEOUS DUCTWORK, SPRINKLER PIPING AND OTHER HUNG ITEMS.
4. DESIGN FOR SNOW LOAD IS IN ACCORDANCE WITH ASCE7–95, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
   A. GROUND SNOW LOAD Pg = 50 psf FLAT
   B. ROOF SNOW LOAD Pf = 35 psf SNOW
   C. EXPOSURE FACTOR Ce=1.0 SNOW LOAD
   D. IMPORTANCE FACTOR: I = 1.0 SNOW
   E. DRIFTING AND PARTIAL LOADING IN ACCORDANCE WITH ASCE7–95. SEE SNOW DRIFT DIAGRAM
5. DESIGN FOR WIND LOAD IS IN ACCORDANCE W/ASCE7–95, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES:
   A. BASIC WIND SPEED: V= 85 mph WIND
   B. LOAD IMPORTANCE FACTOR I=1.00
   C. WIND EXPOSURE = EXPOSURE C WIND
   D. DESIGN PRESSURE:
      1. FOR THE MAIN WIND FORCE RESISTING SYSTEM
         P=+12 psf AT WINDWARD WALL.
         P=–5 psf AT LEEWARD WALL.
      2. FOR COMPONENTS AND CLADDING IN WALL CONSTRUCTION
         P= ± 37.5 psf WITHIN 13'–6" OF CORNERS AND 22.3 PSF ELSEWHERE
      3. FOR COMPONENTS AND CLADDING IN ROOF CONSTRUCTION
         P= SEE ROOF UPLIFT DIAGRAM
6. SEISMIC LOADS
   A. PEAK VELOCITY RELATED ACCELERATION: Av=.12
   B. PEAK ACCELERATION: Aa =.12
   C. SEISMIC HAZARD EXPOSURE GROUP: GROUP I
   D. SEISMIC PERFORMANCE CATEGORY C
   E. SOIL PROFILE TYPE: S4
   F. BASIC STRUCTURAL SYSTEM CONCENTRICALLY BRACED FRAMES:
   H. RESPONSE MODIFICATION FACTOR: R= 5.0
   I. DEFLECTION AMPLIFICATION FACTOR: Cd= 4.5
   J. ANALYSIS PROCEDURE UTILIZED: EQUIVALENT LATERAL FORCE PROCEDURE
   K. NET SEISMIC LOAD: V= 0.06W

FOUNDATION NOTES:

1. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY S.W. COLE ENGINEERING INC., DATED SEPTEMBER 18, 2003, ENTITLED "GEOTECHNICAL ENGINEERING SERVICES, PROPOSED FORE STREET OFFICE BLDG., FORE STREET & FRANKLIN STREET ARTERIAL, PORTLAND, MAINE". CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND COMPLY WITH ALL ASSOCIATED RECOMMENDATIONS.
2. ALLOWABLE BEARING PRESSURE AT LEDGE IS 6000 PSF.
3. PILES ARE DESIGNED FOR AN ALLOWABLE CAPACITY OF 180 KIPS IN COMPRESSION. SEE SPECIFICATIONS FOR DRIVING TOLERANCES AND REQUIREMENTS.
4. SPREAD FOOTINGS ARE TO BEAR ON CLEAN SOUND LEDGE. UP TO 6" OF 3/4" CRUSHED STONE OR MUD SLAB (f'cmin= 2500 PSI) MAY BE USED TO LEVEL WORKING SURFACE.
5. PERIMETER DRAINS SHALL BE INSTALLED AS INDICATED IN STRUCTURAL DETAILS, SEE CIVIL DRAWINGS FOR DRAIN DETAILS.
6. FROST PROTECTION:
   A. FOOTINGS WHICH BEAR ON LEDGE ARE TO BEAR A MINIMUM OF 2'–0" BELOW ADJACENT FINISHED GRADES.
   B. PILE CAPS OR FOOTINGS BEARING ON FILL/NATIVE SOIL ARE TO BEAR A MINIMUM OF 4'–6" FROM ADJACENT FINISHED GRADES.
7. REMOVE ALL ORGANIC MATERIAL FROM WITHIN THE BUILDING & WITHIN THE ZONE OF INFLUENCE BENEATH PERIMETER FOOTINGS. THE ZONE OF INFLUENCE SHALL BE DEFINED AS THAT AREA BENEATH THE FOOTING WITH A HORIZONTAL LIMIT ORIGINATING FROM THE OUTSIDE FACE OF FOOTING AND EXTENDING LATERALLY AT LEAST ONE FOOT PER FOOT OF FILL DEPTH.
8. FILL PLACED WITHIN THE ZONE OF INFLUENCE BENEATH THE FOOTINGS & WITHIN 5' OF FOUNDATION WALLS & WHERE FILL IS REQUIRED WITHIN THE BUILDING SHALL CONSIST OF SELECT FILL (SEE NOTE 11) AND SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 9" AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D–698.
9. THE CONTRACTOR SHALL DEWATER EXCAVATION TO AT LEAST ONE FOOT BELOW SUBGRADE.
10. AT SLABS ON GRADE PROVIDE FILL MATERIALS AS FOLLOWS:
    A. EXCAVATE TO A MINIMUM DEPTH OF 1'–6" BELOW THE BOTTOM OF SLAB.
    B. PLACE 12" OF SELECT FILL. COMPACT TO 95% MAXIMUM DRY DENSITY.
    C. PLACE 10 MIL. VAPOR BARRIER.
    D. PLACE 2" OF RIGID, CLOSED CELL POLYSTYRENE INSULATION
11. SELECT FILL SHALL COMPLY WITH THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT FINER BY WEIGHT
4"	100
3"	90–100
1/4"	25–90
NO. 40	0–30
NO. 200	0–5

PLACE FILL WITH THE MINIMUM MOISTURE CONTENT AS REQUIRED TO ATTAIN THE SPECIFIED COMPACTION.

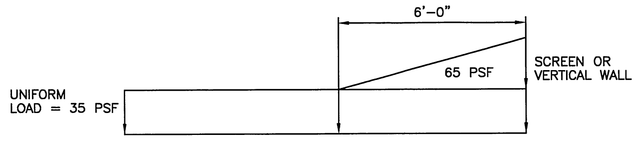
12. BACK FILL FOUNDATION WALLS WITHIN 4' OF FOUNDATION WALLS WITH SELECT FILL, COMPACTED IN 6" LIFTS TO 95% MAX. DRY DENSITY. COMPACT BY HAND OPERATED VIBRATING PLATE COMPACTORS.
13. BACK FILL BOTH SIDES OF WALLS SIMULTANEOUSLY, WHERE POSSIBLE.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318–99.
2. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE:
   4000 PSI FOR ALL WALLS, GRADE BEAMS, FLOOR SLABS, AND EXTERIOR SLABS–ON–GRADE 3000 PSI FOR PIERS, PILE CAPS AND FOOTINGS
3. ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED.
4. CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.
5. REINFORCING BARS SHALL CONFORM TO ASTM A–615 GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH ACI 315–LATEST EDITION.
6. SPLICES OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH ACI 318–99, UNLESS OTHERWISE NOTED ON DRAWINGS.
7. ALL SLABS–ON–GRADE SHALL BE FIBER REINFORCED. FIBER REINFORCEMENT SHALL BE ADDED AT A MINIMUM RATE OF 1.5 POUNDS PER CUBIC YARD OF CONCRETE. FIBER MANUFACTURER AND RATE OF APPLICATION SHALL BE APPROVED PRIOR TO PLACEMENT OF CONCRETE.
8. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 UNLESS OTHERWISE NOTED ON DRAWINGS.
9. COMPLETE SHOP DRAWINGS OF ALL REINFORCING STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. SUBMIT SHOP DRAWINGS IN THE FORM OF TWO BLUELINE COPIES AND ONE SEPIA.
10. LAP SPLICES AND DEVELOPMENT LENGTHS INDICATED AS Ld ON PLANS AND SECTIONS ARE DEPENDENT ON BAR SIZE AND REINFORCING STRENGTH AS FOLLOWS:

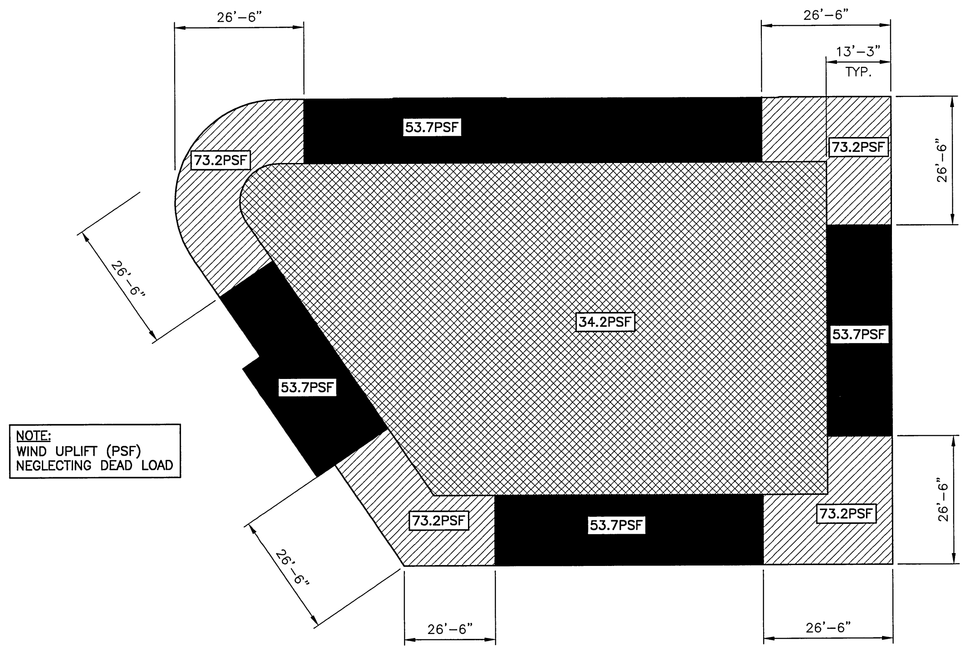
	UNCOATED		EPOXY–COATED	
Bar \ Ld	3000 PSI	4000 PSI	3000 PSI	4000 PSI
#3	17	15	21	18
#4	22	19	27	23
#5	28	24	34	29
#6	33	29	40	35
#7	48	42	58	51
#8	55	48	66	58
#9	62	54	75	65

11. NO CONDUIT OR PIPING SHALL BE LOCATED HORIZONTALLY WITHIN THE CONCRETE SLABS.



NOTE:
SNOW DRIFT ELEVATOR PENTHOUSE AND AT MECHANICAL EQUIPMENT SCREEN (TO BE APPLIED IN ADDITION TO UNIFORM SNOW LOAD).

SNOW DRIFT DIAGRAM



NOTE:
WIND UPLIFT (PSF)
NEGLECTING DEAD LOAD

ROOF UPLIFT DIAGRAM

STEEL CONNECTION NOTES

1. STRUCTURAL STEEL CONNECTIONS FOR BEAM–TO–BEAM AND BEAM–TO–COLUMN CONNECTIONS SHALL BE CONSIDERED AS "SIMPLE", (TYPE 2) CONNECTIONS IN ACCORDANCE WITH AISC'S SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS– ALLOWABLE STRESS DESIGN OR TYPE PR CONNECTIONS IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTOR DESIGN FOR STRUCTURAL STEEL BUILDINGS, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS. DESIGN CONNECTIONS IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, VOLUME II, CONNECTIONS, ASD OR LRFD.
2. AT COMPOSITE FLOOR FRAMING, BEAM REACTIONS ARE INDICATED AT THE BEAM ENDS IN KIPS. LOADS INDICATED ARE UNFACTORED LOADS. FACTORED LOADS FOR ASD ARE AVAILABLE UPON REQUEST.
3. AT COMPOSITE FLOOR FRAMING, WHERE REACTIONS ARE NOT PROVIDED, AISC MINIMUM CONNECTION LOADS APPLY: 6 KIPS FOR ASD, 10 KIPS FOR LRFD. WHERE A BEAM REACTION IS PROVIDED AT ONE END ONLY, THAT REACTION SHALL BE TAKEN AS TYPICAL FOR BOTH ENDS.
4. WHERE REACTIONS ARE NOT PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 WU FROM THE MAXIMUM FACTORED UNIFORM LOAD TABLES IN THE 1993 EDITION OF THE AISC LRFD MANUAL OR 1/2 THE TOTAL ALLOWABLE UNIFORM LOAD FROM THE ALLOWABLE UNIFORM LOAD TABLES IN THE 1989 EDITION OF THE AISC ASD MANUAL.
5. WHERE STEEL BEAMS FRAME TO TUBULAR STEEL COLUMNS, DESIGN CONNECTIONS IN ACCORDANCE WITH DETAIL J5/SF501 AND THE AISC MANUAL OF HOLLOW STRUCTURAL SECTIONS, CONNECTIONS MANUAL.
6. WHERE BEAMS FRAME TO TUBULAR STEEL COLUMNS, SINGLE PLATE CONNECTIONS ARE ACCEPTABLE PROVIDED THAT THE THICKNESS OF THE PLATE IS LESS THAN 2 X THE THICKNESS OF THE WALL OF THE TUBULAR STEEL COLUMN.
7. DESIGN OF WELDS FOR SINGLE PLATE CONNECTIONS SHALL BE IN ACCORDANCE WITH TABLE 4–9 IN THE HOLLOW STRUCTURAL SECTIONS CONNECTIONS MANUAL.
8. WHERE BEAMS FRAME TO BOTH SIDES OF A GIRDER, PROVIDE SINGLE ANGLE CONNECTIONS ARRANGED SO THAT BEAMS ON OPPOSITE SIDES OF THE GIRDER DO NOT SHARE ANY COMMON BOLTS OR OTHER DETAILS THAT AVOID ALL BOLTS COMMON TO BOTH MEMBERS.
9. WHERE BEAMS FRAME TO BOTH SIDES OF A COLUMN WEB, AT THE SAME ELEVATION, PROVIDE SEATED CONNECTIONS OR OTHER DETAILS TO AVOID BEAMS BEING SUPPORTED BY COMMON BOLTS.
10. AXIAL LOADS FOR STEEL BRACING ARE PROVIDED ON BRACING ELEVATIONS. SPECIFIED LOADS ARE FACTORED LOADS FOR LRFD DESIGN AND THEY INCLUDE SEISMIC LOADS. PLUS SIGN ("+") INDICATES AN AXIAL TENSION LOAD. MINUS SIGN ("–") INDICATES AN AXIAL COMPRESSION LOAD.
11. EXCEPT WHERE OTHERWISE DETAILED BRACING CONNECTIONS SHALL BE DESIGNED BY TRANSFERRING THE VERTICAL LOAD COMPONENT DIRECTLY TO THE COLUMN AND THE HORIZONTAL COMPONENT DIRECTLY TO THE BEAM, UTILIZING WORKING POINTS (W.P.) INDICATED ON THE DRAWINGS.
12. ALL CONNECTION DETAILS NOT PROVIDED WITHIN THESE DOCUMENTS SHALL BE DESIGNED BY THE FABRICATOR IN ACCORDANCE WITH THESE NOTES. WHERE DETAIL IS REQUAIRED TO SPECIFY FIELD ATTACHMENT, THAT DETAIL SHALL BE PROVIDED ON THE ERECTION DRAWINGS.
13. ALL CONNECTION DETAILS ARE SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTION DESIGN SHALL CONFORM TO AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL" – NINTH EDITION OR LOAD AND FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, SECOND EDITION.
2. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A572, GRADE 50 OR ASTM STEEL. STEEL FOR PLATES, ANGLES, AND CHANNELS SHALL CONFORM TO ASTM A36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.
3. FIELD CONNECTIONS SHALL BE BOLTED USING 3/4" DIAMETER A325N HIGH STRENGTH BOLTS EXCEPT WHERE FIELD WELDING IS INDICATED ON THE DRAWINGS OR WHERE OTHERWISE REQUIRED TO SUPPORT DESIGN LOADS.
4. ALL WELDING SHALL CONFORM TO AWS D1.1–LATEST EDITION. ELECTRODES SHALL BE E70XX.
5. STEEL FRAMING MEMBERS AND COMPONENTS THAT REQUIRE FIREPROOFING PER THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL NOT BE PRIMED. REMAINDER OF STEEL SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
6. DO NOT APPLY SHOP PRIMER TO THE TOP FLANGE OF STEEL BEAMS SPECIFIED TO RECEIVE FIELD WELDED SHEAR CONNECTIONS.
7. SHOP DRAWINGS DETAILING FABRICATION AND ERECTION OF EACH METAL FABRICATION INDICATED SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO FABRICATION AND CONSTRUCTION. SUBMIT SHOP DRAWINGS IN THE FORM OF TWO BLUELINE COPIES AND ONE SEPIA.

OPEN WEB STEEL JOISTS AND DECK NOTES:

1. OPEN WEB STEEL JOISTS SHALL CONFORM TO STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS FOR STEEL JOISTS AND JOIST GIRDERS".
2. ALL BRIDGING AND BRIDGING ANCHORS SHALL BE COMPLETELY INSTALLED BEFORE CONSTRUCTION LOADS ARE PLACED ON THE JOISTS.
4. ITEMS ATTACHED TO STEEL JOISTS SHALL BE ATTACHED AT JOIST PANEL POINT LOCATIONS ONLY OR AN ADDITIONAL WEB MEMBER SHALL BE ADDED TO THE JOIST AT THE LOCATION OF THE LOAD. SEE TYPICAL DETAIL.
5. STEEL JOISTS SHALL BE UNPRIMED FOR FIREPROOFING. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFICATION OF FIRE RATED CONSTRUCTION.
6. JOISTS SHALL BE DESIGNED FOR WIND UPLIFT LOADS IN ACCORDANCE WITH DESIGN NOTES. IN EVALUATING RESISTANCE TO UPLIFT LOADS, ASSUME THE SUM OF DEAD LOADS = 5PSF PLUS THE JOIST WEIGHT.
7. STEEL ROOF DECK SHALL BE 1 1/2" DEEP x 20 GAGE, WIDE RIB (TYPE B), GALVANIZED STEEL DECK.
   ROOF DECK SHALL BE FASTENED AS FOLLOWS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS:
   AT SUPPORTS – 5/8" DIAMETER PUDDLE WELDS AT 36/7 PATTERN
   AT SIDELAPS – #10 TEK SCREWS
   AT PERIMETER STEEL PARALLE TO DECK SPAN – 5/8" DIAMETER PUDDLE WELDS AT 12" O.C. MAXIMUM
8. STEEL FLOOR DECK SHALL BE GALV. COMPOSITE DECK 2" DEEP x 18 GAGE. FLOOR DECK UNITS SHALL BE BUTTED.
   FLOOR DECK SHALL BE FASTENED AS FOLLOWS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS:
   AT SUPPORTS – 5/8" DIAMETER PUDDLE WELDS AT 36/4 PATTERN
   AT SIDELAPS, FOR SPANS GREATER THAN 5.0 FEET – FASTEN WITH #10 TEK SCREWS AT MIDSPAN OR AT 36" INTERVALS, WHICHEVER DISTANCE IS SMALLER
   AT PERIMETER STEEL PARALLEL TO DECK SPAN – 5/8" DIAMETER PUDDLE WELDS AT 12" O.C. MAXIMUM
   WHERE SHEAR CONNECTIONS ARE FASTENED THROUGH STEEL DECK, SHEAR CONNECTORS MAY BE COUNTED AS REQUIRED PUDDLE WELDS.
9. SHOP DRAWINGS FOR OPEN WEB STEEL JOISTS AND STEEL DECKING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO FABRICATION AND CONSTRUCTION. SUBMIT SHOP DRAWINGS IN THE FORM OF TWO BLUE LINE COPIES AND SEPIA.
10. TJ INDICATES TIE JOIST. PROVIDE A BOLT CONNECTION AS REQUIRED TO FACILITATE ERECTION. FIELD WELD AS SPECIFIED FOR ADJACENT JOISTS IN ADDITION TO BOLTS. PROVIDE BOTTOM CHORD EXTENSIONS, TO BE CONNECTED TO SUPPORTING FRAMING AT ALL TIE JOISTS UNLESS OTHERWISE NOTED.
11. PROVIDE ADDITIONAL BOTTOM CHORD EXTENSIONS, TO BE CONNECTED TO SUPPORTING FRAMING, WHERE INDICATED THUS "BCX".
12. WHERE HORIZONTAL BRIDGING IS INDICATED, PROVIDE 1 BAY OF DIAGONAL BRIDGING WHERE THE ROW TERMINATES AT A ROLLED STEEL SHAPE. PROVIDE SPECIAL DIAGONAL BRIDGING WHERE INDICATED AS "SPB" ON THE FRAMING PLAN. DIAGONAL BRIDGING INDICATED THUS "X" MAY BE MANUFACTURER'S STANDARD.

LIGHT GAGE METAL FRAMING NOTES:

(THESE NOTES ARE APPLICABLE ONLY TO THE EXTERIOR WALL FRAMING. FOR THE INTERIOR WALL FRAMING SEE SPECIFICATION SECTION 5400)

SEE PROJECT SPECIFICATION SECTION 05400 FOR ADD'L DESIGN CRITERIA

1. THE EXTENT OF THE WORK FOR THE EXTERIOR METAL STUD WALL SYSTEM IS DETAILED ON THE ARCHITECTURAL DRAWINGS. THESE NOTES SHALL BE WORKED IN CONJUNCTION WITH THOSE DRAWINGS AND THE SPECIFICATIONS.
2. THE FOLLOWING SPECIFICATIONS AND PUBLICATIONS (LATEST EDITION) SHALL BE FOLLOWED.
   A. AMERICAN IRON AND STEEL INSTITUTE COLD FORM DESIGN MANUAL, SPECIFICATION FOR THE DESIGN OF COLD FORM STEEL STRUCTURAL MEMBERS.
   B. AMERICAN SOCIETY FOR TESTING AND MATERIALS.
   C. AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION 9TH EDITION.
3. PROVIDE CHANNEL SHAPED STUDS, JOISTS, RUNNERS, TRACKS, BLOCKING, CLIP ANGLES, SHOES, REINFORCEMENTS, FASTENERS, AND OTHER ACCESSORIES RECOMMENDED BY THE MANUFACTURER FOR A COMPLETE FRAMING SYSTEM.
4. FABRICATION OF LIGHT GAGE STEEL SHALL CONFORM WITH THE FOLLOWING MINIMUM YIELD POINTS (Fy):
   A. 16 GA. AND HEAVIER – Fy = 50,000 PSI (GRADE D)
   B. 18 GA. – Fy = 33,000 PSI (GRADE B)
   C. ALL WALL FRAMING MEMBERS AND COMPONENTS SHALL BE 18 GAGE MINIMUM.
5. THE LIGHT GAGE METAL FRAMING SIZES SHOWN ON DRAWINGS ARE AS MANUFACTURED BY SUPER STUD BUILDING PRODUCTS, INC., AND ARE PROVIDED FOR THE PRELIMINARY COST ESTIMATE ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN BID COST BASED ON THE LIGHT GAGE DESIGN – SEE NOTE 11 BELOW.
6. THE EXTERIOR WALL SYSTEM SHALL BE DESIGNED FOR A MAXIMUM ALLOWABLE DEFLECTION OF L/600. THE SPAN SHALL BE MEASURED FROM POINT OF ATTACHMENT TO STRUCTURAL STEEL OR CONCRETE, INCLUDING EFFECT OF STUDS ONLY, NOT SHEATHING BOARD OR FACING MATERIAL.
7. THE DESIGN WIND PRESSURE SHALL BE IN ACCORDANCE WITH ASCE 7–98.
8. STUD CONNECTIONS TO THE PERIMETER STEEL FRAMING SHALL ALLOW FOR A MINIMUM OF 3/4" SNOW/LIVE LOAD FRAMING DEFLECTION OR L/240 AT ROOF LEVEL, WHICHEVER IS SMALLER.
9. ALL FASTENERS CONNECTING LIGHT GAGE MEMBERS AND ACCESSORIES SHALL BE A MINIMUM OF NO. 12 SIZE SCREWS SPACED NOT CLOSER THAN ONE–HALF INCH ON CENTER. NUMBER OF FASTENERS SHALL BE AS SHOWN ON DETAILS. ALL FASTENERS SHALL BE GALVANIZED OR CADMIUM PLATED.
10. ALL FASTENERS CONNECTING LIGHT GAGE MEMBERS TO STRUCTURAL STEEL SHALL BE POWER DRIVEN FASTENERS OF 0.177" DIAMETER MINIMUM. ALL FASTENERS OF LIGHT GAGE MEMBERS TO CONCRETE SHALL BE POWER DRIVEN FASTENERS OF 0.177" DIAMETER MINIMUM WITH A MINIMUM OF 1–1/4 INCH EMBEDMENT.
11. THE LIGHT GAGE METAL FRAMING SUBCONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS ALL AFFIXED WITH THE SEAL OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MAINE. THESE DRAWINGS SHALL ILLUSTRATE THE DESIGN OF EXTERIOR STUD WALL FRAMING INCLUDING HEADERS, JAMBS, TRACKS, AND ALL NECESSARY STRUCTURAL STEEL STIFFENING AND BRACING.

ROCK ANCHORS:

1. ROCK ANCHORS ARE DESIGNED AND INSTALLED FOR THE FOLLOWING LOADS:
   A. DESIGN LOAD = 90 KIPS
   B. REQUIRED PRESTRESSED FORCE (LOCK–OFF LOAD) = 90k
2. SPLICE PILES, IF REQUIRED, WITH FULL PENETRATION WELDS (SEE SB502) OR WITH ASSOCIATED PILE AND FITTING CORP. ADVANCE SPLICER. DRIVE FIT FOR FRICTION ATTACHMENT WITHOUT WELDING.
3. DRIVE PILES TO REFUSAL PER SPECIFICATIONS DRILL/DRIVE 4" PIPE CASING TO REFUSAL ADJACENT TO PILE WEB AND SOCKET INTO LEDGE. LEAVE ABOVE GRADE AS REQUIRED BY DETAIL J5/SB501.
4. PLACE CONCRETE PILE CAP. SET BEARING PLATE ON SMOOTH TROWELED SURFACE.
5. DRILL 2 1/2" DIAMETER HOLE THROUGH THE 6" DIAMETER PIPE TO A MINIMUM DEPTH OF 20'–0" INTO ROCK. DRILL TO A TOLERANCE OF ± 3 DEGREES FROM THE VERTICAL WITH A MAXIMUM DEVIATION OF 2" IN 10'–0". REMOVE ALL MATERIAL WITHIN 6" PIPE TO BOTTOM OF DRILL HOLE PRIOR TO ANCHOR PLACEMENT.
6. ROCK ANCHORS SHALL BE 1 1/4" DIAMETER ASTM A722, CLASS II TPI COROSION PROTECTION, WILLIAMS THREADBAR, OR EQUAL, WITH AN ULTIMATE STRESS Fpu = 150 KSI. PROVIDE SHEATHING ENCLOSURE FOR STRESSING LENGTH. PROVIDE CENTRALIZERS AS REQUIRED IN THE BOND LENGTH TO MAINTAIN 1 5/8" OF GROUT COVER.
7. INSTALL ROCK ANCHORS WITH A MINIMUM BOND LENGTH OF 15'–0". THE FIRST 5' OF ENCOUNTERED LEDGE SHALL NOT BE INCLUDED IN THE BOND LENGTH. IF SPLICES ARE REQUIRED, UTILIZE THE MANUFACTURER'S STANDARD COUPLERS, WITH A TENSILE CAPACITY EQUAL TO 100% OF THE TENSILE CAPACITY OF THE ANCHOR.
8. INJECT GROUT FROM THE BOTTOM OF THE ANCHOR FOR THE ENTIRE LENGTH OF THE ANCHOR. STRESSING LENGTH SHALL REMAIN UNBONDED BY MEANS OF GREASE FILLED SHEATHING. GROUT SHALL BE "CELROC P" BY FOSROC, PORTLAND CEMENT AND WATER, OR APPROVED EQUAL.
9. GROUT PLACEMENT SHALL COMPLY WITH "RECOMMENDED PRACTICE FOR GROUTING OF POST TENSIONED, PRESTRESSED CONCRETE" BY THE POST TENSIONING INSTITUTE (TPI).
10. AFTER ANCHOR GROUT AT THE BOND LENGTH HAS ATTAINED A MINIMUM STRENGTH OF 3500 PSI, PRETENSION ROCK ANCHORS.
11. TESTING AND FIELD QUALITY CONTROL:
    A. WATER TEST ONE HOLE AT EACH PILE CAP BY FILLING WITH WATER AND SUBJECTED TO A PRESSURE OF 5 PSI (.034 MPa) IN EXCESS OF THE HYDROSTATIC HEAD MEASURED AT THE TOP OF THE HOLE. IF THE LEAKAGE RATE FROM THE HOLE EXCEEDS .0025 GALLONS PER FOOT OF DEPTH PER MINUTE, THE HOLE SHALL BE CONSOLIDATION GROUTED AND RETESTED. IF A FAILING TEST OCCURS AT ONE PILE WITHIN A CAP, THE SECOND PILE SHALL ALSO BE TESTED.
       1. CONTRACTOR MAY OPT NOT TO PERFORM WATER TEST AT RISK. IF GROUT LEVEL DROPS 1/4" OR MORE PER MINUTE, ANCHOR SHALL BE WITHDRAWN AND HOLE IS TO BE CONSOLIDATION GROUTED AND REDRILLED.
    B. GROUTING OF THE BOND LENGTH SHALL BE CONTINUOUSLY INSPECTED WITH THE FOLLOWING DATA RECORDED:
       1. TYPE OF MIXER
       2. WATER/CEMENT RATIO
       3. TYPE OF ADDITIVES
       4. GROUT PRESSURE
       5. TYPE OF CEMENT
       6. VOLUME OF GROUT
    C. STRESSING OF ANCHORS SHALL BE OBSERVED.
    D. PERFORMANCE TESTING SHALL BE PERFORMED ON 2 INSTALLED ROCK ANCHORS AS INDICATED ON PLAN. PERFORMANCE TESTS SHALL BE MADE IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS BY THE POST–TENSIONING INSTITUTE.
    E. PROOF TEST ALL INSTALLED ANCHORS. PROOF TESTING SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS BY THE POST–TENSIONING INSTITUTE.
    F. INITIAL LIFT–OFF READINGS SHALL BE MADE AT ALL ROCK ANCHORS AFTER TRANSFERRING LOAD TO THE STRESSING ANCHORAGE AND PRIOR TO REMOVING THE JACK. THE LOAD DETERMINED FROM THE LIFT–OFF READING SHALL BE WITHIN 5% OF THE SPECIFIED LOCK–OFF LOAD. IF NOT, THE END OF THE ANCHORAGE SHALL BE RESET AND ANOTHER LIFT–OFF READING SHALL BE MADE.
12. CUT TENDON PROTRUSIONS TO PROVIDE A MINIMUM CONCRETE COVER OF 2". UTILIZE CUTTING PROCEDURES RECOMMENDED BY THE TENDON MANUFACTURER.

MASONRY STEEL LINTEL SCHEDULE

MASONRY OPENING	LINTEL SIZE
UP TO 6'–0"	L4x4x5/16
6'–4" TO 8'–0"	L6x4x5/16 (LLV)
8'–4" TO 10'–8"	L8x4x7/16 (LLV)

NOTES:
1. PROVIDE 8": OF BEARING @ EACH END OF ALL LINTELS.
2. SEE ARCH DETAILS FOR TYPICAL DETAIL.
3. LINTELS AT EXTERIOR WALLS SHALL BE GALVANIZED

REV.	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	12–15–03

ISSUED FOR CONSTRUCTION 12-15-03

CURRENT ISSUE STATUS:

PROJECT NORTH

STATE OF MAINE — SCOTT J. GIBSON — NO. 9768 — 12/15/03

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PROJECT: FORE STREET OFFICE BUILDING, PORTLAND, MAINE

SHEET TITLE: STRUCTURAL GENERAL NOTES

SCALE:	AS NOTED	DATE:	12–15–03
PROJECT MANAGER:	JLJ	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	RJL/JSG		
A/E OF RECORD:	JLJ	SHEET No.	SG001
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