

GENERAL NOTES

- THE NOTES ON THESE DRAWINGS ARE NOT INTENDED TO REPLACE THE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES. INCONSISTENCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND SITE DRAWINGS. GC SHALL COORDINATE LOCATIONS AND DIMENSIONS OF OPENINGS, CHASES, INSERTS, RISERS, SLEEVES, DEPRESSIONS, ETC.
- ALL DIMENSIONS AND COORDINATES SHALL BE FIELD VERIFIED. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
- 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 CONSTRUCTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, BOLTS OR TIEDOWNS. SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE SITE AFTER COMPLETION OF THE PROJECT.
- SECTIONS AND DETAILS SHOWN ON ANY STRUCTURAL DRAWINGS SHALL BE CONSIDERED TYPICAL FOR SIMILAR CONDITIONS.
- THE CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH ALL APPLICABLE FEDERAL, STATE AND MUNICIPAL REGULATIONS.

DESIGN NOTES

- THIS BUILDING IS DESIGNED TO COMPLY WITH THE 1999 (14TH) EDITION OF THE BOCA NATIONAL BUILDING CODE.
- FLOOR LIVE LOADS ARE AS FOLLOWS:
 - FIRST FLOOR LABORATORY WING - 250 PSF
 - SECOND FLOOR LABORATORY WING - 150 PSF
 - PUBLIC AREAS, STAIRS, STORAGE AREAS AND AND EGRESS CORRIDORS - 100 PSF
 - MECHANICAL AND ELECTRICAL ROOMS - 125 PSF
- DEAD LOADS = ACTUAL WEIGHTS OF COMPONENTS PLUS 5 psf ALLOWANCE FOR MISCELLANEOUS DUCTWORK, SPRINKLER PIPING AND OTHER HUNG ITEMS.
- DESIGN FOR SNOW LOAD IS IN ACCORDANCE WITH ASCE 7-98, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
 - GROUND SNOW LOAD $P_g = 50$ psf
 - FLAT ROOF SNOW LOAD $P_f = 35$ psf
 - SNOW EXPOSURE FACTOR $C_e = 1.0$
 - SNOW LOAD IMPORTANCE FACTOR: $I = 1.0$
 - SNOW DRIFTING AND PARTIAL LOADING IN ACCORDANCE WITH ASCE 7-98.
- DESIGN FOR WIND LOAD IS IN ACCORDANCE WITH ASCE 7-98, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES:
 - BASIC WIND SPEED: $V = 100$ mph
 - WIND LOAD IMPORTANCE FACTOR $I = 1.0$
 - C. WIND EXPOSURE = EXPOSURE D
 - WIND DESIGN PRESSURE:
 - FOR THE MAIN WIND FORCE RESISTING SYSTEM
 - $P = +17$ psf AT WINDWARD WALL
 - $P = -14$ psf AT LEeward WALL
 - $P = -17$ psf AT ROOF (NORMAL)
 - FOR COMPONENTS AND CLADDING IN WALL CONSTRUCTION
 - $P = -20$ psf ; $+18$ psf
 - FOR COMPONENTS AND CLADDING IN ROOF CONSTRUCTION SEE UPLIFT DIAGRAM ON THIS SHEET.
- SEISMIC LOADS:
 - PEAK VELOCITY RELATED ACCELERATION: $A_{rv} = .12$
 - PEAK ACCELERATION: $A_p = .12$
 - SEISMIC HAZARD EXPOSURE GROUP: GROUP I
 - SEISMIC PERFORMANCE CATEGORY C.
 - SOIL PROFILE TYPE: $S_M = 2.0$
 - BASIC STRUCTURAL SYSTEM: BUILDING FRAME SYSTEM.
 - SEISMIC RESISTING SYSTEM: CONCENTRICALLY BRACED FRAMES.
 - RESPONSE MODIFICATION FACTOR: $R = 5$
 - DEFLECTION AMPLIFICATION FACTOR: $C_{dh} = 4.5$
 - ANALYSIS PROCEDURE UTILIZED: EQUIVALENT LATERAL FORCE PROCEDURE
 - NET SEISMIC LOAD: $V = 0.06W$

FOUNDATION NOTES:

- FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY R.W. GILLESPIE AND ASSOC. ENTITLED "GEOTECHNICAL INVESTIGATION, PROPOSED GULF OF MAINE RESEARCH INSTITUTE BUILDING, PORTLAND MAINE." CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND COMPLY WITH ALL ASSOCIATED RECOMMENDATIONS.
- PILES ARE DESIGNED FOR A CAPACITY OF 160 KIIPS IN COMPRESSION, 10k KIIPS UPLIFT AND 3 KIIPS OF LATERAL RESISTANCE. SPREAD FOOTINGS ARE DESIGNED WITH AN ALLOWABLE BEARING CAPACITY OF 1500 PSF, WITH AN ANTICIPATED SETTLEMENT OF 2".
- REMOVE ALL ORGANIC MATERIAL, ASPHALT AND EXISTING UNDERGROUND STRUCTURES FROM WITHIN THE BUILDING & WITHIN THE ZONE OF INFLUENCE BENEATH 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.
- ALL POTENTIAL OBSTRUCTIONS TO PILE DRIVING SHOULD BE REMOVED FROM AREAS THAT WILL RECEIVE PILE CAPS. OBSTRUCTIONS THAT MIGHT BE ENCOUNTERED INCLUDE: RUBBLE FILL, CONCRETE FOUNDATIONS, CISTERNS, DRY WELLS, AND ABANDONED UTILITIES.
- ALL EXCAVATION AND FILLING WITHIN 4 FEET OF PILES, INCLUDING OPERATIONS INVOLVED WITH OBSTRUCTION REMOVAL, SHALL BE COMPLETED PRIOR TO THE START OF PILE DRIVING. PREDRILLING THROUGH THE FILL TO DETECT SUBSURFACE OBSTRUCTIONS SHOULD BE PERFORMED PRIOR TO PILE INSTALLATION, ESPECIALLY AT MULTIPLE PILE GROUPS.
- FILL PLACED WITHIN THE ZONE OF INFLUENCE BENEATH PILE CAPS, FOOTINGS, WITHIN 5' OF FOUNDATIONS & WHERE FILL IS REQUIRED WITHIN THE BUILDING FOOTPRINT SHALL CONSIST OF COMPACTED GRANULAR FILL, COMPACT TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.
- THE CONTRACTOR SHALL Dewater EXCAVATION TO AT LEAST ONE FOOT BELOW SUBGRADE.
- AT INTERIOR STRUCTURAL SLABS PROVIDE FILL MATERIALS AS FOLLOWS:
 - EXCAVATE TO A MINIMUM DEPTH OF 2'-6" BELOW THE BOTTOM OF SLAB.
 - PLACE 3/4" CRUSHED STONE WITH 6" PERFORATED PIPE CENTERED BETWEEN BOTTOM OF GRADE BEAMS AND BOTTOM OF CRUSHED STONE. SPACE PERFORATED PIPES APPROXIMATELY 10' ON CENTER LATERALLY.
 - PLACE VAPOR BARRIER (KEE FIBERGLASS) VAPOR BARRIER, OR APPROVED EQUAL, DIRECTLY BENEATH SLAB.

FOUNDATION NOTES (CON'T):

- GRANULAR FILL SHALL COMPLY WITH THE FOLLOWING GRADATION:

SIZE	PERCENT FINER BY WEIGHT
4"	100
3"	75 TO 100
No. 4	35 TO 70
No. 40	5 TO 35
No. 200	0 TO 5
- PLACE FILL WITH THE MINIMUM MOISTURE CONTENT AS REQUIRED TO ATTAIN THE SPECIFIED COMPACTION.
- BACK FILL FOUNDATION WALLS WITHIN 5' OF FOUNDATION WALLS WITH GRANULAR FILL, COMPACTED IN 6" LIFTS TO 95% MAX. DRY DENSITY. COMPACT BY HAND OPERATED VIBRATING PLATE COMPACTORS.
- BACK FILL BOTH SIDES OF WALLS AND GRADE BEAMS SIMULTANEOUSLY.

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTION DESIGN SHALL CONFORM TO AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL" - NINTH EDITION OR THE LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - SECOND EDITION.
- STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A572, GRADE 50 OR ASTM A588 STEEL FOR PLATES, ANGLES, AND CHANNELS SHALL CONFORM TO ASTM A36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.
- FIELD CONNECTIONS SHALL BE BOLTED USING 3/4" DIAMETER A325N HIGH STRENGTH BOLTS EXCEPT WHERE FIELD WELDING IS INDICATED ON THE DRAWINGS.
- ALL WELDING SHALL CONFORM TO AWS D1.1-LATEST EDITION. ELECTRODES SHALL BE E70XX.
- STEEL FRAMING MEMBERS AND COMPONENTS THAT REQUIRE FIREPROOFING PER THE ARCHITECTURAL DRAWINGS SHALL NOT BE PRIMED. REMAINDER OF INTERIOR STEEL SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
- STRUCTURAL STEEL FRAMING EXPOSED TO WEATHER SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.
- 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.

STEEL CONNECTION NOTES

- 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 FR CONNECTIONS IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTOR DESIGN FOR STRUCTURAL STEEL BUILDINGS, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
- 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.
- 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.
- 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.
- 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.
- 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.
- ALL CONNECTION DETAILS NOT PROVIDED WITHIN THESE DOCUMENTS SHALL BE DESIGNED BY THE FABRICATOR IN ACCORDANCE WITH THESE NOTES. WHERE DETAIL IS REQUIRED TO SPECIFY FIELD ATTACHMENT, THAT DETAIL SHALL BE PROVIDED ON THE ERECTION DRAWINGS.
- ALL CONNECTION DETAILS ARE SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
- WHERE TUBULAR STEEL BRACING IS SLOTTED TO FIT OVER A PLATE, OVERSIZE THE SLOT BY 1/8" LARGER THAN THE PLATE THICKNESS. ADJUST FILLET WELD SIZES TO ACCOUNT FOR THE GAP.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL CONFORM TO ACI 318-99.
- CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE: 4000 PSI FOR ALL FLOOR SLABS, GRADE BEAMS AND EXTERIOR SLABS-ON-GRADE 3000 PSI FOR PILE CAPS
- ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED.
- CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.
- 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.
- SPICES OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH ACI 318-99, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL SLABS-ON-GRADE SHALL BE FIBER REINFORCED. FIBER MANUFACTURER AND RATE OF APPLICATION SHALL BE APPROVED PRIOR TO PLACEMENT OF CONCRETE.
- ANCHOR BOLTS SHALL CONFORM TO ASTM A307 UNLESS OTHERWISE NOTED ON DRAWINGS.
- COMPLETE SHOP DRAWINGS OF ALL REINFORCING STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK.

SPLICE LENGTHS (Ld):

WHERE LAP SPLICE LENGTHS FOR REINFORCING STEEL ARE NOT SPECIFIED, PROVIDE SPLICE LENGTHS IN ACCORDANCE W/ THE FOLLOWING TABLE:

BAR SIZE	SPLICE LENGTH $F_y = 3000$ PSI	SPLICE LENGTH $F_y = 4000$ PSI
#3	17"	16"
#4	22"	19"
#5	28"	24"
#6	35"	29"
#7	46"	42"
#8	55"	48"
#9	62"	54"
#10	70"	61"

WHERE DETAILS INDICATE 1.3 Ld IS TO BE USED, MULTIPLY ABOVE LENGTHS BY 1.3.

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

- 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.
- THE FOLLOWING SPECIFICATIONS AND PUBLICATIONS (LATEST EDITION) SHALL BE FOLLOWED.
 - AMERICAN IRON AND STEEL INSTITUTE COLD FORM DESIGN MANUAL, SPECIFICATION FOR THE DESIGN OF COLD FORM STEEL STRUCTURAL MEMBERS.
 - AMERICAN SOCIETY FOR TESTING AND MATERIALS.
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION 9TH EDITION.

- PROVIDE CHANNEL SHAPED STUDS, JOISTS, RUNNERS, TRACKS, BLOCKING, CLIP ANGLES, SHIMS, REINFORCEMENTS, FASTENERS, AND OTHER ACCESSORIES RECOMMENDED BY THE MANUFACTURER FOR A COMPLETE FRAMING SYSTEM.
- FRAMING SYSTEM SHALL CONFORM WITH THE FOLLOWING MINIMUM YIELD POINTS (Fy):
 - 16 GA. AND HEAVIER - $F_y = 50,000$ PSI (GRADE D)
 - 18 GA. - $F_y = 33,000$ PSI (GRADE B)
 - ALL WALL FRAMING MEMBERS AND COMPONENTS SHALL BE 18 GAGE

- THE LIGHT GAGE METAL FRAMING SIZES SHOWN ON DRAWINGS ARE AS MANUFACTURED BY SUPPLIER 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.

- THE EXTERIOR WALL SYSTEM SHALL BE DESIGNED FOR A MAXIMUM ALLOWABLE DEFLECTION AS SHOWN IN PROJECT SPECIFICATION 05400. 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.

- THE DESIGN WIND PRESSURE SHALL BE IN ACCORDANCE WITH ASCE 7-98.

- STUD CONNECTIONS TO THE PERIMETER STEEL FRAMING SHALL ALLOW FOR A MINIMUM OF 3/4" SNOW/LIVE LOAD FRAMING DEFLECTION OR 1/240 AT ROOF LEVEL, WHICHEVER IS SMALLER.

- 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.

- 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.

- 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.

DECK NOTES:

- DK-1 REFERENCED ON PLANS DENOTES 2" 20GA. COMPOSITE METAL DECK, FILL TO A TOTAL DEPTH OF 9" WITH NORMAL WEIGHT CONCRETE ($f_c = 4000$ PSI) AND REINFORCE WITH #9X9-6X6 W.W.F. PLACED 2" CLEAR FROM TOP OF SLAB.
- DK-2 REFERENCED ON PLANS DENOTES 2" 20GA. COMPOSITE METAL DECK, FILL TO A TOTAL DEPTH OF 6" WITH NORMAL WEIGHT CONCRETE ($f_c = 4000$ PSI) AND REINFORCE WITH #2.9X2.9-6X6 W.W.F. PLACED MID-DEPTH OF SLAB.
- DK-3 REFERENCED ON PLANS DENOTES 1 1/2" 22GA. COMPOSITE METAL DECK, FILL TO A TOTAL DEPTH OF 4" WITH NORMAL WEIGHT CONCRETE ($f_c = 4000$ PSI) AND REINFORCE WITH #2.9X2.9-6X6 W.W.F. PLACED MID-DEPTH OF SLAB.
- DK-4 REFERENCED ON PLANS DENOTES 1 1/2" 20GA. WIDE RIB ROOF DECK. DECK SHALL BE FASTENED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THE DRAWINGS:
 - AT SUPPORTS: 3/4" DIAMETER PUDDLE WELD IN 36/7 PATTERN
 - AT SIDELAPS: (7) PUDDLE WELDS PER SPAN
 - AT PERIMETER STEEL PARALLEL TO DECK SPAN: 3/4" DIAMETER PUDDLE WELDS AT 12" ON CENTER

DECK NOTES CONTINUED:

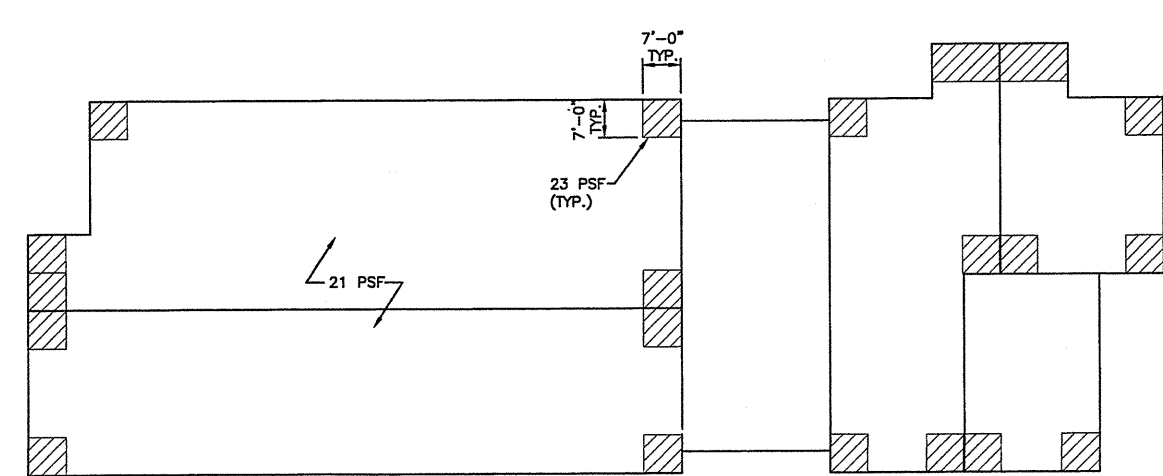
- DK-5 REFERENCED ON PLANS DENOTES 1 1/2" CELLULAR DECK W/ 20 GA. HAT AND 20 GA. PANS. PLACE DECK W/ FLAT, PERFORATED SURFACE FACING INTERIOR SPACE. VOIDS ARE TO BE FILLED WITH INSULATION. (MIN=0.357 IN/7") CELLULAR DECK SHALL BE FASTENED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THE DRAWINGS:
 - AT SUPPORTS: 5/8" DIAMETER PUDDLE WELD IN 36/4 PATTERN
 - AT SIDELAPS: (1) PUDDLE WELD PER SPAN
 - AT PERIMETER STEEL PARALLEL TO DECK SPAN: 5/8" DIAMETER PUDDLE WELDS AT 12" ON CENTER
- DK-6 REFERENCED ON PLANS DENOTES 1 1/2" 20GA. WIDE RIB ROOF DECK. DECK SHALL BE FASTENED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THE DRAWINGS:
 - AT SUPPORTS: 5/8" DIAMETER PUDDLE WELD IN 36/3 PATTERN
 - AT SIDELAPS: (1) PUDDLE WELD PER SPAN
 - AT PERIMETER STEEL PARALLEL TO DECK SPAN: 5/8" DIAMETER PUDDLE WELDS AT 12" ON CENTER
- SHOP DRAWINGS FOR STEEL DECKING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO FABRICATION AND CONSTRUCTION.

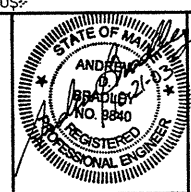
ROCK ANCHORS:

- ROCK ANCHORS ARE DESIGNED AND INSTALLED FOR THE FOLLOWING LOADS:
 - DESIGN LOAD = 112.5 KIIPS
 - REQUIRED PRESTRESSED FORCE (LOCK-OFF LOAD) = 131.3
- PIPE PILES SHALL BE 10" DIAMETER WITH A MINIMUM WALL THICKNESS OF .307", AND 6" DIAMETER WITH A MINIMUM WALL THICKNESS OF 0.375"; MINIMUM STEEL YIELD STRENGTH SHALL BE 50 KSI.
- SPLICE PILES, IF REQUIRED, WITH ASSOCIATED PILE AND FITTING CORP. ADVANCE SPLICER. DRIVE FIT FOR FRICTION ATTACHMENT WITHOUT WELDING.
- DRIVE 10" PIPE PILES TO REFUSAL AS SPECIFIED FOR H-PILES. DRILL/DRIVE 6" PIPE PILE TO REFUSAL THROUGH 10" PIPE AND SOCKET INTO LEDGE. LEAVE BOTH PIPE PILES ABOVE GRADE AS REQUIRED BY DETAIL J5/SB801.
- PLACE CONCRETE PILE CAP. SET BEARING PLATE.
- DRILL 4 1/2" DIAMETER HOLE THROUGH THE 6" DIAMETER PIPE TO A MINIMUM DEPTH OF 35"-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.
- ROCK ANCHORS SHALL BE 1 1/4" DIAMETER ASTM A722, CLASS II TPI CORROSION PROTECTION, WILLIAMS THREADBAR, OR EQUAL, WITH AN ULTIMATE STRESS $F_{pu} = 150$ KSI. PROVIDE SHEATHING ENCLOSURE FOR STRESSING LENGTH. PROVIDE CENTRALIZERS AS REQUIRED IN THE BOND LENGTH TO MAINTAIN 1 1/2" OF GROUT COVER.
- INSTALL ROCK ANCHORS WITH A MINIMUM BOND LENGTH OF 30'-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.
- 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 "CELRUC P" BY FOSROC, PORTLAND CEMENT AND WATER, OR APPROVED EQUAL.
- GROUT PLACEMENT SHALL COMPLY WITH "RECOMMENDED PRACTICE FOR GROUTING OF POST TENSIONED, PRESTRESSED CONCRETE" BY THE POST TENSIONING INSTITUTE (TPI).
- AFTER ANCHOR GROUT AT THE BOND LENGTH HAS ATTAINED A MINIMUM STRENGTH OF 3500 PSI, PRETENSION ROCK ANCHORS TO 131.3 KIIPS.
- TESTING AND FIELD QUALITY CONTROL:
 - WATER TEST ONE HOLE AT EACH PILE CAP BY FILLING WITH WATER AND SUBJECTED TO A PRESSURE OF 5 PSI (0.34 MPa) IN EXCESS OF THE HYDROSTATIC HEAD MEASURED AT THE TOP OF THE HOLE. IF THE LEAKAGE RATE PER 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.
 - GROUTING OF THE BOND LENGTH SHALL BE CONTINUOUSLY INSPECTED WITH THE FOLLOWING DATA REQUIRED:
 - TYPE OF MIXER
 - WATER/CEMENT RATIO
 - TYPE OF ADDITIVES
 - GROUT PRESSURE
 - TYPE OF CEMENT
 - VOLUME OF GROUT
 - STRESSING OF ANCHORS SHALL BE OBSERVED.
 - PERFORMANCE TESTING SHALL BE PERFORMED ON ONE INSTALLED ROCK ANCHOR AT EACH PILE CAP. PERFORMANCE TESTS SHALL BE MADE IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS BY THE POST-TENSIONING INSTITUTE.
 - 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.
 - 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.
- CUT TENDON PROTRUSIONS TO PROVIDE A MINIMUM CONCRETE COVER OF 2" IN THE PREFORMED CONCRETE COVER RECESS. UTILIZE CUTTING PROCEDURES RECOMMENDED BY THE TENDON MANUFACTURER.

ROOF UPLIFT DIAGRAM:

COMPONENTS & CLADDING UNREDUCED SERVICE VALUES



0	ISSUED FOR CONSTRUCTION	8-26-03
REV.	DESCRIPTION	DATE
ISSUED FOR CONSTRUCTION 8-26-03		
CURRENT ISSUE STATUS-		
 ARCHITECTURE ENGINEERING PLANNING 144 Fore Street, P.O. Box 618 Portland, Maine 04104 tel. (207) 772-3846 fax. (207) 772-1070		
THE GULF OF MAINE RESEARCH INSTITUTE PORTLAND, MAINE		
STRUCTURAL GENERAL NOTES		
SHEET TITLE:		
SCALE: AS NOTED	DATE: 8-26-03	
PROJECT MANAGER: DRL	GRAPHIC SCALE: 0" = 1'	
JOB CAP/DRAWN: SDL/TCM		
A/E OF RECORD: ADB	SHEET No.	
SMRT CAD FILE: S0001-03034		
PROJECT No. 03034		

A1 STRUCTURAL GENERAL NOTES

NONE