3. ALL METHODS OF CONSTRUCTION, NOTES, ETC. INDICATED ON DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS UNLESS OTHERWISE NOTED. 4. DESIGN CRITERIA: A. BUILDING CODES AND DESIGN STANDARDS: MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, ASCE 7-02 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-02 LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, DECEMBER 1, 1999 SEISMIC DESIGN PROVISIONS FOR STRUCTURAL STEEL BUILDINGS. 2002 B. LIVE LOAD (20% REDUCTION FOR ELEMENTS SUPPORTING TWO OR MORE LOADS) TYPICAL GARAGE FLOOR 40 PSF, 3,000 LBS ON 4.5"x4.5" AREA (UON) ROOF LIVE LOAD SNOW LOAD GOVERNS AT NON-GARAGE ROOFS C. SNOW LOAD FLAT-ROOF SNOW LOAD SNOW EXPOSURE FACTOR SNOW LOAD IMPORTANCE FACTOR THERMAL FACTOR BASIC WIND SPEED V = 100 MPHWIMD LOAD IMPORTANCE FACTOR E. SEISMIC LOAD

1. ARCHITECTURAL, STRUCTURAL AND MEP DRAWINGS MUST BE USED IN CONJUNCTION DURING

2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND REPORT

ALL PHASES OF CONSTRUCTION AND BID. CONTRACTOR SHALL REPORT ANY DISCREPANCIES.

ANY DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE

SEISMIC IMPORTANCE FACTOR le = 1.00SEISMIC USE GROUP MAPPED SPECTRAL RESPONSE ACCELERATIONS $S_1 = 0.10$ SPECTRAL RESPONSE COEFFICIENTS SEISMIC DESIGN CATEGORY BASIC SEISMIC FORCE RESISTING SYSTEM ORDINARY STEEL MOMENT FRAMES DESIGN BASE SHEAR SEISMIC RESPONSE COFFFICIENT RESPONSE MODIFICATION FACTOR DEFLECTION AMPLIFICATION FACTOR

EQUIVALENT LATERAL FORCE PROCEDURE ANALYSIS PROCEDURE: F. HANDRAIL AND GUARDRAIL LOADS: 200 LB CONCENTRATED HANDRAILS 50 LB/FT UNIFORM 200 LB CONCENTRATED IN ANY DIRECTION **GUARDRAILS** 50 LB/FT IN ANY DIRECTION AT TOP 6,000 POUNDS APPLIED 18" ABOVE DECK (1 SQ FT AREA) 5. UNDER NO CIRCUMSTANCES SHALL THE CONSTRUCTION LOAD ON THE STRUCTURE EXCEED THE

DESIGN LOAD WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE ENGINEER.

II. SHOP DRAWINGS 1. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS REVIEW, SCHEDULES AND SHOP AND SETTING DRAWINGS. GIVING ALL NECESSARY DETAILS FOR THE PROPER FABRICATION AND PLACING OF REINFORCING AND STRUCTURAL STEEL. THESE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO SUBMISSION AND SHALL BE USED FOR CONSTRUCTION ONLY AFTER THEY ARE RELEASED FOR CONSTRUCTION BY THE ENGINEER. 2. THE REVIEW OF THE DRAWINGS BY THE ENGINEER WILL INDICATE ONLY THAT THE GENERA METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY; IT SHALL NOT BE CONSTRUED AS PERMITTING ANY DEPARTURE FROM THE CONTRACT REQUIREMENTS OR AS RELIEVING THE CONTRACTOR OF THE RESPONSIBILITY FOR ERRORS THAT MAY BE PRESENT IN HIS/HER

3. THE CONTRACTOR SHALL EMPLOY A COMPETENT CONSTRUCTION ENGINEER, WHOSE QUALIFICATIONS ARE APPROVED BY THE ENGINEER, TO CHECK AND SIGN ALL STRUCTURAL SHOP DRAWINGS BEFORE SUBMISSION AND CHECK AND COORDINATE THE PLACING OF ALL STRUCTURAL COMPONENTS. 4. NO FABRICATION SHALL BE STARTED UNTIL THE ENGINEER APPROVES IN WRITING THE SHOP DRAWINGS COVERING THE WORK. III. FOUNDATIONS

I. FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH RECOMENDATIONS PROVIDED IN THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY HALEY & ALDRICH, DATED NOVEMBER 08, 2. THE STRUCTURE IS TO BE SUPPORTED ON STEEL H-PILES. THE FOLLOWING DESIGN CAPACITIES SHALL BE USED: HP14x117: 340 kips; HP12x53: 180 kips
3. BACKFILL BENEATH FOUNDATIONS SHALL CONSIST OF GRANULAR FILL AND SHALL BE PLACED AND COMPACTED IN ENGINEERED LIFTS IN ACCORDANCE WITH THE SPECIFICATIONS. 4. NO FOOTING, PILE CAP, OR GRADE BEAM SHALL HAVE ITS BASE HIGHER THAN HALF THE SHORTEST HORIZONTAL DISTANCE TO THE NEAREST FOOTING OR EXCAVATION, UNLESS OTHERWISE SHOWN ON THE DRAWINGS 5. PROVIDE ALL NECESSARY SHEETING, SHORING, AND BRACING AS REQ'D TO PREVENT LATERAL AND VERTICAL DISPLACEMENT OF EXISTING SOIL AND ADJACENT STRUCTURES OR UTILITIES. 6. DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL CONCRETE HAS OBTAINED AT LEAST 3 OF ITS SPECIFIED MINIMUM DESIGN STRENGTH. 7. BACKFILLING OPERATION BEHIND RETAINING WALLS SHALL START ONLY AFTER WALLS HAVE ATTAINED THEIR DESIGN STRENGTH. 8. FOR WALLS AND GRADE BEAMS HAVING FILL ON EACH SIDE, BACKFILL OPERATION SHALL

PROCEED SIMULTANEOUSLY IN UNIFORM LIFTS. DIFFERENTIAL ELEV OF THE TOP OF LIFTS ON EACH SIDE SHALL NOT EXCEED 2'-0". 9. PROVIDE SLEEVES AND/OR OPENINGS IN WALLS FOR FOUNDATION DRAINS, PLUMBING, ELECTRIC AND OTHER SERVICES AS REO'D. 10.NO FOOTINGS, PILE CAPS, OR GRADE BEAMS SHALL BE PLACED IN WATER OR ON FROZEN 11. THE SOIL BELOW FOOTINGS, PILE CAPS, AND GRADE BEAMS SHALL BE PROTECTED FROM REEZING DURING CONSTRUCTION. 12. PRIOR TO PRODUCTION PILE DRIVING. THE CONTRACTOR SHALL INSTALL EIGHT (8) INDICATOR PILES AT LOACATIONS SHOWN ON DRAWING S1.00. EACH INDICATOR PILE SHALL BE DYNAMICALLY LOAD TESTED USING PDA EQUIPMENT IN ACCORDANCE WITH SPECIFICATION

13. A MAXIMUM OF ONE (1) SPLICE PER PILE SHALL BE ALLOWED. SPLICING AND WELDING OF PILES SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02380.

1. CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318-02 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND SPECIFICATION SECTION 03300. 2. <u>LOCATION:</u>
SPREAD AND CONTINUOUS FOOTINGS WALLS AND PIERS

IV. CONCRETE

SLABS ON GRADE

SUPPORTED SLABS, BEAMS

V. PRECAST CONCRETE

ALL OTHER CONCRETE, (UON) 4.000 PSI . CONCRETE EXPOSED TO WEATHER OR FREEZING SHALL BE AIR-ENTRAINED. 4. CONTROLLED CONCRETE SHALL BE USED AND SHALL BE PROPORTIONED, MIXED AND PLACED UNDER SUPERVISION OF AN APPROVED CONCRETE TESTING LABORATORY. . PROTECTIVE COVER FOR REINFORCEMENT: A. CONCRETE PLACED AGAINST EARTH, 3"

4.000 PS

B. CONCRETE EXPOSED TO EARTH, WEATHER, OR WATER, 2" (1-1/2" FOR #5 BARS OR C. FLOORS ON SAND, GRAVEL, OR STONE FILL, $1-\frac{1}{2}$ " D. FORMED SLABS TOP AND BOTTOM, 2" E. PIERS: MAIN BARS, 2"; TIES, 1—½" 6. STANDARD REINFORCING BARS SHALL CONFORM TO ASTM 615-60, SPECIFICATIONS FOR

DEFORMED BILLET STEEL BARS FOR CONCRETE REINF WITH 60,000 PSI MINIMUM YIELD POINT. STAINLESS STEEL REINFORCING BARS SHALL CONFORM TO ASTM A955. SECTION OR DETAIL TITLES SPECS FOR DEFORMED AND PLAIN STAINLESS STEEL BARS FOR CONCRETE REINFORCEMENT AND SHALL BE A NON-MAGNETIC ALLOY. . PROVIDE KEYS AT ALL CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN ON THE DRAWING 8. REINFORCING BARS IN FOUNDATION WALLS SHALL BE CONTINUOUS. USE LAP SPLICES AS REQUIRED. PROVIDE CORNER BARS AS SHOWN ON TYPICAL CORNER DETAILS TO LAP WITH MAIN HORIZONTAL REINFORCEMENT WHERE WALLS INTERSECT. 9. WHEN REINFORCING STEEL IS SHOWN CONT IN GRADE BEAMS, WALLS SLABS, BEAMS, ETC. SPLICE REINFORCING STEEL ONLY WHEN UNAVOIDABLE DUE TO STOCK LENGTHS, UNLESS OTHERWISE SHOWN, STAGGER ALL SPLICES A MINIMUM OF 4'-0". LOCATE THE TOP BAR SPLICES WITHIN THE MIDDLE HALF OF SPAN AND BOTTOM BAR SPLICES AT SUPPORTS OR BTWN SUPPORT AND 3 OF SPAN, UNLESS OTHERWISE NOTED.

10.REINFORCING BAR DEVELOPMENT LENGTH (Ld) AND TENSION LAP SPLICE LENGTH SHALL BE IN

ACCORDANCE WITH TABLE 1 (SEE TYPICAL DETAILS). I.COMPRESSION EMBEDMENT SHALL BE 22 BAR DIAMÉTERS AND COMPRESSION SPLICE LENGTH SHALL BE 30 BAR DIAMETERS. 2.CONSTRUCTION JOINTS SHALL BE LOCATED AND DETAILED ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER. 13.HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED IN THE WALLS AND BEAMS UNLESS 14.CHAMFER EXPOSED CONC CORNERS $\frac{34}{7}$ x45 degrees, unless otherwise noted. 15.ALL necessary sleeves and inserts are to be furnished and placed by the various

TRADES IN FULL COOPERATION WITH THE CONTRACTOR. 16.STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL. PLUMBING AND ELECTRICAL DRAWINGS AND THESE DRAWINGS SHALL BE REFERRED TO FOR SIZES AND LOCATION OF OPENINGS. BENTS. PIPES. INSERTS AND HANGERS 17.CUT NO BARS, OMIT NO BARS ON ACCOUNT OF SLEEVES OR DUCT OPENINGS IN FLOORS EXCEPT AS SPECIFICALLY DETAILED ON THE DRAWINGS. BARS MAY BE MOVED ASIDE WITHOUT

18.THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR TESTING AGENCY THAT REINFORCEMENT IS COMPLETE AND READY FOR INSPECTION AT LEAST 24 HOURS IN ADVANCE OF CONCRETE 19.PRIOR TO REQUESTING INSPECTION OF REINFORCING, THE CONTRACTOR SHALL HAVE COMPLETED ALL NECESSARY WORK, INCLUDING THE WORK OF OTHER TRADES, THE ERECTION OF CONSTRUCTION JOINT DAMS AND THE THOROUGH CLEANING OF ALL FORMS IN THE AREA 20.ALL CONCRETE SURFACES SHALL BE COMPLETELY CLEANED OF ANY DIRT, TRASH OR OTHER CONTAMINATION TO THE SURFACE BEFORE PLACING NEW CONCRETE.

I. PRECAST CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318-02, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND WITH PCI MANUAL 120-99 CODE OF STANDARD PRACTICE FOR PRECAST CONCRETE AND SPECIFICATION SECTION 03410 . CONCRETE FOR ALL PRECAST ELEMENTS SHALL BE NORMAL WEIGHT AND SHALL DEVELOP 28 DAY COMPRESSIVE STRENGTH, f'c, OF 5,000 PSI, MINIMUM (UON). CONCRETE FOR ALL PRECAST ELEMENTS SHALL BE CONSIDERED AS SUBJECTED TO SEVERE EXPOSURE AND CHLORIDE IONS FROM DEICING CHEMICALS.

VI. MASONRY 1. MASONRY CONSTRUCTION SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530-95/ASCE 6-95, SPECIFICATIONS FOR MASONRY STRUCTURES ACI 530.1-02 / ASCE 6-02, AND SPECIFICATION SECTION 04810. 2. HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 MEDIUM WEIGHT, TYPE 1. MOISTURE CONTROLLED UNITS, UON. 3. THE MINIMUM DESIGN COMPRESSIVE STRENGTH OF MASONRY (f'm) SHALL BE 3,000 PSI. 4. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. 5. GROUT SHALL CONFORM TO ASTM C467 WITH COMPRESSIVE STRENGTH (f'g) EQUAL TO OR GREATER THAN I'M BUT NOT GREATER THAN 5,000 PSI. 6. CMU LINTELS, WHERE REQUIRED, SHALL BE CONSTRUCTED AS SHOWN IN THE CMU LINTEL SCHEDULE. SEE TYPICAL DETAIL SHEETS. . STEEL ANGLE LINTELS, WHERE REQUIRED, SHALL BE CONSTRUCTED AS SHOWN ON THE STEEL

B. CELLS OF BLOCK CONTAINING REINFORCEMENT SHALL BE IN LINE VERTICALLY. MORTAR THE

LINTEL SCHEDULE. SEE TYPICAL DETAIL SHEETS.

BLOCK CROSS WEBS TO PREVENT GROUT LOSS.

9. REVIEW PROPOSED TECHNIQUES FOR INSTALLING REINFORCED BLOCK MASONRY AS WELL AS PROPOSED BLOCK TYPES WITH THE ARCHITECT PRIOR TO CONSTRUCTION. 10.PROVIDE HORIZONTAL 2-W1.7 WIRE JOINT REINFORCEMENT AT 16" ON CENTER VERTICAL. AT OPENINGS OF 16" OR GREATER. PROVIDE HORIZONTAL REINFORCEMENT IN THE FIRST HORIZONTAL JOINT ABOVE AND BELOW THE OPENING. BOND BEAMS MAY BE PROVIDED IN LIEU OF JOINT REINFORCING. PROVIDE BOND BEAMS WITH FOLLOWING MINIMUM HORIZONTAL REINFORCEMENT IN ALL CMU WALLS UNLESS OTHERWISE NOTED:

6" CMU, #4@48" O.C. 8" CMU, #5@48" O.C. OR #4@32" O.C. B. AT TOP AND BOTTOM OF WALLS: 8" CMU, #5 PROVIDE WITHIN 16" OF TOP AND BOTTOM OF WALL C. AT OPENINGS:

PROVIDE ABOVE AND BELOW OPENING BARS TO EXTEND THE GREATER OF 24" OR 40 BAR DIAMETERS PAST THE OPENING 6" CMU, #4 PROVIDE CONTINOUS WHERE FLOOR OR ROOF IS STRUCTURALLY CONNECTED 12.PROVIDE THE FOLLOWING MINIMUM VERTICAL REINFORCEMENT IN ALL MASONRY WALLS UNLESS OTHERWISE NOTED:

6" CMU, #5@32" O.C. TYPICAL 8" CMU, #5@24" O.C. TYPICAL B. NON-LOADBEARING WALLS 16 FEET OR LESS IN HEIGHT:

A. LOADBEARING WALLS:

C. PROVIDE #5 WITHIN 8" OF ENDS OF WALLS, WITHIN 8" EACH SIDE OF MOVEMENT JOINTS, WITHIN 16" EACH SIDE OF OPENINGS OF 16" OR GREATER 13.PROVIDE HEAD ANCHORAGE TO FLOOR ABOVE AT TOP OF ALL NON-LOADBEARING WALLS. SEE TYPICAL DETAILS. 14.PROVIDE 2" SOFT JOINT BETWEEN TOP OF NON-LOADBEARING CMU WALLS AND BOTTOM OF PRECAST DOUBLE-TEES AND STEEL BEAMS. JOINT TO BE FIRE-RATED WHERE REQUIRED. 15.CONTRACTOR SHALL COORDINATE CMU CONSTRUCTION AND ALL REQUIRED DETAILS, EMBEDMENTS AND REINFORCING WITH ELEVATORS, STAIRS AND ANY OTHER RELATED

16.SPECIAL ATTENTION SHALL BE GIVEN TO ANY REQUIRED CONSTRUCTION SEQUENCES WHICH MAY REQUIRE COORDINATION WITH OTHER TRADES. THIS MAY INCLUDE, BUT IS NOT LIMITED TO STAIR LANDINGS WHICH MUST BE INSTALLED INTEGRALLY WITH CMU WALL PRIOR TO CONTINUING CMU CONTRUCTION VERTICALLY. VII. STRUCTURAL STEEL

1. STRUCTURAL STEEL CONSTRUCTION, FABRICATION AND ERECTION SHALL CONFORM TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STEEL BUILDINGS, 1999, AND SPECIFICATION SECTION 05120. . Structural steel shall conform to the following unless otherwise shown A. ROLLED SHAPES, COLUMNS, BEAMS, TEES, AND GIRDERS ASTM A992 ASTM A572, GRADE 50 C. ANGLES, PLATES, STAIR STRINGERS ASTM A36 ASTM A500, GRADE E D. HOLLOW STRUCTURAL SHAPES

3. UON, ALL BOLTED FASTENERS SHALL BE ASTM A325N BEARING TYPE HIGH STRENGTH BOLTS. ALL BOLTS TO BE HOT-DIP GALVANIZED. 4. SLIP CRITICAL CONNECTIONS, AS SHOWN, SHALL BE ASTM A325 SC BOLTS. (REQ'D AT ALL 5. WELDED CONNECTIONS SHALL CONFORM TO AWS D1.1, "STRUCTURAL WELDING CODE" USING E70XX LOW HYDROGEN ELECTRODES CONFORMING TO AWS SPECIFICATION A5.1. COMPOSITE STEEL BEAMS ARE DESIGNED BASED ON UNSHORED CONSTRUCTION. '. DETAILS, FABRICATION AND ERECTION SHALL CONFORM TO THE SPECIFICATIONS AND TO THE LATEST STANDARD SPECIFICATIONS OF AISO 8. ALL CONNECTIONS SHALL BE AS SHOWN ON THE DRAWINGS AND/OR AS DESCRIBED IN THE 9. THE CONSTRUCTOR SHALL TAKE SPECIAL NOTE THAT THE HORIZONTAL STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE INTERACTION BETWEEN THE STRUCTURAL STEEL AN THE PRECAST DOUBLE TEE DECK. EACH SECTION OF THE STRUCTURE IS STABLE ONLY AFTER

REQUIRED IN THE AISC SPECIFICATIONS CONSIDERING THIS BUILDING AS A NON SELF-SUPPORTING FRAME 10.MOMENT CONNECTIONS SHALL BE MADE AFTER THE PRECAST DOUBLE TEES HAVE BEEN 11.STEEL H-PILES SHALL BE NEW AND SHALL BE FABRICATED OF GRADE 50 (50 KSI) STEEL.

HAVE BEEN COMPLETED. TEMPORARY GUYS AND BRACINGS SHALL BE PROVIDED AS

THE DOUBLE TFE DECK IS ERECTED AND THE BRACING CONNECTIONS AND COLUMN SPLICES

I. METAL DECK WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF AISI "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND STEEL DECK INSTITUTE "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK," "SPECIFICATIONS AND COMMENTARY FOR COMPOSITE STEEL FLOOR DECK," AND SPECIFICATION SECTION 05310. 2. STEEL ROOF DECK SHALL BE 1½" DEEP, DESIGN THICKNESS OF 0.0474" (18GA) WIDE RIBBED DECK FABRICATED WITH ZINC COATED STEEL SHEETS COMPLYING WITH ASTM A653. QUALITY SQ. GRADE 33 KSI WITH COATING DESIGNATION G90 (UON). 3. STEEL FLOOR DECK TYPE SHALL BE 2" DEEP, DESIGN THICKNESS OF 0.0474" (18GA) COMPOSITE FLOOR DECK FABRICATED WITH ZINC COATED STEEL SHEETS COMPLYING WITH

ASTM A653, QUALITY SQ, GRADE 33 KSI WITH COATING DESIGNATION G90 (UON). 4. HEADED STUD SHEAR CONNECTORS SHALL BE 34" DIAMETER, 4" LONG AND SHALL CONFORM TO ASTM A108, GRADE DESIGNATION 1015 (UON). FIELD WELDING OF STUDS SHALL CONFORM WITH AWS D1.1 CODE. IX. CONCRETE ANCHORS

1. EXPANSION TYPE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F-488.

"STANDARD TEST METHODS FOR STRENGTH OF ANCHORS IN CONCRETE AND MASONRY ELEMENTS" AND ICBO ES AC-01; ACCEPTANCE CRITERIA FOR EXPANSION ANCHORS IN CONCRETE AND MASONRY ELEMENTS 2. ADHESIVE TYPE ANCHORS SHALL FURTHER CONFORM TO THE REQUIREMENTS OF ASTM E-1512, "STANDARD TEST METHODS FOR TESTING BOND PERFORMANCE OF ADHESIVE BONDED ANCHORS" AND ICBO ES AC-58; ACCEPTANCE CRITERIA FOR ADHESIVE ANCHORS IN CONCRETE AND MASONRY ELEMENTS. 3. PROVIDE SIZE, TYPE AND EMBEDMENT OF ANCHOR INDICATED. THE ANCHORS SHALL HAVE MINIMUM SAFETY FACTOR OF 4:1 4. ANCHOR INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S CURRENT PRINTED 5. A QUALIFIED MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING THE FIRST

INSTALLATION TO ENSURE CORRECT PROCEDURES ARE BEING FOLLOWED. 6 REMOVE DUST AND DEBRIS FROM DRILLED HOLES LISING COMPRESSED AIR OR VACUUM AT THE BOTTOM OF THE HOLE. REMOVE ANY STANDING WATER FROM HOLES TO RECEIVE ADHESIVE ANCHORS. 7. PROVIDE STUD TYPE ANCHORS FROM ONE OF THE FOLLOWING MANUFACTURERS: A. KWIK-BOLT II. MADE BY HILTI, INC., TULSA, OK B. POWER-STUD MADE BY POWERS RAWL, NEW ROCHELLE, NY

8. PROVIDE ADHESIVE ANCHORS FROM ONE OF THE FOLLOWING MANUFACTURERS: A. HILTI HIT HY-150 ADHESIVE ANCHORING SYSTEM, HILTI, INC., TULSA, OK B. ACRYLIC 100 ANCHORING SYSTEM, POWERS RAWL, NEW ROCHELLE, NY.

X. CONSTRUCTION GENERAL NOTES

1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODES AND DESIGN STANDARDS TO SUPPORT IN-PLACE DESIGN LOADS N A COMPLETED STRUCTURE. PROVIDE ADDITIONAL SUPPORTS OR TEMPORARY SHORING/BRACINGS FOR THE STRUCTURE, AS NEED. DUE TO THE FORCES IMPOSED DURING CONSTRUCTION. PRINCIPAL OPENINGS THROUGH THE ROOF AND FLOORS ARE SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE OTHER OPENINGS, INSERTS, SLEEVES, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS WITH ARCHITECTURAL AND MEP DRAWINGS. 3. THE STRUCTURE SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC REQUIREMENTS FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AISC CODE OF

4. PRECAST CONCRETE SHALL NOT BE ERECTED UNTIL COLUMN BASE PLATES HAVE BEEN FULLY GROUTED AND ATTAINED A COMPRESSIVE STRENGTH OF NO LESS THAN 3,000 PSI.

PRESTRESSED BARRIER STRAND CABLE NOTES

I. GENERAL

I. BARRIER RAILINGS SHALL BE CAPABLE OF RESISTING AN ULTIMATE FORCE OF 10,000 LBS AT 18 INCHES ABOVE THE FLOOR DECK. 2. GALVANIZED PRESTRESSING STRAND (GPC) FOR BARRIERS SHALL HAVE A ZINC COATING WEIGHT CLASS A AS DESIGNATED IN ASTM A475 TABLE 4. STRAND SHALL BE ASTM A-416. GRADE 270. CERTIFIED MILL TEST REPORTS SHALL BE SUBMITTED FOR EACH COIL. 3. ADJUSTABLE ANCHORS TO BE "GRAB-IT" TYPE MANUFACTURED BY FLORIDA WIRE AND COMPANY INC., OR APPROVED EQUAL. THE DEVICE CAN BE USED TO MECHANICALLY RE-ADJUST THE TENSION OF THE BARRIER TENSION OF THE BARRIER CABLE AFTER

INSTALATION AND ALLOW FOR REPAIR OF THE BARRIER CABLE AFTER INSTALATION. . INSTALLATION AND STRESSING: a) PROPER CALIBRATED STRESSING EQUIPMENT SHALL BE SUPPLIED FOR THE PARTICULAR APPLICATION AND/OR BARRIER CABLE SYSTEM THAT IS NECESSARY TO PERFORM WORK. b) AT THE INTERMEDIATE SPACERS PROVIDE A HOLE WHICH IS A MINIMUM OF 1/8" DIAMETER c) AT THE END SUPPORTS, A THREADED ANCHORING DEVICE SHALL BE INSTALLED INTO AN INSERT THAT DEVELOPS THE SINGLE CABLE DESIGN LOAD. d) ALL THE BARRIER CABLES SHALL BE STRESSED TO A MINIMUM FORCE OF 5 Kips FOR 34'-0" SPANS TO PREVENT SAGGING.

e) ALL FIXED AND STRESSING ANCHORAGES SHALL BE BACKSTRESSED. f) BARRIER CABLE TAILS SHALL BE REMOVED WITHIN ONE INCH FROM THE FACE OF THE COLUMN USING EITHER AN OXYACETYLENE TORCH OR A METAL CUT-OFF SAW. PROVIDE END CAPS ON ALL BARRIER CABLE TAILS. q) BARRIER CABLE THAT PASSES THROUGH A HOLE IN THE END SUPPORT AT THE ANCHORAGES SHALL HAVE THE HOLE SEALED TO PREVENT WATER FROM FOLLOWING THE PATH OF THE BARRIER CABLE TO THE ANCHORAGE.

METAL STAIR NOTES

 STRUCTURAL PERFORMANCE: ENGINEER, FABRICATE, AND INSTALL STEEL STAIRS, HANDRAILS, AND RAILING SYSTEMS TO WITHSTAND THE FOLLOWING STRUCTURAL LOADS WITHOUT EXCEEDING THE ALLOWABLE DESIGN WORKING STRESS OF THE MATERIAL INVOLVED, INCLUDING ANCHORS AND CONNECTIONS. APPLY EACH LOAD TO PRODUCE THE MAXIMUM STRESS IN EACH COMPONENT OF

A. TREADS OF STEEL STAIRS: CAPABLE OF WITHSTANDING A UNIFORM LOAD OF 100 lb/sq ft OR A CONCENTRATED LOAD OF 300 Ib ON AN AREA OF 4 SQ INCHES LOCATED IN THE CENTER OF

B. LANDING OF STEEL STAIRS: CAPABLE OF WITHSTANDING A UNIFORM LOAD OF 100 lb/sq ft. C. STAIR FRAMING: CAPABLE OF WITHSTANDING STRESSES RESULTING FROM LOADS SPECIFIED ABOVE PLUS THE RAILING SYSTEM LOADS. D. TOP RAIL OF GUARDRAIL SYSTEM: CAPABLE OF WITHSTANDING THE FOLLOWING LOADS APPLIED

AS INDICATED: 1. CONCENTRATED LOAD OF 200 Ib AT ANY POINT IN ANY DIRECTION 2. UNIFORM LOAD OF 50 Ib/ft APPLIED HORIZONTALLY WITH A UNIFORM LOAD OF 100 Ib/ft APPLIED VERTICALLY DOWNWARD.

3. CONCENTRATED AND UNIFORM LOADS ARE NOT ASSUMED TO E. HANDRAILS: CAPABLE OF WITHSTANDING THE FOLLOWING LOADS: 1. CONCENTRATED LOAD OF 200 Ib APPLIED AT ANY POINT IN ANY DIRECTION. 2. UNIFORM LOAD OF 50 Ib/ft APPLIED IN ANY DIRECTION.

3. CONCENTRATED AND UNIFORM LOADS ABOVE ARE NOT ASSUMED TO ACT CONCURRENTLY F. INFILL AREA OF GUARDRAIL SYSTEM: CAPABLE OF WITHSTANDING A HORIZONTAL CONCENTRATED LOAD OF 50 Ib ON A 1 SQ FT AREA AT ANY POINT (PANELS, INTERMEDIATE RAILS, ETC.). 1. THIS LOAD IS NOT ASSUMED TO ACT CONCURRENTLY WITH LOADS

G. STRUCTURAL PERFORMANCE OF HANDRAILS AND GUARDRAIL SYSTEMS: ENGINEER TO FABRICATE AND INSTALL HANDRAILS AND RAILING SYSTEMS TO COMPLY WITH REQUIREMENTS OF ASTM E985.

1. PRODUCT DATA FOR METAL STAIRS, PREFILLED METAL PAN STAIR TREADS, NONSLIP AGGREGATES AND NONSLIP AGGREGATE SURFACE FINISHES, PAINT PRODUCTS AND GROUT. 2. SHOP DRAWINGS DETAILING FABRICATION AND INSTALLATION OF STEEL STAIRS: INCLUDE PLANS, ELEVATIONS, SECTIONS AND DETAILS OF STEEL STAIRS AND THE CONNECTIONS. SHOW ANCHORAGE AND ACCESSORY ITEMS. PROVIDE TEMPLATES FOR ANCHORS AND BOLTS SPECIFIED FOR

. INCLUDE STRUCTURAL ANALYSIS AND DESIGN DATA SEALED AND SIGNED BY THE QUALIFIED PROFESSIONAL ENGINEER WHO WAS RESPONSIBLE FOR THE PREPARATION. I. WELDER CERTIFICATES SIGNED BY CONTRACTOR CERTIFYING THAT WELDERS COMPLY WITH THE REQUIREMENTS SPECIFIED UNDER THE "QUALITY ASSURANCE," TO DEMONSTRATE CAPABILITIES AND

1. STEEL PLATES, SHAPES AND BARS: ASTM A36.

2. STEEL TUBING: HOT FORMED STEEL TUBING, ASTM A501. 3. STEEL PIPE: STANDARD WEIGHT UNLESS NOTED OTHERWISE. 4. UNCOATED STRUCTURAL STEEL SHEET: PRODUCT TYPE, QUALITY AND GRADE:

1. COLD ROLLED STRUCTURAL SHEET: ASTM A1008, GRADE A UNLESS NOTED OTHERWISE 5. WELDING RODS AND BORE ELECTRODES: SELECT ACCORDING TO AWS SPECIFICATIONS FOR THE METAL ALLOY TO BE WELDED.

GENERAL: PROVIDE PLATED FASTENERS COMPLYING WITH ASTM B633, CLASS Fe/Zn 25 FOR ELECTRO-DEPOSITED Zn COATING FOR EXTERIOR USE OR WHERE BUILT INTO EXTERIOR. 2. EXPANSION ANCHORS: ANCHOR BOLT AND SLEEVE ASSEMBLIES OF MATERIAL INDICATED BELOW WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 4 TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE AS DETERMINED BY TESTING PER ASTM E488 BY A QUALIFIED INDEPENDENT TESTING AGENCY. MATERIAL: CARBON STEEL COMPONENTS ZINC PLATED TO COMPLY WITH ASTM B633, CLASS Fe/Zn 5.

1. HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 OR A153. 2. TOUCH UP ALL FIELD WELDS OR OTHER COATING DAMAGE W/ COLD GALVANIZED (ZRC OR SIMILAR).

CONCRETE FILL AND REINFORCING 1. CONCRETE MATERIALS: COMPLY WITH REQUIREMENTS OF DIVISION 3 SECTION "CAST-IN-PLACE CONCRETE" FOR NORMAL WEIGHT. READY MIXED CONCRETE WITH 36" MAXIMUM AGGREGATE SIZE AND A MIN 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED. 2. NONSLIP AGGREGATE FINISH: FACTORY PACKAGED ABRASIVE AGGREGATE MADE FROM FUSED, ALUMINUM-OXIDE GRITS OR CRUSHED EMERY, RUST PROOF AND NONGLAZING; UNAFFECTED BY

FREEZING, MOISTURE OR CLEANING MATERIALS. 3. PROVIDE FIBROUS REINFORCING AT A DOSAGE RATE OF 1.5 LB/CU YARD.

STEEL FABRICATION 1. FORM STEEL STAIRS FROM MATERIALS OF SIZE, THICKNESS, AND SHAPES INDICATED OR AS DETERMINED BY SUBMITTED STRUCTURAL ANALYSIS AND DESIGN. WORK TO DIMENSIONS AND ELEVATIONS INDICATED OR ACCEPTED ON SHOP DRAWINGS USING DETAILS OF FABRICATION AND

2. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS WHEREVER POSSIBLE. USE EXPOSED FASTENERS AND LOCATE JOINTS WHERE LEAST CONSPICUOUS.

STEEL FRAMED STAIRS 1. CONSTRUCT STAIRS TO CONFORM TO SIZES AND ARRANGEMENTS INDICATED OR AS DETERMINED BY SUBMITTED STRUCTURAL ANALYSIS AND DESIGN. JOIN PIECES TOGETHER BY WELDING, UNLESS NOTED OTHERWISE. PROVIDE COMPLETE STAIR ASSEMBLIES, INCLUDING METAL FRAMING, HANGERS, COLUMNS, HANDRAILS, RAILING SYSTEMS, NEWELS, BALUSTERS, STRUTS, CLIPS, OR OTHER COMPONENTS NECESSARY FOR THE SUPPORT OF STAIRS AND PLATFORMS, AND AS REQUIRED TO ANCHOR AND CONTAIN THE STAIRS ON THE THE SUPPORTING STRUCTURE. A. NAAMM STAIR STANDARD: COMPLY WITH STANDARDS FOR FIXED METAL STAIRS IN NAAMM "METAL STAIR MANUAL"

COORDINATION WITH OTHER TRADES 1. COORDINATE WITH WORK OF OTHER TRADES, INCLUDING, BUT NOT LIMITED TO: A. MECHANICAL, ELECTRICAL, PLUMBING PENETRATIONS B. FIRE PROTECTION PENETRATIONS

C. MASONRY INCLUDING CONSTRUCTION SEQUENCING REQUIREMENTS D. CURTAIN WALL

ABBREVIATIONS

ANCHOR BOLT k KIP AMERICAN CONCRETE ADDENDUM POUND ADDITIONAL LONG LIVE LOAD AMERICAN INSTITUTE OF LONG WAY STEEL CONSTRUCTION, INC LIGHTWEIGHT CONCRETE ALTERNAT APPROX APPROXIMATEL ARCHITECT, ARCHITECTURAL MAXIMUM AMERICAN SOCIETY OF MECHANICAL CIVIL ENGINEERS AMERICAN SOCIETY FOR TESTING AND MATERIALS BITUMINOUS

MECHANICAL, ELECTRICAL AND PLUMBING MANUFACTURER BUILDING LINE MISCELLANEOUS BLDG BUILDING BEAM NORTH BOT BOTTOM NEAR FACE NOT IN CONTRACT BRIDGING BEARING NOMINA

OUTSIDE LEG

OUT TO OUT

OPPOSITE HAND

PERPENDICULAR

PLATE, PLANE

SQUARE FOOT

PLATFORM

POINT

RISER

REV

REINF

REQ'D

STRL

TEMP

T/CONC

T/CURB

T/FTG

T/PC

VERT

W-BM

W-COL

RADIUS

REFERENCE

REVISION

ROOF DRAIN

REINFORCE

REQUIRED

SOUTH

SHEET

SLAB-ON-GRADE

SPACE, SPIRAL

SPECIFICATION

SQUARE FOOT

SQUARE INCH

STANDARD

STRUCTURAL

SHORT WAY

TEMPORARY

THROUGH

TOP OF STEEL

TOP OF WALL

TOP OF CURB

TOP OF PIER

UPPER

VERTICAL

WIDTH

VERIFY IN FIELD

WEST OR WIDE

WORK POINT

WELDED WIRE FABRIC

WIDE FLANGE BEAM

WITH (COMB FORM)

WIDE FLANGE COLUMN

TOP AND BOTTOM

TOP OF CONCRETE

TOP OF FOOTING

TOP OF PILE CAP

UNLESS OTHERWISE NOTED

TYPICAL

SYMMETRICAL

TRAFFIC BEARING MEMBRANE

STIRRUP

STEEL

STAINLESS STEEL

SQUARE

PRECAST

QUANTITY

PROPERTY LINE

POUND-FORCE PER

POUND FORCE PER

REACTION IN KIPS

PRECAST/PRESTRESSED

POINT OF INTERSECTION

BRACKET NOT TO SCALE BENT PLATE ON CENTER BACK TO BACK OUTSIDE DIAMETER BOTTOM OF FOOTING OUTSIDE FACE BOTTOM OF METAL DECK OPPOSITE

CHAM CHAMFER CIP CAST-IN-PLACE CONSRUCTION JOINT CENTER LINE CLEAR, CLEARANCE

CMU CONCRETE MASONRY UNIT COL COLUMN COMP COMPOSITE CONCRETE CONNECT OR CONNECTION CONSTR CONSTRUCTION

CONTINUE, CONTINUOUS COMPLETE PENETRATION CTJ CONTROL JOINT CTR CENTER CENTER TO CENTER

DBL DEGREE DEMOLISH, DEMOLITION DEPR DEPRESSION DET DIAG

DIAGONAL DIM DIMENSION DEAD LOAD DN DOWN DITTO DOUBLE DWG DRAWING

EACH FACE EXPANSION JOIN EL, ELEV ELEVATION ELECTRIC ELEC EMB EMBEDDED, EMBEDMENT ENGR ENGINEER EQ EQUAL, EQUALLY

EQ SP EQUALLY SPACED EQPT EQUIPMENT EST ESTIMATE(D) EW FACH WAY EXIST EXISTING

EXP EXPANSION EXTERIOR SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE FLOOR DRAIN

FDN FOUNDATION FINISH FLOOR FLOOR, FLOOR LINE, FLUSH FIN FT FEET OR FOOT FTG FOOTING FACE TO FACE F/F

GA GAGE GALV GALVANIZE GRADE BEAM GENERAL CONTRACTOR GYP GYPSUM

HORIZ HORIZONTAL HIGH POINT HP HEIGHT HEATING, VENTILATION AND AIR CONDITIONING

INCL INCLUDE INFORMATION INFO INT INTERIOR INVERT INV

LEGEND

FOOTING MARK (B/FTG EL) FORMED PIER MARK [T/P EL] PILE CAP MARK [T/PC EL] DRILLED PIER MARK H-PILE MARK GRADE BEAM MARK STRAP BEAM MARK COLUMN MARK TOS EL (+/- ESTABLISHED ELEV) (+____) C = ___" NUMBER OF STUDS (EQ SP, UON) MOMENT FRAME CONNECTION —**⊕**H NON-FRAME MOMENT CONNECTION POST ABOVE & BELOW ROOF DECK SIZE AND SPAN DIRECTION COMPOSITE FLOOR DECK TOTAL THICKNESS AND SPAN DIRECTION SLAB CHANGE IN ELEVATION (± FROM ESTABLISHED ELEVATION)

FLOOR DRAIN LOCATION REVISION NUMBER

— — — PROPERTY LINE — · — · — LIMIT OF WORK

×-----× FENCE LINE

MATERIAL SYMBOLS

PRECAST CONCRETE PRECAST CONCRETE WASH

CAST-IN-PLACE CONCRETE

RIGID INSULATION GRAVEL OR CRUSHED STONE

CIP CONC W/FIBROUS REINF SEALANT AND BACKER ROD

BITUMINOUS CONCRETE SLAB-ON-GRADE

DRAFTING SYMBOLS

SECT/DET NUMBER - SHEET ON WHICH SCALE SECTION OR DETAIL IS REFERENCED SECTION NUMBER

SECTION IS DRAWN A DETAIL DESIGNATION DETAIL IS DRAWN

----SHEET ON WHICH

DRAWING LIST

S1.00 FOUNDATION PLAN GROUND FLOOR STRUCTURAL PLAN S1.02 FIRST FLOOR STRUCTURAL PLAN

SECOND FLOOR STRUCTURAL PLAN THIRD FLOOR STRUCTURAL PLAN

S1.07 ROOF STRUCTURL PLAN

S4.01 EXTERIOR SECTIONS

S5.01 STAIR PLANS, SECTIONS & DETAILS

S6.01 PRECAST DOUBLE TEE SECTIONS & DETAILS S7.01 TYPICAL DETAILS

SO.01 GENERAL NOTES & INFORMATION

S.105 FOURTH FLOOR STRUCTRUAL PLAN S1.06 FIFTH FLOOR STRUCTURAL PLAN

S2.01 COLUMN SCHEDULE S3.01 FOUNDATION SECTIONS & DETAILS

S4.02 INTERIOR SECTIONS S4.03 RETAIL PLAN & SECTIONS & ISLAND PART PLANS

S4.04 GENERAL DETAILS

S5.02 PLANS SECTIONS AND DETAILS

OWNER

GATEWAY PORTLAND, ME

OCEAN

CLIENT

RIVERWALK

50 MONUMENT SQ. PORTLAND, ME 04101

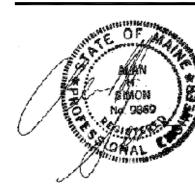
PROJECT

OCEAN GARAGE

MIDDLE STREET PORTLAND, MAINE

REVISIONS NO. DATE DESCRIPTION √1\ 8.10.07 BULLETIN 1

22 FEB 2007 SCALE AS NOTED PROJECT NO. 05-032



DRAWING TITLE GENERAL NOTES & INFORMATION

SHEET NUMBER