GENERAL NOTES:

1. 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.

2. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE PLACEMENT AND ERECTION PROCEDURES AND SEQUENCING TO INSURE THE SAFETY OF THE COMPONENTS AND SURROUNDING STRUCTURES DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY FORM WORK, SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS. SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.

3. SECTIONS AND DETAILS SHOWN ON ANY STRUCTURAL DRAWINGS SHALL BE CONSIDERED TYPICAL FOR SIMILAR CONDITIONS.

4. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR ALL PARTS OF THE WORK, INCLUDING DESCRIPTION OF FORM WORK, SHORING, CONSTRUCTION METHODS AND SEQUENCING WHERE APPLICABLE. NO PERFORMANCE OF THE WORK, SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER AND ARCHITECT.

5. ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

FOUNDATION NOTES:

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AS WELL AS ALL APPROPRIATE AGENCIES AND MUNICIPALITIES TO AVOID DAMAGE TO UNDERGROUND UTILITIES PRIOR TO THE START OF ANY SITE WORK.

2. THE CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIALS AND REPLACE WITH COMPACTED STRUCTURAL FILL AND/OR A STABILIZED GEOTECHNICAL SYSTEM (BY OTHERS) UP TO BOTTOM OF FOOTINGS AND SLABS. IN ADDITION, THE CONTRACTOR SHALL MAKE PROVISIONS FOR DEWATERING ALL GROUNDWATER DURING EXCAVATIONS OF FOUNDATIONS.

3. DEPTHS AND QUANTITIES OF MATERIAL REMOVAL AND REPLACEMENT SHALL BE BASED UPON THE DRAWINGS THIS INCLUDES ALL REMOVAL OF UNSUITABLE SOILS, COMPACTION OF EXISTING SOILS, SPECIFICATIONS AND PLACEMENT OF GRANULAR FILL, AND ANY ADDITIONAL REQUIREMENTS.

4. WHERE STRUCTURAL FILL IS SPECIFIED, IT SHALL BE MDOT TYPE 'D' GRAVEL. STRUCTURAL FILL SHALL BE PLACED & COMPACTED IN LIFTS NOT EXCEEDIGN 6 INCHES AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557.

5. SOILS EXPOSED AT THE BASE OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGE IN CONDITION, SUCH AS DISTURBANCE FROM RAIN OR FROST. SURFACE RUNOFF SHOULD BE DRAINED AWAY FROM THE EXCAVATIONS AND NOT BE ALLOWED TO POND. FOUNDATION EXCAVATIONS SHOULD BE ADEQUATELY PROTECTED FROM RAINFALL OR FREEZING CONDITIONS. GROUNDWATER SHOULD BE ANTICIPATED FOR EXCAVATIONS AND APPROPRIATE DEWATERING MEASURES SHALL BE EMPLOYED.

6. SLOPE FOOTING EXCAVATIONS AS REQUIRED FOR STABILITY AND SAFETY OR PROVIDE SHEETING OR SHORING IN ACCORDANCE WITH OSHA REQUIREMENTS. BRACED EXCAVATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE.

5. EXCAVATIONS SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MAINE PRIOR TO PLACING FOUNDATIONS.

6. CONCRETE FOUNDATIONS HAVE BEEN DESIGNED USING A DESIGN ALLOWABLE BEARING PRESSURE OF 1,500 PSF IN ACCORDANCE WITH TABLE 1806.2 OF THE 2012 EDITION OF THE INTERNATIONAL BUILDING CODE. IF AFTER EXCAVATIONS THE SITE GEOTECHNICAL ENGINEER DETERMINES THAT THE ALLOWABLE SOIL PRESSURE DIFFERS FROM 1,500 PSF CONTACT THE DESIGN ENGINEER PRIOR TO PLACING FOUNDATIONS.

7. MATERIAL FOR CONTROLLED FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 12 INCHES AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE WITHIN 2 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT. MAXIMUM PARTICLE SIZE FOR CONTROLLED FILL SHALL BE 6 INCHES.

CONCRETE NOTES:

1. CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)," AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301)." GENERAL CONTRACTOR, AND CONSTRUCTION MANAGER SHALL HAVE AVAILABLE ON SITE AT ALL TIMES A COPY OF ACI "FIELD REFERENCE MANUAL SP–15".

2. CONCRETE SHALL PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.

3. PORTLAND CEMENT SHALL CONFORM TO ASTM C150 TYPE I OR II. AGGREGATES SHALL CONFORM TO ASTM C33 CLASS 3S.

4. READY–MIX CONCRETE MUST COMPLY WITH THE REQUIREMENTS OF ASTM C94, AND AS SPECIFIED HEREIN. PROVIDE BATCH TICKET FOR EACH BATCH DISCHARGED AND USED IN WORK, INDICATING PROJECT NAME, MIX TYPE, MIX TIME, BATCH QUANTITY, AND PROPORTIONS OF INGREDIENTS. JOB–SITE MIXING WILL NOT BE PERMITTED.

5. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315, LATEST EDITION. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED.

6. CONCRETE MIX DESIGN:

   A. STRENGTH: 4,000 psi at 28 DAYS
   B. AGGREGATE: ¾ INCH NOMINAL MAXIMUM
   C. W/C RATIO: 0.45 MAXIMUM
   D. ENTRAINED AIR: 6% ± ½% FOR CONCRETE EXPOSED TO WEATHER OR SOIL.
   E. SLUMP: 1–5 INCHES BEFORE ADDITION OF HIGH RANGE WATER REDUCER OR PLASTICIZER.
   F. ADD AIR ENTRAINING ADMIXTURE AT MANUFACTURER'S PRESCRIBED RATIO TO RESULT IN CONCRETE AT POINT OF PLACEMENT HAVING THE ABOVE NOTED AIR CONTENTS.
   G. ADDITIONAL SLUMP MAY BE ACHIEVED BY THE ADDITION OF A MIDRANGE OR HIGH RANGE WATER REDUCING ADMIXTURE. MAXIMUM SLUMP AFTER ADDITION OF ADMIXTURE SHALL BE 8 INCHES.
   H. MIX ADJUSTMENTS MAY BE REQUESTED BY THE CONTRACTOR, WHEN CHARACTERISTICS OF THE MATERIALS, JOB CONDITIONS, WEATHER OR OTHER CIRCUMSTANCES WARRANT, AT NO ADDITIONAL COST TO THE OWNER AND AS ACCEPTED BY THE ENGINEER. LABORATORY TEST DATA FOR THE REVISED MIX DESIGN AND STRENGTH DATA MUST BE SUBMITTED AND ACCEPTED BY THE ENGINEER BEFORE USING IN WORK.
   J. WATER MAY BE ADDED AT THE PROJECT SITE ONLY IF THE MAXIMUM SPECIFIED WATER–CEMENT RATIO AND SLUMP ARE NOT EXCEEDED. CONTRACTOR SHALL HAVE BATCH TICKET INDICATING WATER AND CEMENT MIXED IN THE PLANT, AND SHALL RECORD THE WATER ADDED AS EVIDENCE THAT THE WATER–CEMENT RATIO HAS NOT BEEN EXCEEDED.
   K. ADDITIONAL DOSES OF SUPER PLASTICIZER SHOULD BE USED WHEN DELAYS OCCUR AND REQUIRED SLUMP HAS NOT BEEN MAINTAINED. A MAXIMUM OF TWO ADDITIONAL DOSAGES ARE PERMITTED PER ACI 212.3R RECOMMENDATIONS.

7. CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND. CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE SHOWN OR NOTED. VERTICAL CONSTRUCTION JOINTS AND STOPS IN CONCRETE WORK SHALL BE MADE AT MIDSPAN OR AT POINTS OF MINIMUM SHEAR.

8. PROVIDE PVC SLEEVES WHERE PIPES PASS THROUGH EXTERIOR CONCRETE, OR SLABS, UNLESS SHOWN OTHERWISE.

9. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. PROVIDE NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION.

10. MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

    A. SURFACES CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH: 3"
    B. FORMED SURFACES IN CONTACT WITH EARTH OR EXPOSED WEATHER: 2"
    C. SURFACES NOT IN CONTACT WITH EARTH OR EXPOSED TO WEATHER: 1½"

CONCRETE NOTES CONTINUED:

11. REINFORCEMENT SHALL BE CONTINUOUS AROUND CORNERS AND AT INTERSECTIONS. PROVIDE LAPPED BARS AT SPLICES OR HOOKED BARS AT DISCONTINUOUS ENDS. PROVIDE TENSION LAP SPLICES PER THE LATEST ACI CODE FOR ALL REINFORCING UNLESS OTHERWISE SHOWN ON PLAN.

12. HOOKED DOWELS SHALL BE STANDARD ACI HOOKS.

13. CONSTRUCTION JOINTS SHOWN ON DRAWINGS ARE MANDATORY. OMISSIONS, ADDITIONS, OR CHANGES SHALL NOT BE MADE EXCEPT WITH THE SUBMITTAL OF A WRITTEN REQUEST TOGETHER WITH DRAWINGS OF THE PROPOSED JOINT LOCATIONS FOR APPROVAL OF THE ENGINEER. WHERE CONSTRUCTION JOINTS ARE NOT SHOWN, OR WHEN ALTERNATE LOCATIONS ARE PROPOSED, DRAWINGS SHOWING LOCATION OF CONSTRUCTION AND CONTROL JOINTS AND CONCRETE PLACING SEQUENCE SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO PREPARATION OF THE REINFORCEMENT SHOP DRAWINGS.

14. INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AT LEAST 24 HOURS PRIOR TO THE SCHEDULED CONCRETE PLACEMENT. NOTIFY ENGINEER AND STRUCTURAL ENGINEER OF COMPLETION AT LEAST 24 HOURS PRIOR TO THE SCHEDULED COMPLETION OF THE INSTALLATION OF REINFORCEMENT.

15. WHERE SEALANT IS SPECIFIED IT SHALL BE THE FOLLOWING:

    15.1. CONTROL & CONSTRUCTION JOINT FILLER: SINGLE COMPONENT, SELF LEVELING, POLYURETHANE BASED ELASTOMERIC SEALANT RESISTANT TO HYDROCARBONS. CONFORM TO ASTM C–920, TYPE S, GRADE P, CLASS 25. COLOR: CONCRETE OR STONE GRAY. PREPARE SUBSTRATE AND INSTALL PER ALL MANUFACTURER REQUIREMENTS AND SPECIFICATIONS.

DESIGN LOADING:

NOTE: THE FOLLOWING LOADS HAVE BEEN ASSUMED FOR THE DESIGN THE FOUNDATION SYSTEM ONLY. DESIGN LOADS FOR THE BUILDING ARE BY OTHERS.

ROOF LIVE LOAD:	20PSF
FLOOR LIVE LOAD:	150PSF
SNOW LOADS:	
FLAT ROOF SNOW LOAD, Pf	80PSF
SNOW EXPOSURE FACTOR, Ce	0.9
SNOW LOAD IMPORTANCE FACTOR, Is	1.10
THERMAL FACTOR, Ct	1.10
EARTHQUAKE LOADS	
RISK CATEGORY	III
SEISMIC IMPORTANCE FACTOR, Ie =	1.25
S_{DS}	0.267
S_{D1}	0.112
SEISMIC DESIGN CATEGORY	D
WIND LOADS	
BASIC WIND SPEED, V	150MPH
RISK CATEGORY	III
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	0.18

1

STATE OF MAINE
BRIAN J. BEAULIEU
No. 12004
LICENSED
PROFESSIONAL ENGINEER
06-21-2016

REV	DESCRIPTION	DWN	APP	DATE
1	REVISED DESIGN LOADS	AKG	BJB	06/21/16
0	ISSUED FOR CONSTRUCTION	BCH	BJB	05/11/16

PROCESS PIPELINE SERVICES

232 WEST COMMERCIAL STREET
PRESSURE REGULATING STATION FOUNDATION

GENERAL NOTES

PLEASE NOTE: THIS DOCUMENT MAY NOT ACCURATELY REPRESENT THE FINAL DOCUMENT. ONLY AN ENGINEER, ARCHITECT OR SURVEYOR SIGNED, SEALED AND DATED PAPER COPY, PROVIDED BY THIS OFFICE, MAY BE UTILIZED FOR BIDDING OR CONSTRUCTION PURPOSES.

Colby Company engineering
47A York Street
Portland, Maine 04101
207.553.7753
colbycoengineering.com

SIZE: ANSI D
DATE: DATE
DES BY: AKG
DWN BY: AKG
CKD BY: BJB

PROJECT NO. 312.002.001
SHEET 1 OF 4
DRAWING NO. G-001

Reviewed for Code Compliance
Inspection Division
Date: 08/03/16

X:\312 Process Pipeline\312.002.001 - 232 West Commercial St Foundations\Drawings\Sheets\G-001.dwg - 6/21/2016 5:06 PM - ADAM GREENLAW