A. GENERAL INFORMATION

1. THE GENERAL STRUCTURAL NOTES APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THEY ARE SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
2. CONTRACTOR SHALL COORDINATE STRUCTURAL DRAWINGS WITH ALL DISCIPLINES, EQUIPMENT LAYOUT AND SHOP DRAWINGS. NOTIFY ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO FABRICATION.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER WHERE DIMENSIONS AND CONDITIONS ARE DIFFERENT TO WHAT IS SHOWN ON THESE DRAWINGS.
4. DESIGN LOADS:
   - DEAD LOAD: SLAB ---------- SELF WEIGHT
     24" PIPE ---------- 100 PLF
     36" PIPE ---------- 150 PLF
     24" BALL VALVE ---------- 7 KIPS
     36" BALL VALVE ---------- 15 KIPS
     24" BUTTERFLY AND CHECK VALVES ---------- 4 KIPS
   - LIVE LOAD: 24" PIPE ---------- 200 PLF OR 100 PSF WHICHEVER IS GREATER
     36" PIPE ---------- 450 PLF OR 100 PSF WHICHEVER IS GREATER
5. APPLICABLE CODES AND STANDARDS:
   a. ASCE 7-2016 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES
   b. AISC STEEL CONSTRUCTION MANUAL, 13th EDITION
   c. 2012 INTERNATIONAL BUILDING CODE AND LASTEST AMENDMENTS.
6. ALL STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE IBC 2012 CODE AND LASTEST AMENDMENTS.

B. FOUNDATIONS:

1. GEOPIERS ARE 30" DIAMETER WITH ESTIMATED BOTTOM ELEVATION 891.0' THE DESIGN BEARING CAPACITY IS 4,000 PSF.
2. FOUNDATION SLAB SHALL BE PLACED OVER GAB .
3. FOUNDATION DESIGN IS BASED ON GEOPIER FOUNDATION COMPANY, INC. DRAWINGS GP0.1 AND GP1.1 DATED 8/21/18.
4. REMOVE ALL ORGANIC/WET SOILS AND REPLACE WITH CLEAN STRUCTURAL FILL AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. PLACE FILL SOILS IN 6" MAXIMUM (LOOSE) LIFTS AT MOISTURE CONTENTS AS DESCRIBED IN THE GEOTECHNICAL REPORT. COMPACT FILL PER GEOPIER INSTALLER RECOMMENDATION. FIELD DENSITY TESTS MUST BE MADE AS DESCRIBED IN GEOTECHNICAL REPORT TO VERIFY DESIGN BEARING PRESSURE.

C. REINFORCED CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE", AS WELL AS TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".
2. SHOP DRAWINGS, SHOWING ALL DIMENSIONS AND LOCATIONS FOR PLACING OF THE REINFORCING STEEL AND ACCESSORIES SHALL BE SUBMITTED FOR REVIEW TO THE ENGINEER. NO FABRICATION SHALL BEGIN UNTIL SHOP DRAWINGS ARE COMPLETED, REVIEWED AND APPROVED.
3. UNLESS OTHERWISE SPECIFIED CONSTRUCTION JOINTS IN SLABS AND WALLS SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 40'-0". SHOP DRAWINGS SHOWING LOCATION OF CONSTRUCTION JOINTS SHALL BE SUBMITTED FOR REVIEW TO THE ENGINEER. NO CONCRETE WORK SHALL BEGIN UNTIL SHOP DRAWINGS ARE COMPLETED, REVIEWED AND APPROVED.
4. UNLESS NOTED OTHERWISE, DETAILS OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, AND CRSI MSP-1, MANUAL OF STANDARD PRACTICE.
5. UNLESS NOTED OTHERWISE, 28 DAY COMPRESSIVE STRENGTH OF CAST-IN-PLACE CONCRETE SHALL BE 4000 PSI, CLASS D, UNLESS NOTED OTHERWISE. PROVIDE CELLULAR GROUT TO FILL EXISTING PIPE.
6. UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
   CONCRETE CAST AGAINST EARTH ----------3"
   BEAM PRIMARY REINFORCEMENT----------2 1/2"
   STIRRUPS ----------2"
   ALL OTHER REINFORCEMENT----------2"
7. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 U.N.O. ALL WELDED REINFORCING STEEL SHALL CONFORM TO ASTM A706.
8. ALL SPLICES SHALL CONFORM TO THE ACI 318 CODE AND SHALL BE CLASS "B" SPLICE UNLESS NOTED OTHERWISE
9. UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR ALL CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS:

THICKNESS	REINFORCING EACH WAY	LOCATION
6"	#4@12"	CENTERED
8"	#5@12"	CENTERED
10"	#4@12"	EACH FACE
12",14",16"	#5@12"	EACH FACE
18" AND THICKER	#6@12"	EACH FACE

10. UNLESS INDICATED OTHERWISE, ALL BENDS SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN THE LATEST EDITION OF ACI BUILDING CODE 318.
11. UNLESS NOTED OTHERWISE, LONGITUDINAL REINFORCING IN FOOTINGS SHALL EXTEND TO THE END OF THE DISCONTINUOUS FACE AT CORNERS AND INTERSECTIONS.
12. WELDING OR TACK WELDING OF REINFORCING STEEL SHALL NOT BE PERMITTED EXCEPT AS AUTHORIZED OR DIRECTED BY THE STRUCTURAL ENGINEER OR HIS REPRESENTATIVE.
13. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUEST, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER- OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.
14. ALL POST-INSTALLED ANCHORS TO BE AISI 316 STAINLESS STELL AND SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS, HILTI ANCHORING SYSTEMS OR APPROVED EQUAL.

D. STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO SPECIFICATION FOR "THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING" OF THE A.I.S.C., LATEST EDITION.
2. ALL FABRICATIONS SHALL COMPLY WITH "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" LATEST EDITION AS PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
3. SHOP DRAWINGS PREPARED IN ACCORDANCE WITH THE LATEST "STRUCTURAL STEEL DETAILING MANUAL" OF THE A.I.S.C. SIGNED AND SEALED BY A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF GEORGIA SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. NO FABRICATION SHALL BEGIN UNTIL SHOP DRAWINGS ARE COMPLETED AND APPROVED.
4. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL ROLLED SECTIONS SHALL CONFORM TO ASTM A992. STEEL PIPE AND STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B. CHANNELS, PLATES, ANGLES AND BARS SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE. ALL STEEL MEMBERS EXPOSED TO WEATHER CONFORM SHALL BE GALVANIZED BEFORE RECEIVING PRIMER AND FINISHED COATING. STAINLESS STEEL BARS AND SHAPES SHALL CONFORM TO ASTM 276.
5. STEEL FRAMING CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED U.N.O..
   A. BOLTS SHALL CONFORM TO ASTM A325, AND SHALL BE MINIMUM 3/4" DIAMETER UNLESS NOTED OTHERWISE. BOLTED CONNECTIONS SHALL BE ASSEMBLED AND TESTED ACCORDING TO "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS", AND SHALL BE DESIGNED AS BEARING CONNECTIONS WITH THREADS IN THE SHEAR PLANE.
   B. WELDS SHALL CONFORM TO "STRUCTURAL WELDING CODE" OF THE AMERICAN WELDING SOCIETY, AWS D1.1 USE E70XX ELECTRODES. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE. MINIMUM WELD SIZE IS ACCORDING TO AISC, LATEST EDITION.
   C. GRIND ALL EXPOSED WELDS SMOOTH TO MATCH AND BLEND WITH ADJOINING SURFACES.
   D. ONE SIDED CONNECTION WILL NOT BE PERMITTED.
6. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE SELECTION, DESIGN AND DETAILING OF ALL CONNECTIONS NOT FULLY DETAILED ON THE CONTRACT DRAWINGS. WHERE BEAM REACTIONS ARE NOT SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DETAILED FOR THE MAXIMUM UNIFORM LOAD WHICH THE BEAM WILL SUPPORT (AS A SIMPLE BEAM) FOR THE SPAN SHOWN ON THE DRAWINGS, OR 12.0 KIPS MINIMUM.
7. ALL EXPANSION ANCHORS TO BE 3/4" DIAMETER AISI 316 STAINLESS STEEL WITH 4 3/4" MINIMUM EMBEDMENT, OR AN APPROVED EQUAL; U.N.O.

ABBREVIATIONS

AB	ANCHOR BOLT
A.F.F.	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
ALUM.	ALUMINUM
ACI	AMERICAN CONCRETE INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANCH	ANCHOR, ANCHORAGE
ARCH.	ARCHITECT, ARCHITECTURAL
B. PL.	BASE PLATE
BM	BEAM
BRG	BEARING
BETWN.	BETWEEN
BOT.	BOTTOM
BLDG.	BUILDING
C.I.P.	CAST IN PLACE
CTR	CENTER
℄	CENTER LINE
C/C	CENTER TO CENTER
CLR	CLEAR
COL.(S)	COLUMN(S)
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CRSI	CONCRETE REINFORCING STEEL INSTITUE
CONN.	CONNECT, CONNECTION
CONSTR.	CONSTRUCTION
CJ	CONTROL JOINT
CONT.	CONTINUE, CONTINUOUS
CONTR	CONTRACTOR
D.L.	DEAD LOAD
DET.	DETAIL
DIAG.	DIAGONAL
DIA.	DIAMETER
DIM.	DIMENSION
DO.	DITTO
DWL	DOWEL
DN	DOWN
DWG.	DRAWING
EA.	EACH
E.F.	EACH FACE
E.W.	EACH WAY
E.O.S.	EDGE OF SLAB
EL.	ELEVATION (HEIGHT LEVEL)
ELEV.	ELEVATOR
EMBED	EMBEDMENT
ENGR	ENGINEER
EQ.	EQUAL
EQPT.	EQUIPMENT
EXIST.	EXISTING
EXP.	EXPANSION
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
F TO F	FACE TO FACE
FF	FAR FACE
FS	FAR SIDE
FT.	FEET, FOOT
FIN.	FINISH, FINISHED
FIN. FLR	FINISH FLOOR
FLR.	FLOOR
F.D.	FLOOR DRAIN
FT'G	FOOTING
FD'N	FOUNDATION
GA.	GAUGE
GAB	GRADED AGGREGATE BASE (PER GDOT STANDARDS)
GALV.	GALVANIZED
GRTG	GRATING
H.R.	HANDRAIL
H.P.	HIGH POINT
HORIZ.	HORIZONTAL, HORIZONTALLY
IN	INCH
IF	INSIDE FACE
INT	INTERIOR
INV.	INVERT
JT	JOINT
JST	JOIST
K	KIP
K.S.F.	KIPS (1000 LBS) PER SQUARE FOOT
K.S.I.	KIPS (1000 LBS) PER SQUARE INCH
LB	POUND
L.L.	LIVE LOAD
LONG	LONGITUDINAL
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.P.	LOW POINT
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
NCMA	NATIONAL CONCRETE MASONRY ASSOCIATION
NF	NEAR FACE
NO. OR #	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
OPP.	OPPOSITE
OPP. HD.	OPPOSITE HAND
O.F.	OUTSIDE FACE
PCF	POUND PER CUBIC FOOT
PL.	PLATE
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
PT.	POINT
PREFAB.	PREFABRICATED
PROJ.	PROJECT, PROJECTION
QTY.	QUANTITY
RAD.	RADIUS
REF.	REFERENCE
REINF.	REINFORCE, REINFORCING OR REINFORCEMENT
REM	REMAINDER
REQD	REQUIRED
RET	RETAINING
REV.	REVISED, REVISION
SCHED.	SCHEDULE
SECT.	SECTION
SHT.	SHEET
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SIM.	SIMILAR
S.O.G.	SLAB ON GRADE
SPCS	SPACES
SPEC	SPECIFICATION
SQ	SQUARE
S.F.	SQUARE FEET
S.ST.	STAINLESS STEEL
STD.	STANDARD
STL	STEEL
SDI	STEEL DECK INSTITUTE
STIFF.	STIFFENER
STIR.	STIRRUP
STRUCT.	STRUCTURE, STRUCTURAL
SYMM.	SYMMETRICAL
TEMP.	TEMPERATURE
THK.	THICK, THICKNESS
THD.	THREADED
T&B	TOP AND BOTTOM
T.O.C.	TOP OF CURB
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
UN	UNLESS NOTED
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W.P.	WATER (WEATHER) PROOF WORK POINT
W.S.	WATERSTOP
W.F. (W)	WIDE FLANGE (STEEL)
W.W.F.	WELDED WIRE FABRIC
WL	WIND LOAD
W/	WITH
W/O	WITHOUT

SEAL

GEORGIA REGISTERED NO. 027615 PROFESSIONAL ENGINEER VICTOR L. ----

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HARTSFIELD-JACKSON MANIFOLD IMPROVEMENTS

CLAYTON COUNTY, GEORGIA - DISTRICT 05, LL 22

CITY OF ATLANTA DEPARTMENT OF WATERSHED MANAGEMENT BUREAU OF ENGINEERING SERVICES

ATLANTA, GEORGIA

REV	DATE	DESCRIPTION	BY
---	1/7/2019	GENERAL REVISION	FD
1	10/10/18	100% CD SUBMITTAL	

PROJECT NO.: FC8993
DATE: -
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CHECKED: -
DRAWN: -----
APPROVED: -----

SHEET TITLE: GENERAL NOTES STRUCTURAL

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