TAYLOR WEST WEBER WATER IMPROVEMENT DISTRICT
WATER SYSTEM IMPROVEMENTS
900 SOUTH WELL HOUSE
WEST WEBER, WEBER COUNTY UTAH
900 SOUTH 4700 WEST
2016

SHEET INDEX

GENERAL NOTES:
General Notes to Contractor and all suppliers: This project is Federally funded. All products are required to meet the provisions of the American Iron and Steel Act (AIS). The AIS requirements are included in their entirety in the contract documents for this project. The general contractor will be entirely responsible for meeting the AIS material and documentation requirements.
The contractor shall pay Davis-Bacon wages and shall submit certified payroll in accordance with the contract documents.

PROJECT LOCATION

VICINITY MAP

NTS

NOTICE:
EXISTING UTILITIES ARE SHOWN ON PLANS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE ENGINEER BEARS NO RESPONSIBILITY FOR THE UTILITIES NOT SHOWN OR SHOWN INCORRECTLY.

AVOID CUTTING UNDERGROUND UTILITIES. IT'S COSTLY
Call BLUE STAKES BEFORE YOU Dig
1-800-662-4111
UNDERGROUND SERVICE (USA)

REGISTERED PROFESSIONAL ENGINEER
No. 354312
Daniel Leon White
04/08/2016
STATE OF UTAH

GARDNER ENGINEERING
CIVIL • LAND PLANNING
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EXISTING
2MG TANK

1 NEW BACK UP GENERATOR

EXISTING TRANSFORMER

4" FLOOR DRAIN, 2' COVER w/ #4 NON-CORRIDIBLE SCREEN SECURED TO END

PLACE 6"-12" ROCKS AT OUTFALL TO DISSIPATE ENERGY FROM PUMP-TO WASTE WATER. ENSURE THAT ALL FLOW FROM PIPE PLUS 5' DOWNSTREAM LANDS ON ROCKS. RE-SHAPE DITCH AS NECESSARY TO ENSURE FLOW CAPACITY OF CHANNEL IS NOT RESTRICTED BY PLACEMENT OF ROCKS.

WTR

EX. 4" DRAIN LINE

EXISTING PUMPHOUSE

EX. 8" DIP

8 X 8 HOT TAP
10 X 8 PEXPE REDUCER

1

1" CTS 200 PSI WATER LATERAL, TEE OFF EXISTING YARD HYDRANT 3.5' COVER

1

APPROX. 50 L.F. 10" PVC DR14 C900 BETWEEN HOT TAP AND ELBOW UNDER FOOTING. PAY ITEM 1.6 INCLUDES HOT TAP, VALVE, REDUCER, ELBOWS AND PIPE. SEE SHEET C3 FOR PAY LIMIT.

1

30'-8"

NEW 900 SOUTH WELL HOUSE

FFE: 4242.0

16'-0"

WL

4240

4239

4238

4237

1

DITCH FLOW LINE
EL: 4233.0

#4 NON-CORRODIBLE SCREEN PLACED ON RCP

TOP OF BANK
EL: 4238.32

REMOVE + REPLACE CHAIN LINK FENCE AS NECESSARY TO ACCOMMODATE OUTFALL CONSTRUCTION

100'

4' x '4 BASIN
RIM = 4240.5
FL OUT = 4237.5

EX. 12" WL APPROX. 6' COVER

15" RCP - PUMP LINE TO WASTE MIN. 1.85% SLOPE TO EX. DITCH W/
FL IN = 4237.5
FL OUT = 4235.66

4235

4235

1

SLOPE AWAY FROM WELL HOUSE

GRADE TO DRAIN (REQUIRES SCRAPING AND RELOCATION ONSITE OF UP TO 6" OF EXISTING PEA GRAVEL AND UNCLASSIFIED FILL)
PLACE MIRAFI 600X NON-WOVEN GEOTEXTILE OR EQUAL
PLACE 12" CRUSHED CONCRETE ROAD BASE
COMPACTION AS PER SPECS

0' 10' 20' 40'

Scale in Feet
1" = 20'

Date: 2/19/2016
Scale: 1" = 20'
Designed: MDD
Drafted: MDD
Checked: DLW
Path: SEE PLOT STAMP

Revisions	
Date	Description
3/4/2016	1 ADD. 1

REGISTERED PROFESSIONAL ENGINEER
No. 354312
Daniel Leon White
STATE OF UTAH

SITE PLAN
TAYLOR WEST WEBER W.I.D.
900 SOUTH WELL HOUSE
WEST WEBER, WEBER, UTAH

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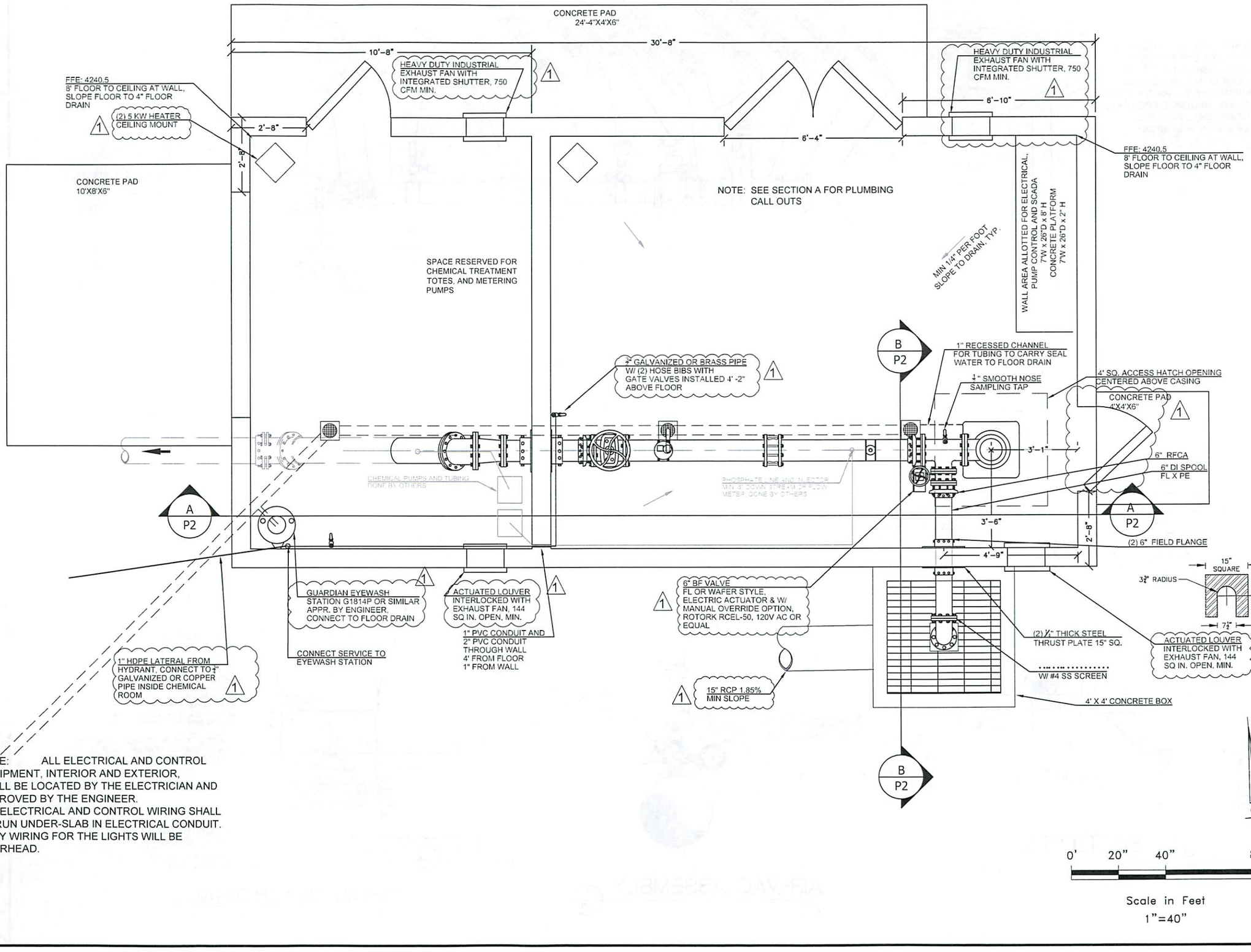
C1
6

R:\2200 - TWWSID\900 South Well\ENGINEERING\DESIGN\WELL HOUSE DESIGN ADD 1_3-4-2016.dwg, C1 - SITE PLAN, 3/4/2016 7:56:47 AM



NOTE: ALL ELECTRICAL AND CONTROL EQUIPMENT, INTERIOR AND EXTERIOR, SHALL BE LOCATED BY THE ELECTRICIAN AND APPROVED BY THE ENGINEER.
ALL ELECTRICAL AND CONTROL WIRING SHALL BE RUN UNDER-SLAB IN ELECTRICAL CONDUIT. ONLY WIRING FOR THE LIGHTS WILL BE OVERHEAD.

Revisions

Date	Description
3/4/2016	1 ADD. 1

Date: 2/19/2016
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REGISTERED PROFESSIONAL ENGINEER
No. 354312
Daniel Leon White
STATE OF UTAH

PLAN VIEW
TAYLOR WEST WEBER W.I.D.
900 SOUTH WELL HOUSE
WEST WEBER, WEBER, UTAH

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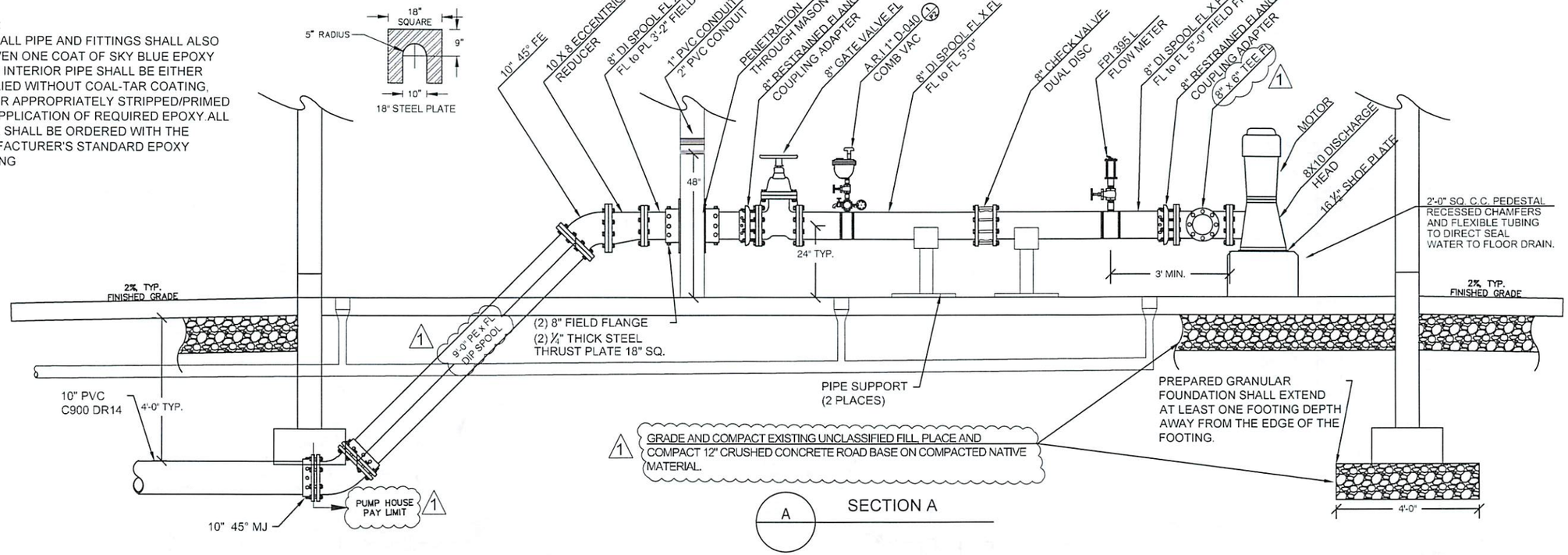
C2
6

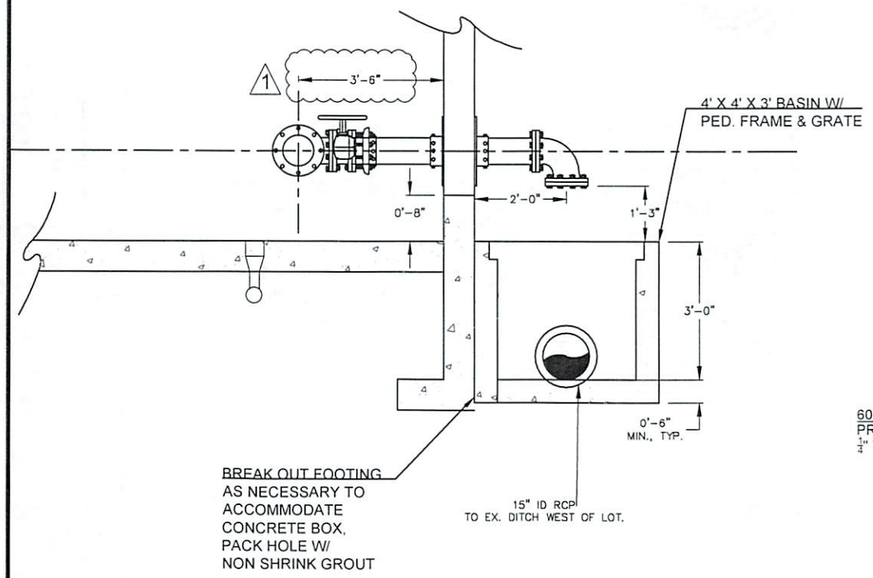
R:\2016 - TWWID\04-900 South Well\Engineering\Design\Well House Design ADD 1_3-4-2016.dwg, C2 - PLAN VIEW, 3/4/2016 7:56:53 AM

NOTE:

ALL PIPE AND FITTINGS SHALL ALSO BE GIVEN ONE COAT OF SKY BLUE EPOXY PAINT. INTERIOR PIPE SHALL BE EITHER SUPPLIED WITHOUT COAL-TAR COATING, AND/OR APPROPRIATELY STRIPPED/PRIMED FOR APPLICATION OF REQUIRED EPOXY.ALL VALVE SHALL BE ORDERED WITH THE MANUFACTURER'S STANDARD EPOXY COATING



A SECTION A



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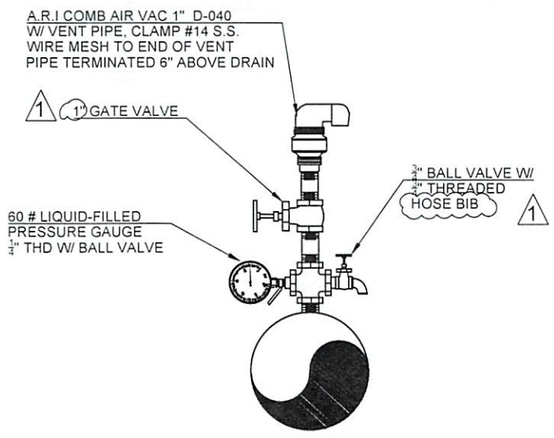
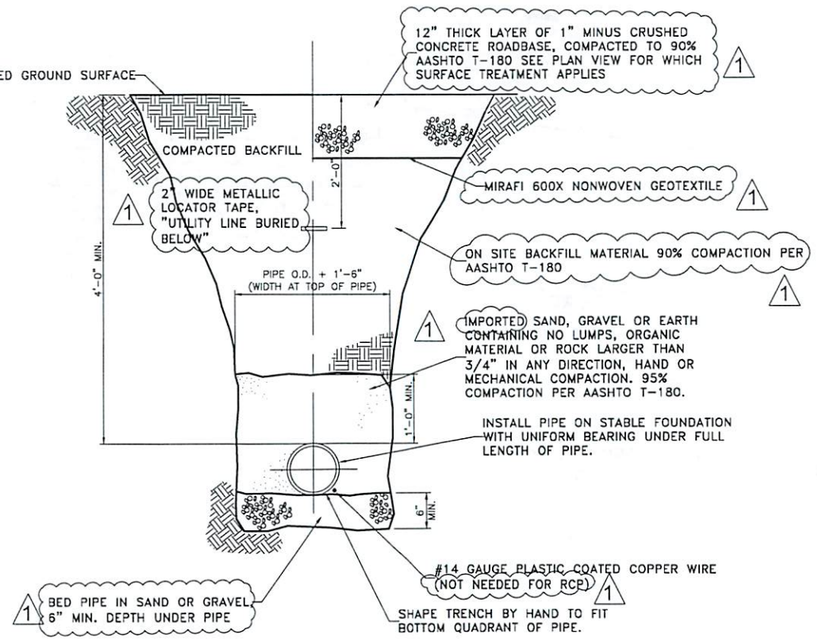


AIR-VAC ASSEMBLY (1 P2)

NTS



TYPICAL TRENCH DETAIL

NTS

Revisions

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REGISTERED PROFESSIONAL ENGINEER
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Daniel Leon White
STATE OF UTAH

PROFILE
TAYLOR WEST WEBER W.I.D.
900 SOUTH WELL HOUSE
WEST WEBER, WEBER, UTAH

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C3
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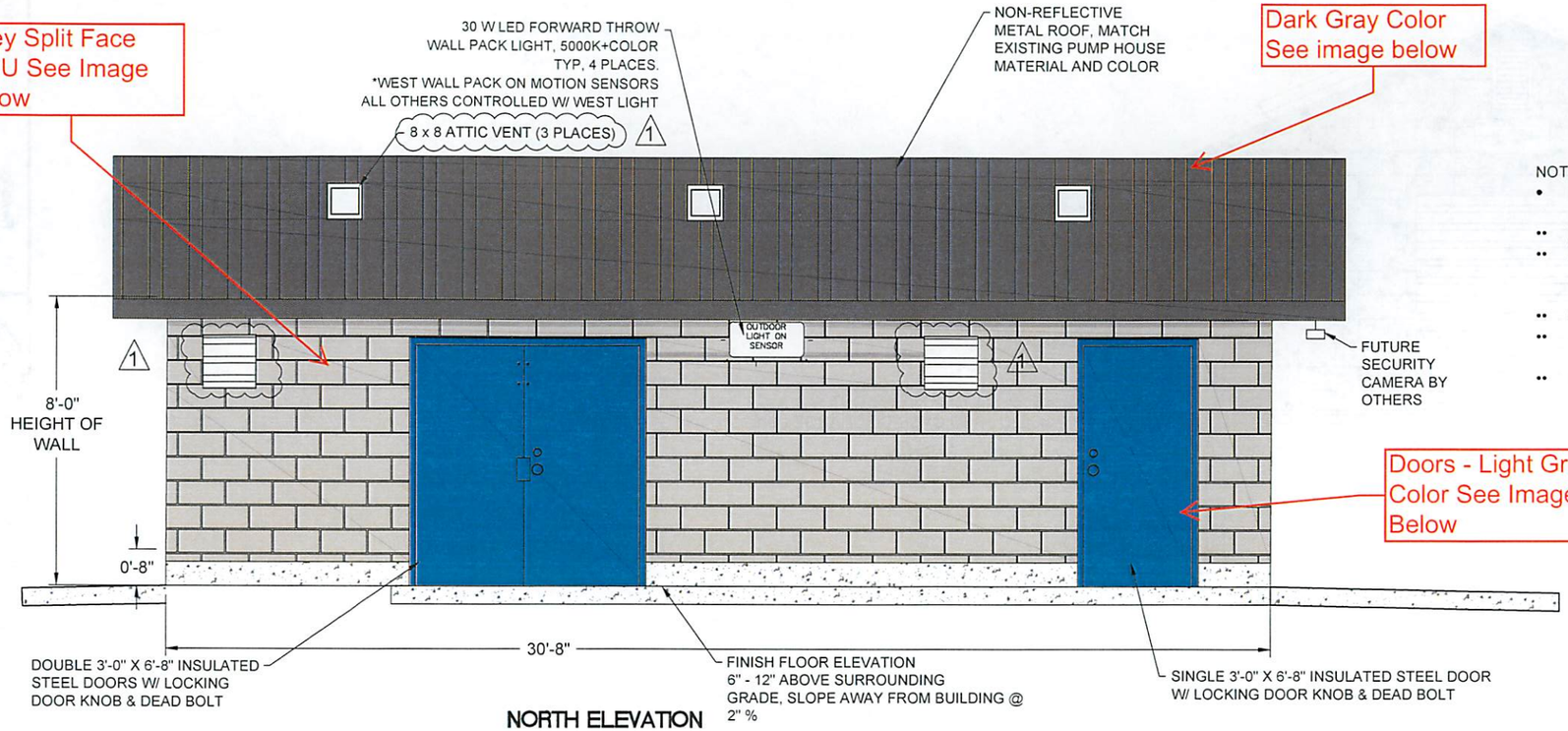
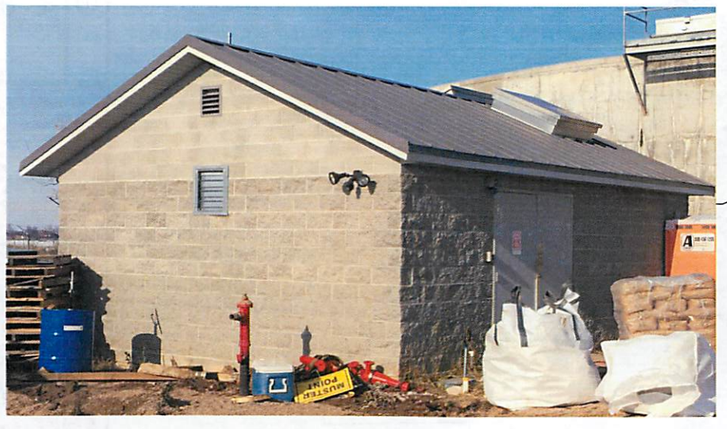
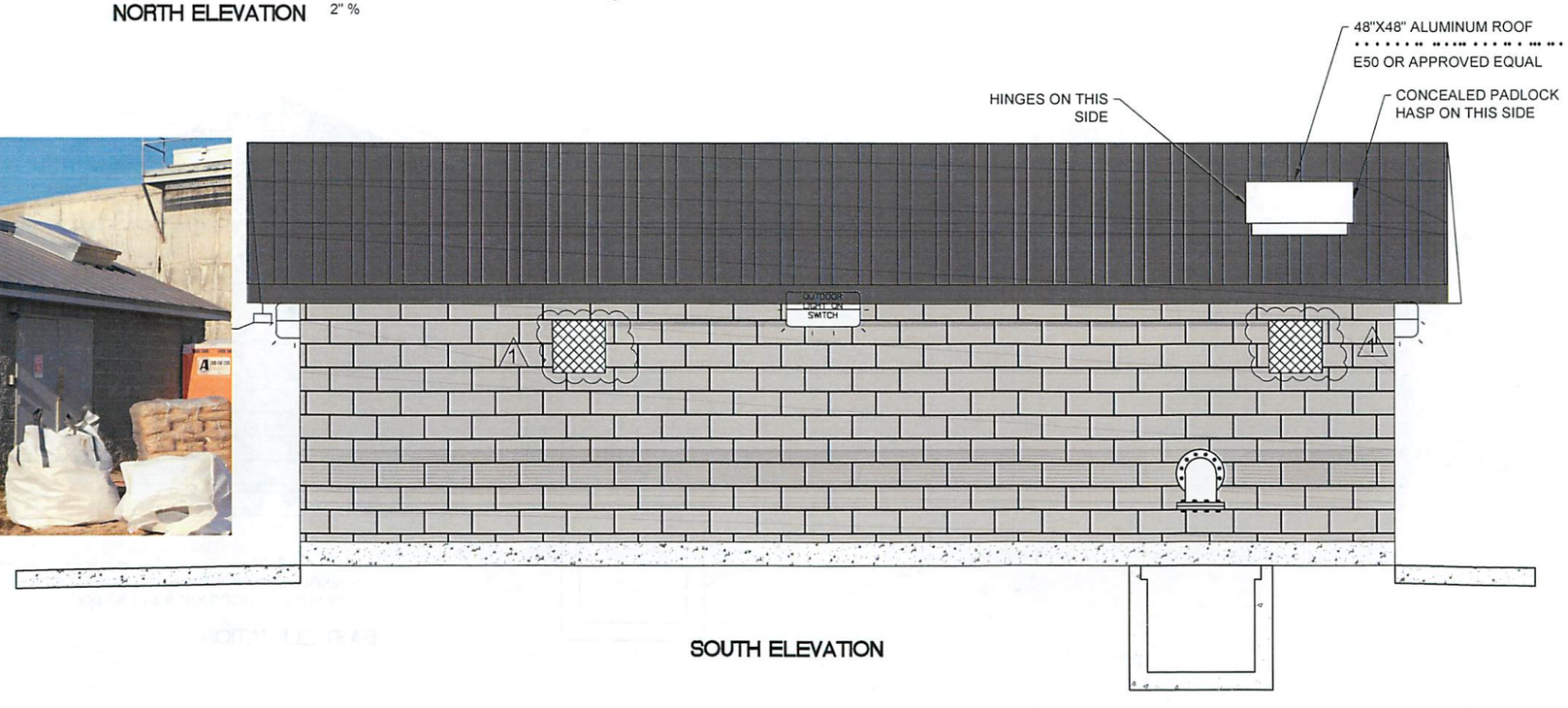


NORTH ELEVATION

NOTES:

- HANG ½" SAG-AND MOISTURE-RESISTANT DRY WALL ON CEILING, PRIME + PAINT W/ 2 COATS SEMI- GLOSS ENAMEL
- INSTALL R-30 BATTING IN ATTIC
- INSTALL WOOD (NO PRESS BOARD OR AROUND WALL/CEILING INTERFACE, W/ PRIMER AND 2 COATS SEMI GLOSS ENAMEL PAINT)
- INSTALL MOISTURE BARRIER AND STEEL ROOFING SYSTEM
- SEAL BOTH INTERIOR AND EXTERIOR FACES OF CMU WALLS PROVIDE ATTIC ACCESS PER CODE, TRIM OPENINGS
- PROVIDE APPROPRIATELY LOCATED AND SIZED OPENING IN CEILING W/ REMOVABLE CEILING PANELS BELOW ROOF HATCH. PANELS SHALL BE INSULATED, TRIM CEILING AROUND OPENING.





SOUTH ELEVATION

Revisions

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3/4/2016	1 ADD. 1

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REGISTERED PROFESSIONAL ENGINEER
No. 354312
Daniel Leon White
STATE OF UTAH

BUILDING ELEVATIONS
TAYLOR WEST WEBER W.I.D.
900 SOUTH WELL HOUSE
WEST WEBER, WEBER, UTAH

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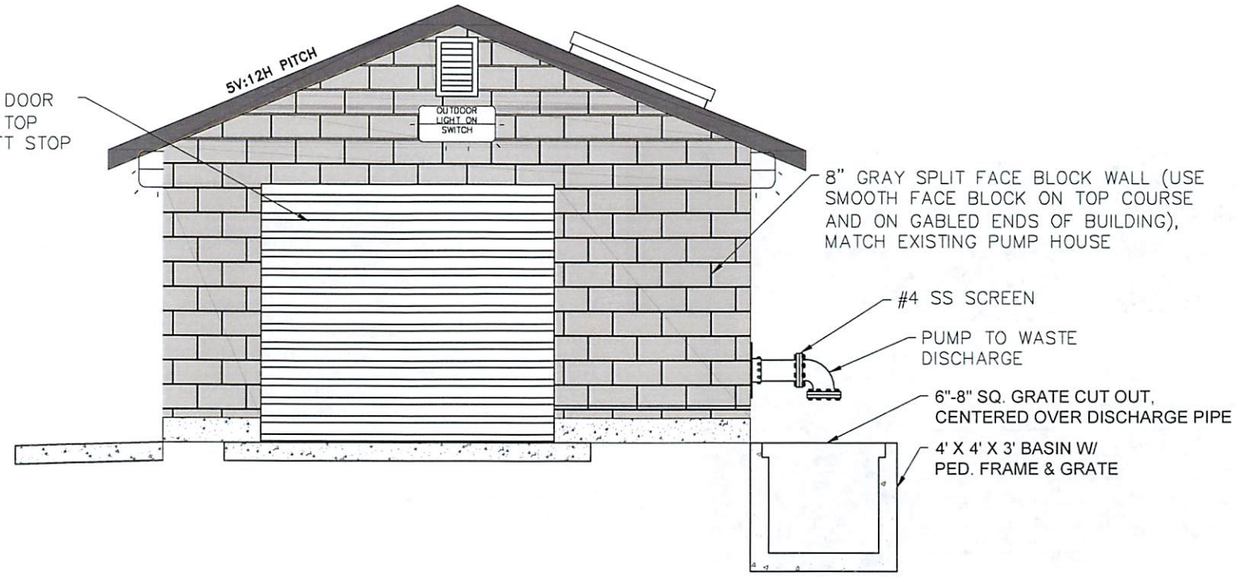
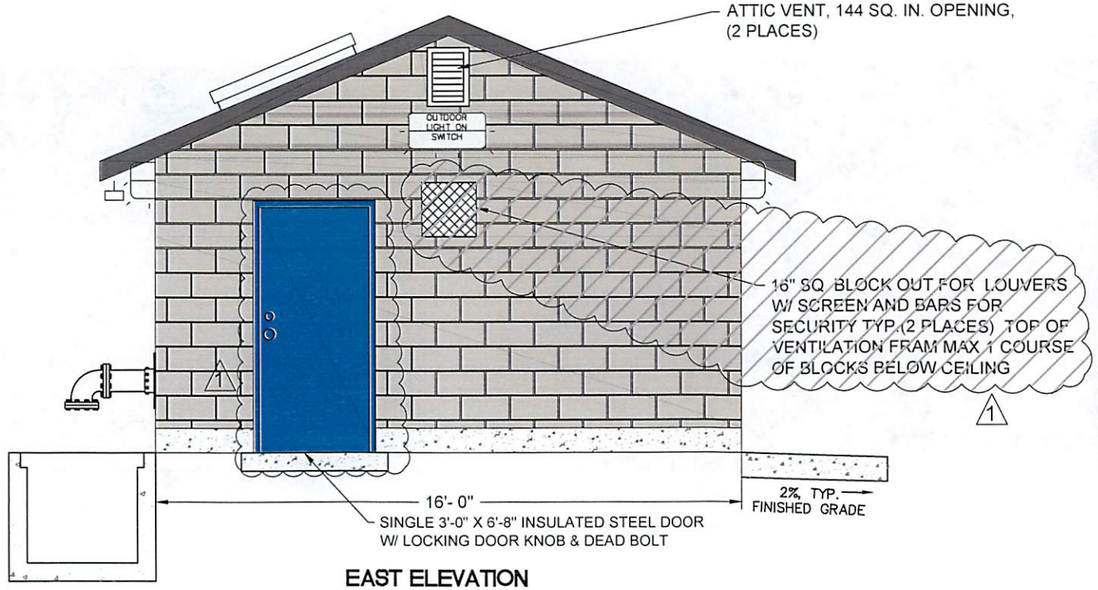


WEST ELEVATION

NOTE: ALL EXTERIOR
MASONRY WALL CAVITIES
SHALL BE FILLED WITH
MASONRY FILL INSULATION



EAST ELEVATION

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REGISTERED PROFESSIONAL ENGINEER
No. 354312
Daniel Leon
White
STATE OF UTAH

BUILDING ELEVATIONS 2
TAYLOR WEST WEBER W.I.D.
900 SOUTH WELL HOUSE
WEST WEBER, WEBER, UTAH

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6

STRUCTURAL NOTES

A. GENERAL

1. THE STRUCTURAL NOTES ARE INTENDED TO COMPLEMENT THE PROJECT SPECIFICATIONS WHICH ARE PART OF THE CONSTRUCTION DOCUMENTS. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS.
2. THESE DRAWINGS (AND, WHERE APPLICABLE, ACCOMPANYING WRITTEN SPECIFICATIONS) ARE THE ONLY CONTRACT DOCUMENTS PROVIDED BY ARW ENGINEERS FOR THE PROJECT REPRESENTED HEREIN. NOTHING IN ANY DIGITAL MODEL OR DIGITAL FILE RELATED TO THIS PROJECT SHALL BE TAKEN TO SUPERSEDE ANY INFORMATION SHOWN IN THESE DRAWINGS (INCLUDING, BUT NOT LIMITED TO, DIMENSIONS, SIZES, ETC).
3. THE ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. THE STRUCTURAL DRAWINGS ARE SUPPLEMENTARY TO AND MUST BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONSULTANTS DRAWINGS. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
4. SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS. SUBMITTALS SHALL BE MADE IN A TIMELY MANNER AS INDICATED IN SPECIFICATIONS. REVIEW OF SUBMITTALS BY ARW ENGINEERS IS FOR GENERAL COMPLIANCE ONLY AND IS NOT INTENDED AS APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND ELEVATIONS ON SUBMITTALS AS RELATED TO DESIGN DOCUMENTS. PREPARATION OF SHOP DRAWINGS FOR STRUCTURAL ELEMENTS WILL REQUIRE INFORMATION (I.E. DIMENSIONS, ETC.) FOUND IN THE ARCHITECTURAL, STRUCTURAL, AND OTHER CONSULTANTS DRAWINGS.
5. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN ON CONTRACT DOCUMENTS, CONTRACTOR SHALL NOTIFY ARCHITECT PRIOR TO FABRICATION OR CONSTRUCTION OF ANY AFFECTED ELEMENTS.
6. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT OR OTHER EQUIPMENT BEFORE FABRICATING AND ERECTING STRUCTURAL ELEMENTS. SIZES AND LOCATIONS THAT DIFFER FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ARCHITECT.
7. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ARCHITECT FOR ARCHITECT AND/OR ENGINEER APPROVAL BEFORE PROCEEDING WITH ANY CHANGES, MODIFICATIONS, OR SUBSTITUTIONS.
8. OBSERVATION VISITS TO THE SITE BY ARW ENGINEERS FIELD REPRESENTATIVES SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
9. DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS AS NOTED IN THESE DOCUMENTS.
10. TYPICAL OR SIMILAR DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN. TYPICAL OR SIMILAR DETAILS REFER TO THE CONDITION ADDRESSED AND ARE NOT NECESSARILY DETAILS LABELED "TYPICAL" OR "SIMILAR" IN THE PLANS AND DOCUMENTS.
11. DRAWINGS AND DETAILS HAVE BEEN PREPARED WITH THE INTENT TO VISUALLY REPRESENT INFORMATION PROVIDED IN SCALED FORM; HOWEVER CONTRACTOR/SUPPLIERS SHOULD NOT SCALE PLANS OR DETAILS FOR DIMENSIONAL INFORMATION.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING FOR ALL STRUCTURAL ELEMENTS UNTIL THE ENTIRE STRUCTURAL SYSTEM IS COMPLETED. DESIGN OF ALL SHORING AND BRACING IS BY OTHERS AT NO ADDITIONAL COST TO THE OWNER.
13. ENGINEER SHALL NOT BE RESPONSIBLE FOR ACTIVITIES UNDER CONTROL OF THE CONTRACTOR SUCH AS CONSTRUCTION SITE SAFETY, MEANS, METHODS AND SEQUENCING OF CONSTRUCTION. ENGINEER SHALL NOT BE RESPONSIBLE FOR FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS AS PRESCRIBED BY OSHA OR OTHER REGULATORY AGENCIES REGARDLESS OF INDICATIONS IN THESE DOCUMENTS.
14. NOTICE OF COPYRIGHT: THESE STRUCTURAL DRAWINGS ARE HEREBY COPYRIGHTED BY ARW ENGINEERS, ALL RIGHTS RESERVED. THESE DOCUMENTS DEFINE A STRUCTURE AND ARE INSTRUMENTS OF SERVICE, FOR ONE USE ONLY. REPRODUCTION AND DISTRIBUTION OF THESE DRAWINGS IS ONLY ALLOWED AS REQUIRED FOR REGULATORY AGENCIES AND FOR CONVEYANCE OF INFORMATION TO PARTIES INVOLVED IN THE CONSTRUCTION OF THIS PROJECT. THESE DOCUMENTS SHALL NOT BE REPRODUCED OR COPIED, IN PART OR WHOLE BY ANY PARTY FOR USE IN PREPARATION OF SHOP DRAWINGS OR OTHER SUBMITTALS.

B. STATEMENT OF SPECIAL INSPECTIONS AND SPECIAL INSPECTIONS

1. ITEMS REQUIRING SPECIAL INSPECTION ARE IDENTIFIED IN THE SPECIAL INSPECTION SCHEDULE.
2. SPECIAL INSPECTIONS AND TESTING ARE TO BE PROVIDED AS REQUIRED BY IBC SECTIONS 1704 THROUGH 1705 AND OTHER APPLICABLE SECTIONS OF THE IBC. THE TYPE AND FREQUENCY OF TESTING AND SPECIAL INSPECTIONS SHALL BE AS NOTED IN THE SPECIAL INSPECTION SCHEDULE, JOB SPECIFICATIONS, AND ACCORDANCE WITH IBC SECTION 110 AND CHAPTER 17. CONTRACTOR SHALL COORDINATE AND COOPERATE WITH REQUIRED INSPECTIONS.
3. ALL TESTING AND SPECIAL INSPECTION SHALL BE PROVIDED BY A QUALIFIED INDEPENDENT SPECIAL INSPECTION AGENCY IN ACCORDANCE WITH IBC 1704 AND AS OUTLINED IN THE JOB SPECIFICATIONS. REPORTS OF FINDINGS OR DISCREPANCIES SHALL BE NOTED AND FORWARDED TO THE CONTRACTOR, ARCHITECT, ENGINEERS, AND BUILDING OFFICIAL IN A TIMELY MANNER.
4. STRUCTURAL OBSERVATION VISITS SHALL BE PERFORMED BY A REPRESENTATIVE FROM ARW ENGINEERS IN ACCORDANCE WITH THE CONTRACT AS NEEDED TO OBSERVE THE CONSTRUCTION OF CRITICAL BUILDING ELEMENTS (I.E. FOOTINGS, BRACED FRAMES, MOMENT FRAMES, DRAG STRUTS AND THEIR CONNECTIONS, COLLECTORS, AND ROOF AND FLOOR DIAPHRAGMS). STRUCTURAL OBSERVATION REPORTS FOR EACH VISIT SHALL BE SENT DIRECTLY TO THE ARCHITECT FOR DISTRIBUTION TO THE CONTRACTOR AND BUILDING OFFICIAL. STRUCTURAL OBSERVATION VISITS SHALL NEITHER BE CONSTRUED AS SPECIAL INSPECTION NOR APPROVAL OF COMPLETED CONSTRUCTION.

C. BASIS OF DESIGN

1. GOVERNING BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC) 2012
   RISK CATEGORY: II
2. ROOF LOADS
   a. FLAT-ROOF SNOW LOAD, PF: 36 PSF
      1) GROUND SNOW LOAD, PG: 43 PSF
      2) SNOW EXPOSURE FACTOR, CE: 1.0
      3) SNOW LOAD IMPORTANCE FACTOR, IS: 1.0
      4) THERMAL FACTOR, CT: 1.2
   b. DEAD LOAD = 15 PSF
3. WIND DESIGN
   a. BASIC WIND SPEED (3 SECOND GUST): 115 MPH
   b. WIND EXPOSURE: C
4. SEISMIC DESIGN:
   a. SEISMIC IMPORTANCE FACTOR, IE: 1.0
   b. SITE CLASS: D
   c. MAPPED SPECTRAL RESPONSE ACCELERATIONS: SS = 1.245, S1 = 0.415
   d. SPECTRAL RESPONSE COEFFICIENTS: SDS = 0.832, SD1 = 0.439
   e. SEISMIC DESIGN CATEGORY: D
   f. BASIC SEISMIC-FORCE-RESISTING SYSTEM: MASONRY SHEAR WALLS
   g. DESIGN BASE SHEAR: VN-S = CS x W , VE-W = CS x W
   h. SEISMIC RESPONSE COEFFICIENT, CS: 0.166
   i. RESPONSE MODIFICATION FACTOR, R: 5.0
   j. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

D. FOUNDATION

1. DESIGN SOIL PRESSURE: 1500 PSF
2. ALL FOOTINGS SHALL BE PLACED ON MECHANICALLY COMPACTED FILL COMPACTED TO NOT LESS THAN 95% OF MODIFIED PROCTOR DENSITY (ASTM D-1557).
3. UNLESS NOTED OTHERWISE, ALL CONCRETE SLABS ON EARTH SHALL BEAR ON STRUCTURAL FILL COMPACTED TO 90% OF MODIFIED PROCTOR DENSITY (ASTM D-1557).
4. TOP OF FOOTING ELEVATIONS SHOWN ON THE FOOTING AND FOUNDATION PLAN ARE BASED ON PRELIMINARY GRADING INFORMATION AND MUST BE VERIFIED PRIOR TO CONSTRUCTION. STEPS WHERE SHOWN ARE AT APPROXIMATE LOCATIONS. ALL EXTERIOR FOOTINGS MUST BEAR A MINIMUM OF 30 INCHES BELOW LOWEST ADJACENT FINAL GRADE.
5. ALL WALLS (EXCEPT CANTILEVERED RETAINING WALLS) SHALL BE ADEQUATELY BRACED AGAINST LATERAL MOVEMENT PRIOR TO BACKFILLING. DESIGN AND ERECTION OF BRACING/SHORING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. BRACING SHALL REMAIN IN PLACE UNTIL SUPPORTING STRUCTURAL ELEMENTS ARE IN PLACE AND HAVE ATTAINED FULL STRENGTH.
6. UNLESS NOTED OTHERWISE, ALL FOOTINGS SHALL HAVE VERTICAL FACES FORMED WITH STANDARD FORMING MATERIALS (WOOD, METAL, ETC.). WITH PRIOR APPROVAL OF ARCHITECT AND ENGINEER, CONCRETE FOR FOOTINGS CAN BE PLACED IN EXCAVATED "SOIL" FORMS PROVIDED THAT THE DIMENSIONS ARE INCREASED 3" ON EACH SIDE.

E. CONCRETE

1. ALL CONCRETE MIX DESIGNS SHALL COMPLY WITH THE PROJECT SPECIFICATIONS AND THE REQUIREMENTS LISTED BELOW:
   a. FOOTINGS, GRADE BEAMS, FOUNDATION WALLS:
      1) WHERE THE TOP OF THE ELEMENT IS EXPOSED OR LOCATED WITHIN 30" OF THE LOWEST ADJACENT GRADE (EXPOSURE CATEGORY F1):
         a) 28 DAY COMPRESSIVE STRENGTH:4500 PSI
         b) MAXIMUM W/C RATIO: 0.45
         c) MAXIMUM AGGREGATE SIZE: 1"
         d) AIR CONTENT: 6%
      2) WHERE THE TOP OF THE ELEMENT IS NOT EXPOSED OR LOCATED WITHIN 30" OF THE LOWEST ADJACENT GRADE (EXPOSURE CATEGORY F0):
         a) 28 DAY COMPRESSIVE STRENGTH:2500 PSI
   b. INTERIOR SLABS ON GRADE (EXPOSURE CATEGORY F0):
      1) 28 DAY COMPRESSIVE STRENGTH: 3000 PSI
   c. EXTERIOR SLABS (DOCKS, ETC.) (EXPOSURE CATEGORY F1):
      1) 28 DAY COMPRESSIVE STRENGTH: 4500 PSI
      2) MAXIMUM W/C RATIO: 0.45
      3) MAXIMUM AGGREGATE SIZE: 1"
      4) MINIMUM AIR CONTENT: 6%
2. WATER USED IN MIXING CONCRETE SHALL CONFORM TO ASTM C1602.
3. NO PIPES, DUCTS, SLEEVES, ETC. SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. NO ALUMINUM PRODUCTS SHALL BE EMBEDDED IN CONCRETE. PENETRATIONS THRU STRUCTURAL CONCRETE ELEMENTS MUST BE APPROVED BY THE ENGINEER AND SHALL BE BUILT INTO THE ELEMENT PRIOR TO CONCRETE PLACEMENT.
4. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, ETC. TO BE CAST IN TO CONCRETE, AND FOR EXTENT AND LOCATION OF DEPRESSIONS, CURBS, RAMPS, ETC.
5. UNLESS NOTED OTHERWISE, MINIMUM REINFORCING IN ALL CONCRETE FOUNDATION WALLS SHALL BE AS FOLLOWS:

THICKNESS	TOP & BOTTOM BARS	VERTICAL	HORIZONTAL
8"	(2) #5	#4 AT 18"O.C.	#4 AT 12"O.C.

6. UNLESS NOTED OTHERWISE, CONCRETE SLABS ON EARTH SHALL BE REINFORCED AS FOLLOWS:
   6" THICK - #4 AT 15"O.C. EACH WAY
   REINFORCING SHALL BE CONTINUOUSLY SUPPORTED AT 36"O.C. MAXIMUM SPACING.
7. UNLESS NOTED OTHERWISE, FOR OPENINGS LARGER THAN 12" IN ANY DIRECTION IN CONCRETE WALLS ADD (2) #5 BARS ALL SIDES IN ADDITION TO REGULAR WALL REINFORCING AND EXTEND 24" EACH WAY BEYOND OPENING. WHERE 24" IS NOT AVAILABLE, EXTEND BARS AS FAR AS POSSIBLE AND TERMINATE WITH A STANDARD HOOK.
8. CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE MADE AND LOCATED SO AS TO NOT IMPAIR THE STRENGTH OF THE STRUCTURE AND AS APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE 2 X 4 (SHAPED) KEYWAY IN ALL VERTICAL AND HORIZONTAL JOINTS UNLESS NOTED OR DETAILED OTHERWISE. ALL STEEL REINFORCING SHALL BE CONTINUOUS THROUGH COLD JOINTS UNLESS NOTED OTHERWISE. SEE TYPICAL DETAILS FOR COLD/CONSTRUCTION JOINTS FOR SLABS ON GRADE.
9. FOOTINGS HAVE BEEN DESIGNED USING A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI. SPECIAL INSPECTIONS ARE NOT REQUIRED.

F. ANCHOR BOLTS/EMBEDDED BOLTS

1. ALL ANCHOR BOLTS SHALL HAVE ASTM A-563 HEAVY HEX NUT AND ASTM F-436 WASHERS AT STANDARD OR OVERSIZED HOLES PER AISC SPECIFICATION TABLE J3.3. WHERE HOLE SIZES DO NOT COMPLY WITH THE LIMITATIONS FOR OVERSIZED HOLES THE STRUCTURAL ENGINEER SHALL BE NOTIFIED TO DETERMINE STEEL PLATE WASHER REQUIREMENTS. ANCHOR BOLTS SHALL COMPLY WITH THE FOLLOWING:
   a. AT BRACED FRAMES & MOMENT RESISTING FRAMES - ASTM F1554 GRADE 105 HEADED BOLTS. (ASTM A449 THREADED ROD MAY BE USED WITH DOUBLE NUT AND WASHER.)
   b. AT WOOD STUD WALLS - ASTM A-307 GRADE HEADED BOLTS. ANCHOR BOLTS IN TREATED LUMBER SHALL BE GALVANIZED OR STAINLESS STEEL. SEE TIMBER NOTES FOR MORE INFORMATION.
   c. AT ALL OTHER ANCHOR BOLTS (UNLESS NOTED OTHERWISE) - ASTM F1554 GRADE 36 HEADED BOLTS. (ASTM A36 THREADED ROD MAY BE USED WITH DOUBLE NUT AND WASHER.)
2. EMBEDDED BOLTS IN MASONRY SHALL BE (UNLESS NOTED OTHERWISE) ASTM A-307 GRADE HEADED BOLTS.
3. SEE TYPICAL ANCHOR BOLT DETAIL FOR DEFINITIONS OF EMBEDMENT LENGTH, ETC.
4. FURNISH TEMPLATES AND OTHER DEVICES AS NECESSARY FOR PRESETTING ALL BOLTS PRIOR TO PLACING CONCRETE AND/OR GROUT.
5. IF THREADED RODS ARE USED AS PERMITTED ABOVE, THEY SHALL BE CLEAR OF SOIL AND DIRT.

G. ADHESIVE/MECHANICAL ANCHORS

1. ALL ADHESIVE/MECHANICAL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH AN APPROVED INDEPENDENT EVALUATION REPORT (ICC, IAPMO, OR APPROVED EQUAL), AS INDICATED BELOW, AND IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.
2. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.
3. UNLESS NOTED OTHERWISE, ALL ADHESIVE ANCHORS INTO CONCRETE SHALL BE:
   a. HILTI HIT-RE 500-SD (ESR-2322), OR HILTI HIT-HY 200 (ESR-3187).
   b. SIMPSON SET XP EPOXY (ESR-2508).
4. UNLESS NOTED OTHERWISE, ALL ADHESIVE ANCHORS INTO MASONRY SHALL BE:
   a. HILTI HIT HY-150 MAX (ESR-1967), OR HILTI HIT-HY-70 (ESR-2682).
   b. SIMPSON SET ADHESIVE (IAPMO ER-0265).
5. UNLESS NOTED OTHER WISE, ALL MECHANICAL ANCHORS INTO CONCRETE SHALL BE:
   a. HILTI KWIK BOLT TZ (ESR-1917).
   b. POWERS WEDGE BOLT (ESR-2526).
   c. SIMPSON STRONG-BOLT 2 (ESR-3037).
6. UNLESS NOTED OTHERWISE, ALL MECHANICAL ANCHORS INTO MASONRY SHALL BE:
   a. HILTI KWIK HUS-EZ (ESR-3056).
   b. SIMPSON STRONG BOLT 2 WEDGE ANCHOR (IAPMO ER-0240).
7. ALL MASONRY CELLS WITHIN 8" OF THE ANCHOR SHALL BE SOLID GROUTED.
8. THE TESTING LABORATORY WILL PERFORM VISUAL INSPECTION OF ANCHORS AND DOWELS AS SPECIFIED IN THE SPECIAL INSPECTION SCHEDULE AND THE APPROVED INDEPENDENT EVALUATION REPORT. TENSION TESTING CAN BE REQUIRED AT THE DIRECTION OF THE STRUCTURAL ENGINEER OF RECORD OR THE SPECIAL INSPECTOR.
9. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON THAT HOLE AND SHIFT THE ANCHOR LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM SPACE OF (2) ANCHOR HOLE DIAMETERS OR 1 INCH, WHICH EVER IS LARGER, OF SOUND CONCRETE/MASONRY BETWEEN THE ANCHOR AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. AT CONTRACTORS OPTION, LOCATE EXISTING REINFORCEMENT PRIOR TO DRILLING/CORING. IF THE ANCHOR OR DOWEL CANNOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
10. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH MECHANICAL ANCHORS

H. REINFORCING STEEL

1. REINFORCING BAR STRENGTH REQUIREMENTS:
   a. ALL REINFORCING BARS SHALL CONFORM TO ASTM STANDARD A-615 GRADE 60 AND ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM STANDARD A-185 AND SHALL BE SUPPLIED IN FLAT SHEETS. ADEQUATELY TIE AND SUPPORT ALL REINFORCING STEEL AS SPECIFIED BY ACI 117, TO MAINTAIN EXACT REQUIRED POSITION.
2. STEEL DISCONTINUOUS FIBER REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO ASTM A820 AND SHALL HAVE A LENGTH TO DIAMETER RATIO NOT SMALLER THAN 50 AND NOT GREATER THAN 100.
3. HEADED DEFORMED BARS SHALL CONFORM TO ASTM A970. OBSTRUCTIONS OR INTERRUPTIONS OF THE BAR DEFORMATIONS, IF ANY, SHALL NOT EXTEND MORE THAN 2 BAR DIAMETERS FROM THE BEARING FACE OF THE HEAD.
4. ALL FIELD BENT DOWELS SHALL BE GRADE 40 WITH SPACING INDICATED REDUCED BY 1/3.
5. UNLESS NOTED OTHERWISE, REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVERAGE:
   a. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3"
   b. EXPOSED TO EARTH OR WEATHER:
      1) #6 & LARGER ..... 2"
      2) #5 & SMALLER .....1-1/2"
   c. NOT EXPOSED TO WEATHER OR EARTH:
      1) SLABS, WALLS, JOISTS, #11 & SMALLER ..... 3/4"
      2) BEAMS, COLUMNS: MAIN REINFORCING OR TIES ..... 1-1/2"
   d. SLAB ON GRADE:
      1) PLACE REINFORCING AT CENTER OF SLAB UNLESS INDICATED OTHERWISE.
6. EXCEPT WHERE NOTED ON PLANS OR DETAILS CONTINUOUS REINFORCEMENT SHALL BE SPLICED AT POINTS OF MINIMUM STRESS BY LAPPING PER THE REBAR LAP SCHEDULE.
7. ALL VERTICAL REINFORCING IN STRUCTURAL ELEMENTS ABOVE SHALL BE SPLICED WITH MATCHING DOWELS EMBEDDED WITHIN THE FOOTINGS OR STRUCTURE BELOW. SPLICE LENGTHS SHALL COMPLY WITH REBAR LAP SCHEDULE. DOWELS INTO FOOTINGS SHALL TERMINATE WITH A STANDARD HOOK, AND SHALL EXTEND TO WITHIN 4" OF THE BOTTOM OF THE FOOTING, BUT NEED NOT EXTEND MORE THAN 20" INTO FOOTING. FOR MASONRY CONSTRUCTION SEE STRUCTURAL NOTE I.6.A.
8. DO NOT WELD REINFORCING EXCEPT AS NOTED ON PLANS. WHERE REINFORCING IS WELDED, USE ASTM A-706 REINFORCING.
9. REINFORCING BARS, TIES, AND TENDONS SHALL BE SUPPORTED BY NYLON CONES, PLASTIC-COATED TIE-WIRES, OR PLASTIC-COATED CHAIRS. REINFORCING IN FOOTINGS IS PERMITTED TO BE SUPPORTED ON CONCRETE DOBIES.
10. UNLESS NOTED OTHERWISE, HOOKS, STIRRUPS, TIES, AND OTHER BENDS IN REINFORCING STEEL SHALL MEET THE STANDARDS SET FORTH IN ACI 318/318R-11. UNLESS OTHERWISE PERMITTED BY THE ENGINEER, ALL REINFORCEMENT SHALL BE BENT COLD. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT, EXCEPT AS SHOWN ON THESE DRAWINGS OR OTHERWISE PERMITTED BY THE ENGINEER.
11. UNLESS SPECIFICALLY NOTED AND/OR DETAILED IN THE STRUCTURAL DRAWINGS CONDUIT SHALL NOT BE IN CONTACT WITH REINFORCING STEEL.

I. MASONRY

1. ALL HOLLOW MASONRY UNITS SHALL CONFORM TO ASTM C-90.
   F'M (MINIMUM, FACTORED) 1,500 PSI
   MINIMUM UNIT STRENGTH 1,900 PSI (TESTED IN ACCORDANCE WITH ASTM C-140)
   ACCEPTABLE RANGE OF UNIT WEIGHT: 105 PCF TO 125 PCF
2. ALL GROUT (SITE MIXED OR PRE-MIXED) SHALL CONFORM TO ASTM C-476 OR SECTION 2.2A OF TMS 602-11/ACI 530.1-11/ASCE 6-11. GROUT SHALL BE PLACED WITH SUFFICIENT WATER FOR POURING WITHOUT SEGREGATION. DO NOT USE MORTAR FOR GROUT. MECHANICALLY VIBRATE ALL GROUT.
3. GROUT STOPS SHALL BE AN APPROVED PRODUCT DESIGNED AND MANUFACTURED FOR USE AS A GROUT STOP. GROUT STOP SUBMITTALS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER FOR REVIEW. OTHER GROUT STOP MATERIALS SUCH AS ASPHALT IMPREGNATED MATERIALS ARE NOT PERMITTED.
4. MORTAR SHALL BE TYPE S AND SHALL CONFORM TO ASTM C 270.
5. ALL MASONRY WORK SHALL CONFORM TO CHAPTER 21 OF THE IBC.
6. UNLESS NOTED OTHERWISE, MINIMUM REINFORCING IN ALL MASONRY WALLS SHALL BE AS FOLLOWS:
   a. VERTICAL: # 5 BARS IN CELLS ADJACENT TO ALL OPENINGS, AT CORNERS AND AT A MAXIMUM SPACING OF 32" THROUGHOUT THE WALL. ALL VERTICAL REINFORCEMENT INCLUDING, BUT NOT LIMITED TO JAMBS, COLUMNS, AND WALL REINFORCING SHALL BE DOWELED INTO AND THROUGH THE FOUNDATION WALL AND INTO THE FOOTING BELOW UNLESS SPECIFICALLY DETAILED OTHERWISE.
   b. HORIZONTAL: (2) #4 BARS IN 8" DEEP "H" BLOCK BOND BEAM UNITS AT 48"O.C. AND AT FLOORS, ROOF AND TOP OF WALL. BOND BEAMS AT ROOF WILL SLOPE TO MATCH SLOPING ROOF.
7. ALL BLOCK CELLS CONTAINING REINFORCING, BOLTS, OR ANCHORS SHALL BE GROUTED SOLID.
8. PROVIDE (1) #5 (MINIMUM), IN GROUTED SPACE, ON ALL SIDES AND ADJACENT TO EVERY OPENING WHICH EXCEEDS 24" IN EITHER DIRECTION. HORIZONTAL BARS SHALL EXTEND 24" BEYOND THE CORNERS OF THE OPENING AND VERTICAL BARS SHALL EXTEND TO TOP OF WALL. VERTICAL REINFORCING SHALL BE PROVIDED AT ENDS, CORNERS AND EACH SIDE OF CONTROL JOINTS. SEE TYPICAL DETAILS FOR OPENINGS WHICH EXCEED 32" IN EITHER DIRECTION.
9. SOLID GROUTING OF MASONRY IS UNACCEPTABLE EXCEPT AS SPECIFICALLY NOTED ON PLANS AND SCHEDULES.
10. WHERE WALLS ARE NOT GROUTED SOLID, EACH GROUT POUR SHALL TERMINATE FLUSH WITH THE TOP OF THE UPPERMOST UNIT EXCEPT AT CELLS WITH VERTICAL REINFORCING WHERE GROUT SHALL BE 1-1/2" BELOW TOP OF UNIT TO PROVIDE CONSTRUCTION KEY. WHERE WALLS ARE GROUTED SOLID, EACH GROUT POUR SHALL TERMINATE 1-1/2" BELOW TOP OF UNIT.
11. GROUT POURS SHALL NOT EXCEED 5'-0" UNLESS HIGH LIFT GROUTING PROCEDURES ARE FOLLOWED.
12. THE USE OF HIGH LIFT GROUTING PROCEDURES REQUIRE THE APPROVAL OF THE ARCHITECT AND ENGINEER AND SHALL NOT EXCEED THE MAXIMUM HEIGHTS GIVEN IN TABLE 1.20.1 OF TMS 402-11/ACI 530-11/ASCE 5-11. GROUT DEMONSTRATION PANELS, AS PRESCRIBED BY THE ARCHITECT AND ENGINEER, SHALL BE REQUIRED WHERE REQUESTED GROUTING PROCEDURES DO NOT MEET THE LIMITS OF TABLE 1.20.1. ADDITIONALLY, ALL HIGH LIFT GROUTING SHALL REQUIRE SPECIAL INSPECTION PROCEDURES NEEDED TO VERIFY GROUT PLACEMENT DURING CONSTRUCTION. DURING THE SUBMITTAL FOR APPROVAL PROCESS, SUBMITTAL SHALL INCLUDE, BUT NOT BE LIMITED TO: STATEMENT OF PROCEDURE FOR MECHANICAL VIBRATION OF HIGH LIFT GROUT; NEW MIX DESIGNS FOR HIGH SLUMP, HIGH LIFT GROUT; FOR SELF-CONSOLIDATING GROUT, SUBMIT MIX DESIGNS, SLUMP FLOW RATES, VISUAL STABILITY INDEX (VSI), AND QUANTITIES OF ADMXTURES BEING USED.
13. ALL MASONRY BEAMS SHALL BE BUILT INTEGRAL WITH SUPPORT, NO TOOTHING OR DOWELING PERMITTED. UNITS WITH ONE END OPEN SHALL BE USED FOR ALL MASONRY BEAMS.
14. ALL VERTICAL REINFORCING SHALL BE SECURED IN PLACE PRIOR TO GROUTING USING WIRE POSITIONERS OR OTHER ACCEPTABLE DEVICES. REINFORCING SHALL BE SECURED AT BAR-SPLICE LOCATIONS AND AT A SPACING NOT MORE THAN 120 BAR DIAMETERS.
15. UNLESS NOTED OTHERWISE, MASONRY WALLS SHALL BE CONSTRUCTED UTILIZING COMMON RUNNING-BOND WITH FULLY MORTARED BED JOINTS AROUND GROUTED CELLS.
16. ELECTRICAL CONDUIT SHALL NOT BE PLACED IN CELLS THAT CONTAIN REBAR. CONDUIT IS ALLOWED TO PASS THROUGH REINFORCED CELLS WHEN IT OCCURS PERPENDICULAR TO THE REBAR. CONDUIT SHALL NOT CONTACT REBAR AS IT PASSES. THERE SHALL BE 1" CLEAR BETWEEN CONDUIT AND REBAR.

J. TIMBER

1. WOOD GRADES (UNLESS NOTED OTHERWISE)
   a. ALL FRAMING LUMBER SHALL BE DOUGLAS FIR/LARCH CLEARLY MARKED WITH A STAMP BY WWPA APPROVED AGENCY AND SHALL BE GRADED AS FOLLOWS:
      1) HORIZONTAL MEMBERS: JOISTS & RAFTERS: NO. 2, BEAMS & STRINGERS: NO. 2.
      2) VERTICAL MEMBERS: POST & TRIMMERS: NO. 1, STUDS: NO. 2.
2. SHEATHING SHALL BE APA RATED SHEATHING, EXPOSURE I, EXTERIOR GLUE AND PANEL INDEX RATING AS NOTED BELOW UNLESS NOTED OTHERWISE:

LOCATION	THICKNESS	PANEL INDEX
WALLS:	15/32"	24/0
ROOFS:	19/32"	32/16

3. INDIVIDUAL PIECES OF SHEATHING AT ROOF AND SHEAR WALLS SHALL NOT BE SMALLER THAN 24" IN EITHER DIRECTION AND SHALL SPAN A MINIMUM OF TWO FRAMING SPACES, UNO.
4. CONNECTIONS, FASTENERS, AND ADHESIVE
   a. ALL BOLTS THRU WOOD SHALL BE ASTM A307 AND SHALL HAVE HARDENED WASHERS UNDER ASTM A563 HEAVY HEX NUT AND BOLT HEADS.
   b. UNLESS NOTED OTHERWISE, 8D COMMON NAILS SHALL BE USED TO FASTEN ALL PLYWOOD SHEATHING TO SUPPORTING TRUSSES, JOISTS, LEDGERS OR BLOCKING AS FOLLOWS:
      1) BOUNDARY NAILING "BN": 4"O.C. AT ALL ROOF SHEATHING INTO BEARING WALLS, SHEAR WALLS, AND BLOCKING.
      2) PANEL EDGE NAILING "EN": 6"O.C. AT ALL OTHER PLYWOOD PANEL EDGES.
      3) PANEL FIELD NAILING "FN": 12"O.C. AT INTERIOR SUPPORTS IN FIELD OF PANEL.
      NAILS SHALL BE GALVANIZED OR STAINLESS STEEL AT EXPOSED LOCATIONS OR IN TREATED WOOD (SEE NOTE BELOW FOR FASTENERS CONNECTED TO OR IN CONTACT WITH TREATED WOOD). THE HEAD OF ALL NAILS SHALL BE DRIVEN FLUSH WITH THE SURFACE OF THE SHEATHING.
      4) ALL WALL SHEATHING SHALL BE FASTENED TO THE WALL FRAMING WITH 10D NAILS @ 6"O.C.
   c. ALL NAILS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

NAIL SIZE	SHANK DIAMETER	MIN. PENETRATION INTO SUPPORT MEMBER
6D	0.113"	1.25"
8D	0.131"	1.50"
10D	0.148"	1.63"
12D	0.148"	1.63"
16D	0.162"	1.75"

   d. ALL FRAMING ANCHORS, POST CAPS, HOLD DOWNS, COLUMN BASES ETC. TO BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
   e. UNLESS NOTED OTHERWISE, ALL WALL BOTTOM PLATES TO BE ANCHORED WITH 5/8" DIAMETER ANCHOR BOLTS AT 24"O.C. WITH 6" MINIMUM EMBEDMENT. THERE SHALL BE A MINIMUM OF (2) ANCHOR BOLTS PER PLATE WITH ONE BOLT LOCATED NOT MORE THAN 12" AND NOT LESS THAN 4" FROM EACH END OF EACH PIECE. ADDITIONALLY, WALL BOTTOM PLATES AT SHEAR WALLS SHALL INCLUDE 1/4" X 3" X 3" STEEL PLATE WASHERS BETWEEN THE SILL PLATE AND NUT OF THE ANCHOR BOLT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.
5. ALL WOOD TRUSSED RAFTERS SHALL BE FABRICATED IN COMPLIANCE WITH THE RESEARCH COMMITTEE RECOMMENDATIONS OF THE ICC FOR THE CONNECTOR PLATES USED. SUBMIT DESIGN CALCULATIONS WITH ENGINEERS SEAL FOR REVIEW WITH SHOP DRAWINGS. PROVIDE CALCULATIONS AND DETAILS FOR ALL TRUSS TO TRUSS CONNECTIONS INCLUDING CONNECTION HARDWARE. ALL NECESSARY TRUSS BRIDGING AND CONNECTION DESIGN OF TRUSS BRIDGING SHALL BE PROVIDED BY THE TRUSS DESIGNER AND SHALL BE INCLUDED IN THE DESIGN CALCULATIONS FOR REVIEW.
6. INSTALLATION OF ALL METAL-PLATE-CONNECTED WOOD TRUSSES SHALL COMPLY WITH THE FOLLOWING STANDARDS:
   a. ANSI/TPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSSES".
   b. TPI HIB "COMMMENTARY AND RECOMMENDATIONS FOR HANDLING INSTALLING & BRACING METAL-PLATE-CONNECTED WOOD TRUSSES".
   c. TPI DSB "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL-PLATE-CONNECTED WOOD TRUSSES".
7. UNLESS NOTED OTHERWISE, ALL ROOF SHEATHING AND WALL SHEATHING AT SHEAR WALLS SHALL HAVE SOLID BLOCKING AT ALL PANEL EDGES.
8. PROVIDE SOLID 2" (NOMINAL) FULL DEPTH BLOCKING AT ENDS AND SUPPORT LOCATIONS FOR ALL JOISTS AND RAFTERS. BLOCKING SHALL BE ATTACHED TO SUPPORT FRAMING WITH A MINIMUM OF (1) SIMPSON A35 FRAMING ANCHOR BETWEEN JOISTS UNLESS NOTED OTHERWISE.
9. UNLESS NOTED OTHERWISE, ALL BEARING WALLS SHALL BE 2X6 STUDS SPACED AT 16"O.C. BLOCK ALL NON-SHEATHED BEARING WALLS AT 4'-0"O.C.
10. VERIFY THE STUD SPACING WITH THE ANCHOR BOLT LAY-OUT. WHERE STUDS INTERFERE WITH ANCHOR BOLTS, PROVIDE AN ADDITIONAL FULL-HEIGHT STUD TO ENSURE THAT THE FULL CROSS-SECTIONAL AREA OF THE STUD IS IN CONTACT WITH THE SILL PLATE.
11. EXTERIOR WALLS SHALL HAVE DOUBLE 2X TOP PLATES SPLICED WITH A MINIMUM OF 32" OF OVERLAP AND SHALL BE CONNECTED WITH A MINIMUM OF (12) 16D NAILS.
12. EXCEPT WHERE NOTED OTHERWISE, THE NUMBER AND SIZE OF NAILS CONNECTING WOOD MEMBERS SHALL NOT BE LESS THAN THAT SET FORTH IN IBC TABLE 2304.9.1. CONNECTIONS FOR MULTIPLE PIECES OF ENGINEERED LUMBER PIECES SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
13. UNLESS NOTED OTHERWISE, ALL HORIZONTAL FRAMING MEMBERS SHALL BE INSTALLED WITH THE NATURAL CROWN UP.

T. DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE COMPLETE PACKAGES TO BE SUBMITTED FOR REVIEW THAT INCLUDE DRAWINGS AND CALCULATIONS FOR ALL ELEMENTS AND CONNECTIONS OF ITEMS LISTED BELOW. DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF THE DESIGN PROFESSIONAL RESPONSIBLE FOR THE DESIGN.
2. DEFERRED SUBMITTAL COMPONENTS SHALL NOT BE INSTALLED UNTIL APPROVED BY THE BUILDING OFFICIAL.
3. DEFERRED SUBMITTALS SHALL INCLUDE, BUT ARE NOT LIMITED TO:
   a. PRE-MANUFACTURED WOOD TRUSSES, BLOCKING, BRIDGING, BRIDGING CONNECTIONS, TRUSS HANGERS, AND RELATED COMPONENTS.

STRUCTURAL SHEET INDEX	
SHEET NUMBER	SHEET NAME
S0.1	STRUCTURAL NOTES
S0.2	SCHEDULES
S0.3	SCHEDULES
S1.1	FOOTING & ROOF FRAMING PLANS
S2.1	DETAILS

0' 50' 100' 200' 300'
Scale in Feet
1" = 100'

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STRUCTURAL NOTES
900 SOUTH WELL HOUSE

LICENSED PROFESSIONAL ENGINEER No. 8444309 Ammon J. Hedin 2/12/16 State of Utah

REVISIONS	
DATE	DESCRIPTION

SCALE: AS NOTED
DATE: 2/12/2016
DESIGNED: AJH
DRAWN: TJM
CHECKED: DLP
DWG: X:\DRAWINGS 2015\15151 - 900 South well house\S-15151 - 900 South Well House - 2015.rvt

S0.1

SPECIAL INSPECTION SCHEDULE [1, 2]

ESTABLISHED PER 2012 IBC SECTION 110 AND CHAPTER 17

ITEM	CONTINUOUS[3]	PERIODIC[3]	REFERENCE	COMMENTS
CONCRETE CONSTRUCTION (IBC 1705.3)			SEE IBC TABLE 1705.3 - REF. NOTE C1	C1. SPECIAL INSPECTION IS NOT REQUIRED FOR CONC. ISOLATED SPREAD FOOTINGS, CONTINUOUS FOOTINGS, NON-STRUCTURAL SLABS, FOUNDATION WALLS, PATIOS, DRIVEWAYS, AND SIDEWALKS PROVIDED THE REQUIREMENTS OF IBC 1705.3 ARE MET.
REINFORCING STEEL PLACEMENT		●		C2. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR VERIFICATION OF THE WELDABILITY OF REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR WELDING OF OTHER ASTM A 706 REINFORCING STEEL NOT INCLUDED IN THE CONTINOUS SPECIAL INSPECTION REQUIREMENTS NOTED ABOVE.
WELDING OF REINFORCING STEEL	●	◐	REFERENCE NOTE C2	
EMBEDDED BOLTS & PLATES	●			C3. PERFORM AIR, SLUMP AND TEMP. TESTS WHEN CONCRETE SAMPLES ARE CAST.
VERIFYING REQUIRED DESIGN MIX		◐		C4. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR VERIFICATION OF IN-SITU CONCRETE STRENGTH FOR POST-TENSIONED CONCRETE PRIOR TO TENSIONING TENDONS OR REMOVING SHORING OR FORMS.
CONCRETE PLACEMENT / SAMPLING	●		REFERENCE NOTE C3	C5. EPOXY AND EXPANSION ANCHORS INTO MASONRY OR CONCRETE MAY BE USED ONLY WHEN APPROVED BY ARCHITECT, AND/OR ENGINEER USING AN APPROVED PRODUCT WITH CURRENT PUBLISHED ICC RESEARCH REPORT NUMBERS. COORDINATE CONTINUOUS/PERIODIC SPECIAL INSPECTION REQUIREMENTS WITH ICC REPORT.
CURING TEMPERATURE / TECHNIQUES		◐		
PRESTRESSED CONCRETE				
APPLICATION OF PRESTRESSING FORCES	●			
GROUTING BONDED TENDONS	●		IN SEISMIC-FORCE-RESISTING SYSTEM	
ERECTION OF PRECAST MEMBERS		◐		
VERIFICATION OF IN-SITU STRENGTH		●	REFERENCE NOTE C4	
EPOXY / EXPANSION ANCHOR PLACEMENT	●	●	REFERENCE NOTE C5	
MASONRY CONSTRUCTION (IBC 1705.4)			SEE TMS 402/ACI 550 TABLE 1.19.2 (NON-ESSENTIAL)	M1. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR VERIFICATION OF THE WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706 IN ACCORDANCE WITH ANSI / AWS D1.4. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. PERIODIC SPECIAL INSPECTION IS ALLOWED FOR WELDING OF OTHER ASTM A 706 REINFORCING STEEL NOT INCLUDED IN THE CONTINUOUS SPECIAL INSPECTION REQUIREMENTS NOTED ABOVE.
AS MASONRY CONSTRUCTION BEGINS, VERIFY:				M2. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ESSENTIAL FACILITIES (TMS 402/ACI 530 TABLE 1.19.3).
SITE PREPARED MORTAR		○		M3. EPOXY AND EXPANSION ANCHORS INTO MASONRY OR CONCRETE MAY BE USED ONLY WHEN APPROVED BY ARCHITECT AND/ORENGINEER USING AN APPROVED PRODUCT WITH CURRENT PUBLISHED ICC RESEARCH REPORT NUMBERS. COORDINATE CONTINUOUS/PERIODIC SPECIAL INSPECTION REQUIREMENTS WITH ICC REPORT.
MORTAR JOINTS		●		
REINFORCEMENT / CONNECTORS		●		
PRE-STRESSING TECHNIQUES		●		
GRADE & SIZE OF TENDONS & ANCHORAGES		●		
INSPECTION SHALL VERIFY:				
SIZE & LOCATION OF STRUCTURAL ELEMENTS		●		
TYPE, SIZE, & LOCATION OF ANCHORS		●	REFERENCE NOTE M2	
SIZE, GRADE & TYPE OF REINFORCEMENT		◐		
WELDING OF REINFORCING BARS	●		REFERENCE NOTE M1	
HOT OR COLD WEATHER PROTECTION		◐		
MEASUREMENT OF PRE-STRESSING FORCE		●	REFERENCE NOTE M2	
PRIOR TO GROUTING, VERIFY:				
CLEAN GROUT SPACE		●	REFERENCE NOTE M2	
PLACEMENT OF REINFORCEMENT CONNECTORS, TENDONS AND ANCHORS.		●		
PROPORTIONS OF SITE PREPARED GROUT		●		
CONSTRUCTION OF MORTAR JOINTS		●		
GROUT PLACEMENT	●			
GROUTING OF PRE-STRESSING BONDED TENDONS	●			
PREPARATION OF TEST SPECIMENS / PRISMS	●			
COMPLIANCE W/ CONST. DOCS. / SUBMITTALS		○		
EPOXY / EXPANSION ANCHOR PLACEMENT	●	●	REFERENCE NOTE M3	
VERIFICATION OF f'm AND f'aac		●		
SELF CONSOLIDATING GROUT:				
VERIFY SLUMP FLOW AND VSI	●			

GENERAL SPECIAL INSPECTION NOTES :

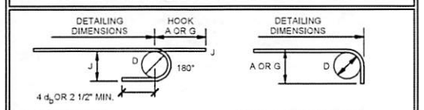
1. THE ITEMS MARKED WITH A "●" IN THE SPECIAL INSPECTION SCHEDULE SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY, FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO THE MATERIAL SAMPLING AND TESTING SECTION. THE PROJECT SPECIFICATIONS, AND THE SPECIFIC GENERAL NOTES SECTIONS. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT, ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL. ANY ITEMS WHICH FAIL TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL, ARCHITECT, AND ENGINEER PRIOR TO COMPLETION OF THAT PHASE OF WORK. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
2. ANY CONSTRUCTION OR MATERIAL THAT HAS FAILED INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT.
3. CONTINUOUS SPECIAL INSPECTION MEANS THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. PERIODIC SPECIAL INSPECTION MEANS THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK. (IBC SECTION 1702)

LEGEND OF SYMBOLS AND ABBREVIATIONS

AB	=	ANCHOR BOLT
ABV	=	ABOVE
ARCH	=	ARCHITECT
BLW	=	BELOW
BN	=	BOUNDARY NAILING
BRB	=	BUCKLING RESTRAINED BRACE
BRBF	=	BUCKLING RESTRAINED BRACE FRAME
CJP	=	COMPLETE JOINT PENETRATION
CL	=	CENTER LINE
CMU	=	CONCRETE MASONRY UNIT
COL	=	COLUMN
CONC	=	CONCRETE
CP	=	CONCRETE PIER
DC	=	DEMAND CRITICAL
DIA / Ø	=	DIAMETER
DBA	=	DEFORMED BAR ANCHOR
DBE	=	DECK BEARING ELEVATION
ELEV	=	ELEVATION
EN	=	EDGE NAILING
EOD	=	EDGE OF DECK
FDN	=	FOUNDATION
FTG	=	FOOTING
FFE	=	FINISHED FLOOR ELEVATION
GB	=	CONCRETE GRADE BEAM
HSA	=	HEADED STUD ANCHOR
JBE	=	JOIST BEARING ELEVATION
KB	=	KICKER BRACE
MAX	=	MAXIMUM
MB	=	MASONRY BEAM
MC	=	MASONRY COLUMN
MECH	=	MECHANICAL
MEZZ	=	MEZZANINE
MIN	=	MINIMUM
MJ	=	MASONRY JAMB
MW	=	MASONRY WALL
NS, FS	=	NEAR SIDE, FARSIDE
OAE	=	OR APPROVED EQUAL
OPP	=	OPPOSITE
PAF	=	POWDER ACTUATED FASTENER
PL	=	PLATE
REINF	=	REINFORCING
REQ	=	REQUIRED
SIM	=	SIMILAR
SSH	=	STEEL STUD HEADER
SSJ	=	STEEL STUD JAMB
SSS	=	STEEL STUD SILL
SSW	=	STEEL STUD WALL
TOF	=	TOP OF FOOTING
TOB	=	TOP OF BEAM ELEVATION
TOM	=	TOP OF MASONRY ELEVATION
TOC	=	TOP OF CONCRETE SLAB
TOG	=	TOP OF GIRDER ELEVATION
TOS	=	TOP OF STEEL ELEVATION
TYP	=	TYPICAL
UNO	=	UNLESS NOTED OTHERWISE

FOOTING MARK
TOP OF FOOTING ELEV.
SECTION MARK
SHEET NUMBER
TOP OF FOUNDATION WALL OR COLUMN PIER ELEV.
SHEAR WALL - SEE SCHEDULE
MIN. LENGTH OF SHEAR WALL
S — S FOOTING STEP
MASONRY WALL
DEPRESS FDN./WALL AND POUR FLOOR SLAB OVER AT MASONRY FOUNDATION WALL
MASONRY BEAM
ELEVATION
L — ITEMS, DETAILS, & SYSTEMS WHICH ARE PART OF THE LATERAL FORCE RESISTING SYSTEM.

STANDARD HOOK & BEND SCHEDULE



d_b = BAR DIAMETER
D = FINISHED INSIDE BEND DIAMETER

D = $6d_b$ FOR #3 THROUGH #8
D = $8d_b$ FOR #9 THROUGH #11

BAR SIZE	DIMENSION OF STANDARD 180-DEG HOOKS, ALL GRADES			DIMENSION OF STANDARD 90-DEG HOOKS, ALL GRADES	
	A or G	J	D	A or G	D
#3	5"	3"	2 1/4"	6"	2 1/4"
#4	6"	4"	3"	8"	3"
#5	7"	5"	3 3/4"	10"	3 3/4"
#6	8"	6"	4 1/2"	1'-0"	4 1/2"
#7	10"	7"	5 1/4"	1'-2"	5 1/4"
#8	11"	8"	6"	1'-4"	6"
#9	1'-3"	11 3/4"	9 1/2"	1'-7"	9 1/2"
#10	1'-5"	1'-1 1/4"	10 3/4"	1'-10"	10 3/4"
#11	1'-7"	1'-2 3/4"	12"	2'-0"	12"

REVISIONS

DATE	DESCRIPTION

SCALE: AS NOTED
DATE: 2/12/2016
DESIGNED: AJH
DRAWN: TJM
CHECKED: DJP
DWG: X:\DRAWINGS 2015\15151 - 900 South well House\S-15151 - 900 South Well House - 2015.vwx

LICENSED PROFESSIONAL ENGINEER No. 8443009 Ammon I. Hedin 2/12/16 State of Utah

SCHEDULES

900 SOUTH WELL HOUSE

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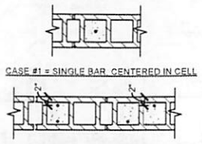
0' 50' 100' 200' 300'
Scale in Feet
1" = 100'

S0.2

2012 IBC MASONRY REBAR LAP SPLICE SCHEDULE

FOR MASONRY APPLICATIONS (ACI 530 - 11)



BAR LOCATION	MASONRY REINFORCING & SPLICE LENGTHS (IN) (f'm = 1500psi)									
	BAR SIZE									
	#3		#4		#5		#6		#7	
	CASE #		CASE #		CASE #		CASE #		CASE #	
	1	2	1	2	1	2	1	2	1	2
BEAM / WALL HORIZONTAL	20"		26"		32"		39"		45"	
WALL VERTICAL COLUMN AND JAMB	12"	16"	14"	29"	22"	45"	43"	54"	59"	63"

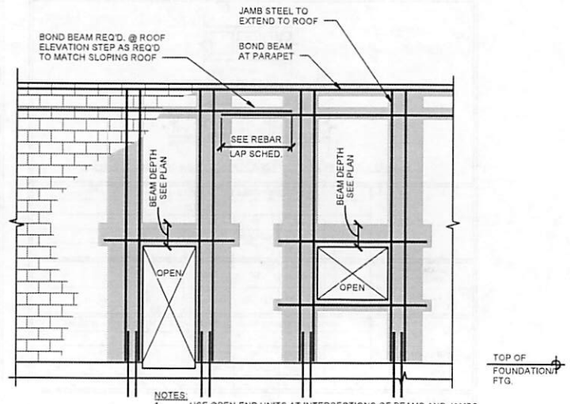
BAR LOCATION	MASONRY REINFORCING & SPLICE LENGTHS (IN) (f'm = 2000psi)									
	BAR SIZE									
	#3		#4		#5		#6		#7	
	CASE #		CASE #		CASE #		CASE #		CASE #	
	1	2	1	2	1	2	1	2	1	2
BEAM / WALL HORIZONTAL	20"		26"		32"		39"		45"	
WALL VERTICAL COLUMN AND JAMB	12"	14"	12"	25"	19"	40"	37"	54"	51"	63"

BAR LOCATION	MASONRY REINFORCING & SPLICE LENGTHS (IN) (f'm = 2500psi)									
	BAR SIZE									
	#3		#4		#5		#6		#7	
	CASE #		CASE #		CASE #		CASE #		CASE #	
	1	2	1	2	1	2	1	2	1	2
BEAM / WALL HORIZONTAL	20"		26"		32"		39"		45"	
WALL VERTICAL COLUMN AND JAMB	12"		12"	22"	17"	36"	33"	54"	46"	63"

NOTES

1. MECHANICAL COUPLERS MAY BE USED IN LIEU OF LAP SPLICES SHOWN. SEE STRUCTURAL NOTES FOR MINIMUM COUPLER CAPACITY. WHERE MECHANICAL COUPLERS ARE USED, STAGGER ADJACENT SPLICES A MINIMUM OF 24" AS INDICATED ABOVE.
2. DEVELOPMENT LENGTHS SHALL BE INCREASED BY 50% WHERE EPOXY COATED REBAR IS USED.
3. WHEN SPLICING BARS OF DIFFERENT SIZES, USE LAP SPLICE LENGTH OF LARGER BARS UNO.
4. ALL REBAR #8 AND LARGER IN MASONRY SHALL BE SPLICED USING MECHANICAL SPLICES. SEE STRUCTURAL NOTES FOR MINIMUM COUPLER CAPACITY.

TYPICAL MASONRY / JAMB REINFORCING SCHEDULE



NOTES:
1. USE OPEN-END UNITS AT INTERSECTIONS OF BEAMS AND JAMBS.
2. TYPICAL HORIZONTAL BOND BEAMS MAY BE ADJUSTED UP OR DOWN BY ONE COURSE PROVIDED THE OVERALL NUMBER OF REQUIRED BOND BEAMS ARE INSTALLED.
3. TYPICAL HORIZONTAL AND VERTICAL WALL REINFORCING NOT SHOWN FOR CLARITY. SEE PLAN AND SCHEDULE FOR TYPICAL WALL REINFORCING.
4. JAMB REINFORCING SHOWN IS SCHEMATIC. SEE SCHEDULE & DETAILS FOR ACTUAL JAMB REINF.

MASONRY BEAM SCHEDULE

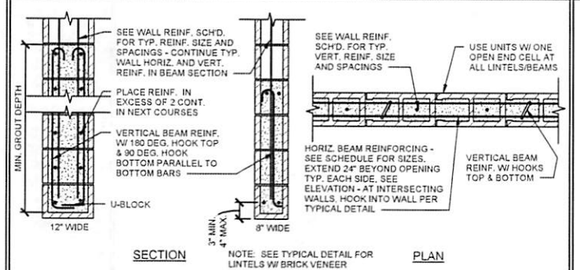
MARK	NOMINAL THICKNESS	BOTTOM REINF.	TOP REINF.	VERTICAL REINF.	MIN. GROUT DEPTH	OPENING ① SIZE	COMMENTS
MB-1	8"	(2) #4	(2) #4	—	16"	6'-0"	

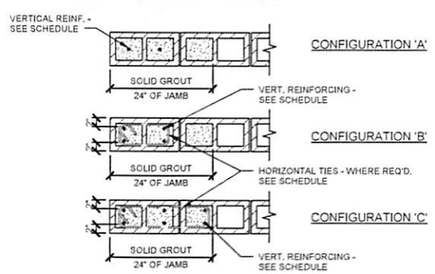
NOTES:
1. WHERE SPECIFIC BEAMS ARE NOT NOTED ON THE PLANS - REFER TO OPENING SIZE FOR REQUIRED BEAM DEPTH AND REINFORCING.
2. FIRST VERTICAL BAR TO BE WITHIN 8" OF END OF BEAM.
3. SEE TYPICAL ELEVATION - VIEW OF BEAM.
4. VERTICAL REINFORCING SHALL HAVE HOOKS TOP AND BOTTOM.

MASONRY JAMB SCHEDULE

MARK	NOMINAL THICKNESS	VERTICAL REINF.	TIES	CONFIG.	OPENING ① SIZE	COMMENTS
MJ-1	8"	(2) #5	—	A	UP TO 6'-6"	

NOTES:
1. WHERE SPECIFIC JAMBS ARE NOT NOTED ON THE PLANS - REFER TO OPENING SIZE FOR REQUIRED REINFORCING AND CONFIGURATION.
2. ALL VERT. REINFORCING SHALL HAVE MATCHING DOWELS CAST INTO FOUNDATIONS.
3. HORIZONTAL REINFORCING NOT SHOWN.
4. JAMBS TO BE GROUTED SOLID.





MASONRY WALL SCHEDULE

MARK	THICK.	VERT. REINF.		HORIZ. REINF.			BOND BEAM REINF.		COMMENTS
		SIZE	SPACE	NO.	SIZE	SPACE	@ ROOF	@ ELEVATED FLOOR	
MW-1	8"	#5	32"o.c.	(2)	#4	48"	(2) #4	--	ALL WALLS U.N.O.

NOTES:
1. FOR ANY CMU WALLS NOT SPECIFICALLY CALLED OUT IN PLANS, USE MW1
2. VERT. REINFORCING TO BE @ CL. OF WALL UNLESS OTHERWISE NOTED.
3. SOLID GROUTING OF WALLS IS UNACCEPTABLE EXCEPT WHERE SPECIFICALLY NOTED.
4. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
5. A BOND BEAM SHALL BE LOCATED IN THE FIRST COURSE ABOVE THE FOUNDATION IF VERTICAL DOWELS HAVE BEEN BENT TO ALIGN WITH VERTICAL CELLS. WHETHER OR NOT MASONRY WEBS HAVE BEEN CUT

REVISIONS

DATE	DESCRIPTION

SCALE: AS NOTED
DATE: 2/12/2016
DESIGNED: AJH
DRAWN: TJM
CHECKED: DJP
DWG: X:\DRAWINGS\2015\15101 - 900 South Well House\15101 - 900 South Well House - 2015.rvt

LICENSED PROFESSIONAL ENGINEER No. 9444309 Ammon J. Hedin 2/12/16 State of Utah

SCHEDULES

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0' 50' 100' 200' 300'
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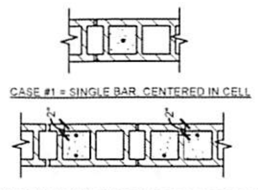
2012 IBC MASONRY REBAR LAP SPLICE SCHEDULE

FOR MASONRY APPLICATIONS (ACI 530 - 11)



BAR LOCATION	MASONRY REINFORCING & SPLICE LENGTHS (IN) (f'm = 1500psi)									
	BAR SIZE									
	#3		#4		#5		#6		#7	
	CASE #		CASE #		CASE #		CASE #		CASE #	
	1	2	1	2	1	2	1	2	1	2
BEAM / WALL HORIZONTAL	20"		26"		32"		39"		45"	
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	BAR SIZE									
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	CASE #		CASE #		CASE #		CASE #		CASE #	
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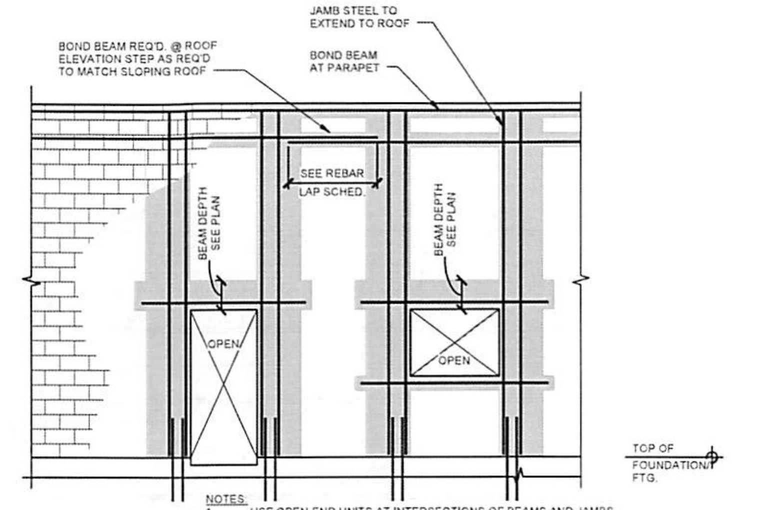
TYPICAL MASONRY / JAMB REINFORCING SCHEDULE



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MASONRY BEAM SCHEDULE

MARK	NOMINAL THICKNESS	BOTTOM REINF.	TOP REINF.	VERTICAL REINF.	MIN. GROUT DEPTH	OPENING ① SIZE	COMMENTS
MB-1	8"	(2) #4	(2) #4	—	16"	6'-6"	

NOTES:
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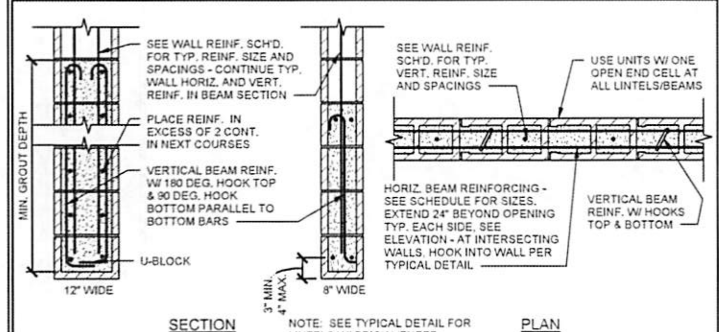

MASONRY JAMB SCHEDULE

MARK	NOMINAL THICKNESS	VERTICAL REINF.	TIES	CONFIG.	OPENING ① SIZE	COMMENTS
MJ-1	8"	(2) #5	—	A	UP TO 6'-6"	

NOTES:
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3. HORIZONTAL REINFORCING NOT SHOWN.
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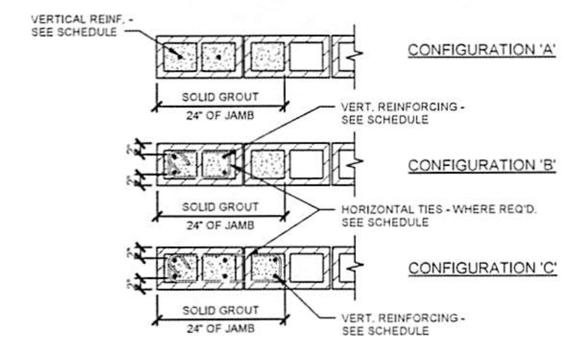

MASONRY WALL SCHEDULE

MARK	THICK.	VERT. REINF.		HORIZ. REINF.			BOND BEAM REINF.		COMMENTS
		SIZE	SPACE	NO.	SIZE	SPACE	@ ROOF	@ ELEVATED FLOOR	
MW-1	8"	#5	32"o.c.	(2)	#4	48"	(2) #4	–	ALL WALLS U.N.O.

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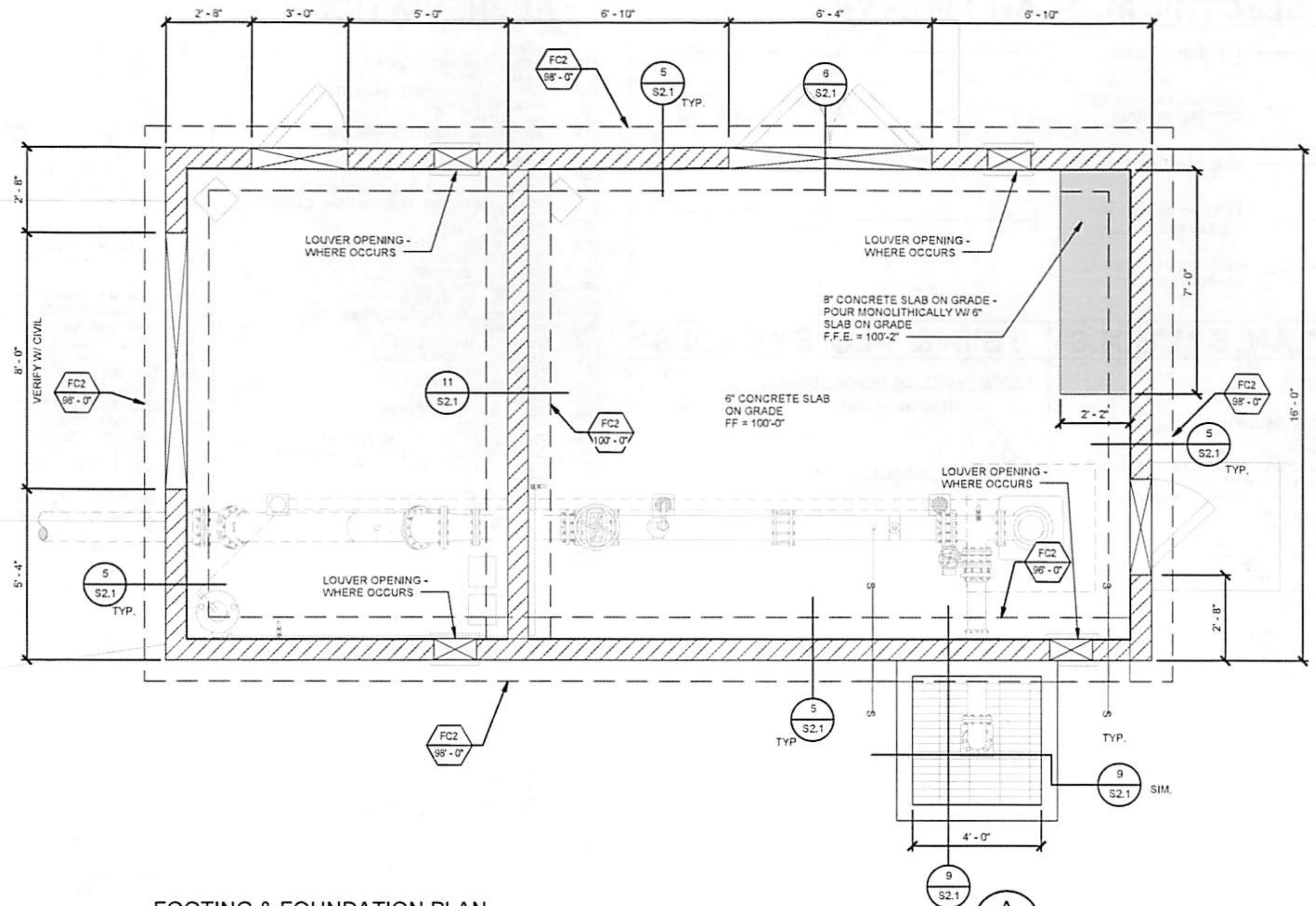
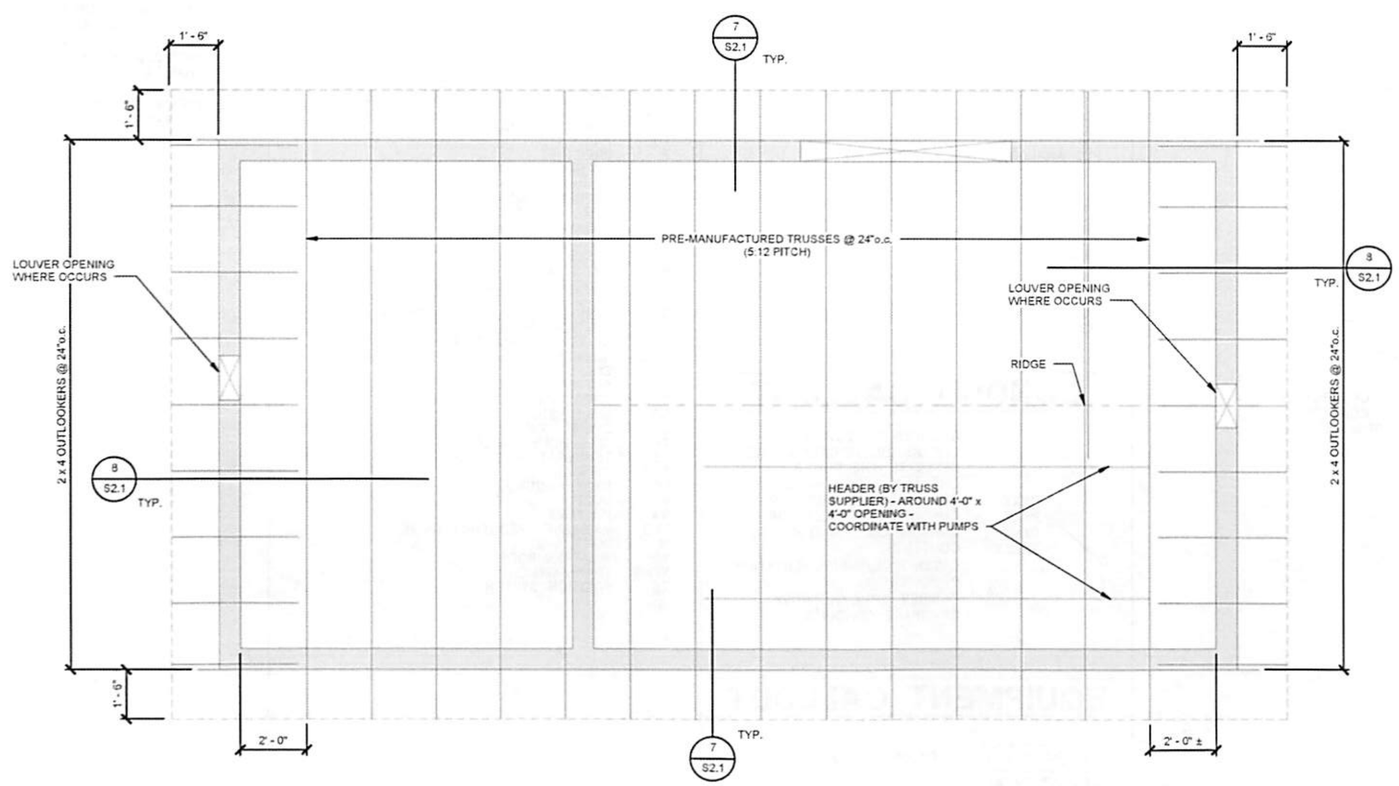


FOOTING & FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

A S1.1



ROOF FRAMING PLAN

SCALE: 3/8" = 1'-0"

B S1.1

ARW ENGINEERS structural consultants

Scale in Feet 1" = 100'

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FOOTING & ROOF FRAMING PLANS

900 SOUTH WELL HOUSE

No. 9444309 Ammon J. Hedin 2/12/16 State of Utah

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SCALE: AS NOTED
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S1.1

SCHEMATIC LINETYPES

- ELECTRICAL BUS
- EXISTING OR FUTURE ELECTRICAL BUS
- MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE
- EXISTING OR FUTURE MANUFACTURER/SHOP WIRE
- FIELD/CONTRACTOR INSTALLED WIRE
- EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE

SCHEMATIC SYMBOLS

- DEVICE CONNECTION LUG OR TERMINAL
- SCHEMATIC POINT OF CONNECTION
- POWER STABS BUS CONNECTION
- POWER STABS LOAD CONNECTION

CIRCUIT BREAKER
- 100AF ← FRAME SIZE
- 50AT ← TRIP RATING
- MCP ← BREAKER TYPE

DISCONNECT
- 30A ← AMPERE RATING
- 4X ← NEMA RATING

FUSE
- 30A ← AMPERE RATING
- R ← FUSE TYPE

FUSED DISCONNECT
- 30A ← AMPERE RATING
- 4X ← NEMA RATING
- 30A ← AMPERE RATING
- R ← FUSE TYPE

TRANSFORMER

CURRENT TRANSFORMER
- 100:5 ← CT TURNS RATIO
- 3 ← NUMBER OF CT'S

POTENTIAL TRANSFORMER
- 480:120 ← PT VOLTAGE RATIO
- 3 ← NUMBER OF PT'S

METERING EQUIPMENT
- UM ← METER TYPE DESIGNATION
  - AM = AMMETER
  - SSM = SOLID STATE METER
  - UM = UTILITY METER
  - VM = VOLTMETER
  - WHM = WATT HOUR METER
  - WM = WATT METER

GENERATOR

MANUAL OR AUTOMATIC TRANSFER SWITCH
- 600A ← AMPERE RATING
- 3R ← NEMA RATING

TRANSIENT VOLTAGE SURGE SUPRESSOR
- TVSS CLASS C ← TVSS CLASSIFICATION

MOTOR OVERLOAD RELAY

FULL VOLTAGE NON-REVERSING STARTER (FVNR)
- NEMA SIZE 1 ← STARTER TYPE AND SIZE

FULL VOLTAGE REVERSING STARTER (FVR)
- NEMA SIZE 1 ← STARTER TYPE AND SIZE

TWO-SPEED STARTER
- NEMA SIZE 1 ← STARTER TYPE AND SIZE

- HF — HARMONIC FILTER
- LR — LOAD REACTOR
- VFD — VARIABLE FREQUENCY DRIVE
- RVSS — REDUCED VOLTAGE SOFT STARTER
- GROUND CONNECTION
- (S) — MOTOR, NUMBER DESIGNATES NEMA HORSEPOWER SIZE
- (M) — MOTOR STARTER, CONTACTOR, RELAY OR TIMER COIL
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- SOLENOID VALVE
- EQUIPMENT PROGRAMMING CONSOLE
- OFF ON / XO — 2 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN
- H O A / XOO — 3 POSITION SELECTOR SWITCH HAND – OFF – AUTO POSITION LEGEND: X=CLOSED O=OPEN
- O C A / XOO — 3 POSITION SELECTOR SWITCH OPEN – CLOSE – AUTO POSITION LEGEND: X=CLOSED O=OPEN
- F O R / XOO — 3 POSITION SELECTOR SWITCH FORWARD – OFF – REVERSE POSITION LEGEND: X=CLOSED O=OPEN
- STOP — NORMALLY CLOSED PUSH BUTTON
- START — NORMALLY OPEN PUSH BUTTON

TYPICAL SWITCH CONFIGURATION
- FLOAT SWITCH – MAKE ON FALL
- FLOAT SWITCH – MAKE ON RISE
- FLOAT SWITCH – BREAK ON FALL
- FLOAT SWITCH – BREAK ON RISE
- SWITCH TYPE SYMBOL (SEE BELOW)
  - LEVEL SWITCH
  - PRESSURE SWITCH
  - FLOW OR TORQUE SWITCH
  - TEMPERATURE SWITCH
  - LIMIT SWITCH
- NOTC — TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE
- (ETM) — ELAPSED TIME METER
- (CR) — CONTROL RELAY
- (TD) — TIME DELAY RELAY
- (AR) — ALARM RELAY
- (R) — PILOT LIGHT LETTER INDICATES COLOR R=RED, A=AMBER, B=BLUE, G=GREEN
- (50) — INSTANTANEOUS SHORT-CIRCUIT TRIP DEVICE
- (51) — TIME OVERCURRENT TRIP DEVICE
- (51G) — GROUND FAULT TRIP DEVICE

ELECTRICAL PLAN LINETYPES

- EXPOSED CONDUIT
- EXISTING OR FUTURE EXPOSED CONDUIT
- UNDERGROUND CONDUIT
- EXISTING OR FUTURE UNDERGROUND CONDUIT
- BARE COPPER GROUND CONDUCTOR
- ELECTRICAL EQUIPMENT
- EXISTING OR FUTURE ELECTRICAL EQUIPMENT
- DEMOLITION
- CAPPED UNDERGROUND CONDUIT

ELEC. PLAN SYMBOLS

SITE PLAN DEVICES

[X] ← X= (SEE BELOW)
- AE – ANALYZER ELEMENT
- AIT – ALALYZING INDICATING TRANSMITTER
- FE – FLOW ELEMENT
- FIT – FLOW INDICATING TRANSMITTER
- FS – FLOW SWITCH
- J – JUNCTION BOX
- JS – TORQUE SWITCH
- LE – LEVEL ELEMENT
- LIT – LEVEL INDICATING TRANSMITTER
- LS – LEVEL SWITCH
- M – MOTOR
- MH – MANHOLE
- MV – MOTOR OPERATED VALVE
- PB – PULLBOX
- PIT – PRESSURE INDICATING TRANSMITTER
- PS – PRESSURE SWITCH
- PT – PRESSURE TRANSMITTER
- SV – SOLENOID VALVE
- TS – TEMPERATURE SWITCH
- WE – WEIGHT ELEMENT
- WIT – WEIGHT INDICATING TRANSMITTER
- ZS – LIMIT SWITCH

- GROUND ROD
- WP — DUPLEX RECEPTACLE — DENOTES RECEPTACLE TYPE (BLANK) = STANDARD INDOORS GFCI = GND FLT CURRENT INT. WP = WEATHER PROOF & GFCI
- QUADRAPLEX RECEPTACLE
- WP — DUPLEX RECEPTACLE MOUNTED AT 44" AFF
- DATA JACK
- $ — SINGLE POLE SWITCH
- $3 — 3-WAY SWITCH
- $4 — 4-WAY SWITCH
- CONDUIT SEALOFF
- LTC CONNECTION
- MC CONNECTION
- DISCONNECT SWITCH
- (T) — THERMOSTAT
- 3 — CONDUIT HOME RUN NUMBER INDICATES QUANTITY OF CONDUCTORS INCLUDING GROUND

TB'S & PLC SYMBOLS

LOCAL PANEL OR DEVICE TERMINAL BLOCK — TERMINAL LABEL — X

PLC PANEL TERMINAL BLOCK — TERMINAL LABEL — X

MCC TERMINAL BLOCK — TERMINAL LABEL — X

DEVICE TERMINAL BLOCK — TERMINAL LABEL — X

PLC DISCRETE INPUT — DISCRETE INPUT LABEL — DIXX

PLC DISCRETE OUTPUT (NORMALLY OPEN) — DISCRETE OUTPUT LABEL — DOXX

PLC DISCRETE OUTPUT (NORMALLY CLOSED) — DISCRETE OUTPUT LABEL — DOXX

PLC ANALOG INPUT — ANALOG INPUT LABEL — AIXX

PLC ANALOG OUTPUT — ANALOG OUTPUT LABEL — AOXX

PLC RTD — RTD LABEL — RTDXX

CONDUIT CALLOUT

CXXX / PXXX / FXXX / SPXXX — GROUPED CONDUIT AND CIRCUIT IDENTIFICATION TAGS. REFER TO THE POWER ONE-LINE AND CONTROL ONE-LINE DIAGRAMS OR CONDUIT SCHEDULES FOR CONDUIT SIZES AND CONTENTS.
C–CONTROL/INSTRUMENTATION
P–POWER
F–FIBER OPTIC/NETWORK
SP–SPARE CONDUITS

EQUIPMENT CALLOUT

- EQUIP. TAG / DESCRIPTOR #1 / DESCRIPTOR #2 / DESCRIPTOR #3 — EQUIPMENT CALLOUT
- 100 / TYP — DETAIL CALLOUT
- FE / 101 — FIELD INSTRUMENT CALLOUT

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT
AIC	AMPS INTERRUPTING CAPACITY
AO	ANALOG OUTPUT
AS	AIR SUPPLY
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CL2	CHLORINE
CPT	CONTROL POWER TRANSFORMER
CTC	COMMUNICATIONS TERMINATION CABINET
CU	COPPER, BARE
CV	CONTROL VALVE
DCS	DISTRIBUTED CONTROL SYSTEM
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
DP	DISTRIBUTION PANEL
DS	DISCONNECT SWITCH
DV/DT	DIFFERENTIAL VOLTAGE/TIME
DWG	DRAWING
ETM	ELAPSED TIME METER
EOL	ELECTRONIC OVERLOAD
FE	FLOW ELEMENT
FLA	FULL LOAD AMPS
FOC	FIBER OPTIC CABLE
FOR	FORWARD–OFF–REVERSE
FS	FLOW SWITCH
FVNR	FULL VOLTAGE NON–REVERSING
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GPM	GALLONS PER MINUTE
GRS	GALVANIZED RIGID STEEL
H2S	HYDROGEN SULFIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND–OFF–AUTO
HOR	HAND–OFF–REMOTE
I	CURRENT
IC	INSTRUMENTATION CABLE
IO	INPUT/OUTPUT
ISC	SHORT CIRCUIT CURRENT
J	JUNCTION BOX
LAN	LOCAL AREA NETWORK
LCP	LOCAL CONTROL PANEL
LOS	LOCK–OUT–STOP
LP	LIGHTING PANEL
LR	LOCAL/REMOTE
LS	LEVEL SWITCH
LTC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
M	MOTOR
MA	MANUAL/AUTO, MILLIAMP
MC	MANUFACTURER'S CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR(S)	MANUFACTURER(S)
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MOV	MOTOR OPERATED VALVE
MTU	MASTER TELEMETRY UNIT
NEC	NATIONAL ELECTRICAL CODE
NOTC	NORMALLY OPEN TIMED CLOSED
NPW	NON–POTABLE WATER
NTS	NOT TO SCALE
NTU	TURBIDITY
OIT	OPERATOR INTERFACE TERMINAL
OL	OVERLOAD
OO	ON/OFF (MAINTAINED)
OR	OFF–REMOTE
PB	PULL BOX
PC	PERSONAL COMPUTER
PFR	PHASE/POWER FAILURE RELAY
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PPM	PARTS PER MILLION
PR	PAIR
P	PRESSURE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PV	PROCESS VARIABLE
RCP	REMOTE CONTROL PANEL
RF	RADIO FREQUENCY
RIO	REMOTE INPUT OUTPUT
RST	RESET
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TELEMETRY UNIT
RVSS	REDUCED VOLTAGE SOFT STARTER
SEQ	SERVICE ENTRANCE EQUIPMENT
SES	SERVICE ENTRANCE SECTION
SLOS	START–LOCK–OFF–STOP
SMC	SUBMERSIBLE MANUFACTURER CABLE
SO2	SULFUR DIOXIDE
SP	SET POINT/SPARE
SPD	SURGE PROTECTION DEVICE
SS	START/STOP
ST	SHUNT TRIP
TC	TELEPHONE CABLE
TS	TEMPERATURE SWITCH
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
VA	VOLTAMP
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
ZS	POSITION SWITCH

NOTES

1. THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC.
2. VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND OTHER FACTORS, WHICH MAY AFFECT THE EXECUTION OF THE WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
3. THE CONTRACTOR SHALL COORDINATE WORK WITH THE UTILITIES PROVIDING SERVICES ON THIS PROJECT, AND SHALL COMPLY WITH ALL THEIR INSTALLATION REQUIREMENTS.
4. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE.
5. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR THE OWNER, WILL BE REJECTED AS DEFECTIVE.
6. LEAVE THE SITE CLEAN. REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR REPAINTED WITH MATCHING COLOR PAINT AND FINISH.
7. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 AWG THROUGH #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW–2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 AWG GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316–10, 75° C BASED ON A 30° C AMBIENT.
8. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC. MINIMUM CONDUIT DEPTH SHALL BE 24 INCHES. MINIMUM UNDERGROUND CONDUIT SIZE SHALL BE 1 INCH.
   MINIMUM CONDUIT DEPTH UNDER SLAB SHALL BE 1 INCH.
9. CONDUITS SHALL BE MARKED AT EACH END WITH MATCHING NUMBERED BRASS OR NYLON TAGS. SPARE CONDUITS SHALL HAVE A PULL STRING INSTALLED AND SECURED.
10. EXPOSED CONDUITS IN THE CHEMICAL ROOM SHALL BE PVC COATED GRS. ALL OTHER EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL (GRS). MINIMUM SIZE 3/4 INCH, UNLESS OTHERWISE NOTED ON THE PLANS. 1
11. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.
12. WIRING DEVICES SHALL BE SPECIFICATION GRADE.
13. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING, SCHEDULING, DOCUMENTING, AND PERFORMING THE WORK SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION AND CONTROL SYSTEM FOR THE FACILITY IS PROVIDED. ACCURATE SHOP AND RECORD DRAWINGS, AND OEM MANUALS SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF THE WORK.
14. TYPICAL DETAILS SHALL APPLY IN ALL CASES, WHETHER SPECIFICALLY REFERRED TO OR NOT.

Revisions			
	Date	Description	
	3/4/2016	ADD. 1	1

Date: 03/03/16
Scale: AS SHOWN
Designed: MPJ
Drafted: NYT
Checked: MPJ

REGISTERED PROFESSIONAL ENGINEER — MARK P. JEPPSEN — 03/03/2016 — STATE OF UTAH

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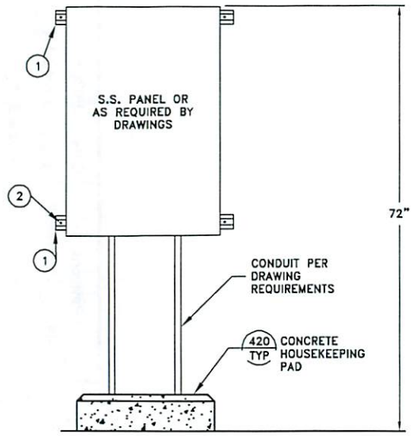
GE-01

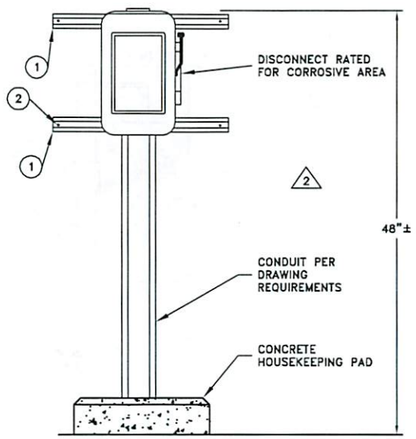
3/4/2016 – S:\PROJECTS\ENGINEERING\900\D946 TWW WELL SITE\SKM CAD FILES\10 GE-01



1. STAINLESS STEEL 1-5/8" X 1-5/8" UNISTRUT CHANNEL.
2. ½" X 3" S.S. ANCHOR BOLT OR LAG BOLT WITH WASHER, ANCHORED TO WALL (EVERY 18", 2 MIN.)
3. MAXIMUM PANEL HEIGHT NOT TO EXCEED 72".
4. CENTER OF INSTRUMENT DISPLAYS SHALL BE 62".
5. CENTER OF LOCAL CONTROL STATIONS SHALL BE 48".

002 TYP WALL MOUNTED PANEL

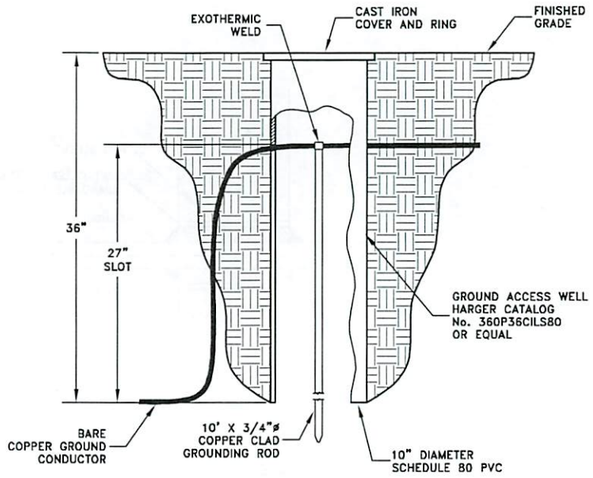
SCALE: NONE



1. STAINLESS STEEL 1-5/8 X 1-5/8 UNISTRUT CHANNEL
2. 1/2"x3" SS ANCHOR BOLT OR LAG BOLT WITH WASHER ANCHORED TO WALL (EVERY 18" 2 MINIMUM)

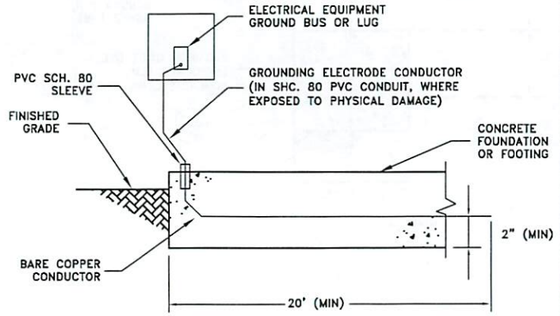
003 TYP WALL MOUNTED DISCONNECT

SCALE: NONE



100 TYP GROUND ROD WITH ACCESS WELL

SCALE: NONE

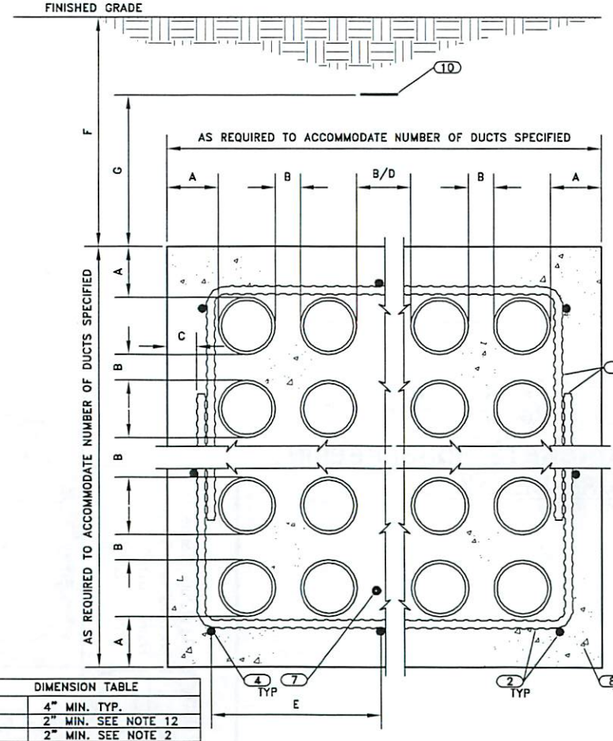


NOTE:

ALL WORK SHALL BE PER NATIONAL ELECTRICAL CODE AND LOCAL GOVERNING AUTHORITY.

140 TYP GROUNDING DETAIL ("UFER")

SCALE: NONE



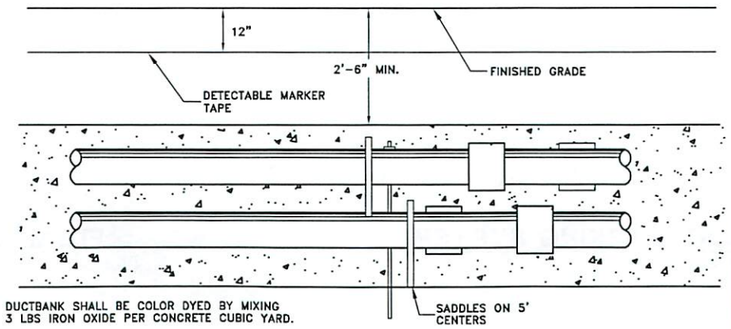
DIMENSION TABLE	
A	4" MIN. TYP.
B	2" MIN. SEE NOTE 12
C	2" MIN. SEE NOTE 2
D	12" MIN. SEE NOTE 13
E	18" MAX. SEE NOTE 4
F	18" MIN. 30" MAX.
G	12"

NOTES:

1. ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
3. REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCTBANKS.
4. HORIZONTAL REBAR SHALL BE PLACED @ A MAXIMUM OF 18" ON CENTER ALL AROUND THE DUCTBANK ENVELOPE AND SHALL BE SUPPORTED EVERY 4 FEET LONGITUDINALLY. SINGLE ROW DUCTBANKS LESS THAN 24" WIDE SHALL HAVE A MIN. OF 2 HORIZONTAL BARS.
5. DUCT SPACERS (SADDLES) SHALL BE PROVIDED FOR PROPER SUPPORT OF CONDUIT DUCTS. SPACERS SHALL BE PROVIDED HORIZONTALLY AS RECOMMENDED BY THE MANUFACTURER AND TO PREVENT ANY SAGGING OF THE DUCTS (LOW SPOTS WILL NOT BE ALLOWED).
6. DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
7. PROVIDE A 4/0 BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170.
8. DUCTBANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
9. ALL DUCTBANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE.
10. A 3" WIDE DETECTABLE PLASTIC MARKER TAPE WITH INSCRIPTION "CAUTION ELECTRICAL LINES BURIED BELOW" (BLACK LETTERS ON RED BACKGROUND) SHALL BE INSTALLED 12" ABOVE THE TOP OF ALL CONCRETE ENCASED DUCTBANKS.
11. REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
12. ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
13. SIGNAL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12". SIGNAL DUCTS SHALL BE SEPARATED FROM 120V POWER DUCTS BY 6" MIN. AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.

202 TYP MULTIPLE DUCT DUCTBANK DETAIL

SCALE: N.T.S.



ALL DUCTBANKS SHALL BE SLOPED 1/4" PER DUCT 10' TO ALLOW DRAINAGE. NO LOW SPOTS WILL BE ALLOWED IN RACEWAY

203 TYP DUCTBANK DETAIL

SCALE: NONE

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	Date	Description			
2	3/28/2016	ADD. 2			

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Designed: MPJ
Drafted: NYT
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REGISTERED PROFESSIONAL ENGINEER — MARK P. JEPPSEN — 10/03/2016 — STATE OF UTAH

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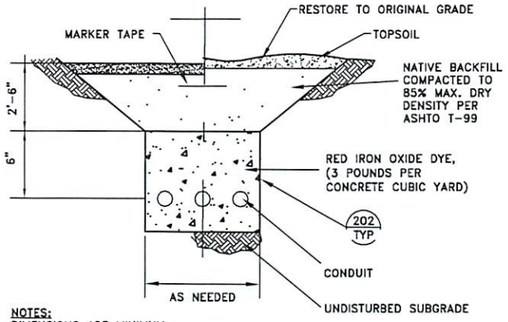
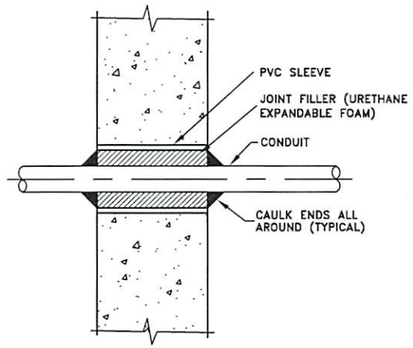


NOTES:
DIMENSIONS ARE MINIMUM.

THE GROUND CONDUCTOR SHALL RUN CONTINUOUSLY THROUGH MANHOLES AND PULL BOXES AND SHALL CONTINUE FROM THE DUCTBANK INTO THE ELECTRICAL EQUIPMENT OR BUILDING GROUNDING SYSTEM AND SHALL BE BONDED TO EACH RIDGID METAL CONDUIT.

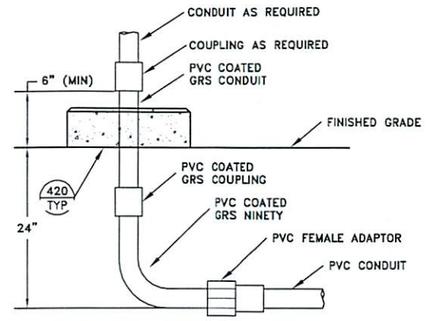
TYPICAL TRENCH DETAIL FOR BELOW 600 VOLTS

204 TYP SCALE: NONE



CONDUIT PENETRATION AT NEW WALL OR SLAB

300 TYP SCALE: NONE

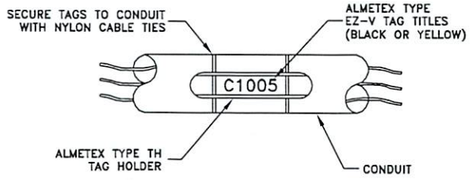


NOTES:

1. WHERE CONDUITS ARE INSTALLED IN OR UNDER A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
2. IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.
3. SCOTCHWRAP PER SPECIFICATIONS, MAY BE SUBSTITUTED FOR PVC COATING.

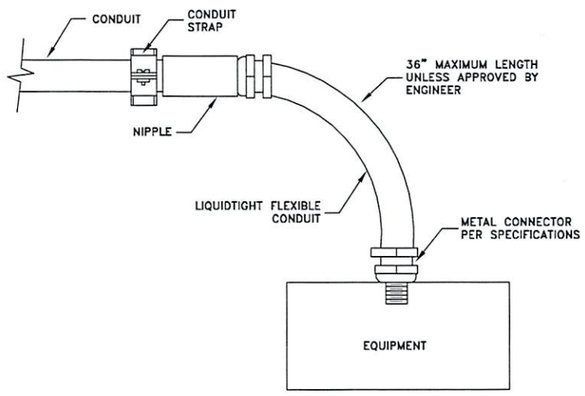
STUB UP DETAIL

321 TYP SCALE: NONE



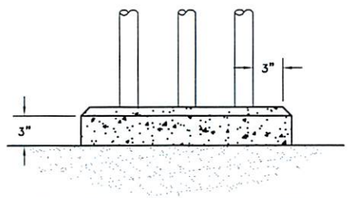
CONDUIT MARKING SYSTEM

360 TYP SCALE: NONE



FLEXIBLE CONDUIT DETAIL

365 TYP SCALE: NONE



HOUSEKEEPING CURB REQUIRED AT ALL INTERIOR WALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS. RISERS SHALL BE COUPLED SO THAT SINGLE RISERS ARE SIX FEET APART MIN.

CONCRETE HOUSEKEEPING CURB DETAIL

420 TYP SCALE: NONE

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		Checked: MPJ

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10/03/2016
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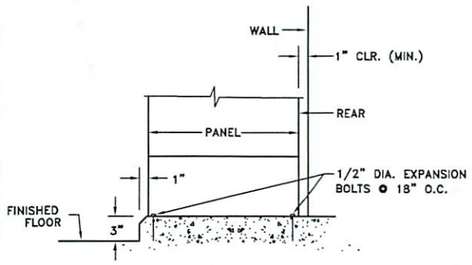
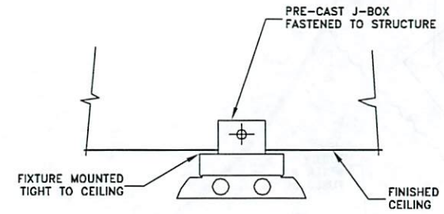


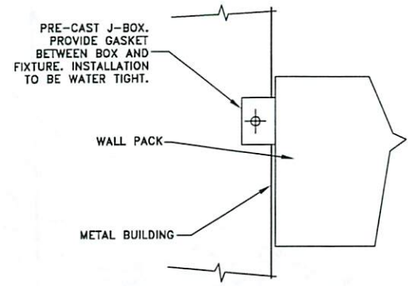
FLOOR MOUNTED PANEL DETAIL

613 TYP SCALE: NONE



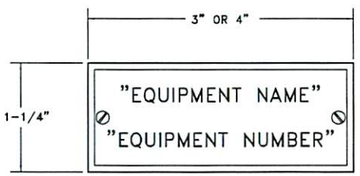
CEILING HUNG FIXTURE DETAIL

800 TYP SCALE: NONE



WALL HUNG FIXTURE MOUNTING DETAIL

810 TYP SCALE: NONE

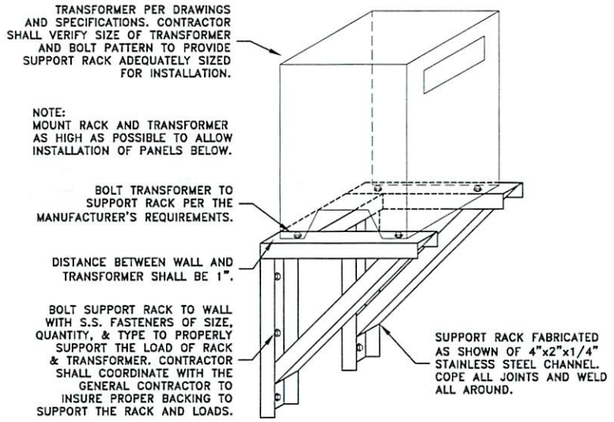


NOTES:

1. ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.

NAMEPLATE DETAIL

900 TYP SCALE: NONE



TRANSFORMER SUPPORT RACK DETAIL

910 TYP SCALE: NONE

Revisions

Date	Description

Date: 03/03/16
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REGISTERED PROFESSIONAL ENGINEER
MARK P. JEPSEN
6/07/2016
STATE OF UTAH

DETAILS 3
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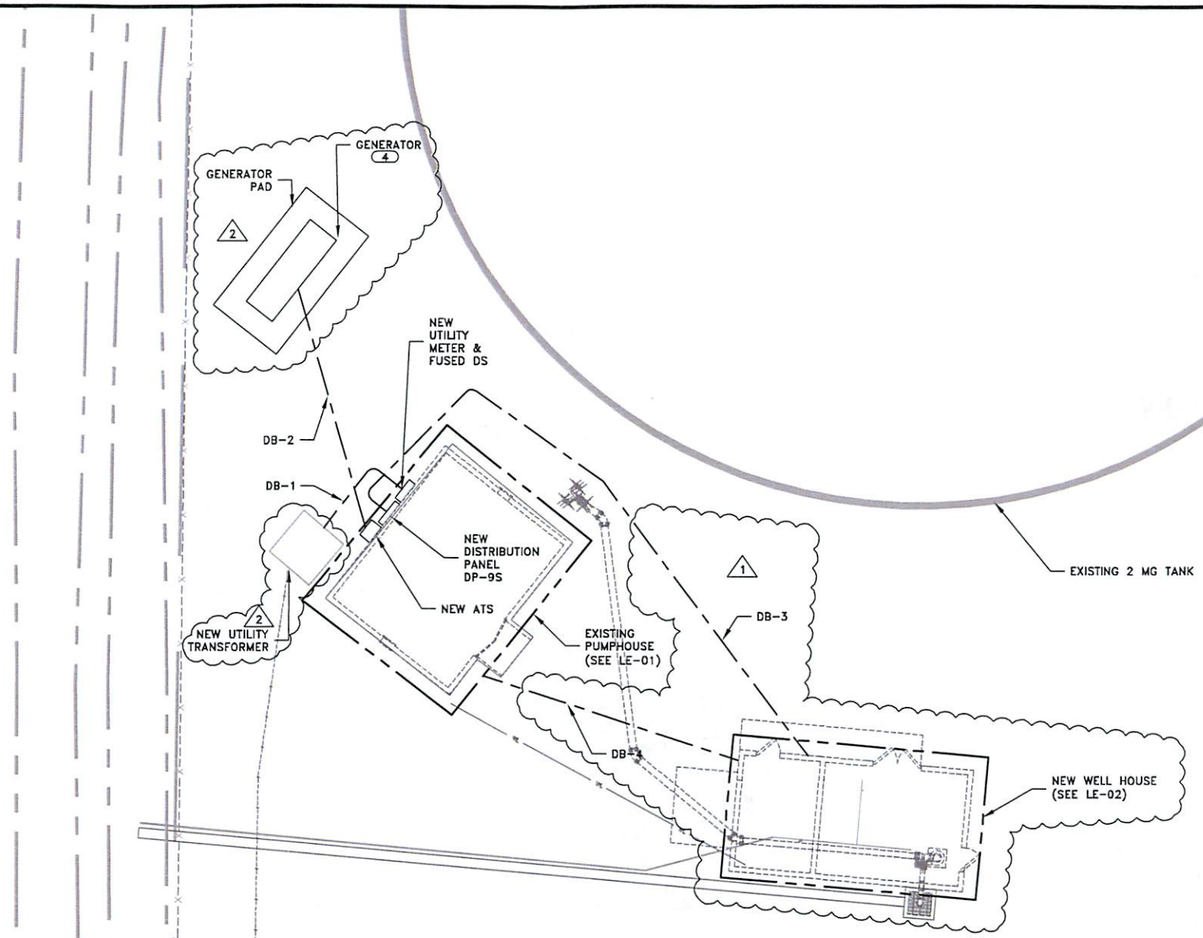
GE-04



SITE PLAN

0 10 20
Scale In Feet

NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. UNLESS OTHERWISE INDICATED, ALL EXPOSED CONDUIT SHALL BE PVC COATED AND PANELS SHALL BE STAINLESS STEEL NEMA 4X.
2. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS AND DUCT BANKS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
4. THE GENERATOR SHALL BE INSTALLED AT A MINIMUM OF 25' FROM THE UTILITY TRANSFORMER.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE NEW TRANSFORMER PAD ACCORDING TO UTILITY RECOMMENDATIONS. (2)

Revisions		
	Date	Description
1	3/4/2016	ADD. 1
2	3/28/2016	ADD. 2

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REGISTERED PROFESSIONAL ENGINEER
MARK P. JEPSEN
STATE OF UTAH
03/03/2016

SITE PLAN

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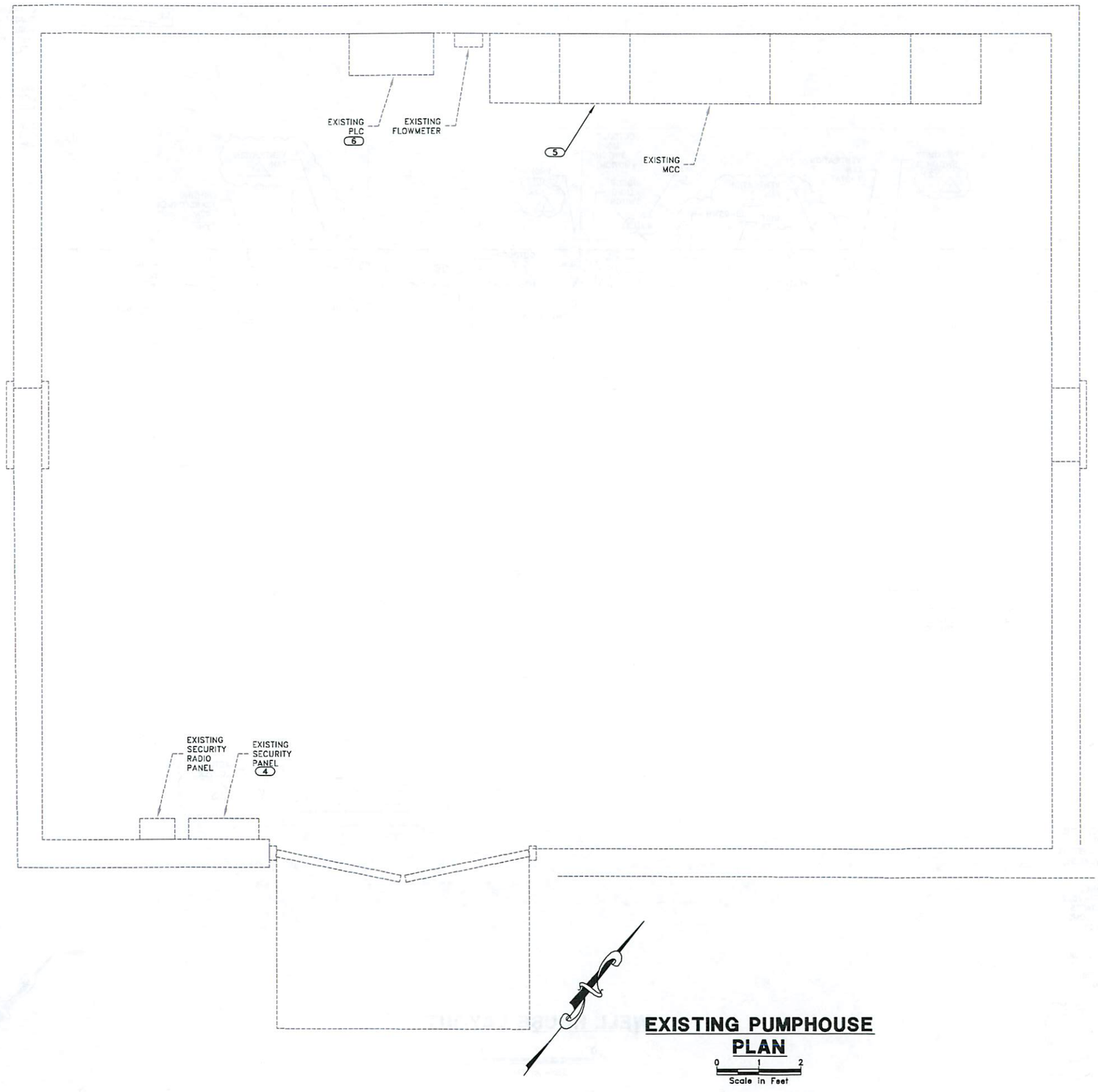
SE-01



NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. TIE NEW DOOR SWITCHES FROM NEW WELL HOUSE TO EXISTING SECURITY PANEL.
5. REMOVE AND SALVAGE EXISTING MANUAL TRANSFER SWITCH TO OWNER. INSTALL NEW LUGS IN ITS PLACE TO CONNECT TO EXISTING BUS BAR.
6. NEW IO POINTS SHALL BE RUN TO EXISTING PLC. TERMINATION OF IO POINTS SHALL BE PERFORMED BY OTHERS.

EXISTING PUMPHOUSE PLAN

0 1 2
Scale in Feet

Revisions	
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REGISTERED PROFESSIONAL ENGINEER
MARK P. RITTSEN
08/05/2016
STATE OF UTAH

EXISTING PUMPHOUSE PLAN
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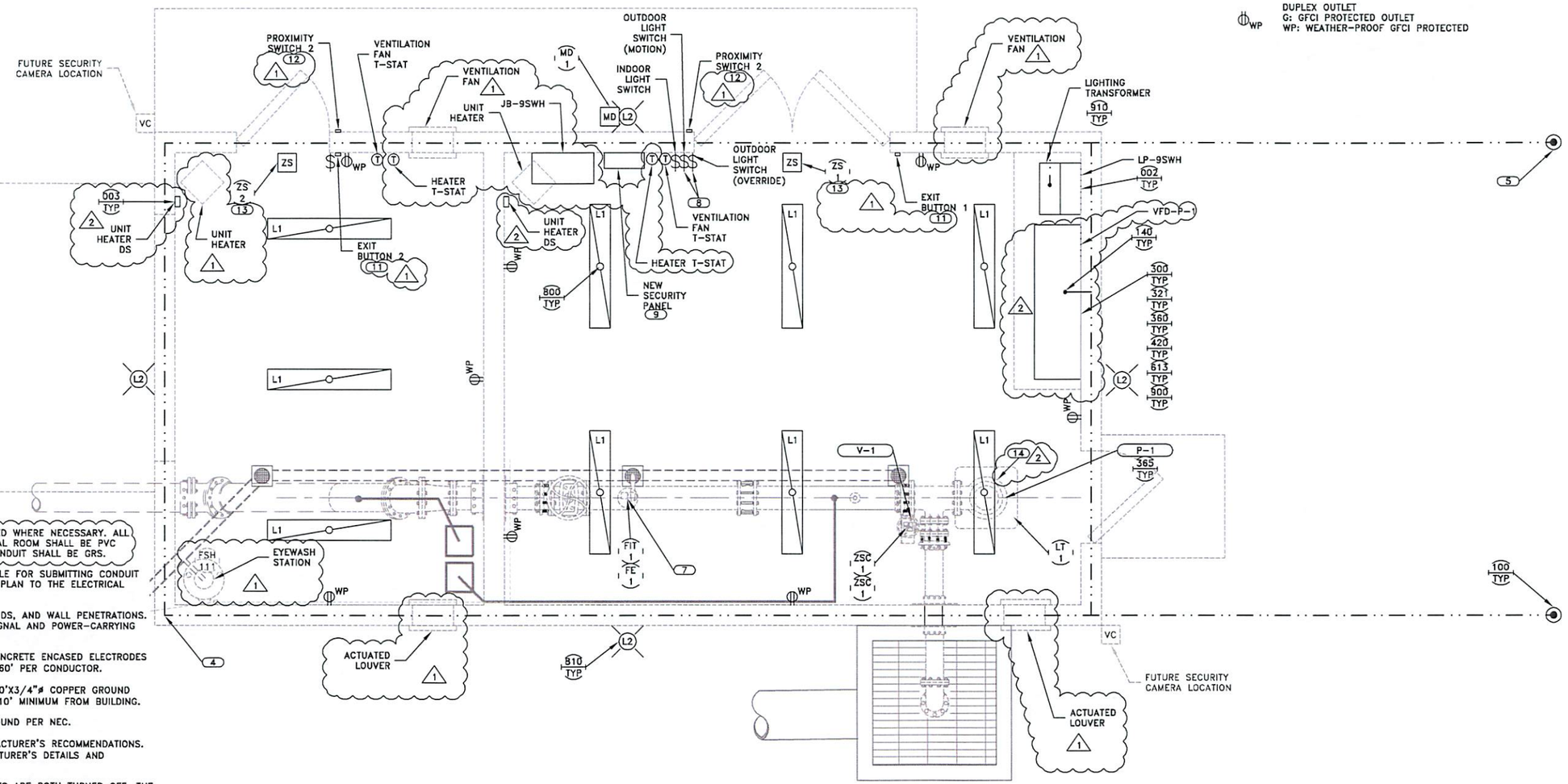
LE-01

ELECTRICAL LEGEND

L1 — DAY-BRITE WET LOCATION VAPORLUME T5 FLUORESCENT FIXTURE. MODEL DWAE254HO-120-1/2-E7W. (48" ELEMENT SURFACE MOUNT WET LOCATION FLUORESCENT FIXTURE WITH 1 - 2 LAMP BALLAST. ONE OF WHICH IS AN EMERGENCY BALLAST).

L2 — DAY-BRITE LED MEDIUM GLASS LOW PROFILE WALL LIGHT (WALL PACK) WITH PHOTO CELL CONTROL. MODEL WLP40WLU-PEC-MT.

WP — DUPLEX OUTLET
G: GFCI PROTECTED OUTLET
WP: WEATHER-PROOF GFCI PROTECTED



NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT IN THE CHEMICAL ROOM SHALL BE PVC COATED. ALL OTHER EXPOSED CONDUIT SHALL BE GRS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. CONTRACTOR SHALL PROVIDE 2 CONCRETE ENCASED ELECTRODES IN FOOTINGS PER SPECIFICATIONS 50' PER CONDUCTOR.
5. CONTRACTOR SHALL INSTALL (2) 10'X3/4"ø COPPER GROUND RODS 10' MINIMUM SPACING AND 10' MINIMUM FROM BUILDING.
6. BOND ALL BUILDING STEEL TO GROUND PER NEC.
7. GROUND FLOW METER PER MANUFACTURER'S RECOMMENDATIONS. INSTALL FLOWMETER PER MANUFACTURER'S DETAILS AND RECOMMENDATIONS.
8. WHEN THE OUTSIDE LIGHT SWITCHES ARE BOTH TURNED OFF, THE OUTSIDE LIGHTS WILL STAY OFF. WHEN THE OUTSIDE LIGHT SWITCH (MOTION) IS ON, THAN THE OUTSIDE LIGHTS WILL OPERATE BASED ON MOTION. WHEN THE OUTSIDE LIGHT SWITCH (OVERRIDE) IS TURNED ON, THAN THE OUTSIDE LIGHTS WILL STAY ON.
9. CONTRACTOR SHALL PROVIDE AND INSTALL A SECURITY PANEL WITH A NEW DSX-1022 INTELLIGENT CONTROLLER. THE DSX-1022 SHALL CONNECT TO MAGLOCKS, EXIT BUTTONS, DOOR CONTACTS AND PROXIMITY SWITCHES FOR THE PUMP AND CHEMICAL ROOMS. THE INSTALLATION SHALL BE ACCORDING TO MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
10. THE NEW SECURITY PANEL SHALL TIE INTO THE EXISTING SECURITY PANEL IN THE PUMPHOUSE (ALSO A DSX-1022). DENCO SECURITY CURRENTLY MONITORS THE PUMPHOUSE. THE CONTRACTOR SHALL COORDINATE WITH DENCO SECURITY TO INCLUDE PUMP AND CHEMICAL ROOM MONITORING.
11. PUSH TO EXIT BUTTON SHALL BE A SECURITRON EEB2, OR EQUAL.
12. PROXIMITY CARD READER SHALL BE AN HID PROXPOINT PLUS 6005B, OR EQUAL.
13. MAGLOCKS SHALL BE THE SECURITRON MAGNALOCK M32 SERIES, OR EQUAL.
14. CONTRACTOR SHALL TIE MOTOR SHAFT GROUNDING RING TO BUILDING GROUND.

WELL HOUSE LAYOUT

0 2 4
Scale In Feet

Revisions			
	Date	Description	
1	3/4/2016	ADD. 1	
2	3/28/2016	ADD. 2	

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REGISTERED PROFESSIONAL ENGINEER — MARK P. JEPSEN — 10/03/2016 — STATE OF UTAH

WELL HOUSE LAYOUT
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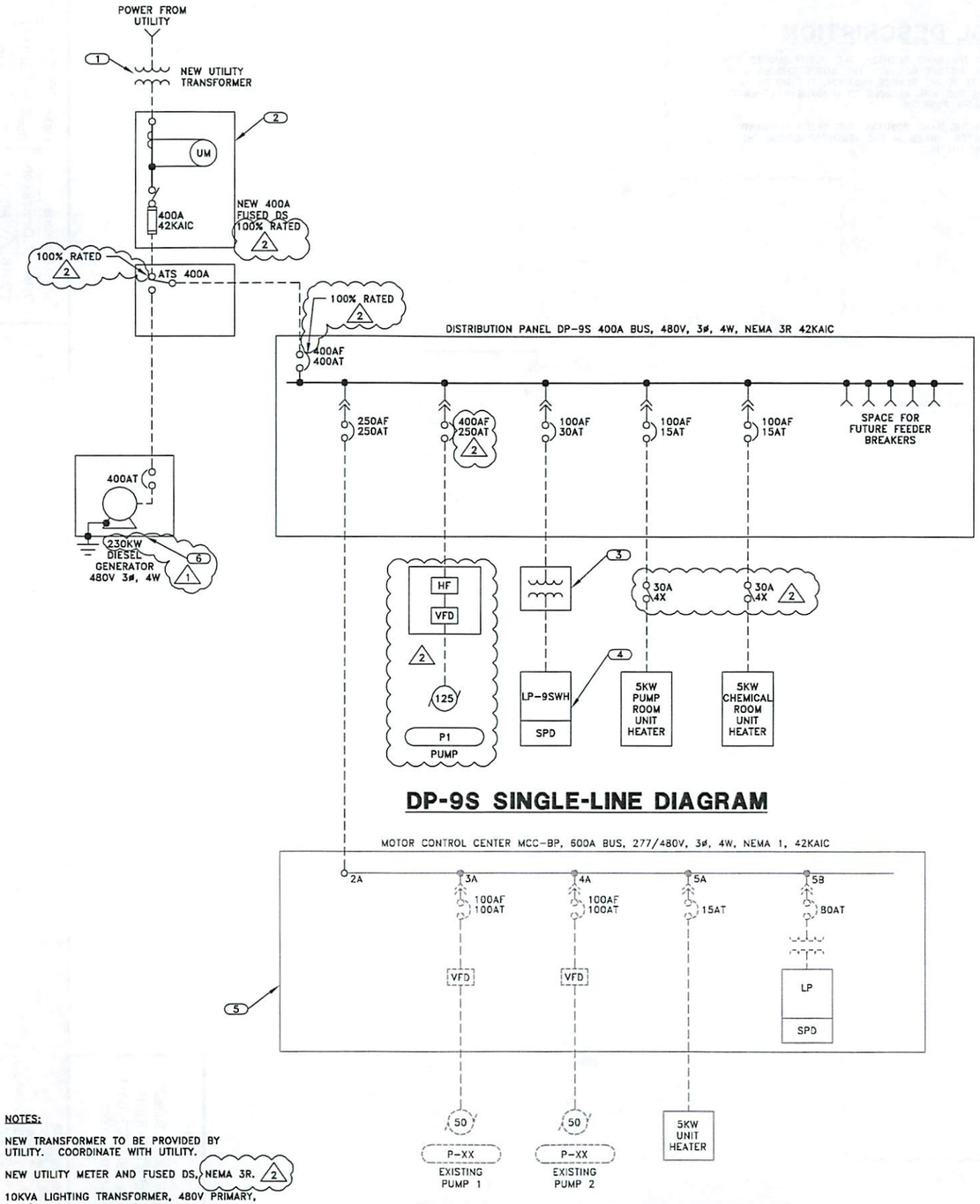
LE-02



DP-9S SINGLE-LINE DIAGRAM

MCC-BP SINGLE-LINE DIAGRAM

NOTES:

1. NEW TRANSFORMER TO BE PROVIDED BY UTILITY. COORDINATE WITH UTILITY.
2. NEW UTILITY METER AND FUSED DS, NEMA 3R. (2)
3. 10KVA LIGHTING TRANSFORMER, 480V PRIMARY, 120/240V SECONDARY, NEMA 3R.
4. LIGHTING PANEL LP-9SWH, 40A, 120/240V, 1ø, 3W, 18 CKT, NEMA 1A.
5. REMOVE AND SALVAGE EXISTING MANUAL TRANSFER SWITCH TO OWNER. INSTALL NEW LUGS IN ITS PLACE TO CONNECT TO EXISTING BUS BAR.
6. THE GENERATOR SHALL BE INSTALLED WITH A WEATHER ENCLOSURE AND A SUBBASE FUEL TANK CAPABLE OF RUNNING AT FULL LOAD FOR A 24 HOUR PERIOD. (1)

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
BOOSTER PUMP		125.0	156.0
NON-MOTOR LOADS			
EXISTING MCC			146.6
PUMP ROOM UNIT HEATER	5.0		6.0
CHEMICAL ROOM HEATER	5.0		6.0
LIGHTING PANEL	15.0		8.0
SUBTOTAL			322.6
+ 25% OF LARGEST MOTOR			39.0
TOTAL AMPS @ 480V/3PHASE			361.6
SERVICE SIZE (AMPS)			400.0

(2)

DP-9S CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
EXSTING PUMP 1		50.0	65.0
EXSTING PUMP 2		50.0	65.0
NON-MOTOR LOADS			
EXSTING UNIT HEATER	5.0		6.0
EXSTING LIGHTING PANEL	35.0		10.5
SUBTOTAL			146.6

MCC-BP CALCULATIONS

PANEL: LP-9SWH		VOLTAGE: 120/240		MAIN CB: 60 AMP		BUS AMPS: 100 AMP	
CB TYPE: BOLT-ON		MOUNTING: WALL		BUS BRACING: 10KA		BKR AIC: 10KA	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LINE 1	LINE 2	CIRCUIT	BKR	CIRCUIT DESCRIPTION
WELL HOUSE INDOOR LIGHTS	20/1	1	648				
			160		2	20/1	WELL HOUSE OUTDOOR LIGHTS
WELL HOUSE RECEPTACLES	20/1	3		360			
				360	4	20/1	WELL HOUSE RECEPTACLES
SPARE	20/1	5					
			540		6	20/1	CHEMICAL ROOM RECEPT.
CHEMICAL ROOM LIGHTS	20/1	7		324			
				200	8	20/1	SECURITY PANEL
FIT-1	20/1	9	100				
					10	20/1	SPARE
PUMP ROOM FAN & DAMPER	20/1	11		264			
				200	12	20/1	V-1
CHEMICAL R. FAN & DAMPER	20/1	13	264				
					14	20/1	SPARE
SPARE	20/1	15					
					16	20/1	SPARE
SPARE	20/1	17					
					18	20/1	SPARE
SPARE	20/1	19					
					20	20/1	SPARE
SPARE	20/1	21					
					22	20/1	SPARE
SPARE	20/1	23					
					24	20/1	SPARE
CONNECTED VA PER PHASE			1712.0	1708.0	NOTES:		
CONNECTED AMPS PER PHASE			14.3	14.2			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			227.0	81.0			
LARGEST MOTOR (25%)			66.0	66.0			
CODE VA PER PHASE			2005.0	1855.0			
CODE AMPS PER PHASE			16.7	15.5			

LP-9SWH

FE/FIT-1	WELL SITE FLOW SENSOR/TRANSMITTER	McCROMETER	395L	24VDC		OR APPROVED EQUAL
LT-1	WELL SITE LEVEL TRANSDUCER	KPSI	750	24VDC		

INSTRUMENT SCHEDULE

Revisions

Date	Description
3/4/2016	1 ADD. 1
3/28/2016	2 ADD. 2

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REGISTERED PROFESSIONAL ENGINEER MARK P. JEPSEN 9/09/2016 STATE OF UTAH

ONELINE DIAGRAM
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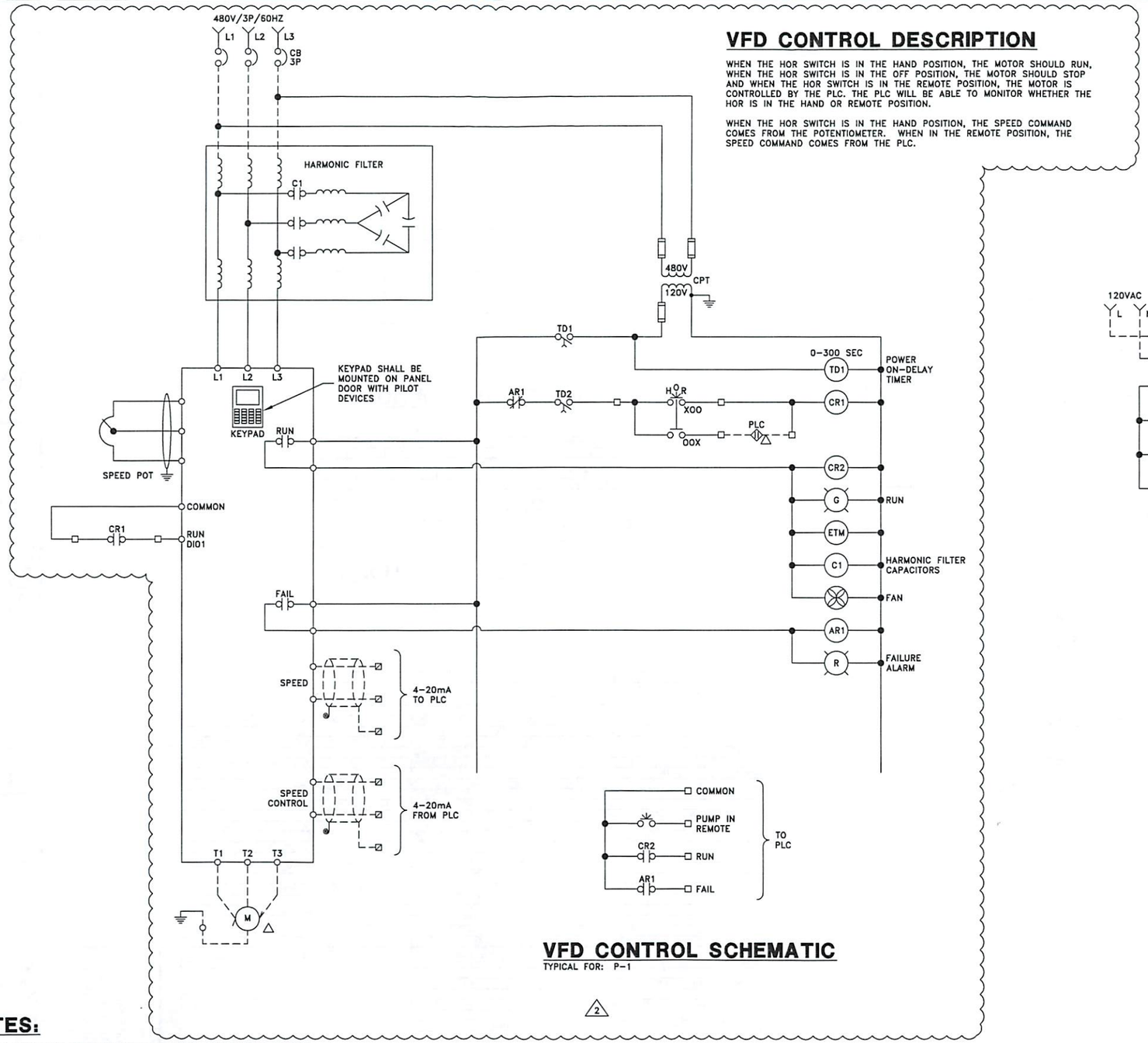
E-01



VFD CONTROL SCHEMATIC

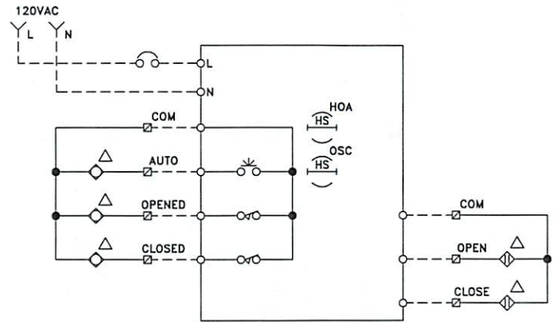
TYPICAL FOR: P-1

2

VFD CONTROL DESCRIPTION

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOR SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOR SWITCH IS IN THE REMOTE POSITION, THE MOTOR IS CONTROLLED BY THE PLC. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOR IS IN THE HAND OR REMOTE POSITION.

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE REMOTE POSITION, THE SPEED COMMAND COMES FROM THE PLC.



120VAC VALVE SCHEMATIC

TYPICAL FOR: V-1

NOTES:

1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
4. FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
5. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.
6. CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.

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1	3/4/2016	ADD. 1
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REGISTERED PROFESSIONAL ENGINEER
MARK P. JEPPSEN
03/03/16
STATE OF UTAH

SCHEMATICS

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E-02

	CONDUIT	SIZE	CONDUCTORS	SERVICE	VOLTAGE	ABOVE GROUND MATERIAL	UNDERGROUND MATERIAL	FROM	TO	DUCTBANKS	COMMENTS
	C002	1"	6 #14	CONTROL	120VAC	GRS	PVC 40	EXISTING PLC	ATS		
2	C003	1"	4 #14	CONTROL	120VAC	GRS	PVC 40	ATS	GENERATOR	DB-2	
	C003A	1"	8 #14	CONTROL	120VAC	GRS	PVC 40	EXISTING PLC	GENERATOR	DB-2	
1	C021	1"	3 #14	CONTROL	120VAC	GRS	PVC 40	PUMP ROOM UNIT HEATER	T-STAT		
	C022	1"	3 #14	CONTROL	120VAC	PVC COATED GRS	PVC 40	CHEMICAL ROOM UNIT HEATER	CHEMICAL ROOM T-STAT		
	C031	1.5"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	EXISTING SECURITY PANEL	JB-9SWH	DB-4	
	C031A	1"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	JB-9SWH	NEW SECURITY PANEL		
	C031B	1"	2 #14 W/ #14 GND	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	ZS-1		
	C032	1"	2 #14 W/ #14 GND	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	ZS-2		
	C033	1"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	PROXIMITY SENSOR 1		
	C034	1"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	PROXIMITY SENSOR 2		
	C035	1"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	DOOR EXIT BUTTON 1		
	C036	1"	PER MFG REQUIREMENTS	CONTROL	120VAC	GRS	PVC 40	NEW SECURITY PANEL	DOOR EXIT BUTTON 2		
	C100	1.5"	16 #14	CONTROL	120VAC	GRS	PVC 40	EXISTING PLC	JB-9SWH	DB-4	
	C101	1"	10 #14	CONTROL	120VAC	GRS	PVC 40	JB-9SWH	VFD-P-1 2		
1	C101X	1"	3 #14	CONTROL	120VAC	GRS	PVC 40	RVSS-F-1	FSH-1		
	C103	1"	8 #14	CONTROL	120VAC	GRS	PVC 40	LP-9SWH	V-1		
1	C111	1"	PULL STRING, WIRE FUTURE	CONTROL	120VAC	PVC COATED GRS	PVC 40	JB-9SWH	FUTURE FSH-111		STUB UP AND CAP CONDUIT
	P000		WIRE BY UTILITY	POWER				UTILITY	UTILITY TRANSFORMER		COORDINATE WITH UTILITY
	P001	2-4"	2 SETS OF 4 3/0 W/ #4 GND	POWER	277/480VAC	GRS	PVC 40	UTILITY TRANSFORMER	FUSED DISCONNECT SWITCH	DB-1	
	P002	2-4"	2 SETS OF 4 3/0 W/ #4 GND	POWER	277/480VAC	GRS	PVC 40	FUSED DISCONNECT SWITCH	ATS		
	P003	2-4"	2 SETS 4 3/0 W/ #4 GND	POWER	277/480VAC	GRS	PVC 40	ATS	GENERATOR		
2	P003A	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	EXISTING LP-A	BATTERY CHARGER	DB-2	
	P003B	1"	2 #8 W/ #10 GND	POWER	240VAC	GRS	PVC 40	EXISTING LP-A	BLOCK HEATER	DB-2	
	P004	2-4"	2 SETS OF 4 3/0 W/ #4 GND	POWER	277/480VAC	GRS	PVC 40	ATS	DP-9S		
	P005	3"	4 250 MCM W/ #4 GND	POWER	277/480VAC	GRS	PVC 40	DP-9S	EXISTING MCC-BP		
	P011	1"	3 #10 W/ #10 GND	POWER	480VAC	GRS	PVC 40	DP-9S	LIGHTING TRANSFORMER	DB-3	
	P011A	1"	3 #6 W/ #10 GND	POWER	120/240VAC	GRS	PVC 40	LIGHTING TRANSFORMER	LP-9SWH		
1	P021	1"	3 #12 W/ #12 GND	POWER	480VAC	GRS	PVC 40	DP-9S	PUMP ROOM UNIT HEATER DS	DB-3	
2	P021A	1"	3 #12 W/ #12 GND	POWER	480VAC	GRS	PVC 40	PUMP ROOM UNIT HEATER DS	PUMP ROOM UNIT HEATER		
1	P022	1"	3 #12 W/ #12 GND	POWER	480VAC	PVC COATED GRS	PVC 40	DP-9S	CHEMICAL ROOM UNIT HEATER DS	DB-3	
2	P022A	1"	3 #12 W/ #12 GND	POWER	480VAC	PVC COATED GRS	PVC 40	CHEMICAL ROOM UNIT HEATER DS	CHEMICAL ROOM UNIT HEATER		
	P023	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	LP-9SWH	PUMP ROOM T-STAT		
	P023A	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	1 PUMP ROOM T-STAT	PUMP ROOM FAN & DAMPER		
	P024	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS 1	PVC 40	LP-9SWH	CHEMICAL ROOM T-STAT		
	P024A	1"	2 #12 W/ #12 GND	POWER	120VAC	PVC COATED GRS	PVC 40	CHEMICAL ROOM T-STAT	CHEMICAL ROOM FAN & DAMPER		
	P031	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	LP-9SWH	NEW SECURITY PANEL		
	P101	2"	3 3/0 W/ #6 GND	POWER	480VAC	GRS	PVC 40	DP-9S	VFD-P-1	DB-3	
	P101A	2"	3 3/0 W/ #6 GND 2	POWER	480VAC	GRS	PVC 40	VFD-P-1 2	P-1		
	P102	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	LP-9SWH	FIT/FE-1		
	P103	1"	2 #12 W/ #12 GND	POWER	120VAC	GRS	PVC 40	LP-9SWH	V-1		
	S031	1.5"	PULL STRING, WIRE FUTURE	COMMS	24VDC	GRS	PVC 40	EXISTING PLC	JB-9SWH	DB-4	
	S031A	1"	PULL STRING, WIRE FUTURE	SIGNAL	24VDC	GRS	PVC 40	JB-9SWH	FUTURE VIDEO CAMERA 1		CAP CONDUIT
	S031B	1"	PULL STRING, WIRE FUTURE	SIGNAL	24VDC	GRS	PVC 40	JB-9SWH	FUTURE VIDEO CAMERA 2		CAP CONDUIT
	S100	1.5"	5 - TSP	SIGNAL	24VDC	GRS	PVC 40	EXISTING PLC	JB-9SWH	DB-4	
	S101	1"	1 - TSP	SIGNAL	24VDC	GRS	PVC 40	JB-9SWH	LT-1		
2	S101A	1.5"	2 - TSP	SIGNAL	24VDC	GRS	PVC 40	JB-9SWH	VFD-P-1		
	S102	1"	2 - TSP	SIGNAL	24VDC	GRS	PVC 40	JB-9SWH	FIT/FE-1		

CONDUIT SCHEDULE

Revisions

	Date	Description
1	3/4/2016	ADD. 1
2	3/28/2016	ADD. 2

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REGISTERED PROFESSIONAL ENGINEER
MARK P. JEPPSEN
03/03/2016
STATE OF UTAH

CONDUIT SCHEDULE
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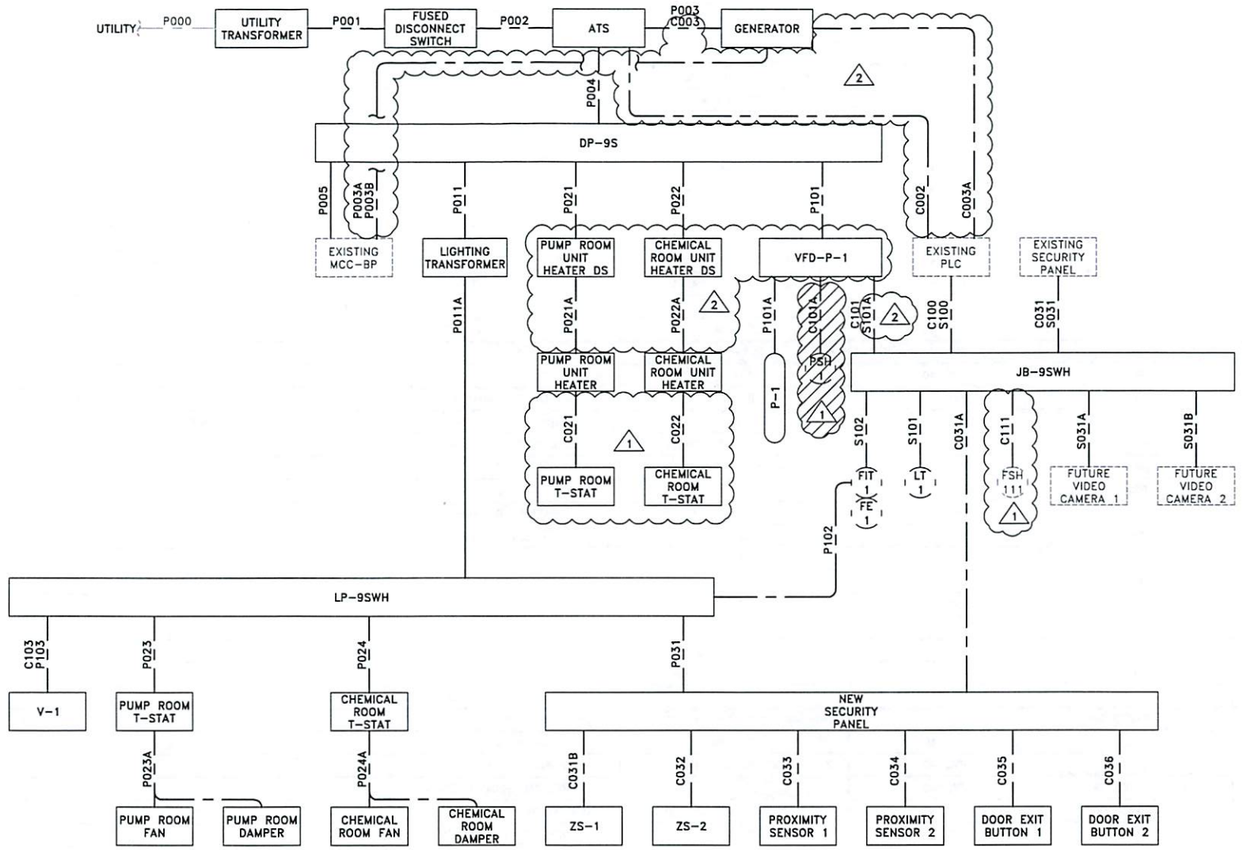
E-03



CONDUIT DEVELOPMENT

CONDUIT DEVELOPMENT HAS BEEN COPIED FROM PREVIOUS E-03 AND THIS SHEET WAS ADDED. (2)

LINETYPE LEGEND

- ABOVE GROUND CONDUIT
- BELOW GROUND CONDUIT
- EXISTING ABOVE GROUND CONDUIT
- EXISTING BELOW GROUND CONDUIT

Revisions		
Date	Description	
3/4/2016	1 ADD. 1	
3/28/2016	2 ADD. 2	

Date: 03/03/16
Scale: AS SHOWN
Designed: MPJ
Drafted: NYT
Checked: MPJ

REGISTERED PROFESSIONAL ENGINEER MARK P. JOHNSON 03/03/2016 STATE OF UTAH

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