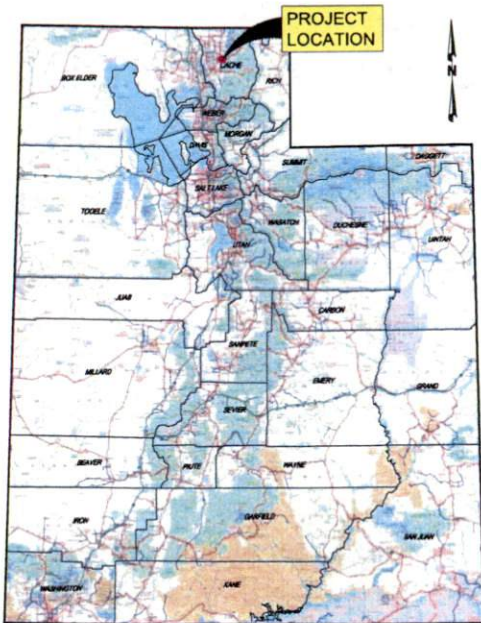


LOWER WELL IMPROVEMENT PROJECT

372 RIVERDALE AVE

RIVER HEIGHTS CITY

JANUARY 2023



UTAH - PROJECT AREA MAP

NOT TO SCALE

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LOWER WELL - VICINITY MAP

NOT TO SCALE

RIVER HEIGHTS CITY

MR. CLAYTEN NELSON, PUBLIC WORKS DIRECTOR
520 SOUTH 500 EAST LOGAN, UTAH 84321
(801) 450-2478

FORSGREN ASSOCIATES, INC

MR. ERIC DURSTELER, P.E., PROJECT MANAGER
MR. ZACH HATFIELD, ENGINEERING TECHNICIAN
MR. BEN MAUGHAN, P.E., STRUCTURAL ENGINEER
95 WEST 100 SOUTH, STE 115, LOGAN, UTAH 84321
(435) 227-0333

ALL IMPROVEMENTS NOT SPECIFICALLY COVERED HEREIN BY THE CONTRACT DOCUMENTS (RIVER HEIGHTS CITY STANDARDS AND SPECIFICATIONS) MUST MEET OR EXCEED THE CURRENT "APWA STANDARDS FOR PUBLIC WORKS CONSTRUCTION". WHERE IMPROVEMENTS ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE OWNER WILL BE THE SOLE JUDGE IN ESTABLISHING APPROPRIATE STANDARDS.



GENERAL NOTES

- UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS BY CONTACTING BLUE STAKES AT 1-800-882-4111 OR 811 AND OTHER APPLICABLE UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL POT-HOLE AND LOCATE UTILITIES AT THE CONTRACTOR'S EXPENSE WHEN REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR COSTS AND REPAIRS DUE TO DAMAGE OF EXISTING UTILITIES. ALL UTILITIES MAY NOT BE SHOWN ON PLANS.
- CONTRACTOR SHALL POTHOLE ALL GAS SERVICES, WATER LINES, COMMUNICATIONS LINES, SEWER LINES, AND POSSIBLE INTERFERING WATER SERVICES IN ORDER TO VERIFY ADEQUATE CLEARANCE TO THE NEW CONSTRUCTION. THIS SHALL BE DONE AT THE BEGINNING OF THE PROJECT IN ORDER TO PROVIDE UTILITY OWNERS ADEQUATE TIME TO RELOCATE SERVICES IF REQUIRED.
- CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN, ADEQUATE TRAFFIC CONTROL, SIGNING, BARRICADING, AND PEDESTRIAN DIRECTION THROUGH AND AROUND THE CONSTRUCTION WORK ZONE IN COMPLIANCE WITH THE LATEST EDITION OF THE MUTCD AND UDOT REQUIREMENT.
- CONTRACTOR SHALL REPAIR DISTURBED SURFACES TO EXISTING CONDITIONS, BUT NOT LIMITED TO, UTILITY LINES AND SERVICES, ASPHALT REPAIR, DRIVEWAYS, PLANTER STRIPS, SPRINKLER AND IRRIGATION SYSTEMS, IRRIGATION DITCHES, AND GENERAL CLEANUP EXCEPT WHERE INSTRUCTED IN WRITING OTHERWISE.
- ALL UTILITIES SHALL BE KEPT IN WORKING ORDER EXCEPT FOR THE MINIMUM TIME NEEDED FOR EXCAVATION, TRENCHING, CONNECTIONS, ETC.
- APPROVAL FROM THE PUBLIC WORKS DIRECTOR IS REQUIRED PRIOR TO COMMENCING THE WORK AND SHALL FIELD-VERIFY ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION.

CONSTRUCTION NOTES

SURVEY AND CONSTRUCTION STAKING

- OWNER WILL PROVIDE BENCHMARK LOCATIONS FOR THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING FOR THE PROJECT.
- CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS PRIOR TO COMMENCING THE WORK AND SHALL FIELD-VERIFY ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION.

PIPE AND FITTING MATERIALS

- ALL POLYVINYL CHLORIDE PIPE (PVC) SHALL BE RIGID, THERMOPLASTIC PRESSURE CLASS 150 AND MEET THE REQUIREMENTS OF ANS/AWWA STANDARD C900 FOR WATER DISTRIBUTION PIPE.
- ALL FITTINGS FOR POLYVINYL CHLORIDE PIPE (PVC) SHALL BE DUCTILE IRON (DI) AND SHALL MEET THE REQUIREMENTS OF NSF 81 AND ANS/AWWA C110/A21.10-82 OR C-153/A21.53-88.
- ALL PVC/PE/HDPE PIPE, INCLUDING WATER SERVICE CONNECTIONS SHALL INCLUDE A #12 TRACER WIRE ATTACHED TO THE TOP OF THE PIPE.
- ALL HIGH DENSITY POLYETHYLENE PIPE (HDPE) PIPE SHALL BE PE 3508 MADE OF HIGH DENSITY, HIGH MOLECULAR WEIGHT RESIN MANUFACTURED ACCORDING TO ASTM D3350, F714, OR API 15LE AND AWWA C906. SEE PLANS FOR PIPE DR REQUIREMENTS.
- DISINFECTION OF WATER MAINS SHALL BE ACCOMPLISHED BY CHLORINE TABLETS PLACED INTO EACH 20' STICK OF PIPE AND ADHERED TO THE INSIDE TOP THEREOF.
- CAUTION SHALL BE USED WHEN INSTALLING PVC PIPELINE SUCH THAT EACH PIPE SEGMENT IS NOT INSERTED FURTHER INTO THE RECEIVING BELL THAN THE MARK SHOWN THEREON. CONTRACTOR SHALL REMOVE AND REWORK PIPE SEGMENTS THAT ARE SEATED BEYOND THE SAID MARK. PIPE SHALL BE ASSEMBLED PER MANUFACTURER'S RECOMMENDATIONS.
- ALL FITTING HARDWARE SHALL BE COATED WITH NSF#1 APPROVED GREASE AND ENTIRE FITTING SHALL BE COVERED WITH POLYETHYLENE PLASTIC.

GENERAL CONSTRUCTION REQUIREMENTS

- CONTRACTOR SHALL FIELD VERIFY ALL PIPE LENGTHS AND CONNECTION ANGLES PRIOR TO CONSTRUCTION OF JOINTS.
- ALL MECHANICAL JOINT FITTINGS SHALL BE PROVIDED WITH THRUST RESTRAINT JOINTS ("MEGA-LUG" OR APPROVED EQUAL). THRUST BLOCKS ARE REQUIRED AT ALL TEES, AND BENDS 11.25' AND GREATER.
- ALL MATERIALS WHICH MAY COME IN CONTACT WITH DRINKING WATER SHALL BE ANSI-CERTIFIED TO MEET OR EXCEED NSF STANDARD 81, AND SHALL BE STAMPED THEREON TO INDICATE SUCH CERTIFICATION.
- CONTRACTOR SHALL COVER AND EFFECTIVELY SEAL ALL OPEN ENDS OF PIPELINES AT THE END OF EACH DAY'S WORK.
- ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND LOCAL BUILDING CODES, AND SHALL BE CONSISTENT WITH COMMON CONSTRUCTION PRACTICES OF THE TRADES.
- THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTING PROJECT. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE, EXCEPT AS NOTED.
- ANY CONTRACTOR-CAUSED DAMAGE TO UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK IN THE PROJECT AREA.
- THE CONTRACTOR SHALL INSTALL THRUST BLOCKS AT ALL ELBOWS, TEES, VALVES, ETC. PER APWA STANDARDS AND SPECIFICATIONS.
- EPOXY GROUT ANNUAL SPACE BETWEEN WALLS/FLOOR AND PIPE PENETRATION FLUSH TO SURFACE (TYP.)

PERMITS

- IT SHALL BE UNLAWFUL TO DO ANY CONSTRUCTION, EXCAVATION WORK ON ANY STREET, CURB, CUTTER, SIDEWALK, SEWER LINE, WATER LINE, PRESSURE IRRIGATION LINE, STORM DRAIN OR OTHER INFRA-STRUCTURE ADDITION OR IMPROVEMENT IN THE CITY OF RIVER HEIGHTS WITHOUT A PUBLIC WORKS' PERMIT FROM THE CITY TO DO SO. THE CITY OF RIVER HEIGHTS AND ALL UTILITY COMPANIES ARE BOUND BY CITY STANDARD SPECIFICATIONS. NO WORK SHALL BE STARTED UNTIL A PERMIT IS SECURED.
- CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS REQUIRED FOR THIS PROJECT.
- CONTRACTOR IS RESPONSIBLE TO CONTAIN AND MANAGE ALL STORMWATER RUNOFF FROM THE PROJECT SITE. CONTRACTOR SHALL MAINTAIN AN EROSION AND SEDIMENT CONTROL (ESC) PLAN FOR THE PROJECT. CONTRACTOR IS RESPONSIBLE TO MODIFY THE ESC PLAN AND BMP'S AS SITE CONDITIONS REQUIRE.
- CONTRACTOR SHALL OBTAIN AND KEEP COPIES OF ALL PERMITS ON SITE.
- AFTER COMPLETION OF ALL PUBLIC WORKS IMPROVEMENTS THE CONTRACTOR SHALL PROVIDE THE CITY WITH A SET OF "RECORD DRAWINGS" WHICH HAVE BEEN CORRECTED TO SHOW THE CONSTRUCTED IMPROVEMENTS. CONTRACTOR SHALL ALSO PROVIDE CONSTRUCTION NOTES, RECORDS AND PHOTOS TAKEN THROUGHOUT THE PROJECT ON A FLASH DRIVE TO RIVER HEIGHTS CITY.
- NO ROAD SHALL BE CLOSED BY THE CONTRACTOR TO THE PUBLIC EXCEPT BY EXPRESS PERMISSION OF THE PUBLIC WORKS DIRECTOR AND THROUGH WRITTEN PERMISSION BY UDOT AS REQUIRED. THE DEVELOPER/CONTRACTOR SHALL, AT ALL TIMES, CONDUCT ITS WORK SO AS TO ENSURE THE LEAST POSSIBLE OBSTRUCTION TO TRAFFIC AND NORMAL COMMERCIAL PURSUITS.

STATE AND LOCAL INSPECTING AGENCIES

THE SITE OF CONSTRUCTION IS TO BE OPEN AT ALL REASONABLE TIMES AND PLACES FOR PERIODIC OBSERVATION BY ACCREDITED REPRESENTATIVES OF THE FEDERAL, STATE, AND LOCAL AGENCIES WHO HAVE REGULATORY OR SUPERVISORY AUTHORITY OVER ANY PART OF THE WORK PROPOSED OR REGULATED THEREON.

RESTORATION OF SURFACE IMPROVEMENTS

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND THE RESTORATION OR REPLACEMENT OF ANY IMPROVEMENTS EXISTING ON PUBLIC OR PRIVATE PROPERTY AT THE START OF WORK OR PLACED THERE DURING THE PROGRESS OF THE WORK.
- EXISTING IMPROVEMENTS SHALL INCLUDE BUT NOT TO BE LIMITED TO PERMANENT SURFACING, CURBS, CUTTERS, SIDEWALKS, PLANTED AREAS, DITCHES, DRIVEWAYS, CULVERTS, FENCES, AND WALLS. ALL IMPROVEMENTS SHALL BE RECONSTRUCTED TO EQUAL OR BETTER, IN ALL RESPECTS, THAN THE EXISTING IMPROVEMENTS REMOVED.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RESTORE TO THEIR ORIGINAL CONDITION ALL IRRIGATION CANALS, LEEVES, CULVERTS, GATES, FENCES, DRAINAGE DITCHES, AND ALL SUCH IMPROVEMENTS WHICH ARE CUT OR DISTURBED DURING CONSTRUCTION. TOPSOIL IN FARMING AREAS OR ALONG ROAD EDGES SHALL BE STORED SEPARATE FROM SUBSOIL DURING PIPE TRENCH EXCAVATION. TOPSOIL SHALL BE REPLACED DURING BACKFILL OPERATIONS AS NEARLY AS POSSIBLE TO ITS ORIGINAL CONDITION, THEREBY ASSURING SUITABLE SOIL FOR RESEEDING.
- UNLESS OTHERWISE DIRECTED, ALL STREET SURFACING, CURBS, CUTTERS, SIDEWALKS, DRIVEWAYS, OR OTHER HARD SURFACE THAT MUST BE REMOVED IN THE PERFORMANCE OF THE WORK SHALL BE RESTORED IN KIND BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS CONTAINED HEREIN. DEVIATION OF MORE THAN ONE-FOURTH INCH (1/4") BETWEEN OLD AND NEW WORK OR WITHIN NEW CONSTRUCTION SHALL BE CORRECTED. SUCH MEASUREMENT SHALL BE MADE FROM A TEN-FOOT (10') MINIMUM LENGTH STRAIGHT EDGE. ADJOINING SURFACES BETWEEN OLD AND NEW MUST BE FLUSH
- AT THE COMPLETION OF EACH AREA OF WORK ALL EQUIPMENT, BARRICADES, AND SIMILAR ITEMS SHALL BE REMOVED FROM THE AREA. ALL EXCESS MATERIAL WILL BE REMOVED. ALL ROCKS LARGER THAN TWO INCHES (2") SHALL BE REMOVED FROM THE SURFACE. ADJACENT BORROW PITS AND ROAD SHOULDERS USED FOR STORAGE OF EXCAVATING MATERIALS SHALL BE SMOOTHED AND RETURNED TO ITS ORIGINAL CONTOUR/GRADE.
- ALL DISTURBED/IMPACTED AREAS RESULTING FROM THE DEMOLITION, REMOVAL, AND/OR RECONSTRUCTION EFFORTS SHALL BE RE-SEED; SEED MIX TO MATCH NATIVE GRASSES SURROUNDING SITE.

ACCESS AND IRRIGATION IMPACTS

- ALL PROPERTY OWNERS AND RESIDENTS ADJACENT TO THE STREETS OR EASEMENTS AFFECTED BY THE CONSTRUCTION SHALL BE NOTIFIED BY THE DEVELOPER/CONTRACTOR AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF THE TIME CONSTRUCTION BEGINS. THE CONTRACTOR CAN SATISFY THIS REQUIREMENT BY PLACING A WRITTEN NOTICE ON THE DOOR OF EACH RESIDENCE OR BUSINESS READING "NOTICE OF CONSTRUCTION OPERATION" INDICATING THE WORK TO BE PERFORMED. THE CONTRACTOR SHALL PROVIDED A COPY OF THE NOTIFICATION FORM AT THE PRE-CONSTRUCTION MEETING AND THE METHOD TO BE USED (HANG ON DOOR, ETC.).
- DAMAGE TO EXISTING IRRIGATION DITCHES, ROADWAY SWALES, OR OTHER CONVEYANCE SYSTEMS (INCLUDING CONTROL VALVES) SHALL BE REPAIRED BY CONTRACTOR AT NO COST TO THE CITY OF RIVER HEIGHTS OR THE UTILITY OWNER.

PUBLIC SAFETY AND CONVENIENCE

THE CONVENIENCE OF THE GENERAL PUBLIC AND THE PROTECTION OF PERSONS AND PROPERTY IS OF PRIME IMPORTANCE AND SHALL BE PROVIDED FOR BY THE CONTRACTOR DURING THIS PROJECT. THE CONTRACTOR SHALL USE EVERY REASONABLE PRECAUTION TO SAFEGUARD PERSONS AND PROPERTY. FAILURE OF THE OWNER OR THE PUBLIC WORKS REPRESENTATIVE/ENGINEER TO NOTIFY THE CONTRACTOR OF ANY DEFICIENCIES IN PROVIDING FOR PUBLIC SAFETY AND CONVENIENCE SHALL NOT RELIEVE THE CONTRACTOR FROM ITS RESPONSIBILITY. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE REQUIREMENTS OF OSHA.

CONFINEMENT OF WORK AND ACCESS TO RIGHT-OF-WAY AND EASEMENTS:

THE CONTRACTOR WILL BE REQUIRED TO CONFINE CONSTRUCTION OPERATIONS WITHIN THE DEDICATED RIGHT-OF-WAY FOR PUBLIC THROUGHFARES OR WITHIN AREAS FOR WHICH CONSTRUCTION EASEMENTS HAVE BEEN OBTAINED UNLESS IT HAD MADE SPECIAL ARRANGEMENTS WITH THE AFFECTED PROPERTY OWNERS IN ADVANCE. THE CONTRACTOR WILL BE REQUIRED TO PROTECT STORED MATERIALS, LAWN, TRESS, AND OTHER FEATURES LOCATED ADJACENT TO THE PROPOSED CONSTRUCTION SITE. DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN SUCH FACILITIES AS MAY BE REQUIRED TO PROVIDE ACCESS BY ALL PROPERTY OWNERS TO THEIR PROPERTY. NO PERSON SHALL BE CUT OFF FROM ACCESS TO THEIR RESIDENCES OR PLACES OF BUSINESS FOR A PERIOD EXCEEDING EIGHT (8) HOURS, UNLESS THE CONTRACTOR HAS MADE WRITTEN ARRANGEMENTS WITH THE AFFECTED PERSONS PRIOR TO COMMENCING WORK IN THE AREA. COPIES OF SUCH ARRANGEMENTS SHALL BE PROVIDED TO RIVER HEIGHTS CITY.

MATERIAL AND COMPACTION TESTING:

DURING THE COURSE OF THE WORK, A CONTRACTOR SHALL SUBCONTRACT A GEOTECHNICAL ENGINEER/TESTING COMPANY TO PERFORM SUCH TESTS, IN ACCORDANCE WITH UTAH APWA SPECIFICATIONS, AS ARE REQUIRED TO IDENTIFY MATERIALS, TO DETERMINE GRADATION, TO DETERMINE COMPACTION CHARACTERISTICS, TO DETERMINE MOISTURE, TO DETERMINE DENSITY OF FILLS IN PLACE, TO DETERMINE CONCRETE STRENGTH, TO DETERMINE DENSITY AND MIXTURE OF ASPHALT. THESE TESTS WILL BE USED TO VERIFY THAT THE CONSTRUCTION CONFORMS TO THE REQUIREMENTS OF THE SPECIFICATIONS. TEST RESULTS SHALL BE PROVIDED TO OWNER AND ENGINEER.

BITUMINOUS ASPHALT CEMENT PAVEMENT PATCH:

- CONTRACTOR SHALL PLACE AND COMPACT A HOT-MIX ASPHALT SURFACE COURSE OVER THE FINISHED BASE COURSE MATERIAL. THE BITUMINOUS BINDER TYPE MATERIAL FOR THE SURFACE COURSE SHALL BE "PG58-28" ASPHALT CEMENT CONFORMING TO THE REQUIREMENTS OF AMERICAN SOCIETY FOR TESTING AND MATERIALS AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) FOR THE SAME IN ACCORDANCE WITH UTAH APWA STANDARDS AND SPECIFICATIONS. THE BITUMINOUS SURFACE COURSE SHALL BE PLACED AND COMPACTED ON THE PREPARED BASE IN CONFORMANCE WITH THE LINES AND DIMENSIONS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THESE SPECIFICATIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL TRAFFIC. ALL TRAFFIC SHALL BE KEPT OFF THE COMPLETED SURFACE FOR A MINIMUM PERIOD OF 24 HOURS. NO BITUMINOUS SURFACE COURSE SHALL BE PLACED WHEN THE TEMPERATURE OF THE AIR OR ROADBED IS 50 DEG. F. OR BELOW, DURING RAINY WEATHER, WHEN THE BASE IS WET, OR DURING OTHER UNFAVORABLE WEATHER CONDITIONS AS DETERMINED BY THE PUBLIC WORKS REPRESENTATIVE/ENGINEER. THE AIR TEMPERATURE SHALL BE MEASURED IN THE SHADE.
- HOT MIX ASPHALT MIX SHALL BE COMPACTED TO AN AVERAGE RELATIVE DENSITY OF 95 PERCENT PER ASTM D 5581 (MARSHAL METHOD) WITH NO DENSITY TEST RESULT LESS THAN 92 PERCENT. COMPACTION SHALL BE COMPLETED BEFORE ASPHALT TEMPERATURE FALLS BELOW 180-DEGREES FAHRENHEIT. SOCIETY FOR TESTING AND MATERIALS AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) FOR THE SAME IN ACCORDANCE WITH UTAH APWA STANDARDS AND SPECIFICATIONS. THE BITUMINOUS SURFACE COURSE SHALL BE PLACED AND COMPACTED ON THE PREPARED BASE IN CONFORMANCE WITH THE LINES AND DIMENSIONS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THESE SPECIFICATIONS.

ROCKY MOUNTAIN POWER CONSTRUCTION REQUIREMENTS:

[HTTPS://WWW.ROCKYMOUNTAINPOWER.NET/WORKING-WITH-US/BUILDERS-CONTRACTORS/ELECTRIC-SERVICE-REQUIREMENTS.HTML](https://www.rockymountainpower.net/working-with-us/builders-contractors/electric-service-requirements.html) -> "ADDITIONAL SPECIFICATIONS AND RESOURCES - UNDERGROUND CONDUIT SYSTEM INSTALLATION"

PRIMARY POWER CONDUIT TO BE HIGH-DENSITY POLYETHYLENE (HDPE, SEE RMP ZG-031).

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CLARIFICATIONS	ZJH (9/26)	DRAWN	EEB/ZJH
		DESIGNED	EEB/ZJH
REVISIONS	BY DATE	APPROVED	CN
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CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
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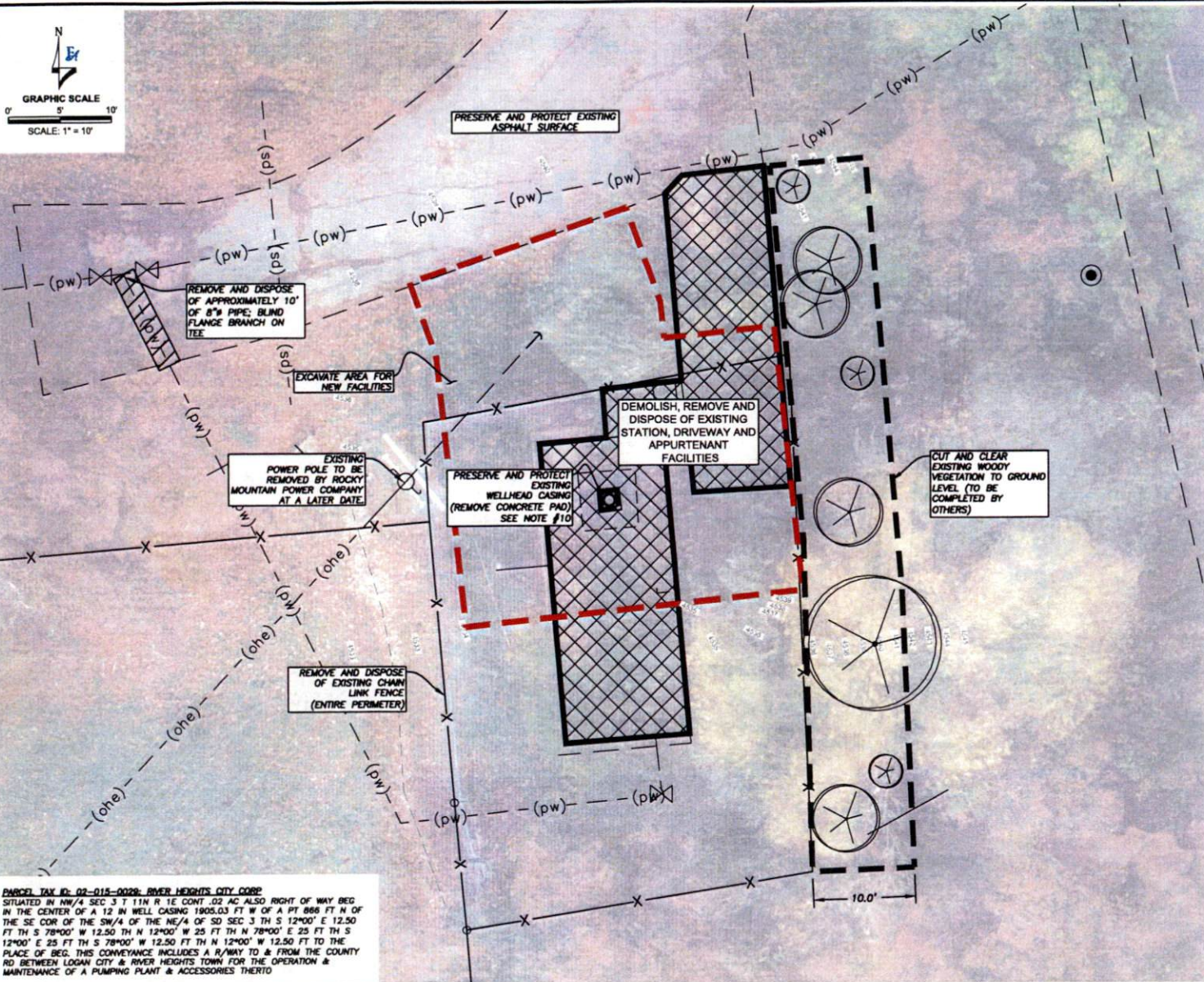
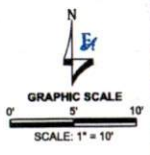
FORSGREN Associates Inc.
85 WEST 100 SOUTH, STE. 115, LOGAN, UT 84301
PH: 435.227.9330 FAX: 435.227.9334



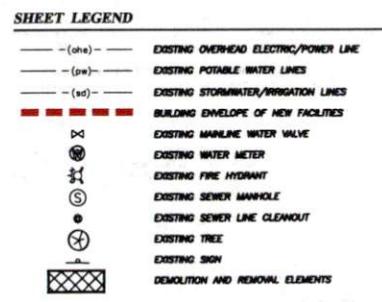
LOWER WELL IMPROVEMENT PROJECT

GENERAL NOTES & SPECIFICATIONS

PROJECT NO:	014-13-0004-028
SHEET ID:	GN-1
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- DEMOLITION, REMOVAL AND DISPOSAL NOTES:**
1. THIS PROJECT INVOLVES RENOVATION OF AND/OR INTERFACING WITH EXISTING FACILITIES. ALL REPRESENTATIONS OF EXISTING CONDITIONS SHOWN HEREIN WERE DERIVED FROM TOPOGRAPHIC SURVEYS, FIELD INVESTIGATIONS AND/OR FROM AVAILABLE RECORD DRAWING INFORMATION. NEITHER THE OWNER NOR ENGINEER GUARANTEES THESE LOCATIONS TO BE EITHER TRUE OR EXACT. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES TO THE EXTENT NECESSARY IN ORDER TO DULY EXECUTE THE WORK.
 2. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
 3. THESE DOCUMENTS MAKE NO REPRESENTATION AS TO THE EXISTENCE OR LOCATION OF EXISTING HAZARDOUS MATERIALS (INCLUDING ASBESTOS CONTAINING MATERIALS) AT THE SITE. REMOVAL OR ABATEMENT OF HAZARDOUS MATERIALS IS NOT INCLUDED IN THE SCOPE OF THIS PROJECT. SHOULD CONTRACTOR DISCOVER SUSPECTED HAZARDOUS MATERIALS AT THE SITE HE SHALL IMMEDIATELY BRING IT TO THE ATTENTION OF THE OWNER AND THE ENGINEER PRIOR TO STARTING OR CONTINUING WORK INVOLVING THOSE MATERIALS.
 4. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE AT NO ADDITIONAL COST.
 5. UNLESS SPECIFICALLY NOTED TO BE SAVED/STOCKPILED OR REUSED/RELOCATED, ALL SITE FEATURES CALLED FOR REMOVAL SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE. ALL ITEMS CALLED FOR REMOVAL SHALL BE REMOVED TO FULL DEPTH INCLUDING ALL FOOTINGS, FOUNDATIONS, AND OTHER APPURTENANCES, EXCEPT AS SPECIFICALLY NOTED OTHERWISE.
 6. THE EXISTING FACILITIES INCLUDING, SLABS, FOUNDATIONS, PAVEMENTS, ASSOCIATED DEBRIS, SURFACE VEGETATION, ROOT SYSTEMS, TOPSOIL, SPRINKLER IRRIGATION, NON-ENGINEERED FILL, AND ANY DELETERIOUS MATERIALS SHALL BE DEMOLISHED, REMOVED AND DISPOSED OF FROM BENEATH THE FOOTPRINT OF THE PROPOSED STRUCTURES AND EXTENDING OUT AT LEAST 5- FEET FROM THE PERIMETER OF THE PROPOSED STRUCTURES FOOTPRINT.
 7. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 8. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING.
 9. CONTRACTOR SHALL STOCKPILE EXCAVATED NATIVE SOIL MATERIAL FOR REUSE IN SITE RECLAMATION ACTIVITIES.
 10. THE EXISTING WELL CASING SHALL BE EQUIPPED WITH A TEMPORARY STEEL TOP PLATE, TACK-WELDED IN PLACE UNTIL THE BUILDING DEMOLITION AND REMOVAL ACTIVITIES HAVE BEEN COMPLETED. THE EXISTING CONCRETE SURROUNDING THE WELL CASING IS TO BE CAREFULLY REMOVED TO EXPOSE 1-FOOT OF WELL CASING TO WHICH THE EXTENSION CAN BE WELDED.



PARCEL TAX ID: 02-015-0009, RIVER HEIGHTS CITY CORP.
 SITUATED IN NW/4 SEC 3 T 11N R 1E CONT. 02 AC ALSO RIGHT OF WAY BEG. IN THE CENTER OF A 12 IN WELL CASING 1905.03 FT W OF A PT 866 FT N OF THE SE COR. OF THE SW/4 OF THE NE/4 OF SD SEC 3 TH S 12°00' E 12.50 FT TH S 78°00' W 12.50 TH N 12°00' W 25 FT TH N 78°00' E 25 FT TH S 12°00' E 25 FT TH S 78°00' W 12.50 FT TH N 12°00' W 12.50 FT TO THE PLACE OF BEG. THIS CONVEYANCE INCLUDES A R/WAY TO & FROM THE COUNTY RD BETWEEN LOGAN CITY & RIVER HEIGHTS TOWN FOR THE OPERATION & MAINTENANCE OF A PUMPING PLANT & ACCESSORIES THERTO

NO.	REVISIONS	BY	DATE

DRAWN	EEZJLH
DESIGNED	EEZJLH
APPROVED	CN
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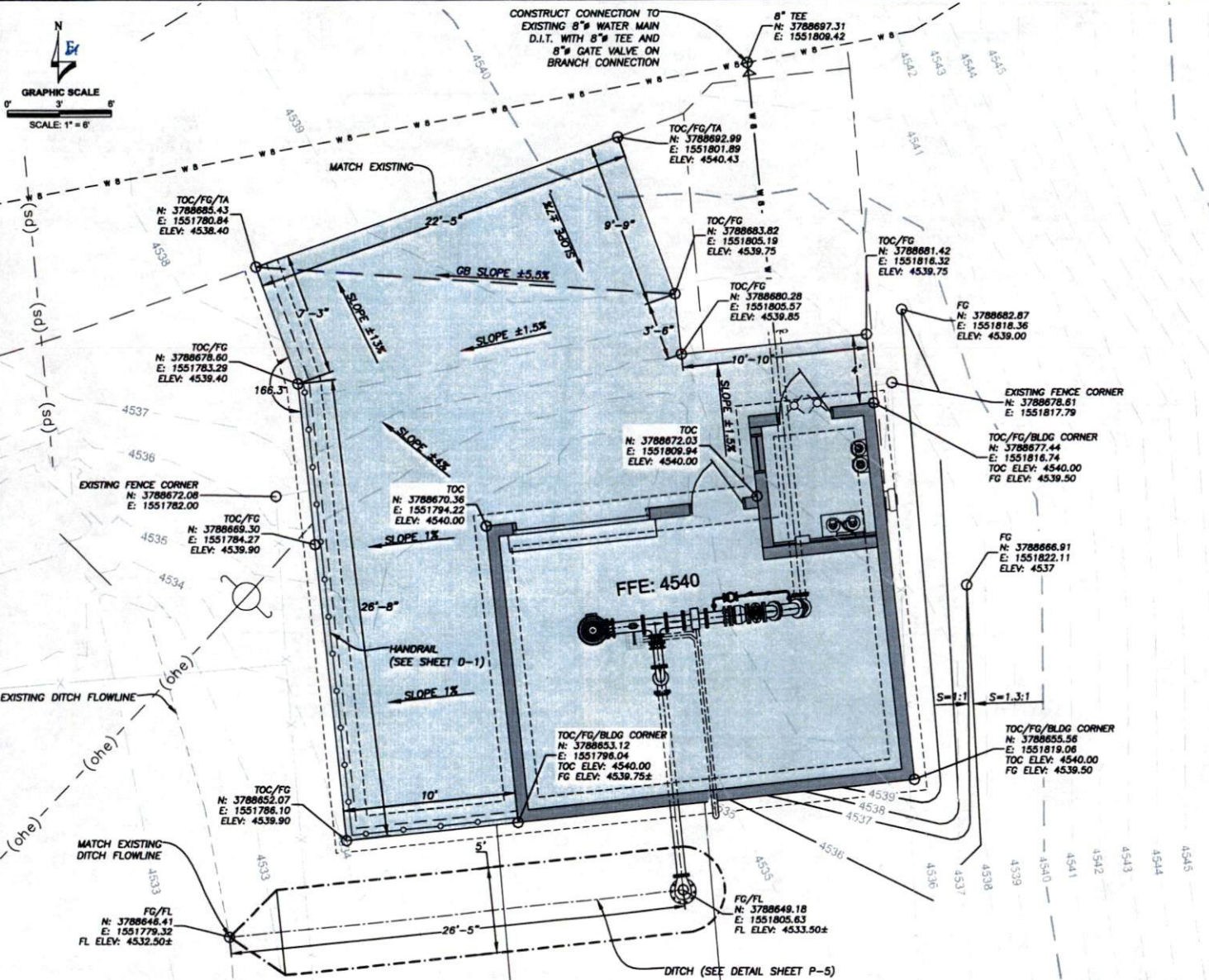
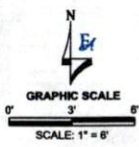
CITY OF RIVER HEIGHTS
 520 SOUTH 500 EAST
 RIVER HEIGHTS, UTAH 84321

FORSYGREN Associates Inc.
 95 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
 PH: 435.227.0333 FAX: 435.227.0334



LOWER WELL IMPROVEMENT PROJECT
WELL CONTROL BUILDING
DEMOLITION AND REMOVAL PLAN

PROJECT NO:	014-13-0004-028
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- SITE PREPARATION AND CONSTRUCTION NOTES:**
1. ALL PROPOSED SITE FEATURES SHALL BE LAD OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
 2. CONTRACTOR SHALL PLACE SURVEY HUBS NEAR PROPOSED BUILDING TO MARK FINISHED FLOOR ELEVATION FOR USE IN DETERMINING REQUIRED BURY DEPTH FOR UTILITY PIPING, AND TO ESTABLISH BUILDING CORNERS TO ENSURE PROPER UTILITY PIPING INSTALLATION.
 3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
 4. THE CONTRACTOR SHALL KEEP ALL STREETS, PARKING LOTS AND WALKS THAT ARE NOT RESTRICTED FROM PUBLIC USE DURING CONSTRUCTION BROOM CLEAN AT ALL TIMES. THE CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION.
 5. THE MATERIALS TESTING ENGINEER MUST BE NOTIFIED PRIOR TO THE PLACEMENT OF STRUCTURAL SITE GRADING FILLS, FLOOR SLABS, FOOTINGS, AND PAVEMENTS TO VERIFY THAT ALL LOOSE/DISTURBED SOILS AND NON-ENGINEERED FILLS HAVE BEEN COMPLETELY REMOVED AND/OR PROPERLY PREPARED.
 6. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
 7. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
 8. ALL PAVEMENT ADJACENT TO THE STRUCTURE SHALL BE SLOPED AWAY FROM THE STRUCTURE AT A TWO-PERCENT (2%) SLOPE UNLESS OTHERWISE INDICATED HEREON.

- SITE RECLAMATION AND RESTORATION:**
1. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
 2. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, CONTRACTOR SHALL BLEND GRADES TO MATCH AND MEET EXISTING CONDITIONS.
 3. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH 4-INCHES OF TOP SOIL MATERIAL (I.E. IN AREAS WHERE STRUCTURES/PAVEMENTS WERE REMOVED) AND RAKE AND WORK SUCH MATERIALS IN ORDER TO FORM A SMOOTH AND AESTHETICALLY PLEASING FINISHED GRADE FREE FROM ROUGHNESS, BUMPS, RIDGES OR IRREGULARITIES.
 4. CONTRACTOR SHALL PLACE NATIVE GRASS SEED ON PREPARED TOP SOIL MATERIAL TO THE SATISFACTION OF THE OWNER (SEED MIX TO BE DETERMINED BY OWNER).

SHEET LEGEND

	EXISTING EDGE OF PAVEMENT
	EXISTING CONTOUR MAJOR (10')
	EXISTING CONTOUR MINOR (1')
	PROPOSED CONTOUR MINOR (1')
	NEW UNDERGROUND ELECTRIC/POWER LINE
	EXISTING WATER LINE
	NEW WATER MAIN LINE
	PROPOSED HANDRAIL
	EXISTING FENCE
	NEW WATER VALVE
	TOP OF CONCRETE
	TOP OF ASPHALT
	FINISHED GRADE
	NEW CONCRETE WALKWAY/SURFACE
	FLOWLINE
	NORTHING
	EXISTING
	STORM DRAIN
	GRADE BREAK

NO.	REVISIONS	BY	DATE

CLARIFICATIONS	ZJH 08/28
DRAWN	EEB/ZJH
DESIGNED	EEB/ZJH
APPROVED	CN
QA	



ATTENTION
LINE IS 1-INCH
AT 11X17 SIZE
IF NOT 1/8-INCH
SCALE DRAWING ACCORDINGLY

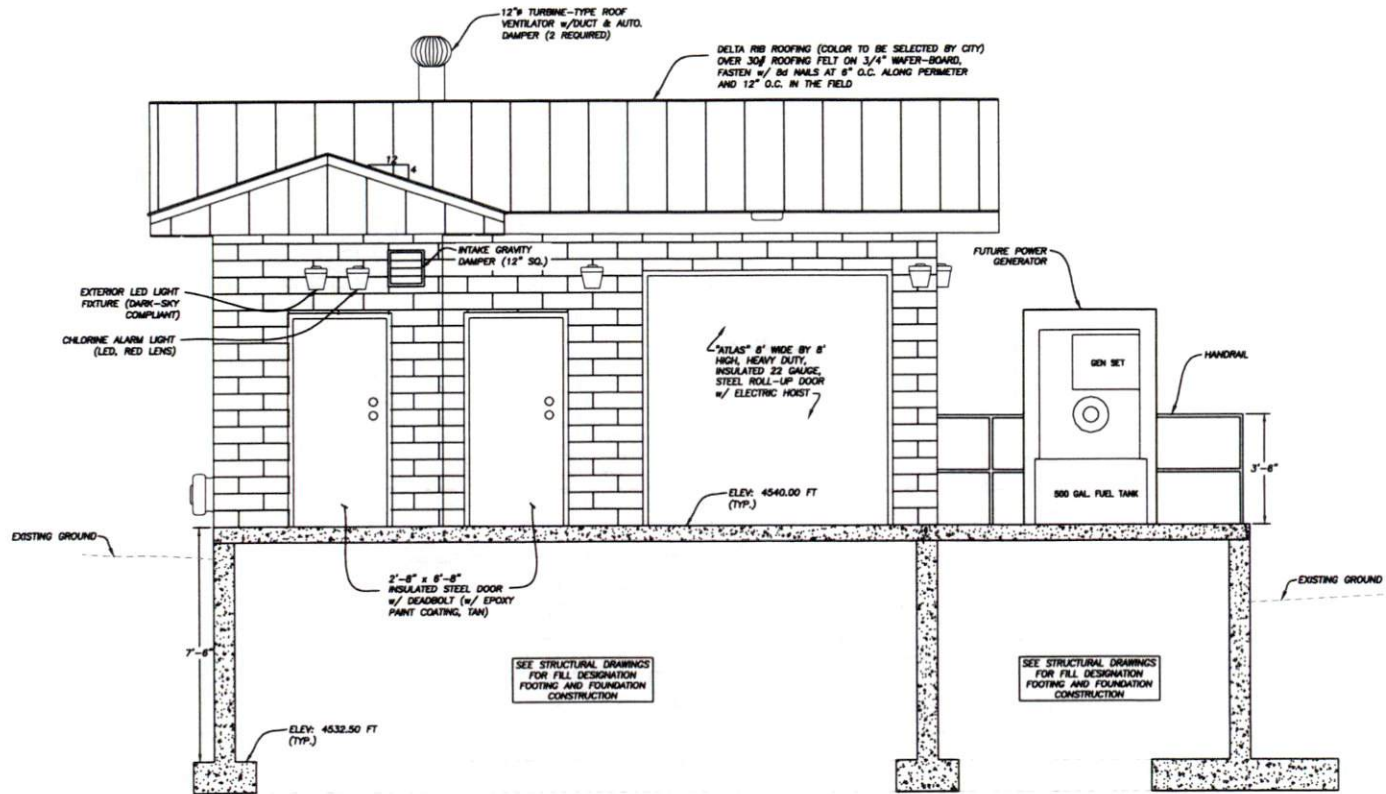


CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321



LOWER WELL IMPROVEMENT PROJECT
WELL CONTROL BUILDING
SITE & GRADING PLAN

PROJECT NO:	014-13-0004-028
SHEET ID:	SGP-1
DATE:	7-2022
PAGE NO:	4



WELL OPERATIONS BUILDING - FRONT ELEVATION 1
SCALE 1" = 4'

NO.	REVISIONS	BY	DATE

DRAWN: EEDZLH
 DESIGNED: EEDZLH
 APPROVED: CN
 QA:



ATTENTION
 LINE IS 1-INCH
 AT 1/16" SIZE
 IF NOT 1/16" SCALE DRAWING ACCORDINGLY



CITY OF RIVER HEIGHTS
 520 SOUTH 500 EAST
 RIVER HEIGHTS, UTAH 84321

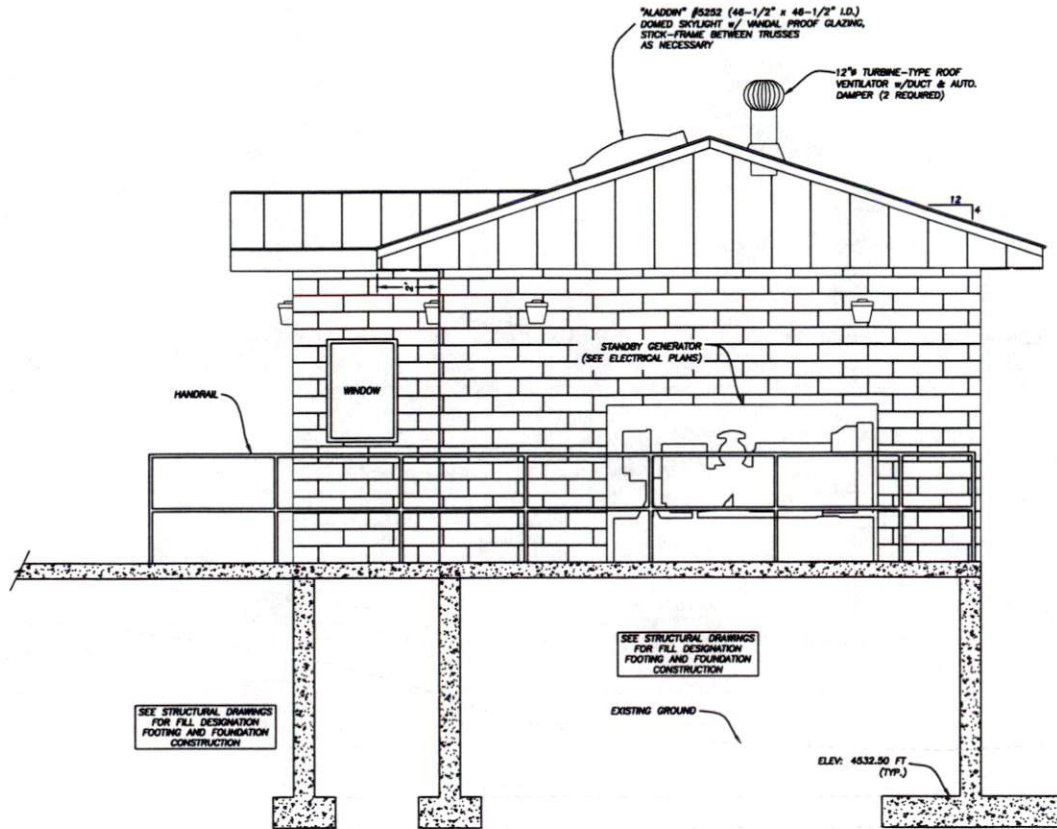
FORSYREN Associates Inc.
 95 WEST 150 SOUTH, STE. 115, LOGAN, UT 84321
 PH: 435.227.0333 FAX: 435.227.0334



LOWER WELL IMPROVEMENT PROJECT
 WELL CONTROL BUILDING
 FRONT ELEVATION

PROJECT NO: 014-13-0004-028
 SHEET ID: P-1
 DATE: 7-2022 PAGE NO: 5

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WELL OPERATIONS BUILDING - SIDE ELEVATION 2
SCALE 1" = 4'

NO.	REVISIONS	BY	DATE

CLARIFICATIONS	ZJH 08/28
DRAWN	EED/ZLH
DESIGNED	EED/ZLH
APPROVED	CN
QA	



ATTENTION
LINE IS 1-INCH
AT 11X17 SIZE
IF NOT 1-INCH,
SCALE DRAWING ACCORDINGLY



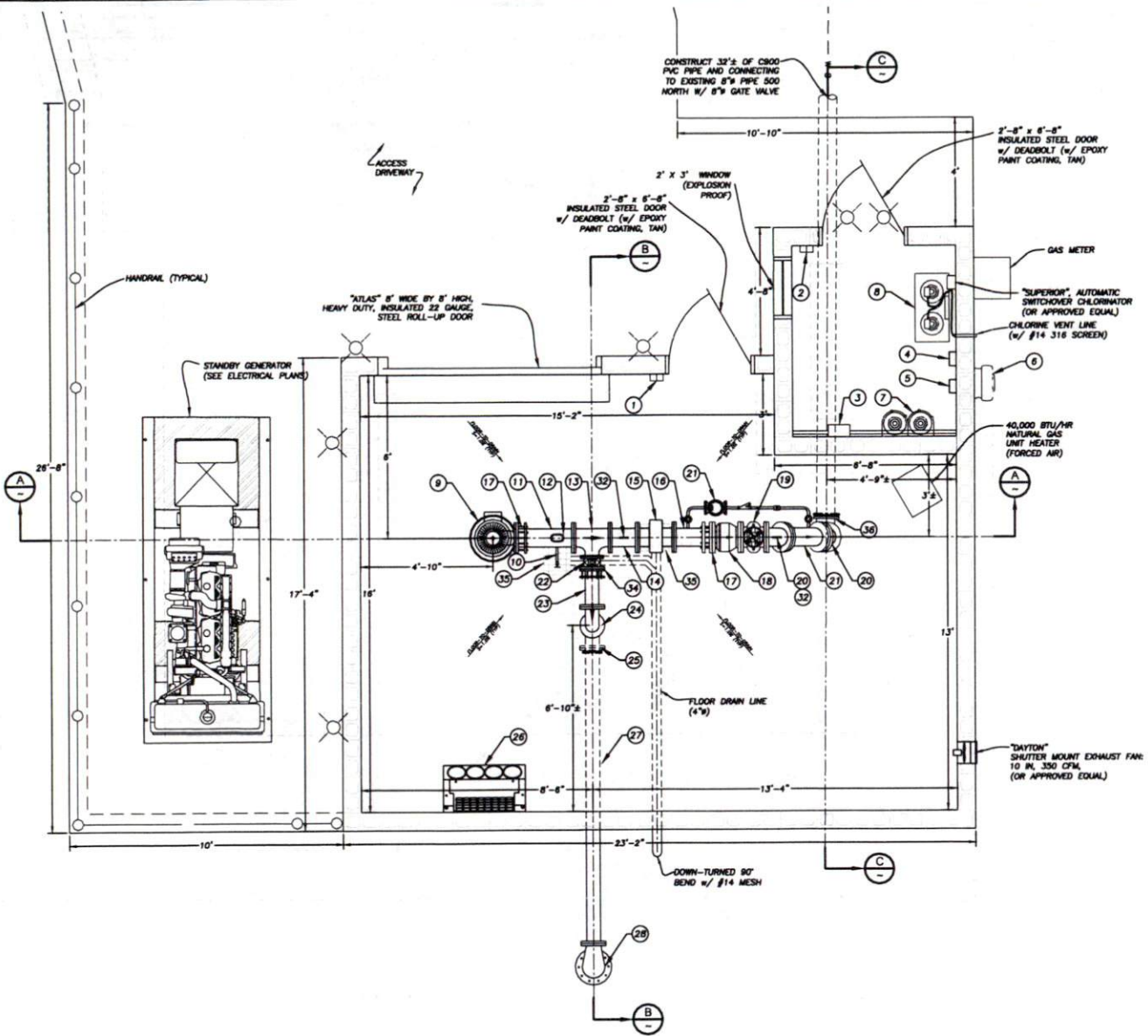
CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORSGREN Associates Inc.
85 WEST 100 SOUTH, STE. 110, LOGAN, UT 84321
PH: 435.227.9333 FAX: 435.227.9334



LOWER WELL IMPROVEMENT PROJECT
WELL CONTROL BUILDING
WEST ELEVATION

PROJECT NO:	014-13-0004-028
SHEET ID:	P-2
DATE:	7-2022
PAGE NO:	6



GENERAL CONSTRUCTION REQUIREMENTS

1. ALL MATERIALS WHICH MAY COME IN CONTACT WITH DRINKING WATER SHALL BE ANSI-CERTIFIED TO MEET OR EXCEED NSF STANDARD 61, AND SHALL BE STAMPED THEREON TO INDICATE SUCH CERTIFICATION.
2. CONTRACTOR SHALL COVER AND EFFECTIVELY SEAL ALL OPEN ENDS OF PIPELINES AT THE END OF EACH DAY'S WORK.
3. ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND LOCAL BUILDING CODES, AND SHALL BE CONSISTENT WITH COMMON CONSTRUCTION PRACTICES OF THE TRADES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK IN THE PROJECT AREA.
5. THE CONTRACTOR SHALL INSTALL THRUST BLOCKS AT ALL ELBOWS, TEES, VALVES, ETC. PER APWA STANDARDS AND SPECIFICATIONS.

PIPE, FITTINGS AND EQUIPMENT SCHEDULE			
ITEM	QTY	SIZE	DESCRIPTION
1	2	-	LIGHT SWITCH AND EXHAUST FAN SWITCH
2	1	-	LIGHT SWITCH AND EXHAUST FAN SWITCH (CHLORINE ROOM)
3	1	-	"SUPERIOR" AUTOMATIC SWITCHOVER CHLORINATOR (OR APPROVED EQUAL)
4	1	-	"ATI" GAS SENSOR/GAS DETECTOR*
5	1	-	"SUPERIOR" SMARTVALVE GAS FEED REGULATOR*
6	1	-	420 CFM EXHAUST FAN W/GRAVITY BACKDRAFT DAMPER
7	2	-	DUAL SPARE CHLORINE CYLINDER STORAGE W/ STAINLESS STEEL CHAIN RESTRAINTS (W/ TANK WRENCH)
8	1	-	"SCALETRON" MODEL 2330 DUAL CYLINDER MANUAL SCALE*
9	1	SL11H (7 STAGE)	"SIMILO" 1000 GPM VERTICAL TURBINE WELL PUMP, 200 HP, 1800 RPM, 450-FEET TDH (185 PSI), PUMP INTAKE 93" BGS.
10	1	8"	SMOOTH-NOSED SAMPLING TAP (MOUNTED HORIZONTALLY AS SHOWN) W/ "ASHCROFT" GLYCERIN FILLED PRESSURE GAUGE
11	1	8" x 2'-1 1/2"	FL x FL CL-50 D.I.P. SPOOL PIECE W/ 1" THREADED PORT (A.R.L.V.)
12	1	1"	"FLOMMATIC" OR "VALMATIC" AIR RELIEF VALVE*
13	1	8" x 8" x 5"	FL D.I. FLANGED REDUCING TEE
14	1	8" x 1'-8"	FL x FL CL-50 D.I.P. SPOOL PIECE W/ 1" THREADED PORT
15	1	8"	"MICROMETER" UNDS FLOWMETER W/ DUAL 4-20MA ANALOG, DUAL DIGITAL W/ REMOTE WALL-MOUNTED DISPLAY (GPM & TOTALIZER)
16	1	8"	FL x P.E. CL-50 D.I.P.
17	2	8"	"TROMAC" FLANGED COUPLING ADAPTER
18	1	8"	"FLOMMATIC" GLOBE CHECK VALVE*
19	1	8"	FL GATE VALVE
20	2	8"	FL x FL 45° BEND (1 W/ 1/2" THREADED PORT)
21	1	TBD	CHLORINE DISINFECTION SYSTEM PRESSURE BOOSTER PUMP
22	1	8"	"BIRN" FL BUTTERFLY VALVE W/ 120V ELECTRIC ACTUATOR (4-20MA)*
23	1	8" x 1'0"	FL x P.E. CL-50 D.I.P.
24	1	8"	FL x FL 90° BEND
25	1	8"	M.J. x M.J. 90° BEND (W/MEGA-LUG RESTRAINTS)
26	1	-	"DAMPASS" 4202-1340369 200 HP VFD (SEE ELECTRICAL DRAWING)
27	1	8" x 10'9"	FL x P.E. CL-50 D.I.P.
28	1	8" x 10"	D.I. FL 90° REDUCING BEND W/ #4 AND #14 MESH
29	1	8" x 3'1 1/2"	FL x P.E. CL-50 D.I.P.
30	2&	-	PIPE SUPPORT (SCREW-TYPE ADJUSTABLE)
31	1	12"	12" WELL CASING EXTENSION TO ELEVATION 4540.50 FT
32	2	-	ELECTRONIC PRESSURE GAUGE (0-300 PSI) W/ 4-20MA OUTPUT
33	1	12"	1-1/4" PVC DRAIN PIPE TO BE EXTENDED 100' BELOW FLOOR ELEVATION (FOR PRESSURE TRANSDUCER)
34	1	8"	"TROMAC" FLANGED COUPLING ADAPTER
35	2	-	12"x12" SQUARE FLOOR DRAIN (DRAIN-TO-DAYLIGHT)
36	1	8"	M.J. x M.J. 90° BEND (W/MEGA-LUG RESTRAINTS)

* OR AN APPROVED EQUAL.

CLASSIFICATIONS	ZL17 0626		
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 APPROVED: CN
 QA: _____



ATTENTION
 LINE IS 1-INCH
 AT 11X17 SIZE
 IF NOT 1-INCH,
 SCALE DRAWING ACCORDINGLY



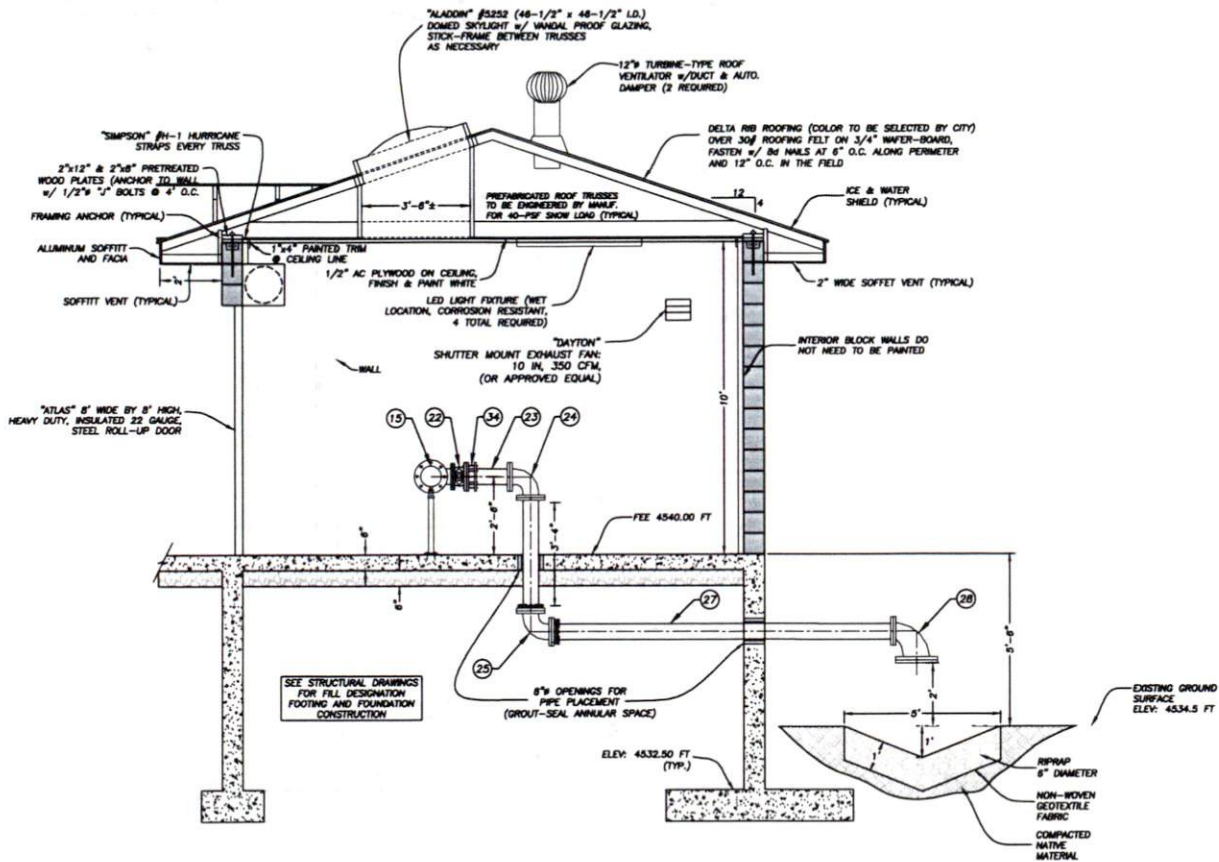
CITY OF RIVER HEIGHTS
 520 SOUTH 500 EAST
 RIVER HEIGHTS, UTAH 84321

FORSGREN Associates, Inc.
 85 WEST 150 SOUTH, STE. 115, LOGAN, UT 84321
 PH 435.227.0333 FAX 435.227.0334



LOWER WELL IMPROVEMENT PROJECT
 WELL CONTROL BUILDING
 PLAN VIEW

PROJECT NO: 014-13-0004-028
 SHEET ID: P-3
 DATE: 7-2022 PAGE NO: 7



WELL OPERATIONS BUILDING - SECTION B-B
SCALE 1" = 4'

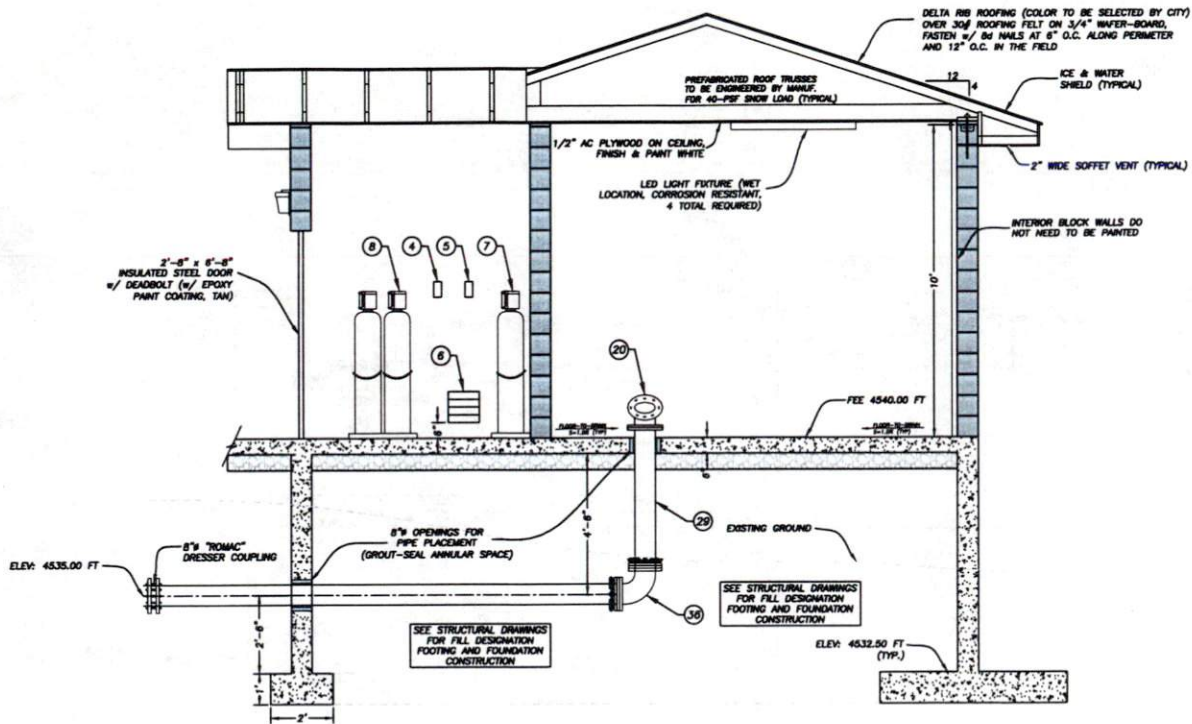
GENERAL CONSTRUCTION REQUIREMENTS

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PIPE, FITTINGS AND EQUIPMENT SCHEDULE			
ITEM	QTY	SIZE	DESCRIPTION
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3	1	-	"SUPERIOR" AUTOMATIC SWITCHOVER CHLORINATOR (OR APPROVED EQUAL)
4	1	-	"ATI" GAS SENSOR/GAS DETECTOR*
5	1	-	"SUPERIOR" SMARTVALVE GAS FEED REGULATOR*
6	1	-	420 CFM EXHAUST FAN w/ GRAVITY BACKDRAFT DAMPER
7	2	-	DUAL SPARE CHLORINE CYLINDER STORAGE w/ STAINLESS STEEL CHAIN RESTRAINTS (w/ TANK WRENCH)
8	1	-	"SCALETRON" MODEL 2330 DUAL CYLINDER MANUAL SCALE*
9	1	SL11H (7 STAGE)	"SMILO" 1000 GPM VERTICAL TURBINE WELL PUMP, 200 HP, 1800 RPM, 450-FOOT TDH (195 PSI), PUMP INTAKE 95' BGS.
10	1	8"	SMOOTH-NOSED SAMPLING TAP (MOUNTED HORIZONTALLY AS SHOWN) w/ "ASHCROFT" GLYCERIN FILLED PRESSURE GAUGE
11	1	8" x 2'-1 1/2"	FL x FL CL-50 D.I.P. SPOOL PIECE w/ 1" THREADED PORT (A.R.V.)
12	1	1 1/2"	"FLOWMATIC" OR "VALMATIC" AIR RELIEF VALVE*
13	1	8" x 8" x 8"	FL D.I. FLANGED REDUCING TEE
14	1	8" x 1'-8 1/2"	FL x FL CL-50 D.I.P. SPOOL PIECE w/ 1" THREADED PORT
15	1	8"	"MICROMETER" LAMB FLOWMETER w/ DUAL 4-20MA ANALOG, DUAL DIGITAL w/ REMOTE WALL-MOUNTED DISPLAY (GPM & TOTALIZER)
16	1	8"	FL x P.E. CL-50 D.I.P.
17	2	8"	"ROMAC" FLANGED COUPLING ADAPTER
18	1	8"	"FLOWMATIC" GLOBE CHECK VALVE*
19	1	8"	FL GATE VALVE
20	2	8"	FL x FL 45° BEND (1 w/ 1/2" THREADED PORT)
21	1	T80	CHLORINE DISINFECTION SYSTEM PRESSURE BOOSTER PUMP
22	1	8"	"BRAY" FL BUTTERFLY VALVE w/ 120V ELECTRIC ACTUATOR (4-20MA)*
23	1	8" x 1'0 1/2"	FL x P.E. CL-50 D.I.P.
24	1	8"	FL x FL 90° BEND
25	1	8"	M.L. x M.L. 90° BEND (w/ MEGA-LUG RESTRAINTS)
26	1	-	"DAWFOSS" FC202-1340369 200 HP VFD (SEE ELECTRICAL DRAWING)
27	1	8" x 10'9 1/2"	FL x P.E. CL-50 D.I.P.
28	1	8" x 10'9"	D.I. FL 90° REDUCING BEND w/ #4 and #14 MESH
29	1	8" x 3'1 1/2"	FL x P.E. CL-50 D.I.P.
30	2±	-	PIPE SUPPORT (SCREW-TYPE ADJUSTABLE)
31	1	12"	12" WELL CASING EXTENSION TO ELEVATION 4540.50 FT
32	2	-	ELECTRONIC PRESSURE GAUGE (0-300 PSI) w/ 4-20MA OUTPUT
33	1	12"	1-1/4" PVC DROP PIPE TO BE EXTENDED 100' BELOW FLOOR ELEVATION (FOR PRESSURE TRANSDUCER)
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36	1	8"	M.L. x M.L. 90° BEND (w/ MEGA-LUG RESTRAINTS)

* OR AN APPROVED EQUAL.

<table border="1"> <tr><td>NO.</td><td>REVISIONS</td><td>BY</td><td>DATE</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	NO.	REVISIONS	BY	DATE					CLARIFICATIONS ZLH 08/26 DRAWN EEO/ZLH DESIGNED EEO/ZLH APPROVED CN QA		ATTENTION LINE IS 1-INCH AT 11X17 SIZE IF NOT 1-INCH SCALE DRAWING ACCORDINGLY		CITY OF RIVER HEIGHTS 520 SOUTH 500 EAST RIVER HEIGHTS, UTAH 84321			LOWER WELL IMPROVEMENT PROJECT WELL CONTROL BUILDING SECTION B-B	PROJECT NO: 014-13-0004-028 SHEET ID: P-5 DATE: 7-2022 PAGE NO: 9
NO.	REVISIONS	BY	DATE														



WELL OPERATIONS BUILDING - SECTION C-C 5
SCALE 1" = 4'

GENERAL CONSTRUCTION REQUIREMENTS

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PIPE, FITTINGS AND EQUIPMENT SCHEDULE

ITEM	QTY	SIZE	DESCRIPTION
1	2	-	LIGHT SWITCH AND EXHAUST FAN SWITCH
2	1	-	LIGHT SWITCH AND EXHAUST FAN SWITCH (CHLORINE ROOM)
3	1	-	"SUPERIOR" AUTOMATIC SWITCHOVER CHLORINATOR (OR APPROVED EQUAL)
4	1	-	"XIT" GAS SENSOR/GAS DETECTOR*
5	1	-	"SUPERIOR" SMARTVALVE GAS FEED REGULATOR*
6	1	-	420 CFM EXHAUST FAN w/ GRAVITY BACKDRAFT DAMPER
7	2	-	DUAL SPARE CHLORINE CYLINDER STORAGE w/ STAINLESS STEEL CHAIN RESTRAINTS (w/ TANK WRENCH)
8	1	-	"SCALETRON" MODEL 2330 DUAL CYLINDER MANUAL SCALE*
9	1	SL11H (7' STAGE)	"SMFLD" 1000 GPM VERTICAL TURBINE WELL PUMP, 200 HP, 1800 RPM, 450-FEET TDH (185 PSI), PUMP INTAKE 95" BGS.
10	1	8"	SMOOTH-NOSED SAMPLING TAP (MOUNTED HORIZONTALLY AS SHOWN) w/ "ASHCROFT" GLYCEERIN FILLED PRESSURE GAUGE
11	1	8" x 2'-1 1/2"	FL x FL CL-50 D.I.P. SPOOL PIECE w/ 1" THREADED PORT (A.R.V.)
12	1	1"	"FLOWMATIC" OR "VALMATIC" AIR RELIEF VALVE*
13	1	8" x 8" x 8"	FL D.I. FLANGED REDUCING TEE
14	1	8" x 1'-8 1/2"	FL x FL CL-50 D.I.P. SPOOL PIECE w/ 1" THREADED PORT
15	1	8"	"MICROMETER" UMDS FLOWMETER w/ DUAL 4-20MA ANALOG, DUAL DIGITAL w/ REMOTE WALL-MOUNTED DISPLAY (GPM & TOTALIZER)
16	1	8"	FL x P.E. CL-50 D.I.P.
17	2	8"	"TROMAC" FLANGED COUPLING ADAPTER
18	1	8"	"FLOWMATIC" CLOSE CHECK VALVE*
19	1	8"	FL GATE VALVE
20	2	8"	FL x FL 45° BEND (1 w/ 1/2" THREADED PORT)
21	1	TBD	CHLORINE DISINFECTION SYSTEM PRESSURE BOOSTER PUMP
22	1	6"	"BRAY" FL BUTTERFLY VALVE w/ 120V ELECTRIC ACTUATOR (4-20MA)*
23	1	8" x 1'0 1/2"	FL x P.E. CL-50 D.I.P.
24	1	8"	FL x FL 90° BEND
25	1	8"	M.J. x M.J. 90° BEND (w/ MEGA-LUG RESTRAINTS)
26	1	-	"DINFOSS" R202-134M389 300 HP VFD (SEE ELECTRICAL DRAWING)
27	1	8" x 10'8 1/2"	FL x P.E. CL-50 D.I.P.
28	1	8" x 10"	D.I. FL 90° REDUCING BEND w/ #4 AND #14 MESH
29	1	8" x 3'1 1/2"	FL x P.E. CL-50 D.I.P.
30	2±	-	PIPE SUPPORT (SCREW-TYPE ADJUSTABLE)
31	1	12"	12" WELL CASING EXTENSION TO ELEVATION 4540.50 FT
32	2	-	ELECTRONIC PRESSURE GAUGE (0-300 PSI) w/ 4-20MA OUTPUT
33	1	12"	1-1/4" PHC DROP PIPE TO BE EXTENDED 100' BELOW FLOOR ELEVATION (FOR PRESSURE TRANSDUCER)
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36	1	8"	M.J. x M.J. 90° BEND (w/ MEGA-LUG RESTRAINTS)

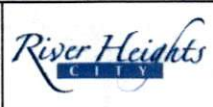
* OR AN APPROVED EQUAL

NO.	REVISIONS	BY	DATE

CLARIFICATIONS	ZLH 0626
DRAWN	EED/ZLH
DESIGNED	EED/ZLH
APPROVED	CN
QA	



ATTENTION
LINE IS 1-INCH
AT 11X17 SIZE
IF NOT 1-INCH
SCALE DRAWING ACCORDINGLY



CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

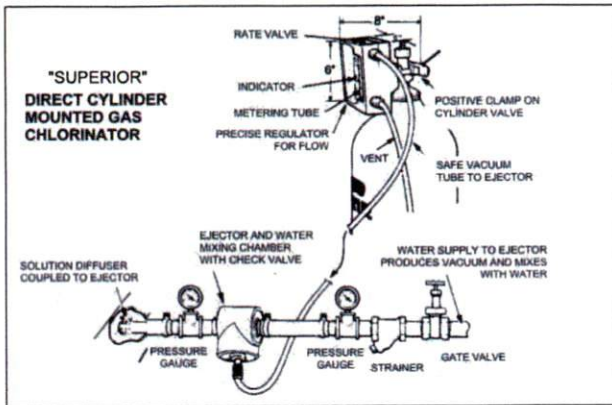
FORSGREN Associates Inc.
88 WEST 100 SOUTH, STE. 115, LOGAN, UT 84301
PH: 435.227.9335 FAX: 435.227.8804



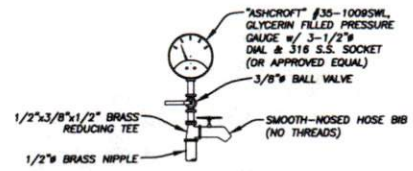
LOWER WELL IMPROVEMENT PROJECT

PROJECT NO: 014-13-0004-028
SHEET ID: P-6
WELL CONTROL BUILDING
SECTION C-C

DATE: 7-2022 PAGE NO: 10

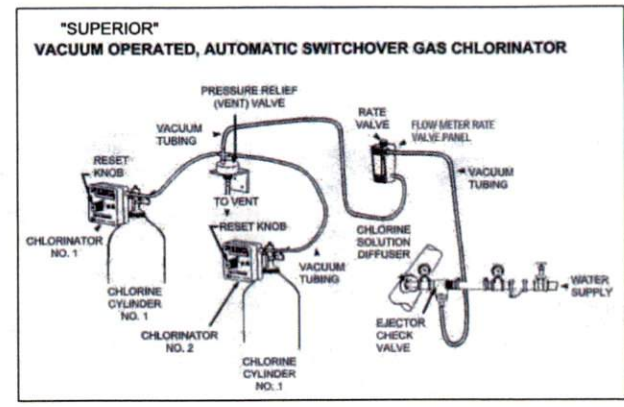


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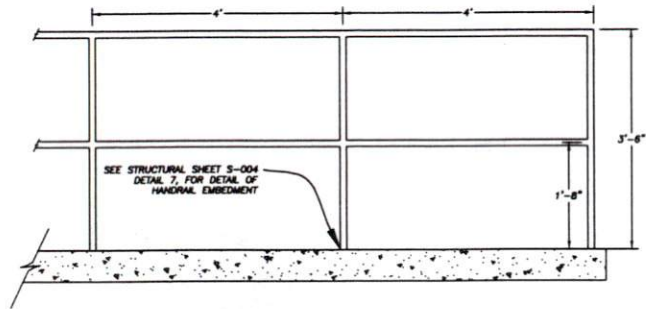


PRESSURE GAUGE REQUIREMENTS:
 INLET PRESSURE SUSTAINING VALVE / EJECTOR CHECK VALVE:
 1. UPSTREAM - RANGE: 0-300 PSI w/ SAMPLING TAP
 2. DOWNSTREAM - RANGE: 0-300 PSI

PRESSURE GAUGE / SAMPLING TAP 6
 @WELLHEAD ITEM #10 NOT TO SCALE



- FOR REFERENCE ONLY -



HANDRAIL DETAIL 6
 NOT TO SCALE

GENERAL CONSTRUCTION NOTES:

- CONTRACTOR SHALL FIELD VERIFY ALL PIPE LENGTHS AND CONNECTION ANGLES PRIOR TO CONSTRUCTION OF JOINTS.
- ALL MATERIALS WHICH MAY COME IN CONTACT WITH DRINKING WATER SHALL BE ANSI-CERTIFIED TO MEET OR EXCEED NSF STANDARD 61, AND SHALL BE STAMPED THEREON TO INDICATE SUCH CERTIFICATION.
- CONTRACTOR SHALL BE AND/OR EMPLOY A CERTIFIED "SUPERIOR" GAS CHLORINATION SYSTEM CONTRACTOR TO FURNISH AND INSTALL THE GAS CHLORINATION SYSTEM COMPLETE AS TO FORM, FUNCTION, AND OPERATION. CONTRACTOR SHALL PROVIDE THE OWNER THE NECESSARY AND PRUDENT TRAINING AND INSTRUCTION ON OPERATION AND MAINTENANCE OF THE INSTALLED GAS CHLORINATION SYSTEM.
- CONTRACTOR SHALL VERIFY THAT THE PUMP FOUNDATION AND BASE IS CONSTRUCTED TO PREVENT FLUIDS FROM COMING INTO CONTACT WITH JOINTS BETWEEN THE PUMP BASE AND THE CASTING.

WATER LEVEL MEASUREMENTS:

CONTRACTOR SHALL INSTALL DROP TUBE FOR PLACEMENT OF LEVEL TRANSDUCER (TRANSDUCER TO BE FURNISHED AND INSTALLED BY CONTRACTOR 100 FEET BELOW FLOOR).

WELL HOUSE CONSTRUCTION U.A.C. R309 REQUIREMENTS:

- CASING THE PROJECTION ABOVE FLOOR. THE PERMANENT CASING FOR ALL GROUND WATER WELLS SHALL PROJECT AT LEAST 12 INCHES ABOVE THE PUMP HOUSE FLOOR OR CONCRETE APRON SURFACE AND AT LEAST 18 INCHES ABOVE THE FINAL GROUND SURFACE. HOWEVER, CASINGS TERMINATED IN UNDERGROUND VAULTS MAY BE PERMITTED IF THE VAULT IS PROVIDED WITH A "DRAIN-TO-DAYLIGHT" SIZED TO HANDLE IN EXCESS OF THE WELL FLOW AND SURFACE RUNOFF IS DIRECTED AWAY FROM THE VAULT ACCESS.
- FLOOR DRAIN. WHERE A WELL HOUSE IS CONSTRUCTED, THE FLOOR SURFACE SHALL BE AT LEAST SIX INCHES ABOVE THE FINAL GROUND ELEVATION AND SHALL BE SLOPED TO PROVIDE DRAINAGE. A "DRAIN-TO-DAYLIGHT" SHALL BE PROVIDED UNLESS HIGHLY IMPRACTICAL.
- EARTH BERM. SITES SUBJECT TO FLOODING SHALL BE PROVIDED WITH AN EARTH BERM TERMINATING AT AN ELEVATION AT LEAST TWO FEET ABOVE THE HIGHEST KNOWN FLOOD ELEVATION OR OTHER SUITABLE PROTECTION AS DETERMINED BY THE DIRECTOR.
- WELL CASING TERMINATION AT FLOOD SITES. THE TOP OF THE WELL CASING AT SITES SUBJECT TO FLOODING SHALL TERMINATE AT LEAST THREE FEET ABOVE THE 100-YEAR FLOOD LEVEL OR THE HIGHEST KNOWN FLOOD ELEVATION, WHICHEVER IS HIGHER (REFER TO R309-515-6(8)(B)(VI)).
- THE WELL HOUSE SHALL BE VENTILATED, HEATED, AND LIGHTED IN SUCH A MANNER AS TO ASSURE ADEQUATE PROTECTION OF THE EQUIPMENT (REFER TO R309-540-5(2) (A) THROUGH (H)).

1	CLARIFICATIONS	ZLH	08/26
	DRAWN	EED/ZLH	
	DESIGNED	EED/ZLH	
	APPROVED	CK	
	QA		

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ATTENTION
 LINE IS 1-INCH
 AT 11X17 SIZE
 IF NOT INDICATED
 SCALE DRAWING ACCORDINGLY



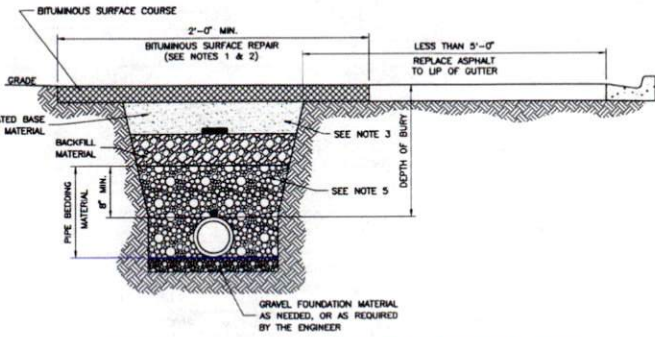
CITY OF RIVER HEIGHTS
 520 SOUTH 500 EAST
 RIVER HEIGHTS, UTAH 84321

FORSGREN Associates Inc.
 84 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
 PH: 435.227.0333 FAX: 435.227.2534



LOWER WELL IMPROVEMENT PROJECT
WELL CONTROL BUILDING
GENERAL DETAILS

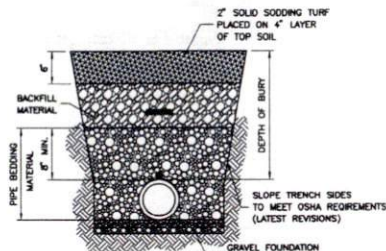
PROJECT NO:	014-13-0004-028
SHEET ID:	D-1
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BITUMINOUS SURFACE REPAIR/TRENCH SECTION

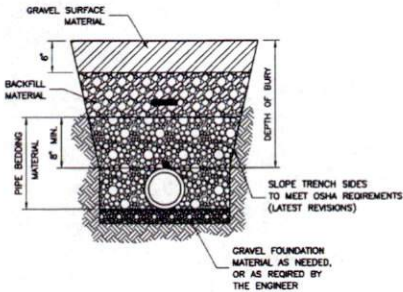
SCALE: N.T.S.

- NOTES:
1. SAW CUT BITUMINOUS ASPHALT SURFACE 6" WIDER THAN TRENCH ON EACH SIDE FOR FINAL TRENCH REPAIR WHERE BITUMINOUS SURFACE EXISTS.
 2. BITUMINOUS SURFACE IS TO BE 5" OR TO MATCH EXISTING THICKNESS, WHICHEVER IS GREATER FOR STATE ROADS & 3" OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER FOR OTHER ROADS.
 3. FOR TRENCH REPAIR, 4" UNTREATED BASE COURSE MATERIAL IS TO BE 12" OR TO MATCH EXISTING THICKNESS, WHICHEVER IS GREATER. FOR NEW ROAD CONSTRUCTION, 4" UNTREATED BASE COURSE MATERIAL IS TO BE 10" MIN. OR AS DIRECTED BY THE ENGINEER. BASE COURSE TO BE COMPACTED TO 98% ASTM D-1557.
 4. SLOPE TRENCH SIDES TO MEET OSHA SAFETY REGULATIONS. (LATEST REV.)
 5. BACKFILL TO BE COMPACTED TO 98% ASTM D-1557 IN ROADWAYS AND 90% IN LANDSCAPED AREAS.



TURF SURFACE TRENCH SECTION

SCALE: N.T.S.



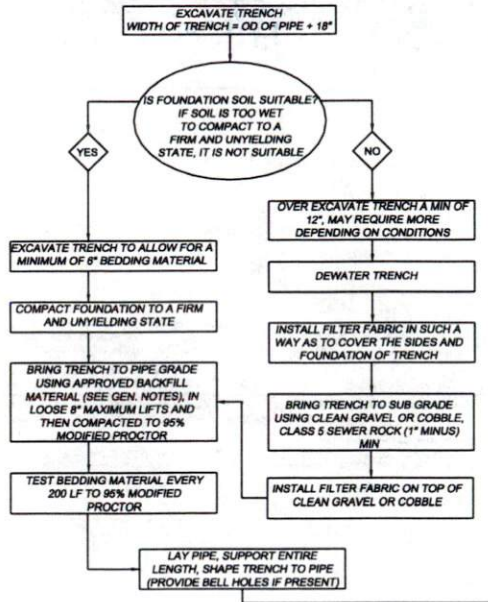
GRAVEL SURFACE TRENCH SECTION

SCALE: N.T.S.

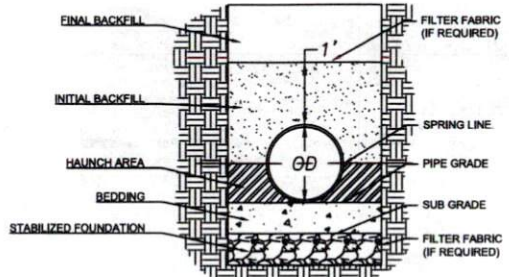
TYPICAL TRENCH SECTIONS

NOT TO SCALE

7



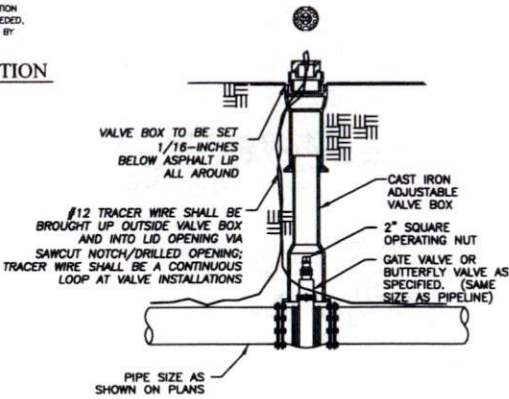
- BACKFILL TO THE SPRING LINE OF THE PIPE WITH APPROVED BACKFILL MATERIAL (SEE GEN. NOTES), 8" MAX LIFTS
 - HAND COMPACT MATERIAL UNDER PIPE HAUNCHES BY SHOVEL SLICING THE ENTIRE LENGTH OF THE PIPE, AVOID LIFTING THE PIPE
 - PLACE INITIAL BACKFILL USING GRADE 1/2, UNTREATED BASE COURSE, IN LOOSE 8" MAX LIFTS, AND THEN COMPACT TO 95% MODIFIED PROCTOR
 - TEST INITIAL BACKFILL MATERIAL EVERY 200 LF TO 95% MODIFIED PROCTOR
- GENERAL NOTES:**
- GRADATION DOCUMENTATION, CLASSIFICATION AND PROCTORS SHALL BE PROVIDED TO CITY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF MATERIAL. GRADATION SHALL MEET 100% PASSING 3/4" SIEVE, AND LESS THAN 12% PASSING THE #200 SIEVE (CLAY).
- ADDITIONAL FILTER FABRIC MAY BE REQUIRED BY CITY ENGINEER AT THE INTERFACE OF THE INITIAL AND FINAL BACKFILL, IF THE MATERIALS DIFFER SIGNIFICANTLY IN GRADATION (PEA GRAVEL TO PIT RUN)
- ANY VARIANCE FROM THIS FLOW CHART MUST BE APPROVED IN WRITING BY CITY ENGINEER



PIPE LAYING FLOW CHART

NOT TO SCALE

9



TYPICAL VALVE DETAIL

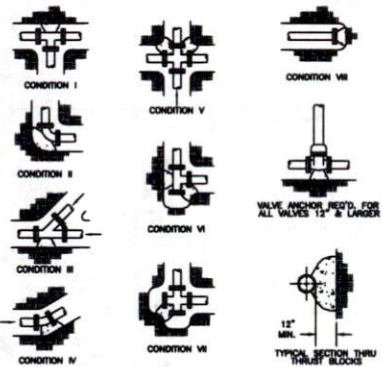
NOT TO SCALE

8

PIPE SIZE	THRUST BLOCK BEARING AREA IN SQ. FT.							
	I	II	III	IV	V	VI	VII	VIII
12"	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
15"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
18"	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21"	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
24"	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
27"	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
30"	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
36"	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
42"	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
48"	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
54"	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
60"	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

NOTES:

1. ALL THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
2. CONCRETE SHALL HAVE A 28 DAY AVERAGE COMPRESSIVE STRENGTH OF 2500 PSI, CALCULATED ON 150 LB. STATIC PRESSURE & ALLOWABLE BEARING PRESSURE OF 2000 LBS. PER SQ. FT.
3. IN POORER SOILS SPECIAL DESIGN IS REQ'D.
4. ALL THRUST BLOCK SIDES SHALL BE FORMED.
5. ALL FITTINGS REQUIRING THRUST BLOCKS SHALL BE COVERED WITH 8 MIL POLYETHYLENE COVER.



CURVE THRUST BLOCKING

NOT TO SCALE

10

NO.	REVISIONS	BY	DATE

CLARIFICATIONS	ZLH	08/28
DRAWN	BEEDZLH	
DESIGNED	BEEDZLH	
APPROVED	CN	
QA		



ATTENTION
LINE IS 1/4-INCH AT 11X17 SIZE
IF NOT 1/4-INCH SCALE DRAWING ACCORDINGLY



CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORSYTH Associates Inc.
85 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.0330 FAX: 435.227.0304



LOWER WELL IMPROVEMENT PROJECT
WELL CONTROL BUILDING
GENERAL DETAILS

PROJECT NO:	014-13-0004-028
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GENERAL

1. ALL DESIGN, CONSTRUCTION, AND INSPECTION SHALL BE IN CONFORMANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC) AND REFERENCED STANDARDS.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE.
3. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.
4. DRAWINGS INDICATE THE FINISHED PRODUCT. THEY DO NOT INDICATE A METHOD OF CONSTRUCTION. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH PRECAUTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, ETC.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPENSATING THE OWNER FOR ANY CHANGES MADE AS A RESULT OF A DEVIATION FROM THE CONTRACT DOCUMENTS, DEVIATION FROM THE SPECIFICATIONS, FAULTY MATERIALS, OR FAULTY WORKMANSHIP.
6. OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED DESIGN CHANGES, COST ASSOCIATED WITH ANY DESIGN WORK INITIATED BY THE OPTION SHALL BE BORNE BY THE CONTRACTOR.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE JOB SITE.
8. TEMPORARY SHORING AND BRACING SHALL BE PROVIDED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED INCLUDING WIND. SUCH BRACING SHALL BE LEFT IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY OR UNITS. ALL THE STRUCTURAL ELEMENTS ARE COMPLETE.
9. DURING AND AFTER CONSTRUCTION THE CONTRACTOR AND/OR OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOADS.
10. THE GENERAL CONTRACTOR SHALL HAVE SHOP DRAWINGS REVIEWED BY THE ENGINEER PRIOR TO FABRICATION OR ERECTION.
11. ALL DETAILS, SECTIONS, AND NOTES ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS UNLESS NOTED OR SHOWN OTHERWISE.
12. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION NOT COVERED ON THE DRAWINGS.
13. OBSERVATION VISITS TO THE JOB SITE BY THE OWNER, ENGINEER OR FIELD REPRESENTATIVES OF THE ENGINEER SHALL NEITHER BE CONSIDERED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
14. SIZES, LOCATIONS, AND ANCHORAGE OF EQUIPMENT SHALL BE VERIFIED IN THE FIELD WITH EQUIPMENT MANUFACTURERS (SUPPLIERS) PRIOR TO PLACING CONCRETE OR FABRICATING STEEL.

DESIGN CRITERIA

THE FOLLOWING STRUCTURAL DESIGN LOADS APPLY U.O.D.:

ROOF LIVE LOAD	.....	L = 20 PSF
ROOF DEAD LOAD	.....	D = 20 PSF
STRUCTURE RISK CATEGORY	.....	IV
SNOW LOAD:		
GROUND SNOW LOAD	.....	P _g = 40 PSF
SNOW IMPORTANCE FACTOR	.....	I _s = 1.2
SNOW EXPOSURE FACTOR	.....	C _e = 1.0
SNOW THERMAL FACTOR	.....	C _t = 1.1
SNOW SLOPE FACTOR	.....	C _s = 1.0
FLAT ROOF SNOW LOAD	.....	P _f = 37 PSF
SLOPED ROOF SNOW LOAD	.....	P _s = 37 PSF

WIND:	
BASIC WIND SPEED	..... V = 114 MPH (3-SECOND GUST)
WIND EXPOSURE	..... B

SEISMIC:	
SEISMIC IMPORTANCE FACTOR	..... I _s = 1.5
SPECTRAL RESPONSE ACCELERATION	..... S _s = 1.05
SPECTRAL RESPONSE ACCELERATION	..... S ₁ = 0.35
SEISMIC SOIL SITE CLASS	..... D
SPECTRAL RESPONSE COEFFICIENT	..... S _m = 0.94
SEISMIC DESIGN CATEGORY	..... D
BASIC SEISMIC FORCE RESISTING SYSTEM	
SPECIAL REINFORCED MASONRY SHEAR WALLS	
RESPONSE MODIFICATION COEFFICIENT	..... R = 5.0
OVERSTRENGTH FACTOR	..... Q _s = 2.5
SEISMIC RESPONSE COEFFICIENT	..... C _s = 0.25

SOILS:	
DESIGN BEARING CAPACITY	= 1500 PSF (ASSUMED)

CONCRETE

1. ALL CONCRETE SHALL MEET THE REQUIREMENTS OF ACI-301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS." PROPORTIONING OF INGREDIENTS FOR EACH CONCRETE MIX SHALL BE BY METHOD 2 OR THE ALTERNATE PROCEDURE GIVEN IN ACI-301. PLACE CONCRETE PER ACI-308 AND CONFORM TO ACI-404 (308) FOR COLD WEATHER PLACEMENT AND ACI-405 (305) FOR HOT WEATHER PLACEMENT. USE INTERIOR MECHANICAL VIBRATORS WITH 2,000 RPM MINIMUM FREQUENCY. DO NOT OVERVIBRATE. CONCRETE SHALL BE PLACED MONOLITHICALLY BETWEEN CONSTRUCTION AND CONTROL JOINTS. PROTECT ALL CONCRETE FROM PREATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURE FOR SEVEN DAYS AFTER PLACING.
2. STRENGTH
TWENTY-EIGHT DAY COMPRESSIVE STRENGTH SHALL BE F_c = 4000 PSI
SLUMP: 4" ± 1 INCH
MAX. WATER/CEMENT RATIO: 0.48
3. STRUCTURAL CONCRETE EXPOSURE CLASS: F2
4. MATERIALS
CEMENT: ASTM 150, TYPE I
COARSE AND FINE AGGREGATE: ASTM C33
WATER SHALL BE CLEAN AND POTABLE.
5. ADMIXTURES
WATER REDUCING ADMIXTURE: ASTM C494. ADMIXTURES SHALL BE USED IN EXACT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
SYNCRIZED PERFORMANCE SYSTEM: CONCRETE USING ADMIXTURES TO PRODUCE FLOWABLE CONCRETE MAY BE USED SUBJECT TO ENGINEERS APPROVAL.
6. AIR ENTRAINMENT: ASTM C260 AND ASTM C494. ENTRAIN 5% PLUS/MINUS 1.12% BY VOLUME IN ALL EXPOSED CONCRETE.
7. NO OTHER ADMIXTURE PERMITTED UNLESS APPROVED BY THE ENGINEER OF RECORD.
8. THE FLATNESS AND LEVELNESS OF CONCRETE FLOORS SHALL BE MEASURED PER ASTM E 1186 STANDARD TEST METHOD FOR DETERMINING FLOOR FLATNESS AND LEVELNESS USING THE F-NUMBER SYSTEM.
SPECIFIED OVERALL F-NUMBER FF 25/FI 20
MINIMUM LOCAL F-NUMBER FF 15/FL 12
9. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER PRIOR TO COMMENCING WORK.
10. ALL CONCRETE WORK SHALL BE PLACED, CURED, STRIPPED, AND PROTECTED AS DIRECTED BY THE SPECIFICATIONS AND ACI STANDARDS AND PRACTICES.
11. DAMP PROOFING WILL NOT BE REQUIRED ON THE FOUNDATION WALLS.
12. DOWEL VERTICAL BARS THE DEVELOPMENT LENGTH INTO STRUCTURE ABOVE AND FOOTINGS BELOW. PROVIDE 90 DEGREE HOOK WHERE DEVELOPMENT LENGTH IS NOT POSSIBLE. LAP ALL REIN. IN CONCRETE THE LISTED LENGTH U.O.D.
13. BEFORE CONCRETE IS Poured CHECK WITH ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDURTS, BOLTS, INSERTS, ETC. RELATIVE TO WORK.
14. ADD 3/4" BARS MINIMUM AROUND ALL OPENINGS (UNLESS OTHERWISE NOTED) AND EXTEND 24" BEYOND CORNER OF OPENING.
15. REFER TO DRAWINGS FOR TYPICAL CONSTRUCTION JOINT DETAILS.
16. WHERE EXTERIOR SLABS ON GRADE ABUT FOUNDATIONS OR COLUMNS PROVIDE 3/4" PREFORMED EXPANSION JOINT WITH SEALANT.
17. CONTRACTOR SHALL SUBMIT A PLACEMENT PLAN FOR REVIEW INCLUDING ALL ITEMS EMBEDDED IN CONCRETE AND ALL CONCRETE PENETRATIONS.

FOOTINGS

1. EXTERIOR WALL FOOTINGS SHALL BEAR AT A MINIMUM DEPTH OF 30" BELOW FINISHED EXTERIOR GRADE.
2. NO GEOTECHNICAL REPORT HAS BEEN PREPARED. PLACE FOUNDATION ON NATIVE UNDISTURBED COMPETENT MATERIAL.
3. NO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.
4. ANY SOIL CONDITION ENCOUNTERED DURING EXCAVATION THAT IS CONTRARY TO THE CONDITIONS DESCRIBED ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.
5. WHERE 8" DIAMETER OR LARGER PIPE PASSES THROUGH AN INTERIOR OR EXTERIOR FOUNDATION WALL, STEP THE FOOTING DOWN TO PASS BELOW PIPE AND THEN STEP BACK UP TO INDICATED ELEVATION. PROVIDE PIPE SLEEVE THROUGH FOUNDATION WALL, PLACE BOTTOM OF PIPE SLEEVE 12" ABOVE TOP OF FOOTING.
6. COMPACT DISTURBED SOIL UNDER FOOTINGS TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY (MODIFIED PROCTOR) ASTM D1557.

FORM WORK

1. FOLLOW RECOMMENDED PRACTICE FOR CONCRETE FORMWORK (ACI-347-14).
2. ALL SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FORMWORK SUPPORTS AND BRACING SHALL BE DESIGNED TO PROVIDE FINISHED CONCRETE SURFACES OF ALL FACES LEVEL, PLUMB, AND TRUE TO THE DIMENSIONS AND ELEVATIONS SHOWN. TOLERANCES AND VARIATIONS SHALL BE AS SPECIFIED.

REINFORCING STEEL

1. ALL REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH SP-806(4): ACI DETAILING MANUAL - 2004.
2. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A106A.
3. ALL REINFORCEMENT SHALL BE SECURELY TIED AND HELD IN PLACE.
4. REINFORCING BARS THAT ARE TO BE WELDED, INCLUDING DEFORMED BAR ANCHORS (D.B.A.) SHALL COMPLY WITH ASTM A706 OR ANOTHER APPROVED WELDABLE GRADE AND SHALL BE WELDED IN ACCORDANCE WITH THE A.W.S. RECOMMENDATIONS.
5. ALL CONTINUOUS REINFORCEMENT SHALL TERMINATE WITH A 90 DEG. TURN OR A SEPARATE CORNER BAR. ALL SPLICES IN CONCRETE SHALL LAP THE LISTED LAP LENGTH.
6. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
B. ALL OTHER CONCRETE: 2"
7. PRIOR TO FABRICATION AND PLACEMENT, SHOP DRAWINGS FOR ALL REINFORCING STEEL SHALL BE REVIEWED BY THE ENGINEER.
8. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK. REFER TO STANDARD CONCRETE HOOK DETAILS.
9. ALL WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PLASTERS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS.

MASONRY

1. ALL MASONRY SHALL BE REINFORCED WITH BOTH HORIZONTAL AND VERTICAL REINFORCEMENT. ALL BLOCK CELLS WITH REINFORCEMENT SHALL BE GROUTED FULL USING 2000 PSI GROUT. CELLS SHALL BE ALIGNED TO PRESERVE UNOBTURATED VERTICAL CAVITIES OF 2" x 3" MINIMUM.
2. GROUT FOR BLOCK FILL SHALL HAVE 3/8 INCH MAXIMUM SIZE COURSE AGGREGATE AND SUFFICIENT WATER SO THE CONCRETE WILL FLOW INTO THE BLOCK CELLS WITHOUT LEAVING Voids. WHERE BEAMS BEAR ON CONCRETE BLOCK WALLS, BLOCK CELLS SHALL BE FILLED WITH CONCRETE 1" WIDE TO FOUNDATION AND REINFORCED WITH A #6 BAR AT EACH CELL, UNLESS OTHERWISE SHOWN.
3. ADDITIONAL VERTICAL BARS (MATCHING WALL REINFORCEMENT) SHALL BE PLACED AT EACH CORNER, END OF WALL, EACH SIDE OF JOINTS AND JAMB OF ALL OPENINGS.
4. ALL STEEL BEAM POCKETS IN MASONRY SHALL BE GROUTED SOLID UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
5. HORIZONTAL BARS SHALL BE PLACED IN BOND BEAMS FILLED WITH GROUT AT THE TOP OF ALL WALLS AND AT 48" O.C. MAXIMUM BETWEEN TOP OF WALL AND FOUNDATION. ALL HORIZONTAL REINFORCING SHALL TERMINATE WITH A STANDARD 180 DEGREE HOOK AROUND VERTICAL REINFORCING. BOND BEAM UNITS AND REINFORCING SHALL CONTINUE UNINTERRUPTED AROUND ALL CORNERS AND WALL INTERSECTIONS. WHERE STRUCTURAL STEEL COLUMNS OR BEAMS INTERRUPT THE CONTINUITY OF A BOND BEAM, DOWELS MATCHING BOND BEAM REINFORCEMENT SHALL BE WELDED TO THE STRUCTURAL STEEL TO PROVIDE CONTINUITY.
6. ALL VERTICAL REINFORCING BARS SHALL BE DOWELED TO STRUCTURE BELOW WITH BARS OF SAME SIZE AND SPACING. LAP ALL SPLICES IN MASONRY PER REBAR SCHEDULE. PLACE ALL BARS SECURELY PRIOR TO GROUTING.
7. MASONRY REINFORCEMENT: THE MINIMUM REINFORCEMENT FOR ALL MASONRY WALLS SHALL BE AS FOLLOWS:
8 IN. WALLS: #5 @ 32 IN. O.C. IN VERTICAL GROUDED CELLS
& (2) #4 @ 48 IN. O.C. IN BLOCK UNIT HORIZONTALLY GROUDED.
8. CONCRETE MASONRY UNITS SHALL BE LIGHT WEIGHT UNITS CONFORMING TO ASTM C90 AND SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2000 PSI (F_m = 2000 PSI) ON THE NET SECTION.
9. MORTAR SHALL BE TYPE "S", CONFORM TO A.S.T.M. C270, AND SHALL HAVE THE FOLLOWING PROPORTIONS BY VOLUMES:
PORTLAND CEMENT 1 PART
HYDRATED LIME 1/4 - 1/2 PART DAMP
DAMP, LOOSE AGGREGATE 1/4 - 1/2 PART DAMP & NOT MORE THAN (3) TIMES THE SUM OF CEMENT AND LIME USED.
10. STOP GROUT POURS 1/2" BELOW TOP OF BLOCK UNITS.
11. ALL ANCHOR BOLTS MUST BE PLACED IN GROUDED CELLS.
12. NO MASONRY SHALL BE LAID WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 40 DEG. F. UNLESS APPROVED METHODS ARE USED DURING CONSTRUCTION TO PREVENT DAMAGE TO THE MASONRY. SUCH METHODS SHALL INCLUDE PROTECTION OF THE MASONRY FOR A PERIOD OF AT LEAST 48 HOURS.
13. ALL REINFORCING SHALL BE IN PLACE PRIOR TO GROUTING. VERTICAL REINFORCING BARS SHALL BE HELD IN POSITION AT THE TOP, BOTTOM AND AT INTERVALS NOT FARTHER APART THAN 200 BAR DIAMETERS. PROVIDE WIRE TIES AT ALL LAP SPLICES.

WOOD FRAMING

1. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILS, ADDITIONAL NOTES AND SCHEDULES PERTAINING TO PLYWOOD ROOF.
2. STRUCTURAL FRAMING LUMBER SHALL BE CLEARLY MARKED AND MEET THE FOLLOWING MINIMUM GRADES AS DEFINED BY THE 2018 EDITION OF THE NATIONAL DESIGN SPECIFICATION:
A. 2" TO 4" THICK
5" AND WIDER: DOUGLAS FIR-LARCH GRADE NO.2
1. ALL NAILS SPECIFIED ON DETAILS OR SCHEDULED SHALL BE COMMON STEEL WIRE NAILS (COATED) UNLESS NOTED OTHERWISE AND SHALL COMPLY WITH REQUIREMENTS OF ASTM F 1607 AND IBC SECTION 2303.1

NAIL SIZE	SHANK DIAMETER	MIN. PENETRATION INTO SUPPORTED MEMBER
6d	0.113"	1.25"
8d	0.131"	1.50"
10d	0.148"	1.87"
12d	0.162"	1.87"

2. HOLES FOR NAILS, WHERE NECESSARY TO PREVENT SPLITTING, SHALL BE BORED OF A DIAMETER SMALLER THAN THAT OF THE NAILS.
3. ALL JOISTS AND BEAM HANGERS, FRAMING ANCHORS, STRAP TIES, AND OTHER METAL FASTENERS FOR WOOD FRAMING SHALL BE SIMPSON BRAND (OR EQUIV.).
4. UNLESS NOTED OTHERWISE, ANCHOR ALL TRUSSES, RAFTERS AND JOISTS TO SUPPORTS WITH GALVANIZED FRAMING ANCHORS.
5. UNLESS NOTED OTHERWISE, PROVIDE 2x CONTINUOUS BLOCKING BETWEEN MAIN MEMBERS AT ALL RIDGES, HIPS AND VALLEYS.
6. NAILING AND CONNECTION SHALL BE IN CONFORMANCE W/ IBC AND ATCC. REFER TO IBC 2018, TABLE 2304.10.1 FOR FASTENING SCHEDULE.
7. ALL BOLTS FOR STRUCTURAL WOOD CONNECTIONS SHALL BE ASTM A307 BOLTS.
8. P.T. LUMBER SHALL BE IN CONFORMANCE WITH IBC SECTION 2303.1.9
9. NAILS IN CONTACT WITH P.T. LUMBER SHALL BE STAINLESS STEEL.
10. WOOD SHEATHING SHALL MEET THE RATING REQUIREMENTS OF THE APA FOR EXPOSURE 1 AND SHALL CONFORM TO THE REQUIREMENTS FOR ITS TYPE IN USDOC PC1 OR USDOC PS2. THE PANELS MUST BE IDENTIFIED BY THE TRADEMARKS OF THE APPROVING TESTING AND INSPECTION AGENCY. WOOD SHEATHING SPAN RATINGS FOR THE CORRESPONDING THICKNESS ARE LISTED BELOW. SEE NOTES AND SCHEDULES FOR SHEATHING THICKNESS REQUIREMENTS.
7/16" THICK - 24/16 SPAN RATING
15/32" THICK - 32/16 SPAN RATING
19/32" THICK - 40/16 SPAN RATING
23/32" THICK - 48/16 SPAN RATING

PLYWOOD DIAPHRAGM FASTENERS

1. SUBSTITUTION OF FASTENERS OTHER THAN THOSE SPECIFIED IN THE STRUCTURAL NOTES OR THE PLYWOOD DIAPHRAGM SCHEDULE IS NOT ALLOWED.
2. NAILS SHALL BE PLACED NOT LESS THAN 3/8" FROM THE EDGE OF PLYWOOD PANELS. STAGGER NAILS EACH SIDE OF PANEL EDGE.
3. AT ROOF DIAPHRAGM, APPLY NAILS AT PANEL EDGE SPACING TO ALL BLOCKING OVER WALLS, AND ANY OTHER SPECIAL DIAPHRAGM MEMBERS NOTED ON PLANS.
4. AT PLYWOOD SHEAR WALLS, APPLY NAILS AT PANEL EDGE SPACING TO TOP AND BOTTOM PLATES, END POSTS, ALL VERTICAL ELEMENTS AT HOLD DOWN ANCHORS, AND HORIZONTAL BLOCKING.
5. ALL PANEL EDGES OF PLYWOOD SHEAR WALLS MUST BE BLOCKED WITH 2x4 MIN.
6. NAILS SHALL BE COATED AND SHALL COMPLY WITH THE REQUIREMENTS OF ASTM F 1607 N/CMS AND IBC SECTION 2303.6.

SHOP DRAWINGS

- SUBMIT SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR THE FOLLOWING:
1. REINFORCING STEEL FOR MASONRY AND CONCRETE.
 2. PRE-MANUFACTURED WOOD TRUSSES w/ DESIGN CALCULATIONS AND DRAWINGS STAMPED BY A LICENSED PROFESSIONAL ENGINEER.
 3. STEEL ANGLE WALL ANCHORS.

NO.	REVISIONS	BY	DATE

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ATTENTION
LINE IS 1-INCH
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520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORSGREN
Associates Inc.
95 WEST 120 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.9333 FAX: 435.227.9334



LOWER WELL IMPROVEMENT PROJECT
GENERAL NOTES AND SPECIFICATIONS

PROJECT NO:	014-13-0004-028
SHEET ID:	S-001
DATE:	5-2022
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QUALITY ASSURANCE PLAN

- SPECIAL INSPECTION SHALL BE PROVIDED ACCORDING TO IBC CHAPTER 17 FOR THE ITEMS IDENTIFIED IN THIS SECTION AND ON THE CONTRACT DOCUMENTS.
- THE NAMES AND CREDENTIALS OF SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT WHEN APPLYING FOR A BUILDING PERMIT.
- SPECIAL INSPECTION REPORTS SHALL BE DELIVERED TO THE OWNER IMMEDIATELY OR MORE FREQUENTLY AS REQUIRED BY THE INSPECTOR OR BUILDING OFFICIAL.
- OFF-SITE FABRICATION: WHERE FABRICATION OF STRUCTURAL, LOAD-BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR (SHOP), SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE IN ACCORDANCE WITH IBC SECTION 1704.2.8 UNLESS THE FABRICATOR IS APPROVED ACCORDING TO IBC SECTION 1704.2.1.
- CONCRETE CONSTRUCTION: SPECIAL INSPECTIONS AND VERIFICATIONS SHALL BE PROVIDED IN ACCORDANCE WITH TABLE 1705.3.
- MASONRY CONSTRUCTION: LEVEL 3 SPECIAL INSPECTION SHALL BE PROVIDED FOR MASONRY CONSTRUCTION IN ACCORDANCE WITH SECTION 1705.8 TABLES 3 & 4.
- SOILS: SPECIAL INSPECTION SHALL BE PROVIDED FOR PLACEMENT OF FILL 12 INCHES OR MORE DEEP IN ACCORDANCE WITH SECTION 1704.6.
- ADHESIVE ANCHORS: PRIOR TO AND DURING ADHESIVE INJECTION TO INSURE PROPER INSTALLATION AS PER MANUFACTURERS REQUIREMENTS, CONTRACTOR SHALL SUBMIT PREPARED ADHESIVE MANUFACTURERS EVALUATION REPORT TO ENGINEER PRIOR TO INSTALLATION.

QUALITY ASSURANCE CONTRACTOR RESPONSIBILITY

- EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A SEISMIC FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR COMPONENT LISTED IN THE QUALITY ASSURANCE PLAN SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND TO THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT IN ACCORDANCE WITH IBC SECTION 1704.4. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:
- ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE QUALITY ASSURANCE PLAN.
 - ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
 - PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
 - IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL, AND THE POSITION(S) IN THE ORGANIZATION.

STRUCTURAL OBSERVATIONS

- STRUCTURAL OBSERVATION SHALL BE PROVIDED BY A REGISTERED DESIGN PROFESSIONAL AT THE COMPLETION OF CRITICAL STRUCTURAL COMPONENTS AS DESCRIBED BELOW.
- PRIOR TO THE COMMENCEMENT OF OBSERVATIONS THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT IDENTIFYING THE FREQUENCY AND EXTENT OF STRUCTURAL OBSERVATIONS.
- AT THE CONCLUSION OF THE WORK THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
- STRUCTURAL OBSERVATION REPORTS SHALL BE PROVIDED TO THE ARCHITECT, STRUCTURAL ENGINEER OF RECORD AND, WHERE REQUIRED, THE BUILDING OFFICIAL.
- PROVIDE STRUCTURAL OBSERVATION AT THE FOLLOWING CONSTRUCTION STAGES:
 - FOOTING REINFORCING, RETAINING WALL REINFORCING, MASONRY WALL REINFORCING, WOOD SHEAR WALLS, WOOD ROOF DIAPHRAGMS, AND STEEL ANGLE WALL ANCHORS.

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS		REFERENCE STANDARD	IBC REFERENCE
	DURING	PERIODIC		
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 30, 28.2, 28.3, 28.4-28.8.3	1908.4
2. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318 17.8.2	-
3. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	-	X	ACI 318 17.8.2.4	-
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	-	ACI 318 17.8.2.4	-
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 3.a.	-	X	ACI 318 17.8.2	-
4. VERIFYING USE OF REQUIRED DESIGN MK.	-	X	ACI 318: CH. 10, 28.4.3, 28.4.4	1904.1, 1904.2, 1908.2, 1908.3
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C173, ASTM C31, ACI 318: 28.4, 28.12	1908.10
6. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 28.5	1908.6, 1908.7, 1908.8
7. VERIFY MAINTENANCE OF SPOCCED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 28.3.3-28.5.5	1908.9
8. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 28.11.1, 28.12	-

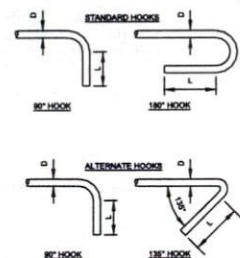
TABLE 1705.8 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

VERIFICATION AND INSPECTION	CONTINUOUS DURING TASK LISTED		PERIODICALLY DURING TASK LISTED
	DURING	PERIODICALLY	
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS.	-	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	-	X

BAR SIZE (D)	STANDARD		ALTERNATE		MIN. BEND DIAMETER
	90°	180°	90°	135°	
#3	4 1/2"	2 1/2"	2 1/4"	2 1/4"	2 1/4"
#4	6"	2 1/2"	3"	3"	3"
#5	7 1/2"	3 1/2"	3 3/4"	3 3/4"	3 3/4"
#6	9"	3"	4 1/2"	4 1/2"	4 1/2"
#7	10 1/2"	3 1/2"	5 1/4"	5 1/4"	5 1/4"
#8	12"	4"	6"	6"	6"

BAR SIZE	#3	#4	#5	#6
SINGLE MAT	18"	24"	30"	36"

- NOTE:
- For #1000 PSL, $f_y=80,000$ PSL.
 - DOUBLE MAT REBAR SHALL HAVE 2" CLEARANCE BETWEEN FACE OF WALL & EDGE OF VERT. BAR.



- NOTE:
- STANDARD HOOKS SHALL BE AROUND A PERPENDICULAR BAR, U.L.O. ON DRAWINGS.
 - ALT. HOOKS ARE ONLY ALLOWED FOR MASONRY COLUMN TIES AND BEAM STRUPLIPS.
 - COLUMN TIES SHALL BE 180° STANDARD OR 135° ALTERNATE HOOK.
 - BEND DIAMETER IS MEASURED FROM INSIDE FACE OF REINFORCING.

TMS 402/602-16, TABLE 3 - MINIMUM VERIFICATION REQUIREMENTS

VERIFICATION AND INSPECTION	REQUIRED FOR QUALITY ASSURANCE			REFERENCE FOR CRITERIA
	LEVEL 1	LEVEL 2	LEVEL 3	
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS.	NR	R	R	TMS 802
PRIOR TO CONSTRUCTION, VERIFICATION OF f_m AND $f_{m,c}$ EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE.	NR	R	R	ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE.	NR	NR	R	ART. 1.5 & 1.3
PRIOR TO CONSTRUCTION, VERIFICATION OF f_m AND $f_{m,c}$ FOR EVERY 5000 SQ.	NR	NR	R	ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF PROPORTIONS OF MATERIALS AS DELIVERED TO THE PROJECT SITE FOR PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT.	NR	NR	R	ART. 1.4 B

TMS 402/602-16, TABLE 4 - MINIMUM SPECIAL INSPECTIONS REQUIREMENTS

INSPECTION TASK	FREQUENCY ⁽¹⁾			REFERENCE FOR CRITERIA	
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 402	TMS 802
1. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. PROPORTIONS OF SITE-PREPARED MORTAR.	NR	P	P	-	ART. 2.1, 2.6 A, & 2.6 C
B. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES.	NR	P	P	-	ART. 2.4 B, 2.4 H
C. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES.	NR	P	P	-	ART. 3.4, 3.6 A
D. PRESTRESSING TECHNIQUE.	NR	P	P	-	ART. 3.8 B
E. PROPERTIES OF THINBED MORTAR FOR AAC MASONRY.	NR	C	P	C	ART. 2.1 C.1
F. SAMPLE PANEL CONSTRUCTION.	NR	P	C	-	ART. 1.8 D
2. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. GROUT SPACE.	NR	P	C	-	ART. 3.2 D, 3.2 F
B. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES.	NR	P	P	-	SEC. 10.8 & 10.9
C. PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHOR BOLTS.	NR	P	C	-	SEC. 8.1, 8.3.1, 8.3.6, 8.3.7
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDING TENDONS.	NR	P	P	-	ART. 2.8 B, 2.8 D, 2.8 F
3. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:					
A. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS.	NR	P	P	-	ART. 1.5
B. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION.	NR	P	P	-	ART. 3.3 B
C. SIZE AND LOCATION OF STRUCTURAL MEMBERS.	NR	P	P	-	ART. 3.3 F
D. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	NR	P	P	-	SEC. 12.790, 8.2.1, 8.3.1
E. WELDING OF REINFORCEMENT.	NR	C	C	-	SEC. 8.1 & 8.1.2
F. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (80°F).	NR	P	P	-	ART. 1.8 C, 1.8 D
G. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	NR	C	C	-	ART. 3.8 B
H. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDING TENDONS IS IN COMPLIANCE.	NR	C	C	-	ART. 1.3, 3.6 C
I. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THINBED MORTAR JOINTS.	NR	C	P	C	ART. 3.3 B.5, 3.3 F.1.3
4. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, ANCHOR PRESS.	NR	P	C	-	ART. 1.8 B.2.A, 1.8 B.2.B, 1.8 B.2.C, 1.8 B.2.D, 1.8 B.4

- (1) FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE LISTED TASK OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE.
- (2) REQUIRED FOR THE FIRST 8000 SQUARE FEET OF AAC MASONRY.
- (3) REQUIRED AFTER THE FIRST 8000 SQUARE FEET OF AAC MASONRY.

DRAWN	ZH
DESIGNED	ZH
APPROVED	BM
QA	KD

NO. 177028	5/31/2022
BENJAMIN M. MALIKHANI M.	



ATTENTION
LINE IS 1-INCH
AT 1/16" SCALE
IF NOT 1-INCH
SCALE DRAWING ACCORDINGLY



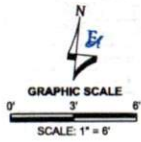
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520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORSGREN Associates Inc.
95 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.9333 FAX: 435.227.9334



LOWER WELL IMPROVEMENT PROJECT
GENERAL NOTES AND SPECIFICATIONS

PROJECT NO:	014-13-0004-028
SHEET ID:	S-002
DATE:	5-2022
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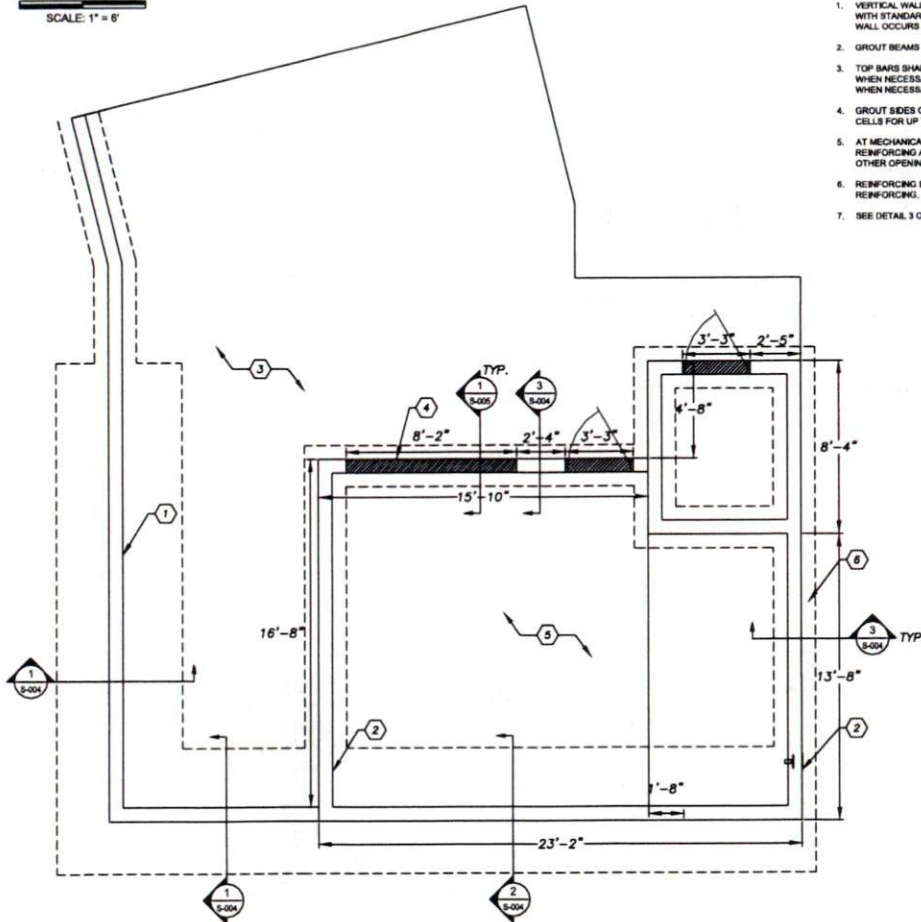
MASONRY BEAM SCHEDULE						
MARK	WIDTH	DEPTH	COVER	REINFORCEMENT		NOTES
				HORIZONTAL	VERTICAL	
MB-1	WALL	24"	2"	(2) #4	-	REINFORCING TOP AND BOTTOM

MASONRY BEAM SCHEDULE NOTES:

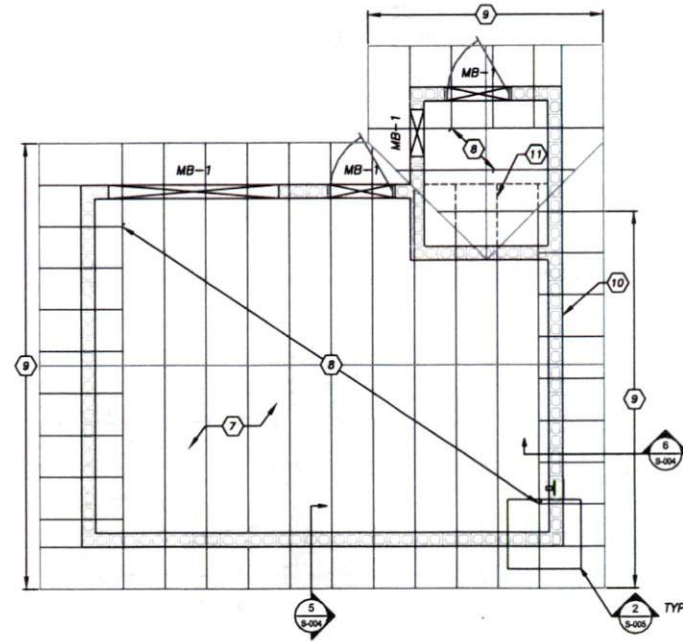
- VERTICAL WALL REINFORCEMENT (SIZE AND SPACING) SHALL BE USED IN MASONRY BEAMS, U.N.O. VERTICAL REINF. ENDS WITH STANDARD HOOK AND LAP WITH VERTICAL REINF. ABOVE BEAM. PROVIDE STANDARD HOOK AT TOP ALSO WHERE NO WALL OCCURS ABOVE BEAM.
- GROUT BEAMS SOLID FOR DEPTH SHOWN IN BEAM SCHEDULE PLUS AS PER DETAILS AND STRUCTURAL NOTES.
- TOP BARS SHALL EXTEND THE GREATER OF 24 INCHES OR 48 BAR DIAMETERS BEYOND FACE OF SUPPORTS AND BE SPLICED WHEN NECESSARY AT MIDSPAN. BOTTOM BARS SHALL EXTEND 24 INCHES INTO SUPPORTS AND BE SPLICED OVER SUPPORTS, WHEN NECESSARY.
- GROUT SIDES OF OPENINGS, SOLID 1/2" OF OPENING WIDTH, MINIMUM ONE 8" CELL FOR OPENINGS UP TO 8'-0" SPAN, 2 CELLS FOR UP TO 16'-0" SPAN, ETC.
- AT MECHANICAL OPENINGS, UNLESS SHOWN OTHERWISE IN WALLS, USE MASONRY BEAMS OF SIMILAR SIZE AND REINFORCING AS SHOWN IN THOSE WALLS FOR EQUIVALENT WIDTH OPENINGS. NO MECHANICAL, ELECTRICAL, PLUMBING OR OTHER OPENINGS SHALL BE PLACED IN WALLS BELOW STEEL, OR MASONRY BEAM BEARING.
- REINFORCING INDICATED IN BEAM SCHEDULE IS IN ADDITION TO SCHEDULED WALL HORIZONTAL AND VERTICAL REINFORCING.
- SEE DETAIL 3 ON SHEET S-065, FOR BEAM CONSTRUCTION AND REINFORCEMENT PLACEMENT.

KEY NOTES:

- PROVIDE FOUNDATION STEP AS NECESSARY. FOOTING STEPS ARE REQUIRED TO PROVIDE ADEQUATE FROST DEPTH FOR THE FOOTINGS. CONTRACTOR SHALL COORDINATE FOOTING DEPTHS AND STEP LOCATIONS TO MAINTAIN FROST DEPTH FOR THE FOOTINGS. STEP LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY AND SHOULD NOT BE CONSTRUCTED OTHERWISE. SEE DETAIL 4 ON S-004, 2'-0" MAX STEP ALLOWED.
- APPROXIMATE LOCATION OF FOUNDATION STEP. SEE DETAIL 4 ON S-004.
- IF EXTERIOR UNREINFORCED CONCRETE SLAB ON GRADE, PROVIDE CONTRACTION JOINTS AT 10' O.C. MAX.
- DEPRESS TOP OF WALL (HATCHED) AT OPENINGS 8" MIN. TYPICAL.
- INTERIOR 8" CONCRETE SLAB ON GRADE w/ #4 BARS @ 18" O.C. EACH WAY. ADHESIVE ANCHOR REINFORCING TO WALL.
- 2'-0" X 12" CONTINUOUS FOOTING w/ (3) #4 LONGITUDINAL BARS EVENLY SPACED IN FOOTING WHERE WALL ABOVE FOOTING IS NOT RETAINING SOIL. WHERE WALL IS RETAINING SOIL, SEE DETAILS FOR FOOTING INFO.
- PROVIDE 15/32" THICK SHEATHING AT ROOF DIAPHRAGM w/ 10 # NAILS AT 8" O.C. AT PANEL EDGES AND INTERMEDIATE SUPPORTS. PROVIDE PSCA SIMPSON PANEL SHEATHING CLIP AT UNSUPPORTED PANEL EDGES.
- PREFABRICATED TRUSSES @ 7'-0" O.C. TO BE ENGINEERED BY MANUFACTURER FOR 40-PSF SNOW LOAD (TYPICAL) SUBMIT TO THE E.O.R. DESIGN CALCULATIONS AND DRAWINGS STAMPED BY A UTAH REGISTERED ENGINEER.
- 2X8 OUTRIGGERS @ 24" O.C.
- IF MASONRY WALL, TYP. w/ (2) #4 HORIZONTAL BARS @ 48" O.C. AND (1) #5 VERTICAL BAR @ 32" O.C. PROVIDE (1) #5 VERTICAL BAR IN OPENING JAMBS FULL HEIGHT OF WALL, PROVIDE (2) #4 HORIZONTAL BARS AT TOP OF WALL.
- EXTEND TRUSS ENDS FOR OVERBUILD BEARING.



STRUCTURAL - FOOTING AND FOUNDATION 1
SCALE 1" = 6'



STRUCTURAL - ROOF PLAN 2
SCALE 1" = 6'

NO.	REVISIONS	BY	DATE

DRAWN	ZH
DESIGNED	ZH
APPROVED	BM
QA	KD



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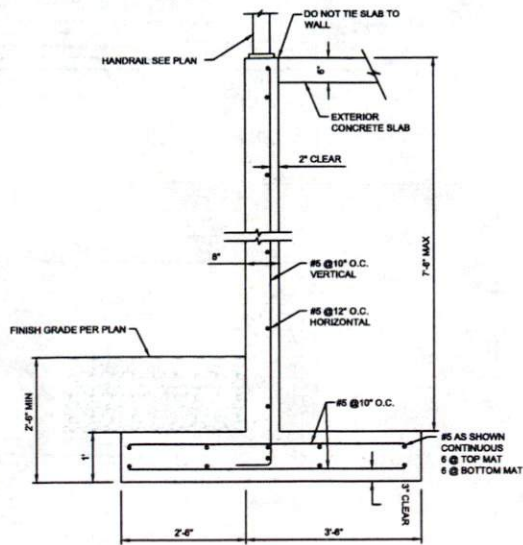
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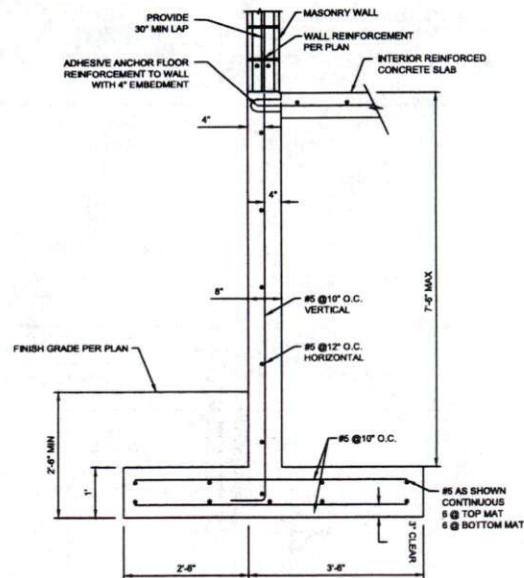


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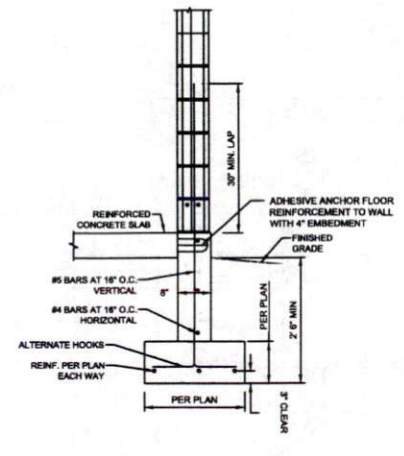
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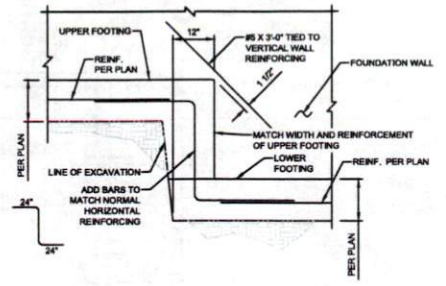
CANTILEVERED WALL
NO SCALE 1



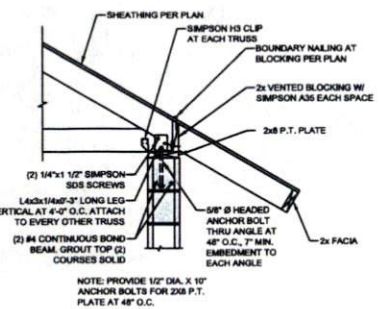
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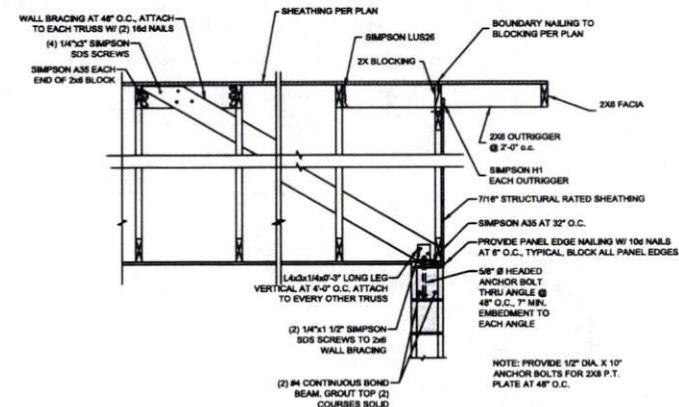
TYPICAL FOUNDATION
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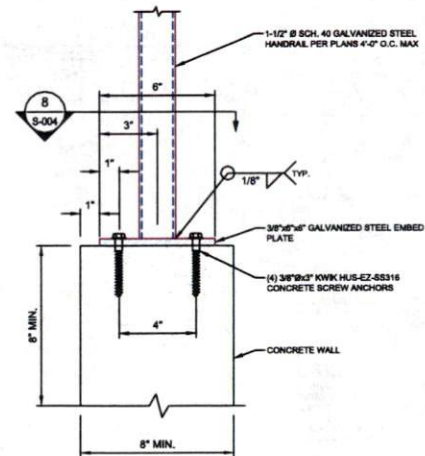
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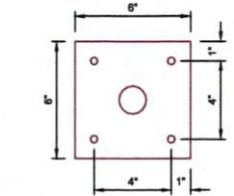
ROOF DETAIL
NO SCALE 5



ROOF DETAIL
NO SCALE 6



HAND RAIL EMBED
NO SCALE 7



3/8\"/>

NO.	REVISIONS	BY	DATE

DRAWN	ZH
DESIGNED	ZH
APPROVED	BM
QA	KD



ATTENTION
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AT 1/16\"/>



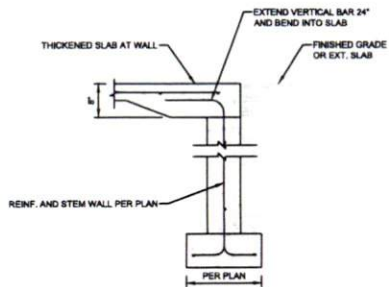
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520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORS GREN Associates Inc.
85 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.237.9339 FAX: 435.237.9334



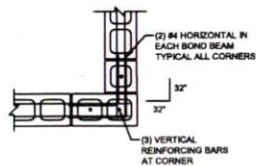
LOWER WELL IMPROVEMENT PROJECT
STRUCTURAL - DETAILS

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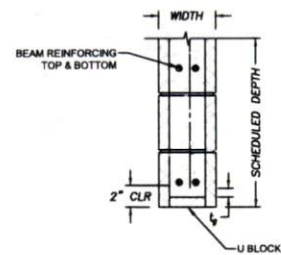
SLAB TO WALL DETAIL
NO SCALE

1



MASONRY CORNER DETAIL
NO SCALE

2



MASONRY BEAM DETAIL
NO SCALE

3

NO.	REVISIONS	BY	DATE

DRAWN ZH
DESIGNED ZH
APPROVED BM
QA KD



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AT 11X17 SIZE
IF NOT 1-INCH
SCALE DRAWING ACCORDINGLY



CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UTAH 84321

FORSYDEN
Associates, Inc.
95 WEST 180 SOUTH, STE. 115, LOGAN, UT 84321
PH 435.227.9333 FAX 435.227.9334



LOWER WELL IMPROVEMENT PROJECT

STRUCTURAL - DETAILS

PROJECT NO:
014-13-0004-028
SHEET ID:
S-005
DATE: 5-2022 PAGE NO:
17

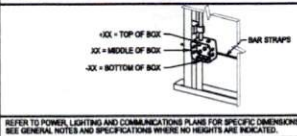
GENERAL PROJECT NOTES

- ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST NEC AND LOCAL CODES.
- ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDENT AND ANY OTHER TRACERS AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE DRAWINGS. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
- ELECTRICAL CONTRACTOR'S PROJECT MANUAL AND ON-SITE PROJECT MANUAL SHALL REVIEW VENDOR SUBMITTALS FOR ACCURACY PRIOR TO SUBMITTING TO ENGINEER. INACCURACIES SHALL BE CORRECTED PRIOR TO ENGINEER SUBMITTAL.
- SUBMITTALS FOR EACH SYSTEM WILL BE REVIEWED BY ENGINEER UP TO TWO TIMES-ONE FULL SUBMITTAL FOR OVERALL COMPLIANCE AND ONE RESUBMITTAL. ADDITIONAL REVIEWS WILL BE CHARGED TO CONTRACTOR AT ENGINEER'S STANDARD BILLING RATE.
- SUBMITTALS TO ENGINEER SHALL INCLUDE ALL SPECIFIED SYSTEMS IN FIRST SUBMITTAL. PARTIAL SUBMITTALS WILL BE RETURNED TO CONTRACTOR AS INCOMPLETE AND WILL BE CONSIDERED ONE OF TWO INCLUDED SUBMITTAL REVIEWS.
- THE CLARITY OF RECORD DRAWING CHANGES MADE BY THE CONTRACTOR SHALL BE EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ARCHITECT OR THE RECORD SET WILL BE RETURNED TO THE CONTRACTOR FOR CLARIFICATION.
- WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "AS-BUILT" READY-AUTOLOG ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR GUIDES OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE CHANGES ON CD IN AUTOCAD FORMAT.
- DO NOT SCALE ELECTRICAL FLOOR AND PLANS. SEE CIVIL DRAWINGS FOR ACCURATE DIMENSIONS AND FLOOR PLANS. ELECTRICAL DEVICES CANNOT BE SHOWN TO SCALE AND SOMETIMES OVERLAP BUILDING AND SITE ELEMENTS. REFER TO CIVIL SECTIONS FOR ACCURATE HEADING LOCATIONS.
- ELECTRICAL CONTRACTOR SHALL CONTACT POWER COMPANY WITHIN THE FIRST WEEK OF THE START OF CONSTRUCTION AND NOTIFY THEM OF THE PROBABLE DATE WHEN THE NEW ELECTRICAL SERVICE CONNECTION WILL BE NEEDED.
- CONTRACTOR SHALL LOCATE AND INSTALL TRANSFORMER PAD PER POWER COMPANY SPECIFICATIONS. VERIFY PROPER CLEARANCES FROM BUILDING AND OTHER EQUIPMENT BEFORE INSTALLATION. THE LOCATION OF THE TRANSFORMER SHOWN ON THE PLANS IS AN APPROXIMATE LOCATION.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL PANEL CLEARANCES PER NEC 110.26 AND NOTIFY ALL OTHER TRADES ON THE JOB OF THESE CODE REQUIREMENTS.
- PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING INFORMATION ON LIGHTS AND OUTLETS. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPENITTED.
- CONDUITS ENTERING MAIN PANEL FROM THE BOTTOM SHALL BE ARRANGED IN STRAIGHT ROWS FASTENED TO UNISTRUT. HOLES SHALL BE PUNCHED IN PANEL BOTTOM AND CONDUITS FASTENED BY TWO LOCKWASLS AND A CONDUIT BUSHING. CUTTING OUT THE BOTTOM OF THE PANEL IS NOT PERMITTED.
- MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16" TO BOTTOM AND 48" TO TOP RESPECTIVELY UNLESS OTHERWISE NOTED.
- DO NOT INSTALL INRANGE JUNCTION BOXES UNLESS SPECIFICALLY SHOWN ON DRAWINGS. CONDUCTORS SHALL BE RUN CONTINUOUS WITHOUT SPINDLING FROM SOURCE OR DEVICE TO NEXT DEVICE.
- CIRCUIT WIRE SIZES MUST MATCH BRANCH CIRCUIT BREAKERS PER NEC. VERIFY WITH PANEL SCHEDULES BEFORE PULLING WIRE.
- PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR, PULLED INTO THE CONDUIT WITH THE PHASE CONDUCTOR, IN ALL SERVICE FEEDER, AND BRANCH CIRCUITS.
- PROVIDE A NEUTRAL CONDUCTOR FOR EACH BREAKER TRIP HANDLE. NEUTRALS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS.
- ALL CIRCUITS TO BE MINIMUM #12 CU IN MINIMUM 3/4" RIGID CONDUIT UNLESS OTHERWISE NOTED.
- MC CABLE IS NOT AN APPROVED ALTERNATE TO CONDUCTORS IN CONDUIT.
- DO NOT INSTALL MORE THAN THREE PHASE CONDUCTORS IN ANY HOME-RUN CONDUIT UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
- A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFY" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
- ALL CONVENIENCE OUTLETS MUST BE MOUNTED FLUSH WITH THE COVER PLATE AND SECURED FIRMLY TO THE OUTLET BOX.
- FIGURE COUNTS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE TO VERIFY FIGURE COUNTS AS PART OF BIDDING PROCESS.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL SWITCH LOCATIONS WITH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION TO PREVENT ANY SWITCHES FROM BEING LOCATED ON THE WRONG SIDE OF THE DOOR.
- COORDINATE LOCATION OF LIGHT FIXTURES IN MECHANICAL ROOMS WITH MECHANICAL EQUIPMENT. DETERMINE FINAL FIXTURE LOCATIONS AFTER DUCTWORK INSTALLATION HAS BEEN COMPLETED. CHAIN SUSPEND FIXTURES UNDER DUCTWORK AND CONDUIT TRACES AS REQUIRED.
- REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL FURNISH ALL MOTOR DISCONNECTS, STARTERS, AND CONTROL STATIONS FOR MECHANICAL EQUIPMENT UNLESS THE SAME IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT. VERIFY WITH MECHANICAL CONTRACTOR PRIOR TO BID.
- PROVIDE SAFETY DISCONNECTS AS REQUIRED AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT. PROVIDE FILING AND RATINGS PER NAMEPLATE INFORMATION OF EQUIPMENT SERVED.
- DISCONNECT SWITCHES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL ELECTRICAL SWITCHES AND MOTOR CONTROL FOR PROPER CODE CLEARANCES. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS WITH OTHER TRADES REGARDING PROPER EQUIPMENT CLEARANCES.
- ALL DISCONNECT SWITCHES FOR MOTORS SHALL BE RATED A MINIMUM OF 200% AC UNLESS OTHERWISE SHOWN.
- BEFORE RUNNING CONDUITS, PLACING OUTLETS OR ORDERING EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS AND DESIGN AND SHOP DRAWINGS OF THE OTHER TRADES SERVED BY THE CONDUIT, OUTLETS, AND/OR EQUIPMENT.
- PROVIDE NEUTRAL CONNECTION TO 208V/120V SINGLE-PHASE EQUIPMENT. RUN SEPARATE GROUND WIRE TO ALL OUTDOOR UNITS AND BOND TO THE EQUIPMENT GROUND LUG.
- WHERE THERE ARE CONFLICTS IN THE DRAWINGS AND/OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID. WHERE NO NOTIFICATION IS GIVEN THE MORE STRINGENT INTERPRETATION (GENERALLY INTERPRETED TO BE THE MORE COSTLY) WILL BE ENFORCED.

ELECTRICAL LEGEND

ANNOTATIONS		POWER AND DISTRIBUTION	
	DETAIL CALL-OUT: TOP "Y" REVERSES TO DETAIL NUMBER & BOTTOM "XXX" REFERS TO SHEET NUMBER		DISTRIBUTION PANEL
	KEYED NOTE CALLOUT		PANELBOARD
	EQUIPMENT CALLOUT		METER / METER SOCKET
LIGHTING FIXTURES		ONE-LINE	
	EMERGENCY LIGHT		BREAKER: "Y" = BREAKER AMPERAGE "Q" = QUANTITY OF POLES
	BATTERY PACK		BRANCH PANEL
	EXT LIGHT: CEILING - FACES AS SHOWN		BRANCH PANEL WITH MAIN BREAKER
	EXT LIGHT: WALL - FACES AS SHOWN		BRANCH PANEL WITH SUB FEED BREAKER
	EXT LIGHT: FACE SIDE		FEEDER SIZE (REFER TO CONDUIT AND CONDUCTOR SCHEDULE UNLESS OTHERWISE NOTED)
	EXT LIGHT: DIRECTIONAL ARROWS, DOUBLE FACE		GROUND
	RECESSED FIXTURE		DIRECT METER
	STRIP LIGHT		CT METER
	LINEAR FIXTURE		TRANSFORMER
LIGHTING CONTROL			GENERATOR
	SINGLE POLE SWITCH: "Y" INDICATES SWITCH GROUP		TRANSFER SWITCH (AUTOMATIC UNLESS OTHERWISE NOTED)
	THREE WAY SWITCH		SWITCH: "Y" = SWITCH AMPERAGE, "Q" = QUANTITY OF POLES
	SWITCH KEYED		MOTOR: "hp" = MOTOR HORSEPOWER
BRANCH CIRCUITING		SITE ELECTRICAL	
	SIMPLEX OUTLET		120V --- 1-PHASE OVERHEAD PRIMARY POWER
	SIMPLEX OUTLET: GROUND FAULT INTERRUPTER		180V --- 1-PHASE OVERHEAD SECONDARY POWER
	DUPLEX OUTLET		120V --- 1-PHASE UNDERGROUND SECONDARY POWER
	DUPLEX OUTLET: GFCI PROTECTION DEVICE		180V --- 1-PHASE UNDERGROUND SECONDARY POWER
	DUPLEX OUTLET: GROUND FAULT INTERRUPTER		300V --- 3-PHASE OVERHEAD PRIMARY POWER
	DUPLEX OUTLET: WEATHERPROOF		300V --- 3-PHASE OVERHEAD SECONDARY POWER
	DUPLEX OUTLET: WEATHERPROOF-IN-USE COVER		300V --- 3-PHASE OVERHEAD SECONDARY POWER: EXISTING
	DOUBLE DUPLEX OUTLET		300V --- 3-PHASE UNDERGROUND SECONDARY POWER
	DOUBLE DUPLEX OUTLET: GROUND FAULT INTERRUPTER		OT --- OVERHEAD TELEPHONE
	SPECIAL OUTLET: SEE PANEL SCHEDULE		OTV --- OVERHEAD TV
	JUNCTION BOX		UTV --- UNDERGROUND TELEPHONE: EXISTING
	DISCONNECT: NO OVER-CURRENT PROTECTION		UTV --- UNDERGROUND TV: EXISTING
	DISCONNECT WITH OVER-CURRENT PROTECTION (CIRCUIT BREAKER STYLE OR AS SPECIFIED)		UT --- UNDERGROUND TELEPHONE
	MOTOR PROTECTIVE THERMAL SWITCH		UTV --- UNDERGROUND TV
	QUANTITY OF CONDUCTORS. SHORT LINES = PHASE SWITCH. LONG LINES = NEUTRAL.		POINT OF DISCONNECTION
	HOME-RUN		POINT OF CONNECTION
	UTILITY POLE		UTILITY POLE

GENERAL WALL-MOUNTED BOX HEIGHT DETAIL



REFER TO POWER, LIGHTING AND COMMUNICATIONS PLANS FOR SPECIFIC DIMENSIONS. SEE GENERAL NOTES AND SPECIFICATIONS WHERE NO HEIGHTS ARE INDICATED.

SHEET INDEX	
#	Sheet Title
E001	ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX
ES101	ELECTRICAL SITE PLAN
E101	ELECTRICAL PLANS
E001	ELECTRICAL ONE-LINE DIAGRAM

BID ALTERNATE TABLE	
1. BID ALTERNATE #1: PROVIDE A COMPLETE, OPERATIONAL, EMERGENCY BACK UP GENERATOR TO SUPPLY PUMP HOUSE DURING POWER OUTAGE.	
2. BID ALTERNATE #2: RE-ROUTE UTILITY LINES WHERE CONTRACTOR CAN SAFELY TRENCH THROUGH.	

SPECIFICATION 263213- ENGINE GENERATORS
 A. 2.1 MANUFACTURERS
 i. Onan/Cummins Power generation
 ii. Caterpillar: Engine Div.
 iii. Kohler Co. Generator Division
 iv. Generac: Industrial Power
 B. 2.3 Assembly Description
 i. H: Dimensions: Generator package maximum allowable dimensions
 1. 40" wide
 2. 144" long
 SPECIFICATION 263600- Transfer Switches
 A. 2.1 MANUFACTURERS
 i. Onan/Cummins Power generation
 ii. Caterpillar: Engine Div.
 iii. Kohler Co. Generator Division
 iv. Generac: Industrial Power

ELECTRICAL ABBREVIATIONS

A	AMPERE	ELEC	ELECTRICAL	MAX	MAXIMUM	SCHED	SCHEDULE
AF	AMP FUSE	ELEV	ELEVATOR	MCB	MAIN CIRCUIT BREAKER	SECT	SECTION
AFD	ABOVE FINISHED FLOOR	EMER	EMERGENCY	MCH	MECHANICAL	SP	SINGLE POLE
AFI	ABOVE FINISHED GRADE	EMT	ELECTRICAL METALLIC TUBING	MFR	MANUFACTURER	SN	SOLID NEUTRAL
ARI	ARC-FAULT CIRCUIT INTERRUPTER	ELDR	END OF LINE RESISTOR	MIN	MINIMUM	SPEC	SPECIFICATION
AC	AMPERE INTERRUPTING CAPACITY	EQUIP	EQUIPMENT	MLO	MAIN LOSS ONLY	SW	SWITCH
AL	ALUMINUM	EX, EXIST	EXISTING	MTD	MOUNTED	SWBD	SWITCH BOARD
ARCH	ARCHITECTURAL	FBO	FURNISHED BY OTHERS	NEC	NATIONAL ELECTRICAL CODE	SWGR	SWITCH GEAR
AS	AMP SWITCH	FCU	FAN COIL UNIT	NECA	NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION	SYS	SYSTEM
AWG	AMERICAN WIRE GAUGE	FF	FISHED FLOOR	NEHA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	TEMP	TEMPORARY
BLDG	BUILDING	FRT	FEATURE	NEUT	NEUTRAL	TELE	TELEPHONE
BKGD	BACKGROUND	FLEX	FLEXIBLE METALLIC CONDUIT (STEEL)	NFC	NATIONAL FIRE CODE	TWP	TWISTED PAIR
C	CONDUIT	FLUOR	FLUORESCENT	NC	NORMALLY CLOSED	TWSP	TWISTED SHIELDED PAIR
CAB	CABINET	FT	FEET OR FOOT	NC	NOT IN CONTRACT	TRFMR	TRANSFORMER
CAT	CATALOG CATEGORY	GFI	GROUND FAULT INTERRUPTER	NL	NIGHT LITE	TSTAT	THERMOSTAT
CB	CIRCUIT BREAKER	GRD	GROUND	NO	NORMALLY OPEN	TYP	TYPICAL
CBT	CIRCUIT BREAKER	HP	HORSEPOWER	NTS	NOT TO SCALE	UL	UNIFORM BUILDING CODE
CEG	CEILING	HVAC	HEATING, VENTILATING & AIR CONDITIONING	OC	OVERCURRENT PROTECTION	UB	UNDERWRITERS LABORATORY
CO	CONDUIT ONLY	IS	ISOLATED GROUND	P	POLE	UMC	UNIFORM MECHANICAL CODE
COMM	COMMUNICATION	IN	INTERMEDIATE METAL CONDUIT	PH	PHASE	V	VOLT OR VOLTAGE
CONN	CONNECTION	IN	INCHES	PL	PANEL	VA	VOLT AMPERE
CU	COPPER	IS	ISOLATED GROUND	PWR	POWER	W	WATT
DEM	DEMOLITION/DEMOLISH	JB, JBOX	JUNCTION BOX	QTY	QUANTITY	W	WITH
DISC	DISCONNECT	KCMIL	THOUSAND CIRCULAR MILS	RECP	RECEPTACLE	WG	WIRE GUARD
DN	DOWN	KV	KILOVOLT AMPERE	REQD	REQUIRED	W	WIRE
DWG	DRAWING	KV	KILOVOLT	RISC	RIGID GALVANIZED STEEL CONDUIT	W	WIRE
EA	EACH	LIT	LIGHTING	RM	ROOM	W	WIRE

NO.	ADDENDUM #1 REVISIONS	SSE	DATE	BY	DATE

ATTENTION LINE IS 2 INCHES AT 22"x34" (IF NOT P-S SCALE ADJUSTMENT)



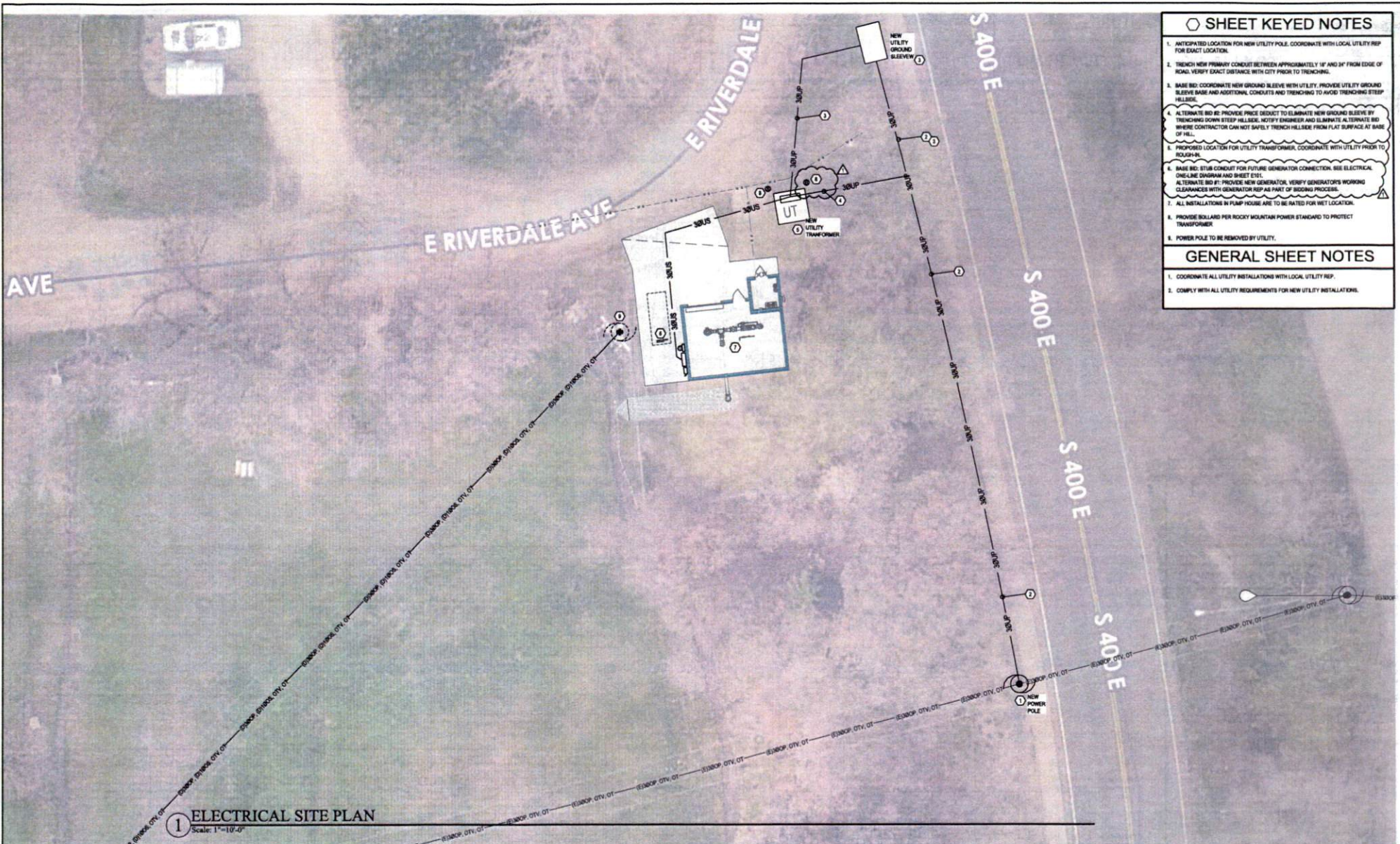
CITY OF RIVER HEIGHTS
 520 SOUTH 500 EAST
 RIVER HEIGHTS, UT 84321

FORSGREN Associates Inc.
 95 WEST 100 SOUTH, STE. 119, LOGAN, UT 84321
 POC: 436.227.9333 FAX: 436.227.9334



LOWER WELL IMPROVEMENT PROJECT
 ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX

PROJECT NO:	014-13-0004-028
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DATE:	7-29-2022
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- SHEET KEYED NOTES**
1. ANTICIPATED LOCATION FOR NEW UTILITY POLE. COORDINATE WITH LOCAL UTILITY REP FOR EXACT LOCATION.
 2. TRENCH NEW PRIMARY CONDUIT BETWEEN APPROXIMATELY 18" AND 24" FROM EDGE OF ROAD. VERIFY EXACT DISTANCE WITH CITY PRIOR TO TRENCHING.
 3. BASE BID: COORDINATE NEW GROUND SLEEVE WITH UTILITY. PROVIDE UTILITY GROUND SLEEVE BASE AND ADDITIONAL CONDUITS AND TRENCHING TO AVOID TRENCHING STEEP HILLSIDE.
 4. ALTERNATE BID #2: PROVIDE PRICE PROTECT TO ELIMINATE NEW GROUND SLEEVE BY TRENCHING DOWN STEEP HILLSIDE. NOTIFY ENGINEER AND SUBMIT ALTERNATE BID WHERE CONTRACTOR CAN NOT SAFELY TRENCH HILLSIDE FROM FLAT SURFACE AT BASE OF HILL.
 5. PROPOSED LOCATION FOR UTILITY TRANSFORMER. COORDINATE WITH UTILITY PRIOR TO ROUGH-IN.
 6. BASE BID: STUB CONDUIT FOR FUTURE GENERATOR CONNECTION. SEE ELECTRICAL ONE-LINE DIAGRAM AND SHEET E151. ALTERNATE BID #1: PROVIDE NEW GENERATOR. VERIFY GENERATOR'S WORKING CLEARANCES WITH GENERATOR REP AS PART OF BIDDING PROCESS.
 7. ALL INSTALLATIONS IN PUMP HOUSE ARE TO BE RATED FOR NET LOCATION.
 8. PROVIDE BOLLARDS PER ROCKY MOUNTAIN POWER STANDARD TO PROTECT TRANSFORMER.
 9. POWER POLE TO BE REMOVED BY UTILITY.
- GENERAL SHEET NOTES**
1. COORDINATE ALL UTILITY INSTALLATIONS WITH LOCAL UTILITY REP.
 2. COMPLY WITH ALL UTILITY REQUIREMENTS FOR NEW UTILITY INSTALLATIONS.

1 ELECTRICAL SITE PLAN
Scale: 1"=10'-0"

NO.	ADDENDUM #1	DATE	BY

DRAWN _____ ER
 DESIGNED _____ ER
 APPROVED _____ ER
 QA _____ ER

ATTENTION
LINE IS 2 INCHES
AT 22"x34"
(IF NOT 2" SCALE ACCORDINGLY)

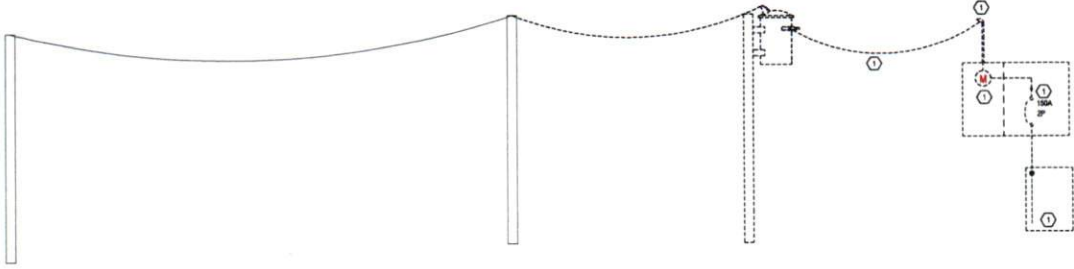
REGISTERED PROFESSIONAL ENGINEER
 No. 4195111
 ELEC. C.
 RASMUSSEN
 8/16/2012
 STATE OF UTAH

CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UT 84321

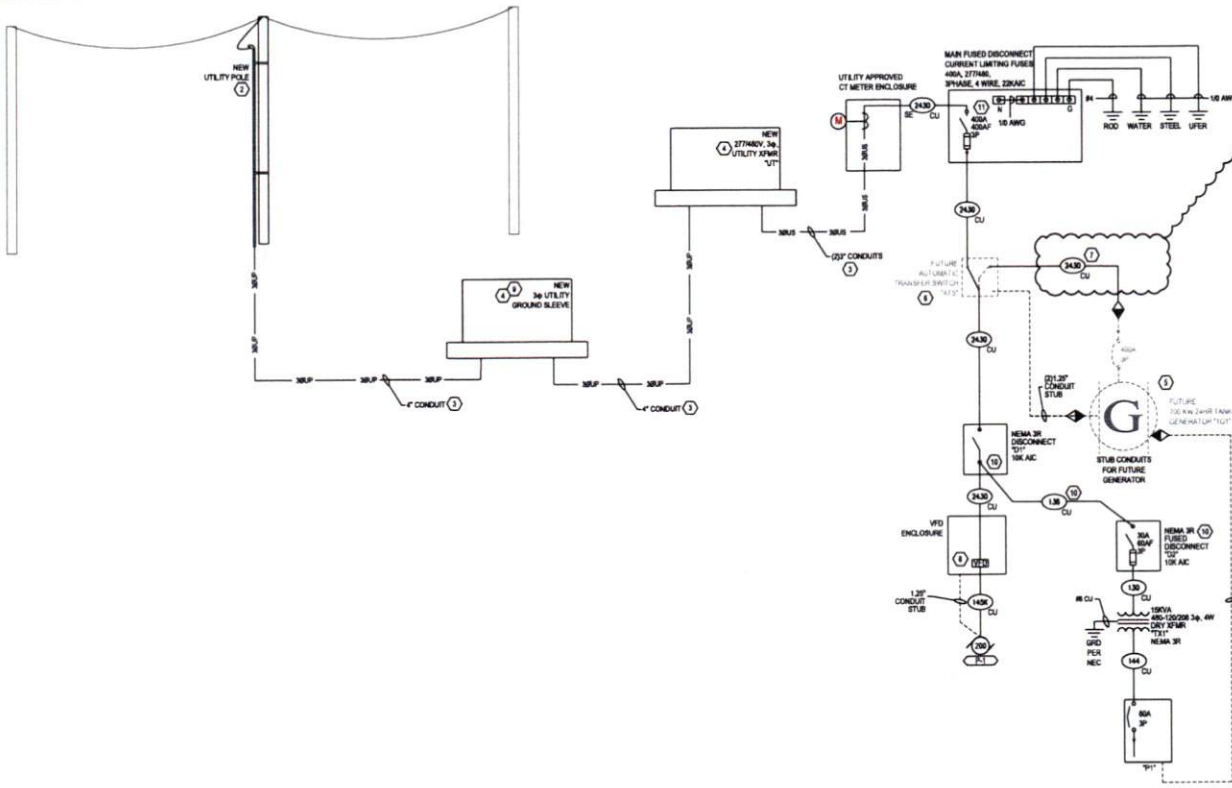
FORSGREN Associates Inc.
85 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.6333 FAX: 435.227.0334

811
Know what's Below.
Call before you dig.

LOWER WELL IMPROVEMENT PROJECT		PROJECT NO: 014-13-0004-028
ELECTRICAL SITE PLAN		SHEET NO: ES101
DATE: 7-29-2022	PAGE NO: E2 OF E4	



1 ELECTRICAL ONE-LINE DIAGRAM: DEMO
Scale: NO SCALE



2 ELECTRICAL ONE-LINE DIAGRAM: NEW
Scale: NO SCALE

SHEET KEYED NOTES

- DEMO EXISTING ELECTRICAL SERVICE AND COORDINATE REMOVAL OF SERVICE LATERAL, CONDUCTORS AND UTILITY POLE WITH LOCAL UTILITY REP.
- COORDINATE NEW UTILITY POLE LOCATION WITH LOCAL UTILITY REP. SURVEY FIELD CONDUIT RISERS FOR UTILITY INSTALLATION ON POLE PER UTILITY REQUIREMENTS.
- PRIMARY AND SECONDARY CONDUIT, TRENCHING, AND BACKFILL BY CONTRACTOR. CONDUCTORS BY UTILITY.
- EQUIPMENT PAD BY CONTRACTOR PER UTILITY REQUIREMENTS. EQUIPMENT BY UTILITY.
- BASE BID: FUTURE GENERATOR, STUB CONDUITS INDICATED TO FUTURE GENERATOR LOCATION SHOWN ON SHEET E3191. ALTERNATE BID #1: PROVIDE NEW GENERATOR FOR A COMPLETE OPERATIONAL BACK UP EMERGENCY SYSTEM.
- BASE BID: PROVIDE 3/4" PULL BOX WITH 4 EXTRA CABLE COILED FOR FUTURE CONNECTION TO TRANSFER SWITCH. ADD ALTERNATE #1: PROVIDE ATS.
- BASE BID: STUB CONDUIT FROM FUTURE ATS LOCATION TO FUTURE GENERATOR LOCATION. CAP CONDUIT AND MARK LOCATION ON FIELD REELING SET. ADD ALTERNATE #1: PROVIDE CONDUIT AND CABLEING FROM ATS TO GENERATOR PER MANUFACTURER REQUIREMENTS.
- METALL VFD ENCLOSURE, VFD, AND CONTROLS FURNISHED BY OTHERS. REFER TO SCADA CONTRACTOR'S SHOP DRAWINGS FOR REQUIRED RACEWAYS TO BE RUN BY ELECTRICIAN AS PART OF ELECTRICAL BID. ANTICIPATED CONTROL RACEWAYS INDICATED ON SHEET E3191.
- BASE BID: PROVIDE GROUND SLEEVE AND ADDITIONAL PRIMARY UTILITY CONDUIT TO HOIST HILL BOX. ALTERNATE BID #2: PROVIDE PRICE DEDUCT TO TRENCH HILLSIDE AND ELIMINATE GROUND SLEEVE.
- PROVIDE ADDITIONAL LUGS ON LOAD SIDE OF DISCONNECT "D" FOR FEEDER TAP. TAP SHALL COMPLY WITH NEC 240.21(C) LOCATE FUSED DISCONNECT "D" WITHIN 8" AND LESS THAN 1/4" OF CONDUIT LENGTH FROM TAP LOCATION.
- PROVIDE CURRENT LIMITING FUSES. PEAK LET THROUGH CURRENT SHALL NOT EXCEED 1000 AMPS.
- BASE BID: STUB CONDUIT FROM PANEL TO FUTURE GENERATOR LOCATION. CAP CONDUIT AND MARK LOCATION ON FIELD REELING SET. ADD ALTERNATE #1: PROVIDE CIRCUITS FOR BATTERY CHARGER, BLOCK HEATER, AND COOLANT HEATER REFER TO PANEL SCHEDULE FOR CONDUCTOR SIZES.

GENERAL SHEET NOTES

- COMPLY WITH POWER UTILITIES REQUIREMENTS FOR ALL UTILITY RELATED INSTALLATIONS. REVIEW CURRENT UTILITY STANDARDS MANUAL PRIOR TO BID. NOTIFY ENGINEER OF CONFLICTS PRIOR TO BID.
- AC RATINGS SHOW INDICATE MINIMUM REQUIRED VALUES. USE MANUFACTURER'S NEXT STANDARD RATING WHICH MEETS OR EXCEEDS VALUE SHOWN.
- ALL CONDUCTORS ARE CONSIDERED TO BE COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
- A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR SIZED FOR THE OVERCURRENT PROTECTIVE DEVICE PROTECTING THE CIRCUIT IS REQUIRED IN EACH RACEWAY OR CABLE FOR PARALLELED CIRCUITS.
- FIELD MARK SERVICE EQUIPMENT WITH AVAILABLE FAULT CURRENT AND CALCULATION DATE PER NEC 110.24(A).
- ALL SERVICE ENTRANCE EQUIPMENT (PANELBOARDS, SWITCHBOARDS, ETC) SHALL BE UL LISTED OR USE AS SERVICE ENTRANCE EQUIPMENT.
- BOND BUILDING STRUCTURAL STEEL, METALLIC WATER PIPES, AND CONCRETE-ENCASED ELECTRODES (REBAR) TO EACH OTHER AND TO THE ENCLOSURE GROUNDING BUS INSIDE THE ENCLOSURE CONTAINING THE SERVICE DISCONNECT SWITCH. THE CONCRETE INSTALLATION CONTRACTOR SHALL BE RESTRICTED TO LEAVE AT LEAST 1 FT. OF REBAR EXPOSED AT THE SERVICE ENTRANCE PANEL, FOR BONDING.
- ALL BONDING SHALL BE EFFECTED BY MEANS OF UL LISTED DEVICES SPECIFICALLY TESTED AND APPROVED FOR THE PURPOSE.

CONDUCTOR AND CONDUIT SCHEDULE

SYM	SIZE OF CONDUCTORS		QUANTITY OF PARALLEL RUNS		SCHEDULE NUMBER		CONDUCTOR MATERIAL		SUBSCRIPTS (SEE NOTE 5)		
	CU	AL	QTY	SIZE	CU	AL	CU	AL	CU	AL	
(1212)	20	NA	1	3/4"	2	12	12	NA	8	NA	2.3
(1312)	3	NA	3	1/2"	12	12	12	NA	8	NA	2.3
(1412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(1512)	30	NA	3	1/2"	12	12	12	NA	8	NA	2.3
(1612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(1712)	48	NA	7	1/2"	12	12	12	NA	8	NA	2.3
(1812)	3	NA	3	1/2"	12	12	12	NA	8	NA	2.3
(1912)	58	NA	2	1/2"	12	12	12	NA	8	NA	2.3
(2012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(2912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(3912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(4912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(5912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(6912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7112)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7212)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7312)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7412)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7512)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7612)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7712)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7812)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(7912)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3
(8012)	4	NA	4	1/2"	12	12	12	NA	8	NA	2.3

CONDUIT AND CONDUCTOR SCHEDULE NOTES

- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE #1. ALL CONDUCTORS SHOWN ARE THINW GALV OR THINW AL UNLESS OTHERWISE NOTED.
- PROVIDE EQUIPMENT GROUNDING CONDUCTORS PER NEC TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATINGS SHOWN IN TABLE.
- PROVIDE #10 NEUTRALS FOR MULTIPLE BRANCH CIRCUITS SERVING COMPUTERS.
- GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
- SYMBOL SUBSCRIPTS:
 - "G" INCLUDES IS (INSULATED/SHIELDED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUNDING OF EQUIPMENT GROUND CONDUCTOR.
 - "SE" SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
 - "2N" INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.
 - RACEWAY ONLY CONDUCTORS PROVIDED BY UTILITY.
 - "VFD" PHASE AND NEUTRAL CONDUCTORS UPSIZED FOR VOLTAGE DROP, UPSIZE GROUNDING CONDUCTORS TO SIZE INDICATED BY "M" PER NEC 250.122(B).
 - "A" ALUMINUM CONDUCTORS ALLOWED FOR FEEDER INDICATED. ALUMINUM CONDUCTORS ARE NOT TO BE USED FOR CONNECTIONS TO MOTORS OR MOTOR DRIVEN EQUIPMENT.
- A FULL SIZE GROUNDING CONDUCTOR (SE OR G AND/OR IG) SHALL BE INSTALLED IN EACH RACEWAY OR CABLE FOR PARALLELED CIRCUITS.
- GROUNDING CONDUCTORS #6, #8, AND #10 SHALL BE OF THE SAME CONDUCTOR MATERIAL AS THE CORRESPONDING PHASE CONDUCTORS TO KEEP TABLE CALCULATIONS IN T. ACCORDANCE WITH NEC REQUIREMENTS.
- INCREASE CONDUIT TO NEXT LARGEST STANDARD CONDUIT SIZE WHEN G IS USED.
- CONDUIT SIZED FOR COMPACT ALUMINUM CONDUCTORS. USE COPPER CONDUIT SIZE FOR STANDARD SIZE CONDUCTORS.

ADDENDUM #1	DATE	BY	DATE
REVISIONS	DATE	BY	DATE
DESIGNED	ER		
DRAWN	ER		
APPROVED	ER		
QA	ER		

ATTENTION
LINE IS 2 INCHES
AT 22"x34"
(IF NOT 2" SCALE ACCORDINGLY)



CITY OF RIVER HEIGHTS
520 SOUTH 500 EAST
RIVER HEIGHTS, UT 84321

FORSGREN Associates Inc.
95 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.0333 FAX: 435.227.0334



LOWER WELL PROJECT
ELECTRICAL ONE-LINE DIAGRAM

PROJECT NO: 014-13-0004-028
SHEET NO: E801
DATE: 7-29-2022 PAGE NO: E4 OF E4