# KANE COUNTY JAIL YARD

CONSTRUCTION DOCUMENTS



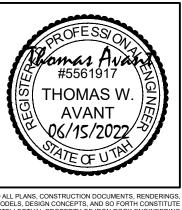


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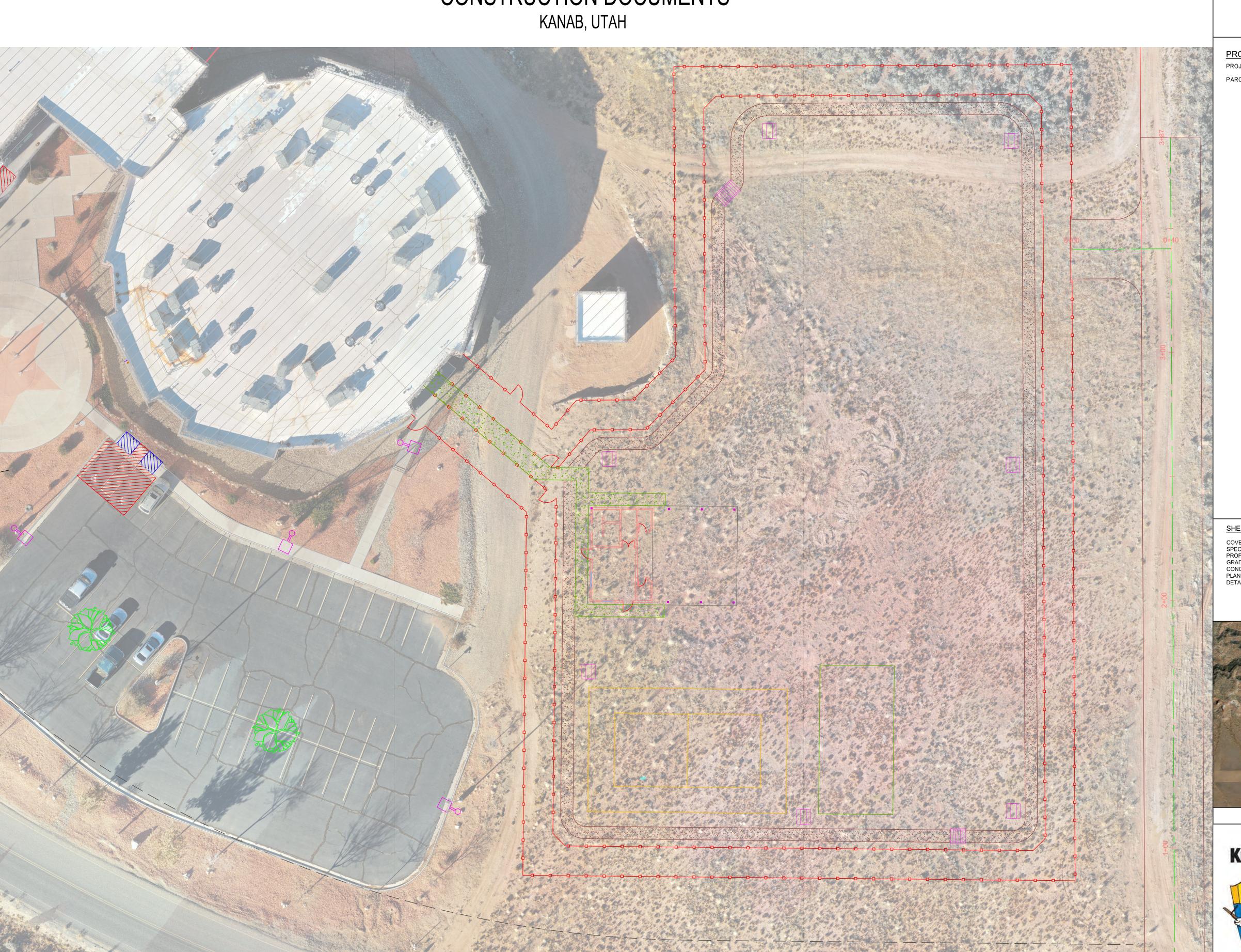
COVER SHEET
SPECIFICATION SHEET
PROPOSED SITE PLAN
GRADING/UTILITY PLAN
CONCRETE GRADING PLAN
PLAN AND PROFILE

VICINITY MAP





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### **GENERAL NOTES:**

ALL MATERIALS WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE APPROPRIATE GOVERNING AGENCY, THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS, STANDARDS, AND SPECIFICATIONS AS APPROVED BY THE APPROPRIATE GOVERNING AGENCY.

THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARDS, SPECIFICATIONS, PERMITS, BONDS, ETC. WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY PROBLEMS IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.

SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN SECTION 3 OF THE KANE COUNTY STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE SOILS REPORT. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 96% OF MODIFIED PROCTOR MAXIMUM DENSITY PER AASHTO T180, METHOD D FOR A-1 SOILS AND AASHTO T99, METHOD D FOR OTHER SOILS FOR TRAVELED AREAS INCLUDING ROADS, SHOULDERS PARKING LOTS, AND DRIVEWAYS AND 90% OF OF MODIFIED PROCTOR MAXIMUM DENSITY PER AASHTO T180, METHOD D FOR A-1 SOILS AND AASHTO T99, METHOD D FOR OTHER SOILS FOR NON-TRAVELED AREAS. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% PLUS OR MINUS OF OPTIMUM. PLACE BACKFILL AND EMBANKMENT MATERIALS IN LAYERS NOT EXCEEDING 12 INCHES NON-COMPACTIVE DEPTH. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED REGISTERED SOILS ENGINEER, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED, HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS & SPECS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT.

BACKFILL MATERIAL FOR UTILITY TRENCHES SHALL BE MATERIAL FREE OF RUBBISH, DEBRIS, ORGANIC MATERIAL, FROZEN MATERIAL, ROCKS EXCEEDING 12 INCHES, OR OTHER OBJECTIONABLE MATERIAL, BACKFILL FOR ELECTRICAL TRENCHES SHALL NOT INCLUDE ANY ROCKS EXCEEDING 3 INCHES IN SIZE, BROKEN PORTLAND CEMENT CONCRETE OR ASPHALT. PIPE BEDDING SHALL BE NATIVE OR IMPORTED SOIL, SAND, GRAVEL, CRUSHED ROCK OR OTHER MATERIAL NOT EXCEEDING 3/4 INCH MAXIMUM PARTICLE SIZE. FLOWABLE FILL CAN BE USED AS BEDDING. DO NOT PLACE ROCKS LARGER THAN 2.5 INCHES IN BACKFILL PLACED WITHIN 12 INCHES OF PAVEMENT SUBGRADE. BACKFILL TRENCHES AS SOON AS POSSIBLE. NO MORE THAN 500 LINEAR FEET OF OPEN TRENCH IS PERMITTED.

ANY CONSTRUCTION DEBRIS OR MUD DROPPED INTO MANHOLES, INLETS, PIPES OR TRACKED ONTO EXISTING ROADWAYS SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REPAIR ANY EXCAVATIONS OR PAVEMENT FAILURES CAUSED BY HIS CONSTRUCTION. THE CONTRACTOR SHALL PROPERLY BARRICADE THE CONSTRUCTION SITE UNTIL CONSTRUCTION IS COMPLETE

THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

ALL ROADWAY AREAS WILL HAVE STERILIZATION OF THE SOIL TO EPA STANDARDS AND USU EXTENSION RECOMMENDED PRODUCTS PRIOR TO PLACEMENT OF UBC ROAD BASE OR ASPHALT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE APPROPRIATE FIRE DEPARTMENT OF ALL STREET CLOSINGS AND EXISTING FIRE HYDRANTS TAKEN OUT OF SERVICE AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

THE CONTRACTOR SHALL NOTIFY ALL PUBLIC UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL PROTECT, AT HIS OWN EXPENSE, ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR THEIR REPAIR IF THEY ARE DAMAGED DURING CONSTRUCTION.

EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN.

IN COMPLIANCE WITH THE PROVISIONS OF THE FEDERAL WATER POLLUTION CONTROL ACT, THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION ACTIVITY STORMWATER DISCHARGE PERMIT THROUGH THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY, PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE UTAH STORMWATER GENERAL PERMIT UTR300000. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND REPORT. THE CONTRACTOR IS TO USE BEST MANAGEMENT PRACTICES FOR PROVIDING EROSION CONTROL FOR CONSTRUCTION OF THIS PROJECT.

THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM WATER AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER SHALL BE PROMPTLY DEWATERED AND RESTORED AT THE CONTRACTORS EXPENSE.

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. WATER WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE WORK.

CONSTRUCTION SHALL BE CONDUCTED SUCH THAT ACCESS TO ALL DRIVEWAYS IS MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.

1. ALL CONSTRUCTION SHALL CONFORM TO THE "KANE COUNTY STANDARD SPECIFICATIONS AND DRAWING DETAILS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE".

FOR FILL AREAS, SURFACE GRADES SHALL BE WITHIN ONE FOOT OF FINISHED GRADE AND VERIFICATION OF COMPACTION OBTAINED AND SUBMITTED TO THE APPROPRIATE GOVERNING AGENCY FOR THEIR REVIEW PRIOR TO PIPELINE INSTALLATION.

NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE APPROPRIATE GOVERNING AGENCY OR THE CONTRACTING OFFICER.

ALL BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND THE APPROPRIATE GOVERNING AGENCY. COMPACTION TESTS SHALL BE SUBMITTED TO THE APPROPRIATE GOVERNING AGENCY OR THE CONTRACTING OFFICER PRIOR TO THE FINAL ACCEPTANCE.

ALL SITE CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. ANY CONCRETE THAT HAS THE POSSIBILITY OF BEING SUBJECTED TO VEHICULAR LOADS, SUCH AS DRIVE APRONS OR SIDEWALKS IN FIRE LANES, SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4200 PSI.

ALL RIM ELEVATIONS OF MANHOLES, CLEANOUTS, VALVES, METERS, ETC. SHALL BE ADJUSTED TO FINISHED GRADE, UNLESS SPECIFICALLY DIRECTED OTHERWISE.

THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF THE GAS, SEWER, WATER AND STORM SEWER LINES FOR UP TO ONE (1) YEAR FROM THE DATE OF ACCEPTANCE OF THE LINES BY THE APPROPRIATE GOVERNING AGENCY OR BY THE FEDERAL GOVERNMENT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE APPROPRIATE GOVERNING AGENCY AND OWNER AT NO EXPENSE TO THE AGENCY OR OWNER.

TEMPORARY FLOOD AND SEDIMENT CONTROL FACILITIES SHALL BE CONSTRUCTED OR PUT IN PLACE PRIOR TO THE COMMENCEMENT OF ANY GRADING OPERATIONS. THE CONTRACTOR WILL BE HELD LIABLE FOR ANY FLOOD DAMAGE DOWNSTREAM DUE TO RUNOFF FROM THE CONSTRUCTION SITE DURING CONSTRUCTION.

### **WATER NOTES:**

1. ALL CONSTRUCTION SHALL CONFORM TO THE "KANE COUNTY STANDARD SPECIFICATIONS AND DRAWING DETAILS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE".

2. CONTRACTOR SHALL POTHOLE ALL PIPELINES TO VERIFY DEPTH PRIOR TO PROCEEDING WITH ANY BUILDING OR PIPELINE CONSTRUCTION.

3. 12 GAUGE WIRE SHALL BE TAPED TO ALL WATER LINES FOR LOCATING PURPOSES. THE WIRE SHALL ALSO BE BROUGHT UP AT EACH VALVE BOX AND HYDRANT.

4. THRUST RESTRAINT ON THE NEW PIPELINE SHALL BE BELL AND SPIGOT JOINT RESTRAINT HARNESS OR CLAMP RATED AT PRESSURE CLASS OF PIPE OR GREATER. USE MEGA-LUG OR APPROVED EQUAL ON THE FITTINGS AND FIELD LOCK GASKETS ON THE REQUIRED LENGTH OF RESTRAINED PIPE.

5. ASPHALT REPLACED OVER THE PIPE TRENCHING IS TO MATCH EXISTING PAVEMENT DEPTHS WITH A 6" OVER CUT FROM THE EDGE OF THE TRENCH LINE ON EACH SIDE OF THE TRENCH. SEE DETAIL 4, SHEET C400.

7. ANY CHANGES MADE IN THE FIELD MUST BE FIRST APPROVED AND DOCUMENTED BY THE ENGINEER.

8. ALL SERVICE LINE SHALL BE HDPE PIPE, 200 PSI, MAINTAIN 3 FEET MINIMUM COVER TO TOP OF PIPE. TAP SADDLE, CORPORATION STOP, AND SERVICE METER PER KANE COUNTY STANDARD SPECIFICATIONS.

9. ALL FIRE HYDRANTS SHALL BE AWWA C502, DRY BARREL TYPE WITH PRIMER AND TWO COATS OF RED ENAMEL WITH A MIN 6 FOOT BURY. HYDRANTS SHALL HAVE A 6" C-900 PIPE AND SHUT-OFF VALVE BETWEEN WATER SUPPLY AND HYDRANT AND INSTALLED AS PER KANE COUNTY STANDARD SPECIFICATIONS.

10. ALL WATER MAIN LINES TO BE INSTALLED A MINIMUM OF 10' HORIZONTALLY FROM ANY SEWER MAIN LINE AND 18" VERTICALLY ABOVE TOP OF SEWER MAIN LINE OR STORM DRAIN LINE AT ANY CROSSING. WHEN THE WATER MAIN CANNOT BE AS HIGH AS 18 INCHES ABOVE THE SEWER, THE SEWER SHALL BE CONSTRUCTED OF MATERIAL WITH PRESSURE CONDUIT STANDARDS FOR A DISTANCE OF 20 FEET ON EITHER SIDE OF THE CROSSING. ALL POTABLE AND FIRE WATER LINE TO MAINTAIN A MINIMUM DEPTH OF 60" BELOW FINISHED GRADE TO TOP OF PIPE.

12. ALL TEES, BENDS PLUGS AND HYDRANTS SHALL BE PROVIDED WITH REACTION BLOCKING, TIE RODS OR JOINTS DESIGNED TO PREVENT MOVEMENT.

13. ALL VALVES SHALL BE AWWA C509 IRON BODY GATE VALVES WITH BRONZE TRIM, NON-RISING STEM WITH A 2" SQUARE OPERATING NUT, SINGLE WEDGE, RESILIENT SEAT, MECHANICAL JOINT ENDS. RATED FOR 200 POUNDS PER SQUARE INCH WORKING PRESSURE. VALVE BOX AND COVER SHALL BE CAST IRON EXTENSION SLEEVE TYPE WITH "WATER" CAST ON COVER WITH A CLASS AA(AE) REINFORCED CONCRETE.

### WATER PIPE TESTING:

1. TEST WATER MAINS AT LESSER OF 200 PSI OR PRESSURE RATING OF PIPE. TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF THE KANE COUNTY ENGINEER, OR KANE COUNTY WATER CONSERVANCY DISTRICT, AS APPLICABLE.

- A. FILL PIPE WITH WATER AND PLACE UNDER SLIGHT PRESSURE FOR AT LEAST 48 HOURS.
- B. BRING PIPE PRESSURE TO TEST PRESSURE AND MAINTAIN FOR 4 HOURS MIN.
- C. PROVIDE ACCURATE MEANS FOR MEASURING QUANTITY OF WATER NEEDED TO
- MAINTAIN TEST PRESSURE ON PIPE FOR TEST PERIOD.

  D. IF VOLUME OF WATER ADDED TO PIPE IS 10 GALLONS PER INCH OF PIPE DIAMETER
- PER MILE OF PIPE PER 24 HOURS OR LESS, PIPE PASSES TEST.
- E. IF PIPE DOES NOT PASS TEST, FIND SOURCE OF LEAKAGE, REPAIR OR REPLACE, AND RETEST. REPEAT UNTIL PIPE PASSES TEST.

2. BACTERIOLOGICAL TEST: AFTER FLUSHING CHLORINATED WATER FROM WATER LINES, TAKE SAMPLE FOR BACTERIOLOGICAL TEST. IF NECESSARY, RE-CHLORINATE UNTIL SATISFACTORY BACTERIOLOGICAL TEST IS OBTAINED. DO NOT PUT PIPING INTO SERVICE UNTIL TEST RESULTS ARE SATISFACTORY.

THE FOLLOWING TEST PROTOCOL IS LISTED IN ANSI/AWWA STANDARD C651.

- A. COLLECT TWO SAMPLES FROM EACH SAMPLE LOCATION TAKEN AT LEAST 24 HRS.
- B. COLLECT A SAMPLE FROM AT LEAST EVERY 1,200 FT OF NEW MAIN.
- C. COLLECT A SAMPLE FROM THE END OF THE LINE AND AT LEAST ONE FROM EACH
- TEST SAMPLES FOR TOTAL COLIFORM BACTERIA IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER. ADDITIONAL TESTS MAY BE REQUIRED INCLUDING: CHLORINE RESIDUAL, TURBIDITY, pH, AND HETEROTROPHOC PLAT COUNT (HPC).
- E. SPECIAL CONDITION. COLLECT ADDITIONAL SAMPLES AT INTERVALS OF APPROXIMATELY 200 FT IF TRENCH WATER HAS ENTERED THE NEW MAIN DURING CONSTRUCTION OR IF EXCESSIVE QUANTITIES OF DIRT OR DEBRIS HAVE ENTERED THE NEW MAIN. TAKE SAMPLES OF WATER THAT HAS STOOD IN THE NEW MAIN FOR AT LEAST 16 HOURS AFTER FINAL FLUSHING.
- F. COLLECT SAMPLES IN STERILE BOTTLES TREATED WITH SODIUM THIOSULFATE AS REQUIRED BY STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER DO NOT USE HOSE OR FIRE HYDRANTS FOR THE COLLECTION OF SAMPLES. ENSURE THAT THERE IS NO WATER IN THE TRENCH UP TO THE CONNECTION FOR SAMPLING. USE CLEAN AND DISINFECTED SAMPLING PIPE THAT HAS BEEN FLUSHED PRIOR TO SAMPLING. A CORPORATION COCK MAY BE INSTALLED IN THE MAIN WITH A COPPER TUBE GOOSENECK ASSEMBLY. THIS ASSEMBLY CAN BE REMOVED AFTER SAMPLING AND USED AGAIN.
- G. IF THE HPC TEST RESULTS ARE GREATER THAN 500 COLONY-FORMING UNITS(CFU) PER mL, FLUSH AND COLLECT A REPEAT SAMPLE UNTIL NO COLIFORMS ARE PRESENT AND HPC IS BELOW 500 CFU/mL.
- H. COLIFORM BACTERIA MUST BE ABSENT FROM THE SAMPLES AND THE BACTERIOLOGICAL QUALITY OF THE WATER EQUAL TO OR BETTER THAN THAT OF THE DISTRIBUTION SYSTEM.
- I. IF UNSATISFACTORY TEST RESULTS ARE OBTAINED, FLUSH THE MAIN AGAIN AND RESAMPLE. IF CHECK SAMPLES ALSO FAIL TO PRODUCE ACCEPTABLE RESULTS, RECHLORINATE THE MAIN BY THE CONTINUOUS-FEED OR SLUG METHOD UNTIL TWO CONSECUTIVE SETS OF ACCEPTABLE TESTS ARE TAKEN AT LEAST 24 HR APART. IN SOME CASES, IT MAY BE NECESSARY TO PIG OR PRESSURE WASH THE PIPE PRIOR TO RECHLORINATEING THE MAIN. IT IS ADVISABLE TO CHECK THE QUALITY OF THE WATER ENTERING THE NEW MAIN BECAUSE HIGH VELOCITIES USED FOR FLUSHING MAY HAVE DISTURBED SEDIMENT IN THE SUPPLY PIPING AND RESULTED IN POOR QUALITY FEED WATER.

## WATER PIPE DISINFECTION

1. AFTER COMPLETING PRESSURE TESTING, FLUSH PIPE TO REMOVE DIRT OR OTHER FOREIGN OBJECTS.

2. ADD LIQUID CHLORINE OR LIQUID CALCIUM HYPOCHLORITE TO PIPE TO OBTAIN 50 PPM CONCENTRATION OF CHLORINE. MAINTAIN 25 PPM CHLORINE RESIDUAL AT THE END OF 24 HOURS. DISINFECTION PROCEDURES SHALL COMPLY WITH UTAH STATE RULES FOR PUBLIC DRINKING WATER SYSTEMS. PART 11 AND AWWA C651.

3. FLUSH CHLORINATED WATER FROM PIPE. DISPOSE OF DISCHARGED CHLORINATED WATER IN ACCEPTABLE MANNER AND IN CONFORMANCE WITH RULES OF UTAH WATER QUALITY BOARD (SEE R317 OF ADMINISTRATIVE CODE), AND/OR AWWA STANDARDS.

### <u>DRAINAGE NOTES:</u>

1. ALL CONSTRUCTION SHALL CONFORM TO THE "KANE COUNTY STANDARD SPECIFICATIONS AND DRAWING DETAILS FOR DESIGN AND CONSTRUCTION".

2. ALL DRAINAGE PIPE SHALL BE CORRUGATED HIGH DENSITY POLYETHYLENE PIPE WITH SMOOTH LINING, GASKETED SPIGOT AND BELL ENDS AND SHALL CONFORM TO AASHTO M294 AND ASTM D3350.

3. VERIFY LOCATION AND ELEVATION OF ALL IMPROVEMENTS PRIOR TO PLACING DRAINAGE STRUCTURES.

4. INSTALL PIPE AND FITTINGS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL PIPE STARTING AT DOWNSTREAM END. SECURE JOINTS WATER TIGHT.



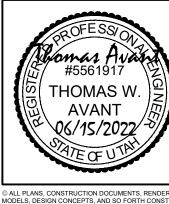
Building on Solid Foundations

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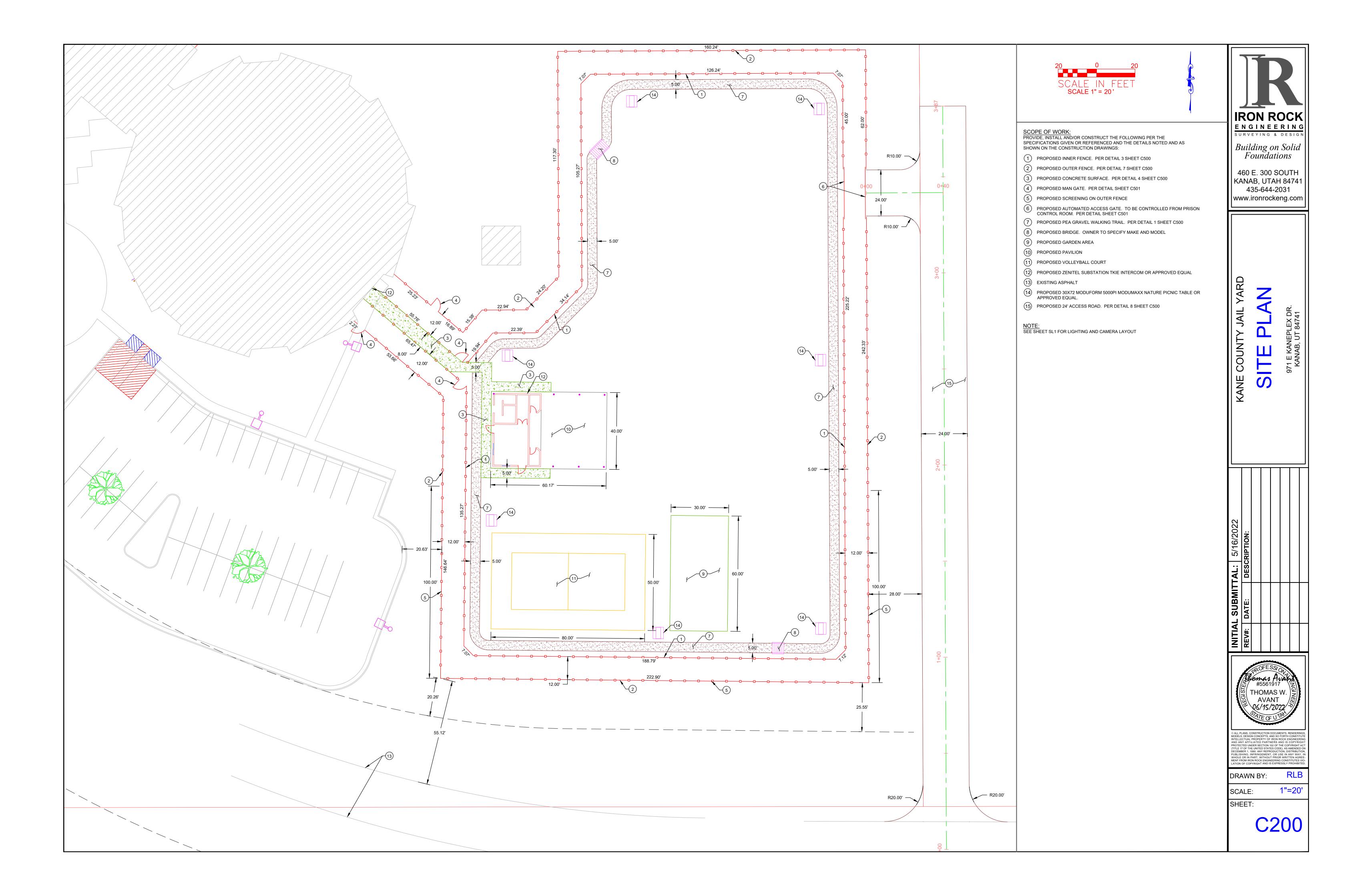
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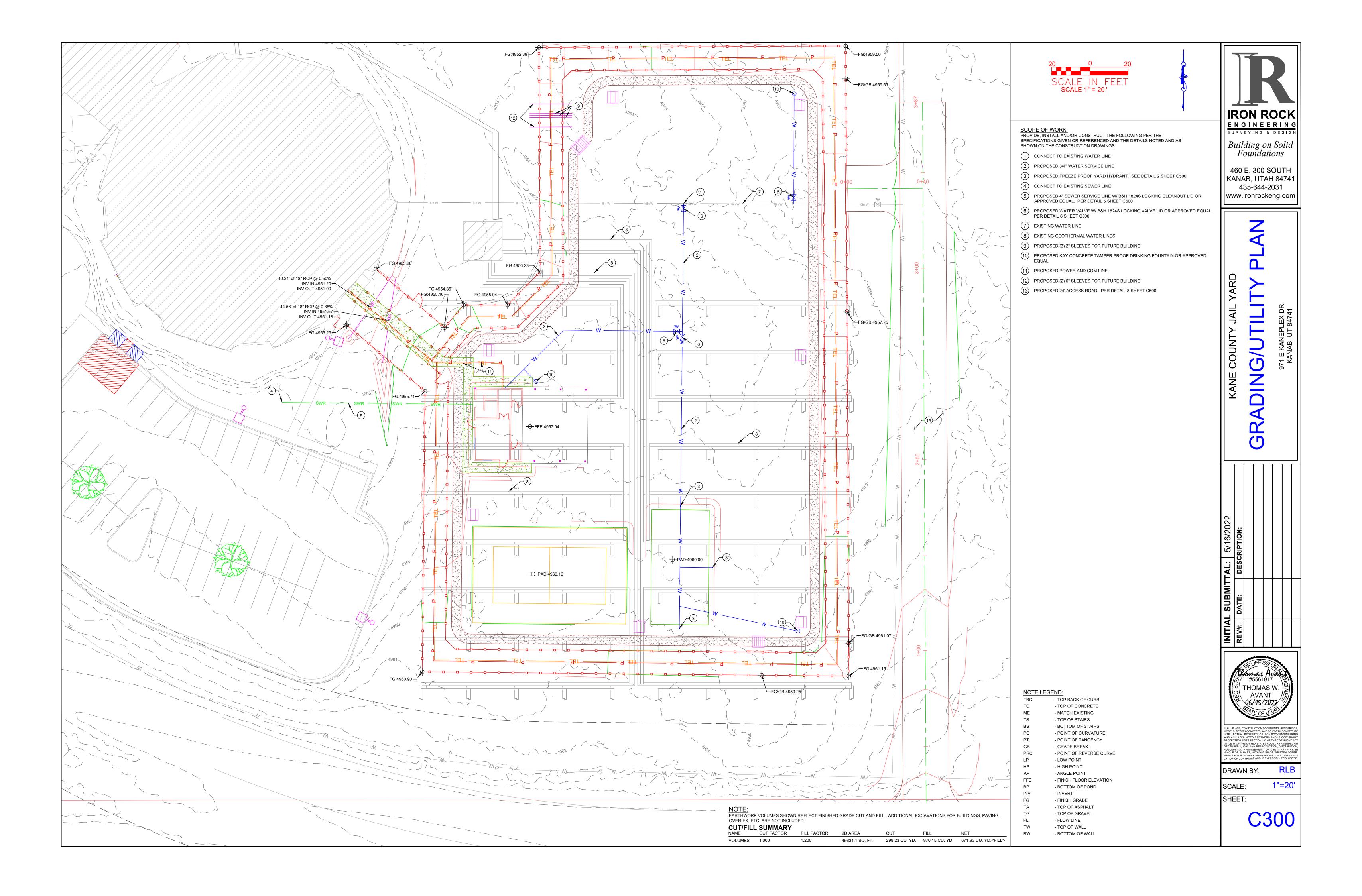
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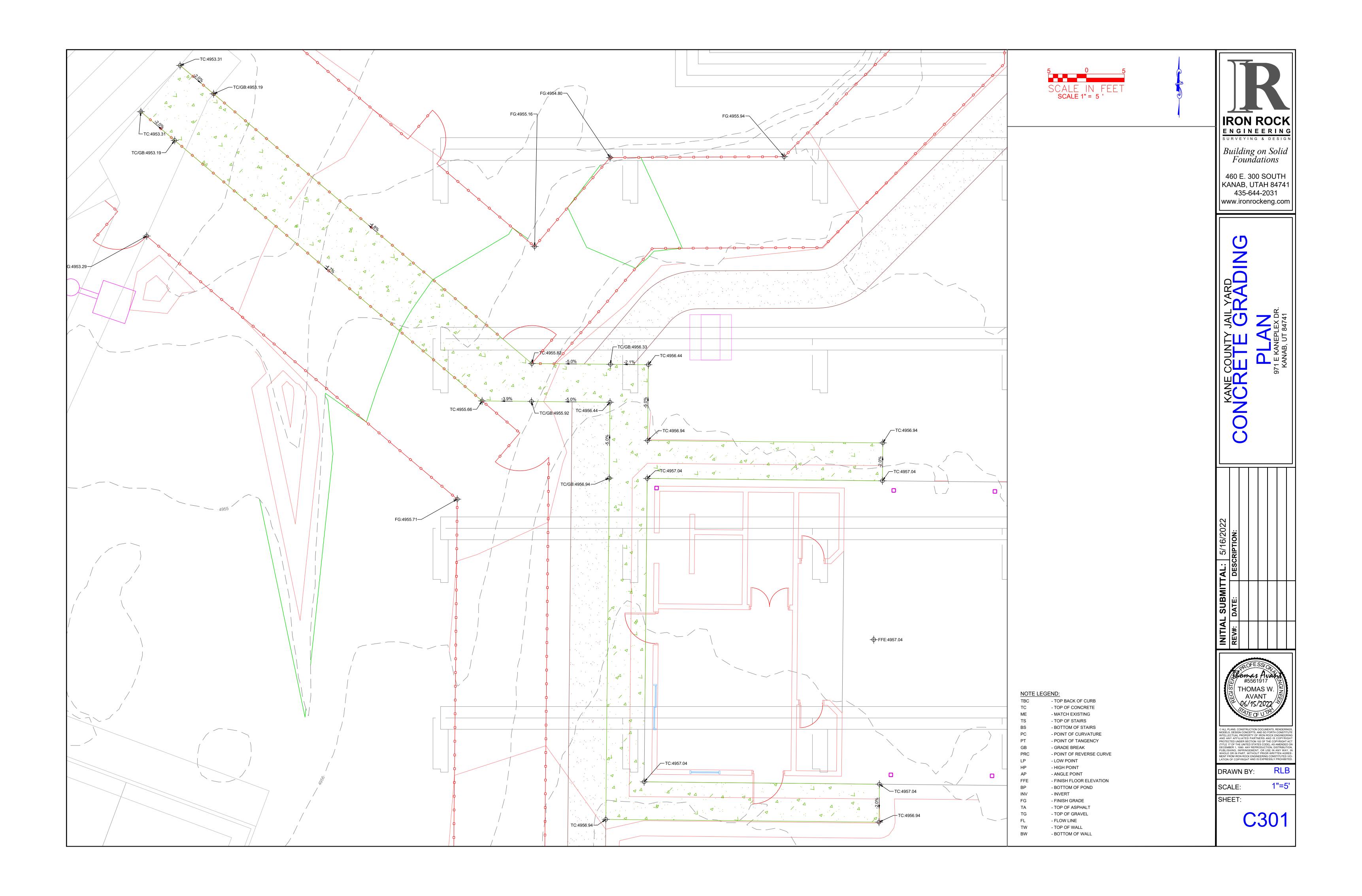
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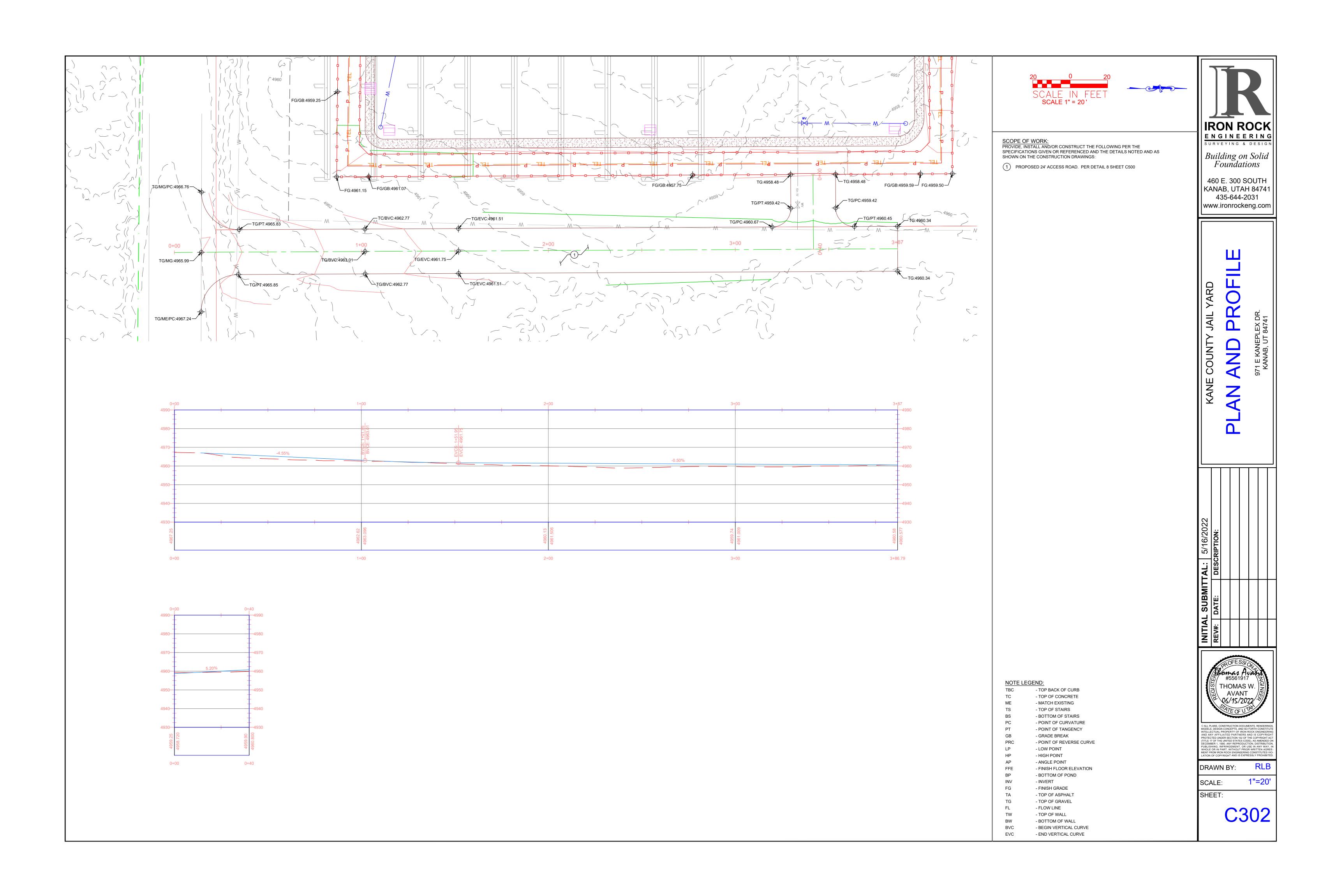
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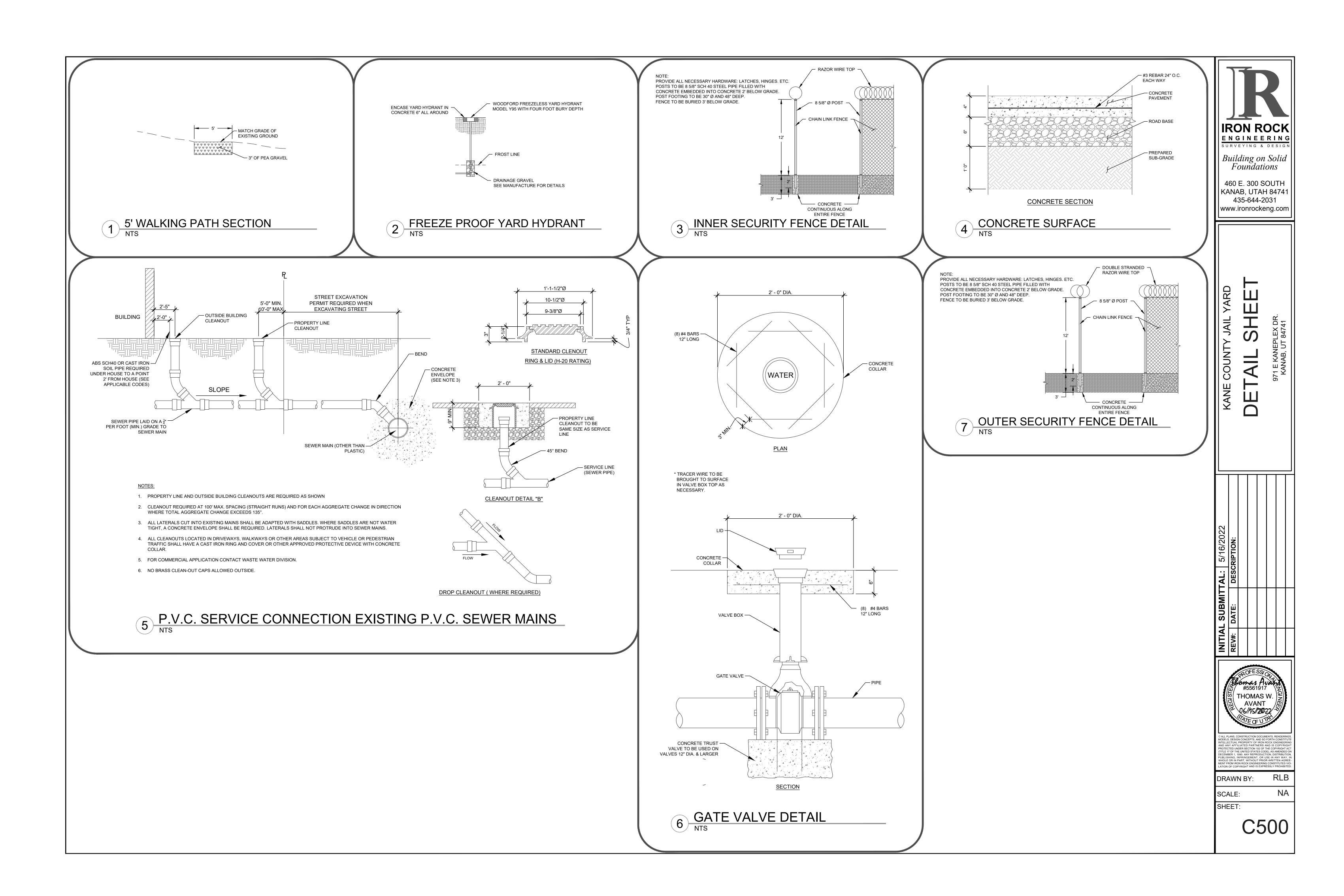
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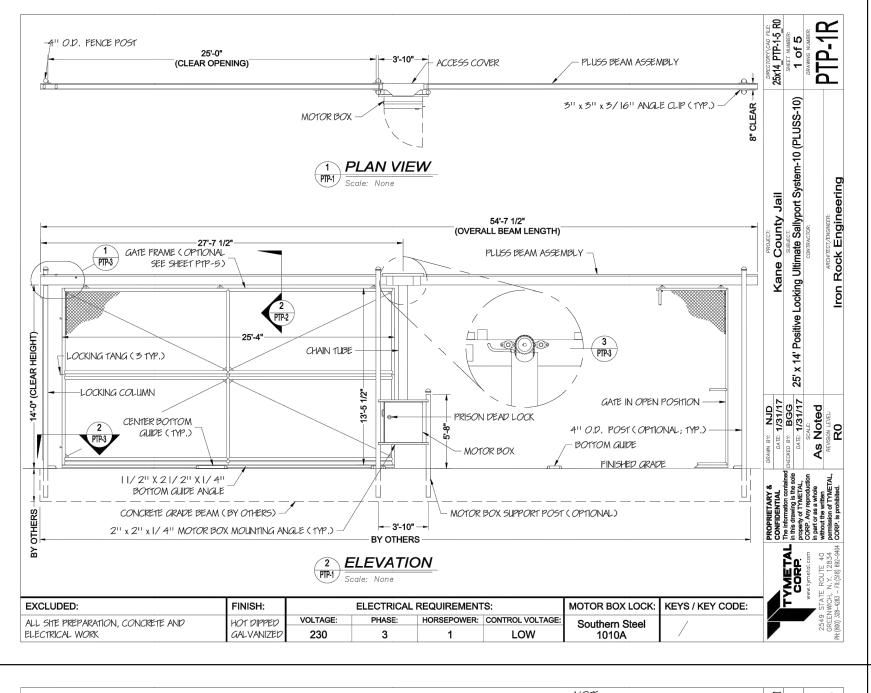


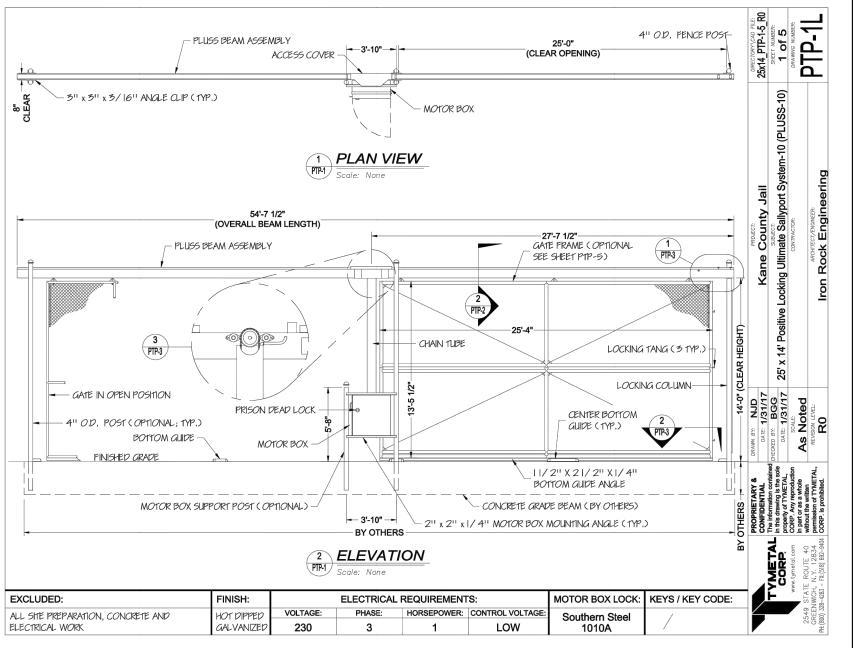


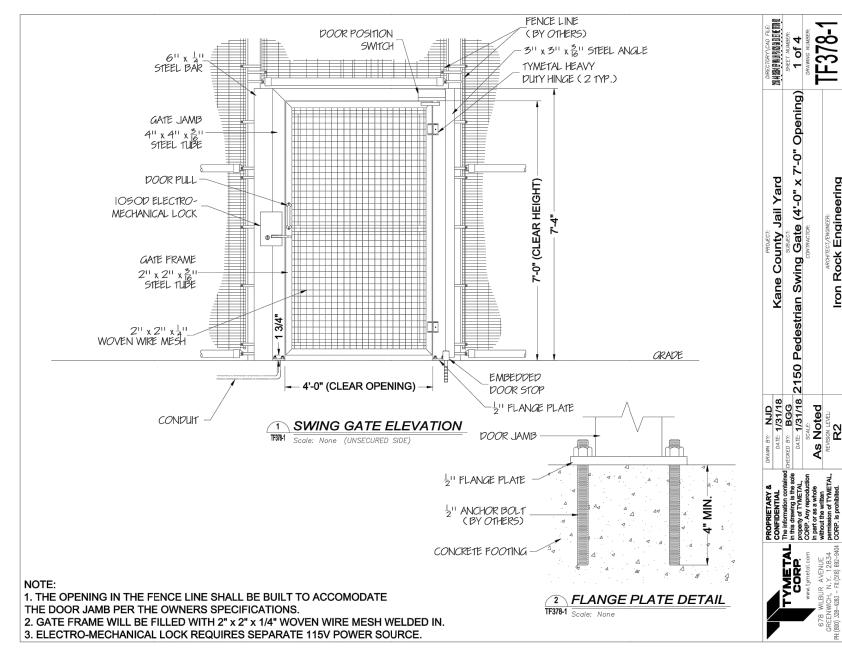


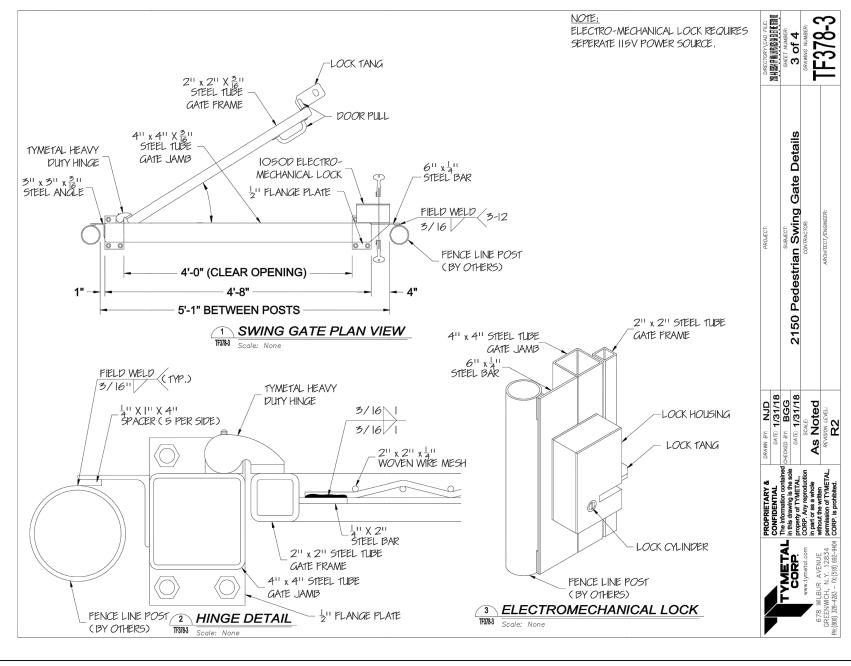


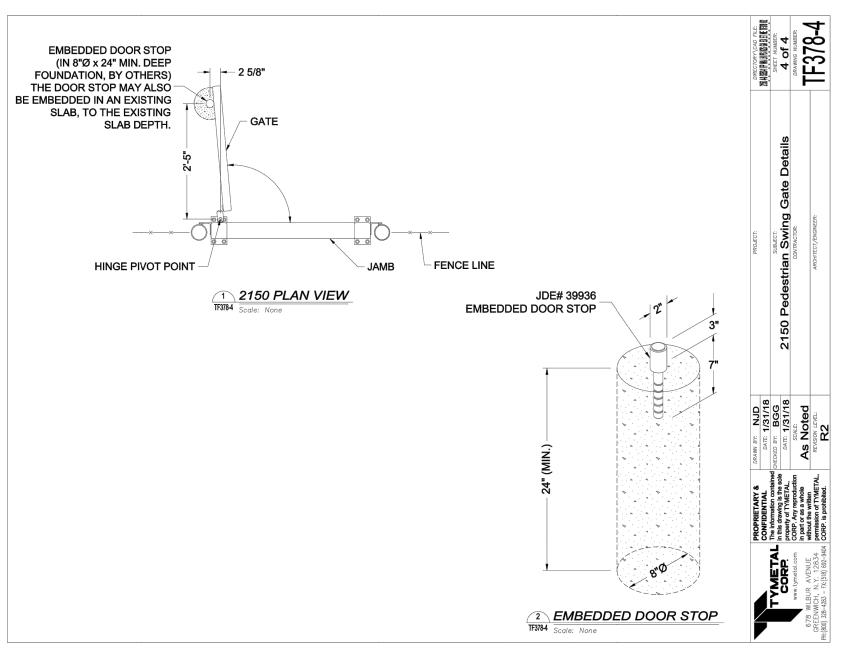


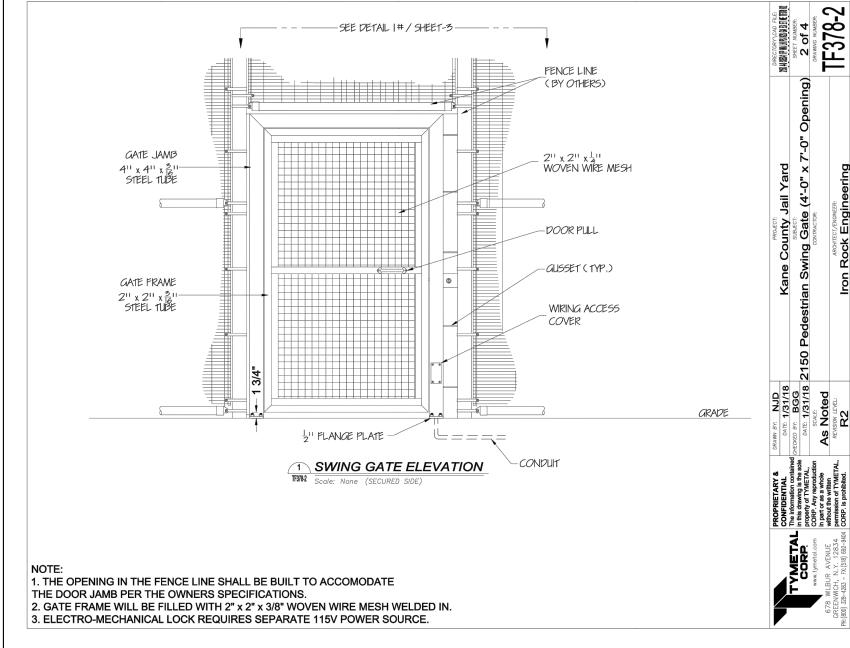


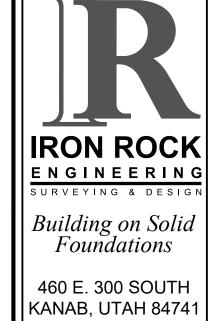




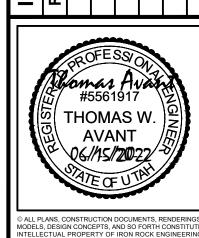








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