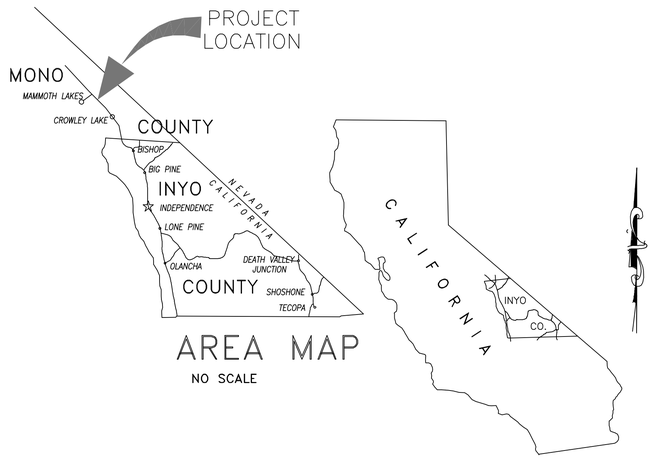
SIERRA BUSINESS PARK OWNER'S ASSOCIATION
PLANS FOR A
2022 WATER SYSTEM IMPROVEMENT PROJECT

Mono County, California



AREA MAP

NO SCALE

Sitework, Grading and Drainage Notes and Specifications

1. All work in the Mono County Right-of-Way shall comply with the terms, conditions, and requirements of the county encroachment permit. NOTE: THIS PROJECT IS ON A PRIVATE ROAD, CONTRACTOR TO PROVIDE TRAFFIC CONTROL.

2. Contractor will follow the Mono County ordinances and standards for all grading operations and the Construction Safety Orders of the State of California, Department of Industrial Relations, Division of Industrial Safety. Contractor will comply with all requirements of general OSHA Standards for the protection of workmen and the general public.

3. One set of survey stakes will be provided. Contractor will be responsible for and will bear cost of resetting stakes destroyed by his operations.

4. At least 48 hours in advance of excavation or digging, contractor is to call U.S.A. alert at 811. It is the contractor's responsibility to verify the exact location and depth of all utilities prior to construction.

5. To request service/inspection, Contractor will notify the following companies/agenies: (at least 48 hours in advance)

Construction Staking
To be determined by Project Owner

Soils Testing
To be determined by Project Owner

County Inspection
Mono County
Public Works Dept. (760)
Mono County Building Department (760)

Sierra Business Park Owner' Association
System Operator - Clay Murray 760 937-4798

6. Contractor shall take all necessary measures to control dust in construction areas or on access roads. Sufficient water will be made available for dust control purposes. All exposed soil surfaces will be moistened as required to avoid nuisance conditions and inconveniences.

7. Construction will be limited to 7:00AM to 7:00PM Monday thru Saturday.

8. Finish grades in all areas will comply with plan elevations. No areas will be left such that a ponding condition occurs, except as noted.

9. Seeded slopes shall be stabilized by installation of an erosion control blanket, "North American Green SC150" or approved equal, secured per manufactures' recommendations.

10. Areas to be graded will be cleared of brush, vegetation, large boulders, and other deleterious materials. Cleared materials will be disposed of by the Contractor only at approved sites. Topsoil will be stockpiled within the construction perimeter or in approved areas for reuse on slopes and disturbed areas.

11. Areas to receive fill and/or paving are to be scarified, moistened, and compacted to a minimum of 95 % of the material's maximum dry density as determined by ASTM D-1557-00 for the upper 12 inches.

12. All fill materials will be placed in 8 inch maximum lifts at optimum moisture content and compacted to a minimum of 95 % of the material's maximum dry density as determined by Caltrans specifications. Maximum rock size for all fill material is 6 inches.

13. Earth material, determined to be suitable by the engineer, imported or excavated on the property may be utilized in the fill. Material should be free of organic and other deleterious material.

14. Aggregate base will be class 2, 3/4 inch maximum grading, and will conform to the provisions of section 26, "aggregate bases" of the 2002 Caltrans standard specifications and will be compacted to a minimum of 95 % of the materials maximum dry density as determined by ASTM D-1557-00.

15. AC paving will Asphalt AR4000 with 3/4"max, medium grading, per section 39 "Asphalt Concrete" of the 2002 Caltrans Standard Specifications.

16. Concrete will be class A, per section 90 "Portland Cement Concrete" of the 2002 Caltrans standard specifications.

17. Soils testing shall be performed by an approved independent testing laboratory. Should any compaction test fail to meet the minimum required specifications, the contractor will correct the deficiency at his expense to the satisfaction of the soils engineer and will bear the expense of retesting, at no cost to the owner.

INDEX OF DRAWINGS

PROJECT DESCRIPTION

1. Install water pipes & electrical conduit from the booster pump building to new well #2 about 950 ft away. Cross paved streeT 2 timeS, trench behind the curb for most of project.
2. Install below grade flushing hydrants on existing 8" waterline deadends. One cross half in the paved street. One is in the dirt near the existing well.
3. Reconfigure the existing well #1 to provide a direct on demand well water irrigation system. Install a new well pump, small bladder tank & varible speed drive (VFD) so the well can pump directly into the new irrigation piping. The irrigation system will feed the existing irrigation zones.
4. Remove the surface water treatment plant filters & accessories from the Water System Building.
5. Install Arsenic Treatment System on potable water supply.

The project is located in the Slerra Business Park. The Business Park is the Owner of the road area.

PURPOSE OF PROJECT

To replace the existing well for potable water service. The existing well is classified as a Ground Water Under the Influsnce of Surface Water (GWUISW). It requires a treatment plant to provide potable water.

PROJECT OWNER

Sierra Business Park Owner's Association
Board President Chip Polvoorde
Board Member Marc Wolter
Board Member Mike Barth

Mailing Address
Sierra Business Park Owner's Association
119 Mac Iver Street #G
Bishop CA 93514

PROJECT LOCATION

In the Sierra Business Park off HWY 395 across from the Mammoth Airport,
Water System Building Location 71 Industrial Circle APN 037-260-015 on dedicated easement for water system.
New Well on Lot 29 at 78 Industrial Circle APN 037-260-0290 on a New Easement dedicated to the Business Park for the well location & facilities.
Pipe route is between the two locations in the shoulder & crossing Industrial Circle in two locations – within the private road easement.

2019 CALIFORNIA WATER WORKS STANDARDS
2019 CALIFORNIA BUILDING CODE

7-30-22

PREPARED AND SUBMITTED BY:

TIM RUDOLPH 7-30-22
TIM RUDOLPH DATE
RCE 63207 EXP. 6-30-24

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY P. RUDOLPH
63207
EXP.
6/30/24
CIVIL
STATE OF CALIFORNIA

REVISIONS

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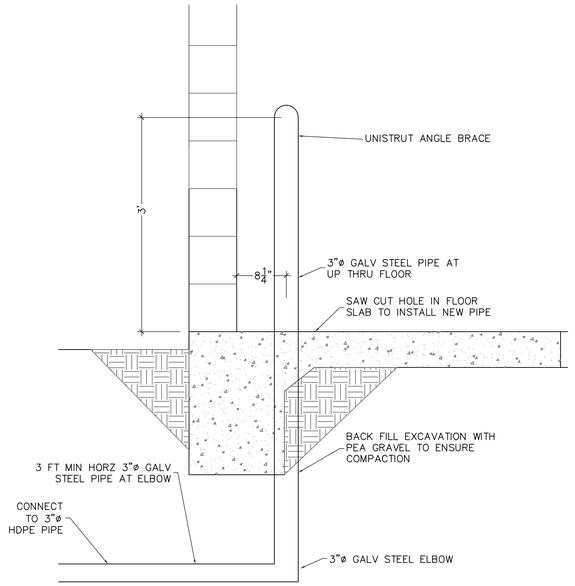
Sierra Business Park Owner's Assoc.
71 Industrial Circle Mono County, CA
2022 WATER SYSTEM PROJECT
TITLE SHEET

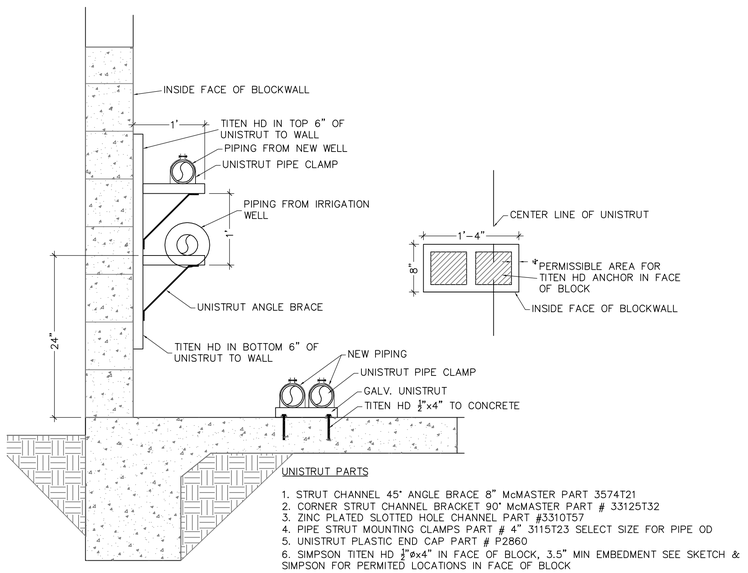
DATE 5-7-21

1



PIPE THRU FLOOR

Scale 1" =1'

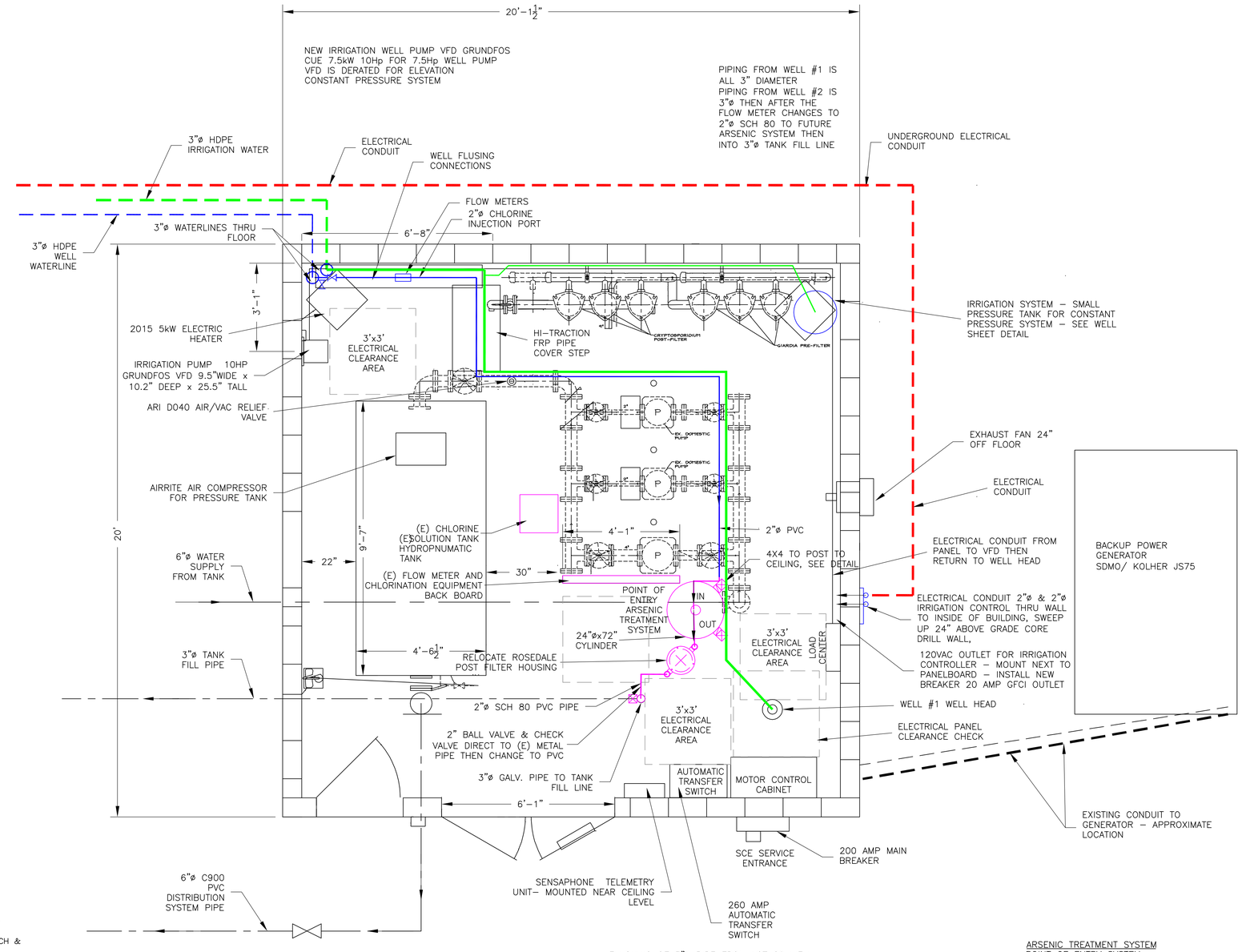


UNISTRUT PARTS

1. STRUT CHANNEL 45° ANGLE BRACE 8" McMASTER PART 3574T21
2. CORNER STRUT CHANNEL BRACKET 90° McMASTER PART # 33125T32
3. ZINC PLATED SLOTTED HOLE CHANNEL PART #3310T57
4. PIPE STRUT MOUNTING CLAMPS PART # 4" 3115T23 SELECT SIZE FOR PIPE OD
5. UNISTRUT PLASTIC END CAP PART # P2860
6. SIMPSON TITEN HD ½"ø x4" IN FACE OF BLOCK, 3.5" MIN EMBEDMENT SEE SKETCH & SIMPSON FOR PERMITED LOCATIONS IN FACE OF BLOCK

UNISTRUT PIPE BRACING

Scale 1" =1'



BUILDING PIPING

Scale ½" =1'

PIPING PLAN ARE COLOR CODED
BLUE = WELL #2 POTABLE WATER
GREEN = WELL #1 IRRIGATION WATER
RED= ELECTRICAL

FLUSHING OF 3"ø PIPE FROM LOT 29 WELL

THE SMALLER WELL PUMP IS NOT DESIGNED FOR A 50 GPM FLUSHING FLOW. FLUSHING IS TO BE DONE BY BACK FLUSHING FROM THE BUILDING BACK TOWARDS THE WELL OUT THRU THE BELOW GRADE FLUSHING CONNECTION AT THE WELL HEAD.
1. CONNECT 1.5"ø HOSE FROM THE PRESSURE TANK DRAIN TO THE FLUSHING VALVE CONNECTION ON THE 3" PIPING FROM THE WELL. BACK FLUSH THE PIPE WITH POTABLE WATER FROM THE DOMESTIC SYSTEM BOOSTER PUMPS. 1.5" HOSE SHOULD HAVE A VACUUM BREAKER AT THE CONNECTION POINT.

NEW WELL FLOW METER
MULTI-JET PULSE FLOW METER 1.5" DIAMETER USABLUEBOOK PART 22099 DIRECT READ & PULSED OUTPUT FOR DATA LOGGER INPUT

PRESURE REGULATION
NOT NEEDED, FLOWS INTO GROUND LEVEL STORAGE TANK

PIPES CROSSING WALK PATHS
INSTALL SAFEGUARDTECHNOLOGY.COM HI-TRACTION FRP PIPE & CABLE COVER

ARSENIC TREATMENT SYSTEM
POINT OF ENTRY SYSTEM
SINGLE VESSEL 24"X72" TALL COMPOSITE VESSEL
1. AC POWER NEEDED - YES, 120 VAC PLUG NEAR TANK FOR FLECK FLOW METER VALVE. NO AMP SPEC FOUND
2. NO BACKWASH OF MEDIA NEEDED

SEE SHEET 6 PAGE FOR INSTALLATION DETAILS

PRINTING NOTE:
THIS PLAN HAS ITEMS IN COLOR THAT SHOW IN THE PDF COPY
THEY MAY NOT SHOW UP ON A BLACK & WHITE PRINTED COPY

7-30-22

PREPARED AND SUBMITTED BY:

TIM RUDOLPH 7-30-22
RCE 63207 EXP. 6-30-24 DATE

REGISTERED PROFESSIONAL ENGINEER TIMOTHY P. RUDOLPH 63207 EXP. 6/30/24 CIVIL STATE OF CALIFORNIA

REVISIONS
7-19-22 MOVED HOLE IN FLOOR - TO MATCH DISTANCE NEEDED

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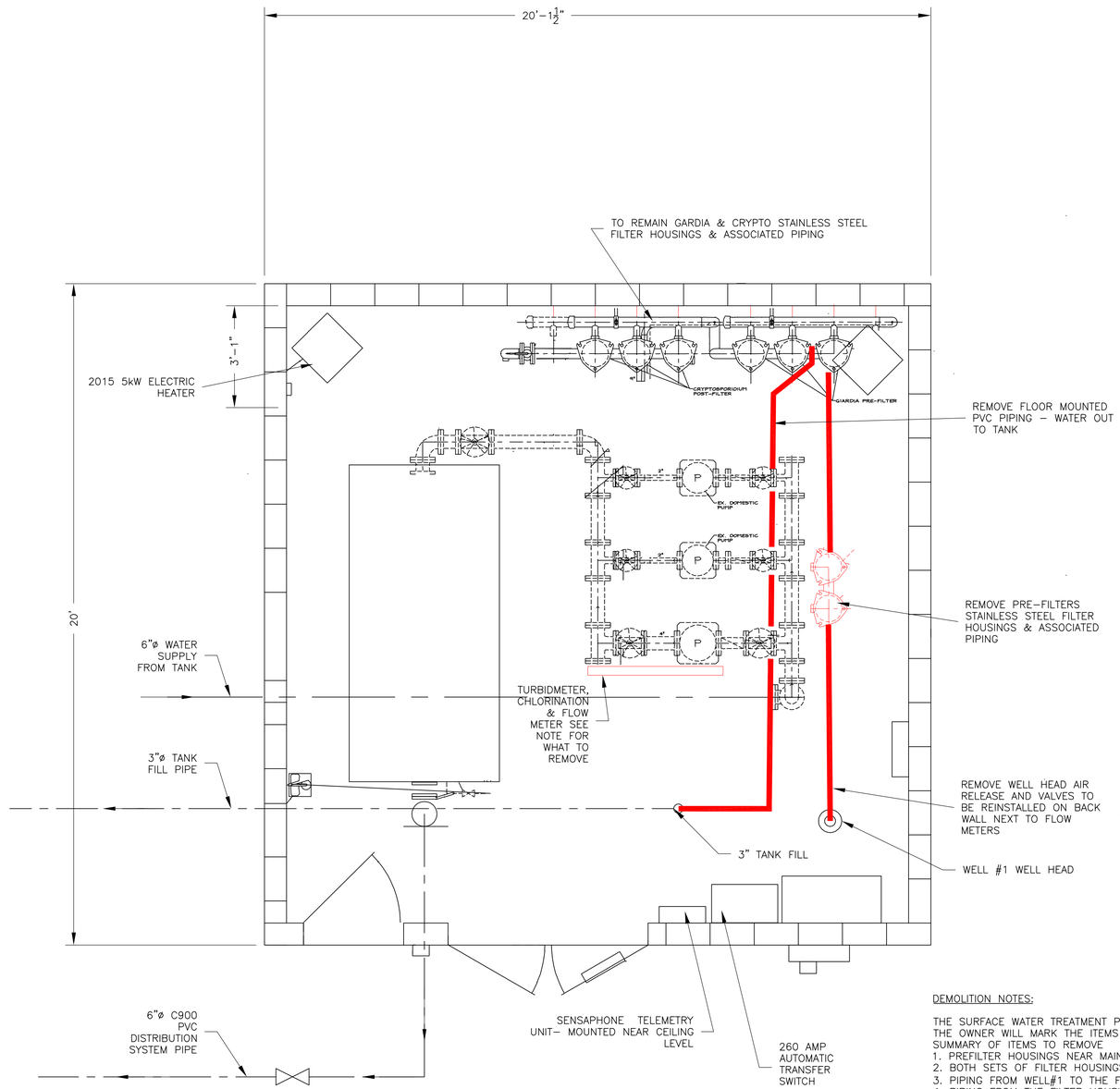
2022 IMPROVEMENT PLANS
BUILDING FLOOR PLAN

DATE 5-7-21

2
of 9 pages



BACKUP POWER GENERATOR
SDMO/ KOLHER JS75

DEMOLITION NOTES:

THE SURFACE WATER TREATMENT PLANT IS TO BE REMOVED.
THE OWNER WILL MARK THE ITEMS TO BE REMOVED WITH TAPE & TEXT
SUMMARY OF ITEMS TO REMOVE
1. PREFILTER HOUSINGS NEAR MAIN ELECTRICAL PANEL
2. BOTH SETS OF FILTER HOUSINGS ON THE REAR WALL
3. PIPING FROM WELL#1 TO THE FILTER HOUSINGS
4. PIPING FROM THE FILTER HOUSINGS TO THE STEEL INLET PIPE NEAR THE FRONT OF THE BUILDING
5. MONITORING EQUIPMENT TO REMOVE – TURBIDITY METER

ITEMS TO REMAIN
CHLORINATION EQUIPMENT & FREE STANDING BACK BOARD.
CHLORINATION ALARMS TO REMAIN CHLORINATION EQUIPMENT TO FEED WELL #2 ONLY

ALL REMOVED EQUIPMENT WILL REMAIN THE PROPERTY OF THE BUSINESS PARK. IT IS TO BE PLACED IN A SHIPPING CONTAINER BEHIND THE BUILDING. ALL ITEMS SHOULD BE KEPT IN GOOD CONDITION.

EXISTING BUILDING PIPING & DEMO PLAN

Scale $\frac{1}{2}$" =1'

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7–30–22

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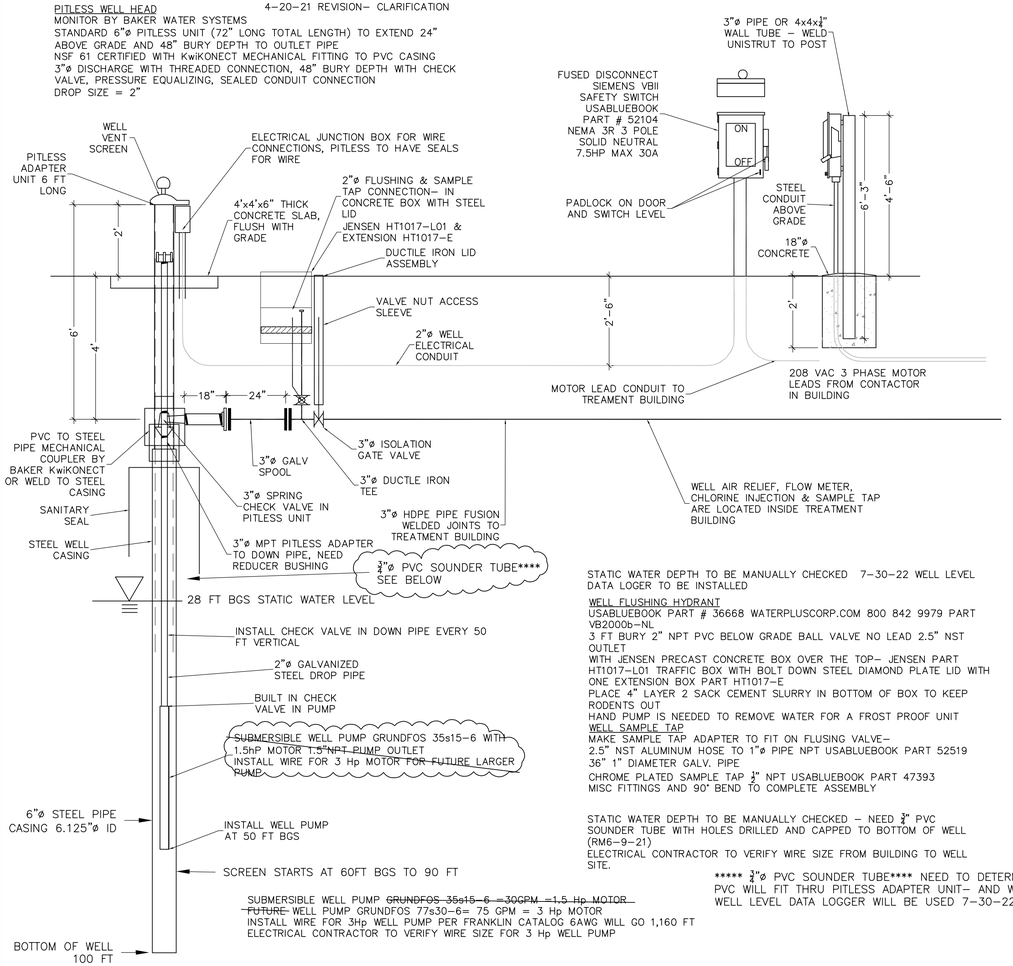
PIPING DEMO PLAN

DATE 5-7-21

PITLESS WELL HEAD
MONITOR BY BAKER WATER SYSTEMS
STANDARD 6"ø PITLESS UNIT (72" LONG TOTAL LENGTH) TO EXTEND 24" ABOVE GRADE AND 48" BURY DEPTH TO OUTLET PIPE
NSF 61 CERTIFIED WITH KwiKONECT MECHANICAL FITTING TO PVC CASING
3"ø DISCHARGE WITH THREADED CONNECTION, 48" BURY DEPTH WITH CHECK VALVE, PRESSURE EQUALIZING, SEALED CONDUIT CONNECTION
DROP SIZE = 2"

4-20-21 REVISION- CLARIFICATION



STATIC WATER DEPTH TO BE MANUALLY CHECKED 7-30-22 WELL LEVEL DATA LOGER TO BE INSTALLED

WELL FLUSHING HYDRANT
USABLUEBOOK PART # 36668 WATERPLUSCORP.COM 800 842 9979 PART VB2000b-NL
3 FT BURY 2" NPT PVC BELOW GRADE BALL VALVE NO LEAD 2.5" NST OUTLET
WITH JENSEN PRECAST CONCRETE BOX OVER THE TOP- JENSEN PART HT1017-L01 TRAFFIC BOX WITH BOLT DOWN STEEL DIAMOND PLATE LID WITH ONE EXTENSION BOX PART HT1017-E
PLACE 4" LAYER 2 SACK CEMENT SLURRY IN BOTTOM OF BOX TO KEEP RODENTS OUT
HAND PUMP IS NEEDED TO REMOVE WATER FOR A FROST PROOF UNIT

WELL SAMPLE TAP
MAKE SAMPLE TAP ADAPTER TO FIT ON FLUSING VALVE-
2.5" NST ALUMINUM HOSE TO 1"ø PIPE NPT USABLUEBOOK PART 52519
36" 1" DIAMETER GALV. PIPE
CHROME PLATED SAMPLE TAP ¾" NPT USABLUEBOOK PART 47393
MISC FITTINGS AND 90° BEND TO COMPLETE ASSEMBLY

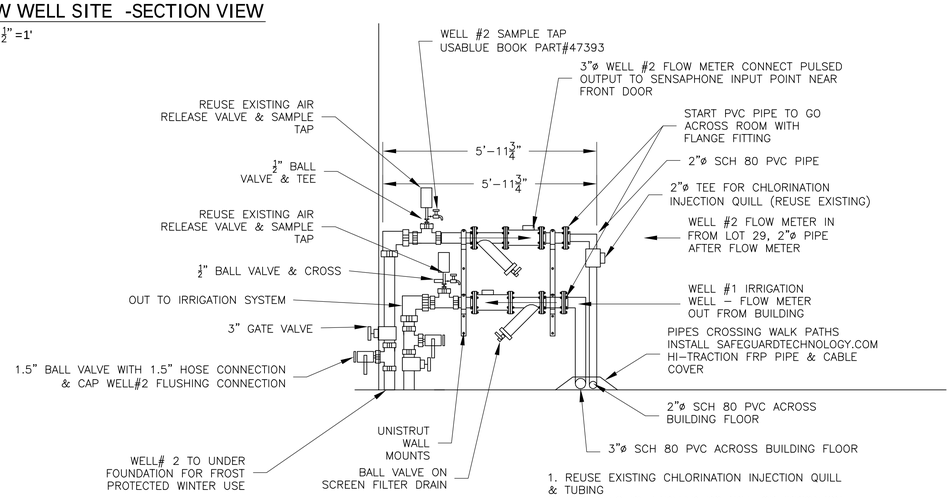
STATIC WATER DEPTH TO BE MANUALLY CHECKED - NEED ¾" PVC SOUNDER TUBE WITH HOLES DRILLED AND CAPPED TO BOTTOM OF WELL (RM6-9-21)
ELECTRICAL CONTRACTOR TO VERIFY WIRE SIZE FROM BUILDING TO WELL SITE.

***** ¾"ø PVC SOUNDER TUBE**** NEED TO DETERMINE IF PVC WILL FIT THRU PITLESS ADAPTER UNIT- AND WHAT WELL LEVEL DATA LOGGER WILL BE USED 7-30-22

~~SUBMERSIBLE WELL PUMP GRUNDFOS 35s15-6 =30GPM =1.5 Hp MOTOR FUTURE~~ WELL PUMP GRUNDFOS 77s30-6= 75 GPM = 3 Hp MOTOR
INSTALL WIRE FOR 3Hp WELL PUMP PER FRANKLIN CATALOG 6AWG WILL GO 1,160 FT
ELECTRICAL CONTRACTOR TO VERIFY WIRE SIZE FOR 3 Hp WELL PUMP

NEW WELL SITE -SECTION VIEW

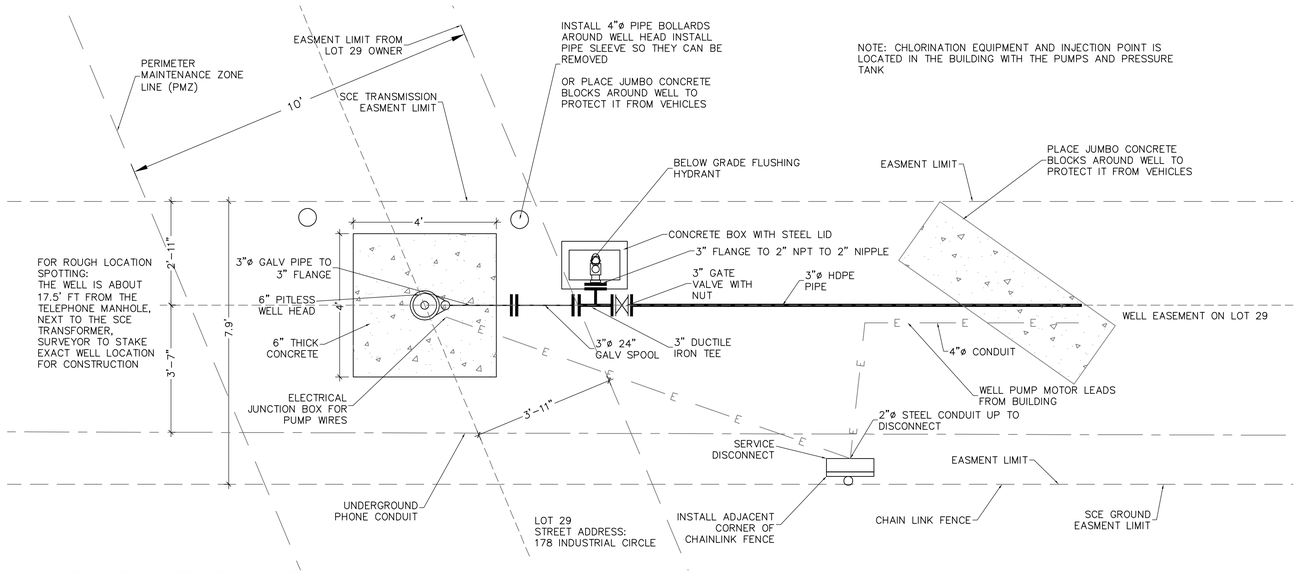
Scale ½" =1'



1. REUSE EXISTING CHLORINATION INJECTION QUILL & TUBING
2. PIPING TO BE LABELED POTABLE OR IRRIGATION

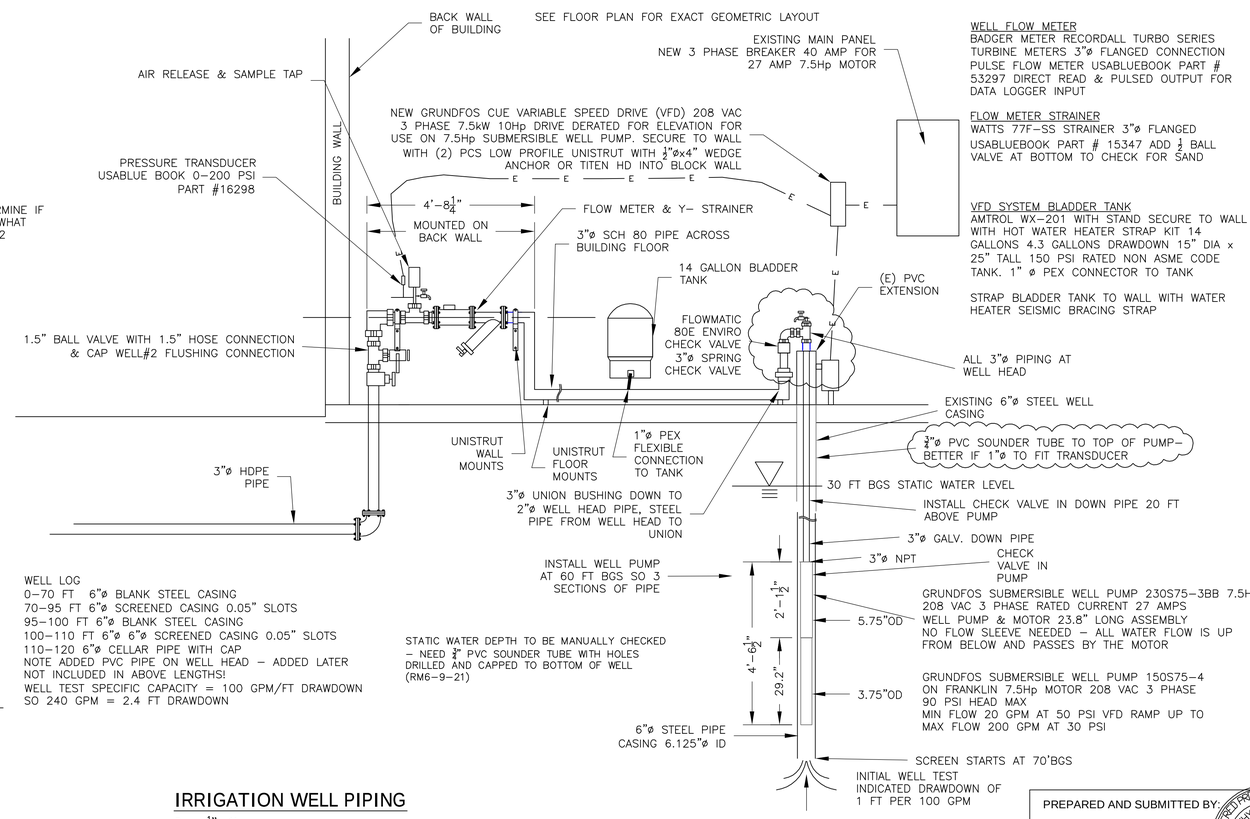
WELL HEAD PIPING IN BUILDING

Scale ½" =1'



NEW WELL SITE -PLAN VIEW

Scale ½" =1'



WELL LOG
0-70 FT 6"ø BLANK STEEL CASING
70-95 FT 6"ø SCREENED CASING 0.05" SLOTS
95-100 FT 6"ø BLANK STEEL CASING
100-110 FT 6"ø 6"ø SCREENED CASING 0.05" SLOTS
110-120 6"ø CELLAR PIPE WITH CAP
NOTE ADDED PVC PIPE ON WELL HEAD - ADDED LATER NOT INCLUDED IN ABOVE LENGTHS!
WELL TEST SPECIFIC CAPACITY = 100 GPM/FT DRAWDOWN SO 240 GPM = 2.4 FT DRAWDOWN

STATIC WATER DEPTH TO BE MANUALLY CHECKED - NEED ¾" PVC SOUNDER TUBE WITH HOLES DRILLED AND CAPPED TO BOTTOM OF WELL (RM6-9-21)

IRRIGATION WELL PIPING

Scale ½" =1'

IRRIGATION SYSTEM COMPONENT LIST

WELL FLOW METER
BADGER METER RECORDALL TURBO SERIES TURBINE METERS 3"ø FLANGED CONNECTION
PULSE FLOW METER USABLUEBOOK PART # 53297 DIRECT READ & PULSED OUTPUT FOR DATA LOGGER INPUT

FLOW METER STRAINER
WATTS 77F-SS STRAINER 3"ø FLANGED
USABLUEBOOK PART # 15347 ADD ½ BALL VALVE AT BOTTOM TO CHECK FOR SAND

VFD SYSTEM BLADDER TANK
AMTROL WX-201 WITH STAND SECURE TO WALL WITH HOT WATER HEATER STRAP KIT 14 GALLONS 4.3 GALLONS DRAWDOWN 15" DIA x 25" TALL 150 PSI RATED NON ASME CODE TANK. 1" ø PEX CONNECTOR TO TANK

STRAP BLADDER TANK TO WALL WITH WATER HEATER SEISMIC BRACING STRAP

7-30-22

REVISIONS

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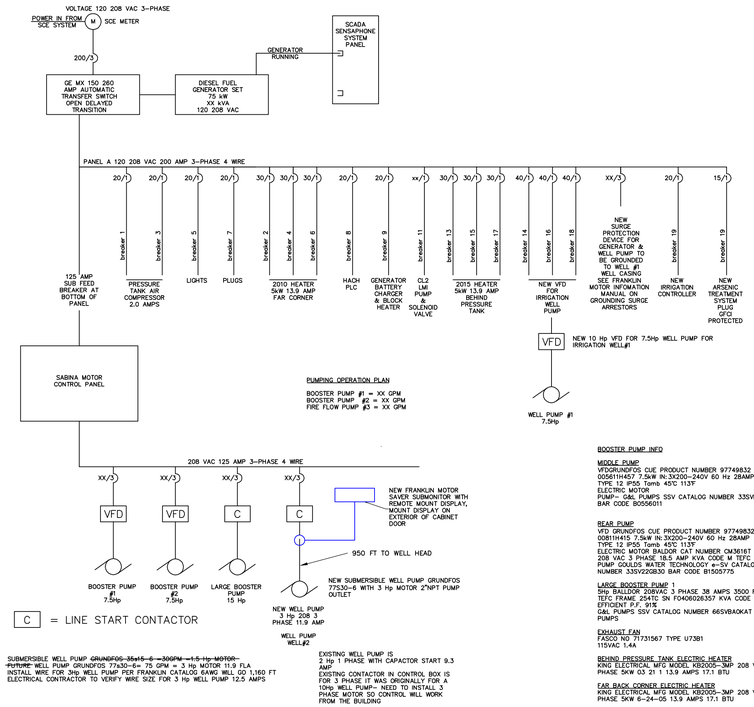
71 Industrial Circle Mono County CA 93546
2022 IMPROVEMENT PLANS
LOT 29 WELL SITE & BUILDING

PREPARED AND SUBMITTED BY:
TIM RUDOLPH 7-30-22
TIM RUDOLPH DATE
RCE 63207 EXP. 6-30-24

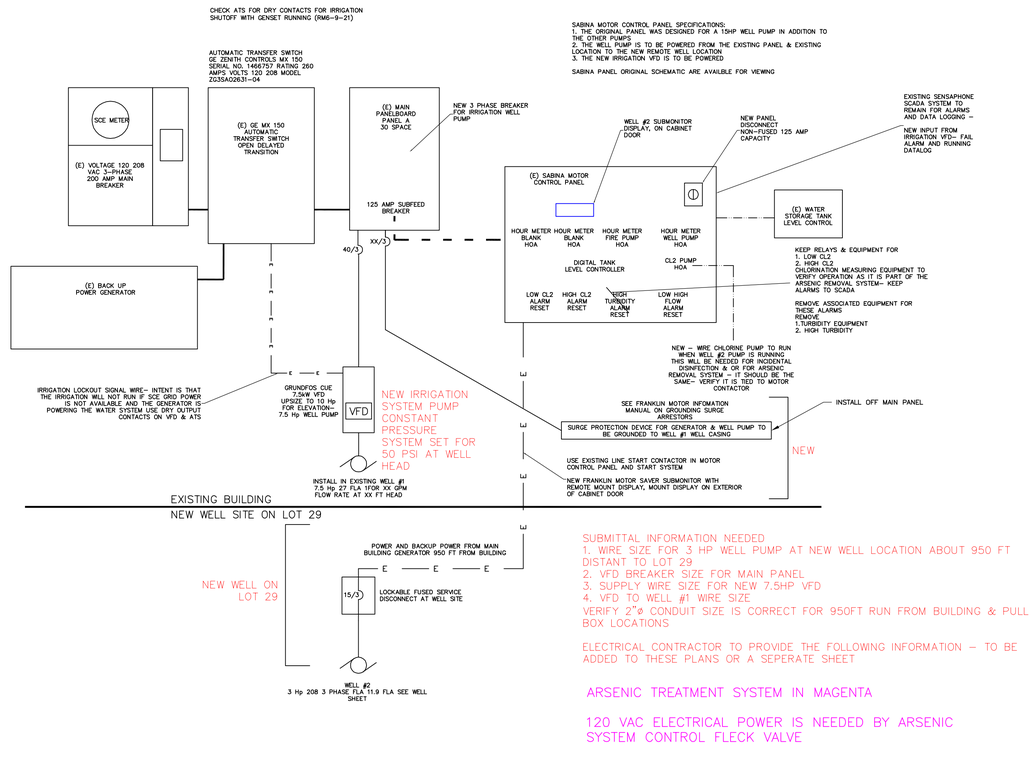
REGISTERED PROFESSIONAL ENGINEER TIMOTHY P. RUDOLPH 63207 EXP. 6/30/24 CIVIL STATE OF CALIFORNIA

DATE 5-7-21



ELECTRICAL SYSTEM SINGLE LINE DIAGRAM

Scale $\frac{1}{2}$" =1'



ELECTRICAL SYSTEM PANEL DIAGRAM

Scale $\frac{1}{2}$" =1'

WELL PUMP INSTALLATION & STARTUP ISSUES

1. PROJECT CONTRACTOR TO PROVIDE ELECTRICIAN ON SITE WITH WELL PUMP INSTALLATION FOR MEGER TEST AND COORDINATION OF CONTROL PANEL WIRING CHANGES

2. THE ELECTRICAL CONTROLS FOR THE NEW WELL #2 ARE CURRENTLY USED FOR WELL #1

7–30–22

REVISIONS
7-19-22 CHANGE TO 7.5 Hp PUMP 10 Hp VFD

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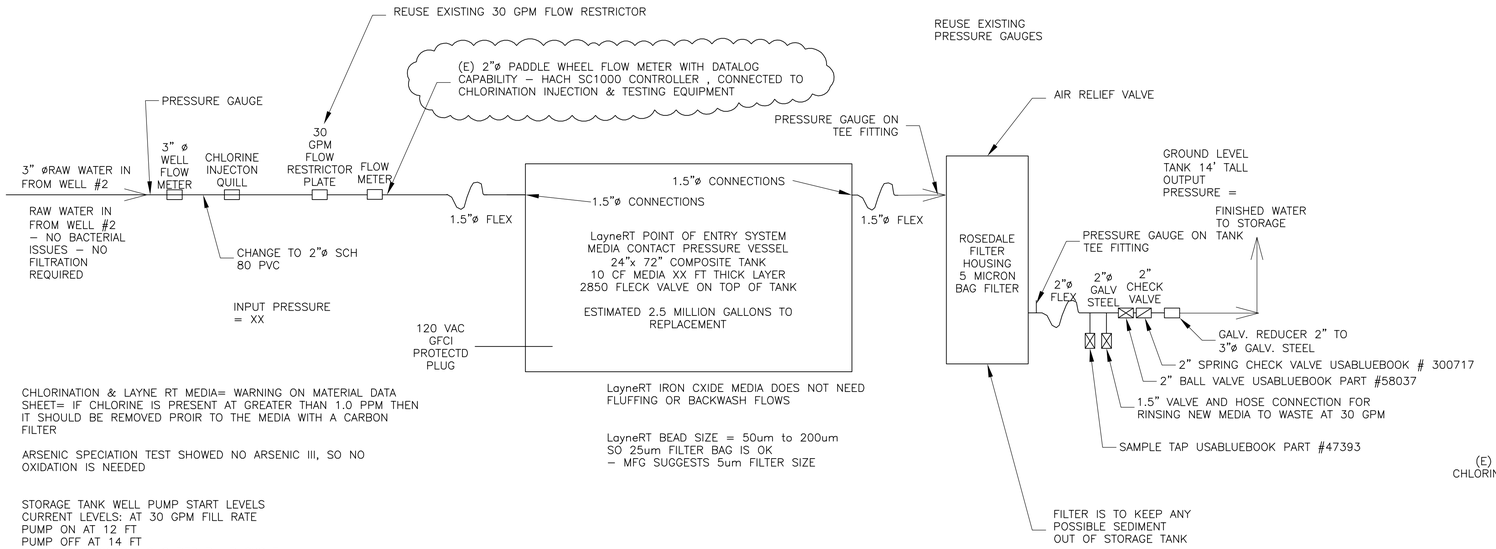
2022 IMPROVEMENT PLANS
ELECTRCIAL PLAN

DATE 5-7-21



CHLORINATION & LAYNE RT MEDIA= WARNING ON MATERIAL DATA SHEET= IF CHLORINE IS PRESENT AT GREATER THAN 1.0 PPM THEN IT SHOULD BE REMOVED PROIR TO THE MEDIA WITH A CARBON FILTER

ARSENIC SPECIATION TEST SHOWED NO ARSENIC III, SO NO OXIDATION IS NEEDED

STORAGE TANK WELL PUMP START LEVELS
CURRENT LEVELS: AT 30 GPM FILL RATE
PUMP ON AT 12 FT
PUMP OFF AT 14 FT
APPROX 12,000 GALLONS PER PUMP CYCLE
ABOUT 6,000 GALLONS PER FT OF TANK ELEVATION

INSTALL TIMING RELAY ON WELL PUMP TO RUN FOR 15 MIN EVERY DAY TO KEEP WATER FRESH IN PIPING & TREATMENT VESSEL. (15 MIN x 30GPM =450 GALLONS)

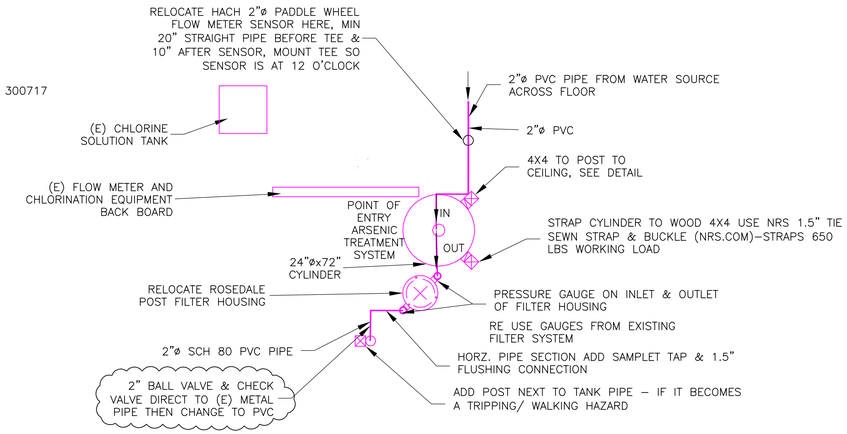
LayneRT IRON CXIDE MEDIA DOES NOT NEED FLUFFING OR BACKWASH FLOWS

LayneRT BEAD SIZE = 50um to 200um
SO 25um FILTER BAG IS OK
– MFG SUGGESTS 5um FILTER SIZE

NEED TO PROVIDE FLEX CONNECTORS FOR SEISMIC & SERVICIBILITY MOVEMENT – USE 1.5"ø STAINLESS STEEL HOT WATER HEATER CONNECTORS

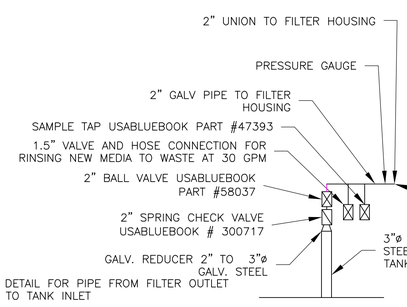
ARSENIC SKID SYSTEM-SCHEMATIC DIAGRAM

Scale $\frac{1}{2}$" =1'



ARSENIC TREATMENT SYSTEM- PLAN VIEW

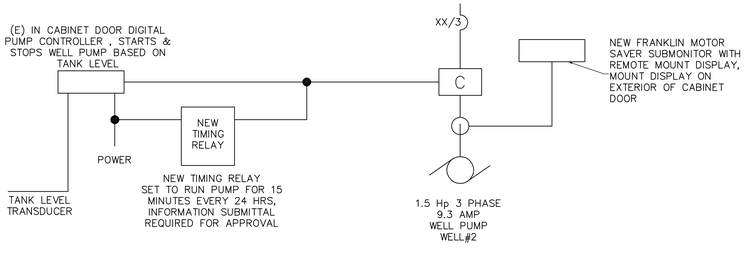
Scale $\frac{1}{2}$" =1'



TANK FILL PIPING DETAIL

Scale $\frac{1}{2}$" =1'

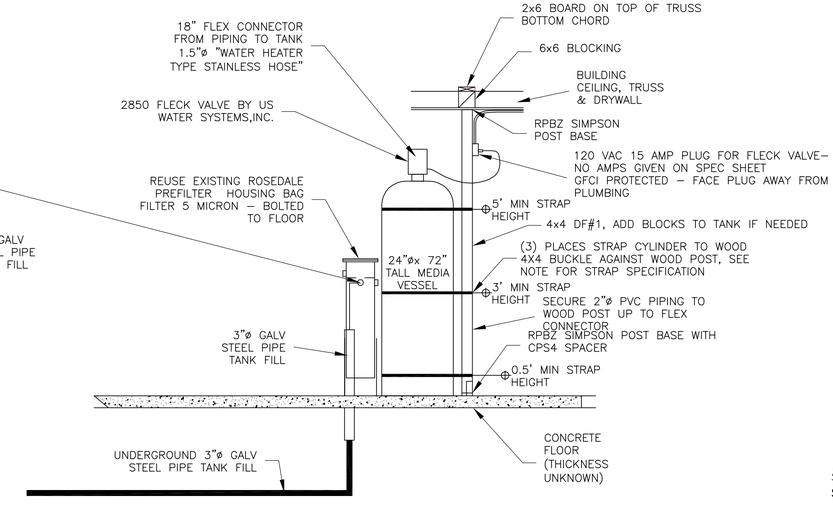
– ROSDALE FILTER BAGS HAVE A 25 GPD FLOW REQUIREMENT – TO MEET THIS A TIMING RELAY NEEDS TO BE ADD TO RUN THE WELL PUMP EVERY DAY FOR 15 MINUTES
–THE Layne RT MEDIA WILL ALSO BENEFIT FROM DAILY FLOW. IT WILL KEEP THE MEDIA FROM STICKING TOGETHER



C = LINE START CONTACTOR

WELL PUMP - NEW TIMING RELAY

Scale $\frac{1}{2}$" =1'



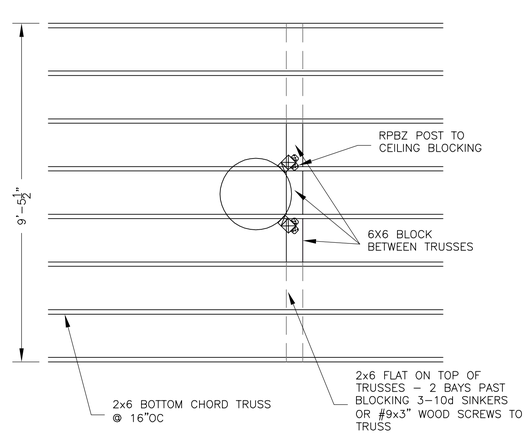
POST FILTER SPECIFICATIONS
REUSE EXISTING ROSEDALE PREFILTER HOUSING BAG FILTER 5 MICRON
FILTER HOUSING PART # NC08–30–2P–*–150–S–B–PB
RELEASE # 32311 150 PSIG RATED

FILTER BAGS ROSDALE 5 MICRON PO–5–G2RPO–NSF

WOOD POST
1. NRS 9 FT LONG x 1.5" STRAPS AND BUCKLE ASSEBMLY 650 LB WORKING LIMIT 2,000 LB MIN. BREAKING STRENGTH AVAILABLE AT NRS.COM
2. SIMPSON RPBZ POST BASE TO CONCRETE = $\frac{3}{8}$"x 4" TITEN HD CONCRETE SCREW INSTALL ON CPS 4 COMPOSITE SPACE TO LIFT POST BASE OFF CONCRETE
3. SIMPSON RPBZ POST BASE TO CEILING BLOCKING THRU DRYWALL 4 PCS $\frac{1}{4}$"x 4.5 SDS SCREWS
4. SIMPSON RPBZ TO POST SIMPSON $\frac{1}{4}$"x1.5 SDS SCREW FILL ALL HOLES 4 PCS

ARSENIC TREATMENT SYSTEM- ELEVATION VIEW

Scale $\frac{1}{2}$" =1'



ATTIC FRAMING

Scale $\frac{1}{2}$" =1'

WAITING FOR MFG INSTALLATION DRAWINGS
PRELIMINARY APPROVAL FROM WATERBOARD 8–3–21

REVISIONS

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2022 IMPROVEMENT PLANS
ARSENIC TREATMENT SYSTEM

PREPARED AND SUBMITTED BY:
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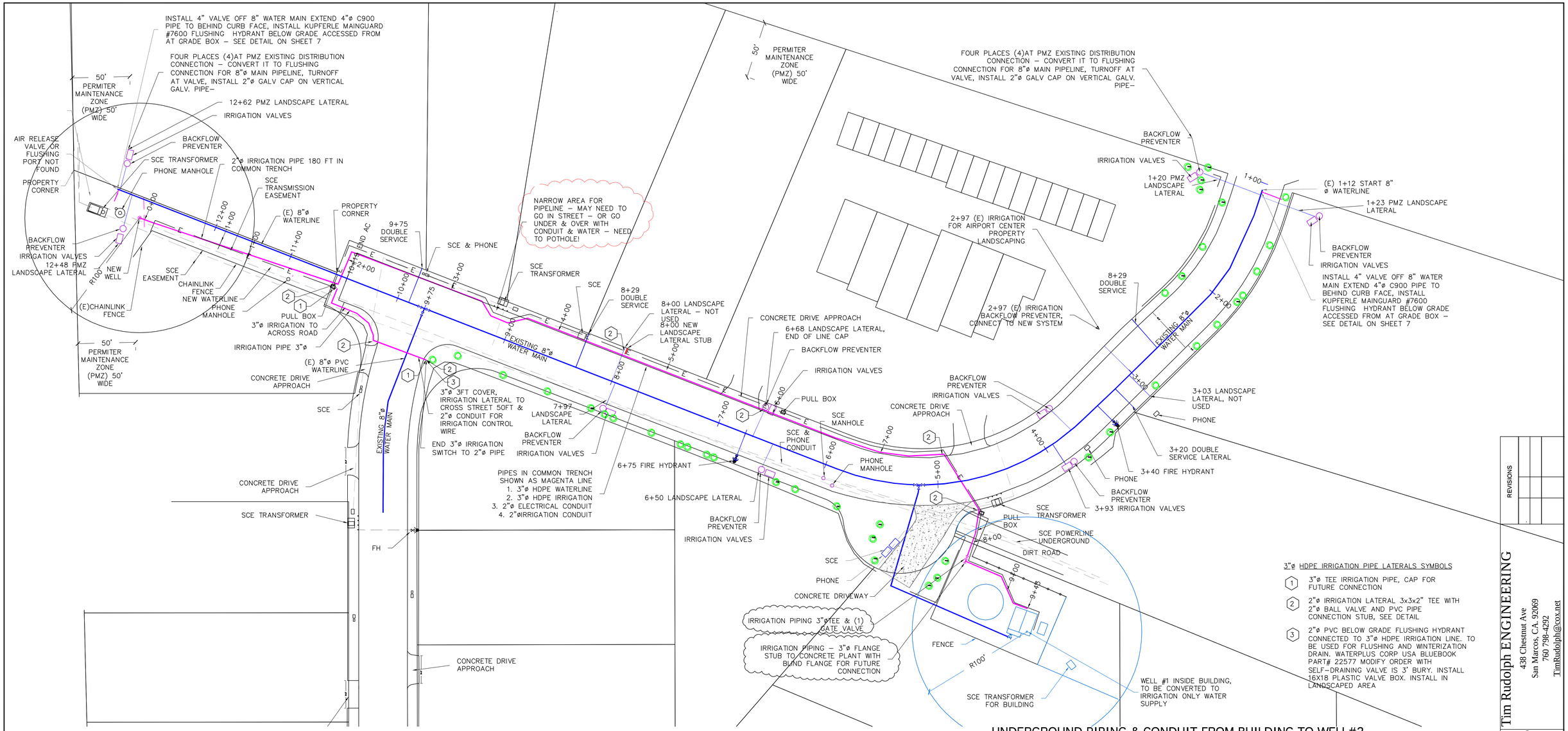
TIM RUDOLPH DATE
RCE 63207 EXP. 6-30-24

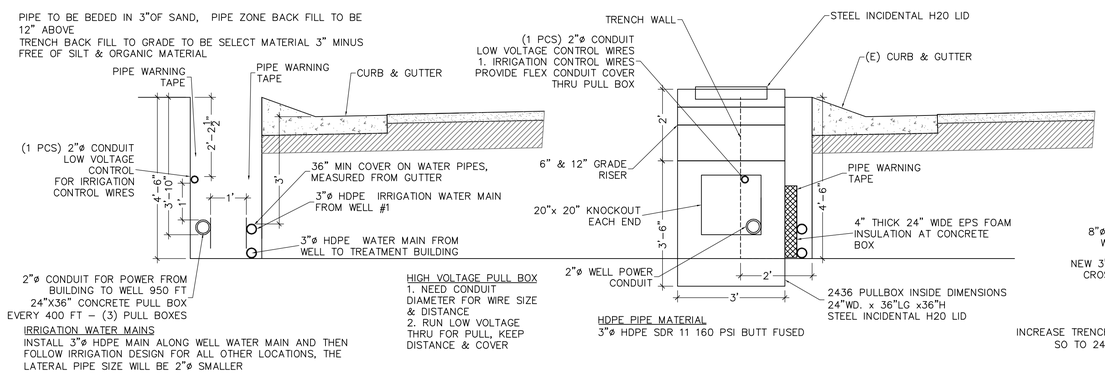
REGISTERED PROFESSIONAL ENGINEER TIMOTHY P. RUDOLPH 63207 EXP. 6/30/24 CIVIL STATE OF CALIFORNIA

DATE 8-12-21



UNDERGROUND PIPING & CONDUIT FROM BUILDING TO WELL#2

Scale 1"=40'



TRENCH SECTION FROM WELL#2 TO BUILDING

Scale 1/2" =1'

ELECTRICAL PULL BOX

Scale 1/2" =1'

STREET CROSSING AT WATERLINE

Scale 1/2" =1'

IRRIGATION LATERALS

Scale 1/2" =1'

5–17–22

REVISIONS

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2022 WATER SYSTEM PROJECT
WATER PIPELINE & WELL ELECTRIC

PREPARED AND SUBMITTED BY:

TIM RUDOLPH 7-30-22
TIM RUDOLPH RCE 63207 DATE EXP. 6-30-24

REGISTERED PROFESSIONAL ENGINEER TIMOTHY P. RUDOLPH 63207 EXP. 6/30/24 CIVIL STATE OF CALIFORNIA

DATE 5-7-21

GENERAL NOTES

1. RESTRAINED JOINTS OR THRUST BLOCKS ARE REQUIRED ON ALL TYPES OF PIPE UTILIZING RUBBER RING-GASKET JOINTS FOR ALL CHANGES OF HORIZONTAL OR VERTICAL DIRECTION IN EXCESS OF 5°. AT DEAD ENDS, TEES (INCLUDING CROSSES TEMPORARILY FUNCTIONING AS TEES), TEES WHICH ARE INSTALLED WITH A BLIND FLANGE FOR FUTURE EXTENSION, AND ON ALL FIRE HYDRANT TEES INCLUDING INCOMPLETE INSTALLATIONS CONSISTING OF A BLIND FLANGED TEE OR SIDE OUTLET. THRUST BLOCKS PLACED AGAINST BLIND FLANGES SHALL BE CONSTRUCTED TO ALLOW REMOVAL OF SAID THRUST BLOCK AND BLIND FLANGE WITHOUT DISTURBING ANY ADJACENT THRUST BLOCKS.

2. CONTRACTOR SHALL VERIFY LOCATION AND DEPTHS OF ALL UNDERGROUND AND ABOVE GROUND INTERFERENCES (UNDER SUPERVISION OF THE AFFECTED UTILITY, AGENCY, OR PERSON) AND TAKE PROPER PROTECTIVE AND PRECAUTIONARY MEASURES.

3. THE CONTRACTOR IS TO PROVIDE A WRITTEN WORK PLAN AND SCHEDULE PRIOR TO BEGINNING CONSTRUCTION.

4. UNLESS OTHERWISE SPECIFIED, ALL APPURTENANCES SHALL BE CONSTRUCTED AT RIGHT ANGLES TO PIPELINE AT STATION NOTED (SYMBOL LOCATIONS ARE APPROXIMATE ONLY).

5. THE SPECIFIED GRADES SHALL BE CONSIDERED MET IF FIELD MEASUREMENT SHOWS COMPLIANCE TO NEAREST 0.1' OF THE COMPUTED GRADE, EXCEPT WHERE ROUNDING UP CAUSES VIOLATION OF MINIMUM COVER REQUIREMENTS AND AT CRITICAL POINTS SUCH AS MEETING EXISTING FACILITIES AND AVOIDING INTERFERENCES. THE SBPOA INSPECTOR SHALL HAVE DISCRETIONARY AUTHORITY TO ACCEPT VARIATIONS UP TO 0.2' FROM THE COMPUTED GRADE IN NONCRITICAL AREAS IF SAGS AND HUMPS ARE NOT INTRODUCED INTO THE PROFILE THEREBY.

6. ALL OPERATIONS OF THE SBPOA WATER SYSTEM SHALL BE PERFORMED OR WITNESSED BY AUTHORIZED SBPOA PERSONNEL. ALL CONNECTIONS TO EXISTING SYSTEM MADE BY CONTRACTOR SHALL BE UNDER DIRECT SUPERVISION OF THE DISTRICT'S INSPECTOR.

7. PRIOR TO ANY INSTALLATIONS, THE CONTRACTOR MUST RECEIVE SBPOA APPROVAL OF ALL MATERIALS TO BE INSTALLED.

8. BOLTS SHALL BE STANDARD HEX HEAD MACHINE PER APPROVED MATERIALS LIST. NUTS SHALL BE HEAVY COLD-PRESSED SEMI-FINISHED STEEL PER APPROVED MATERIALS LIST. THREADS SHALL BE LUBRICATED WITH A DISTRICT APPROVED ANTI-SEIZE COMPOUND. ALL BELOW GROUND EXPOSED STEEL SHALL BE COATED WITH A DISTRICT APPROVED BITUMASTIC. ALL ABOVEGROUND EXPOSED STEEL SHALL BE PAINTED IN ACCORDANCE WITH THE DISTRICT'S APPROVED PAINT SYSTEMS.

9. THE CONTRACTOR IS TO MAINTAIN ALL RECORDS OF AS-BUILT LOCATIONS OF INSTALLED FACILITIES AND IS TO FURNISH SUCH RECORDS UPON COMPLETION OF WORK.

10. CONTRACTOR MUST NOTIFY DIG ALERT PRIOR TO ANY EXCAVATION.

11. OUTAGES

Work shall be scheduled to limit the time customers are without water service. The Contractor is to include in the schedule proposed outages and time limits for such outages. 24 hour notice is required to customers prior to a planned outage.

12. PROTECTION OF WORK

Trench plates shall be used to protect open trenches.

13. ALL WATER LINES SHALL BE HYDROSTATICLY PRESSURE TESTED FOR LEAKAGE PER AWWA C900-16 OR C901 FOR HDPE ALL LEAKS AND DEFECTIVE PIPE MUST BE REPAIRED OR REPLACED PRIOR TO PLACING ANY WATER LINE IN SERVICE

HYDROSTATIC TESTING The contractor shall submit a Hydrostatic testing plan to the SBPOA for approval prior to the start of work. The plan should comply with AWWA C605. The contractor shall provide and install any saddle taps needed for pressure testing. The minimum test pressure shall be 150 psi maintained for 2 hours. The pressure test shal be made with equipment that allows measurement of the water added to maintain constant pressure. The allowable leakage shall be for 6" Ø pipe 0.01 gph per pipe joint (approximated for 300 ft of pipe=300 / 20=15 joints so 15*0.01*2hr=0.3 gallons total- the allowance is not intended to allow for actual leakage but for slight swelling of the pipe diameter, seating of gaskets, trapped air, and engagement of pipe restraint. Leaks must be repaired. The plan should include test port locations and proposed test equipment.

GENERAL NOTES CONT...

14. DISINFECTION OF PIPELINES AND APPURTENANCES: CONTRACTOR TO SUBMIT A HYDROSTATIC TESTING AND DISINFECTION PLAN FOR THE SBPOA's APPROVAL PRIOR TO BEGINNING CONSTRUCTION.

Contractor shall furnish all equipment, labor, and materials for the proper disinfection (chlorination and flushing) of all pipelines and appurtenances. Before any pipelines are connected to the existing system for testing and disinfection, Contractor may disinfect pipelines and appurtenances either before or after they have been subjected to hydrostatic and leakage tests. If Contractor elects to disinfect before hydrostatic and leakage testing, and he must repair or replace pipelines as a result of said hydrostatic or leakage tests, Contractor shall again disinfect all or portions of previously tested pipelines, as directed by the SBPOA .

Disinfection shall conform to provisions of AWWA C651-Current Version . Chlorinating agent shall be applied as approved by the SBPOA and at locations selected by the Contractor and approved by the SBPOA . Concentration of the dosage applied to the water within the pipeline shall be at least 40-50 ppm. Disinfecting may be accomplished with liquid chlorine, calcium hypochlorite granules, sodium hypochlorite solutions, or calcium hypochlorite tablets, however, the SBPOA must approve disinfection agent before use.

Chlorinated water must be retained in the pipeline long enough to destroy all non-spore-forming bacteria. Said period shall be at least 24 hours. After the chlorine-treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative locations shall be not less than 10 ppm.

Following chlorination, Declorination of the disinfection water is mandatory as it is discharged to the streets. Contractor shall flush all pipelines and appurtenances in the manner and with the procedure approved by the SBPOA . The flushing shall be done to provide a water velocity of 5fps in the pipe to be flushed - minimum flushing flowrates for pipe diameters -3" Ø@150gpm, 4"Ø@ 200gpm, 6"Ø @ 450gpm, 8"Ø@ 780gpm During flushing all valves shall be in full open free discharge position. Flushing shall continue until all chlorine, debris, and foreign materials have been removed from pipelines and appurtenances. Contractor shall be responsible for controlling and directing flushed water; Contractor shall be responsible for all remedial work to public or private properties which are damaged as a result of flushing operations.

If so directed by the SBPOA , Contractor shall remove portions of certain appurtenances such as air valve installations, blowoff installations, and service installations in order to accomplish complete flushing; Contractor shall replace same without adversely affecting disinfected pipelines and appurtenances.

Chlorine residual and bacteriological analysis tests will be performed by SBPOA during their regularly scheduled testing day. If initial chlorination fails to produce satisfactory disinfection as evidenced by chlorine residual or bacteriological analysis, disinfection procedure shall be repeated until acceptable results have been obtained. Once a negative bacteriological sample is verified, no additional work, including testing, shall be performed by Contractor, except for connections to existing system as scheduled and inspected by the SBPOA .

Following disinfection, pipelines and appurtenances shall remain isolated from any operational water system facilities until evidence has been submitted to the SBPOA demonstrating that said pipelines and appurtenances have been adequately and properly disinfected. Said evidence shall consist of aforementioned Affidavits of Compliance together with said bacteriological test results, as submitted by the SBPOA approved certified laboratory. Normally, said pipelines and appurtenances shall be isolated for at least 48 hours or longer if so determined by the SBPOA . See Special Provisions Section 6.15 for further Details

HDPE PIPE SPECIFICATIONS

Well to building pipe 3"ø HDPE SDR 11 160 psi butt fused test pressure 100 psi
Irrigation pipe 3"ø HDPE SDR 11 160 psi butt fused test pressure 100 psi
Galvanized steel pipe 3"ø sch 40

Irrigation piping well head to flow meter – 3" SCH PVC socket welded pipe or other SCH 80 pipe size as indicated ASTM D2241, NSF #14 fittings ASTM D2467 solvents to be ASTM D2564
Tracer wire to be 12 AWG SOC 10 PE(color –blue) or larger

HDPE PIPE & FITTINGS

This specification covers high density polyethylene (PE3408) pressure pipe primarily intended for the transportation of potable water either buried or above grade.

HDPE Material:

Materials used for the manufacturing of polyethylene pipe and fittings shall be PE 3408 High Density Polyethylene (HDPE) meeting the ASTM D3350 cell classification of 345434C. The material shall have a minimum Hydrostatic Design Basis (HDB) of 160 psi at 73'F when tested in accordance with PPI TR–3 and shall be listed in the name of the pipe and fitting manufacturer in PPI TR4.
The material used in the production of potable water pipe shall be approved by the National Sanitation Foundation (NSF).
The Manufacturer shall certify that the materials used to manufacture pipe and fittings meet the requirements of this specification.

PIPE:

Polyethylene pipe shall be manufactured in accordance with AWWA C906 for sizes 4" through 54" and AWWA C901 for sizes ½" to 3".
Pipe with gouges or cuts in excess of 10 percent of the product wall thickness should not be used.
Permanent identification of piping service shall be provided by co–extruding longitudinal blue stripes into the pipe's outside surface. The striping material shall be the same material as the pipe material except for color. Stripes printed or painted on the pipe outside surface shall not be acceptable.

FITTINGS:

Polyethylene fittings shall be made from material meeting the same requirements as the pipe. Polyethylene fittings shall be molded or fabricated by the manufacturer of the pipe. Where applicable, fittings shall meet the requirements of AWWA C906 or C901.
Molded fittings shall be manufactured in accordance with either ASTM D2683 (socket fused) or ASTM D3261 (butt fused) and shall be so marked.

INSTALLATION AND TESTING

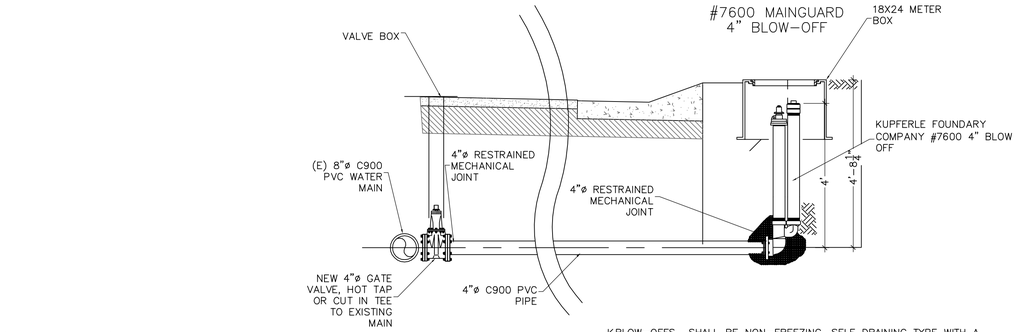
Joints between plain ends of polyethylene pipe shall be made by butt fusion when possible. The Pipe Manufacturer's fusion procedures shall be followed at all times as well as the recommendations of the Fusion Machine Manufacturer. The wall thicknesses of the joining pipes shall have the same DR at the point of fusion. The AWWA M55 Manual for the Design and Installation in Water Application shall be followed.
When saddle connections are fusion welded the Manufacturer's recommended saddle fusion procedures shall be used.
If mechanical fittings (which are designed for, or tested and found acceptable for use with polyethylene pipe) are utilized for transitions between pipe materials, repairs, joining pipe sections, saddle connections, or at other locations, the recommendation of the Mechanical Fitting Manufacturer must be followed. These procedures may differ from other pipe materials.
Socket and Saddle fusions shall be tested by a bent strap test as described by the Pipe Manufacturer. The pipe Manufacturer shall provide visual guidelines for inspecting the butt, saddle, and socket fusion joints.
Pressure testing shall be conducted in accordance with the Manufacturer's recommended procedure. Pressure testing shall use water as the test media. Pneumatic (air) testing is prohibited.
Testing to ASTM F2164, Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure. The procedure is annotated below.

HYDROSTATIC TESTING

Fill the pipeline with water after it has been laid; bleed off any trapped air. Subject the lowest element in the system to a test pressure that is 1.5 times the design pressure, and check for any leakage.
The test procedures consist of two steps; the initial expansion and the test phase. When test pressure is applied to a water filled pipe, the pipe expands. During the initial expansion of the pipe under test, sufficient make–up water must be added to the system at hourly intervals for 3 hours to maintain the test pressure. After about 4 hours, initial expansion should be complete and the actual test can start.
When the test is to begin, the pipe is full of water and is subjected to a constant test pressure of 1.5 times the system design pressure. The test phase should not exceed 3 hours, after which time any water deficiency must be replaced and measured. Add and measure the amount of make–up water required to return to the test pressure and compare this to the maximum allowance in the table below.
An alternate leakage test consists of maintaining the test pressure (described above) over a period of 4 hours and then dropping the pressure by 10 psi (0.69 MPa). If the pressure then remains within 5% of the target value for 1 hour, this indicates there is no leakage in the system.

NOTES:

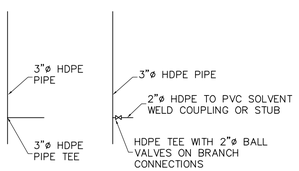
Under no circumstances shall the total time under test exceed 8 hours at 1.5 times the system pressure rating. If the test is not complete within this time limit (due to leakage, equipment failure, etc.), the test section shall be permitted to "relax" for 8 hours prior to the next test sequence.
Air testing is not recommended. Additional safety precautions may be required
Above procedure taken from PPI Technical Report TR–31 by the Plastic Pipe Institute.
The allowable leakage for 3" pipe is 0.1 gallons/100 ft for a 1–hour test, 0.15 gallons/100 ft for a 2–hour test, 0.25 gallons/100 ft for a 3–hour test



FLUSHING HYDRANT AT END OF WATER MAINS

K BLOW–OFFS SHALL BE NON–FREEZING, SELF DRAINING TYPE WITH A 48" DEPTH OF BURY, SET IN 18x24" METER BOXES.
BLOW–OFFS WILL BE FURNISHED WITH A 4" MJ INLET, A NON–TURNING OPERATING ROD AND SHALL OPEN TO THE LEFT. ALL OF THE WORKING PARTS SHALL BE OF BRONZE–TO–BRONZE DESIGN, AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING. UNITS SHALL OPERATE WITH A STANDARD 2" GATE VALVE WRENCH. WHEN OPEN, VALVE SHALL BE 100% UNOBSTRUCTED AND DRAIN HOLE SHALL BE COVERED. THE OUTLET SHALL BE 4" FIP WITH PLUG AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO. MODEL #7600, OR APPROVED EQUAL

(SPECIFY OVERALL LENGTH 6" SHORTER THAN NORMAL DEPTH OF BURY. MINIMUM OPENING IN METER BOX SHOULD BE 14")



3"Ø IRRIGATION PIPE LATERAL TEE

Scale ½" =1'

4"Ø BLOW OFF AT 8"Ø DEADEND WATER MAIN

Scale ½" =1'

7–30–22

PREPARED AND SUBMITTED BY:

TIM RUDOLPH 7-30-22
TIM RUDOLPH DATE
RCE 63207 EXP. 6-30-24

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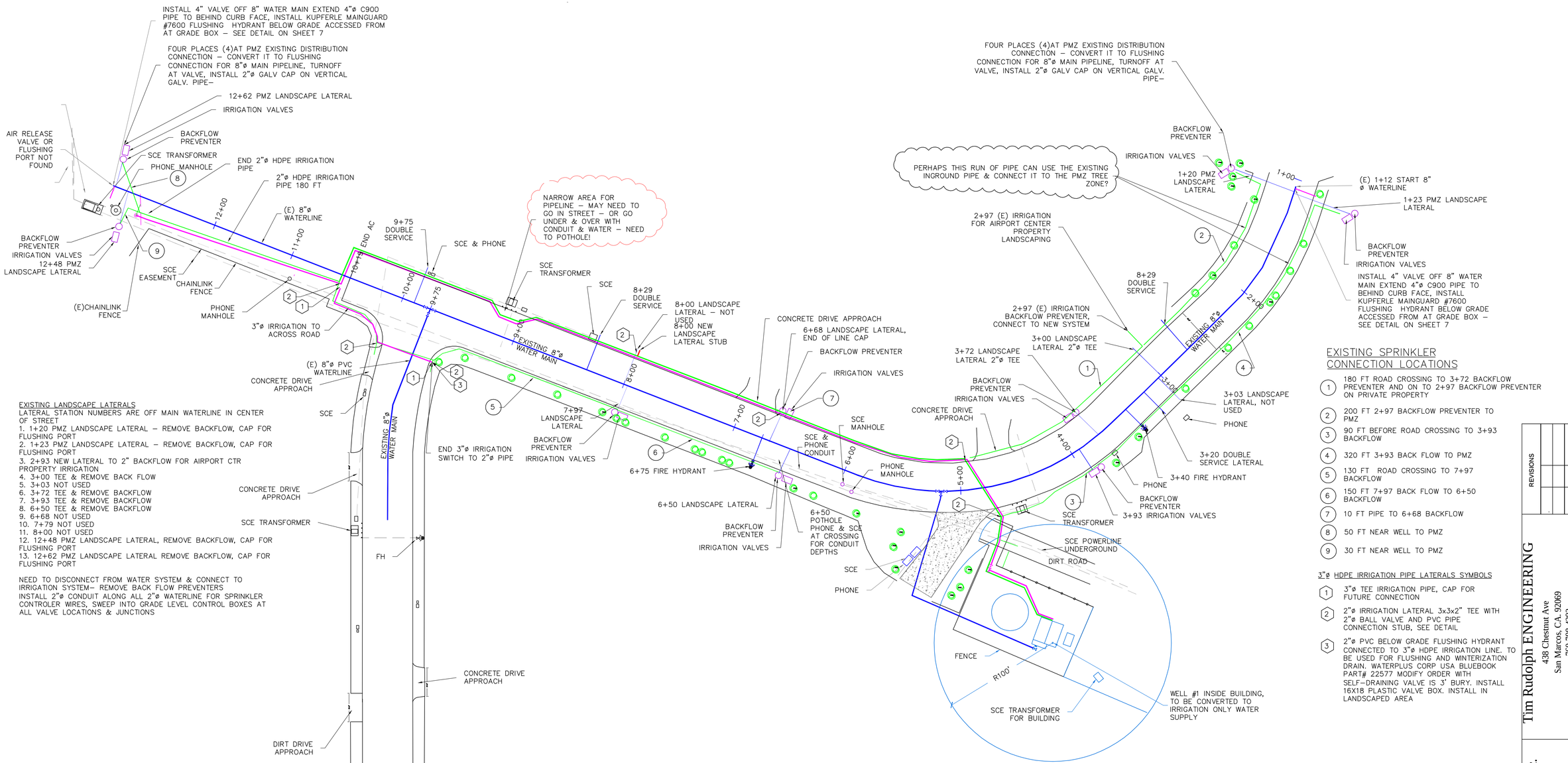
2022 WATER SYSTEM PROJECT
PIPELINE SPECS

DATE 5-7-21



EXISTING LANDSCAPE LATERALS
LATERAL STATION NUMBERS ARE OFF MAIN WATERLINE IN CENTER OF STREET
1. 1+20 PMZ LANDSCAPE LATERAL – REMOVE BACKFLOW, CAP FOR FLUSHING PORT
2. 1+23 PMZ LANDSCAPE LATERAL – REMOVE BACKFLOW, CAP FOR FLUSHING PORT
3. 2+93 NEW LATERAL TO 2" BACKFLOW FOR AIRPORT CTR PROPERTY IRRIGATION
4. 3+00 TEE & REMOVE BACK FLOW
5. 3+03 NOT USED
6. 3+72 TEE & REMOVE BACKFLOW
7. 3+93 TEE & REMOVE BACKFLOW
8. 6+50 TEE & REMOVE BACKFLOW
9. 6+68 NOT USED
10. 7+79 NOT USED
11. 8+00 NOT USED
12. 12+48 PMZ LANDSCAPE LATERAL, REMOVE BACKFLOW, CAP FOR FLUSHING PORT
13. 12+62 PMZ LANDSCAPE LATERAL REMOVE BACKFLOW, CAP FOR FLUSHING PORT

NEED TO DISCONNECT FROM WATER SYSTEM & CONNECT TO IRRIGATION SYSTEM– REMOVE BACK FLOW PREVENTERS
INSTALL 2"ø CONDUIT ALONG ALL 2"ø WATERLINE FOR SPRINKLER CONTROLER WIRES, SWEEP INTO GRADE LEVEL CONTROL BOXES AT ALL VALVE LOCATIONS & JUNCTIONS

EXISTING SPRINKLER CONNECTION PLAN

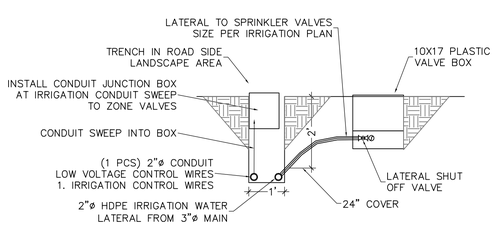
Scale 1"=40'

EXISTING SPRINKLER CONNECTION LOCATIONS

1. 180 FT ROAD CROSSING TO 3+72 BACKFLOW PREVENTER AND ON TO 2+97 BACKFLOW PREVENTER ON PRIVATE PROPERTY
2. 200 FT 2+97 BACKFLOW PREVENTER TO PMZ
3. 90 FT BEFORE ROAD CROSSING TO 3+93 BACKFLOW
4. 320 FT 3+93 BACK FLOW TO PMZ
5. 130 FT ROAD CROSSING TO 7+97 BACKFLOW
6. 150 FT 7+97 BACK FLOW TO 6+50 BACKFLOW
7. 10 FT PIPE TO 6+68 BACKFLOW
8. 50 FT NEAR WELL TO PMZ
9. 30 FT NEAR WELL TO PMZ

3"ø HDPE IRRIGATION PIPE LATERALS SYMBOLS

1. 3"ø TEE IRRIGATION PIPE, CAP FOR FUTURE CONNECTION
2. 2"ø IRRIGATION LATERAL 3x3x2" TEE WITH 2"ø BALL VALVE AND PVC PIPE CONNECTION STUB, SEE DETAIL
3. 2"ø PVC BELOW GRADE FLUSHING HYDRANT CONNECTED TO 3"ø HDPE IRRIGATION LINE. TO BE USED FOR FLUSHING AND WINTERIZATION DRAIN. WATERPLUS CORP USA BLUEBOOK PART# 22577 MODIFY ORDER WITH SELF–DRAINING VALVE IS 3' BURY. INSTALL 16X18 PLASTIC VALVE BOX. INSTALL IN LANDSCAPED AREA



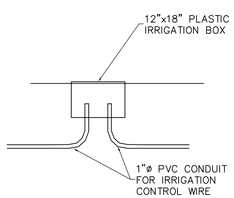
IRRIGATION WATER MAINS
INSTALL 2" or 3"ø HDPE MAIN UP STREET FROM TREATMENT BUILDING TO PARK ENTRANCE
SERVES PMZ (2 LOCATIONS) & STREET LANDSCAPE AREA (1 SAME SIDE & 2 ON OTHER SIDE OF STREET)

AT 2" LATERAL LOCATIONS, INSTALL 2" BALL VALVE & PVC PIPE CONNECTOR CAP FOR PRESSURE TESING OF 3" MAIN
MARK LOCATION OF LATERAL WITH VERTICAL 2X4, FROM PIPE TO 3" ABOVE GROUND SURFACE

IRRIGATION LATERALS

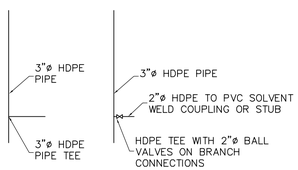
Scale $\frac{1}{2}$" =1'

JUNCTION BOX LOCATIONS
1. INSTALL PULL STRING IN CONDUIT, TAPE ENDS TO KEEP DIRT OUT
2. INSTALL AT EACH SPRINKLER VALVE LOCATION & PIPE BRANCH JUNCTIONS



1"Ø IRRIGATION CONTROL WIRE CONDUIT

Scale $\frac{1}{2}$" =1'



3"Ø IRRIGATION PIPE LATERAL TEE

Scale $\frac{1}{2}$" =1'

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EXISTING SPRINKLER CONN.

DATE 4-20-22

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