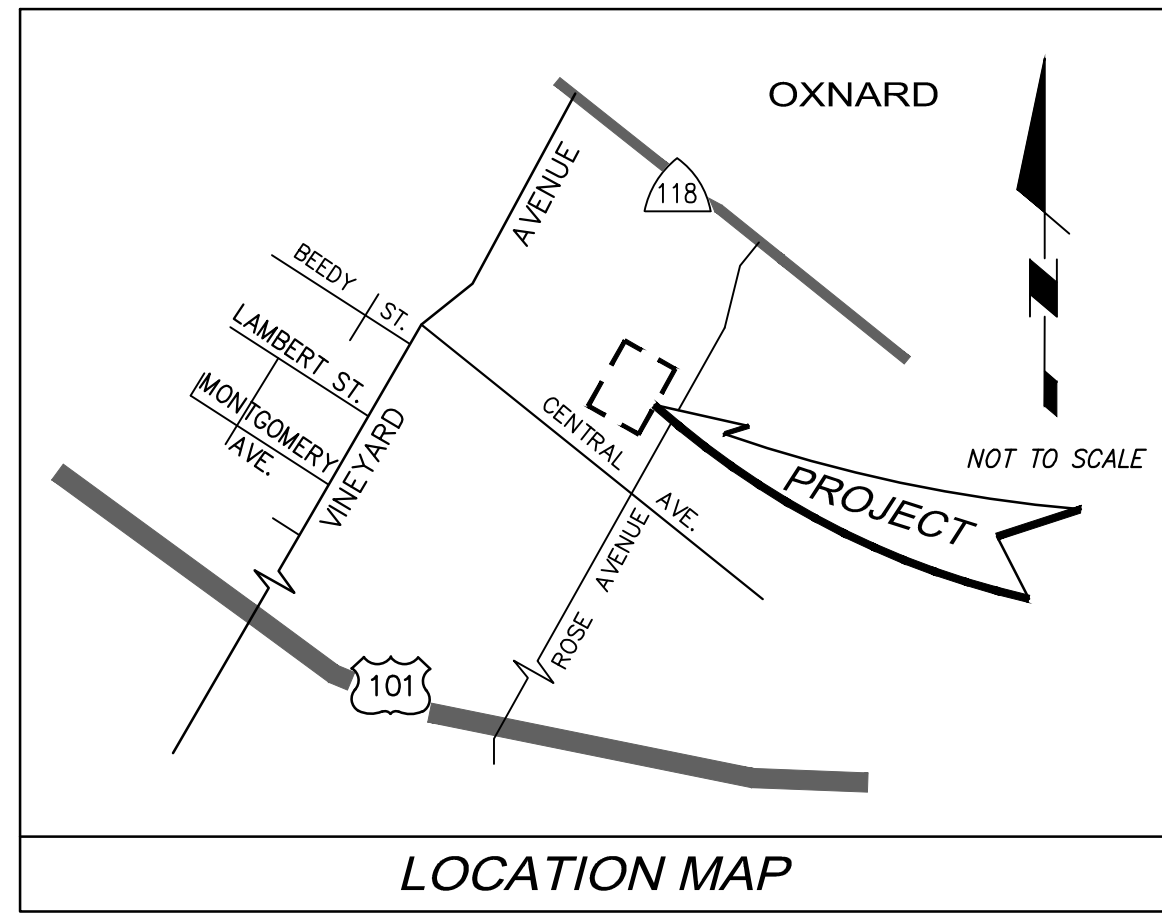


RIO MESA HIGH SCHOOL OXNARD UNION HIGH SCHOOL DISTRICT WELL #3 WATER SYSTEM IMPROVEMENTS 545 CENTRAL AVENUE, OXNARD, CA



LEGEND

- PROPOSED WATER LINE
- - - - - EXISTING SEWER
- - - - - EXISTING GAS
- - - - - EXISTING WATER
- - - - - PROPERTY LINE
- - - - - EASEMENT
- /// EDGE OF PAVEMENT
- (E) EXISTING
- (P) PROPOSED
- ⊥ ⊥ ⊥ PIPELINE FITTINGS
- T.O.P. TOP OF PIPE
- RW RESILIENT WEDGE
- L&C LINED AND COATED
- EG EXISTING GROUND

EXISTING UTILITIES NOTES

1. EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND BASED ON INFORMATION PROVIDED BY OTHERS. NO GUARANTEE IS MADE AS TO THE COMPLETENESS OR ACCURACY OF ANY EXISTING UTILITY INFORMATION SHOWN OR NOT SHOWN.
2. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT AT 811 PRIOR TO ANY EXCAVATION.
3. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS OF ALL EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.

SURVEY NOTES

PREPARED BY ENCOMPASS CONSULTING GROUP, JAMES FALLON, PLS

1. MAPPING

TOPOGRAPHIC MAPPING WAS COMPILED AT A SCALE OF 1"=10', WITH A .5 FOOT CONTOUR INTERVAL FROM DATA COLLECTED IN A FIELD SURVEY PERFORMED USING CONVENTIONAL EQUIPMENT AND PROCEDURES IN DECEMBER 2019, AT THE REQUEST OF WATER RESOURCE ENGINEERING ASSOCIATES.

2. BASIS OF BEARINGS AND COORDINATES

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD83, ZONE 5, EPOCH 2017.50 AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS) AND/OR CONTINUOUS OPERATING REFERENCE STATIONS (CORS) CSCI & OVL5 BEING N27°39'18"W AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC).

3. ELEVATIONS

THE VERTICAL DATUM OF THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), PER GPS TIES & GEIOD MODELING (GEIOD12B) TO CGPS STATION CSCI. ELLIPSOID HEIGHTS ARE CONSTRAINED PER CSRC. NO COUNTY BENCHMARKS WERE MEASURED IN THIS SURVEY.

4. UTILITIES

SURFACE UTILITY FEATURES SHOWN HEREON WERE LOCATED AS A PART OF THE FIELD SURVEY PERFORMED BY ECG BASED ON VISIBILITY ON THE DATE OF SURVEY. NO RESEARCH OR MAPPING OF SUBSURFACE UTILITIES HAS BEEN PERFORMED.

100% SUBMITTAL FOR DDW APPROVAL / BID SET



OVERALL SITE PLAN

SCALE: 1" = 200'

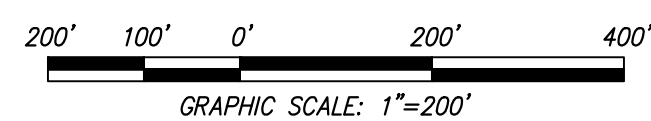
GENERAL NOTES

1. SCOPE: THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND PERFORM ALL OPERATIONS REQUIRED OR INCIDENTALY NECESSARY TO PROVIDE A COMPLETE AND OPERABLE INSTALLATION AS SPECIFIED AND AS SHOWN ON THE PLANS.
2. DESCRIPTION OF WORK: THE WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
 - A. SUBMIT ALL PRODUCT AND MATERIAL SHOP DRAWINGS, MANUFACTURER DATA, AND CUTSHEETS FOR APPROVAL PRIOR TO CONSTRUCTION.
 - B. POTHOLE AND LOCATE EXISTING UTILITY CROSSINGS (AS NECESSARY)
 - C. PROVIDE AND INSTALL DOMESTIC WELL DISCHARGE PIPING
 - D. PROVIDE AND INSTALL SUBMERSIBLE TURBINE PUMP AND MOTOR
 - E. PROVIDE AND INSTALL DROP PIPE IN EXISTING WELL
 - F. PROVIDE MATERIALS FOR AND INSTALL ELECTRICAL DISTRIBUTION, CONTROL SIGNALS, PUMP PANELS AND CONTROLLERS
 - G. RECONFIGURE POWER AND CONTROL SYSTEMS TO PROVIDE OPERABLE SYSTEM
 - H. PROVIDE AND INSTALL ALL ADDITIONAL FITTINGS AND APPURTENANCES AS REQUIRED TO PROVIDE A COMPLETE, OPERABLE SYSTEM
 - I. PROVIDE TESTING, DISINFECTION AND FLUSHING OF THE SYSTEM AS REQUIRED BY INVOLVED AGENCIES
 - J. PROVIDE REDLINED "AS-BUILT" DRAWINGS FOR ALL IMPROVEMENTS INCLUDING PIPING, ELECTRICAL, AND CONTROLS.
3. ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH:
 - A. THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION AND LATEST SUPPLEMENT (SSPWC)
 - B. VENTURA COUNTY BUILDING CODE
 - C. VENTURA COUNTY PLUMBING CODE (VOPC)
 - D. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH CALIFORNIA ADMINISTRATIVE CODE TITLE 22
 - E. VENTURA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
 - F. VENTURA COUNTY FIRE DEPARTMENT (VCFD)
 - G. NATIONAL ELECTRIC CODE (NEC)
4. THE LOCATIONS OF EXISTING SUBSTRUCTURES HAVE BEEN TAKEN FROM RECORDS AVAILABLE AND THEIR APPROXIMATE LOCATIONS ARE SHOWN ON THE PLANS TO THE EXTENT THE INFORMATION IS KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXACT LOCATION AND PROTECT THEM.
5. CODES AND REGULATIONS: ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND GOVERNING AUTHORITIES HAVING JURISDICTION. NOTHING IN THE PLANS OR SPECIFICATIONS SHALL BE DEEMED AS PERMISSION TO VIOLATE THESE CODES OR AUTHORITIES. CONTRACTOR SHALL VERIFY CONFORMANCE TO ALL CODES AND ORDINANCES.
6. MATERIALS: ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO THE CALL-OUTS ON THE PLANS AND THE PROVISIONS OF THE SPECIFICATIONS.
7. GUARANTEES: ALL MATERIALS AND EQUIPMENT PROVIDED AND/OR INSTALLED UNDER THE SPECIFICATIONS SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE OF THE WORK BY OWNER.
8. OPERATING MANUALS: THE CONTRACTOR SHALL DELIVER TO THE OWNER TWO (2) COPIES OF MANUFACTURER'S OPERATING MANUAL AND TWO (2) COPIES OF THE WIRING DIAGRAM (IF APPLICABLE) FOR ALL EQUIPMENT PRIOR TO START-UP.
9. DIMENSIONS AND DESCRIPTIONS OF EXISTING APPURTENANCES (IF ANY,) ARE APPROXIMATE AND ANY MAJOR DISCREPANCY SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION.
10. AFTER COMPLETION, THE AREAS SURROUNDING THE CONSTRUCTION SITES SHALL BE RESTORED TO THE CONDITION THEY WERE PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING OF THE SYSTEM PURSUANT TO MANUFACTURER'S, RECOMMENDATIONS NFPA REQUIREMENTS, AND VCFD CONDITIONS. THE CONTRACTOR SHALL DEMONSTRATE TO THE OWNER AND ENGINEER THAT THE SYSTEM WILL OPERATE AS DESIGNED.
12. STERILIZATION AND TESTING OF THE DOMESTIC SYSTEM SHALL BE COMPLETED PURSUANT TO CPC AND AWWA STANDARDS.
13. ALL ABOVE GROUND FITTINGS AND APPURTENANCES SHALL BE PRIMED AND PAINTED WITH TWO COATS OF ENAMEL AFTER CONSTRUCTION, "TAN" COLOR, CONTRACTOR TO SUBMIT SAMPLE TO DISTRICT REPRESENTATIVE FOR APPROVAL.
14. THE ELECTRICAL SYSTEM IMPROVEMENTS AND CONTROL SYSTEM MODIFICATIONS TO BE DESIGN-BUILD BY THE LICENSED ELECTRICAL SUBCONTRACTOR. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PROPOSED ELECTRICAL / CONTROLS CONDUIT ALIGNMENTS FOR APPROVAL.
15. PERMITS: CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS FOR CONSTRUCTION UNLESS OTHERWISE PROVIDED BY DISTRICT.
16. SANITARY SEPARATION: THE CONTRACTOR SHALL CONFIRM THAT ALL PIPING AND EQUIPMENT INSTALLATIONS ARE IN ACCORDANCE WITH THE CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS, TITLE 22, DIVISION 4, CHAPTER 16, SECTION 64572) CRITERIA FOR THE SEPARATION OF NEW WATER MAINS FROM NON-POTABLE PIPELINES.

SHEET INDEX

SHEET	TITLE
1	OVERALL SITE PLAN, LOCATION MAP, GENERAL NOTES, AND LEGEND
2	NOTES, SPECIFICATIONS, AND PUMP ENGINEERING DATA
3	PIPING PLAN AND DETAILS
4	CONSTRUCTION DETAILS

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Plot date: May 21, 2020 - 3:15 pm
Plot by: Ben



REVISIONS	BY	DATE	PROGRESS	BY	DATE
			100% SUBMITTAL TO DDW / BID SET	SC	5/21/2020
			50% SUBMITTAL TO DDW	SC	3/10/2020

WREA
WATER RESOURCE ENGINEERING ASSOCIATES
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BENJAMIN T. FISCHETTI R.C.E. NO. 69360 EXP. 06-30-20 DATE

OVERALL SITE PLAN,
LOCATION MAP, GENERAL NOTES,
AND LEGEND

RIO MESA HIGH SCHOOL, OUHSD
545 CENTRAL AVENUE, OXNARD, CA
WELL #3 WATER SYSTEM IMPROVEMENTS



Know what's below.
Call before you dig.

SHEET 1
OF 4
JOB NO. 3329

SUBMERSIBLE TURBINE PUMP SPECIFICATIONS

1. SCOPE

THIS SPECIFICATION IS FOR A DEEP WELL SUBMERSIBLE TURBINE PUMP WITH AN ABOVE GROUND DISCHARGE AND FURNISHED WITH A SPECIFIED DRIVER AND ACCESSORIES. THE PUMPING UNIT SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE LATEST HYDRAULIC INSTITUTE AND ANWA SPECIFICATIONS FOR SUBMERSIBLE TURBINE PUMPS.

2. SERVICE CONDITIONS

THE PUMPS SHALL BE DESIGNED AND BUILT TO OPERATE SATISFACTORILY WITH A REASONABLE SERVICE LIFE, WHEN INSTALLED IN A PROPER SUBMERSIBLE TURBINE PUMP APPLICATION. THE PRODUCT SHALL BE MANUFACTURED BY GOULDS OR APPROVED EQUAL THAT CAN MEET THE REQUIRED MATERIAL STANDARDS AND PERFORMANCE SPECIFICATIONS.

3. OPERATING CONDITIONS

SEE WELL 3 PUMP ENGINEERING DATA.

4. PUMP CONSTRUCTION

A. BOWL ASSEMBLY: THE INTERMEDIATE BOWLS AND ALL SUBMERSIBLE DISCHARGES AND MOTOR BRACKETS SHALL BE CONSTRUCTED FROM CLOSE GRAM CAST IRON, ASTM A48, CLASS 30. THEY SHALL BE FLANGED TYPE CONSTRUCTION AND FREE OF BLOW HOLES, SAND HOLES OR OTHER FAULTS AND BE MACHINED ACCURATELY WITH FITTED CLOSE TOLERANCES. THE BOWLS SHALL HAVE GLASS ENAMEL OR EPOXY ENAMEL LINED WATERWAYS FOR MAXIMUM EFFICIENCY. ALL BOWLS, DISCHARGES AND MOTOR BRACKETS ARE TO BE ASSEMBLED WITH STAINLESS STEEL BOLTING.

B. IMPELLERS: THE IMPELLERS SHALL BE INVESTMENT CAST 304 STAINLESS STEEL, ASTM A296 AND SHALL BE ENCLOSED TYPE. THEY SHALL BE FREE FROM DEFECTS AND MUST BE INVESTMENT CAST, MACHINED, BACKFILED AND BALANCED FOR OPTIMUM EFFICIENCY AND PERFORMANCE. THEY SHALL BE SECURELY FASTENED TO THE BOWL SHAFT WITH STAINLESS STEEL TAPER LOCKS, 01045 STEEL WILL NOT BE ACCEPTED.

C. BOWL SHAFT SHALL BE CONSTRUCTED FROM PSQ 416 STAINLESS STEEL, ASTM A582 PUMP SHAFT MATERIAL. IT SHALL BE PRECISION MACHINED AND STRAIGHTENED WITHIN .002" - .004" TOLERANCE.

D. THE MOTOR ADAPTER MUST BE CONSTRUCTED OF DUCTILE IRON, ASTM A536, CLASS 65, TO HANDLE THE WEIGHT AND TORQUE OF THE SUBMERSIBLE MOTOR. THE WATER INLET MUST BE ABOVE THE MOTOR BRACKET BEARING TO PREVENT EARLY MOTOR BRACKET BEARING FAILURES. THE INLET AREA SHALL BE PROTECTED BY A 304 STAINLESS STEEL SCREEN WITH A NET OPENING OF FOUR TIMES THE IMPELLER EYE OPENING.

E. THE SUBMERSIBLE DISCHARGE SHALL BE CONSTRUCTED OF DUCTILE IRON, ASTM A536, CLASS 65, TO HANDLE THE ENTIRE WEIGHT AND TORQUE OF THE PUMP AND MOTOR ASSEMBLY. THE DISCHARGE SHALL BE THREADED WITH NPT THREADS AND HAVE AN EXTRA LONG TOP BEARING FOR STABILITY AND LONG PUMP LIFE.

F. THE MOTOR COUPLING SHALL CONFORM TO NEMA STANDARDS AND BE CONSTRUCTED OF 416 STAINLESS STEEL. IT SHALL BE CAPABLE OF HANDLING THE TOTAL TORQUE, HORSEPOWER AND THRUST LOAD OF THE BOWL ASSEMBLY.

5. DROP PIPE

DROP PIPE SHALL BE A MINIMUM GRADE B STEEL 6-INCH PIPE WITH ENDS MACHINED WITH NPT THREAD. PIPE SHALL BE CONNECTED WITH THREADED SLEEVE TYPE STEEL COUPLINGS. HOOP PIPE AND CONNECTORS SHALL BE LINED AND COATED WITH NSF 61 APPROVED FUSION BONDED EPOXY (3M SCOTCHKOTE 206N OR APPROVED EQUAL).

6. SUBMERSIBLE DISCHARGE

THE ABOVE GROUND DISCHARGE SHALL BE OF FABRICATED STEEL AND INCORPORATE A LONG RADIUS ELBOW SECURELY WELDED TO AN ANSI 150 LB. FLANGE. THE DISCHARGE SHALL BE WELDED AND SECURED TO A SURFACE PLATE CAPABLE OF HOLDING 1 1/2 TIMES THE TOTAL WEIGHT OF THE PUMP, MOTOR, PIPE, WIRE AND WEIGHT OF THE WATER IN THE PIPE. THE SURFACE PLATE SHALL ALSO INCORPORATE AN OPENING FOR THE PUMP CABLE, WITH SEALING CAPABILITY, AND ADDITIONAL FITTINGS FOR VENTING AND AIR LINE CONNECTIONS.

7. SUBMERSIBLE ELECTRIC CABLE

TYPE THW-HEAVY DUTY FLAT BLACK JACKETED WITH GROUND, UL STANDARD 83; ROHS COMPLIANT CSA LISTED WITH SEQUENTIAL FOOTAGE MARKS.

8. DISCHARGE PRESSURE TRANSMITTER

DANFOSS TYPE MBS 3000, 0-150 PSI TRANSDUCER (OR APPROVED EQUAL)

9. SUBMERSIBLE ELECTRIC MOTOR

THE SUBMERSIBLE MOTOR SHALL BE A NEMA, HEAVY DUTY OIL FILLED, CANNED OR WET WOUND TYPE. THE MOTOR SHALL RUN AT 3,600 RPM AND HAVE A SUITABLE THRUST BEARING TO HANDLE THE ENTIRE HYDRAULIC THRUST OF THE PUMP ASSEMBLY. THE MOTOR SHALL HAVE A 1.15 SERVICE FACTOR AND BE SUITABLE FOR 460-VOLTS, 3-PHASE, 60 CYCLE ELECTRIC SERVICE.

10. VARIABLE FREQUENCY DRIVE CONTROLLER

DANFOSS FC202 VARIABLE FREQUENCY DRIVE (OR APPROVED EQUAL) W/DOOR MOUNTED INTERFACE; NEMA 3R ENCLOSURE WITH 12" FOOT KIT; LOCKING AND LIFTING PROVISIONS; SERVICE ENTRANCE RATED; SERVICE DISCONNECT WITH LOCKABLE EXTERNAL OPERATOR; HOA SELECTOR SWITCH W/SPEED POT; LOCKABLE CLEAR OPERATOR COVER W/UV INHIBITORS; 120V CONTROL TRANSFORMER WITH FUSING; THROUGH THE BACK HEAT SINK COOLING SYSTEM; INTEGRATED DV/DT FILTERS.

11. SUBMERSIBLE PUMP CHECK VALVE

FLOMATIC 6" DUCTILE-IRON VFD CHECK VALVE W/BREAK-OFF-PLUG; DUCTILE-IRON EPOXY COATED BODY, DUCTILE-IRON EPOXY COATED POPPET, STAINLESS STEEL STEM, STAINLESS STEEL SPRING, DUCTILE-IRON EPOXY COATED STEM GUIDE, STAINLESS STEEL RETAINING RING, STAINLESS STEEL BREAK OFF PLUG.

12. LABELS

WELL HEAD SHALL BE LABELED WITH SECURELY AFFIXED EMBOSSED METAL NAME PLATE, MINIMUM 6"x4" SIZE WITH MINIMUM 3/16" TEXT HEIGHT, INCLUDING (BUT NOT LIMITED TO): WELL NUMBER, PUMP AND MOTOR DATA (MODEL, MANUFACTURER, HP, SERIAL NUM, RPM, VOLTAGE, AMPS, PHASE, HERTZ, RATING), DATE OF INSTALLATION, PUMP SETTING AND AIRLINE LENGTH/DEPTH.

AIRLINE AND SOUNDING TUBE NOTES

1. AIRLINE ASSEMBLY

1/4-INCH DIAMETER STAINLESS STEEL AIRLINE WITH SURFACE APPARATUS: THE 1/4-INCH DIAMETER STAINLESS STEEL AIRLINE SHALL CONSIST OF ALL NEW MATERIAL. THE AIRLINE SHALL BE ATTACHED AT THE SURFACE OF THE WELL HEAD WITH AN APPROPRIATE HANGER, NEW 100 PSI AIR GAUGE, AND SCHRAEDER VALVE FITTING.

2. SOUNDING TUBE ASSEMBLY

1-INCH I.D. SCHEDULE 40 POLYVINYL CHLORIDE FLUSH THREADED SOUNDING TUBE: THE 1-INCH I.D. DIAMETER SOUNDING TUBE SHALL BE POLYVINYL CHLORIDE PVC MANUFACTURED IN ACCORDANCE WITH TYPE 1, GRADE 1, PVC, ASTM D1784 (JOHNSON). THE SOUNDING TUBE SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE FLUSH THREADED FOR EASE OF INSTALLATION. THE BOTTOM OF THE SOUNDING TUBE SHALL BE FITTED WITH A PLUG AND THE BOTTOM 60 FEET PERFORATED WITH 3/8-INCH DIAMETER HOLES (ABOUT 2 SETS PER 5 FEET).

3. INSTALLATION

THE AIRLINE AND SOUNDING TUBE SHALL BE INSTALLED STARTING AT THE TOP OF THE PUMP BOWLS AND CONTINUE TO THE SURFACE. THE BOTTOM OF THE 1-INCH SOUNDING TUBE SHALL BE FITTED WITH A PLUG THAT IS ROUNDED OR TAPERED ON THE BOTTOM EDGES. THE BOTTOM 60 FEET (ABOVE BOWLS) OF THE 1-INCH SOUNDING TUBE SHALL HAVE 3/8-INCH-DIAMETER HOLES DRILLED APPROXIMATELY EVERY 5 FEET. THE SOUNDING TUBE SHALL BE STRAPPED SECURELY TO THE COLUMN PIPE USING STAINLESS STEEL BANDING AND BE ATTACHED TO THE MID-SECTION OF THE COLUMN PIPE (NO CLOSER THAN 5 FEET ABOVE OR BELOW THE PIPE COLLARS). THE 1-INCH SOUNDING TUBE SHALL BE CONFIGURED TO PASS THROUGH THE EXISTING SOUNDING TUBE PORT OR PUMP BASE AND ALLOW EASY ACCESS AND REMOVAL OF WATER LEVEL SOUNDING EQUIPMENT (TRANSDUCER) WHILE THE PUMP ASSEMBLY, DISCHARGE HEAD AND MOTOR ARE IN PLACE. DURING PUMP INSTALLATION THE CONTRACTOR SHALL HAVE ONSITE A DUMMY (1.0-INCH-DIAMETER BY 12-INCH LONG). THE DUMMY SHALL BE LOWERED APPROXIMATELY 60 FEET IN THE 1-INCH SOUNDING TUBE AFTER EACH ADDITIONAL 40 FEET OF COLUMN PIPE IS INSTALLED TO ENSURE THAT PASSAGE THROUGH THE SOUNDING TUBE OCCURS DURING INSTALLATION. THE 1/4-INCH AIRLINE SHALL BE SECURELY TAPED WITH 10-MILL TAPE TO THE COLUMN PIPE ALONGSIDE OF THE 1-INCH PIPE TO PREVENT PINCHING FROM THE STAINLESS STEEL BANDS AND PROVIDE PROTECTION DURING INSTALLATION.

ELECTRICAL CONSTRUCTION MATERIAL NOTES

ALL WORK SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC), LATEST EDITION.

1. ABOVE GRADE

HOT DIPPED GALVANIZED RIGID STEEL CONDUIT TO BE USED FOR ALL EXTERIOR AND INTERIOR LOCATIONS ABOVE GRADE. ALL RIGID CONDUIT AND FITTINGS TO BE THREADED. USE OF SET SCREW OR COMPRESSION TYPE CONNECTOR IS PROHIBITED. MEYERS HUBS TO BE USED ON ALL EXTERIOR PANEL CONNECTIONS.

2. BELOW GRADE

RIGID PVC NONMETALLIC CONDUIT SCHEDULE 40 TO BE USED FOR ALL UNDERGROUND LOCATIONS. NO DIRECT BURIAL CABLE WITHOUT CONDUIT ALLOWED.

3. MOTOR OR SENSOR CONNECTIONS

LIQUID TIGHT FLEXIBLE METAL CONDUIT (UV RESISTANT) TO ONLY BE USED ON CONNECTIONS TO MOTORS OR SENSORS. MAXIMUM LENGTH TO BE 30".

4. LABELS

EACH WIRE SHALL BE LABELED APPROPRIATELY. THE WIRE LABEL SHALL BE HEAT SHRINK TYPE APPROPRIATELY SIZED FOR WIRE SIZE AND TYPE. THE WIRES SHALL HAVE THE WIRE LABELS AT BOTH ENDS OF THE WIRE WITH THE SAME WIRE LABEL. WIRE LABELS SHALL BE INSTALLED ON ALL FIELD EQUIPMENT FOR POWER LISTING THE CIRCUIT BREAKER NUMBER OR THE DEVICE INPUT/OUTPUT WIRING.

5. JUNCTION BOXES

MINIMUM SIZE PER NEC. EXPOSED LOCATION, 1 AND 2 GANG TO BE CAST IRON DEVICE BOXES TYPE FS/FD SUITABLE FOR WET LOCATIONS. EXPOSED LOCATION EXTERIOR LARGER SIZES CONTINUOUS HINGE TYPE 4, CORROSIVE LOCATIONS CONTINUOUS HINGE TYPE 4X STAINLESS STEEL.

6. GROUND CONNECTIONS

GROUND CONNECTIONS TO BE EXOTHERMIC CADWELD (ALL 600 AMP OR LARGER SERVICE) OR BURNDY HYDRAULIC COMPRESSION CONNECTORS. GROUND BUS CONNECTIONS TO BE CRIMP LUG TYPE WITH BOLTED CONNECTION TO GROUND BUS.

480 VOLT AND BELOW POWER WIRING TO BE THWN-2 600 VOLT, ALL POWER CONNECTIONS TO BE TREATED WITH ANTIOXIDANT COMPOUND.

*NOTE: ALL 1/2", 3/4", 1", AND 2" PIPE, FITTINGS, AND VALVES TO BE EITHER COPPER/BRASS/BRONZE, STAINLESS STEEL OR GALVANIZED STEEL (AS SPECIFIED ON PLANS). PROVIDE AN INSULATING UNION (DIELECTRIC COUPLING) AT THE POINT OF TRANSITION FROM ANY DISSIMILAR METAL PIPES SUCH AS COPPER PIPE TO FERROUS PIPE.

WELL 3 PUMP ENGINEERING DATA

PROJECT: RIO MESA HIGH SCHOOL WELL #3

WELL DIAMETER: 14" DEPTH: 450' CASING TYPE: STEEL

PUMP DESIGN Q: 650 GPM SWL: 130'± PUMPING LEVEL: 200' BGS

HOW Q DETERMINED PER HOPKINS GROUNDWATER SUMMARY OF OPERATIONS (NOV 2019)

PRESSURE CALCULATIONS:

BY: BT DATE: 3/9/2020 CHECKED: LMN DATE: 5/12/2020

PUMP SETTING: 260'

PUMPING LEVEL: 200' = 200'

HIGH POINT = 143.5' + MIN. PRESSURE 10' = 153.5'

ELEVATION @ HEAD: 119.5' = 119.5'

DIFFERENCE: = 34' = 34'

FRICTION LOSS:

VALVING @ HEAD: ASSUMED 5' = 5'

MAINLINE 130 L.F. 8" PVC @ C = 140, 650 GPM = 0.96'

COLUMN: 260' STEEL @ C = 100, 650 GPM = 14.35'

SUB TOTAL: = 20.31'

FITTINGS @ 10% = 2.03'

TOTAL FRICTION: = 22.34' = 22.34'

TOTAL DYNAMIC HEAD = 256.34'

FINAL SPECS: 650 GPM TO 257' TDH'

H.P. REQUIREMENT @ 78% EFFICIENCY 53.94

POWER REQUIREMENTS:

H.P. 60 V.A.C. 460 PHASE 3 DISCHARGE PRESSURE @ GROUND = 19 PSI

FINAL PUMP SELECTION:

TYPE: SUBMERSIBLE DIAMETER: 7.5" BOWL

MANUFACTURER: GRUNDFOS MODEL # BRJHC (3 STAGES)

COMMENTS:

1. SET PUMP INLET AT 260'± PROVIDE HIGH AND LOW PRESSURE CUT-OFF.
2. ELECTRICAL CONTRACTOR TO DESIGN BUILD POWER AND PUMP CONTROLS.
3. PUMP DESIGN REFLECTS REQUIREMENTS FOR WELL 3 RUNNING ALONE.
4. SUBMERSIBLE PUMP, VFD DRIVE DATA, AND OTHER MATERIAL SPECIFICATION DATA PROVIDED BY: MITCHELL LEWIS & STAYER CO., QUOTE NUM 197066, 634 NORTH ECKHOFF STREET, ORANGE CA 92668, PHONE: 714-941-2274 OR 714-620-9807.

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Plot date: May 21, 2020 - 3:48pm



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			100% SUBMITTAL TO DDW / BID SET	SC	5/21/2020
			50% SUBMITTAL TO DDW	SC	3/10/2020

PREPARED BY: **WREA**
 WATER RESOURCE ENGINEERING ASSOCIATES
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 BENJAMIN T. FISCHETTI R.C.E. NO. 69360 EXP. 06-30-20 DATE

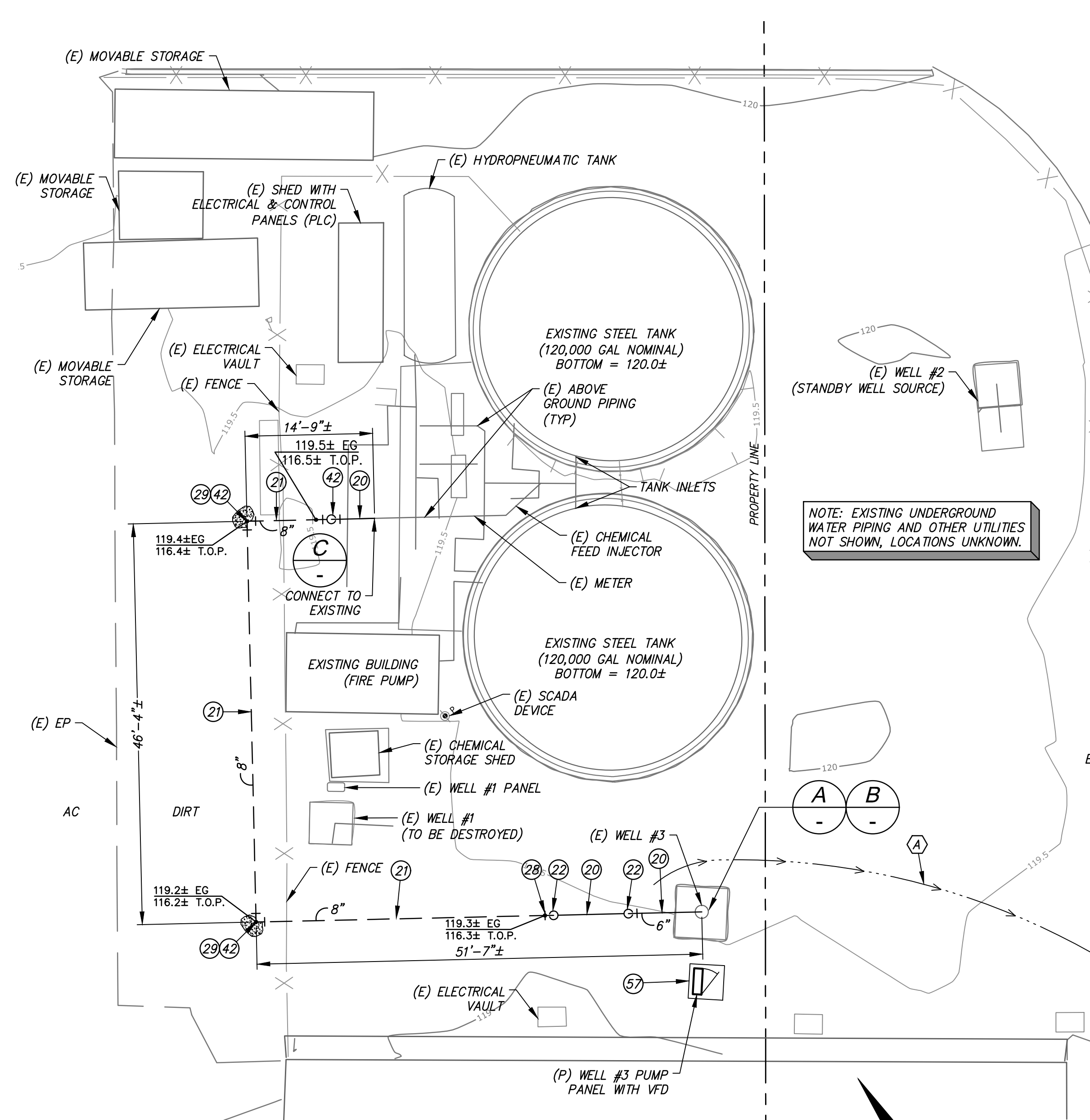
NOTES, SPECIFICATIONS,
AND PUMP ENGINEERING DATA

RIO MESA HIGH SCHOOL, OUHSD
 545 CENTRAL AVENUE, OXNARD, CA
 WELL #3 WATER SYSTEM IMPROVEMENTS

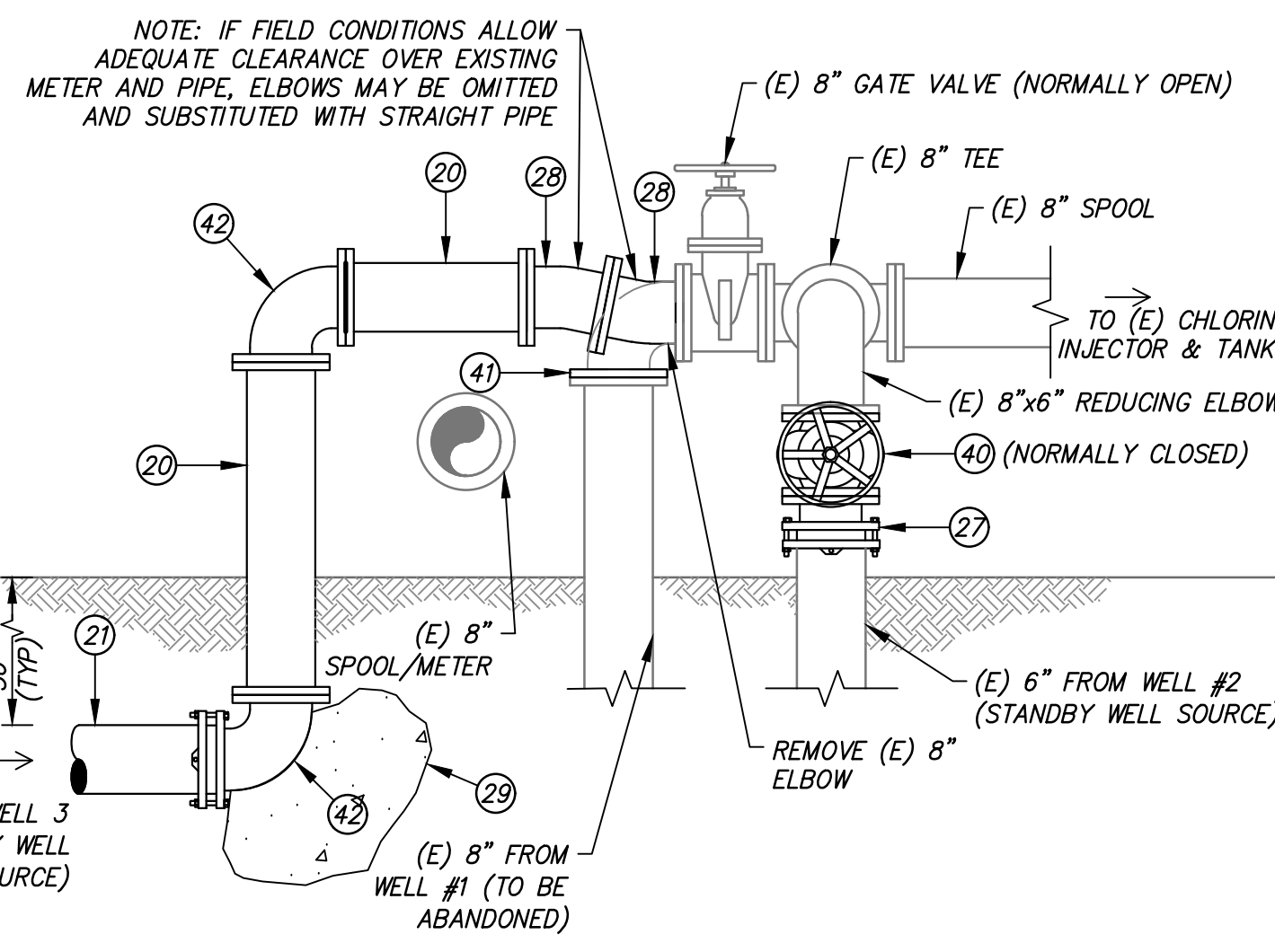
SHEET 2
OF 4
JOB NO. 3329



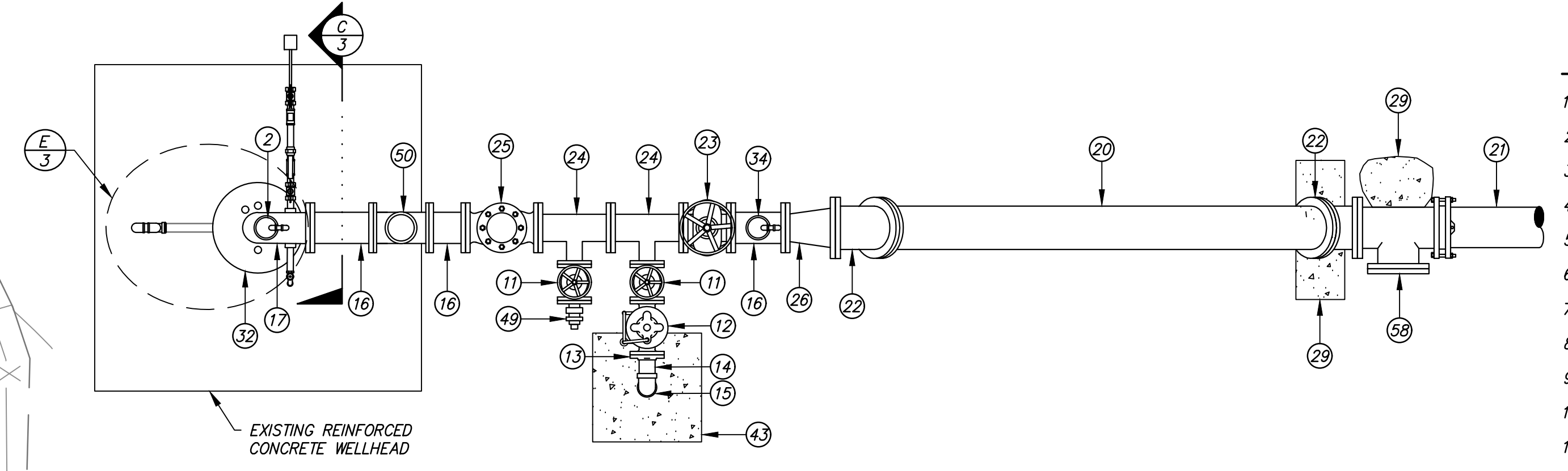
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 Plot by: Ben



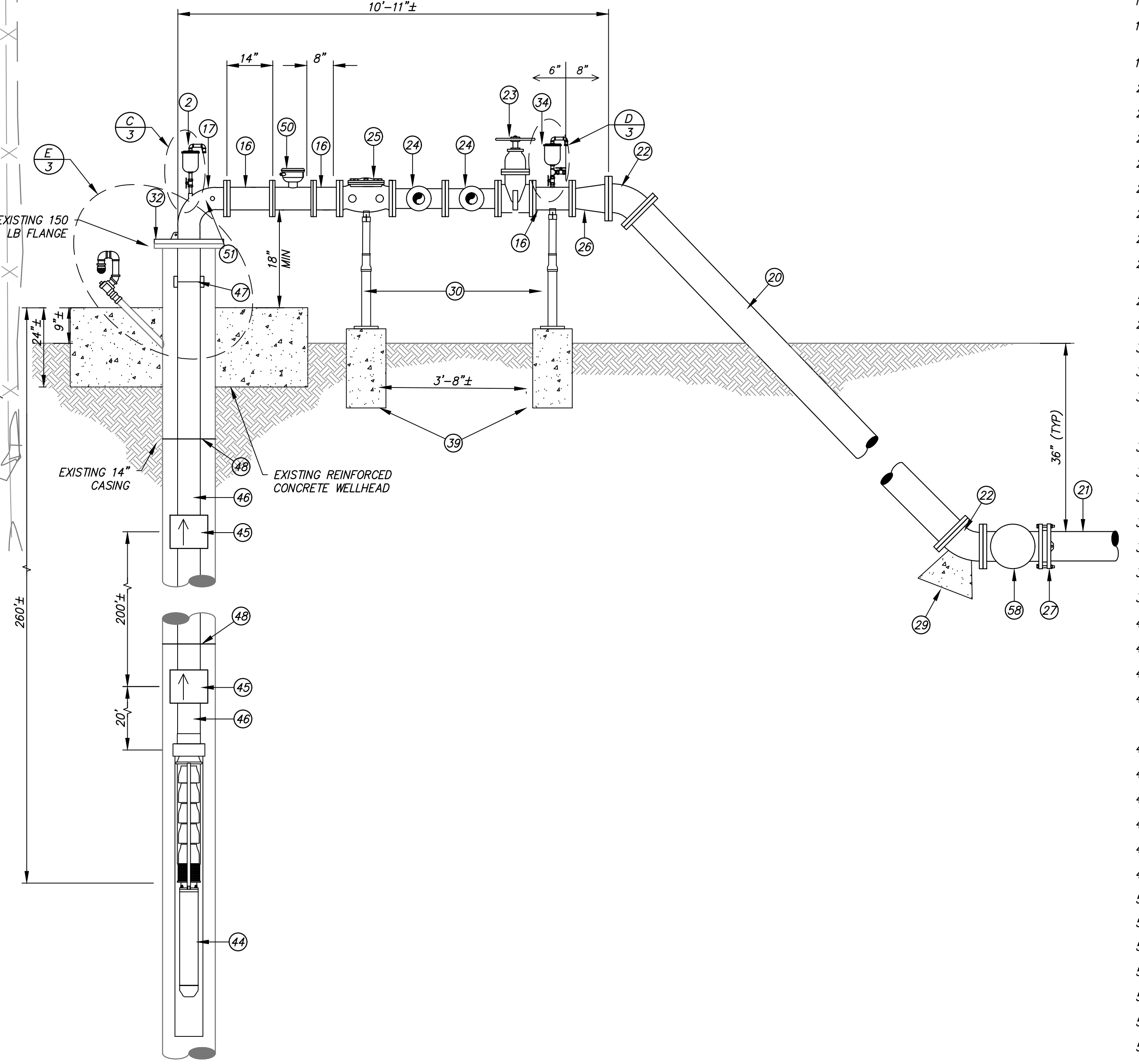
PIPING PLAN



TANK INLET CONNECTION



WATER WELL DISCHARGE ASSEMBLY PLAN



WATER WELL DISCHARGE ASSEMBLY ELEVATION

PARTS LIST

1. 1/2" BALL VALVE
2. 1" AIR VALVE
3. 1/2" 90° THREADED ELBOW, GALV
4. 1/2" THREADED NIPPLE, GALV, LENGTH AS REQUIRED (TYP)
5. 2" COUPLING (IF NEEDED)
6. 2" STEEL TUBE WELDED TO CASING
7. 2" THREADED TEE, GALV
8. 2" 90° THREADED ELBOW, GALV
9. 2" THREADED NIPPLE, GAL, LENGTH AS REQUIRED
10. 2" 45° THREADED ELBOW, GALV
11. 3" GATE VALVE, FLG
12. 3" PRESSURE RELIEF VALVE
13. 3" COMPANION FLANGE
14. 3" PIPE, THREADED, GALV (LENGTH AS REQUIRED)
15. 3" 90° ELBOW, GALV
16. 6" PIPE, FLG x FLG, DI (LENGTH AS REQUIRED)
17. 6" FABRICATED DISCHARGE 90° ELBOW, FLG x THREADED
18. 1/2" SAMPLE TAP, THREADED CONNECTION x SMOOTH WALL OUTLET, DOWNTURNED
19. 2" GALV PLUG
20. 8" PIPE, FLG x FLG, DI (LENGTH AS REQUIRED)
21. 8" PIPE, DR18 C900 PVC PER (B/4)
22. 8" 45° ELBOW, FLG, DI
23. 6" RW GATE VALVE, FLG
24. 6" x 3" REDUCING TEE, FLG, DI
25. 6" SILENT GLOBE CHECK VALVE
26. 8" x 6" REDUCER, FLG, DI
27. 6" FLANGE COUPLING ADAPTER WITH RESTRAINT (ROMAC ALPHA FC) OR WELDED STEEL FLANGE.
28. 8" 11-1/2" ELBOW, FLG, DI
29. THRUST BLOCK PER (A/4)
30. PIPE SUPPORT AS REQUIRED
31. SS 100 MESH SCREEN
32. WELL CAP OR ADAPTOR FOR, 14" O.D. CASING PIPE, MIN. 1" THICK WITH (3) 1" PORTS WITH GALV PLUGS, 1 EACH FOR AIR LINE, SOUNDING AND CABLE.
33. 1" BALL VALVE
34. 1" AIR AND VACUUM VALVE
35. 1" 90° THREADED ELBOW, GALV
36. 1" THREADED NIPPLE, GALV, LENGTH AS REQUIRED (TYP)
37. 1" THREADED TEE, GALV
38. 8" PVC FABRICATED SLEEVE/SHROUD
39. 12" DIA CONCRETE PEDESTAL
40. 6" RW GATE VALVE, FLG
41. 8" BLIND FLANGE
42. 8" 90° ELBOW, DI, FLG OR MJ AS REQUIRED
43. CONCRETE SPLASH PAD, 24" X 24" X 6" THICK, #4 REBAR AT 12" EA WAY CENTERED IN SLAB, FINISHED SURFACE 1" ABOVE ADJACENT GRADE
44. 8" SUBMERSIBLE TURBINE PUMP, 650 GPM AT 257 FT TDH, (60-HP)
45. 6" SUBMERSIBLE PUMP CHECK VALVE
46. 6" DROP PIPE, STEEL THREADED, EPOXY L&C
47. 6" THREADED COUPLING, EPOXY L&C
48. CENTRALIZERS (AS REQUIRED)
49. 3" QUICK CONNECT FITTING
50. 6" MAG METER SEAMETRICS IMAG 4700 SERIES
51. 0-200 PSI PRESSURE GAGE WITH ISOLATION VALVE
52. PRESSURE TRANSMITTER
53. 1/2" NPT CONNECTOR
54. 1/2" WELDED HALF COUPLING
55. 1/2" TEE THREADED, GALV
56. 1/2" UNION THREADED, GALV
57. CONCRETE PAD, MIN 48" X 48" X 8" THICK, #4 REBAR AT 12" EA WAY CENTERED IN SLAB, FINISHED SURFACE 4" ABOVE ADJACENT GRADE.
58. 8" TEE WITH BLIND FLANGE, DI, FLG x MJ (FOR FUTURE CONNECTION)

CONSTRUCTION NOTES

- (A) CONSTRUCT GRADED SWALE TO CONVEY RUNOFF FROM INCIDENTAL DISCHARGE OF PRESSURE RELIEF VALVE AWAY FROM WELL, TANKS, AND ADJACENT BUILDINGS.



REVISIONS	BY	DATE	PROGRESS	BY	DATE

WREA
 WATER RESOURCE ENGINEERING ASSOCIATES
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 BENJAMIN T. FISCHETTI R.C.E. NO. 69360 EXP. 06-30-20 DATE

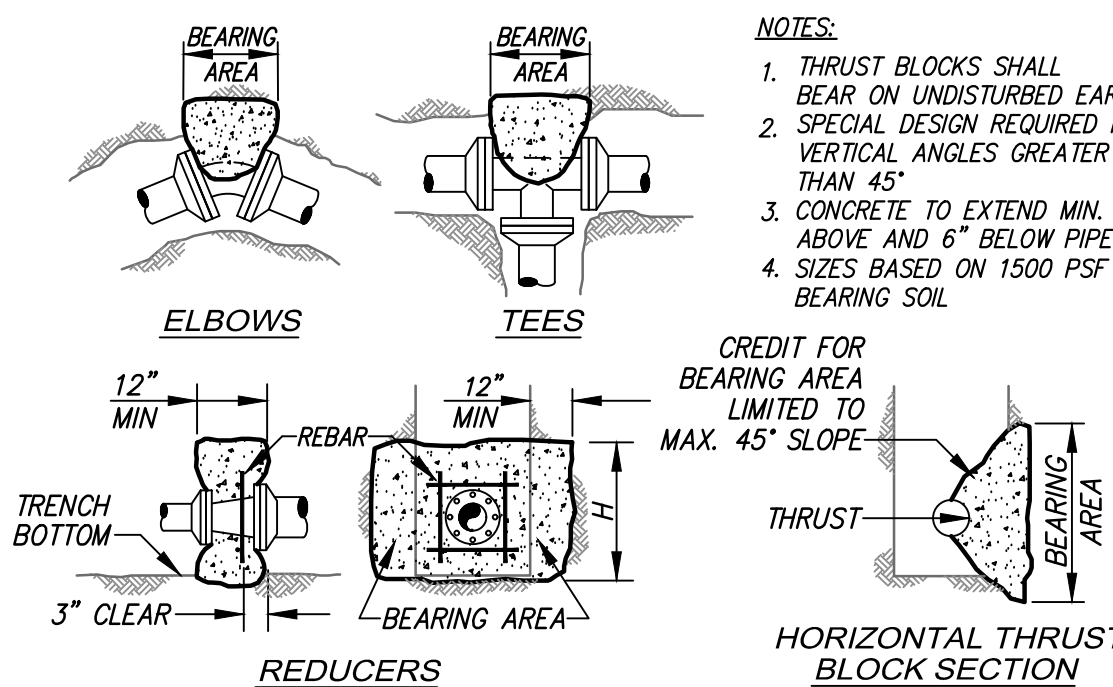
PIPING PLAN AND DETAILS
 PREPARED BY:

RIO MESA HIGH SCHOOL, OUHSD
 545 CENTRAL AVENUE, OXNARD, CA
 WELL #3 WATER SYSTEM IMPROVEMENTS

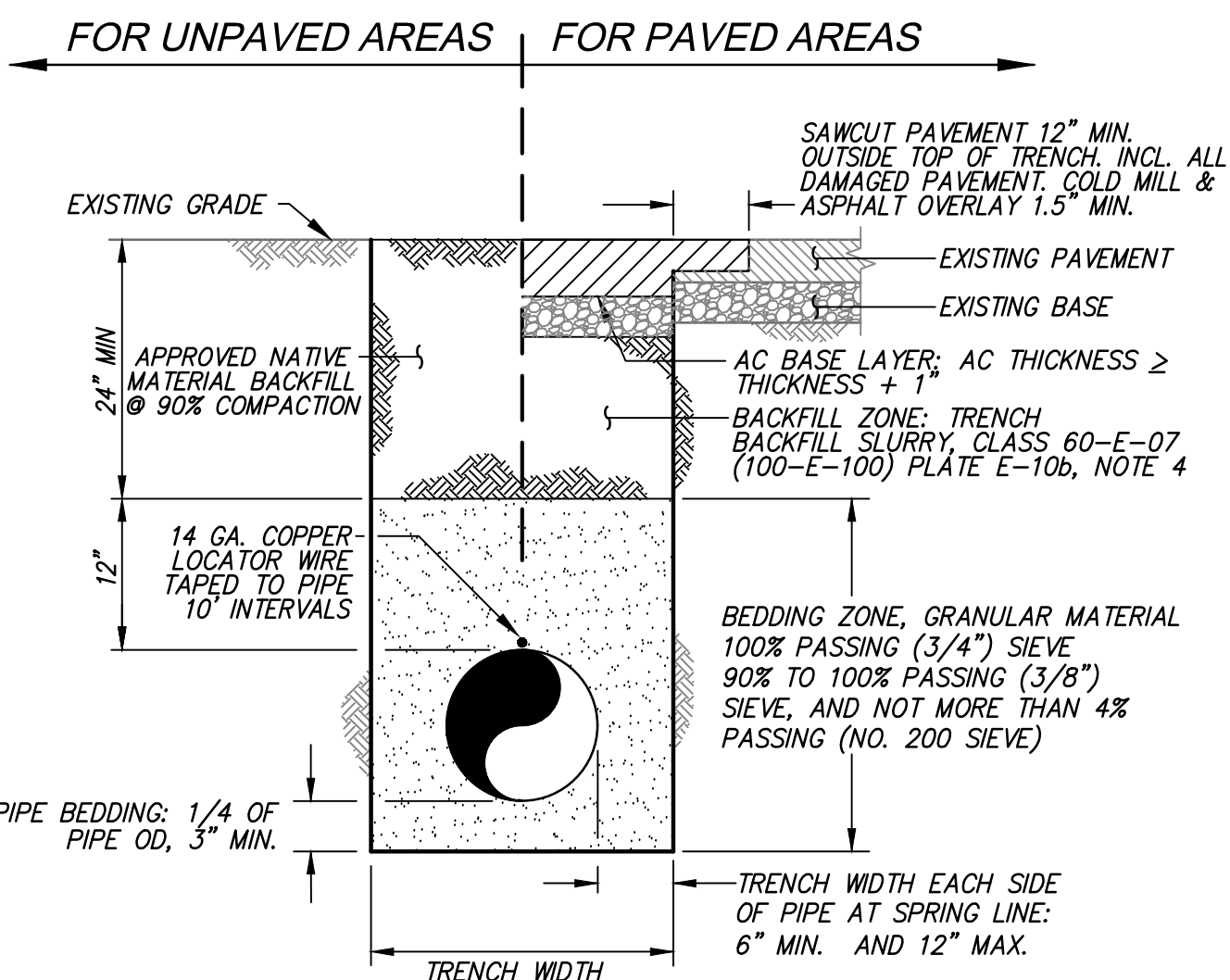
SHEET **3**
 OF **4**
 JOB NO. 3329

THRUST BLOCK SCHEDULE						
PIPE DIA.	MINIMUM BEARING AREA IN SQUARE FEET				REDUCER H	REBAR
	90°	45°	22 1/2°	11 1/4°		
8"	12	7	4	2	9	2'-6" No. 5

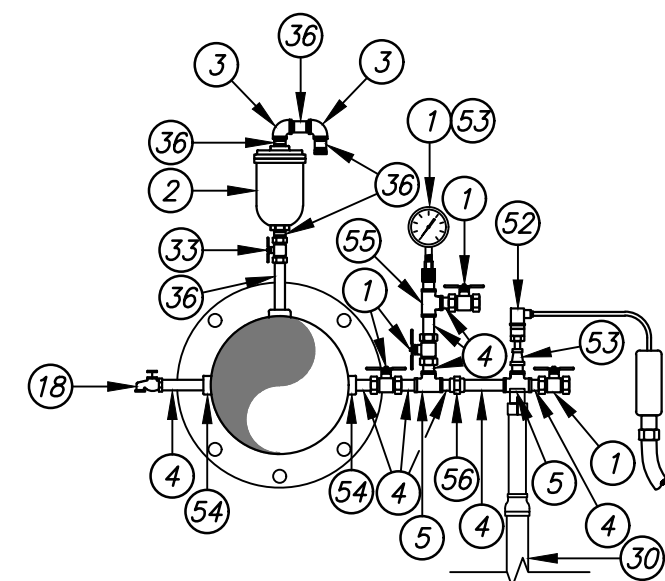
FOR MADE-UP FITTINGS OF INTERMEDIATE VALUES, USE THE NEXT HIGHER ANGLE VALUE.



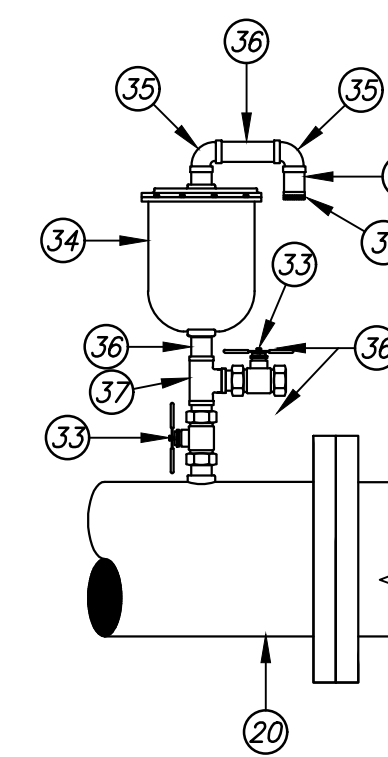
(A) THRUST BLOCK SCHEDULE & DETAILS
NOT TO SCALE



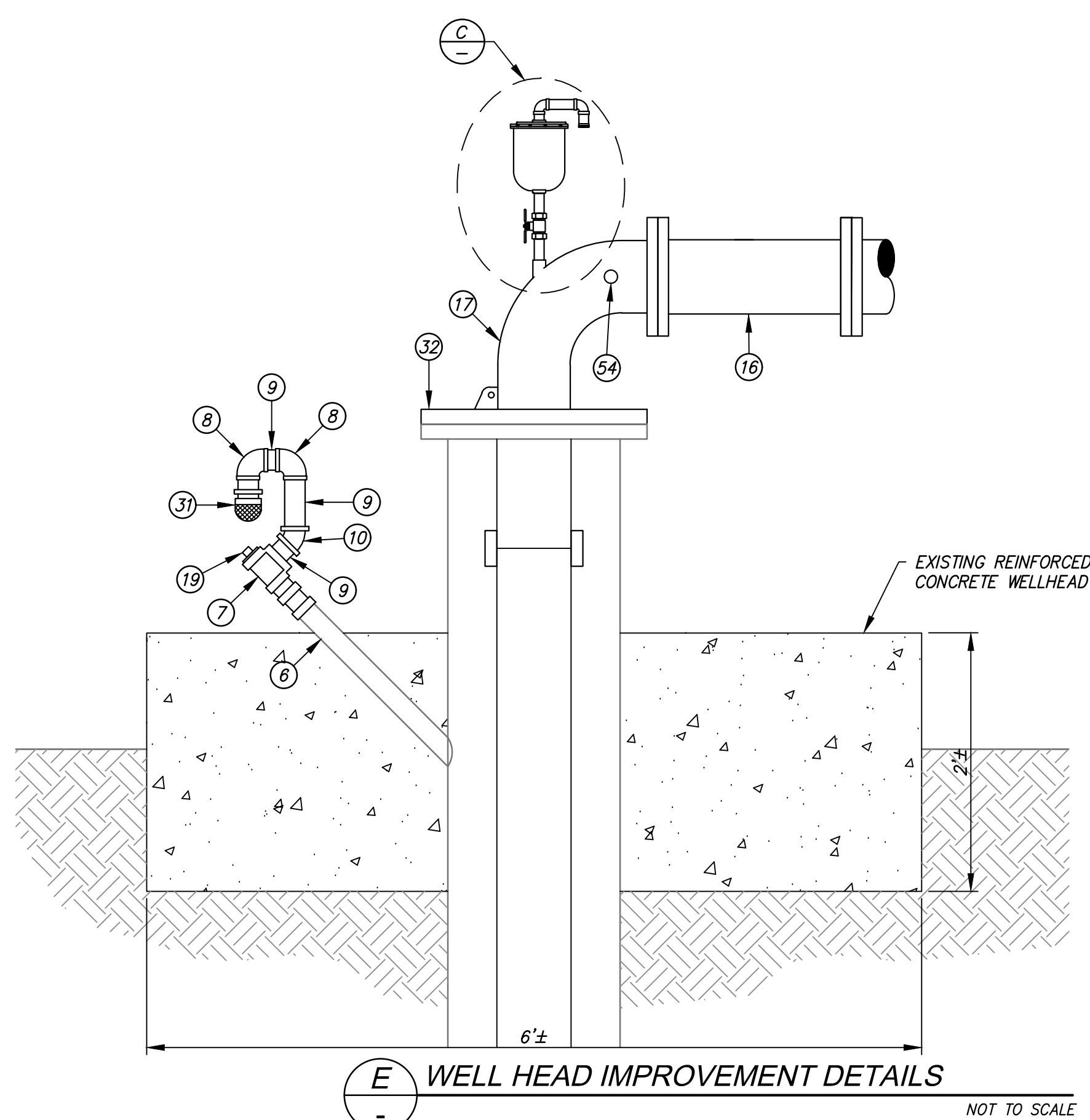
(B) TYPICAL TRENCH AND BACKFILL - SINGLE PIPE
NOTE: COMPACTION TESTS REQUIRED FOR ALL TRENCHES
NOT TO SCALE



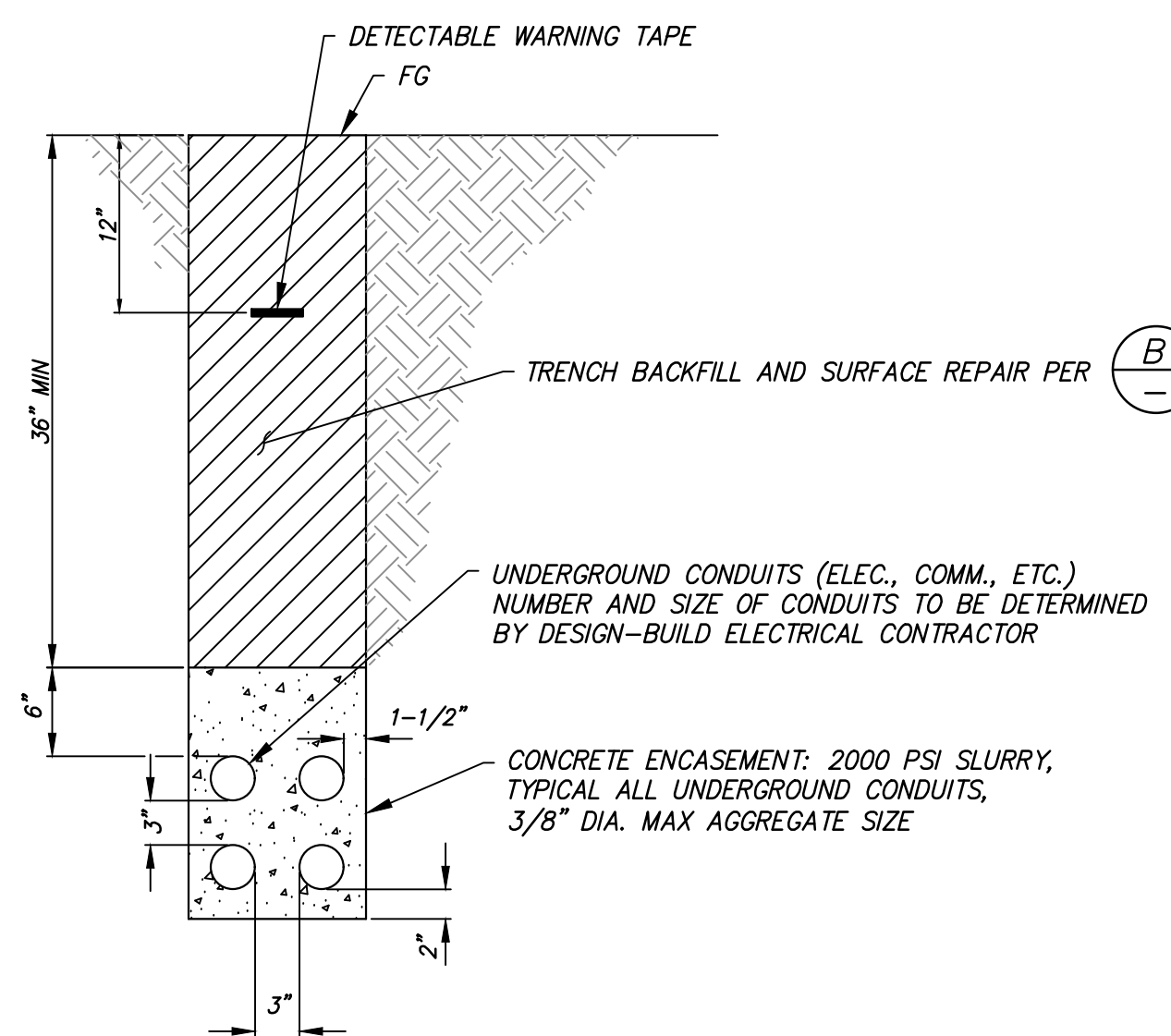
(C) DISCHARGE AIR VALVE DETAIL
NOT TO SCALE



(D) DISCHARGE AIR AND VACUUM VALVE DETAIL
NOT TO SCALE



(E) WELL HEAD IMPROVEMENT DETAILS
NOT TO SCALE



(F) TYPICAL ELECTRICAL/COMMUNICATION TRENCH SECTION
NOT TO SCALE



NOTES:
1. SEE SEPARATE DOCUMENT "SOFTWARE CONTROL DESCRIPTION, OXNARD SCHOOL DISTRICT, TESCO JOB # 134350, RIO MESA HIGH SCHOOL P/S" REV. 8-27-07 FOR REFERENCE.
2. AFTER RECONFIGURATION / RECONNECTION OF WELL #1 POWER AND CONTROLS TO WELL #3, CONTRACTOR SHALL RE-LABEL PLC INTERFACE ACCORDINGLY IN MANNER CONSISTENT WITH EXISTING (PZE TAPE OR EQUAL).

(G) EXISTING PLC INTERFACE
NOT TO SCALE

PARTS LIST

1. 1/2" BALL VALVE
2. 1" AIR VALVE
3. 1/2" 90° THREADED ELBOW, GALV
4. 1/2" THREADED NIPPLE, GALV, LENGTH AS REQUIRED (TYP)
5. 2" COUPLING (IF NEEDED)
6. 2" STEEL TUBE WELDED TO CASING
7. 2" THREADED TEE, GALV
8. 2" 90° THREADED ELBOW, GALV
9. 2" THREADED NIPPLE, GAL, LENGTH AS REQUIRED
10. 2" 45° THREADED ELBOW, GALV
11. 3" GATE VALVE, FLG
12. 3" PRESSURE RELIEF VALVE
13. 3" COMPANION FLANGE
14. 3" PIPE, THREADED, GALV (LENGTH AS REQUIRED)
15. 3" 90° ELBOW, GALV
16. 6" PIPE, FLG x FLG, DI (LENGTH AS REQUIRED)
17. 6" FABRICATED DISCHARGE 90° ELBOW, FLG x THREADED
18. 1/2" SAMPLE TAP, THREADED CONNECTION x SMOOTH WALL OUTLET, DOWNTURNED
19. 2" GALV PLUG
20. 8" PIPE, FLG x FLG, DI (LENGTH AS REQUIRED)
21. 8" PIPE, DR18 C900 PVC PER (B/4)
22. 8" 45° ELBOW, FLG, DI
23. 6" RW GATE VALVE, FLG
24. 6" x 3" REDUCING TEE, FLG, DI
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Drawing name: N:\Projects\33009\3329-Rio Mesa High School\04 DWG\04 Water Plans\3329-04-DTEL.dwg

Plot date: May 21, 2020 - 3:54pm



REVISIONS	BY	DATE	PROGRESS	BY	DATE
			100% SUBMITTAL TO DDW / BID SET	SC	5/21/2020
			50% SUBMITTAL TO DDW	SC	3/10/2020

PREPARED BY: **WREA**
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 BENJAMIN T. FISCHETTI R.C.E. NO. 69360 EXP. 06-30-20 DATE

CONSTRUCTION DETAILS

RIO MESA HIGH SCHOOL, OUHSD
 545 CENTRAL AVENUE, OXNARD, CA
 WELL #3 WATER SYSTEM IMPROVEMENTS

SHEET **4**
 OF **4**
 JOB NO. 3329

