

PLANS FOR WATER WELL PONCA TRIBE

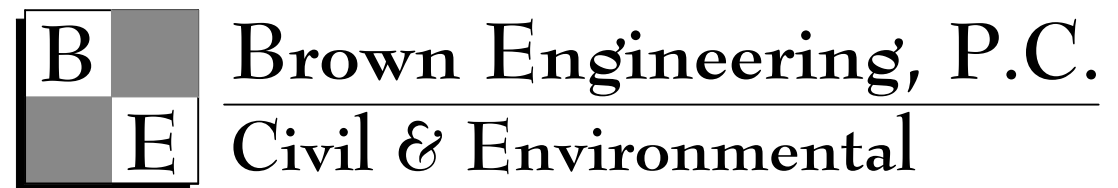
PREPARED BY:

MICHAEL D. BROWN, P.E.

DATE

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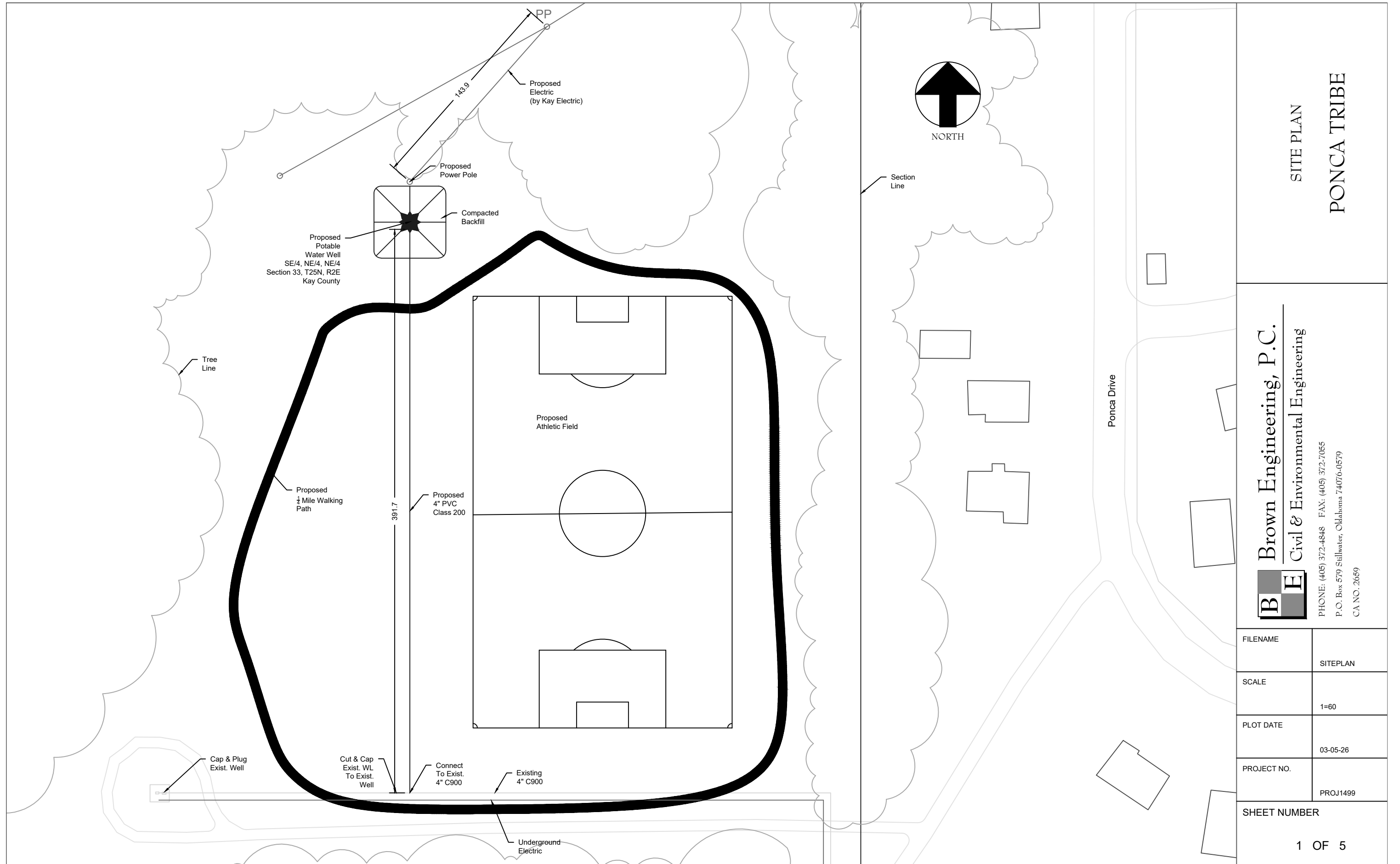
DATE



P.O. Box 579 Stillwater, Oklahoma 74076-0579

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CA NO. 2659

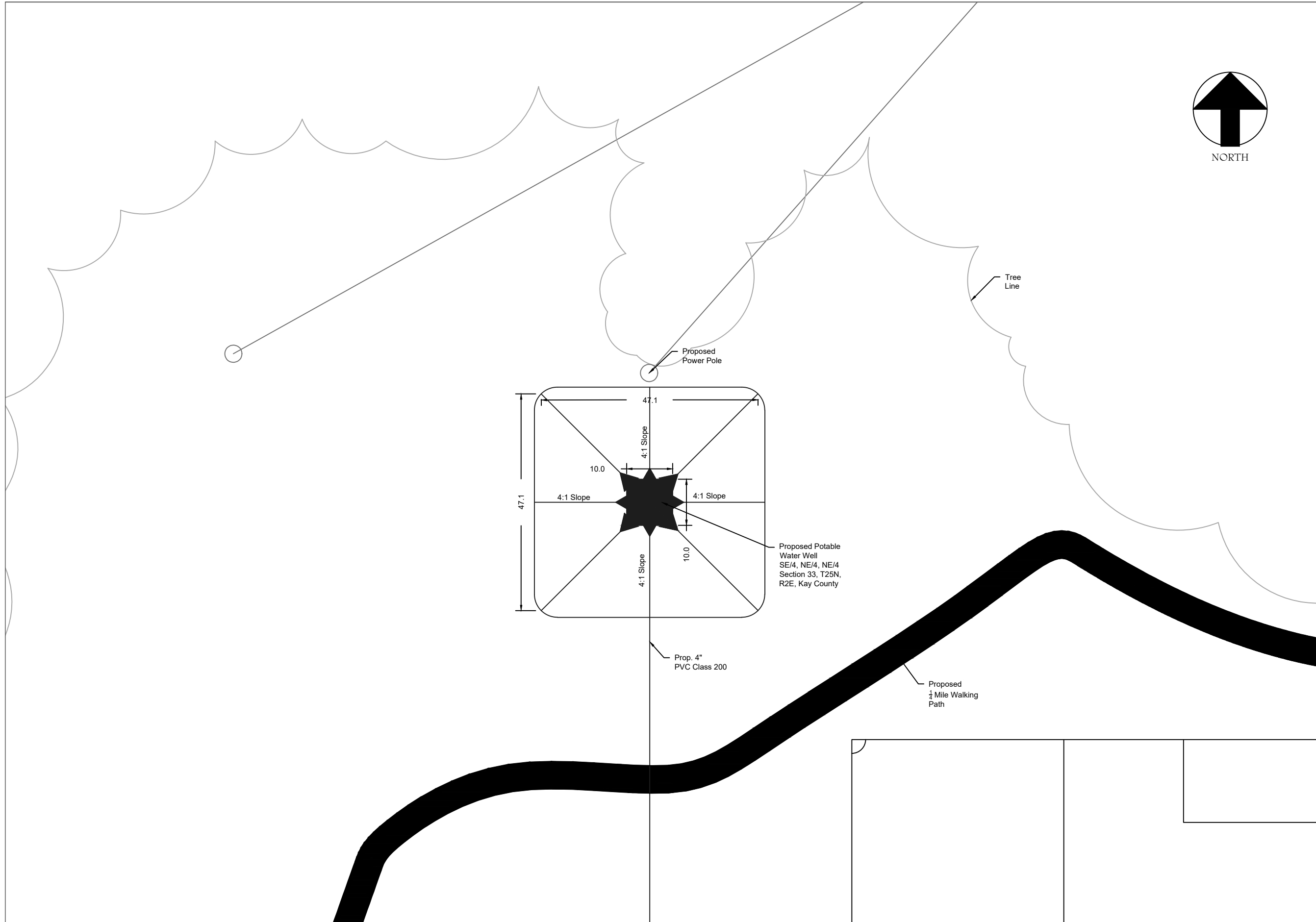


SITE PLAN
PONCA TRIBE

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FILENAME	SITEPLAN
SCALE	1=60
PLOT DATE	03-05-26
PROJECT NO.	PROJ1499
SHEET NUMBER	1 OF 5

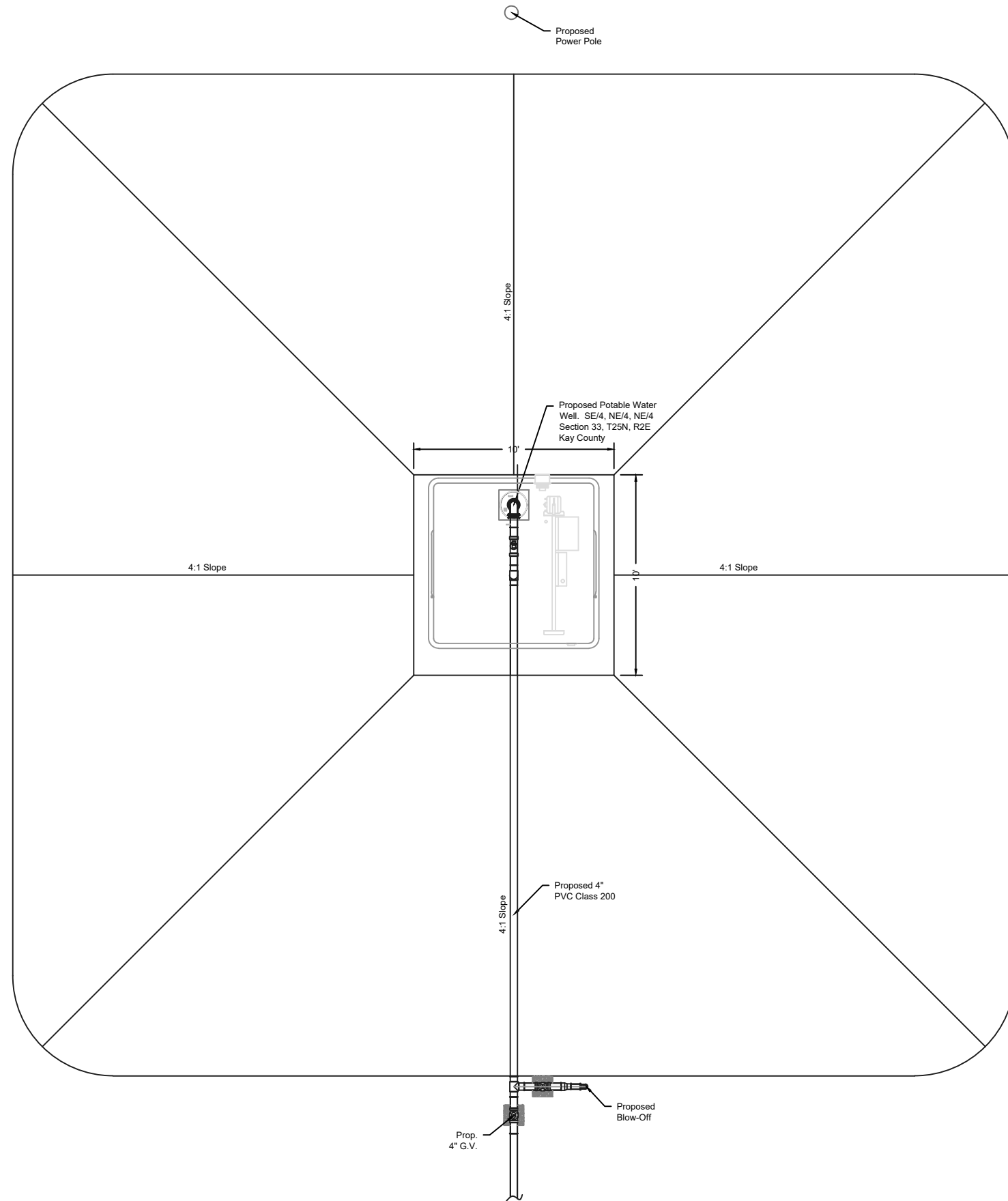


SITEPLAN
PONCA TRIBE

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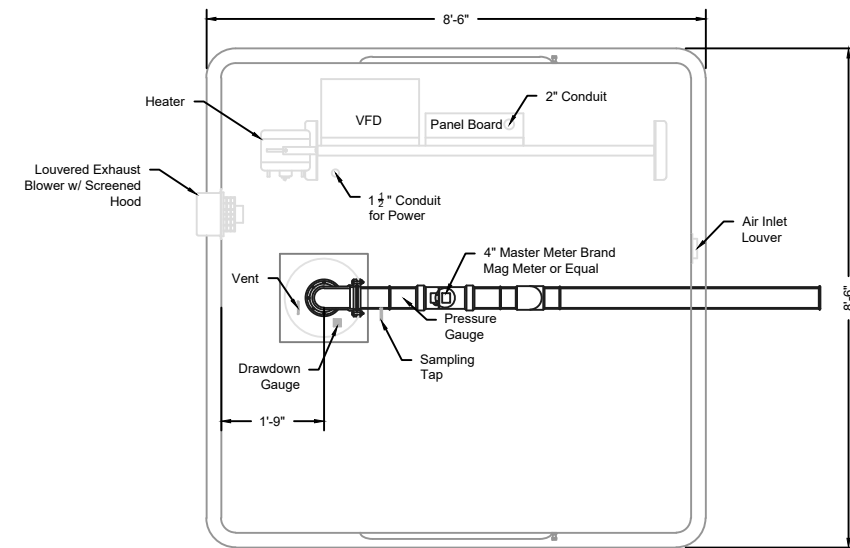
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FILENAME	SITEPLAN
SCALE	1=20
PLOT DATE	03-05-26
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2 OF 5	



Well Logs Must:
 (A) Include Sample Collected At Maximum 20-Foot Intervals And At Each Pronounced Change In Formation.
 (B) Be Recorded And Submitted To The DEQ And To The Oklahoma Water Resources Board, And
 (C) Be Supplemented With A Record Of Drill Hole Diameters & Depths, Assembled Order Of Size And Length Of Casings And Liners, Length Of The Perforated Section And Type Of Perforations, Or Type And Length Of Screen Used, Grouting Depths, Formations Penetrated, Water Levels, And Locations Of Any Blast Charges. Where Multiple Water Bearing Formations Are Developed, Give The Elevation And Length Of Each Perforated Or Screened Section.

(A) Surface Casing Material, Ferrous Material Must:
 (i) Be New Pipe Meeting ASTM, NSF Or API Specification For Water Well Construction,
 (ii) Have Minimum Weights And Thickness Indicated In Appendix C,
 (iii) Be Capable Of Withstanding Forces To Which It Is Subjected
 (iv) Be Equipped With A Drive Shoe When Driven, And
 (v) Have Full Circumferential Welds Or Threaded Coupling Joints

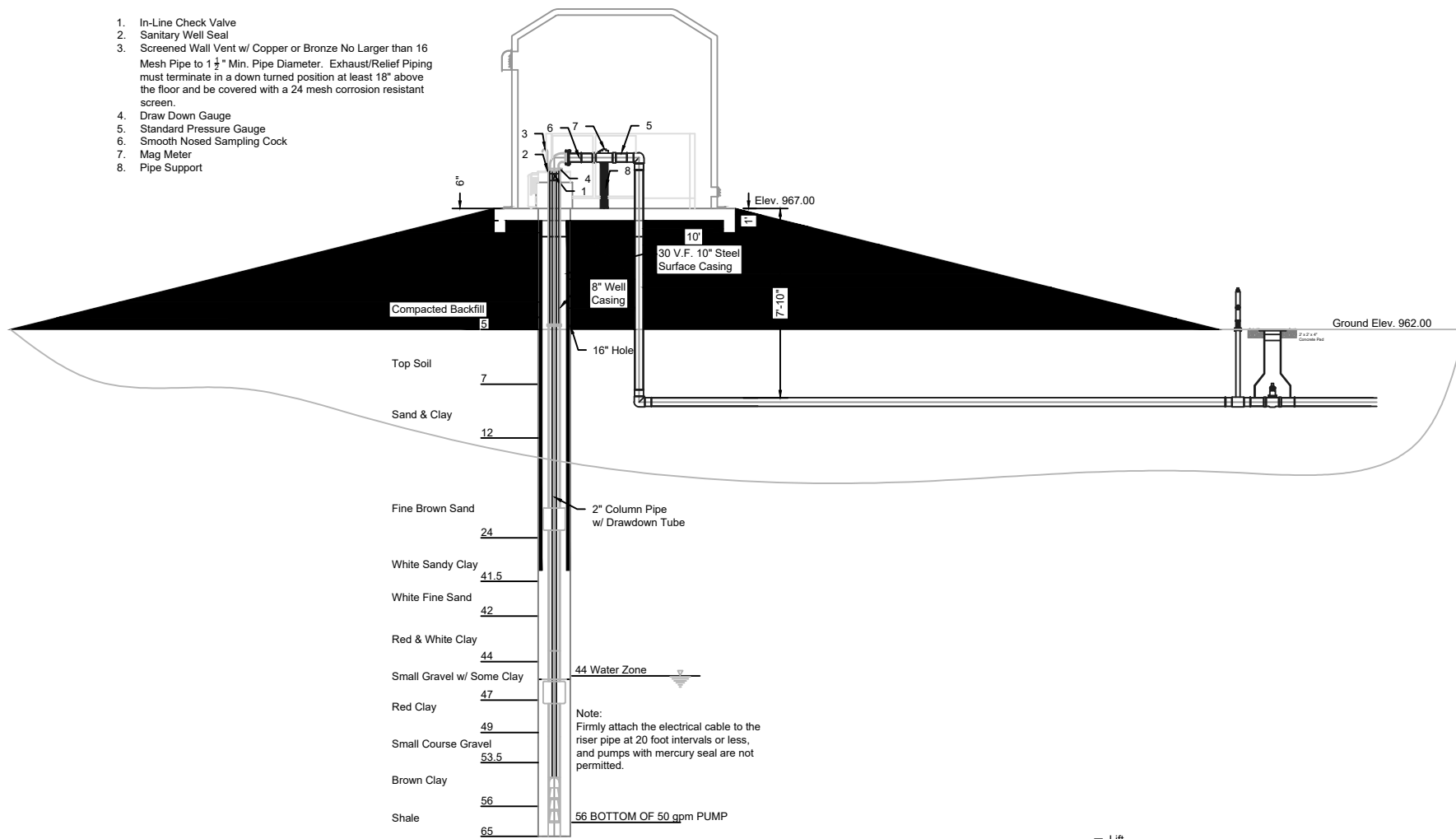


WELL DETAILS
PONCA TRIBE

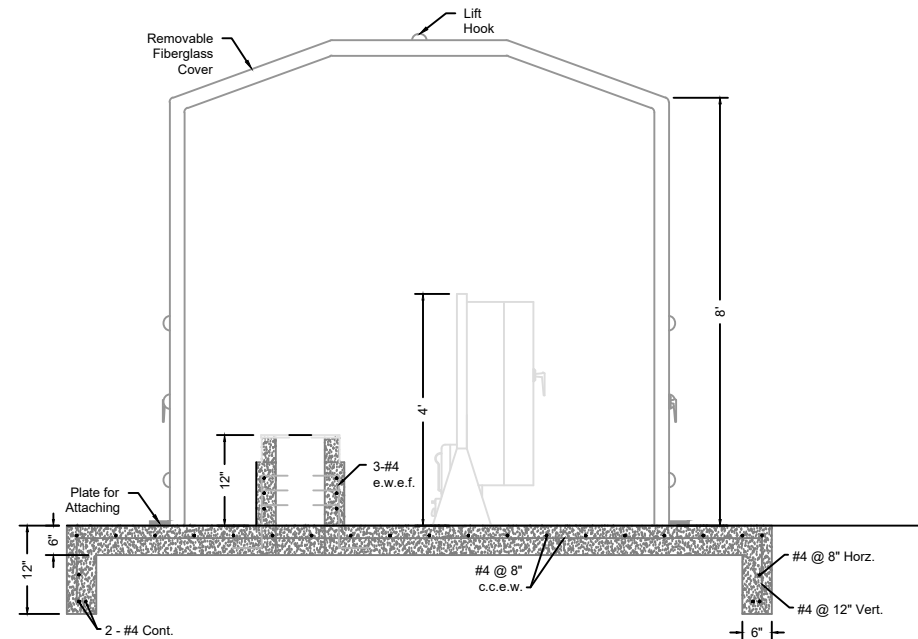
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3 OF 5	

1. In-Line Check Valve
2. Sanitary Well Seal
3. Screened Wall Vent w/ Copper or Bronze No Larger than 16 Mesh Pipe to 1 1/2" Min. Pipe Diameter. Exhaust/Relief Piping must terminate in a down turned position at least 18" above the floor and be covered with a 24 mesh corrosion resistant screen.
4. Draw Down Gauge
5. Standard Pressure Gauge
6. Smooth Nosed Sampling Cock
7. Mag Meter
8. Pipe Support



WELL CROSS SECTION



General Notes for Well Construction

1. Grading and drainage shall be provided to drain surface water from site.
2. All season access Road shall be provided to the site.
3. The top of the floor slab shall not be less than 6 inches above the surrounding ground, in areas not subject to flooding.
4. The floor slab shall rest upon thoroughly compacted earth to 95% standard proctor density.
5. Gravel for gravel treated wells shall be disinfected:
 - 5.1. by immersing the gravel in a chlorine solution containing not less than 200 parts per million of available chlorine (may be made with one pound of calcium hypochlorite to 400 gallons of water or proportionate amounts of other chlorine compounds), or
 - 5.2. by applying chlorinated lime uniformly to the washed gravel at the rate of 1/4 pound per cubic yard of gravel.
6. Provisions shall be made for periodic measurement of water levels in the completed well, as required in OAC 252-630-1-7(3)(A) [-7-4(m)]
7. Well floor to be constructed with reinforced, watertight concrete not less than 6 inches thick with a footing of at least 12 inches.
8. Slope floor or apron at least 1/4 per foot away from well casing and allow for drainage away from site.
9. Screens must
 - 9.1. Have sizes of openings based on sieve analysis of formation and gravel pack materials to permit maximum transmitting ability without clogging or jamming
 - 9.2. Have sufficient diameter to provide adequate specific capacity and low aperture entrance velocity. The entrance velocity must not exceed 0.1 ft/s
 - 9.3. Be installed so that the pumping water level remains above the screen under all operating conditions, unless measures are provided to protect the screen from being corroded
 - 9.4. Be provided with a bottom plate or washdown bottom fitting of the same material as the screen, where applicable.
10. Upon Completion of the well, collect at least 2 bacteriologically safe samples on consecutive days. Collect samples after chlorine used in disinfecting the well has been completely dissipated, Submit the records to the DEQ.
11. If any samples show presence of coliform bacteria, take additional samples to determine the degree of contamination and treatment if required.
12. Cement Grout
 - 12.1. Cement conforming to ASTM Standard C150, with not more than 6 gallons of water per 94 pound sack of cement, must be used for 1-1/2 inch annular openings
 - 12.2. Additives used to increase fluidity are subject to approval by DEQ.
13. Concrete Grout
 - 13.1. Equal parts of cement conforming to ASTM Standard C150, and sand, with not more than 6 gallons of water per 90 - lb. sack of cement may be used for annular openings larger than 1-1/2 inches.
 14. Where an annular opening larger than 4 inches is available, gravel not larger than 1/2 inch in size may be added.
 15. Provide sufficient annular opening to permit a minimum of 1-1/2 inches of grout around permanent casings, including couplings.
 16. Provide the casing with sufficient guides welded to the casing to permit unobstructed flow and uniform thickness of grout.
 17. Use gravel pack that is well rounded, 95% siliceous material, smooth and uniform, free of foreign material, properly sized, washed and disinfected immediately prior to or during placement.
 18. Install gravel pack in one uniform continuous operation throughout each screened interval.
 19. Surround gravel refill pipes located in the grouted annular opening by minimum of 1-1/2" inches of grout.
 20. Provide protection from leakage of grout into the gravel pack or screen.

Size (Inches)	Diameter (Inches)		Thickness (Inches)	Weight Per Foot (Pounds)	
	External	Internal		Plain Ends (Calculated)	With Treads And Couplings (Nominal)
6 ID	6.625	6.065	0.280	18.97	19.18
8	8.625	7.981	0.322	28.55	29.35
10	10.750	10.020	0.365	40.48	41.85
12	12.750	12.000	0.375	49.56	51.15
14 OD	14.000	13.250	0.375	54.57	57.00
16	16.000	15.250	0.375	62.58	
18	18.000	17.250	0.375	70.59	
20	20.000	19.250	0.375	78.60	
22	22.000	21.000	0.500	114.81	
24	24.000	23.000	0.500	125.49	
26	26.000	25.000	0.500	136.17	
28	28.000	27.000	0.500	146.85	
30	30.000	29.000	0.500	157.53	
32	32.000	31.000	0.500	168.21	
34	34.000	33.000	0.500	178.89	
36	36.000	35.000	0.500	189.57	

WELL DETAILS

PONCA TRIBE

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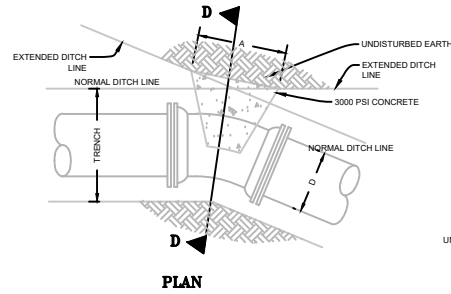
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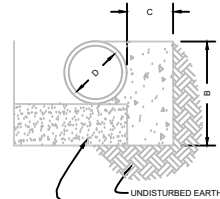
SHEET NUMBER
4 OF 5

NOTES: WATER SYSTEM

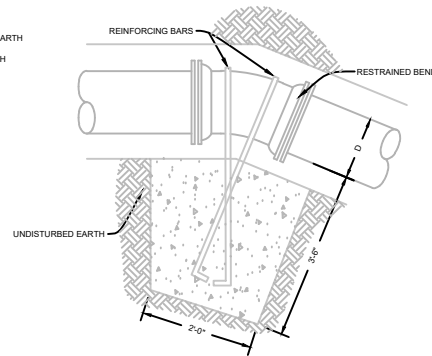
- The Contractor is responsible for obtaining all permits necessary to complete construction.
- All construction to meet most current Oklahoma Department of Environmental Quality Standards.
- Existing paving disturbed during construction of utilities must be repaired to ODOT standards.
- Utility trenches which cross existing or proposed paving must be compacted to 95% standard proctor density.
- All PVC pipe to be SDR-21 Class 200 unless otherwise instructed by the Engineer. In no case shall the wall thickness of the pipe be less than 0.09 inches.
- All Ductile Iron pipe shall be class 50 unless otherwise instructed by the Engineer.
- All PVC push-on Joints shall be integrally formed, rubber Gasket.
- A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe.
- All water mains shall be covered with atleast 30 inches of earth or with sufficient insulation to prevent freezing.
- All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints that prevent movement.
- Water mains shall be pressure and leakage tested in accordance with AWWA C601. Leakage shall not exceed ten gallons per inch diameter per mile of pipe per 24 hours at 150 psi testing pressure.
- All mains and appurtenances shall be disinfected in accordance with current AWWA standards. Following disinfection in accordance with AWWA standards, obtain safe bacteriological samples on 2 consecutive days before placing the water line into service.
- Water mains shall be located at least 10 feet horizontally from any existing or proposed sewer lines, storm sewers, raw water lines, oil and gas lines, and buried electric lines.
- PVC water lines shall be located at least 50 feet horizontally from any gasoline storage tank.
- Water lines shall be located at 15 feet from all parts of septic tanks and absorption fields, or other sewage treatment and disposal systems.
- Lay waterlines crossing sewer lines to provide a minimum vertical distance of 24 inches between the water main and the sewer line. Arrange the piping so that joints in a 20-foot length of PVC or 18-foot length of cast iron sewer pipe will be equidistant from the water main. Where a water main crosses under a sewer, provide adequate structural support for the sewer to prevent damage to the water main.
- Bores with HDPE pipe must be in the ground for at least 24 hours prior to connection to PVC pipe.
- Best Management Practices will be included in the contract documents regarding soil erosion. Silt fences will be required as necessary at the construction site. Bare Ground will be returned to grass by seeding or slab sodding.
- Maintain a 2-foot vertical separation between waterlines and any existing or proposed storm sewers, raw water lines, petroleum product lines, natural gas lines, and other buried utility lines.
- Install metal tracer wire on all non-ferrous piping used for public water supply mains.



PLAN

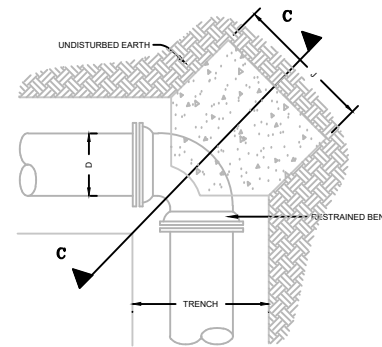


SECTION D-D

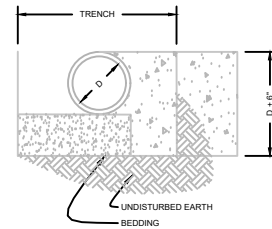


SECTION FOR VERTICAL BENDS

45 DEG., 22 1/2 DEG., 11 1/4 DEG. BENDS



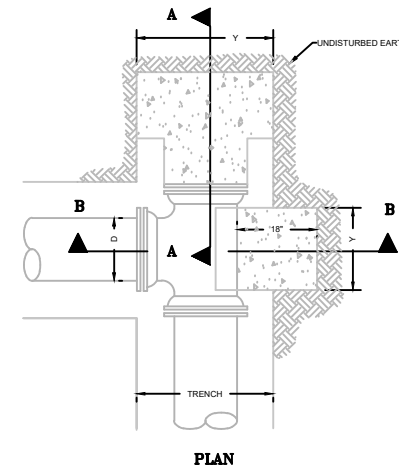
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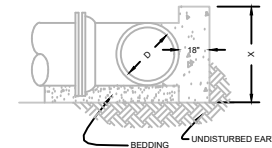
SECTION C-C
90 DEG. BENDS

PIPE DIA.	TRENCH WIDTH	DIMENSIONS FOR CONCRETE ANCHORAGES											
		45 DEG. BEND			22 1/2 DEG. BEND			11 1/4 DEG. BEND			TEE OR PLUG		
		A	B	C	A	B	C	A	B	C	X	Y	J
36	60	7'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	4'-0"	3'-4"	6'-5"
30	54	5'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	3'-6"	3'-0"	5'-8"
24	44	3'-9"	2'-6"	1'-10"	2'-6"	2'-6"	1'-1"	2'-0"	2'-6"	1'-0"	3'-3"	3'-0"	4'-9"
20	39	2'-9"	2'-2"	1'-8"	2'-0"	2'-2"	1'-1"	2'-0"	2'-2"	11"	3'-0"	2'-0"	4'-1"
18	37	2'-3"	2'-0"	1'-6"	2'-0"	2'-0"	1'-1"	2'-0"	2'-0"	11"	2'-3"	2'-0"	3'-9"
16	35	2'-0"	1'-10"	1'-5"	2'-0"	1'-10"	1'-1"	2'-0"	1'-10"	11"	1'-6"	2'-0"	3'-6"
12	30	2'-0"	1'-6"	1'-4"	2'-0"	1'-6"	1'-0"	2'-0"	1'-6"	11"	1'-0"	2'-0"	3'-0"
10	28	2'-0"	1'-4"	1'-4"	2'-0"	1'-4"	1'-0"	2'-10"	1'-4"	11"	1'-0"	1'-0"	2'-8"
8	26	2'-0"	1'-2"	1'-4"	1'-10"	1'-2"	1'-0"	1'-8"	1'-2"	11"	10"	1'-6"	2'-4"
6	24	2'-0"	1'-1"	1'-4"	1'-8"	1'-1"	1'-0"	1'-6"	1'-1"	11"	8"	1'-4"	2'-1"

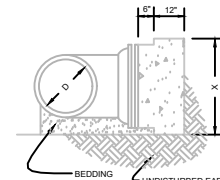
HORIZONTAL-CONCRETE THRUST BLOCKING



PLAN

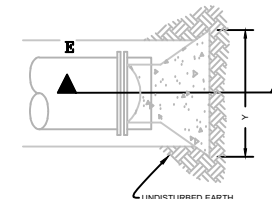


SECTION B-B

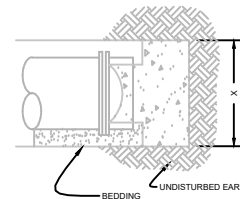


SECTION A-A

TEES

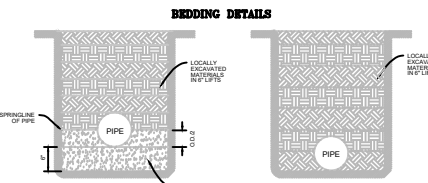


PLAN



SECTION E-E

PLUGS

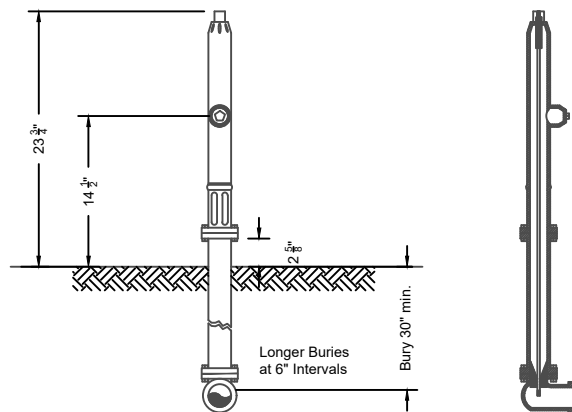


UNLESS OTHERWISE SPECIFIED, TYPE III SHALL BE USED FOR P.V.C. AND FOR DUCTILE IRON, EXCEPT WHEN ROCK AND / OR STONES ARE ENCOUNTERED THEN TYPE II SHALL BE USED. PIPE SHALL BE LAID IN ACCORDANCE WITH CURRENT AWWA STANDARDS. LOCALLY EXCAVATED MATERIALS MAY BE USED IN ROCK AREA IF THE SOIL IS FREE OF STONES.

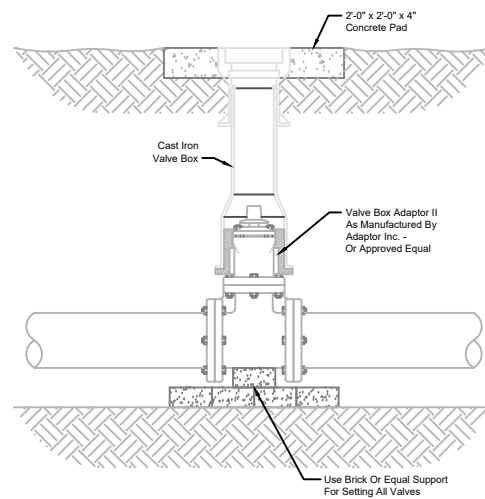
TRENCH SCHEDULE

PIPE DIAMETER IN INCHES	TRENCH WIDTH IN FEET
2	2.0
3	2.0
4	2.0
6	2.0
8	2.2
10	2.2
12	2.2
15	2.6
18	2.9
21	3.3
24	3.8

Flushing Hydrant to be Mueller 2 3/4" post type Fire Hydrant with one 2 1/2" Hose Nozzle or equal



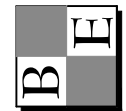
BLOW-OFF HYDRANT DETAIL



VALVE SETTING DETAIL
1" = 1'-0"

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