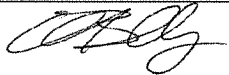



CONTRACTOR SUBMITTAL FORM

Project Name: Navajo Gallup Water Supply Project Reach 26.3	<input checked="" type="checkbox"/> M (Materials)	Submittal No. M017
SMA Project No: 6921307	<input type="checkbox"/> T (Testing)	
Date: 07-16-2019	<input type="checkbox"/> A (Administrative)	
Contractor: Navajo Engineering and Construction Authority	No. of Copies: 1	

Supplier: Core & Main	Manufacturer: 101 Pipe & Casing
Specification No.: None	Drawing No.: C-6-9, 13, 24, DT-5
Bid Item No(s): 29, 30	
Submittal Checklist No(s): M219	
Product Description: 18" and 24" Steel Schedule 10 Casing for Open Cut Crossing Areas.	
Are there any deviations from the Contract Documents? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Explain:	
Contractor's certification that product meets requirements of Contract Documents: <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Certified with variations as noted on shop drawings and/or attached sheets.	
Signed:  Quentin Benally, NECA	Date: 07-16-2019

Engineer's Comments: <input type="checkbox"/> No Exception Taken <input checked="" type="checkbox"/> Approved as Corrected <input type="checkbox"/> Exceptions as Noted <input type="checkbox"/> Submittal Rejected <input type="checkbox"/> Revise and Resubmit to Engineer <input type="checkbox"/> Contractor to Submit Specified Information - Open cut casings require bituminous paint - Contractor responsible for installing correct lengths of casings	Review is limited to check for compliance with design concept. No changes from provisions of Contract Documents are intended and Contractor remains responsible for compliance with revisions therein. The Contractor is solely responsible for quantities; correctness of dimensions; verification of physical interrelation of elements of the work as required by the drawings and specifications and by field determination; fabrication procedures, construction methods, techniques and sequences. This review does not relieve the Contractor from these responsibilities. Non-conformities and errors detected have been noted but such markings, or lack thereof, shall not relieve the Contractor from compliance with all requirements of the contract drawings and specifications.
Signed: 	Date: 7/22/19



PIPE CHART

PIPE SIZE	O.D. in inches	PIPE SCHEDULE															DBL. E.H.
		5s	5	10s	10	20	30	40	STD	60	80	E.H.	100	120	140	160	
1/8	.405		.035	.049	.049			.068	.068		.095	.095					
			.1383	.1863	.1863			.2447	.2447		.3145	.3145					
1/4	.540		.049	.065	.065			.088	.088		.119	.119					
			.2570	.3297	.3297			.4248	.4248		.5351	.5351					
3/8	.675		.049	.065	.065			.091	.091		.126	.126					
			.3276	.4235	.4235			.5676	.5676		.7388	.7388					
1/2	.840	.065	.065	.083	.083			.109	.109		.147	.147				.187	.294
		.5383	.5380	.6710	.6710			.8510	.8510		1.088	1.088				1.304	1.714
3/4	1.050	.065	.065	.083	.083			.113	.113		.154	.154				.218	.308
		.6838	.6838	.8572	.8572			1.131	1.131		1.474	1.474				1.937	2.441
1	1.315	.065	.065	.109	.109			.133	.133		.179	.179				.250	.358
		.8678	.8678	1.404	1.404			1.679	1.679		2.172	2.172				2.844	3.659
1 1/4	1.660	.065	.065	.109	.109			.140	.140		.191	.191				.250	.382
		1.107	1.107	1.806	1.806			2.273	2.273		2.997	2.997				3.765	5.214
1 1/2	1.900	.065	.065	.109	.109			.145	.145		.200	.200				.281	.400
		1.274	1.274	2.085	2.085			2.718	2.718		3.631	3.631				4.859	6.408
2	2.375	.065	.065	.109	.109			.154	.154		.218	.218				.344	.436
		1.604	1.604	2.638	2.638			3.653	3.653		5.022	5.022				7.444	9.029
2 1/2	2.875	.083	.083	.120	.120			.203	.203		.276	.276				.375	.552
		2.475	2.475	3.531	3.531			5.793	5.793		7.661	7.661				10.01	13.70
3	3.5	.083	.083	.120	.120			.216	.216		.300	.300				14.32	18.58
		3.029	3.029	4.332	4.332			7.576	7.576		10.25	10.25				14.32	18.58
3 1/2	4.0	.083	.083	.120	.120			.226	.226		.318	.318					.636
		3.472	3.472	4.973	4.0973			9.109	9.109		12.51	12.51					22.85
4	4.5	.083	.083	.120	.120			.237	.237	.281	.337	.337		.438		.531	.674
		3.915	3.915	5.613	5.613			10.79	10.79	12.66	14.98	14.98		19.00		22.51	27.54
4 1/2	5.0							.247				.355					.710
								12.53				17.61					32.53
5	5.563	.109	.109	.134	.134			.258	.258		.375	.375		.500		.625	.750
		6.349	6.349	7.770	7.770			14.62	14.62		20.78	20.78		27.04		32.96	38.55
6	6.625	.109	.109	.134	.134			.280	.280		.432	.432		.562		.719	.864
		7.585	7.585	9.289	9.289			18.97	18.97		28.57	28.57		36.39		45.30	53.16
7	7.625							.301			.500	.500					.875
								23.57			38.05						63.08
8	8.625	.109	.109	.148	.148	.250	.277	.322	.322	.406	.500	.500	.594	.719	.812	.906	.875
		9.914	9.914	13.40	13.40	22.36	24.70	28.55	28.55	35.64	43.39	43.39	50.87	60.63	67.76	74.69	72.42
9								.342			.500	.500					
								33.90			48.72						
10	10.75	.134	.134	.165	.165	.250	.307	.365	.365	.500	.594	.500	.719	.844	1.000	1.125	
		15.19	15.19	18.65	18.65	28.04	34.24	40.48	40.48	54.74	64.33	54.74	76.93	89.20	104.1	115.6	
11	11.75							.375			.500	.500					
								45.55			60.07						
12	12.75	.156	.156	.180	.180	.250	.330	.406	.375	.562	.688	.500	.844	1.000	1.125	1.312	
		20.98	20.98	24.16	24.16	33.38	43.77	53.53	49.56	73.16	88.51	65.42	107.2	125.5	139.7	160.3	
14	14.0	.156		.188	.250	.312	.375	.437	.375	.594	.750	.500	.938	1.094	1.250	1.406	
		23.07		27.73	36.71	45.68	54.57	63.37	54.57	84.91	106.1	72.09	130.7	150.7	170.2	189.1	
16	16.0	.165	.188	.250	.312	.375	.500	.375	.656	.844	.500	.1031	1.219	1.438	1.593		
		27.90		31.75	42.05	52.36	62.58	82.77	62.58	107.5	136.5	82.77	164.8	192.3	223.5	245.1	
18	18.0	.165	.188	.250	.312	.437	.562	.375	.750	.938	.500	1.156	1.375	1.562	1.781		
		31.43		35.76	47.39	59.03	82.06	104.8	70.59	138.2	170.8	93.45	208.0	244.1	274.2	308.5	
20	20.0	.188	.218	.250	.375	.500	.594	.375	.812	1.031	.500	1.281	1.500	1.750	1.968		
		39.78		46.05	52.73	78.60	104.1	122.9	78.6	166.4	208.9	104.1	256.1	296.4	341.1	379.0	
22	22.0			.250	.375	.500		.375	.875	1.125	.500	1.357	1.625	1.875	2.125		
				58.07	86.61	114.81		86.61	197.42	250.82	114.81	302.88	353.61	403.01	451.07		
24	24.0	.218	.250	.250	.375	.562	.687	.375	.969	1.219	.500	1.531	1.812	2.062	2.343		
		55.37		63.41	94.62	140.8	171.2	94.62	238.1	296.4	125.5	367.4	429.4	483.1	541.9		
30	30.0			.312	.500	.625		.375			.500						
				99.00	158.0	196.0		119.0			158.0						



PUMP MANUFACTURER THREAD SPECS

MANUFACTURER		TUBE THREAD AND BRGs O.D.										SHAFT PITCH AND CPLG LENGTH									
		1 1/4	1 1/2	2	2 1/2	3	3 1/2	3/4"	7/8"	15/16"	1"	1 3/16"	1 1/4"	1 7/16"	1 1/2"	1 11/16"	1 3/4"	1 15/16"	2"	2 3/16"	2 7/16"
BERKELY			12LH 1.640	12LG 2.090	12LH 2.457	12LH 3.033		16 2 1/8"			10 2 1/2"	10 3 1/2"		8 3 3/4"		16 2 1/8"	16 2 1/8"		16 2 1/8"	16 2 1/8"	16 2 1/8"
BYRON JACKSON		12LH 1420 12RH	12LH 1.625 12RH 1.033	10LH 2.090 10RH 1.033	8LH 2.531 8RH 2.545	8LH 3.109 8RH 3.115	8LH 3.562 8RH 3.573	10 2"			10 2 1/2"	8 2 3/4"		8 3 3/4"		8 4 3/4"		8 5 1/2"	8 5 1/2"	8 6"	
CRANE								16 2 3/4"	14 3"	12 3 1/4"	14 3 1/4"	12 3 1/4"	12 3 1/2"		12 4 1/4"	10 4 3/8"	10 4 1/2"	10 4 3/4"	10 5"	10 5 1/4"	
FAIRBANKS		14LH 1.380	14LH 1.620	12LH 2.078	12LH 2.522	12LH 3.108	12LH 3.552	16 2 1/8"			14 2 1/2"	12 3 1/2"	10 3 1/4"	12 4"	10 3 1/2"	10 4 1/2"		10 5"		10 5 1/2"	10 6"
FLOWAY		12LH 1.395	12LH 1.610	12LH 2.049	12LH 2.437	12LH 3.016	12LH 3.500	16 2 1/8"			14 2 1/2"	10 3 1/2"	10 3 1/4"		10 3 1/2"	10 4"	10	10 5"	10	10 5 1/2"	8 5 1/2"
JACUZZI		12RH 1.373	12RH 1.623	12RH 2.062	12RH 2.494	12RH 3.062	12RH 3.495	16 2 1/8"			12 2 1/4"	12 2 1/2"		12 3 1/8"	12 3 1/8"	12 4 3/8"		12 4 3/8"		12 5 1/2"	8 7"
JOHNSTON		14LH 1.475	14LH 1.633	14LH 2.057	12LH 2.534 10LH 2.619	10LH 3.130	10LH 3.560	16 2 1/8"			12 3"	12 3"	12 3 1/4"	OLD 10 3 1/2"	10 3 1/2"	10 4"		10 5"		10 5 1/2"	10 6"
LAYNE & BOWLER		16RH 1.406	12RH 1.675	10RH 2.090	10RH 2.500	10RH 3.062	10RH 3.562	16 2 1/8"			10 3"	10 3 1/2"			10 3 1/2"	10 4 1/2"		10 5 1/2"	8 5 1/2"	8 6"	
LAYNE OF MEMPHIS		NEW OLD	12RH 1.685 12RH	10RH 2.096 10RH	10RH 8RH 2.518	10RH 8RH 3.118	10RH 8RH	NEW 16 3"	12 3"		12 3"	8 4"			8 4"	8 5"		NEW 8 6"	NEW 8 6"	NEW 8 7"	
																		OLD	OLD	OLD	
PACIFIC		14LH 1 5/8"	14LH 1 2/32"	14LH 2 5/16"	14LH 2 13/16"	14LH 3 15/32"	14LH 3 31/32"		12		2		2	10		10		10	10	8	
PEERLESS		12RH 1.403	14RH 1.654	12RH 2.090	10VRH 2.482	10RH 3.050	10RH 3.554	16 2 1/8"	14 2 1/4"		14 2 1/2"	10 3 1/2"			10 3 1/2"	10 4"		10 5"		10 5 1/2"	8 6"
U.S. GOULD		14LH 1.480	14LH 1.638	14LH 2.062	10LH 2.625	10LH 3.136	10LH 3.562	16 2 1/8"			12 3"	12 3"			10 3 1/2"	10 4"		10 5"		10 5 1/2"	8 6"
WLA WINTROATH		14RH 1.390	14RH 1.615	12RH 2.093	10RH 2.500	10RH 3.053	10RH 3.555	16 2 1/8"			14 2 1/2"	10 3 1/2"			10 3 1/2"	10 4 1/2"		10 5 1/2"		10 5 1/2"	8 6"
WD WORTHINGTON		12LH 1.401	12LH 1.623	12LH 2.125	12LH 2.494	12LH 3.119	12LH 3.562	12 2 1/8"			12 3"		8 3 1/2"	12	8 4"	10 4 1/2"		10 5 1/2"	8 5"	10 5 1/2"	8 6"
A.O. SMITH		12LH 1.390	12LH 1.605	12LH 2.044	12LH 2.432	12LH 3.011	12LH 3.493	16 2 1/8"			14 2 1/2"	10 3 1/2"	10 3 1/4"		10 3 1/2"	10 4"	10	10 5"	10	10 5 1/2"	8 5 1/2"
WESTERN LAND ROLLER			12RH	12RH	12RH LH 2.522						14 2 3/4"		12 3 1/2"		12 4"	12 4"		10 5"			

Above data was compiled from existing industry sources and 101 Pipe & Casing is not responsible for its accuracy.