

LEGEND

- CL CENTER LINE
- WLE WATERLINE EASEMENT
- PUE PUBLIC UTILITY EASEMENT
- DE DRAINAGE EASEMENT
- SLE SEWERLINE EASEMENT
- BC BACK OF CURB
- WTR WATER
- SWR SEWER
- P PAVEMENT
- R/W RIGHT-OF-WAY
- ⊙ SURVEY MONUMENT
- ⊗ WATER VALVE
- ⊕ FIRE HYDRANT
- SEWER MANHOLE
- (X) CONSTRUCTION NOTES
- SEWER LINE
- SEWER CLEANOUT
- SEWER TAP
- ▨ SEWER TAP ENCASEMENT
- WATER LINE
- WATER METER
- ◆ GEOTECHNICAL BORE LOCATION (REFER TO SPECS)
- ⊙ POTHOLE LOCATION (REFER TO SPECS)

BUCKSKIN SANITARY DISTRICT PHASE 4 SEWER EXTENSIONS -CONTRACT 106-

SHEET INDEX		
SHT#	TOTAL SHTS	DESCRIPTION
1	1	COVER SHEET
3	6	GEOMETRIC CONTROL PLAN
4,1	7	STANDARD NOTES, TESTHOLE DATA
4,2	8	STANDARD NOTES, RESTRAINED JOINT LENGTHS
44	48	DETAILS
45	49	DETAILS
70	94	MCDANIEL DRIVE
74	98	RIO WAY

**SITUATED IN PORTIONS OF:
SECTIONS 1, 11, 12, 14 AND 15, TOWNSHIP 10 NORTH, RANGE 19 WEST,
SECTION 31, TOWNSHIP 11 NORTH, RANGE 18 WEST,
AND SECTION 6, TOWNSHIP 10 NORTH, RANGE 18 WEST
OF THE GILA AND SALT RIVER BASE MERIDIAN, LA PAZ COUNTY, ARIZONA**

PROJECT CONTROL

BEARINGS & COORDINATES SHOWN HEREON ARE BASED UPON GRID COORDINATES (CONVERTED TO GROUND) AS LISTED AS SECONDARY CONTROL BEING SHOWN IN THE RIGHT-OF-WAY PLANS OF THE PARKER BUSINESS ROUTE SR95B, SR 95B TURNBACK, 095B LA 148 H4696 01R, S B95-A-800 PREPARED FOR THE ARIZONA DEPARTMENT OF TRANSPORTATION BY ARCADIS GERAGHTY 7 MILLER, PROJECT NO. AZ 000838, DRAWING NO. D-15_T-015 HAVING A STAMP DATE OF 7/15/03.

ELEVATIONS SHOWN HEREON ARE BASED ON AN ADOT ALUMINUM CAP LOCATED AT STATION 236+70.9 AS SHOWN ON THE SURVEY CONTROL SHEET CREATED BY STANLEY CONSULTANTS PREPARED FOR THE BUCKSKIN SANITARY DISTRICT ON SHEET 6 OF 80, PROJECT NO. 17471.02.00 HAVING PRINT DATE OF 2/9/07. ELEVATION = 390.81 ADOT (NGVD 29)

APPROXIMATE GEOGRAPHIC PROJECT LOCATION

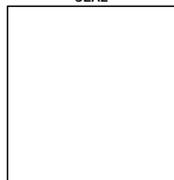
THIS APPROXIMATE GEOGRAPHIC LOCATION REPRESENTS THE EXISTING BUCKSKIN SANITARY DISTRICT WASTE WATER TREATMENT PLANT SERVING THIS PHASE 4 PROJECT.

LATITUDE: 34° 12' 18.47"N
LONGITUDE: 114° 13' 4.93"W

SEWER "AS BUILT" CERTIFICATION:

I HEREBY CERTIFY THAT THE "AS-BUILT" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED, AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AFTER DUE REVIEW. ADDITIONALLY, I HEREBY CERTIFY THAT ALL MAINS AND SERVICES HAVE BEEN INSTALLED WITHIN THE LIMITS OF EASEMENTS DEDICATED TO BUCKSKIN SANITARY DISTRICT OR INSIDE DEDICATED STREET RIGHTS-OF-WAYS OR PUBLIC UTILITY EASEMENTS.

SEAL



LOCATION MAP
N.T.S.

UTILITY SERVICES

- | | |
|----------------|----------------------------|
| SEWER | BUCKSKIN SANITARY DISTRICT |
| WATER | BROOKE UTILITIES |
| GAS | SOUTHWEST GAS |
| ELECTRICITY | A.P.S. |
| COMMUNICATIONS | FRONTIER COMMUNICATIONS |
| COMMUNICATIONS | SUDDENLINK COMMUNICATIONS |
| POLICE | LA PAZ COUNTY SHERIFF |
| FIRE | BUCKSKIN FIRE DEPT |
| STORM DRAINAGE | LA PAZ COUNTY |

UTILITY NOTIFICATION:

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES, WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED AS NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORSEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

- BROOKE UTILITIES
- A.P.S.
- FRONTIER COMMUNICATIONS
- SUDDENLINK COMMUNICATIONS
- SOUTHWEST GAS

SEWER OWNER/OPERATOR

BUCKSKIN SANITARY DISTRICT
8832 RIVERSIDE DRIVE #4
PARKER, ARIZONA 85344
PHONE: (928) 667-7197
FAX: (928) 667-1797
CONTACT: WAYNE POSEY, DISTRICT MANAGER

CIVIL ENGINEER

ENERGY AND WATER SOLUTIONS
4241 E. HANO STREET
PHOENIX, AZ 85044
PHONE: (602) 309-3824
FAX: (480) 656-9778
CONTACT: GLENN PANARO, PE.

STRUCTURAL ENGINEER

OLIDEN ENGINEERING
3144 E. WILDWOOD DR.
PHOENIX, AZ 85048
PHONE: (602) 421-2025
CONTACT: OSCAR OLIDEN, PE.

SURVEYOR

JG ELLIS LAND SURVEYING SERVICES
3238 NORTH 81ST PLACE
SCOTTSDALE, AZ 85251
PHONE: (602) 970-6265
FAX: (602) 970-6271
CONTACT: JAMES ELLIS, RLS

GEOTECHNICAL ENGINEER

WESTERN TECHNOLOGIES, INC.
1524 EAST DRINDA WAY #113
FORT MOHAVE, AZ 86426
PHONE: (928) 758-8378
FAX: (928) 727-1776
CONTACT: DENNIS ROBERTS

ELECTRICAL ENGINEER

WRIGHT ENGINEERING CORP.
165 EAST CHILTON DRIVE
CHANDLER, AZ 85225
PHONE: (480) 497-5829
FAX: (480) 497-5807
CONTACT: WADE WILLIAMS, PE.

APPROVALS:

BUCKSKIN SANITARY DISTRICT
ARIZONA DEPT. OF ENVIRONMENTAL QUALITY
LA PAZ COUNTY, ARIZONA



EXPIRES 3/31/20

CALL TWO WORKING DAYS BEFORE YOU DIG
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE

GEOMETRIC CONTROL

PNT #	NORTHING	EASTING	ELEV.	DESC	PNT #	NORTHING	EASTING	ELEV.	DESC
1	1165354.745	557931.8818		PC	21	1183156.123	575109.4743		PC
2	1153074.973	613837.6523		CC	22	1183594.701	574920.7439		CC
3	1165405.281	557942.9821		CPI	123	1183267.066	575367.2869		CPI
4	1165455.797	557954.1737		PRC	124	1183546.289	575395.7452		PT
5	1166104.704	555025.1944		CC	125	1183697.506	575411.157		PC
6	1165498.671	557963.6724		CPI	126	1183500.683	576361.1587		CC
7	1165541.806	557971.9122		PT	127	1184300.88	575472.8522		CPI
8	1165859.402	558032.5811		PC	128	1184501.725	576044.9316		PT
9	1165756.204	558572.8127		CC	129	1184677.837	576546.7342		PI
10	1165968.638	558053.4448		CPI	200	1171347.921	564796.51		PI
11	1166061.186	558115.1162		PT	201	1171633.132	564527.5304		INT
12	1166283.388	558253.8486		CC	300	118194.885	57221.7741		PC
13	1164883.107	560334.2885		CC	301	1181287.871	572394.8438		CC
14	1166519.653	558420.6114		CPI	302	1181136.987	572248.1787		CPI
15	1166723.23	558641.9679		PT	303	1181108.236	572306.9163		PT
16	1166809.926	558736.2364		PC	304	1181063.334	572398.6505		PI
17	1163715.786	561581.35		CC	1000	1166591.963	558545.4533		CC
18	1168964.376	558904.1752		CPI	1001	1166891.63	558594.5600		CPI
19	1167099.742	559087.8442		PCC	1002	1167056.684	559020.5804		swr
20	1165264.36	560440.536		CC	1003	1168521.504	561149.4918		swr
21	1167194.613	559216.5692		CPI	1004	1170606.071	563482.8025		tel
22	1167270.588	559357.2765		PT	1005	1170840.564	563519.8259		tel
23	1167594.136	559507.813		CC	1006	1171857.908	564709.3476		wtr
24	1168782.204	559315.4082		CC	1007	1172005.021	564892.8819		wtr
25	1167685.243	560125.2291		CPI	1008	1172615.9	565534.894		tel
26	1167819.41	560261.7314		PT	1009	1175071.545	567781.5099		sd
27	1168052.553	560498.9328		PC	1010	1175751.896	568286.8488		wtr
28	1167334.966	560807.364		CC	1011	1177234.203	569361.2988		wtr
29	1168103.081	560550.34		CPI	1012	1177753.191	569710.901		wtr
30	1168134.565	560615.1825		PT	1013	1178643.438	570728.3025		tel
31	1168178.377	560705.417		PC	1014	1180659.258	572150.7721		tel
32	1168705.294	560449.5786		CC	1015	1180866.593	572215.7789		tel
33	1168233.496	560777.747		CPI	1016	1181004.532	572337.1476		tv
34	1168266.806	560837.9383		PT	1017	1181030.946	572337.5382		tv
35	1168868.187	561516.9423		PC	1018	1181090.451	572323.2376		wtr
36	1176074.398	555134.5417		CC	1019	1181106.603	572329.1449		swr
37	1168913.285	561567.8611		CPI	1020	1181110.378	572322.7999		tel
38	1168959.098	561651.1375		CPI	1021	1181542.986	572437.204		tv
39	1169498.177	562210.8369		PC	1022	1181553.775	572430.3749		tel
40	1184282.309	548740.1651		CC	5021	1165852.738	558121.1331	453.09	P&M
41	1169533.614	562248.6297		CPI					588-7
42	1169568.245	562286.2459		PT					BRASS
43	1171421.457	564299.2483		CC	5022	1174626.864	567589.3462	377.18	CAP
44	1181335.522	550753.1675		CC	5023	1183945.595	575421.5474	408.33	EMERALD REBAR
45	1171449.373	564329.571		CPI					
46	1171477.413	564359.7785		PT					
47	1172298.866	565244.711		CC					
48	1157840.757	578851.322		CC					
49	1172320.582	565268.0842		CPI					
50	1172342.184	565291.5264		PT					
51	1173476.052	566520.8577		CC					
52	1177063.2	563212.2676		CC					
53	1173769.249	566838.7392		CPI					
54	117413.777	567100.1077		PT					
55	1176387.293	568824.8601		CC					
56	1181431.532	562175.6975		CC					
57	1176066.182	568990.9154		CPI					
58	1176835.518	569142.2153		PCC					
59	1180761.9	563190.709		CC					
60	1177048.43	569282.8793		CPI					
61	1177270.834	569407.5701		PT					
62	1177423.348	569493.2139		CC					
63	1176462.994	571203.4045		CC					
64	1177531.786	569554.1088		PT					
65	1177048.43	569282.8793		CPI					
66	1177770.459	569731.1834		CC					
67	1176826.055	571004.1032		CC					
68	1177889.951	569819.8364		CPI					
69	1177990.866	569929.1785		PT					
70	1178251.797	570211.8379		CC					
71	1182609.697	566190.2955		CC					
72	1178324.294	570290.4958		CPI					
73	1178399.574	570366.3898		PRC					
74	1177399.936	571357.9482		CC					
75	1178507.201	570474.8931		CC					
76	1178389.04	570603.9615		PRC					
77	1181430.897	568801.9975		CC					
78	1178725.212	570818.7165		CPI					
79	1178892.111	571010.5689		PRC					
80	1178137.642	571666.9051		CC					
81	1178984.204	571164.4321		CC					
82	1179043.607	571243.5526		PRC					
83	1179444.95	571056.0074		CC					
84	1179105.425	571375.8418		CPI					
85	1179233.79	571445.4436		PCC					
86	1179805.78	570390.5373		CC					
87	1179287.625	571474.6338		CPI					
88	1179344.151	571498.1919		PRC					
89	1176773.648	577665.9823		CC					
90	1179527.008	571574.3996		CPI					
91	1179705.028	571661.3063		PT					
92	117821.355	571718.0951		CC					
93	1177338.324	576804.3667		CC					
94	1179961.391	571786.4582		CPI					
95	1180097.453	571862.423		PT					
96	1180693.772	572195.3528		PI					
97	1180953.723	572349.2954		CC					
98	1181436.782	571519.7828		CC					
99	1181103.094	572428.7732		CPI					
100	1181260.786	572458.3399		PT					
101	1181476.89	572498.8587		CC					
102	1181371.302	573062.0084		CC					
103	1181791.301	572557.8097		CPI					
104	1181906.099	572856.3914		PT					
105	1182111.263	573390.01		CC					
106	1181219.958	573732.6954		CC					
107	1182165.896	573532.1092		CPI					
108	1182173.636	573694.1524		PT					
109	1182189.16	573989.1375		CC					
110	1182666.017	573964.8651		CC					
111	1182197.783	574158.5482		CPI					
112	1182311.354	574284.5473		CC					
113	1182818.814	574526.8314		CC					
114	1182974.529	574307.1605		CC					
115	1182690.749	574705.4555		CPI					
116	1182788.206	574746.7624		PT					
117	1182941.404	574811.6945		CC					
118	1183282.608	575075.4585		CC					
119	1183047.295	574856.5761		CPI					
120	1183092.756	574962.2197		PT					

MATCH - SEE BELOW LEFT

MATCH - SEE BELOW LEFT

MATCH - SEE UPPER RIGHT

GEOMETRIC CONTROL LAYOUT
SCALE: N.T.S.

GEOMETRIC CONTROL LAYOUT
SCALE: N.T.S.

GEOMETRIC CONTROL LAYOUT
SCALE: N.T.S.

CURVE DATA

CRV	DELTA	RADIUS	ARC	TANGENT	CHORD DIR	CHORD
C1	00°06'13"	57,238.52'	103.48'	51.74'	S12°26'25"W	103.48'
C2	01°40'38"	3,000.00'	87.82'	43.91'	N11°39'12"E	87.82'
C3	22°51'45"	550.00'	219.46'	111.21'	S22°14'45"W	218.01'
C4	13°43'08"	2,500.00'	598.60'	300.74'	S40°32'12"W	597.17'
C5	06°12'49"	4,203.72'	455.88'	228.16'	S50°30'10"W	455.65'
C6	08°01'26"	2,280.00'	319.29'	159.91'	S57°37'17"W	319.03'
C7	16°08'20"	1,350.00'	380.26'	191.40'	N53°33'50"E	379.01'
C8	18°36'26"	440.00'	142.89'	72.08'	S54°47'53"W	142.27'
C9	15°37'56"	585.74'	159.81'	80.41'	N56°17'08"E	159.32'
C10	00°48'35"	9,626.24'	136.03'	68.02'	N48°03'52"E	136.03'
C11	00°17'35"	20,000.00'	102.26'	51.13'	N47°30'47"E	102.26'
C12	00°14'10"	20,000.00'	82.43'	41.22'	N47°14'55"E	82.43'
C13	00°10'58"	20,000.00'	63.78'	31.89'	S47°13'19"W	63.78'
C14	10°07'42"	4,880.00'	862.65'	432.45'	N42°14'57"E	861.52'
C15	03°46'15"	8,346.00'	549.30'	274.75'	N35°17'58"E	549.20'
C16	04°05'52"	7,130.00'	509.93'	255.07'	N31°21'55"E	509.82'
C17	07°15'22"	1,961.39'	248.40'	124.37'	S32°56'40"W	248.23'
C18	10°43'52"	1,585.00'	296.70'	148.79'	S41°56'07"W	296.27'
C19	02°03'56"	5,930.00'				

BUCKSKIN SANITARY DISTRICT - TYPICAL SEWER NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS AND THE UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS MOST RECENT ADDITION (MAG SPECS & MAG DETAILS); THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING BULLETIN NO. 11; AND REQUIREMENT OF THE BUCKSKIN SANITARY DISTRICT, WHICHEVER IS MOST STRINGENT.
- BEDDING MATERIAL SHALL NOT BE LARGER THAN 3/4" INCH IN SIZE.
- ALL FACILITIES, MATERIALS, AND WORKMANSHIP ARE SUBJECT TO THE APPROVAL AND ACCEPTANCE OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE IN ORDER TO ASSURE THE INTEGRITY OF THE SANITARY DISTRICT'S COLLECTION SYSTEM.
- ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE AND/OR ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THE SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS MUST BE APPROVED IN WRITING BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE PRIOR TO ACCEPTANCE.
- THE CONTRACTOR MUST OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM BUCKSKIN SANITARY DISTRICT, LA PAZ COUNTY AND ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY AND ANY OTHER ENTITY HAVING JURISDICTION PRIOR TO CONSTRUCTION. THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE SHALL BE NOTIFIED 24 HOURS PRIOR TO THE DIFFERENT PHASES OF CONSTRUCTION FOR SCHEDULING INSPECTIONS.
- THE CONTRACTOR WILL UNCOVER ALL EXISTING LINES BEING TIED INTO TO VERIFY THEIR LOCATION PRIOR TO TRENCHING. THE CONTRACTOR WILL LOCATE OR HAVE LOCATED ALL EXISTING UNDERGROUND PIPELINES, TELEPHONE AND ELECTRIC CONDUITS, AND STRUCTURES IN ADVANCE OF CONSTRUCTION AND WILL OBSERVE ALL POSSIBLE PRECAUTIONS TO AVOID DAMAGE TO THE SAME.
- TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH MAG SPECIFICATION 401, MANUAL OF TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (LATEST EDITION), AND THE REQUIREMENTS FOR SIGNING AND BARRICADES OF THE LA PAZ COUNTY TRANSPORTATION DEPARTMENT.
- BACKFILLING SHALL NOT BE STARTED UNTIL ALL LINES ARE APPROVED BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE.
- LOCATIONS AND FREQUENCY OF COMPACTION TESTING WIL BE CONDUCTED IN ACCORDANCE THE SPECIFICATIONS. COPIES OF THE TEST RESULTS SHALL BE SENT TO THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE. IF ANY TEST FAILURES ARE EXPERIENCED, THE DISTRICT RESERVES THE RIGHT TO REQUIRE ADDITIONAL TESTING AT NO EXPENSE TO THE DISTRICT.
- WHEN A SEWER CROSSES A WATER PIPE AT A POINT AT WHICH THE SEWER IS LESS THAN 2 FEET BELOW THE WATER PIPE, THE SEWER SHALL BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRONPIPE WITH MECHANICAL JOINTS, FOR A DISTANCE OF AT LEAST 6 FEET IN EACH DIRECTION FROM THE CROSSING, EXCEPT IN THE CASE OF A FORCE MAIN WHERE THE DISTANCE IS 10 FEET. WHEN THE SEWER IS A 4 OR 6 INCH HOUSE CONNECTION, NO PROTECTION IS REQUIRED IF THE VERTICAL SEPARATION IS 12 INCHES OR GREATER BELOW THE WATER PIPE.
- ALL SEWER TAP LATERALS SHALL BE CONSTRUCTED TO THE LOT LINE OR INTERIOR EDGE OF THE PUE WHICHEVER IS FURTHER ONTO THE PROPERTY. A PLUG OR CAP MUST BE INSTALLED AT THE END OF EACH LATERAL WITH A 2X4 INSTALLED VERTICALLY FROM THE PLUG OR CAP UP TO 2 FEET ABOVE GRADE. THESE 2X4'S SHALL HAVE #10 STEEL WIRE WRAPPED AROUND THEM TO AID IN LOCATING THE LATERAL. THE 2X4 SHALL BE PAINTED GREEN AND THE DEPTH OF THE SERVICES (FROM GRADE TO TOP OF CAP OR PLUG) SHALL BE MARKED ON THE 2X4. METAL 2X4'S WITHOUT WIRE ARE ALSO ACCEPTABLE.
- ALL SEWER STUBS SHALL END WITH A PLUG OR CAP AND MUST HAVE A 2X6 INSTALLED FROM THE END OF THE PLUG OR CAP UP TO 2 FEET ABOVE GRADE. THE 2X6 SHALL HAVE #10 WIRE WRAPPED AROUND IT TO ASSIST IN LOCATING THE STUB IN CASE THE 2X6 IS BROKEN OFF AT GRADE. 2X6'S MUST BE PAINTED GREEN. METAL 2X6'S WITHOUT WIRE ARE ALSO ACCEPTABLE ACCEPT IN TRAVEL WAYS.
- ALL SEWER LINES WILL BE AIR TESTED IN ACCORDANCE WITH MAG SPEC. SECTION 02722, PART 2.13-B. ALL MANHOLES WILL BE WATER TESTED IN ACCORDANCE WITH ADEQ ENGINEERING BULLETIN NO. 11 OR TESTED WITH NEGATIVE AIR PRESSURE IN ACCORDANCE WITH ASTM C 1244-93. A LETTER CERTIFYING THE PASSING TEST RESULTS MUST BE RECEIVED BY THE DISTRICT OR DULY AUTHORIZED REPRESENTATIVE PRIOR TO ACCEPTANCE.
- ANY PREVIOUSLY TESTED SEWER LINES BROKEN DURING THE INSTALLATION OF OTHER ADJACENT UTILITIES WILL BE REPAIRED AND RETESTED TO THE SATISFACTION OF THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE.
- ACCEPTANCE OF THE COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL FULL SIZE PHOTO MYLAR REPRODUCIBLE "AS-BUILTS" HAVE BEEN SUBMITTED BY A REGISTERED ARIZONA PROFESSIONAL ENGINEER AND APPROVED BY THE SANITARY DISTRICT MANAGER OR DULY AUTHORIZED REPRESENTATIVE, ALONG WITH ELECTRONIC FILES IN PDF FORMAT OF ALL AS-BUILTS SHEETS.
- NON-SHRINK GROUT SHALL BE USED IN THE CONSTRUCTION OF ALL MANHOLES.
- ALL SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC), UNLESS OTHERWISE NOTED, IN ACCORDANCE WITH MAG SPECIFICATIONS. A CERTIFICATE SHALL BE FURNISHED FROM THE MANUFACTURER ATTESTING THAT THE PIPE MEETS THE REQUIRED ASTM REQUIREMENTS, PVC PIPE SDR 35, ASTM D 3034.
- ALL CLEANOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DISTRICT'S STANDARD DESIGN.
- COMPLIANCE WITH ALL COUNTY, STATE AND FEDERAL RULES AND REGULATIONS PERTAINING TO JOB SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE INSIDE OF ALL NEW MANHOLES SHALL BE COATED WITH INSECTICIDE PAINT IN ACCORDANCE WITH THE SPECIFICATIONS. USE EITHER INSECTA OR SUPER IQ. APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. A LETTER CERTIFYING THAT THE APPLICATION IS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ALONG WITH A TWO YEAR WARRANTY SHALL BE PROVIDED TO THE DISTRICT.

GENERAL NOTES:

- THE ENGINEERING DESIGN OF THESE PLANS ARE ONLY APPROVED BY BUCKSKIN SANITARY DISTRICT IN SCOPE AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY BUCKSKIN SANITARY DISTRICT. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT BUCKSKIN SANITARY DISTRICT FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW.
- AN APPROVED SET OF PLANS SHALL BE LOCATED ON THE SITE DURING CONSTRUCTION AND INSPECTION.
- A COPY OF ALL PERMITS AND THE DUST CONTROL INFORMATION SIGN MUST BE ON SITE AT ALL TIMES.
- ALL WORK AND MATERIALS WHICH DO NOT CONFORM TO THE SPECIFICATIONS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- INSPECTION IS TO BE DONE BY THE BUCKSKIN SANITARY DISTRICT OR A DULY AUTHORIZED REPRESENTATIVE OF THE DISTRICT.

GENERAL NOTES: (CONTINUED)

- ANY WORK PERFORMED WITHOUT THE KNOWLEDGE OF THE ENGINEER OR THE BUCKSKIN SANITARY DISTRICT REPRESENTATIVE IS SUBJECT TO REMOVAL AND REPLACEMENT OF SAME TO BE DONE AT THE CONTRACTORS EXPENSE.
- THE LA PAZ COUNTY ENGINEERING DEPARTMENT AND BUCKSKIN SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 4 WORKING DAYS PRIOR TO STARTING WORK.
- THE ENGINEER OF RECORD SHALL BE NOTIFIED AT LEAST 4 WORKING DAYS IN ADVANCE OF ANY CONSTRUCTION.
- FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL HORIZONTAL AND VERTICAL CONTROLS ARE LOCATED APPROXIMATELY AND TO THE BEST AVAILABLE INFORMATION.
- EXISTING UTILITIES AND OTHER FACILITIES HAVE BEEN PLACED ON THE PLANS FROM FIELD SURVEYS, EXISTING MAPS, AND OTHER CURRENT PLANS WITHIN THE AREA OF THIS PROJECT. THE CONTRACTOR WILL DETERMINE THE EXACT LOCATION AND/OR ELEVATION OF EXISTING UTILITIES WHICH PERTAIN TO AND AFFECT THE CONSTRUCTION OF THIS PROJECT.
- CONTRACTOR MUST PROTECT THE ADJACENT PROPERTIES AND IMPROVEMENTS THERETO FROM ANY DAMAGE DURING CONSTRUCTION. ANY DAMAGE TO ADJACENT PROPERTIES OR IMPROVEMENTS MUST BE REPAIRED OR REPLACED TO THE PROPERTY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
- WHEREVER THE CONTRACTORS WORK REQUIRES THE REMOVAL OF EXISTING CONCRETE OR ASPHALTIC CONCRETE PAVEMENT, THE PAVEMENT SHALL BE SAWCUT TO ACHIEVE A NEAT AND UNIFORM JOINT WITH THE REPLACED PAVEMENT.
- WHENEVER EXCAVATION IS TO BE DONE, THE CONTRACTOR SHALL CALL THE "BLUE STAKE CENTER" AT 1-800-STAKE-IT.
- DISPOSAL OF ALL WASTE MATERIAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY THE INVERTS AND HORIZONTAL LOCATIONS OF ALL EXISTING SEWER PRIOR TO ANY SEWER CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF SANITARY SEWER, BY OTHERS, FOR COMPATIBILITY WITH WORK AND FOR ORDERING MATERIALS. WHEN REQUIRED, THE CONTRACTOR SHALL REMOVE EXISTING BULKHEAD. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE EXISTING BULKHEAD AND PREVENTING ANY FLOODING FROM ANY INCOMING FLOWS. CONTRACTOR SHALL PROTECT THE SITE DURING CONSTRUCTION FROM ANY INCOMING FLOWS FROM EXISTING SANITARY SEWER. IF THE SANITARY SEWER BY OTHERS IS NOT COMPLETE AT THE TIME OF GRAVITY SEWER CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A TEMPORARY BULKHEAD.
- TRENCHING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND MAG SPECIFICATIONS.
- ALL FRAMES, COVERS, VALVE BOXES AND MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION.
- ALL ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR THE CONSTRUCTION AND TESTING OF SEWER SHALL BE COMPLIED WITH.
- THE TOTAL LENGTH OF EACH SEWER SEGMENT SHALL BE TESTED TO INSURE UNIFORM SLOPE BY CCTV CAMERA PRIOR TO ACCEPTANCE. A COPY OF THE RESULTS FOR EACH SEGMENT SHALL BE PROVIDED TO BUCKSKIN SANITARY DISTRICT ON DVD IN A FORMAT READABLE BY THE DISTRICT PRIOR TO FINAL ACCEPTANCE.
- ALL COMPACTION AND BACKFILL WITHIN COUNTY RIGHT-OF-WAY SHALL CONFORM TO LA PAZ COUNTY REQUIREMENTS FOR THE INSTALLATION OF UNDERGROUND UTILITIES AND THE PROJECT SPECIFICATIONS. BACKFILL UNDER ANY EXISTING OR PROPOSED PAVEMENT, CURB, GUTTER OR WITHIN TWO (2) FEET OR LESS FROM THE EDGE OF PAVEMENT SHALL CONSIST OF AGGREGATE BASE COURSE (ABC) MATERIAL.
- ALL STRUCTURES, SUCH AS MANHOLES, VALVE BOX & COVERS, AND MONITORING WELLS MUST BE MARKED WITH AT LEAST TWO REFLECTORIZED YELLOW FLEX POST WHEN STRUCTURES ARE LOCATED OUTSIDE THE TRAVELED WAY AND WITHIN THE RIGHT-OF-WAY. (*APPLIES ONLY WHEN THERE IS NO CURB.')
- ALL EXISTING PAVEMENT MARKING, TRAFFIC SIGNS AND SIGNAL EQUIPMENT THAT NEEDS TO BE REMOVED, REPLACED, RELOCATED, OR REPAIRED BECAUSE OF CONTRACTOR'S WORK WILL BE DONE BY THE CONTRACTOR AT HIS EXPENSE. ALL TRAFFIC SIGNS THAT ARE REMOVED SHALL BE STOCKPILED ON THE PROJECT SITE AND THE CONTRACTOR IS TO NOTIFY THE INSPECTOR WHEN ALL SIGNS HAVE BEEN REMOVED. ALL NEW STREET NAME SIGNS SHALL BE PROVIDED AND INSTALLED BY PERMITEE AT NO EXPENSE TO BUCKSKIN SANITARY DISTRICT.
- PAVEMENT MARKING, SIGNING, AND SIGNAL WORK WILL BE INSPECTED AND WILL HAVE TO MEET COUNTY STANDARDS BEFORE RELEASE OF BOND.
- ANY EXCAVATION BY CONTRACTOR THAT UNCOVERS AN HISTORICAL OR ARCHEOLOGICAL ARTIFACT OR HUMAN REMAINS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND A REPRESENTATIVE AGENCY. CONSTRUCTION SHALL BE TEMPORARILY HALTED PENDING THE NOTIFICATION PROCESS AND FURTHER DIRECTIONS ISSUED BY AGENCY AFTER CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICE (SHPO).
- PRIOR TO MOVING OR DESTROYING PROTECTED NATIVE PLANT SPECIES, THE CONTRACTOR SHALL FILE A FORMAL NOTICE OF INTENT WITH THE ARIZONA DEPARTMENT OF AGRICULTURE NATIVE PLANTS (602) 542-3292.
- EXCEPT UNDER EMERGENCY CONDITIONS, ROADS SHALL NOT BE CLOSED FROM CONSTRUCTION ACTIVITY UNLESS PRIOR APPROVAL IS OBTAINED FROM LA PAZ COUNTY PUBLIC WORKS DIRECTOR.

ENGINEER NOTES:

- THE CONTRACTOR SHALL CALL THE BLUE STAKE CENTER (602) 263-1100 OR 1-800-STAKE-IT OUTSIDE OF MARICOPA COUNTY) TWO WORKING DAYS PRIOR TO ANY EXCAVATION TO LOCATE ALL UNDERGROUND UTILITIES.
- THE ENGINEER HAS ATTEMPTED TO SHOW ALL PERTINENT EXISTING UNDERGROND UTILITIES AND STRUCTURES. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESENCE OF AND TO PROTECT ANY OVERHEAD AND UNDERGROUND UTILITIES OR STRUCTURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THESE PLANS. WHERE REQUIRED, CONTRACTOR SHALL MAKE EXPLORATORY EXCACATIONS TO LOCATE UNDERGROUND UTILITIES OR STRUCTURES.
- WHERE EXISTING UTILITIES ARE EXPOSED, CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY FOR INSPECTION PRIOR TO BACKFILLING.
- THE CONTRACTOR SHALL TAKE NO ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THESE PLANS. IN THE EVENT THE CONTRACTOR DISCOVERS SUCH AN ERROR OR OMISSION, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- THE ENGINEER WILL DECIDE ALL QUESTIONS WHICH MAY ARISE AS TO THE INTERPRETATION OF THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ALL EFFORTS TO REVIEW THESE PLANS AND CONTACT THE ENGINEER WITH QUESTIONS OR CLARIFICATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY QUESTIONS REGARDING THESE PLANS SHALL BE PRESENTED TO THE ENGINEER. WHEN NECESSARY THE ENGINEER SHALL ISSUE REVISED PLANS, DETAILS OR SPECIFICATIONS. THE ENGINEER ASSUMES NO REPONSIBILITY FOR ANY REVISIONS TO PLANS, DETAILS OR SPECIFICATIONS MADE BY ANY PARTY WITHOUT THE CONSENT AND APPROVAL OF THE ENGINEER.
- QUANTITIES LISTED ON THESE PLANS ARE ESTIMATES ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL QUANTITIES BEFORE SUBMITTING A BID FOR THIS WORK.

ENGINEER NOTES:

- ALL CONSTRUCTION WATER AND POWER SHALL BE OBTAINED AND HANDLED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS TO PROVIDE WATER AND TRANSPORT WATER TO THE CONSTRUCTION SITE. ALL TEMPORARY FACILITIES SHALL BE REMOVED PRIOR TO FINAL ACCEPTANCE BY THE DISTRICT.
- ALL ASPHALT CONCRETE ROADWAY PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH MAG SECTIONS 336 AND 601. ALL ASPHALT CONCRETE SHALL RECEIVE A PRESERVATIVE SEAL IN ACCORDANCE WITH M.A.G. SPEC. SECTION 334.
- WHERE THERE IS A CONFLICT BETWEEN THE DISTRICT SPECIFICATIONS, M.A.G. SPECIFICATIONS OR THE PROJECT SPECIFICATIONS, THE MOST STRINGENT SHALL GOVERN.
- CONTRACTOR PERFORMING CONSTRUCTION OR EXCAVATING OPERATIONS IS RESPONSIBLE FOR LOCATING, RELOCATING AND/OR PROTECTING ALL UTILITIES IN CONFLICT OR WITHIN THE CLEAR ZONE, AT NO EXPENSE TO BUCKSKIN SANITARY DISTRICT.
- THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK.
- THE CONTRACTOR MUST FURNISH AND INSTALL ALL NECESSARY APPURTENANCES INCLUDING BUT NOT LIMITED TO: NUTS, BOLTS, GASKETS, FLANGES, TAPS, BUSHES, ADAPTERS, HADWHEELS, GEAR OPERATORS, SUPPORTS, RESTRAINTS, ETC. TO ACHIEVE COMPLETE AND FUNCTIONING PIPING SYSTEMS, WHETHER OR NOT SUCH INCIDENTAL ITEMS ARE INDICATED ON THE DRAWINGS OR SPECIFIED. PLUG VALVES SHALL BE INSTALLED WITH THEIR MAIN PLUG SHAFTS HORIZONTAL.
- THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE AREA OF OVERHEAD ELECTRIC LINES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO USE APPROPRIATE SAFETY MEASURES. ALL WORK SHALL BE IN ACCORDANCE WITH CHAPTER 181, ARTICLE 6.4, ARS 40-360.41-45 (THE OVERHEAD POWERLINE SAFETY LAW).
- THE CONTRACTOR IS TO UNCOVER ALL EXISTING LINES BEING TIED INTO AND VERIFY GRADES BEFORE ANY OTHER CONSTRUCTION.
- CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THESE PLANS AND MAKE HIS BID BASED UPON THOSE VERIFICATIONS. IF ANY DISCREPANCY IN QUANTITIES IS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UNDERGROUND PIPELINE, TELEPHONE AND ELECTRICAL CONDUITS AND STRUCTURES IN ADVANCE OF ANY CONSTRUCTION; AND WILL TAKE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO SUCH. THE ENGINEER AND/OR OWNER WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM SAME.
- ALL PLANS, SIGNED BY THE BUCKSKIN SANITARY DISTRICT ENGINEER OR REPRESENTATIVE IN CHARGE, ARE NULL AND VOID ONE YEAR FROM DATE OF SIGNATURE IF CONSTRUCTION HAS NOT STARTED.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL SERVICE LATERALS WITH HOMEOWNERS PRIOR TO INSTALLATION. ALL SERVICE CONNECTIONS SHALL BE INSTALLED TO PROPERTY LINE/RIGHT-OF-WAY OR SEWER EASEMENT, WHICHEVER GOVERNS.

NOTE:
HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES ARE SHOWN ON THE PLANS, WHERE AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESENCE OF ALL UTILITIES AND TO PROTECT ANY OVERHEAD AND UNDERGROUND UTILITIES OR STRUCTURES PRIOR TO COMMENCEMENT OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THESE PLANS. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO LOCATE UNDERGROUND UTILITIES OR STRUCTURES AT HIS OWN EXPENSE.



EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG
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JOB #: _____
DATE: 5/24/15
SCALE: N.T.S.

REVISIONS	BY	DATE

BUCKSKIN SANITARY DISTRICT
PHASE 4 SEWER
STANDARD NOTES

FILES
4.1

PRECAST CONCRETE NOTES:

1. WETWELLS AND VALVE VAULTS SHALL BE PRECAST.
2. ALL PRECAST AND ASSOCIATED CAST-IN-PLACE CONCRETE SHALL BE DESIGNED IN ACCORDANCE WITH MAG SPECIFICATIONS AND STANDARDS (SEE SEWER SYSTEM MATERIAL SPECIFICATIONS) AND THE GEOTECHNICAL REPORT RECOMMENDATIONS.
3. THE PRECAST FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF ALL PRECAST UNITS AND APPURTENANCES INCLUDING BUT NOT LIMITED TO: PRECAST WETWELLS, PRECAST VALVE VAULTS, CAST-IN-PLACE BASES AND PRECAST VALVE VAULT AND WETWELL TOPS.
4. ALL DESIGN DETAILS AND CALCULATIONS SHALL BE SEALED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF ARIZONA AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING JOINT ANCHORAGE AND PIPE PENETRATION LOCATIONS AND DETAILS FOR WETWELLS AND VALVE VAULTS.

**BUCKSKIN SANITARY DISTRICT
SEWER SYSTEM MATERIAL SPECS**

- COLLECTION MAINS – SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS, ASTM D-3034, AND ASTM F-679 OR US PIPE PROTECTO 401 CERAMIC EPOXY DUCTILE IRON PIPE. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6.
- SEWER SERVICE – SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS AND ASTM D-3034.
- MANHOLE – PRECAST CONCRETE IN ACCORDANCE WITH M.A.G. SPEC. SECTION 625, EXCEPT THAT ALL MANHOLES SHALL HAVE NO STEPS INSTALLED. MANHOLES SHALL BE TREATED WITH "INSECTA" INSECT TREATMENT AS SOON AS MANHOLE IS RAISED TO GRADE AND PRIOR TO FINAL ACCEPTANCE. MANHOLES SUSCEPTIBLE TO HYDROGEN SULFIDE SHALL BE LINED WITH SAUERREISEN OR APPROVED EQUAL AS INDICATED ON THE DRAWINGS.
- MANHOLE COVER – IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. LID TO BE STAMPED "BUCKSKIN SANITARY DISTRICT" IN ACCORDANCE WITH M.A.G. DETAILS 423-1,2 AND 424-1,2.
- ALL OTHER ITEMS – IN ACCORDANCE WITH M.A.G. SPECIFICATIONS.
- FORCE MAINS – PVC PRESSURE PIPE IN ACCORDANCE WITH AWWA C900 OR C905, DUCTILE IRON PIPE CLASS 53, MIN. PRESSURE CLASS 150. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SPEC. SECTION 610.6 AND LINED AND COATED PER PROJECT SPECIFICATIONS.

FORCE MAIN NOTES:

1. FORCE MAINS SHALL BE PROVIDED WITH RESTRAINED JOINTS WHERE INDICATED ON THE PLANS CONFORMING TO REQUIREMENTS OF FORCE MAIN PIPE MATERIAL SPECIFICATIONS.
2. INSTALL RESTRAINED JOINTS FOR LENGTH OF PIPE ON BOTH SIDES OF EACH BEND OR FITTING FOR FULL LENGTH AS SHOWN ON THE PLANS.
3. HORIZONTAL AND VERTICAL BENDS BETWEEN ZERO AND TEN DEGREES DEFLECTION ANGLE WILL NOT REQUIRE RESTRAINED JOINTS UNLESS OTHERWISE SHOWN ON THE PLANS.
4. HORIZONTAL AND VERTICAL BENDS BETWEEN 11 AND 90 DEGREES DEFLECTION ANGLE SHALL HAVE THRUST RESTRAINT AS SHOWN ON THE PLANS.
5. ALL BURIED DUCTILE IRON PIPE WITHIN THE LIFT STATION SITES SHALL HAVE RESTRAINED JOINTS FOR THE FORCE MAINS UNLESS INDICATED OTHERWISE ON THE PLANS.
6. A MAXIMUM OF ONE DEGREE OF AXIAL GASKETED JOINT DEFLECTION WILL BE ALLOWED FOR PVC AND D.I. PIPE. IF GREATER CURVATURE OR JOINT DEFLECTION IS REQUIRED, THE CONTRACTOR SHALL USE SPECIAL FITTINGS.
7. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF DIVISION 15 – MECHANICAL AS IT PERTAINS TO THE FURNISHING AND INSTALLATION OF ALL LABOR, EQUIPMENT AND MATERIALS AND NECESSARY TO INSTALL ALL PIPING, FITTINGS, AND ACCESSORIES REQUIRED FOR THE COMPLETION OF FORCE MAIN PIPING WORK AS SHOWN ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN.
8. UNDERGROUND WARNING TAPE AND TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15265 – PLASTIC PIPING AND TUBING.

LIFT STATION NOTES:

1.0 GENERAL:

LIFT STATIONS SHALL CONSIST OF A WET WELL, SUBMERSIBLE PUMPS, DRY VALVE VAULT, ELECTRICAL CONTROL PANEL, EMERGENCY GENERATOR AND OTHER RELATED ACCESSORIES. THE LIFT STATIONS SHALL CONFORM TO BUCKSKIN SANITARY DISTRICT'S SANITARY SEWER SYSTEM STANDARDS AND SPECIFICATIONS (SEE CHAPTER 2, SECTION T.6). ALL STATIONS SHALL CONTAIN AT LEAST TWO (2) PUMPS, EACH WITH 100% DESIGN CAPACITY.

2.0 WET WELLS:

- 2.1 THE WET WELL FOR EACH LIFT STATION SHALL BE REINFORCED POLYMER CONCRETE MEETING ASTM C478-02A (OR LATEST REVISION) STANDARD SPECIFICATION FOR PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS AND SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 3410-PRECAST POLYMER AND CONCRETE STRUCTURES.
- 2.2 WALL PENETRATIONS THRU THE WET WELLS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15200 – PIPE CONNECTING AND RESTRAINTS DEVICES. OPENINGS IN THE WALLS OF THE WET WELL SHALL BE THOROUGHLY FILLED WITH NON-SHRINKING GROUT AFTER INSTALLATION OF THE PIPES UNLESS MANUFACTURER RECOMMENDS OTHERWISE. SPECIAL CARE SHALL BE TAKEN TO INSURE A WATERTIGHT CONNECTION AT THESE POINTS.
- 2.3 THE PUMPS AND/OR ACCESSORIES SHALL BE SECURED TO THE CONCRETE BASE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM DESIGN FOR ADEQUACY OF BASE AND TOP SLAB REINFORCEMENT IS FOR ASHTO H-20 TRUCK LOADING. THE CONCRETE BASE SHALL EXTEND A MINIMUM OF 6" BEYOND THE EDGE OF THE BODY OF THE WET WELL.
- 2.4 THE WET WELL SHALL CONTAIN STAINLESS STEEL GUIDE RAILS FOR THE PUMPS, SECURELY FASTENED AT THE TOP OPENING OF THE WET WELL TO ALLOW THE PUMPS TO ACCURATELY MATE WITH THE PUMP BASES, WHICH SHALL BE SECURED TO THE BOTTOM WITH STAINLESS STEEL BOLTS IN ACCORDANCE WITH PART 2.3 (B) OF SECTION 11400 OF THE SPECIFICATIONS.

- 2.5 THE WET WELL SHALL HAVE A 3" MINIMUM DIAMETER DUCTILE IRON OR STAINLESS STEEL AIR VENT EXTENDING THROUGH THE TOP SLAB. THE VENT PIPE WILL BE ATTACHED TO THE ODOR CONTROL UNIT IN ACCORDANCE WITH THE PLANS.
- 2.6 THE WET WELL SHALL BE INSTALLED PLUMB AND LEVEL ON A 12" THICK (MINIMUM) COMPACTED ROCK/STONE BED IN ACCORDANCE WITH THE PLANS.
- 2.7 A SIGN MUST BE POSTED ON THE WET WELL STATING "CONFINED SPACE."

3.0 PIPING INSIDE LIFT STATIONS:

- 3.1 PIPING INSIDE THE STATION WET WELL AND ABOVE GROUND PIPING SHALL BE DUCTILE IRON WITH FLANGED JOINTS. FLANGES SHALL BE EITHER WELDED OR THREADED TO THE CONNECTING PIPES. ALL FASTENERS INSIDE THE WET WELL AND VALVE VAULT SHALL BE STAINLESS STEEL.
- 3.2 DUCTILE IRON PIPE SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C150/A21.50 FOR A MINIMUM 150 PSI RATED WORKING PRESSURE PLUS A 100 PSI SURGE ALLOWANCE; A 2 TO 1 FACTOR OF SAFETY ON THE SUM OF WORKING PRESSURE PLUS SURGE PRESSURE;
- 3.3 DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C151/A21.51. EACH PIPE SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF AT LEAST 500 PSI AT THE POINT OF MANUFACTURE.
- 3.4 DUCTILE IRON PIPE SHALL BE COATED AND LINED IN ACCORDANCE WITH SECTION 15251 – DUCTILE IRON PIPE.
- 3.5 THE CLASS OR NOMINAL THICKNESS, NET WEIGHT WITHOUT LINING, AND CASTING PERIOD SHALL BE CLEARLY MARKED ON EACH LENGTH OF PIPE. ADDITIONALLY, THE MANUFACTURER'S MARK, COUNTRY WHERE CAST, YEAR IN WHICH THE PIPE WAS PRODUCED, AND THE LETTERS "DI" OR "DUCTILE" SHALL BE CAST OR STAMPED ON THE PIPE.
- 3.6 FITTINGS SHALL BE DUCTILE IRON. FITTINGS SHALL CONFORM TO THE LATEST REVISION OF EITHER ANSI/AWWA CI 10/A21.10 OR ANSI/AWWA C153/A21.53. FITTINGS AND ACCESSORIES SHALL BE FURNISHED WITH MECHANICAL TYPE JOINTS IN ACCORDANCE WITH ANSI/AWWA CI 11/A21.11, OF LATEST REVISION.
- 3.7 ALL PIPE, FITTINGS AND ACCESSORIES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C600.

4.0 PUMPS AND MOTORS:

- 4.1 THE PUMP AND MOTOR UNITS SHALL BE THE SUBMERSIBLE TYPE TO DELIVER THE DESIGN FLOW THROUGH THE DISCHARGE FORCE MAIN AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF SECTION 11400 – PUMPS.
- 4.2 THE DISCHARGE CONNECTION ELBOWS SHALL BE PERMANENTLY INSTALLED IN THE WET WELL AND THE PUMPS SHALL BE AUTOMATICALLY CONNECTED TO THE DISCHARGE CONNECTION WHEN LOWERED INTO PLACE AND SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE BY MEANS OF STAINLESS STEEL LIFTING CHAINS. THERE SHALL BE NO NEED FOR PERSONNEL TO ENTER THE WET WELL.
- 4.3 EACH PUMP SHALL BE FITTED WITH A STAINLESS STEEL LIFTING CHAIN OF ADEQUATE STRENGTH AND LENGTH TO PERMIT RAISING AND LOWERING THE PUMP FOR INSPECTION AND REMOVAL. THE LIFTING SYSTEM MUST PERMIT THE PUMP TO BE REMOVED IN ONE CONTINUOUS MOTION, WITHOUT INTERMEDIATE HOOKING.

5.0 VALVE VAULTS:

- 5.1 THE VALVE VAULT FOR EACH LIFT STATION SHALL BE REINFORCED CONCRETE MEETING ASTM C478-02A (OR LATEST REVISION) STANDARD SPECIFICATION FOR PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS AND SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 3410-PRECAST CONCRETE STRUCTURES.
- 5.2 ALL VALVE VAULTS SHALL BE SIZED TO PROVIDE AT LEAST 12 INCHES OF CLEARANCE (TOP, BOTTOM, SIDES) BETWEEN THE WALLS OF THE BOX AND INTERNAL COMPONENTS
- 5.3 VALVE VAULTS FOR EACH LIFT STATION SHALL CONSIST OF A PRE-CAST BOX WITH AN APPROVED ALUMINUM ACCESS HATCH AND STEPS, THE SAME AS FOR THE WET WELL. THE VALVE VAULT SHALL CONTAIN TWO DISCHARGE LINES FROM THE PUMPS IN ACCORDANCE WITH THE PLANS. EACH DISCHARGE LINE SHALL HAVE A CHECK VALVE AND A GATE VALVE INSTALLED IN ACCORDANCE WITH SECTION 15100 – VALVES AND THE DRAWINGS.
- 5.4 ALL PIPING AND ALL FITTINGS SHALL BE FLANGED DUCTILE IRON AND ALL PIPING SHALL BE PROPERLY SUPPORTED. THE CONNECTION TO THE PVC FORCE MAIN OUTSIDE THE VALVE VAULT SHALL BE MADE WITH A RESTRAINED FLANGE ADAPTER, SERIES 2100 MEGAFLANGE, BY EBAA IRON, INC. OR EQUAL. PROVISIONS SHALL BE MADE FOR THE REMOVAL AND REPLACEMENT OF ALL PIPING, VALVES AND FITTINGS.
- 5.5 PIPES AND VALVES SHALL BE ALIGNED HORIZONTALLY WITH THE CHECK VALVE PRECEDING THE GATE VALVE.
- 5.6 THE FLOOR OF THE VALVE VAULT SHALL BE SHAPED OR SLOPED TO DRAIN TOWARD THE WET WELL. A 2" SCHEDULE 80 PVC DRAIN PIPE SHALL BE INSTALLED TO DRAIN ANY LIQUID CONTENTS OF THE VALVE VAULT TO THE WET WELL. A TIDEFLEX CHECK VALVE OR EQUAL SHALL BE INSTALLED ON THE DISCHARGE END OF THE DRAINAGE PIPE TO PREVENT THE WET WELL CONTENTS FROM ENTERING THE VALVE VAULT.

6.0 VALVES AND FITTINGS

ALL VALVES, FITTINGS AND ACCESSORIES FOR THE LIFT STATIONS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 15100 – VALVES.

7.0 ACCESS FRAME AND COVER

7.1 A DOOR ACCESS FRAME ASSEMBLY SHALL BE FURNISHED FOR THE WET WELL AND VALVE VAULT AT EACH LIFT STATION IN ACCORDANCE WITH THE DIMENSIONS SHOWN ON THE DRAWINGS. THE FRAME COVER SHALL BE CAPABLE OF BEARING A 300 POUNDS PER SQUARE FOOT (PSF) LIVE LOAD.

7.2 THE ACCESS COVER SHALL CONSIST OF 1/4-INCH (6.4MM) ALUMINUM DIAMOND PLATE COVER EQUIPPED WITH CAST ALUMINUM FLUSH LIFTING HANDLE AND 316 STAINLESS STEEL HOLD-OPEN ARM WITH RED VINYL GRIP THAT AUTOMATICALLY KEEPS THE COVER IN ITS OPEN/UPRIGHT POSITION. DOOR SHALL LOCK IN THE 90-DEGREE POSITION.

7.3 THE FRAME SHALL CONSIST OF EXTRUDED ALUMINUM WITH INTEGRAL ANCHOR FLANGE AND DOOR SEAT ON ALL FOUR SIDES. THE HARDWARE SHALL BE MADE OF 316 STAINLESS STEEL HINGES AND TAMPER RESISTANT BOLTS/LOCK NUTS.

7.4 THE ENTRANCE LATCH SHALL BE CONSTRUCTED AND FABRICATED TO COMPLY WITH OSHA STANDARDS.

7.5 ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT OR OTHER APPROVED PROTECTIVE COATING. COVER MUST BE COMPATIBLE WITH PUMPS AND GUIDE RAIL SYSTEM. ALL HARDWARE, INCLUDING ANCHORS, BOLTS, HASPS, HINGES, GUIDES AND CABLE HOLDERS SHALL BE STAINLESS STEEL.

7.6 EACH ACCESS FRAME AND COVER SYSTEM SHALL BE EQUIPPED WITH FLYGT "SAFE-HATCH" FALL THROUGH PREVENTION SYSTEM, MDOEL FLEC(D)-SH, ADHERING TO OSHA SAFETY STANDARDS.

7.7 EACH ACCESS HATCH SHALL HAVE EXPOSED PADLOCK CLIP AND AN ALUMINUM LIFT HANDLE WHICH IS FLUSH WITH TOP OF DIAMOND PLATE.

7.8 A YALE MODEL 945, OR APPROVED EQUAL, SOLID BRASS PAD LOCK FOR EACH HATCH COVER SHALL BE SUPPLIED. LOCKS SHALL BE KEYED ALIKE WITH A MINIMUM OF 5 KEYS PROVIDED TO THE OWNER.

7.9 MANUFACTURER SHALL GUARANTEE AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TEN YEARS.

8.0 CONTROL PANELS AND ELECTRICAL EQUIPMENT

THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL HARDWARE, SOFTWARE, LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE CONTROL PANEL, IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. THE CONTROL PANEL SHALL BE LOCATED AT A SAFE DISTANCE FROM THE WET WELL AS SHOWN ON THE PLANS.

9.0 PORTABLE HOISTS (LIFT STATION NO. 1 ONLY)

PROVIDE AND INSTALL SURFACE-MOUNTED STAINLESS STEEL FLOOR SOCKETS FOR THE PORTABLE HOISTS AT APPROPRIATE LOCATIONS SUCH THAT ALL PUMPS UNDER THIS SECTION MAY BE REMOVED BY INSERTION OF THE PORTABLE HOIST INTO FLOOR SOCKETS. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL. PORTABLE HOIST FLOOR SOCKETS SHALL BE FURNISHED TO MATCH THE PORTABLE HOIST THE DISTRICT PRESENTLY USES FOR MAINTENANCE.

RESTRAINED JOINT LENGTHS:

HORIZONTAL RESTRAINT LENGTH				
BEND ANGLE (DEGREES)	4-INCH PVC PIPE (FEET)	6-INCH PVC PIPE (FEET)	4-INCH D.I. PIPE (FEET)	6-INCH D.I. PIPE (FEET)
90	18	24	20	27
45	8	10	8	12
22.5	4	5	4	6
11.25	2	3	2	3

VERTICAL RESTRAINT LENGTH								
BEND ANGLE (DEGREES)	4-INCH PVC PIPE (FEET)		6-INCH PVC PIPE (FEET)		4-INCH D.I. PIPE (FEET)		6-INCH D.I. PIPE (FEET)	
	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
45	22	8	31	10	32	8	45	12
22.5	11	4	15	5	16	4	22	6
11.25	6	2	8	3	8	2	11	3

CRITERIA

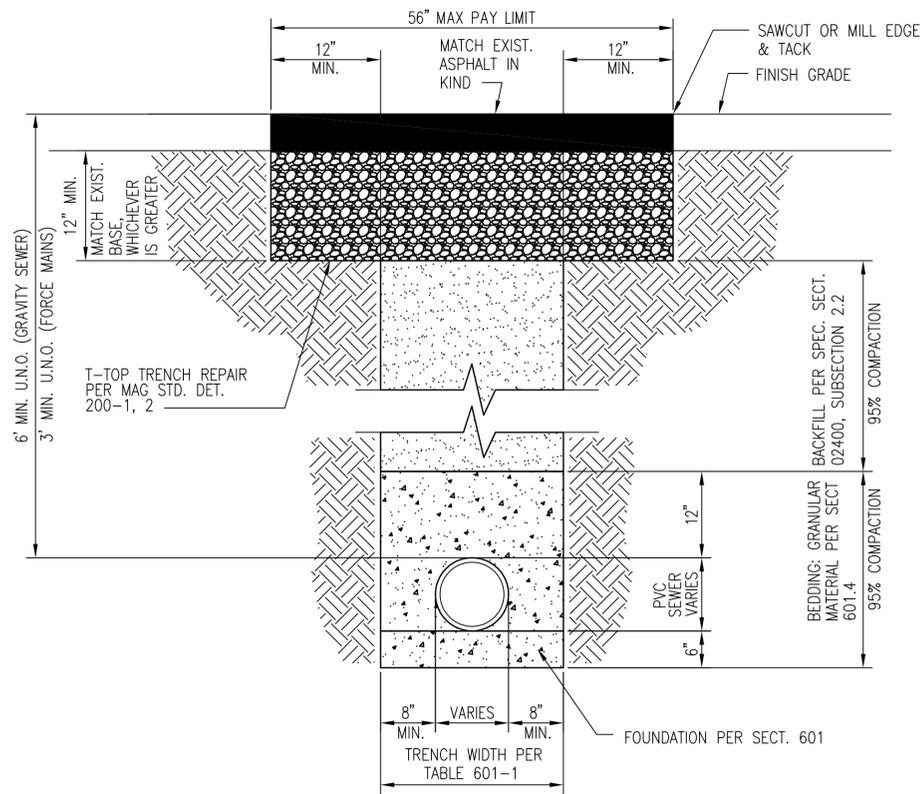
PIPE MATERIAL	PVC/D.I.
SOIL TYPE	GP/GM
SAFETY FACTOR	1.5
TRENCH TYPE	5
DEPTH OF BURY	3 FT
TEST PRESSURE	200



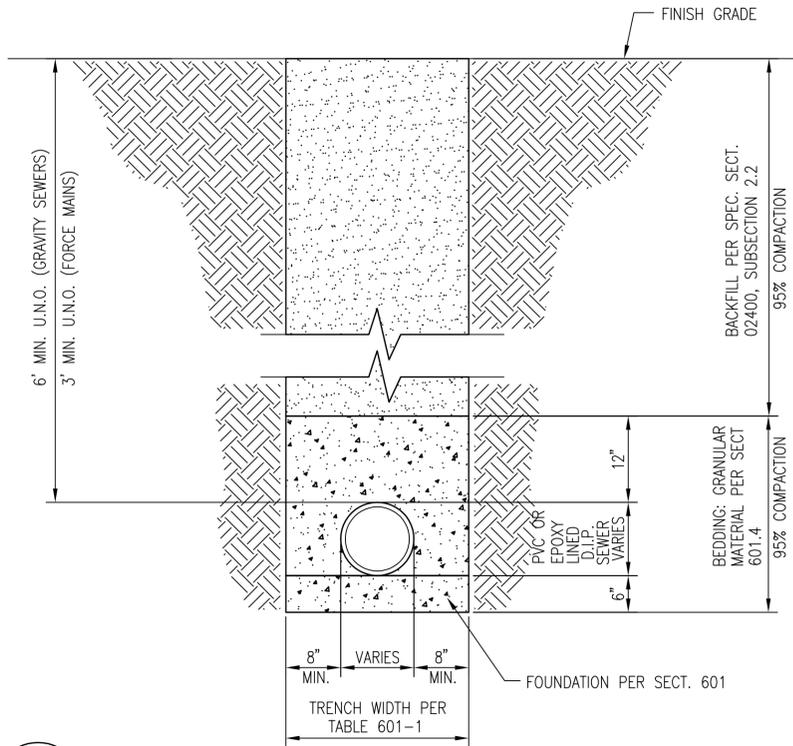
EXPIRES 3/31/17



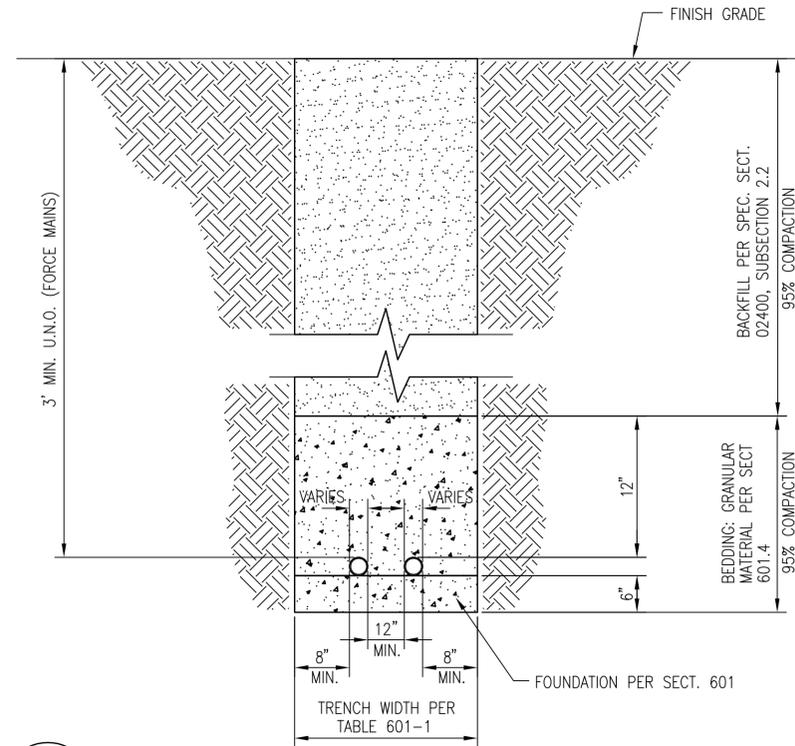
REVISIONS	BY	DATE



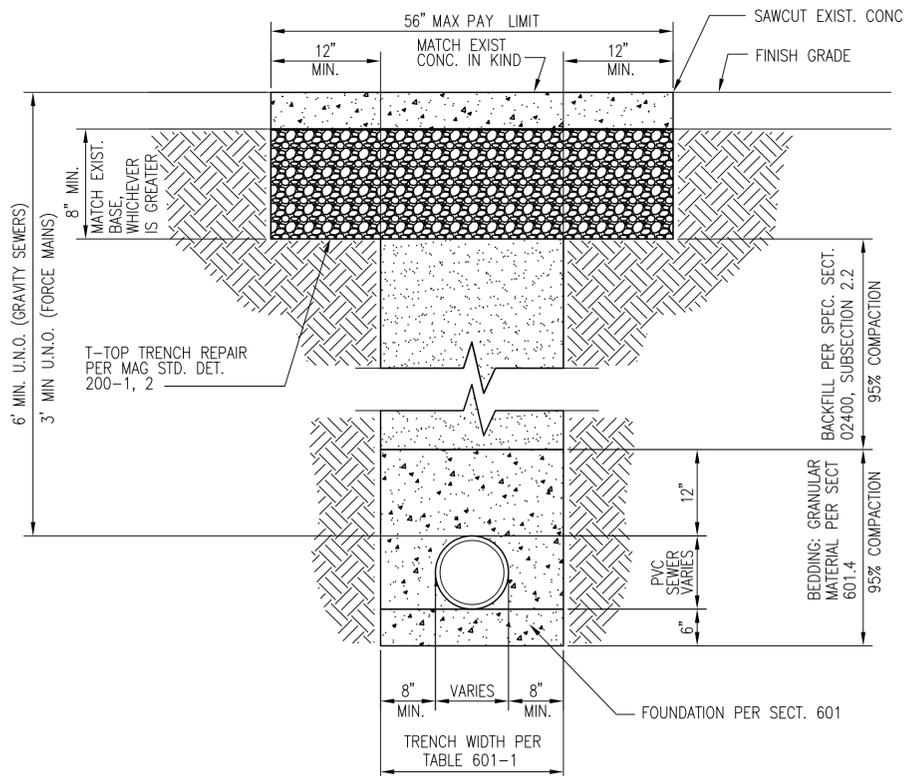
A TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH IN PAVED AREAS
N.T.S.



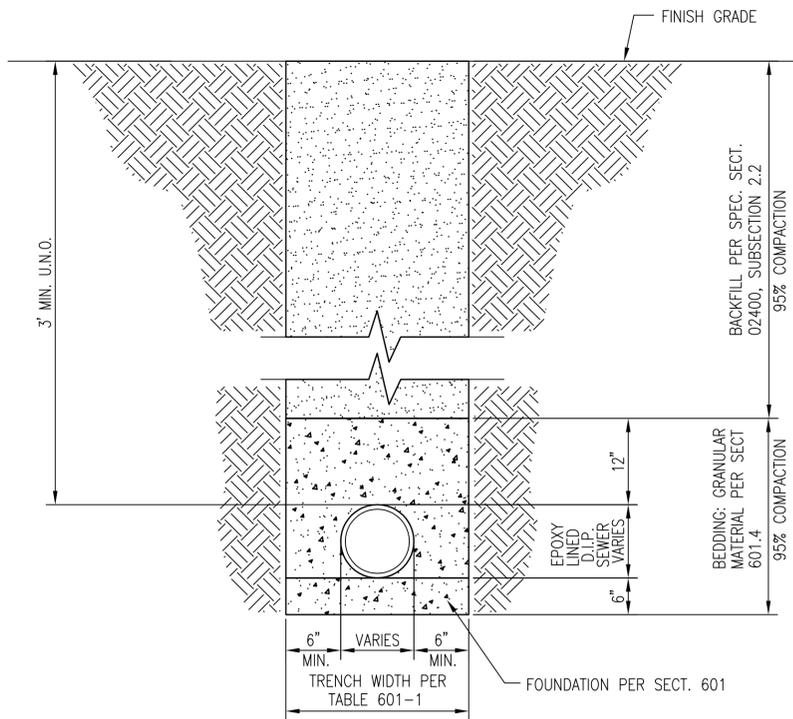
B TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH IN NON-PAVED AREAS
N.T.S.



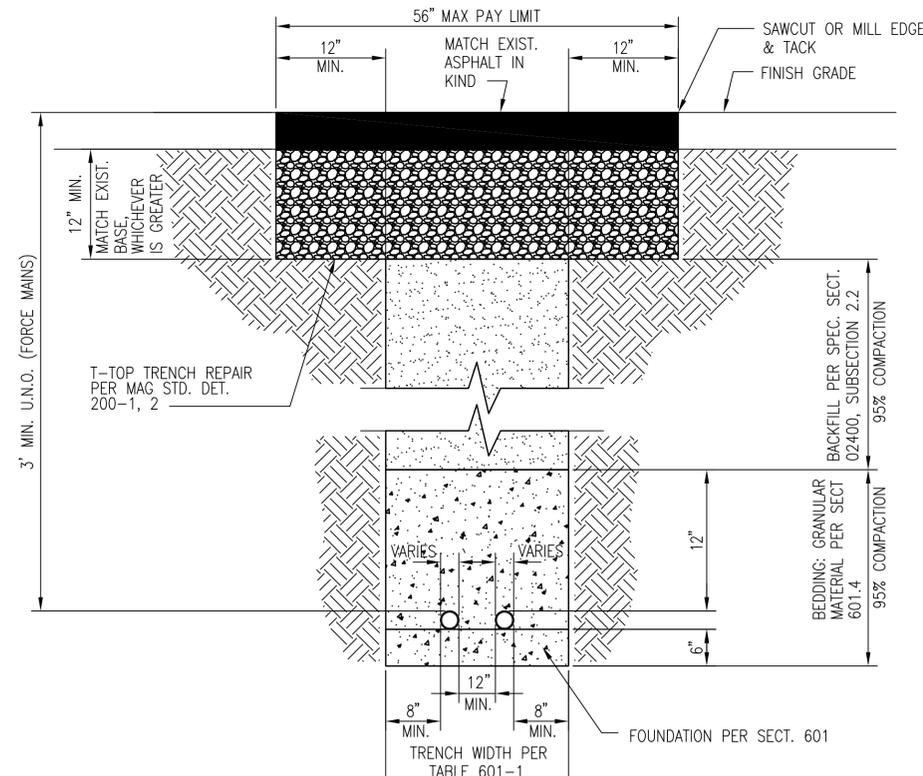
C JOINT TRENCH - DUAL FORCE MAINS IN NON-PAVED AREAS
N.T.S.



D TYPICAL GRAVITY / FORCE MAIN SEWER TRENCH DETAIL IN CONCRETE
N.T.S.



E FORCE MAIN SEWER TRENCH DETAIL IN WASH CROSSINGS
N.T.S.



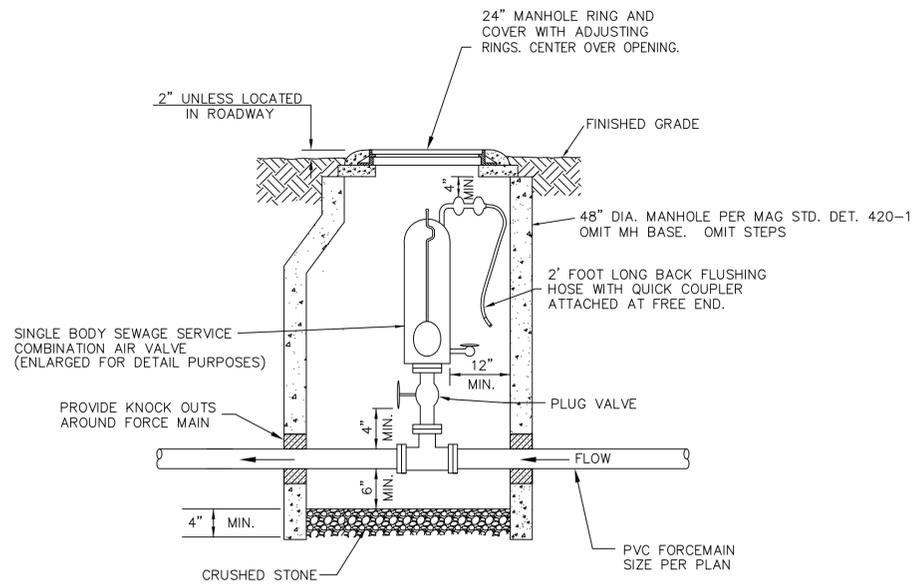
F JOINT TRENCH - DUAL FORCE MAIN SEWER IN PAVED AREAS
N.T.S.



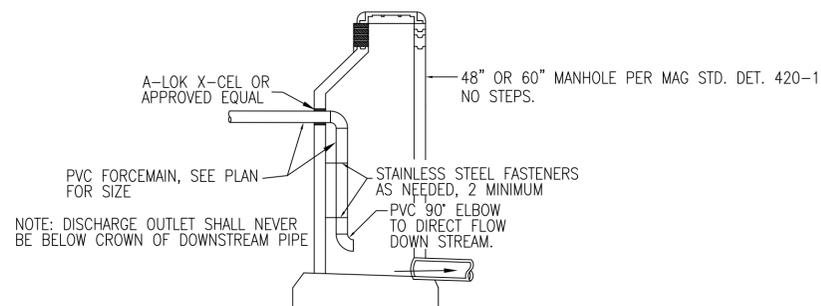
EXPIRES 3/31/17

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

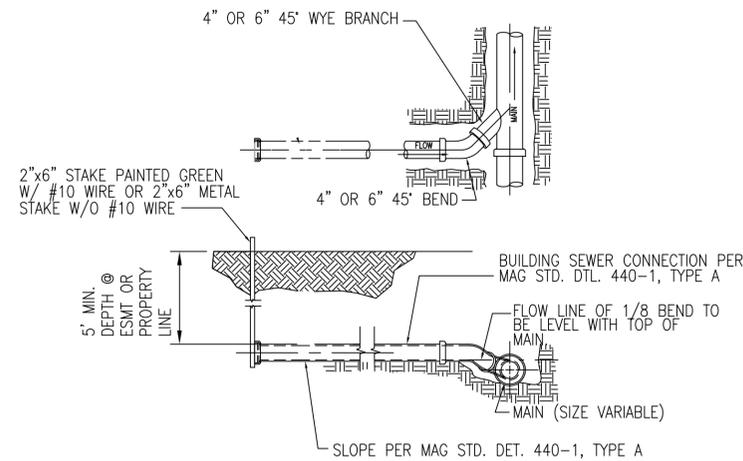
REVISIONS	BY	DATE



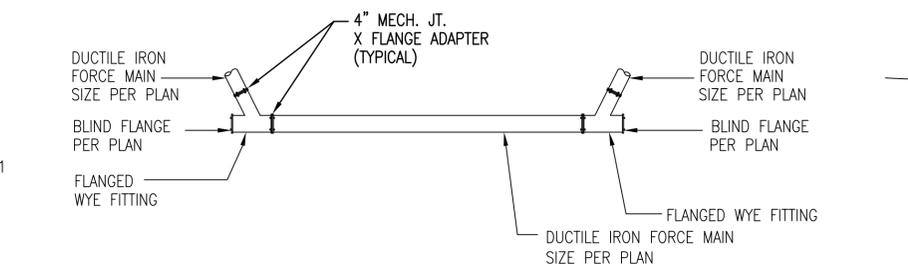
SEWER AIR RELEASE VALVE
N.T.S.



TYPICAL FORCEMAIN DISCHARGE MANHOLE
N.T.S.

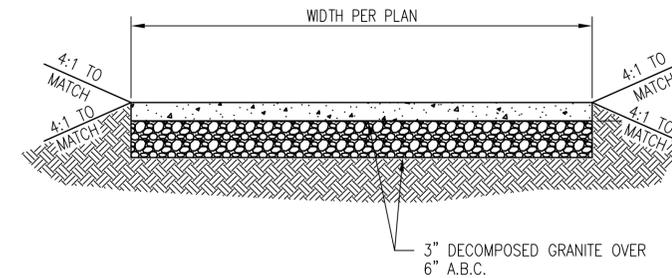


BUILDING SEWER CONNECTION
N.T.S.

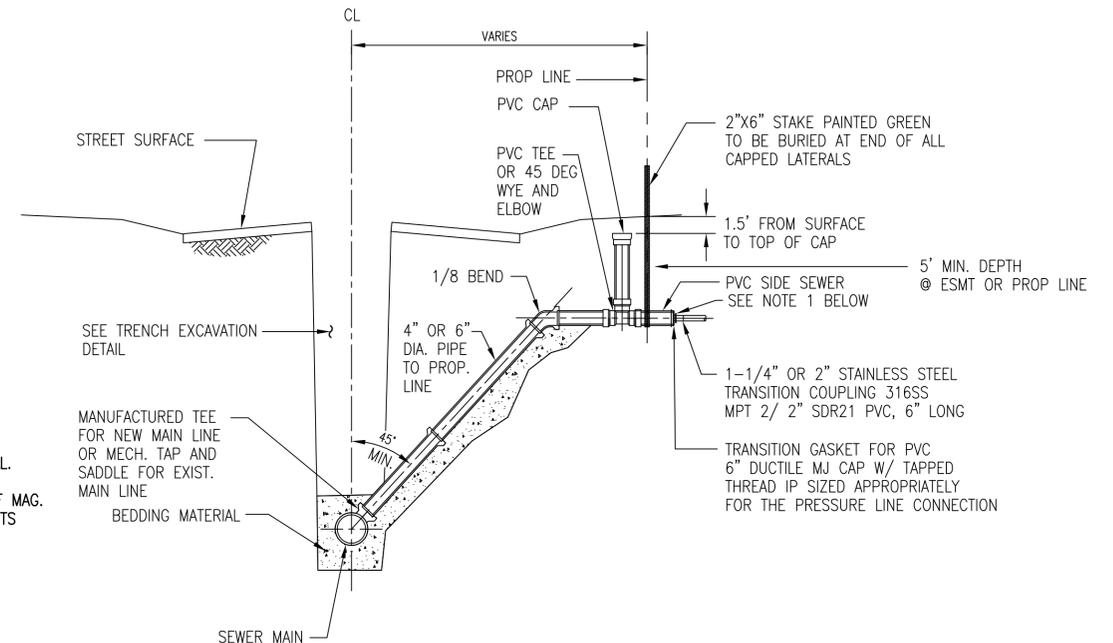


NOTE:
 1. ALL 4" DIP JOINTS SHALL BE RESTRAINED USING MEGA-LUG SERIES 1100 BY EBAA IRON INC., OR APPROVED EQUAL.
 2. ALL 4" D.I. PIPING AND FITTINGS SHALL BE LINED WITH CERAMIC EPOXY, "PROTECTO 401", OR APPROVED EQUAL.
 3. ALL 4" D.I. PIPING AND FITTINGS SHALL BE ENCASED WITH POLYETHYLENE IN ACCORDANCE WITH SECTION 610-6 OF MAG.
 4. D.I. PIPING SHALL BE CONCRETE ENCASED AT A MINIMUM OF 10' BEYOND THE OUTSIDE DIAMETER OF BOTH CULVERTS IN ACCORDANCE WITH MAG STD. DET. 404-1,2,3.

FORCE MAIN CLEANOUT
N.T.S.



ACCESS ROAD DETAIL
N.T.S.



NOTES:
 1. FOR 1-1/4" SERVICE USE 2"x1-1/4" BRASS BUSHING FOR 2" TAP
 2. FOR 2" SERVICE, OMIT BUSHING

FORCE MAIN SEWER LATERAL SERVICE CONNECTION
N.T.S.



CALL TWO WORKING DAYS BEFORE YOU DIG
 602-263-1100
 1-800-STAKE-IT
 (OUTSIDE MARICOPA COUNTY)

REVISIONS	BY	DATE

