



August 14, 2026

City of Norman

ATTN: Jason Murphy, Stormwater Program Manager
City of Norman Public Works - Engineering
225 N Webster Ave
Norman, OK 73069

Dear Jason Murphy:

No-Rise Certification and Floodplain Impact Statement:

The 36th Avenue NW Roadway Improvement and Bridge Replacement project includes roadway reconstruction, sidewalk improvements, storm sewer installation, and replacement of the existing bridge crossing within the FEMA Zone A regulatory floodplain, Panel 40027C0190K. A hydraulic analysis was performed using HEC-RAS to evaluate the impacts of the proposed improvements on flood elevations compared to the existing conditions.

Based upon the hydraulic modeling performed for this project and the accompanying floodplain storage calculations, the proposed improvements do not result in an increase in the 100-YR WSEL within the regulatory floodplain. The hydraulic analysis demonstrates that the proposed design improves existing floodplain conveyance characteristics.

Accordingly, it is my professional opinion that the proposed project results in **no adverse floodplain impacts, no net loss of floodplain storage, and no rise in the 100-YR Water Surface Elevation.**

This statement represents the best professional judgment based on available survey information, design plans, and hydraulic modeling. It has been prepared for inclusion with floodplain permit request. Should you have any questions, please contact me at 405.242.6625 or at jbarton@olsson.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jacob Burton".

Jacob Burton, PE, CFM
Project Manager II / Civil Engineering

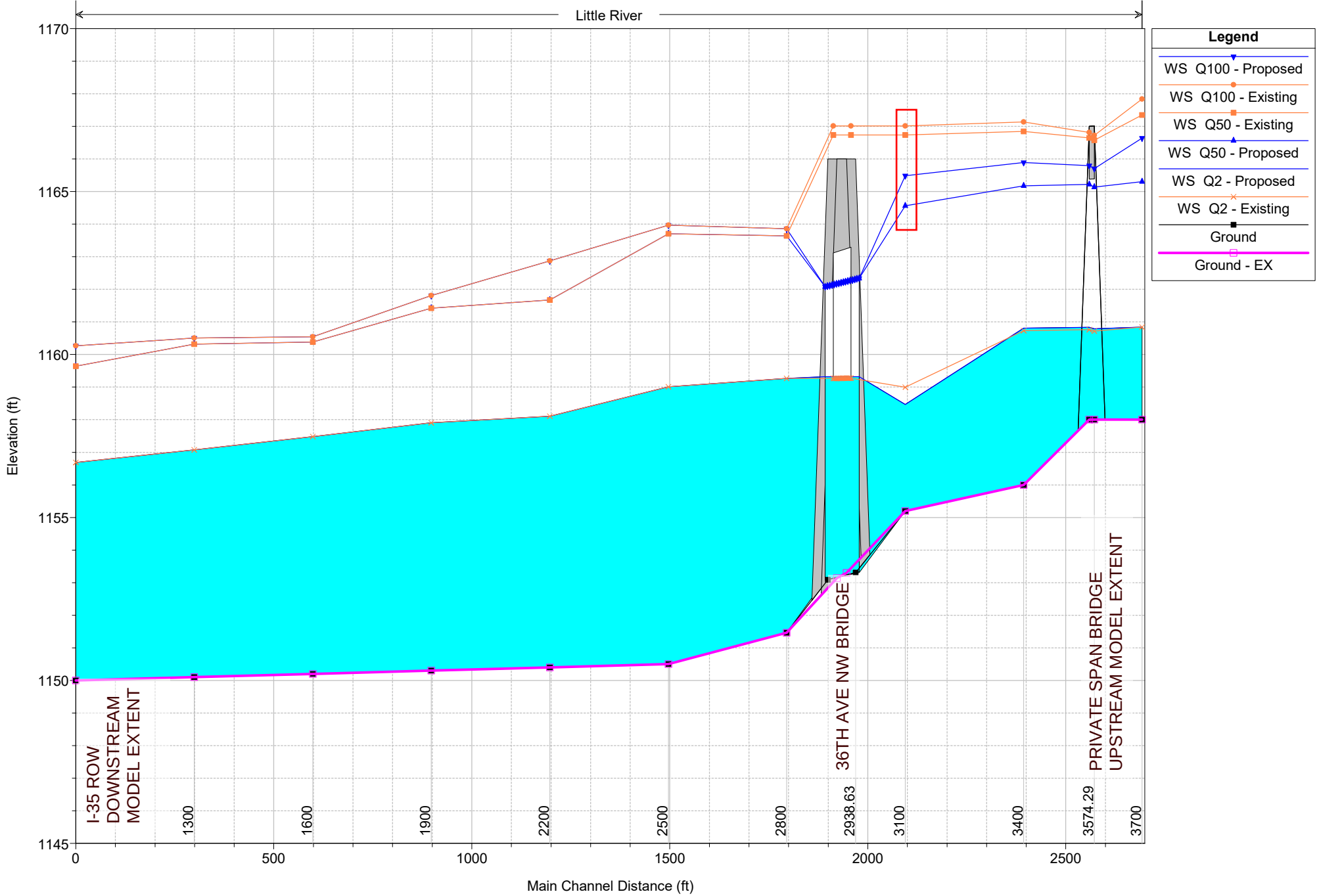
D 405.242.6625

C 405.397.9017

11600 Broadway Extension, Suite 300
Oklahoma City, OK 73114
O 405.242.6600



S&S Date: 08/14/2026
Stamp Exp.: 09/30/2027



HEC-RAS Plan: Proposed River: Little Reach: River

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
River	3700	Q2	498.00	1158.00	1160.84	1160.84	1161.82	0.014990	7.93	62.81	32.56	1.01
River	3700	Q5	910.00	1158.00	1162.22	1161.89	1163.20	0.009801	7.93	114.69	43.05	0.86
River	3700	Q10	1260.00	1158.00	1163.29	1162.60	1164.18	0.007268	7.58	166.24	53.44	0.76
River	3700	Q25	1790.00	1158.00	1164.34	1163.48	1165.30	0.006067	7.85	232.90	93.34	0.71
River	3700	Q50	2320.00	1158.00	1165.30	1164.21	1166.14	0.004169	7.58	367.00	186.13	0.62
River	3700	Q100	2730.00	1158.00	1166.64	1165.05	1167.07	0.001781	5.85	689.33	275.52	0.42
River	3700	Q500	4310.00	1158.00	1169.07	1166.31	1169.30	0.000779	4.84	1477.02	393.45	0.29
River	3574.29		Bridge									
River	3400	Q2	498.00	1156.00	1160.81		1161.01	0.001901	3.64	136.72	47.87	0.38
River	3400	Q5	910.00	1156.00	1162.37		1162.64	0.001630	4.12	221.45	60.60	0.37
River	3400	Q10	1260.00	1156.00	1163.45		1163.75	0.001355	4.42	291.76	70.42	0.35
River	3400	Q25	1790.00	1156.00	1164.50		1164.89	0.001391	5.10	374.58	95.06	0.37
River	3400	Q50	2320.00	1156.00	1165.18		1165.67	0.001543	5.77	448.17	121.68	0.39
River	3400	Q100	2730.00	1156.00	1165.89		1166.38	0.001384	5.85	544.89	149.57	0.38
River	3400	Q500	4310.00	1156.00	1167.20		1167.83	0.001593	6.99	823.15	283.80	0.42
River	3100	Q2	498.00	1155.20	1158.47	1158.47	1159.68	0.014704	8.82	56.44	23.34	1.00
River	3100	Q5	910.00	1155.20	1159.70	1159.70	1161.42	0.013516	10.50	86.72	25.58	1.00
River	3100	Q10	1260.00	1155.20	1160.57	1160.57	1162.65	0.012769	11.58	109.40	26.93	1.00
River	3100	Q25	1790.00	1155.20	1162.71	1162.71	1164.05	0.005771	9.69	234.07	116.43	0.71
River	3100	Q50	2320.00	1155.20	1164.56	1163.40	1165.12	0.002139	7.10	541.06	203.07	0.45
River	3100	Q100	2730.00	1155.20	1165.49	1163.81	1165.92	0.001572	6.57	743.93	238.95	0.40
River	3100	Q500	4310.00	1155.20	1166.83	1164.86	1167.30	0.001616	7.33	1126.95	335.46	0.41
River	2938.63		Culvert									
River	2800	Q2	498.00	1151.46	1159.27		1159.43	0.000824	3.25	153.19	29.94	0.25
River	2800	Q5	910.00	1151.46	1160.70		1161.03	0.001318	4.58	199.26	34.65	0.33
River	2800	Q10	1260.00	1151.46	1161.63		1162.09	0.001571	5.46	234.28	41.22	0.37
River	2800	Q25	1790.00	1151.46	1162.76		1163.42	0.001850	6.56	291.13	62.78	0.41
River	2800	Q50	2320.00	1151.46	1163.64		1164.46	0.002067	7.43	355.42	82.43	0.44
River	2800	Q100	2730.00	1151.46	1163.86		1164.91	0.002578	8.44	374.32	86.55	0.49
River	2800	Q500	4310.00	1151.46	1164.63	1163.68	1166.56	0.004474	11.73	456.65	121.88	0.66
River	2500	Q2	498.00	1150.50	1159.01	1155.51	1159.11	0.001161	2.51	198.35	82.60	0.29
River	2500	Q5	910.00	1150.50	1160.51	1156.93	1160.63	0.000774	2.77	339.49	114.84	0.25
River	2500	Q10	1260.00	1150.50	1161.51	1158.47	1161.64	0.000648	2.96	474.47	154.10	0.24
River	2500	Q25	1790.00	1150.50	1162.75	1159.06	1162.89	0.000537	3.15	689.79	187.50	0.23
River	2500	Q50	2320.00	1150.50	1163.71	1159.54	1163.86	0.000494	3.33	877.89	205.68	0.22
River	2500	Q100	2730.00	1150.50	1163.97	1159.87	1164.16	0.000587	3.72	932.70	210.68	0.24
River	2500	Q500	4310.00	1150.50	1164.96	1161.13	1165.26	0.000821	4.80	1283.34	377.31	0.30
River	2200	Q2	498.00	1150.40	1158.10		1158.53	0.003328	5.21	95.75	28.62	0.49
River	2200	Q5	910.00	1150.40	1159.39		1160.12	0.003885	6.90	147.83	52.40	0.55
River	2200	Q10	1260.00	1150.40	1160.19		1161.16	0.004272	8.02	196.06	67.51	0.59
River	2200	Q25	1790.00	1150.40	1161.15	1159.93	1162.42	0.004748	9.37	269.37	85.96	0.64
River	2200	Q50	2320.00	1150.40	1161.67	1161.09	1163.35	0.005833	10.93	317.08	96.08	0.72
River	2200	Q100	2730.00	1150.40	1162.87	1162.87	1163.75	0.003065	8.79	671.55	405.78	0.54
River	2200	Q500	4310.00	1150.40	1164.67		1164.96	0.001242	6.37	1519.56	510.89	0.35
River	1900	Q2	498.00	1150.30	1157.91		1158.03	0.000739	2.79	178.35	44.53	0.25
River	1900	Q5	910.00	1150.30	1159.23		1159.46	0.000954	3.82	241.89	51.28	0.29
River	1900	Q10	1260.00	1150.30	1160.06		1160.38	0.001122	4.56	285.93	55.47	0.33
River	1900	Q25	1790.00	1150.30	1161.00		1161.48	0.001389	5.58	340.63	60.44	0.37
River	1900	Q50	2320.00	1150.30	1161.42		1162.13	0.001916	6.81	366.42	62.64	0.44
River	1900	Q100	2730.00	1150.30	1161.81		1162.70	0.002224	7.60	391.43	64.71	0.48
River	1900	Q500	4310.00	1150.30	1163.53	1160.57	1164.43	0.002053	8.33	1094.74	565.59	0.47
River	1600	Q2	498.00	1150.20	1157.48		1157.71	0.001577	3.79	131.42	35.14	0.35
River	1600	Q5	910.00	1150.20	1158.60		1159.01	0.002319	5.21	181.39	67.21	0.43
River	1600	Q10	1260.00	1150.20	1159.38		1159.89	0.002390	5.88	248.96	106.42	0.45
River	1600	Q25	1790.00	1150.20	1160.39		1160.95	0.002237	6.40	380.43	141.39	0.45
River	1600	Q50	2320.00	1150.20	1160.38		1161.33	0.003792	8.32	378.67	141.28	0.58
River	1600	Q100	2730.00	1150.20	1160.55	1159.97	1161.73	0.004676	9.40	401.88	142.74	0.65
River	1600	Q500	4310.00	1150.20	1163.15		1163.73	0.001980	7.67	1234.27	547.85	0.45
River	1300	Q2	498.00	1150.10	1157.08	1154.35	1157.26	0.001328	3.46	143.86	93.53	0.32
River	1300	Q5	910.00	1150.10	1157.94	1155.57	1158.34	0.002145	5.09	182.76	142.27	0.43
River	1300	Q10	1260.00	1150.10	1158.53	1156.49	1159.12	0.002685	6.18	223.26	194.36	0.49
River	1300	Q25	1790.00	1150.10	1159.31	1157.44	1160.13	0.003181	7.41	319.84	267.23	0.54
River	1300	Q50	2320.00	1150.10	1160.32	1158.32	1160.55	0.001112	4.87	903.23	461.01	0.33
River	1300	Q100	2730.00	1150.10	1160.51	1159.18	1160.79	0.001314	5.40	992.70	470.89	0.36
River	1300	Q500	4310.00	1150.10	1163.25	1159.97	1163.35	0.000416	3.79	2474.85	606.79	0.21

HEC-RAS Plan: Proposed River: Little Reach: River (Continued)

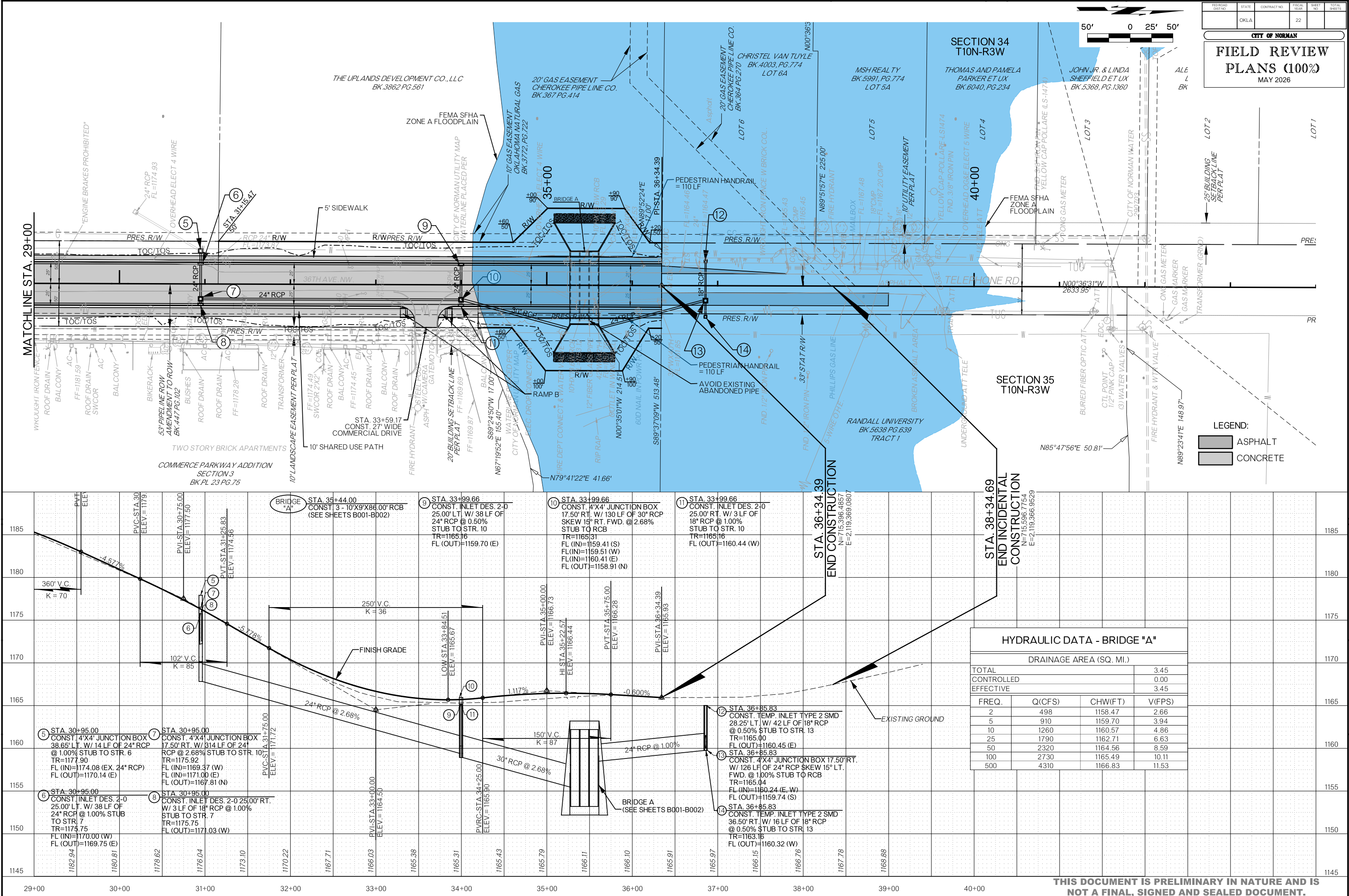
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
River	1000	Q2	498.00	1150.00	1156.69	1154.68	1156.82	0.001538	2.87	173.50	132.68	0.33
River	1000	Q5	910.00	1150.00	1157.42	1155.65	1157.67	0.002065	3.98	231.35	172.45	0.40
River	1000	Q10	1260.00	1150.00	1157.99	1156.39	1158.32	0.002201	4.60	281.00	203.49	0.43
River	1000	Q25	1790.00	1150.00	1158.82	1157.01	1159.23	0.002155	5.23	361.84	228.79	0.44
River	1000	Q50	2320.00	1150.00	1159.64	1157.52	1160.10	0.001945	5.56	452.89	253.50	0.43
River	1000	Q100	2730.00	1150.00	1160.27	1157.89	1160.45	0.000846	3.95	974.75	313.58	0.29
River	1000	Q500	4310.00	1150.00	1163.15	1159.22	1163.24	0.000307	3.10	2188.08	505.16	0.18

HEC-RAS Plan: Existing River: Little Reach: River

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
River	3700	Q2	498.00	1158.00	1160.84	1160.84	1161.82	0.014990	7.93	62.81	32.56	1.01
River	3700	Q5	910.00	1158.00	1162.36	1161.89	1163.24	0.008610	7.54	120.69	44.39	0.81
River	3700	Q10	1260.00	1158.00	1163.78	1162.60	1164.44	0.004904	6.51	193.54	58.20	0.63
River	3700	Q25	1790.00	1158.00	1166.46	1163.48	1166.67	0.000887	4.05	641.71	269.62	0.29
River	3700	Q50	2320.00	1158.00	1167.35	1164.20	1167.54	0.000731	4.03	893.69	299.51	0.27
River	3700	Q100	2730.00	1158.00	1167.84	1165.06	1168.03	0.000700	4.14	1044.95	316.18	0.27
River	3700	Q500	4310.00	1158.00	1169.63	1166.32	1169.81	0.000557	4.28	1709.70	431.56	0.25
River	3574.29		Bridge									
River	3400	Q2	498.00	1156.00	1160.73		1160.95	0.002041	3.74	133.20	47.29	0.39
River	3400	Q5	910.00	1156.00	1162.50		1162.74	0.001470	3.99	228.80	61.70	0.35
River	3400	Q10	1260.00	1156.00	1163.89		1164.13	0.001007	4.03	323.45	74.43	0.31
River	3400	Q25	1790.00	1156.00	1166.19		1166.37	0.000499	3.60	592.62	174.47	0.23
River	3400	Q50	2320.00	1156.00	1166.85		1167.07	0.000570	4.07	730.15	245.62	0.25
River	3400	Q100	2730.00	1156.00	1167.14		1167.40	0.000662	4.49	806.68	277.42	0.27
River	3400	Q500	4310.00	1156.00	1168.00		1168.39	0.000958	5.75	1086.22	375.79	0.33
River	3100	Q2	498.00	1155.20	1159.00	1158.47	1159.81	0.008134	7.22	68.98	24.38	0.76
River	3100	Q5	910.00	1155.20	1161.15	1159.70	1161.98	0.004316	7.33	125.69	29.17	0.59
River	3100	Q10	1260.00	1155.20	1163.30	1160.57	1163.74	0.001647	5.80	311.21	144.10	0.39
River	3100	Q25	1790.00	1155.20	1166.09	1162.75	1166.22	0.000444	3.77	899.11	284.81	0.21
River	3100	Q50	2320.00	1155.20	1166.74	1163.44	1166.89	0.000489	4.14	1098.38	328.48	0.23
River	3100	Q100	2730.00	1155.20	1167.02	1163.86	1167.19	0.000570	4.54	1192.73	351.00	0.25
River	3100	Q500	4310.00	1155.20	1167.81	1164.93	1168.08	0.000887	5.94	1491.41	405.53	0.31
River	2938.63		Culvert									
River	2800	Q2	498.00	1151.46	1159.27		1159.43	0.000824	3.25	153.19	29.94	0.25
River	2800	Q5	910.00	1151.46	1160.70		1161.03	0.001318	4.58	199.26	34.65	0.33
River	2800	Q10	1260.00	1151.46	1161.63		1162.09	0.001571	5.46	234.28	41.22	0.37
River	2800	Q25	1790.00	1151.46	1162.76		1163.42	0.001850	6.56	291.13	62.78	0.41
River	2800	Q50	2320.00	1151.46	1163.64		1164.46	0.002067	7.43	355.42	82.43	0.44
River	2800	Q100	2730.00	1151.46	1163.86		1164.91	0.002578	8.44	374.32	86.55	0.49
River	2800	Q500	4310.00	1151.46	1164.62	1163.68	1166.56	0.004475	11.73	456.62	121.88	0.66
River	2500	Q2	498.00	1150.50	1159.01	1155.51	1159.11	0.001161	2.51	198.35	82.60	0.29
River	2500	Q5	910.00	1150.50	1160.51	1156.93	1160.63	0.000774	2.77	339.49	114.84	0.25
River	2500	Q10	1260.00	1150.50	1161.51	1158.47	1161.64	0.000648	2.96	474.47	154.10	0.24
River	2500	Q25	1790.00	1150.50	1162.75	1159.06	1162.89	0.000537	3.15	689.79	187.50	0.23
River	2500	Q50	2320.00	1150.50	1163.71	1159.54	1163.86	0.000494	3.33	877.89	205.68	0.22
River	2500	Q100	2730.00	1150.50	1163.97	1159.87	1164.16	0.000587	3.72	932.70	210.68	0.24
River	2500	Q500	4310.00	1150.50	1164.96	1161.13	1165.26	0.000821	4.80	1283.30	377.31	0.30
River	2200	Q2	498.00	1150.40	1158.10		1158.53	0.003328	5.21	95.75	28.62	0.49
River	2200	Q5	910.00	1150.40	1159.39		1160.12	0.003885	6.90	147.83	52.40	0.55
River	2200	Q10	1260.00	1150.40	1160.19		1161.16	0.004272	8.02	196.06	67.51	0.59
River	2200	Q25	1790.00	1150.40	1161.15	1159.93	1162.42	0.004748	9.37	269.37	85.96	0.64
River	2200	Q50	2320.00	1150.40	1161.67	1161.09	1163.35	0.005833	10.93	317.08	96.08	0.72
River	2200	Q100	2730.00	1150.40	1162.87	1162.87	1163.75	0.003065	8.79	671.55	405.78	0.54
River	2200	Q500	4310.00	1150.40	1164.67		1164.96	0.001242	6.37	1519.50	510.89	0.35
River	1900	Q2	498.00	1150.30	1157.91		1158.03	0.000739	2.79	178.35	44.53	0.25
River	1900	Q5	910.00	1150.30	1159.23		1159.46	0.000954	3.82	241.89	51.28	0.29
River	1900	Q10	1260.00	1150.30	1160.06		1160.38	0.001122	4.56	285.93	55.47	0.33
River	1900	Q25	1790.00	1150.30	1161.00		1161.48	0.001389	5.58	340.63	60.44	0.37
River	1900	Q50	2320.00	1150.30	1161.42		1162.13	0.001916	6.81	366.42	62.64	0.44
River	1900	Q100	2730.00	1150.30	1161.81		1162.70	0.002224	7.60	391.43	64.71	0.48
River	1900	Q500	4310.00	1150.30	1163.53	1160.57	1164.43	0.002053	8.33	1094.81	565.60	0.47
River	1600	Q2	498.00	1150.20	1157.48		1157.71	0.001577	3.79	131.42	35.14	0.35
River	1600	Q5	910.00	1150.20	1158.60		1159.01	0.002319	5.21	181.39	67.21	0.43
River	1600	Q10	1260.00	1150.20	1159.38		1159.89	0.002390	5.88	248.96	106.42	0.45
River	1600	Q25	1790.00	1150.20	1160.39		1160.95	0.002237	6.40	380.43	141.39	0.45
River	1600	Q50	2320.00	1150.20	1160.38		1161.33	0.003792	8.32	378.67	141.28	0.58
River	1600	Q100	2730.00	1150.20	1160.55	1159.97	1161.73	0.004676	9.40	401.88	142.74	0.65
River	1600	Q500	4310.00	1150.20	1163.15		1163.73	0.001979	7.66	1234.40	547.86	0.45
River	1300	Q2	498.00	1150.10	1157.08	1154.35	1157.26	0.001328	3.46	143.86	93.53	0.32
River	1300	Q5	910.00	1150.10	1157.94	1155.57	1158.34	0.002145	5.09	182.76	142.27	0.43
River	1300	Q10	1260.00	1150.10	1158.53	1156.49	1159.12	0.002685	6.18	223.26	194.36	0.49
River	1300	Q25	1790.00	1150.10	1159.31	1157.44	1160.13	0.003181	7.41	319.86	267.24	0.54
River	1300	Q50	2320.00	1150.10	1160.32	1158.32	1160.55	0.001111	4.87	903.29	461.01	0.33
River	1300	Q100	2730.00	1150.10	1160.51	1159.18	1160.79	0.001314	5.40	992.70	470.89	0.36
River	1300	Q500	4310.00	1150.10	1163.25	1159.97	1163.35	0.000416	3.79	2474.92	606.80	0.21

HEC-RAS Plan: Existing River: Little Reach: River (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
River	1000	Q2	498.00	1150.00	1156.69	1154.68	1156.82	0.001538	2.87	173.50	132.68	0.33
River	1000	Q5	910.00	1150.00	1157.42	1155.65	1157.67	0.002065	3.98	231.35	172.45	0.40
River	1000	Q10	1260.00	1150.00	1157.99	1156.39	1158.32	0.002201	4.60	281.00	203.49	0.43
River	1000	Q25	1790.00	1150.00	1158.82	1157.01	1159.23	0.002155	5.23	361.84	228.79	0.44
River	1000	Q50	2320.00	1150.00	1159.64	1157.52	1160.10	0.001945	5.56	452.89	253.50	0.43
River	1000	Q100	2730.00	1150.00	1160.27	1157.89	1160.45	0.000846	3.95	974.75	313.58	0.29
River	1000	Q500	4310.00	1150.00	1163.15	1159.22	1163.24	0.000307	3.10	2188.08	505.16	0.18



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

FLOODPLAIN END AREA VOLUME REPORT

36TH AVE NW

BASELINE STATION	CUT				FILL			
	FACTOR	AREA (SF)	VOLUME (CY)	ADJUSTED	FACTOR	AREA (SF)	VOLUME (CY)	ADJUSTED
34+50.00	1	24.44	78.42	78.42	1	98.18	129.23	129.23
35+00.00	1	26.51	47.18	47.18	1	113.1	195.62	195.62
35+27.00	1	1436.37	731.44	731.44	1	91.15	102.12	102.12
35+44.00	1	662.07	660.62	660.62	1	81.66	54.40	54.40
35+50.00	1	864.39	169.61	169.61	1	92.73	19.38	19.38
35+61.00	1	1224.27	425.47	425.47	1	78.12	34.80	34.80
36+00.00	1	60.36	100.82	100.82	1	69.73	754.99	754.99
36+34.39	1	50.73	70.75	70.75	1	48.93	75.57	75.57
GRAND TOTAL:			2284.31	2284.31			1366.12	1366.12

Storm Pipe and Structures within the FEMA SHFA Zone A (Strs 10-14):

1,162 cu. ft. (1,029 cu. ft. - RCPs & 133 cu. ft. - inlets/JBs) = 43.04 CY Additional Floodplain Storage Capacity

For 36th Avenue NW roadway improvement project, the cumulative storage volume provided by the increased volumetric opening associated with the replacement bridge and the proposed storm sewer system exceeds the volume of fill introduced by roadway, sidewalk, and grading improvements within the floodplain. Accordingly, the project results in a net increase in available floodplain storage and no adverse impact from loss of floodplain volume is anticipated. The above calculations document that the proposed condition produces a net reduction in displaced floodplain volume relative to existing conditions and does not require compensatory storage to be added.