Flood Monitoring Forms and Data Sheets

The Plan of Action for the monitoring of the bridges on the flood watch list includes the determination of when the bridges should be monitored together with procedures to monitor them.

To determine when bridges should be monitored it was decided that using available stream flow information collected at USGS stream gauges was the most prudent approach. Thus as a particular gauge reached its designated flood stage it would be used as a trigger fo monitoring bridges in the adjacent area or watershed. An evaluation was then performed of the location of the stream gauges together with the location of the bridges on the flood watch list. The intent was to match each bridge with a gauge that could be used as a trigger to determine when monitoring would be necessary. The flood watch list was first divided into three groups in accordance with the bridge's association with the State's three maintenance regions. The bridges within each of these groups were then subdivided into smaller groups and each of these smaller groups matched with an existing stream gauge. The smaller groups were given designations such as N1, C1 and S1 to make for an easier classification system. Thus when any of the stream gauges utilized reach flood stage the plan is that it would trigger the need to monitor an individual or group of associated bridges. The table at the end of this section provides the results of this effort and defines the stream gauges to be used and their associated bridge or bridge group on the flood watch list.

The procedures used for the field aspect of the monitoring effort will consist of the completion of a standard data form. A copy of this form together with instructional text on how it should be completed is included in this document following this section. In addition to the monitoring form, individual data sheets were prepared for each of the flood watch bridges to provide the monitoring crew with available data related to scour. Data sheets for each of the bridges on the flood watch list are provided at the end of this document and include information on the bridge's location and waterway as well as the following data which may be useful in performing the field monitoring:

- Substructure and foundation type
- History of scour problems
- History of debris
- Streambed material
- Substructure redundancy

STATE SCOUR WATCH LIST BRIDGES

Bridge Group	Stream Gauge No.	Stream Gauge Location	Flood Elev	Rte	Number	Name	Mile Point	Drainage Basin
BRIDGES IN NORTH MAINTENANCE REGION								
Stream Gauges in Bergen County								
N1	01378500	Hackensack River at New Milford, NJ	6.0	1+9	0201151	US 1&9(BROAD AVENUE) OVER WOLF CREEK	61.32	Hackensack River
				4	0206166	NJ 4 / HACKENSACK RIVER & ACCESS ROAD	4.59	Hackensack River
				4	0206181	NJ 4 OVER FLAT ROCK BROOK	9.54	Hackensack River
				4	0206189	KINDERKAMACK RD OVER COLES BROOK	5.39	Hackensack River
N2	01387500	Ramapo River near Mahwah, NJ	8.0	17	0218161	N.J 17 NB/US 202 & RAMAPO RIVER	26.04	Ramapo River
				17	0218162	NJ RT 17 SB OVER US 202 & RAMAPO RVR	26.04	Ramapo River
N3	01390500	Saddle River at Ridgewood, NJ	6.0	17	0216150	RT 17 OVER SPROUT BROOK	13.97	Saddle River
				17	0216157	NJ RT 17 OVER SADDLE RIVER.	17.04	Saddle River
N4	01391500	Saddle River at Lodi, NJ	6.0	46	0220157	U.S.ROUTE 46 OVER SADDLE RIVER	66.51	Saddle River
				80	0225166	I-80/MRKT.MAIN,FAIRVIEW STS.&SADL RIV	63.65	Saddle River
Stream Gauge in Essex County								
N5	01392170	Third River at Bloomfield, NJ	6.0	3	1601157	NJ ROUTE 3 OVER THIRD RIVER	3.91	Lower Passaic
				3	1601160	NJ RT 3 OVER UPPER POND SPILLWAY	4.39	Lower Passaic
				21	0716156	MAIN ST OVER SECOND RIVER	5.68	Lower Passaic
Stream Gauges in Morris County								
N6	01379773	Green Pond Brook at Picatinny Arsenal, NJ	3.0	15	1403150	NJ RT 15 OVER BRNT MDW(GRN PD) BROOK	1.65	Rockaway River
				15	1404155	GOVRNMNT RD(PARKER RD) WB/GREEN POND	2.78	Rockaway River
				15	1404158	NJ ROUTE 15 SB / ROCKAWAY RIVER	4.20	Rockaway River
				80	1413155	RAMP C OVER BURNT MEADOW BROOK	34.31	Rockaway River
N7	01380500	Rockaway River above Reservoir at Boonton, NJ	5.0	10	1401156	RT 10 OVER MILL BROOK	7.16	Rockaway River
				46	1409154	US ROUTE 46 OVER GRANNEYS BROOK	37.72	Rockaway River
				53	1411152	RT 53 OVER DEN BROOK	4.59	Rockaway River
N8	01381500	Whippany River at Morristown, NJ	6.0	10	1402150	NJ ROUTE 10 OVER MALAPARDIS BROOK	13.89	Whippany River
				202	1416152	US 202 OVER WHIPPANY RIVER	45.73	Whippany River
N9	01381800	Whippany River near Pine Brook, NJ	9.0	10	0709150	RT 10 OVER WILLOW MEADOW BROOK	18.65	Upper Passaic
				10	0711150	NJ ROUTE 10 OVER CANOE BROOK	20.50	Upper Passaic
N10	01381900	Passaic River at Pine Brook, NJ	19.0	46	1410159	ROUTE 46 OVER PASSAIC RIVER	51.85	Upper Passaic
				280	1418154	RT.I-280 EB OVER PASSAIC RIVER	3.32	Upper Passaic
N11	01396190	South Branch Raritan River at Four Bridges, NJ	7.0	46	1407156	US 46 OVER SOUTH BR RARITAN RIVER	25.87	South Branch of Raritan River
				206	1417156	RT 206/SOUTH BR OF RARITAN RIVER	92.23	South Branch of Raritan River
				206	1417157	US 206 OVER TRIB TO DRAKES BROOK	92.46	South Branch of Raritan River
				206	1417159	US RT 206/S BRANCH RARITAN RIVER	92.82	South Branch of Raritan River
N12	01455500	Muscanetcong River at Outlet of Lake Hopatcong, NJ	4.0	15	1404159	NJ RT 15 RAMP A OVER HURDTOWN BROOK	6.72	Musconetcong River
				15	1424150	NJ 15 NB OVER LAKE SHAWNEE	6.72	Musconetcong River
				46	1407152	ROUTE US 46 WB OVER MINE BROOK	22.47	Musconetcong River
				46	1407153	RTE US 46EB OVER BRANCH MINE BRK.	22.61	Musconetcong River
				206	1911151	US206 OVER LUBBERS RUN	98.82	Musconetcong River
Stream Gauges in Passaic County								
N13	01382500	Pequannock River at Macopin Intake Dam, NJ	7.0	23	1405156	RT23/PEQUANNOCK R,HAMBURG TPK SB, RR	16.98	Pequannock River
				23	1605153	NJ RTE 23 SB OVER PEQUANNOCK RIV.	18.20	Pequannock River
				23	1605156	NJ RT 23 SB OVER PEQUANNOCK RIVER	19.49	Pequannock River
				23	1605158	NJ ROUTE 23 NB/MACOPIN RIVER	20.26	Pequannock River
				23	1605162	RTE 23SB OVER PEQUANNOCK RV	22.50	Pequannock River
				23	1605167	ROUTE 23 SB OVER PEQUANNOCK RIVER	25.52	Pequannock River
				23	1605175	RT 23 NB OVER PEQUANNOCK RIVER	26.20	Pequannock River
N14	01388500	Pompton River at Pompton Plains, NJ	16.0	23	1619151	N.J 23 OVER POMPTON RIVER	9.64	Pompton River
N15	01389005	Passaic River below Pompton River at Two Bridges, NJ	9.0	23	1604150	ROUTE NJ 23/PASSAIC RIVER	4.54	Lower Passaic
				46	0722157	US ROUTE 46 EB OVER PASSAIC RIVER	55.45	Upper Passaic
				46	0722158	U.S. ROUTE 46 WB /PASSAIC RIVER	55.45	Upper Passaic

STATE SCOUR WATCH LIST BRIDGES

Bridge Group	Stream Gauge No.	Stream Gauge Location	Flood Elev	Rte	Number	Name	Mile Point	Drainage Basin
N16	01389534	Peckman River at Ozone Avenue at Verona, NJ	3.5	23	0719151	RT 23 OVER PECKMANS BROOK	2.09	Lower Passaic
N17	01389765	Molly Ann Brook at North Haledon, NJ	6.0	208	1612154	ROUTE 208 RAMP A OVER GOFFLE BROOK	4.36	Lower Passaic
Stream Gauges in Sussex County								
N18	01367800	Papakating Creek at Pellville, NJ	4.0	23	1903152	23/BR OF PACOCK BRK & DEL-OSTEGO R.R.	30.14	Wallkill River
				23	1903153	RT 23 OVER BRANCH OF FRANKLIN LAKE	30.60	Wallkill River
				23	1904152	NJ 23 OVER WALLKILL RIVER	36.61	Wallkill River
				23	1904153	NJ RT 23/ BR OF WALLKILL RIVER	37.60	Wallkill River
				23	1905151	ROUTE NJ 23/BRANCH OF CLOVE RIVER	42.61	Papatking Creek
				94	1923150	NJ RT.94 OVER WALLKILL RIVER	35.21	Wallkill River
				284	1907152	NJ RT284/BR OF WALLKILL RIVER	3.04	Wallkill River
				284	1907157	NJ 284 OVER BR OF WALLKILL RIVER	6.62	Wallkill River
N19	01440000	Flat Brook near Flatbrookville, NJ	6.0	206	1912158	US ROUTE 206 OVER KITTATINY BROOK	122.51	Flat Brook
				206	1912160	US 206 OVER BIG FLAT BROOK	122.61	Flat Brook
N20	01445000	Pequest River at Huntsville, NJ	4.0	15	1922150	NJ ROUTE 15 OVER BEAVER RUN	17.56	Paulins Kill
				15	1922151	NJ.RTE.15 OVER PAULINS KILL CREEK	18.26	Paulins Kill
				206	1911159	US206 OVER PEQUEST RIVER	105.90	Pequest River
Stream Gauges in Union County								
N21	01394500	Rahway River near Springfield, NJ	5.5	22	2003157	US22 OVER ECHO LAKE	50.74	Rahway River
				22	2003161	US 22 EB OVER RAHWAY RIVER	52.94	Rahway River
				22	2003162	US 22 WB OVER RAHWAY RIVER	52.94	Rahway River
				22	2004151	US 22 OVER ELIZABETH RIVER	56.51	Elizabeth River
				82	2012150	NJ ROUTE 82 OVER RAHWAY RIVER	0.36	Rahway River
N22	01395000	Rahway River at Rahway, NJ	6.0	27	2006151	RT 27 OVER ROBINSON BRNCH RAHWAY RVR	28.44	Rahway River
				27	2006152	NJ RT 27/RAHWAY RIVER.	29.07	Rahway River
Stream Gauges in Warren County								
N23	01443500	Paulins Kill at Blairstown, NJ	5.0	46	2107156	US ROUTE 46 OVER PAULINS KILL	0.74	Paulins Kill
				94	2117157	NJ 94 OVER JACKSONBURG CREEK	7.97	Paulins Kill
				94	2117159	NJ ROUTE 94 OVER BLAIR CREEK.	9.04	Paulins Kill
				94	2117160	ROUTE 94 OVER PAULINS KILL	9.16	Paulins Kill
N24	01445500	Pequest River at Pequest, NJ	4.0	31	2111151	RT 31 OVER POHATCONG CREEK	44.47	Pohatcong Creek
				31	2111155	NJ RT 31 OVER PEQUEST RIVER	48.88	Pequest River
				57	2105164	RT 57 OVER POHATCONG CREEK	9.55	Pohatcong Creek
N25	01446000	Beaver Brook near Belvidere, NJ	4.5	46	2107154	US 46 WB OVER BEAVER BROOK	7.29	Pequest River
				46	2107155	US 46 EB OVER BEAVER BROOK	7.29	Pequest River
N26	01457000	Muscanetcong River near Bloomsbury, NJ	6.0	46	2108162	RTE US 46 OVER MUSCONETCONG RIVER	21.83	Musconetcong River
				57	2106164	NJ 57 OVER HANCES BROOK	18.13	Musconetcong River

STATE SCOUR WATCH LIST BRIDGES

Bridge Group	Stream Gauge No.	Stream Gauge Location	Flood Elev	Rte	Number	Name	Mile Point	Drainage Basin
BRIDGES IN CENTRAL MAINTENANCE REGION								
Stream Gauges in Hunterdon County								
C1	01396500	South Branch Raritan River near High Bridge, NJ	10.0	31	1013152	ROUTE NJ 31 OVER WILLOUGHBY BROOK	35.06	South Branch of Raritan River
C2	01396660	Mulhockaway Creek at Van Syckel, NJ	5.5	78	1015157	I-78EB SERV.RD / MULHOCKAWAY CREEK	12.32	South Branch of Raritan River
C3	01397000	South Branch Raritan River at Stanton, NJ	8.0	78	1016156	I-78 EB OVER SO BR. RARITAN RIVER	16.53	South Branch of Raritan River
				78	1016157	I-78 WB OVER SO BR. RARITAN RIVER	16.53	South Branch of Raritan River
C4	01399670	South Branch Rockaway Creek at Whitehouse Station, NJ	6.0	22	1005153	RT US 22 OVER BR ROCKAWAY CREEK	19.78	North Branch of Raritan River
				22	1005162	US 22 EB OVER S BR ROCKAWAY CREEK	25.67	North Branch of Raritan River
				22	1005163	RT US 22 WB OVER S BR ROCKAWAY CREEK	25.67	North Branch of Raritan River
Stream Gauges in Mercer County								
C5	01401000	Stony Brook at Princeton, NJ	9.0	27	1105152	RT NJ 27 OVER MILLSTONE RIVER	3.02	Millstone River
				33	1304151	OLD ROAD(NJ 33) OVER MILLSTONE RIVER	19.80	Millstone River
				130	1123152	US ROUTE 130 OVER ROCKY BROOK	68.92	Millstone River
				130	1123153	RT 130 OVER MILLSTONE RIVER	70.04	Millstone River
C6	01463620	Assunpink Creek near Clarksville, NJ	8.0	1B	1102150	US 1B OVER SHABAKUNK CREEK	1.51	Assunpink Creek
C7	01464500	Croswicks Creek at Extonville, NJ	12.0	130	1122150	US 130 OVER DOCTORS CREEK	58.52	Crosswicks Creek
Stream Gauges in Middlesex County								
C8	01405400	Manalapan Brook at Spotswood, NJ	19.0	9	1303155	US RT 9 OVER MILFORD BROOK	117.70	South River
				33	1304156	ROUTE 33 OVER MANALAPAN BROOK	25.39	South River
				130	1227159	US 130 OVER OAKEYS BROOK	79.15	Lawrence Brook
C9	01406710	Raritan River at South Amboy, NJ	***11.8***	35	1222150	ROUTE 35/CHEESEQUAKE CREEK & RAMP	47.26	Matawan Creek
Stream Gauges in Monmouth County								
C10	01407080	Waackaack Creek at Keansburg, NJ	***11.8***	36	1315157	NJ 36 OVER FLAT CREEK	22.61	Matawan Creek
C11	01407290	Big Brook at Marlboro, NJ	18.0	34	1308154	N.J.ROUTE 34 OVER BIG BROOK	15.98	Navesink River
C12	01407770	Shark River at Belmar, NJ	***9.0***	71	1321150	ROUTE 71 OVER SHARK RIVER	5.89	Shark River
C13	01408000	Manasquan River at Squankum, NJ	7.0	71	1320152	ROUTE 71 OVER WRECK POND	2.43	Wreck Pond Brook
Stream Gauges in Ocean County								
C14	01408500	Toms River near Toms River, NJ	8.0	166	1516151	RT NJ166 OVER S.CHANNEL OF TOMS RIVER	1.05	Toms River
				166	1516152	RT NJ 166 OVER NO. CHANNEL OF TOMS R.	1.13	Toms River
C15	01409000	Cedar Creek at Lanoka Harbor, NJ	4.0	9	1502153	US 9 OVER OYSTER CREEK	79.56	Forked River
				9	1502154	US 9 OVER S. BRANCH OF FORKED RIVER	80.19	Forked River
				9	1502157	US 9 OVER CEDAR CREEK	84.01	Cedar Creek
Stream Gauges in Somerset County								
C16	01379000	Passaic River near Millington, NJ	8.0	202	1809158	US RT 202 OVER PASSAIC RIVER	39.08	Upper Passaic
C17	01398500	North Branch Raritan River near Far Hills, NJ	5.0	202	1809150	US202 OVER N BR RARITAN RIVER	32.54	North Branch of Raritan River
				202	1809153	RT 202 OVER BR MINE BROOK	35.42	North Branch of Raritan River
C18	01399830	North Branch Raritan River at North Branch, NJ	12.3	22	1801153	US 22 EB OVER N BR RARITAN RIVER	30.83	North Branch of Raritan River
				22	1801154	US 22 WB OVER N BR RARITAN RIVER	30.83	North Branch of Raritan River
C19	01400000	North Branch Raritan River near Raritan, NJ	10.0	202	1807155	US 202 OVER N BR RARITAN RIVER	21.75	North Branch of Raritan River
C20	01400500	Raritan River at Manville, NJ	14.0	206	1810164	US206 OVER BR OF ROYCES BROOK	66.36	Millstone River
				206	1810165	US206 OVER BR OF ROYCES BROOK	67.52	Millstone River
C21	01401750	Millstone River at Griggstown, NJ	9.5	206	1810153	US 206 OVER BACK BROOK	60.27	Millstone River
				206	1810155	RT US 206 OVER CRUSERS BROOK	61.82	Millstone River
				206	1810158	ROUTE US 206 OVER PIKE RUN	63.35	Millstone River
C22	01403540	Stony Brook at Watchung, NJ	14.5	22	1803156	RT US 22 OVER STONY BROOK	44.62	Lower Raritan
Stream Gauge in Union County								
C23	01395000	Rahway River at Rahway, NJ	6.0	27	1218158	NJ RT 27 OVER S BRANCH RAHWAY RIVER	25.85	Rahway River

STATE SCOUR WATCH LIST BRIDGES

Bridge Group	Stream Gauge No.	Stream Gauge Location	Flood Elev	Rte	Number	Name	Mile Point	Drainage Basin
Stream Gauges in Warren County								
C24	01457000	Muscanetcong River near Bloomsbury, NJ	6.0	22	2102154	US 22 OVER LOPATCONG CREEK	2.84	Lopatcong Creek
				78	2113160	I78WB/ASBURY RD(CR632)&MUSCONETCONG R	7.05	Musconetcong River
				173	2103152	RT 173 OVER POHATCONG CREEK	1.50	Pohatcong Creek
				173	2103153	NJ 173 OVER MUSCONETCONG RIVER	3.39	Musconetcong River
C25	01457500	Delaware River at Riegelsville, NJ	22.0	29	1006151	ROUTE 29 OVER SWAN CREEK	18.74	Lockatong Creek
				29	1009150	ROUTE 29 OVER COPPER CREEK	33.19	Lockatong Creek
				29	1110158	NJ 29 OVER MOORES CREEK	15.34	Lockatong Creek

STATE SCOUR WATCH LIST BRIDGES

Bridge Group	Stream Gauge No.	Stream Gauge Location	Flood Elev	Rte	Number	Name	Mile Point	Drainage Basin
BRIDGES IN SOUTH MAINTENANCE REGION								
Stream Gauges in Atlantic County								
S1	01409400	Mullica River near Basto, NJ	5.0	206	0118150	US 206 OVER CEDAR BRANCH	0.75	Mullica River
				206	0118152	US 206 OVER GREAT SWAMP BRANCH	2.88	Mullica River
				206	0118153	RT 206 OVER ALBERTSONS BROOK	3.75	Mullica River
				206	0324152	U.S ROUTE 206 OVER SPRINGERS BROOK	10.13	Basto River
				206	0324153	US 206 OVER MUSKINGUM CREEK	13.16	Basto River
S2	01410600	Absecon Channel at Atlantic City, NJ	***9.8***	87	0115150	RT.87/ABSECON INLET&RAMPS J&H	1.38	Absecon Creek
S3	01411000	Great Egg Harbor River at Folsum, NJ	6.0	322	0119151	US 322 OVER HOSPITALITY BROOK	37.04	Great Egg Harbor River
				322	0119156	US 322 OVER BIG DITCH	43.22	Great Egg Harbor River
S4	01411300	Tuckahoe River at Head of River, NJ	6.0	49	0509150	RT 49 OVER MILL CREEK	52.56	Tuckahoe River
				50	0510152	ROUTE 50 OVER TUCKAHOE RIVER	6.98	Tuckahoe River
Stream Gauges in Burlington County								
S5	01465850	South Branch Rancocas Creek at Vincentown, NJ	7.0	206	0324155	US 206 OVER SO BR OF RANCOCAS CREEK	20.61	South Branch of Rancocas Creek
				206	0324156	ROUTE US 206 OVER JADE RUN	21.08	South Branch of Rancocas Creek
S6	01467000	North Branch Rancocas Creek at Pemberton, NJ	2.5	130	0317150	US 130 NB OVER ASSISCUNK CREEK	46.65	Assiscunk Creek
				130	0317152	US 130 SB OVER ASSISCUNK CREEK	46.65	Assiscunk Creek
				206	0324160	US RT 206 OVER BARKERS CREEK	27.33	Assiscunk Creek
				206	0324162	US206 OVER ASSISCUNK CREEK	29.54	Assiscunk Creek
Stream Gauge in Camden County								
S7	01467150	Cooper River at Haddonfield, NJ	2.8	30	0405153	US RTS 30 & 130 OVER COOPER RIVER	3.62	Cooper River
				38	0408160	MILL ROAD/SO BR PENNSAUKEN CREEK	4.30	Pennsauken Creek
				45	0810150	RT 45 OVER WOODBURY CREEK	26.21	Woodbury Creek
				47	0815152	NJ 47 OVER BIG TIMBER CREEK	75.08	Big Timber Creek
				130	0316150	RT US 130 OVER POMPESTON CREEK	37.84	Pompeston Creek
				130	0818151	RT US 130 /BIG TIMBER CREEK	25.47	Big Timber Creek
				154	0424151	RT 154 OVER NO BR COOPER RIVER	1.22	Cooper River
Stream Gauges in Gloucester County								
S8	01475000	Mantua Creek at Pitman, NJ	5.0	45	0808151	ROUTE 45 OVER EDWARDS RUN	20.82	Mantua Creek
S9	01477120	Raccoon Creek near Swedesboro, NJ	13.0	45	0807152	RT45 OVER RACCOON CREEK	17.73	Raccoon Creek
				130	0817150	US RT 130 OVER BIG BIRCH CREEK	9.95	Maple Swamp
				130	0817151	RT US 130 OVER RACCOON CREEK	11.80	Raccoon Creek
				322	0825150	US 322 OVER RACCOON CREEK	11.27	Raccoon Creek
Stream Gauges in Mercer County								
S10	01464500	Croswicks Creek at Extonville, NJ	12.0	130	0319152	US RT. 130 OVER CROSSWICKS CREEK	58.28	Crosswicks Creek
				206	0326152	US 206 NB OVER CROSSWICKS CREEK	38.46	Crosswicks Creek
				206	0326153	US206 SB OVER CROSSWICKS CREEK	38.46	Crosswicks Creek
Stream Gauges in Salem County								
S11	01411500	Maurice River at Norma, NJ	4.0	47	0601150	RT 47 OVER MUSKEE CREEK	32.78	Maurice River
				47	0601151	N.J.ROUTE 47 OVER MANUMUSKIN RIV.	33.93	Manamuskin River
				49	0606150	NJ RT 49 OVER MANANTICO CREEK	39.08	Manantico Creek
				55	0609151	ROUTE 55 NB OVER MANANTICO CREEK	21.81	Manantico Creek
				55	0609152	RT 55 SB OVER MANANTICO CREEK	21.81	Manantico Creek
				56	1716151	NJ ROUTE 56 OVER MAURICE RIVER	7.47	Maurice River
				322	0826150	US ROUTE 322 OVER SCOTLAND RUN	21.73	Maurice River
S12	01482500	Salem River at Woodstown, NJ	13.0	40	1703152	U.S.RTE 40 OVER BRANCH SALEM CRK.	13.59	Salem River
				45	1705150	NJ RT 45 & US RT 40/SALEM RIVER	10.40	Salem River

FLOOD INSPECTION FORM

Flood inspection monitoring consists of a field evaluation of the bridge site and completion of a standard inspection monitoring form. This form, provided at the end of this section, includes various items to be observed at the site. As illustrated on the form, the observed elements are broken down into "critical" and "non-critical" items. Observed changes in items designated as "critical" would normally be cause for the closure of the bridge. Observations of a change in a "non-critical" item should also be noted. If the change in a non-critical item is significant in the judgment of the field crew, it could also be cause for the closure of the bridge.

Safety of the traveling public and the monitoring crew is of critical importance. If observed changes in the designated critical items are present they could indicate an active scour condition and a bridge that is in distress. Should these or any other signs of structural distress be apparent at the bridge, the monitoring crew should call for a bridge closure, as per the previously discussed procedures, and avoid getting on the bridge.

The following provides a discussion of the various items shown on the Flood Monitoring Inspection form, which are required to be observed during a flood monitoring inspection:

Critical Items

Alignment: The monitoring crew should sight along the fascia, curb line, joints, center line strip, main members, etc. Excessive horizontal or vertical separation at bridge deck joints is important. Any noticeable change would typically be cause for closure of the bridge.

Tilt: The monitoring crew should visually check abutments and piers for a change in plumbness and check bearings for a change in inclination. Any noticeable change or vertical or lateral displacement of the superstructure would typically be cause for closure of the bridge.

Vibration: With no traffic on the bridge, the monitoring crew should check each span for vibration or swaying motion from stream flow. Any noticeable change would typically be cause for closure of the bridge.

Freeboard: Freeboard is the distance from the lowest point of a bridge's superstructure to the water surface. An approximate measurement should be entered by the monitoring crew (to the nearest ½ foot) and the point of measurement noted in the comment section. Zero freeboard or overtopping of the bridge would typically be cause for closure of the bridge. Overtopping of the approach roadway is also important and may be considered as critical.

Snagging Debris: Any heavy debris and/or ice snagging on the superstructure or piers and abutments should be noted. Massive amounts of debris that causes a

negative freeboard situation or structure movement would typically be cause for closure of the bridge.

Bridge Noise: The monitoring crew should listen for cracks, groans, snapping or popping noises coming from the bridge. These noises can be indicative of a potentially serious problem and would typically be cause for closure of the bridge.

Superstructure Distress: The monitoring crew should look for visible damage or cracks in the structure's curbs, parapets and bridge deck

Non-Critical Items

Length: If any increase or decrease in bridge length, as observed at the deck, railing, parapet or curb joints should be noted. Any measurements made should be to the nearest ½ inch.

Erosion: The monitoring crew should look for erosion around substructures, stream banks, highway embankments or pavement and shoulders. .

Settlement: The monitoring crew should observe if any settlement is apparent on approach roadways and embankment slopes. Any sinkholes in the roadway behind the abutments may be considered as critical

Cracking: The monitoring crew should look for cracking in pavement, shoulder areas and embankment slopes.

Debris: The monitoring crew should observe the quantity of debris and/or ice carried by the stream. The box on the form should be completed with either: N – None, L – Light, M – Medium or H - Heavy

Impacting Debris: The monitoring crew should note if any debris is impacting the superstructure.

Flow Characteristics: The monitoring crew should note whether the location, strength and/or direction of the current has changed. Any changes should be noted in the comment section.

Stream Noise: The monitoring crew should note if there is an audible sound of rocks or other objects rolling or scraping in the stream.

The form should be completed with a "yes" or "no" response for the various items. Where "yes" has been used the inspector should note the specific changes or observations in the comment section of the form. The inspector may also add any other comments on other items that they may feel are significant in the comment section. One form should be used for each structure.

Multiple entries may be required for a specific event, the time the observations were made and the weather should also be noted in the columns provided.

FLOOD MONITORING PROGRAM

ROUTE _____ DATE _____

BRIDGE NO. _____

GENERAL			CRITICAL							NON-CRITICAL								
Freeboard Normal _____ Minimum _____ Date _____ **Substructure Type** Abut. _____ Pier _____			1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	
Time	Weather	Insp. Initials	Alignment (Y, N)	Tilt (Y, N)	Vibration (Y, N)	Approx. Freeboard (Nearest 1/2 ft)	Snagging Debris (Y, N)	Bridge Noise (Y, N)	Superstructure Distress (Y, N)	Length (Chg. Nearest 1/2 inch)	Erosion (Y, N)	Settlement (Y, N)	Cracking (Y, N)	Debris (N, L, M, H)	Impacting Debris (Y, N)	Flow Characteristic Changes (Y, N)	Stream Noise (Y, N)	Remarks (See Below)

REMARKS

Structural Evaluation Manager - (609) 530-3572 **Regional Engineer North - (973) 770-5170**

FLOOD MONITORING PROGRAM

ROUTE _____ DATE _____

BRIDGE NO. _____

GENERAL			CRITICAL							NON-CRITICAL								
Freeboard Normal _____ Minimum _____ Date _____ **Substructure Type** Abut. _____ Pier _____			1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	
Time	Weather	Insp. Initials	Alignment (Y, N)	Tilt (Y, N)	Vibration (Y, N)	Approx. Freeboard (Nearest 1/2 ft)	Snagging Debris (Y, N)	Bridge Noise (Y, N)	Superstructure Distress (Y, N)	Length (Chg. Nearest 1/2 inch)	Erosion (Y, N)	Settlement (Y, N)	Cracking (Y, N)	Debris (N, L, M, H)	Impacting Debris (Y, N)	Flow Characteristic Changes (Y, N)	Stream Noise (Y, N)	Remarks (See Below)

REMARKS

Structural Evaluation Manager - (609) 530-3572 **Regional Engineer Central - (732) 409-3263**

FLOOD MONITORING PROGRAM

ROUTE _____ DATE _____

BRIDGE NO. _____

GENERAL			CRITICAL							NON-CRITICAL								
Freeboard Normal _____ Minimum _____ Date _____ **Substructure Type** Abut. _____ Pier _____			1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	
Time	Weather	Insp. Initials	Alignment (Y, N)	Tilt (Y, N)	Vibration (Y, N)	Approx. Freeboard (Nearest 1/2 ft)	Snagging Debris (Y, N)	Bridge Noise (Y, N)	Superstructure Distress (Y, N)	Length (Chg. Nearest 1/2 inch)	Erosion (Y, N)	Settlement (Y, N)	Cracking (Y, N)	Debris (N, L, M, H)	Impacting Debris (Y, N)	Flow Characteristic Changes (Y, N)	Stream Noise (Y, N)	Remarks (See Below)

REMARKS

Structural Evaluation Manager - (609) 530-3572 **Regional Engineer South - (856) 486-6600**

Data Sheet – Bridge No. 1013152

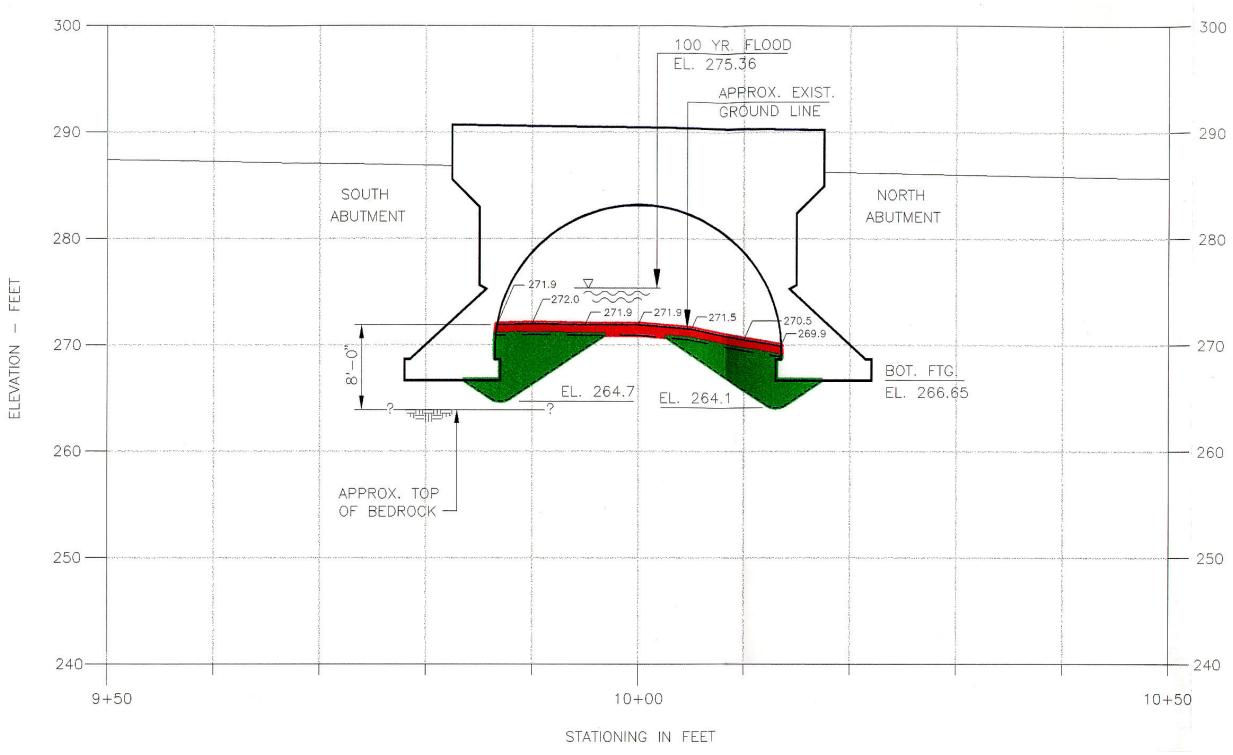
Route: 31
Community: Lebanon Township
Milepoint: 35.06
County: Hunterdon

Waterway Name: Wiloughby Brook
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete filled spandrel arch
Substructure Type: Reinforced concrete arch
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1015157

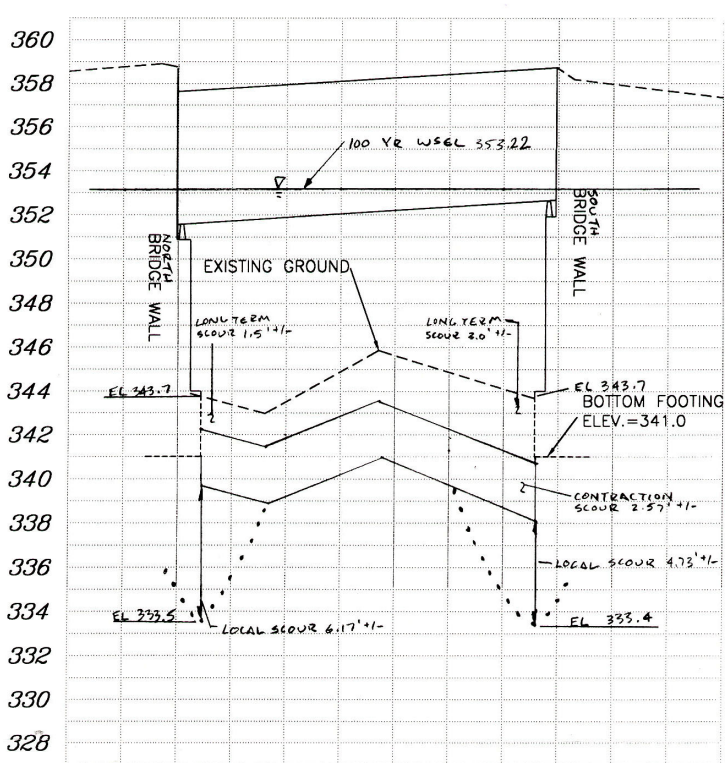
Route: 78 EB
Milepoint: 12.32
Community: Union Township
County: Hunterdon

Waterway Name: Mulhockaway Creek
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, prestressed concrete multi-stringer
Substructure Type: Reinforced concrete semistub, vertical wall
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



UPSTREAM BRIDGE FACE

CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1016156

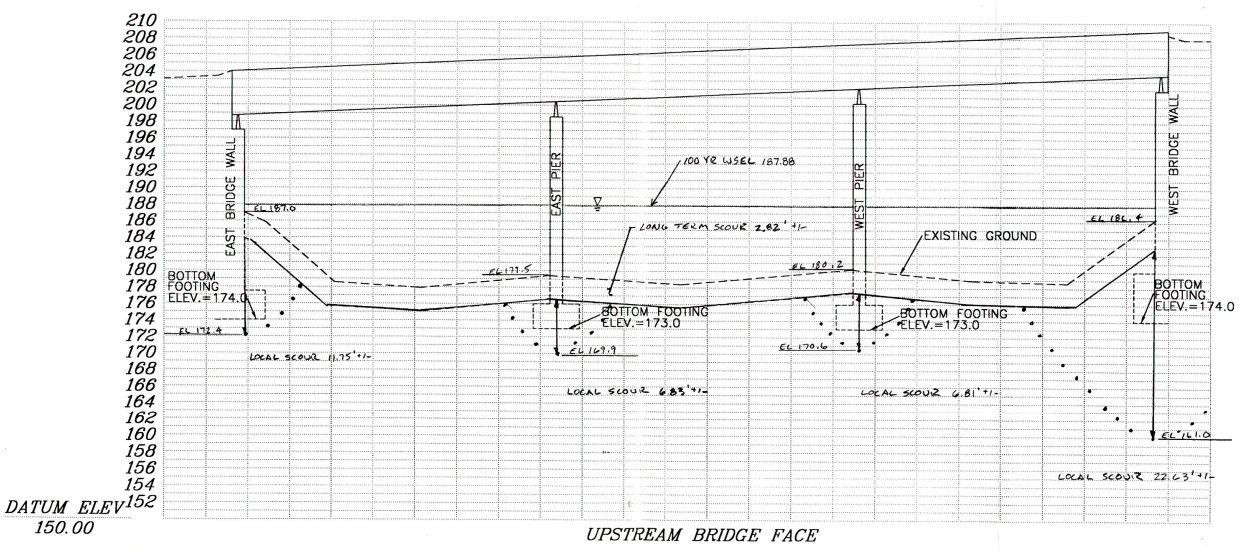
Route: 78 EB
Milepoint: 16.53
Community: Clinton Township
County: Hunterdon

Waterway Name: South Branch of Raritan River
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported prestressed concrete multi-stringer
Substructure Type: Full height reinforced concrete cantilever walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: Reinforced concrete spread footings

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1016157

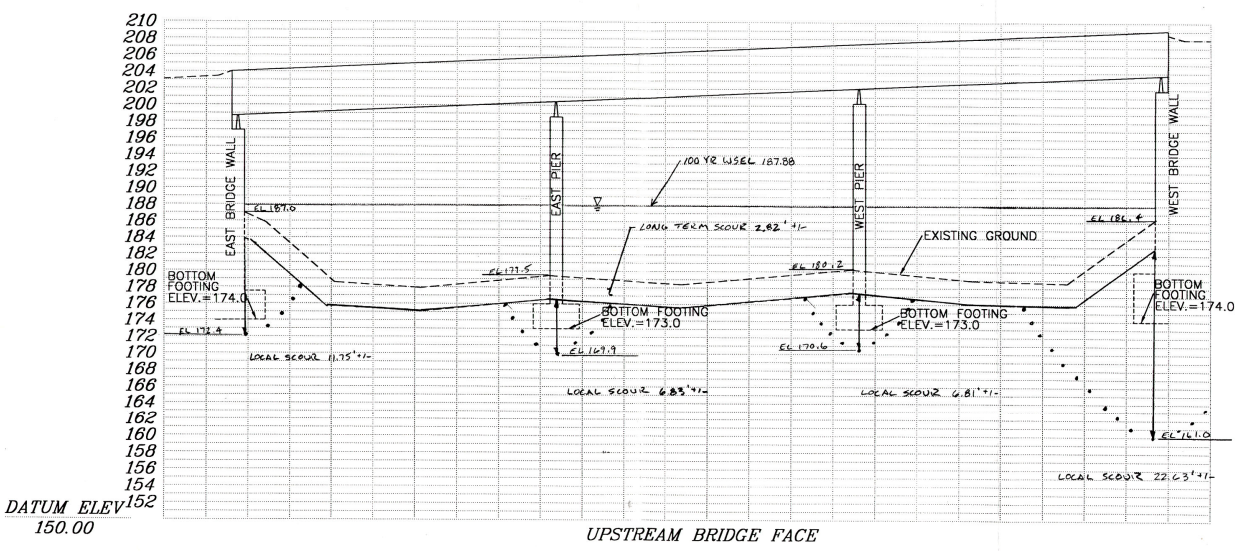
Route: 78 WB
Milepoint: 16.53
Community: Clinton Township
County: Hunterdon

Waterway Name: South Branch of Raritan River
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported prestressed concrete multi-stringer
Substructure Type: Full height reinforced concrete cantilever walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: Reinforced concrete spread footings

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of significant debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1005153

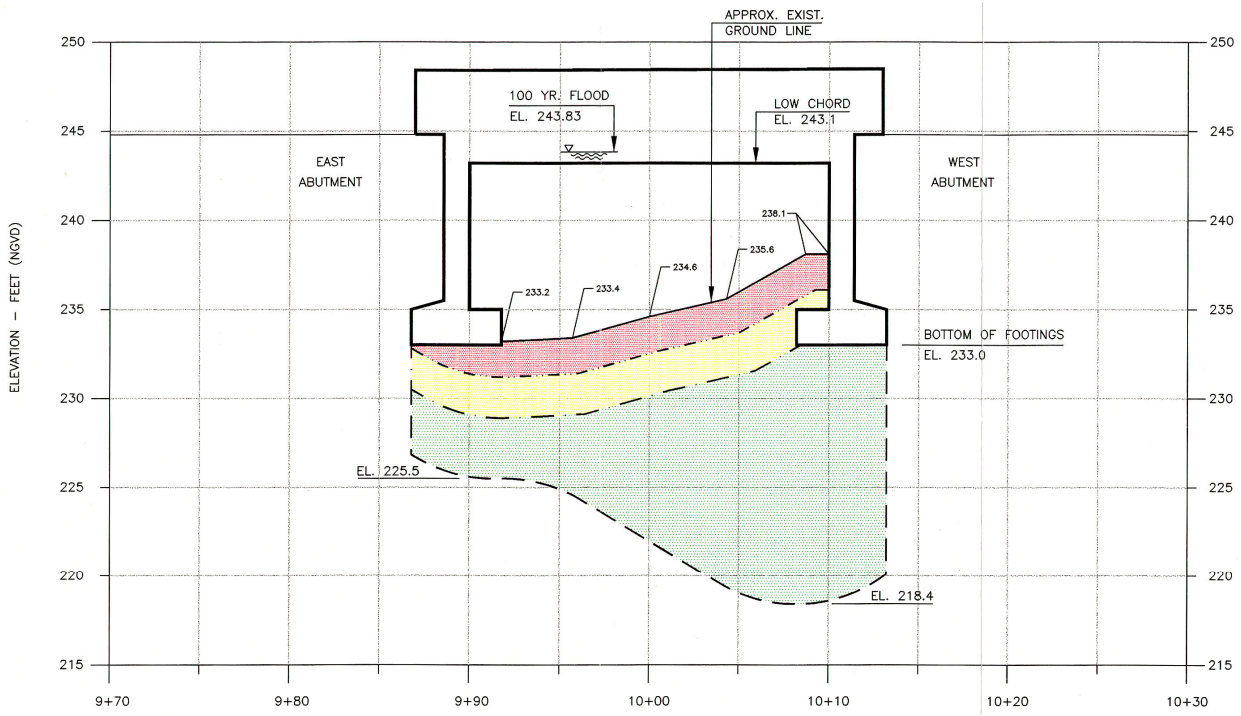
Route: 22
Milepoint: 19.78
Community: Clinton Township
County: Hunterdon

Waterway Name: Branch of Rockaway Creek
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete rigid frame w/o fill
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of undermined footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1005162

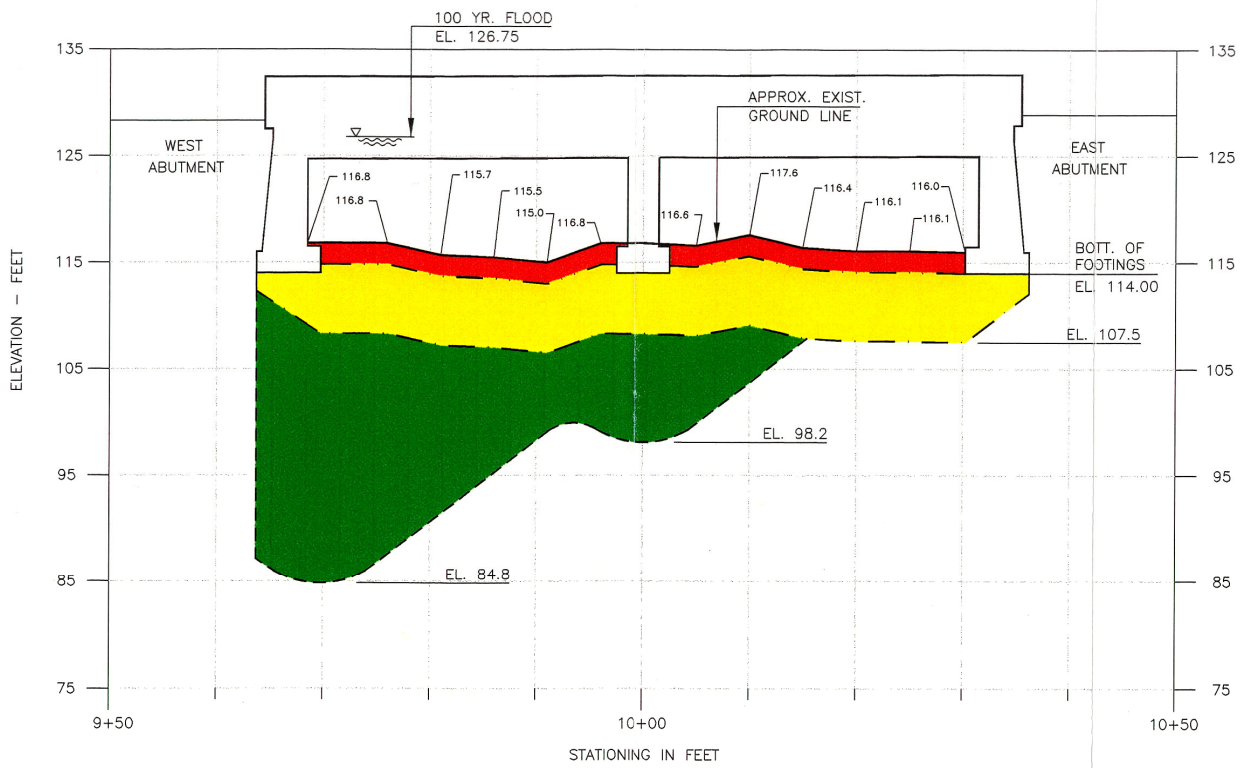
Route: 22 EB
Milepoint: 25.67
Community: Readington Township
County: Hunterdon

Waterway Name: South Branch of Rockaway Creek
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported concrete encased steel stringer
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1005163

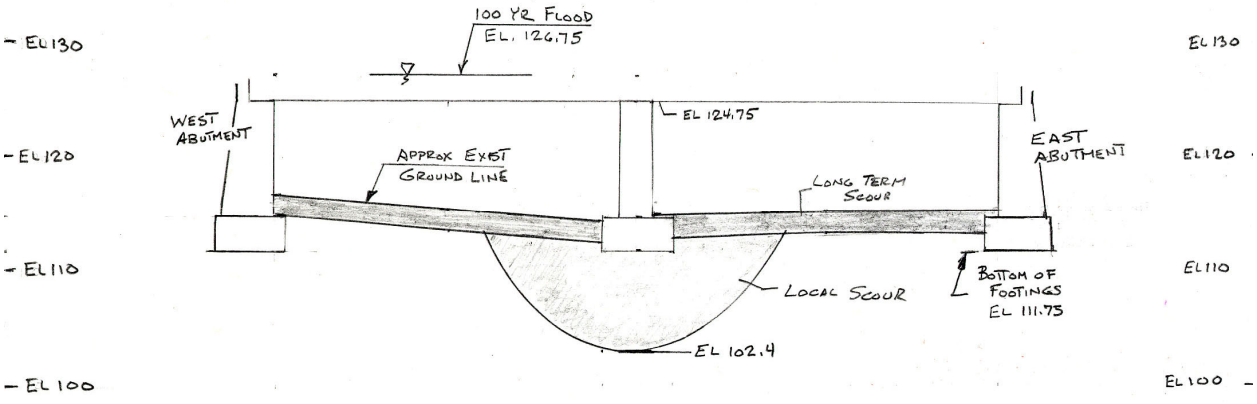
Route: 22 WB
Community: Readington Township
Milepoint: 25.67
County: Hunterdon

Waterway Name: South Branch of Rockaway Creek
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, prestressed concrete voided slab
Substructure Type: Concrete vertical wall
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: Concrete spread footings

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1105152

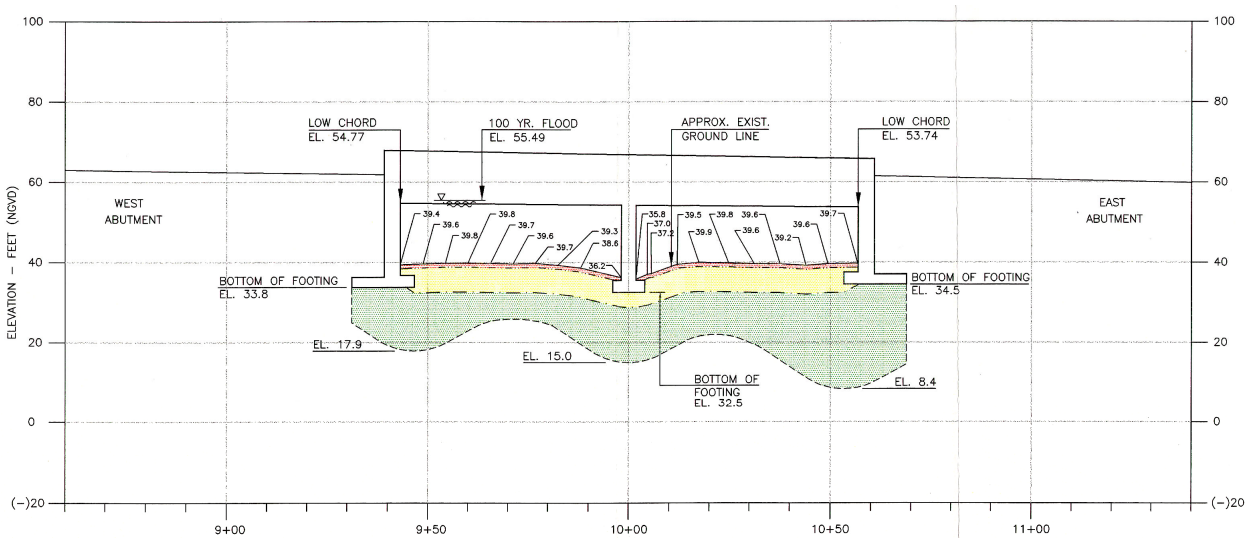
Route: 27 **Milepoint:** 3.02
Community: Princeton Twp, South Brunswick Twp **County:** Mercer, Middlesex

Waterway Name: Millstone River
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Composite welded steel stringer
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1123152

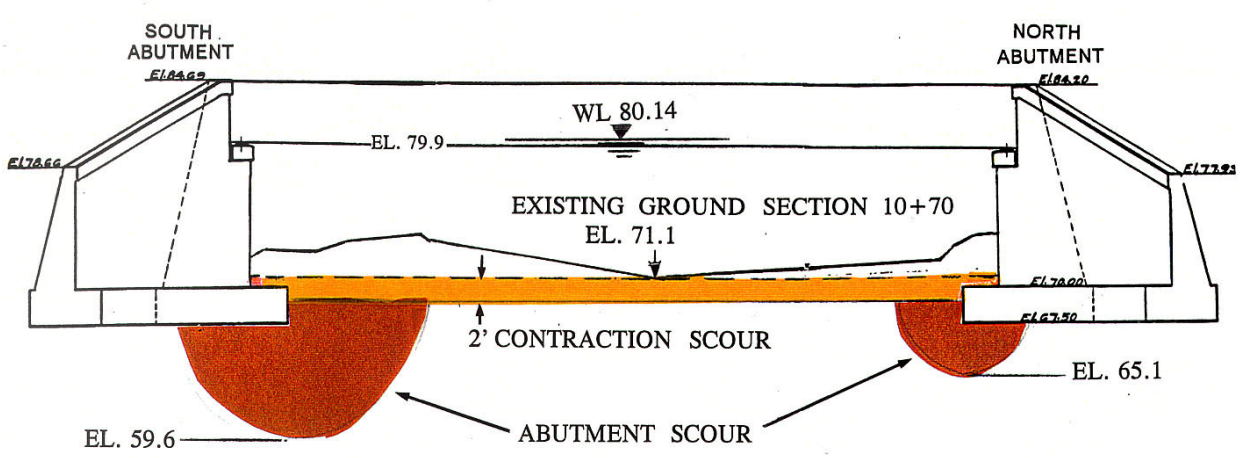
Route: 130
Community: East Windsor Township
Milepoint: 68.92
County: Mercer

Waterway Name: Rocky Brook
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Concrete encased steel stringers
Substructure Type: Reinforced concrete vertical abutments w/ wing walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1123153

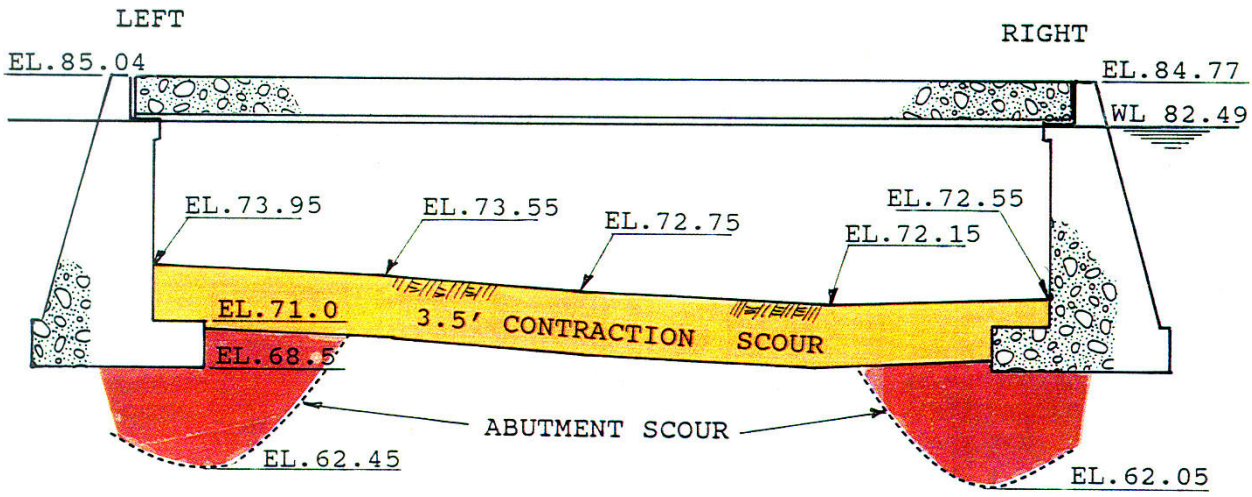
Route: 130 **Milepoint:** 70.04
Community: East Windsor Twp, N. Brunswick Twp **County:** Mercer, Middlesex

Waterway Name: Millstone River
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased steel stringer
Substructure Type: Reinforced concrete vertical abutments w/ wing walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C5

Data Sheet – Bridge No. 1304151

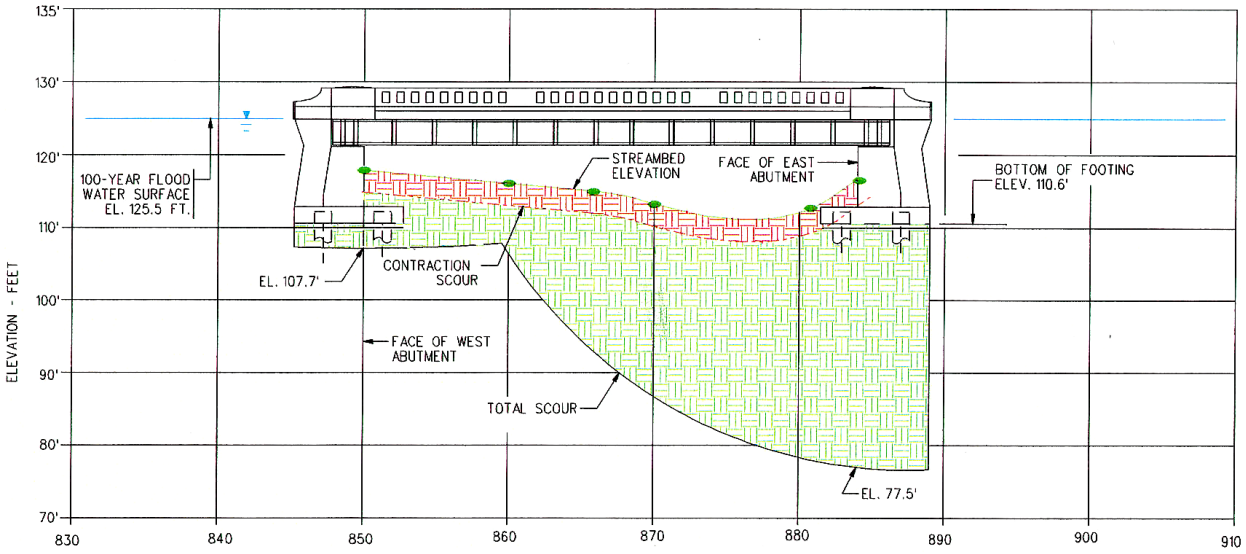
Route: 33 (Old Road)
Milepoint: 19.80
Community: Millstone Township
County: Monmouth

Waterway Name: Millstone River
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Riveted deck girder floorbeam structure
Substructure Type: Vertical wall abutments
Abutment Foundation Type: Plans indicate spread footing; timber piles (abut. Extensions)
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1102150

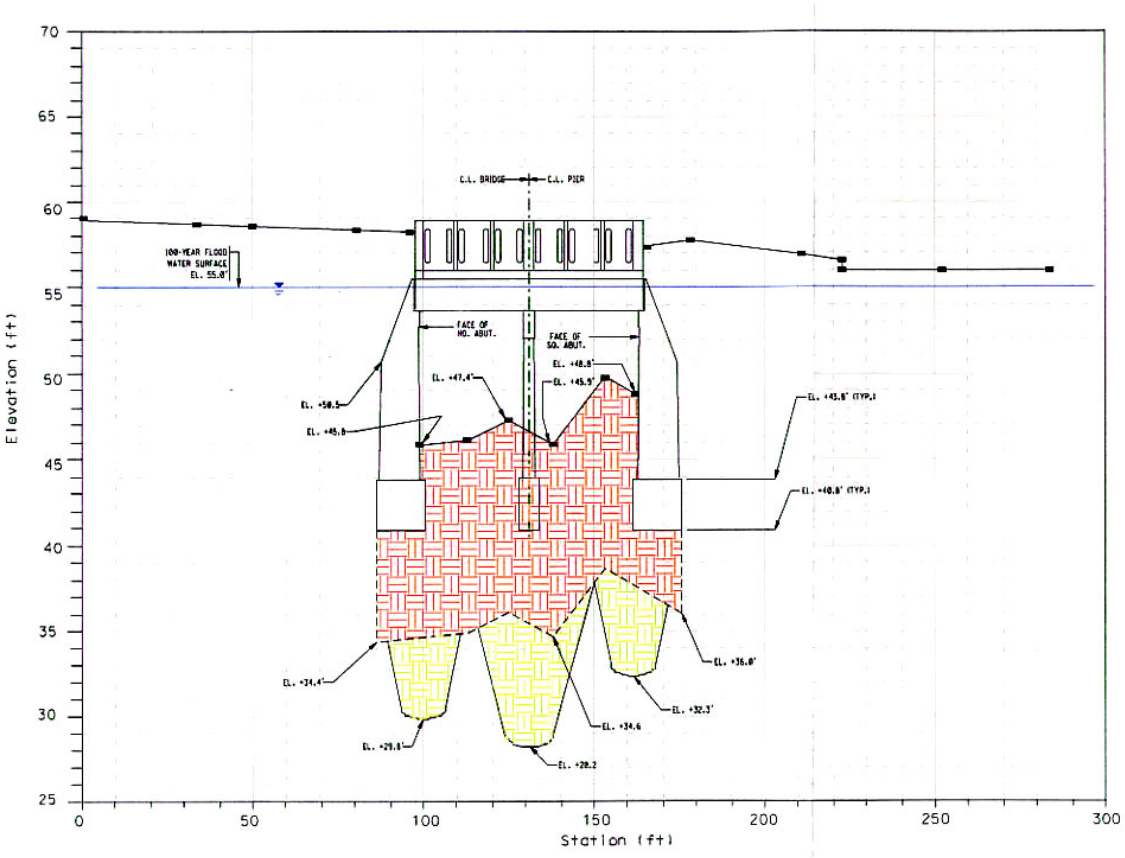
Route: 1B
Milepoint: 1.51
Community: Lawrence Township
County: Mercer

Waterway Name: Shabakunk Creek
Drainage Basin: Assunpink Creek
Watershed Management Area: Central Delaware (11)
Watershed Management Region: Northwest

Superstructure Type: Encased steel stringers
Substructure Type: Vertical wall abutments, solid wall pier
Abutment Foundation Type: Spread footing on soil
Pier Foundation Type: Spread footing on soil

History of Scour Problems: Undermining and settlement of center pier at upstream end of bridge
History of Debris: Woody debris at upstream nose of pier
Streambed Material: Fine to coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1122150

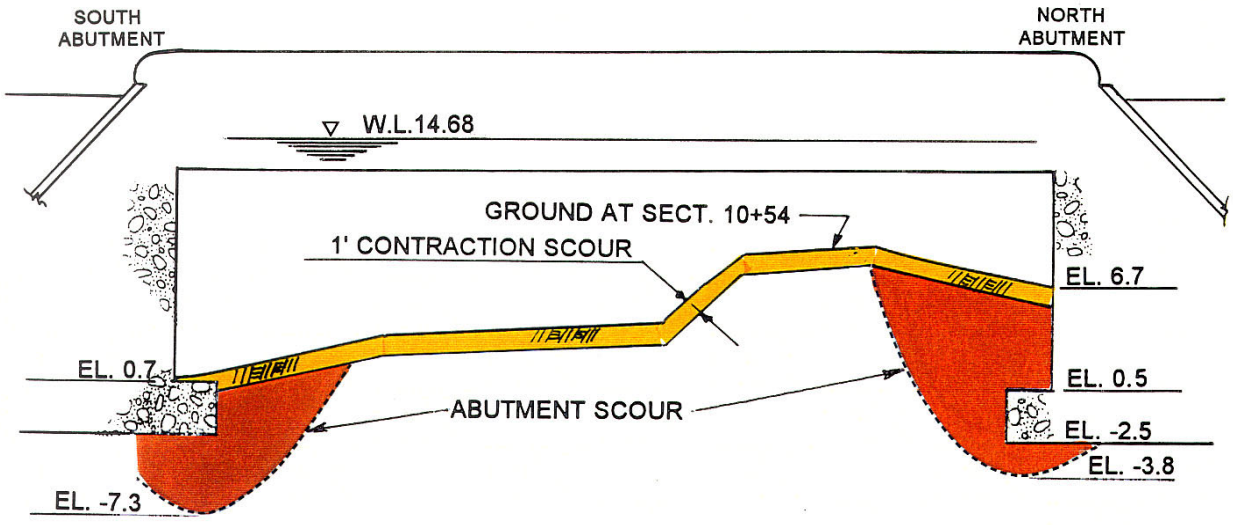
Route: 130
Milepoint: 58.52
Community: Hamilton Township
County: Mercer

Waterway Name: Doctors Creek
Drainage Basin: Crosswicks Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Non-composite rolled steel stringers
Substructure Type: Reinforced concrete vertical abutments w/ wing walls
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1227159

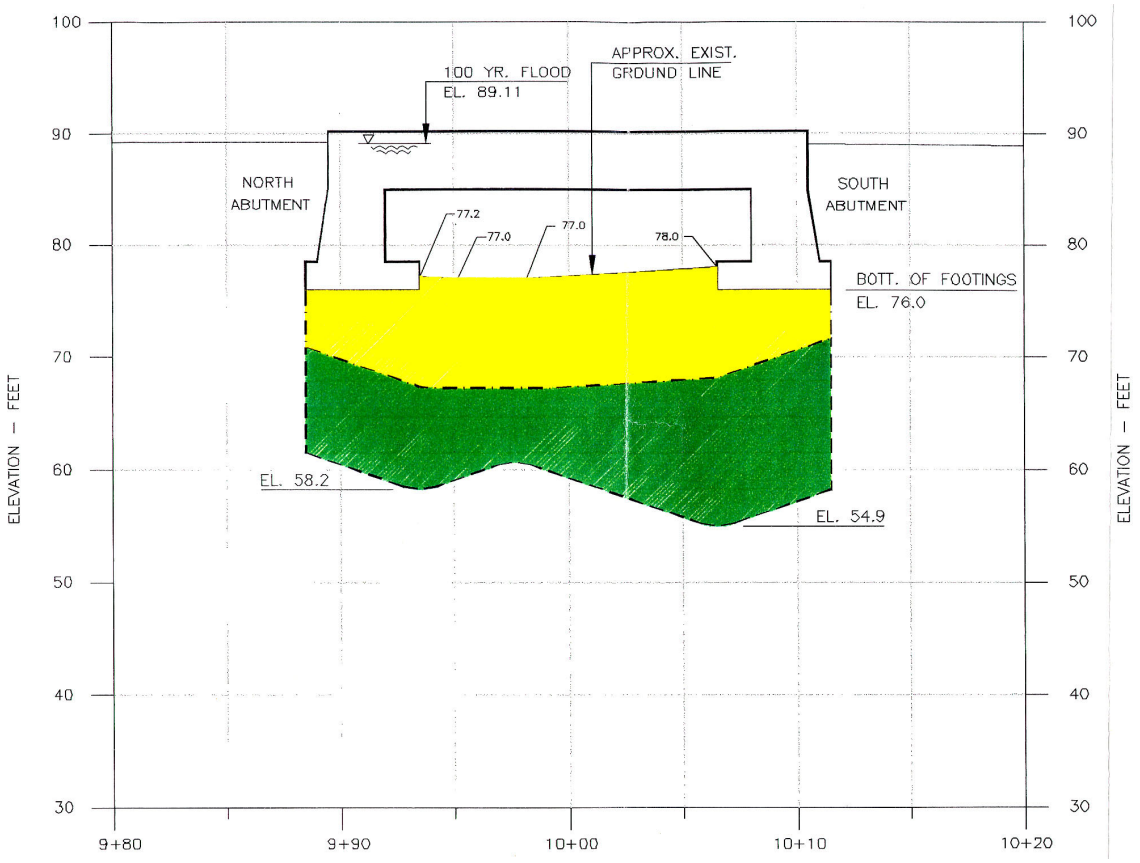
Route: 130 **Milepoint:** 79.15
Community: S. Brunswick Twp, N. Brunswick Twp **County:** Middlesex

Waterway Name: Oakeys Brook
Drainage Basin: Lawrence Brook
Watershed Management Area: Lower Raritan, South River, Lawrence (9)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, reinforced concrete slab
Substructure Type: Reinforced concrete vertical walls
Abutment Foundation Type: Plain concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1303155

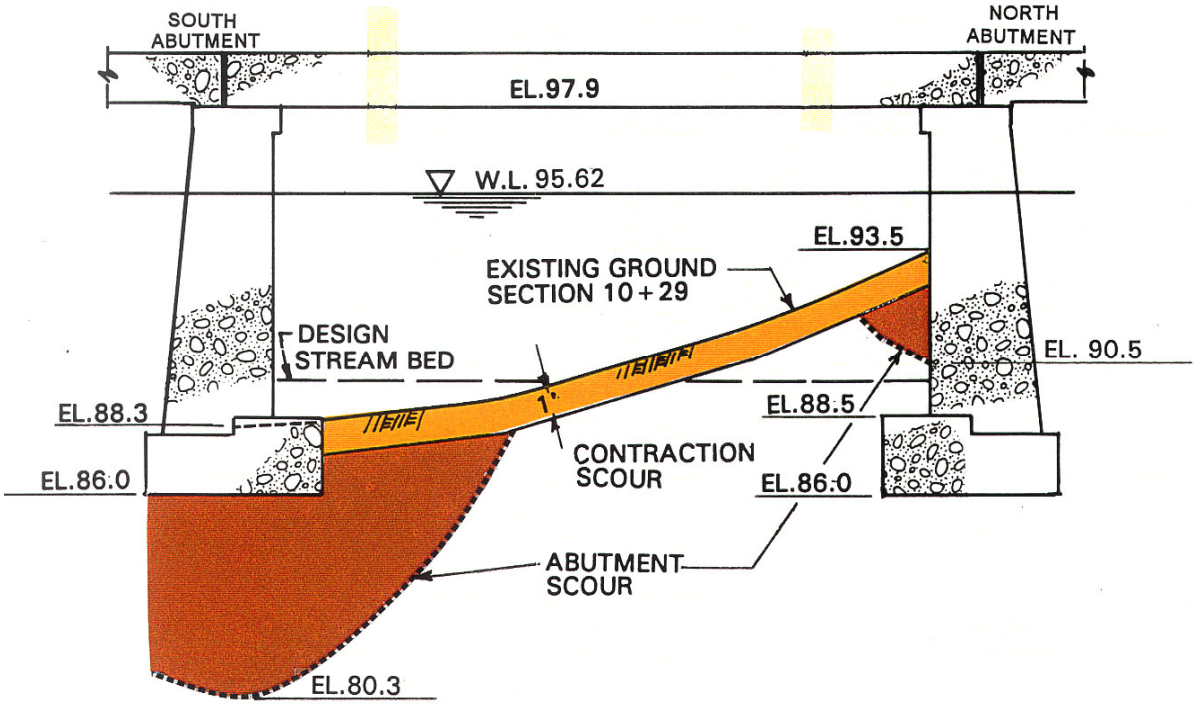
Route: 9
Milepoint: 117.70
Community: Manalapan Township
County: Monmouth

Waterway Name: Milford Brook
Drainage Basin: South River
Watershed Management Area: Lower Raritan, South River, Lawrence (9)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete slab
Substructure Type: Reinforced concrete vertical abutments w/ wingwalls
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1304156

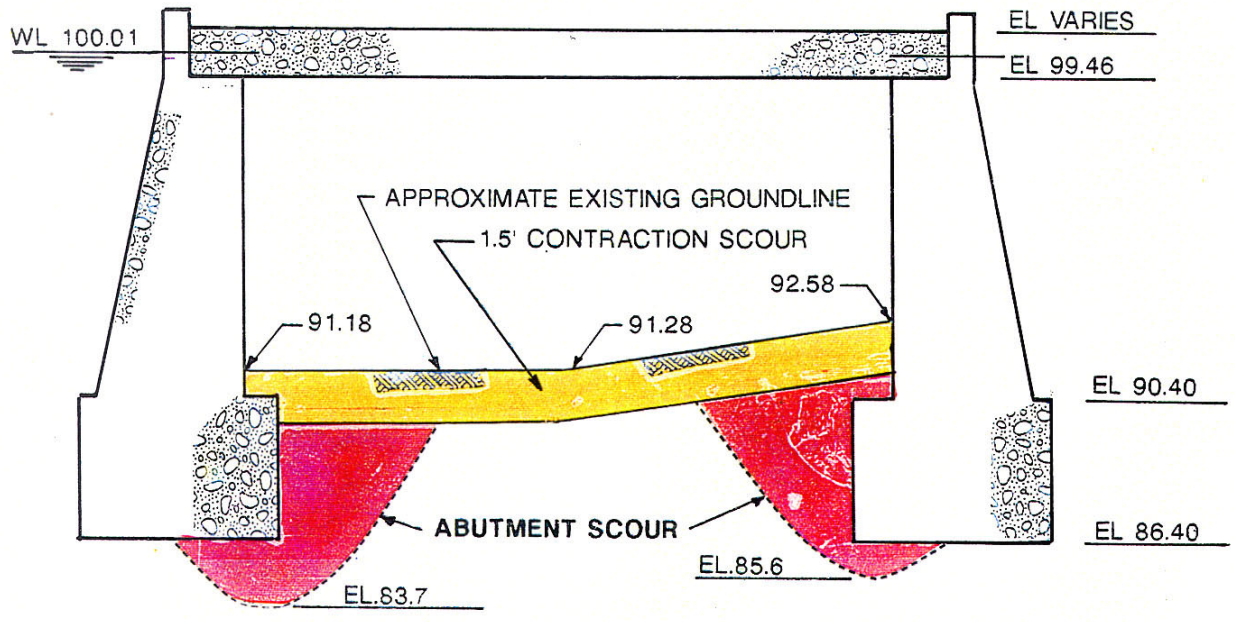
Route: 33
Milepoint: 25.39
Community: Manalapan Township
County: Monmouth

Waterway Name: Manalapan Brook
Drainage Basin: South River
Watershed Management Area: Lower Raritan, South River, Lawrence (9)
Watershed Management Region: Raritan

Superstructure Type: Concrete encased steel beams (old structure) and prestressed box beams (new)
Substructure Type: Reinforced concrete vertical abutments w/ wing walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C9

Data Sheet – Bridge No. 1222150

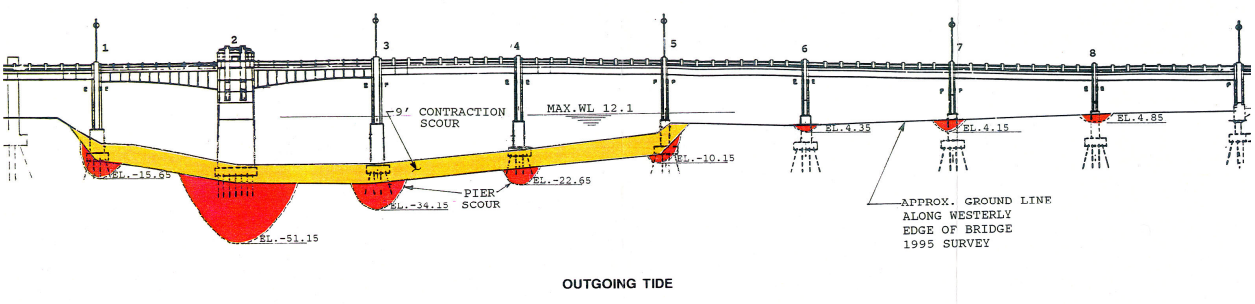
Route: 35
Milepoint: 47.26
Community: Old Bridge Twp, Sayerville Boro
County: Middlesex

Waterway Name: Cheesequake Creek
Drainage Basin: Matawan Creek
Watershed Management Area: Monmouth (12)
Watershed Management Region: Atlantic

Superstructure Type: Single leaf bascule w/ one deck girder anchor span & seven approach spans
Substructure Type: Reinforced concrete vertical abutments on piles, perpendicular wing walls
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of undermined footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1315157

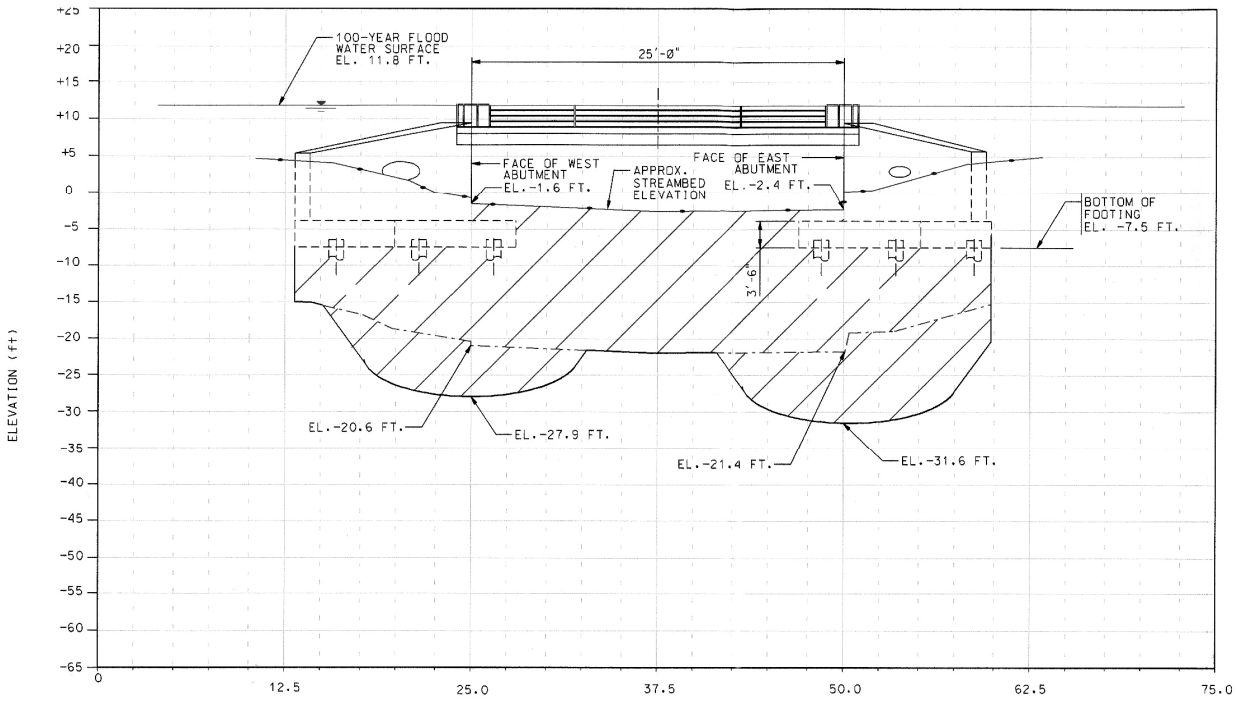
Route: 36
Milepoint: 22.61
Community: Hazlet Twp, Union Beach Boro
County: Monmouth

Waterway Name: Flat Creek
Drainage Basin: Matawan Creek
Watershed Management Area: Monmouth (12)
Watershed Management Region: Atlantic

Superstructure Type: Reinforced concrete slab
Substructure Type: Reinforced concrete vertical wall abutments
Abutment Foundation Type: Timber piles of unknown length
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1308154

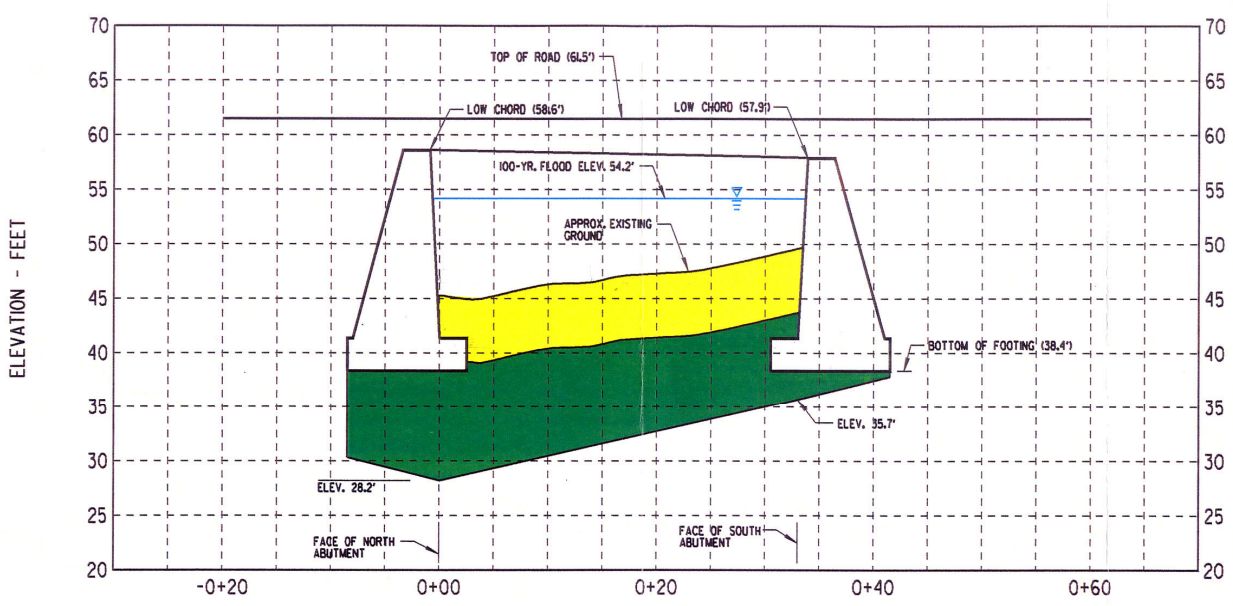
Route: 34
Milepoint: 15.98
Community: Colts Neck Township
County: Monmouth

Waterway Name: Big Brook
Drainage Basin: Navesink River
Watershed Management Area: Monmouth (12)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported, concrete encased steel I-beam
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1321150

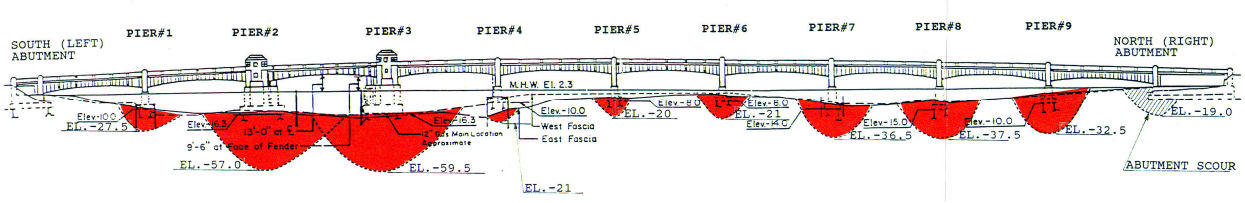
Route: 71 **Milepoint:** 5.89
Community: Belmar Boro, Avon By The Sea Boro **County:** Monmouth

Waterway Name: Shark River
Drainage Basin: Shark River
Watershed Management Area: Monmouth (12)
Watershed Management Region: Atlantic

Superstructure Type: Floorbeam girder type, one double-leaf bascule span
Substructure Type: Reinforced concrete vertical abutments, 7 concrete piers, 2 trunnion piers
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1320152

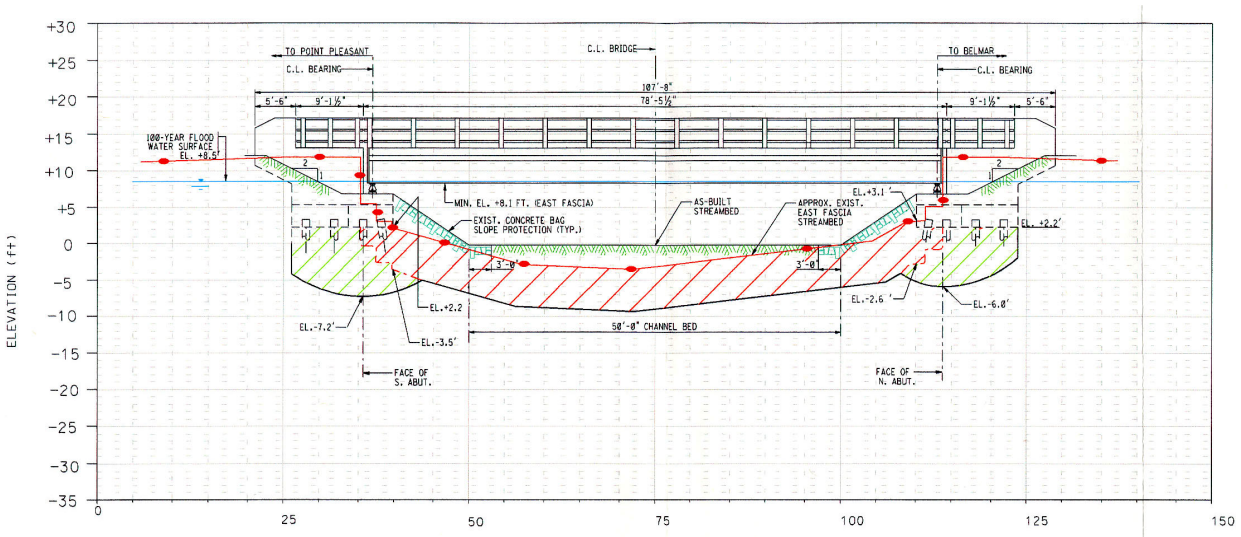
Route: 71
Milepoint: 2.43
Community: Wall Township, Sea Girt Boro
County: Monmouth

Waterway Name: Wreck Pond Brook
Drainage Basin: Wreck Pond Brook
Watershed Management Area: Monmouth (12)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported, composite, rolled steel stringer
Substructure Type: Vertical wall reinforced concrete abutments
Abutment Foundation Type: Timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1516151

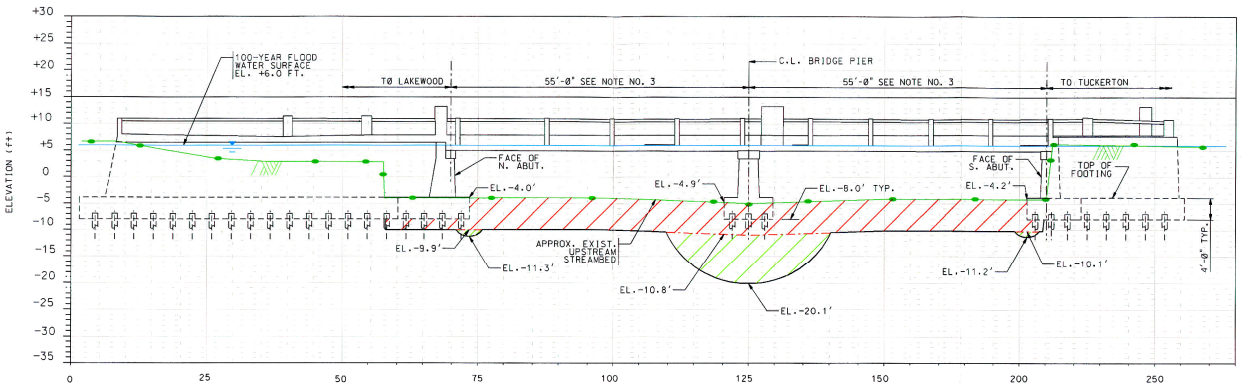
Route: 166
Community: South Toms River Boro
Milepoint: 1.05
County: Ocean

Waterway Name: South Channel of Toms River
Drainage Basin: Toms River
Watershed Management Area: Barnegat Bay (13)
Watershed Management Region: Atlantic

Superstructure Type: Concrete encased steel thru-girder w/ continuous encased, riveted floorbeams
Substructure Type: Vertical wall reinforced concrete abutments & solid wall reinforced concrete pier
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C14

Data Sheet – Bridge No. 1516152

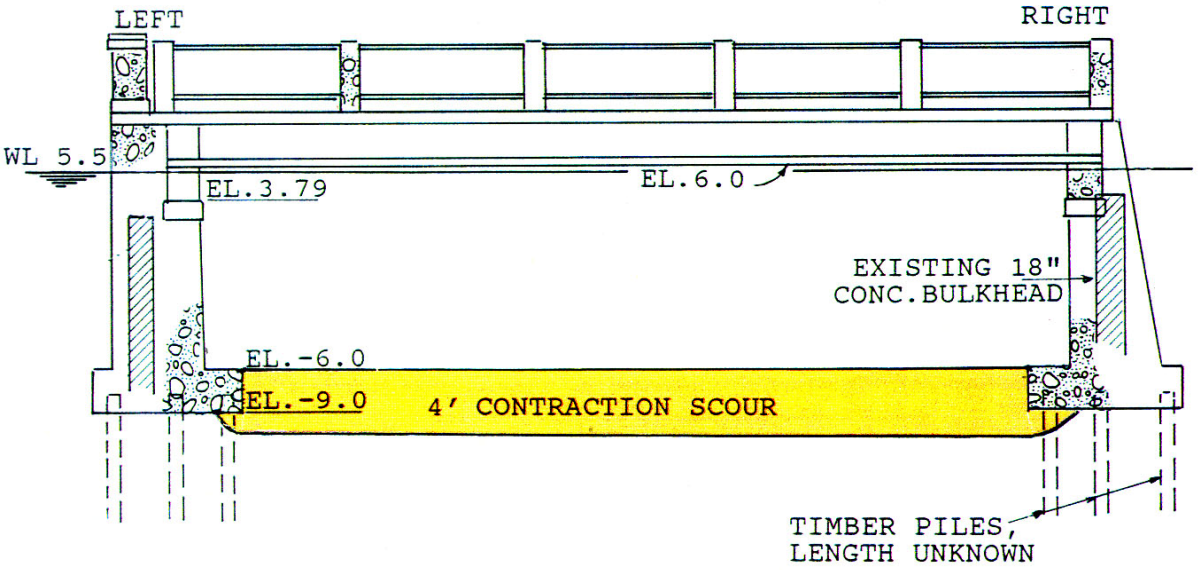
Route: 166
Milepoint: 1.13
Community: South Toms River Boro
County: Ocean

Waterway Name: North Channel of Toms River
Drainage Basin: Toms River
Watershed Management Area: Barnegat Bay (13)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported multi-stringer
Substructure Type: Reinforced concrete vertical abutments
Abutment Foundation Type: Timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1502153

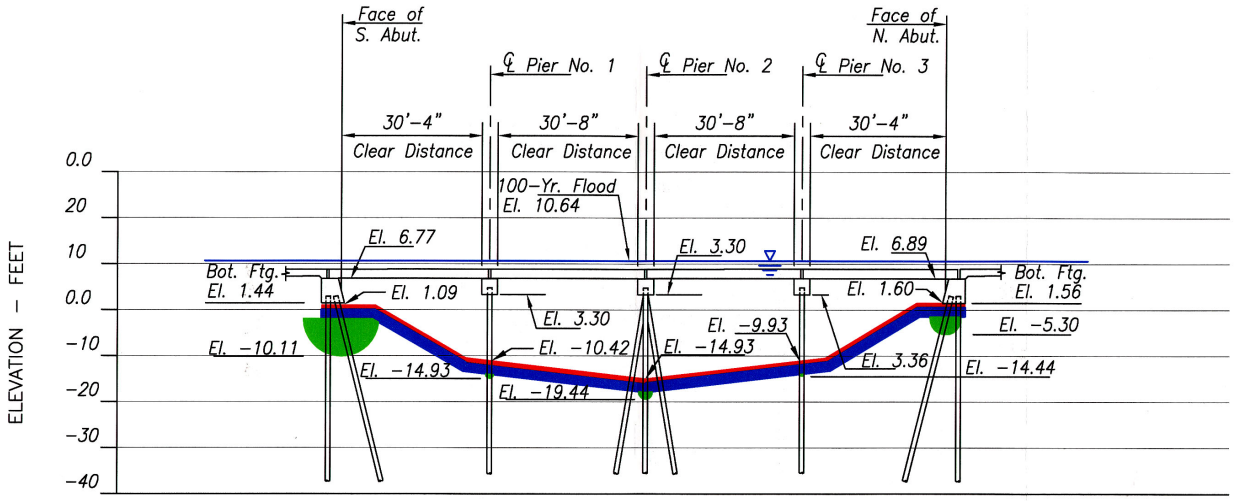
Route: 9
Milepoint: 79.56
Community: Lacey Township, Ocean Township
County: Ocean

Waterway Name: Oyster Creek
Drainage Basin: Forked River
Watershed Management Area: Barnegat Bay (13)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported composite prestressed concrete adjacent box beams
Substructure Type: Reinforced concrete short-stub w/ sloped face, reinforced concrete cap beam (Pier)
Abutment Foundation Type: Treaded timber piles
Pier Foundation Type: Treaded timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1502154

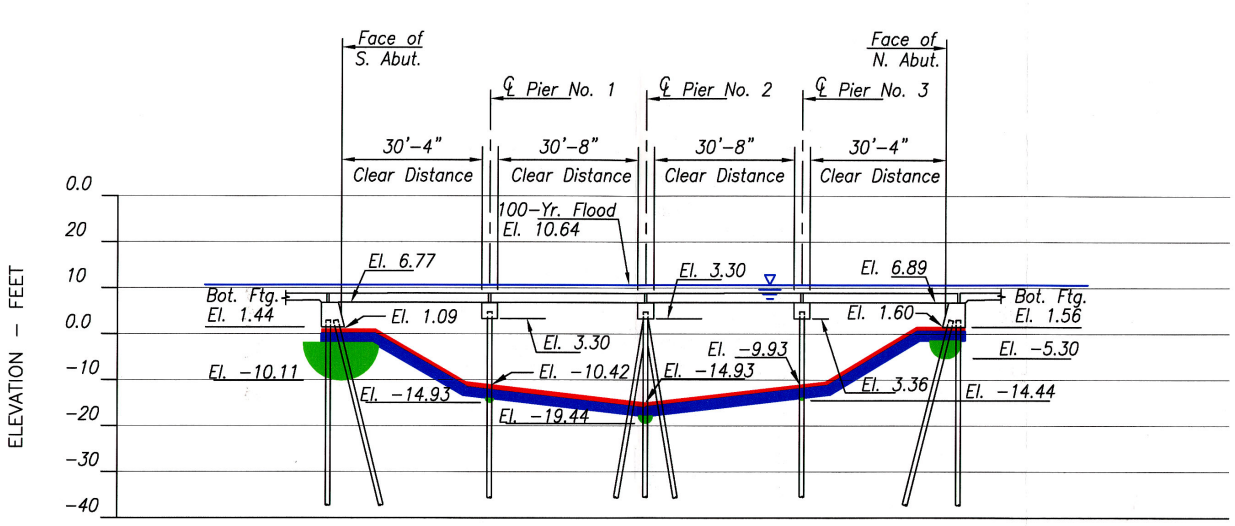
Route: 9
Milepoint: 80.19
Community: Lacey Township
County: Ocean

Waterway Name: South Branch of Forked River
Drainage Basin: Forked River
Watershed Management Area: Barnegat Bay (13)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported composite prestressed concrete adjacent box beams
Substructure Type: Reinforced concrete short-stub w/ sloped face, reinforced concrete cap beam (Pier)
Abutment Foundation Type: Treaded timber piles
Pier Foundation Type: Treaded timber piles

History of Scour Problems: Reports of significant channel degradation
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1502157

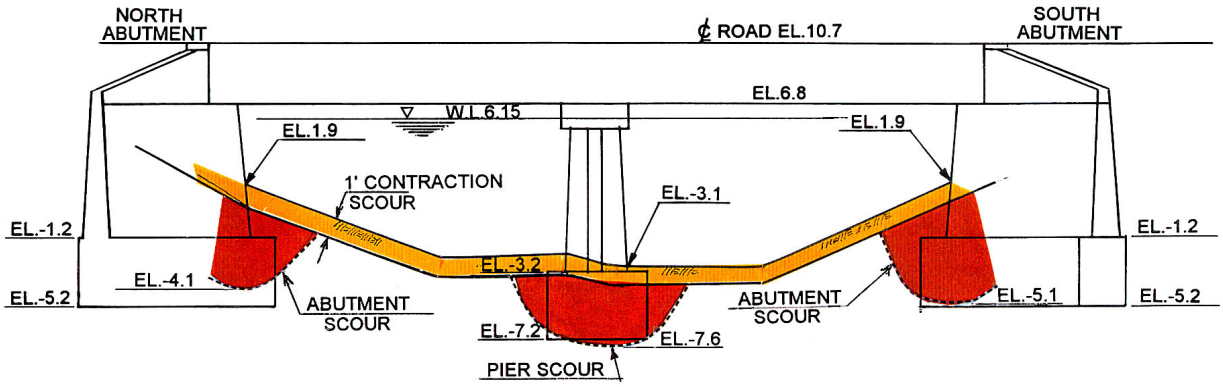
Route: 9
Milepoint: 84.01
Community: Lacey Township, Berkley Township
County: Ocean

Waterway Name: Cedar Creek
Drainage Basin: Cedar Creek
Watershed Management Area: Barnegat Bay (13)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported concrete encased steel stringer
Substructure Type: Concrete vertical abutments w/ wing walls; solid center pier, pointed ends
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: Concrete spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1809158

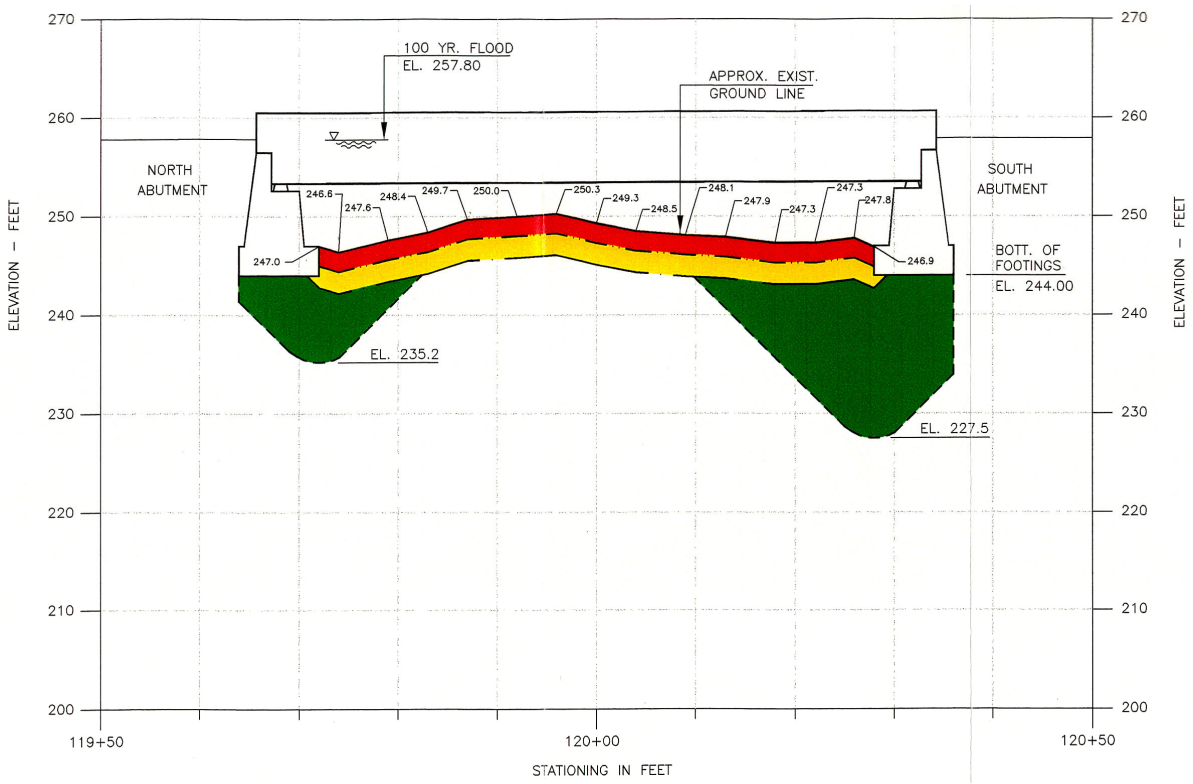
Route: 202
Milepoint: 39.08
Community: Bernards Twp, Harding Twp
County: Somerset, Morris

Waterway Name: Passaic River
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Simply supported concrete encased riveted steel thru-girder and floorbeam
Substructure Type: Reinforced concrete vertical walls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C17

Data Sheet – Bridge No. 1809150

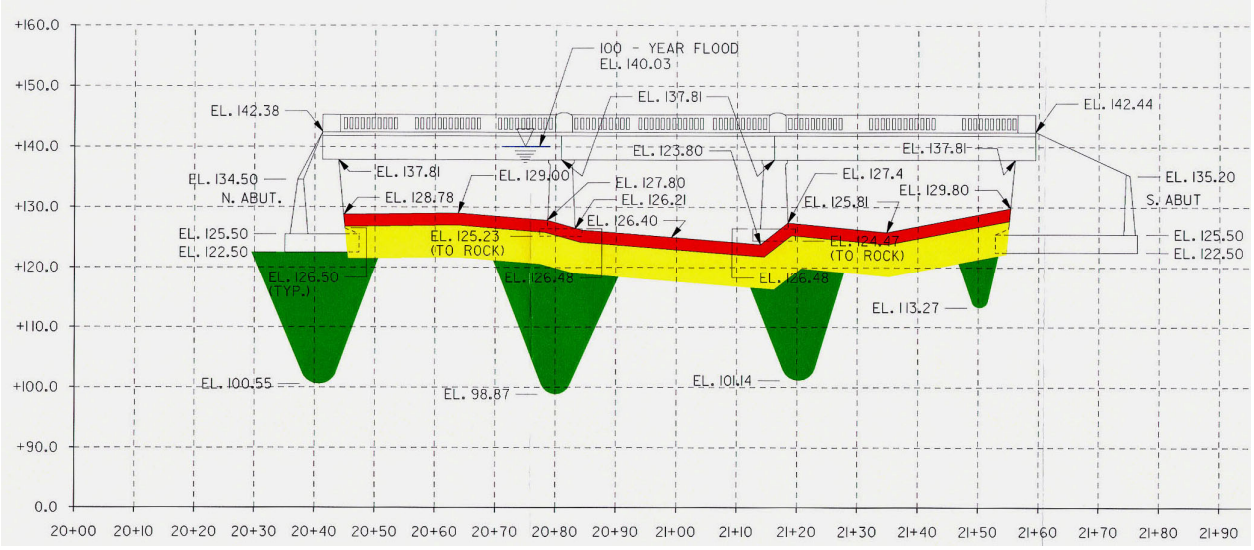
Route: 202
Community: Bedminster Township
Milepoint: 32.54
County: Somerset

Waterway Name: North Branch of Raritan River
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased rolled steel multi-stringers
Substructure Type: Full height plain concrete gravity wall; Plain concrete solid wall
Abutment Foundation Type: Plain concrete spread footings
Pier Foundation Type: Plain concrete spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1809153

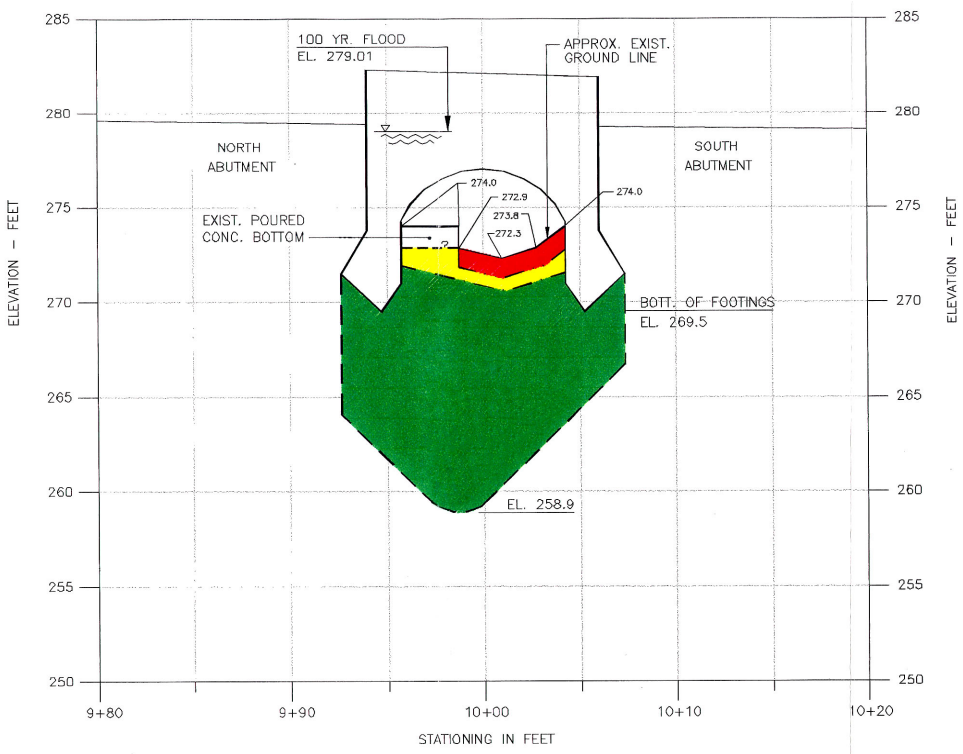
Route: 202
Milepoint: 35.42
Community: Bernardsville Boro
County: Somerset

Waterway Name: Branch of Mine Brook
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Filled concrete and stone arch
Substructure Type: Stone and mortar, arch skewback
Abutment Foundation Type: Stone and mortar
Pier Foundation Type: None

History of Scour Problems: History of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C18

Data Sheet – Bridge No. 1801153

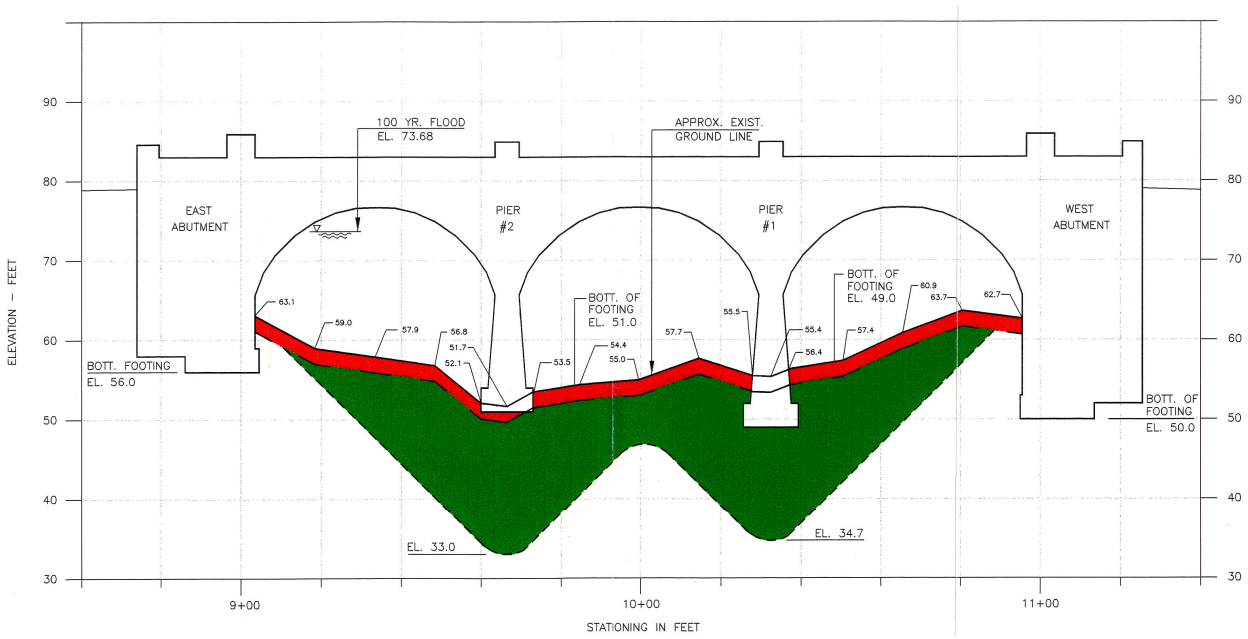
Route: 22 EB
Milepoint: 30.83
Community: Branchburg Twp, Bridgewater Twp
County: Somerset

Waterway Name: North Branch of Raritan River
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete spandrel filled arch
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C18

Data Sheet – Bridge No. 1801154

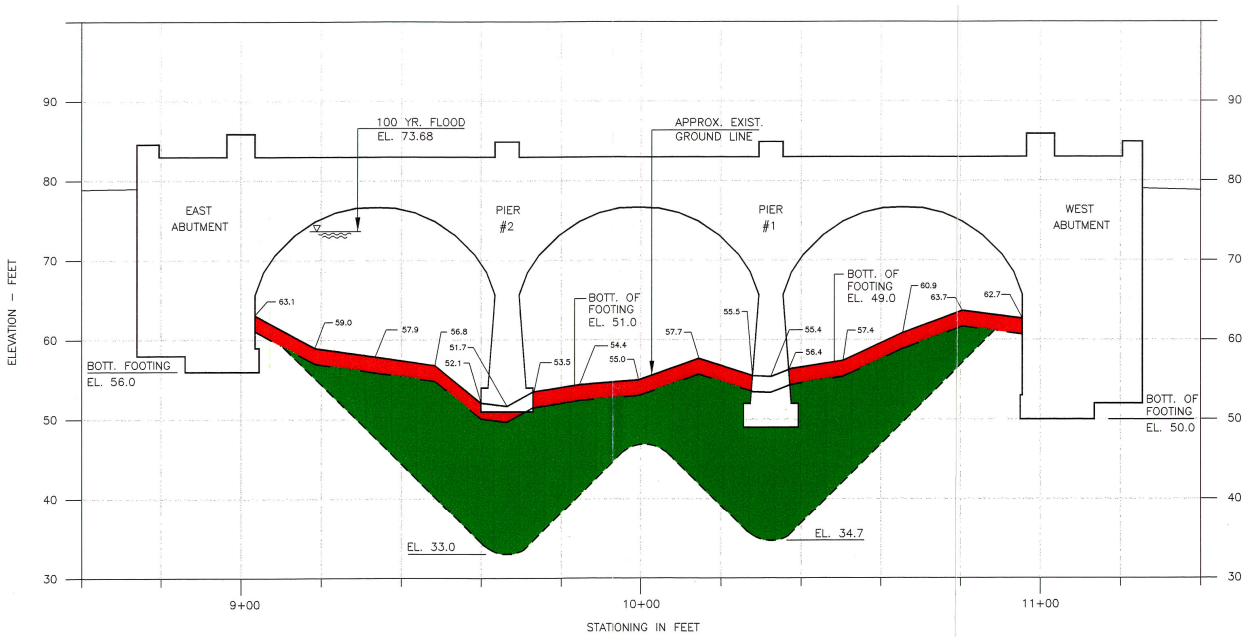
Route: 22 WB
Milepoint: 30.83
Community: Branchburg Twp, Bridgewater Twp
County: Somerset

Waterway Name: North Branch of Raritan River
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete spandrel filled arch
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1807155

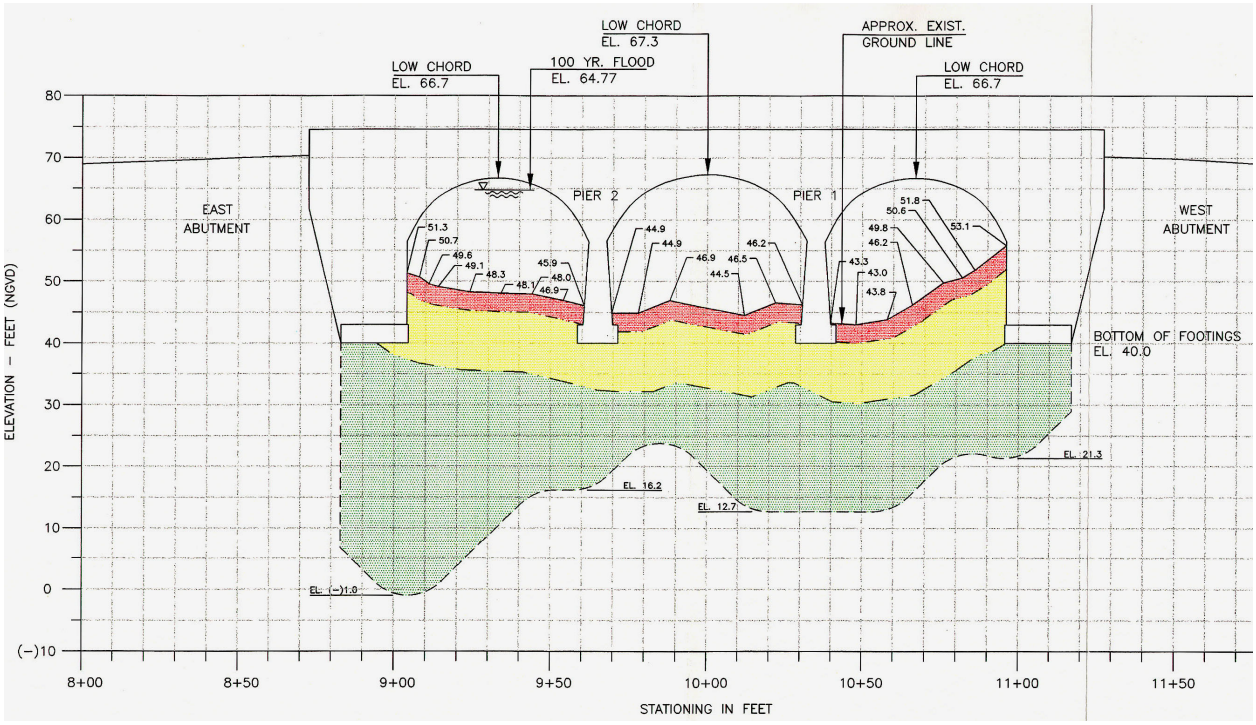
Route: 202
Milepoint: 21.75
Community: Bridgewater Twp, Branchburg Twp
County: Somerset

Waterway Name: North Branch of Raritan River
Drainage Basin: North Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Filled spandrel reinforced concrete arch
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of significant debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1810164

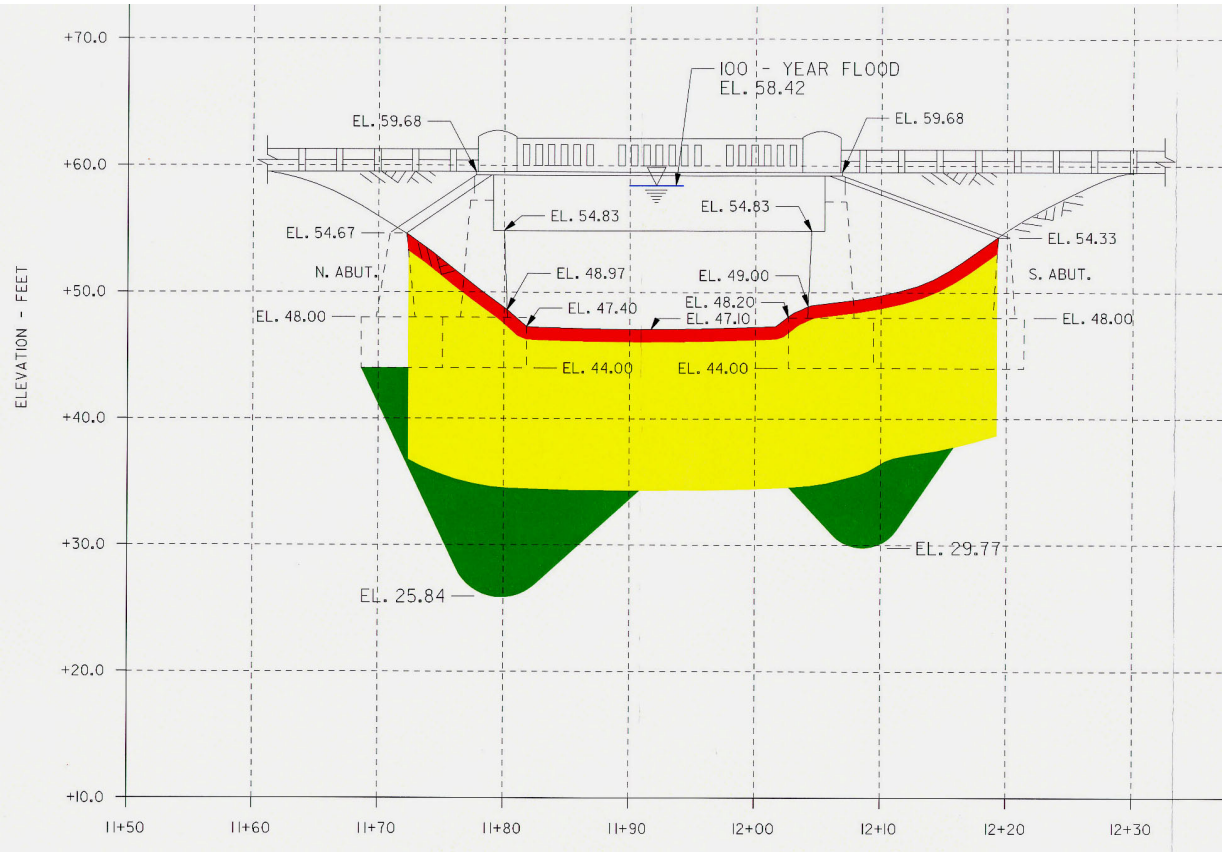
Route: 206
Community: Hillsborough Township
Milepoint: 66.36
County: Somerset

Waterway Name: Branch of Royces Brook
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased, rolled steel multi-stringer
Substructure Type: Vertical gravity wall w/ flared wingwalls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Central Region
Group C20

Data Sheet – Bridge No. 1810165

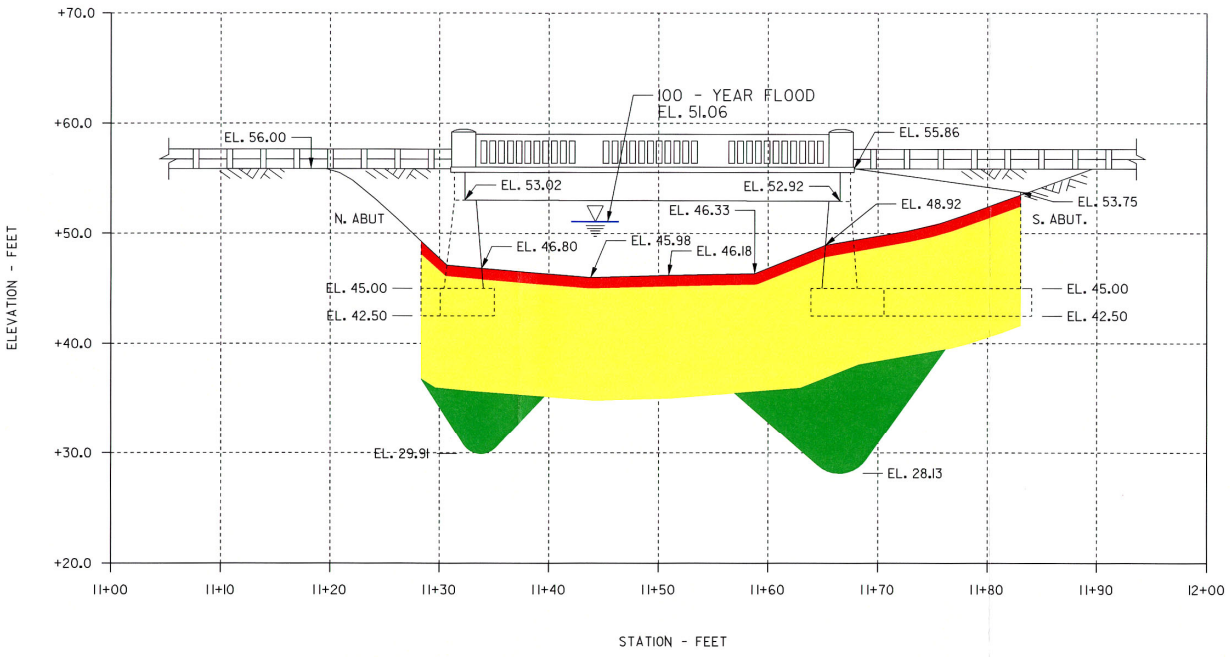
Route: 206
Milepoint: 67.52
Community: Hillsborough Township
County: Somerset

Waterway Name: Branch of Royces Brook
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased, rolled steel multi-stringers
Substructure Type: Vertical gravity wall w/ flared wingwalls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1810153

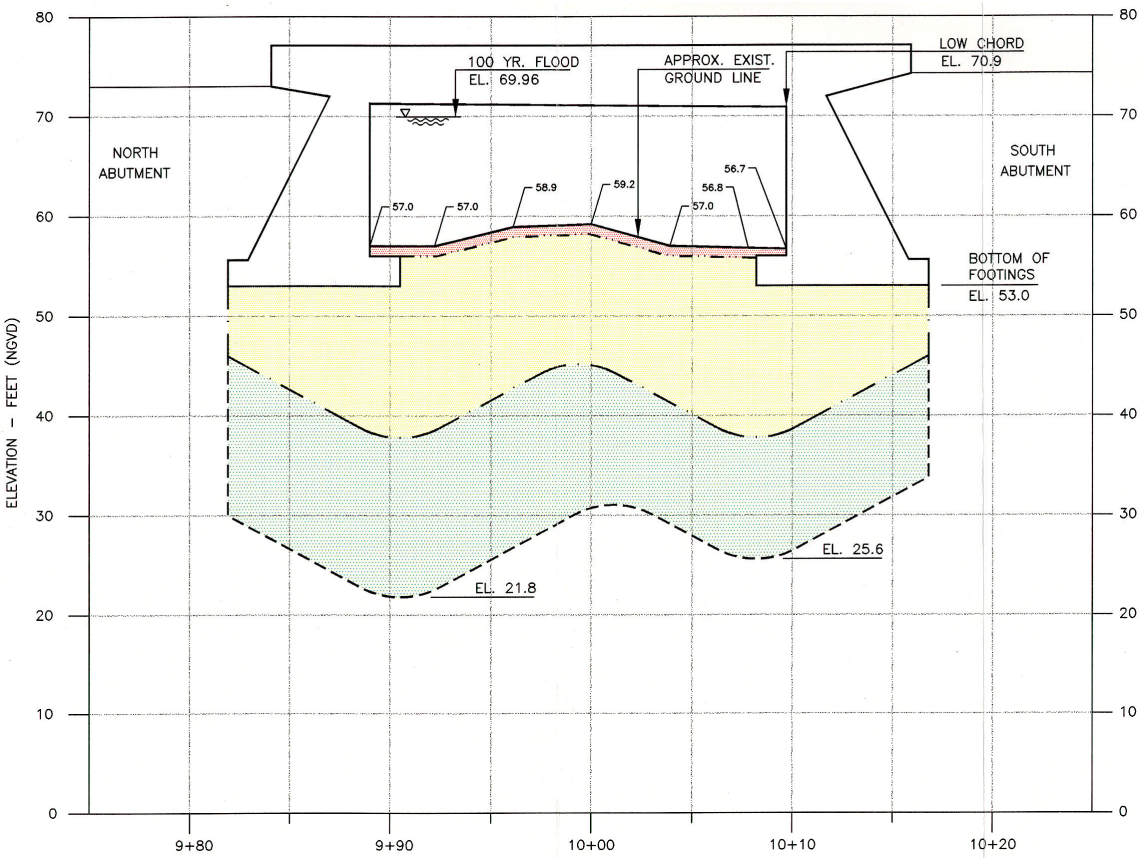
Route: 206
Community: Montgomery Township
Milepoint: 60.27
County: Somerset

Waterway Name: Back Brook
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete slab
Substructure Type: Plain concrete vertical wall
Abutment Foundation Type: Plain concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1810155

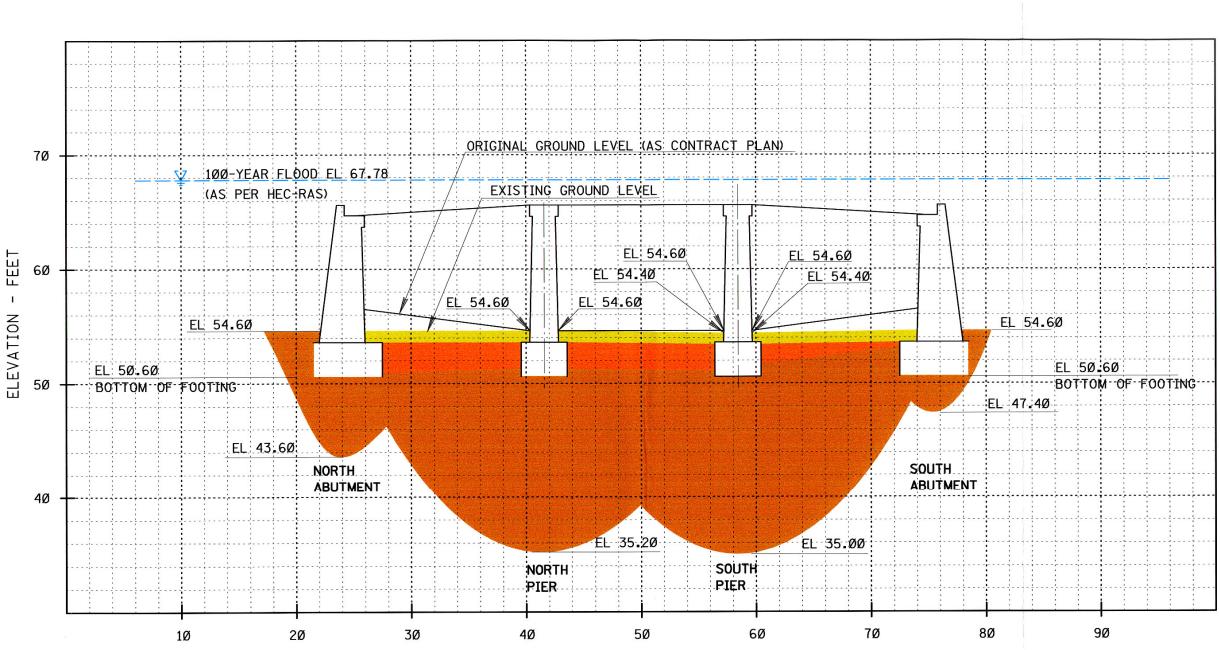
Route: 206
Milepoint: 61.82
Community: Montgomery Township
County: Somerset

Waterway Name: Crusers Brook
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Continuous, reinforced concrete slab
Substructure Type: Concrete gravity type wall abutments; solid wall piers
Abutment Foundation Type: Spread footing
Pier Foundation Type: Spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1810158

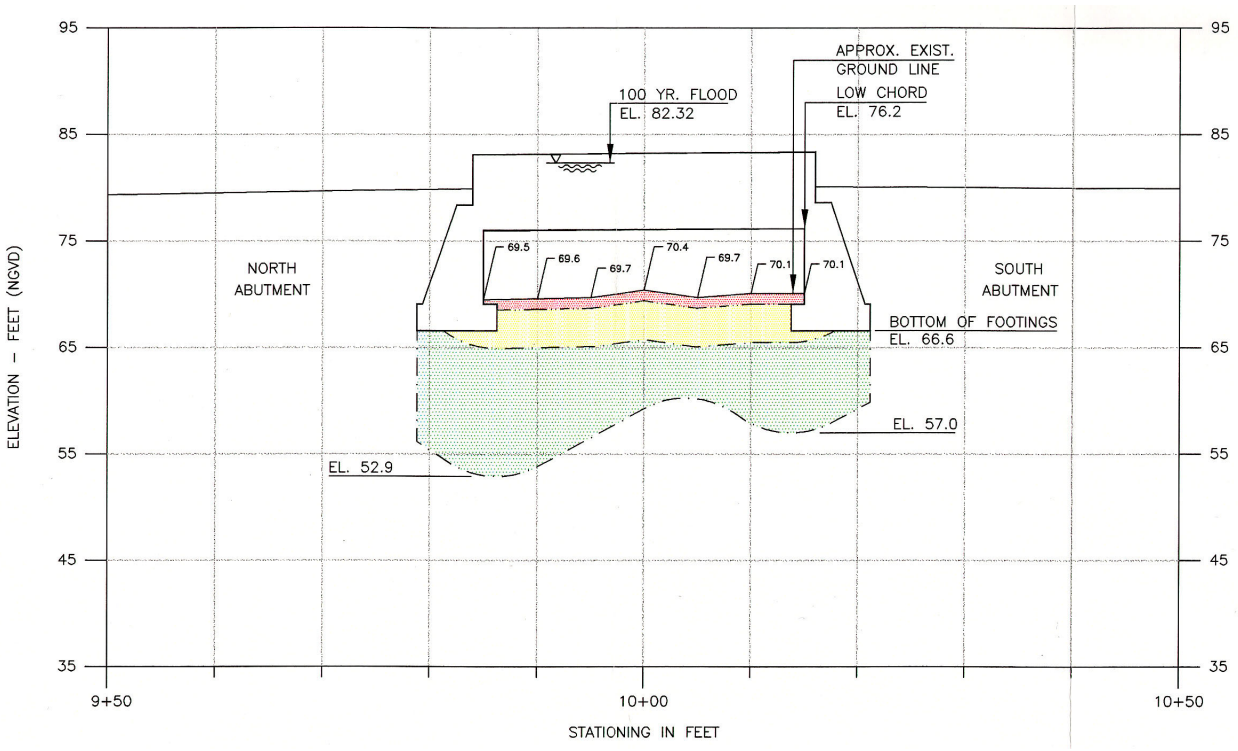
Route: 206
Milepoint: 63.35
Community: Hillsborough Township
County: Somerset

Waterway Name: Pike Run
Drainage Basin: Millstone River
Watershed Management Area: Millstone (10)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased steel stringers
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1803156

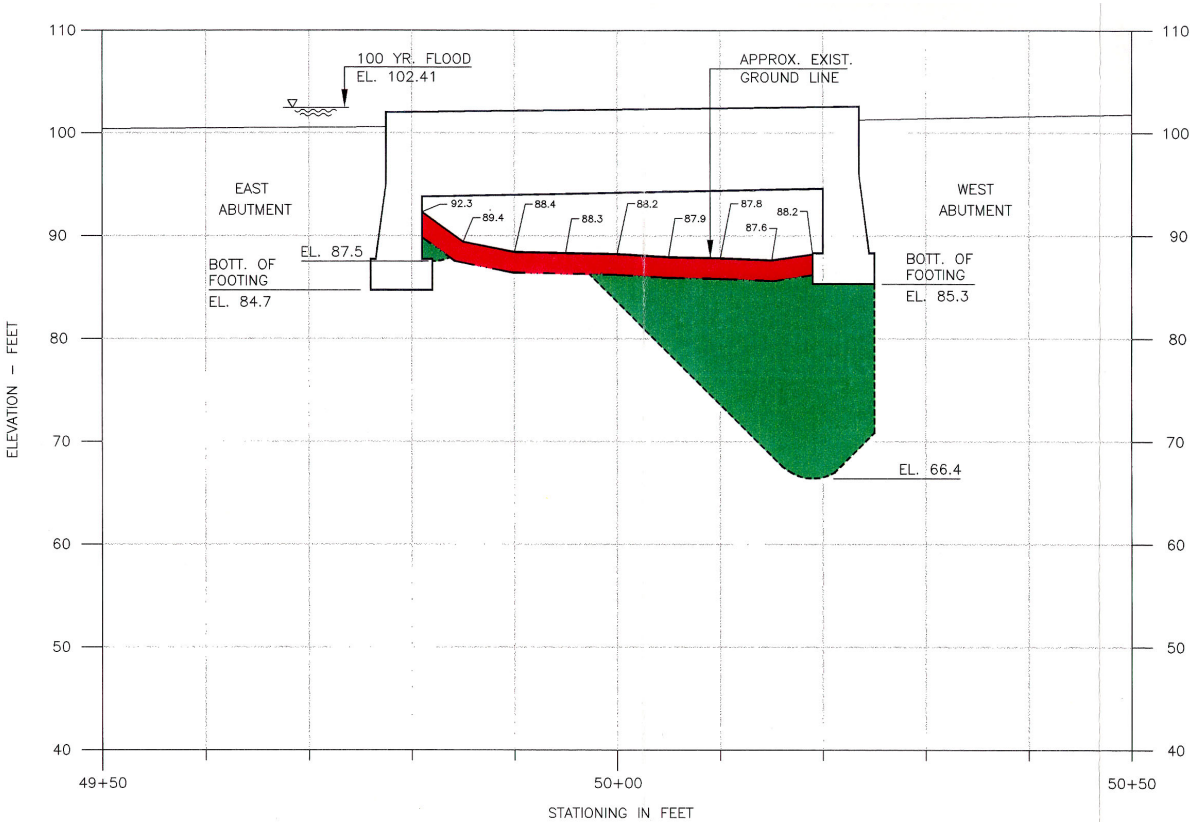
Route: 22
Milepoint: 44.62
Community: North Plainfield Boro
County: Somerset

Waterway Name: Stony Brook
Drainage Basin: Lower Raritan
Watershed Management Area: Lower Raritan, South River, Lawrence (9)
Watershed Management Region: Raritan

Superstructure Type: Concrete encased steel wide flange stringer
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1218158

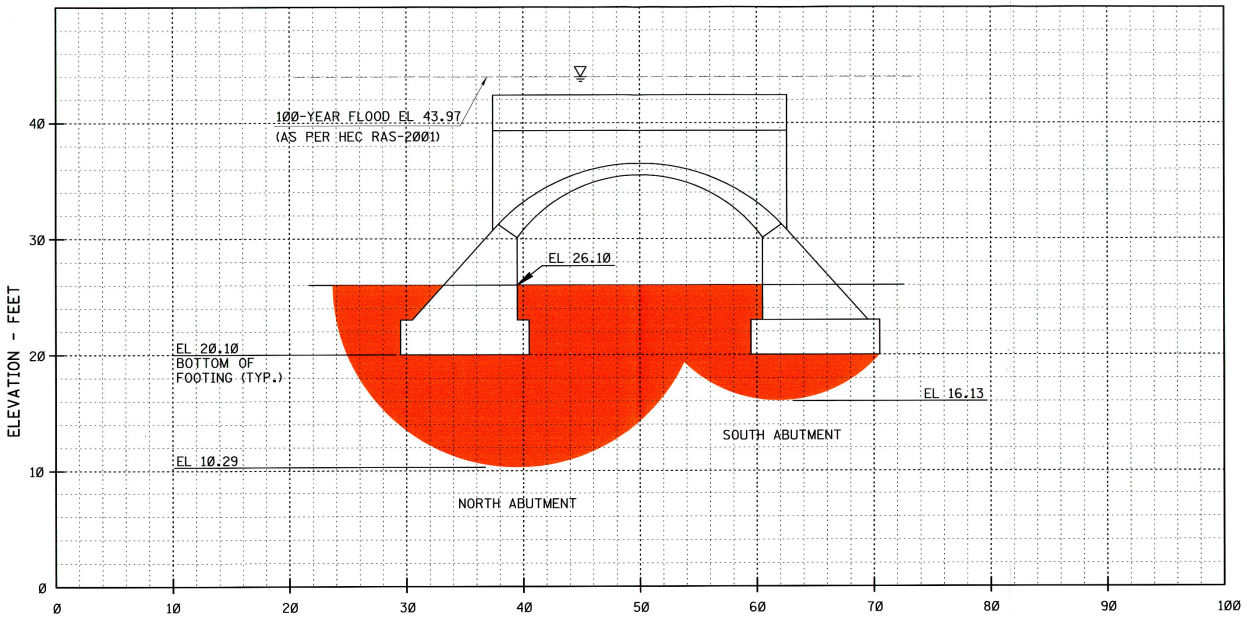
Route: 27
Milepoint: 25.85
Community: Woodbridge Township
County: Middlesex

Waterway Name: South Branch of Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete arch w/ fill (original); reinforced concrete slab (widened)
Substructure Type: Arch abutment (original); Masonry stone abutment (widened)
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2102154

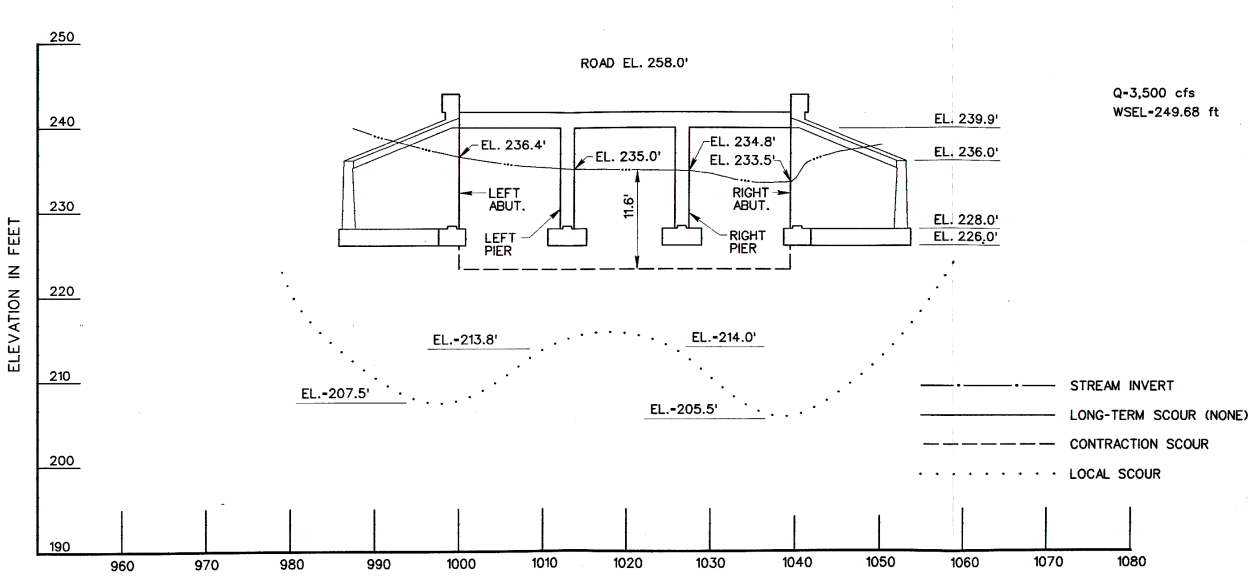
Route: 22
Milepoint: 2.84
Community: Lopatcong Township
County: Warren

Waterway Name: Lopatcong Creek
Drainage Basin: Lopatcong Creek
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Three cell, reinforced concrete rigid frame with fill
Substructure Type: Reinforced concrete rigid frame (abutments), reinforced concrete solid wall (piers)
Abutment Foundation Type: Reinforced concrete on spread footing
Pier Foundation Type: Reinforced concrete on spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2103152

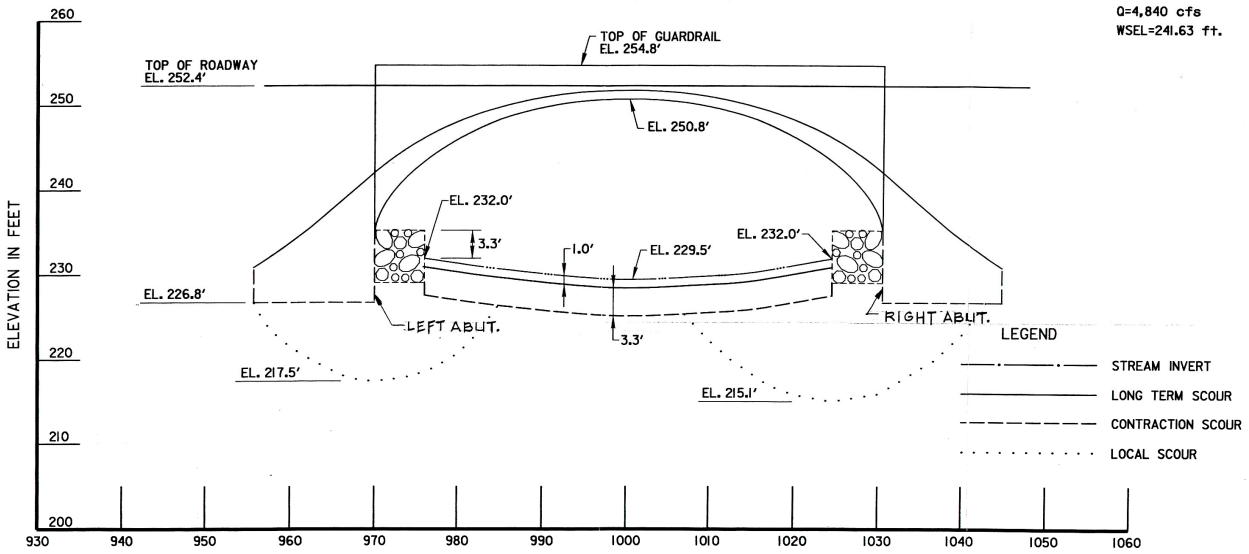
Route: 173
Milepoint: 1.50
Community: Greenwich Township
County: Warren

Waterway Name: Pohatcong Creek
Drainage Basin: Pohatcong Creek
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Earth filled reinforced concrete arch
Substructure Type: Arch foundation
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2103153

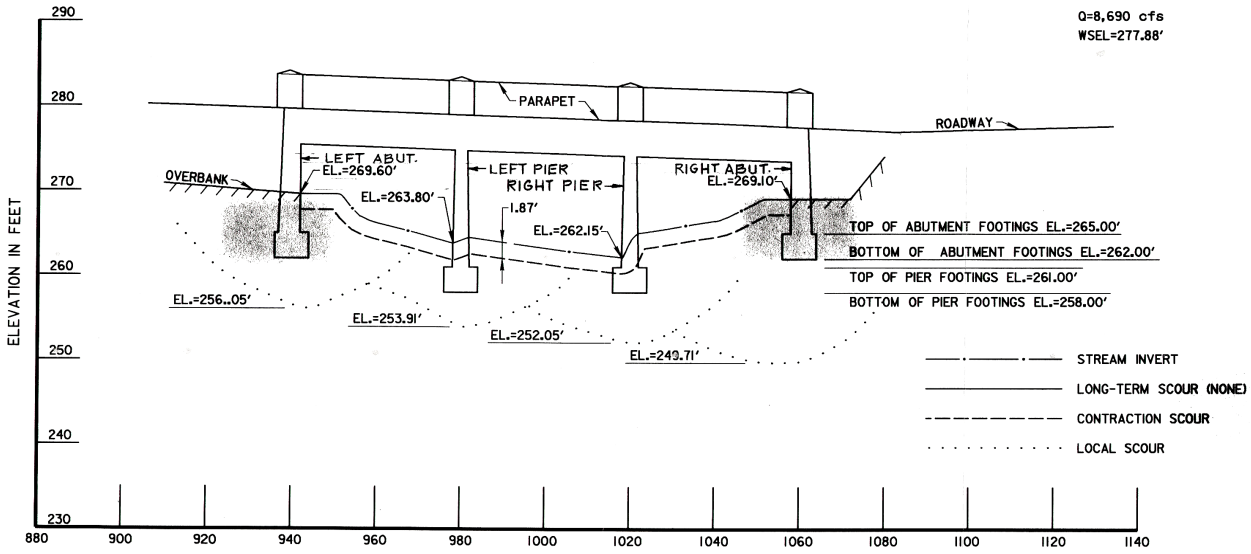
Route: 173
Milepoint: 3.39
Community: Greenwich Twp, Bloomsbury Boro
County: Warren, Hunterdon

Waterway Name: Musconetcong River
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported concrete encased, riveted plate girder
Substructure Type: Vertical wall, concrete gravity type abutments; Concrete solid wall pier
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2113160

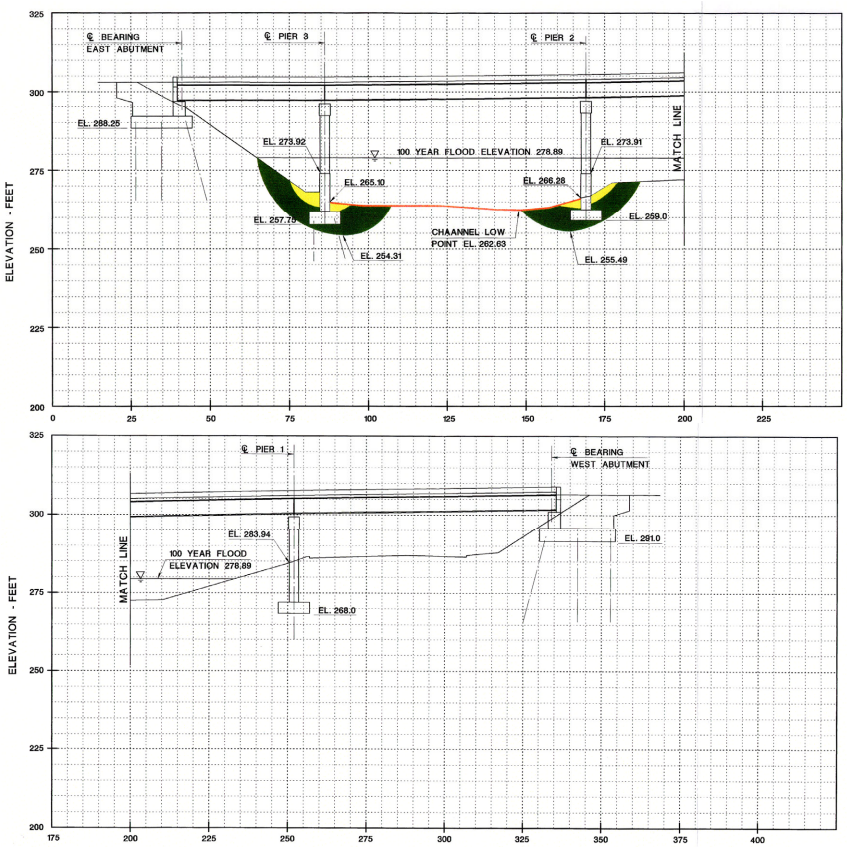
Route: 78 WB
Milepoint: 7.05
Community: Franklin Twp, Bloomsbury Boro
County: Warren, Hunterdon

Waterway Name: Musconetcong River
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported prestressed concrete multi-stringer
Substructure Type: Reinforced concrete stub abutments and multi-column piers
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: Reinforced concrete spread footings

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1006151

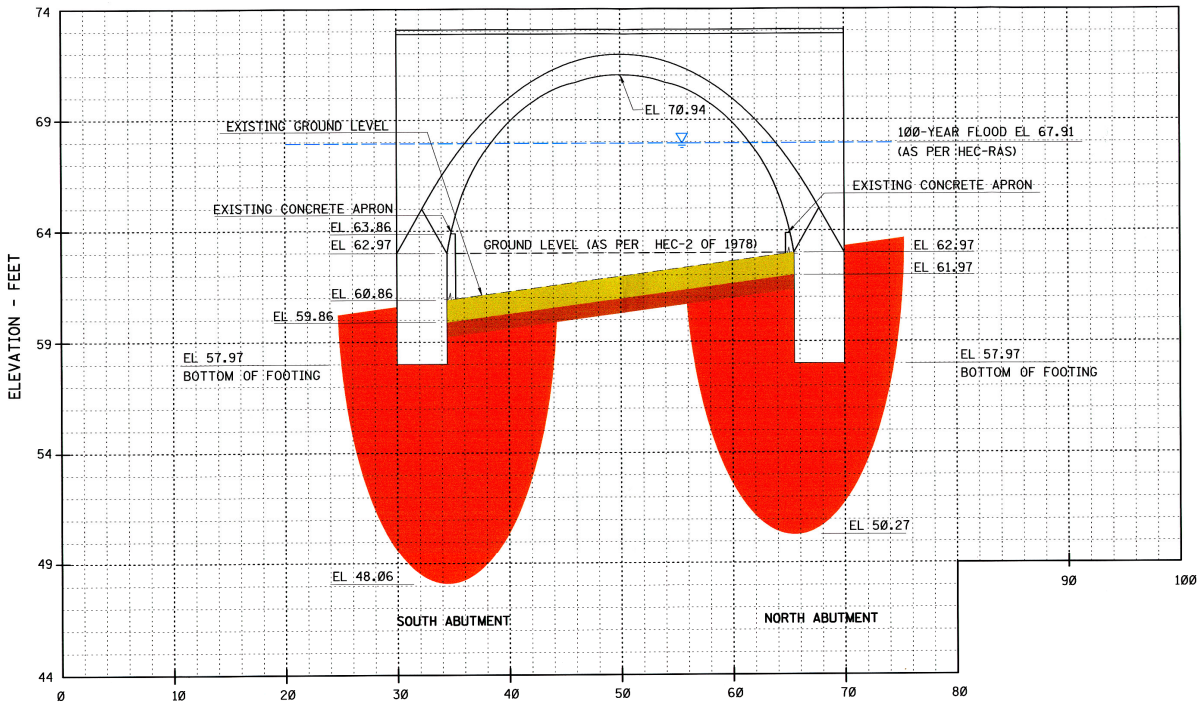
Route: 29
Milepoint: 18.74
Community: Lambertville City
County: Hunterdon

Waterway Name: Swan Creek
Drainage Basin: Lockatong Creek
Watershed Management Area: Central Delaware (11)
Watershed Management Region: Northwest

Superstructure Type: Reinforced concrete arch with fill
Substructure Type: Arch abutments
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1009150

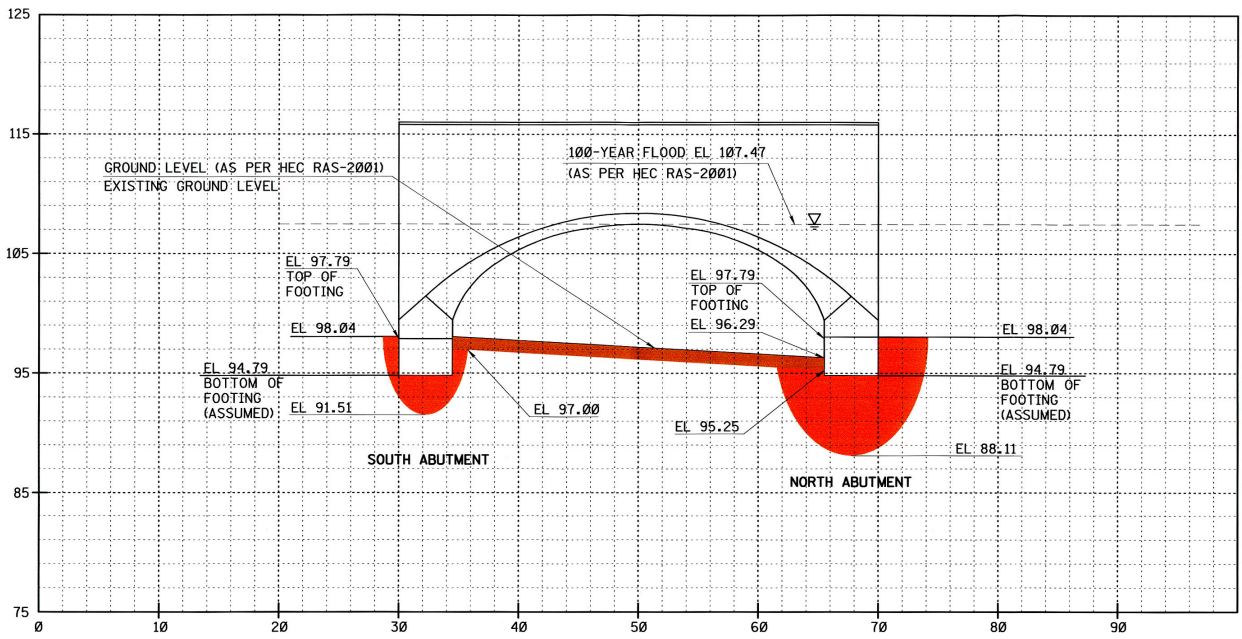
Route: 29
Milepoint: 33.19
Community: Kingwood Township
County: Hunterdon

Waterway Name: Copper Creek
Drainage Basin: Lockatong Creek
Watershed Management Area: Central Delaware (11)
Watershed Management Region: Northwest

Superstructure Type: Reinforced concrete arch with fill
Substructure Type: Arch abutments
Abutment Foundation Type: Spread footing (assumed)
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1110158

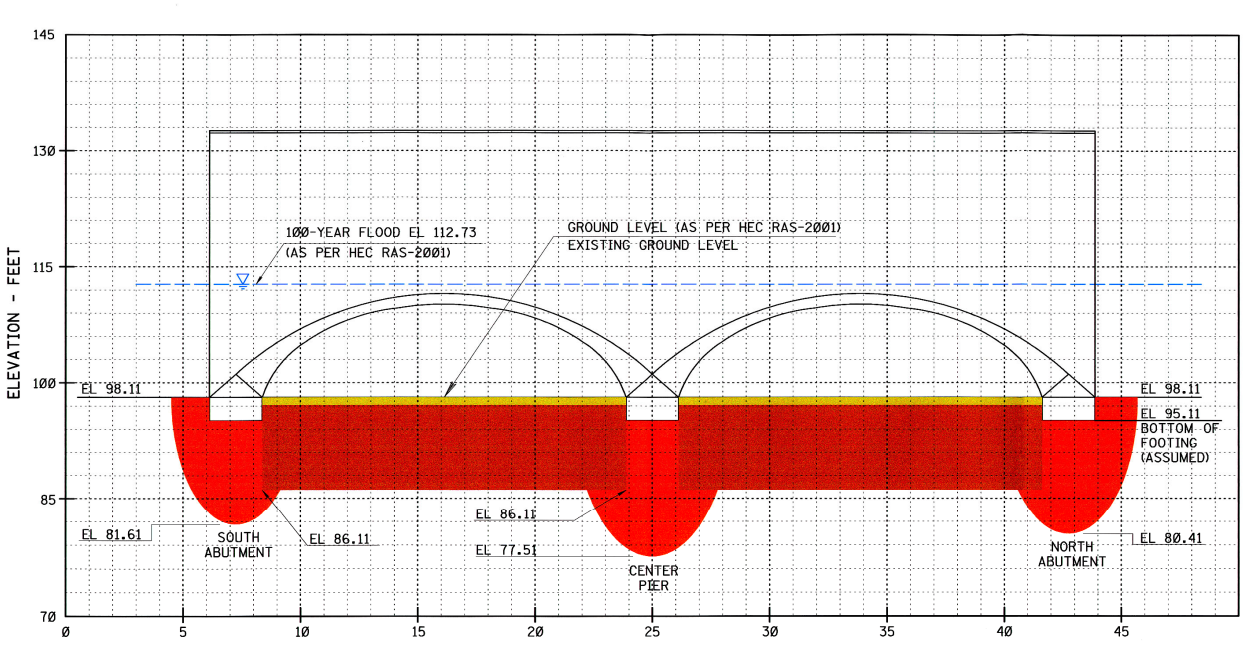
Route: 29
Milepoint: 15.34
Community: Hopewell Township
County: Mercer

Waterway Name: Moores Creek
Drainage Basin: Lockatong Creek
Watershed Management Area: Central Delaware (11)
Watershed Management Region: Northwest

Superstructure Type: Twin barrel concrete arch with fill
Substructure Type: Arch abutments, arch pier
Abutment Foundation Type: Spread footing (assumed)
Pier Foundation Type: Spread footing (assumed)

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0201151

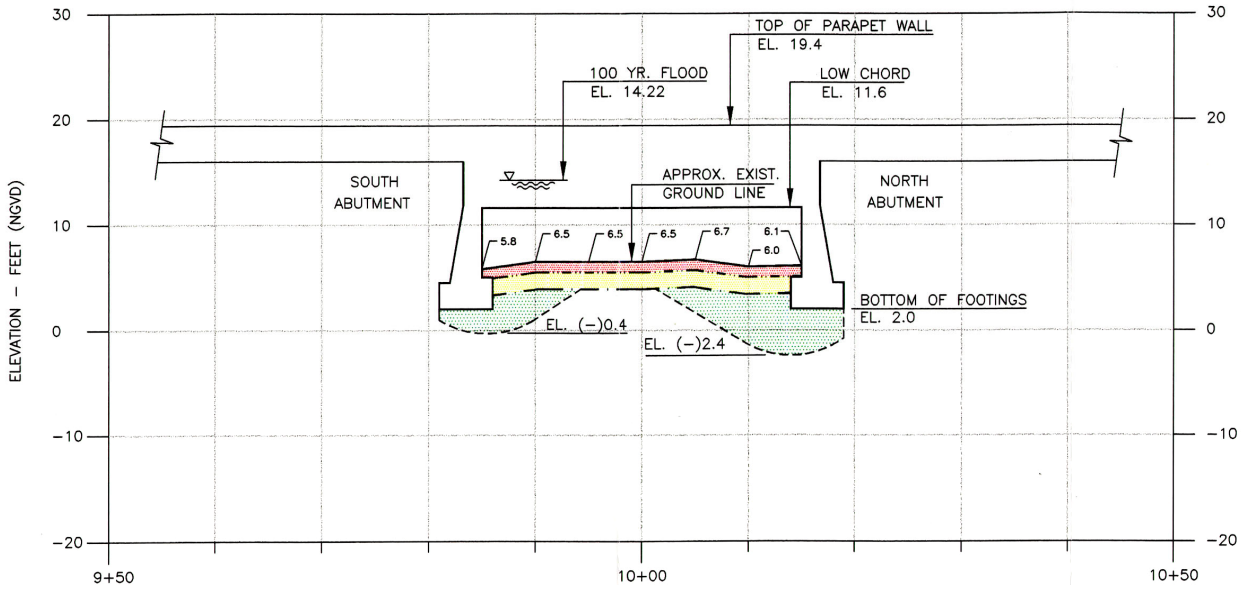
Route: 1&9
Milepoint: 61.32
Community: Fairview Boro, Ridgefield Boro
County: Bergen

Waterway Name: Wolf Creek
Drainage Basin: Hackensack River
Watershed Management Area: Hackensack, Hudson, Pascack (5)
Watershed Management Region: Northeast

Superstructure Type: Simply supported; non-composite, encased steel multi-stringer
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0206166

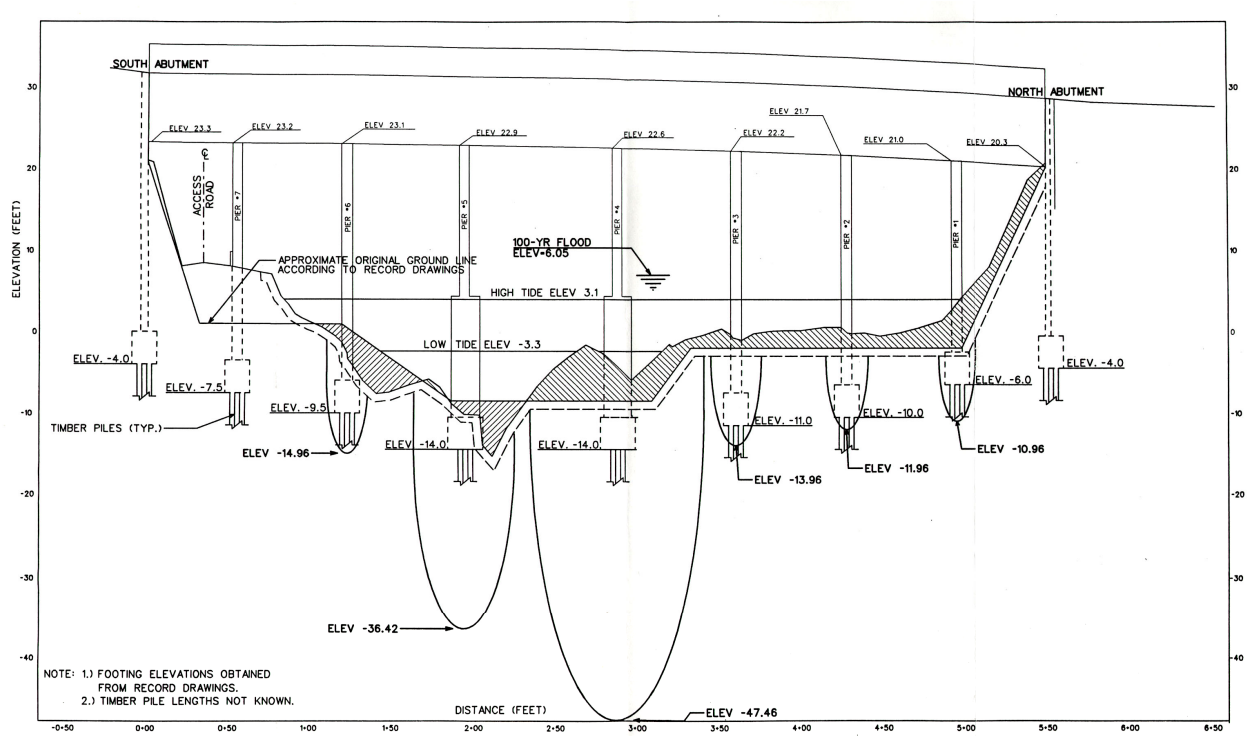
Route: 4
Milepoint: 4.59
Community: Hackensack City
County: Bergen

Waterway Name: Hackensack River
Drainage Basin: Hackensack River
Watershed Management Area: Hackensack, Hudson, Pascack (5)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, concrete encased steel stringers
Substructure Type: R/C Counterfort type abutments, R/C Columns w/ concrete web walls (Pier)
Abutment Foundation Type: R/C pile footings
Pier Foundation Type: R/C pile footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: No

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0206181

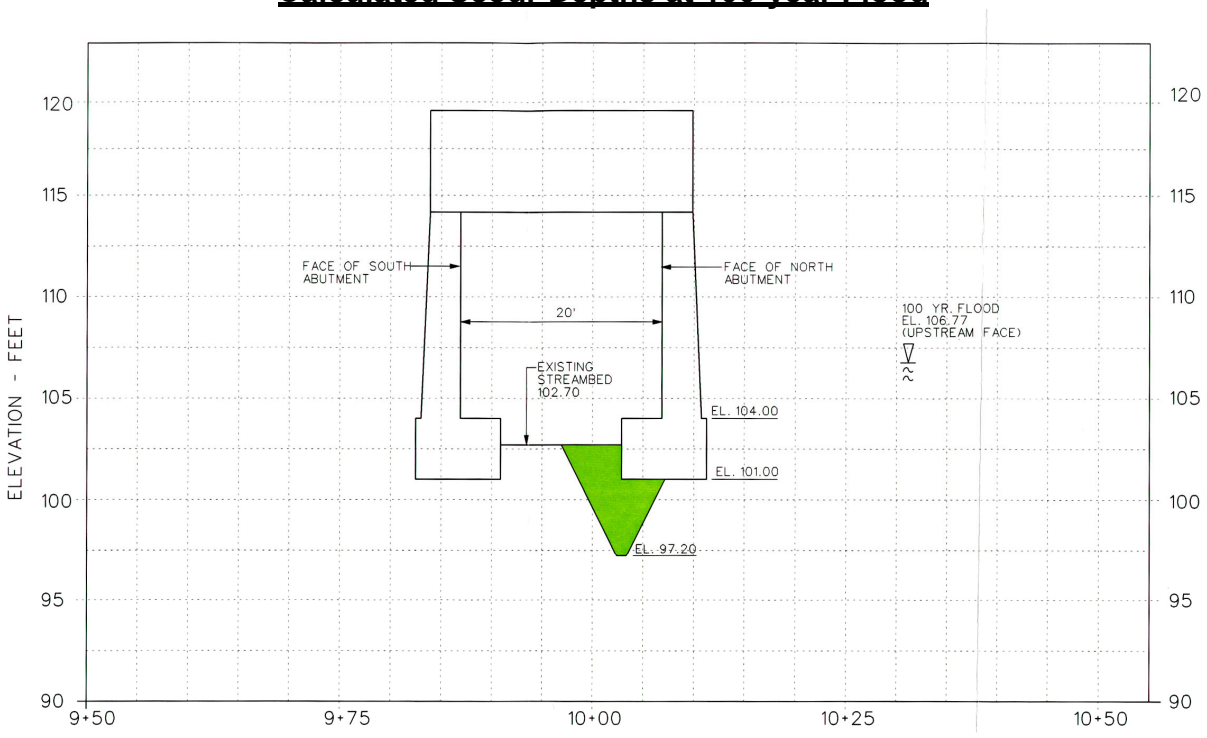
Route: 4
Milepoint: 9.54
Community: Englewood City
County: Bergen

Waterway Name: Flat Rock Brook
Drainage Basin: Hackensack River
Watershed Management Area: Hackensack, Hudson, Pascack (5)
Watershed Management Region: Northwest

Superstructure Type: Single span, reinforced concrete slab
Substructure Type: Concrete gravity wall
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0206189

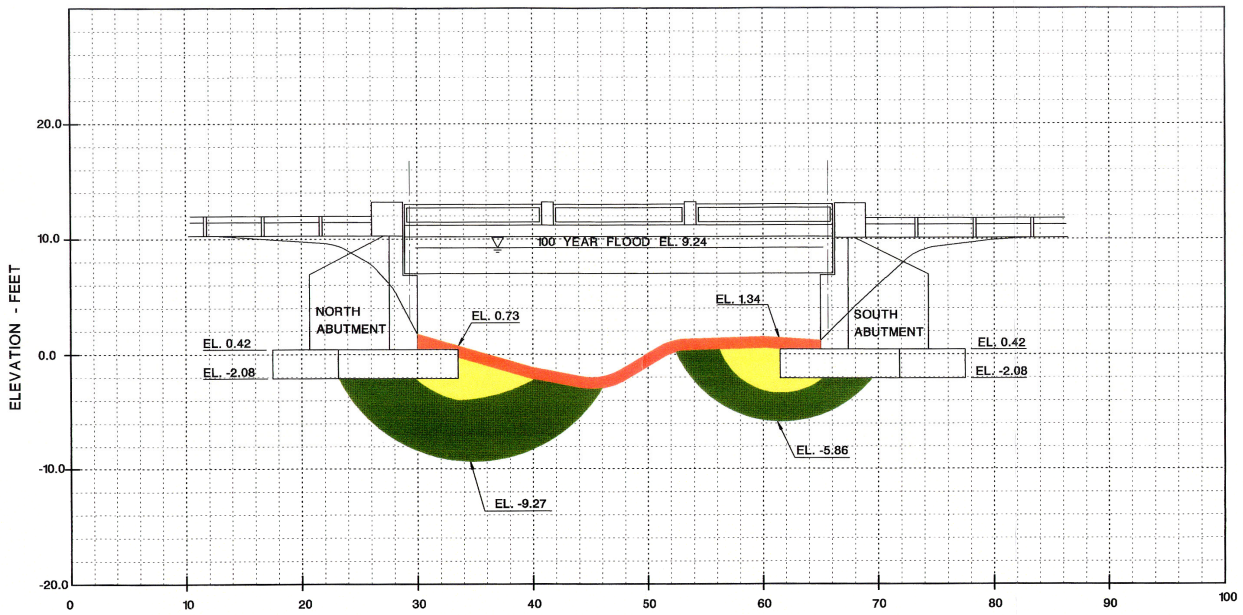
Route: 4 (Kindermack Road) **Milepoint:** 5.39
Community: Hackensack City, River Edge Boro **County:** Bergen

Waterway Name: Coles Brook
Drainage Basin: Hackensack River
Watershed Management Area: Hackensack, Hudson, Pascack (5)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased, rolled steel multi-stringer
Substructure Type: Reinforced concrete full height
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of undermined footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N2

Data Sheet – Bridge No. 0218161

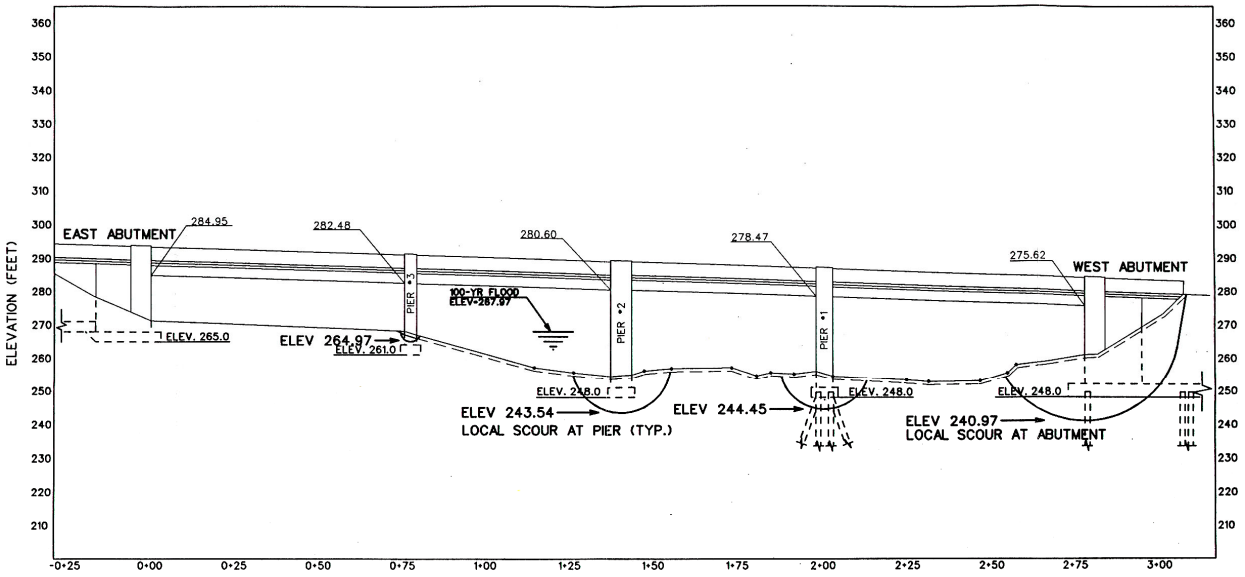
Route: 17 NB
Milepoint: 26.04
Community: Mahwah Township
County: Bergen

Waterway Name: Ramapo River
Drainage Basin: Ramapo River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, composite rolled, steel stringers w/ welded cover plates
Substructure Type: R/C full height cantilever type abutments, R/C Open Pier w/ 5 columns
Abutment Foundation Type: Pile footing (west), spread footing (east)
Pier Foundation Type: R/C footing w/ steel H piles (Pier 1), Plain concrete spread footing (Piers 2-3)

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0218162

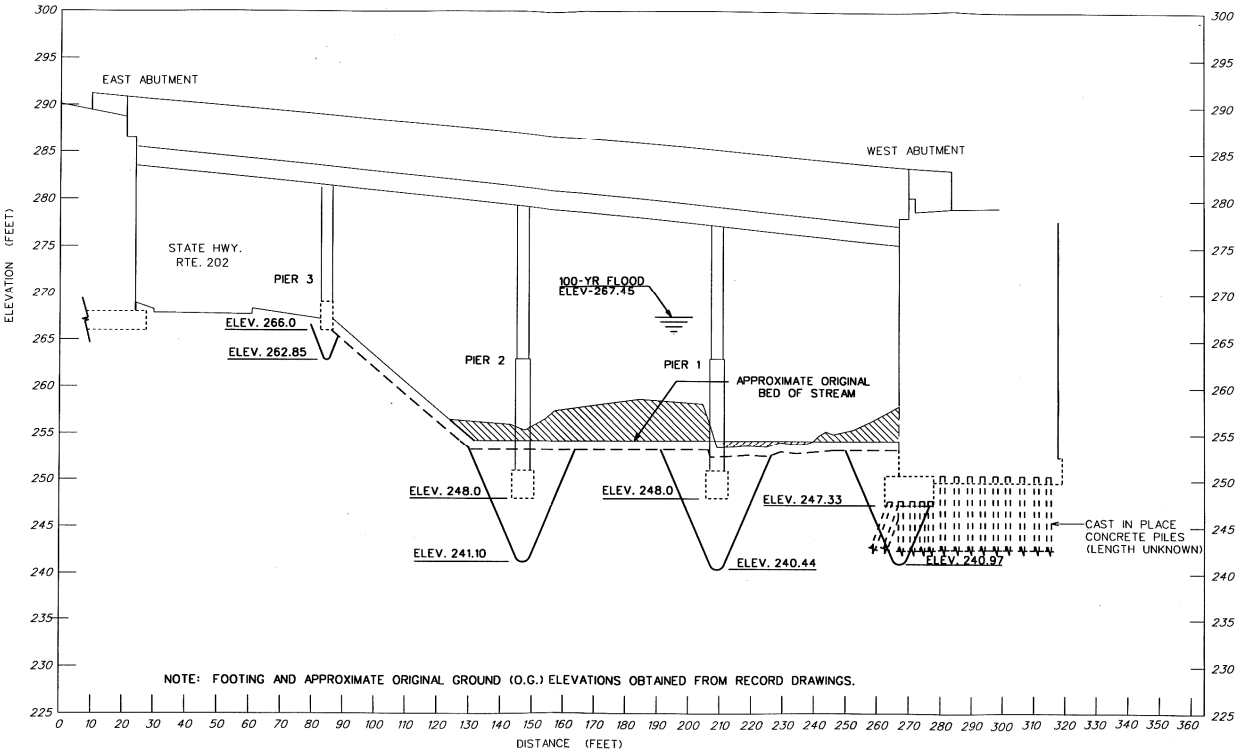
Route: 17 SB
Milepoint: 26.04
Community: Mahwah Township
County: Bergen

Waterway Name: Ramapo River
Drainage Basin: Ramapo River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, concrete encased steel stringers
Substructure Type: Reinforced concrete gravity wall (abutments), Reinforced concrete open pier
Abutment Foundation Type: Reinforced concrete spread footing on piles (west), spread footing (east)
Pier Foundation Type: Reinforced concrete spread footing (Piers 1-2), Concrete wall footing (Pier 3)

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0216150

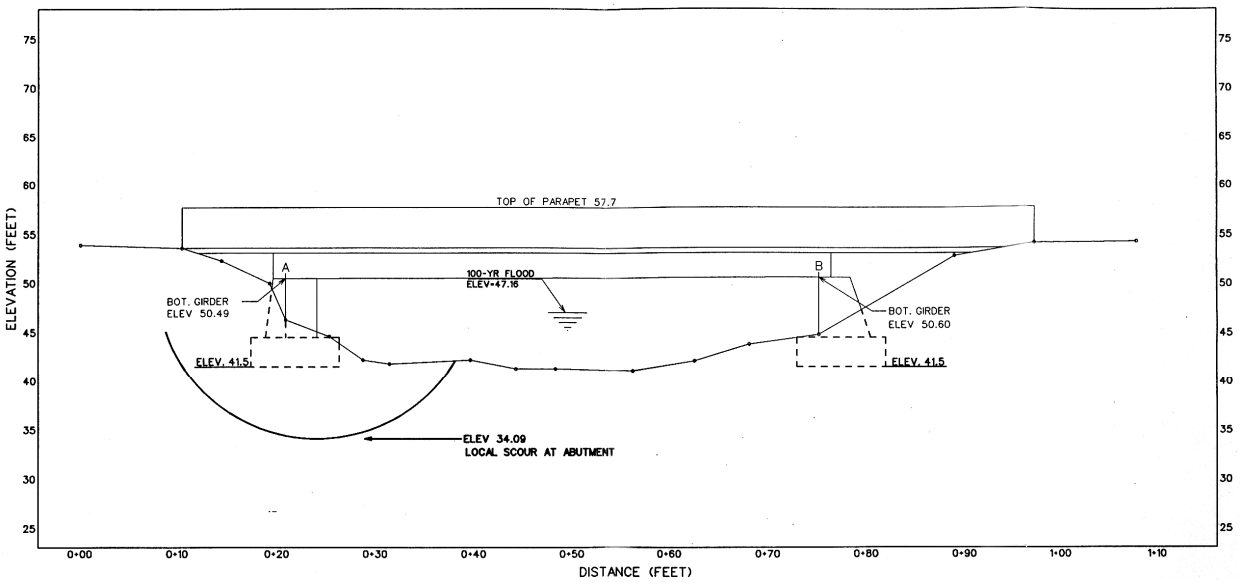
Route: 17
Milepoint: 13.97
Community: Paramus Boro
County: Bergen

Waterway Name: Sprout Brook
Drainage Basin: Saddle River
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, concrete encased steel I-beams and concrete T-beams
Substructure Type: R/C gravity type
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0216157

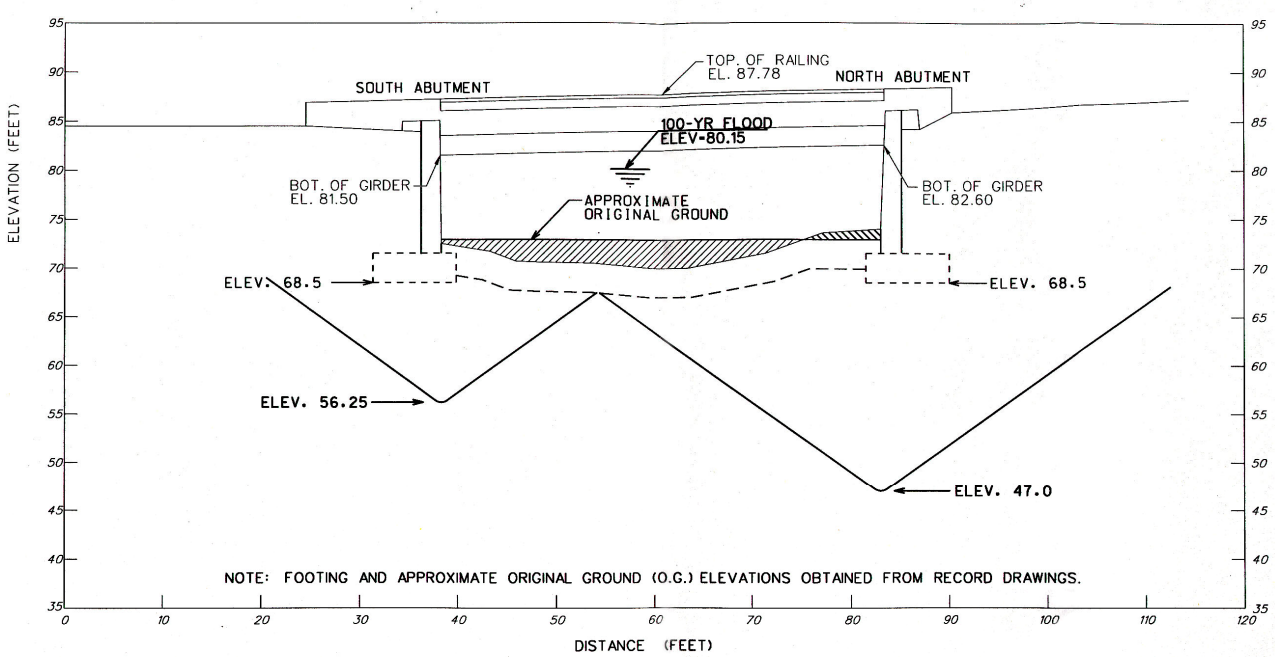
Route: 17
Milepoint: 17.04
Community: Ridgewood Village
County: Bergen

Waterway Name: Saddle River
Drainage Basin: Saddle River
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported adjacent precast prestressed concrete box beams
Substructure Type: Concrete full height vertical gravity type abutment w/ flared wing walls
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0220157

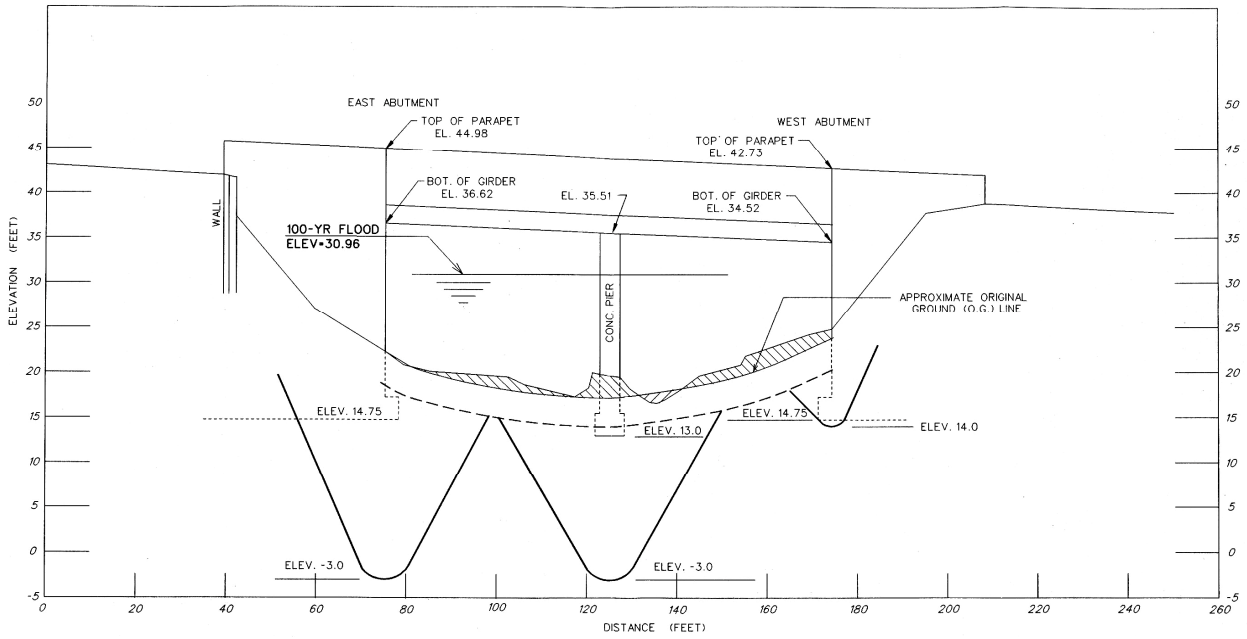
Route: 46
Milepoint: 66.51
Community: Lodi Boro
County: Bergen

Waterway Name: Saddle River
Drainage Basin: Saddle River
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported concrete encased rolled steel stringers
Substructure Type: Reinforced concrete gravity type abutments; reinforced concrete solid pier wall
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of significant debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N4

Data Sheet – Bridge No. 0225166

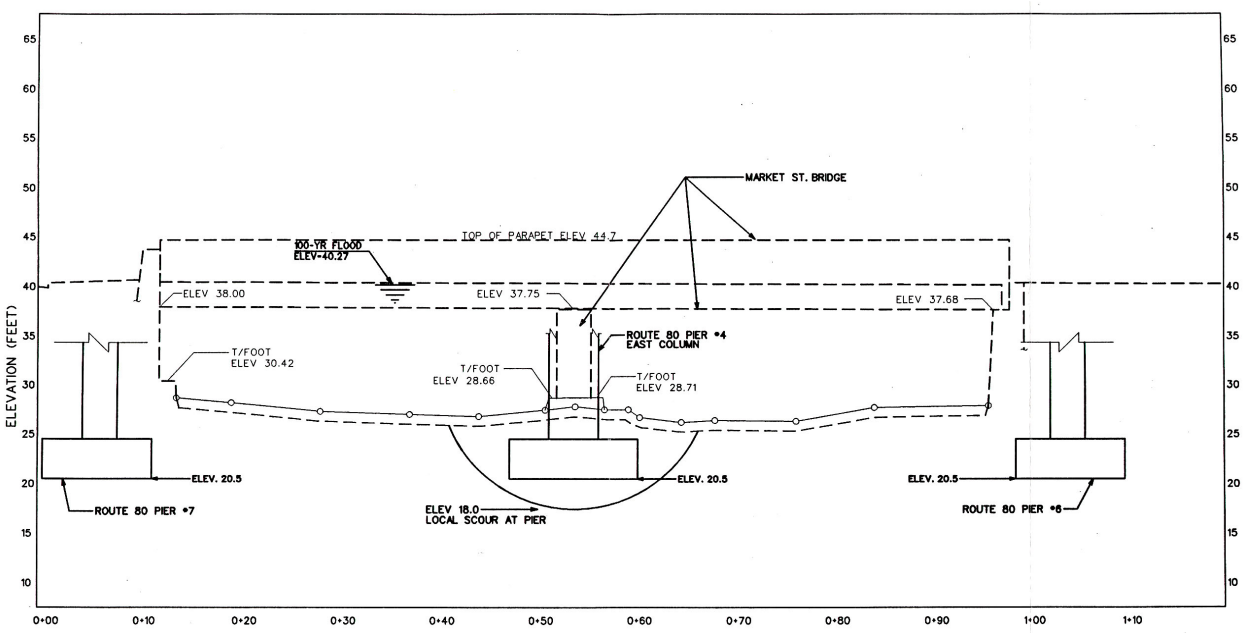
Route: 80 **Milepoint:** 63.65
Community: Lodi Boro, Saddle Brook Twp **County:** Bergen

Waterway Name: Saddle River
Drainage Basin: Saddle River
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported composite and non-composite welded and rolled steel stringers
Substructure Type: Full height cantilever type abutment (east); stub abutment (west); R/C column (pier)
Abutment Foundation Type: R/C spread footing (east); Pile footing (west)
Pier Foundation Type: R/C spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: No

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0716156

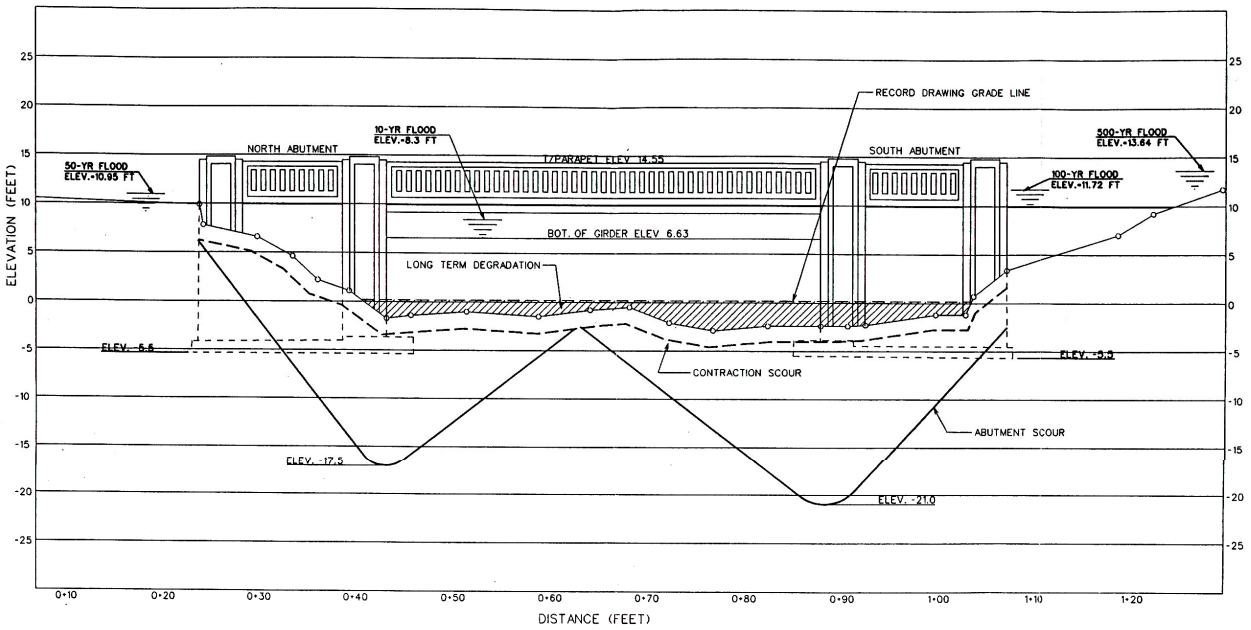
Route: 21
Community: Newark City
Milepoint: 5.68
County: Essex

Waterway Name: Second River
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported concrete encased steel stringers
Substructure Type: R/C cantilever type
Abutment Foundation Type: R/C spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of undermined footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 10-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1601157

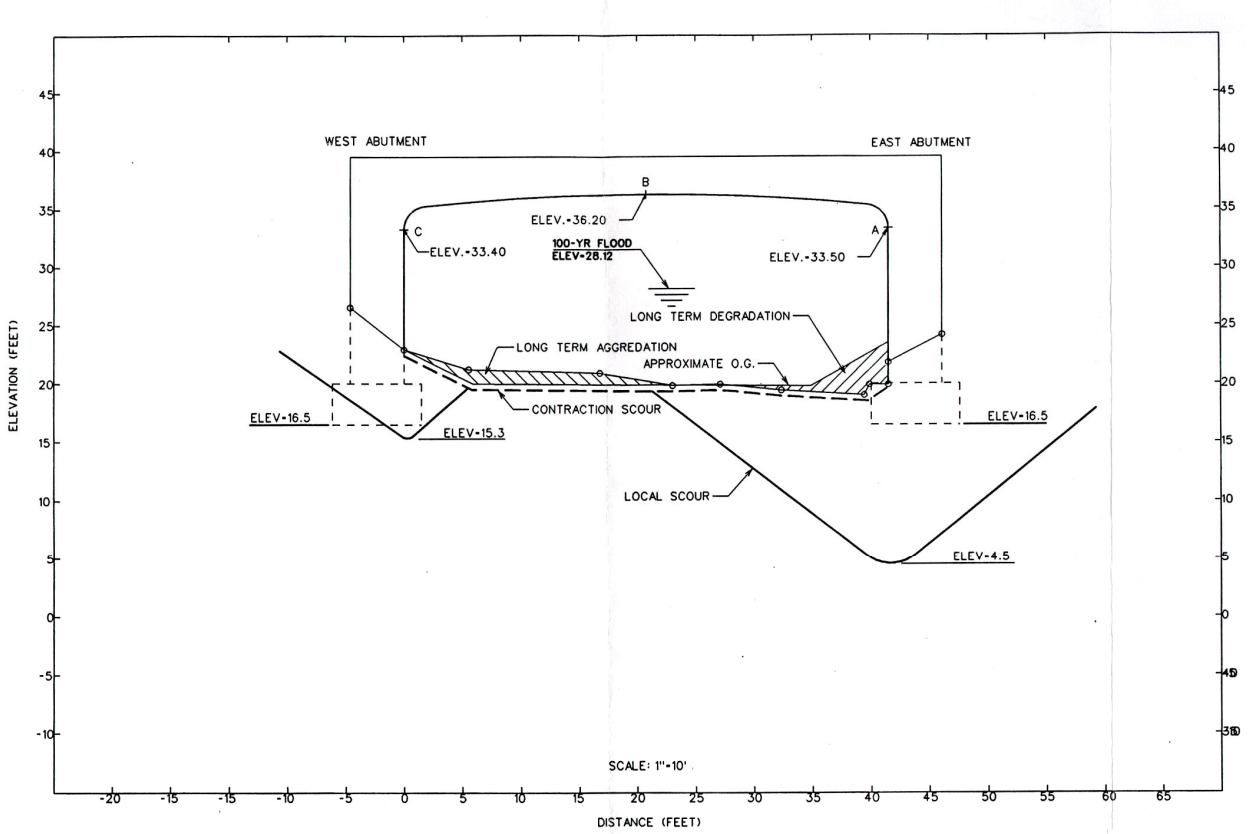
Route: 3
Community: Clifton City
Milepoint: 3.91
County: Passaic

Waterway Name: Third River
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Single span reinforced concrete rigid frame with fill
Substructure Type: Reinforced concrete rigid frame
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1601160

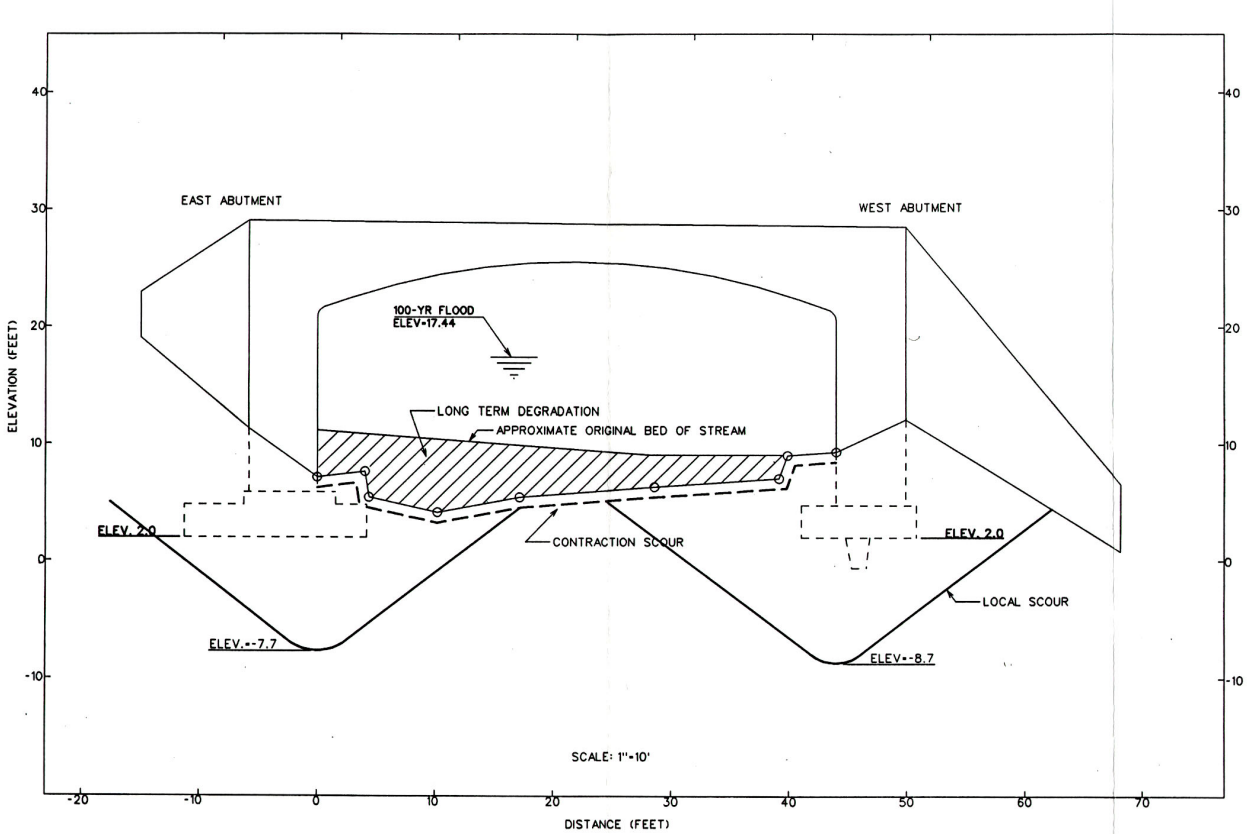
Route: 3
Community: Clifton City
Milepoint: 4.39
County: Passaic

Waterway Name: Upper Pond Spillway
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Single span reinforced concrete hinged frame with fill
Substructure Type: Reinforced concrete hinged rigid frame
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1403150

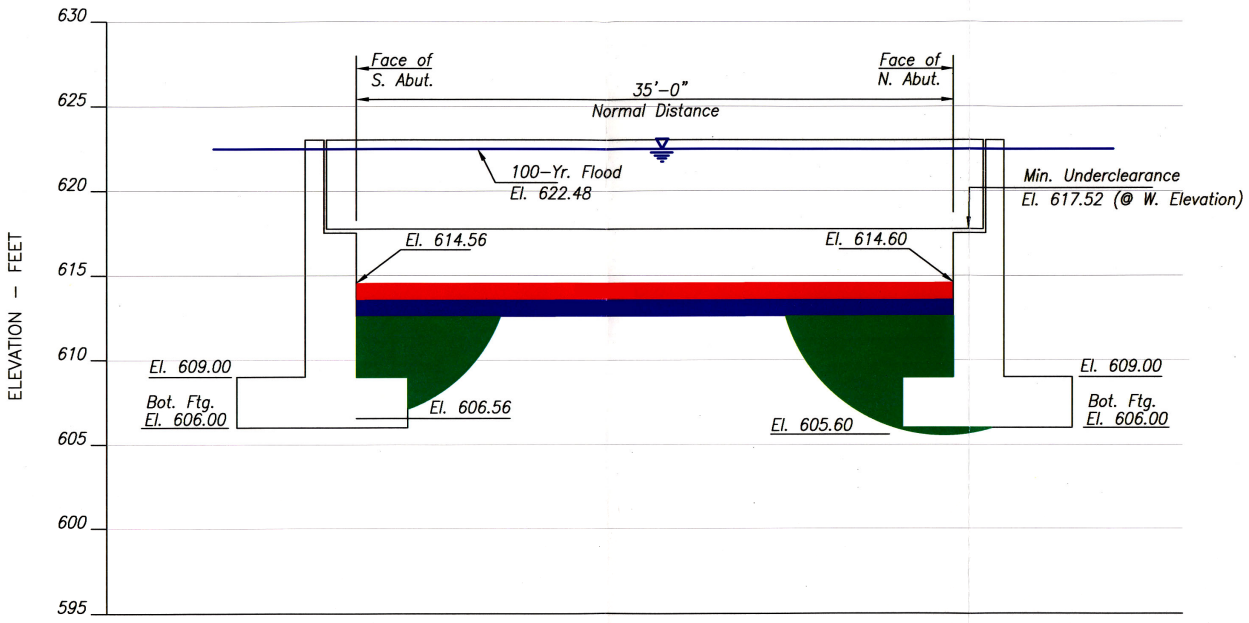
Route: 15
Milepoint: 1.65
Community: Wharton Boro
County: Morris

Waterway Name: Burnt Meadow Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Simply supported prestressed concrete I-Beams
Substructure Type: Reinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N6

Data Sheet – Bridge No. 1404155

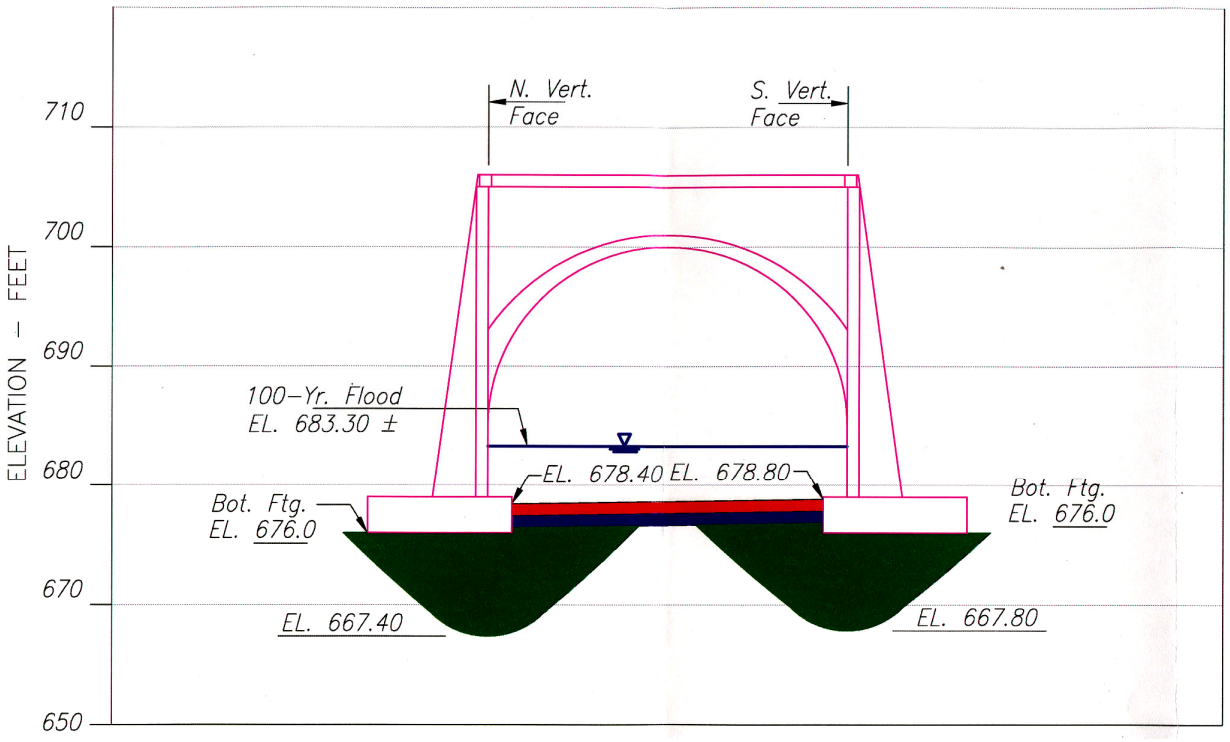
Route: 15 (Government Road)
Community: Rockaway Township
Milepoint: 2.78
County: Morris

Waterway Name: Green Pond Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete fixed barrel arch
Substructure Type: Reinforced concrete arch
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1404158

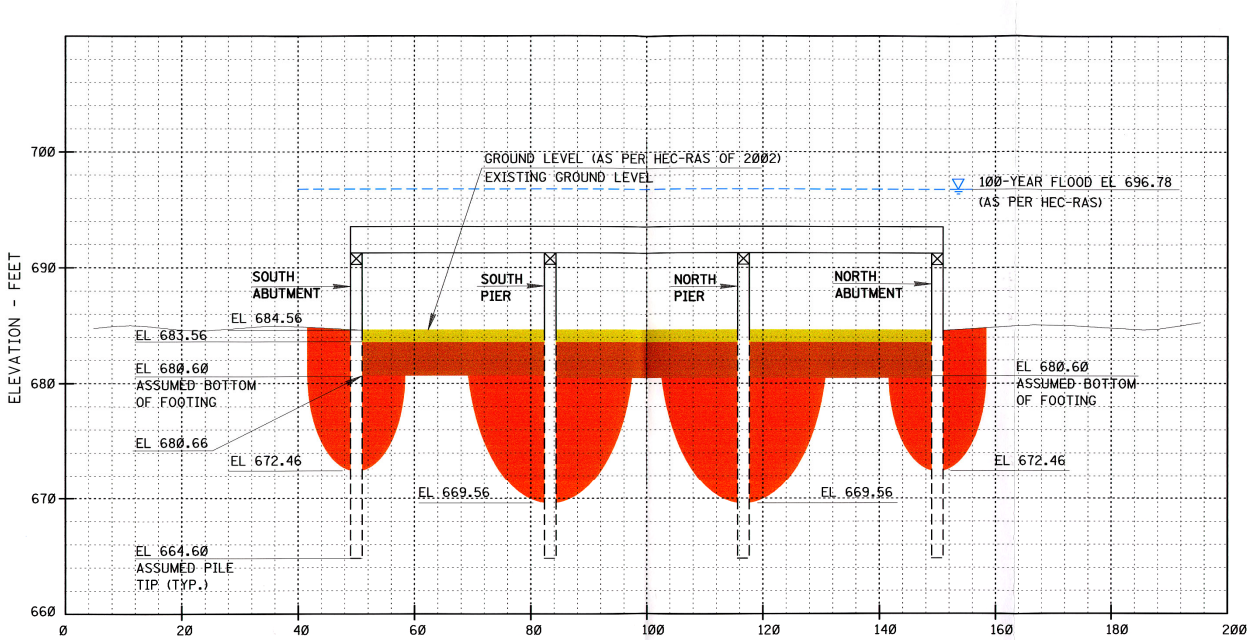
Route: 15 SB
Milepoint: 4.20
Community: Jefferson Township
County: Morris

Waterway Name: Rockaway River
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Continuous reinforced concrete slab
Substructure Type: Stone masonry abutments and timber pile bent abutments
Abutment Foundation Type: Stone masonry section – unknown, rest - timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1413155

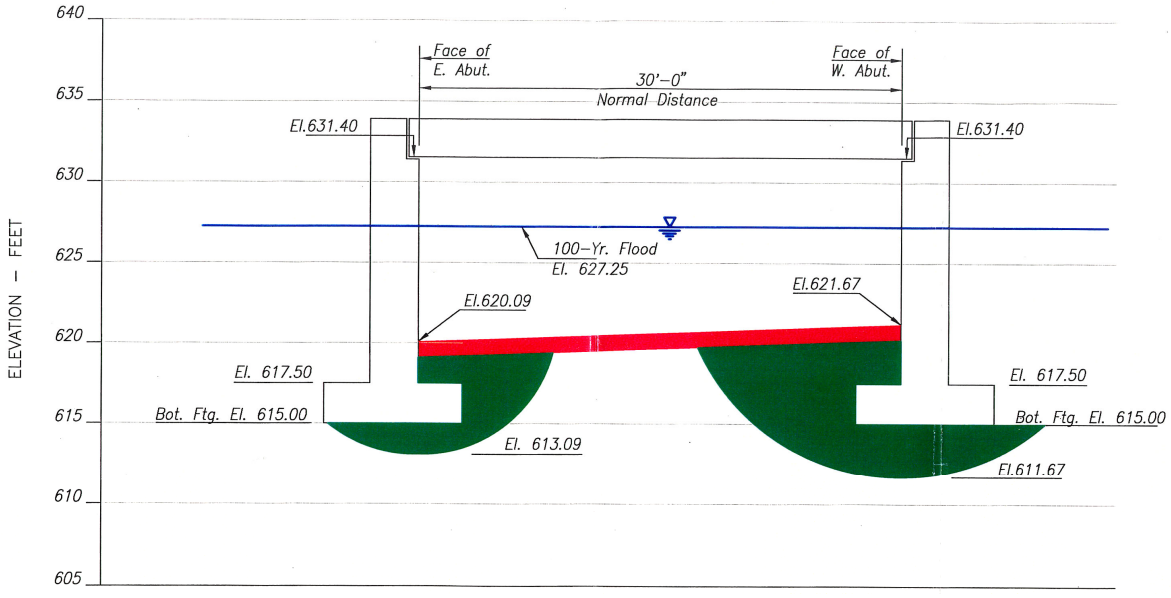
Route: 80, Ramp C
Milepoint: 34.31
Community: Rockaway Township
County: Morris

Waterway Name: Burnt Meadow Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, composite prestressed concrete multi-girder bridge
Substructure Type: Reinforced concrete full height vertical cantilever abutments
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1401156

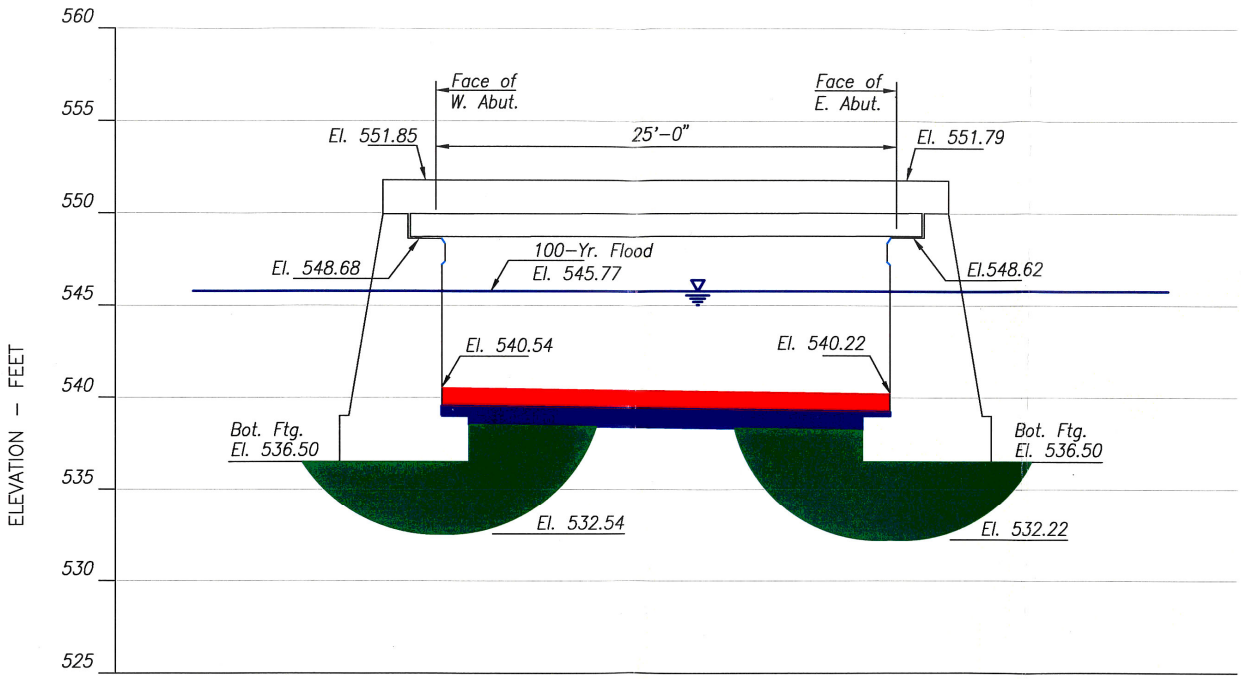
Route: 10
Community: Randolph Township
Milepoint: 7.16
County: Morris

Waterway Name: Mill Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Concrete encased steel stringers
Substructure Type: Unreinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N7

Data Sheet – Bridge No. 1409154

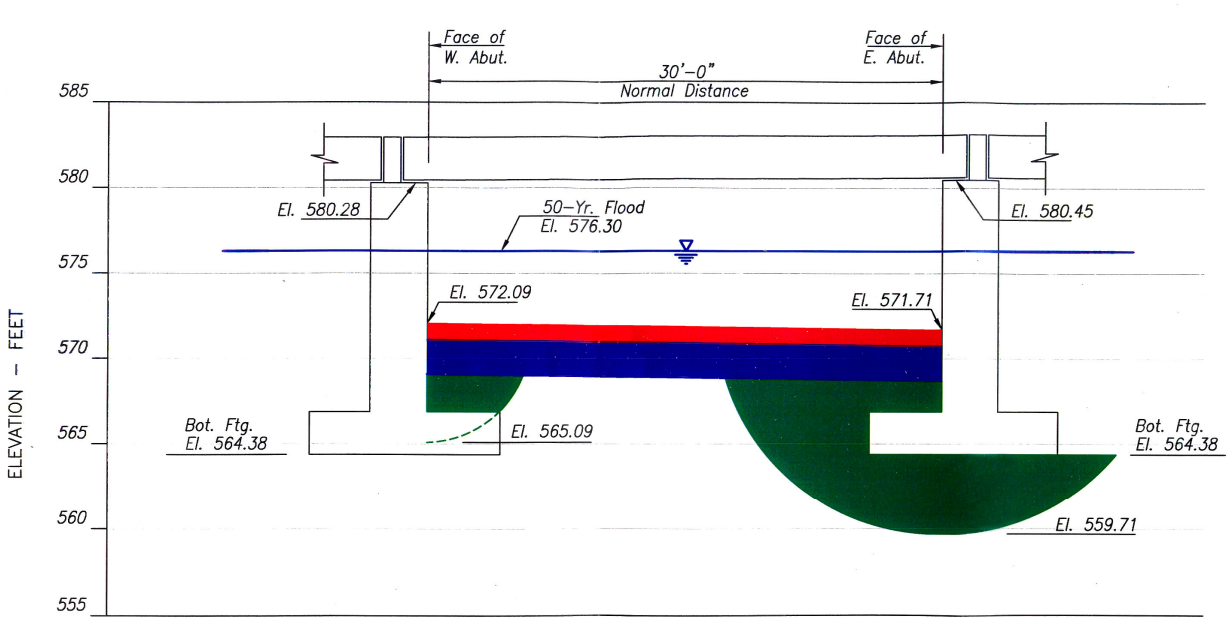
Route: 46
Community: Dover Town
Milepoint: 37.72
County: Morris

Waterway Name: Granneys Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Prestressed concrete box beams
Substructure Type: Reinforced concrete full height cantilever abutments
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1411152

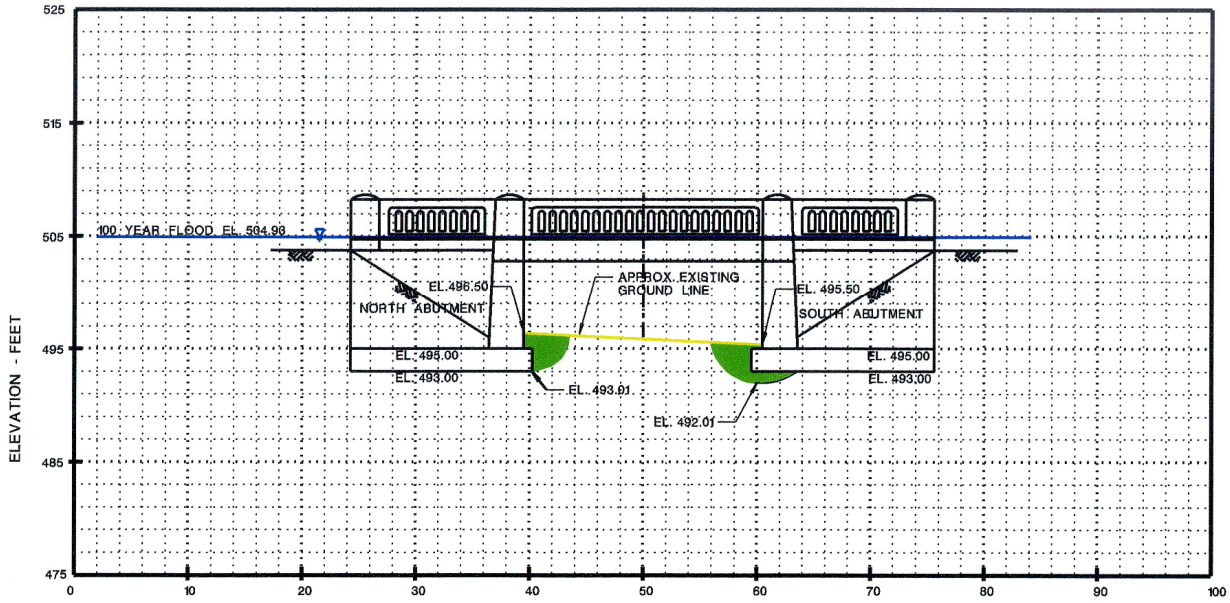
Route: 53
Milepoint: 4.59
Community: Denville Township
County: Morris

Waterway Name: Den Brook
Drainage Basin: Rockaway River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Concrete encased steel stringers; concrete & brick jack arches; concrete slab
Substructure Type: Concrete abutments
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1402150

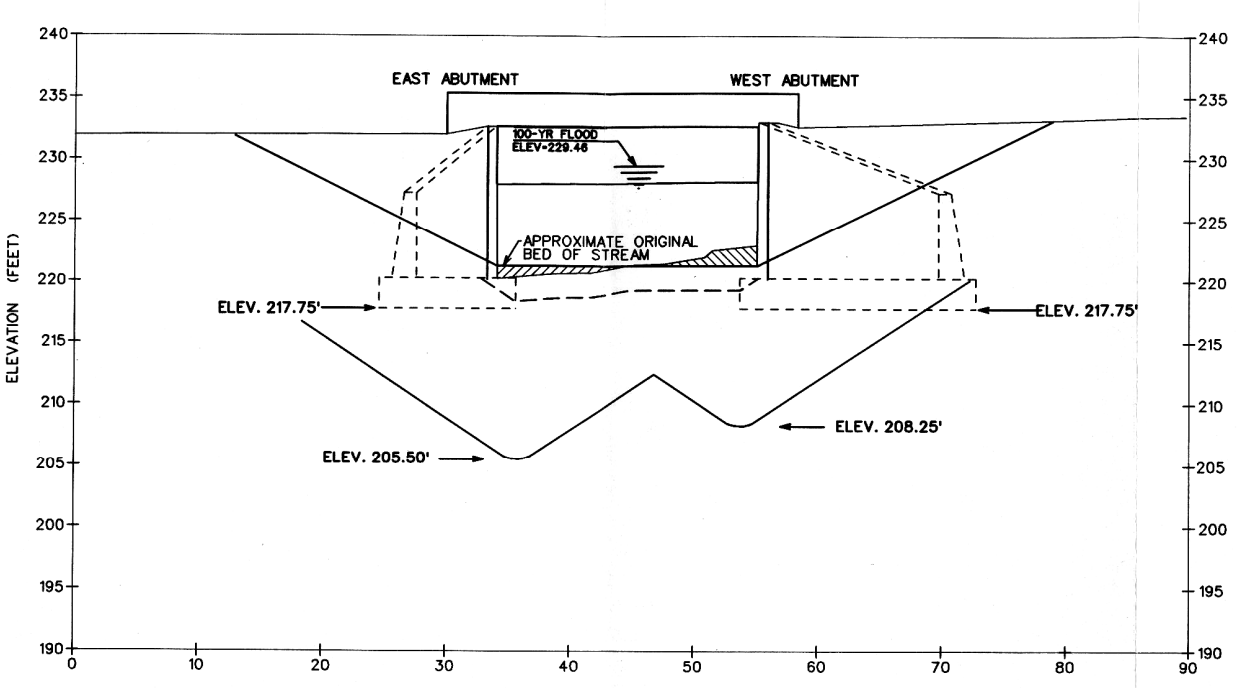
Route: 10
Milepoint: 13.89
Community: Hanover Township
County: Morris

Waterway Name: Malarapadris Brook
Drainage Basin: Whippany River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete slab
Substructure Type: Unreinforced concrete full height gravity type with flared wingwalls
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N8

Data Sheet – Bridge No. 1416152

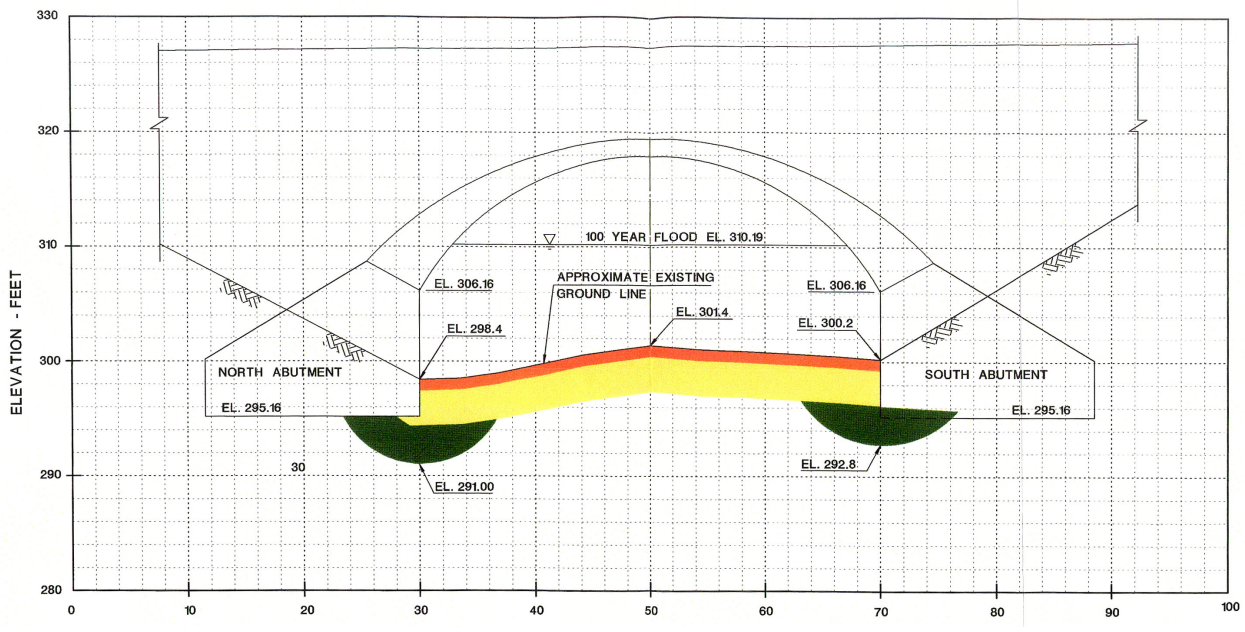
Route: 202
Milepoint: 45.73
Community: Morristown Town
County: Morris

Waterway Name: Whippany River
Drainage Basin: Whippany River
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Brick and reinforced concrete earth-filled arch
Substructure Type: Masonry and reinforced concrete abutments
Abutment Foundation Type: Gravity-type
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0709150

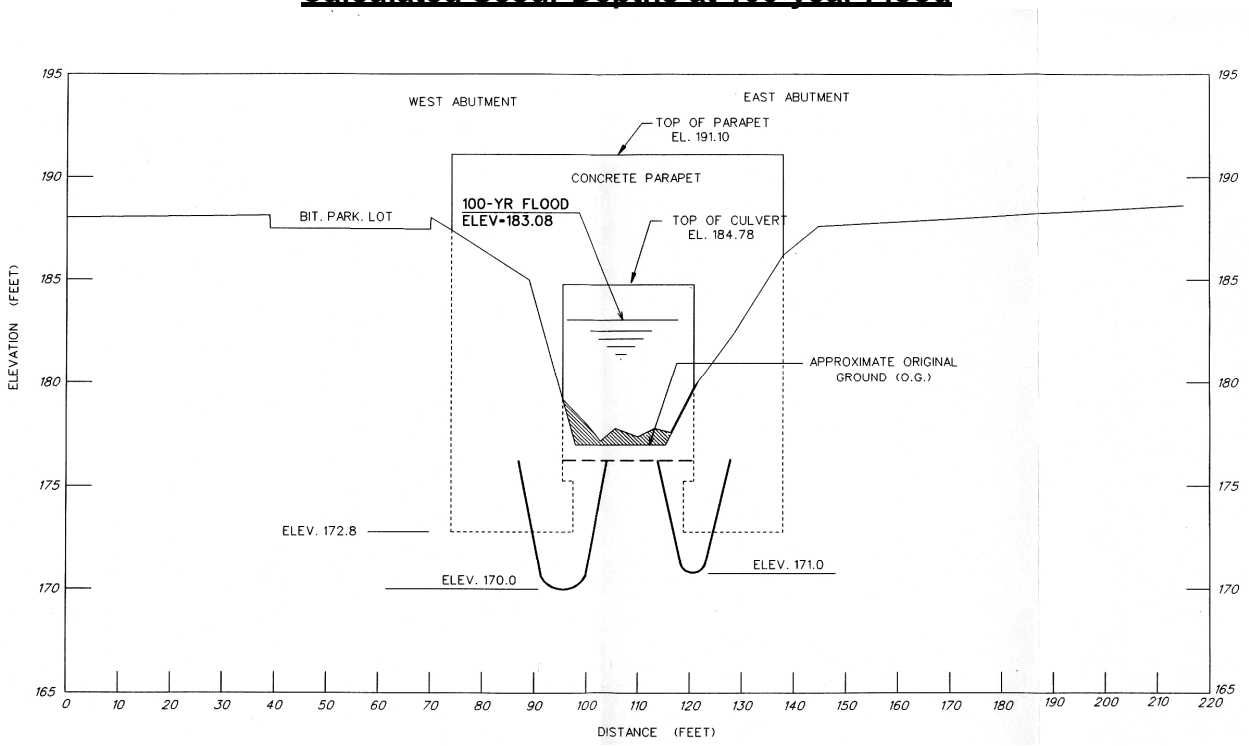
Route: 10
Milepoint: 18.65
Community: Livingston Township
County: Essex

Waterway Name: Willow Meadow Brook
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete slab
Substructure Type: Reinforced concrete full height gravity type with U-type wingwalls
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0711150

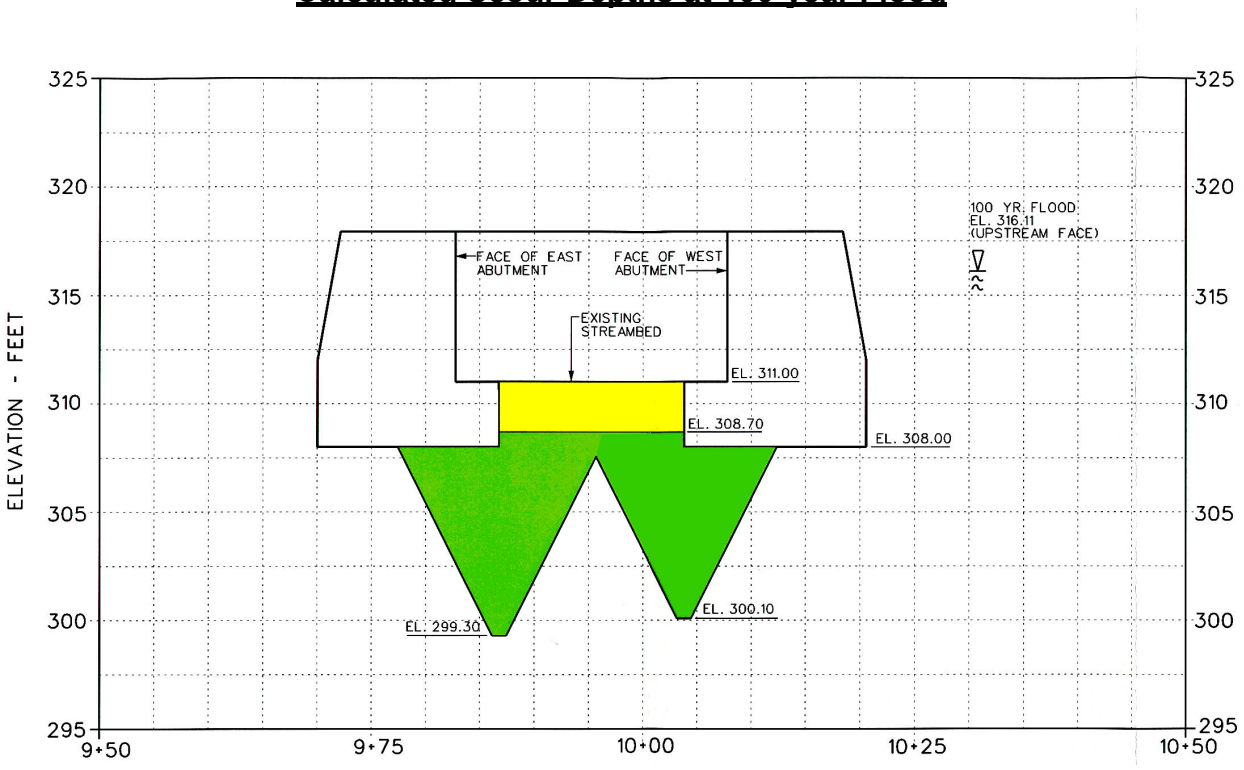
Route: 10
Milepoint: 20.50
Community: Livingston Township
County: Essex

Waterway Name: Canoe Brook
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Reinforced, simply supported prestressed concrete box beams
Substructure Type: Full height concrete abutments
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1410159

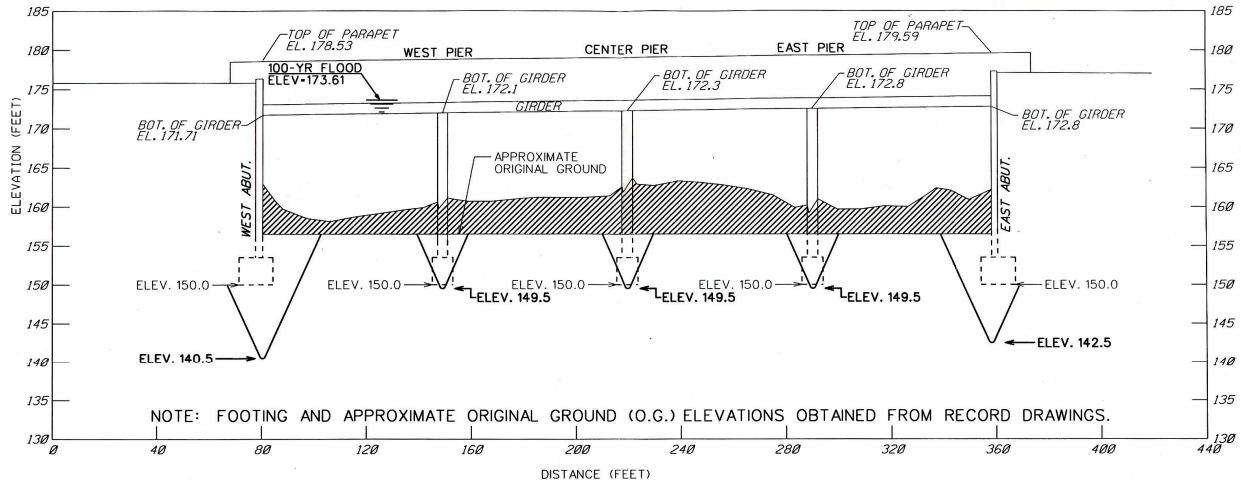
Route: 46
Milepoint: 51.85
Community: Montville Township
County: Morris

Waterway Name: Upper Passaic
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Simply supported concrete encased steel stringers
Substructure Type: Reinforced concrete gravity type
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: Unreinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1418154

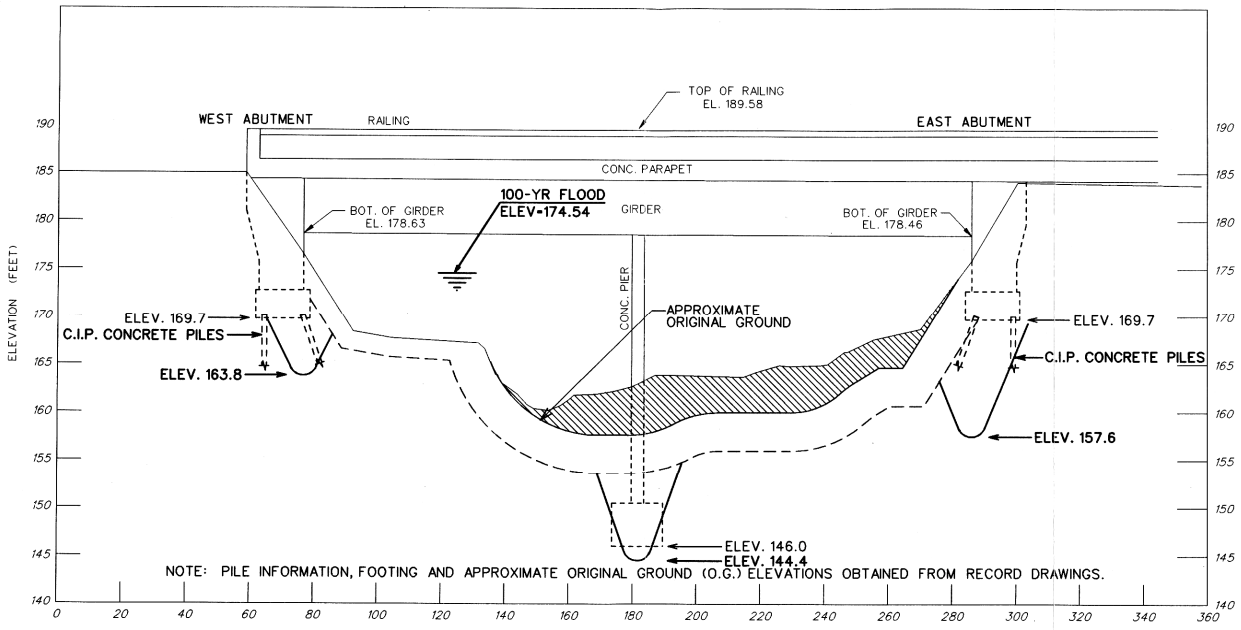
Route: 280 EB
Milepoint: 3.32
Community: East Hanover Twp, Roseland Boro
County: Morris, Essex

Waterway Name: Passaic River
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, composite, welded steel plate multi-girder
Substructure Type: Reinforced concrete semi-stub abutments; Reinforced concrete hammerhead pier
Abutment Foundation Type: Reinforced concrete spread footing on concrete piles
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1407156

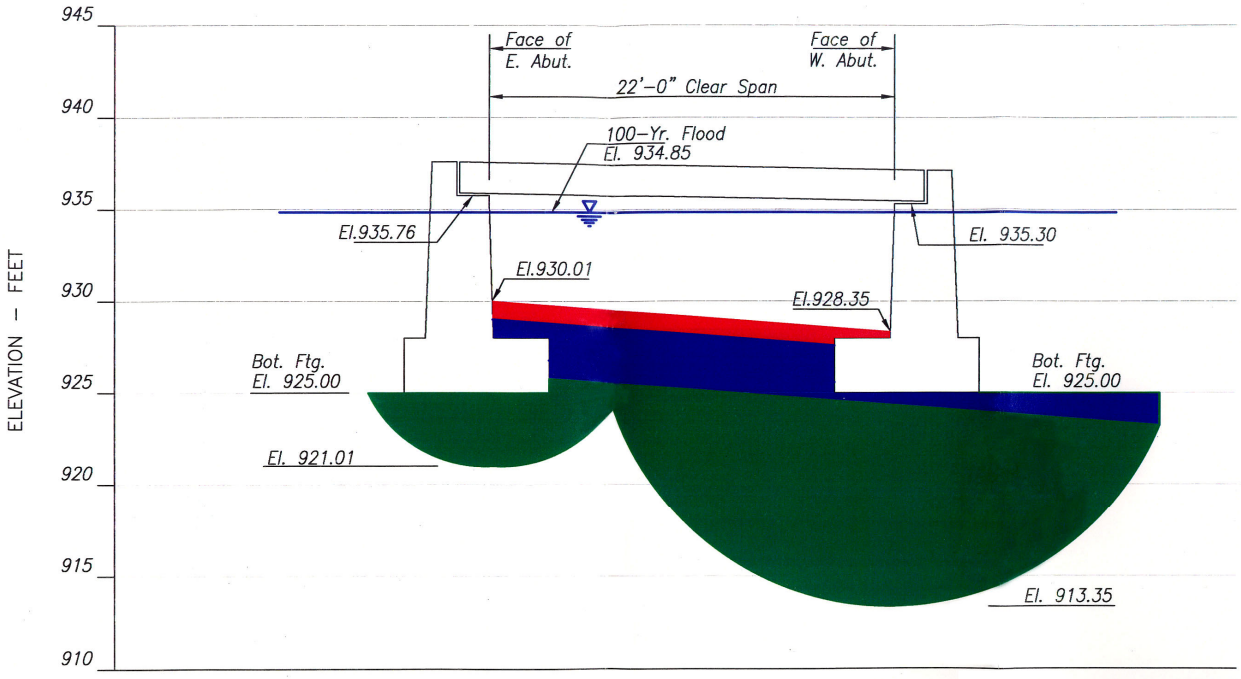
Route: 46
Milepoint: 25.87
Community: Mount Olive Township
County: Morris

Waterway Name: South Branch of Raritan River
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Concrete encased steel stringers (orig.); prestressed box beams (widened)
Substructure Type: Reinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1417156

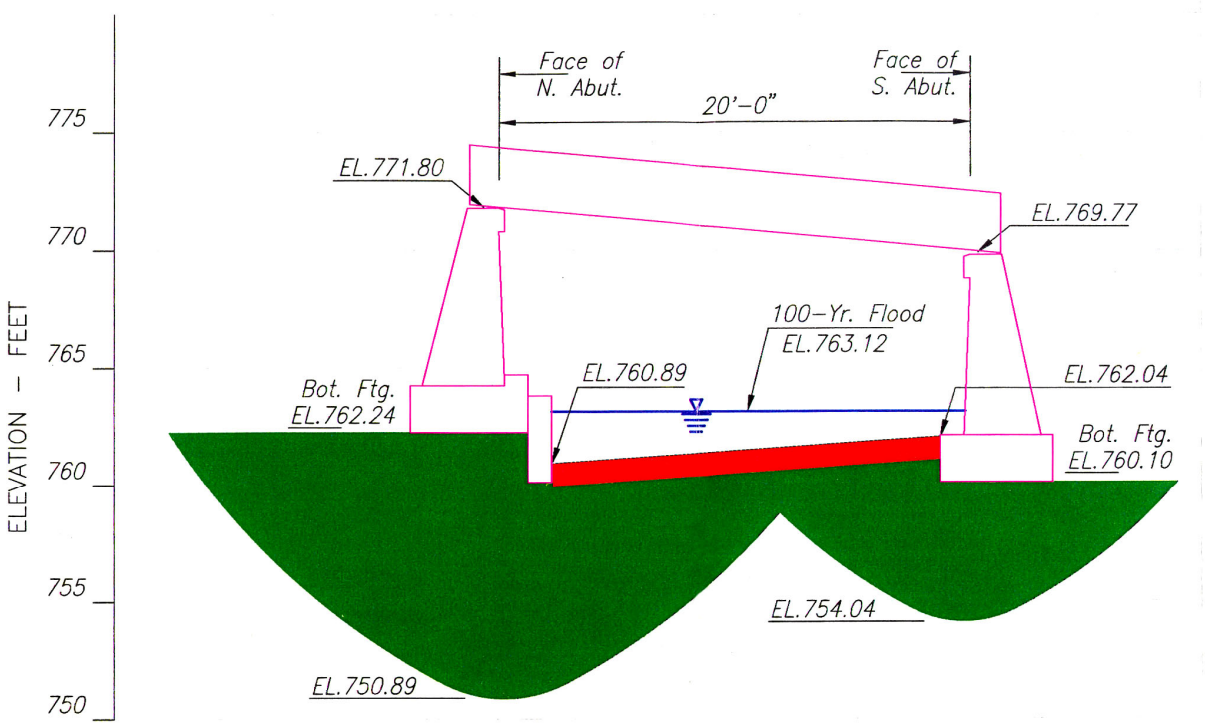
Route: 206
Community: Mount Olive Township
Milepoint: 92.23
County: Morris

Waterway Name: South Branch of Raritan River
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, reinforced concrete slab w/ earth fill
Substructure Type: Unrefinforced gravity concrete full height vertical abutments
Abutment Foundation Type: Unreinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1417157

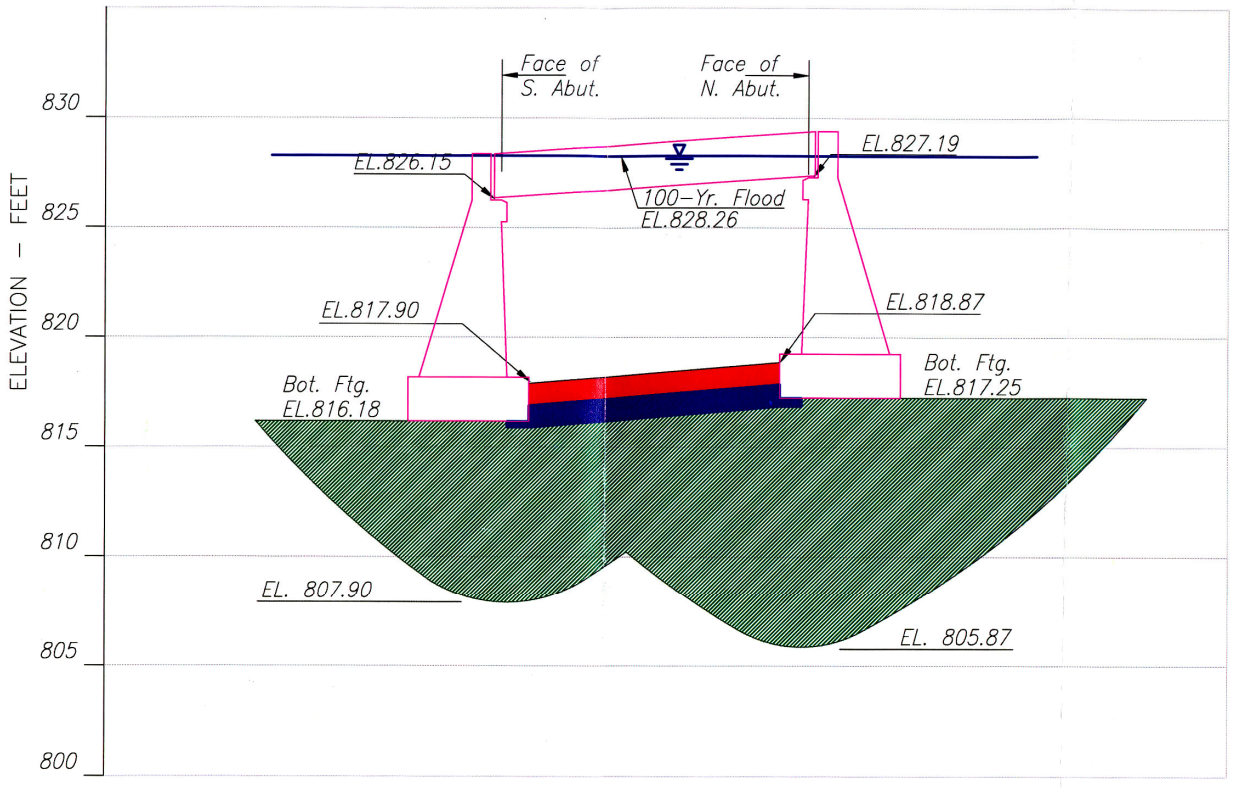
Route: 206
Milepoint: 92.46
Community: Mount Olive Township
County: Morris

Waterway Name: Tributary to Drakes Brook
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, reinforced concrete deck slab w/ fill
Substructure Type: Plain concrete full height vertical abutments
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1417159

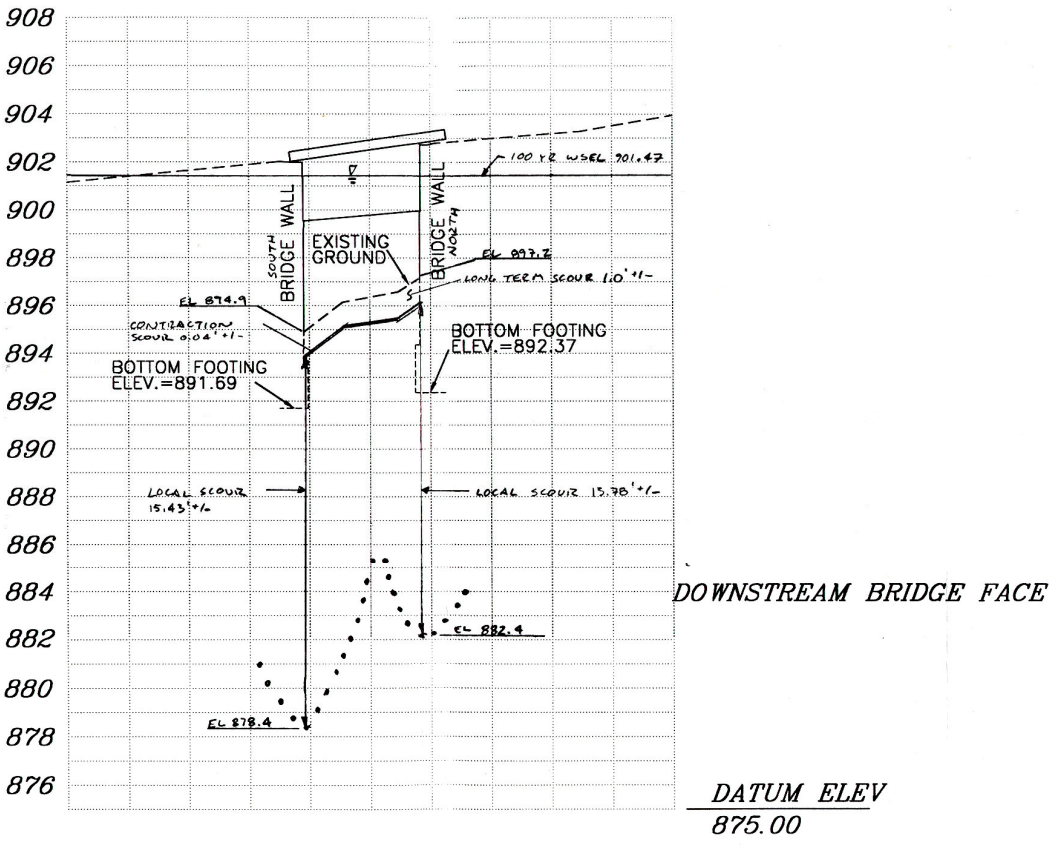
Route: 206
Milepoint: 92.82
Community: Mount Olive Township
County: Morris

Waterway Name: South Branch of Raritan River
Drainage Basin: South Branch of Raritan River
Watershed Management Area: North and South Branch Raritan (8)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, reinforced concrete deck slab
Substructure Type: Plain concrete gravity type walls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1404159

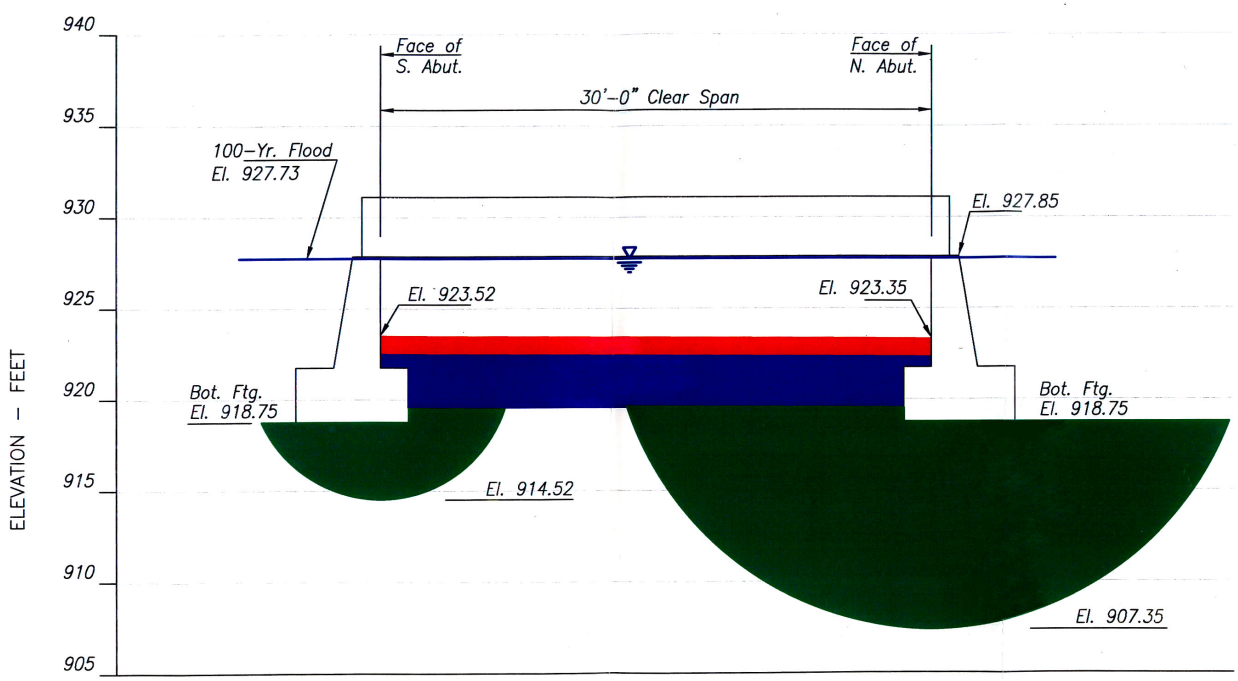
Route: 15, Ramp A
Community: Jefferson Township
Milepoint: 6.72
County: Morris

Waterway Name: Hurdtown Brook
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Reinforced concrete deck slab
Substructure Type: Unreinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N12

Data Sheet – Bridge No. 1407152

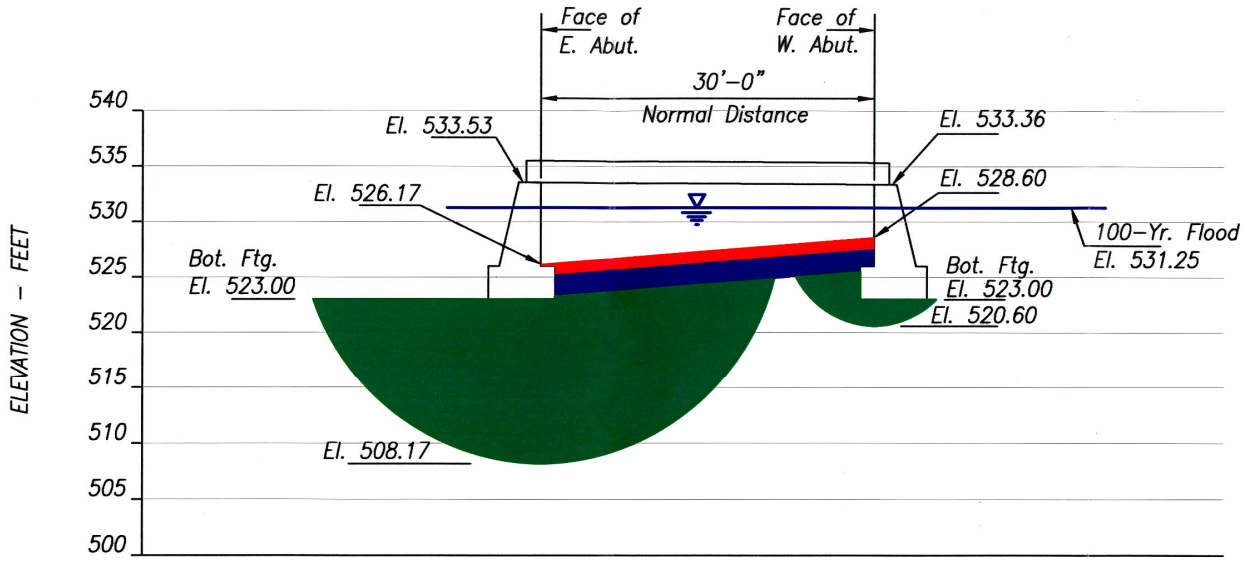
Route: 46 WB
Milepoint: 22.47
Community: Washington Township
County: Morris

Waterway Name: Mine Brook
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Reinforced concrete slab
Substructure Type: Unreinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N12

Data Sheet – Bridge No. 1407153

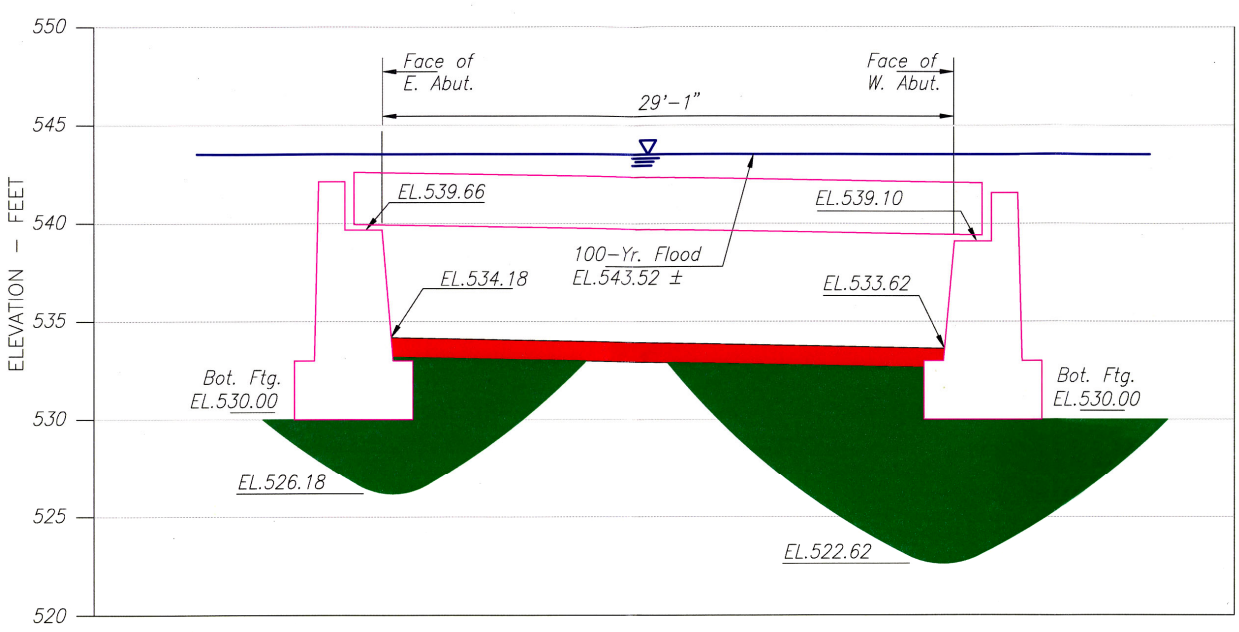
Route: 46 EB
Milepoint: 22.61
Community: Washington Township
County: Morris

Waterway Name: Branch of Mine Brook
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, concrete encased steel beams
Substructure Type: Plain concrete full height vertical abutments
Abutment Foundation Type: Plain concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N12

Data Sheet – Bridge No. 1424150

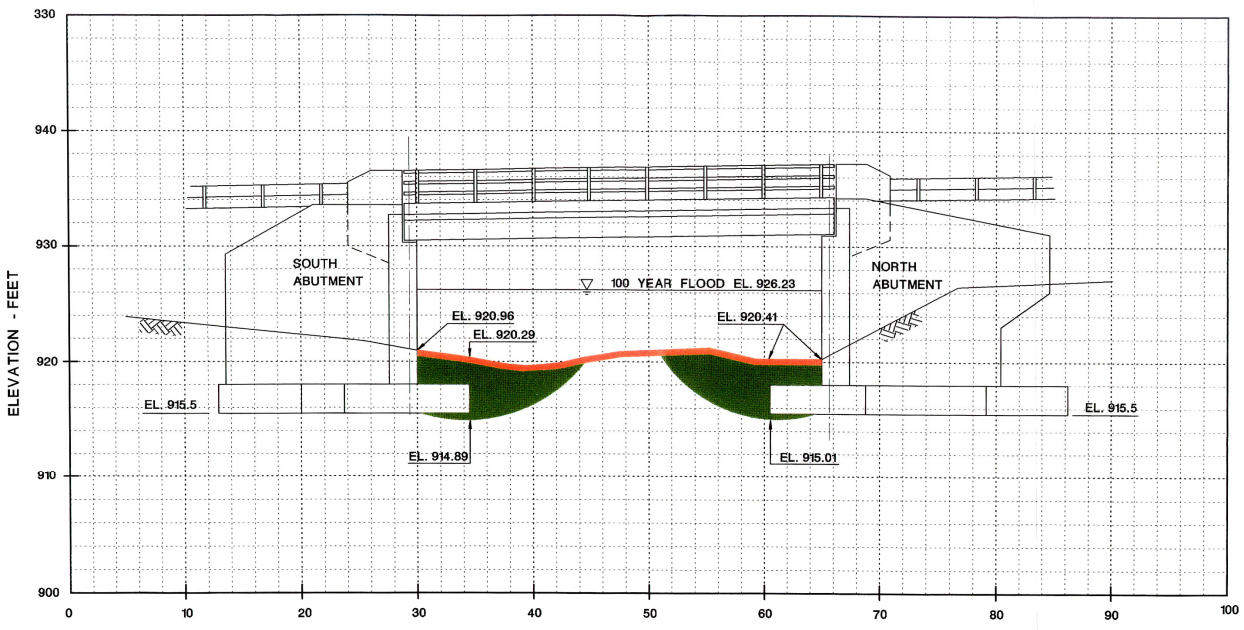
Route: 15 NB
Milepoint: 6.72
Community: Jefferson Township
County: Morris

Waterway Name: Hurdtown Brook
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Composite prestressed concrete adjacent box beams
Substructure Type: Reinforced concrete full height
Abutment Foundation Type: Spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1911151

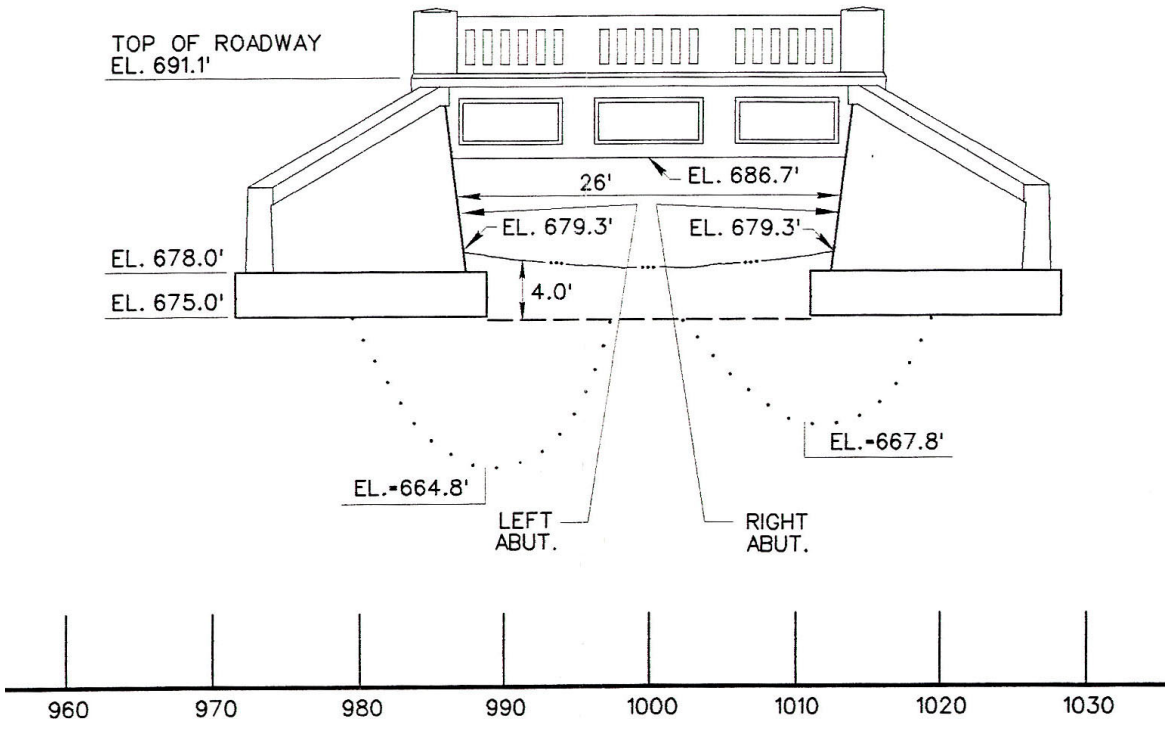
Route: 206
Milepoint: 98.82
Community: Byram Township
County: Sussex

Waterway Name: Lunbbers Run
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, encased steel stringer
Substructure Type: Vertical wall, plain concrete gravity type
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N13

Data Sheet – Bridge No. 1405156

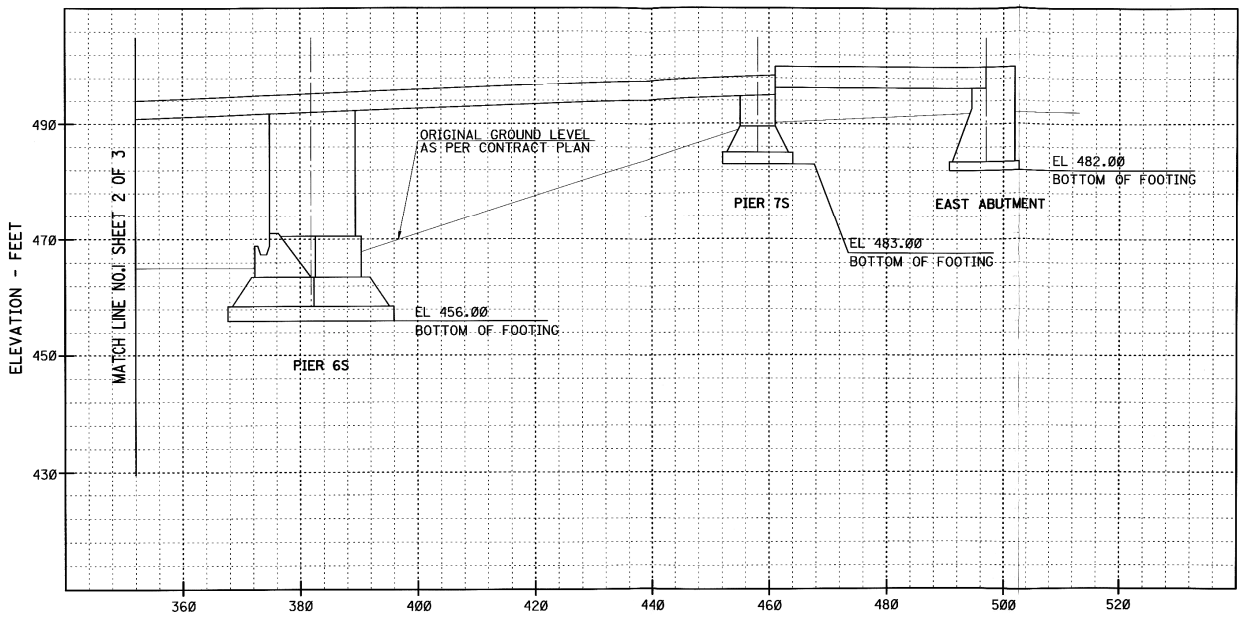
Route: 23
Milepoint: 16.98
Community: Kinnelon Boro, West Milford Twp
County: Morris, Pssaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Concrete encased steel thru-girder
Substructure Type: reinforced concrete spill thru abutments; single, reinforced concrete columns (piers)
Abutment Foundation Type: Spread footing
Pier Foundation Type: Spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: No

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N13

Data Sheet – Bridge No. 1605153

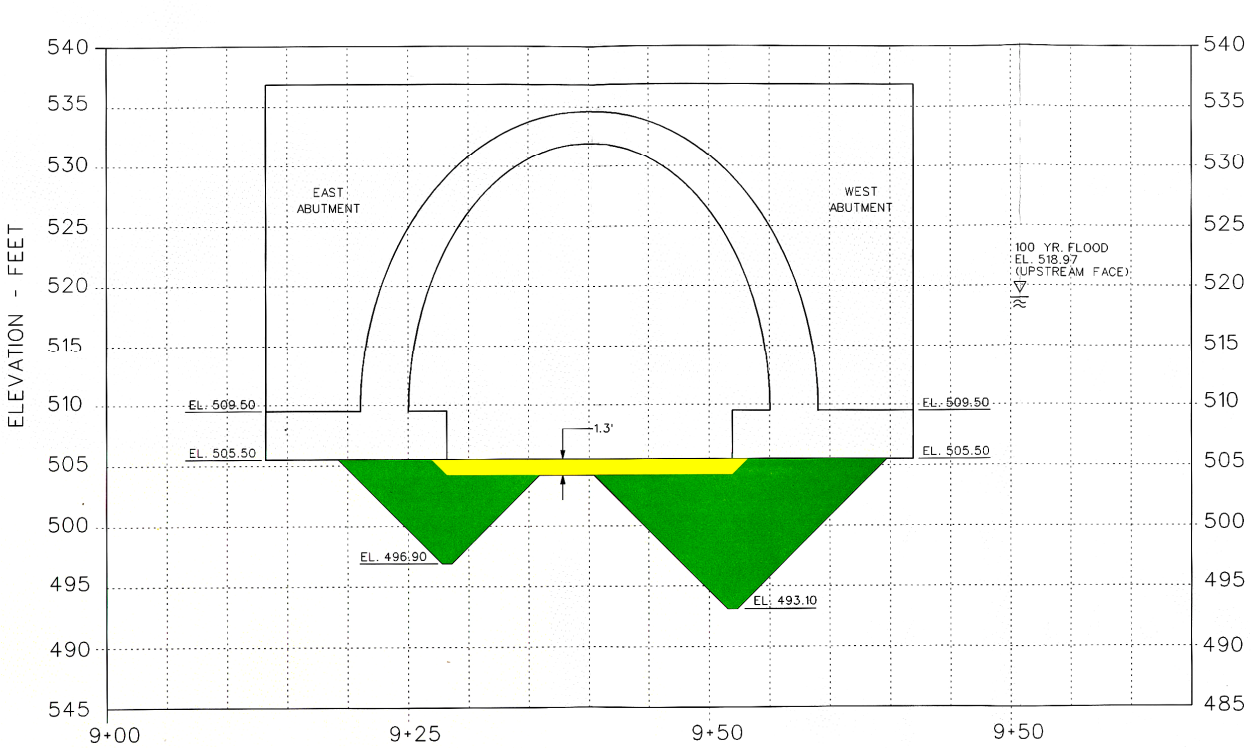
Route: 23 SB
Community: West Milford Township
Milepoint: 18.20
County: Passaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete arch culvert with fill
Substructure Type: Reinforced concrete arch wall
Abutment Foundation Type: Continuous concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1605156

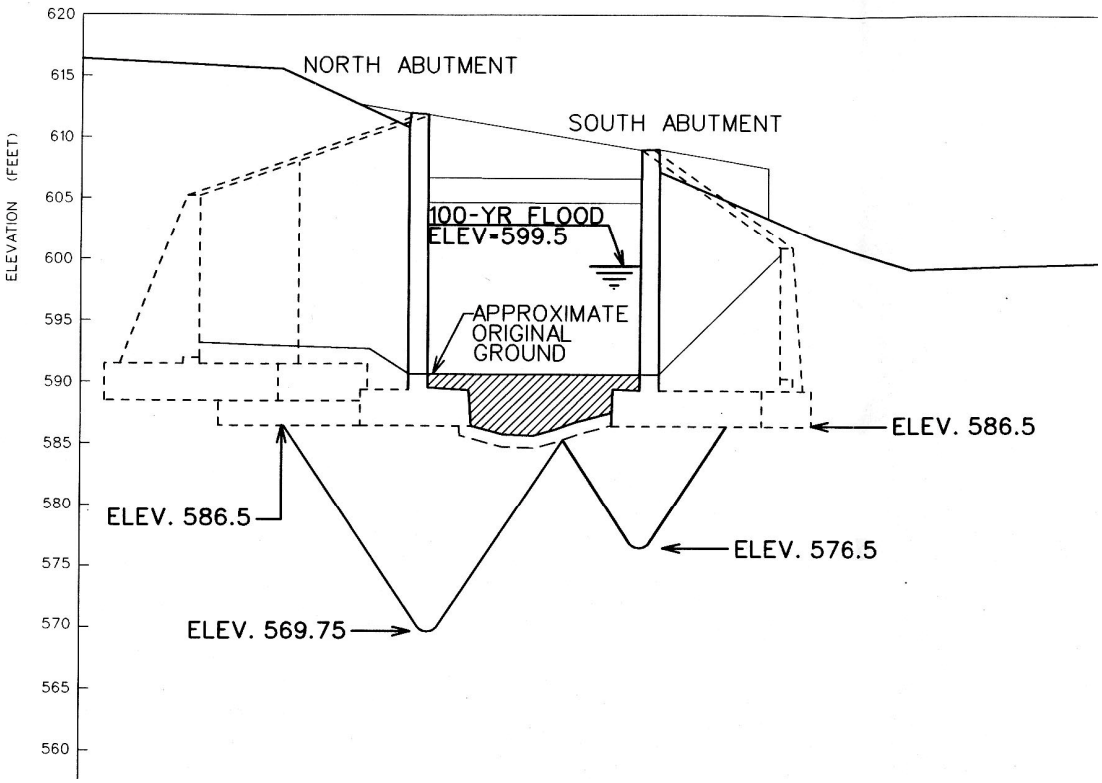
Route: 23 SB
Milepoint: 19.49
Community: West Milford Township
County: Passaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Single cell reinforced concrete rigid frame culvert w/ earth fill
Substructure Type: Reinforced concrete full height vertical abutments w/ flared wingwalls
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1605158

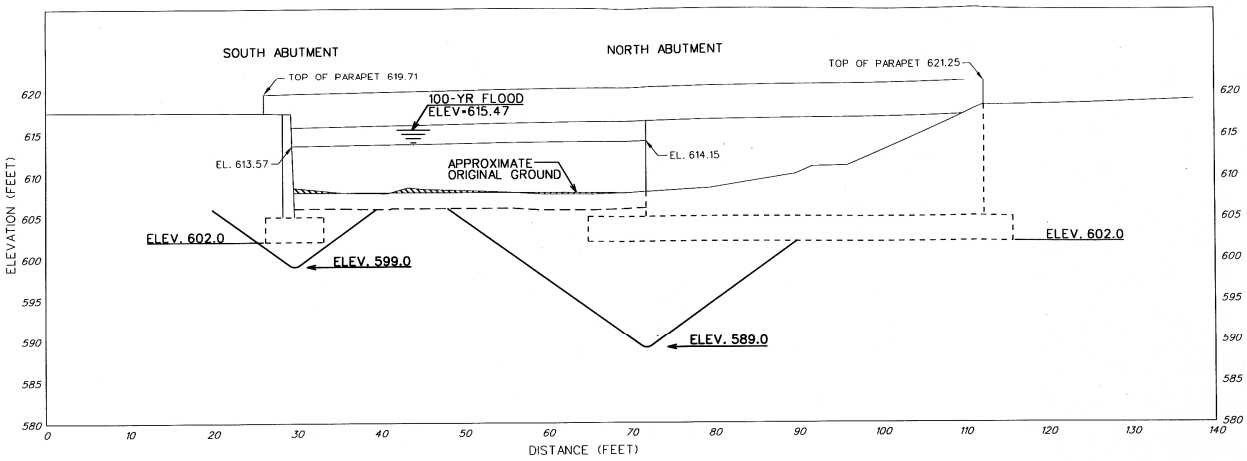
Route: 23 NB
Milepoint: 20.26
Community: West Milford Township
County: Passaic

Waterway Name: Macopin River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Simply supported roll steel stringers w/ cover plate
Substructure Type: Reinforced concrete full height vertical abutment w/ flared wingwalls
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N13

Data Sheet – Bridge No. 1605162

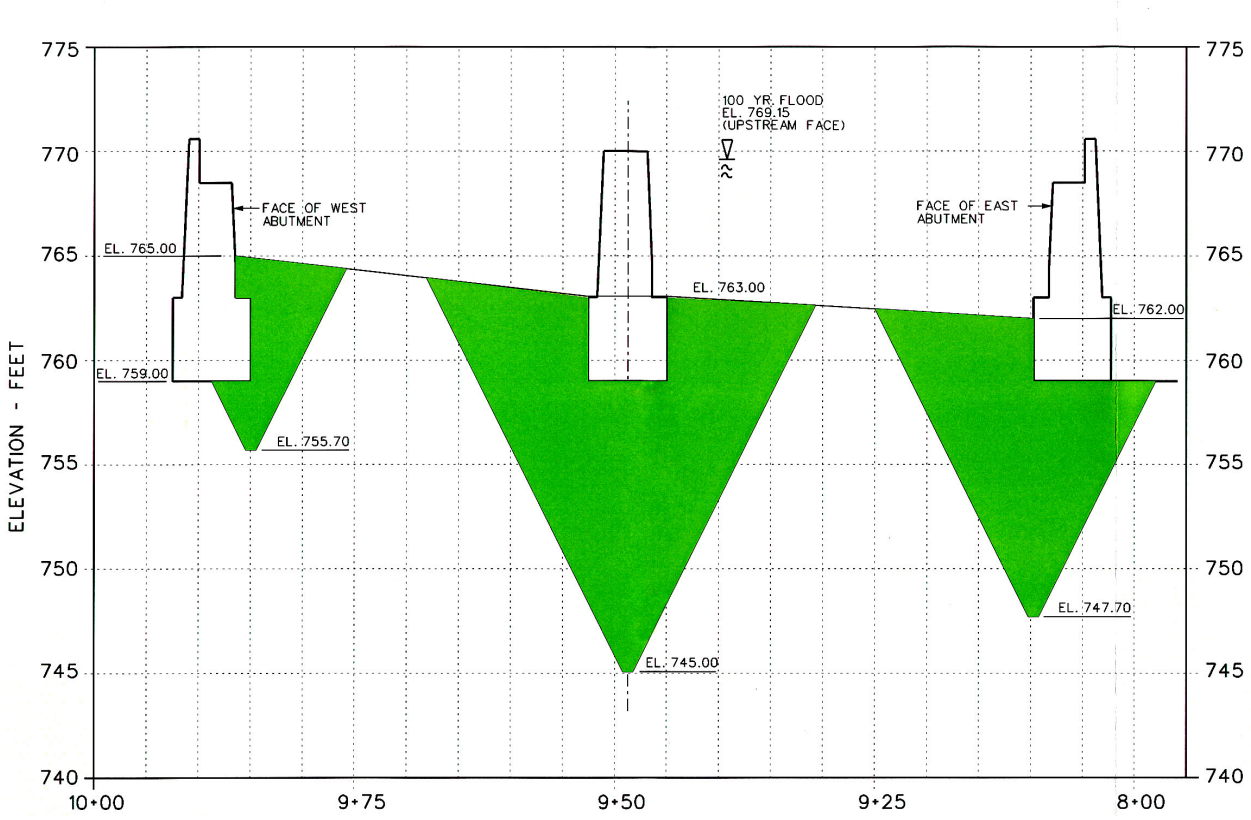
Route: 23 SB
Community: West Milford Township
Milepoint: 22.50
County: Passaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Continuous, composite rolled steel multi-stringer reinforced concrete slab
Substructure Type: Concrete gravity wall
Abutment Foundation Type: Concrete spread footings on timber piles
Pier Foundation Type: Concrete spread footings on timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1605167

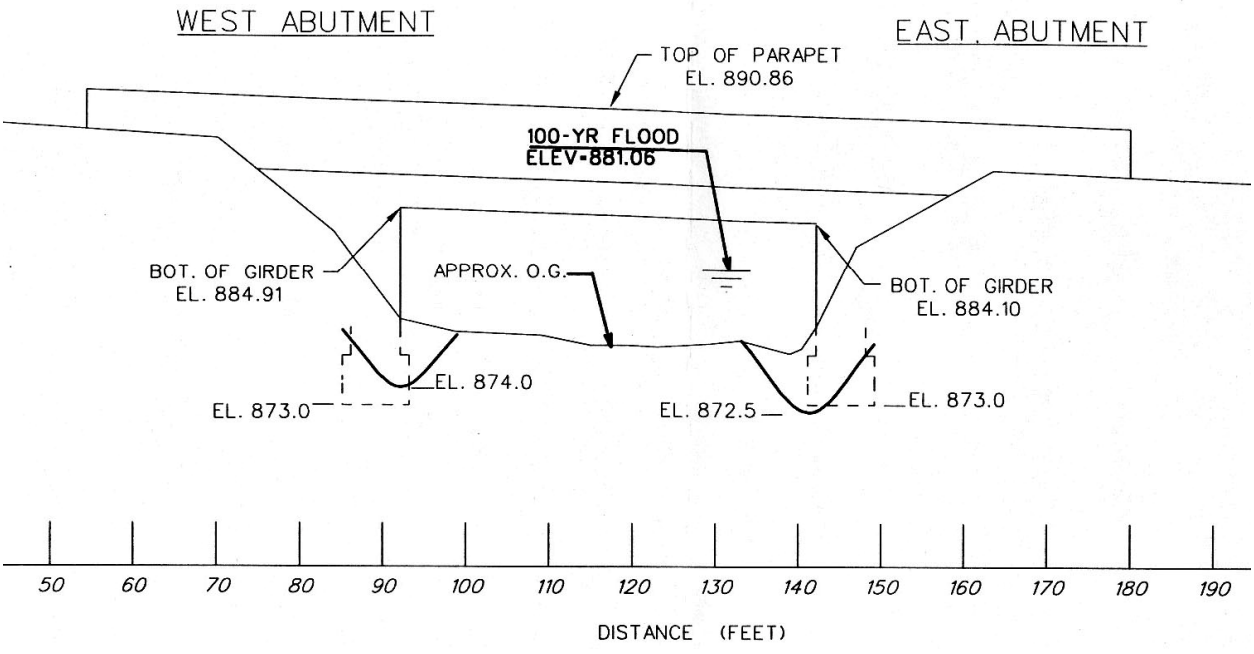
Route: 23 SB
Milepoint: 25.62
Community: West Milford Township
County: Passaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Simply supported composite rolled steel stringers w/ welded cover plate
Substructure Type: Unreinforced concrete full height vertical abutments w/ U-type wingwalls
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1605175

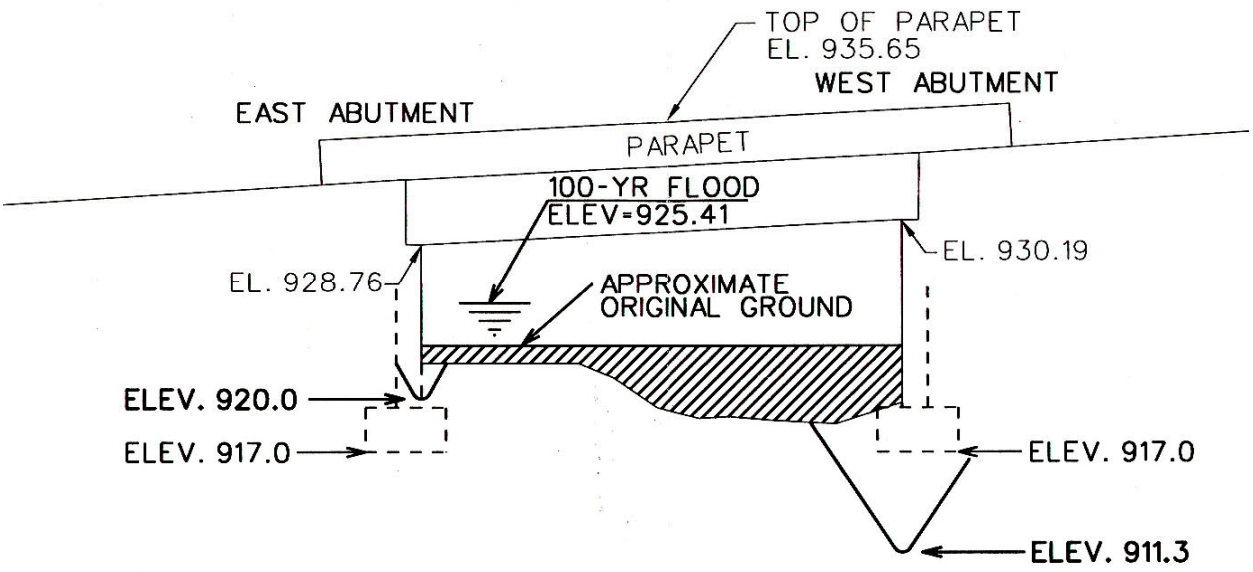
Route: 23 NB
Milepoint: 26.20
Community: West Milford Township
County: Passaic

Waterway Name: Pequannock River
Drainage Basin: Pequannock River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Simply supported prestressed concrete box beams
Substructure Type: Reinforced concrete full height vertical wall abutments w/ wingwalls
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1619151

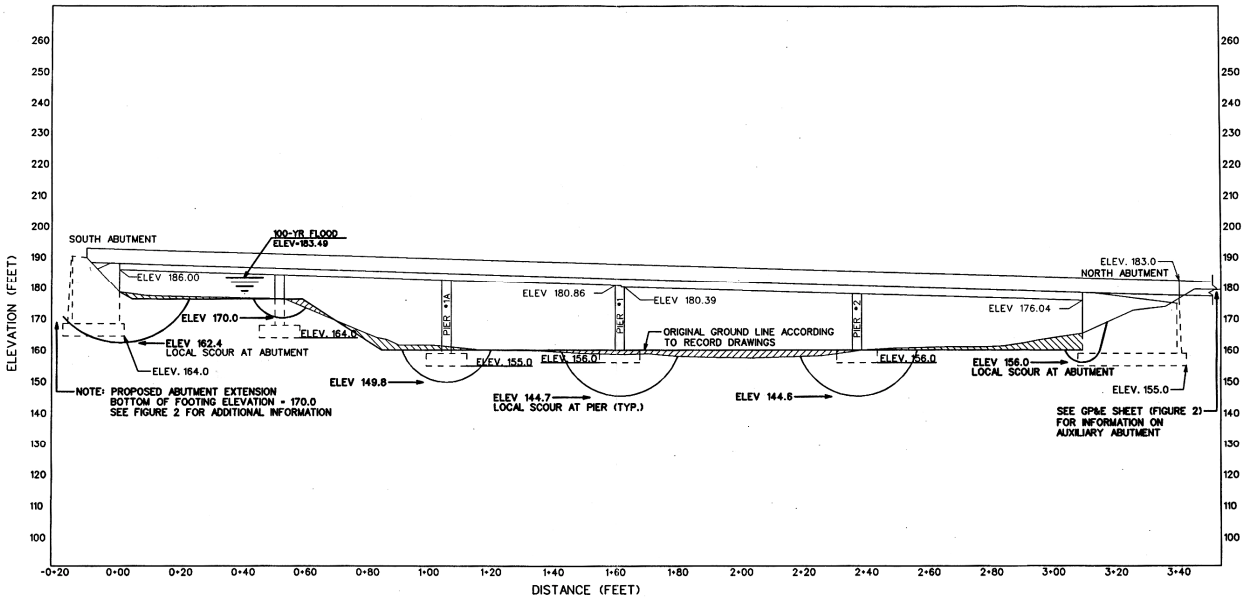
Route: 23
Milepoint: 9.64
Community: Wayne Twp, Pequannock Twp
County: Passaic, Morris

Waterway Name: Pompton River
Drainage Basin: Pompton River
Watershed Management Area: Pompton, Pequannock, Wanaque, Ramapo (3)
Watershed Management Region: Northeast

Superstructure Type: Continuous and simply supported, welded steel stringers
Substructure Type: Full height cantilever type (abut. 1&2), stub (aux. abut.), solid pier wall
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: Concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0722157

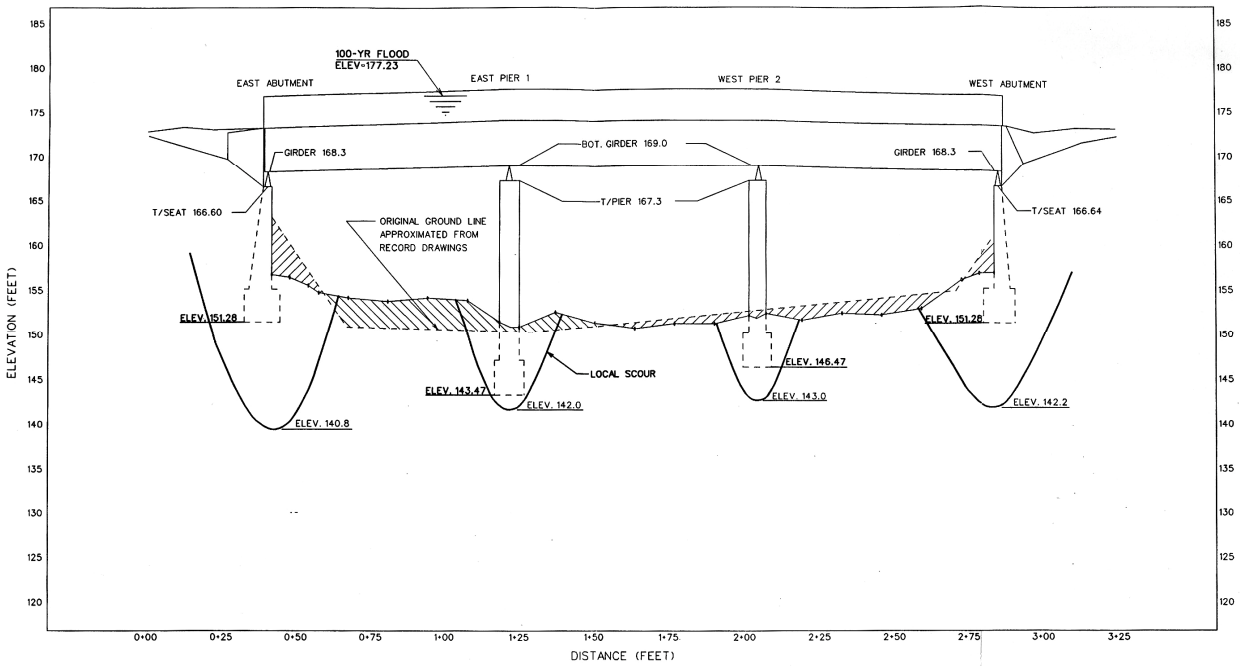
Route: 46 EB
Milepoint: 55.45
Community: Fairfield Boro, Wayne Twp
County: Essex, Passaic

Waterway Name: Upper Passaic
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Simply supported, concrete encased, riveted thru-girder and floorbeam
Substructure Type: Concrete gravity type abutments; solid pier wall
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: Unreinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N15

Data Sheet – Bridge No. 0722158

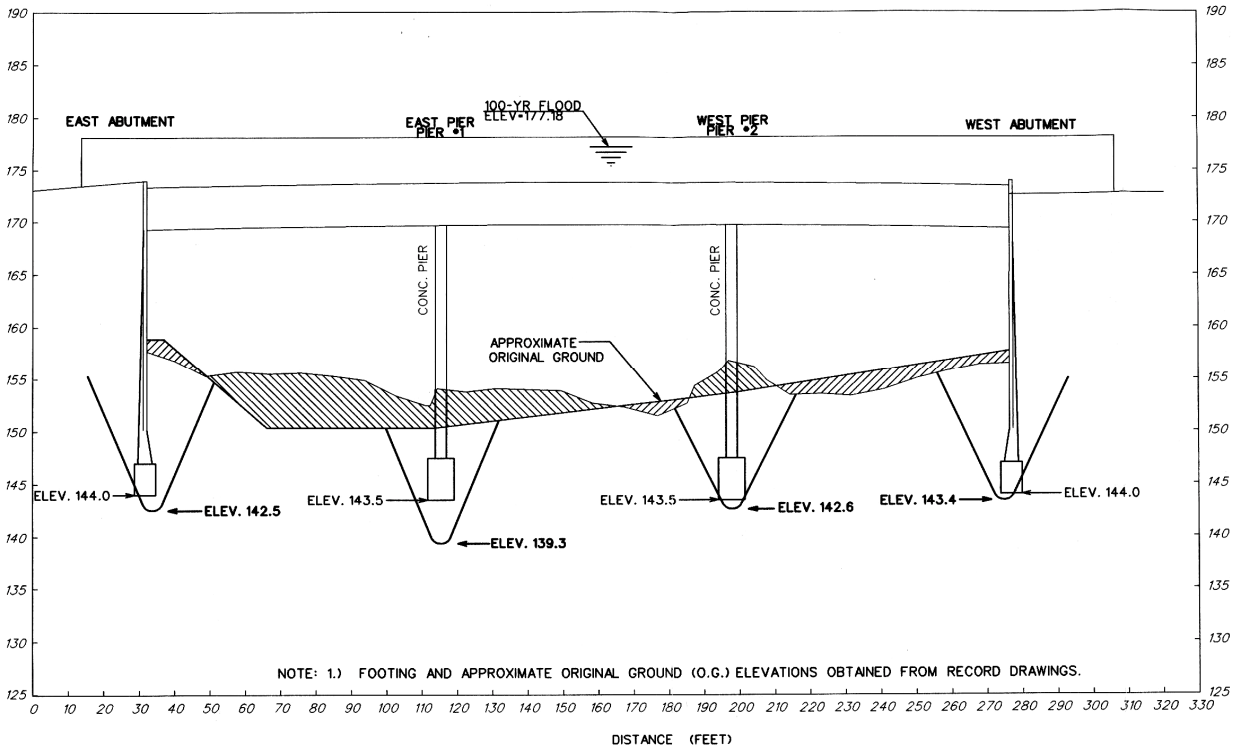
Route: 46 WB
Community: Fairfield Boro, Wayne Twp
Milepoint: 55.45
County: Essex, Passaic

Waterway Name: Upper Passaic
Drainage Basin: Upper Passaic
Watershed Management Area: Upper and Mid-Passaic, Whippany, Rockaway (6)
Watershed Management Region: Northeast

Superstructure Type: Continuous rolled steel stringers
Substructure Type: Concrete gravity type abutments; solid pier wall
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1604150

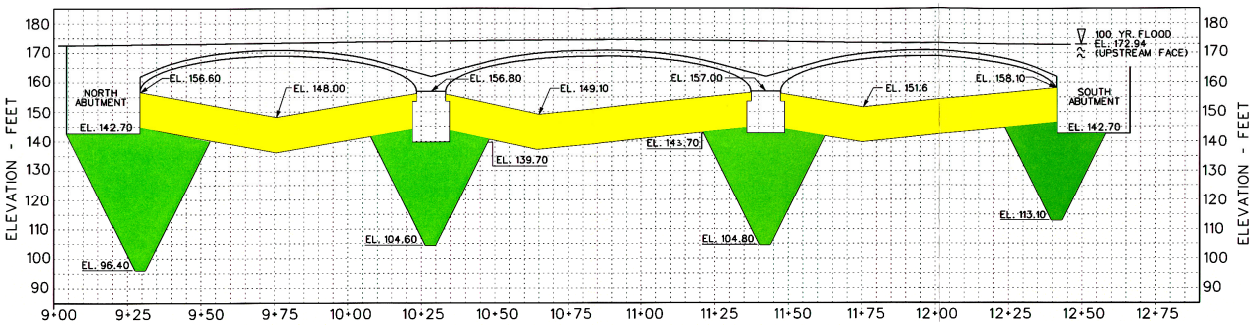
Route: 23
Community: Little Falls Twp, Wayne Twp
Milepoint: 4.54
County: Passaic

Waterway Name: Lower Passaic
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete, open spandrel arch w/ rib supported concrete deck
Substructure Type: Gravity concrete wall
Abutment Foundation Type: Concrete footing timber piles
Pier Foundation Type: Concrete footing timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0719151

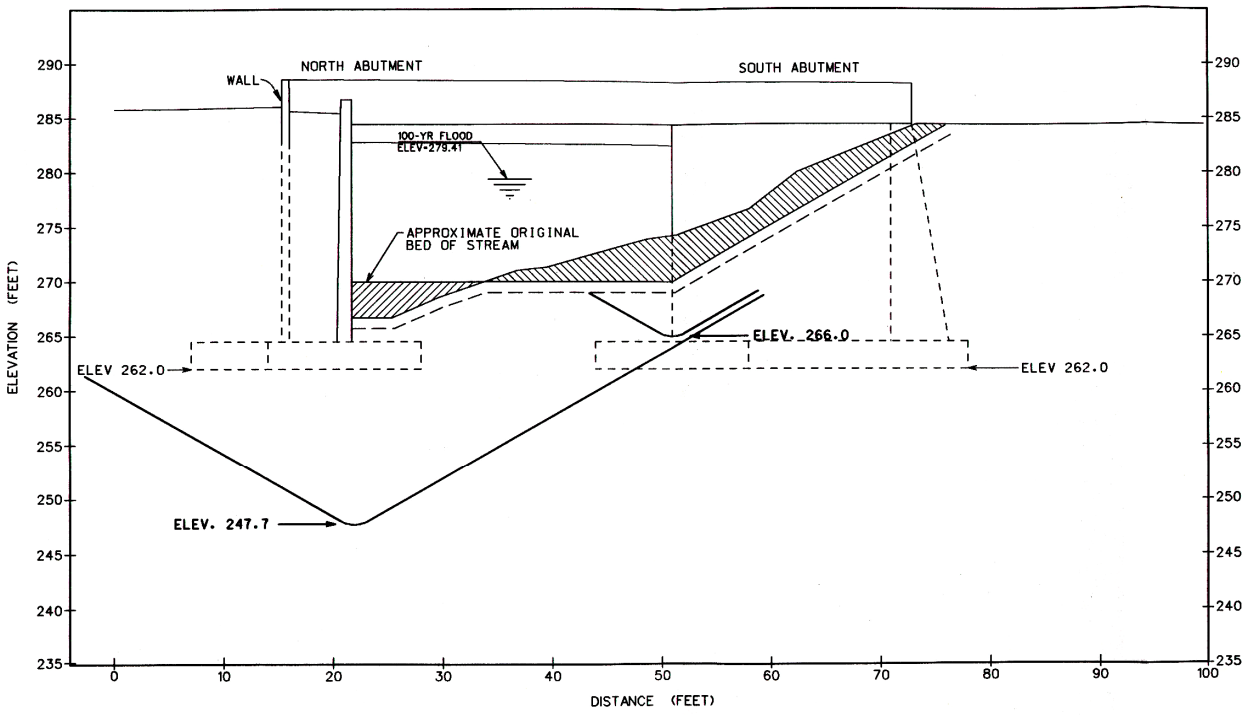
Route: 23
Milepoint: 2.09
Community: Cedar Grove Township
County: Essex

Waterway Name: Peckmans Brook
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Simply supported prestressed concrete voided slab beams
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1612154

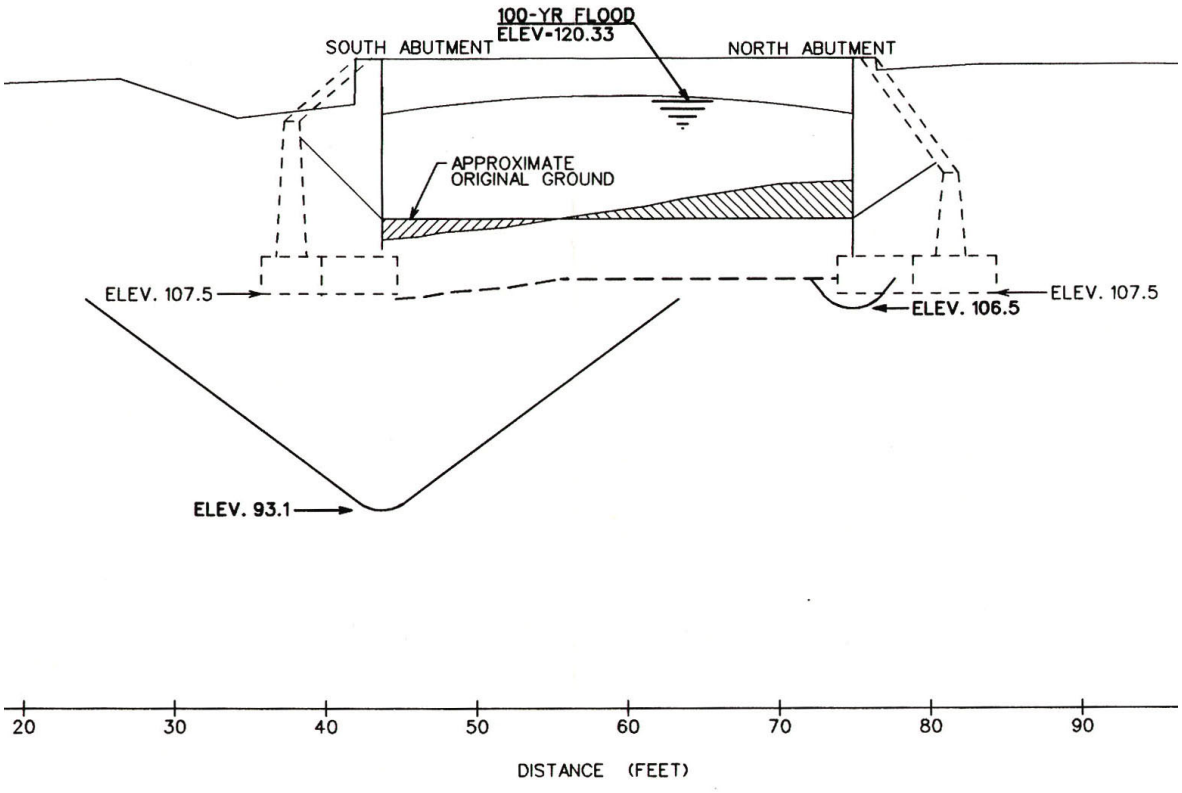
Route: 208, Ramp A
Milepoint: 4.36
Community: Hawthorne Boro
County: Passaic

Waterway Name: Goffle Brook
Drainage Basin: Lower Passaic
Watershed Management Area: Lower Passaic, Saddle (4)
Watershed Management Region: Northeast

Superstructure Type: Reinforced concrete, hinged rigid frame w/ fill
Substructure Type: Concrete cast in place gravity type vertical wall
Abutment Foundation Type: Concrete hinged spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1903152

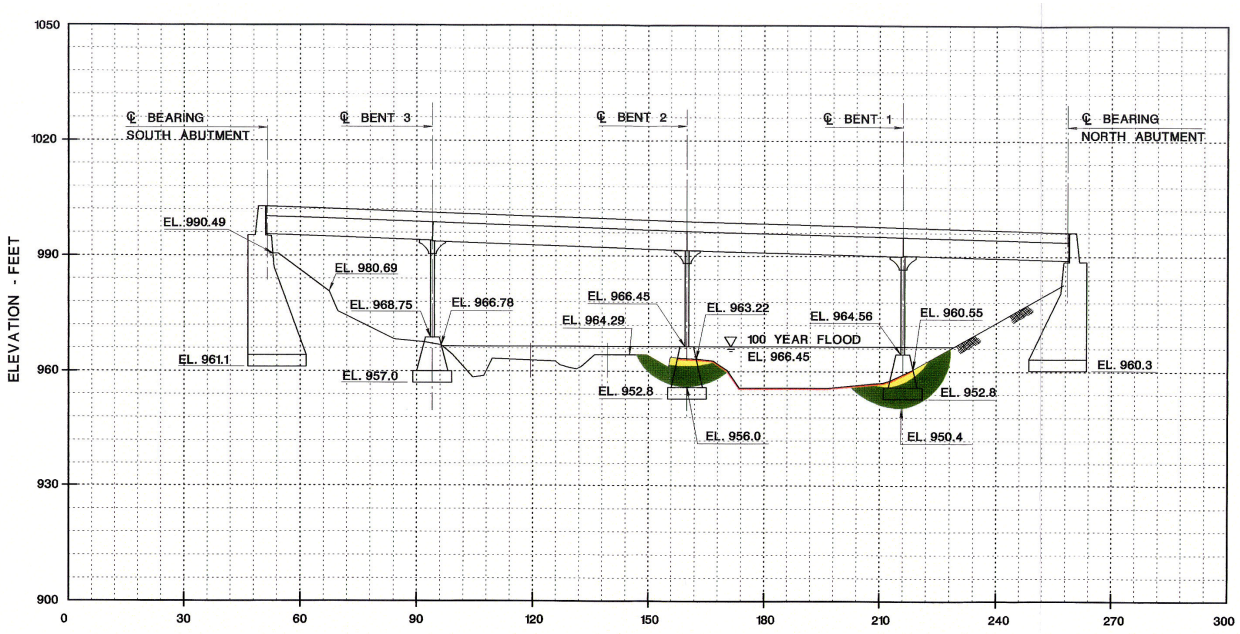
Route: 23
Milepoint: 30.14
Community: Hardyston Township
County: Sussex

Waterway Name: Pacock Brook
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Riveted steel plate girder & floorbeams encased in concrete barrel arch deck
Substructure Type: Concrete gravity (abut.); steel bents on concrete gravity pedestals (piers)
Abutment Foundation Type: Spread footings
Pier Foundation Type: Spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: No

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1903153

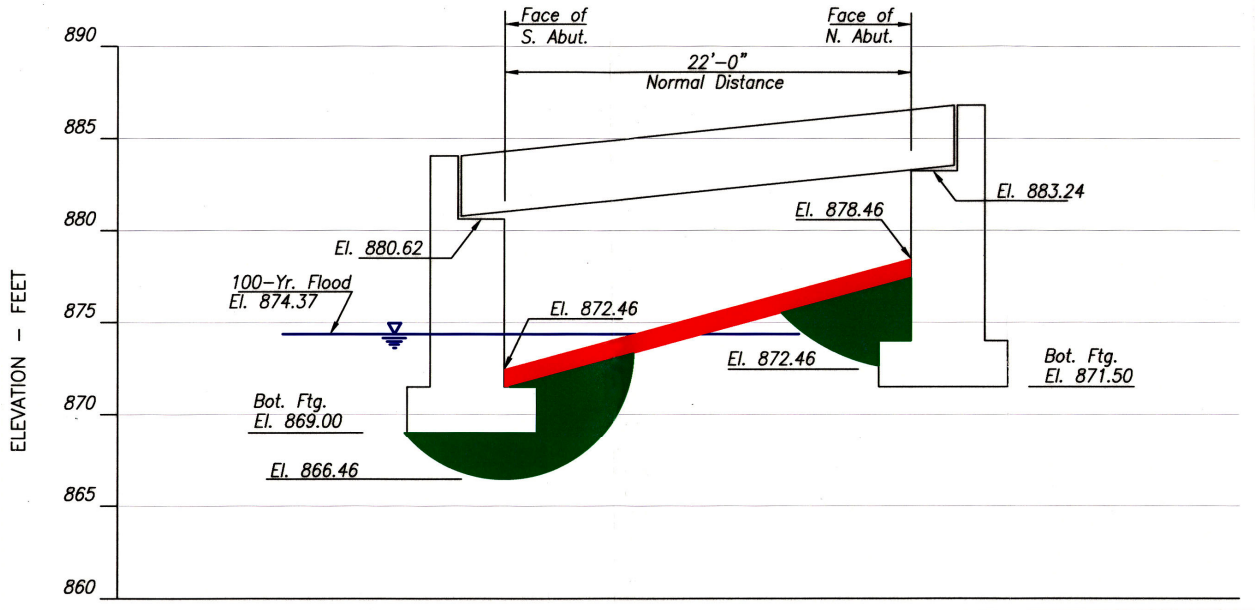
Route: 23
Community: Hardyston Township
Milepoint: 30.60
County: Sussex

Waterway Name: Branch of Franklin Lake
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Simply supported with steel stringers
Substructure Type: Reinforced concrete full height cantilever abutments
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1904152

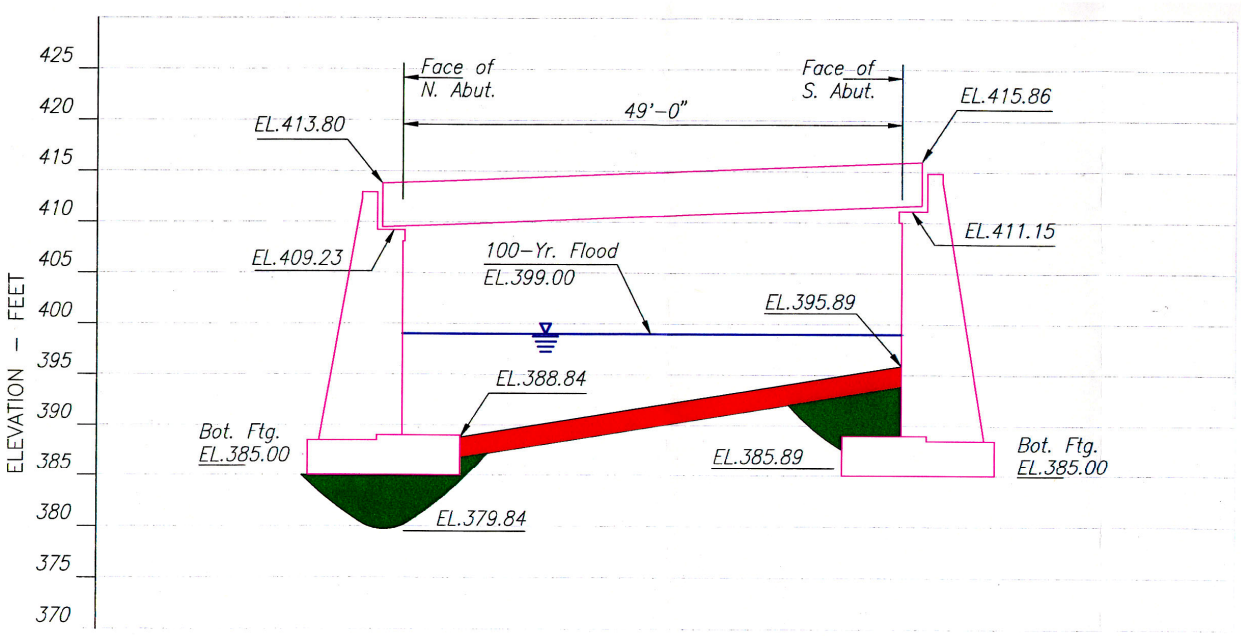
Route: 23
Community: Hardyston Twp, Wantage Twp
Milepoint: 36.61
County: Sussex

Waterway Name: Wallkill River
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, non-composite rolled steel stringers
Substructure Type: Full height abutments
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1904153

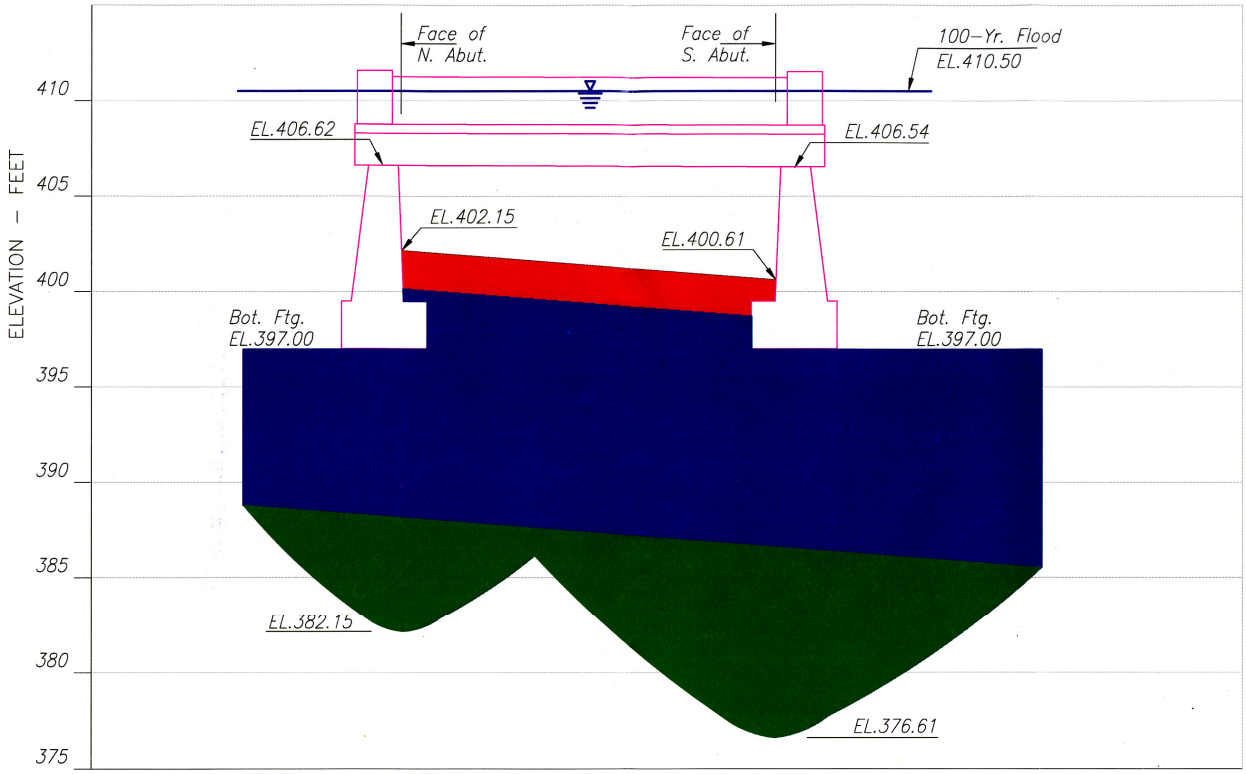
Route: 23
Community: Wantage Township
Milepoint: 37.60
County: Sussex

Waterway Name: Wallkill River
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Simply supported reinforced concrete slab
Substructure Type: Full height vertical abutments
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N18

Data Sheet – Bridge No. 1905151

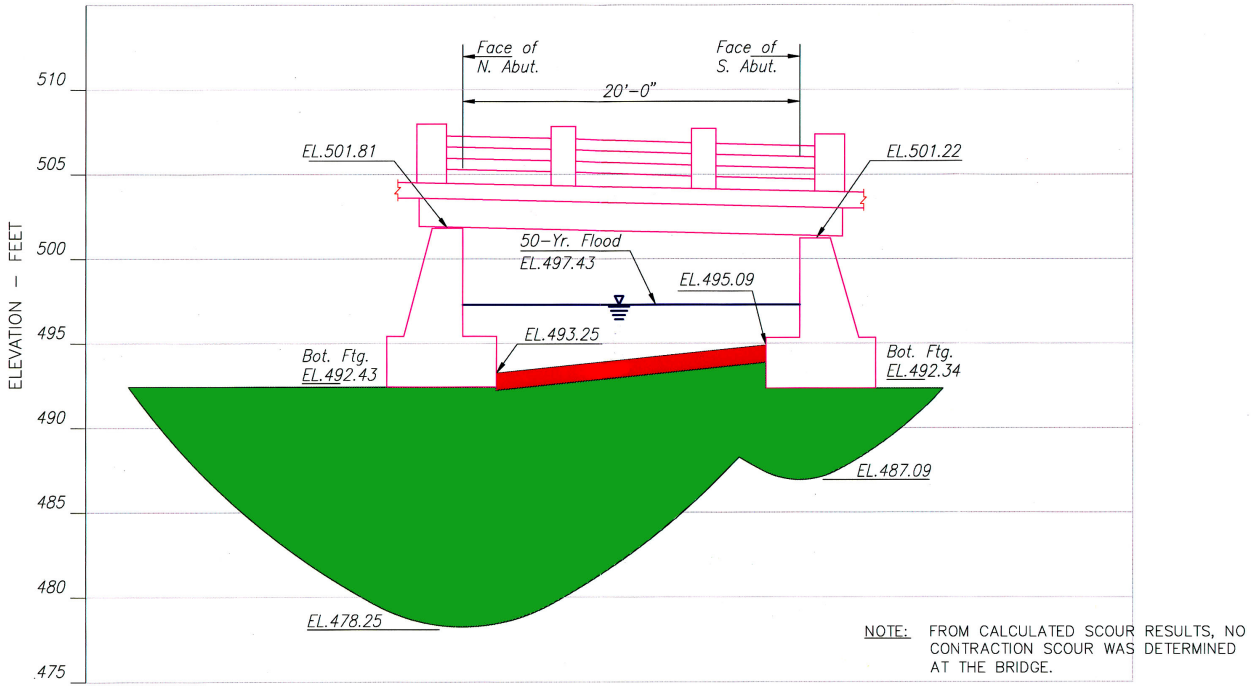
Route: 23
Milepoint: 42.61
Community: Wantage Township
County: Sussex

Waterway Name: Branch of Clove River
Drainage Basin: Papatking Creek
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Simply supported reinforced concrete deck slab
Substructure Type: Reinforced concrete full height vertical abutments
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 50-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1907152

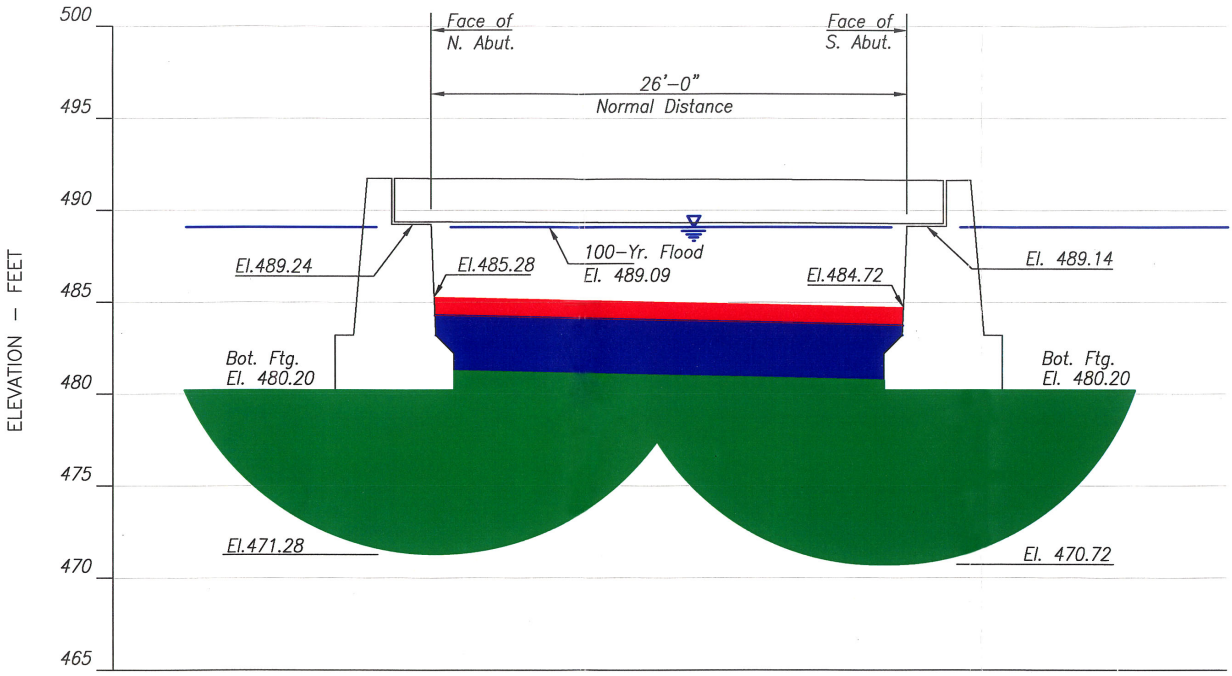
Route: 284
Milepoint: 3.04
Community: Wantage Township
County: Sussex

Waterway Name: Wallkill River
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased rolled I-beam
Substructure Type: Unreinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N18

Data Sheet – Bridge No. 1907157

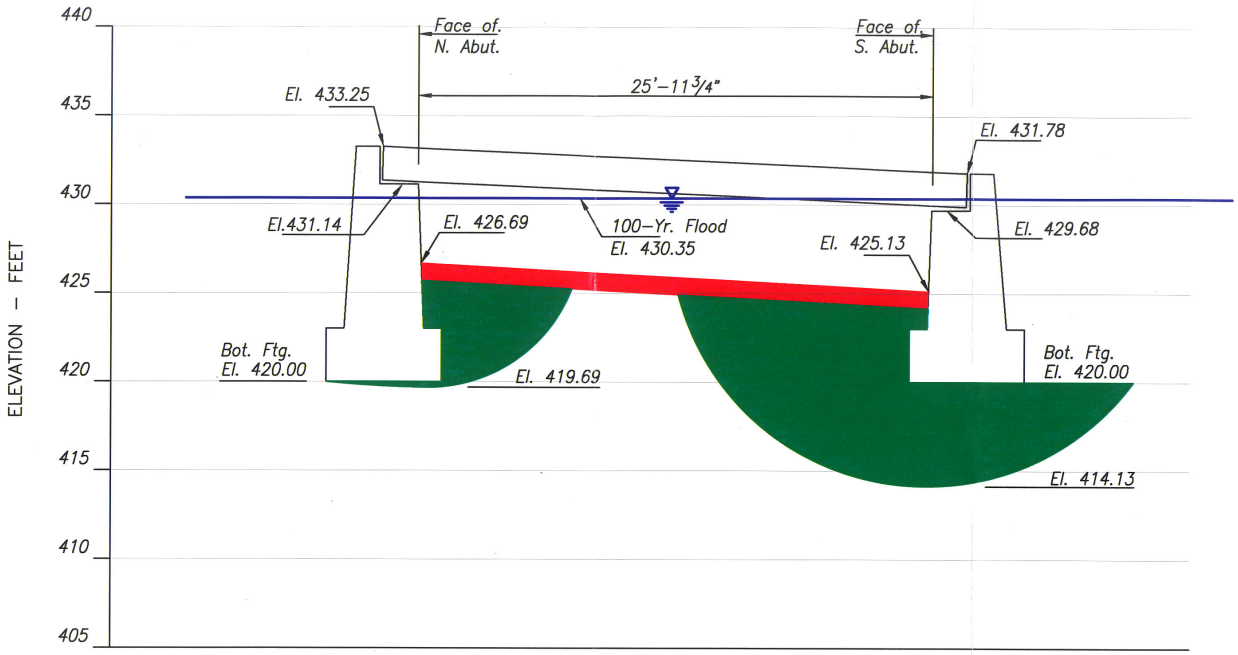
Route: 284
Community: Wantage Township
Milepoint: 6.62
County: Sussex

Waterway Name: Branch of Wallkill River
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Multibeam, concrete encased steel stringers
Substructure Type: Unreinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N18

Data Sheet – Bridge No. 1923150

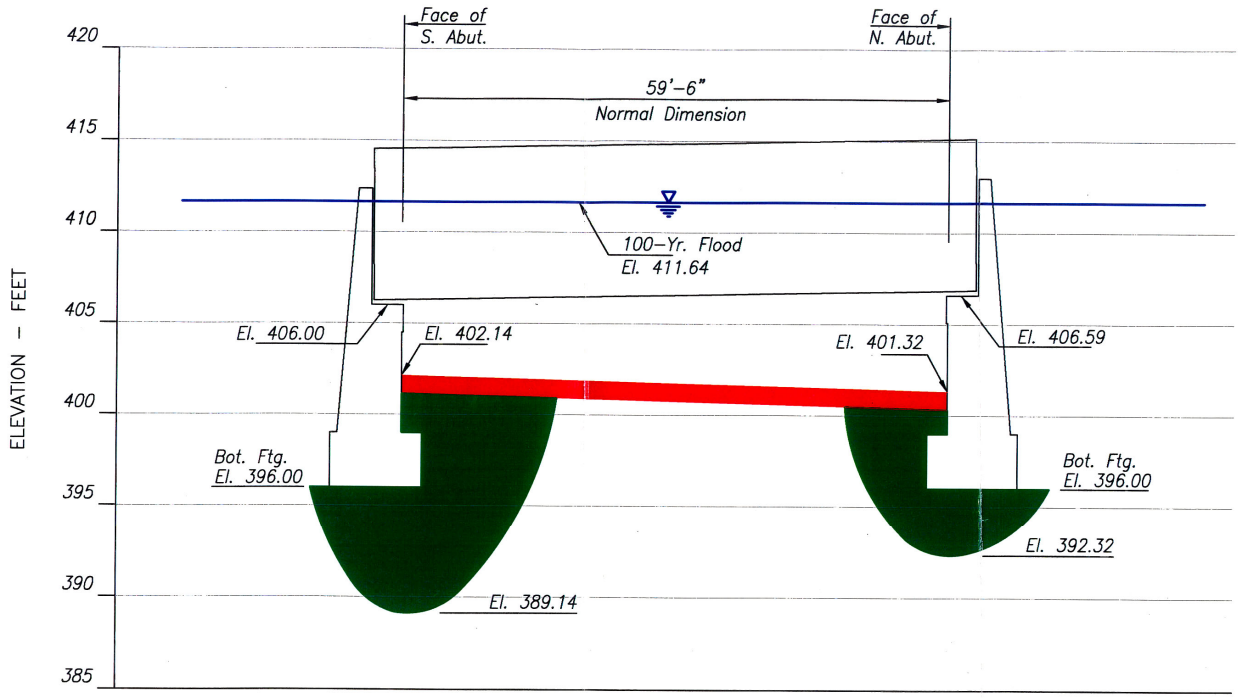
Route: 94
Community: Hardystown Twp, Hamburg Boro
Milepoint: 35.21
County: Sussex

Waterway Name: Wallkill River
Drainage Basin: Wallkill River
Watershed Management Area: Wallkill (2)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased steel thru-girders w/ floor beams
Substructure Type: Minimally reinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Unreinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N19

Data Sheet – Bridge No. 1912158

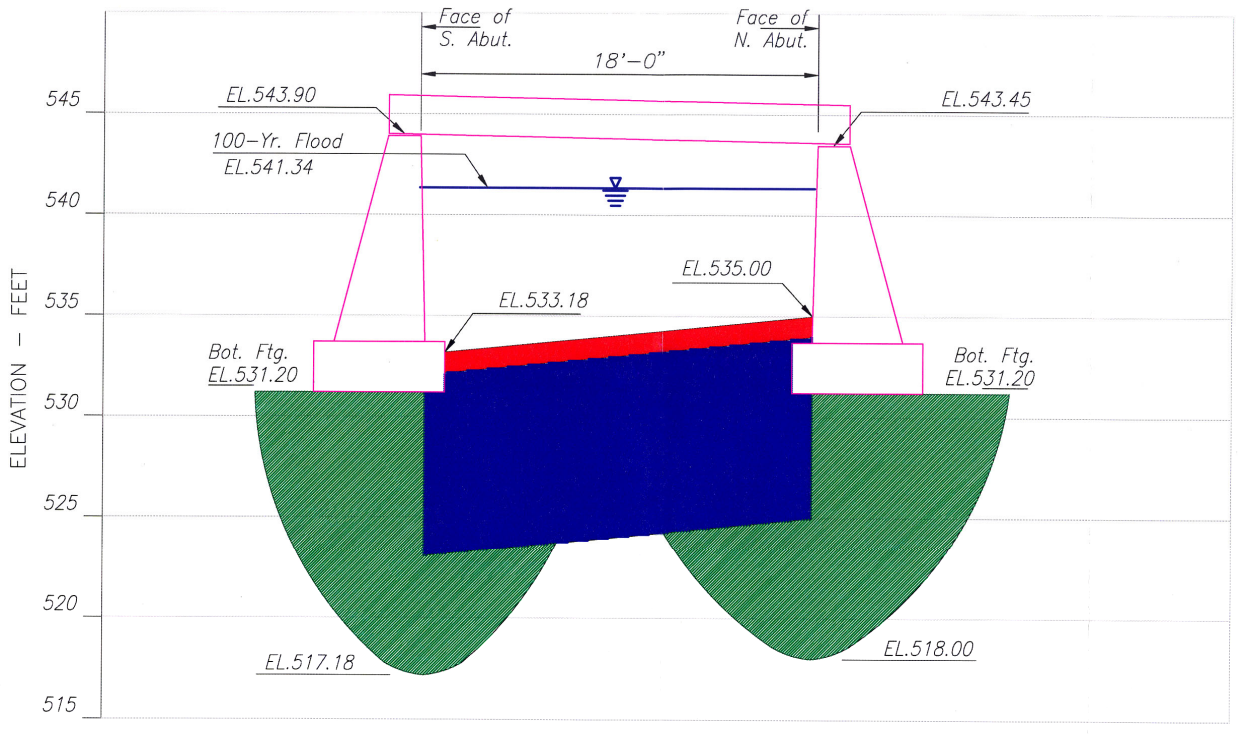
Route: 206
Community: Sandystown Township
Milepoint: 122.51
County: Sussex

Waterway Name: Kittatiny Brook
Drainage Basin: Flat Brook
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported concrete slab w/ fill
Substructure Type: Plain concrete full height vertical abutments
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N19

Data Sheet – Bridge No. 1912160

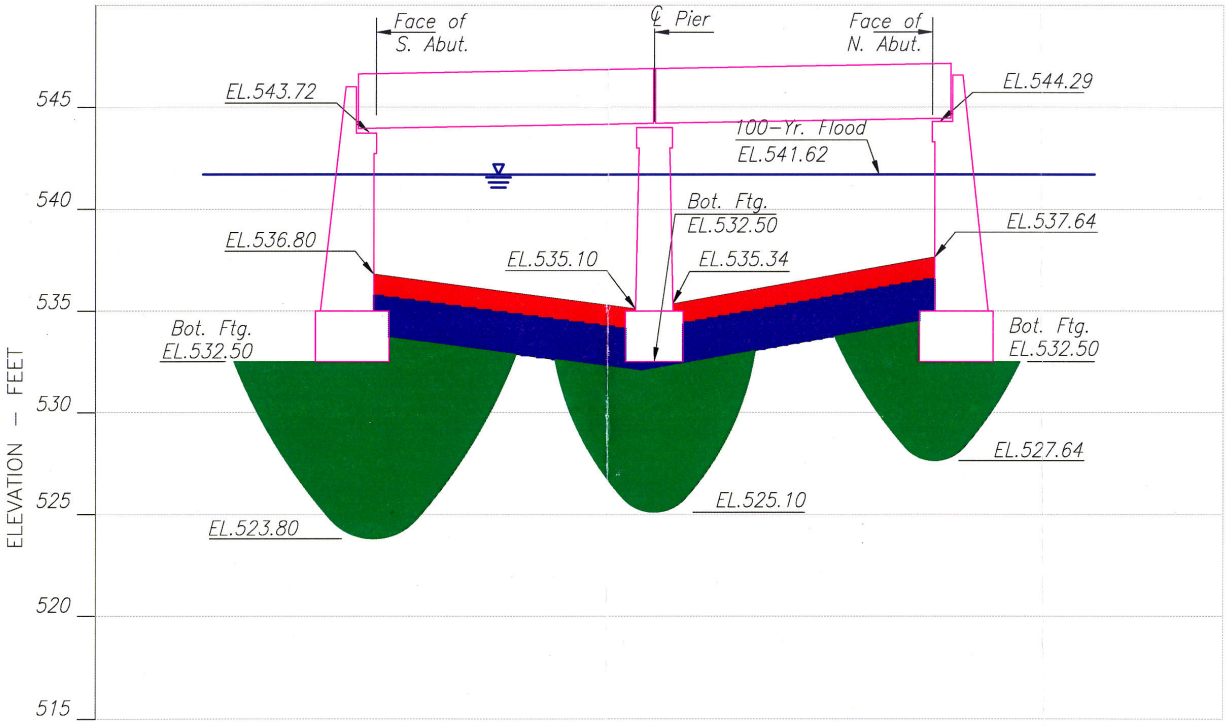
Route: 206
Community: Sandystown Township
Milepoint: 122.61
County: Sussex

Waterway Name: Big Flat Brook
Drainage Basin: Flat Brook
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported concrete encased stringers
Substructure Type: Plain concrete full height vertical abutments & solid wall pier
Abutment Foundation Type: Plain concrete spread footings
Pier Foundation Type: Plain concrete spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1911159

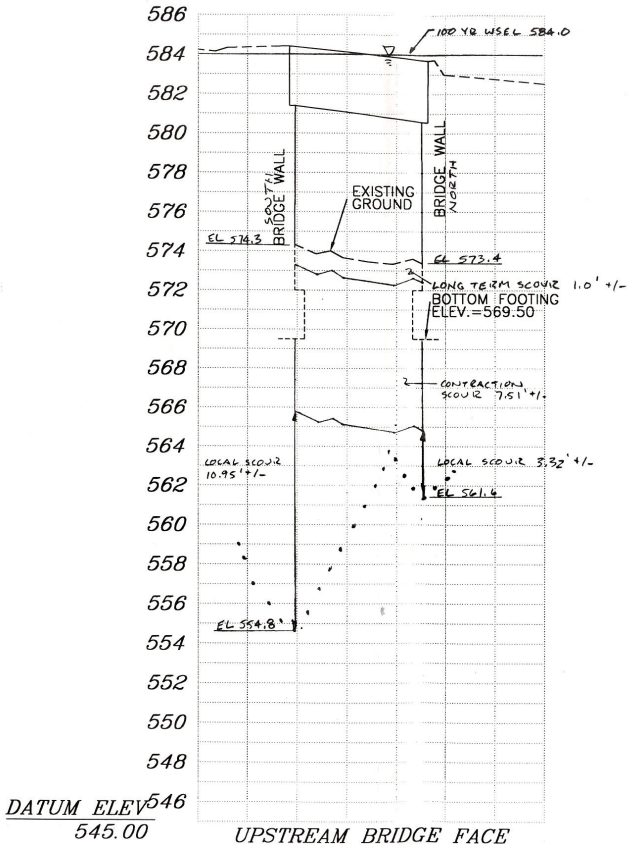
Route: 206
Community: Andover Township
Milepoint: 105.90
County: Sussex

Waterway Name: Pequest River
Drainage Basin: Pequest River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased, rolled steel stringers
Substructure Type: Plain concrete gravity-type walls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N20

Data Sheet – Bridge No. 1922150

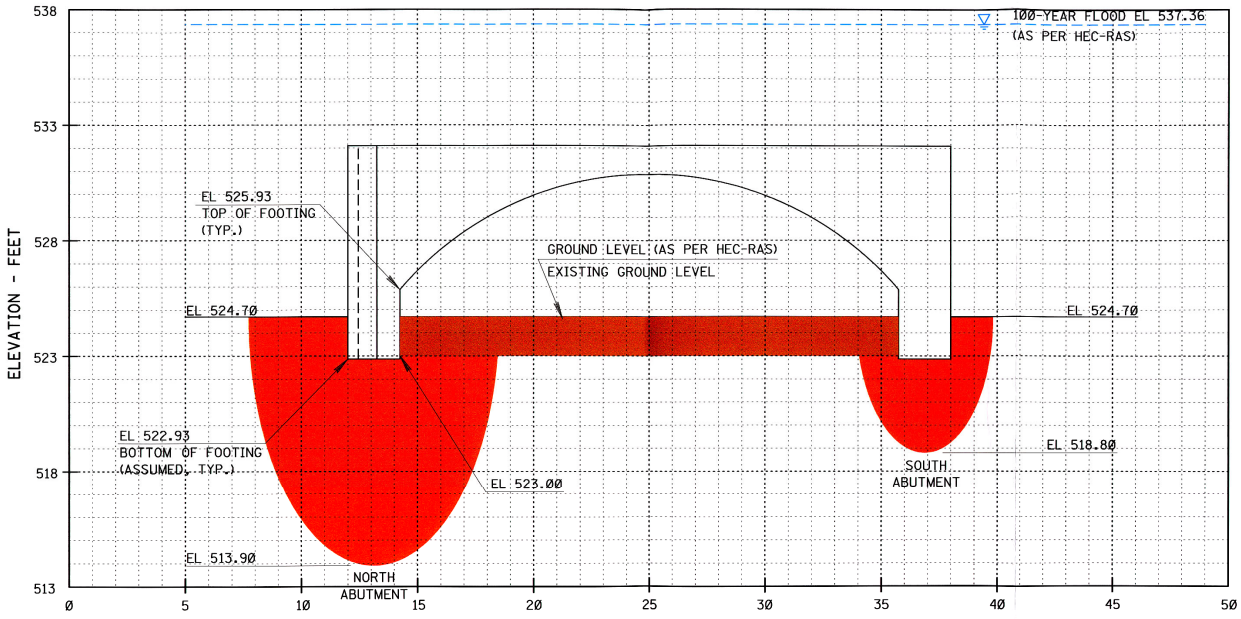
Route: 15
Community: Lafayette Township
Milepoint: 17.56
County: Sussex

Waterway Name: Beaver Run
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Stone masonry arch (original), widened w/ T-beams & corrugated metal arch
Substructure Type: Arch abutment (original & east section), concrete gravity wall abutment (west)
Abutment Foundation Type: Spread footing (assumed)
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N20

Data Sheet – Bridge No. 1922151

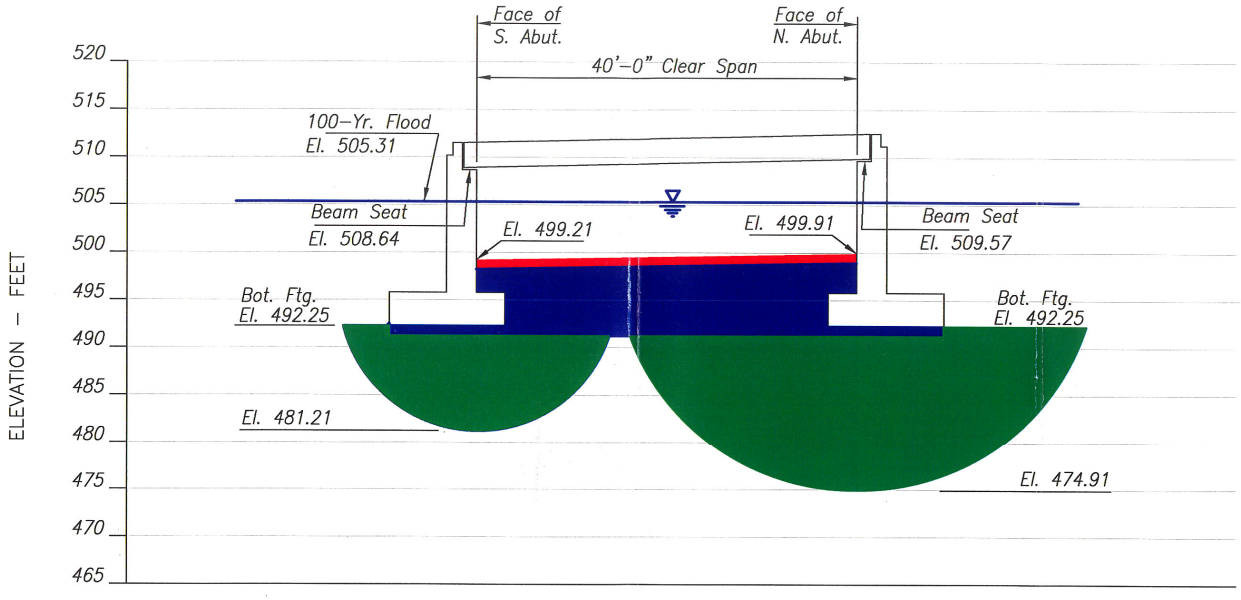
Route: 15
Milepoint: 18.26
Community: Lafayette Township
County: Sussex

Waterway Name: Paulins Kill Creek
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Prestressed concrete multi-beam deck
Substructure Type: Reinforced concrete full height cantilever abutments
Abutment Foundation Type: Reinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2003157

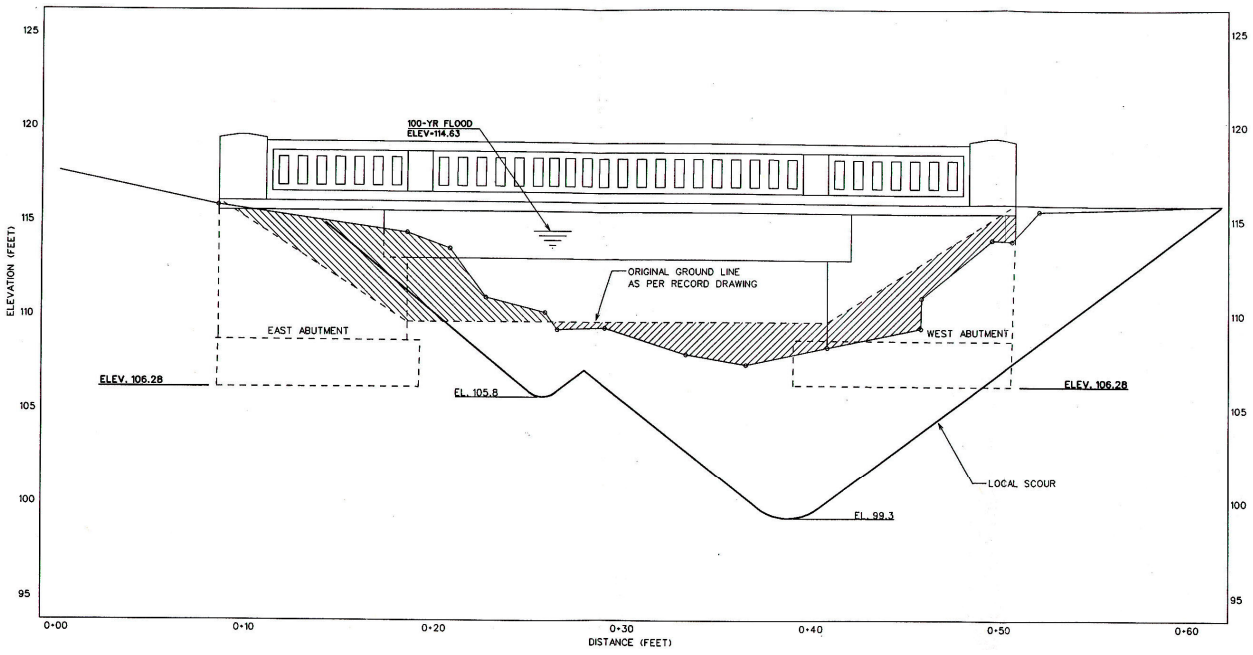
Route: 22
Milepoint: 50.74
Community: Mountainside Boro
County: Union

Waterway Name: Echo Lake
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Simply supported, concrete encased steel stringers
Substructure Type: Unreinforced gravity abutment
Abutment Foundation Type: Unreinforced spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N21

Data Sheet – Bridge No. 2003161

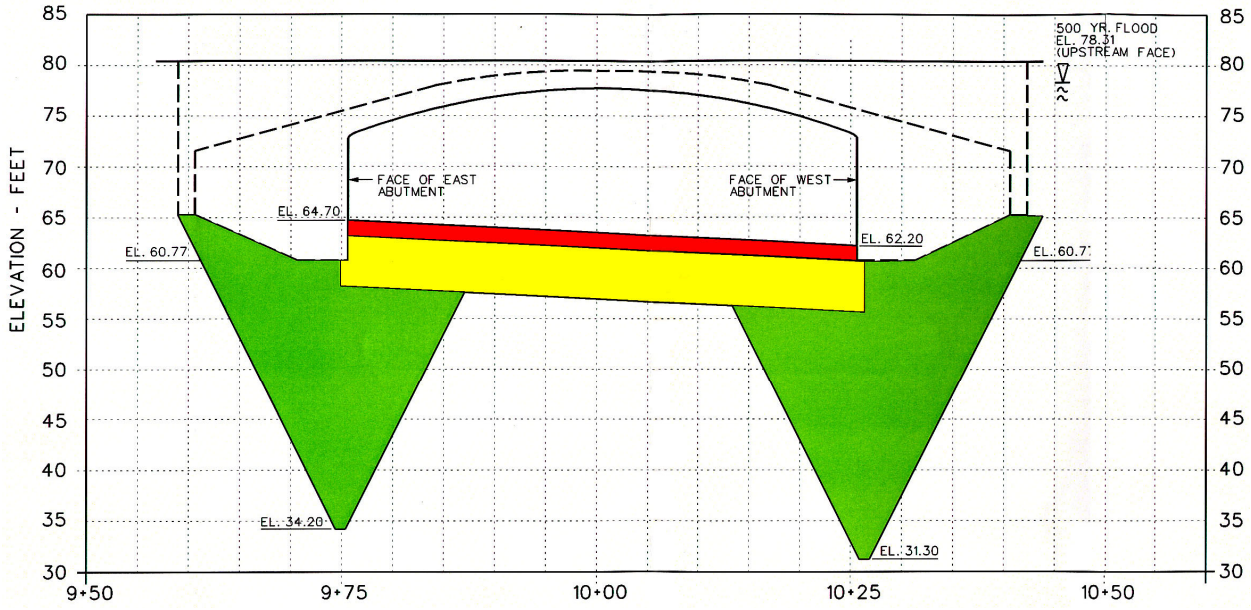
Route: 22 EB
Community: Springfield Twp, Union Twp
Milepoint: 52.94
County: Union

Waterway Name: Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete slab arch w/ earth fill
Substructure Type: Concrete gravity wall
Abutment Foundation Type: Concrete spread footings on timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N21

Data Sheet – Bridge No. 2003162

Route: 22 WB
Community: Springfield Twp, Union Twp

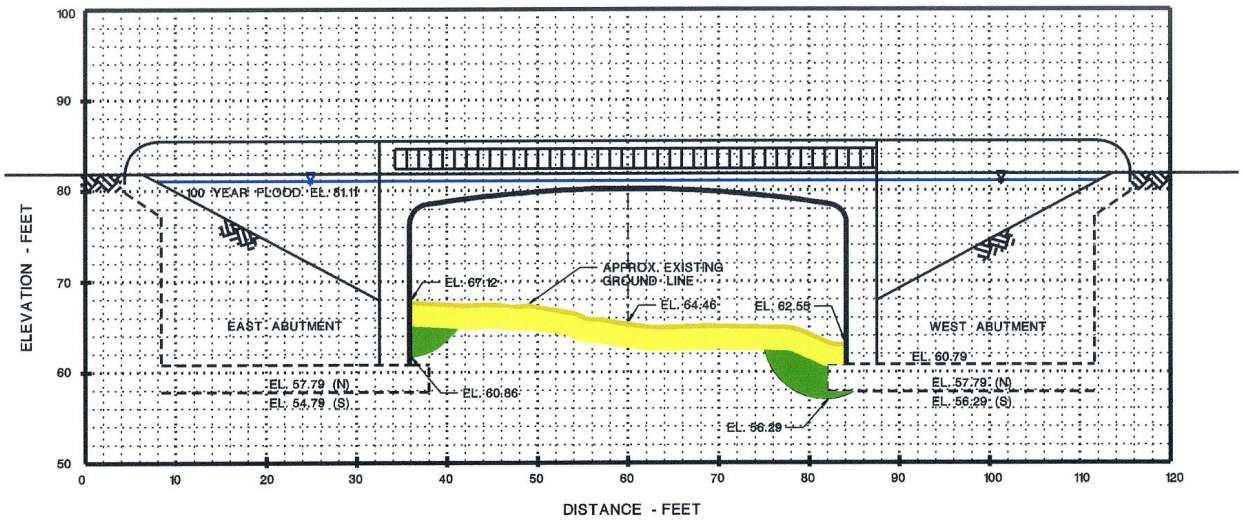
Milepoint: 52.94
County: Union

Waterway Name: Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Reinforced concrete rigid frame
Substructure Type: Reinforced concrete
Abutment Foundation Type: Spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2004151

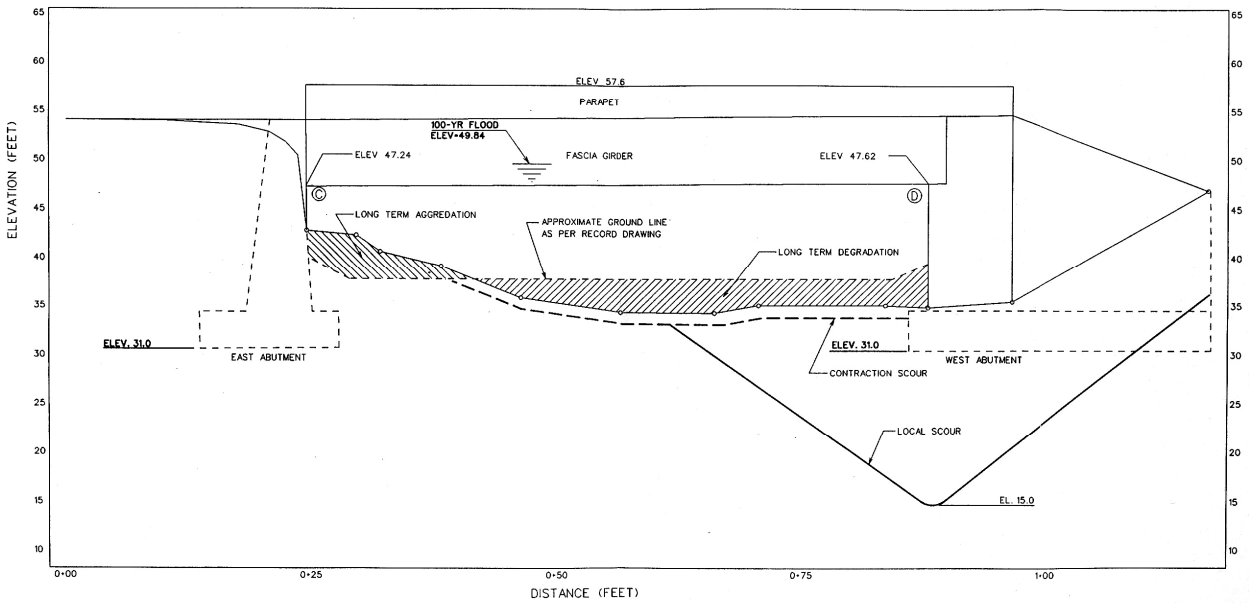
Route: 22
Milepoint: 56.51
Community: Union Township, Hillside Township
County: Union

Waterway Name: Elizabeth River
Drainage Basin: Elizabeth River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Simply supported concrete encased riveted plate girders
Substructure Type: Concrete gravity type
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N21

Data Sheet – Bridge No. 2012150

Route: 82
Community: Springfield Twp, Union Twp

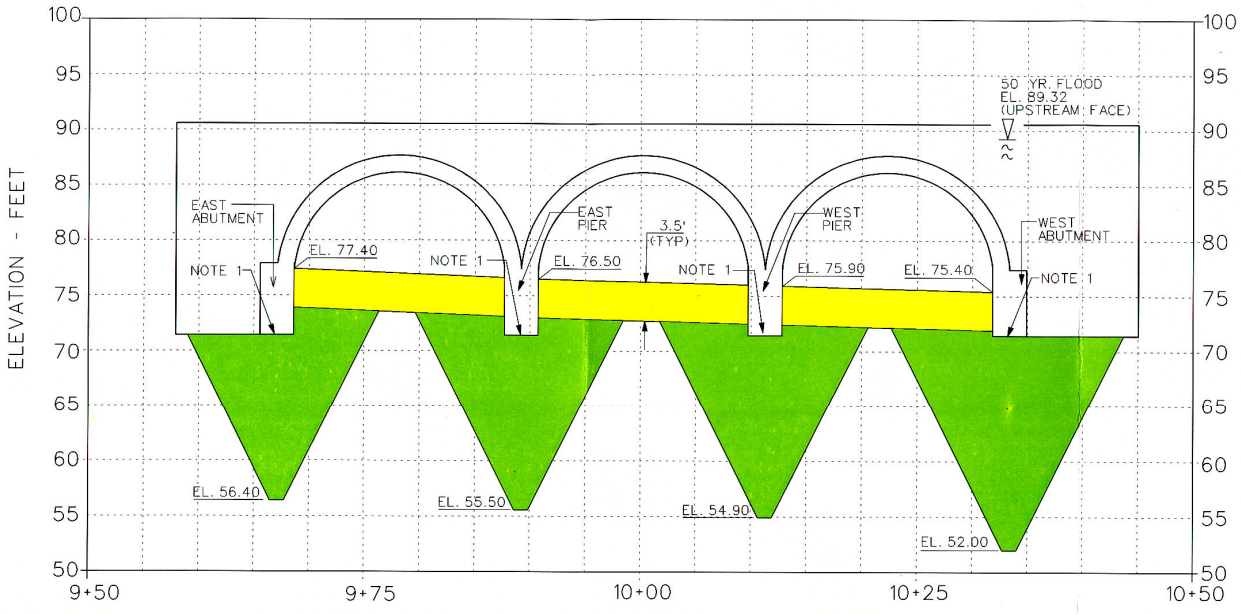
Milepoint: 0.36
County: Union

Waterway Name: Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Three barrel filled spandrel masonry arch
Substructure Type: No information available
Abutment Foundation Type: No information available
Pier Foundation Type: No information available

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2006151

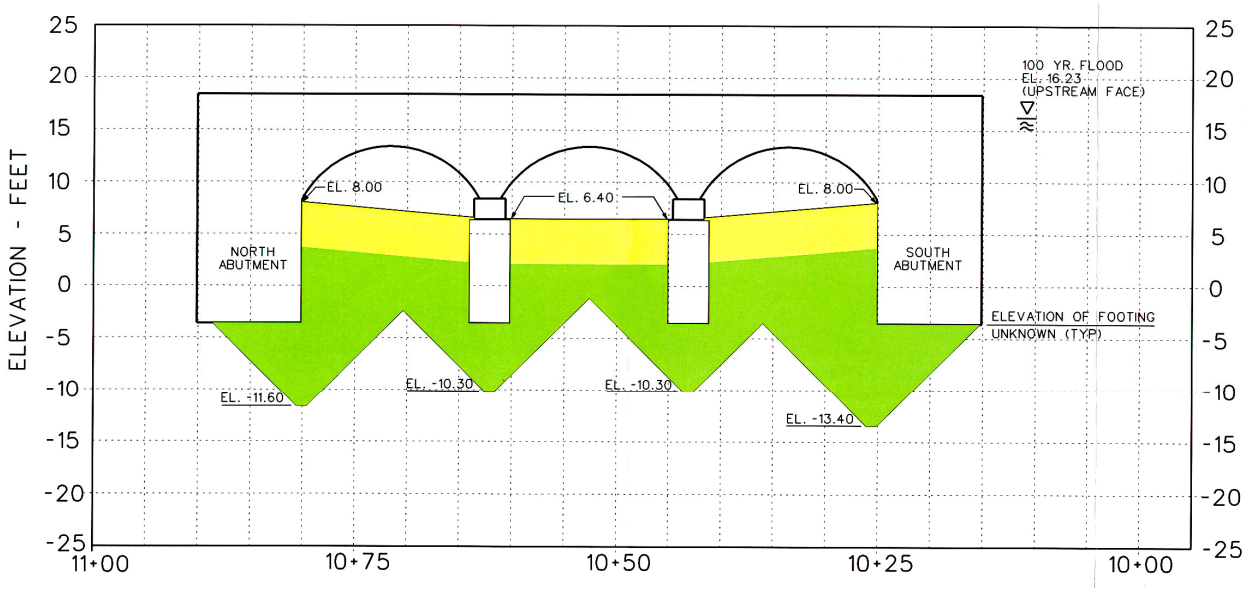
Route: 27
Milepoint: 28.44
Community: Rahway City
County: Union

Waterway Name: Robinson Branch of Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Earth filled brick arch
Substructure Type: Gravity wall
Abutment Foundation Type: No information available
Pier Foundation Type: No information available

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of significant debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N22

Data Sheet – Bridge No. 2006152

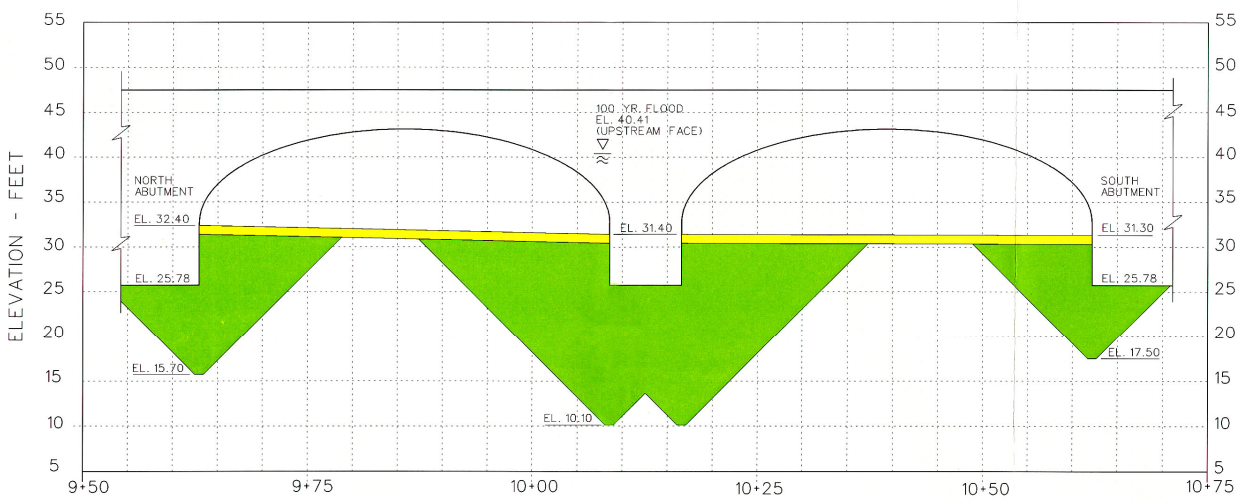
Route: 27
Milepoint: 29.07
Community: Rahway City
County: Union

Waterway Name: Rahway River
Drainage Basin: Rahway River
Watershed Management Area: Arthur Kill (7)
Watershed Management Region: Raritan

Superstructure Type: Earth filled, reinforced concrete arch
Substructure Type: Gravity wall
Abutment Foundation Type: Concrete spread footings
Pier Foundation Type: Concrete spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2107156

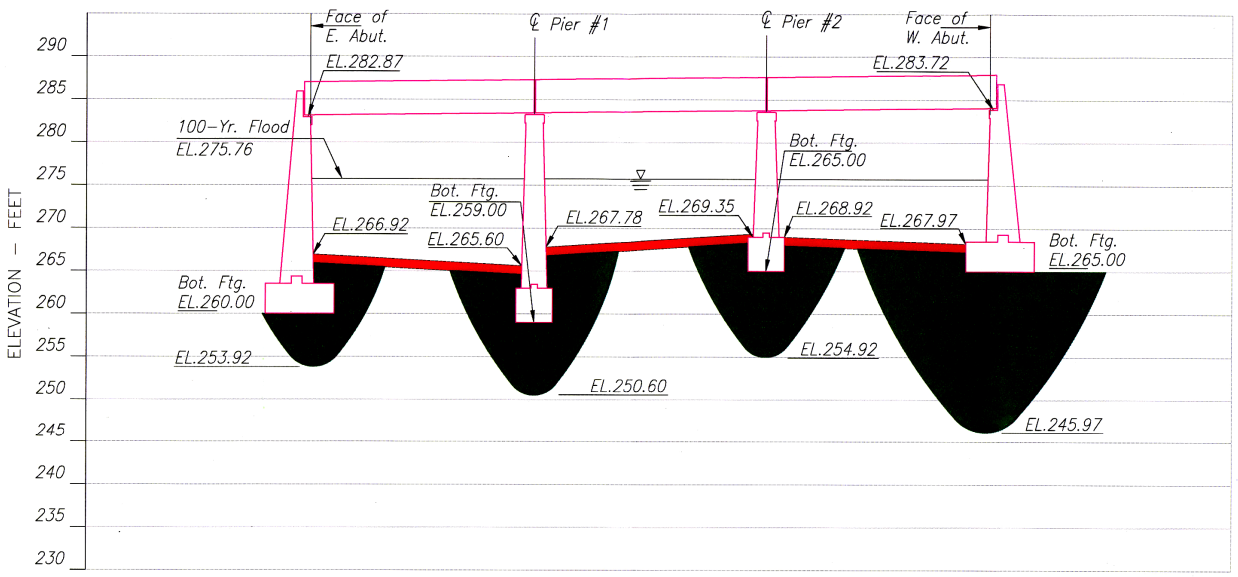
Route: 46
Community: Knowlton Township
Milepoint: 0.74
County: Warren

Waterway Name: Paulins Kill
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported non-composite rolled steel stringers
Substructure Type: Reinforced concrete full height vertical abut.; reinforced concrete solid pier wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: Reinforced concrete spread footings

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2117157

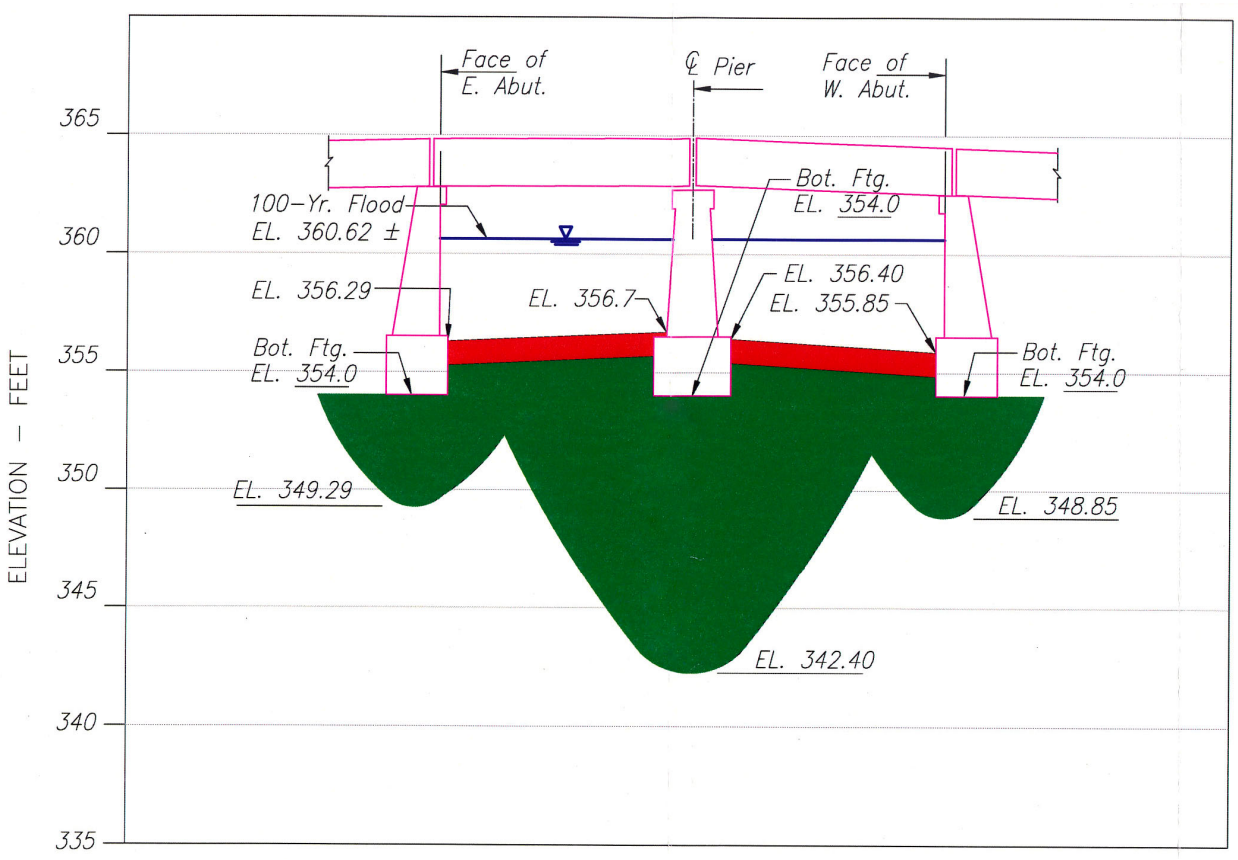
Route: 94
Community: Blairstown Township
Milepoint: 7.97
County: Warren

Waterway Name: Jacksonburg Creek
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, reinforced concrete deck slab
Substructure Type: Full height vertical abutments; solid wall pier
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: Concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N23

Data Sheet – Bridge No. 2117159

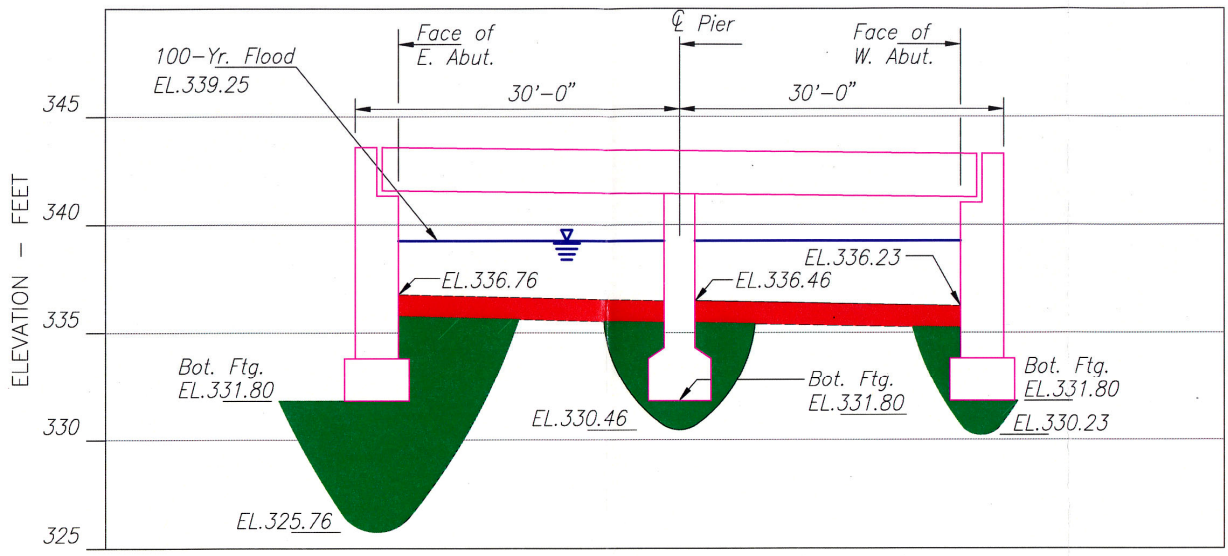
Route: 94
Community: Blairstown Township
Milepoint: 9.04
County: Warren

Waterway Name: Blair Creek
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, concrete encased rolled steel stringer
Substructure Type: Full height vertical abutments; solid wall pier
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: Concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2117160

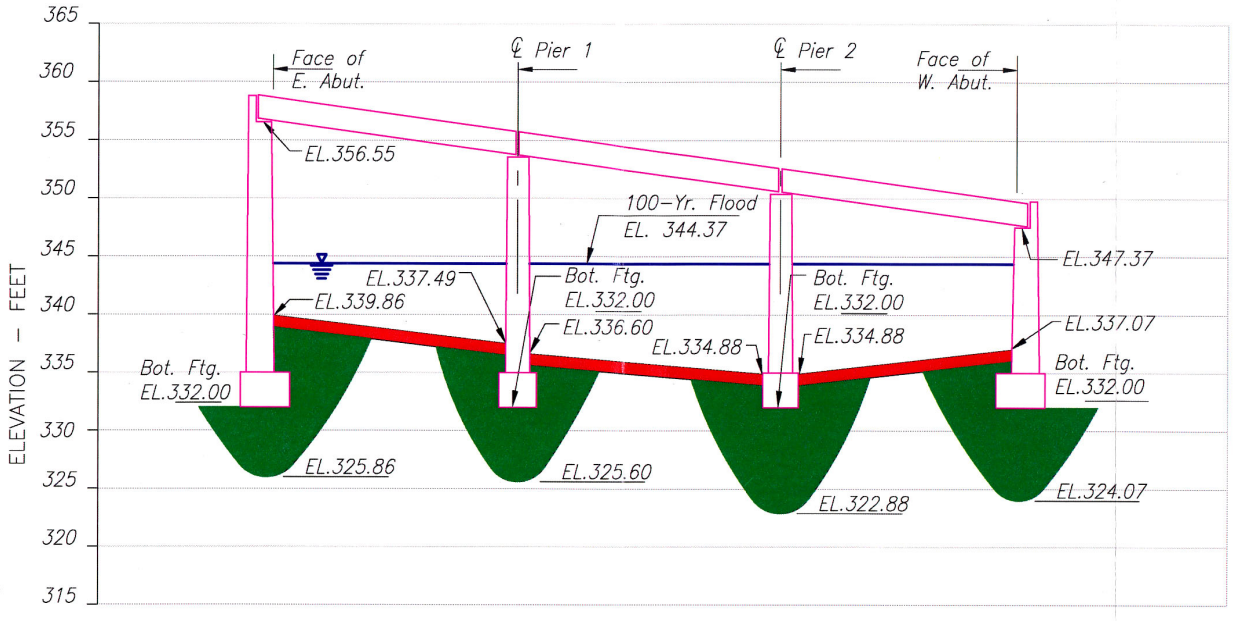
Route: 94
Milepoint: 9.16
Community: Blairstown Township
County: Warren

Waterway Name: Paulins Kill
Drainage Basin: Paulins Kill
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported, concrete encased rolled steel beams
Substructure Type: Vertical gravity abutments; solid wall piers
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: Plain concrete spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N24

Data Sheet – Bridge No. 2105164

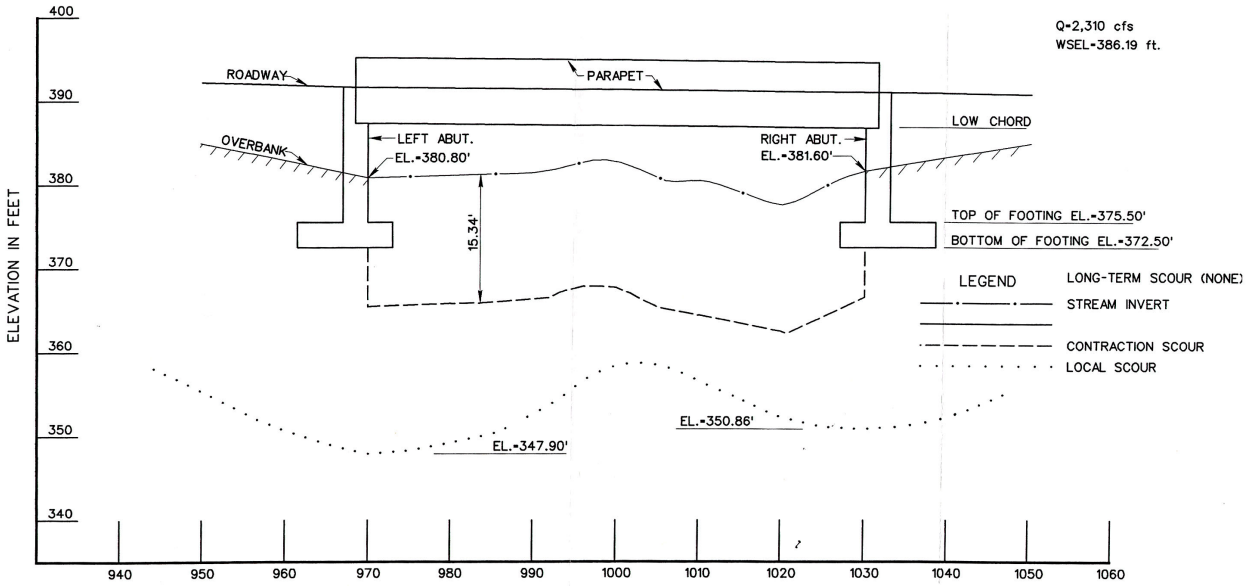
Route: 57
Milepoint: 9.55
Community: Washington Township
County: Warren

Waterway Name: Pohatcong Creek
Drainage Basin: Pohatcong Creek
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Composite prestressed concrete box beam and channel beam
Substructure Type: Reinforced concrete full height vertical wall
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2111151

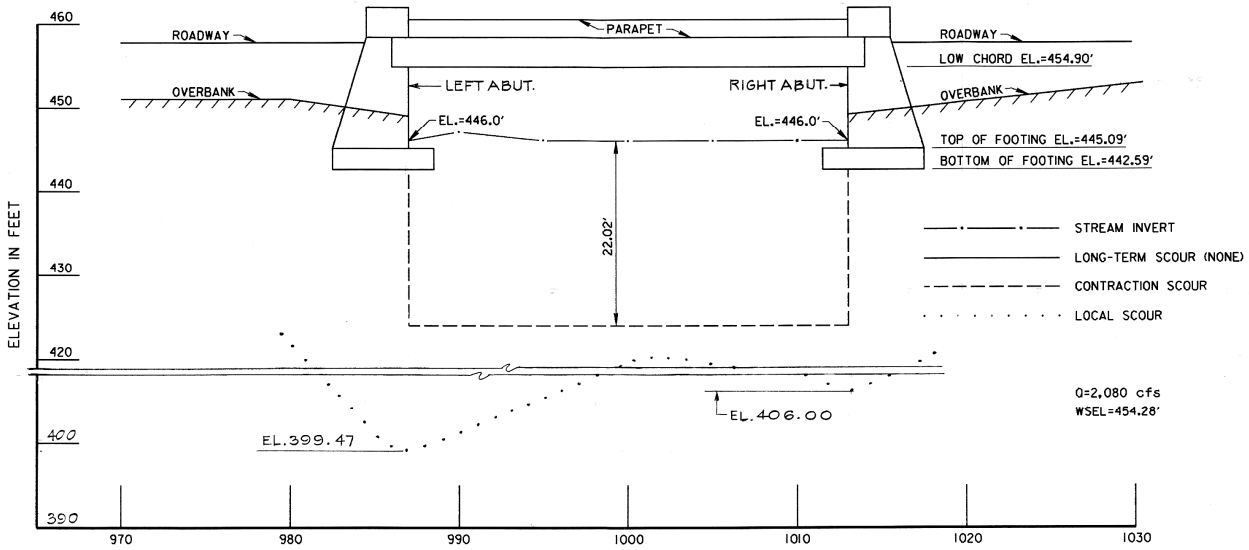
Route: 31
Milepoint: 44.47
Community: Washington Township
County: Warren

Waterway Name: Pohatcong Creek
Drainage Basin: Pohatcong Creek
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported encased steel stringer
Substructure Type: Vertical wall plain concrete gravity type
Abutment Foundation Type: Concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2111155

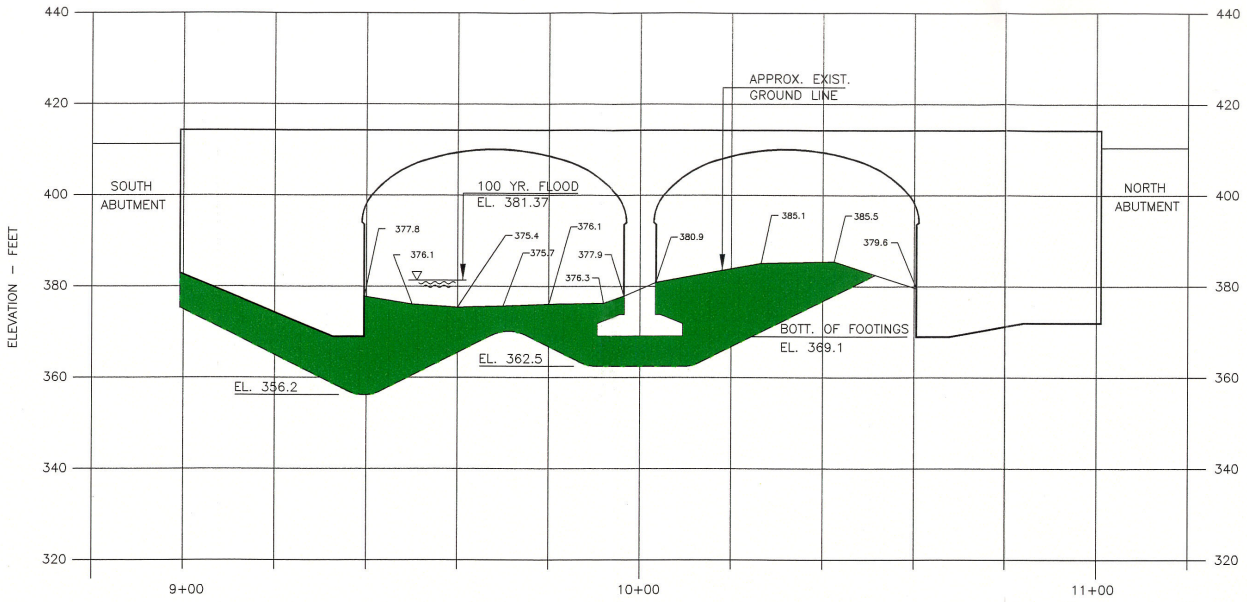
Route: 31
Community: White Township
Milepoint: 48.88
County: Warren

Waterway Name: Pequest River
Drainage Basin: Pequest River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Reinforced concrete spandrel filled arch
Substructure Type: Reinforced concrete gravity type abutments; reinforced concrete solid wall type pier
Abutment Foundation Type: Reinforced concrete gravity wall
Pier Foundation Type: Reinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2107154

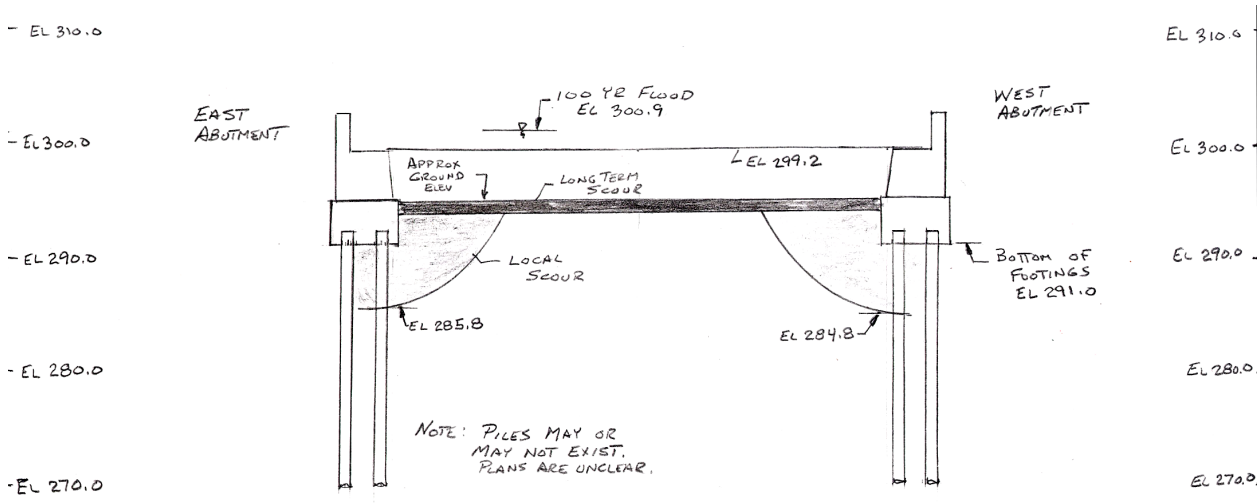
Route: 46 WB
Milepoint: 7.29
Community: White Township
County: Warren

Waterway Name: Beaver Brook
Drainage Basin: Pequest River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased thru-girder
Substructure Type: Concrete vertical wall
Abutment Foundation Type: Concrete footing, possibly w/ timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

North Region
Group N25

Data Sheet – Bridge No. 2107155

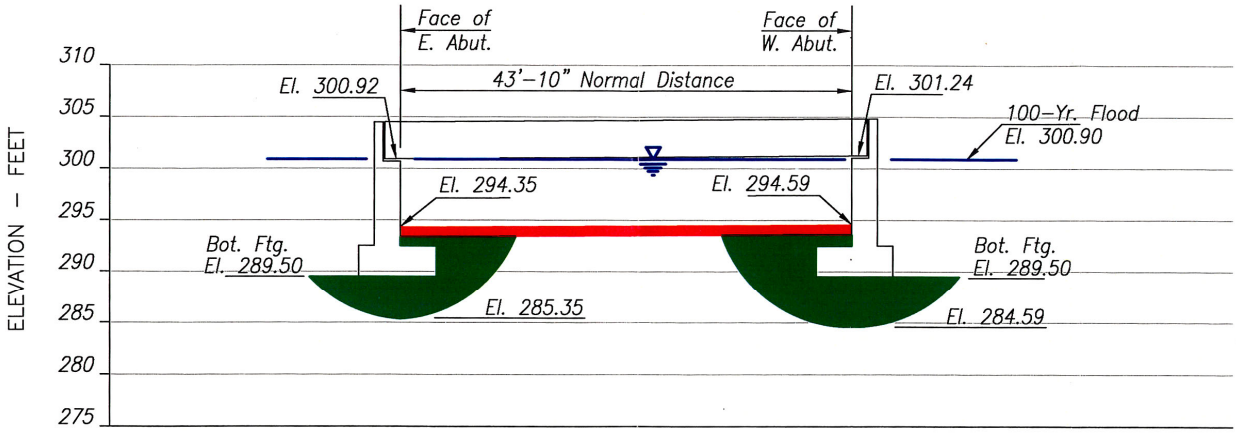
Route: 46 EB
Milepoint: 7.29
Community: White Township
County: Warren

Waterway Name: Beaver Brook
Drainage Basin: Pequest River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported prestressed concrete box beams
Substructure Type: Reinforced concrete full height vertical gravity abutments
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2106164

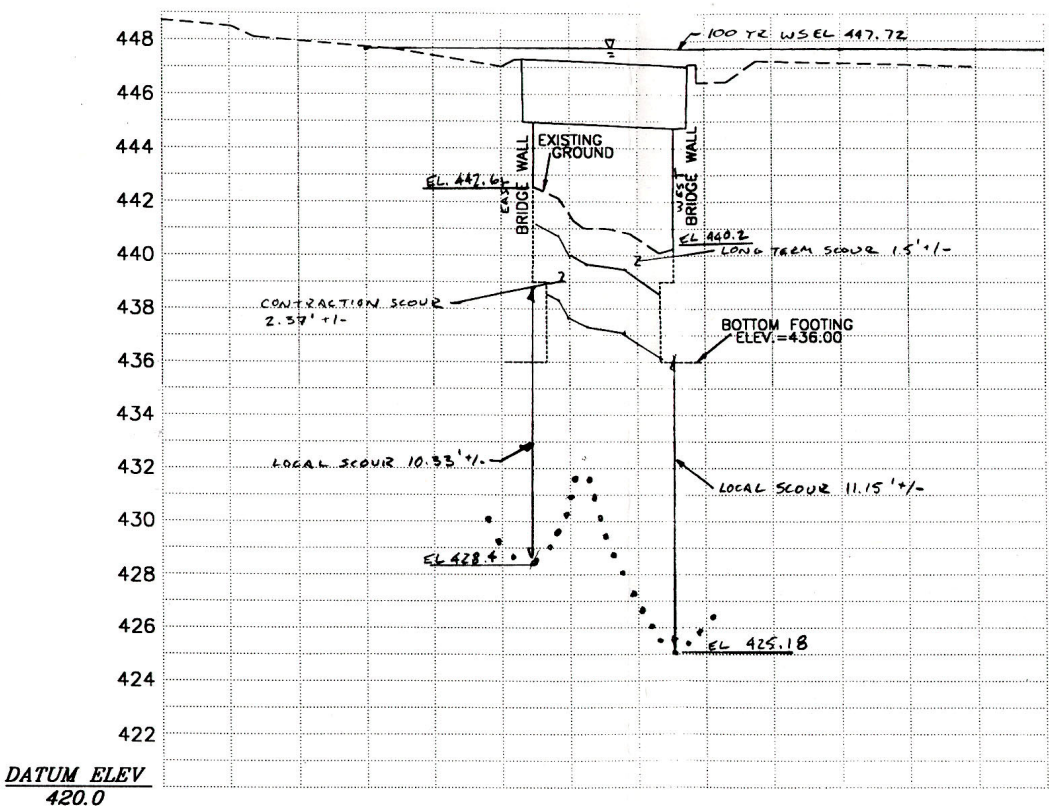
Route: 57
Milepoint: 18.13
Community: Mansfield Township
County: Warren

Waterway Name: Hances Brook
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Concrete encased rolled steel stringers w/ reinforced concrete deck slab
Substructure Type: Vertical abutments, plain concrete gravity-type walls
Abutment Foundation Type: Plain concrete spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 2108162

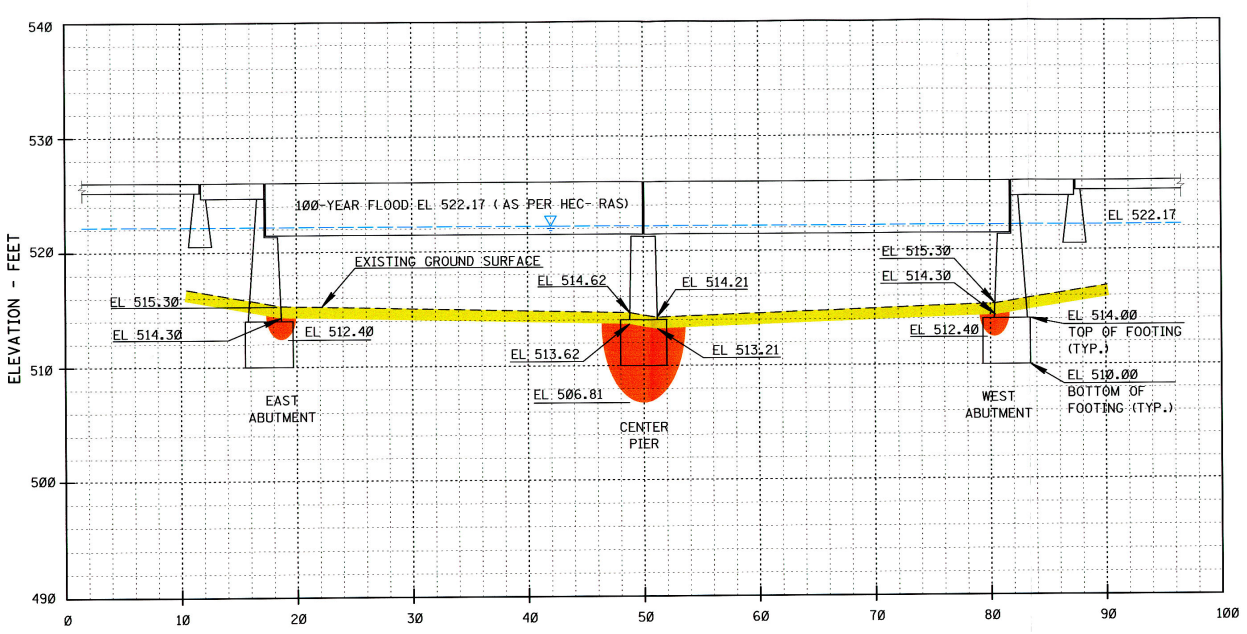
Route: 46 **Milepoint:** 21.83
Community: Hackettstown Twp, Mount Olive Twp **County:** Warren, Morris

Waterway Name: Musconetcong River
Drainage Basin: Musconetcong River
Watershed Management Area: Upper Delaware (1)
Watershed Management Region: Northwest

Superstructure Type: Simply supported concrete encased riveted steel thru-girder w/ rolled steel beams
Substructure Type: Concrete gravity wall abutments; solid wall pier
Abutment Foundation Type: Spread footing
Pier Foundation Type: Spread footing

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0118150

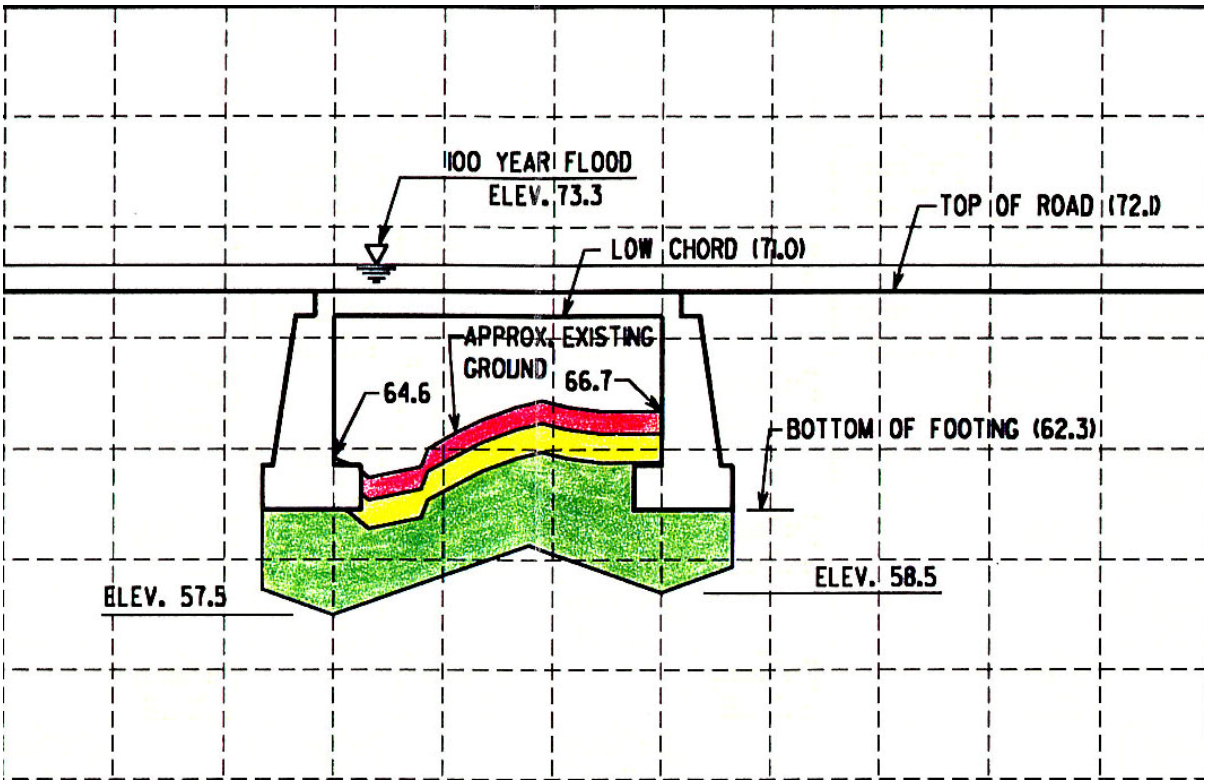
Route: 206
Community: Hammonton Township
Milepoint: 0.75
County: Atlantic

Waterway Name: Cedar Branch
Drainage Basin: Mullica River
Watershed Management Area: Mullica (14)
Watershed Management Region: Atlantic

Superstructure Type: Reinforced concrete deck slab
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0118152

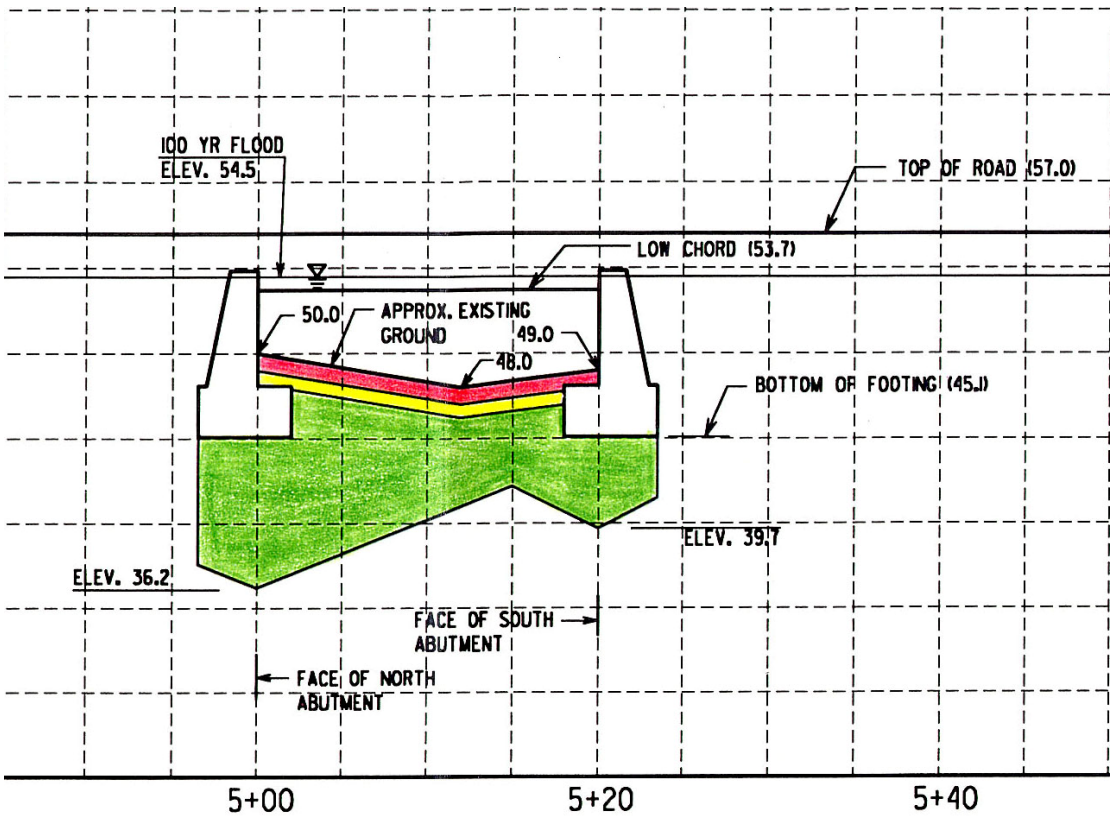
Route: 206
Milepoint: 2.88
Community: Hammonton Township
County: Atlantic

Waterway Name: Great Swamp Branch
Drainage Basin: Mullica River
Watershed Management Area: Mullica (14)
Watershed Management Region: Atlantic

Superstructure Type: Reinforced concrete deck slab
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0118153

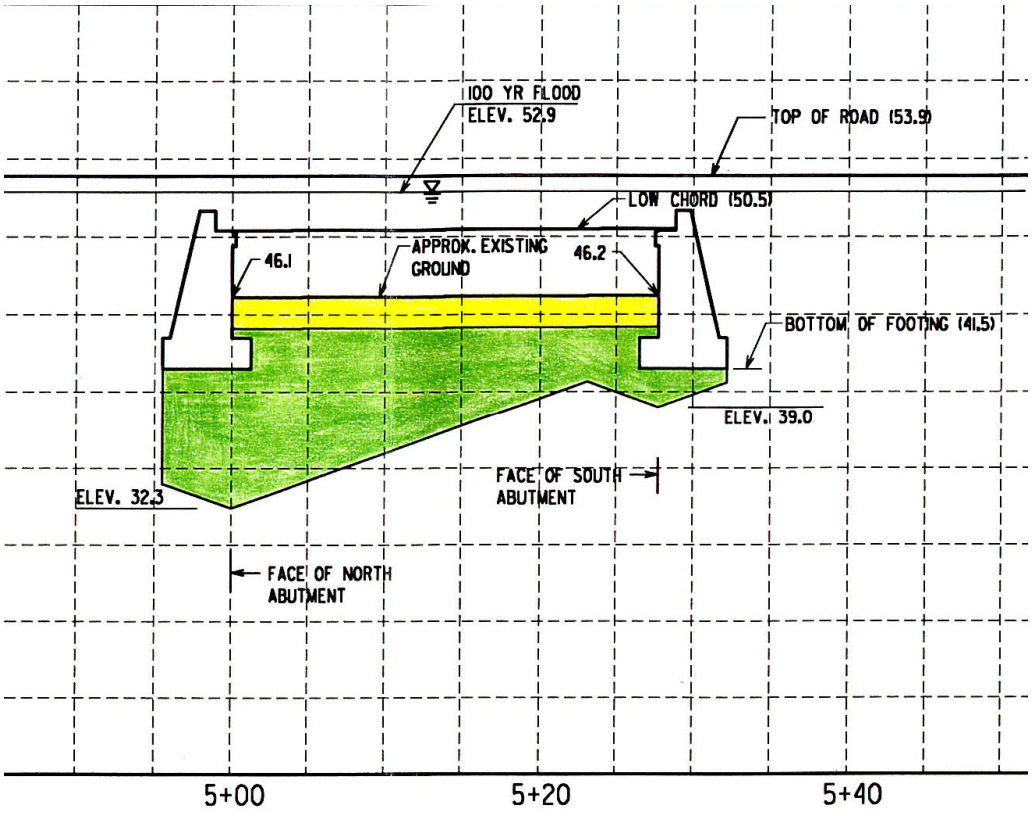
Route: 206
Community: Hammonton Township
Milepoint: 3.75
County: Atlantic

Waterway Name: Albertsons Brook
Drainage Basin: Mullica River
Watershed Management Area: Mullica (14)
Watershed Management Region: Atlantic

Superstructure Type: Concrete encased, rolled steel stringers
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S1

Data Sheet – Bridge No. 0324152

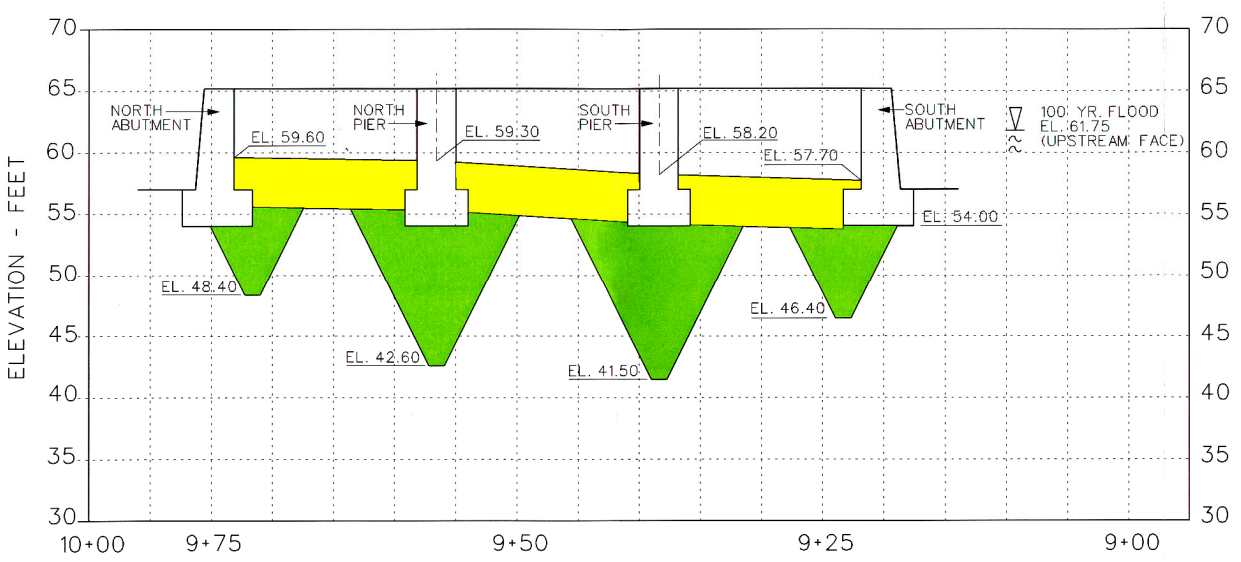
Route: 206
Community: Shamong Township
Milepoint: 10.13
County: Burlington

Waterway Name: Springers Brook
Drainage Basin: Basto River
Watershed Management Area: Mullica (14)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported reinforced concrete slab
Substructure Type: Gravity concrete walls
Abutment Foundation Type: Concrete spread footing on timber piles
Pier Foundation Type: Concrete spread footing on timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0324153

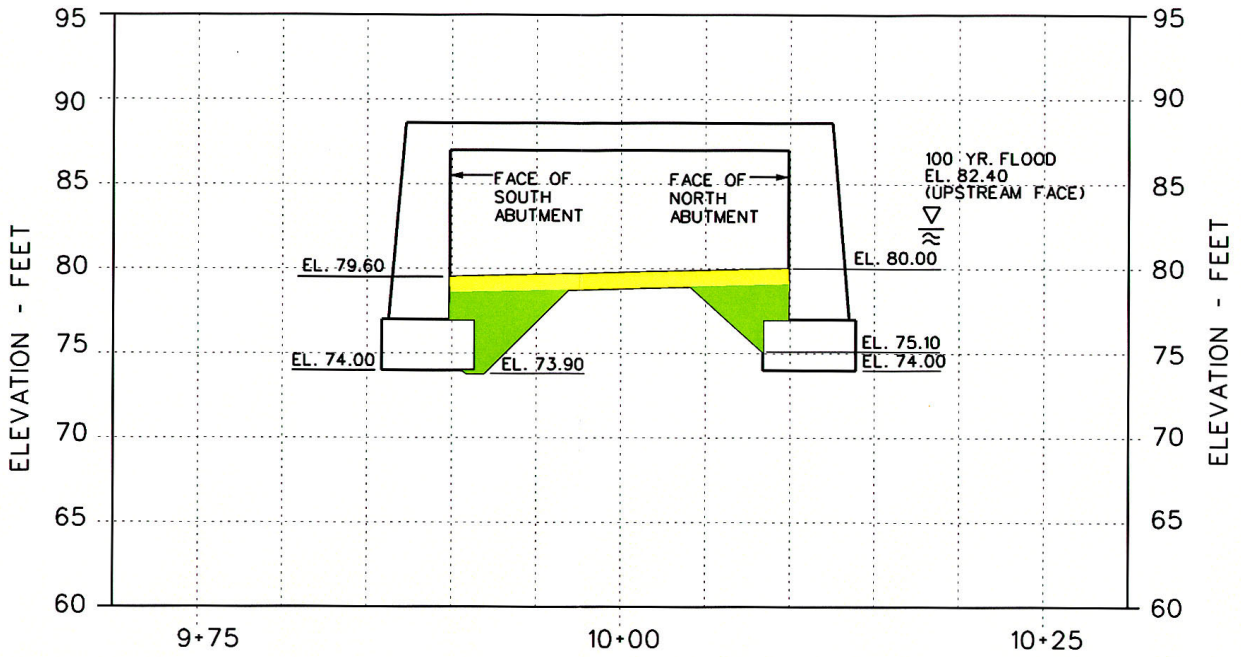
Route: 206
Community: Tabernacle Township
Milepoint: 13.16
County: Burlington

Waterway Name: Muskingum Creek
Drainage Basin: Basto River
Watershed Management Area: Mullica (14)
Watershed Management Region: Atlantic

Superstructure Type: Reinforced concrete slab
Substructure Type: Concrete gravity wall
Abutment Foundation Type: Concrete spread footing on timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S2

Data Sheet – Bridge No. 0115150

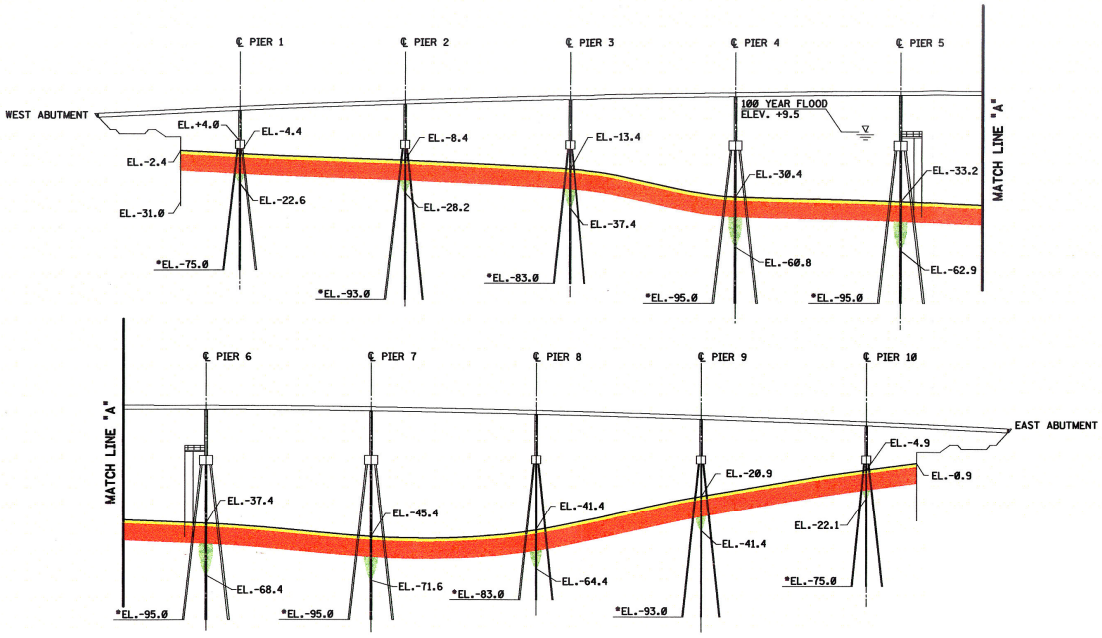
Route: 87
Milepoint: 1.38
Community: Atlantic City, Brigantine City
County: Atlantic

Waterway Name: Absecon Inlet
Drainage Basin: Absecon Creek
Watershed Management Area: Great Egg Harbor (15)
Watershed Management Region: Atlantic

Superstructure Type: 11 span (2 simply supported, 6 cantilever, 3 pin suspended), multi-girders
Substructure Type: Stub type & spill-thru shape (abut.); Column bent type & cylindrical shape (piers)
Abutment Foundation Type: Spread footings
Pier Foundation Type: Prestressed concrete piles

History of Scour Problems: Reports of significant channel degradation
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0119151

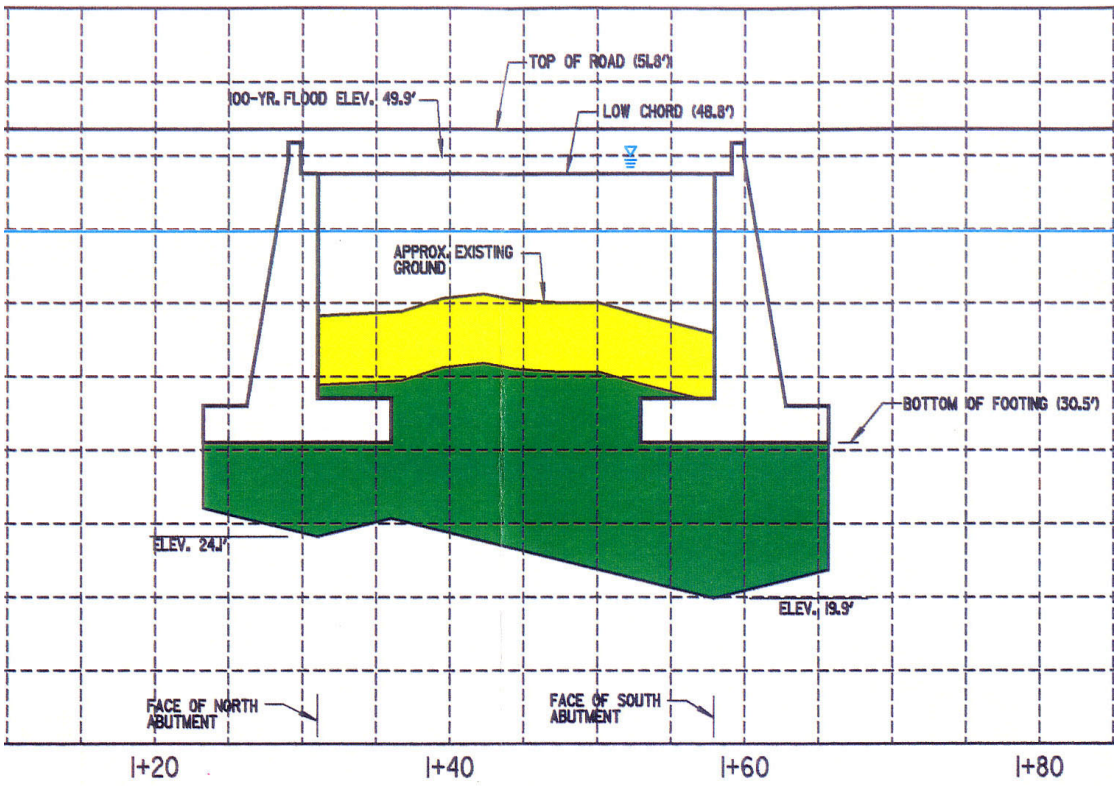
Route: 322
Milepoint: 37.04
Community: Folsom Boro
County: Atlantic

Waterway Name: Hospitality Brook
Drainage Basin: Great Egg Harbor River
Watershed Management Area: Great Egg Harbor (15)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported, prestressed concrete box beams
Substructure Type: Solid stem reinforced concrete type w/ vertical face
Abutment Foundation Type: Unreinforced concrete spread footing
Pier Foundation Type: Unreinforced concrete spread footing

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0119156

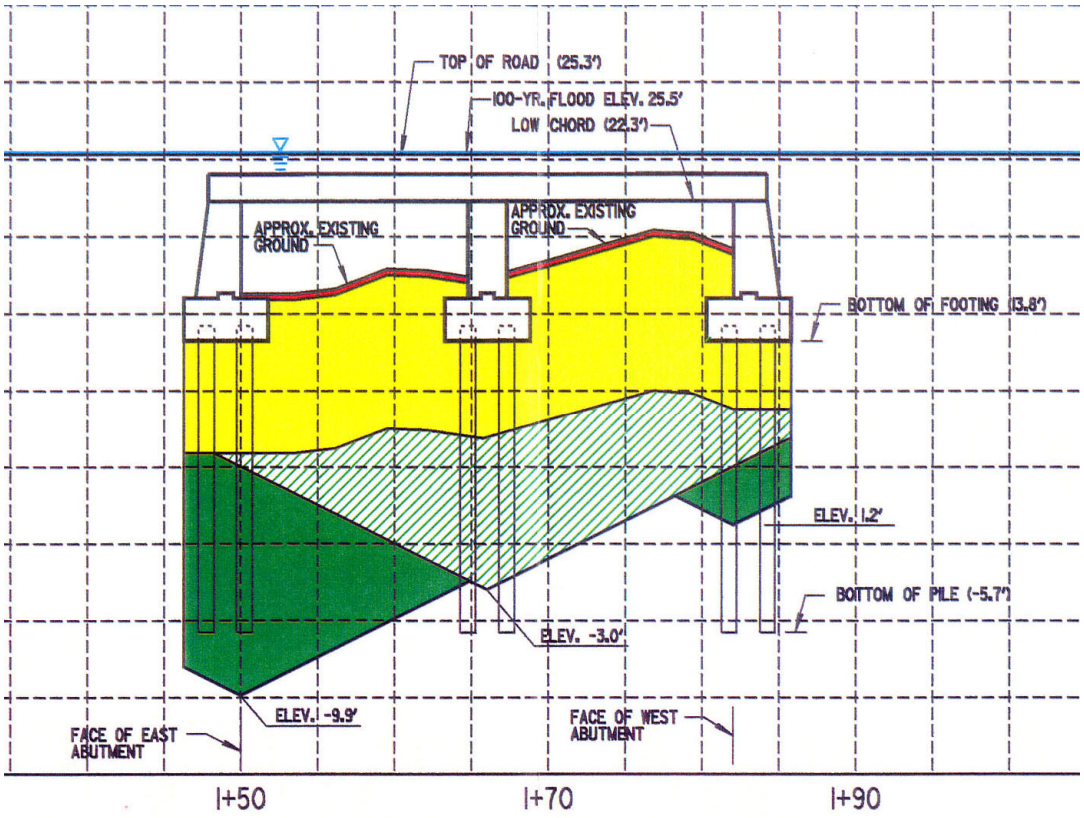
Route: 322
Community: Hamilton Township
Milepoint: 43.22
County: Atlantic

Waterway Name: Big Ditch
Drainage Basin: Great Egg Harbor River
Watershed Management Area: Great Egg Harbor (15)
Watershed Management Region: Atlantic

Superstructure Type: Simply supported reinforced concrete slab
Substructure Type: Concrete gravity type abutments; Concrete wall type pier
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0509150

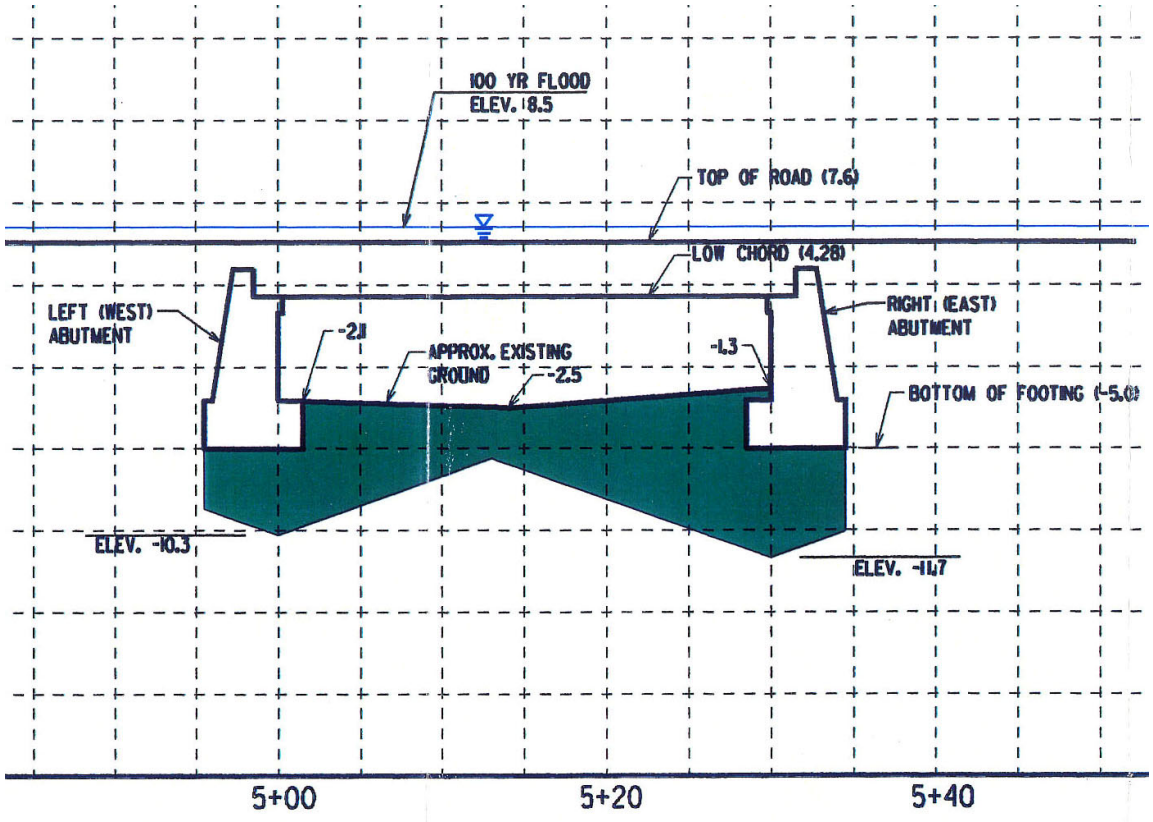
Route: 49
Milepoint: 52.56
Community: Upper Township
County: Cape May

Waterway Name: Mill Creek
Drainage Basin: Tuckahoe River
Watershed Management Area: Great Egg Harbor (15)
Watershed Management Region: Atlantic

Superstructure Type: Concrete encased rolled steel, multi-stringer
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0510152

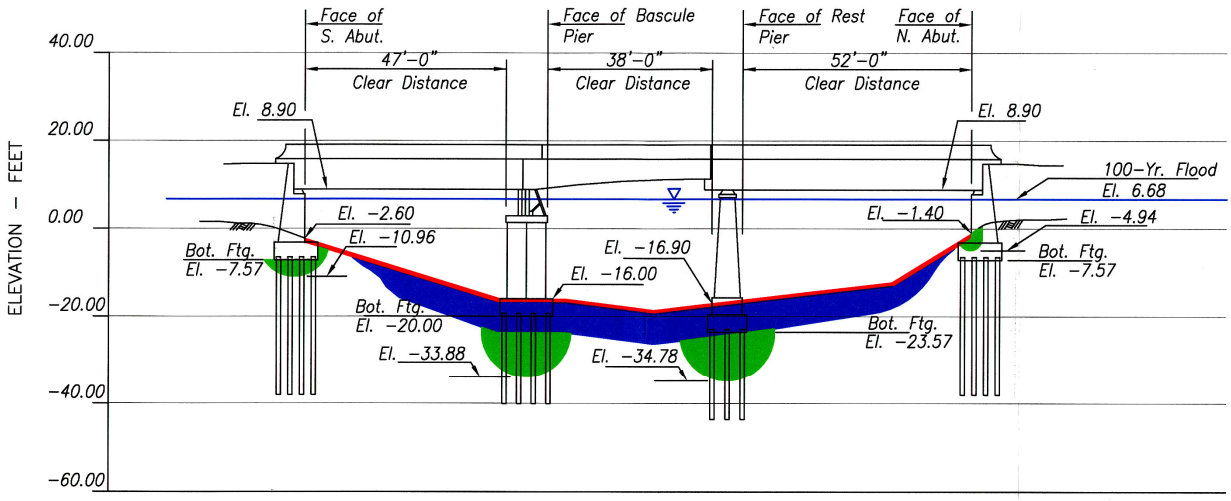
Route: 50
Milepoint: 6.98
Community: Upper Township, Corbin City
County: Cape May, Atlantic

Waterway Name: Tuckahoe River
Drainage Basin: Tuckahoe River
Watershed Management Area: Great Egg Harbor (15)
Watershed Management Region: Atlantic

Superstructure Type: 1 leaf Bascule span; 2 concrete encased girders w/ floorbeam at approach spans
Substructure Type: Full height gravity type w/ vertical wall face (abut.); solid shaft concrete bents (piers)
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S5

Data Sheet – Bridge No. 0324155

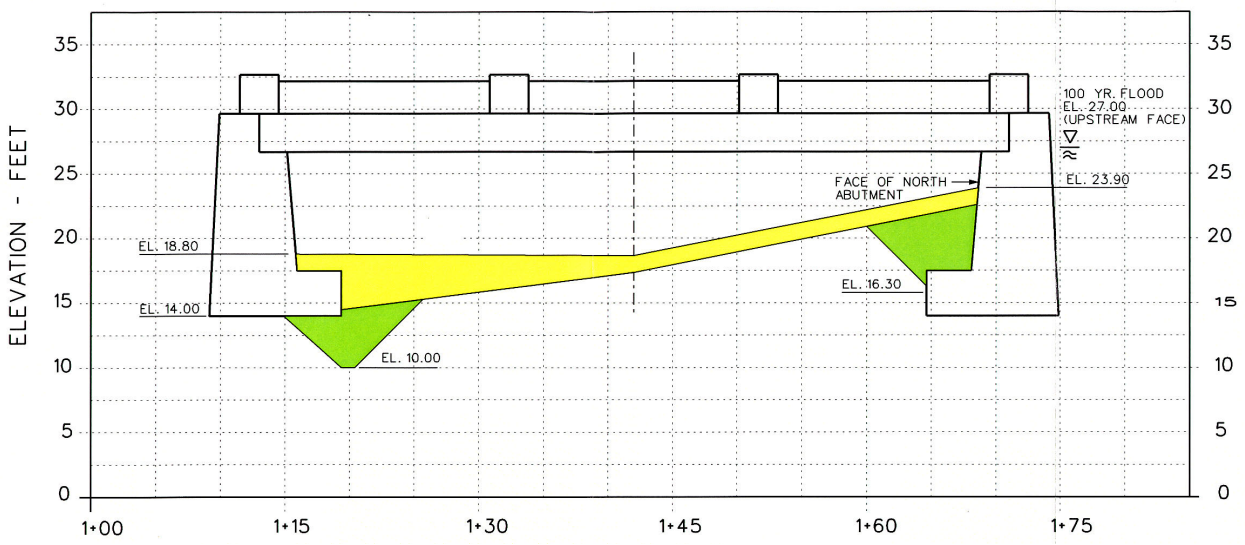
Route: 206
Milepoint: 20.61
Community: Southhampton Township
County: Burlington

Waterway Name: South Branch of Rancocas Creek
Drainage Basin: South Branch of Rancocas Creek
Watershed Management Area: Rancocas (19)
Watershed Management Region: Lower Delaware

Superstructure Type: Concrete slab over encased riveted steel plate girders
Substructure Type: Concrete gravity wall
Abutment Foundation Type: Concrete spread footing on timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S5

Data Sheet – Bridge No. 0324156

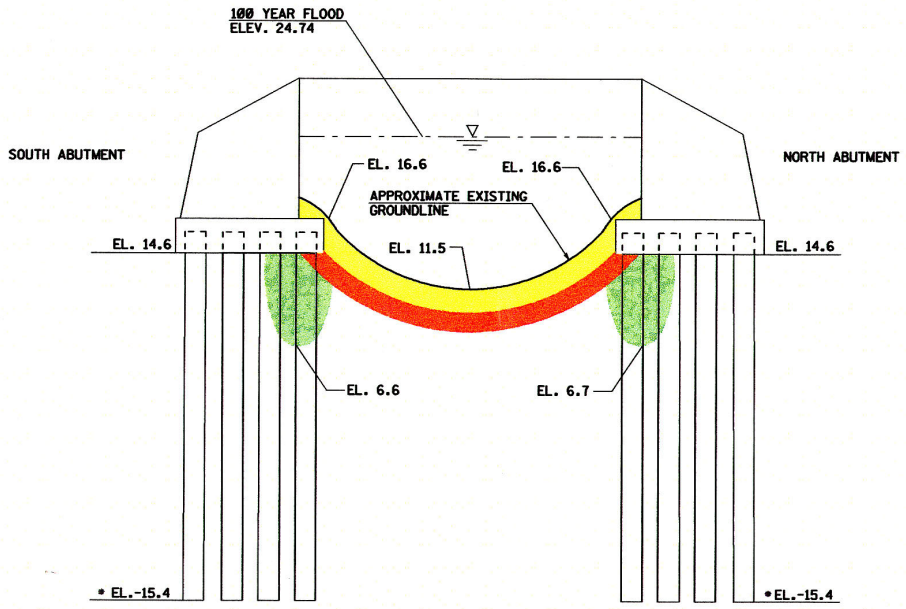
Route: 206
Milepoint: 21.08
Community: Southhampton Township
County: Burlington

Waterway Name: Jade Run
Drainage Basin: South Branch of Rancocas Creek
Watershed Management Area: Rancocas (19)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete slab
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S6

Data Sheet – Bridge No. 0317150

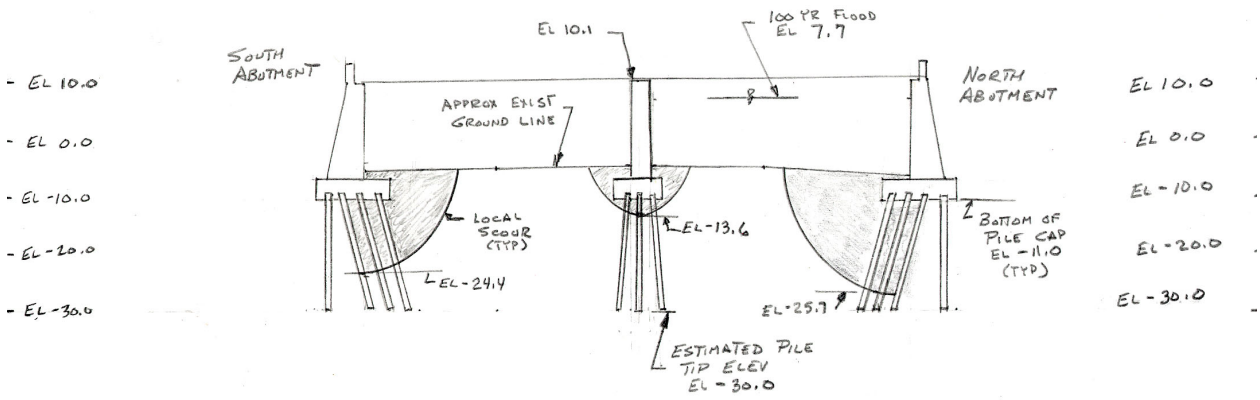
Route: 130 NB
Community: Burlington City
Milepoint: 46.65
County: Burlington

Waterway Name: Assiscunk Creek
Drainage Basin: Assiscunk Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported, prestressed concrete box beams
Substructure Type: Vertical wall reinforced concrete abutments and pier
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S6

Data Sheet – Bridge No. 0317152

Route: 130 SB
Community: Burlington City

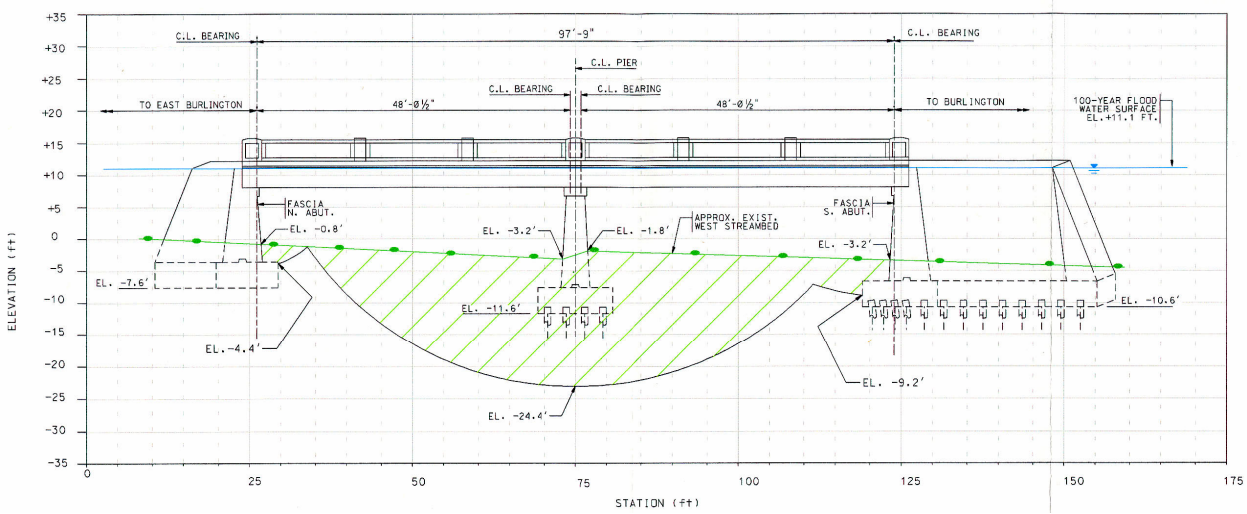
Milepoint: 46.65
County: Burlington

Waterway Name: Assiscunk Creek
Drainage Basin: Assiscunk Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported, concrete encased steel stringers
Substructure Type: Vertical wall reinforced concrete abutments
Abutment Foundation Type: Spread footing (N. Abut.); Timber piles (S. Abut.)
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0324160

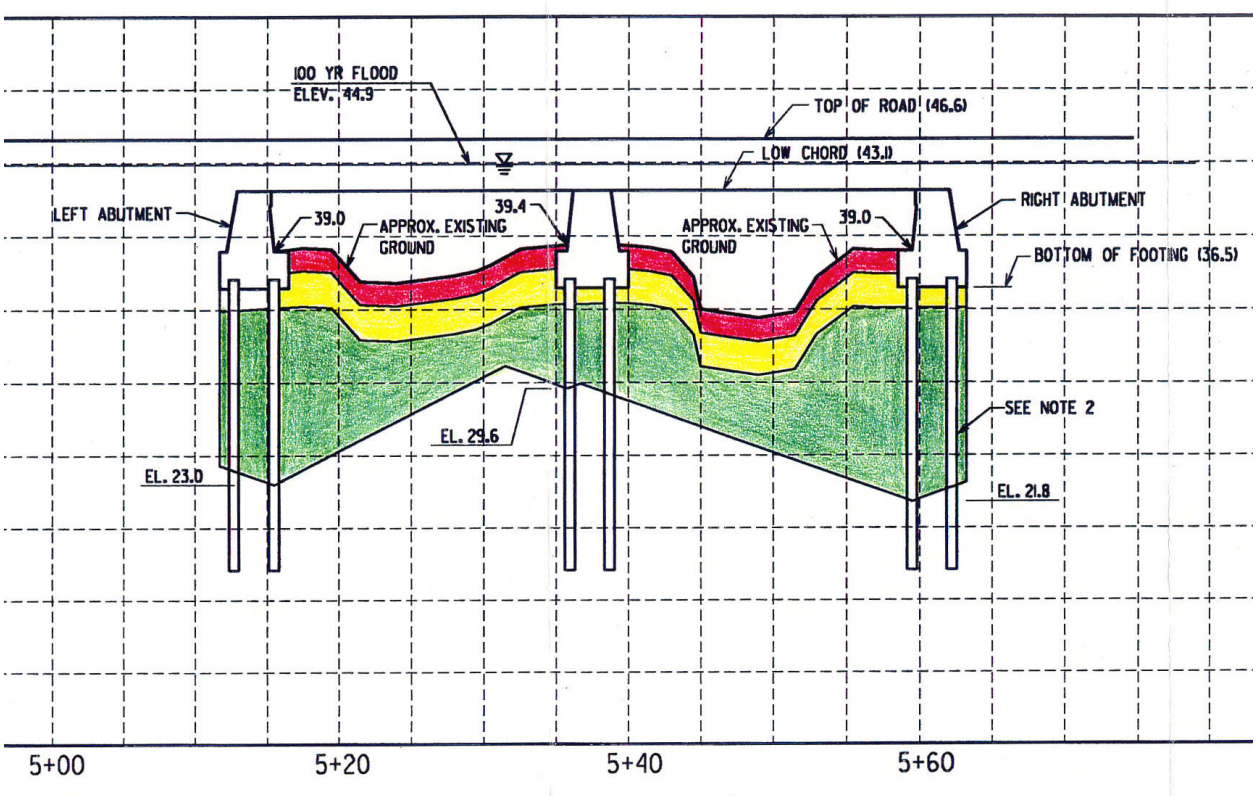
Route: 206
Milepoint: 27.33
Community: Springfield Township
County: Burlington

Waterway Name: Barkers Creek
Drainage Basin: Assiscunk Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Concrete encased rolled steel stringer & reinforced concrete slab
Substructure Type: Concrete gravity type
Abutment Foundation Type: Original foundation type unknown; widened sections on pile foundations
Pier Foundation Type: Original foundation type unknown; widened sections on pile foundations

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0324162

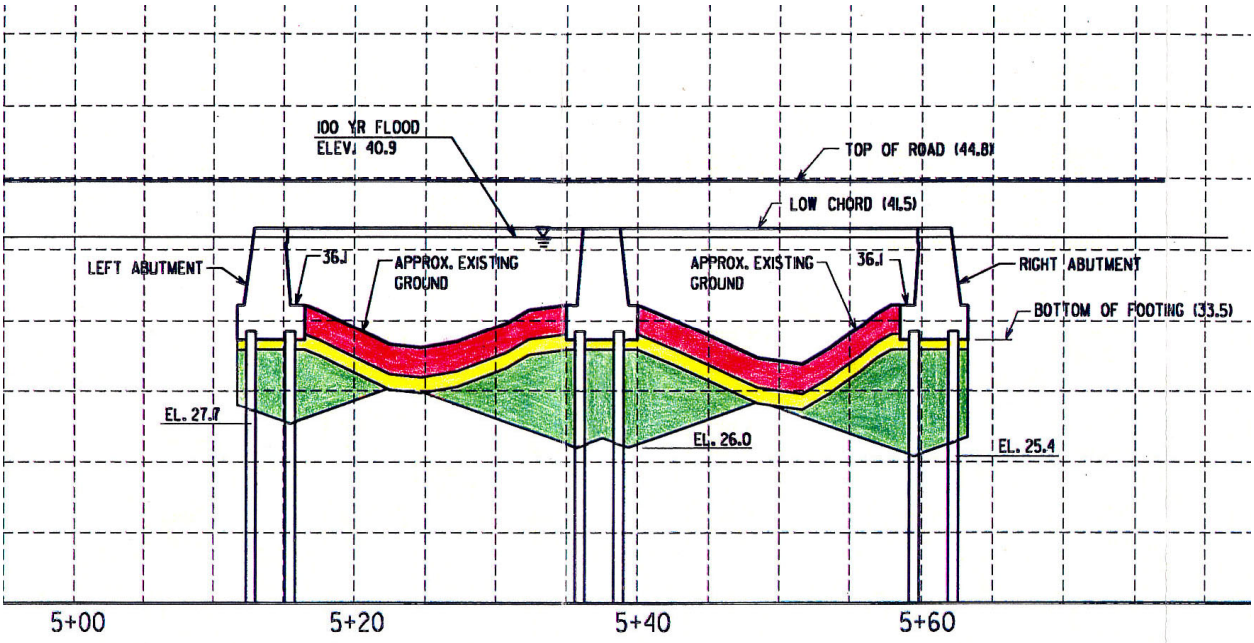
Route: 206
Milepoint: 29.54
Community: Springfield Twp, Mansfield Twp
County: Burlington

Waterway Name: Assiscunk Creek
Drainage Basin: Assiscunk Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Concrete encased rolled steel stringer & reinforced concrete slab
Substructure Type: Concrete gravity type
Abutment Foundation Type: Original foundation type unknown; widened sections on pile foundations
Pier Foundation Type: Original foundation type unknown; widened sections on pile foundations

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of moderate debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S7

Data Sheet – Bridge No. 0316150

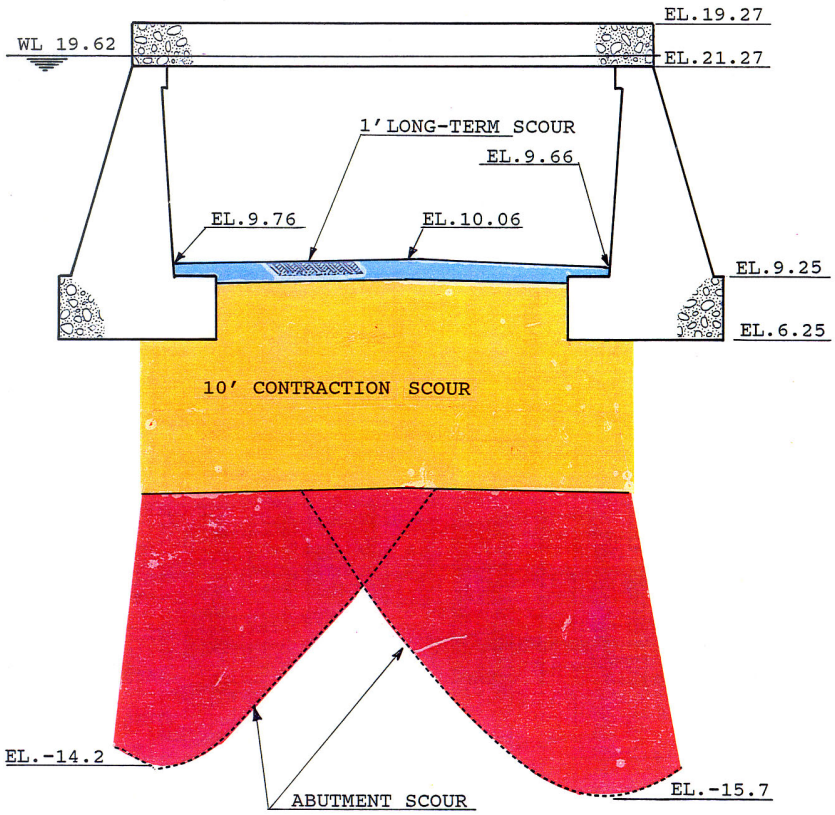
Route: 130
Milepoint: 37.84
Community: Cinnaminson Township
County: Burlington

Waterway Name: Pompeston Creek
Drainage Basin: Pompeston Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported, concrete encased steel stringer & reinforced concrete slab
Substructure Type: Reinforced concrete vertical abutments w/ wing walls
Abutment Foundation Type: Reinforced concrete spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0405153

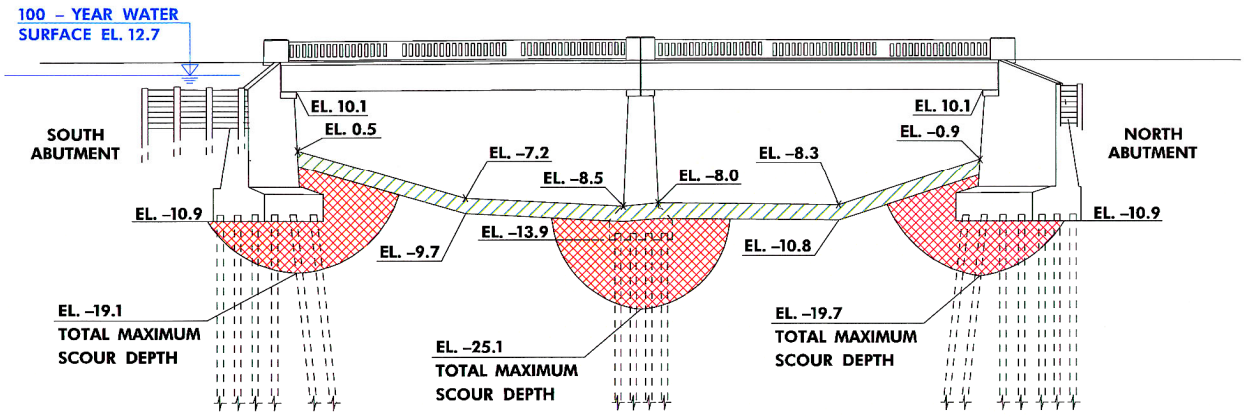
Route: 30
Milepoint: 3.62
Community: Pennsauken Township
County: Camden

Waterway Name: Cooper River
Drainage Basin: Cooper River
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported concrete encased steel stringer
Substructure Type: Gravity type concrete abutments w/ flared wingwalls; solid stem pier
Abutment Foundation Type: Timber piles of unknown length
Pier Foundation Type: Timber piles of unknown length

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S7

Data Sheet – Bridge No. 0408160

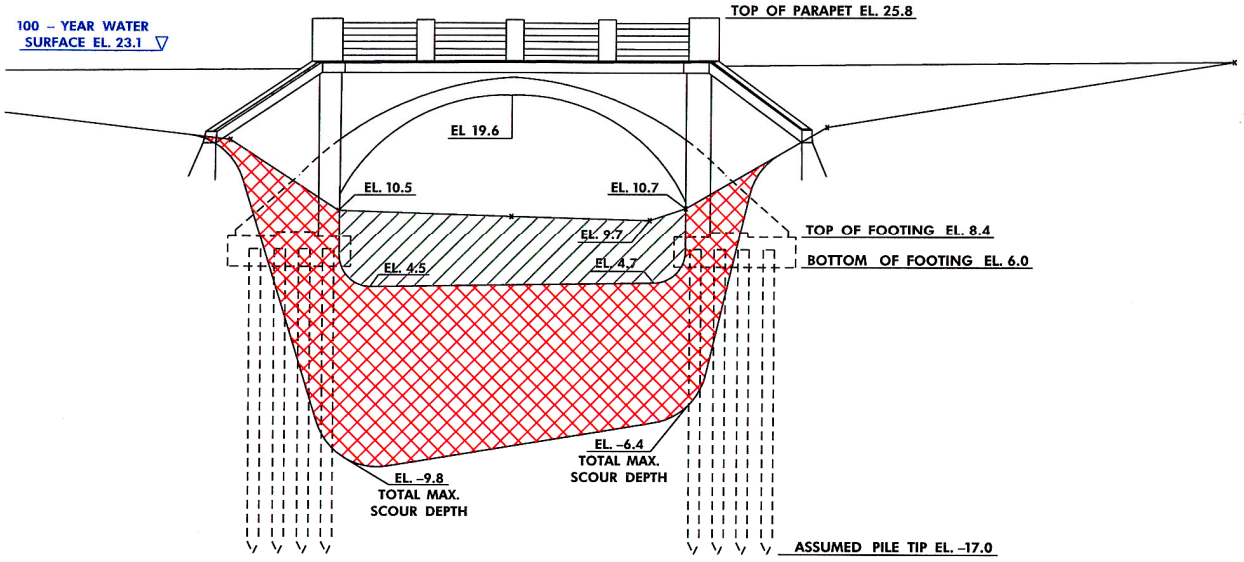
Route: 38 (Mill Road)
Milepoint: 4.30
Community: Cherry Hill Township
County: Camden

Waterway Name: Pennsauken Creek
Drainage Basin: Pennsauken Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Filled spandrel reinforced concrete arch
Substructure Type: Gravity type, concrete abutments (skew backs) w/ flared wingwalls
Abutment Foundation Type: Pile cap and timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0424151

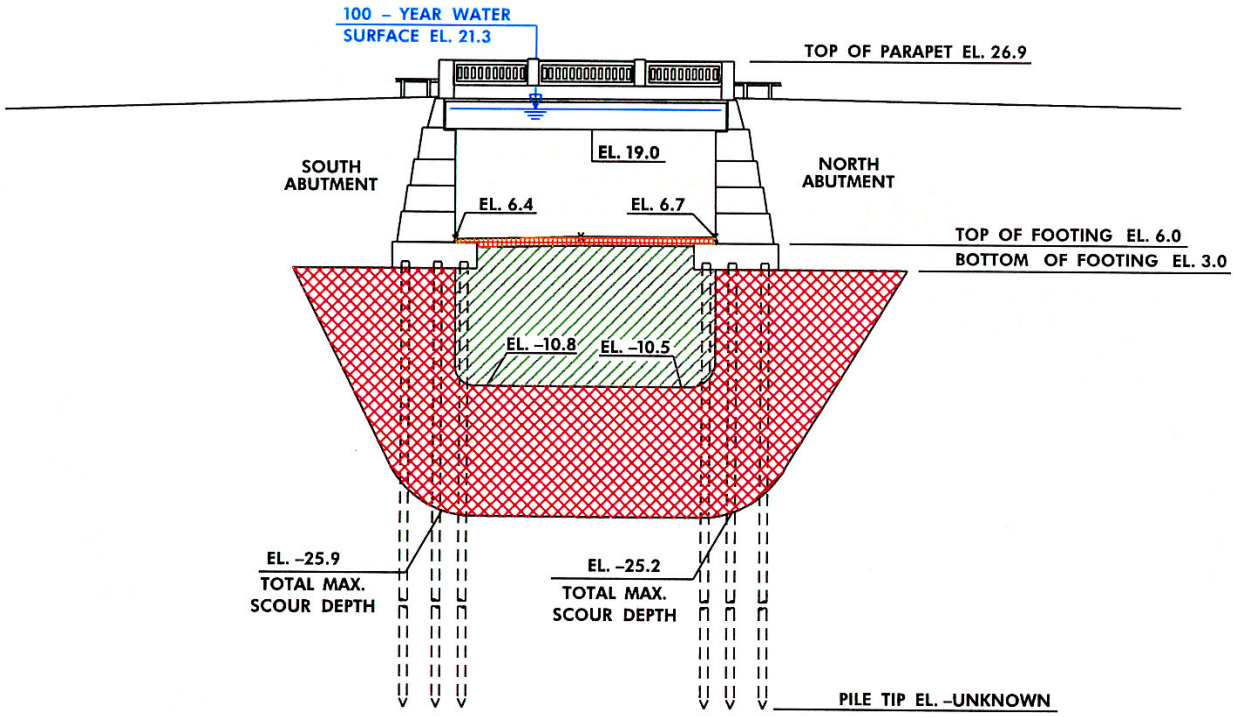
Route: 154
Milepoint: 1.22
Community: Cherry Hill Township
County: Camden

Waterway Name: North Branch of Cooper River
Drainage Basin: Cooper River
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported concrete encased steel multi-stringer
Substructure Type: Gravity type concrete abut. w/ parallel (upstream) & flared (downstream) wingwalls
Abutment Foundation Type: Pile supported
Pier Foundation Type: Pile supported

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0810150

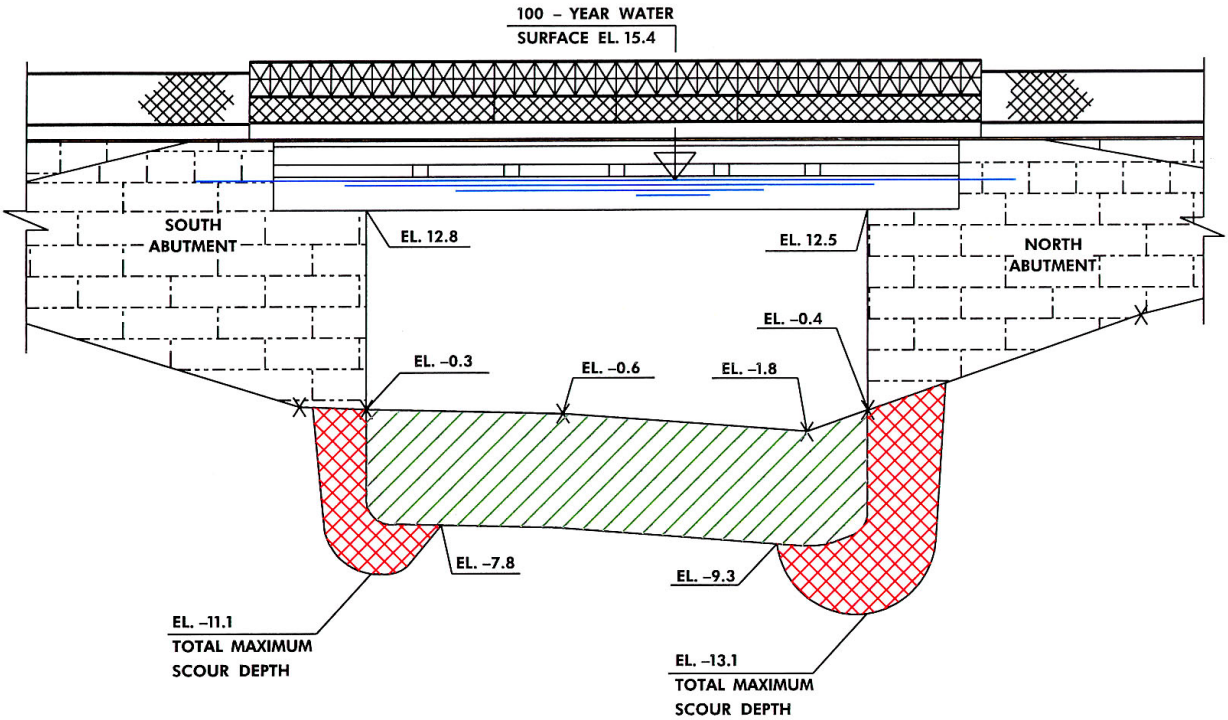
Route: 45
Milepoint: 26.21
Community: Woodbury City
County: Gloucester

Waterway Name: Woodbury Creek
Drainage Basin: Woodbury Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Built up girders with rolled floor beams and stringers
Substructure Type: Masonry abutments w/ flared masonry wingwalls
Abutment Foundation Type: Unknown
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S7

Data Sheet – Bridge No. 0815152

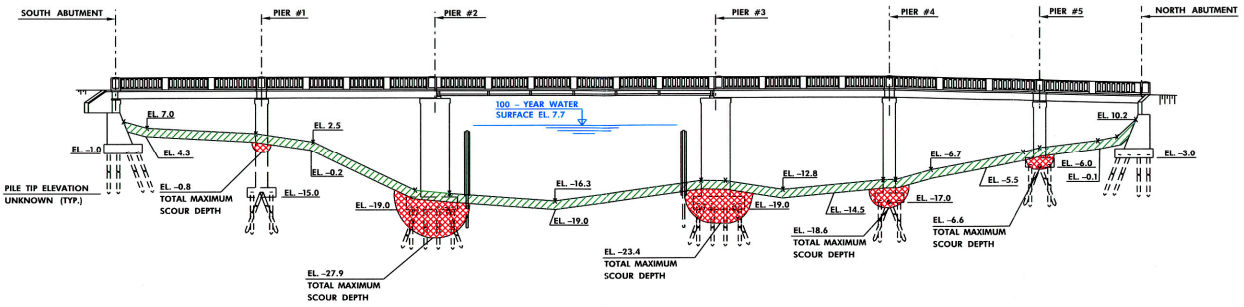
Route: 47
Milepoint: 75.08
Community: Westville Boro, Brooklawn Boro
County: Gloucester, Camden

Waterway Name: Big Timber Creek
Drainage Basin: Big Timber Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Thru-girder (main span); concrete encased steel stringer (approach spans)
Substructure Type: Spill-through buttress abutments w/ in-line wingwalls; concrete stem wall pier
Abutment Foundation Type: Concrete pile cap and timber piles
Pier Foundation Type: Concrete pile cap and timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S7

Data Sheet – Bridge No. 0818151

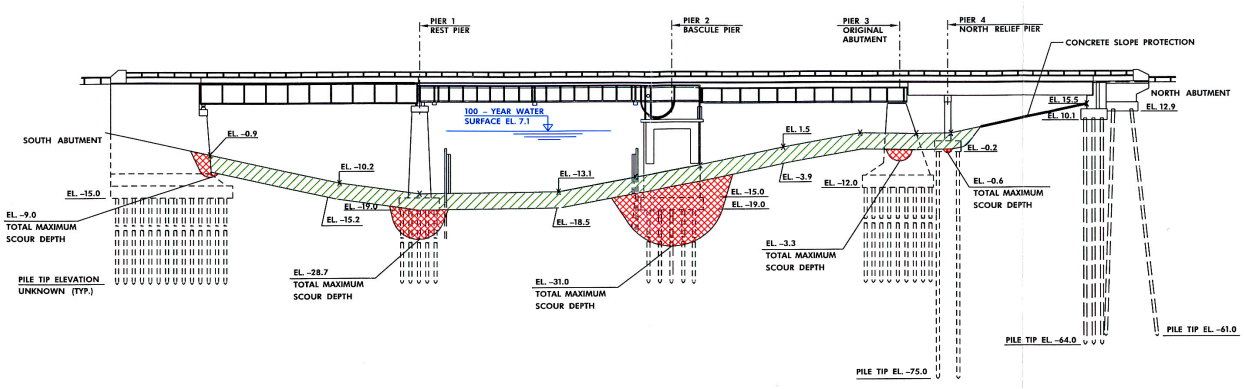
Route: 130
Milepoint: 25.47
Community: Westville Boro, Brooklawn Boro
County: Gloucester, Camden

Waterway Name: Big Timber Creek
Drainage Basin: Big Timber Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Fixed bascule and simply supported steel girders w/ floorbeams
Substructure Type: Concrete abutments w/ U-type wingwalls; Concrete solid stem & multi-column piers
Abutment Foundation Type: Pile cap and timber piles
Pier Foundation Type: Pile cap and piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S8

Data Sheet – Bridge No. 0808151

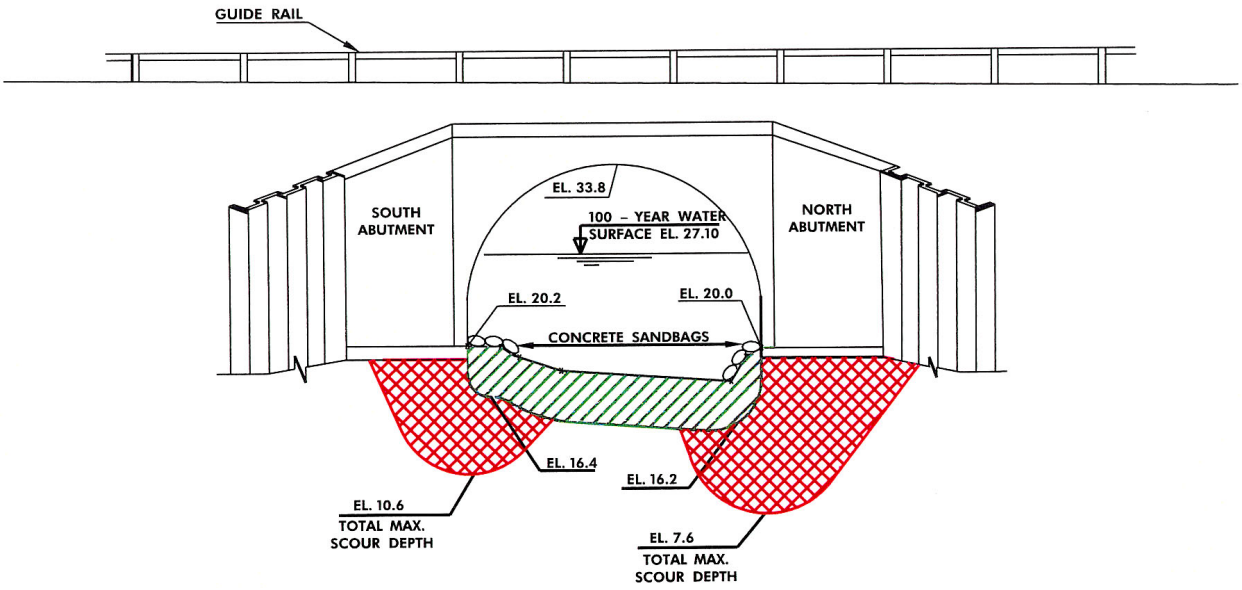
Route: 45
Community: Mantua Township
Milepoint: 20.82
County: Gloucester

Waterway Name: Edwards Run
Drainage Basin: Mantua Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Filled spandrel reinforced concrete arch
Substructure Type: Arch with wingwalls
Abutment Foundation Type: Unknown
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0807152

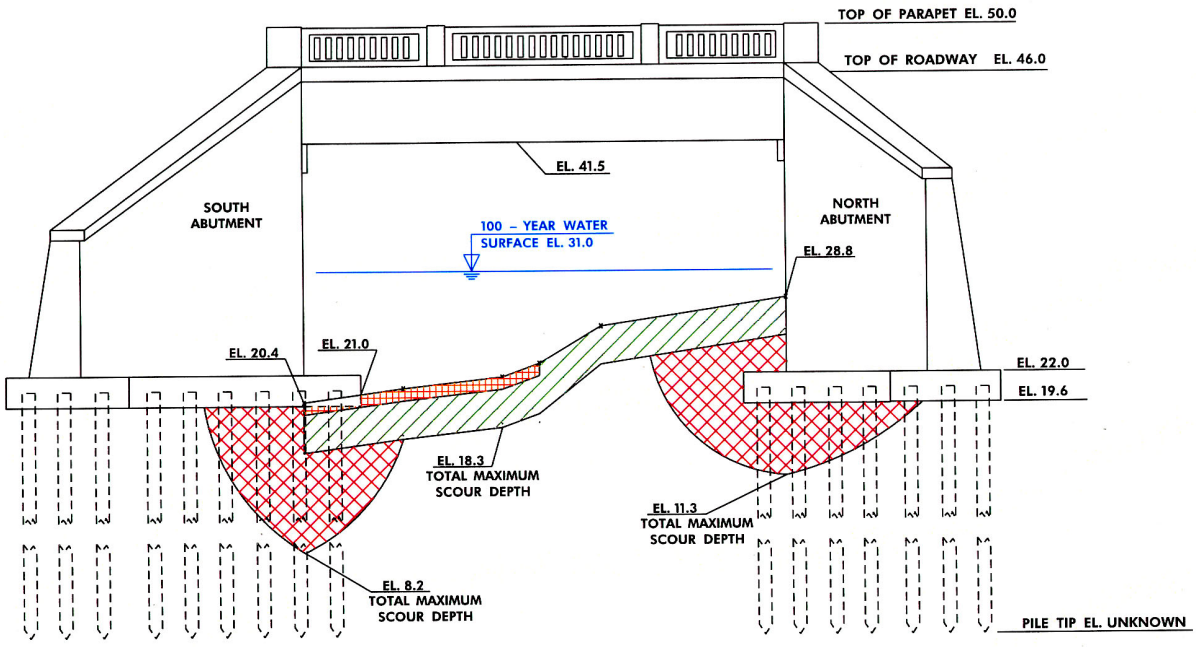
Route: 45
Milepoint: 17.73
Community: Harrison Township
County: Gloucester

Waterway Name: Raccoon Creek
Drainage Basin: Raccoon Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported concrete encased steel multi-stringer
Substructure Type: Full height concrete abutments w/ flared wingwalls
Abutment Foundation Type: Unknown
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0817150

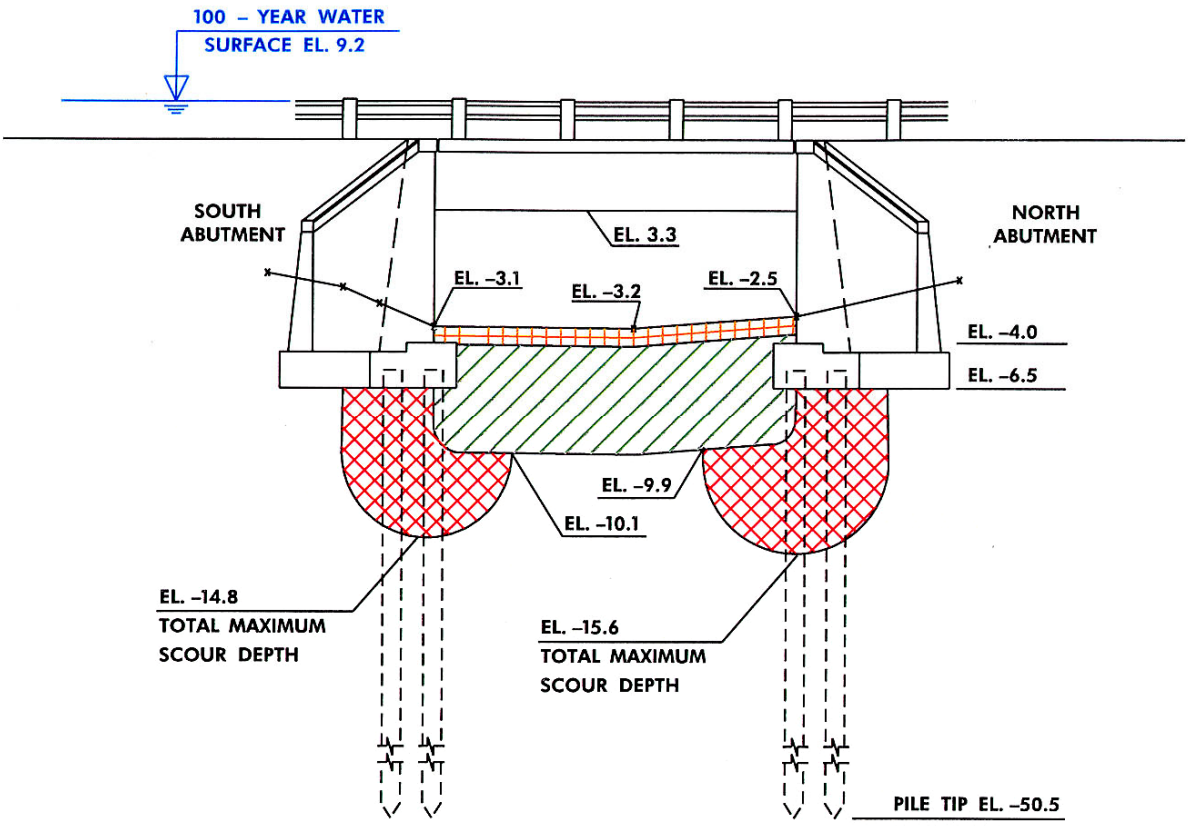
Route: 130
Milepoint: 9.95
Community: Logan Township
County: Gloucester

Waterway Name: Big Birch Creek
Drainage Basin: Maple Swamp
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete deck slab w/ fill
Substructure Type: Integral abutment w/ concrete cantilevered, flared wingwalls
Abutment Foundation Type: Pile cap and timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S9

Data Sheet – Bridge No. 0817151

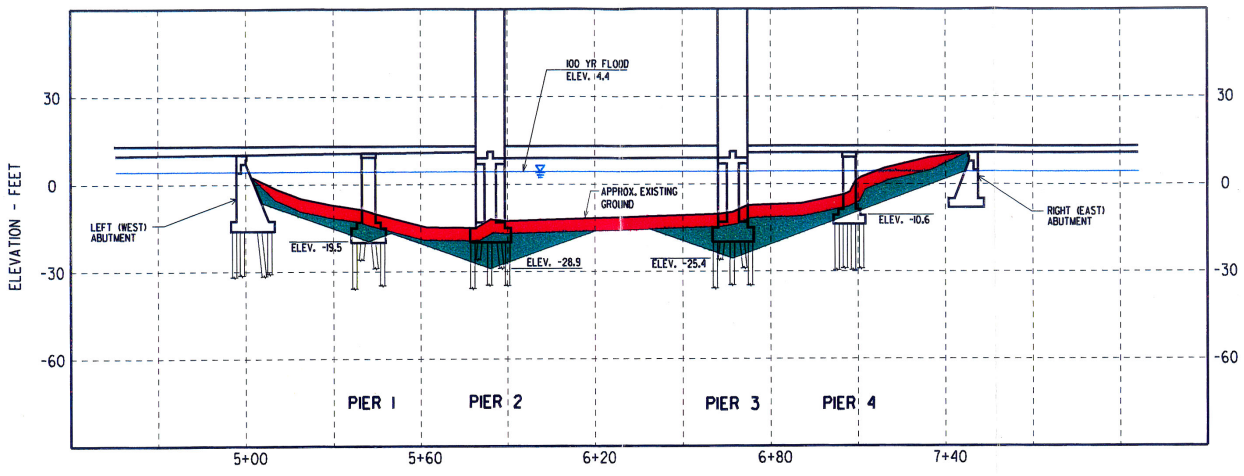
Route: 130
Milepoint: 11.80
Community: Logan Township
County: Gloucester

Waterway Name: Raccoon Creek
Drainage Basin: Raccoon Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Floorbeam/girder lift span; 4 concrete encased approach spans
Substructure Type: Concrete buttress, open bay w/ inclined face (Abut.); Solid stem, sharp nose (Pier)
Abutment Foundation Type: Pile cap and timber piles (West); Spread footing (East)
Pier Foundation Type: Pile cap and timber piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Fine or coarse gravel
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0825150

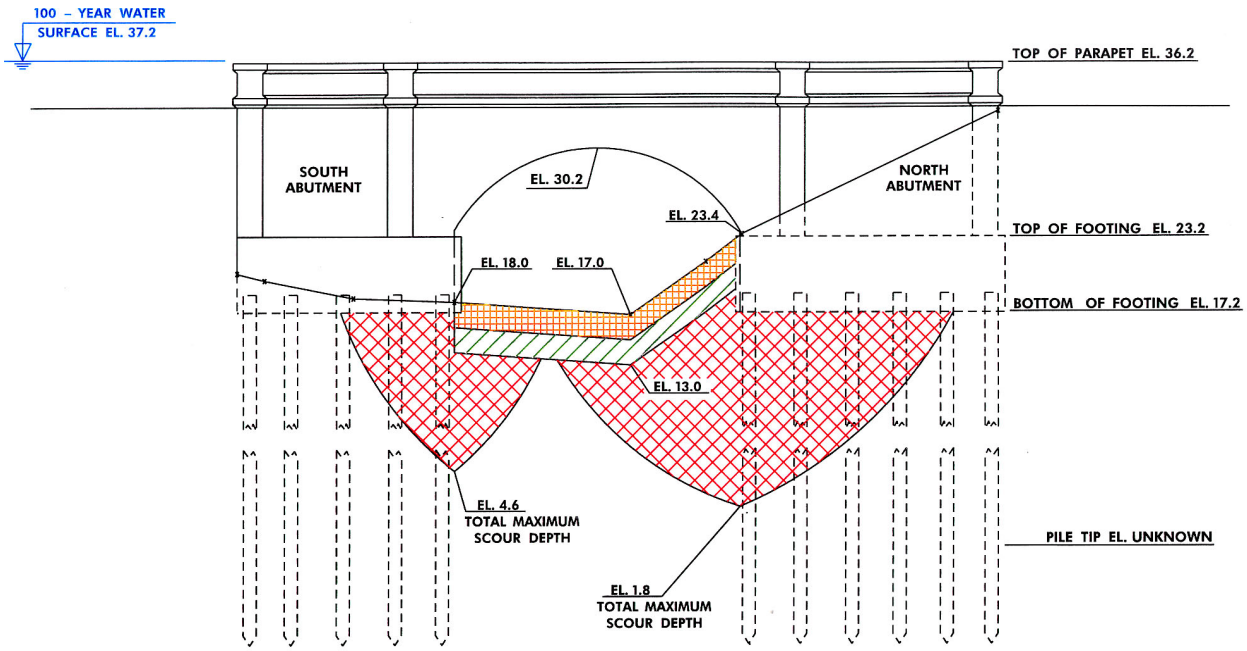
Route: 322
Milepoint: 11.27
Community: Harrison Township
County: Gloucester

Waterway Name: Raccoon Creek
Drainage Basin: Raccoon Creek
Watershed Management Area: Lower Delaware (18)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete arch w/ fill
Substructure Type: Concrete arch w/ footings supported on piles
Abutment Foundation Type: Pile cap and timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0319152

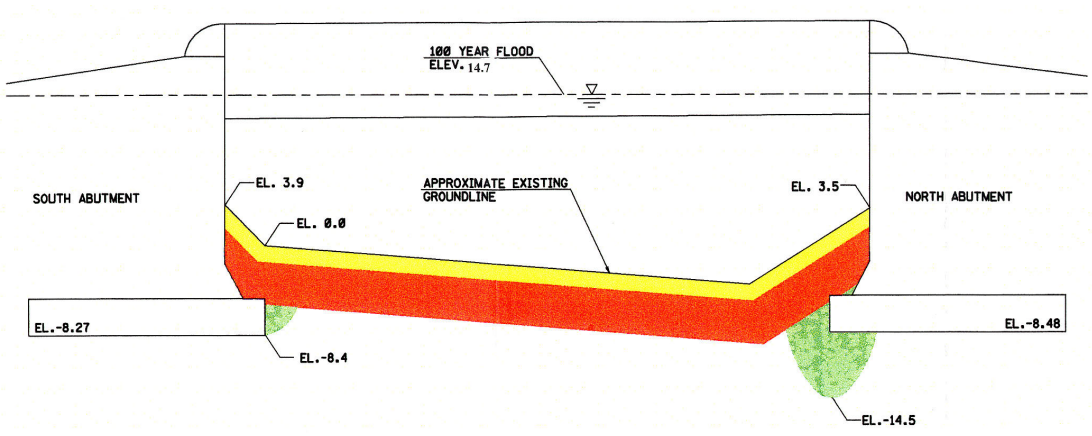
Route: 130
Milepoint: 58.28
Community: Bordenton Twp, Hamilton Twp
County: Burlington, Mercer

Waterway Name: Crosswicks Creek
Drainage Basin: Crosswicks Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Composite rolled steel beam & concrete encased riveted steel girder
Substructure Type: Reinforced concrete vertical wall
Abutment Foundation Type: Spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S10

Data Sheet – Bridge No. 0326152

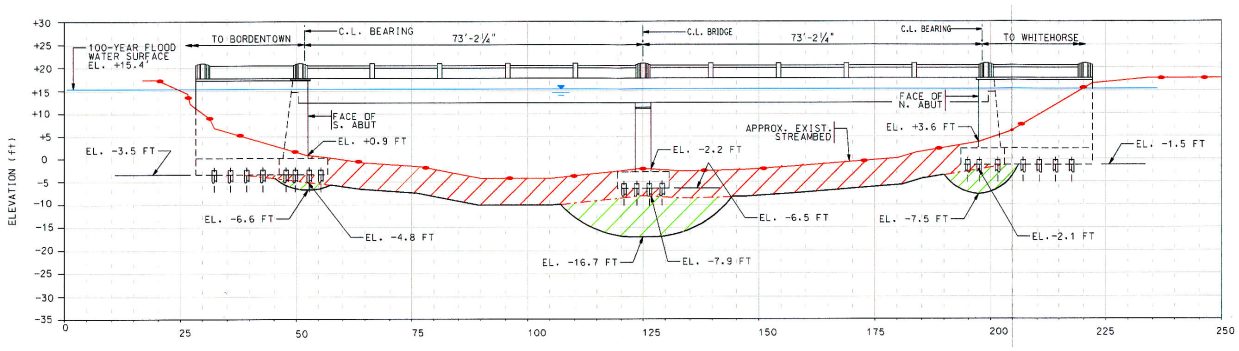
Route: 206 NB
Milepoint: 38.46
Community: Bordenton Twp, Hamilton Twp
County: Burlington, Mercer

Waterway Name: Crosswicks Creek
Drainage Basin: Crosswicks Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported encased I-beam
Substructure Type: Vertical wall reinforced concrete abutments; solid wall pier
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S10

Data Sheet – Bridge No. 0326153

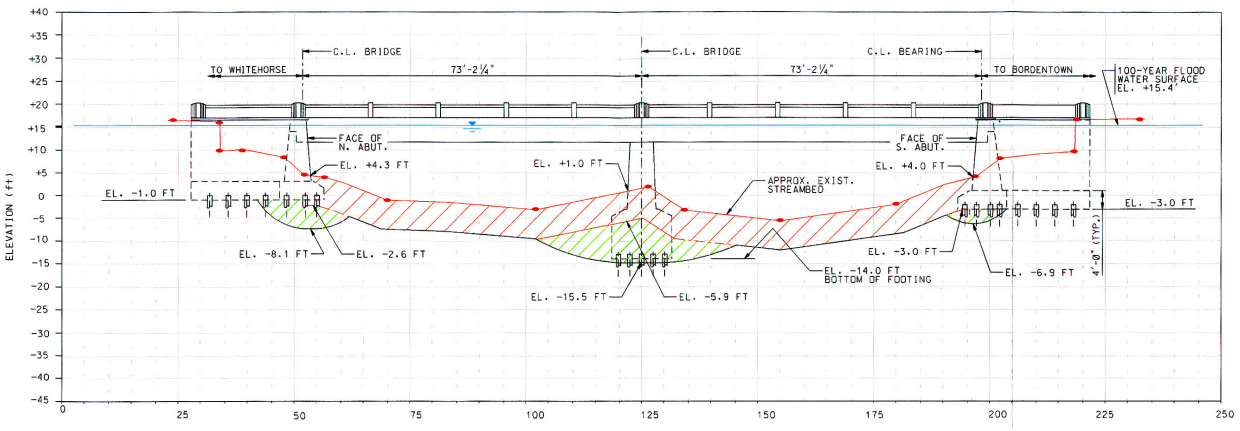
Route: 206 SB
Milepoint: 38.46
Community: Bordenton Twp, Hamilton Twp
County: Burlington, Mercer

Waterway Name: Crosswicks Creek
Drainage Basin: Crosswicks Creek
Watershed Management Area: Assiscunk, Crosswicks, Doctors (20)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported concrete encased steel thru-girder floorbeam system
Substructure Type: Vertical wall reinforced concrete abutments; solid wall pier
Abutment Foundation Type: Timber piles
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S11

Data Sheet – Bridge No. 0601150

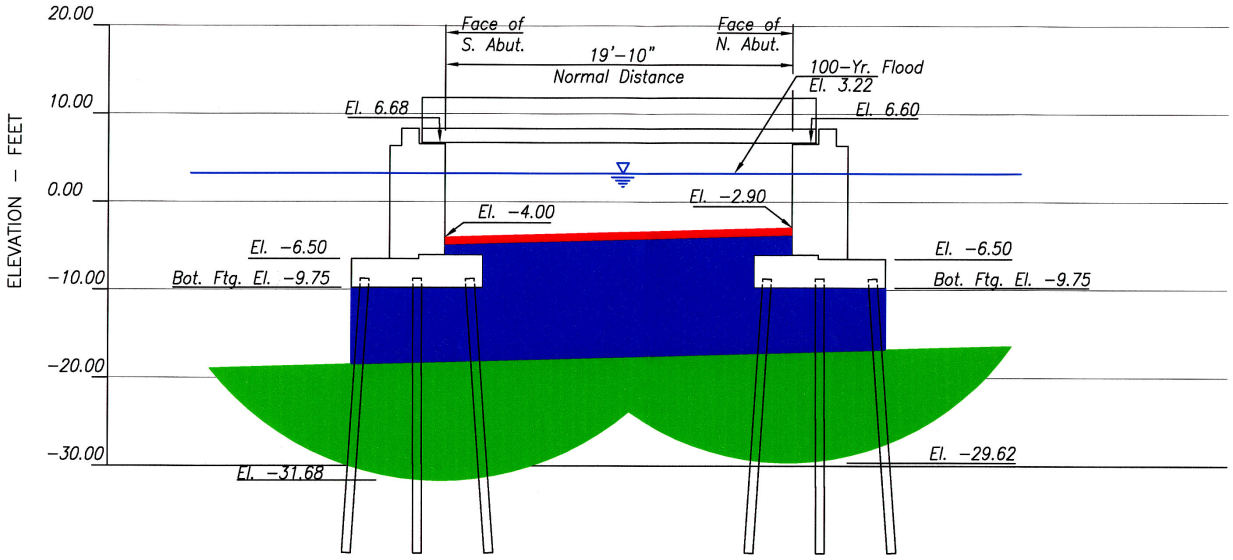
Route: 47
Milepoint: 32.78
Community: Maurice River Township
County: Cumberland

Waterway Name: Muskee River
Drainage Basin: Maurice River
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported prestressed solid multi-beam concrete slabs
Substructure Type: Full height reinforced concrete w/ vertical wall face and flared wingwalls
Abutment Foundation Type: Treated timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S11

Data Sheet – Bridge No. 0601151

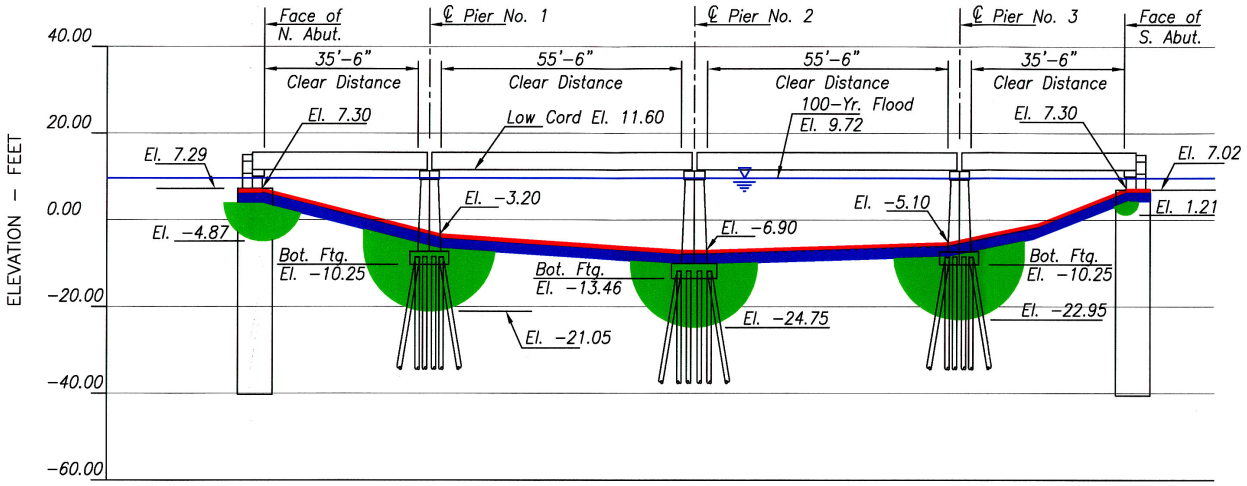
Route: 47
Milepoint: 33.93
Community: Maurice River Township
County: Cumberland

Waterway Name: Manamuskin Creek
Drainage Basin: Manamuskin Creek
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Concrete encased steel thru-girder and concrete encased steel multi-stringer
Substructure Type: Reinforced concrete short-stub (abut.); reinforced concrete bents (pier)
Abutment Foundation Type: Caissons 47.5 feet long (contract drawings)
Pier Foundation Type: Timber piles

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0606150

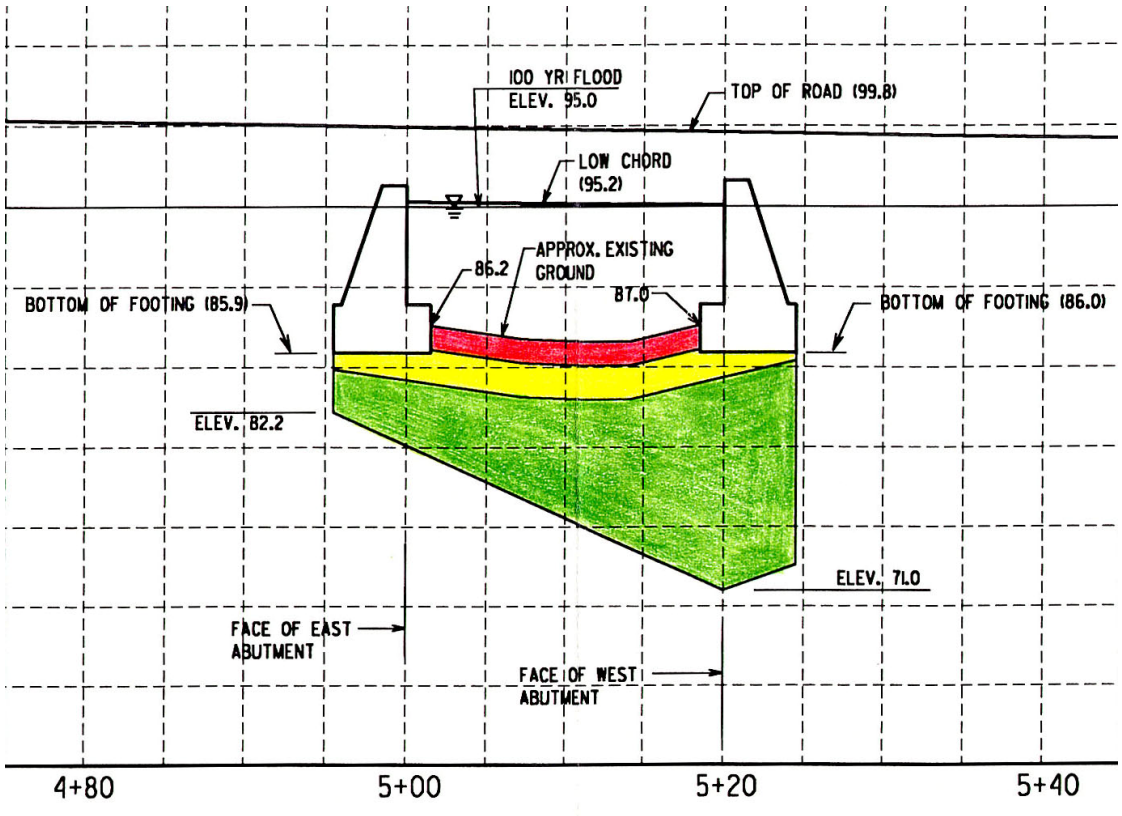
Route: 49
Milepoint: 39.08
Community: Millville City
County: Cumberland

Waterway Name: Manantico Creek
Drainage Basin: Manantico Creek
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete slab with fill
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footings
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S11

Data Sheet – Bridge No. 0609151

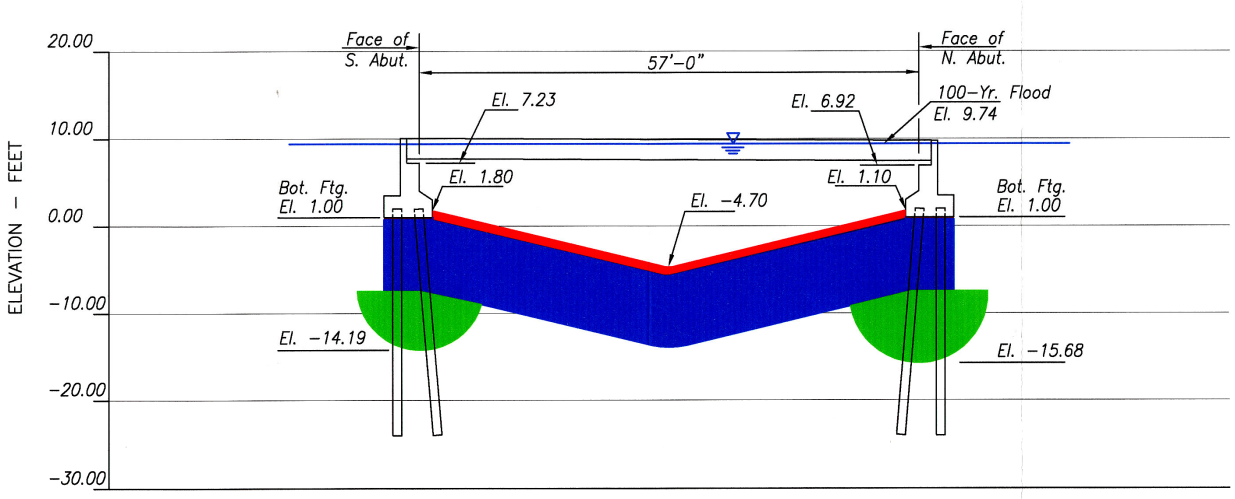
Route: 55 NB
Milepoint: 21.81
Community: Millville City
County: Cumberland

Waterway Name: Manantico Creek
Drainage Basin: Manantico Creek
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Prestressed concrete adjacent box beam w/ fill
Substructure Type: Reinforced concrete short stub type w/ vertical wall face
Abutment Foundation Type: Treated timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S11

Data Sheet – Bridge No. 0609152

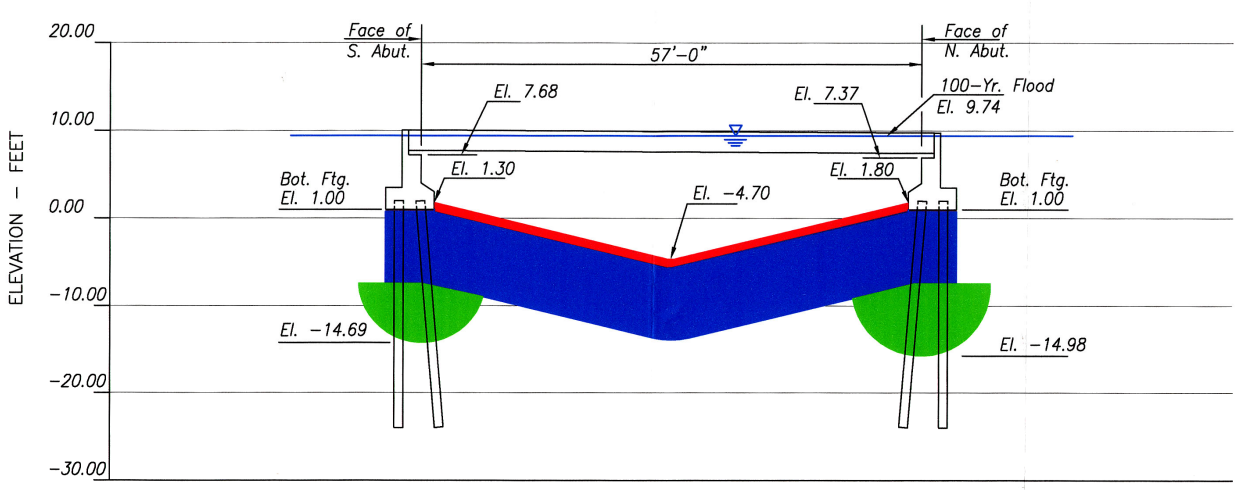
Route: 55 SB
Milepoint: 21.81
Community: Millville City
County: Cumberland

Waterway Name: Manantico Creek
Drainage Basin: Manantico Creek
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Prestressed concrete adjacent box beam w/ fill
Substructure Type: Reinforced concrete short stub w/ vertical wall face
Abutment Foundation Type: Treated timber piles
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 0826150

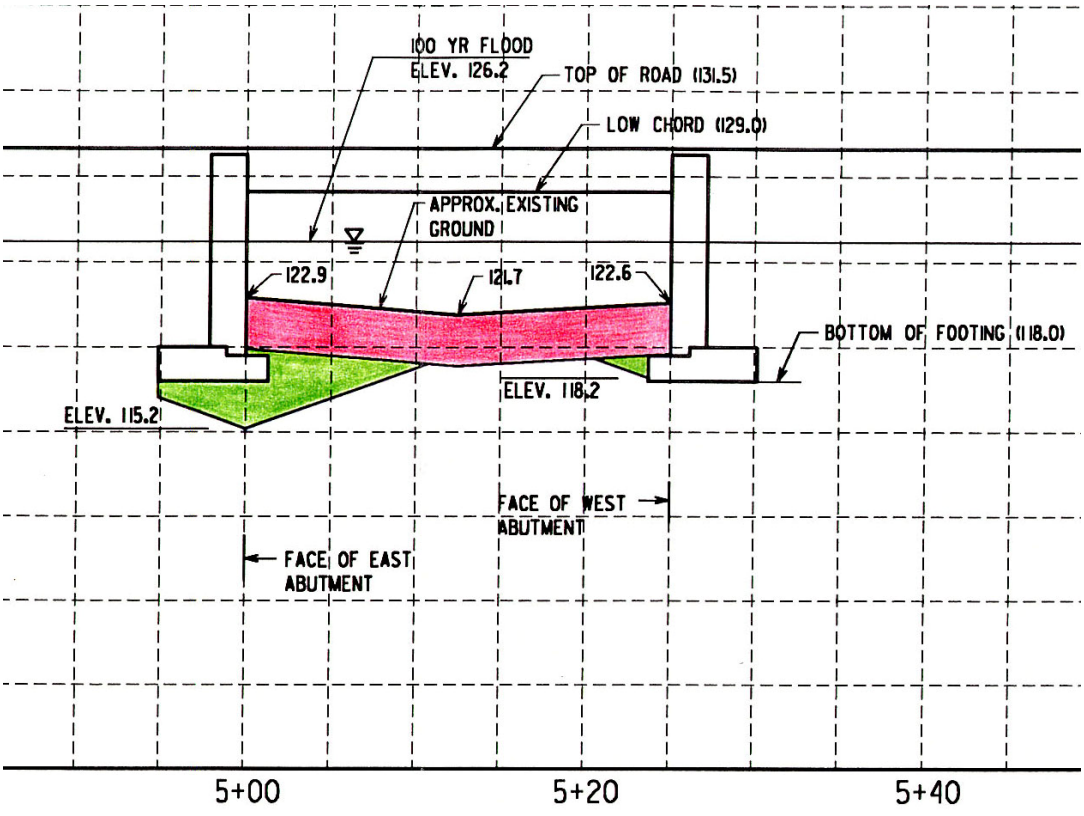
Route: 322
Milepoint: 21.73
Community: Monroe Township
County: Gloucester

Waterway Name: Scotland Run
Drainage Basin: Maurice River
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete deck slab
Substructure Type: Concrete gravity type w/ vertical face
Abutment Foundation Type: Spread footing
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S11

Data Sheet – Bridge No. 1716151

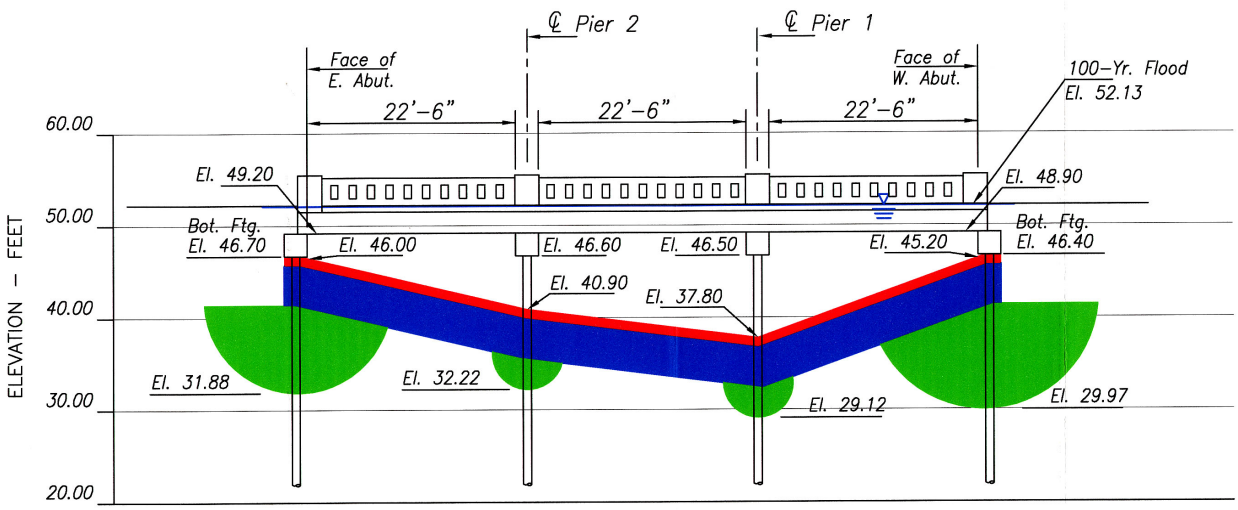
Route: 56
Milepoint: 7.47
Community: Pilesgrove Twp, Vineland City
County: Salem, Cumberland

Waterway Name: Maurice River
Drainage Basin: Maurice River
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported w/ rolled steel multi-stringers
Substructure Type: Reinforced concrete short-stub (abut.); Reinforced concrete cap beam
Abutment Foundation Type: Concrete piles
Pier Foundation Type: Concrete piles

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

Data Sheet – Bridge No. 1703152

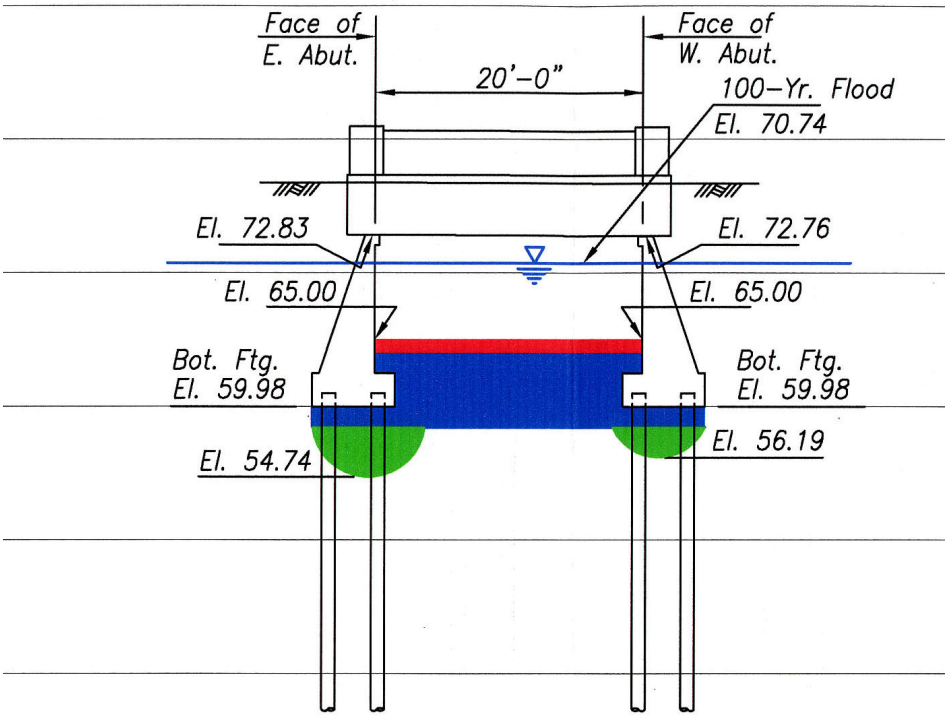
Route: 40
Community: Pilesgrove Township
Milepoint: 13.59
County: Salem

Waterway Name: Branch of Salem Creek
Drainage Basin: Salem River
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Reinforced concrete T-Beam
Substructure Type: Unreinforced concrete gravity type w/ vertical wall face
Abutment Foundation Type: Timber piles of unknown length
Pier Foundation Type: None

History of Scour Problems: Reports of minor scour problems
History of Debris: Reports of no or very minor debris
Streambed Material: Medium or coarse sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)

South Region
Group S12

Data Sheet – Bridge No. 1705150

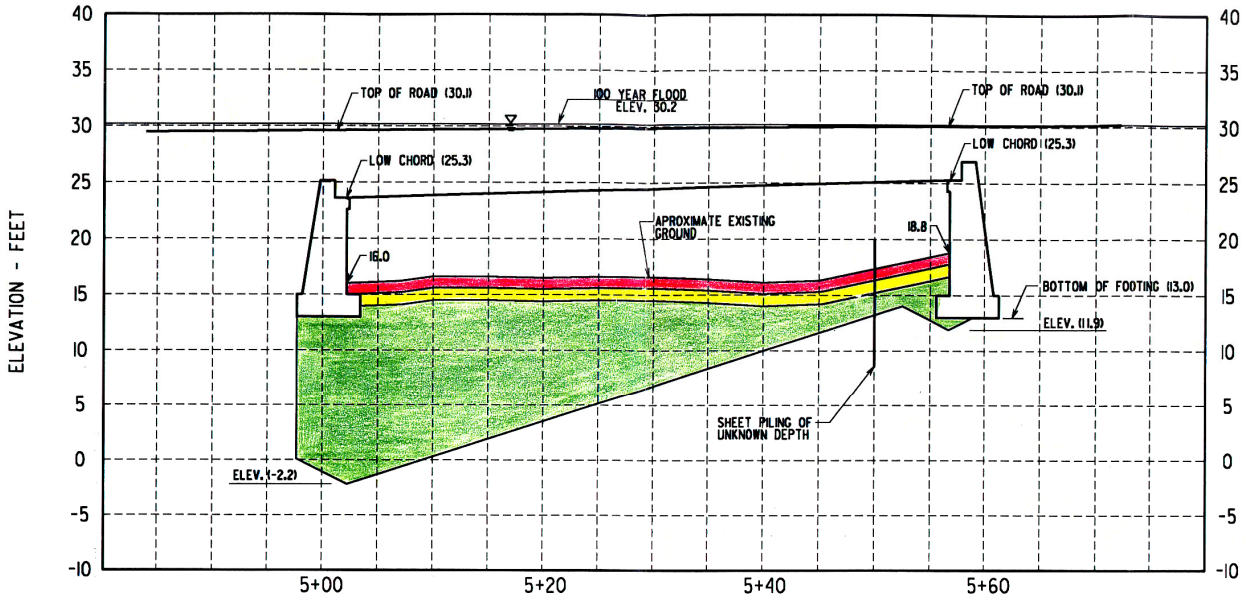
Route: 45
Community: Woodstown Boro
Milepoint: 10.40
County: Salem

Waterway Name: Salem River
Drainage Basin: Salem River
Watershed Management Area: Maurice, Salem, Cohansey (17)
Watershed Management Region: Lower Delaware

Superstructure Type: Simply supported concrete encased steel multi-stringer
Substructure Type: Concrete gravity type with vertical face
Abutment Foundation Type: Spread footing; east abutment protected by steel sheetpile wall
Pier Foundation Type: None

History of Scour Problems: Reports of exposed footings
History of Debris: Reports of no or very minor debris
Streambed Material: Silt or fine sand
Substructure Redundancy: Yes

Calculated Scour Depths at 100-year Flood



CROSS-SECTION (LOOKING DOWNSTREAM)