



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/09/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Rehabilitation Alternative (WITH RUN-AROUND)

DATE: 06/09/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
	RUN-AROUND													
0207000	BORROW	CY	2000										\$17.06	\$34,120.00
XXXXXXX	A TRACK REMOVAL	TF		2356									\$40.00	\$94,240.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		2356									\$340.00	\$801,040.00
XXXXXXX	A TRACK SHIFT (OTM)	TF		268									\$18.00	\$4,820.00
XXXXXXX	A CATENARY STRUCTURES (RUN-AROUND)	EA								9			\$6,767.00	\$60,900.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								3			\$29,948.00	\$89,840.00
XXXXXXX	A FIXED TENSIONED CATENARY SYSTEM	LF								4000			\$74.50	\$298,000.00
070120X	A DRILLED SHAFT (8.0' DIAMETER)	LF				909							\$5,000.00	\$4,545,000.00
XXXXXXX	A CLASS "X" CONCRETE	CY				1122							\$700.00	\$785,400.00
0602000	A DEFORMED STEEL BARS	LBS				259016							\$1.50	\$388,520.00
0603064	A STRUCTURAL STEEL (SITE NO. 4)	LS				1							\$12,611,000.00	\$12,611,000.00
XXXXXXX	A REMOVAL OF RUN-AROUND STRUCTURE	LS				1							\$4,000,000.00	\$4,000,000.00
0603545	A STEEL GRATING	SF				2829							\$50.00	\$141,450.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$3,000,000.00	\$3,000,000.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1108							\$500.00	\$554,000.00
														SUBTOTAL RUN-AROUND: \$27,409,000.00
														SUBTOTAL INCLUDING RUN-AROUND: \$174,913,000.00
	MINOR ITEMS	15%												\$26,237,000.00
														TOTAL: \$201,150,000.00
	ESTIMATED BASED ON % OF TOTAL CONTRACT COST													
0201001	A CLEARING AND GRUBBING	2%												\$4,023,000.00
0975004	A MOBILIZATION AND PROJECT CLOSEOUT	6%												\$12,069,000.00
0980001	A CONSTRUCTION STAKING	1%												\$2,012,000.00
														SUBTOTAL: \$219,254,000.00
	DESIGN CONTINGENCY	25%												\$54,814,000.00
	CONSTRUCTION CONTINGENCY	10%												\$21,925,000.00
	INCIDENTAL COST	25%												\$54,814,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) (2016)													\$350,807,000.00
	INFLATION AT MIDPOINT OF CONSTRUCTION 2020													
	INFLATION AT 4% (5 YEARS OF INFLATION)													\$76,003,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) AT MIDPOINT OF CONSTRUCTION (2020)													\$426,810,000.00



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DATE: 06/12/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Rehabilitation Alternative (WITH RUN-AROUND)

Rehabilitation Alternative Low Level Fixed (WITH RUN-AROUND)

DATE: 06/09/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount	
	RUN-AROUND														
0207000	BORROW	CY	2000										\$17.06	\$34,120.00	
XXXXXXX	A TRACK REMOVAL	TF		2356									\$40.00	\$94,240.00	
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		2356									\$340.00	\$801,040.00	
XXXXXXX	A TRACK SHIFT (OTM)	TF		268									\$18.00	\$4,820.00	
XXXXXXX	A CATENARY STRUCTURES (RUN-AROUND)	EA								9			\$6,767.00	\$60,900.00	
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								3			\$29,948.00	\$89,840.00	
XXXXXXX	A FIXED TENSIONED CATENARY SYSTEM	LF								4000			\$74.50	\$298,000.00	
070120X	A DRILLED SHAFT (8.0' DIAMETER)	LF				909							\$5,000.00	\$4,545,000.00	
XXXXXXX	A CLASS "X" CONCRETE	CY				1122							\$700.00	\$785,400.00	
0602000	DEFORMED STEEL BARS	LBS				259016							\$1.50	\$388,520.00	
0603064	A STRUCTURAL STEEL (SITE NO. 4)	LS				1							\$12,611,000.00	\$12,611,000.00	
XXXXXXX	A REMOVAL OF RUN-AROUND STRUCTURE	LS				1							\$4,000,000.00	\$4,000,000.00	
0603545	A STEEL GRATING	SF				2829							\$50.00	\$141,450.00	
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$3,000,000.00	\$3,000,000.00	
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1108							\$500.00	\$554,000.00	
														SUBTOTAL RUN-AROUND:	\$27,409,000.00
														SUBTOTAL INCLUDING RUN-AROUND:	\$168,113,000.00
	MINOR ITEMS	15%													\$25,217,000.00
														TOTAL:	\$193,330,000.00
	ESTIMATED BASED ON % OF TOTAL CONTRACT COST														
0201001	A CLEARING AND GRUBBING	2%													\$3,867,000.00
0975004	MOBILIZATION AND PROJECT CLOSEOUT	6%													\$11,600,000.00
0980001	A CONSTRUCTION STAKING	1%													\$1,933,000.00
														SUBTOTAL:	\$210,730,000.00
	DESIGN CONTINGENCY	25%													\$52,683,000.00
	CONSTRUCTION CONTINGENCY	10%													\$21,073,000.00
	INCIDENTAL COST	25%													\$52,683,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) (2016)														\$337,169,000.00
	INFLATION AT MIDPOINT OF CONSTRUCTION 2020														
	INFLATION AT 4% (5 YEARS OF INFLATION)														\$73,049,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) AT MIDPOINT OF CONSTRUCTION (2020)														\$410,218,000.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14A (WITH RUN-AROUND)

Low Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$1,094,500.00	\$1,094,500.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						0					\$3,930,000.00	\$0.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14A (WITH RUN-AROUND)
Low Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A OPERATING MACHINERY (2 SPANS)	LS					0						\$6,800,000.00	\$0.00
XXXXXXX	A SPAN LOCKS (2 SPANS)	LS					0						\$840,000.00	\$0.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14A (WITH RUN-AROUND)
Low Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			0								\$470,720.00	\$0.00
XXXXXXX	A CONTROL HOUSE	EA.			0								\$592,512.00	\$0.00
XXXXXXX	A GENERATOR BUILDING	EA.			0								\$300,000.00	\$0.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATRE EMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16'X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6'X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA										18	\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115KV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115KV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115KV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115KV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115KV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS										1	\$362,800.00	\$362,800.00
009051	A LOWERING CATENARY	LF								6020			\$27.50	\$165,550.00
009028	A CATENARY POLE FOUNDATION TYPE A	EA								12			\$29,748.00	\$356,980.00
009604	A CATENARY GUY ANCHORS IN SOIL	EA								6			\$24,680.00	\$148,080.00
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00



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Option 14A (WITH RUN-AROUND)

Low Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXXX	A CONTROL HOUSE HVAC	LS					0						\$40,000.00	\$0.00
XXXXXXXX	A CONTROL HOUSE PLUMBING	LS					0						\$20,000.00	\$0.00
XXXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				972							\$5,000.00	\$4,860,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				1620							\$5,000.00	\$8,100,000.00
0601201	CLASS "F" CONCRETE	CY				3360							\$700.00	\$2,352,000.00
XXXXXXXX	A CLASS "X" CONCRETE	CY				3045							\$700.00	\$2,131,500.00
XXXXXXXX	A PIER 1 FORMLINER	LS				1							\$111,900.00	\$111,900.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14A (WITH RUN-AROUND)

Low Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$129,800.00	\$129,800.00
0602000	DEFORMED STEEL BARS	LBS				1520132							\$1.50	\$2,280,200.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				0							\$1.80	\$0.00
0714026	A TEMPORARY SHEET PILING	LBS				654750							\$2.00	\$1,309,500.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				16245							\$20.00	\$324,900.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				0							\$0.00	\$0.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				0							\$0.00	\$0.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$3,604,189.00	\$3,604,190.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$29,462,713.00	\$29,462,710.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				0							\$3,023,853.00	\$0.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				2756							\$500.00	\$1,378,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				0							\$500.00	\$0.00
0603545	A STEEL GRATING	SF				4134							\$50.00	\$206,700.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				0							\$0.00	\$0.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				0							\$0.00	\$0.00
0603367	A BALANCE BLOCKS	EA				0							\$0.00	\$0.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				0							\$0.00	\$0.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$98,905,800.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	410										\$28.44	\$11,660.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	620										\$3.38	\$2,100.00
0212000	SUBBASE	CY	280										\$56.03	\$15,690.00
0305001	PROCESSED AGGREGATE	CY	110										\$62.37	\$6,860.00
0406171	HMA S0.5	TON	160										\$175.51	\$28,080.00
0507771	RESET CATCH BASIN	EA	2										\$926.02	\$1,850.00
0811001	CONCRETE CURBING	LF	240										\$35.70	\$8,570.00
0921001	CONCRETE SIDEWALK	SF	2360										\$12.25	\$28,910.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	20										\$133.17	\$2,660.00
1208929	PUBLIC INFORMATION SIGNS	SF	23										\$51.96	\$1,200.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.33	\$70.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	460										\$0.93	\$430.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	340										\$4.10	\$1,390.00
1220027	CONSTRUCTION SIGNS	SF	233										\$22.86	\$5,330.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				2360							\$20.00	\$47,200.00
0714026	A TEMPORARY SHEET PILING	LBS				125400							\$2.00	\$250,800.00
XXXXXXX	A STEEL PILE HP 14X89	LF				7808							\$60.00	\$468,480.00
0601000	CLASS "A" CONCRETE	CY				1052							\$70.00	\$736,400.00
0602000	DEFORMED STEEL BARS	LBS				300200							\$1.50	\$450,300.00
0216000	PERVIOUS STRUCTURE BACKFILL	CY				5160							\$35.00	\$180,600.00
0503905	REMOVAL OF EXISTING STRUCTURAL STEEL	LS				1							\$50,000.00	\$50,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$382,500.00	\$382,500.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$1,912,500.00	\$1,912,500.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				204							\$500.00	\$102,000.00
0603545	A STEEL GRATING	SF				430							\$50.00	\$21,500.00
0503029	A REMOVAL OF EXISTING CONCRETE SUBSTRUCTURE	CY				1040							\$350.00	\$364,000.00
0974005	A REMOVAL OF EXISTING RETAINING WALL	CY				780							\$350.00	\$273,000.00



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CITY OF: Norwalk
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14A (WITH RUN-AROUND)

Low Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0506017	A RETAINING WALL	LS				1							\$216,000.00	\$216,000.00
													SUBTOTAL FORT POINT STREET: \$5,570,080.00	
	RUN-AROUND													
0207000	BORROW	CY	2000										\$17.06	\$34,120.00
XXXXXXX	A TRACK REMOVAL	TF		2356									\$40.00	\$94,240.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		2356									\$340.00	\$801,040.00
XXXXXXX	A TRACK SHIFT (OTM)	TF		268									\$18.00	\$4,820.00
XXXXXXX	A CATENARY STRUCTURES (RUN-AROUND)	EA								9			\$6,767.00	\$60,900.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								3			\$29,948.00	\$89,840.00
XXXXXXX	A FIXED TENSIONED CATENARY SYSTEM	LF								4000			\$74.50	\$298,000.00
070120X	A DRILLED SHAFT (8.0' DIAMETER)	LF				909							\$5,000.00	\$4,545,000.00
XXXXXXX	A CLASS "X" CONCRETE	CY				1122							\$700.00	\$785,400.00
0602000	DEFORMED STEEL BARS	LBS				259016							\$1.50	\$388,520.00
0603064	A STRUCTURAL STEEL (SITE NO. 4)	LS				1							\$12,611,000.00	\$12,611,000.00
XXXXXXX	A REMOVAL OF RUN-AROUND STRUCTURE	LS				1							\$4,000,000.00	\$4,000,000.00
0603545	A STEEL GRATING	SF				2829							\$50.00	\$141,450.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$5,400,000.00	\$5,400,000.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1108							\$500.00	\$554,000.00
														SUBTOTAL RUN-AROUND: \$29,808,330.00
														SUBTOTAL INCLUDING FORT POINT STREET AND RUN-AROUND: \$134,284,210.00
	MINOR ITEMS	15%												\$20,143,000.00
														TOTAL: \$154,427,000.00
	ESTIMATED BASED ON % OF TOTAL CONTRACT COST													
0201001	A CLEARING AND GRUBBING	2%												\$3,089,000.00
0975004	MOBILIZATON AND PROJECT CLOSEOUT	6%												\$9,266,000.00
0980001	A CONSTRUCTION STAKING	1%												\$1,544,000.00
														SUBTOTAL: \$168,326,000.00
	DESIGN CONTINGENCY	25%												\$42,082,000.00
	CONSTRUCTION CONTINGENCY	10%												\$16,833,000.00
	INCIDENTAL COST	25%												\$42,082,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) (2016)													\$269,323,000.00
	INFLATION AT MIDPOINT OF CONSTRUCTION 2020													
	INFLATION AT 4% (5 YEARS OF INFLATION)													\$58,350,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) AT MIDPOINT OF CONSTRUCTION (2020)													\$327,673,000.00



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CITY OF: Norwalk
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$1,094,500.00	\$1,094,500.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						0					\$3,930,000.00	\$0.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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CITY OF: Norwalk
F.A.P. No.: ----
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A OPERATING MACHINERY (2 SPANS)	LS					0						\$6,800,000.00	\$0.00
XXXXXXX	A SPAN LOCKS (2 SPANS)	LS					0						\$840,000.00	\$0.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			0								\$470,720.00	\$0.00
XXXXXXX	A CONTROL HOUSE	EA.			0								\$592,512.00	\$0.00
XXXXXXX	A GENERATOR BUILDING	EA.			0								\$300,000.00	\$0.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATRE EMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16'X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6'X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA										18	\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115KV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kv TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kv TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kv TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115kv SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS									1		\$362,800.00	\$362,800.00
0090051	A LOWERING CATENARY	LF								6020			\$27.50	\$165,550.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								12			\$29,748.00	\$356,980.00
0096064	A CATENARY GUY ANCHORS IN SOIL	EA								6			\$24,680.00	\$148,080.00
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00



**CONCEPTUAL ENGINEERING REPORT
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CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXXX	A CONTROL HOUSE HVAC	LS					0						\$40,000.00	\$0.00
XXXXXXXX	A CONTROL HOUSE PLUMBING	LS					0						\$20,000.00	\$0.00
XXXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				1004							\$5,000.00	\$5,020,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				1276							\$5,000.00	\$6,380,000.00
0601201	CLASS "F" CONCRETE	CY				3858							\$700.00	\$2,700,600.00
XXXXXXXX	A CLASS "X" CONCRETE	CY				3885							\$700.00	\$2,719,500.00
XXXXXXXX	A PIER 1 FORMLINER	LS				1							\$124,600.00	\$124,600.00



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CITY OF: Norwalk
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TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$143,400.00	\$143,400.00
0602000	DEFORMED STEEL BARS	LBS				1821727							\$1.50	\$2,732,590.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				0							\$1.80	\$0.00
0714026	A TEMPORARY SHEET PILING	LBS				709425							\$2.00	\$1,418,850.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				16426							\$20.00	\$328,520.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$0.00	\$0.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$0.00	\$0.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$4,530,234.00	\$4,530,230.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$31,711,638.00	\$31,711,640.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				1							\$0.00	\$0.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				2756							\$500.00	\$1,378,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				0							\$500.00	\$0.00
0603545	A STEEL GRATING	SF				4134							\$50.00	\$206,700.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				0							\$0.00	\$0.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				0							\$0.00	\$0.00
0603367	A BALANCE BLOCKS	EA				0							\$0.00	\$0.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				0							\$0.00	\$0.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$102,049,030.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	410										\$28.44	\$11,660.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	620										\$3.38	\$2,100.00
0212000	SUBBASE	CY	280										\$56.03	\$15,690.00
0305001	PROCESSED AGGREGATE	CY	110										\$62.37	\$6,860.00
0406171	HMA S0.5	TON	160										\$175.51	\$28,080.00
0507771	RESET CATCH BASIN	EA	2										\$926.02	\$1,850.00
0811001	CONCRETE CURBING	LF	240										\$35.70	\$8,570.00
0921001	CONCRETE SIDEWALK	SF	2360										\$12.25	\$28,910.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	20										\$133.17	\$2,660.00
1208929	PUBLIC INFORMATION SIGNS	SF	23										\$51.96	\$1,200.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.33	\$70.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	460										\$0.93	\$430.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	340										\$4.10	\$1,390.00
1220027	CONSTRUCTION SIGNS	SF	233										\$22.86	\$5,330.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				2360							\$20.00	\$47,200.00
0714026	A TEMPORARY SHEET PILING	LBS				125400							\$2.00	\$250,800.00
XXXXXXX	A STEEL PILE HP 14X89	LF				7808							\$60.00	\$468,480.00
060100	CLASS "A" CONCRETE	CY				1052							\$70.00	\$736,400.00
0602000	DEFORMED STEEL BARS	LBS				300200							\$1.50	\$450,300.00
0216000	PERVIOUS STRUCTURE BACKFILL	CY				5160							\$35.00	\$180,600.00
0503905	REMOVAL OF EXISTING STRUCTURAL STEEL	LS				1							\$50,000.00	\$50,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$382,500.00	\$382,500.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$1,912,500.00	\$1,912,500.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				204							\$500.00	\$102,000.00
0603545	A STEEL GRATING	SF				430							\$50.00	\$21,500.00
0503029	A REMOVAL OF EXISTING CONCRETE SUBSTRUCTURE	CY				1040							\$350.00	\$364,000.00
0974005	A REMOVAL OF EXISTING RETAINING WALL	CY				780							\$350.00	\$273,000.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
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CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14B (WITH RUN-AROUND)

Mid Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0506017	A RETAINING WALL	LS				1							\$216,000.00	\$216,000.00
													SUBTOTAL FORT POINT STREET: \$5,570,080.00	
	RUN-AROUND													
0207000	BORROW	CY	2000										\$17.06	\$34,120.00
XXXXXXX	A TRACK REMOVAL	TF		2356									\$40.00	\$94,240.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		2356									\$340.00	\$801,040.00
XXXXXXX	A TRACK SHIFT (OTM)	TF		268									\$18.00	\$4,820.00
XXXXXXX	A CATENARY STRUCTURES (RUN-AROUND)	EA								9			\$6,767.00	\$60,900.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								3			\$29,948.00	\$89,840.00
XXXXXXX	A FIXED TENSIONED CATENARY SYSTEM	LF								4000			\$74.50	\$298,000.00
070120X	A DRILLED SHAFT (8.0' DIAMETER)	LF				909							\$5,000.00	\$4,545,000.00
XXXXXXX	A CLASS "X" CONCRETE	CY				1122							\$700.00	\$785,400.00
0602000	DEFORMED STEEL BARS	LBS				259016							\$1.50	\$388,520.00
0603064	A STRUCTURAL STEEL (SITE NO. 4)	LS				1							\$12,611,000.00	\$12,611,000.00
XXXXXXX	A REMOVAL OF RUN-AROUND STRUCTURE	LS				1							\$4,000,000.00	\$4,000,000.00
0603545	A STEEL GRATING	SF				2829							\$50.00	\$141,450.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$8,817,400.00	\$8,817,400.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1108							\$500.00	\$554,000.00
													SUBTOTAL RUN-AROUND: \$33,225,730.00	
													SUBTOTAL INCLUDING FORT POINT STREET AND RUN-AROUND: \$140,844,840.00	
	MINOR ITEMS	15%												\$21,127,000.00
													TOTAL: \$161,972,000.00	
	ESTIMATED BASED ON % OF TOTAL CONTRACT COST													
0201001	A CLEARING AND GRUBBING	2%												\$3,239,000.00
0975004	MOBILIZATON AND PROJECT CLOSEOUT	6%												\$9,718,000.00
0980001	A CONSTRUCTION STAKING	1%												\$1,620,000.00
													SUBTOTAL: \$176,549,000.00	
	DESIGN CONTINGENCY	25%												\$44,137,000.00
	CONSTRUCTION CONTINGENCY	10%												\$17,655,000.00
	INCIDENTAL COST	25%												\$44,137,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) (2016)													\$282,478,000.00
	INFLATION AT MIDPOINT OF CONSTRUCTION 2020													
	INFLATION AT 4% (5 YEARS OF INFLATION)													\$61,200,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/ RUN-AROUND) AT MIDPOINT OF CONSTRUCTION (2020)													\$343,678,000.00



**CONCEPTUAL ENGINEERING REPORT
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CITY OF: Norwalk
F.A.P. No.: ----
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14C (NO RUN-AROUND)
High Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$1,094,500.00	\$1,094,500.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						0					\$3,930,000.00	\$0.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14C (NO RUN-AROUND)
High Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A OPERATING MACHINERY (2 SPANS)	LS					0						\$6,800,000.00	\$0.00
XXXXXXX	A SPAN LOCKS (2 SPANS)	LS					0						\$840,000.00	\$0.00



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CITY OF: Norwalk
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14C (NO RUN-AROUND)
High Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			0								\$470,720.00	\$0.00
XXXXXXX	A CONTROL HOUSE	EA.			0								\$592,512.00	\$0.00
XXXXXXX	A GENERATOR BUILDING	EA.			0								\$300,000.00	\$0.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATRE EMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA										18	\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115kV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115kV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS									1		\$362,800.00	\$362,800.00
0090051	A LOWERING CATENARY	LF								6020			\$27.50	\$165,550.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA								12			\$29,748.00	\$356,980.00
0096064	A CATENARY GUY ANCHORS IN SOIL	EA								6			\$24,680.00	\$148,080.00
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14C (NO RUN-AROUND)

High Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXXX	A CONTROL HOUSE HVAC	LS					0						\$40,000.00	\$0.00
XXXXXXXX	A CONTROL HOUSE PLUMBING	LS					0						\$20,000.00	\$0.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$60,000,000.00	\$60,000,000.00
XXXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				0							\$1,000.00	\$0.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				7028							\$5,000.00	\$35,140,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				8932							\$5,000.00	\$44,660,000.00
0601201	CLASS "F" CONCRETE	CY				0							\$700.00	\$0.00
XXXXXXXX	A CLASS "X" CONCRETE	CY				27195							\$700.00	\$19,036,500.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

**Option 14C (NO RUN-AROUND)
High Level Fixed Bridge Option**

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A PIER 1 FORMLINER	LS				7							\$124,600.00	\$872,200.00
XXXXXXX	A PIER 2 FORMLINER	LS				7							\$143,400.00	\$1,003,800.00
0602000	DEFORMED STEEL BARS	LBS				6000190							\$1.50	\$9,000,290.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				0							\$1.80	\$0.00
0714026	A TEMPORARY SHEET PILING	LBS				4965975							\$2.00	\$9,931,950.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				114982							\$20.00	\$2,299,640.00
0701020	A FENDER SYSTEM	LS				7							\$4,000,000.00	\$28,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				7							\$0.00	\$0.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				7							\$0.00	\$0.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				7							\$4,530,234.00	\$31,711,640.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				7							\$31,711,638.00	\$221,981,470.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				7							\$0.00	\$0.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				19292							\$500.00	\$9,646,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				0							\$500.00	\$0.00
0603545	A STEEL GRATING	SF				28938							\$50.00	\$1,446,900.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				0							\$0.00	\$0.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				0							\$0.00	\$0.00
0603367	A BALANCE BLOCKS	EA				0							\$0.00	\$0.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				0							\$0.00	\$0.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$511,013,790.00
	MARTIN LUTHER KING, LOWE, OSBORE, EAST AND WATER STREET BRIDGES													
0202000	EARTH EXCAVATION	CY	2870										\$28.44	\$81,620.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	4340										\$3.38	\$14,670.00
0212000	SUBBASE	CY	1960										\$56.03	\$109,820.00
0305001	PROCESSED AGGREGATE	CY	770										\$62.37	\$48,020.00
0406171	HMA S0.5	TON	1120										\$175.51	\$196,570.00
0507771	RESET CATCH BASIN	EA	14										\$926.02	\$12,960.00
0811001	CONCRETE CURBING	LF	1680										\$35.70	\$59,980.00
0921001	CONCRETE SIDEWALK	SF	16520										\$12.25	\$202,370.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	140										\$133.17	\$18,640.00
1208929	PUBLIC INFORMATION SIGNS	SF	161										\$51.96	\$8,370.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	1400										\$0.33	\$460.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	3220										\$0.93	\$2,990.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	2380										\$4.10	\$9,760.00
1220027	CONSTRUCTION SIGNS	SF	1631										\$22.86	\$37,280.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				16520							\$20.00	\$330,400.00
0714026	A TEMPORARY SHEET PILING	LBS				877800							\$2.00	\$1,755,600.00
XXXXXXX	A STEEL PILE HP 14X89	LF				54656							\$60.00	\$3,279,360.00
060100	CLASS "A" CONCRETE	CY				7364							\$700.00	\$5,154,800.00
0602000	DEFORMED STEEL BARS	LBS				2101400							\$1.50	\$3,152,100.00
0216000	PERVIOUS STRUCTURE BACKFILL	CY				36120							\$35.00	\$1,264,200.00
0503905	REMOVAL OF EXISTING STRUCTURAL STEEL	LS				7							\$50,000.00	\$350,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				7							\$382,500.00	\$2,677,500.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				7							\$1,912,500.00	\$13,387,500.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1428							\$500.00	\$714,000.00
0603545	A STEEL GRATING	SF				3010							\$50.00	\$150,500.00
0503029	A REMOVAL OF EXISTING CONCRETE SUBSTRUCTURE	CY				7280							\$350.00	\$2,548,000.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 14C (NO RUN-AROUND)

High Level Fixed Bridge Option

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974005	A REMOVAL OF EXISTING RETAINING WALL	CY				5460							\$350.00	\$1,911,000.00
0506017	A RETAINING WALL	LS				7							\$216,000.00	\$1,512,000.00
													SUBTOTAL FORT POINT STREET: \$38,990,470.00	
														SUBTOTAL INCLUDING FORT POINT STREET: \$550,004,260.00
	MINOR ITEMS	15%												\$82,501,000.00
														TOTAL: \$632,505,000.00
	ESTIMATED BASED ON % OF TOTAL CONTRACT COST													
0201001	A CLEARING AND GRUBBING	2%												\$12,650,000.00
0975004	A MOBILIZATION AND PROJECT CLOSEOUT	6%												\$37,950,000.00
0980001	A CONSTRUCTION STAKING	1%												\$6,325,000.00
														SUBTOTAL: \$689,430,000.00
	DESIGN CONTINGENCY	25%												\$172,358,000.00
	CONSTRUCTION CONTINGENCY	10%												\$68,943,000.00
	INCIDENTAL COST	25%												\$172,358,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/O RUN-AROUND) (2016)													
														\$1,103,089,000.00
	INFLATION AT MIDPOINT OF CONSTRUCTION 2020													
	INFLATION AT 4% (5 YEARS OF INFLATION)													\$238,987,000.00
	TOTAL PRELIMINARY ESTIMATED COST (W/O RUN-AROUND) AT MIDPOINT OF CONSTRUCTION (2020)													
														\$1,342,076,000.00



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WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5

Option 4S (WITH RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$2,500,000.00	\$2,500,000.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						1					\$3,930,000.00	\$3,930,000.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (WITH RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A OPERATING MACHINERY (2 SPANS)	LS					1						\$6,800,000.00	\$6,800,000.00
XXXXXXX	A SPAN LOCKS (2 SPANS)	LS					1						\$840,000.00	\$840,000.00



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CITY OF: Norwalk
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (WITH RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			2								\$470,720.00	\$941,440.00
XXXXXXX	A CONTROL HOUSE	EA.			1								\$592,512.00	\$592,510.00
XXXXXXX	A GENERATOR BUILDING	EA.			1								\$300,000.00	\$300,000.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATRE EMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16'X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6'X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA										18	\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115kV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115kV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS									1		\$362,800.00	\$362,800.00
009051	A LOWERING CATENARY	LF								6020			\$27.50	\$165,550.00
009028	A CATENARY POLE FOUNDATION TYPE A	EA								12			\$29,748.00	\$356,980.00
009604	A CATENARY GUY ANCHORS IN SOIL	EA								6			\$24,680.00	\$148,080.00
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (WITH RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXX	A CONTROL HOUSE HVAC	LS					1						\$40,000.00	\$40,000.00
XXXXXXX	A CONTROL HOUSE PLUMBING	LS					1						\$20,000.00	\$20,000.00
XXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				974							\$5,000.00	\$4,870,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				1752							\$5,000.00	\$8,760,000.00
0601201	CLASS "F" CONCRETE	CY				3360							\$700.00	\$2,352,000.00
XXXXXXX	A CLASS "X" CONCRETE	CY				5952							\$700.00	\$4,166,400.00
XXXXXXX	A PIER 1 FORMLINER	LS				1							\$110,900.00	\$110,900.00



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BRIDGE NO. 04288R/MP 41.5**

Option 4S (WITH RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$130,300.00	\$130,300.00
0602000	DEFORMED STEEL BARS	LBS				2163820							\$1.50	\$3,245,730.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				308763							\$1.80	\$555,770.00
0714026	A TEMPORARY SHEET PILING	LBS				708750							\$2.00	\$1,417,500.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				21244							\$20.00	\$424,880.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$2,623,704.00	\$2,623,700.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$18,365,928.00	\$18,365,930.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$1,552,237.00	\$1,552,240.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$10,865,659.00	\$10,865,660.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				1							\$2,061,403.00	\$2,061,400.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1892							\$500.00	\$946,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				1200							\$250.00	\$300,000.00
0603545	A STEEL GRATING	SF				9164							\$50.00	\$458,200.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				565950							\$8.00	\$4,527,600.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				1018							\$800.00	\$814,400.00
0603367	A BALANCE BLOCKS	EA				5600							\$200.00	\$1,120,000.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				8							\$150,000.00	\$1,200,000.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$128,392,460.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	410										\$28.44	\$11,660.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	620										\$3.38	\$2,100.00
0212000	SUBBASE	CY	280										\$56.03	\$15,690.00
0305001	PROCESSED AGGREGATE	CY	110										\$62.37	\$6,860.00
0406171	HMA S0.5	TON	160										\$175.51	\$28,080.00
0507771	RESET CATCH BASIN	EA	2										\$926.02	\$1,850.00
0811001	CONCRETE CURBING	LF	240										\$35.70	\$8,570.00
0921001	CONCRETE SIDEWALK	SF	2360										\$12.25	\$28,910.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	20										\$133.17	\$2,660.00
1208929	PUBLIC INFORMATION SIGNS	SF	23										\$51.96	\$1,200.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.33	\$70.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	460										\$0.93	\$430.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	340										\$4.10	\$1,390.00
1220027	CONSTRUCTION SIGNS	SF	233										\$22.86	\$5,330.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				2360							\$20.00	\$47,200.00
0714026	A TEMPORARY SHEET PILING	LBS				125400							\$2.00	\$250,800.00
XXXXXXX	A STEEL PILE HP 14X89	LF				7808							\$60.00	\$468,480.00
0601000	CLASS "A" CONCRETE	CY				1052							\$700.00	\$736,400.00
0602000	DEFORMED STEEL BARS	LBS				300200							\$1.50	\$450,300.00
0216000	PERVIOUS STRUCTURE BACKFILL	CY				5160							\$35.00	\$180,600.00
0503905	REMOVAL OF EXISTING STRUCTURAL STEEL	LS				1							\$50,000.00	\$50,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$382,500.00	\$382,500.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$1,912,500.00	\$1,912,500.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				204							\$500.00	\$102,000.00
0603545	A STEEL GRATING	SF				430							\$50.00	\$21,500.00
0503029	A REMOVAL OF EXISTING CONCRETE SUBSTRUCTURE	CY				1040							\$350.00	\$364,000.00
0974005	A REMOVAL OF EXISTING RETAINING WALL	CY				780							\$350.00	\$273,000.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (NO RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$2,500,000.00	\$2,500,000.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						1					\$3,930,000.00	\$3,930,000.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (NO RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A OPERATING MACHINERY (2 SPANS)	LS					1						\$6,800,000.00	\$6,800,000.00
XXXXXXX	A SPAN LOCKS (2 SPANS)	LS					1						\$840,000.00	\$840,000.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (NO RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			2								\$470,720.00	\$941,440.00
XXXXXXX	A CONTROL HOUSE	EA.			1								\$592,512.00	\$592,510.00
XXXXXXX	A GENERATOR BUILDING	EA.			1								\$300,000.00	\$300,000.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATRE EMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA										18	\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115kV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115kV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS										1	\$362,800.00	\$362,800.00
009051	A LOWERING CATENARY	LF								6020			\$27.50	\$165,550.00
009028	A CATENARY POLE FOUNDATION TYPE A	EA								12			\$29,748.00	\$356,980.00
009604	A CATENARY GUY ANCHORS IN SOIL	EA								6			\$24,680.00	\$148,080.00
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 4S (NO RUN-AROUND)

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXXX	A CONTROL HOUSE HVAC	LS					1						\$40,000.00	\$40,000.00
XXXXXXXX	A CONTROL HOUSE PLUMBING	LS					1						\$20,000.00	\$20,000.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$8,550,000.00	\$8,550,000.00
XXXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				974							\$5,000.00	\$4,870,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				1752							\$5,000.00	\$8,760,000.00
0601201	A CLASS "F" CONCRETE	CY				3360							\$700.00	\$2,352,000.00
XXXXXXXX	A CLASS "X" CONCRETE	CY				5952							\$700.00	\$4,166,400.00



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Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A PIER 1 FORMLINER	LS				1							\$110,900.00	\$110,900.00
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$130,300.00	\$130,300.00
0602000	DEFORMED STEEL BARS	LBS				2163820							\$1.50	\$3,245,730.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				308763							\$1.80	\$555,770.00
0714026	A TEMPORARY SHEET PILING	LBS				708750							\$2.00	\$1,417,500.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				21244							\$20.00	\$424,880.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$2,623,704.00	\$2,623,700.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$18,365,928.00	\$18,365,930.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$1,552,237.00	\$1,552,240.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$10,865,659.00	\$10,865,660.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				1							\$2,061,403.00	\$2,061,400.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1892							\$500.00	\$946,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				1200							\$250.00	\$300,000.00
0603545	A STEEL GRATING	SF				9164							\$50.00	\$458,200.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				565950							\$8.00	\$4,527,600.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				1018							\$800.00	\$814,400.00
0603367	A BALANCE BLOCKS	EA				5600							\$200.00	\$1,120,000.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				8							\$150,000.00	\$1,200,000.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$136,942,460.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	410										\$28.44	\$11,660.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	620										\$3.38	\$2,100.00
0212000	SUBBASE	CY	280										\$56.03	\$15,690.00
0305001	PROCESSED AGGREGATE	CY	110										\$62.37	\$6,860.00
0406171	HMA S0.5	TON	160										\$175.51	\$28,080.00
0507771	RESET CATCH BASIN	EA	2										\$926.02	\$1,850.00
0811001	CONCRETE CURBING	LF	240										\$35.70	\$8,570.00
0921001	CONCRETE SIDEWALK	SF	2360										\$12.25	\$28,910.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	20										\$133.17	\$2,660.00
1208929	PUBLIC INFORMATION SIGNS	SF	23										\$51.96	\$1,200.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.33	\$70.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	460										\$0.93	\$430.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	340										\$4.10	\$1,390.00
1220027	CONSTRUCTION SIGNS	SF	233										\$22.86	\$5,330.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				2360							\$20.00	\$47,200.00
0714026	A TEMPORARY SHEET PILING	LBS				125400							\$2.00	\$250,800.00
XXXXXXX	A STEEL PILE HP 14X89	LF				7808							\$60.00	\$468,480.00
060100	CLASS "A" CONCRETE	CY				1052							\$700.00	\$736,400.00
0602000	DEFORMED STEEL BARS	LBS				300200							\$1.50	\$450,300.00
0216000	PERVIOUS STRUCTURE BACKFILL	CY				5160							\$35.00	\$180,600.00
0503905	REMOVAL OF EXISTING STRUCTURAL STEEL	LS				1							\$50,000.00	\$50,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$382,500.00	\$382,500.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$1,912,500.00	\$1,912,500.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				204							\$500.00	\$102,000.00
0603545	A STEEL GRATING	SF				430							\$50.00	\$21,500.00
0503029	A REMOVAL OF EXISTING CONCRETE SUBSTRUCTURE	CY				1040							\$350.00	\$364,000.00



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CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
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DATE: 06/15/17

WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5

Option 8A

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$1,094,500.00	\$1,094,500.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						1					\$8,000,000.00	\$8,000,000.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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CITY OF: Norwalk
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TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 8A

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A SPAN DRIVE LIFT SPAN OPERATING MACHINERY	LS					1						\$9,540,000.00	\$9,540,000.00
XXXXXXX	A SUSPENSION ROPES AND SOCKETS (SPAN DRIVE)	LS					1						\$3,380,000.00	\$3,380,000.00



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CITY OF: Norwalk
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TOWN No.: 301
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 8A

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A OPERATING ROPES (SPAN DRIVE)	LS					1						\$1,200,000.00	\$1,200,000.00
XXXXXXX	A SPAN DRIVE SHEAVES SHAFTS AND BEARINGS	LS					1						\$12,840,000.00	\$12,840,000.00
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			2								\$470,720.00	\$941,440.00
XXXXXXX	A CONTROL HOUSE	EA.			1								\$592,512.00	\$592,510.00
XXXXXXX	A GENERATOR BUILDING	EA.			1								\$300,000.00	\$300,000.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATREEMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA									18		\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115kV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000011	A 115kV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS									1		\$362,800.00	\$362,800.00
0090051	A LOWERING CATENARY	LF									6020		\$27.50	\$165,550.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA									12		\$29,748.00	\$356,980.00
0096064	A CATENARY GUY ANCHORS IN SOIL	EA									6		\$24,680.00	\$148,080.00



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**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 8A

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00
XXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXX	A CONTROL HOUSE HVAC	LS					1						\$40,000.00	\$40,000.00
XXXXXXX	A CONTROL HOUSE PLUMBING	LS					1						\$20,000.00	\$20,000.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$3,420,000.00	\$3,420,000.00
XXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 8A

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				974							\$5,000.00	\$4,870,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				636							\$5,000.00	\$3,180,000.00
XXXXXXX	A DRILLED SHAFT (12.0' DIAMETER)	LF				612							\$7,000.00	\$4,284,000.00
0601201	CLASS "F" CONCRETE	CY				3360							\$700.00	\$2,352,000.00
XXXXXXX	CLASS "X" CONCRETE	CY				7703							\$700.00	\$5,392,100.00
XXXXXXX	A PIER 1 FORMLINER	LS				1							\$110,900.00	\$110,900.00
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$130,300.00	\$130,300.00
0602000	DEFORMED STEEL BARS	LBS				2602519							\$1.50	\$3,903,780.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				327694							\$1.80	\$589,850.00
0714026	A TEMPORARY SHEET PILING	LBS				708750							\$2.00	\$1,417,500.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				21244							\$20.00	\$424,880.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$4,266,667.00	\$4,266,670.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$29,866,669.00	\$29,866,670.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$1,578,885.00	\$1,578,890.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$11,052,192.00	\$11,052,190.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				1							\$0.00	\$0.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				2008							\$500.00	\$1,004,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				672							\$250.00	\$168,000.00
0603545	A STEEL GRATING	SF				17048							\$50.00	\$852,400.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				0							\$8.00	\$0.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				1090							\$800.00	\$872,000.00
0603367	A BALANCE BLOCKS	EA				6600							\$200.00	\$1,320,000.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				8							\$150,000.00	\$1,200,000.00
XXXXXXX	A ELEVATORS	EA				2							\$400,000.00	\$800,000.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$162,564,480.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	0										\$28.44	\$0.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	0										\$3.38	\$0.00
0212000	SUBBASE	CY	0										\$56.03	\$0.00
0305001	PROCESSED AGGREGATE	CY	0										\$62.37	\$0.00
0406171	HMA S0.5	TON	0										\$175.51	\$0.00
0507771	RESET CATCH BASIN	EA	0										\$926.02	\$0.00
0811001	CONCRETE CURBING	LF	0										\$35.70	\$0.00
0921001	CONCRETE SIDEWALK	SF	0										\$12.25	\$0.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	0										\$133.17	\$0.00
1208929	PUBLIC INFORMATION SIGNS	SF	0										\$51.96	\$0.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	0										\$0.33	\$0.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	0										\$0.93	\$0.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	0										\$4.10	\$0.00
1220027	CONSTRUCTION SIGNS	SF	0										\$22.86	\$0.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				0							\$20.00	\$0.00
0714026	A TEMPORARY SHEET PILING	LBS				0							\$2.00	\$0.00
XXXXXXX	A STEEL PILE HP 14X89	LF				0							\$60.00	\$0.00
060100	CLASS "A" CONCRETE	CY				0							\$700.00	\$0.00
0602000	DEFORMED STEEL BARS	LBS				0							\$1.50	\$0.00



**CONCEPTUAL ENGINEERING REPORT
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CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 11C

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0007012	24" RCP CLASS V	LF	54										\$112.00	\$6,050.00
0063476	A TEMPORARY PLATFORM	LF												\$0.00
0090025	A DEMOLITION	LS				1							\$3,344,000.00	\$3,344,000.00
0090059	A BRIDGE PLATE	EA		64										\$0.00
0096065	A REMOVAL OF CATENARY	LF								11116			\$12.00	\$133,390.00
0096068	A REMOVAL OF CATENARY PORTAL STRUCTURE	EA								17			\$19,000.00	\$323,000.00
0096070	A REMOVAL OF CATENARY STRUCTURE FOUNDATION	EA								19			\$3,558.00	\$67,600.00
00900XX	A REMOVAL OF EXISTING HIGH TOWER	LS									1		\$1,094,500.00	\$1,094,500.00
00900XX	A REMOVAL OF EXISTING RETAINING WALL	LS				1							\$7,640,000.00	\$7,640,000.00
00900XX	A REMOVAL OF EXISTING CONDUCTOR	LS									1		\$652,400.00	\$652,400.00
0202000	EARTH EXCAVATION	CY	2400										\$18.86	\$45,270.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	170										\$4.91	\$830.00
0205001	TRENCH EXCAVATION 0'-4' DEEP	CY	570										\$10.72	\$6,110.00
0205003	TRENCH EXCAVATION 0'-10' DEEP	CY	860										\$14.28	\$12,280.00
0207000	BORROW	CY	10300										\$17.35	\$178,710.00
0219001	SEDIMENTATION CONTROL SYSTEM	LF	6550										\$4.88	\$31,990.00
0305001	PROCESSED AGGREGATE	CY	300										\$62.37	\$18,710.00
0406270	MILLING OF BITUMINOUS CONCRETE (0" TO 6")	SY	1100										\$13.72	\$15,090.00
0406170	HMA S1	TON	40										\$207.77	\$8,310.00
0406171	HMA S0.5	TON	360										\$153.80	\$55,370.00
0503001	A REMOVAL OF SUPERSTRUCTURE	LS				1							\$1,600,000.00	\$1,600,000.00
0503939	A REMOVAL OF EXISTING FENDER SYSTEM	LS				1							\$304,000.00	\$304,000.00
0507002	ABANDON CATCH BASIN	EA.	1										\$1,900.00	\$1,900.00
0507105	CONNECTION TO EXISTING MANHOLE AND/OR CATCH BASIN	EA.	2										\$4,500.00	\$9,000.00
0507201	TYPE "C-L" CATCH BASIN	EA.	3										\$3,212.67	\$9,640.00
0507601	MANHOLE	EA.	2										\$3,757.44	\$7,510.00
0507651	MANHOLE OVER 10' DEEP	EA.	1										\$4,920.83	\$4,920.00
0507771	RESET CATCH BASIN	EA.	1										\$926.01	\$930.00
0507777	REMOVE EXISTING MANHOLE	EA.	1										\$4,072.33	\$4,070.00
0507781	RESET MANHOLE	EA.	10										\$842.09	\$8,420.00
0601070	CLASS "S" CONCRETE	CY	54										\$9,265.85	\$500,360.00
0604526	A BRIDGE ELECTRICAL AND CONTROL SYSTEM	LS						1					\$8,000,000.00	\$8,000,000.00
0651631	18" CORR. PERF. HIGH DENSITY POLYETHYLENE PIPE	LF	550										\$48.33	\$26,580.00
0651717	6" DUCTILE IRON PIPE	LF	10										\$140.00	\$1,400.00
0651757	18" POLYVINYL CHLORIDE PIPE	LF	52										\$65.00	\$3,380.00
0651885	12" HIGH DENSITY POLYETHYLENE PIPE (SMOOTH INTERIOR)	LF	4										\$60.00	\$240.00
0703012	MODIFIED RIPRAP	CY	6										\$120.36	\$720.00
0751713	12" UNDERDRAIN	LF	270										\$40.00	\$10,800.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$43.77	\$15,760.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	LF	360										\$9.93	\$3,570.00
0913041	8' CHAIN LINK FENCE	LF	170										\$48.47	\$8,240.00
0913351	4' CHAIN LINK GATE 8' HIGH	EA.	1										\$1,036.67	\$1,040.00
0913889	12' CHAIN LINK DOUBLE GATE 8' HIGH	EA.	1										\$2,066.67	\$2,070.00
0921001	CONCRETE SIDEWALK	SF	1710										\$12.75	\$21,800.00
0925101	A RELAY BRICK WALK	SF	270										\$38.89	\$10,500.00
0950005	TURF ESTABLISHMENT	SY	9700										\$0.93	\$9,050.00
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER) (ESTIMATED COST)	EST	1										\$204,000.00	\$204,000.00
0970007	A TRAFFICPERSON (UNIFORMED FLAGGER)	HR.	1										TBD	TBD
0974414	A REMOVAL OF PIER 3	LS				1							\$300,000.00	\$300,000.00
0974500	A REMOVAL OF PIER 1	LS				1							\$100,000.00	\$100,000.00



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CITY OF: Norwalk
F.A.P. No.: ----
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PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 11C

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0974501	A REMOVAL OF PIER 2	LS				1							\$300,000.00	\$300,000.00
0974XXX	A REMOVAL OF PIVOT PIER	LS				1							\$1,000,000.00	\$1,000,000.00
0978002	TRAFFIC DRUM	EA.	20										\$80.68	\$1,610.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	20										\$133.16	\$2,660.00
1118012	REMOVAL AND/OR RELOCATION OF TRAFFIC SIGNAL EQUIPMENT	LS	1										\$10,000.00	\$10,000.00
1118101	TEMPORARY SIGNALIZATION	LS	1										\$75,000.00	\$75,000.00
1131001	CHANGEABLE MESSAGE SIGN	DAY	120										\$52.36	\$6,280.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	200										\$0.34	\$70.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	24										\$4.49	\$110.00
1220027	CONSTRUCTION SIGNS	SF	360										\$20.53	\$7,390.00
1301020	RELOCATION OF 1" CURB STOP VALVE	EA.	1										\$1,500.00	\$1,500.00
1301303	1" COPPER PIPE (TYPE K)	LF	620										\$35.00	\$21,700.00
1303196	RELOCATE FIRE HYDRANT	EA.	1										\$3,813.27	\$3,810.00
1303222	METER PIT (WATER MAIN)	EA.	1										\$2,000.00	\$2,000.00
1303285	ABANDON WATER METER PIT	EA.	1										\$1,500.00	\$1,500.00
1303399	SERVICE CONNECTION (WATER MAIN)	EA.	1										\$2,500.00	\$2,500.00
1400101	6" POLYVINYL CHLORIDE PIPE (SANITARY SEWER)	LF	600										\$52.05	\$31,230.00
1401237	6" DUCTILE IRON PIPE FORCE MAIN (SANITARY SEWER)	LF	24										\$320.00	\$7,680.00
1401662	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2										\$4,000.00	\$8,000.00
1401947	REMOVE EXISTING PIPE (SANITARY SEWER)	LF	20										\$50.00	\$1,000.00
1403012	DROP MANHOLE OVER 10' DEEP (SANITARY SEWER)	EA.	1										\$7,535.60	\$7,540.00
1501234	6" HIGH DENSITY POLYETHYLENE GAS MAIN	LF	35										\$35.00	\$1,230.00
150123X	A 1" PVC GAS MAIN	LF	605										\$30.00	\$18,150.00
1807011	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 400 LB	EA.	2										\$407.26	\$810.00
1807012	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 700 LB	EA.	2										\$413.48	\$830.00
1807013	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 1400 LB	EA.	8										\$405.70	\$3,250.00
1807014	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE 2100 LB	EA.	4										\$409.65	\$1,640.00
1807104	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (700 LB)	EA.	2										\$112.98	\$230.00
1807105	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (1400 LB.)	EA.	8										\$111.47	\$890.00
1807106	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (2100 LB)	EA.	4										\$126.41	\$510.00
1807108	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A MODULE (400 LB)	EA.	2										\$116.06	\$230.00
1807200	TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B	EA.	2										\$14,000.00	\$28,000.00
XXXXXXX	A #REF!	LS					1						\$10,740,000.00	\$10,740,000.00
XXXXXXX	A #REF!	LS					1						\$4,060,000.00	\$4,060,000.00



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CITY OF: Norwalk
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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 11C

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
XXXXXXX	A #REF!	LS					0						\$1,200,000.00	\$0.00
XXXXXXX	A #REF!	LS					1						\$16,260,000.00	\$16,260,000.00
XXXXXXX	A BALLASTED TRACK REMOVAL	TF		6393									\$40.00	\$255,720.00
XXXXXXX	A OPEN DECK TRACK REMOVAL	TF		2252									\$40.00	\$90,080.00
XXXXXXX	A BALLASTED TRACK RENEWAL (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		4257									\$345.00	\$1,468,670.00
XXXXXXX	A BALLASTED TRACK CONSTRUCTION (INCLUDES RAIL, TIES, BALLAST, HARDWARE, OTM)	TF		8396									\$340.00	\$2,854,640.00
XXXXXXX	A OPEN DECK TRACK CONSTRUCTION (INCLUDES RAIL, TIES, HARDWARE, OTM)	TF		809									\$280.00	\$226,520.00
XXXXXXX	A MACHINERY ROOM	EA.			2								\$470,720.00	\$941,440.00
XXXXXXX	A CONTROL HOUSE	EA.			1								\$592,512.00	\$592,510.00
XXXXXXX	A GENERATOR BUILDING	EA.			1								\$300,000.00	\$300,000.00
XXXXXXX	A AQUARIUM TEMPORARY STAIR	EA.			1								\$180,095.00	\$180,100.00
XXXXXXX	A IMAX THEATREEMERGENCY WALKWAY	LS			1								\$278,380.00	\$278,380.00
XXXXXXX	A AQUARIUM FIRE ESCAPE MODIFICATION	LS			1								\$151,125.00	\$151,130.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - EAST SIDE	LF									1000		\$847.49	\$847,490.00
XXXXXXX	A 30-4" PVC CONDUITS IN CONCRETE ENCASED DUCTBANK - WEST SIDE	LF									400		\$847.49	\$338,990.00
XXXXXXX	A 4" GRS CONDUIT EXPOSED (ON RETAINING WALL OR IN BRIDGE GIRDERS)	LF									19320		\$36.50	\$705,180.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS ON RETAINING WALL FOR 21 CONDUITS	EA									67		\$2,000.00	\$134,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (TEMPORARY)(2 SETS OF 11)	EA									88		\$1,000.00	\$88,000.00
XXXXXXX	A EXPOSED CONDUIT SUPPORTS UNDER BRIDGE (FINAL)(3 SETS OF 7)	EA									132		\$600.00	\$79,200.00
XXXXXXX	A 16X8' MANHOLE	EA									3		\$15,000.00	\$45,000.00
XXXXXXX	A 6X4' MANHOLE	EA									8		\$8,800.00	\$70,400.00
XXXXXXX	A ARMORED SUBMARINE CABLE #2/0 AWG (S) - 15KV RATED COPPER	LF									2000		\$117.35	\$234,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE #4/0 AWG (F) - 25KV RATED COPPER	LF									2000		\$124.35	\$248,700.00
XXXXXXX	A ARMORED SUBMARINE CABLE 500KCMIL (T, SPT & G) - 25KV RATED COPPER	LF									5000		\$149.35	\$746,740.00
XXXXXXX	A POWER CABLE 25KV #4/0AWG	LF									16600		\$14.00	\$232,400.00
XXXXXXX	A POWER CABLE 15KV #2/0AWG	LF									6640		\$10.00	\$66,400.00
XXXXXXX	A POWER CABLE 25KV #500KCMIL	LF									6640		\$22.00	\$146,080.00
XXXXXXX	A 15/25KV SUB-CABLE SPLICES	EA									36		\$3,055.56	\$110,000.00
XXXXXXX	A 15/25KV POWER CABLE SPLICES	EA									36		\$2,016.67	\$72,600.00
XXXXXXX	A CONSTRUCTION STAGING - TEMPORARY DOWN GUYS AND BRACING	EA									18		\$3,900.00	\$70,200.00
XXXXXXX	A SHIELD WIRE, OPGW - FINAL ALIGNMENT	LF									4104		\$7.00	\$28,730.00
XXXXXXX	A 115kV CONDUCTOR - FINAL ALIGNMENT	LF									24621		\$11.50	\$283,140.00
XXXXXXX	A SHIELD WIRE, 500 KCMIL COPPER - FINAL ALIGNMENT	LF									4103		\$11.50	\$47,180.00
XXXXXXX	A MONOPOLE FOUNDATION	LS									1		\$937,318.00	\$937,320.00
XXXXXXX	A STRUCTURAL STEEL (RISER STRUCTURES)	LBS									100000		\$4.00	\$400,000.00
XXXXXXX	A TAPERED STEEL MONOPOLES 90FT	EA									1		\$35,100.00	\$35,100.00
XXXXXXX	A TAPERED STEEL MONOPOLES 110FT	EA									10		\$36,040.00	\$360,400.00
XXXXXXX	A TAPERED STEEL MONOPOLES 127FT	EA									4		\$37,050.00	\$148,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 130FT	EA									4		\$38,050.00	\$152,200.00
XXXXXXX	A TAPERED STEEL MONOPOLES 137FT	EA									4		\$39,050.00	\$156,200.00
XXXXXXX	A 115kV TRANSMISSION TERMINATIONS - FINAL	EA									42		\$1,596.00	\$67,030.00
XXXXXXX	A 115kV TRANSMISSION JUMPERS - FINAL	LF									840		\$52.00	\$43,680.00
XXXXXXX	A 115kV TRANSMISSION SUSPENSION INSULATION - FINAL	EA									96		\$1,596.00	\$153,220.00
XXXXXXX	A OH STATIC WIRE TERMINATION - FINAL	EA									8		\$1,263.00	\$10,100.00
XXXXXXX	A OH STATIC WIRE CLAMPS - FINAL	EA									38		\$1,161.00	\$44,120.00
000081	A 115kV SURGE ARRESTORS	EA									12		\$3,092.00	\$37,100.00
XXXXXXX	A METRO-NORTH RAILROAD TERMINATION	LS									1		\$362,800.00	\$362,800.00
0090051	A LOWERING CATENARY	LF									6020		\$27.50	\$165,550.00
0090028	A CATENARY POLE FOUNDATION TYPE A	EA									12		\$29,748.00	\$356,980.00
0096064	A CATENARY GUY ANCHORS IN SOIL	EA									6		\$24,680.00	\$148,080.00



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DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 11C

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0096050	A AUTO-TENSIONED CATENARY	LF								8200			\$108.00	\$885,600.00
XXXXXXX	A TEMPORARY CATENARY CONSTRUCTION	LS								1			\$224,900.00	\$224,900.00
XXXXXXX	A MOVEABLE CONDUCTOR RAIL	LS								1			\$1,654,600.00	\$1,654,600.00
XXXXXXX	A CATENARY STRUCTURES	EA								38			\$35,226.00	\$1,338,590.00
XXXXXXX	A CONTROL HOUSE HVAC	LS					1						\$40,000.00	\$40,000.00
XXXXXXX	A CONTROL HOUSE PLUMBING	LS					1						\$20,000.00	\$20,000.00
0506017	A RETAINING WALL (EAST WALL)	LS				1							\$3,420,000.00	\$3,420,000.00
XXXXXXX	A 48"x75"x 24" CASE	EA							1				\$5,320.00	\$5,320.00
XXXXXXX	A 14"x14"x6" TERMINAL BOX	EA							4				\$52.00	\$210.00
XXXXXXX	A PN-150B RELAY	EA							16				\$450.00	\$7,200.00
XXXXXXX	A E & M EQUIPMENT CO PROXIMITY DETECTOR	EA							16				\$2,500.00	\$40,000.00
XXXXXXX	A 12V DC TO DC CONVERTER	EA							8				\$250.00	\$2,000.00
XXXXXXX	A 2C #6 CABLE	FT							800				\$1.60	\$1,280.00
XXXXXXX	A 27C #14 CABLE	FT							800				\$3.20	\$2,560.00
XXXXXXX	A 19C #14 CABLE	FT							1000				\$2.25	\$2,250.00
XXXXXXX	A 5C #14 CABLE	FT							800				\$0.60	\$480.00
XXXXXXX	A 6PR #14	FT							1500				\$1.45	\$2,180.00
XXXXXXX	A 2" CONDUIT	FT							200				\$6.00	\$1,200.00
XXXXXXX	A 144 STRAND DIRECT BURIAL F.O. CABLE	FT							2400				\$5.26	\$12,620.00
XXXXXXX	A 144 STRAND ARMORED DOUBLE JACKETED F.O. CABLE	FT							1000				\$39.00	\$39,000.00
XXXXXXX	A 24 STRAND DOUBLE JACKETED F.O. CABLE	FT							700				\$1.86	\$1,300.00
XXXXXXX	A F.O. SPLICE CASES	EA							6				\$739.00	\$4,430.00
XXXXXXX	A 100 PAIR 19 AWG COPPER COMMUNICATIONS CABLE	FT							1200				\$9.50	\$11,400.00
XXXXXXX	A 100 PAIR 19 AWG COPPER SUBMARINE CABLE	FT							500				\$10.20	\$5,100.00
1114105	A 5/8" MESSENGER CABLE	FT							100				\$2.75	\$280.00
XXXXXXX	A LASHING WIRE	FT							250				\$0.20	\$50.00
XXXXXXX	A LASHING WIRE CLAMPS	EA							6				\$3.25	\$20.00
XXXXXXX	A 4 INCH RGS CONDUIT	FT							150				\$23.40	\$3,510.00
XXXXXXX	A CONDUIT MOUNTING HARDWARE	FT							20				\$55.00	\$1,100.00
XXXXXXX	A 3 INCH RGS CONDUIT	FT							450				\$15.35	\$6,910.00



**CONCEPTUAL ENGINEERING REPORT
DESIGN ESTIMATE
FOR THE CONSTRUCTION OF**

CITY OF: Norwalk
F.A.P. No.: ----
TOWN No.: 301
PROJ. No.: 301-176
DATE: 06/15/17

**WALK BRIDGE REPLACEMENT PROJECT
BRIDGE NO. 04288R/MP 41.5**

Option 11C

DATE: 06/15/17

Item No.	Description	Unit	Civil Quantity	RTS Quantity	ARC Quantity	STR Quantity	MECH Quantity	ELEC Quantity	C&S Quantity	OCS Quantity	TP Quantity	Eversource bypass Quantity	Unit Price	Amount
0701203	A DRILLED SHAFT (4.0' DIAMETER)	LF				2371							\$1,000.00	\$2,371,000.00
0701209	A DRILLED SHAFT (7.0' DIAMETER)	LF				974							\$5,000.00	\$4,870,000.00
0701211	A DRILLED SHAFT (8.0' DIAMETER)	LF				292							\$5,000.00	\$1,460,000.00
XXXXXXX	A DRILLED SHAFT (12.0' DIAMETER)	LF				612							\$7,000.00	\$4,284,000.00
0601201	CLASS "F" CONCRETE	CY				3360							\$700.00	\$2,352,000.00
XXXXXXX	CLASS "X" CONCRETE	CY				7080							\$700.00	\$4,956,000.00
XXXXXXX	A PIER 1 FORMLINER	LS				1							\$110,900.00	\$110,900.00
XXXXXXX	A PIER 2 FORMLINER	LS				1							\$130,300.00	\$130,300.00
0602000	DEFORMED STEEL BARS	LBS				2533376							\$1.50	\$3,800,060.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	LBS				282653							\$1.80	\$508,780.00
0714026	A TEMPORARY SHEET PILING	LBS				708750							\$2.00	\$1,417,500.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				21244							\$20.00	\$424,880.00
0701020	A FENDER SYSTEM	LS				1							\$4,000,000.00	\$4,000,000.00
0603445	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$6,650,145.00	\$6,650,000.00
0603061	A STRUCTURAL STEEL (SITE NO. 1)	LS				1							\$46,550,250.00	\$46,550,000.00
0603446	A PAINTING FOR NEW STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$1,361,867.00	\$1,361,870.00
0603062	A STRUCTURAL STEEL (SITE NO. 2)	LS				1							\$9,533,066.00	\$9,533,070.00
0603063	A STRUCTURAL STEEL (SITE NO. 3)	LS				1							\$0.00	\$0.00
XXXXXXX	A BALLASTED BRIDGE DECK	LF				1732							\$50.00	\$866,000.00
XXXXXXX	A OPEN BRIDGE DECK	LF				960							\$250.00	\$240,000.00
0603545	A STEEL GRATING	SF				17516							\$50.00	\$875,800.00
XXXXXXX	A TRACK AND TREAD PLATES	LBS				0							\$8.00	\$0.00
XXXXXXX	A COUNTERWEIGHT CONCRETE	CY				1262							\$800.00	\$1,009,600.00
0603367	A BALANCE BLOCKS	EA				8000							\$200.00	\$1,600,000.00
XXXXXXX	A MITRE RAILS (WITH SPARE PARTS)	EA				8							\$150,000.00	\$1,200,000.00
XXXXXXX	A ELEVATORS	EA				2							\$400,000.00	\$800,000.00
0603169	A PROGRESS PHOTOGRAPHS	EA	TBD										TBD	TBD
													SUBTOTAL:	\$182,029,110.00
	FORT POINT STREET													
0202000	EARTH EXCAVATION	CY	0										\$28.44	\$0.00
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	LF	0										\$3.38	\$0.00
0212000	SUBBASE	CY	0										\$56.03	\$0.00
0305001	PROCESSED AGGREGATE	CY	0										\$62.37	\$0.00
0406171	HMA S0.5	TON	0										\$175.51	\$0.00
0507771	RESET CATCH BASIN	EA	0										\$926.02	\$0.00
0811001	CONCRETE CURBING	LF	0										\$35.70	\$0.00
0921001	CONCRETE SIDEWALK	SF	0										\$12.25	\$0.00
0979003	CONSTRUCTION BARRICADE TYPE III	EA	0										\$133.17	\$0.00
1208929	PUBLIC INFORMATION SIGNS	SF	0										\$51.96	\$0.00
1210101	4" WHITE EPOXY RESIN PAVEMENT MARKINGS	LF	0										\$0.33	\$0.00
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	LF	0										\$0.93	\$0.00
1210105	EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS	SF	0										\$4.10	\$0.00
1220027	CONSTRUCTION SIGNS	SF	0										\$22.86	\$0.00
0203000	A STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY				0							\$20.00	\$0.00
0714026	A TEMPORARY SHEET PILING	LBS				0							\$2.00	\$0.00
XXXXXXX	A STEEL PILE HP 14X89	LF				0							\$60.00	\$0.00
060100	CLASS "A" CONCRETE	CY				0							\$700.00	\$0.00
0602000	DEFORMED STEEL BARS	LBS				0							\$1.50	\$0.00

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : Rehab
Description : Walk Bridge Rehabilitation

Assumptions:

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - Present Worth				Year		
	Calendar Year	#REF!	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs	5% P/F Factor		Present Worth	
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical/Electrical Inspection	Structural Inspection	Structural Repair	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs						Electrical Repairs
1	2016	1.000	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 1,250,000	1.000	\$ 1,250,000	1
2	2017	1.040	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 1,746,472	0.9524	\$ 1,663,307	2
3	2018	1.082	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 1,352,000	0.9070	\$ 1,226,304	3
4	2019	1.125	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 1,888,984	0.8638	\$ 1,631,776	4
5	2020	1.170	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000										\$ 2,255,000	\$ 2,638,031	0.8227	\$ 2,170,315	5
6	2021	1.217	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 2,043,125	0.7835	\$ 1,600,842	6
7	2022	1.265	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 1,581,649	0.7462	\$ 1,180,251	7
8	2023	1.316	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 2,209,844	0.7107	\$ 1,570,495	8
9	2024	1.369	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 1,710,711	0.6768	\$ 1,157,877	9
10	2025	1.423	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300	\$ 925,000	\$ 80,000										\$ 2,684,300	\$ 3,820,596	0.6446	\$ 2,462,790	10
11	2026	1.480	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 1,850,305	0.6139	\$ 1,135,927	11
12	2027	1.539	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 2,585,205	0.5847	\$ 1,511,516	12
13	2028	1.601	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 2,001,290	0.5568	\$ 1,114,593	13
14	2029	1.665	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 2,796,158	0.5303	\$ 1,482,862	14
15	2030	1.732	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000								\$ 5,005,000	\$ 8,667,041	0.5051	\$ 4,377,444	15
16	2031	1.801	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 3,024,324	0.4810	\$ 1,454,752	16
17	2032	1.873	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 2,341,227	0.4581	\$ 1,072,543	17
18	2033	1.948	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 3,271,109	0.4363	\$ 1,427,174	18
19	2034	2.026	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 2,532,271	0.4155	\$ 1,052,211	19
20	2035	2.107	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300	\$ 925,000	\$ 80,000										\$ 2,684,300	\$ 5,655,415	0.3957	\$ 2,238,040	20
21	2036	2.191	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 2,738,904	0.3769	\$ 1,032,264	21
22	2037	2.279	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 3,826,735	0.3589	\$ 1,373,577	22
23	2038	2.370	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 2,962,398	0.3418	\$ 1,012,696	23
24	2039	2.465	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 4,138,997	0.3256	\$ 1,347,539	24
25	2040	2.563	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000			\$ 10,000,000	\$ 10,000,000	\$ -					\$ 22,255,000	\$ 57,046,334	0.3101	\$ 17,688,238	25
26	2041	2.666	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 4,476,739	0.2953	\$ 1,321,993	26
27	2042	2.772	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 3,465,587	0.2812	\$ 974,664	27
28	2043	2.883	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 4,842,041	0.2678	\$ 1,296,933	28
29	2044	2.999	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 3,748,379	0.2551	\$ 956,188	29
30	2045	3.119	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000								\$ 15,759,300	\$ 49,147,764	0.2429	\$ 11,940,268	30
31	2046	3.243	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 4,054,247	0.2314	\$ 938,061	31
32	2047	3.373	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 5,664,503	0.2204	\$ 1,248,227	32
33	2048	3.508	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 4,385,073	0.2099	\$ 920,279	33
34	2049	3.648	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 6,126,726	0.1999	\$ 1,224,564	34
35	2050	3.794	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000										\$ 2,255,000	\$ 8,556,183	0.1904	\$ 1,628,711	35
36	2051	3.946	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 6,626,667	0.1813	\$ 1,201,350	36
37	2052	4.104	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 5,129,916	0.1727	\$ 885,718	37
38	2053	4.268	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 7,167,403	0.1644	\$ 1,178,576	38
39	2054	4.439	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 5,548,517	0.1566	\$ 868,927	39
40	2055	4.616	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300	\$ 925,000	\$ 80,000										\$ 2,684,300	\$ 12,391,711	0.1491	\$ 1,848,199	40
41	2056	4.801	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 6,001,276	0.1420	\$ 852,455	41
42	2057	4.993	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 8,384,848	0.1353	\$ 1,134,316	42
43	2058	5.193	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 6,490,980	0.1288	\$ 836,295	43
44	2059	5.400	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 9,069,052	0.1227	\$ 1,112,813	44
45	2060	5.617	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000								\$ 5,005,000	\$ 28,110,658	0.1169	\$ 3,285,049	45
46	2061	5.841	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 9,809,086	0.1113	\$ 1,091,717	46
47	2062	6.075	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 7,593,528	0.1060	\$ 804,889	47
48	2063	6.318	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300												\$ 1,679,300	\$ 10,609,508	0.1009	\$ 1,071,021	48
49	2064	6.571	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -												\$ 1,250,000	\$ 8,213,160	0.0961	\$ 789,631	49
50	2065	6.833	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ 229,300	\$ 925,000	\$ 80,000			\$ 10,000,000	\$ 10,000,000	\$ -					\$ 22,684,300	\$ 155,009,747	0.0916	\$ 14,193,299	50

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : Rehab
Description : Walk Bridge Rehabilitation

Assumptions:

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - Present Worth				Year	
	Calendar Year	#REF!	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years			Every 15 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs	5% P/F Factor	Present Worth		
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical/Electrical Inspection	Structural Inspection	Structural Repair	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs						Mechanical Repairs
51	2066	7.107	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 8,883,354	0.0872	\$ 774,662	51
52	2067	7.391	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 12,411,623	0.0851	\$ 1,030,800	52
53	2068	7.687	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 9,608,236	0.0791	\$ 759,976	53
54	2069	7.994	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 13,424,412	0.0753	\$ 1,011,259	54
55	2070	8.314	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000									\$ 2,255,000	\$ 18,747,651	0.0717	\$ 1,345,008	55
56	2071	8.646	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 14,519,844	0.0683	\$ 992,089	56
57	2072	8.992	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 11,240,277	0.0651	\$ 731,436	57
58	2073	9.352	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 15,704,663	0.0620	\$ 973,282	58
59	2074	9.726	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 12,157,484	0.0590	\$ 717,570	59
60	2075	10.115	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000						\$ 15,759,300	\$ 159,405,735	0.0562	\$ 8,860,563	60	
61	2076	10.520	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 13,149,534	0.0535	\$ 703,967	61
62	2077	10.940	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 18,372,235	0.0510	\$ 936,731	62
63	2078	11.378	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 14,222,536	0.0486	\$ 690,622	63
64	2079	11.833	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 19,871,409	0.0462	\$ 918,973	64
65	2080	12.306	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000									\$ 2,255,000	\$ 27,751,104	0.0440	\$ 1,222,264	65
66	2081	12.799	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 21,492,916	0.0419	\$ 901,552	66
67	2082	13.311	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 16,638,356	0.0399	\$ 664,686	67
68	2083	13.843	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 23,246,738	0.0380	\$ 884,462	68
69	2084	14.397	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 17,996,046	0.0362	\$ 652,086	69
70	2085	14.973	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300	\$ 925,000	\$ 80,000									\$ 2,684,300	\$ 40,191,245	0.0345	\$ 1,386,979	70
71	2086	15.572	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 19,464,523	0.0329	\$ 639,724	71
72	2087	16.194	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 27,195,395	0.0313	\$ 851,246	72
73	2088	16.842	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 21,052,828	0.0298	\$ 627,597	73
74	2089	17.516	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 29,414,540	0.0284	\$ 835,109	74
75	2090	18.217	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000	\$ 10,000,000	\$ 10,000,000	\$ -			\$ 25,005,000	\$ 455,305,858	0.0270	\$ 12,316,458	75	
76	2091	18.945	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 31,814,766	0.0258	\$ 819,278	76
77	2092	19.703	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 24,628,831	0.0245	\$ 604,028	77
78	2093	20.491	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 34,410,851	0.0234	\$ 803,747	78
79	2094	21.311	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 26,638,544	0.0222	\$ 592,577	79
80	2095	22.163	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300	\$ 925,000	\$ 80,000									\$ 2,684,300	\$ 59,492,861	0.0212	\$ 1,260,405	80
81	2096	23.050	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 28,812,249	0.0202	\$ 581,344	81
82	2097	23.972	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 40,255,829	0.0192	\$ 773,563	82
83	2098	24.931	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 31,163,328	0.0183	\$ 570,324	83
84	2099	25.928	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 43,540,704	0.0174	\$ 758,898	84
85	2100	26.965	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000									\$ 2,255,000	\$ 60,806,086	0.0166	\$ 1,009,560	85
86	2101	28.044	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 47,993,628	0.0158	\$ 744,512	86
87	2102	29.165	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 36,456,686	0.0151	\$ 548,905	87
88	2103	30.332	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 50,936,466	0.0143	\$ 730,398	88
89	2104	31.545	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 39,431,552	0.0137	\$ 538,500	89
90	2105	32.807	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300	\$ 925,000	\$ 80,000	\$ 800,000	\$ 1,950,000						\$ 15,759,300	\$ 517,016,163	0.0130	\$ 6,724,446	90	
91	2106	34.119	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 42,649,167	0.0124	\$ 528,292	91
92	2107	35.484	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 59,588,460	0.0118	\$ 702,969	92
93	2108	36.903	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 46,129,339	0.0112	\$ 518,277	93
94	2109	38.380	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 64,450,879	0.0107	\$ 689,643	94
95	2110	39.915	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000									\$ 2,255,000	\$ 90,007,861	0.0102	\$ 917,247	95
96	2111	41.511	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 69,710,070	0.0097	\$ 676,569	96
97	2112	43.172	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 53,964,802	0.0092	\$ 498,813	97
98	2113	44.899	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 400,000	\$ 229,300											\$ 1,679,300	\$ 75,398,412	0.0088	\$ 663,743	98
99	2114	46.695	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -											\$ 1,250,000	\$ 58,368,330	0.0084	\$ 489,357	99
100	2115.000	48.562	\$ 240,000	\$ 400,000	\$ 60,000	\$ 350,000	\$ 200,000	\$ -	\$ 925,000	\$ 80,000			\$ 10,000,000	\$ 10,000,000	\$ -			\$ 22,255,000	\$ 1,080,757,329	0.0080	\$ 8,629,539	100	

Annualized P/W =	Interval	Lifecycle P/W	P/A	Annualized
	25	\$ 55,235,100	0.071	\$ 3,919,100
	50	\$ 108,839,300	0.055	\$ 5,861,900
	100	\$ 181,743,100	0.050	\$ 9,156,800

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14A
Description : Low Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - - Present Worth				Year				
			Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs		5% P/F Factor	Present Worth		
	Calendar Year	#REF!	Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs						Electrical Repairs	
1	2016	1.000	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -													\$ 1,798,000	\$ 1,798,000	1.0000	\$ 1,798,000	1	
2	2017	1.040	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,861,000	\$ 1,935,440	0.9524	\$ 1,843,276	2
3	2018	1.082	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,798,000	\$ 1,944,717	0.9070	\$ 1,763,915	3
4	2019	1.125	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 1,868,399	0.8638	\$ 1,613,993	4
5	2020	1.170	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -									\$ 1,746,000	\$ 2,042,573	0.8227	\$ 1,680,430	5
6	2021	1.217	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 2,020,860	0.7835	\$ 1,583,397	6
7	2022	1.265	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 2,021,980	0.7462	\$ 1,508,832	7
8	2023	1.316	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 2,185,763	0.7107	\$ 1,553,381	8
9	2024	1.369	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 2,186,973	0.6768	\$ 1,480,230	9
10	2025	1.423	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -									\$ 1,809,000	\$ 2,574,771	0.6446	\$ 1,659,720	10
11	2026	1.480	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 2,365,430	0.6139	\$ 1,452,169	11
12	2027	1.539	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 2,557,033	0.5847	\$ 1,495,044	12
13	2028	1.601	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 2,558,449	0.5568	\$ 1,424,640	13
14	2029	1.665	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 2,765,687	0.5303	\$ 1,466,703	14
15	2030	1.732	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000							\$ 1,912,000	\$ 3,310,965	0.5051	\$ 1,672,263	15
16	2031	1.801	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 2,991,367	0.4810	\$ 1,438,899	16
17	2032	1.873	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 2,993,024	0.4581	\$ 1,371,139	17
18	2033	1.948	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 3,235,463	0.4363	\$ 1,411,622	18
19	2034	2.026	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 3,237,255	0.4155	\$ 1,345,146	19
20	2035	2.107	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -									\$ 1,809,000	\$ 3,811,290	0.3957	\$ 1,508,257	20
21	2036	2.191	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 3,501,415	0.3769	\$ 1,319,646	21
22	2037	2.279	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 3,785,034	0.3589	\$ 1,358,609	22
23	2038	2.370	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 3,787,130	0.3418	\$ 1,294,630	23
24	2039	2.465	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 4,093,893	0.3256	\$ 1,332,854	24
25	2040	2.563	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -		\$ 1,665,000	\$ -	\$ -					\$ 3,411,000	\$ 8,743,431	0.3101	\$ 2,711,057	25
26	2041	2.666	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 4,427,954	0.2953	\$ 1,307,587	26
27	2042	2.772	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 4,430,407	0.2812	\$ 1,246,011	27
28	2043	2.883	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 4,789,275	0.2678	\$ 1,282,799	28
29	2044	2.999	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 4,791,928	0.2551	\$ 1,222,390	29
30	2045	3.119	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000							\$ 2,775,000	\$ 8,654,258	0.2429	\$ 2,102,520	30
31	2046	3.243	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 5,182,949	0.2314	\$ 1,199,218	31
32	2047	3.373	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 5,602,775	0.2204	\$ 1,234,624	32
33	2048	3.508	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 5,605,878	0.2099	\$ 1,176,484	33
34	2049	3.648	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 6,059,961	0.1999	\$ 1,211,220	34
35	2050	3.794	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -									\$ 1,746,000	\$ 6,624,876	0.1904	\$ 1,261,077	35
36	2051	3.946	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 6,554,454	0.1813	\$ 1,188,259	36
37	2052	4.104	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 6,558,084	0.1727	\$ 1,132,302	37
38	2053	4.268	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 7,089,297	0.1644	\$ 1,165,733	38
39	2054	4.439	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 7,093,224	0.1566	\$ 1,110,837	39
40	2055	4.616	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -									\$ 1,809,000	\$ 8,351,006	0.1491	\$ 1,245,536	40
41	2056	4.801	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 7,672,031	0.1420	\$ 1,089,779	41
42	2057	4.993	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 8,293,475	0.1353	\$ 1,121,955	42
43	2058	5.193	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 8,298,069	0.1288	\$ 1,069,120	43
44	2059	5.400	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 8,970,223	0.1227	\$ 1,100,686	44
45	2060	5.617	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000							\$ 1,912,000	\$ 10,738,777	0.1169	\$ 1,254,948	45
46	2061	5.841	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 9,702,193	0.1113	\$ 1,079,820	46
47	2062	6.075	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 9,707,567	0.1060	\$ 1,028,970	47
48	2063	6.318	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -														\$ 1,661,000	\$ 10,493,892	0.1009	\$ 1,059,350	48
49	2064	6.571	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 10,499,704	0.0961	\$ 1,009,464	49
50	2065	6.833	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -		\$ 1,665,000	\$ -	\$ -					\$ 3,474,000	\$ 23,739,056	0.0916	\$ 2,173,641	50

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14A
Description : Low Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - - Present Worth				Year					
			Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs		5% P/F Factor	Present Worth			
	Calendar Year	#REF!	Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs						Electrical Repairs		
51	2066	7.107	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -														\$ 1,598,000	\$ 11,356,480	0.0872	\$ 990,327	51	
52	2067	7.391	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 12,276,369	0.0831	\$ 1,019,567	52
53	2068	7.687	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 12,283,169	0.0791	\$ 971,554	53
54	2069	7.994	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 13,278,121	0.0753	\$ 1,000,239	54
55	2070	8.314	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -										\$ 1,746,000	\$ 14,515,920	0.0717	\$ 1,041,412	55
56	2071	8.646	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 14,361,615	0.0683	\$ 981,278	56
57	2072	8.992	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 14,369,570	0.0651	\$ 935,068	57
58	2073	9.352	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 15,533,523	0.0620	\$ 962,676	58
59	2074	9.726	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 15,542,127	0.0590	\$ 917,342	59
60	2075	10.115	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000			\$ 800,000	\$ -	\$ -			\$ 2,775,000	\$ 28,069,198	0.0562	\$ 1,577,834	60
61	2076	10.520	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 16,810,365	0.0535	\$ 899,952	61
62	2077	10.940	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 18,172,025	0.0510	\$ 926,523	62
63	2078	11.378	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 18,182,090	0.0486	\$ 882,891	63
64	2079	11.833	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 19,654,862	0.0462	\$ 908,959	64
65	2080	12.306	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -										\$ 1,746,000	\$ 21,487,107	0.0440	\$ 946,374	65
66	2081	12.799	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 21,258,699	0.0419	\$ 891,728	66
67	2082	13.311	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 21,270,474	0.0399	\$ 849,735	67
68	2083	13.843	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 22,993,409	0.0380	\$ 874,823	68
69	2084	14.397	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 23,006,145	0.0362	\$ 833,626	69
70	2085	14.973	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -										\$ 1,809,000	\$ 27,085,632	0.0345	\$ 934,711	70
71	2086	15.572	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 24,883,446	0.0329	\$ 817,824	71
72	2087	16.194	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 26,899,036	0.0313	\$ 841,970	72
73	2088	16.842	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 26,913,935	0.0298	\$ 802,320	73
74	2089	17.516	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 29,093,998	0.0284	\$ 826,009	74
75	2090	18.217	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000	\$ 1,665,000	\$ -	\$ -					\$ 3,577,000	\$ 65,160,746	0.0270	\$ 1,761,886	75
76	2091	18.945	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 31,468,068	0.0258	\$ 810,350	76
77	2092	19.703	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 31,485,498	0.0245	\$ 772,189	77
78	2093	20.491	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 34,035,862	0.0234	\$ 794,988	78
79	2094	21.311	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 34,054,714	0.0222	\$ 757,551	79
80	2095	22.163	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -										\$ 1,809,000	\$ 40,093,352	0.0212	\$ 849,411	80
81	2096	23.050	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 36,833,579	0.0202	\$ 743,190	81
82	2097	23.972	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 39,817,145	0.0192	\$ 765,133	82
83	2098	24.931	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 39,839,199	0.0183	\$ 729,102	83
84	2099	25.928	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 43,066,224	0.0174	\$ 750,628	84
85	2100	26.965	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -										\$ 1,746,000	\$ 47,080,898	0.0166	\$ 781,526	85
86	2101	28.044	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 46,580,428	0.0158	\$ 736,399	86
87	2102	29.165	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 46,606,228	0.0151	\$ 701,721	87
88	2103	30.332	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 50,381,391	0.0143	\$ 722,439	88
89	2104	31.545	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 50,409,296	0.0137	\$ 688,418	89
90	2105	32.807	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -				\$ 148,000	\$ -	\$ -	\$ 166,000			\$ 800,000	\$ -	\$ -			\$ 2,775,000	\$ 91,039,567	0.0130	\$ 1,184,084	90
91	2106	34.119	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 54,522,695	0.0124	\$ 675,368	91
92	2107	35.484	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 58,939,101	0.0118	\$ 695,308	92
93	2108	36.903	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 58,971,747	0.0112	\$ 662,565	93
94	2109	38.380	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 63,748,532	0.0107	\$ 682,127	94
95	2110	39.915	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -										\$ 1,746,000	\$ 69,691,231	0.0102	\$ 710,205	95
96	2111	41.511	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 68,950,412	0.0097	\$ 669,196	96
97	2112	43.172	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 68,988,603	0.0092	\$ 637,683	97
98	2113	44.899	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 126,000	\$ -															\$ 1,661,000	\$ 74,576,766	0.0088	\$ 656,510	98
99	2114	46.695	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -															\$ 1,598,000	\$ 74,618,072	0.0084	\$ 625,594	99
100	2115.000	48.562	\$ 1,500,000	\$ 25,000	\$ 10,000	\$ -	\$ 63,000	\$ -				\$ 148,000	\$ -			\$ 1,665,000	\$ -	\$ -					\$ 3,411,000	\$ 165,646,518	0.0080	\$ 1,322,640	100

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 39,087,900	0.071	\$ 2,773,400
50	\$ 70,162,200	0.055	\$ 3,843,300
100	\$ 113,683,100	0.050	\$ 5,727,700

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14B
Description : Mid Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs -- Present Worth				Year			
	Calendar Year	#REF!	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years		Every 30 Years			Sum 2016 Costs	4% Inflated Costs	5% P/F Factor	Present Worth				
			Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs						Mechanical Repairs	Electrical Repairs	
1	2016	1.000	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,799,625	\$ 1,799,625	1.0000	\$ 1,799,625	1	
2	2017	1.040	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,864,250	\$ 1,938,820	0.9524	\$ 1,846,495	2
3	2018	1.082	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,799,625	\$ 1,946,474	0.9070	\$ 1,765,510	3
4	2019	1.125	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 1,534,596	0.8638	\$ 1,325,641	4
5	2020	1.170	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -											\$ 1,453,000	\$ 1,699,804	0.8227	\$ 1,398,433	5
6	2021	1.217	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 1,659,819	0.7835	\$ 1,300,511	6
7	2022	1.265	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 1,644,440	0.7462	\$ 1,227,107	7
8	2023	1.316	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 1,795,260	0.7107	\$ 1,275,858	8
9	2024	1.369	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 1,778,627	0.6768	\$ 1,203,844	9
10	2025	1.423	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -											\$ 1,517,625	\$ 2,160,054	0.6446	\$ 1,392,390	10
11	2026	1.480	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 1,923,762	0.6139	\$ 1,181,023	11
12	2027	1.539	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 2,100,200	0.5847	\$ 1,227,944	12
13	2028	1.601	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 2,080,741	0.5568	\$ 1,158,635	13
14	2029	1.665	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 2,271,577	0.5303	\$ 1,204,666	14
15	2030	1.732	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700									\$ 1,620,700	\$ 2,806,528	0.5051	\$ 1,417,487	15
16	2031	1.801	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 2,456,937	0.4810	\$ 1,181,829	16
17	2032	1.873	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 2,434,173	0.4581	\$ 1,115,123	17
18	2033	1.948	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 2,657,423	0.4363	\$ 1,159,425	18
19	2034	2.026	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 2,632,802	0.4155	\$ 1,093,984	19
20	2035	2.107	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -											\$ 1,517,625	\$ 3,197,407	0.3957	\$ 1,265,323	20
21	2036	2.191	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 2,847,638	0.3769	\$ 1,073,245	21
22	2037	2.279	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 3,108,809	0.3589	\$ 1,115,883	22
23	2038	2.370	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 3,080,006	0.3418	\$ 1,052,900	23
24	2039	2.465	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 3,362,488	0.3256	\$ 1,094,730	24
25	2040	2.563	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -			#####	\$ -	\$ -						\$ 3,177,750	\$ 8,145,540	0.3101	\$ 2,525,671	25
26	2041	2.666	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 3,636,867	0.2953	\$ 1,073,977	26
27	2042	2.772	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 3,603,171	0.2812	\$ 1,013,358	27
28	2043	2.883	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 3,933,636	0.2678	\$ 1,053,618	28
29	2044	2.999	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 3,897,190	0.2551	\$ 994,148	29
30	2045	3.119	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700									\$ 2,500,325	\$ 7,797,642	0.2429	\$ 1,894,408	30
31	2046	3.243	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 4,215,200	0.2314	\$ 975,302	31
32	2047	3.373	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 4,601,797	0.2204	\$ 1,014,050	32
33	2048	3.508	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 4,559,161	0.2099	\$ 956,814	33
34	2049	3.648	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 4,977,304	0.1999	\$ 994,826	34
35	2050	3.794	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -											\$ 1,453,000	\$ 5,513,142	0.1904	\$ 1,049,453	35
36	2051	3.946	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 5,383,452	0.1813	\$ 975,968	36
37	2052	4.104	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 5,333,573	0.1727	\$ 920,881	37
38	2053	4.268	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 5,822,742	0.1644	\$ 957,466	38
39	2054	4.439	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 5,768,793	0.1566	\$ 903,424	39
40	2055	4.616	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -											\$ 1,517,625	\$ 7,005,912	0.1491	\$ 1,044,918	40
41	2056	4.801	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 6,239,526	0.1420	\$ 886,298	41
42	2057	4.993	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 6,811,784	0.1353	\$ 921,509	42
43	2058	5.193	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 6,748,672	0.1288	\$ 869,496	43
44	2059	5.400	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 7,367,626	0.1227	\$ 904,040	44
45	2060	5.617	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700									\$ 1,620,700	\$ 9,102,686	0.1169	\$ 1,063,752	45
46	2061	5.841	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 7,968,824	0.1113	\$ 886,902	46
47	2062	6.075	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 7,894,991	0.1060	\$ 836,843	47
48	2063	6.318	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -													\$ 1,364,250	\$ 8,619,080	0.1009	\$ 870,089	48
49	2064	6.571	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -													\$ 1,299,625	\$ 8,539,223	0.0961	\$ 820,979	49
50	2065	6.833	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -			#####	\$ -	\$ -						\$ 3,242,375	\$ 22,156,281	0.0916	\$ 2,028,716	50

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14B
Description : Mid Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - - Present Worth				Year		
			Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years		Every 30 Years			Sum 2016 Costs	4% Inflated Costs	5% P/F Factor		Present Worth	
	Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs							
51	2066	7.107	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 9,236,023	0.0872	\$ 805,416	51
52	2067	7.391	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 10,083,104	0.0831	\$ 837,414	52
53	2068	7.687	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 9,989,683	0.0791	\$ 790,147	53
54	2069	7.994	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 10,905,886	0.0753	\$ 821,539	54
55	2070	8.314	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -										\$ 1,453,000	\$ 12,079,972	0.0717	\$ 866,650	55
56	2071	8.646	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 11,795,806	0.0683	\$ 805,965	56
57	2072	8.992	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 11,686,516	0.0651	\$ 760,474	57
58	2073	9.352	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 12,758,344	0.0620	\$ 790,686	58
59	2074	9.726	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 12,640,136	0.0590	\$ 746,058	59
60	2075	10.115	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700					\$ 815,000	\$ -	\$ -	\$ 2,500,325	\$ 25,290,853	0.0562	\$ 1,421,657	60
61	2076	10.520	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 13,671,571	0.0535	\$ 731,915	61
62	2077	10.940	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 14,925,458	0.0510	\$ 760,993	62
63	2078	11.378	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 14,787,171	0.0486	\$ 718,040	63
64	2079	11.833	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 16,143,375	0.0462	\$ 746,566	64
65	2080	12.306	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -										\$ 1,453,000	\$ 17,881,310	0.0440	\$ 787,561	65
66	2081	12.799	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 17,460,675	0.0419	\$ 732,414	66
67	2082	13.311	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 17,298,899	0.0399	\$ 691,074	67
68	2083	13.843	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 18,885,466	0.0380	\$ 718,530	68
69	2084	14.397	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 18,710,489	0.0362	\$ 677,974	69
70	2085	14.973	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -										\$ 1,517,625	\$ 22,722,959	0.0345	\$ 784,157	70
71	2086	15.572	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 20,237,264	0.0329	\$ 665,121	71
72	2087	16.194	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 22,093,324	0.0313	\$ 691,546	72
73	2088	16.842	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 21,888,625	0.0298	\$ 652,513	73
74	2089	17.516	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 23,896,139	0.0284	\$ 678,436	74
75	2090	18.217	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700	\$ 1,724,750	\$ -	\$ -					\$ 3,345,450	\$ 60,942,694	0.0270	\$ 1,647,834	75
76	2091	18.945	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 25,846,064	0.0258	\$ 665,575	76
77	2092	19.703	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 25,606,596	0.0245	\$ 628,008	77
78	2093	20.491	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 27,955,102	0.0234	\$ 652,958	78
79	2094	21.311	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 27,696,094	0.0222	\$ 616,103	79
80	2095	22.163	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -										\$ 1,517,625	\$ 33,635,530	0.0212	\$ 712,596	80
81	2096	23.050	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 29,956,095	0.0202	\$ 604,423	81
82	2097	23.972	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 32,703,516	0.0192	\$ 628,436	82
83	2098	24.931	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 32,400,512	0.0183	\$ 592,965	83
84	2099	25.928	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 35,372,123	0.0174	\$ 616,523	84
85	2100	26.965	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -										\$ 1,453,000	\$ 39,180,152	0.0166	\$ 650,377	85
86	2101	28.044	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 38,258,488	0.0158	\$ 604,836	86
87	2102	29.165	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 37,904,017	0.0151	\$ 570,697	87
88	2103	30.332	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 41,380,381	0.0143	\$ 593,370	88
89	2104	31.545	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 40,996,985	0.0137	\$ 559,878	89
90	2105	32.807	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -	\$ 153,375	\$ -	\$ -	\$ 167,700					\$ 815,000	\$ -	\$ -	\$ 2,500,325	\$ 82,028,291	0.0130	\$ 1,066,881	90
91	2106	34.119	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 44,342,339	0.0124	\$ 549,265	91
92	2107	35.484	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 48,409,193	0.0118	\$ 571,086	92
93	2108	36.903	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 47,960,673	0.0112	\$ 538,852	93
94	2109	38.380	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 52,359,383	0.0107	\$ 560,260	94
95	2110	39.915	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -										\$ 1,453,000	\$ 57,996,196	0.0102	\$ 591,024	95
96	2111	41.511	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 56,631,908	0.0097	\$ 549,639	96
97	2112	43.172	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 56,107,204	0.0092	\$ 518,616	97
98	2113	44.899	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 129,250	\$ -												\$ 1,364,250	\$ 61,253,072	0.0088	\$ 539,220	98
99	2114	46.695	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -												\$ 1,299,625	\$ 60,685,552	0.0084	\$ 508,785	99
100	2115.000	48.562	\$ 1,200,000	\$ 25,000	\$ 10,000	\$ -	\$ 64,625	\$ -	\$ 153,375	\$ -			\$ 1,724,750	\$ -	\$ -					\$ 3,177,750	\$ 154,319,326	0.0080	\$ 1,232,196	100

Annualized P/W =

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 33,403,300	0.071	\$ 2,370,000
50	\$ 59,314,500	0.055	\$ 3,249,100
100	\$ 95,567,800	0.050	\$ 4,815,000

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14C
Description : High Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - - Present Worth				Year		
	Calendar Year	#REF!	Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs		5% P/F Factor	Present Worth
			Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs					
1	2016	1.000	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 2,036,500	\$ 2,036,500	1.0000	\$ 2,036,500	1
2	2017	1.040	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 2,338,000	\$ 2,431,520	0.9524	\$ 2,315,733	2
3	2018	1.082	\$ 1,700,000	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 2,036,500	\$ 2,202,678	0.9070	\$ 1,997,894	3
4	2019	1.125	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 717,663	0.8638	\$ 619,944	4
5	2020	1.170	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -			\$ 746,500	\$ -								\$ 1,083,000	\$ 1,266,957	0.8227	\$ 1,042,329	5
6	2021	1.217	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 776,225	0.7835	\$ 608,192	6
7	2022	1.265	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 425,780	0.7462	\$ 317,723	7
8	2023	1.316	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 839,564	0.7107	\$ 596,663	8
9	2024	1.369	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 460,523	0.6768	\$ 311,700	9
10	2025	1.423	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -			\$ 746,500	\$ -								\$ 1,384,500	\$ 1,970,575	0.6446	\$ 1,270,250	10
11	2026	1.480	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 498,102	0.6139	\$ 305,792	11
12	2027	1.539	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 982,172	0.5847	\$ 574,255	12
13	2028	1.601	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 538,747	0.5568	\$ 299,995	13
14	2029	1.665	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,062,317	0.5303	\$ 563,369	14
15	2030	1.732	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -			\$ 746,500	\$ -	\$ -	\$ 778,000						\$ 1,861,000	\$ 3,222,650	0.5051	\$ 1,627,657	15
16	2031	1.801	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,149,002	0.4810	\$ 552,690	16
17	2032	1.873	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 630,258	0.4581	\$ 288,729	17
18	2033	1.948	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,242,761	0.4363	\$ 542,212	18
19	2034	2.026	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 681,687	0.4155	\$ 283,255	19
20	2035	2.107	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -			\$ 746,500	\$ -								\$ 1,384,500	\$ 2,916,933	0.3957	\$ 1,154,329	20
21	2036	2.191	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 737,313	0.3769	\$ 277,885	21
22	2037	2.279	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,453,854	0.3589	\$ 521,850	22
23	2038	2.370	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 797,478	0.3418	\$ 272,618	23
24	2039	2.465	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,572,489	0.3256	\$ 511,957	24
25	2040	2.563	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -			\$ 746,500	\$ -			\$ 8,820,000	\$ -	\$ -			\$ 9,903,000	\$ 25,384,401	0.3101	\$ 7,870,888	25
26	2041	2.666	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,700,804	0.2953	\$ 502,252	26
27	2042	2.772	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 932,936	0.2812	\$ 262,380	27
28	2043	2.883	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 1,839,589	0.2678	\$ 492,731	28
29	2044	2.999	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,009,064	0.2551	\$ 257,406	29
30	2045	3.119	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -			\$ 746,500	\$ -	\$ -	\$ 778,000						\$ 5,887,500	\$ 18,361,060	0.2429	\$ 4,460,752	30
31	2046	3.243	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,091,403	0.2314	\$ 252,526	31
32	2047	3.373	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 2,152,059	0.2204	\$ 474,227	32
33	2048	3.508	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,180,462	0.2099	\$ 247,739	33
34	2049	3.648	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 2,327,667	0.1999	\$ 465,237	34
35	2050	3.794	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -			\$ 746,500	\$ -								\$ 1,083,000	\$ 4,109,245	0.1904	\$ 782,214	35
36	2051	3.946	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 2,517,605	0.1813	\$ 456,417	36
37	2052	4.104	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,380,973	0.1727	\$ 238,435	37
38	2053	4.268	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 2,723,041	0.1644	\$ 447,765	38
39	2054	4.439	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,493,661	0.1566	\$ 233,915	39
40	2055	4.616	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -			\$ 746,500	\$ -								\$ 1,384,500	\$ 6,391,359	0.1491	\$ 953,258	40
41	2056	4.801	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,615,543	0.1420	\$ 229,481	41
42	2057	4.993	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 3,185,573	0.1353	\$ 430,949	42
43	2058	5.193	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 1,747,372	0.1288	\$ 225,131	43
44	2059	5.400	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 3,445,516	0.1227	\$ 422,780	44
45	2060	5.617	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -			\$ 746,500	\$ -	\$ -	\$ 778,000						\$ 1,861,000	\$ 10,452,335	0.1169	\$ 1,221,474	45
46	2061	5.841	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 3,726,670	0.1113	\$ 414,765	46
47	2062	6.075	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 2,044,178	0.1060	\$ 216,676	47
48	2063	6.318	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -												\$ 638,000	\$ 4,030,766	0.1009	\$ 406,903	48
49	2064	6.571	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -												\$ 336,500	\$ 2,210,983	0.0961	\$ 212,569	49
50	2065	6.833	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -			\$ 746,500	\$ -			\$ 8,820,000	\$ -	\$ -			\$ 10,204,500	\$ 69,730,914	0.0916	\$ 6,384,835	50

Walk Bridge Replacement
CTDOT Project No. 0301-176

Lifecycle Operation, Maintenance & Waterway Users Costs

Option : 14C
Description : High Level Fixed Bridge

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval															Summary of O&M Costs - - Present Worth				Year					
			Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2016 Costs	4% Inflated Costs		5% P/F Factor	Present Worth			
	Calendar Year	#REF!	Waterway Users Cost	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs						Electrical Repairs		
51	2066	7.107	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -														\$ 336,500	\$ 2,391,399	0.0872	\$ 208,539	51	
52	2067	7.391	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 4,715,427	0.0831	\$ 391,622	52
53	2068	7.687	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 2,586,537	0.0791	\$ 204,586	53
54	2069	7.994	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 5,100,205	0.0753	\$ 384,198	54
55	2070	8.314	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -													\$ 1,083,000	\$ 9,003,861	0.0717	\$ 645,961	55
56	2071	8.646	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 5,516,382	0.0683	\$ 376,915	56
57	2072	8.992	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 3,025,883	0.0651	\$ 196,903	57
58	2073	9.352	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 5,966,519	0.0620	\$ 369,769	58
59	2074	9.726	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 3,272,795	0.0590	\$ 193,170	59
60	2075	10.115	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -	\$ 746,500	\$ -	\$ -	\$ 778,000					\$ 3,725,000	\$ -	\$ -				\$ 5,887,500	\$ 59,552,218	0.0562	\$ 3,347,567	60
61	2076	10.520	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 3,539,855	0.0535	\$ 189,508	61
62	2077	10.940	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 6,979,983	0.0510	\$ 355,883	62
63	2078	11.378	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 3,828,707	0.0486	\$ 185,915	63
64	2079	11.833	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 7,549,550	0.0462	\$ 349,136	64
65	2080	12.306	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -													\$ 1,083,000	\$ 13,327,914	0.0440	\$ 587,012	65
66	2081	12.799	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 8,165,593	0.0419	\$ 342,518	66
67	2082	13.311	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 4,479,045	0.0399	\$ 178,934	67
68	2083	13.843	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 8,831,905	0.0380	\$ 336,025	68
69	2084	14.397	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 4,844,535	0.0362	\$ 175,541	69
70	2085	14.973	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -	\$ 746,500	\$ -													\$ 1,384,500	\$ 20,729,717	0.0345	\$ 715,372	70
71	2086	15.572	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 5,239,850	0.0329	\$ 172,214	71
72	2087	16.194	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 10,332,080	0.0313	\$ 323,406	72
73	2088	16.842	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 5,667,421	0.0298	\$ 168,949	73
74	2089	17.516	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 11,175,178	0.0284	\$ 317,275	74
75	2090	18.217	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -	\$ -	\$ 778,000	\$ 8,820,000	\$ -	\$ -								\$ 10,681,000	\$ 194,571,409	0.0270	\$ 5,261,031	75
76	2091	18.945	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 12,087,072	0.0258	\$ 311,260	76
77	2092	19.703	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 6,630,081	0.0245	\$ 162,604	77
78	2093	20.491	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 13,073,378	0.0234	\$ 305,360	78
79	2094	21.311	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 7,171,096	0.0222	\$ 159,522	79
80	2095	22.163	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -	\$ 746,500	\$ -													\$ 1,384,500	\$ 30,685,045	0.0212	\$ 650,088	80
81	2096	23.050	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 7,756,257	0.0202	\$ 156,498	81
82	2097	23.972	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 15,294,003	0.0192	\$ 293,892	82
83	2098	24.931	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 8,389,168	0.0183	\$ 153,531	83
84	2099	25.928	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 16,541,993	0.0174	\$ 288,321	84
85	2100	26.965	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -													\$ 1,083,000	\$ 29,203,100	0.0166	\$ 484,761	85
86	2101	28.044	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 17,891,820	0.0158	\$ 282,855	86
87	2102	29.165	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 9,814,140	0.0151	\$ 147,765	87
88	2103	30.332	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 19,351,792	0.0143	\$ 277,493	88
89	2104	31.545	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 10,614,974	0.0137	\$ 144,964	89
90	2105	32.807	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -	\$ 746,500	\$ -	\$ -	\$ 778,000					\$ 3,725,000	\$ -	\$ -				\$ 5,887,500	\$ 193,151,514	0.0130	\$ 2,512,179	90
91	2106	34.119	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 11,481,156	0.0124	\$ 142,216	91
92	2107	35.484	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 22,638,860	0.0118	\$ 267,072	92
93	2108	36.903	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 12,418,018	0.0112	\$ 139,520	93
94	2109	38.380	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 24,486,191	0.0107	\$ 262,009	94
95	2110	39.915	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -													\$ 1,083,000	\$ 43,227,722	0.0102	\$ 440,523	95
96	2111	41.511	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 26,484,264	0.0097	\$ 257,042	96
97	2112	43.172	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 14,527,325	0.0092	\$ 134,280	97
98	2113	44.899	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 603,000	\$ -															\$ 638,000	\$ 28,645,380	0.0088	\$ 252,170	98
99	2114	46.695	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -															\$ 336,500	\$ 15,712,754	0.0084	\$ 131,735	99
100	2115.000	48.562	\$ -	\$ 25,000	\$ 10,000	\$ -	\$ 301,500	\$ -	\$ 746,500	\$ -			\$ 8,820,000	\$ -	\$ -								\$ 9,903,000	\$ 480,913,944	0.0080	\$ 3,839,961	100

Annualized P/W =

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 26,764,400	0.071	\$ 1,899,000
50	\$ 47,457,200	0.055	\$ 2,599,600
100	\$ 75,632,800	0.050	\$ 3,810,600

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 4S

Description : 168' Through Truss Rolling Bascule

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth	
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs					
1	2014	1.000	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 524,595	1.0000	\$ 524,595	1
2	2015	1.040	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 710,380	0.9524	\$ 676,552	2
3	2016	1.082	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 567,402	0.9070	\$ 514,651	3
4	2017	1.125	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 768,347	0.8638	\$ 663,727	4
5	2018	1.170	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 749,703	\$ 877,047	0.8227	\$ 721,548	5
6	2019	1.217	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 831,044	0.7835	\$ 651,145	6
7	2020	1.265	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 663,781	0.7462	\$ 495,323	7
8	2021	1.316	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 898,857	0.7107	\$ 638,801	8
9	2022	1.369	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 717,945	0.6768	\$ 485,933	9
10	2023	1.423	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488										\$ 908,165	\$ 1,292,602	0.6446	\$ 833,223	10
11	2024	1.480	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 776,529	0.6139	\$ 476,722	11
12	2025	1.539	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,051,536	0.5847	\$ 614,811	12
13	2026	1.601	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 839,894	0.5568	\$ 467,684	13
14	2027	1.665	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,137,341	0.5303	\$ 603,156	14
15	2028	1.732	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723								\$ 1,292,426	\$ 2,238,064	0.5051	\$ 1,130,374	15
16	2029	1.801	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,230,148	0.4810	\$ 591,722	16
17	2030	1.873	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 982,557	0.4581	\$ 450,121	17
18	2031	1.948	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,330,528	0.4363	\$ 580,505	18
19	2032	2.026	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,062,734	0.4155	\$ 441,588	19
20	2033	2.107	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488										\$ 908,165	\$ 1,913,367	0.3957	\$ 757,184	20
21	2034	2.191	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,149,453	0.3769	\$ 433,217	21
22	2035	2.279	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,556,530	0.3589	\$ 558,704	22
23	2036	2.370	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,243,248	0.3418	\$ 425,004	23
24	2037	2.465	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,683,543	0.3256	\$ 548,113	24
25	2038	2.563	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488			#####	\$ 1,400,000	\$ -					\$ 4,693,844	\$ 12,031,750	0.3101	\$ 3,730,659	25
26	2039	2.666	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,820,920	0.2953	\$ 537,723	26
27	2040	2.772	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,454,425	0.2812	\$ 409,044	27
28	2041	2.883	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 1,969,507	0.2678	\$ 527,529	28
29	2042	2.999	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,573,106	0.2551	\$ 401,289	29
30	2043	3.119	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723							\$ 9,612,702	\$ 29,978,668	0.2429	\$ 7,283,207	30	
31	2044	3.243	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,701,471	0.2314	\$ 393,682	31
32	2045	3.373	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 2,304,044	0.2204	\$ 507,718	32
33	2046	3.508	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 1,840,311	0.2099	\$ 386,219	33
34	2047	3.648	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 2,492,054	0.1999	\$ 498,093	34
35	2048	3.794	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488										\$ 749,703	\$ 2,844,611	0.1904	\$ 541,485	35
36	2049	3.946	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 2,695,406	0.1813	\$ 488,651	36
37	2050	4.104	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 2,152,904	0.1727	\$ 371,715	37
38	2051	4.268	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 2,915,351	0.1644	\$ 479,388	38
39	2052	4.439	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 2,328,581	0.1566	\$ 364,668	39
40	2053	4.616	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488										\$ 908,165	\$ 4,192,424	0.1491	\$ 625,291	40
41	2054	4.801	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 2,518,593	0.1420	\$ 357,755	41
42	2055	4.993	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 3,410,548	0.1353	\$ 461,384	42
43	2056	5.193	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 2,724,111	0.1288	\$ 350,973	43
44	2057	5.400	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 3,688,849	0.1227	\$ 452,638	44
45	2058	5.617	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723								\$ 1,292,426	\$ 7,258,930	0.1169	\$ 848,288	45
46	2059	5.841	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 3,989,859	0.1113	\$ 444,057	46
47	2060	6.075	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 3,186,824	0.1060	\$ 337,793	47
48	2061	6.318	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 4,315,432	0.1009	\$ 435,639	48
49	2062	6.571	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 3,446,869	0.0961	\$ 331,389	49
50	2063	6.833	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488			#####	\$ 1,400,000	\$ -					\$ 4,852,306	\$ 33,157,503	0.0916	\$ 3,036,031	50

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 4S
Description : 168' Through Truss Rolling Bascule

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth		
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs					Electrical Repairs	
51	2064	7.107	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 3,728,133	0.0872	\$ 325,107	51
52	2065	7.391	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 5,048,445	0.0831	\$ 419,279	52
53	2066	7.687	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 4,032,349	0.0791	\$ 318,944	53
54	2067	7.994	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 5,460,398	0.0753	\$ 411,331	54
55	2068	8.314	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488										\$ 749,703	\$ 6,232,893	0.0717	\$ 447,165	55
56	2069	8.646	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 5,905,966	0.0683	\$ 403,533	56
57	2070	8.992	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 4,717,278	0.0651	\$ 306,966	57
58	2071	9.352	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 6,387,893	0.0620	\$ 395,884	58
59	2072	9.726	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 5,102,208	0.0590	\$ 301,147	59
60	2073	10.115	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723					\$ 1,161,814	\$ -	\$ 7,000,000	\$ 9,612,702	\$ 97,232,737	0.0562	\$ 5,465,676	60
61	2074	10.520	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 5,518,548	0.0535	\$ 295,438	61
62	2075	10.940	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 7,472,932	0.0510	\$ 381,016	62
63	2076	11.378	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 5,968,862	0.0486	\$ 289,838	63
64	2077	11.833	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 8,082,723	0.0462	\$ 373,794	64
65	2078	12.306	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488										\$ 749,703	\$ 9,226,204	0.0440	\$ 406,357	65
66	2079	12.799	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 8,742,273	0.0419	\$ 366,708	66
67	2080	13.311	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 6,982,724	0.0399	\$ 278,953	67
68	2081	13.843	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 9,455,643	0.0380	\$ 359,756	68
69	2082	14.397	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 7,552,514	0.0362	\$ 273,665	69
70	2083	14.973	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488										\$ 908,165	\$ 13,597,696	0.0345	\$ 469,249	70
71	2084	15.572	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 8,168,799	0.0329	\$ 268,477	71
72	2085	16.194	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 11,061,764	0.0313	\$ 346,246	72
73	2086	16.842	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 8,835,373	0.0298	\$ 263,388	73
74	2087	17.516	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 11,964,404	0.0284	\$ 339,682	74
75	2088	18.217	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723	\$ 2,544,141	\$ 1,400,000	\$ -					\$ 5,236,567	\$ 95,392,394	0.0270	\$ 2,579,322	75
76	2089	18.945	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 12,940,700	0.0258	\$ 333,242	76
77	2090	19.703	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 10,336,137	0.0245	\$ 253,496	77
78	2091	20.491	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 13,996,661	0.0234	\$ 326,925	78
79	2092	21.311	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 11,179,566	0.0222	\$ 248,691	79
80	2093	22.163	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488										\$ 908,165	\$ 20,127,912	0.0212	\$ 426,426	80
81	2094	23.050	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 12,091,818	0.0202	\$ 243,976	81
82	2095	23.972	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 16,374,114	0.0192	\$ 314,648	82
83	2096	24.931	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 13,078,511	0.0183	\$ 239,351	83
84	2097	25.928	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 17,710,241	0.0174	\$ 308,683	84
85	2098	26.965	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488										\$ 749,703	\$ 20,215,748	0.0166	\$ 335,574	85
86	2099	28.044	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 19,155,397	0.0158	\$ 302,831	86
87	2100	29.165	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 15,300,008	0.0151	\$ 230,363	87
88	2101	30.332	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 20,718,477	0.0143	\$ 297,091	88
89	2102	31.545	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 16,548,488	0.0137	\$ 225,996	89
90	2103	32.807	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050	\$ 221,620	\$ 3,488	\$ 300,000	\$ 242,723					\$ 1,161,814	\$ -	\$ 7,000,000	\$ 9,612,702	\$ 315,364,418	0.0130	\$ 4,101,711	90
91	2104	34.119	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 17,898,845	0.0124	\$ 221,711	91
92	2105	35.484	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 24,237,688	0.0118	\$ 285,933	92
93	2106	36.903	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 19,359,391	0.0112	\$ 217,508	93
94	2107	38.380	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 26,215,483	0.0107	\$ 280,513	94
95	2108	39.915	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488										\$ 749,703	\$ 29,924,246	0.0102	\$ 304,950	95
96	2109	41.511	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 28,354,667	0.0097	\$ 275,195	96
97	2110	43.172	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 22,647,749	0.0092	\$ 209,340	97
98	2111	44.899	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 188,824	\$ 64,050												\$ 683,058	\$ 30,668,408	0.0088	\$ 269,979	98
99	2112	46.695	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -												\$ 524,595	\$ 24,495,805	0.0084	\$ 205,372	99
100	2113	48.562	\$ 240,000	\$ 65,000	\$ 10,000	\$ 115,183	\$ 94,412	\$ -	\$ 221,620	\$ 3,488			\$ 2,544,141	\$ 1,400,000	\$ -					\$ 4,693,844	\$ 227,944,561	0.0080	\$ 1,820,072	100

Annualized P/W =

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 18,015,100	0.071	\$ 1,278,200
50	\$ 38,886,700	0.055	\$ 2,130,100
100	\$ 67,253,200	0.050	\$ 3,388,400

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 8A

Description : 168' Through Truss Vertical Lift Span (Span Drive)

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year			
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth					
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs					Electrical Repairs				
1	2014	1.000	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 535,647	1.0000	\$ 535,647	1			
2	2015	1.040	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 674,777	0.9524	\$ 642,645	2			
3	2016	1.082	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 579,356	0.9070	\$ 525,493	3			
4	2017	1.125	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 729,839	0.8638	\$ 630,463	4			
5	2018	1.170	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 735,267	\$ 860,158	0.8227	\$ 707,654	5			
6	2019	1.217	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 789,394	0.7835	\$ 618,511	6			
7	2020	1.265	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 677,765	0.7462	\$ 505,758	7			
8	2021	1.316	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 853,809	0.7107	\$ 606,786	8			
9	2022	1.369	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 733,070	0.6768	\$ 496,171	9			
10	2023	1.423	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 848,444	\$ 1,207,601	0.6446	\$ 778,430	10			
11	2024	1.480	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 792,889	0.6139	\$ 486,765	11			
12	2025	1.539	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 998,835	0.5847	\$ 583,998	12			
13	2026	1.601	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 857,588	0.5568	\$ 477,537	13			
14	2027	1.665	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,080,340	0.5303	\$ 572,928	14			
15	2028	1.732	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 1,167,990	\$ 2,022,580	0.5051	\$ 1,021,540	15			
16	2029	1.801	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,168,496	0.4810	\$ 562,067	16			
17	2030	1.873	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,003,257	0.4581	\$ 459,604	17			
18	2031	1.948	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,263,845	0.4363	\$ 551,412	18			
19	2032	2.026	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,085,123	0.4155	\$ 450,891	19			
20	2033	2.107	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 848,444	\$ 1,787,544	0.3957	\$ 707,392	20			
21	2034	2.191	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,173,669	0.3769	\$ 442,343	21			
22	2035	2.279	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,478,520	0.3589	\$ 530,704	22			
23	2036	2.370	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,269,440	0.3418	\$ 433,958	23			
24	2037	2.465	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,599,168	0.3256	\$ 520,643	24			
25	2038	2.563	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 4,261,408	\$ 10,923,284	0.3101	\$ 3,386,960	25			
26	2039	2.666	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,729,660	0.2953	\$ 510,773	26			
27	2040	2.772	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,485,066	0.2812	\$ 417,661	27			
28	2041	2.883	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 1,870,800	0.2678	\$ 501,091	28			
29	2042	2.999	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,606,247	0.2551	\$ 409,743	29			
30	2043	3.119	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 11,406,981	\$ 35,574,398	0.2429	\$ 8,642,669	30			
31	2044	3.243	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,737,317	0.2314	\$ 401,976	31			
32	2045	3.373	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 2,188,571	0.2204	\$ 482,272	32			
33	2046	3.508	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 1,879,082	0.2099	\$ 394,356	33			
34	2047	3.648	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 2,367,159	0.1999	\$ 473,130	34			
35	2048	3.794	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 735,267	\$ 2,789,835	0.1904	\$ 531,059	35			
36	2049	3.946	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 2,560,319	0.1813	\$ 464,161	36			
37	2050	4.104	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 2,198,260	0.1727	\$ 379,546	37			
38	2051	4.268	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 2,769,241	0.1644	\$ 455,362	38			
39	2052	4.439	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 2,377,638	0.1566	\$ 372,351	39			
40	2053	4.616	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 848,444	\$ 3,916,729	0.1491	\$ 584,172	40			
41	2054	4.801	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 2,571,653	0.1420	\$ 365,292	41			
42	2055	4.993	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 3,239,620	0.1353	\$ 438,261	42			
43	2056	5.193	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 2,781,500	0.1288	\$ 358,367	43			
44	2057	5.400	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 3,503,973	0.1227	\$ 429,953	44			
45	2058	5.617	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 1,167,990	\$ 6,560,032	0.1169	\$ 766,614	45			
46	2059	5.841	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 3,789,897	0.1113	\$ 421,802	46			
47	2060	6.075	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 3,253,962	0.1060	\$ 344,909	47			
48	2061	6.318	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 648,824	\$ 4,099,153	0.1009	\$ 413,806	48			
49	2062	6.571	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -												\$ 535,647	\$ 3,519,485	0.0961	\$ 338,371	49			
50	2063	6.833	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765												\$ 526,141	\$ 3,000,000	\$ -	\$ 4,374,585	\$ 29,893,067	0.0916	\$ 2,737,126	50

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 8A

Description : 168' Through Truss Vertical Lift Span (Span Drive)

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year		
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth				
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs					Electrical Repairs			
51	2064	7.107	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -													\$ 535,647	\$ 3,806,675	0.0872	\$ 331,956	51	
52	2065	7.391	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 4,795,429	0.0831	\$ 398,266	52
53	2066	7.687	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 4,117,300	0.0791	\$ 325,663	53
54	2067	7.994	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 5,186,736	0.0753	\$ 390,716	54
55	2068	8.314	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 735,267	\$ 6,112,873	0.0717	\$ 438,554	55
56	2069	8.646	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 5,609,974	0.0683	\$ 383,309	56
57	2070	8.992	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 4,816,658	0.0651	\$ 313,433	57
58	2071	9.352	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 6,067,748	0.0620	\$ 376,043	58
59	2072	9.726	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 5,209,698	0.0590	\$ 307,492	59
60	2073	10.115	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765			\$ 190,620	\$ 9,000							\$ 1,125,814	\$ -	\$ 9,000,000	\$ 11,406,981	\$ 115,381,915	0.0562	\$ 6,485,883	60
61	2074	10.520	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 5,634,809	0.0535	\$ 301,662	61
62	2075	10.940	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 7,098,406	0.0510	\$ 361,921	62
63	2076	11.378	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 6,094,609	0.0486	\$ 295,944	63
64	2077	11.833	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 7,677,636	0.0462	\$ 355,060	64
65	2078	12.306	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -			\$ 190,620	\$ 9,000										\$ 735,267	\$ 9,048,545	0.0440	\$ 398,532	65
66	2079	12.799	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 8,304,131	0.0419	\$ 348,329	66
67	2080	13.311	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 7,129,831	0.0399	\$ 284,830	67
68	2081	13.843	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 8,981,749	0.0380	\$ 341,726	68
69	2082	14.397	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 7,711,625	0.0362	\$ 279,430	69
70	2083	14.973	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765			\$ 190,620	\$ 9,000										\$ 848,444	\$ 12,703,508	0.0345	\$ 438,391	70
71	2084	15.572	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 8,340,894	0.0329	\$ 274,133	71
72	2085	16.194	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 10,507,375	0.0313	\$ 328,893	72
73	2086	16.842	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 9,021,511	0.0298	\$ 268,936	73
74	2087	17.516	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 11,364,777	0.0284	\$ 322,658	74
75	2088	18.217	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -			\$ 190,620	\$ 9,000	\$ 200,000	\$ 232,723	\$ 526,141	\$ 3,000,000	\$ -					\$ 4,694,131	\$ 85,511,056	0.0270	\$ 2,312,140	75
76	2089	18.945	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 12,292,143	0.0258	\$ 316,541	76
77	2090	19.703	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 10,553,891	0.0245	\$ 258,837	77
78	2091	20.491	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 13,295,182	0.0234	\$ 310,541	78
79	2092	21.311	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 11,415,089	0.0222	\$ 253,930	79
80	2093	22.163	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765			\$ 190,620	\$ 9,000										\$ 848,444	\$ 18,804,295	0.0212	\$ 398,384	80
81	2094	23.050	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 12,346,560	0.0202	\$ 249,116	81
82	2095	23.972	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 15,553,483	0.0192	\$ 298,878	82
83	2096	24.931	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 13,354,039	0.0183	\$ 244,394	83
84	2097	25.928	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 16,822,647	0.0174	\$ 293,213	84
85	2098	26.965	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -			\$ 190,620	\$ 9,000										\$ 735,267	\$ 19,826,476	0.0166	\$ 329,113	85
86	2099	28.044	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 18,195,375	0.0158	\$ 287,654	86
87	2100	29.165	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 15,622,337	0.0151	\$ 235,216	87
88	2101	30.332	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 19,680,117	0.0143	\$ 282,201	88
89	2102	31.545	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 16,897,120	0.0137	\$ 230,757	89
90	2103	32.807	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765			\$ 190,620	\$ 9,000	\$ 200,000	\$ 232,723					\$ 1,125,814	\$ -	\$ 9,000,000	\$ 11,406,981	\$ 374,229,415	0.0130	\$ 4,867,325	90
91	2104	34.119	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 18,275,925	0.0124	\$ 226,382	91
92	2105	35.484	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 23,022,954	0.0118	\$ 271,603	92
93	2106	36.903	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 19,767,241	0.0112	\$ 222,091	93
94	2107	38.380	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 24,901,627	0.0107	\$ 266,454	94
95	2108	39.915	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -			\$ 190,620	\$ 9,000										\$ 735,267	\$ 29,348,028	0.0102	\$ 299,078	95
96	2109	41.511	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 26,933,599	0.0097	\$ 261,403	96
97	2110	43.172	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 23,124,876	0.0092	\$ 213,750	97
98	2111	44.899	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 132,824	\$ 46,765														\$ 648,824	\$ 29,131,381	0.0088	\$ 256,448	98
99	2112	46.695	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -														\$ 535,647	\$ 25,011,865	0.0084	\$ 209,698	99
100	2113.000	48.562	\$ 240,000	\$ 25,000	\$ 10,000	\$ 194,235	\$ 66,412	\$ -			\$ 190,620	\$ 9,000			\$ 526,141	\$ 3,000,000	\$ -				\$ 4,261,408	\$ 206,944,400	0.0080	\$ 1,652,392	100	

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 17,236,300	0.071	\$ 1,223,000
50	\$ 38,871,100	0.055	\$ 2,129,200
100	\$ 68,270,400	0.050	\$ 3,439,700

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 11C
Description : 240' Through Truss Vertical Lift Span (Tower Drive)

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year		
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year				Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth			
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs							
1	2014	1.000	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 532,253	1.0000	\$ 532,253	1		
2	2015	1.040	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 699,818	0.9524	\$ 666,493	2		
3	2016	1.082	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 575,685	0.9070	\$ 522,163	3		
4	2017	1.125	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 756,923	0.8638	\$ 653,858	4		
5	2018	1.170	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -			\$ 223,583	\$ 6,976								\$ 762,812	\$ 892,382	0.8227	\$ 734,165	5		
6	2019	1.217	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 818,688	0.7835	\$ 641,463	6		
7	2020	1.265	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 673,470	0.7462	\$ 502,553	7		
8	2021	1.316	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 885,493	0.7107	\$ 629,303	8		
9	2022	1.369	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 728,425	0.6768	\$ 493,027	9		
10	2023	1.423	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710			\$ 223,583	\$ 6,976								\$ 903,461	\$ 1,285,907	0.6446	\$ 828,907	10		
11	2024	1.480	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 787,864	0.6139	\$ 483,680	11		
12	2025	1.539	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,035,901	0.5847	\$ 605,670	12		
13	2026	1.601	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 852,154	0.5568	\$ 474,511	13		
14	2027	1.665	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,120,431	0.5303	\$ 594,188	14		
15	2028	1.732	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -			\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623						\$ 1,302,435	\$ 2,255,396	0.5051	\$ 1,139,128	15		
16	2029	1.801	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,211,858	0.4810	\$ 582,924	16		
17	2030	1.873	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 996,900	0.4581	\$ 456,691	17		
18	2031	1.948	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,310,745	0.4363	\$ 571,874	18		
19	2032	2.026	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,078,247	0.4155	\$ 448,034	19		
20	2033	2.107	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710			\$ 223,583	\$ 6,976								\$ 903,461	\$ 1,903,456	0.3957	\$ 753,262	20		
21	2034	2.191	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,166,231	0.3769	\$ 439,540	21		
22	2035	2.279	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,533,387	0.3589	\$ 550,397	22		
23	2036	2.370	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,261,396	0.3418	\$ 431,208	23		
24	2037	2.465	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,658,511	0.3256	\$ 539,964	24		
25	2038	2.563	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -			\$ 223,583	\$ 6,976			\$ 506,019	\$ 4,000,000	\$ -			\$ 5,268,831	\$ 13,505,617	0.3101	\$ 4,187,658	25		
26	2039	2.666	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,793,846	0.2953	\$ 529,728	26		
27	2040	2.772	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,475,655	0.2812	\$ 415,014	27		
28	2041	2.883	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 1,940,223	0.2678	\$ 519,686	28		
29	2042	2.999	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,596,068	0.2551	\$ 407,147	29		
30	2043	3.119	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710			\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623					\$ 1,307,567	\$ -	\$ 9,500,000	\$ 12,250,651	\$ 38,205,511	0.2429	\$ 9,281,888	30
31	2044	3.243	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,726,307	0.2314	\$ 399,429	31		
32	2045	3.373	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 2,269,787	0.2204	\$ 500,169	32		
33	2046	3.508	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 1,867,174	0.2099	\$ 391,857	33		
34	2047	3.648	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 2,455,001	0.1999	\$ 490,687	34		
35	2048	3.794	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -			\$ 223,583	\$ 6,976								\$ 762,812	\$ 2,894,351	0.1904	\$ 550,954	35		
36	2049	3.946	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 2,655,330	0.1813	\$ 481,385	36		
37	2050	4.104	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 2,184,330	0.1727	\$ 377,141	37		
38	2051	4.268	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 2,872,004	0.1644	\$ 472,260	38		
39	2052	4.439	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 2,362,571	0.1566	\$ 369,991	39		
40	2053	4.616	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710			\$ 223,583	\$ 6,976								\$ 903,461	\$ 4,170,707	0.1491	\$ 622,052	40		
41	2054	4.801	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 2,555,357	0.1420	\$ 362,977	41		
42	2055	4.993	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 3,359,839	0.1353	\$ 454,524	42		
43	2056	5.193	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 2,763,874	0.1288	\$ 356,096	43		
44	2057	5.400	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 3,634,002	0.1227	\$ 445,908	44		
45	2058	5.617	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -			\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623						\$ 1,302,435	\$ 7,315,145	0.1169	\$ 854,858	45		
46	2059	5.841	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 3,930,536	0.1113	\$ 437,455	46		
47	2060	6.075	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 3,233,341	0.1060	\$ 342,723	47		
48	2061	6.318	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 4,251,268	0.1009	\$ 429,162	48		
49	2062	6.571	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 3,497,182	0.0961	\$ 336,226	49		
50	2063	6.833	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710			\$ 223,583	\$ 6,976			\$ 506,019	\$ 4,000,000	\$ -			\$ 5,409,480	\$ 36,964,866	0.0916	\$ 3,384,648	50		

Walk Bridge Replacement
CTDOT Project No. 0301-0176

Life cycle O&M Costs

Option : 11C

Description : 240' Through Truss Vertical Lift Span (Tower Drive)

Assumptions :

4%	Annual Inflation
5%	Discrete Compounding

Year	Period of Operation		Maintenance/Inspection Item and Interval																	Summary of O&M Costs - - Present Worth				Year
	Calendar Year	4% Inflation Factor (F/P)	Every 1 Year			Every 2 Years	Every 2 Years	Every 4 Years	Every 5 Years		Every 15 Years		Every 25 Years			Every 30 Years			Sum 2014 Costs	4% Inflated Costs	5% P/F Factor	Present Worth		
			Operator	Maintenance	Supplies	Mechanical & Electrical Service	Structural Inspection	Mechanical /Electrical Inspection	Structural Inspection	Structural Inspection	Mechanical Repairs	Electrical Repairs	Structural Repairs	Structural Repairs	Mechanical Repairs	Electrical Repairs	Structural Repairs	Mechanical Repairs					Electrical Repairs	
51	2064	7.107	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 3,782,552	0.0872	\$ 329,853	51
52	2065	7.391	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 4,973,383	0.0831	\$ 413,045	52
53	2066	7.687	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 4,091,208	0.0791	\$ 323,600	53
54	2067	7.994	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 5,379,211	0.0753	\$ 405,215	54
55	2068	8.314	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976										\$ 762,812	\$ 6,341,879	0.0717	\$ 454,984	55
56	2069	8.646	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 5,818,154	0.0683	\$ 397,534	56
57	2070	8.992	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 4,786,135	0.0651	\$ 311,447	57
58	2071	9.352	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 6,292,916	0.0620	\$ 389,998	58
59	2072	9.726	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 5,176,684	0.0590	\$ 305,543	59
60	2073	10.115	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710	\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623					\$ 1,307,567	\$ -	\$ 9,500,000	\$ 12,250,651	\$ 123,915,660	0.0562	\$ 6,965,584	60
61	2074	10.520	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 5,599,101	0.0535	\$ 299,751	61
62	2075	10.940	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 7,361,821	0.0510	\$ 375,351	62
63	2076	11.378	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 6,055,988	0.0486	\$ 294,068	63
64	2077	11.833	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 7,962,546	0.0462	\$ 368,236	64
65	2078	12.306	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976										\$ 762,812	\$ 9,387,531	0.0440	\$ 413,463	65
66	2079	12.799	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 8,612,289	0.0419	\$ 361,255	66
67	2080	13.311	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 7,084,649	0.0399	\$ 283,025	67
68	2081	13.843	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 9,315,052	0.0380	\$ 354,407	68
69	2082	14.397	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 7,662,757	0.0362	\$ 277,660	69
70	2083	14.973	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710	\$ 223,583	\$ 6,976										\$ 903,461	\$ 13,527,260	0.0345	\$ 466,819	70
71	2084	15.572	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 8,288,037	0.0329	\$ 272,396	71
72	2085	16.194	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 10,897,294	0.0313	\$ 341,097	72
73	2086	16.842	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 8,964,341	0.0298	\$ 267,232	73
74	2087	17.516	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 11,786,513	0.0284	\$ 334,631	74
75	2088	18.217	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623	\$ 506,019	\$ 4,000,000	\$ -					\$ 5,808,454	\$ 105,810,227	0.0270	\$ 2,861,011	75
76	2089	18.945	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 12,748,292	0.0258	\$ 328,288	76
77	2090	19.703	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 10,487,011	0.0245	\$ 257,196	77
78	2091	20.491	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 13,788,553	0.0234	\$ 322,064	78
79	2092	21.311	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 11,342,752	0.0222	\$ 252,321	79
80	2093	22.163	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710	\$ 223,583	\$ 6,976										\$ 903,461	\$ 20,023,650	0.0212	\$ 424,218	80
81	2094	23.050	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 12,268,320	0.0202	\$ 247,538	81
82	2095	23.972	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 16,130,657	0.0192	\$ 309,969	82
83	2096	24.931	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 13,269,415	0.0183	\$ 242,845	83
84	2097	25.928	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 17,446,918	0.0174	\$ 304,093	84
85	2098	26.965	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976										\$ 762,812	\$ 20,569,236	0.0166	\$ 341,442	85
86	2099	28.044	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 18,870,587	0.0158	\$ 298,329	86
87	2100	29.165	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 15,523,339	0.0151	\$ 233,725	87
88	2101	30.332	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 20,410,427	0.0143	\$ 292,673	88
89	2102	31.545	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 16,790,043	0.0137	\$ 229,294	89
90	2103	32.807	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710	\$ 223,583	\$ 6,976	\$ 300,000	\$ 239,623					\$ 1,307,567	\$ -	\$ 9,500,000	\$ 12,250,651	\$ 401,907,742	0.0130	\$ 5,227,316	90
91	2104	34.119	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 18,160,111	0.0124	\$ 224,948	91
92	2105	35.484	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 23,877,312	0.0118	\$ 281,682	92
93	2106	36.903	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 19,641,976	0.0112	\$ 220,683	93
94	2107	38.380	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 25,825,701	0.0107	\$ 276,342	94
95	2108	39.915	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976										\$ 762,812	\$ 30,447,494	0.0102	\$ 310,283	95
96	2109	41.511	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 27,933,078	0.0097	\$ 271,104	96
97	2110	43.172	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 22,978,333	0.0092	\$ 212,396	97
98	2111	44.899	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 139,878	\$ 70,710												\$ 672,902	\$ 30,212,417	0.0088	\$ 265,964	98
99	2112	46.695	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -												\$ 532,253	\$ 24,853,365	0.0084	\$ 208,369	99
100	2113	48.562	\$ 240,000	\$ 25,000	\$ 10,000	\$ 187,314	\$ 69,939	\$ -	\$ 223,583	\$ 6,976			\$ 506,019	\$ 4,000,000	\$ -				\$ 5,268,831	\$ 255,867,349	0.0080	\$ 2,043,028	100	

Interval	Lifecycle P/W	P/A	Annualized
25	\$ 18,462,900	0.071	\$ 1,310,000
50	\$ 41,676,900	0.055	\$ 2,282,900
100	\$ 73,170,200	0.050	\$ 3,686,500