

ADDITIONAL PE ALTERNATIVES (No Traffic Detour)

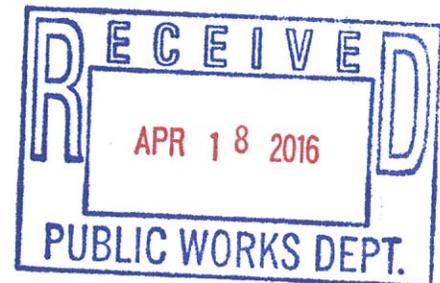
FOR THE

**REPLACEMENT OF THE  
MERRYALL ROAD BRIDGE  
BRIDGE NO. 05118  
OVER THE  
WEST ASPETUCK RIVER  
NEW MILFORD, CONNECTICUT**



April 2016

Prepared for:  
Town of New Milford  
P.O. Box 360  
New Milford, CT 06776



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## **I. DESCRIPTION**

This report summarizes additional studies performed for structure type selection prepared by WMC Consulting Engineers (WMC) for Bridge No. 05118, which carries Merryall Road over the West Aspetuck River in the Town of New Milford, Connecticut. Per discussions with the Town residents at the public information meeting (PIM) on March 31<sup>st</sup>, 2015 and follow up correspondence in April 2015, the Town of New Milford (Town) requested additional studies at the bridge.

Based on the additional studies agreement dated October 15<sup>th</sup>, 2015, WMC was asked to evaluate additional bridge types in order to identify a more cost effective and feasible solution for bridge replacement, while maintaining traffic on Merryall Road during construction. This evaluation included cost and feasibility of the additional alternatives, limited hydraulics, preparation of basic plans, costs and a summary of pros and cons. It is anticipated a subsequent PIM will be held to discuss further the alternatives presented in this report.

Based upon the existing conditions information available on the bridge, our visual observations in the field, permit requirements, hydraulic analysis and the costs developed in this report for various additional replacement options, we recommend Alternative V - New Box Culvert Upstream with "Tee" Intersection using existing Merryall Road during construction to maintain Traffic.

## **II. PROPOSED ADDITIONAL ALTERNATIVES**

To address comments received at, and shortly after the March 2015 public information meeting, this report evaluates four additional replacement alternatives assuming traffic will be maintained on Merryall Road during construction. It presents specific structure types, including estimated structure construction costs, and culminates with a recommendation for structure replacement while maintaining traffic. The four additional alternatives investigated (maintaining sequence numbering from the original PE study) are as follows:

- Alternative IV - Skewed Twin Precast Concrete Box Culverts (at the existing bridge location)
- Alternative V - New Single Box Culvert Upstream with "Tee" intersection (Merryall to Meetinghouse)
- Alternative VI - Precast Deck Unit Bridge with temporary two-lane bridge upstream
- Alternative VII - Precast Deck Unit Bridge (at the existing bridge location) using signalized alternating one-way during construction

Hydraulics - This study includes limited additional hydraulic evaluation in order to provide basic sizes, data and feasibility for comparison of the additional alternatives. This hydraulic evaluation was limited to the two box culvert alternatives as they are the more limited hydraulically and it is expected that a bridge structure configuration can be more easily made to work hydraulically. A

more detailed hydraulic analysis will be performed in the final design stage for the structure type that is ultimately selected. The two alternatives evaluated for hydraulic adequacy are as follows:

- Alternative IV - Skewed Twin Precast Concrete Box Culverts at the existing bridge location
- Alternative V - New Single Cell Box Culvert Upstream with “Tee” Intersection (Merryall to Meetinghouse)

FEMA Flood Insurance Mapping – While adequate hydraulically, culvert options could cause some minor water surface increases in the FEMA flood profiles upstream of the new structure, particularly for options where the structure is relocated upstream for intersection realignment. If an option is selected where minor increases in water surface elevations cannot be reconciled, FEMA Flood Insurance Program regulations would require submission of a letter of map revision (LOMR) to revise the Flood Insurance mapping for the area.

Construction Costs - Cost opinions projected to year 2018 construction costs, assuming 4% annual inflation with 25% for contingencies and 20% for incidentals.

**Alternative IV – Skewed Twin Precast Concrete Box Culverts (at the existing bridge location):** This alternative consists of the installation of twin 11’ x 14’ precast concrete box culverts with cast-in-place (CIP) wingwalls at the location of the existing bridge. It will require two signalized traffic construction stages in order to maintain alternating one-way traffic during construction. Six (6) foot long approach walls with simulated stone concrete formliner are supported by the box culverts. In addition, this twin box culvert will also be constructed with new open aluminum bridge rail attached to the concrete parapets. See Figure IV in Appendix A, Sheet A1 for details.

Hydraulic modeling was performed for the twin 11 foot by 14 foot precast concrete box culverts installed at the existing bridge location, with culvert inverts buried one foot below the streambed. The channel invert was graded to match the culverts and the opening slightly widened. Also, the maximum allowable skew for large culverts is less than the existing bridge skew, so the culvert inlet locations are staggered by five (5) feet in order to retain the current road/stream geometry. The twin culverts proposed are hydraulically adequate, just marginally passing the design flow. If this alternative is chosen, the size may need to be increased slightly during final design.

Based upon 2016 cost figures projected to 2018, Our opinion of the construction cost for Alternative IV, is \$2,110,000. See Appendix B for a detailed cost breakdown.

### **Pros**

- 1) Ability to maintain alternating one-way traffic on Merryall Road during construction.
- 2) Elimination of CIP abutments with precast culverts will reduce construction time over bridge options.
- 3) No deep foundations required to support structure during large scour events.
- 4) Lower Construction Cost

### Cons

- 1) Due to potential fishery impacts, replacing a structure with a natural stream bottom (bridge) with a structure that has a concrete bottom (four sided box culvert) is more recently being viewed unfavorably by permitting agencies, especially the Connecticut DEEP. Therefore, closed cell concrete box culverts will likely require a Category II Army Corps permit and may attract more scrutiny than in the past by the DEEP, requiring more detailed application and causing potentially longer review times for permit application approvals.
- 2) Large skew angle for the stream alignment requires an awkward (staggered) alignment of the box cells.
- 3) Somewhat increased construction duration due to multiple stages in order to maintain traffic and perform the bridge work.
- 4) Restricted left turns from West Meetinghouse Road to Merryall Road and right turns from Merryall Road to West Meetinghouse Road for trucks due to inadequate turning radii caused by alternating one-way traffic control devices during construction.
- 5) Increased maintenance because the twin boxes create a center pier which has a tendency to catch debris.
- 6) Poor sightlines from stop bar on Meeting House Road.

**Alternative V – New Single Cell Box Culvert Upstream with “Tee” Intersection (Merryall to Meetinghouse):** This alternative consists of permanently re-aligning Merryall Road to tee-up with West Meetinghouse Road by installing a 24’ x 11’ Precast Concrete Box Culvert with cast-in-place (CIP) wingwalls to span the West Aspetuck River upstream of the existing bridge. It will allow for existing two-way traffic to remain on Merryall Road for the construction duration while the relocated Merryall Road is constructed. Six (6) foot long approach walls with simulated stone concrete formliner are supported by the box culvert. In addition, this box culvert will also be constructed with new open aluminum bridge rail attached to the concrete parapets. See Figure V in Appendix A, Sheet A2 for details.

Hydraulic modeling was performed for single 24’x11’ box culvert proposed for this alternative. The location for the new upstream crossing is slightly outside the original survey, so estimated cross sections were created at the relocated culvert for hydraulic purposes. A single 24 foot by 11 foot box culvert with the culvert invert buried one (1) foot, was found to be adequate (but marginal) in terms of hydraulic capacity. We anticipate that a single will ultimately work at the site but it may need to be a 3-sided culvert (which come in larger sizes) with a separate precast concrete floor. If not, then a twin culvert could be substituted at this upstream location.

Our opinion of the construction cost for Alternative V, is based upon 2016 construction year cost figures projected to 2018, is \$2,100,000. See Appendix B for a detailed cost breakdown.

### Pros

- 1) Ability to maintain existing two-way traffic patterns on Merryall Road & Meetinghouse Road during construction with no additional costs.

- 2) No staging to handle traffic during construction so reduced construction duration over Alternative IV.
- 3) No deep foundations required to support structure during large scour events.
- 4) Lowest construction cost.
- 5) Relocated intersection is the safest in terms of intersection sight distances.
- 6) Elimination of cast-in-place abutments with precast box culverts should reduce construction time over bridge alternatives.
- 7) Single cell culvert should have less maintenance (than a double cell) because there is no center pier.

### Cons

- 1) Due to potential fishery impacts, replacing a structure with a natural stream bottom (bridge) with a structure that has a concrete bottom (four sided box culvert) is recently being viewed more unfavorably by permitting agencies, especially the Connecticut DEEP. Therefore, closed cell concrete box culverts will likely require a Category II Army Corps permit and may attract more scrutiny than in the past by the DEEP, requiring more detailed application and causing potentially longer review times for permit application approvals.
- 2) Could require a LOMR (Letter Of Map Revision) from FEMA if minor increases in the upstream water surface result from this structure type & location,
- 3) Single cell culvert requires a significant bypass system to handle the West Aspetuck River during construction.

**Alternative VI – Precast Deck Unit Bridge with Temporary Bridge Upstream:** This alternative consists of the same structure type (Precast Deck Units) as proposed in the original study except that it will now also include a temporary Prefabricated Temporary Bridge and temporary intersection relocation up-stream of the existing structure. This alternative will allow for existing two-way traffic to be diverted onto the temporary Merryall Road during construction of the Precast Deck Unit Bridge. Six (6) foot long approach walls with simulated stone concrete formliner are supported by the concrete deck units. In addition, this superstructure will also be constructed with new open aluminum bridge rail attached to the concrete parapets. See Figure VI in Appendix A, Sheet A3 for details.

Our opinion of the Precast Deck Unit Bridge and Temporary Bridge construction cost for Alternative VI, is based upon 2016 construction year cost figures projected to 2018, is \$5,420,000. See Appendix B for a detailed cost breakdown.

### Pros

- 1) Ability to maintain two-way traffic during construction.
- 2) May be viewed more favorably during permitting than the box culvert alternatives, which could potentially avoid delays in the permitting and environmental review process.
- 3) Can maintain stream in existing streambed with temporary cofferdams during construction.

- 4) Single span bridge should have less maintenance because there is no center pier to catch debris.

#### Cons

- 1) Bridge options are significantly more expensive than box culvert options.
- 2) Deep foundations are required for this alternative.

**Alternative VII – Precast Deck Unit Bridge using signalized alternating one-way during construction:** This alternative consists of the same structure type (Precast Deck Units) as proposed in the original study except that it will now also include signalized staged construction. It will require two traffic construction stages in order to maintain alternating one-way traffic during construction. Six (6) foot long approach walls with simulated stone concrete formliner are supported by the concrete deck units. In addition, this superstructure will also be constructed with new open aluminum bridge rail attached to the concrete parapets. See Appendix A, Sheet A4 for details.

Our opinion of the Precast Deck Unit Bridge construction cost for Alternative VI, is based upon 2016 construction year cost figures projected to 2018, is \$5,150,000. See Appendix B for a detailed cost breakdown.

#### Pros

- 1) No temporary bridge required. Ability to maintain alternating one-way traffic at the site during construction.
- 2) May be viewed more favorably during permitting than the box culvert alternatives, which could potentially avoid delays in the permitting and environmental review process.
- 3) Can maintain stream in existing streambed with temporary cofferdams during construction.
- 4) Single span bridge should have less maintenance because there is no center pier to catch debris.

#### Cons

- 1) Bridge options are significantly more expensive than box culvert options.
- 2) Longer construction duration than closing the road.
- 3) Temporary restricted left turns from West Meetinghouse Road to Merryall Road and right turns from Merryall Road to West Meetinghouse Road for trucks due to inadequate turning radii caused by alternating one-way traffic control devices.
- 4) Deep foundations are required for this alternative.

**III. COST SUMMARY & RECOMMENDATION**

<b><u>Table 5 – Superstructure Construction Cost Summary Table:</u></b>		
<b><u>Alternative:</u></b>	<b><u>Structure Type:</u></b>	<b><u>2018 Cost Opinion</u></b>
Alternative IV	Skewed Twin Precast Concrete Box Culverts at the existing bridge location	\$2,110,000
Alternative V	New Single Cell Box Culvert Upstream with “Tee” intersect (Merryall to Meetinghouse)	\$2,100,000
Alternative VI	Precast Deck Unit Bridge with temporary two-lane bridge upstream	\$5,420,000
Alternative VII	Precast Deck Unit Bridge using signalized alternating one-way during construction	\$5,150,000

**Conclusions:**

Based on the improved traffic safety achieved by teeing up the intersection between Merryall Road and Meetinghouse Road, intersection relocation alternatives are preferred. Given the additional benefit of significant cost savings, **Alternative V - New Single Cell Box Culvert Upstream with “Tee” Intersection** is the recommended alternative resulting from this additional study. This recommendation comes with the note that our recent experience with the Connecticut DEEP has been that closed cell (bottom floor) box culverts installed on significant streams and rivers are more difficult and take longer to get permitted. This is in large part due to fishery concerns created by the change from an open (natural stream) bottom river crossing (bridge) to a closed bottom (box culvert) river crossing. In addition, box culverts generally require a Category II permit from the Army Corps, and in some instances may even require an Individual permit.

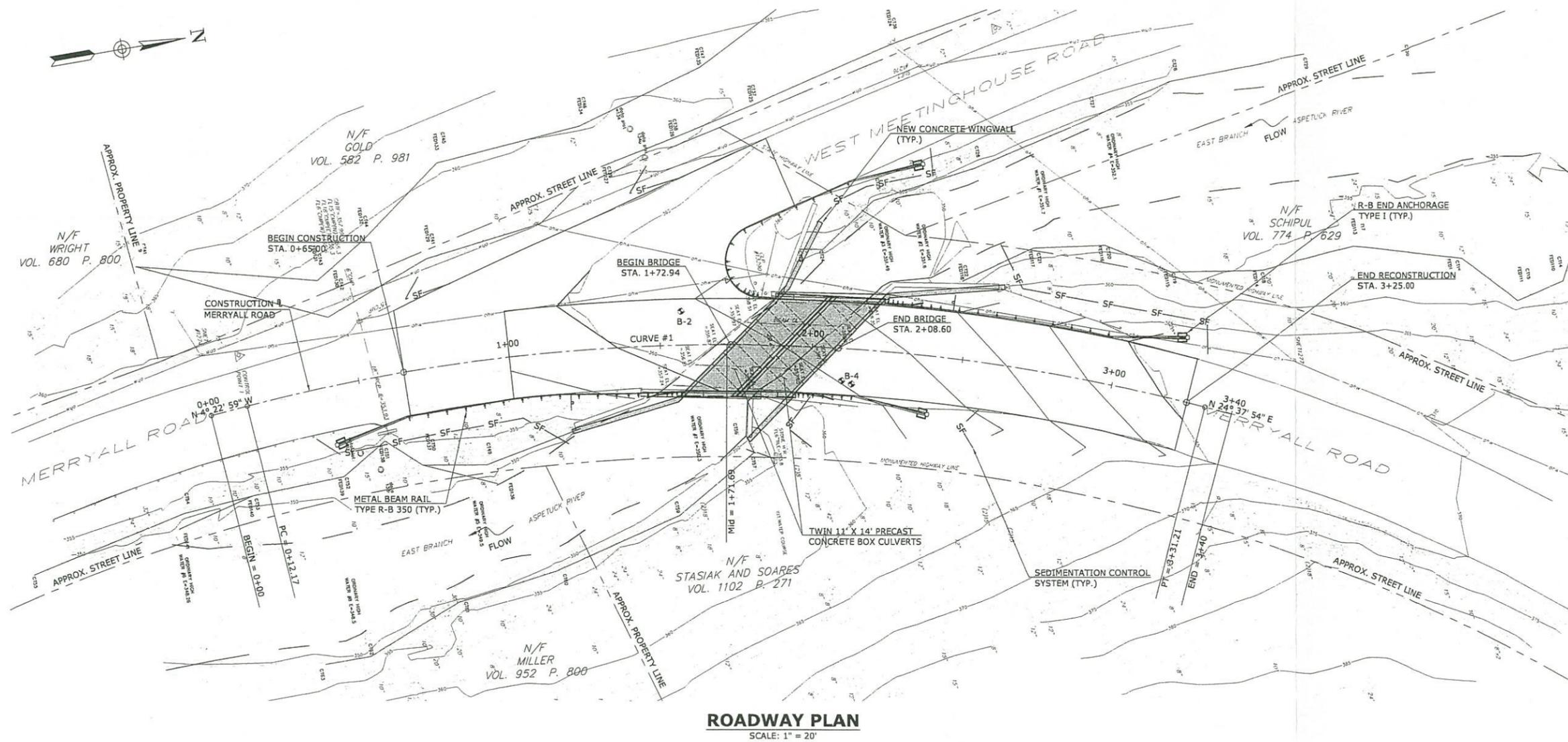
Also, it should also be noted that initial hydraulic evaluations show that the largest span single cell box culvert available is marginally adequate in terms of hydraulic capacity and, if necessary, the single cell may be substituted with a double box culvert to increase hydraulic capacity and/or to control increases in the upstream water surface profile (and avoid a LOMR from FEMA). The construction cost for a twin box culvert structure is essentially the same as a single cell, so a double cell culvert would likely be the second choice in this case.

# APPENDIX - A

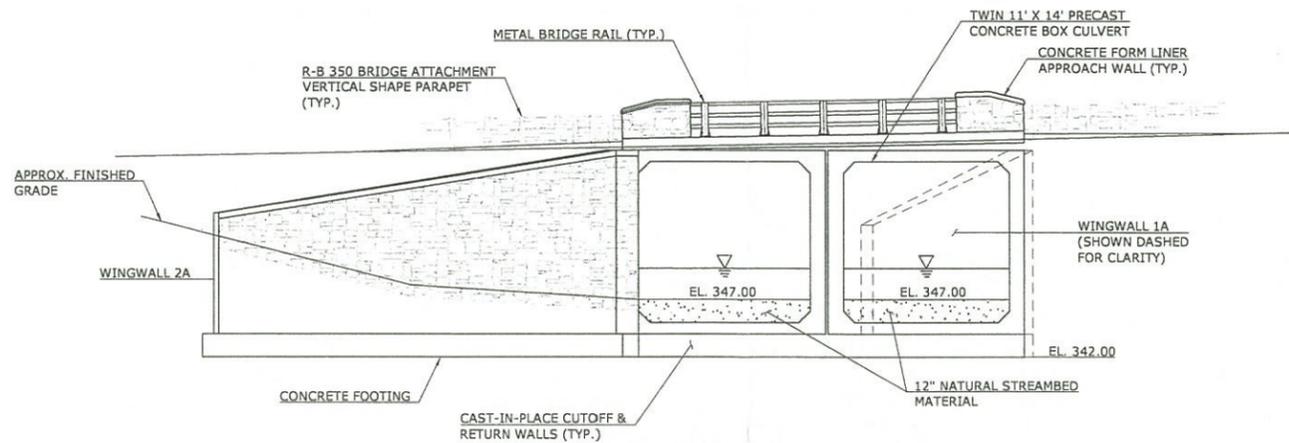
## Figures

DESIGN DATA	
ROAD CLASS	RURAL COLLECTOR
DESIGN SPEED	35 MPH
ADT (2012)	600 VPD
RADIUS (MIN.)	630 FT.
e	4%
MAXIMUM GRADE	4.10%
CROSS SLOPE	N/A
K (SAG MIN.)	49
K (CREST MIN.)	N/A

CURVE DATA	
CURVE #1	
$\Delta = 29^{\circ}00'52.56"$	
$L = 319.04'$	
$T = 163.01'$	
$R = 630'$	



**ROADWAY PLAN**  
SCALE: 1" = 20'



**STRUCTURE ELEVATION (LOOKING UPSTREAM)**  
SCALE: 1/8" = 1' - 0"

**FIGURE A1**

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE TOWN AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

**P.E. SUBMITTAL**



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87 HOLMES ROAD  
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**PREPARED FOR**  
TOWN OF NEW MILFORD  
10 MAIN STREET  
NEW MILFORD, CT. 06776

REPLACEMENT OF THE MERRYALL ROAD  
BRIDGE OVER THE  
EAST BRANCH ASPETUCK RIVER  
SKEWED TWIN PRECAST BOX CULVERT SIGNALIZED  
ALTERNATING ONE-WAY TRAFFIC ALTERNATIVE IV

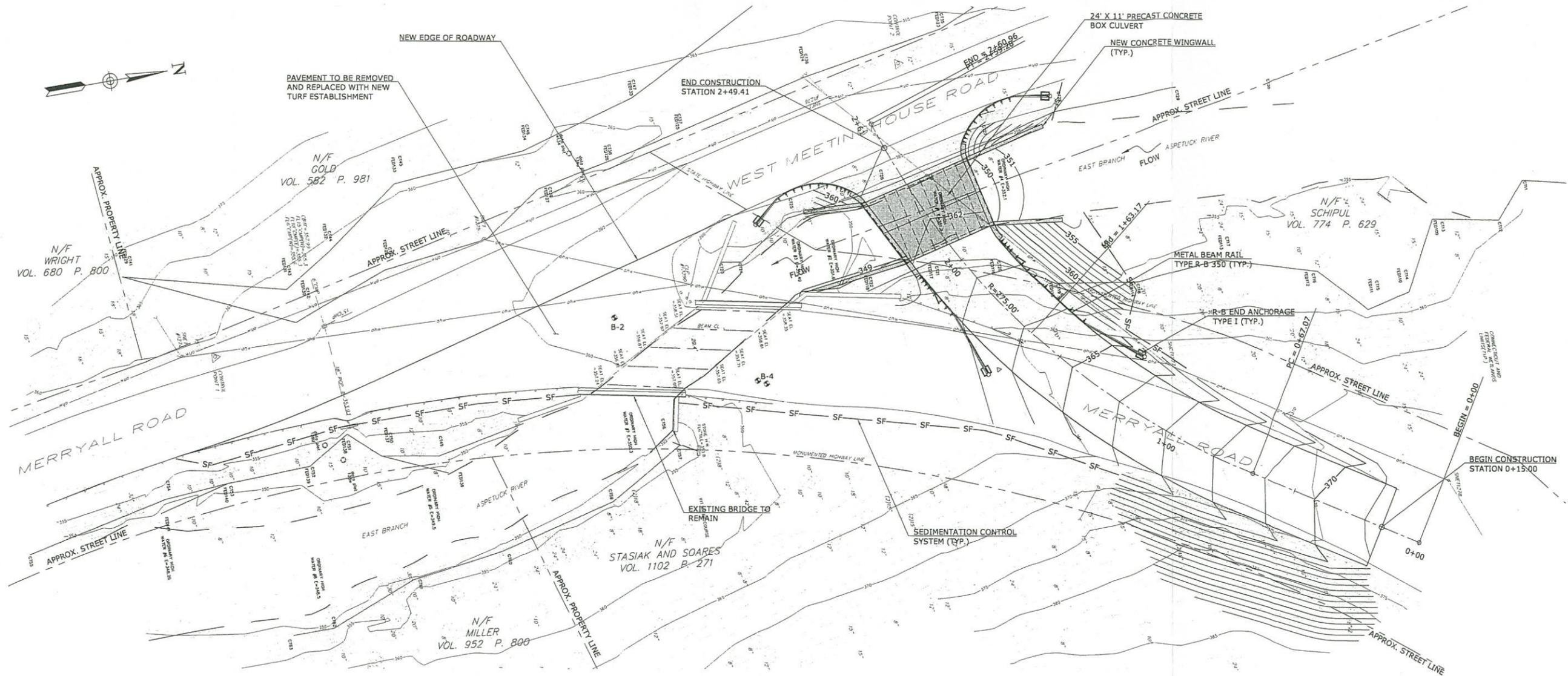
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SUPV.	J.A.C.
DESIGN	K.O.E./M.R.G.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/11/16

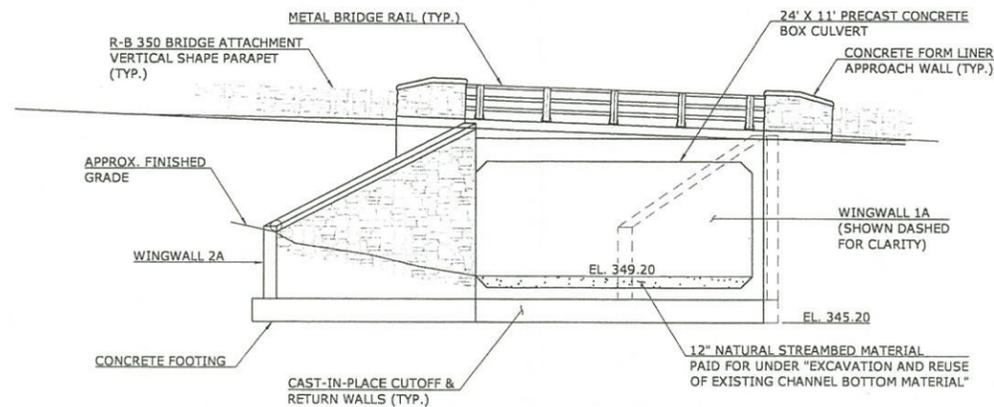
NO.	DATE	DESCRIPTION

DESIGN DATA	
ROAD CLASS	RURAL COLLECTOR
DESIGN SPEED	30 MPH
ADT (2012)	600 VPD
RADIUS (MIN.)	275 FT.
e	N/A
MAXIMUM GRADE	4.95%
CROSS SLOPE	2.08%
K (SAG MIN.)	37
K (CREST MIN.)	N/A

CURVE DATA	
CURVE #1	
$\Delta$	= 40°2'47.13"
L	= 188.32'
T	= 100.22'
R	= 275'



**ROADWAY PLAN**  
SCALE: 1" = 20'



**STRUCTURE ELEVATION (LOOKING DOWNSTREAM)**  
SCALE: 1/8" = 1' - 0"

**FIGURE A2**

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE TOWN AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
REVISIONS		

SUPV.	J.A.C.
DESIGN	K.O.E./M.R.G.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/11/16

**P.E. SUBMITTAL**



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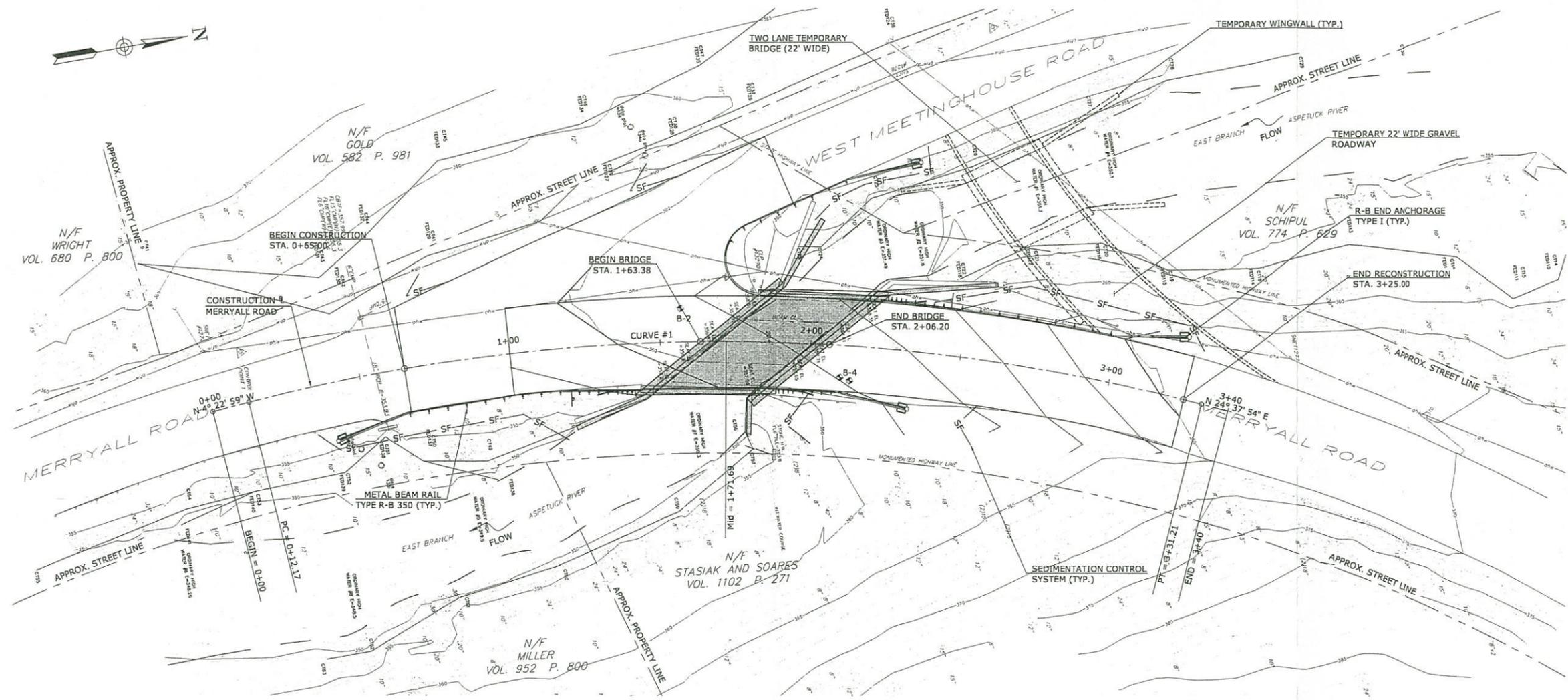
**PREPARED FOR**  
TOWN OF NEW MILFORD  
10 MAIN STREET  
NEW MILFORD, CT. 06776

REPLACEMENT OF THE MERRYALL ROAD  
BRIDGE OVER THE  
EAST BRANCH ASPETUCK RIVER  
PRECAST BOX CULVERT AT  
NEW "TEE" INTERSECTION ALTERNATIVE V

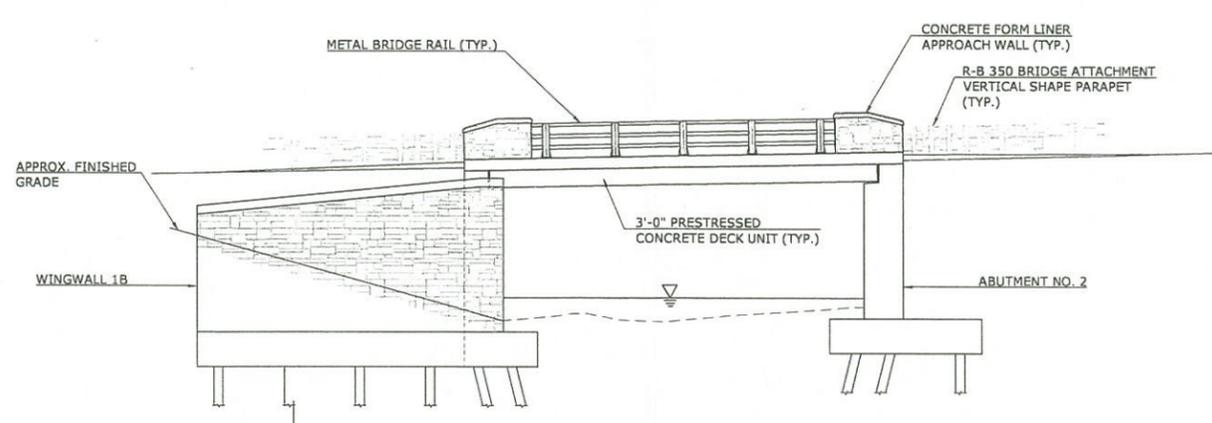
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SIZE	PROJECT	FILE NAME	NUMBER	REV

DESIGN DATA	
ROAD CLASS	RURAL COLLECTOR
DESIGN SPEED	35 MPH
ADT (2012)	600 VPD
RADIUS (MIN.)	630 FT.
e	4%
MAXIMUM GRADE	4.10%
CROSS SLOPE	N/A
K (SAG MIN.)	49
K (CREST MIN.)	N/A

CURVE DATA	
CURVE #1	
$\Delta = 29^{\circ}00'52.56"$	
$L = 319.04'$	
$T = 163.01'$	
$R = 630'$	
PI N 787982.36	
PI E 816336.84	



**ROADWAY PLAN**  
SCALE: 1" = 20'



**STRUCTURE ELEVATION**  
**(LOOKING UPSTREAM)**  
SCALE: 1/8" = 1' - 0"

**FIGURE A3**

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NO.	DATE	DESCRIPTION
REVISIONS		

**P.E. SUBMITTAL**

SUPV.	J.A.C.
DESIGN	K.O.E./M.R.G.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/11/16

**WMC**  
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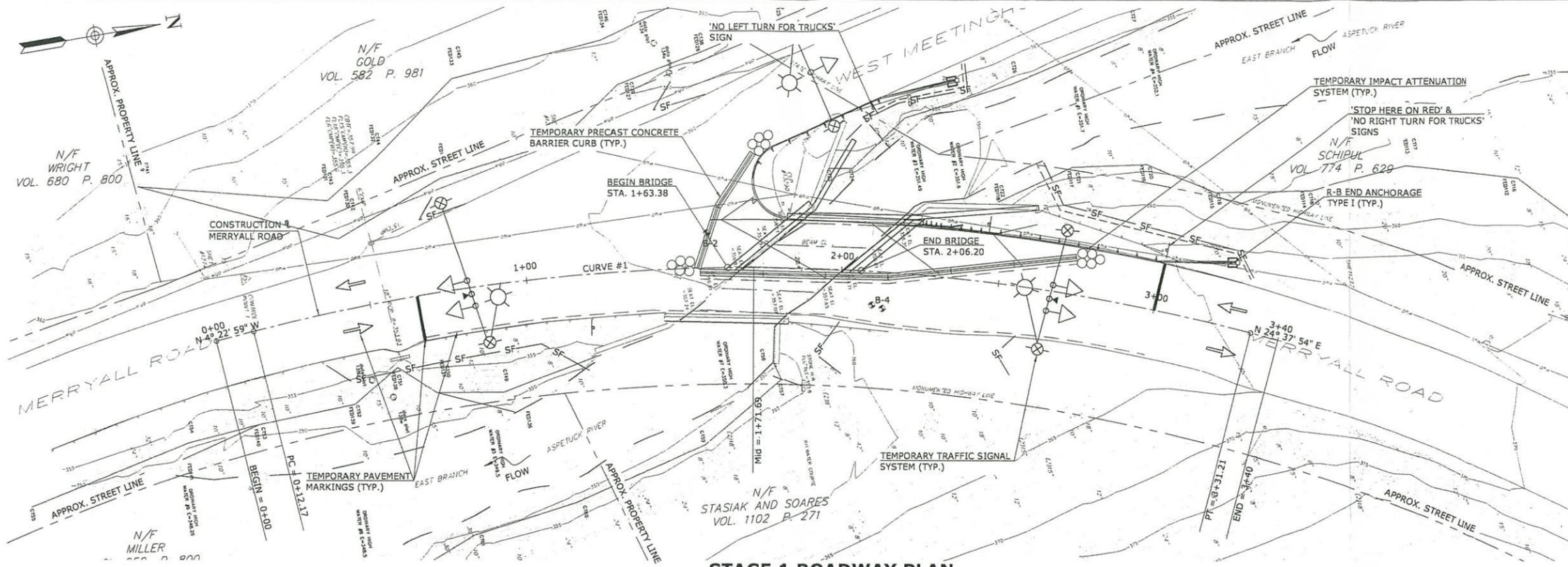
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10 MAIN STREET  
NEW MILFORD, CT. 06776

REPLACEMENT OF THE MERRYALL ROAD  
BRIDGE OVER THE  
EAST BRANCH ASPETUCK RIVER  
TWO LANE TEMPORARY BRIDGE ALTERNATIVE VI

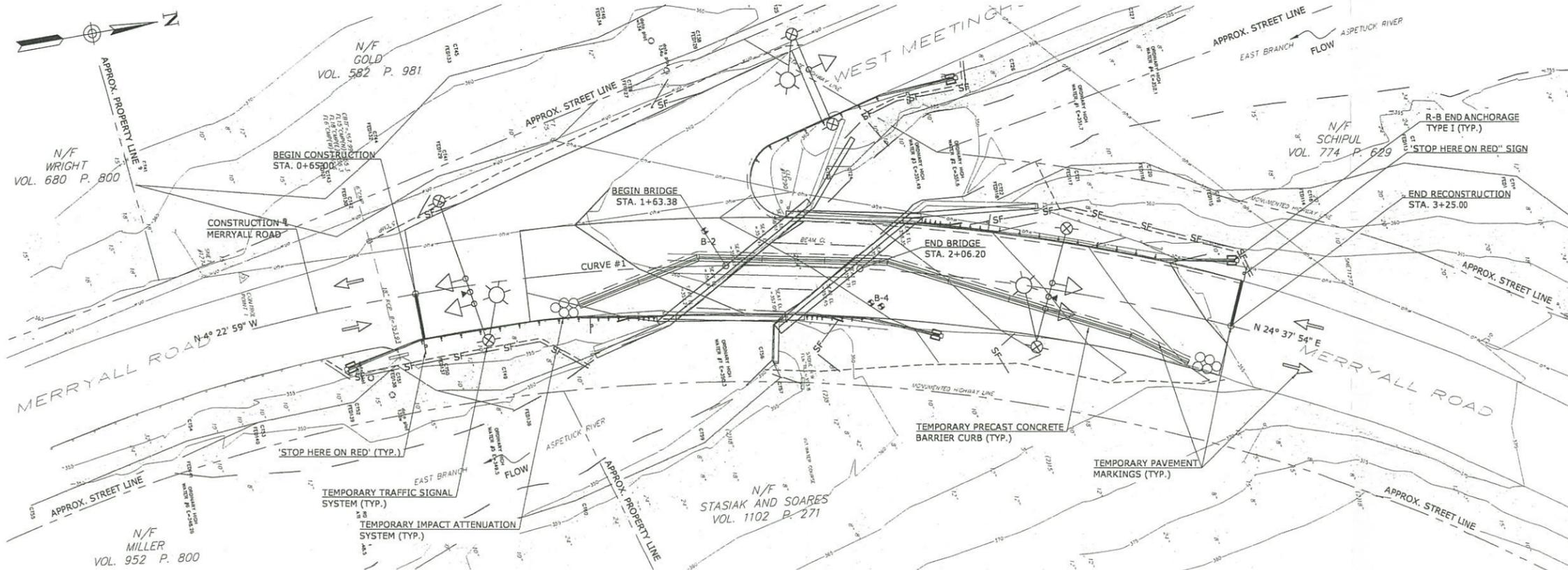
D - MERRYALL RD.	P.E. - 14094.30	SHEET
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DESIGN DATA	
ROAD CLASS	RURAL COLLECTOR
DESIGN SPEED	35 MPH
ADT (2012)	600 VPD
RADIUS (MIN.)	630 FT.
e	4%
MAXIMUM GRADE	4.10%
CROSS SLOPE	N/A
K (SAG MIN.)	49
K (CREST MIN.)	N/A

CURVE DATA	
CURVE #1	
$\Delta$	$29^{\circ}00'52.56"$
L	319.04'
T	163.01'
R	630'
PI N	787982.36
PI E	816336.84



**STAGE 1 ROADWAY PLAN**  
SCALE: 1" = 20'



**STAGE 2 ROADWAY PLAN**  
SCALE: 1" = 20'

**FIGURE A4**

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NO.	DATE	DESCRIPTION
REVISIONS		

**P.E. SUBMITTAL**

SUPV.	J.A.C.
DESIGN	K.O.E./M.R.G.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/11/16



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**PREPARED FOR**  
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10 MAIN STREET  
NEW MILFORD, CT. 06776

REPLACEMENT OF THE MERYALL ROAD  
BRIDGE OVER THE  
EAST BRANCH ASPETUCK RIVER  
PRECAST DECK UNIT BRIDGE WITH SIGNALIZED  
STAGED CONSTRUCTION ALTERNATIVE VII

D	MERYALL RD.	P.E.	14094.30		
SIZE	PROJECT	FILE NAME	NUMBER	REV	OF

**APPENDIX - B**  
**Cost Opinions**

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative IV - Precast Concrete Skewed Twin Box Culverts**

ITEM NO.	ROADWAY ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202000	Earth Excavation	C.Y.	2140	\$ 20.50	\$ 43,870.00
0202100	Rock Excavation	C.Y.	105	\$ 62.00	\$ 6,510.00
0202529	Cut Bituminous Concrete Pavement	L.F.	215	\$ 5.25	\$ 1,128.75
0209001	Formation of Subgrade	S.Y.	720	\$ 5.00	\$ 3,600.00
0210820	A Water Pollution Control (Estimated Cost)	Est	1	\$ 5,000.00	\$ 5,000.00
0212000	Subbase	C.Y.	200	\$ 60.00	\$ 12,000.00
0219001	Sedimentation Control System	L.F.	345	\$ 7.25	\$ 2,501.25
0406170	HMA S1	Ton	175	\$ 151.00	\$ 26,425.00
0406171	HMA S0.5	Ton	225	\$ 166.00	\$ 37,350.00
0406236	Material for Tack Coat	Gal.	395	\$ 9.00	\$ 3,555.00
0406267	A Milling of HMA (0" to 4")	S.Y.	490	\$ 15.00	\$ 7,350.00
0811004	Concrete Transition Curbing	L.F.	105	\$ 41.00	\$ 4,305.00
0822001	A Temporary Precast Concrete Barrier Curb	L.F.	220	\$ 46.00	\$ 10,120.00
0822002	A Relocation Temporary Precast Concrete Barrier Curb	L.F.	220	\$ 10.50	\$ 2,310.00
0910170	Metal Beam Rail (Type R-B 350)	L.F.	170	\$ 30.00	\$ 5,100.00
0910174	R-B 350 Bridge Attachment - Vertical Shape Parapet	Ea.	4	\$ 2,725.00	\$ 10,900.00
0910021	R-B End Anchorage - Type I	Ea.	4	\$ 1,250.00	\$ 5,000.00
0912499	Remove Cable Guide Rail	L.F.	260	\$ 5.75	\$ 1,495.00
0944000	Furnishing and Placing Topsoil	S.Y.	520	\$ 10.00	\$ 5,200.00
0950005	A Turf Establishment	S.Y.	520	\$ 3.00	\$ 1,560.00
0969060	A Construction Field Office (Small)	Mo.	8	\$ 2,525.00	\$ 20,200.00
0970006	Trafficperson (Municipal Police Officer)	Est.	1	\$ 2,000.00	\$ 2,000.00
0976002	Barricade Warning Light-High Intensity	Day	1440	\$ 1.00	\$ 1,440.00
0979003	Construction Barricade Type III	Ea.	8	\$ 136.00	\$ 1,088.00
1208932	Sign Face - Sheet Aluminum (Type IV Retroreflective Sheeting)	S.F.	5	\$ 73.00	\$ 365.00
1210101	4" White Epoxy Resin Pavement Marking	L.F.	550	\$ 0.40	\$ 220.00
1210102	4" Yellow Epoxy Resin Pavement Marking	L.F.	550	\$ 0.40	\$ 220.00
1220013	Construction Signs	S.F.	285	\$ 19.00	\$ 5,415.00
<b>SUBTOTAL</b>					<b>\$ 226,228.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative IV - Precast Concrete Skewed Twin Box Culverts**

ITEM NO.	STRUCTURE ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202200	Channel Excavation	C.Y.	60	\$ 31.00	\$ 1,860.00
0202216	A Excavation and Reuse of Existing Channel Bottom Materi	C.Y.	80	\$ 52.00	\$ 4,160.00
0203202	Structure Excavation - Earth (Excluding Cofferdam and Dewatering)	C.Y.	865	\$ 30.00	\$ 25,950.00
0204001	A Cofferdam and Dewatering	L.F.	460	\$ 280.00	\$ 128,800.00
0213100	Granular Fill	C.Y.	115	\$ 54.00	\$ 6,210.00
0216000	Pervious Structure Backfill	C.Y.	1960	\$ 47.00	\$ 92,120.00
0406170	HMA S1	Ton	35	\$ 151.00	\$ 5,285.00
0406171	HMA S0.5	Ton	30	\$ 166.00	\$ 4,980.00
0503001	A Removal of Superstructure	L.S.	1	\$ 80,000.00	\$ 80,000.00
0601125	A 11' X 14' Precast Concrete Box Culvert	L.F.	93	\$ 1,100.00	\$ 102,300.00
0601000	Class "A" Concrete	C.Y.	270	\$ 762.00	\$ 205,740.00
0601088	Concrete Form Liners	S.Y.	1320	\$ 21.50	\$ 28,380.00
0601201	Class "F" Concrete	C.Y.	15	\$ 1,700.00	\$ 25,500.00
0602000	Deformed Steel Bars	Lbs.	32000	\$ 1.60	\$ 51,200.00
0602006	Deformed Steel Bars-Epoxy Coated	Lbs.	2000	\$ 2.30	\$ 4,600.00
0703011	Intermediate Riprap	C.Y.	70	\$ 89.00	\$ 6,230.00
0703029	A Rounded Stone Riprap	C.Y.	35	\$ 131.00	\$ 4,585.00
0707001	Membrane Waterproofing (Woven Glass Fabric)	S.Y.	115	\$ 58.00	\$ 6,670.00
0708001	Dampproofing	S.Y.	510	\$ 15.00	\$ 7,650.00
0714050	A Temporary Earth Retaining System	S.F.	1870	\$ 28.50	\$ 53,295.00
0751827	6" C.C.M.P. Structure Underdrain	L.F.	225	\$ 18.00	\$ 4,050.00
0751828	6" C.C.M. Outlets for Underdrain	L.F.	15	\$ 31.00	\$ 465.00
0755013	Geotextile Erosion Control Class A	S.Y.	280	\$ 16.00	\$ 4,480.00
0904303	Metal Bridge Rail - Three Rail (Traffic)	L.F.	60	\$ 280.00	\$ 16,800.00
0974001	Removal of Existing Masonry	C.Y.	830	\$ 86.00	\$ 71,380.00
<b>SUBTOTAL</b>					<b>\$ 942,690.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative IV - Precast Concrete Skewed Twin Box Culverts**

ITEM NO.	LUMP SUM ITEMS	PERCENTAGE	UNIT	QUANT	UNIT PRICE	TOTAL COST
0201001	Clearing and Grubbing	2.00%	L.S.	1	\$ 23,500.00	\$ 23,500.00
0971001	A Maintenance and Protection of Traffic	4.00%	L.S.	1	\$ 47,000.00	\$ 47,000.00
0975004	A Mobilization and Project Closeout	7.50%	L.S.	1	\$ 88,000.00	\$ 88,000.00
0980001	Construction Staking	1.00%	L.S.	1	\$ 12,000.00	\$ 12,000.00
<b>SUBTOTAL</b>						<b>\$ 170,500.00</b>

<b>SUBTOTAL</b>	<b>\$ 1,339,418.00</b>
CONTINGENCY @ 25%	\$ 334,854.50
INCIDENTALS @ 20%	\$ 267,883.60
2016 TOTAL	\$ 1,942,156.10
<b>SAY 2016 TOTAL</b>	<b>\$ 1,950,000.00</b>
Projected to 2018 @ 4% per year	\$ 2,109,120.00
<b>SAY 2018 TOTAL</b>	<b>\$ 2,110,000.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative V - Precast Concrete Box Culverts with "Tee" Intersection**

ITEM NO.	ROADWAY ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202000	Earth Excavation	C.Y.	210	\$ 20.50	\$ 4,305.00
0202100	Rock Excavation	C.Y.	10	\$ 62.00	\$ 620.00
0202529	Cut Bituminous Concrete Pavement	L.F.	425	\$ 5.25	\$ 2,231.25
0207000	Barrow	C.Y.	2285	\$ 20.00	\$ 45,700.00
0209001	Formation of Subgrade	S.Y.	810	\$ 5.00	\$ 4,050.00
0210820	A Water Pollution Control (Estimated Cost)	Est	1	\$ 5,000.00	\$ 5,000.00
0212000	Subbase	C.Y.	225	\$ 60.00	\$ 13,500.00
0219001	Sedimentation Control System	L.F.	425	\$ 7.25	\$ 3,081.25
0406170	HMA S1	Ton	205	\$ 151.00	\$ 30,955.00
0406171	HMA S0.5	Ton	185	\$ 166.00	\$ 30,710.00
0406236	Material for Tack Coat	Gal.	290	\$ 9.00	\$ 2,610.00
0811004	Concrete Transition Curbing	L.F.	105	\$ 41.00	\$ 4,305.00
0822001	A Temporary Precast Concrete Barrier Curb	L.F.	220	\$ 46.00	\$ 10,120.00
0910170	Metal Beam Rail (Type R-B 350)	L.F.	50	\$ 30.00	\$ 1,500.00
0910174	R-B 350 Bridge Attachment - Vertical Shape Parapet	Ea.	4	\$ 2,725.00	\$ 10,900.00
0910021	R-B End Anchorage - Type I	Ea.	4	\$ 1,250.00	\$ 5,000.00
0912499	Remove Cable Guide Rail	L.F.	260	\$ 5.75	\$ 1,495.00
0913021	6' Chain Link Fence	L.F.	240	\$ 27.00	\$ 6,480.00
0944000	Furnishing and Placing Topsoil	S.Y.	1450	\$ 10.00	\$ 14,500.00
0950005	A Turf Establishment	S.Y.	1450	\$ 3.00	\$ 4,350.00
0969060	A Construction Field Office (Small)	Mo.	8	\$ 2,525.00	\$ 20,200.00
0970006	Trafficperson (Municipal Police Officer)	Est.	1	\$ 2,000.00	\$ 2,000.00
0976002	Barricade Warning Light-High Intensity	Day	1440	\$ 1.00	\$ 1,440.00
0979003	Construction Barricade Type III	Ea.	8	\$ 136.00	\$ 1,088.00
1208932	Sign Face - Sheet Aluminum (Type IV Retroreflective Sheeting)	S.F.	5	\$ 73.00	\$ 365.00
1210101	4" White Epoxy Resin Pavement Marking	L.F.	525	\$ 0.40	\$ 210.00
1210102	4" Yellow Epoxy Resin Pavement Marking	L.F.	525	\$ 0.40	\$ 210.00
1220013	Construction Signs	S.F.	285	\$ 19.00	\$ 5,415.00
<b>SUBTOTAL</b>					<b>\$ 232,340.50</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative V - Precast Concrete Box Culverts with "Tee" Intersection**

ITEM NO.	STRUCTURE ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202200	Channel Excavation	C.Y.	80	\$ 31.00	\$ 2,480.00
0202216	A Excavation and Reuse of Existing Channel Bottom Materi	C.Y.	85	\$ 52.00	\$ 4,420.00
0203202	Structure Excavation - Earth (Excluding Cofferdam and Dewatering)	C.Y.	870	\$ 30.00	\$ 26,100.00
0204001	A Cofferdam and Dewatering	L.F.	100	\$ 310.00	\$ 31,000.00
0204151	A Handling Water	L.S.	1	\$ 68,000.00	\$ 68,000.00
0213100	Granular Fill	C.Y.	110	\$ 54.00	\$ 5,940.00
0216000	Pervious Structure Backfill	C.Y.	700	\$ 47.00	\$ 32,900.00
0406170	HMA S1	Ton	30	\$ 151.00	\$ 4,530.00
0406171	HMA S0.5	Ton	30	\$ 166.00	\$ 4,980.00
0503001	A Removal of Superstructure	L.S.	1	\$ 80,000.00	\$ 80,000.00
0601125	A 24' X 11' Precast Concrete Box Culvert	L.F.	42.25	\$ 5,000.00	\$ 211,250.00
0601000	Class "A" Concrete	C.Y.	290	\$ 762.00	\$ 220,980.00
0601088	Concrete Form Liners	S.Y.	965	\$ 21.50	\$ 20,747.50
0601201	Class "F" Concrete	C.Y.	15	\$ 1,700.00	\$ 25,500.00
0602000	Deformed Steel Bars	Lbs.	35000	\$ 1.60	\$ 56,000.00
0602006	Deformed Steel Bars-Epoxy Coated	Lbs.	2000	\$ 2.30	\$ 4,600.00
0703011	Intermediate Riprap	C.Y.	70	\$ 89.00	\$ 6,230.00
0703029	A Rounded Stone Riprap	C.Y.	35	\$ 131.00	\$ 4,585.00
0707001	Membrane Waterproofing (Woven Glass Fabric)	S.Y.	100	\$ 58.00	\$ 5,800.00
0708001	Dampproofing	S.Y.	350	\$ 15.00	\$ 5,250.00
0714050	A Temporary Earth Retaining System	S.F.	2095	\$ 28.50	\$ 59,707.50
0751827	6" C.C.M.P. Structure Underdrain	L.F.	160	\$ 18.00	\$ 2,880.00
0751828	6" C.C.M. Outlets for Underdrain	L.F.	15	\$ 31.00	\$ 465.00
0755013	Geotextile Erosion Control Class A	S.Y.	390	\$ 16.00	\$ 6,240.00
0904303	Metal Bridge Rail - Three Rail (Traffic)	L.F.	60	\$ 280.00	\$ 16,800.00
0974001	Removal of Existing Masonry	C.Y.	120	\$ 197.00	\$ 23,640.00
<b>SUBTOTAL</b>					<b>\$ 931,025.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/2/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative V - Precast Concrete Box Culverts with "Tee" Intersection**

ITEM NO.	LUMP SUM ITEMS	PERCENTAGE	UNIT	QUANT	UNIT PRICE	TOTAL COST
0201001	Clearing and Grubbing	2.00%	L.S.	1	\$ 23,500.00	\$ 23,500.00
0971001	A Maintenance and Protection of Traffic	4.00%	L.S.	1	\$ 47,000.00	\$ 47,000.00
0975004	A Mobilization and Project Closeout	7.50%	L.S.	1	\$ 87,500.00	\$ 87,500.00
0980001	Construction Staking	1.00%	L.S.	1	\$ 12,000.00	\$ 12,000.00
<b>SUBTOTAL</b>						<b>\$ 170,000.00</b>

<b>SUBTOTAL</b>	<b>\$ 1,333,365.50</b>
CONTINGENCY @ 25%	\$ 333,341.38
INCIDENTALS @ 20%	\$ 266,673.10
2016 TOTAL	\$ 1,933,379.98
<b>SAY 2016 TOTAL</b>	<b>\$ 1,940,000.00</b>
Projected to 2018 @ 4% per year	\$ 2,098,304.00
<b>SAY 2018 TOTAL</b>	<b>\$ 2,100,000.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VI - Pressressed Deck Units with Temporary Bridge**

ITEM NO.	ROADWAY ITEMS	UNIT	QUANT.	UNIT PRICE	TOTAL COST
0202000	Earth Excavation	C.Y.	1135	\$ 20.50	\$ 23,267.50
0202100	Rock Excavation	C.Y.	55	\$ 62.00	\$ 3,410.00
0202529	Cut Bituminous Concrete Pavement	L.F.	215	\$ 5.25	\$ 1,128.75
0209001	Formation of Subgrade	S.Y.	890	\$ 5.00	\$ 4,450.00
0210820	A Water Pollution Control (Estimated Cost)	Est	1	\$ 5,000.00	\$ 5,000.00
0212000	Subbase	C.Y.	250	\$ 60.00	\$ 15,000.00
0219001	Sedimentation Control System	L.F.	345	\$ 7.25	\$ 2,501.25
0406170	HMA S1	Ton	170	\$ 151.00	\$ 25,670.00
0406171	HMA S0.5	Ton	215	\$ 166.00	\$ 35,690.00
0406236	Material for Tack Coat	Gal.	410	\$ 9.00	\$ 3,690.00
0406267	A Milling of HMA (0" to 4")	S.Y.	490	\$ 15.00	\$ 7,350.00
0811004	Concrete Transition Curbing	L.F.	105	\$ 41.00	\$ 4,305.00
0822001	A Temporary Precast Concrete Barrier Curb	L.F.	240	\$ 46.00	\$ 11,040.00
0822002	A Relocation Temporary Precast Concrete Barrier Curb	L.F.	240	\$ 10.50	\$ 2,520.00
0910170	Metal Beam Rail (Type R-B 350)	L.F.	170	\$ 30.00	\$ 5,100.00
0910174	R-B 350 Bridge Attachment - Vertical Shape Parapet	Ea.	4	\$ 2,725.00	\$ 10,900.00
0910021	R-B End Anchorage - Type I	Ea.	4	\$ 1,250.00	\$ 5,000.00
0912499	Remove Cable Guide Rail	L.F.	260	\$ 5.75	\$ 1,495.00
0944000	Furnishing and Placing Topsoil	S.Y.	520	\$ 10.00	\$ 5,200.00
0950005	A Turf Establishment	S.Y.	520	\$ 3.00	\$ 1,560.00
0969060	A Construction Field Office (Small)	Mo.	8	\$ 2,525.00	\$ 20,200.00
0970006	Trafficperson (Municipal Police Officer)	Est.	1	\$ 2,000.00	\$ 2,000.00
0976002	Barricade Warning Light-High Intensity	Day	1440	\$ 1.00	\$ 1,440.00
0979003	Construction Barricade Type III	Ea.	8	\$ 136.00	\$ 1,088.00
1208932	Sign Face - Sheet Aluminum (Type IV Retroreflective Sheeting)	S.F.	5	\$ 73.00	\$ 365.00
1210101	4" White Epoxy Resin Pavement Marking	L.F.	550	\$ 0.40	\$ 220.00
1210102	4" Yellow Epoxy Resin Pavement Marking	L.F.	550	\$ 0.40	\$ 220.00
1220013	Construction Signs	S.F.	285	\$ 19.00	\$ 5,415.00
<b>SUBTOTAL</b>					<b>\$ 205,225.50</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VI - Pressressed Deck Units with Temporary Bridge**

ITEM NO.	STRUCTURE ITEMS	UNIT	QUANT.	UNIT PRICE	TOTAL COST
0202200	Channel Excavation	C.Y.	60	\$ 31.00	\$ 1,860.00
0202216	A Excavation and Reuse of Existing Channel Bottom Material	C.Y.	45	\$ 52.00	\$ 2,340.00
0203202	Structure Excavation - Earth (Excluding Cofferdam and Dewatering)	C.Y.	1795	\$ 30.00	\$ 53,850.00
0204001	A Cofferdam and Dewatering	L.F.	345	\$ 280.00	\$ 96,600.00
0213100	Granular Fill	C.Y.	140	\$ 54.00	\$ 7,560.00
0216000	Pervious Structure Backfill	C.Y.	5040	\$ 47.00	\$ 236,880.00
0406170	HMA S1	Ton	35	\$ 151.00	\$ 5,285.00
0406171	HMA S0.5	Ton	75	\$ 166.00	\$ 12,450.00
0503001	A Removal of Superstructure	L.S.	1	\$ 80,000.00	\$ 80,000.00
0502195	A Temporary Bridge	Month	6	\$ 6,000.00	\$ 36,000.00
0514203	A Prestressed Deck Units (3'-0" x 1'-6")	L.F.	407	\$ 240.00	\$ 97,680.00
0520036	A Asphaltic Plug Expansion Joint System	C.F.	90	\$ 310.00	\$ 27,900.00
0521021	Steel-Laminated Elastomeric Bearings	C.I.	7395	\$ 3.00	\$ 22,185.00
0601000	Class "A" Concrete	C.Y.	635	\$ 762.00	\$ 483,870.00
0601088	Concrete Form Liners	S.Y.	1125	\$ 21.50	\$ 24,187.50
0601201	Class "F" Concrete	C.Y.	10	\$ 1,700.00	\$ 17,000.00
0602000	Deformed Steel Bars	Lbs.	76000	\$ 1.60	\$ 121,600.00
0602006	Deformed Steel Bars-Epoxy Coated	Lbs.	1595	\$ 2.30	\$ 3,668.50
0702026	A Micropiles	Ea.	106	\$ 9,500.00	\$ 1,007,000.00
0702027	A Verification Test for Micropiles	Ea.	2	\$ 25,665.00	\$ 51,330.00
0702028	A Proof Test for Micropiles	Ea.	5	\$ 10,036.00	\$ 50,180.00
0702029	A Micropile Length Adjustment	L.F.	560	\$ 200.00	\$ 112,000.00
0703011	Intermediate Riprap	C.Y.	70	\$ 89.00	\$ 6,230.00
0703029	A Rounded Stone Riprap	C.Y.	35	\$ 131.00	\$ 4,585.00
0707001	Membrane Waterproofing (Woven Glass Fabric)	S.Y.	280	\$ 58.00	\$ 16,240.00
0708001	Dampproofing	S.Y.	425	\$ 15.00	\$ 6,375.00
0714050	A Temporary Earth Retaining System	S.F.	4405	\$ 28.50	\$ 125,542.50
0751827	6" C.C.M.P. Structure Underdrain	L.F.	225	\$ 18.00	\$ 4,050.00
0751828	6" C.C.M. Outlets for Underdrain	L.F.	15	\$ 31.00	\$ 465.00
0755013	Geotextile Erosion Control Class A	S.Y.	390	\$ 16.00	\$ 6,240.00
0904303	Metal Bridge Rail - Three Rail (Traffic)	L.F.	60	\$ 280.00	\$ 16,800.00
0974001	Removal of Existing Masonry	C.Y.	830	\$ 86.00	\$ 71,380.00
<b>SUBTOTAL</b>					<b>\$ 2,809,333.50</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VI - Pressressed Deck Units with Temporary Bridge**

ITEM NO.	LUMP SUM ITEMS	PERCENTAGE	UNIT	QUANT.	UNIT PRICE	TOTAL COST
0201001	Clearing and Grubbing	2.00%	L.S.	1	\$ 60,500.00	\$ 60,500.00
0971001	A Maintenance and Protection of Traffic	4.00%	L.S.	1	\$ 121,000.00	\$ 121,000.00
0975004	A Mobilization and Project Closeout	7.50%	L.S.	1	\$ 226,500.00	\$ 226,500.00
0980001	Construction Staking	1.00%	L.S.	1	\$ 30,500.00	\$ 30,500.00
<b>SUBTOTAL</b>						<b>\$ 438,500.00</b>

<b>SUBTOTAL</b>	<b>\$ 3,453,059.00</b>
CONTINGENCY @ 25%	\$ 863,264.75
INCIDENTALS @ 20%	\$ 690,611.80
2016 TOTAL	\$ 5,006,935.55
<b>SAY 2016 TOTAL</b>	<b>\$ 5,010,000.00</b>
Projected to 2018 @ 4% per year	\$ 5,418,816.00
<b>SAY 2018 TOTAL</b>	<b>\$ 5,420,000.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VII - Pressressed Deck Units with Alternating Traffic**

ITEM NO.	ROADWAY ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202000	Earth Excavation	C.Y.	1135	\$ 20.00	\$ 22,700.00
0202100	Rock Excavation	C.Y.	55	\$ 50.00	\$ 2,750.00
0202529	Cut Bituminous Concrete Pavement	L.F.	215	\$ 7.00	\$ 1,505.00
0209001	Formation of Subgrade	S.Y.	685	\$ 3.40	\$ 2,329.00
0210820	A Water Pollution Control (Estimated Cost)	Est	1	\$ 5,000.00	\$ 5,000.00
0212000	Subbase	C.Y.	190	\$ 69.00	\$ 13,110.00
0219001	Sedimentation Control System	L.F.	345	\$ 5.30	\$ 1,828.50
0406170	HMA S1	Ton	170	\$ 168.00	\$ 28,560.00
0406171	HMA S0.5	Ton	215	\$ 141.00	\$ 30,315.00
0406236	Material for Tack Coat	Gal.	390	\$ 9.00	\$ 3,510.00
0406267	A Milling of HMA (0" to 4")	S.Y.	490	\$ 33.00	\$ 16,170.00
0811004	Concrete Transition Curbing	L.F.	105	\$ 31.00	\$ 3,255.00
0822001	A Temporary Precast Concrete Barrier Curb	L.F.	240	\$ 29.00	\$ 6,960.00
0822002	A Relocation Temporary Precast Concrete Barrier Curb	L.F.	240	\$ 10.50	\$ 2,520.00
0910170	Metal Beam Rail (Type R-B 350)	L.F.	170	\$ 32.00	\$ 5,440.00
0910174	R-B 350 Bridge Attachment - Vertical Shape Parapet	Ea.	4	\$ 2,600.00	\$ 10,400.00
0910021	R-B End Anchorage - Type I	Ea.	4	\$ 1,250.00	\$ 5,000.00
0912499	Remove Cable Guide Rail	L.F.	260	\$ 5.00	\$ 1,300.00
0944000	Furnishing and Placing Topsoil	S.Y.	520	\$ 7.30	\$ 3,796.00
0950005	A Turf Establishment	S.Y.	520	\$ 2.00	\$ 1,040.00
0969060	A Construction Field Office (Small)	Mo.	8	\$ 2,130.00	\$ 17,040.00
0970006	Trafficperson (Municipal Police Officer)	Est.	1	\$ 2,000.00	\$ 2,000.00
0976002	Barricade Warning Light-High Intensity	Day	1440	\$ 1.00	\$ 1,440.00
0979003	Construction Barricade Type III	Ea.	8	\$ 133.00	\$ 1,064.00
1118101	Temporary Signalization	L.S.	1	\$ 7,200.00	\$ 7,200.00
1208932	Sign Face – Sheet Aluminum (Type IV Retroreflective Sheeting)	S.F.	5	\$ 73.00	\$ 365.00
1209005	Painted Pavement Markings 4" White	L.F.	765	\$ 0.95	\$ 726.75
					\$ -
1210101	4" White Epoxy Resin Pavement Marking	L.F.	550	\$ 0.70	\$ 385.00
1210102	4" Yellow Epoxy Resin Pavement Marking	L.F.	550	\$ 0.90	\$ 495.00
1220013	Construction Signs	S.F.	285	\$ 21.00	\$ 5,985.00
1802001	Type A Impact Attenuation Module 200 lb.	Ea.	3	\$ 392.00	\$ 1,176.00
1802010	Type A Impact Attenuation Module 400 lb.	Ea.	6	\$ 381.00	\$ 2,286.00
1802020	Type A Impact Attenuation Module 700 lb.	Ea.	6	\$ 364.00	\$ 2,184.00
1802030	Type A Impact Attenuation Module 1400 lb.	Ea.	6	\$ 412.00	\$ 2,472.00
1802040	Type A Impact Attenuation Module 2100 lb.	Ea.	6	\$ 416.00	\$ 2,496.00
<b>SUBTOTAL</b>					<b>\$ 214,803.25</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VII - Pressressed Deck Units with Alternating Traffic**

ITEM NO.	STRUCTURE ITEMS	UNIT	QUANT	UNIT PRICE	TOTAL COST
0202200	Channel Excavation	C.Y.	60	\$ 25.00	\$ 1,500.00
0202216	A Excavation and Reuse of Existing Channel Bottom Materi	C.Y.	45	\$ 57.00	\$ 2,565.00
0203202	Structure Excavation - Earth (Excluding Cofferdam and Dewatering)	C.Y.	1795	\$ 35.00	\$ 62,825.00
0204001	A Cofferdam and Dewatering	L.F.	295	\$ 280.00	\$ 82,600.00
0213100	Granular Fill	C.Y.	140	\$ 52.00	\$ 7,280.00
0216000	Pervious Structure Backfill	C.Y.	2665	\$ 56.00	\$ 149,240.00
0406170	HMA S1	Ton	40	\$ 168.00	\$ 6,720.00
0406171	HMA S0.5	Ton	35	\$ 141.00	\$ 4,935.00
0503001	A Removal of Superstructure	L.S.	1	\$ 55,000.00	\$ 55,000.00
0514203	A Prestressed Deck Units (3'-0" x 1'-6")	L.F.	407	\$ 240.00	\$ 97,680.00
0520036	A Asphaltic Plug Expansion Joint System	C.F.	90	\$ 310.00	\$ 27,900.00
0521021	Steel-Laminated Elastomeric Bearings	C.I.	7395	\$ 3.00	\$ 22,185.00
0601000	Class "A" Concrete	C.Y.	635	\$ 785.00	\$ 498,475.00
0601088	Concrete Form Liners	S.Y.	1125	\$ 41.00	\$ 46,125.00
0601201	Class "F" Concrete	C.Y.	15	\$ 900.00	\$ 13,500.00
0602000	Deformed Steel Bars	Lbs.	76000	\$ 1.40	\$ 106,400.00
0602006	Deformed Steel Bars-Epoxy Coated	Lbs.	1990	\$ 2.50	\$ 4,975.00
0702026	A Micropiles	Ea.	106	\$ 9,500.00	\$ 1,007,000.00
0702027	A Verification Test for Micropiles	Ea.	2	\$ 25,665.00	\$ 51,330.00
0702028	A Proof Test for Micropiles	Ea.	5	\$ 10,036.00	\$ 50,180.00
0702029	A Micropile Length Adjustment	L.F.	560	\$ 200.00	\$ 112,000.00
0703011	Intermediate Riprap	C.Y.	70	\$ 70.00	\$ 4,900.00
0703029	A Rounded Stone Riprap	C.Y.	35	\$ 97.00	\$ 3,395.00
0707001	Membrane Waterproofing (Woven Glass Fabric)	S.Y.	135	\$ 36.00	\$ 4,860.00
0708001	Dampproofing	S.Y.	425	\$ 17.00	\$ 7,225.00
0714050	A Temporary Earth Retaining System	S.F.	1870	\$ 9.00	\$ 16,830.00
0751827	6" C.C.M.P. Structure Underdrain	L.F.	225	\$ 20.00	\$ 4,500.00
0751828	6" C.C.M. Outlets for Underdrain	L.F.	15	\$ 62.00	\$ 930.00
0755013	Geotextile Erosion Control Class A	S.Y.	390	\$ 6.00	\$ 2,340.00
0904303	Metal Bridge Rail - Three Rail (Traffic)	L.F.	60	\$ 250.00	\$ 15,000.00
0974001	Removal of Existing Masonry	C.Y.	830	\$ 225.00	\$ 186,750.00
<b>SUBTOTAL</b>					<b>\$ 2,657,145.00</b>

Town of New Milford  
 Merryall Road over West Aspetuck River  
 ConnDOT Bridge No. 05118  
 WMC Reference No.: 14094.10

Date: 3/9/2016  
 Prepared By: S.M.M.  
 State Proj. No:  
 Federal Aid Project No.:

**PD Cost Option**  
**Alternative VII - Pressressed Deck Units with Alternating Traffic**

ITEM NO.	LUMP SUM ITEMS	PERCENTAGE	UNIT	QUANT	UNIT PRICE	TOTAL COST
0201001	Clearing and Grubbing	2.00%	L.S.	1	\$ 57,500.00	\$ 57,500.00
0971001	A Maintenance and Protection of Traffic	4.00%	L.S.	1	\$ 115,000.00	\$ 115,000.00
0975004	A Mobilization and Project Closeout	7.50%	L.S.	1	\$ 215,500.00	\$ 215,500.00
0980001	Construction Staking	1.00%	L.S.	1	\$ 29,000.00	\$ 29,000.00
<b>SUBTOTAL</b>						<b>\$ 417,000.00</b>

<b>SUBTOTAL</b>	<b>\$ 3,288,948.25</b>
CONTINGENCY @ 25%	\$ 822,237.06
INCIDENTALS @ 20%	\$ 657,789.65
2016 TOTAL	\$ 4,768,974.96
<b>SAY 2016 TOTAL</b>	<b>\$ 4,770,000.00</b>
Projected to 2018 @ 4% per year	\$ 5,159,232.00
<b>SAY 2018 TOTAL</b>	<b>\$ 5,160,000.00</b>