

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

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STANDARDS LIST

| | | |
|------|---|------------|
| B-5 | SLOPE GRADING, EMBANKMENTS, MUCK | 06-01-1994 |
| B-71 | STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES | 07-08-2005 |
| D-3 | TREATED GUTTERS | 06-01-1994 |
| T-1 | TRAFFIC CONTROL GENERAL NOTES | 08-06-2012 |
| T-10 | CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING | 08-06-2012 |
| T-17 | TRAFFIC CONTROL MISCELLANEOUS DETAILS | 08-06-2012 |
| T-28 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-29 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-30 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-31 | CONSTRUCTION SIGN DETAILS | 08-06-2012 |
| T-40 | DELINEATORS AND MILEPOSTS | 01-02-2013 |
| G-1 | STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS) | 01-03-2000 |
| G-1D | STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN) | 01-03-2000 |

STRUCTURES DETAILS

| | | |
|-----------|----------------------------|------------|
| SD-501.00 | CONCRETE DETAILS AND NOTES | 05-07-2000 |
|-----------|----------------------------|------------|

HYDROLOGIC DATA Date: JUNE 2012
 DRAINAGE AREA : 6.82 sq. mi.
 CHARACTER OF TERRAIN : HILLY TO MOUNTAINOUS
 STREAM CHARACTERISTICS : STRAIGHT WITH LARGE RADIUS BENDS
 NATURE OF STREAMBED : RIVER COBBLES WITH BOULDERS

PEAK FLOW DATA

| | | | |
|----------|---------|---------|-------|
| Q 2.33 = | 250 cfs | Q 50 = | 900 |
| Q 10 = | 560 | Q 100 = | 1,050 |
| Q 25 = | 750 | Q 500 = | N/A |

DATE OF FLOOD OF RECORD : UNKNOWN
 ESTIMATED DISCHARGE : UNKNOWN
 WATER SURFACE ELEV. : UNKNOWN
 NATURAL STREAM VELOCITY : @ Q25 = 5.5 fps NEAR BRIDGE LOCATION
 ICE CONDITIONS : MODERATE
 DEBRIS : MODERATE
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? YES
 IS ORDINARY RISE RAPID? YES
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
 IF YES, DESCRIBE :

WATERSHED STORAGE : < 0.25% HEADWATERS:
 UNIFORM : X
 IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : SINGLE SPAN ROLLED BEAM WITH TIMBER DECK
 YEAR BUILT : 1919
 CLEAR SPAN(NORMAL TO STREAM): 17'
 VERTICAL CLEARANCE ABOVE STREAMBED: 12'
 WATERWAY OF FULL OPENING: 250 sq. ft.
 DISPOSITION OF STRUCTURE : STRUCTURE REPLACEMENT
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : UNKNOWN

WATER SURFACE ELEVATIONS AT:

| | | | |
|---------|--------|------------|----------|
| Q2.33 = | 463.8' | VELOCITY = | 7.8 fps |
| Q10 = | 465.8' | " | 10.0 fps |
| Q25 = | 466.7' | " | 10.4 fps |
| Q50 = | 467.4' | " | 11.0 fps |
| Q100 = | 468.0' | " | 11.6 fps |

LONG TERM STREAMBED CHANGES : NONE NOTED

IS THE ROADWAY OVERTOPPED BELOW Q100: NO
 FREQUENCY: N/A
 RELIEF ELEVATION: 476.6'
 DISCHARGE OVER ROAD @Q100: 0

UPSTREAM STRUCTURE

TOWN: FAIRFIELD DISTANCE: 5,200' +/-
 HIGHWAY #: S0792 - TH 2 STRUCTURE #: ----
 CLEAR SPAN: UNKNOWN CLEAR HEIGHT: ----
 YEAR BUILT: UNKNOWN FULL WATERWAY: ----
 STRUCTURE TYPE: CULVERT

DOWNSTREAM STRUCTURE

TOWN: FAIRFIELD DISTANCE: 10,700' +/-
 HIGHWAY #: TH 29 STRUCTURE #: BR 49
 CLEAR SPAN: UNKNOWN CLEAR HEIGHT: UNKNOWN
 YEAR BUILT: UNKNOWN FULL WATERWAY: UNKNOWN
 STRUCTURE TYPE: UNKNOWN

LRFR LOAD RATING FACTORS

| LOADING LEVELS | TRUCK | | | | | | |
|----------------|---|-------|-----|--------|---------|---------|----------|
| | H-20 | HL-93 | 3S2 | 6 AXLE | 3A. STR | 4A. STR | 5A. SEMI |
| TONNAGE | | | | | | | |
| INVENTORY | | | | | | | |
| POSTING | | | | | | | |
| OPERATING | | | | | | | |
| COMMENTS: | LOAD RATING TO BE COMPLETED BY FABRICATOR | | | | | | |

AS BUILT "REBAR" DETAIL

| LEVEL I | LEVEL II | LEVEL III |
|---------|----------|-----------|
| TYPE: | TYPE: | TYPE: |
| GRADE: | GRADE: | GRADE: |

PROPOSED STRUCTURE

STRUCTURE TYPE: RIGIFIED FIBER REINFORCED POLYMER TUBULAR ARCH (RFTA)

CLEAR SPAN(NORMAL TO STREAM): 31.3'
 VERTICAL CLEARANCE ABOVE STREAMBED: 15.5' AT CREST OF ARCH
 WATERWAY OF FULL OPENING: 398 sq. ft.

WATER SURFACE ELEVATIONS AT:

| | | | |
|---------|--------|-----------|---------|
| Q2.33 = | 464.0' | VELOCITY= | 3.2 fps |
| Q10 = | 465.6' | " | 4.8 fps |
| Q25 = | 466.2' | " | 5.5 fps |
| Q50 = | 466.7' | " | 6.1 fps |
| Q100 = | 467.1' | " | 6.6 fps |

IS THE ROADWAY OVERTOPPED BELOW Q100: NO
 FREQUENCY: N/A
 RELIEF ELEVATION: 480.7'
 DISCHARGE OVER ROAD @Q100: 0

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 474.0' AT CREST OF ARCH
 VERTICAL CLEARANCE: @ Q25 = 7.8' AT CREST OF ARCH

SCOUR: CONTRACTION SCOUR CALCULATED AS 0.0 FOR 100-YEAR STORM EVENT
 REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 14 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 7 cfs DEPTH = 0.5 FT
 ORDINARY HIGH WATER: 107 cfs DEPTH = 2.0 FT

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: NOT REQUIRED
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

SEE CHANNEL CROSS SECTIONS FOR ESTIMATED OHW

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

| | |
|--|--------------------------|
| 1. DESIGN LIVE LOAD | HL-93 |
| 2. FUTURE PAVEMENT | dp: --- |
| 3. DESIGN SPAN | L: 36.18 FT |
| 4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) | Δ: --- |
| 5. PRESTRESSING STRAND | fy: --- |
| 6. PRESTRESSED CONCRETE STRENGTH | f'c: --- |
| 7. PRESTRESSED CONCRETE RELEASE STRENGTH | f'ci: --- |
| 8. CONCRETE, HIGH PERFORMANCE CLASS AA | f'c: --- |
| 9. CONCRETE, HIGH PERFORMANCE CLASS A | f'c: --- |
| 10. CONCRETE, HIGH PERFORMANCE CLASS B | f'c: 3.5 KSI |
| 11. CONCRETE, CLASS C | f'c: --- |
| 12. REINFORCING STEEL | fy: 60 KSI |
| 13. STRUCTURAL STEEL AASHTO M270 | fy: --- |
| 14. SOIL UNIT WEIGHT | γ: 0.125 KCF |
| 15. NOMINAL BEARING RESISTANCE OF SOIL | qn: 22.2 KSF |
| 16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | φ: 0.45 |
| 17. NOMINAL BEARING RESISTANCE OF ROCK | qn: --- |
| 18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | φ: --- |
| 19. NOMINAL AXIAL PILE RESISTANCE | qp: --- |
| 20. PILE YIELD STRENGTH ASTM A572 | fy: --- |
| 21. PILE SIZE | Lp: --- |
| 22. EST. PILE LENGTH | Lp: --- |
| 23. PILE RESISTANCE FACTOR | φ: --- |
| 24. LATERAL PILE DEFLECTION | Δ: --- |
| 25. BASIC WIND SPEED | V3s: --- |
| 26. MINIMUM GROUND SNOW LOAD | pg: --- |
| 27. SEISMIC DATA | PGA: --- Ss: --- S1: --- |

PROJECT NAME: FAIRFIELD
 PROJECT NUMBER: BRO 1448(38)

FILE NAME: z11j072pl_01.xls PLOT DATE: 10/30/2013
 PROJECT LEADER: D. LANDRY DRAWN BY: W. GAYNOR
 DESIGNED BY: E. ALEXOPOULOS CHECKED BY: T. KENDRICK
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TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT | 20 year ESAL for flexible pavement from 2015 to 2035 : 110000 |
|------|-----|-----|-----|-----|------|---|
| 2013 | 110 | 25 | 55 | 26 | 25 | 40 year ESAL for flexible pavement from 2015 to 2055 : 211000 |
| 2033 | 120 | 25 | 55 | 23 | 25 | Design Speed : 35 mph |