

51. THE CONTRACTOR IS ADVISED THAT DURING THE PLACEMENT OF CONCRETE FOR THE TOP PORTION OF THE DECK, THE EXTERIOR GIRDERS MAY DEFLECT MORE THAN THE INTERIOR GIRDERS DUE TO THE PANEL DEAD LOAD DISTRIBUTION. ADJUSTMENTS TO THE SCREED MACHINE MAY BE NECESSARY TO ACCOUNT FOR THIS.
52. MORTAR, TYPE IV WITH EXPANSIVE ADDITIVES THAT REQUIRE ALL SURFACES TO BE CONFINED SHALL NOT BE USED FOR THE GROUT BEDS UNLESS THE CONTRACTOR PROVIDES A METHOD AND MEANS FOR CONFINEMENT THAT IS ACCEPTABLE TO THE ENGINEER.
53. IF THE CONTRACTOR ELECTS TO USE A TYPE IV MORTAR THAT IS NOT ON THE APPROVED PRODUCTS LIST OR OF THE STATED FORMULATION IN SECTION 707.03, THEN THE MIX MUST MEET 707.03 MORTAR, TYPE IV (c) PERFORMANCE REQUIREMENTS. SECTION 707.03(c)(2) MAY BE OMITTED IF THE MATERIAL WILL NOT HAVE DIRECT EXPOSURE TO MOISTURE IN FREEZE-THAW CONDITIONS. TESTING SHALL BE DONE BY AN INDEPENDENT LABORATORY ACCREDITED BY AMRL IN AASHTO T106 OR ASTM C109 AND IS CAPABLE OF PERFORMING ASTM C1090 AND AASHTO T106 (MODIFIED PER VAOT) OR ASTM C686 (MODIFIED PER VAOT). THE MIX SHALL BE TESTED AT THE MAXIMUM WATER/CEMENTIOUS RATIO.
54. ALL COSTS ASSOCIATED WITH PROVIDING AND PLACING BEDDING STRIPS AND MORTAR FOR GROUT BEDS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.670, SPECIAL PROVISION (PRECAST PRESTRESSED CONCRETE DECK PANEL)(3 1/2').

**GEOTECHNICAL INFORMATION**

GEOTECHNICAL DESIGN PARAMETERS	SOIL	ROCK
NOMINAL BEARING RESISTANCE (KSF)	30.4	120.0
BEARING RESISTANCE FACTOR	0.45	0.45
RET. WALL FOUNDATION SOIL, UNIT WEIGHT (PCF)	125	---
RET. WALL FOUNDATION SOIL, FRICTION ANGLE (DEGREES)	40	---
GRANULAR BACKFILL FOR STRUCTURES, UNIT WEIGHT (PCF)	140	---
GRANULAR BACKFILL FOR STRUCTURES, FRICTION ANGLE (DEGREES)	34	---
EARTH PRESSURE COEFFICIENT, ACTIVE	0.28	---

**SUBSTRUCTURES ON MICROPILES**

55. ABUTMENTS #1 - #3 WILL BE CONSTRUCTED ON MICROPILES.
56. NO MICROPILE LOAD TESTING IS REQUIRED BASED ON THIS DESIGN.
57. THE MICROPILES SHALL BE TYPE A MICROPILES, GROUTED UNDER GRAVITY HEAD ONLY.
58. PLUNGE LENGTH, SEATING LENGTH AND UNCASSED LENGTH SHALL BE IN COMPETENT ROCK.
59. THE BATTERED PILES SHALL INCLUDE A PLUNGE LENGTH. THIS PLUNGE LENGTH IS PART OF THE BOND ZONE. GROUT SHALL SURROUND THE CASING IN AN OVERSIZED HOLE FOR THE PLUNGE LENGTH.
60. GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI WHEN TESTED IN ACCORDANCE WITH AASHTO T106.
61. BEARING PLATES SHALL MEET THE REQUIREMENTS OF ASTM A709 GRADE 50.
62. THE #14 THREADED STEEL BAR SHALL HAVE A MINIMUM YIELD STRENGTH OF 75 KSI.
63. STATIC LOADS, SUCH AS FORMS, REINFORCING STEEL, OR OTHER MATERIALS NECESSARY FOR CONSTRUCTION, SHALL NOT BE PLACED ON THE MICROPILES UNTIL THE GROUT HAS OBTAINED A COMPRESSIVE STRENGTH OF 2000 PSI .
64. MICROPILE DESIGN VALUES:

ABUTMENT	MAXIMUM FACTORED COMPRESSIVE AXIAL LOAD	
	FRONT ROW (BATTERED)	BACK ROW (PLUMB)
ABUT 1	392 KIPS	128 KIPS
ABUT 2	503 KIPS	121 KIPS
ABUT 3	444 KIPS	179 KIPS

**SUBSTRUCTURES ON BEDROCK**

65. IT IS ANTICIPATED THAT BEDROCK WILL BE ENCOUNTERED AT ABUTMENT #4.

66. ABUTMENT #4 HAS BEEN DESIGNED FOR THE FOOTING ELEVATIONS SHOWN ON THE PLANS. THE INTENTION IS TO USE SUBFOOTINGS OF CONCRETE, CLASS "C" IN AREAS WHERE THE LEDGE IS MORE THAN 6 INCHES BELOW THE DESIGN BOTTOM OF FOOTING ELEVATIONS.
67. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK, AND PRIOR TO PLACING FORMWORK, THE RESIDENT ENGINEER SHALL NOTIFY PROJECT MANAGER AND THE VTRANS GEOLOGIST. THE SOILS AND FOUNDATION ENGINEER WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMNAL BEARING RESISTANCE AS SHOWN ON THE PLANS. FIVE (5) WORKING DAYS FROM NOTIFICATION SHALL BE ALLOWED TO MAKE THE INSPECTION AND THE DETERMINATION FOR THE COMPETENCY OF THE BEDROCK.
68. ONCE THE ELEVATION OF THE COMPETENT BEDROCK HAS BEEN DETERMINED, THE CONTRACTOR SHALL PROVIDE A BEDROCK PROFILE TO THE PROJECT MANAGER IN ORDER TO DETERMINE WHETHER THE DESIGN BOTTOM OF FOOTING ELEVATION SHALL BE LOWERED, AND WHETHER A SUBFOOTING SHALL BE REQUIRED. FOOTING ELEVATIONS SHALL NOT BE ADJUSTED WITHOUT APPROVAL OF THE PROJECT MANAGER. THREE (3) WORKING DAYS FROM RECEIPT OF THE BEDROCK PROFILE SHALL BE ALLOWED TO MAKE THIS DETERMINATION. NO WORK SHALL BE DONE ON THE FOOTINGS UNTIL A REPLY IS RECEIVED. THE MAXIMUM TOP OF FOOTING ELEVATION IS 548.00 FEET.
69. FOOTINGS OR SUBFOOTINGS FOR SUBSTRUCTURES FOUNDED ON BEDROCK SHALL BE PLACED ON CLEAN COMPETENT ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.
70. THE LIMITS OF ANY SUBFOOTING SHALL BE 1'-0" OUTSIDE OF THE HORIZONTAL LIMITS OF THE FOOTING. THE TOP SURFACE OF THE SUBFOOTING SHALL BE INTENTIONALLY ROUGHENED TO 1/4" AMPLITUDE TO HELP PREVENT SLIDING AT THE SUBFOOTING/FOOTING INTERFACE.
71. DOWELS SHALL BE DRILLED AND GROUTED INTO BEDROCK AS SHOWN ON THE PLANS. THE DOWELS SHALL HAVE A 2'-0" MINIMUM EMBEDMENT INTO COMPETENT BEDROCK AND SHALL EXTEND INTO THE FOOTING A MINIMUM OF 1'-6". IF A SUBFOOTING IS REQUIRED THE DOWELS SHALL EXTEND THROUGH THE SUBFOOTING INTO THE FOOTING. THE DOWELS SHALL MEET THE REQUIREMENTS FOR LEVEL III CORROSION RESISTANCE, AND BE PAID FOR UNDER ITEM 507.13, "REINFORCING STEEL, LEVEL III". VTRANS WILL PAY FOR 2 LINEAR FEET OF DRILLING AND GROUTING INTO BEDROCK AT EACH DOWEL LOCATION. IF THE CONTRACTOR ELECTS TO DRILL THE DOWELS THROUGH THE SUBFOOTING, IT WILL BE AT THEIR OWN EXPENSE.
72. ANY CONCRETE REQUIRED FOR SUBFOOTINGS SHALL BE PAID FOR AS ITEM 541.30 "CONCRETE, CLASS C". AN ESTIMATED QUANTITY OF CLASS C CONCRETE HAS BEEN INCLUDED IN THESE PLANS.

**TRAFFIC CONTROL**

73. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING A SITE SPECIFIC TRAFFIC CONTROL PACKAGE IDENTIFYING CONSTRUCTION ACTIVITIES BEFORE, DURING, AND AFTER THE BRIDGE CLOSURE PERIOD. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 641.10 "TRAFFIC CONTROL (I-91 NORTHBOUND)", ITEM 641.10 "TRAFFIC CONTROL (I-91 SOUTHBOUND)" AND ITEM 641.10 "TRAFFIC CONTROL (US RT 5)".
74. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 641.10 "TRAFFIC CONTROL (I-91 NORTHBOUND)", ITEM 641.10 "TRAFFIC CONTROL (I-91 SOUTHBOUND)" AND ITEM 641.10 "TRAFFIC CONTROL (US RT 5)". THOSE ITEMS ARE BUT NOT LIMITED TO:
  - TYPE III BARRICADES
  - TYPE III BARRICADES (MOD.)
  - RETROREFLECTIVE PLASTIC DRUMS
  - TRAFFIC CONES
  - TEMPORARY PAVEMENT MARKINGS
  - PAVEMENT MARKING REMOVAL
  - TRAFFIC SIGNS, TYPE A
  - SQUARE TUBE SIGN POST AND ANCHOR
  - CHANNELIZING DEVICES
  - ENERGY ABSORPTION ATTENUATOR
  - SOLID BARRIER FENCE
75. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE T SERIES OF THE STANDARDS. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.

76. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY ON AND OFF PROJECT SIGNS AND TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLANS AND DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL (I-91 NORTHBOUND)", ITEM 641.10 "TRAFFIC CONTROL (I-91 SOUTHBOUND)" AND ITEM 641.10 "TRAFFIC CONTROL (US RT 5)".
77. FULL ACCESS TO ALL SIDE ROAD AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL (US RT 5)".
78. THE QUANTITY OF ITEM 621.90 TEMPORARY TRAFFIC BARRIER WAS CALCULATED BASED ON THE MAXIMUM AMOUNT OF BARRIER NECESSARY AT ANY ONE TIME DURING THE PROJECT DURATION. RE-USE OF THIS BARRIER FOR SUBSEQUENT PHASES OF CONSTRUCTION SHALL BE PAID AS ITEM 621.95 "REMOVE AND RESET TEMPORARY TRAFFIC BARRIER".
79. CONTINGENCY PLANS ARE PROVIDED IN THE TRANSPORTATION MANAGEMENT PLAN. IN THE EVENT OF AN INCIDENT IN THE WORK ZONE, THE CONTRACTOR SHALL IMPLEMENT THE APPROPRIATE CONTINGENCY PLAN WITHIN 30 MINUTES OF THE INCIDENT. ALL ITEMS ASSOCIATED WITH THE CONTINGENCY PLAN WILL BE PAID UNDER THE APPROPRIATE TRAFFIC CONTROL ITEM.
80. DURING EACH BRIDGE BCP A TOW TRUCK WILL BE ONSITE TO IMMEDIATELY REMOVE ANY DISABLED VEHICLES WITHIN THE PROJECT AREA. ALL COSTS SHALL BE INCLUDED IN ITEMS 641.10 TRAFFIC CONTROL (I-91 NORTHBOUND) AND TRAFFIC CONTROL (I-91 SOUTHBOUND)
81. A UTO SHALL BE STATIONED AT THE VA MEDICAL CENTER ENTRANCE (VETERANS DRIVE) AND US 5 WEEKDAYS FROM 4:00PM TO 5:00PM FOR THE DURATION OF THE PROJECT OR AS DIRECTED BY THE ENGINEER.
82. A UTO SHALL BE STATIONED AT THE INTERSECTION OF I-91 NORTHBOUND RAMP AND US5 DURING THE DAYLIGHT HOURS FOR THE DURATION OF THE PROJECT OR AS DIRECTED BY THE ENGINEER.
83. SEE SPECIAL PROVISIONS FOR RESTRICTIONS ON TRAFFIC DELAYS.
84. A SOLID BARRIER FENCE SHALL BE INSTALLED DIRECTLY ON TOP OF THE TEMPORARY BARRIER ON EITHER SIDE OF US 5. THE FENCE SHALL HAVE A MINIMUM HEIGHT OF 6'-0". THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL (US RT 5)".

**PEDESTRIAN TRAFFIC CONTROL**

85. THE CONTRACTOR SHALL PROTECT PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF US 5 DURING CONSTRUCTION ALL TIMES WITH THE EXCEPTION OF EACH BCP. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645, "SPECIAL PROVISION (PUBLIC PROTECTION FOR BRIDGE PROJECTS)".
86. THE SITE SPECIFIC TRAFFIC CONTROL PLANS FOR US 5 WILL INCLUDE ALL SIGNAGE FOR PEDESTRIAN MOBILITY. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL (US RT 5)".
87. MAXIMUM PEDESTRIAN MOBILITY DELAYS SHALL BE AS IDENTIFIED IN THE SPECIAL PROVISIONS FOR TEMPORARY TRAFFIC DELAYS.
88. DURING EACH BCP, A SHUTTLE SHALL TRANSPORT PEDESTRIANS THRU THE WORK ZONE. THIS WORK SHALL BE PAID FOR UNDER ITEM 900.650 SPECIAL PROVISION (PEDESTRIAN SHUTTLE)(N.A.B.I.).

**TEMPORARY TRAFFIC SIGNALS**

89. THE BURN IN TIME FOR THE TEMPORARY SIGNALS SHALL BE REDUCED TO A WEEKEND FROM FRIDAY 6PM TO MONDAY 6AM. PCMS SHALL BE PLACED PRIOR TO SIGNALS DURING THE BURN IN TIME WARNING THE TRAVELLING PUBLIC.
90. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S (VTrans) "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, WITH CURRENT MODIFICATIONS.
91. TEMPORARY TRAFFIC SIGNAL SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CONTRACT ITEM 678.40 – TEMPORARY TRAFFIC SIGNAL SYSTEM.
92. DESIGN OF THE SIGNAL SUPPORTS AND ANY REQUIRED GUYING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
93. SIGNAL FACES SHALL BE L.E.D AND CONSIST OF 12" LENSES (RED, YELLOW AND GREEN).

PROJECT NAME:	HARTFORD
PROJECT NUMBER:	IM 091-2(79)
FILE NAME:	s12a132gen.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	W. LAMMER
GENERAL NOTES SHEET 2	
PLOT DATE:	15-DEC-2014
DRAWN BY:	R. KLINEFELTER
CHECKED BY:	W. LAMMER
SHEET	5 OF 166