

GENERAL

1. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, AND ITS LATEST REVISIONS.
2. ALL EXISTING TRAFFIC SIGNS REMOVED DURING CONSTRUCTION SHALL BE RESET BACK TO THEIR ORIGINAL LOCATION IN ACCORDANCE WITH VERMONT STANDARDS. PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ANY BROOK, STREAM OR RIVER.
4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS OTHERWISE NOTED.
5. FEATURES OF THE EXISTING BRIDGE AND SURVEY SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM LIMITED SURVEY AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS TO ENSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.
6. THE LIMITS OF COFFERDAM ARE TO BE DETERMINED BY THE CONTRACTOR.
7. ITEM 529.15 "REMOVAL OF STRUCTURE (TWO 48" X 40' HDPE)" SHALL BE USED FOR REMOVAL AND DISPOSAL OF THE EXISTING CULVERTS.
8. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK.
9. THE WATER LEVEL MAY VARY FROM WHAT IS SHOWN ON THE PLANS.
10. THE CONTRACTOR SHALL CONTACT "DIG SAFE" PRIOR TO BEGINNING CONSTRUCTION.
11. EXISTING SURVEY FEATURES AND EXISTING CONTOURS ARE BASED ON SURVEY CONDUCTED IN DECEMBER 2011. THE ORIGINAL 1957 4' x 8' CULVERT HAS SINCE BEEN REPLACED WITH TWO 48" X 40' HDPE CULVERTS AND THE SLOPES REGRADED.
12. FOR INFORMATION REGARDING UTILITIES SEE THE SPECIAL PROVISIONS.

TRAFFIC MAINTENANCE DURING CONSTRUCTION

1. VERMONT ROUTE 30 SHALL BE CLOSED TO ALL TRAFFIC DURING CONSTRUCTION. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. THE CONTRACTOR SHALL PLACE ALL ROAD CLOSURE SIGNING PRIOR TO COMMENCEMENT OF THE WORK. SIGNING SHALL BE INCLUDED ON GANSON HILL ROAD WEST.
3. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL INFORM THE PUBLIC STARTING ONE WEEK BEFORE CLOSING OF VT 30.
4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE EXISTING DRIVES AND TOWN HIGHWAYS AT ALL TIMES.

PRECAST CONCRETE STRUCTURES

1. THE DESIGN, CONSTRUCTION, HANDLING, AND ASSEMBLY OF THE PRECAST UNITS SHALL BE IN ACCORDANCE WITH SECTION 540 AND THE SPECIAL PROVISIONS. HANDLING AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS APPLICABLE.
2. THE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO SUPPORT CONSTRUCTION LIVE LOADS DIRECTLY ON TOP OF THE BOX CULVERT WITHOUT ANY FILL OVER THE BOX CULVERT.
3. DESIGN CRITERIA:

DESIGN LIVE LOAD:	HL-93
FILL OVER THE STRUCTURE:	2 FEET
FOUNDATION SOIL PARAMETERS	
UNIT WEIGHT:	110 PCF
FRICTION ANGLE	27°
RETAINED SOIL PARAMETERS	
UNIT WEIGHT:	130 PCF
FRICTION ANGLE:	35°

UNFACTORED BEARING RESISTANCE (BOX WIDTH):
2500 PSF (16 FEET)
4. REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING:
 - A. THE REINFORCING STEEL IN THE CURBS SHALL BE "LEVEL II" OR HIGHER.
 - B. THE REINFORCING STEEL IN THE PRECAST UNITS AND FOOTINGS SHALL BE "LEVEL I, EPOXY COATED REINFORCING STEEL" OR HIGHER.
5. THE PRECAST CONCRETE BURIED STRUCTURE SHALL BE A CONCRETE BOX TYPE STRUCTURE WITH A MINIMUM CLEAR SPAN OF 14 FEET AND VERTICAL CLEAR HEIGHT OF 6 FEET BETWEEN TOP AND BOTTOM OF THE BOX. THE LUMP SUM COST FOR ITEM 540.10 SHALL INCLUDE THE PRECAST BOX; FOOTINGS, WINGWALLS AND CUT-OFF-WALLS, PRECAST HEADWALLS, PRECAST WINGWALLS, PRECAST BED RETENTION SILL, SHEET MEMBRANE WATERPROOFING, AND MECHANICAL CONNECTIONS.
6. THE PRECAST WINGWALLS SHALL BE SELECTED FROM THE LIST OF WALLS ON THE APPROVED RETAINING WALL DOCUMENT AVAILABLE FROM VTRANS MATERIALS AND RESEARCH WEB SITE ([HTTP://WWW.AOT.STATE.VT.US/PROGDEV/SECTIONS/M&R%20INFO/M&RSOIL&FOUNDATION.HTM](http://www.aot.state.vt.us/progdev/sections/m&r%20info/m&rsoil&foundation.htm)). THE PRECAST RETAINING WALLS SHALL BE EITHER A "CONTECH PRECAST ANCHORED WINGWALL SYSTEM" OR A "T-WALL SYSTEM".
7. THE USE OF EQUIPMENT AND THE METHOD OF BACKFILLING AROUND THE BURIED STRUCTURE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN WHEN BACKFILLING AGAINST JOINT SEALING MATERIALS.
8. THE FOOTINGS TO THE PRECAST WINGWALLS MAY BE CONSTRUCTED OF EITHER PRECAST OR CAST-IN-PLACE CONCRETE, CLASS B, FOOTINGS.
9. PRECAST TOLERANCES:

HEIGHT/WIDTH:	+/- 1/8"
LENGTH:	+/- 1/2"
10. FABRICATION DRAWINGS FOR THE PRECAST CONCRETE UNIT SECTIONS SHALL INCLUDE A PLAN FOR SHIPPING AND LEVELING THE FRAME AND WINGWALL SECTIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROPER FIT-UP OF THE PRECAST AND ANY CAST-IN-PLACE ELEMENTS, PER THE FABRICATOR'S RECOMMENDATIONS, FABRICATION AND ENGINEERING DRAWINGS, AND TO THE SATISFACTION OF THE ENGINEER.
12. ALL PRECAST UNITS INCLUDING THE HEADWALLS AND FOOTINGS SHALL BE DESIGNED BY THE FABRICATOR AND DESIGN CALCULATIONS SUBMITTED WITH FABRICATION DRAWINGS STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF VT.

13. INSTALL SHEET MEMBRANE WATERPROOFING OVER THE TOP AND DOWN THE EXTERIOR SIDES OF THE PRECAST UNITS AND ALONG THE ENTIRE LENGTH. TAKE CARE DURING BACKFILL OPERATIONS TO AVOID DAMAGE TO THE SHEET MEMBRANE WATERPROOFING.
14. THE BEGIN/END BRIDGE STATIONS ARE APPROXIMATE, AND MAY CHANGE BASED ON THE MANUFACTURER'S DESIGN DIMENSIONS. THE MIDPOINT OF THE STRUCTURE SHALL BE AS SHOWN IN THESE PLANS.
15. THE DIMENSIONS AND THE GEOMETRIC LAYOUT OF THE STRUCTURE (LAYOUT DIMENSIONS, ELEVATIONS, AND WORKING POINT COORDINATES) WERE DEVELOPED BASED ON PRECAST CONCRETE BOX CULVERT AND WINGWALL DIMENSIONS SHOWN IN THESE PLANS. IF THE DIMENSIONS OR GEOMETRY OF THE PRECAST BOX CULVERT OR PRECAST WINGWALL ARE ALTERED BY THE FABRICATOR FROM WHAT IS SHOWN IN THESE PLANS, THE LAYOUT MAY VARY FROM WHAT IS SHOWN. IN SUCH CASE, THE AFFECTED DIMENSIONS, ELEVATIONS AND WORKING POINT COORDINATES SHOULD BE ADJUSTED BY THE FABRICATOR ACCORDINGLY. THE NEW STRUCTURE AND WINGWALLS SHALL NOT EXIST OUTSIDE THE EXISTING RIGHT-OF-WAY.
16. THE PRECAST CONCRETE STRUCTURES SHALL BE BACKFILLED IN SIX INCH LIFTS WITH THE ITEM "SPECIAL PROVISION (GRANULAR BACKFILL FOR STRUCTURES)".
17. FOUNDATION EMBEDMENT SHALL CONFORM TO GEOTECHNICAL REQUIREMENTS. THE MINIMUM STRUCTURE COVER SHALL BE 1'-6" FOR THE ROADWAY (BETWEEN BRIDGE RAIL).

CONCRETE

1. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT, AND UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW JOINTS.
2. ALL EXPOSED CONCRETE SHALL BE CHAMFERED 1" x 1".
3. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
4. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING: +/-	1"
CLEARANCE:	+/- 1/4"
5. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" ALONG THE BACK FACES OF WALLS AGAINST EARTH, 1 1/2" ALONG THE BOTTOM SURFACE OF THE DECK AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED.
6. WATER REPELLENT (SILANE) SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE PRECAST BOX CULVERT AND WINGWALL SURFACES TO 1'-0" BELOW FINISH GRADE.
7. PLACE 4" DIAMETER WEEP HOLES AT 10'-0" MAXIMUM SPACING.
8. ALL FOOTING CONCRETE SHALL BE PLACED IN THE DRY. DEWATERING SHALL BE CONTINUOUS UNTIL THE FOOTINGS ARE BACKFILLED TO THE ELEVATION OF THE WATER. SUMPS AND TRENCHES THAT DIRECT WATER SHALL BE LOCATED TO PREVENT THE REMOVAL OF FINES BELOW THE FOOTINGS.

CONTROL OF WORK

1. SEE THE "COMPOSITE GENERAL NOTES FOR CONTROL OF WORK" ON SHEET 2 FOR ADDITIONAL REQUIREMENTS.