

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.
- DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS OF THE EXISTING CULVERTS SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND LIMITED FIELD INVESTIGATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS TO ASSURE 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. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- IT IS EXPECTED THAT CULVERT LINING AND HEADWALL CONSTRUCTION WILL BE THE EXTENT OF THE WORK AT EACH SITE. DURING THE COURSE OF CONSTRUCTION IF THE CONTRACTOR SEES AN AREA OF CONCERN, SUCH AS VOIDS AROUND THE EXISTING CULVERT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO THE NEED FOR FURTHER EXPLORATION. IF FURTHER EXPLORATION IS NEEDED TEST BORINGS SHALL BE CONDUCTED IN THE AREA OF CONCERN. TEST BORINGS SHALL EXTEND 5' BELOW THE INVERT OF THE CULVERT. THIS WORK SHALL BE PAID FOR AS ITEM 900.640, "SPECIAL PROVISION (TEST BORINGS)".

PIPE REHABILITATION NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ACCESS TO ALL CULVERT REHABILITATION SITES. ALL RESULTING DISTURBED EARTH SHALL BE STABILIZED AND RESTORED UPON COMPLETION OF CONSTRUCTION. PAYMENT SHALL BE MADE UNDER CONTRACT ITEM 900.645, "SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT)".
- STABILIZATION AND RESTORATION ASSOCIATED WITH THE TEMPORARY ACCESS SHALL BE INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT)". EARTH DISTURBED WITHIN LIMITS OF STRUCTURE EXCAVATION SHALL BE RESTORED AND PAID FOR UNDER CONTRACT ITEMS FOR TURF ESTABLISHMENT.
- AT EACH LOCATION SPECIFIED IN THESE PLANS, THE EXISTING CULVERT SHALL REMAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION OF THE EXISTING PIPE TO THE SATISFACTION OF THE ENGINEER. IT IS ANTICIPATED THAT IT WILL BE NECESSARY FOR THE CONTRACTOR TO REMOVE SEDIMENT, LARGE STONES, AND/OR DEBRIS FROM INSIDE THE EXISTING CULVERT, AND TO FILL AND REPAIR LARGE HOLES IN THE EXISTING CULVERT, PRIOR TO INSTALLING THE NEW LINER. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (ALUMINUM PIPE LINER)".
- THE CONTRACTOR SHALL FILL ANY VOIDS BELOW THE CENTER OF THE CULVERT FROM WITHIN THE CULVERT BEFORE INSTALLING THE LINER. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM 541.31, "CONCRETE, CLASS D".
- THE CONTRACTOR SHALL FILL ANY VOIDS ABOVE THE CENTER OF THE CULVERT FROM WITHIN THE CULVERT BEFORE INSTALLING THE LINER. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM 900.608 "CONTROLLED DENSITY (FLOWABLE) FILL"
- THE EXISTING CRADLE WALL AT EACH PIPE INLET SHALL BE REMOVED UNDER ITEM 529.25 - REMOVAL OF CONCRETE OR MASONRY AND A NEW CONCRETE HEADWALL SHALL BE CONSTRUCTED AT THE INLET. SEE HEADWALL DETAILS SHEET.
- A NEW FULL BEVELED HEADWALL SHALL BE CONSTRUCTED AT THE INLET OF EACH CULVERT. SEE HEADWALL DETAILS SHEET. THE NEW HEADWALL SHALL BE CONSTRUCTED IN THE DRY. CONTROL OF WATER SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)".
- THE CONTRACTOR SHALL VERIFY THAT THE RECOMMENDED SIZE LINER WILL FIT IN THE EXISTING PIPE BEFORE ORDERING THE LINER PIPE. SHOULD THE CONTRACTOR DISCOVER THAT THE RECOMMENDED SIZE LINER WILL NOT FIT IN THE EXISTING PIPE, THEN THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER.

- LIMITS OF FENCING IMPACTED BY THE TEMPORARY ACCESS SHALL BE APPROVED BY THE ENGINEER. REMOVING AND RESETTING EXISTING FENCING SHALL BE INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT)". FENCING IMPACTED WITHIN THE PAY LIMITS OF THE HEADWALL CONSTRUCTION SHALL BE RESTORED AND PAID FOR UNDER CONTRACT ITEMS FOR FENCING.

CONCRETE NOTES

- CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:

HEADWALL: ITEM 501.34, "CONCRETE HIGH PERFORMANCE CLASS B"
SUBFOOTING: ITEM 541.30, "CONCRETE, CLASS C"
FILLING VOIDS UNDER CULVERT: ITEM 541.31, "CONCRETE, CLASS D"
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH BY 1 INCH, UNLESS OTHERWISE NOTED.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT UNLESS OTHERWISE INDICATED. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
- FOOTINGS OR SUBFOOTINGS FOR SUBSTRUCTURES FOUNDED ON BEDROCK SHALL BE PLACED ON CLEAN COMPETENT ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.
- UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE RESIDENT ENGINEER SHALL CONTACT THE VTRANS SOILS AND FOUNDATION ENGINEER TO INSPECT THE BEDROCK. THE STRUCTURES ENGINEER WILL ALSO BE NOTIFIED THAT THE BEDROCK IS READY FOR INSPECTION. THE SOILS AND FOUNDATION ENGINEER WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE OF 10,000 PSF. FIVE (5) WORKING DAYS FROM NOTIFICATION SHALL BE ALLOWED TO MAKE THE INSPECTION AND THE DETERMINATION FOR THE COMPETENCY OF THE BEDROCK.
- IF COMPETENT BEDROCK IS WITHIN 1' -0" BELOW THE DESIGN BOTTOM OF FOOTING FOR THE EXTENT OF THE SUBSTRUCTURE AS SHOWN IN THE CONTRACT PLANS, THE FOOTING MAY BE PLACED INTEGRALLY TO THE TOP OF THE BEDROCK USING THE CONCRETE ITEM SPECIFIED FOR THE FOOTING AT THE CONTRACT UNIT PRICE.
- WHERE COMPETENT BEDROCK IS BELOW THE DESIGN BOTTOM OF FOOTING BY MORE THAN 1'-0" FOR ANY PORTION OF THE SUBSTRUCTURE, THE STRUCTURES ENGINEER SHALL BE CONTACTED TO DETERMINE WHETHER OR NOT THE FOOTING SHALL BE LOWERED, A SUBFOOTING CONSTRUCTED OR PLACEMENT OF A 1'-0" LAYER OF GRANULAR BACKFILL FOR STRUCTURES BELOW THE FOOTING IS REQUIRED. IF THE DESIGN BOTTOM OF FOOTING ELEVATION IS TO BE LOWERED THE CONTRACTOR SHALL PROVIDE A BEDROCK PROFILE TO THE STRUCTURES ENGINEER. 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.
- WHERE COMPETENT BEDROCK IS ABOVE THE DESIGN BOTTOM OF FOOTING ELEVATION, IT SHALL BE REMOVED DOWN TO THE BOTTOM OF FOOTING ELEVATION WITH CONTRACT PAY ITEMS OR A BEDROCK PROFILE SHALL BE PROVIDED BY THE CONTRACTOR TO THE STRUCTURES ENGINEER TO DETERMINE WHETHER THE DESIGN BOTTOM OF FOOTING ELEVATION MAY BE RAISED. THREE (3) WORKING DAYS FROM RECEIPT OF THE BEDROCK PROFILE SHALL BE ALLOWED TO MAKE THE DETERMINATION. FOOTING ELEVATIONS SHALL NOT BE ADJUSTED WITHOUT APPROVAL OF THE STRUCTURES ENGINEER.
- THE LIMITS OF SUBFOOTINGS SHALL BE 1' -0" OUTSIDE OF THE HORIZONTAL LIMITS OF THE FOOTING. IF A SUBFOOTING IS REQUIRED IT SHALL BE PAID FOR UNDER ITEM 541.30, "CONCRETE, CLASS C". THE TOP SURFACE OF ALL SUBFOOTINGS SHALL BE INTENTIONALLY ROUGHENED TO 1/4" AMPLITUDE.
- A MAXIMUM OF 6" AVERAGE ALLOWANCE FOR OVERBREAKAGE WILL BE ALLOWED. ADDITIONAL OVERBREAKAGE AND REPLACEMENT WITH CONCRETE WILL BE AT THE CONTRACTOR'S EXPENSE.

- DOWELS SHALL BE DRILLED AND GROUTED INTO BEDROCK WHEN SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER. THE DOWELS SHALL HAVE A 2' -0" MINIMUM EMBEDMENT IN THE BEDROCK AND SHALL EXTEND IN THE FOOTING OR SUBFOOTING A MINIMUM OF 1' -6", UNLESS NOTED OTHERWISE. PAYMENT FOR DRILLING AND GROUTING OF DOWELS SHALL BE UNDER ITEM 507.16, "DRILLING AND GROUTING DOWELS." PAYMENT FOR DOWELS SHALL BE MADE UNDER ITEM 507.15, "REINFORCING STEEL."

- WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. PAYMENT SHALL BE MADE AS ITEM 514.10, "WATER REPELLENT, SILANE". APPLICATION RATE OF WATER REPELLENT, SILANE SHALL BE 1 GAL/14 SY.

REINFORCING STEEL NOTES

- MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH: 2"
ELSEWHERE UNLESS OTHERWISE INDICATED: 3"
- REINFORCEMENT STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING = +/- 1-INCH
CLEARANCE = +/- 1/4-INCH

TRAFFIC CONTROL NOTES

- ALL TRAFFIC CONTROL MEASURES FOR THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH TYPICAL APPLICATIONS TA-5, TA-33, AND TA-34 OF THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE REFERENCED VTRANS STANDARD DRAWINGS. CONFLICTS BETWEEN THE MUTCD AND THE VTRANS STANDARD DRAWINGS SHOULD DEFER TO THE MUTCD.
- THE CONTRACTOR SHALL SUBMIT A SPECIFIC TRAFFIC CONTROL PLAN FOR EACH CONSTRUCTION SITE TO THE ROADWAY, TRAFFIC AND SAFETY ENGINEER FOR APPROVAL PER SUBSECTION 104.04 AND 105.03. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN TRAFFIC CONTROL ITEMS.
- LARGE CONSTRUCTION VEHICLES MAY BE REQUIRED TO BACK DOWN THE TEMPORARY ACCESS ROAD AT EACH CULVERT LOCATION. THESE VEHICLES WILL LIKELY NOT HAVE ADEQUATE SPACE AT THE INTERSECTION OF THE ACCESS ROAD AND THE INTERSTATE TO PERFORM THE NECESSARY TURNING MOVEMENTS. AT THE DISCRETION OF THE ENGINEER, A TEMPORARY CLOSURE OF THE INTERSTATE TRAVEL LANE AND SHOULDER WILL BE ALLOWED FOR ACCESS TO THE PROJECT SITES. SEE VTRANS STANDARD E-103. THIS WORK SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL".
- TEMPORARY LANE AND/OR SHOULDER CLOSURES SHALL BE ALLOWED DURING WORKING HOURS ONLY. THE INTERSTATE SHALL BE RESTORED TO FULL CAPACITY AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES.
- TEMPORARY BARRIER, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621. BARRIER ENDS FACING ONCOMING TRAFFIC SHOULD BE TAPERED BEYOND THE CLEAR ZONE. IF NECESSARY, PAYMENT FOR FURNISHING, INSTALLING, RESETTING, AND REMOVING ANY TEMPORARY TRAFFIC BARRIER SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
- ENERGY ABSORPTION ATTENUATORS, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 621. PAYMENT FOR INSTALLING AND REMOVING ANY ENERGY ABSORPTION ATTENUATORS SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
- SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY AND THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL".

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PROJECT LEADER: DMB
DESIGNED BY: MHM
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