

## PROJECT NOTES

### GENERAL

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, AND ITS LATEST REVISIONS.
- THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH A 3.0 INCH ALLOWANCE FOR FUTURE PAVEMENT.
- SALVAGED SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF THETFORD. PER NOTE 7 ON SHEET 29 THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE.
- ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ANY BROOK, STREAM, OR RIVER.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS NOTED OTHERWISE.
- FEATURES OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK 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.
- THE LIMITS OF THE COFFERDAM ARE TO BE DETERMINED BY THE CONTRACTOR.
- ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE" IS FOR THE COMPLETE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE SUPERSTRUCTURE, INCLUDING ALL BRIDGE RAIL, BEARINGS AND ANCHOR BOLTS.
- THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. SOME UTILITIES WERE RELOCATED DURING THE PREPARATION OF THESE PLANS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.

### TRAFFIC MAINTENANCE DURING CONSTRUCTION

- THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL NOTIFY THE TOWN A MINIMUM OF TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.
- UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.10, "TRAFFIC CONTROL". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

TEMPORARY TRAFFIC BARRIERS  
RETROREFLECTIVE DRUMS  
SIGNS  
SIGN POSTS

TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.

- THE CONTRACTOR SHALL HAVE THE OPTION OF ALLOWING ALTERNATING ONE-WAY TRAFFIC ON THE BRIDGE PRIOR TO THE INSTALLATION OF THE CONCRETE CURBS AND BRIDGE RAILING IN ORDER TO MINIMIZE THE BRIDGE CLOSURE TIME. PRIOR TO OPENING THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC THE CONCRETE DECK SHALL HAVE BEEN CURED AND ATTAINED THE REQUIRED COMPRESSIVE STRENGTH IN ACCORDANCE WITH SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ) AND SECTION 501. THE ALTERNATING ONE-WAY TRAFFIC SHALL BE MAINTAINED ON THE BRIDGE WITH CONCRETE MEDIAN BARRIER (CMB) PLACED ON EACH SIDE OF THE SINGLE TRAFFIC LANE TO PROVIDE A MINIMUM CLEAR DISTANCE/LANE WIDTH OF 11'-0". THE CMB SHALL BE LOCATED A MINIMUM CLEAR DISTANCE OF 3'-0" FROM THE NON-TRAFFIC SIDE OF THE CMB TO THE EDGE (FASICA) OF THE CONCRETE DECK. THE CMB SHALL BE FLARED AT A RATE OF 1:9 ON THE APPROACHES. IF IT IS NOT POSSIBLE TO PROPERLY FLARE THE CMB AT THE APPROACHES AN ENERGY ABSORPTION ATTENUATOR SHALL BE PLACED AT THE ENDS OF THE CMB.

- IF THE CONTRACTOR CHOOSES TO OPEN THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC, THE CONTRACTOR SHALL SUBMIT A TEMPORARY TRAFFIC CONTROL PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL FOUR WEEKS PRIOR TO OPENING THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC. THE TEMPORARY TRAFFIC CONTROL PLAN SHALL SHOW THE LOCATIONS OF THE TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS, PORTABLE LIGHT TOWERS, TRAFFIC CONTROL SIGNS, CONCRETE MEDIAN BARRIER (CMB), AND IF NECESSARY PHASING OF THE ALTERNATING ONE-WAY TRAFFIC ON THE BRIDGE TO ALLOW FOR THE INSTALLATION OF THE CONCRETE CURBS AND BRIDGE RAILING. ALL COSTS ASSOCIATED WITH PROVIDING A TEMPORARY TRAFFIC CONTROL PLAN, IMPLEMENTING THE TEMPORARY TRAFFIC CONTROL PLAN, INCLUDING THE COSTS OF FURNISHING, INSTALLING AND REMOVING THE TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS, PORTABLE LIGHT TOWERS, SIGNS, SIGN POSTS, CMB, REMOVING AND RESETTING THE CMB, ETC. SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL".
- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
- ALL TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS AND PORTABLE LIGHT TOWERS SHALL BE IN ACCORDANCE WITH SECTION 678 AND THE CURRENT ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).

### SHORING SUPERSTRUCTURE AT PIERS

- IN ORDER TO FACILITATE A REDUCTION OF THE BRIDGE CLOSURE DURATION, THE CONTRACTOR MAY CHOOSE TO MAKE TEMPORARY MODIFICATIONS TO THE EXISTING PIER BRIDGE SEATS AND SUPPORT THE NEW SUPERSTRUCTURE ON TEMPORARY BEARING BOLSTERS WITH THE OBJECTIVE OF COMPLETING FINAL MODIFICATIONS TO THE PIER BRIDGE SEATS AFTER OPENING THE NEW SUPERSTRUCTURE TO TRAFFIC. IF THE CONTRACTOR OPTS TO PERFORM FINAL PIER BRIDGE SEAT MODIFICATIONS AFTER CONSTRUCTION OF THE SUPERSTRUCTURE, THE SUPERSTRUCTURE SHALL BE SHORED IN ACCORDANCE WITH SECTION 502 "SHORING SUPERSTRUCTURES". SHORING SHALL BE DESIGNED TO ACCOMMODATE THE FULL DESIGN HL-93 LIVE LOAD. ASSOCIATED DETAILS, PROCEDURES, AND CALCULATIONS FOR SHORING AND JACKING SHALL BE PREPARED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH SECTION 502. ALL COSTS FOR TEMPORARY SHORING OF THE SUPERSTRUCTURE WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

### CONCRETE

- THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1".
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING	± 1"
CLEARANCE	± ¼"
- CONCRETE FOR THE DECK, CURBS AND CURTAIN WALLS SHALL BE ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ)".
- ALL SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.
- MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" ALONG THE BACK FACES OF WALLS AGAINST EARTH, 1 ½" ALONG THE BOTTOM SURFACE OF THE DECK AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED.
- THE CONSTRUCTION LOADS AND DEFLECTIONS OF STEEL SUPERSTRUCTURE WERE CALCULATED ASSUMING THE POURING SEQUENCE SHOWN IN THE PLANS. ANY CHANGE TO THE POURING SEQUENCE SHOWN IN THE PLANS MUST BE APPROVED BY THE PROJECT MANAGER BEFORE THE STRUCTURAL STEEL FABRICATION DRAWINGS HAVE BEEN APPROVED.
- STAY-IN-PLACE CORRUGATED METAL FORMS (SIPCMF) SHALL BE USED TO FORM THE UNDERSIDE OF THE CONCRETE BRIDGE DECK BETWEEN THE STEEL GIRDERS. THE SIPCMF AND THEIR COMPONENTS, ATTACHMENTS, ETC. SHALL BE GALVANIZED OR STAINLESS STEEL. THE SIPCMF SHALL BE LOCATED TO MAINTAIN A CONSTANT CONCRETE DECK THICKNESS OF 9" FROM THE TOP OF THE SIPCMF'S CORRUGATIONS. THE CORRUGATIONS SHALL BE FILLED WITH FOAM OR A LIGHT WEIGHT MATERIAL APPROVED BY THE MANUFACTURER OR AS DIRECTED BY THE ENGINEER.
- FOR BRIDGE DECK POURS, THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ANY ONE DAY SHALL BE EIGHT HOURS. THERE SHALL BE A MINIMUM OF 96 HOURS BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF OTHER ADJACENT POURS. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END OF THE BRIDGE.
- NO CONCRETE IN THE ABUTMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE GIRDERS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.
- SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED ½" PER FOOT TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
- WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES.

- CONCRETE FORMWORK AND SUPPORTS.
  - FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE DESIGNED BY THE CONTRACTOR AND PLACED AT A MAXIMUM SPACING OF 4'-0". THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER OF THE WEB DEPTH.
  - PER SUBSECTION 501.09, THE CONTRACTOR SHALL SUBMIT A CONCRETE FORMWORK DESIGN FOR THE PIER.

### PRECAST ABUTMENT NOTES

- ALL CONCRETE AND REINFORCING STEEL IN THE ABUTMENTS SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" OR "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)" RESPECTIVELY. THIS SHALL INCLUDE ALL WORK NECESSARY TO FABRICATE, DELIVER, AND ASSEMBLE EACH ABUTMENT COMPLETE AND IN PLACE AS SHOWN ON THE PLANS. ALL APPURTENANCES SHALL BE INCIDENTAL TO THE APPROPRIATE CONTRACT ITEM.
- FABRICATION DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 540 AND SHALL INCLUDE AN ASSEMBLY PLAN WITH TEMPORARY BRACING REQUIREMENTS AS REQUIRED FOR ERECTION AND INSTALLATION. ALL COSTS SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM. SEE ADDITIONAL REQUIREMENTS IN SECTION 540.
- JOINTS IN PRECAST MEMBERS MAY BE INTRODUCED IF REQUIRED. ALL JOINTS SHALL BE CLEARLY INDICATED ON THE FABRICATION DRAWINGS AND SHALL UTILIZE THE PRECAST JOINT DETAILS SHOWN IN THE PLANS UNLESS OTHERWISE APPROVED BY THE AGENCY.
- ALL COSTS FOR GROUTING MATERIAL AND RAPID SETTING CONCRETE USED IN THE PRECAST MEMBERS SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- TEMPORARY BRACING OR SUPPORTS SHALL BE REQUIRED IF THE STRUCTURE IS BACKFILLED PRIOR TO OBTAINING FULL MOMENT CAPACITY BETWEEN ALL CONNECTED ELEMENTS. ALL DETAILS SHALL BE INCLUDED IN THE FABRICATION DRAWINGS AND ASSEMBLY PLAN.
- ONE ASSEMBLY PLAN SHALL DOCUMENT ALL ASPECTS OF THE BRIDGE SYSTEM. THE BRIDGE SYSTEM INCLUDES GROUT AND PRECAST MEMBERS. THE ASSEMBLY PLAN SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE AGENCY FOR APPROVAL. THE ENGINEER OF RECORD FOR THE ENTIRE ASSEMBLY PLAN SHALL BE CLEARLY INDICATED. ALL SUPPLEMENTAL CALCULATIONS SHALL BE INCLUDED IN THE SUBMITTAL. THE ASSEMBLY PLAN SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- MECHANICAL GROUTED SPLICES SHALL BE USED TO PROVIDE MOMENT CONNECTIONS BETWEEN PRECAST MEMBERS. GROUTED SPLICES SHALL DEVELOP A MINIMUM OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING BAR BEING SPLICED. GROUT PORTS SHALL BE ON THE BACK FACE OF ELEMENTS (HIDDEN FROM VIEW) WHENEVER POSSIBLE. ALL COSTS FOR THE GROUTED SPLICES SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- NO VERTICAL JOINTS SHALL BE ALLOWED WITHIN THE LIMITS OF THE BEARING PLATES OR WITHIN 1'-6" OF THE EDGE OF THE BEARING PLATE. VERTICAL JOINTS BETWEEN GIRDER BEARINGS SHALL BE HALF-WAY BETWEEN BEARINGS TO THE EXTENT PRACTICABLE. SEE ABUTMENT DETAILS FOR RECOMMENDED VERTICAL JOINT LOCATION.
- SHEET MEMBRANE SHALL BE APPLIED TO THE BACK OF ALL VERTICAL AND HORIZONTAL JOINTS IN THE SUBSTRUCTURE MEMBERS. A 2'-0" WIDE STRIP SHALL BE CENTERED OVER THE JOINT. ALL COSTS FOR MEMBRANE SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- THE PROPOSED TEMPORARY SUPPORT LOCATIONS FOR THE PRECAST ABUTMENTS, IF REQUIRED, SHALL BE INCLUDED IN THE FABRICATION DRAWINGS AND ASSEMBLY PLAN.
- GROUT FOR MECHANICAL GROUTED SPLICES AT VERTICAL AND HORIZONTAL JOINTS SHALL MEET THE REQUIREMENTS OF SECTION 540.11. CONCRETE FOR RAPID SETTING CONCRETE REPAIR MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 580. ALL GROUT AND RAPID SETTING CONCRETE REPAIR MATERIAL SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
- SEE "CONCRETE" NOTES ON THIS SHEET FOR ADDITIONAL NOTES AS APPLICABLE.

### PRECAST ABUTMENT REINFORCING NOTES

- ALL REINFORCING STEEL SHALL BE UNCOATED (BLACK).
- ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 3" TO OUTER SURFACES. MECHANICAL GROUTED SPLICES SHALL HAVE A MINIMUM OF 1 ½" CLEAR COVER FROM CONCRETE SURFACES UNLESS DETAILED OTHERWISE. ACTUAL CLEAR COVER TO REINFORCEMENT SHALL BE DETAILED ON THE FABRICATION DRAWINGS.
- REINFORCING IN OPPOSING FACES OF MEMBERS SHALL BE ALIGNED.
- THE REINFORCEMENT DETAILED IN THE PLANS SHALL BE UTILIZED TO THE EXTENT PRACTICABLE. THE SPACING OF SHEAR REINFORCEMENT SHALL NOT BE ADJUSTED UNLESS A RE-DESIGN IS COMPLETED. ALL NEW DESIGNS AND CALCULATIONS SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE AGENCY FOR APPROVAL.
- HORIZONTAL MOMENT REINFORCING SHOWN IN THE PLANS SHALL EXTEND CONTINUOUSLY THROUGH THE REINFORCING STEEL BLOCKOUTS.

PROJECT NAME: THETFORD

PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174pn.dgn

PROJECT LEADER: M.A. COLGAN

DESIGNED BY: S.E. BURBANK

PROJECT NOTES (1 OF 2)

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