## GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996 AND ITS LATEST REVISIONS.
2. DIMENSIONS, ANGLES, BEARINGS AND ELEVATIONS 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 SHALL 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 ENGINEER BEFORE ADVANCING THE WORK.
3. ALL DIMENSIONS ARE HORIZONTAL AND VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT.
4. THE CONTRACTOR SHALL NOT BE PERMITTED TO USE ANY HEAVY EQUIPMENT OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A SUITABLE STAGING AREA.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE INTO THE BROOK AS DIRECTED BY THE RESIDENT ENGINEER.
7. FOR TRAFFIC CONTROL CONTROL NOTES, SEE SHEET 7. TRAFFIC SHALL BE MAINTAINED AT THE LOOMIS HIGHLANDS DRIVEWAY LOCATED AT STA. 12+00, RT.
8. THE PRESTRESSED CONCRETE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE VOIDED SLAB BEAMS. THE DESIGN SHALL BE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996, AND ITS LATEST REVISIONS, AND THE LATEST VAOT STRUCTURES MANUAL. DESIGN CALCULATIONS AND FABRICATION DRAWINGS SHALL BE SIGNED, STAMPED AND DATED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF VERMONT. IN ADDITION TO DESIGNING THE BEAMS, THE FABRICATOR SHALL ALSO COMPLETE THE LOAD RATING TABLE ON SHEET 2. THE DESIGN SHALL COMPLY WITH THE FOLLOWING:
   A. HS 25-44 DESIGN LOAD
   B. F'C (MIN.) = 6000 PSI
   C. MAXIMUM CONCRETE RELEASE STRENGTH = 0.80 F'C
   D. MAXIMUM POSITIVE CAMBER AT MIDSPAN = ONE INCH.
   E. ZERO TENSION IN THE PRECOMPRESSED TENSION ZONE, UNDER FINAL SERVICE CONDITIONS.

   FABRICATION DRAWINGS SHALL BE SUBMITTED (6 WEEKS PRIOR TO FABRICATION OF THE BEAMS) TO THE STRUCTURES ENGINEER IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE STRUCTURES ENGINEER MUST APPROVE BEFORE FABRICATION COMMENCES.
9. PRESTRESSED CONCRETE MEMBERS SHALL CONFORM TO SECTION 510 OF THE STANDARD SPECIFICATIONS. THE UNIT PRICE FOR INTERIOR UNITS AND EXTERIOR UNITS SHALL INCLUDE ALL MATERIALS CAST INTO THE UNITS, AND ALL EQUIPMENT AND LABOR ASSOCIATED WITH THE DESIGN, DETAILING, FABRICATING, TESTING, HANDLING, TRANSPORTING, ERECTING AND FINISHING OF THE UNITS, INCLUDING POST-TENSIONING AND PROCEDURES DETAILED IN THE SEQUENCE OF CONSTRUCTION. ADDITIONAL COSTS ASSOCIATED WITH THE EXTERIOR UNITS INCLUDE ALL COSTS ASSOCIATED WITH CONSTRUCTING THE REINFORCED CONCRETE CURB AND ATTACHING THE BRIDGE RAILING TO THE BEAM. THE CONTRACTOR'S/FABRICATOR'S METHOD OF CONSTRUCTING THE CURB, WHETHER IT INVOLVES PRECASTING OR CAST-IN-PLACE METHODS, SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO FABRICATION OF THE PRESTRESSED CONCRETE MEMBERS.
10. THE EXISTING STONE RIP-RAP IN FRONT OF THE ABUTMENTS SHOULD BE DISTURBED AS LITTLE AS POSSIBLE. ANY STONE THAT IS DISTURBED DURING CONSTRUCTION SHOULD BE REPLACED OR RESTORED TO ITS PRESENT CONDITION TO THE SATISFACTION OF THE RESIDENT ENGINEER.
11. IN SOME AREAS, THE NEW 1:2 SLOPES ARE VERY CLOSE TO THE EXISTING RIGHT-OF-WAY LINE. IN THESE AREAS, THE RESIDENT ENGINEER SHALL CONSULT WITH THE STRUCTURES DIVISION AND MAY DIRECT THE CONTRACTOR TO CONSTRUCT THE SLOPES AT 1:1.5 WITH A 2-FOOT THICK FACING OF STONE FILL, TYPE II, FOR STABILITY. AN ESTIMATED QUANTITY OF 25 CY OF ITEM 613.11 HAS BEEN INCLUDED FOR THIS WORK.

## REMOVAL NOTES

1. REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 529.
2. REMOVAL OF THE THE EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10.
3. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE:
   A. REMOVAL OF EXISTING BRIDGE RAILING, CONCRETE CURB, CONCRETE BRIDGE BRIDGE DECK AND CURTAIN WALLS.
   B. REMOVAL OF EXISTING STEEL BEAMS AND DIAPHRAGMS.
   C. REMOVAL OF ALL BEARING DEVICES.

## REMOVAL NOTES (CONTINUED)

   D. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENTS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
   E. ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES TO PREVENT DEBRIS FROM FALLING INTO THE THATCHER BROOK.
4. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.
5. LIMITS OF REMOVAL SHOWN ARE APPROXIMATE. THE ENGINEER SHALL ESTABLISH ACTUAL LIMITS OF REMOVAL AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION.
6. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW MASONRY, SHALL BE RETAINED AND INCORPORATED INTO THE NEW MASONRY. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONRETE, DIRT, DETRIMENTAL SCALE, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
7. SAW CUTS SHALL BE 1" DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
8. EXISTING REINFORCING STEEL THAT WILL NOT BE INCORPORATED INTO THE NEW MASONRY SHALL BE REMOVED A MINIMUM OF 1" BELOW THE MASONRY SURFACE. CAVITIES PRODUCED BY REINFORCING STEEL REMOVAL SHALL BE CLEANED, SATURATED WITH WATER AND POINTED AND TRUED WITH MORTAR PER SECTION 501. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
9. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND THE EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

## SEQUENCE OF CONSTRUCTION FOR PRESTRESSED VOIDED SLABS

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE USED FOR INSTALLING THE PRESTRESSED VOIDED SLAB UNITS. IF THE CONTRACTOR WISHES TO ALTER THIS PROCESS, IT MUST BE APPROVED BY THE VTRANS STRUCTURES ENGINEER.

A. LAYOUT WORKING LINES
   - LAYOUT WORKING LINES FOR THE BRIDGE'S ENTIRE WIDTH ON THE BEAM SEAT. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.
   - THE WORKING LINES ARE TO BE BASED ON THE NOMINAL BEAM WIDTHS.

B. VERIFY BEAM SEAT ELEVATIONS
   - TAKE ELEVATIONS AT BEAM SEATS.
   - IF SEATS ARE HIGH, GRIND TO CORRECT ELEVATIONS.
   - INSTALL BEARINGS.

C. ERECT BEAMS
   - BEAMS SHALL BE PLACED TO FIT WITHIN THE WORKING LINES.
   - AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH LATERAL TIE).

D. INSTALL OAKUM OR EQUIVALENT JOINT FILLER (BACKER ROD)
   - FILLER SHALL BE PLACED BELOW THE KEY'S BOTTOM AS SHOWN ON THE PLANS.

E. GROUT DOWEL ENDS AT THE FIXED END AT BRIDGE SEATS AND PLACE COLD POURED JOINT SEALERS AT EXPANSION END.

F. INSTALL TRANSVERSE TIES
   - A SEAMLESS POLYPROPYLENE SHEATH SHALL COVER TIES (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND).
   - FEED TIES THROUGH DUCTS.
   - VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS.
   - USING CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST-TENSION TIES TO APPROXIMATELY 5,000 LBS. TO REMOVE SAG IN THE TIE AND TO SEAT THE CHUCK.

## SEQUENCE OF CONSTRUCTION FOR PRESTRESSED VOIDED SLABS (CONTINUED)

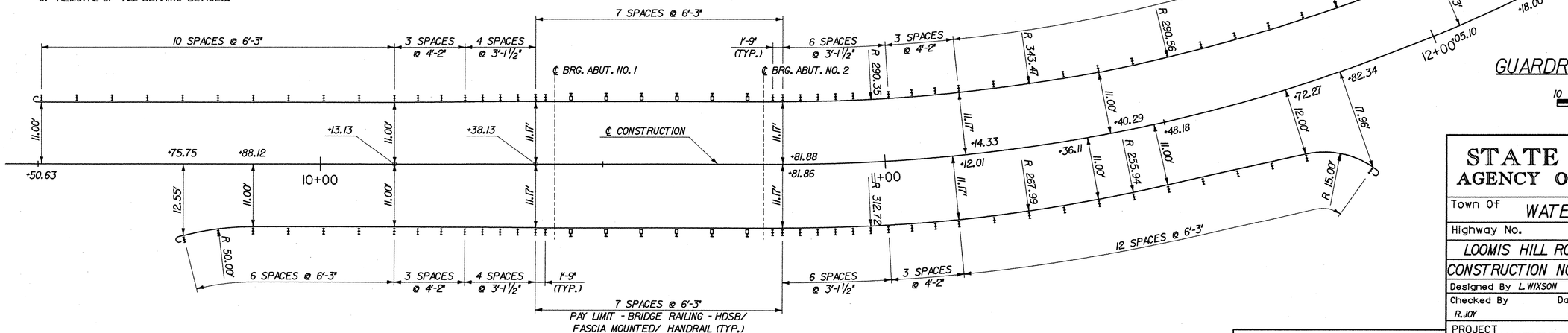
G. GROUT SHEAR KEYS
   - CLEAN JOINT WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. THEN VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
   - ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
   - CAREFULLY ROD THE JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.

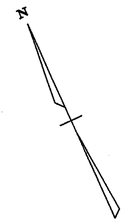
H. POST-TENSION TRANSVERSE TIES
   - GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING.
   - USEING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST-TENSION TIES TO 30,000 LBS.

I. FINISH WORK
   - REMOVE WEDGES, AND PATCH DECK AND FASCIA BEAMS AT TRANSVERSE TIES.
   - PLACE AN OVERLAY.
   - PLACE PAVEMENT.

## CONCRETE AND REINFORCING STEEL NOTES

1. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
2. REINFORCING PLACEMENT TOLERANCES SHALL BE:
   SPACING: +/- ONE-INCH
   CLEARANCE: +/- ONE-QUARTER INCH
3. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   ALONG BACK FACES OF WALLS AGAINST EARTH: 2 INCHES
   ELSEWHERE, UNLESS OTHERWISE NOTED: 3 INCHES
4. ALL CONCRETE SHALL BE CONCRETE, CLASS B (HPC-B), UNLESS NOTED OTHERWISE.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1", OR AS OTHERWISE INDICATED ON THE PLANS.
6. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SUPERSTRUCTURE SURFACES EXCEPT THE UNDERSIDE OF THE VOIDED SLABS BETWEEN DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED SUBSTRUCTURE CONCRETE, NEW AND EXISTING.
7. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
8. THE KEY IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
9. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL.
10. THE REPAIR AREAS INDICATED ON THE PLANS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE ACTUAL LIMITS OF NEEDED REPAIR. A THOROUGH INSPECTION BY THE ENGINEER SHALL BE MADE OF ALL SUBSTRUCTURE AREAS AT THE TIME OF THE CONSTRUCTION. AREAS OF CONCRETE FOUND TO HAVE SPALLED, DELAMINATED OR TO BE OTHERWISE UNSOUND SHALL BE REPAIRED. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 580. SEE CONCRETE SUBSTRUCTURE REPAIR DETAIL ON SHEET 14.




## GUARDRAIL LAYOUT PLAN

SCALE 1" = 10'-0

10 0 10

# STATE OF VERMONT
## AGENCY OF TRANSPORTATION

| | |
|---|---|
| Town Of WATERBURY | Bridge No. 14 |
| Highway No. 6 | Log Sta. |
| | Surv. Sta. |

LOOMIS HILL ROAD OVER THATCHER BROOK

CONSTRUCTION NOTES AND GUARD RAIL LAYOUT

| | |
|---|---|
| Designed By L. WIXSON | Drawn By P. DUSTIN |
| Checked By R. JOY Date 03/03 | Bridge Design Supervisor M. ZYDEL Date 03/03 |
| PROJECT WATERBURY | PROJECT NO. TH 3-9637 |
| I.G.C. Info. m:\549108-Waterbury\BRIDGE\6cont\xj278nte.dgn | |
| Bridge Sheet No. | Sheet 10 of 18 |

McFarland-Johnson, Inc.

PLOTTED 05-MAY-2003