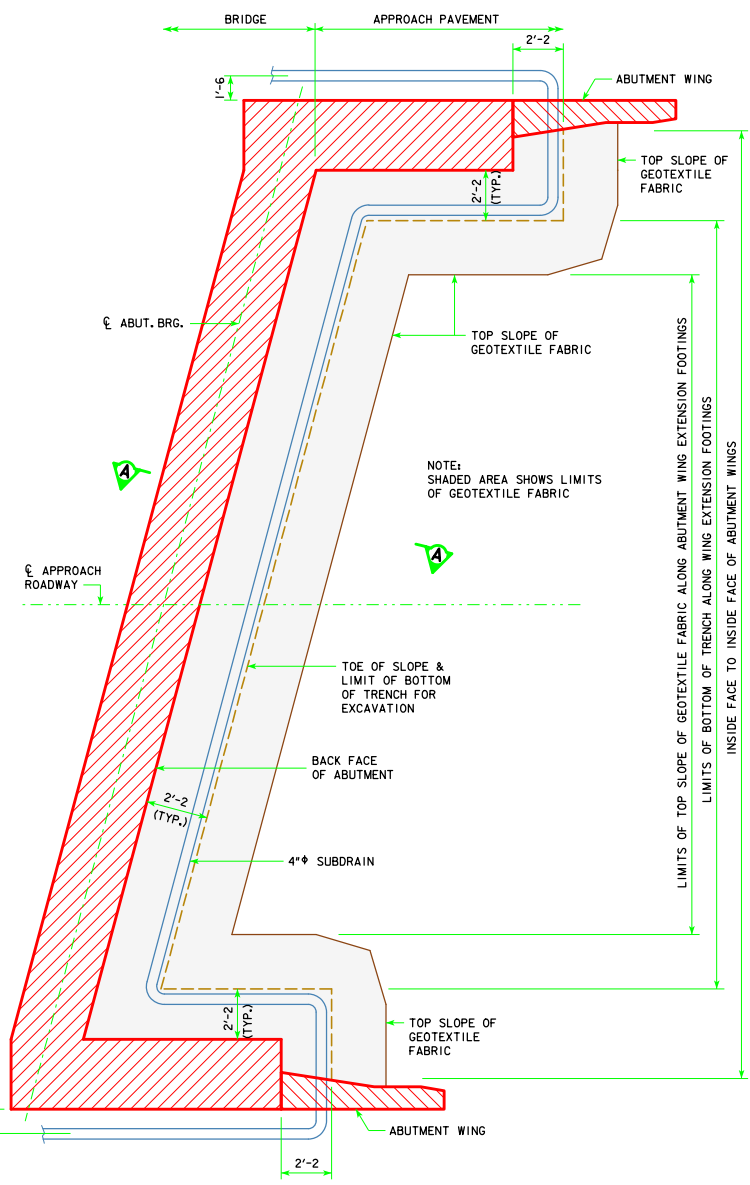


REVISED 04-12 - EXCAVATION LIMIT ON THE FRONT FACE OF ABUTMENT WAS CHANGED TO 3'-0".



**ABUTMENT PLAN WITH WING EXTENSIONS**

**NOTE: THESE DETAILS TO BE USED FOR 340'-0 BRIDGE LENGTH.**

**ABUTMENT BACKFILL PROCESS:**

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

POROUS BACKFILL IS THEN PLACED AND LEVELED, NO COMPACTION IS REQUIRED.

THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FEET OF THICKNESS.

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 3 MINUTES WITHIN EACH INCREMENT.

FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

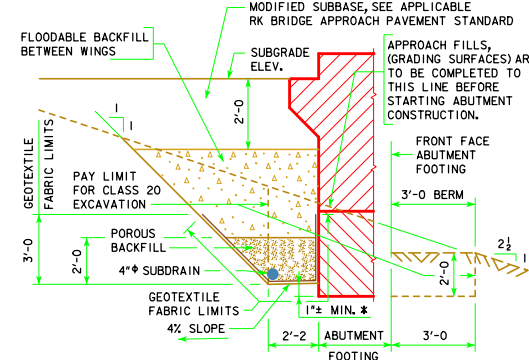
THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.

**NOTE:** SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

**TECHNICAL DATA INFORMATION - GEOTEXTILE FABRIC**

| MECHANICAL PROPERTIES           | TEST METHOD | UNIT  | MINIMUM AVERAGE ROLL VALUE |             |
|---------------------------------|-------------|---|----------------------------|-------------|
|                                 |             |   | MD                         | CD          |
| TENSILE STRENGTH (AT 5% STRAIN) | ASTM D 4595 | kn/m (LBS/FT)                                   | 19.8 (1356)                | 19.8 (1356) |
| APPARENT OPENING SIZE (AOS)     | ASTM D 4751 | mm (U.S. SIEVE)                                 | 0.43 MAX (#40)             |             |
| FLOW RATE                       | ASTM D 4491 | L/MIN/M <sup>2</sup> (GAL/MIN/FT <sup>2</sup> ) | 733 (18)                   |             |
| UV RESISTANCE (AT 500 HOURS)    | ASTM D 4355 | % STRENGTH RETAINED                             | 70                         |             |

**NOTE:**  
SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM CL APPROACH ROADWAY WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.  
SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END WHEN OUTLETTING AT ONE END OF THE ABUTMENT.



**SECTION A-A  
BACKFILL DETAILS**

**NOTE:** GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.  
\* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

|  |   |
|--|---|
| LATEST REVISION DATE<br>04-12<br><i>Thomas E. McQuinn</i><br>APPROVED BY BRIDGE ENGINEER | <br><b>Iowa Department of Transportation<br/>Highway Division</b>                               |
|  | STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES<br><b>ROLLED STEEL BEAM BRIDGES</b><br>JUNE, 2010 |
|  | <b>ABUTMENT BACKFILL<br/>DETAILS, SKEWED</b>  |

**RS40-176-10**