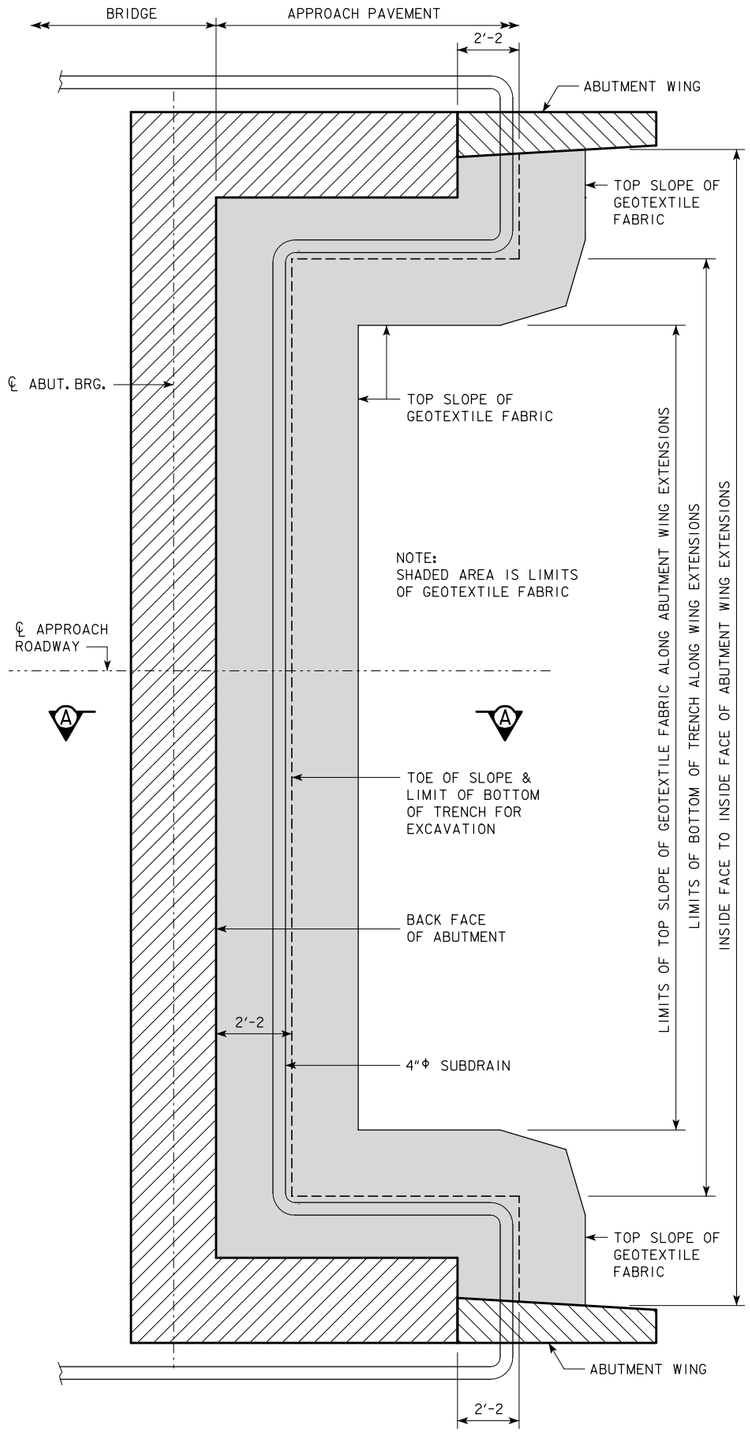


ABUTMENT PLAN WITH WING EXTENSIONS

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 "GRANULAR 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 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 GRANULAR BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE GRANULAR BACKFILL MATERIAL SHALL HAVE 4% OR LESS PASSING THE #200 SIEVE (I.E. WASHED CONCRETE SAND). THE GRANULAR BACKFILL WILL REQUIRE PLACEMENT IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND THEN FOLLOWED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FOOT OF THICKNESS.

TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2 INCH DIAMETER HOSE FOR 5 MINUTES SHOULD BE SPRAYED ON EACH SAND LIFT AT INCREMENTS NOTED. SURFACE FLOODING IS TO START AT THE HIGH END OF THE SUBDRAIN AND PROGRESS INCREMENTALLY TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TYPICAL SPACING FOR THE SURFACE FLOODING (5 MINUTE INTERVALS) SHOULD BE APPROXIMATELY AT 6 FOOT TO 8 FOOT INCREMENTS.

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

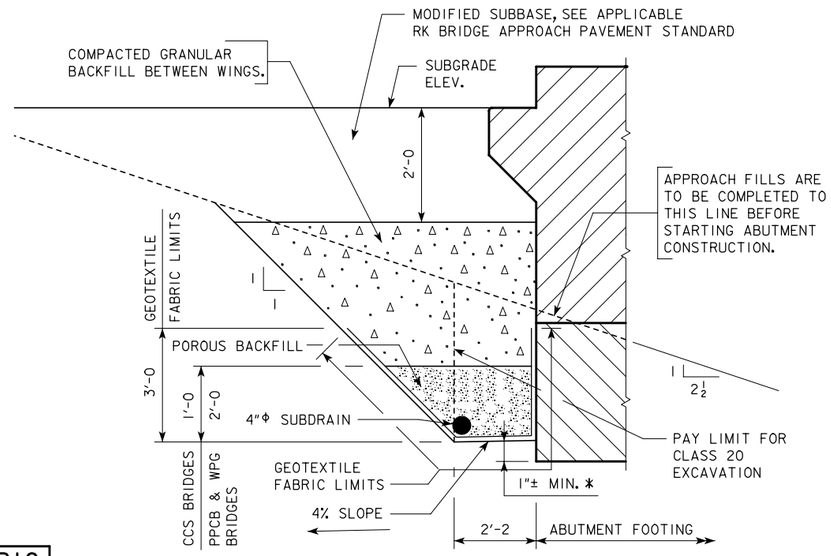
SUBDRAINS, POROUS BACKFILL, GRANULAR BACKFILL, GEOTEXTILE FABRIC AND WATER FLOODING REQUIRED AND FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

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

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)
PERMEABILITY	ASTM D 4491	CM/SEC	0.038	
FLOW RATE	ASTM D 4491	L/MIN/m^2 ($GAL/MIN/FT^2$)	733 (18)	
UV RESISTANCE (AT 500 HOURS)	ASTM D 4355	% STRENGTH RETAINED	70	

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



SECTION A-A

GRANULAR BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM ℄ 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.

ABUTMENT BACKFILL DETAILS

AT BACKFACE OF ABUTMENTS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. ____ OF ____ FILE NO. _____ DESIGN NO. _____

DESIGN TEAM	SUBDRAIN DETAILS (WING EXTENSION ABUTMENTS)	STANDARD SHEET 1007E	COUNTY	PROJECT NUMBER	SHEET NUMBER