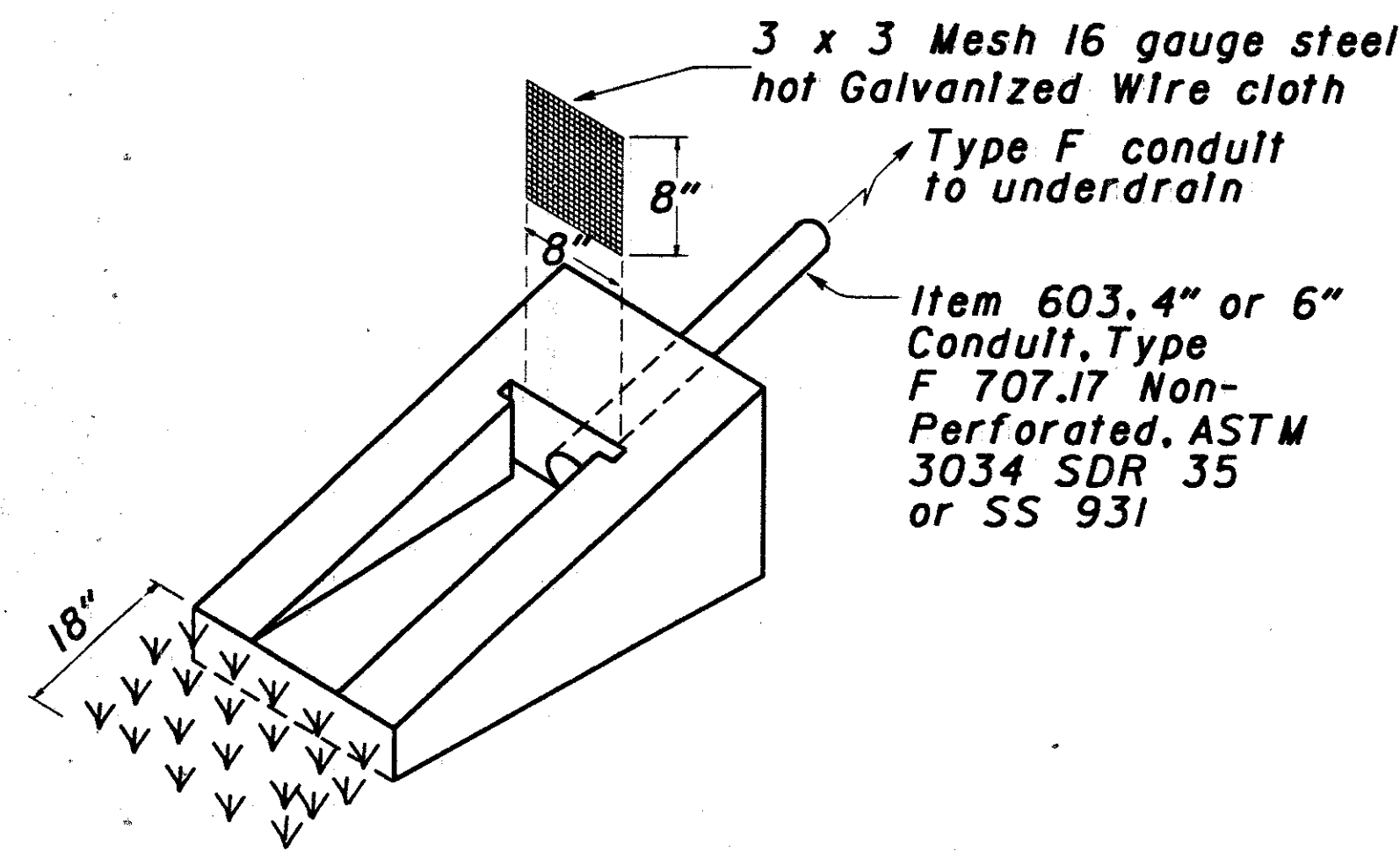
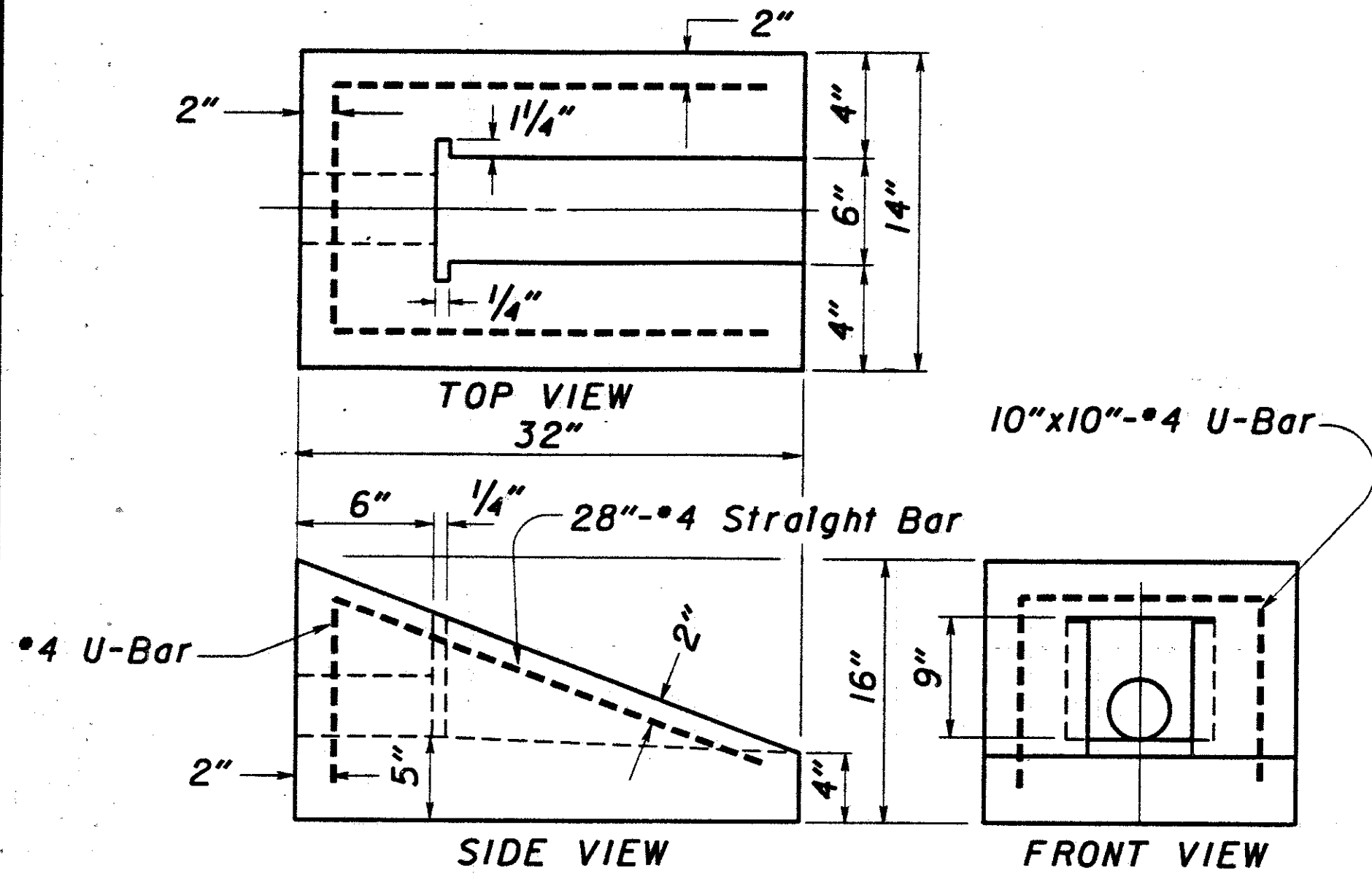


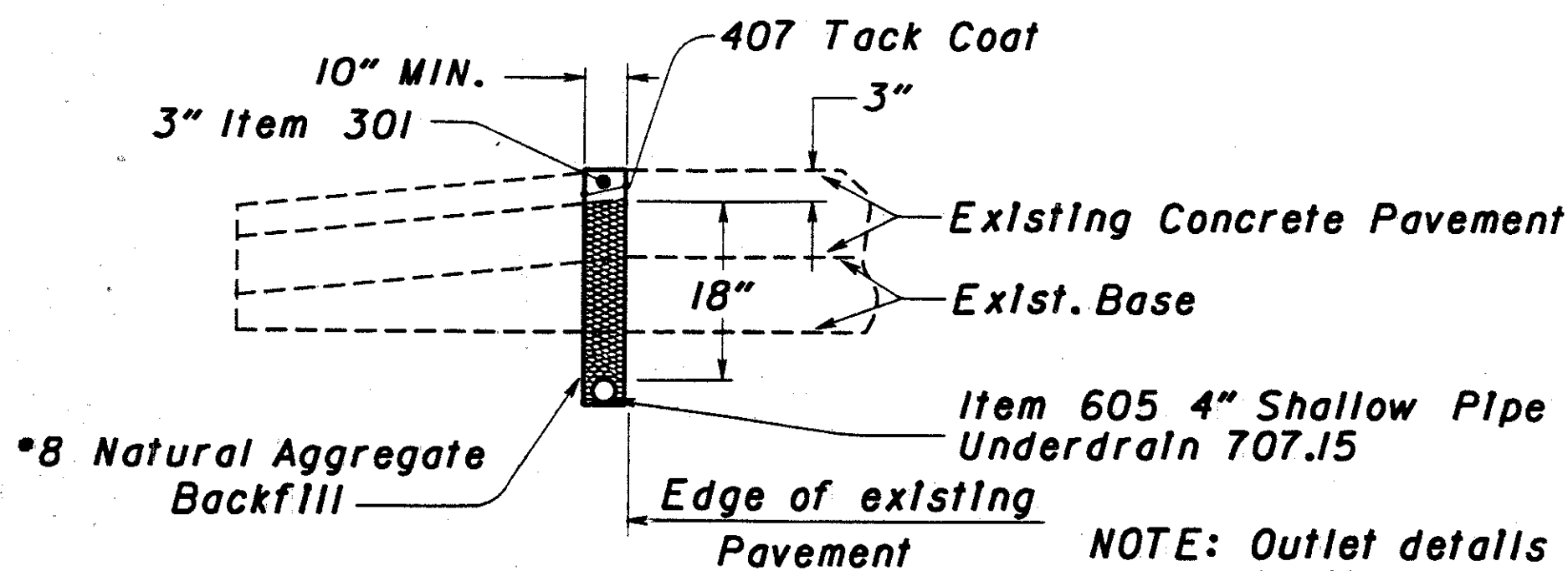
ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



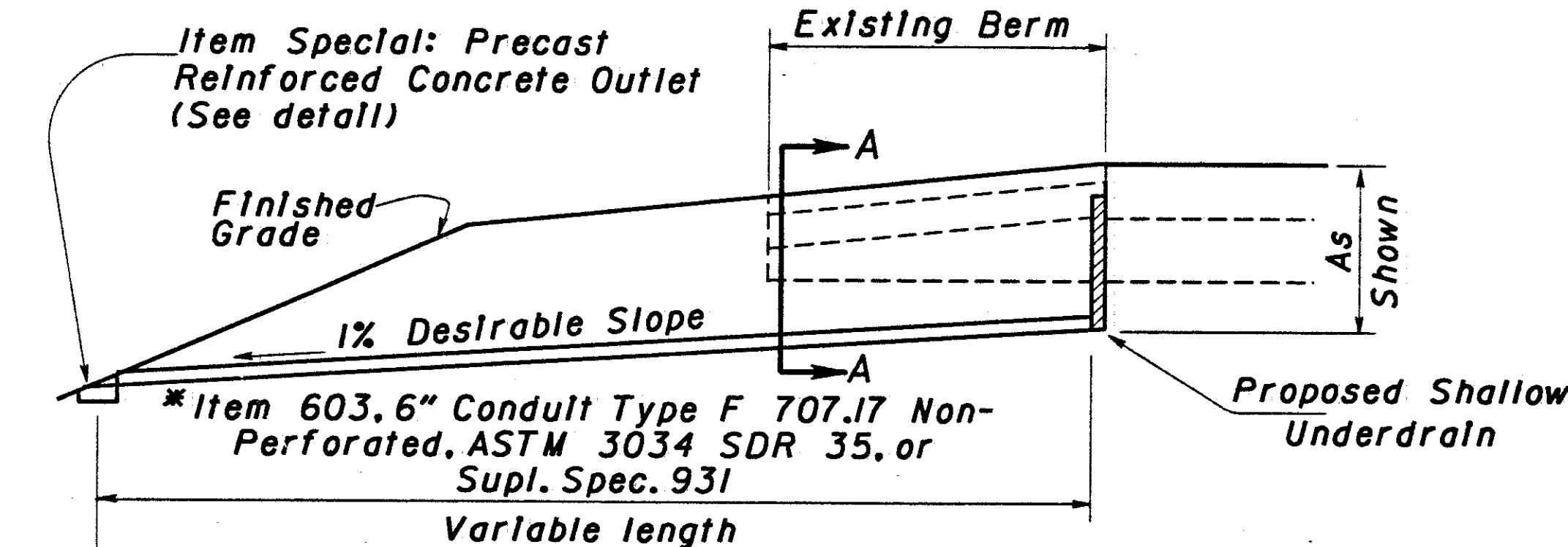
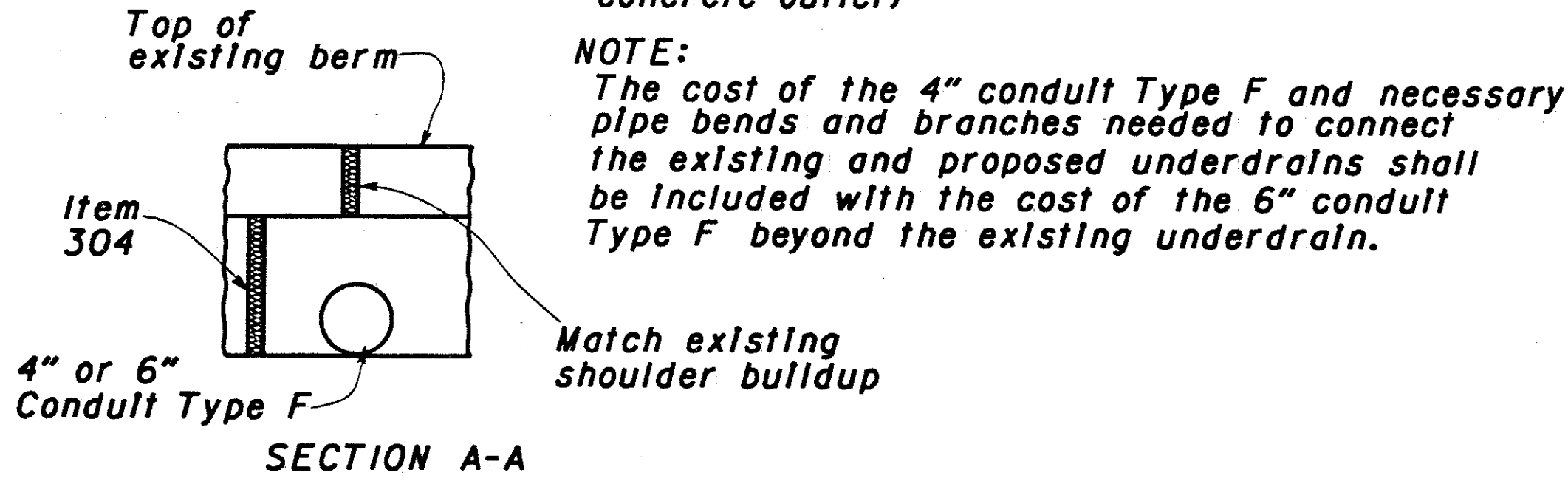
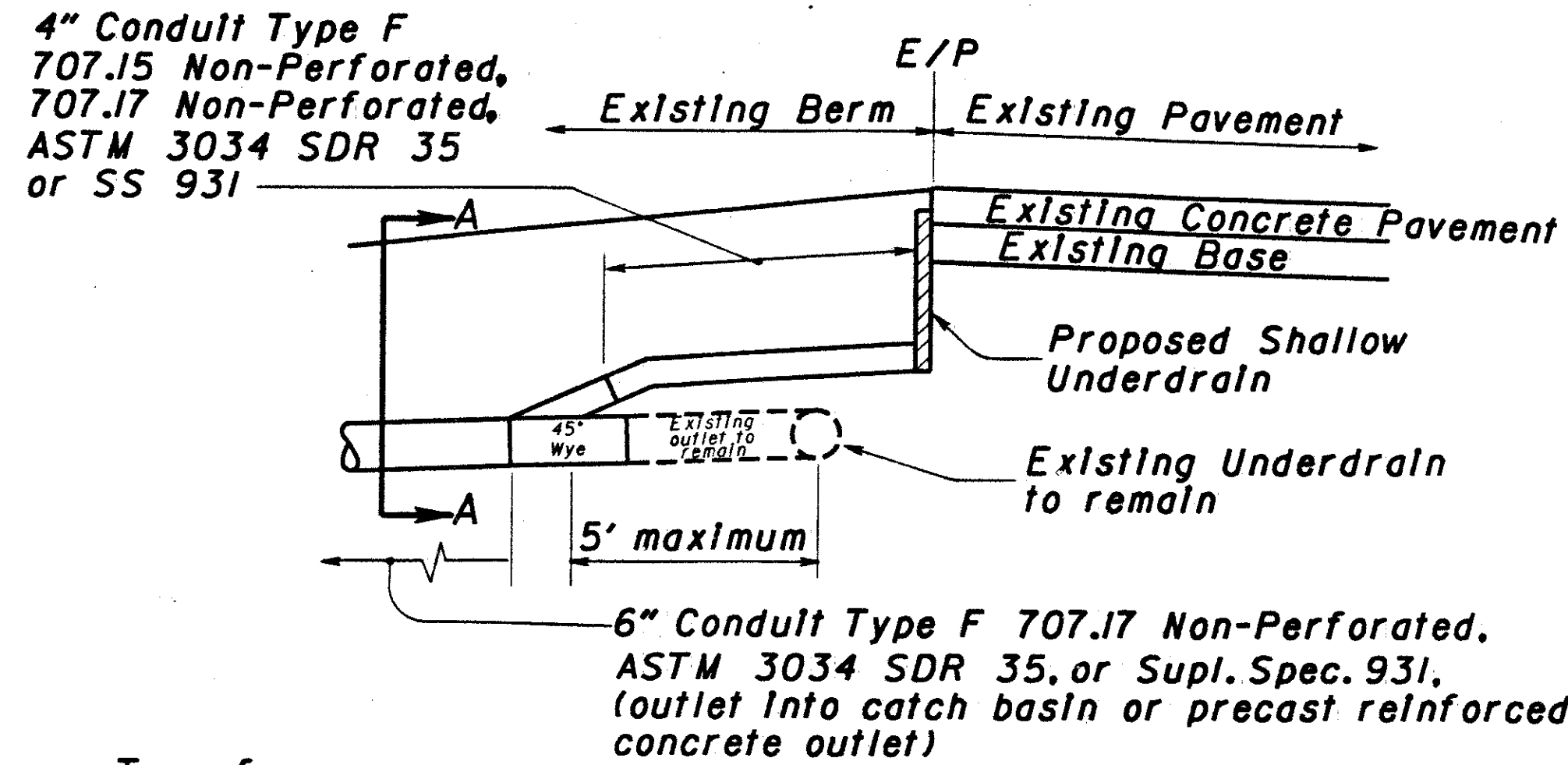
NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

PIPE UNDERDRAIN SYSTEM



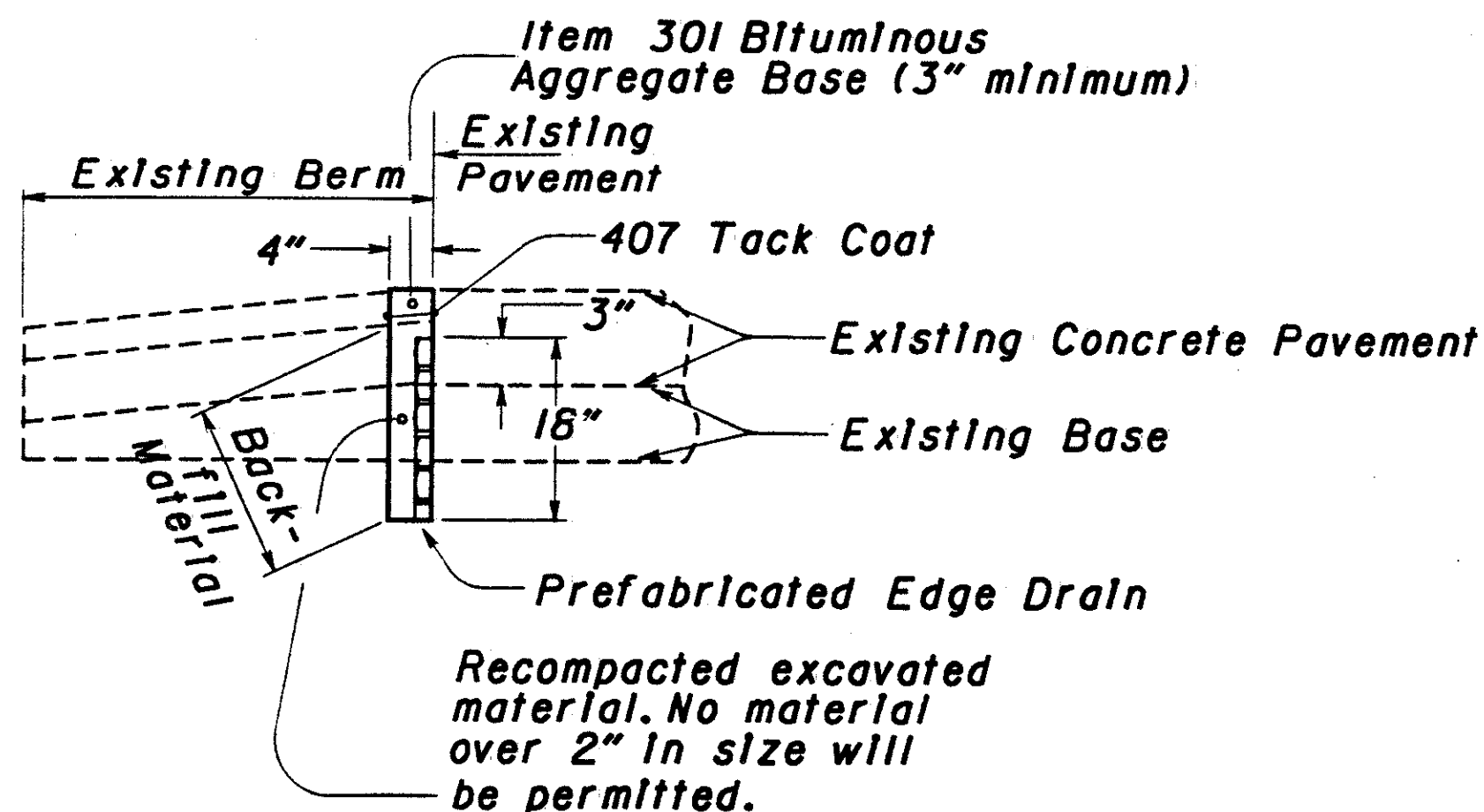
NOTE: Outlet details to be the same as shown above.

OUTLET DETAILS



NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used entirely between the underdrain & catch basin.
* If prefabricated edge drain is used then 4 inch Conduit shall be used for the outlet in lieu of 6 inch Conduit. The 4 inch Conduit shall be paid at the unit price bid for the 6 inch Conduit.

PREFABRICATED EDGE DRAIN SYSTEM



Recompacted excavated material. No material over 2 inch in size will be permitted.

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DESCRIPTION: The Item shall consist of furnishing and installing a pipe underdrain system or prefabricated edge drain system in accordance with the specifications, details as shown on the plans, and as directed by the Engineer.

MATERIALS: The underdrain shall be a pipe underdrain system per Item 605 or a prefabricated edge drain system meeting the following requirements. The prefabricated edge drain shall consist of a polymeric core with a minimum thickness of one inch wrapped in fabric meeting 712.09 Type A. The drain shall be flexible, rectangular in shape and of hollow construction. The core material shall be resistant to petroleum based chemicals, natural occurring soil chemicals, and road de-icing agents.

The core shall provide a minimum of 100 square inches unobstructed (one side only) drainage area per foot of width. Side walls of the core shall provide at least 5% open area to permit unobstructed flow through the filter and wall to the core.

The prefabricated edge drain shall have a minimum compressive strength of 6000 pounds per square foot with a maximum 20% compression in a parallel plate compression test (ASTM-D 695). The minimum (single side) core flow capacity shall be 10 gallons per minute per foot of width for a 0.1 gradient of 10 pounds per square inch bladder load per ASTM D 4716

In lieu of the above requirements the following products are acceptable prefabricated edge drains:
Hydraway Drain by Monsanto Company
PDS 25 by Prodrain Systems
Strip Drain 100 by Contech Construction Products, Inc.
AdvanEDGE by Advanced Drainage Systems, Inc.

CONSTRUCTION: The prefabricated edge drain shall be installed in a trench as shown on the plans and in accordance with the manufacturer's recommendations. The contractor has the option to backfill the trench with the excavated material or No. 8 natural aggregate. If the excavated material is used for the backfill it shall be placed in three (3) lifts minimum with each lift of uncompacted material not exceeding 8 inches in thickness. Each lift shall be compacted to 95% of the maximum dry weight density as determined by AASHTO T99. If No. 8 natural aggregate is used it shall be placed in one (1) or more lifts with a vibratory compactor run over the final lift to consolidate the aggregate prior to placing the asphalt plug. The first layer of the backfill material shall be placed simultaneously with the trenching operation to hold the edge drain flush against the trench wall.

The prefabricated edge drain shall be spliced as required prior to placement in the trench, using material furnished by the manufacturer and in accordance with the manufacturer's directions. All material required for the splices will be supplied by the manufacturer, but any equipment required shall be furnished by the Contractor.

The underdrain outlets shall be placed in accordance with Item 603 as directed by the Engineer, using outlet fittings. The manufacturer shall supply outlet fittings which will make the transition between the prefabricated edge drain and the outlet pipe. Fittings shall be installed as recommended by the manufacturer.

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain. The outlets on crack & seat projects shall be in place and functional prior to cracking and seating the existing pavement.

METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

BASIS OF PAYMENT: Work completed and accepted under this Item and measured will be paid for at the contract unit price bid per linear foot for Item 605 - Shallow Underdrain, as per plan, which price shall be full compensation for excavation and backfill; removing and disposing all surplus excavation in accordance with 203; for furnishing materials, including material for splices; outlet fittings and Item 301; for all labor, tools, equipment, and incidentals necessary to complete the work.

ITEM 605-SHALLOW UNDERDRAIN, AS PER PLAN