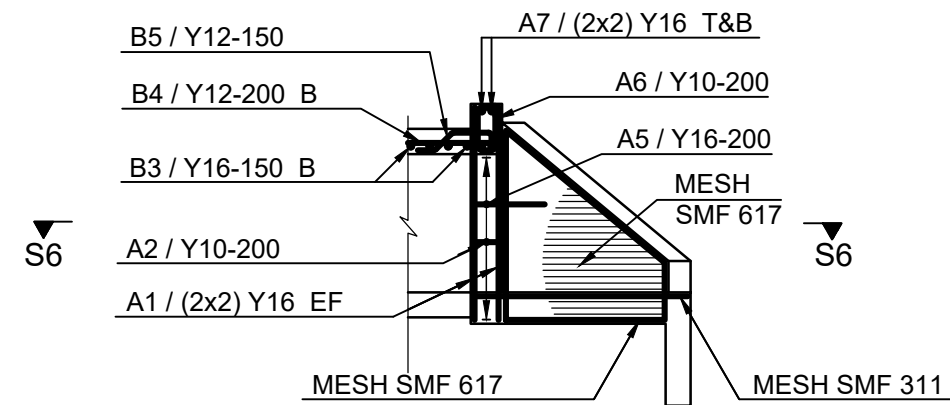
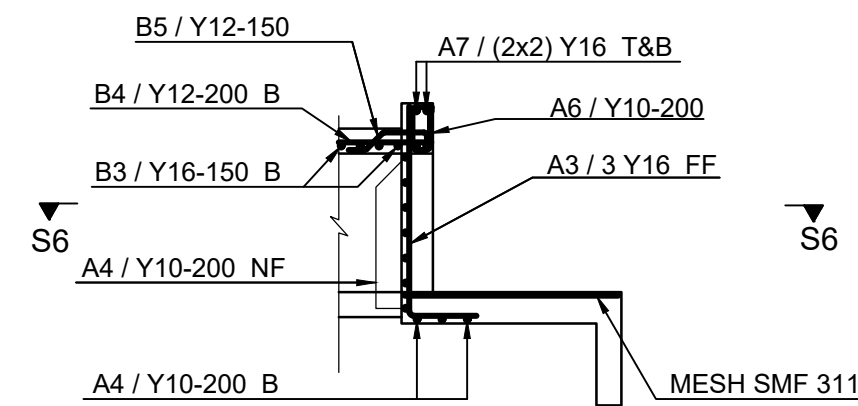


SECTION S1-S1 - INLET / OUTLET WING WALLS  
HEADWALL & COLUMNS - REINFORCEMENT

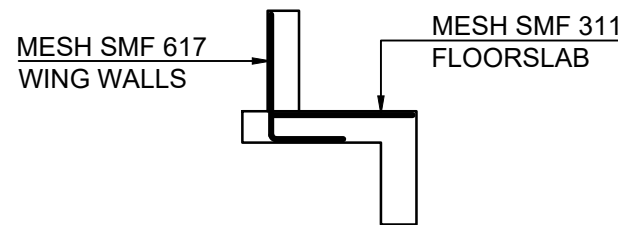


SECTION S2-S2 - INLET / OUTLET WING WALLS  
HEADWALL & WING WALLS - REINFORCEMENT

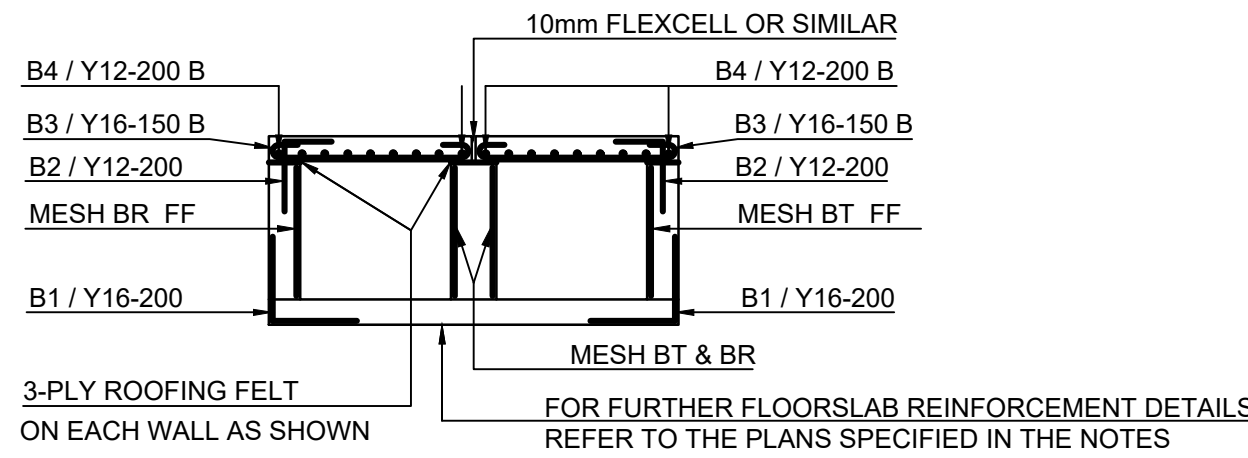


SECTION S3-S3 - INLET / OUTLET WING WALLS  
HEADWALL & COLUMNS - REINFORCEMENT

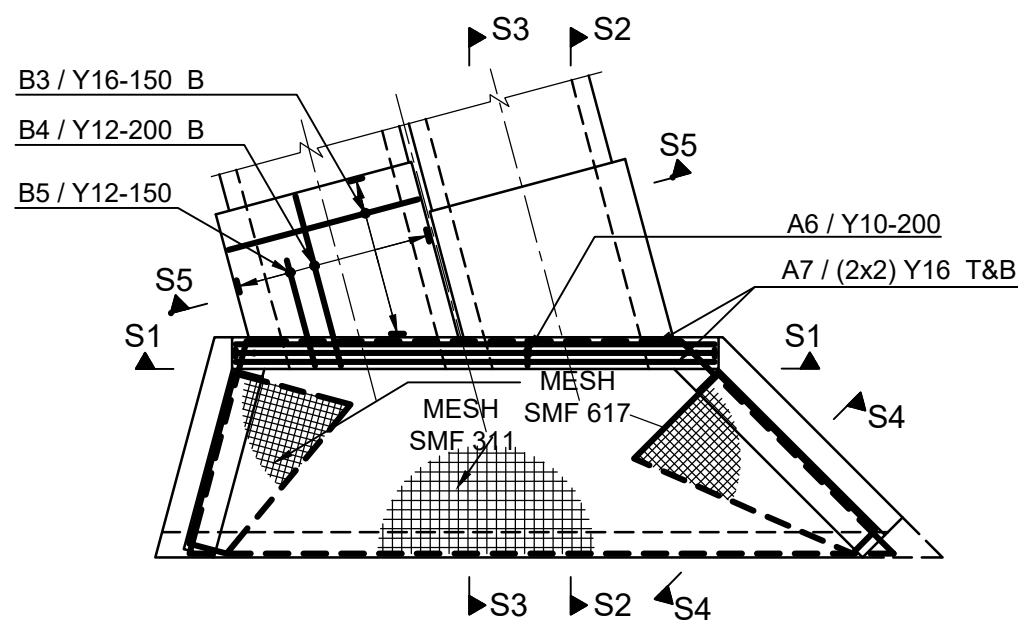
NOTE:  
MESH REINFORCEMENT ONLY  
FOR CULVERTS WHERE  
VERTICAL OPENING, JA > 900



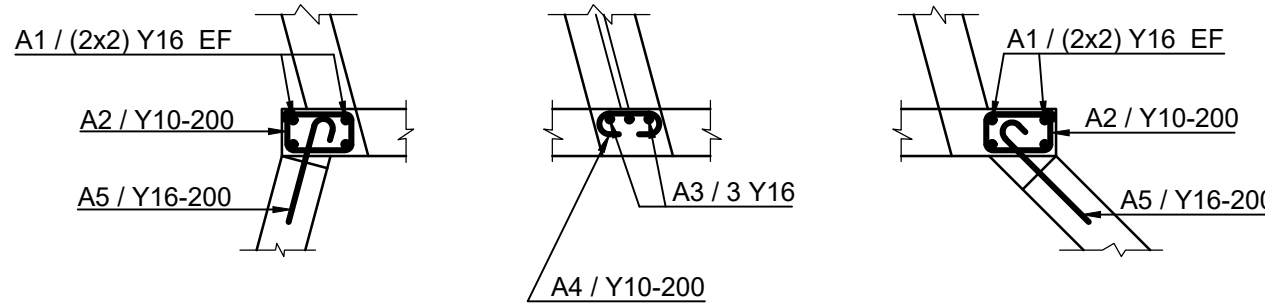
SECTION S4-S4 - INLET / OUTLET WING WALLS  
WING WALLS & FLOORSLAB - REINFORCEMENT



SECTION S5-S5 - INLET / OUTLET WING WALLS  
INSITU BARREL (BOX CULVERTS ONLY) - REINFORCEMENT





TYPICAL REINFORCEMENT PLAN OF  
INLET / OUTLET WING WALLS - MAX Ø = 30°



SECTION S6-S6 - INLET/OUTLET WING WALLS  
HEADWALL COLUMNS - REINFORCEMENT

#### NOTES FOR INLET / OUTLET WING WALLS:

- DESIGN CRITERIA
  - THE WING WALLS ARE DESIGNED AS CANTILEVERS FIXED TO THE BASE AND SUPPORTED BY THE HEADWALL.
  - THE WING WALLS ARE DESIGNED FOR A SURCHARGE OF 750mm AND A MAXIMUM SLOPE OF 1:1.5 FOR ANY FILL HEIGHT.
  - THE DENSITY OF SOIL = 20 kN/m.
  - SOIL PRESSURES DETERMINED USING RANKINE'S THEORY.
  - CONCRETE: WING WALL INSITU BARREL  
CHARACTERISTIC STRENGTH (MPa) 30 30  
CLASS CONCRETE 30 / 19 30 / 19
  - REINFORCEMENT ACCORDING TO SABS 920 - LATEST REVISION.  
CHARACTERISTIC STRENGTH OF HIGH TENSILE STEEL = 450 MPa.  
CHARACTERISTIC STRENGTH OF HIGH TENSILE STEEL MESH = 450 MPa.
  - A LINEAR SOIL PRESSURE DISTRIBUTION IS ASSUMED.
  - THE INSITU BARREL IS DESIGNED FOR SNABC TRAFFIC LOADING IN ACCORDANCE WITH TMH 7 PARTS 1.2&3 (AS AMENDED 1988) "CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA".
- GENERAL
  - THE REQUIRED CLASS OF SURFACE FINISH IS F2 FOR ALL VISIBLE SURFACES.
  - ALL VISIBLE CORNERS MUST HAVE A 25 x 25 mm CHAMFER.
  - TWO 150 mm LAYERS OF APPROVED MATERIAL, COMPACTED TO 93% MODIFIED A.A.S.H.T.O. DENSITY, ARE REQUIRED UNDER THE INLETS AND OUTLETS.
  - MINIMUM CONCRETE COVER TO REINFORCEMENT IS 40mm.
  - FURTHER INFORMATION REGARDING SPECIFIC CULVERTS APPEAR ON THE DRAINAGE SCHEDULES, OF THE ROAD.
  - THE INLET AND OUTLET UNITS ARE DESIGNED TO ACT AS INDEPENDENT UNITS WHEN USED TOGETHER WITH PIPES, PRECAST BARRELS, AS WELL AS INSITU BARREL UNITS.
  - REINFORCEMENT DETAILS OF THE FLOOR SLAB SUPPORTING THE CULVERT BARRELS APPEAR ON THE TYPICAL PLAN FOR PRECAST PORTAL CULVERTS BASE SLABS.
  - THE HEADWALLS MUST BE ALIGNED PARALLEL TO THE ROAD SHOULDER.

			<div>CONSTRUCTION RECORD</div> <div>WORKS CONTRACT ENGINEER</div>			<div></div> <div>Registration No: 2017/026970/07</div>	<div>DESIGNED BY</div> <div><div>NAME</div><div>Gret van Niekerk</div></div> <div><div>Prof. Reg. No.</div><div>790095</div></div> <div><div>CHECKED BY</div><div>Gret van Niekerk</div></div> <div><div>Prof. Reg. No.</div><div>790095</div></div>			<div>CONSULTANT APPROVAL</div> <div><div>NAME</div><div>Gret van Niekerk</div></div> <div><div>Prof. Reg. No.</div><div>790095</div></div> <div><div>Date</div><div>2022/10/31</div></div>			<div>HEAD OFFICE</div> <div>48 Tambotie Avenue Val de Grace Pretoria 0184 PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000</div>			<div></div> <div>BUILDING SOUTH AFRICA THROUGH BETTER ROADS</div>	<div>WESTERN REGION</div> <div>1 Havenga Street Oakdale Belville 7530 Private Bag X19 Belville 7535 Tel: (021) 957 4600</div>			<div>ACCEPTANCE</div> <div>THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATEVER CAUSE OR HOWEVER ARISING</div> <div>for CEO, SA NATIONAL ROADS AGENCY SOC LTD. Date:</div>			<div>PROJECT DESCRIPTION</div> <div>THE PERIODIC MAINTENANCE (REPAIR AND RESEAL) OF NATIONAL ROUTE 10 SECTION 5 FROM LUIPERTSKOP (km 40.00) TO HANOVER (km 62.17)</div>			<div>PROJECT NUMBER</div> <div>N.010-050-2020/3</div>			<div>DRAWING LOCATION DATA</div> <div>ROUTE SECTION DRAWING km DISTANCE DRAWING TYPE STRUCTURES - CULVERTS BRIDGE/STRUCTURE No. CONSULTANT DRAWING No. SANRAL DOCUMENT #</div>			<div>START</div> <div>END</div> <div>FA</div> <div>PM05-T-021</div> <div>TENDER PURPOSES ONLY</div>			<div>VER</div>		
			<div>SANRAL PROJECT MANAGER</div>																																		
			<div>NAME</div> <div>Gret van Niekerk</div>																																		
			<div>Prof. Reg. No.</div> <div>790095</div>																																		
			<div>Date</div> <div>2022/10/31</div>																																		