

PROJECT NAME:	OPG-369 Outlet Stabilization (Country Acres)	DATE:	12/14/07
ADDRESS/BLOCK & LOT	Union Township Block 18, Lot 11 (Discharge) – 96 Country Acres Dr.		
FACILITY TYPE:	Existing Stormwater Outfall	PRIORITY:	>6

1. ISSUES AND CONCERNS:

During site investigations an existing culvert and headwall located along the roadway near the entrance to the development were found to be in immediate need of stabilization and repair to reduce erosion impacts in the open channel downstream of the development. There are no water quality or quantity controls for the stormwater discharge. There was evidence of erosion caused by high runoff velocity in the outfall channel which conveys stormwater to an unnamed tributary of Mulhockaway Creek. The outlet discharge with no velocity controls is contributing to erosion and sedimentation in downstream areas.

2. EXISTING CONDITION BASED ON FIELD EVALUATION:

An existing culvert and headwall were observed in the field. Large rocks were observed at the outfall and appear to be the remnants of a rip-rap apron. The stormwater discharge did not appear to be maintained, and trash and debris were observed directly downstream of the headwall. Evidence of erosion caused by high stormwater velocity was observed along the side slopes of the outfall channel. The flow was beginning to undermine and erode soil around the headwall.

3. PROPOSED SOLUTIONS:

There is little area to construct a stormwater BMP that would treat the runoff from Country Acres Drive. However, the existing outfall should be repaired to provide a stable outlet that conveys runoff without causing erosion. Based on the site conditions, the most effective approach to the repair and stabilization would be with the installation of a properly sized scour hole. The area immediately downstream of the discharge would be stabilized and cleaned of trash and debris. The scour hole creates a stable outlet for high runoff velocities and traps sediment before being discharged.

4. ANTICIPATED BENEFITS:

While the stormwater retrofit would not significantly remove pollutants, the retrofit of the stormwater outfall near the entrance to the site would have a substantial benefit of reducing erosion during major storm events. The scour hole would dissipate energy and reduce runoff velocities which cause erosion and elevated sediment load to the Mulhockaway Creek Watershed. The proposed stabilization of the outfall and channel would protect the soils from erosion during storm events.

5. MAJOR IMPLEMENTATION ISSUES:

The adjacent property owners will need to endorse the project and be willing to allow installation of any repairs. Activities to repair the pipe discharge may impact wetlands or wetlands transition areas, and any changes or modification to the discharge to receiving waters will be closely monitored by the Division of Land Use Regulation.

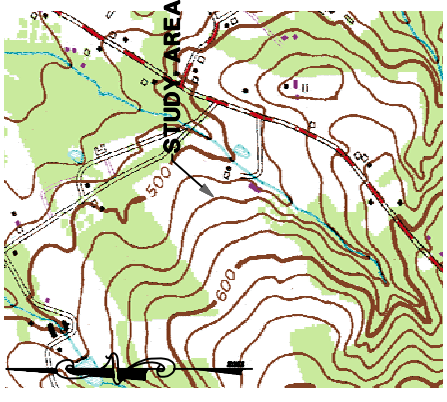
TASK	DESCRIPTION	ESTIMATED COSTS	
1	Prepare concept plan and present to Homeowners Association.	\$2,000.00	
2	Conduct pre-application meeting with NJDEP and Hunterdon SCD. Prepare final design plans and permits.	\$5,000.00	
3	Prepare construction documents and solicit quotes from contractors.	\$2,000.00	
4	Install stormwater BMP retrofits		
		QUANTITY UNITS UNIT PRICE	
	Mobilization/Erosion Control	1 LS \$2,500.00	\$2,500.00
	Outlet and Piping Repair	1 LS \$8,500.00	\$8,500.00
	Stabilization	1 LS \$5,000.00	\$5,000.00
	Closeout/Contingency (20%)	1 LS \$3,200.00	\$3,200.00
	Total Construction Cost	\$19,200.00	
		TOTAL COST: \$28,200.00	
		ANNUAL O&M COST: \$500.00	



Stormwater outfall






Sediment and trash deposition



USGS QUAD LOCATION MAP
(PITTSBOWN, NOT TO SCALE)

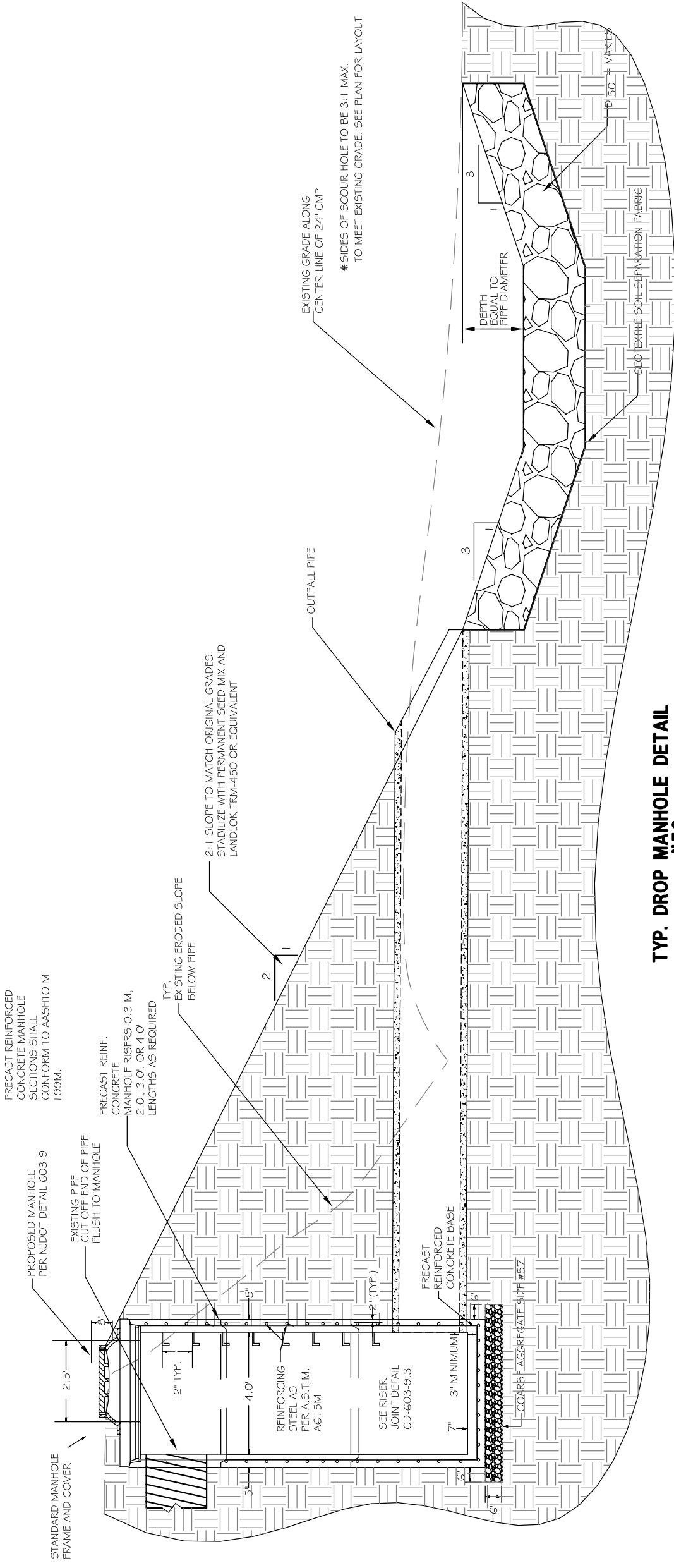
LEGEND

-  **STREAM**
-  **SOILS**
-  **RUNOFF FLOW DIRECTION**

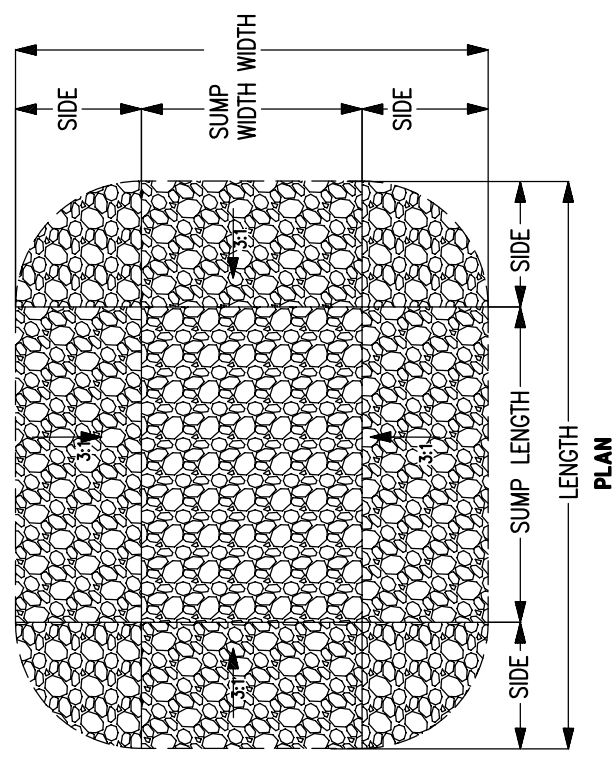
SOILS:
PdtC2 - Pattenburg Gravelly Loam, 6-12% Slopes, eroded
PdtD - Pattenburg Gravelly Loam, 12-18% Slopes
TurB - Turbotville Loam, 2-6% Slopes



SITE PLAN	
COUNTRY ACRES OUTLET REPAIR	
DATE: DECEMBER 14, 2007	BLOCKS 17, LOT 4, 15 & 4, 16 BLOCKS 18, LOT 11 UNION TOWNSHIP HUNTERDON COUNTY, NEW JERSEY
SCALE: 1" = 100'	OMNI ENVIRONMENTAL
SHT. NO. 1 of 1	321 WALL STREET PRINCETON, NJ 08540 PH: (609) 924-8821 FAX: (609) 924-8851



TYP. DROP MANHOLE DETAIL
N.T.S.



TYP. SCOUR HOLE DETAILS
N.T.S.

NOTE: BMP DETAILS ARE GENERIC AND ARE NOT MEANT FOR DETAILED BMP DESIGN.

DROP MANHOLE DETAILS	
MULHOCKAWAY CREEK STORMWATER BMP RETROFITS	
DATE: DECEMBER 14, 2007	
SCALE: NTS	OMNI ENVIRONMENTAL
SHT. NO. 1 of 1	321 WALL STREET PRINCETON, NJ 08540 PH: (609) 924-8821 FAX: (609) 924-8851