

TOWN OF ST. ALBANS, VERMONT
ST. ALBANS PARK AND RIDE - CMG PARK (23) S
DESIGNER EROSION PREVENTION AND SEDIMENT CONTROL CHECKLIST



1. NARRATIVE

1.1. PROJECT DESCRIPTION

THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) OWNS AN EXISTING 56-VEHICLE SPACE PARK AND RIDE FACILITY IN THE TOWN OF ST. ALBANS. THE FACILITY IS LOCATED AT THE SOUTHWESTERN CORNER OF THE VT ROUTE 36 AND VT ROUTE 104 INTERSECTION. VTRANS INTENDS TO EXPAND THIS FACILITY BY ADDING 32 ADDITIONAL PARKING SPACES FOR A TOTAL CAPACITY OF 88 SPACES. AS THE EXPANSION WILL TAKE PLACE ON THE EXISTING 2-ACRE VTRANS-OWNED PROPERTY, NEW PROPERTY ACQUISITION IS NOT REQUIRED.

THE EXPANSION WILL TAKE PLACE WITHIN THE GENERAL FOOTPRINT OF THE EXISTING FACILITY AND ADJACENT SLIP RAMP. THE SLIP RAMP WILL BE REMOVED, AND THE AREA WILL BE CONVERTED TO PARKING SPACES. THE EXISTING TOTAL PAVED SURFACE, INCLUDING THE PARKING AREA AND THE SLIP RAMP IS APPROXIMATELY 0.91-ACRES. THE TOTAL NEW PAVED SURFACE WILL BE APPROXIMATELY 0.88-ACRES. THE MAXIMUM AREA OF SOIL DISTURBANCE ASSOCIATED WITH CONSTRUCTION IS APPROXIMATELY 1.5-ACRES.

IN THE AREA OF THE EXISTING PARKING LOT, THE EXISTING PAVEMENT WILL REMAIN UNDISTURBED. IN AREAS WHERE THE PARKING LOT IS BEING EXPANDED, 40MM OF TYPE III PAVEMENT AND 50MM OF TYPE II PAVEMENT WILL BE PLACED ON TOP OF A 450MM SUBBASE OF DENSE GRADED CRUSHED STONE. AFTER THE EXPANDED AREAS HAVE BEEN CONSTRUCTED, THE ENTIRE PARKING AREA WILL RECEIVE A 40MM LAYER OF TYPE III PAVEMENT OVERLAY.

ADDITIONAL PROJECT ELEMENTS INCLUDE THE INSTALLATION OF A CONCRETE SIDEWALK ALONG THE BACKSIDE OF THE PARKING LOT, REMOVAL AND REPLACEMENT OF A SECTION OF GUARDRAIL ALONG HOME HEALTH CIRCLE DRIVE, REMOVAL AND REPLACEMENT OF THE EXISTING BUS SHELTER, INSTALLATION OF SEVERAL DECIDUOUS TREES ALONG THE PROJECT PERIMETER, AND INSTALLATION OF A LANDSCAPED ISLAND IN THE PARKING LOT.

THE PROJECT WILL ALSO INCLUDE REMOVAL AND REPLACEMENT OF LIGHT POLES AND ASSOCIATED ELECTRICAL SUPPLY LINES. IN ADDITION, THE PROJECT WILL INCLUDE THE CONSTRUCTION OF A NEW GRASS SWALE BETWEEN THE PARKING LOT AND VT ROUTE 104. THE SWALE WILL DRAIN INTO A SERIES OF FIVE NEW DROP INLETS AND CULVERTS THAT WILL CONVEY WATER TO A NEWLY CONFIGURED GRASS-LINED STORMWATER DETENTION POND THAT IS LOCATED ON THE NORTHWEST CORNER OF THE PROPERTY.

1.2. SITE INVENTORY AND ANALYSIS

THE EXISTING PROJECT AREA IS LOCATED IN A RURAL AREA THAT IS EXPERIENCING RAPID DEVELOPMENT, AND CONVERSION OF LAND USE IS FROM AGRICULTURAL TO COMMERCIAL. ALL ABUTTING PROPERTIES HAVE BEEN DEVELOPED. THE PRIMARY WATER RESOURCE IN THE AREA IS THE STEVENS BROOK. ALL OF THE OFF-SITE AND ON-SITE RUNOFF IN THIS AREA DISCHARGES TO THIS BROOK.

ON-SITE DRAINAGE CONSISTS OF SHEET FLOW OVER PAVED SURFACES AND INTO GRASS AND STONE LINED DITCHES. A PORTION OF THE ON-SITE RUNOFF DISCHARGES INTO THE EXISTING DETENTION BASIN VIA DITCH FLOW AND CULVERT FLOW. THE DETENTION BASIN OUTLETS TO STEVENS BROOK OFF-SITE. A PORTION OF RUNOFF ALSO SHEET FLOWS ONTO THE ABUTTING PROPERTY, AND THEN INTO STEVENS BROOK.

1.2.1. OFF-SITE DRAINAGE CHARACTERISTICS

THE AREA SURROUNDING THE PROJECT SITE IS RELATIVELY LEVEL; UP-GRADIENT LAND USES CONSIST OF ROADS (VT 36, VT 104 AND LOCAL ROADS), SEVERAL RESIDENCES AND COMMERCIAL BUILDINGS. THERE IS AN EXISTING STORM DRAIN SYSTEM (CATCH BASINS AND PIPES) THAT COLLECTS ROAD SURFACE AND LOCALIZED RUNOFF AND DISCHARGES IT INTO STEVENS BROOK. A PORTION OF THIS DRAINAGE SYSTEM DISCHARGES INTO AN ON-SITE DETENTION BASIN.

1.2.2. DRAINAGE, WATERWAYS, BODIES OF WATER

THERE IS AN EXISTING GRASS SWALE BETWEEN THE EDGE OF THE EXISTING LOT AND VT ROUTE 36 THAT SLOPES FROM THE INTERSECTION TO THE WEST AND INTO THE GRASS-LINED STORMWATER DETENTION POND. THERE IS ALSO A CATCH BASIN INLET NEAR THE BEGINNING OF THE SWALE THAT IS PART OF THE EXISTING STORM DRAIN SYSTEM. THE DETENTION POND OUTLETS INTO AN AT-GRADE CATCH BASIN, WHICH IS ALSO TIED INTO THE DRAIN SYSTEM. THE WATER FROM THE DETENTION POND AND STORM DRAIN SYSTEM WATER IS THEN CONVEYED UNDER VT ROUTE 36 AND DISCHARGED INTO STEVENS BROOK.

AN EXISTING DETENTION POND WAS RECENTLY CONSTRUCTED AS PART OF THE FRANKLIN COUNTY REHAB CENTER, ON THE ABUTTING PROPERTY TO THE WEST OF THE VTRANS PROPERTY. SOME OF THE PARK AND RIDE RUNOFF CURRENTLY DISCHARGES ONTO THIS PROPERTY AND WILL CONTINUE TO DO SO UNDER PROPOSED CONDITIONS. THIS NEW DETENTION POND IS LOCATED APPROXIMATELY 40-FEET TO THE WEST OF THE EXISTING SLIP RAMP.

1.2.3. TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE EXISTING TOPOGRAPHY OF THE PROJECT AREA GENERALLY SLOPES TO THE WEST AND SOUTHWEST (TOWARDS THE SLIP RAMP). A MAJORITY OF STORMWATER RUNOFF EITHER SHEET FLOWS IN THIS DIRECTION OR DRAINS TOWARDS THE GRASS SWALE AND TO BOTH DETENTION PONDS.

THE PARK AND RIDE FACILITY IS BORDERED ON THE NORTH BY VT ROUTE 36 AND BY VT ROUTE 104 ON THE EAST. HOME HEALTH CIRCLE DRIVE, WHICH IS THE ENTRANCE DRIVE TO THE FRANKLIN COUNTY REHAB CENTER, BORDERS THE NORTHWEST CORNER OF THE PROJECT SITE AND THE REHAB CENTER'S NEWLY CONSTRUCTED DETENTION POND BORDERS THE WESTERN BOUNDARY. THERE ARE NO EXISTING BUILDINGS ON THE PROJECT SITE. THE BUS SHELTER WILL BE REMOVED AND REPLACED AS PART OF THIS PROJECT.

UTILITIES ON THE PROJECT SITE INCLUDE THE STORM DRAIN SYSTEM, BURIED ELECTRICAL SERVICE LINES THAT POWER THE PARKING LIGHTS AND AN ELECTRICAL METER. IN ADDITION, A BURIED WATER LINE IS LOCATED ALONG THE EAST SIDE OF THE PROPERTY.

1.2.4. VEGETATION

THE EXISTING SITE IS MOSTLY PAVED, AND THERE IS VERY LITTLE VEGETATION. EXISTING LANDSCAPING CONSISTS OF 6 SMALL MAPLE TREES AND SEVERAL GRASS SWALES.

NEW LANDSCAPING THAT WILL BE INSTALLED AS PART OF THIS PROJECT INCLUDES THE PLANTING OF 14 SUGAR MAPLES, 12 EVERGREEN SHRUBS AND 13 DAYLILIES. THE EDGE OF THE PARKING LOT ASPHALT ALONG VT ROUTE 104 WILL BE PULLED APPROXIMATELY 8-FEET BACK, AND A NEW GRASS LINED SWALE WILL BE CONSTRUCTED. A NEW CURBED ISLAND WILL BE CONSTRUCTED IN THE INTERIOR OF THE NEW PARKING AREA, AND WILL BE PLANTED WITH SOME OF THE ABOVE IDENTIFIED SHRUBS AND FLOWERS. ALL OTHER DISTURBED AREAS THAT ARE NOT PAVED WILL BE SEEDED AND MULCHED.

1.2.5. SOILS

MUCH OF THE LAND WITHIN THE PROJECT AREA HAS BEEN PREVIOUSLY DISTURBED AND THE MAJORITY OF EARTH DISTURBANCE REQUIRED FOR CONSTRUCTION OF THIS PROJECT FALLS BETWEEN THE EXISTING PARKING LOT AREA AND EXISTING SLIP RAMP.

THE NATIVE SOILS IN THE PROJECT AREA ARE CHARACTERIZED BY THE SCS AS BEING PRIMARILY STONY LOAMS (MESSENA AND GEORGIA), WITH GENERALLY MODERATE ERODIBILITY FACTORS.

1.2.6. SENSITIVE RESOURCE AREAS

THERE ARE NO KNOWN SENSITIVE AREAS THAT REQUIRE SPECIAL PROTECTION WITHIN THE PROJECT AREA. NO T&E SPECIES, PRIME AGRICULTURAL SOILS, WETLANDS OR OTHER CRITICAL HABITAT EXIST WITHIN THE PROJECT AREA.

1.2.7. PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

AS PREVIOUSLY INDICATED, THERE IS AN EXISTING STORMWATER DETENTION POND ON THE PROJECT SITE THAT WILL BE RECONFIGURED, AND THERE IS A DETENTION POND THAT IS LOCATED JUST WEST OF THE PROJECT ON THE ADJOINING PROPERTY. WATER FROM THE ON-SITE DETENTION POND TRAVELS THROUGH A CATCH BASIN AND CULVERT AND IS DISCHARGED OFF-SITE BEFORE ULTIMATELY OUTLETTING INTO STEVENS BROOK. THE PRIMARY OBJECTIVE FOR THIS EROSION PROTECTION AND SEDIMENT CONTROL PLAN WILL BE TO PROTECT THE DETENTION POND OUTLET AND ULTIMATELY PREVENT THE MOBILIZATION AND TRANSPORT OF SEDIMENT INTO STEVENS BROOK.

1.3. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL

1.3.1. DESCRIPTION OF ALL TEMPORARY STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

TO REDUCE THE POTENTIAL FOR MOBILIZATION OF SEDIMENT AND TO PREVENT ITS TRANSPORT OF SEDIMENT INTO THE BROOK, SEVERAL TEMPORARY EROSION MEASURES WILL BE UTILIZED. THESE MEASURES WILL INCLUDE THE PLACEMENT OF SILT FENCE ALONG THE TOE OF SLOPE, INSTALLATION OF A STONE CONSTRUCTION ENTRANCE, USE OF TEMPORARY STONE CHECK DAMS IN THE SWALE, AND INLET PROTECTION FOR CATCH BASINS. IN ADDITION, EROSION MATTING WILL BE USED FOR THE SWALES, STORMWATER DETENTION POND, AND SLOPES GREATER THAN 3:1, AND THE LIMITS OF DISTURBANCE WILL BE DEMARCATED IN THE FIELD.

SILT FENCE WILL BE PLACED AT THE TOE OF SLOPE ALONG THE WESTERN SIDE OF THE PROPERTY TO PREVENT SEDIMENT TRANSPORT FROM STORMWATER THAT IS SHEET FLOWING DOWNGRADIENT. PRIOR TO ANY UPGRADIENT EARTHWORK, THE SILT FENCE WILL BE INSTALLED ALONG THE CONTOUR WITH THE ENDS TURNED UPWARD TO CREATE A PONDING EFFECT AND TO PREVENT WATER FROM ESCAPING AROUND THE ENDS OF THE SILT FENCE.

TEMPORARY STONE CHECK DAMS WILL BE PLACED IN THE GRASS-LINED SWALE THAT RUNS ADJACENT TO VT ROUTE 36 AND DRAINS INTO THE STORMWATER DETENTION POND. THE CHECK DAMS WILL ACT TO REDUCE FLOW VELOCITIES AND WILL BE PLACED SUCH THAT THE ELEVATION OF THE TOP OF EACH CHECK DAM CORRESPONDS WITH THE ELEVATION OF THE TOE OF THE PRECEDING UPSLOPE CHECK DAM. THE CHECK DAMS WILL BE REMOVED ONCE THE SURROUNDING AREAS HAVE BEEN STABILIZED.

THE INLETS OF BOTH EXISTING AND NEW CATCH BASINS WILL ALSO BE PROTECTED THROUGHOUT THE CONSTRUCTION PROCESS WITH EITHER SILT FENCE OR ROCK BARRIER. FOR THOSE CATCH BASINS THAT ARE OUTSIDE OF THE PAVED AREA, INCLUDING THE DETENTION POND OUTLET, THE CATCH BASIN INLETS WILL BE PROTECTED WITH A SINGLE CONTINUOUS PIECE OF SILT FENCE GEOTEXTILE MATERIAL ATTACHED TO A WOODEN FRAME THAT WILL SURROUND THE INLET AREA.

IN AREAS THAT ARE PAVED, THE CATCH BASIN INLETS WILL BE PROTECTED WITH A ROCK BARRIER THAT IS COMPOSED OF CINDER BLOCKS WRAPPED IN GEOTEXTILE FABRIC AND THEN SURROUNDED BY CRUSHED STONE. (SEE ATTACHED DETAIL SHEET FOR ILLUSTRATION OF INLET PROTECTION.) BOTH OF THESE INLET PROTECTION METHODS WILL PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM BY PONDING THE WATER AND ALLOWING THE SEDIMENT TO FALL OUT OF SUSPENSION PRIOR TO ENTERING THE DRAINAGE SYSTEM.

ADDITIONAL MEASURES TO BE IMPLEMENTED ON THE SITE WILL INCLUDE THE STAGING OF CONSTRUCTION TO MINIMIZE THE TIME THAT SOILS ARE EXPOSED TO THE ELEMENTS, ESTABLISHING A STABILIZED CONSTRUCTION ENTRANCE, USING EROSION MATTING ON ALL SLOPES THAT ARE GREATER THAN 1V:3H, AND SEEDING AND MULCHING ALL OTHER DISTURBED AREAS WITHIN 48 HOURS OF REACHING FINAL GRADE OR DURING INTERMITTENT PHASES OF CONSTRUCTION ACTIVITY. THE LIMITS OF DISTURBANCE REQUIRED FOR CONSTRUCTION WILL ALSO BE DEMARCATED IN THE FIELD WITH A COMBINATION OF SILT FENCE AND SNOW FENCE.

MEASURES SUCH AS THE SILT FENCE AND TEMPORARY STONE CHECK DAMS THAT ARE USED ON THE PROJECT SITE WILL BE CHECKED REGULARLY FOR THE ACCUMULATION OF SEDIMENT. ANY ACCUMULATED SEDIMENT WILL BE REMOVED WHEN THE LEVEL OF SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE CONTROL MEASURE.

1.3.2. DESIGN CALCULATIONS FOR ALL TEMPORARY STRUCTURAL CONTROL MEASURES

AS THE TEMPORARY STRUCTURAL CONTROL MEASURES FOR THIS PROJECT ARE LIMITED TO STONE CHECK DAMS AND SILT FENCE, DESIGN CALCULATIONS HAVE NOT BEEN PERFORMED. THE STORMWATER DETENTION POND THAT IS PART OF THIS PROJECT IS A PERMANENT CONTROL MEASURE AND HAS BEEN DESIGNED BASED ON A HYDROLOGICAL ANALYSIS OF THE PROJECT SITE.

1.4. FINAL EROSION CONTROL MEASURES

1.4.1. DESCRIPTION OF PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

FINAL EROSION PREVENTION MEASURES WILL INCLUDE STABILIZATION OF ALL SURFACES BY SEEDING AND MULCHING OR MATTING ALL DISTURBED AREAS THAT ARE NOT PAVED.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83

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