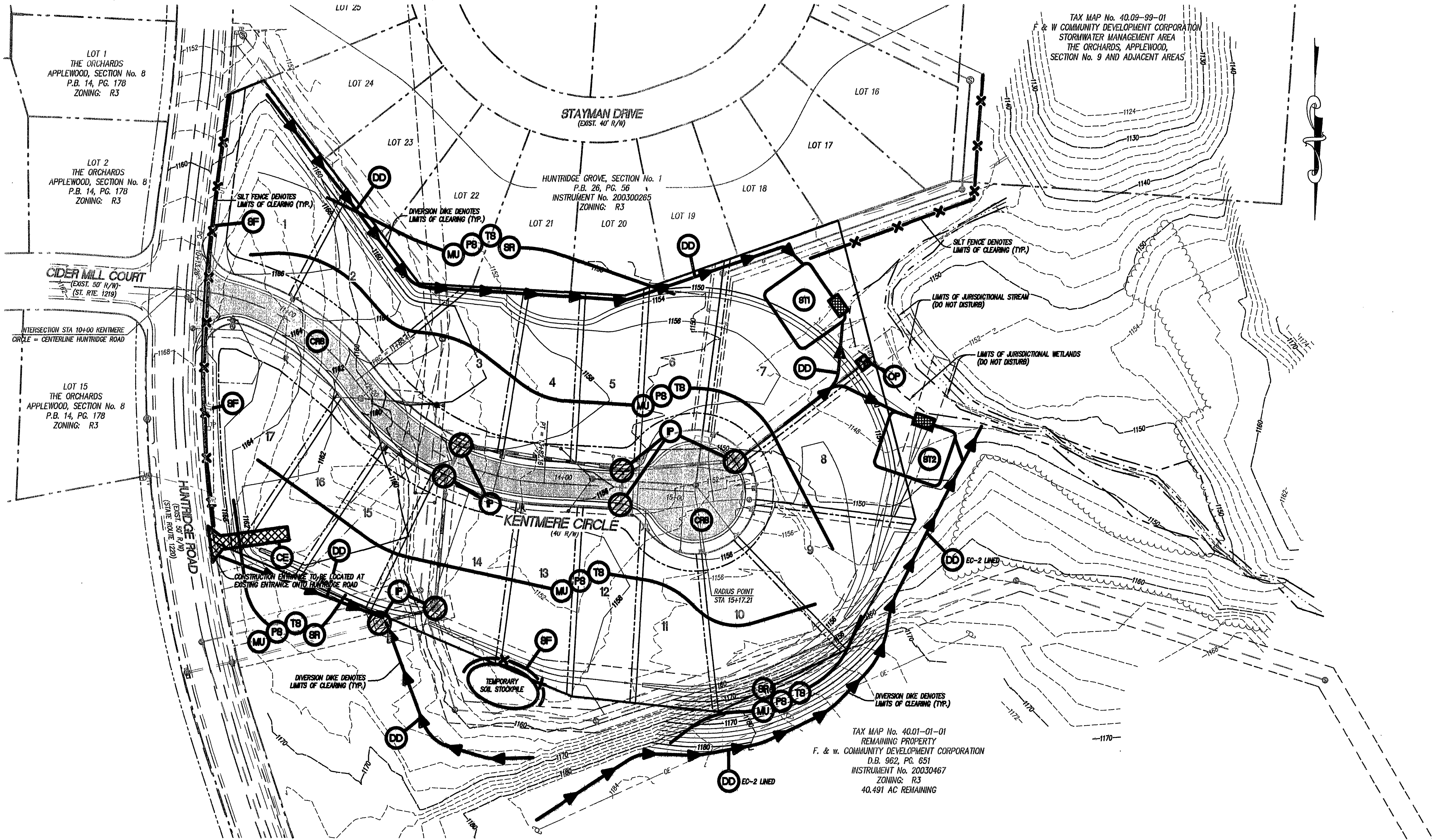


THIS PLAN IS FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY



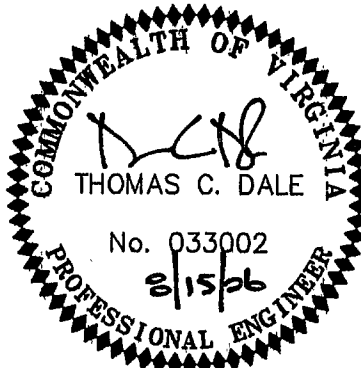
- CONSTRUCTION SEQUENCE**
1. CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER SHALL BE NAMED AND A COPY OF HIS RLD CERTIFICATE PROVIDED TO ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT AT LEAST TWO DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. RLD SHALL ALSO ATTEND PRE-CON MEETING.
 2. CONTRACTOR SHALL APPLY FOR DCR LAND DISTURBANCE PERMIT AT LEAST TWO (2) DAYS PRIOR TO LAND DISTURBANCE AND PROVIDE ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT COPY OF SAID PERMIT WITHIN FIVE (5) DAYS OF ISSUANCE.
 3. INSTALL AND STABILIZE THE CONSTRUCTION ENTRANCE AND SILT FENCE AS THE FIRST STEP IN THE CONSTRUCTION PROCESS.
 4. INSTALL PERIMETER DIVERSION DIKES TO DIVERT OFFSITE DRAINAGE AROUND THE CONSTRUCTION AREA.
 5. INSTALL DIVERSION DIKES AND SEDIMENT TRAPS AS SOON AS GRADING OPERATIONS BEGIN IN THE AFFECTED AREAS. THE CONSTRUCTION PROCESS SHOULD BE SEQUENCED AS MUCH AS POSSIBLE SO THAT EACH AREA IS SEEDED AND STABILIZED PRIOR TO BEGINNING GRADING OPERATIONS IN ANOTHER AREA.
 6. INSTALL CONSTRUCTION ROAD STABILIZATION AS SOON AS THE ROAD IS AT SUBGRADE.
 7. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER THOSE AFFECTED AREAS HAVE BEEN BROUGHT TO FINAL GRADE AND PERMANENTLY STABILIZED WITH IMPROVEMENTS OR ESTABLISHED VEGETATION.
 8. THE LOCATION OF ALL OFFSITE FILL OR BORROW AREAS ASSOCIATED WITH THIS CONSTRUCTION PROJECT SHALL BE PROVIDED TO ROANOKE COUNTY COMMUNITY DEVELOPMENT. AN EROSION AND SEDIMENT CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THESE AREAS. NO OFFSITE BORROW OR FILL AREAS ARE ANTICIPATED WITH THIS DEVELOPMENT.

LUMSDEN ASSOCIATES, P.C.
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**EROSION AND
SEDIMENT
CONTROL PLAN**

KESWICK COURT
PREPARED FOR
FRALIN & WALDRON, INC.
HOLLINS MAGISTERIAL DISTRICT
ROANOKE COUNTY, VIRGINIA

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 17 SINGLE FAMILY ZERO LOT LINE RESIDENCES WITH ASSOCIATED ROAD, WATER, SANITARY SEWER, AND STORM DRAIN SYSTEMS. APPROXIMATELY 5.7 ACRES OF LAND WILL BE DISTURBED BY THIS PROJECT.

EXISTING SITE CONDITIONS:
THIS SITE IS RELATIVELY FLAT AND DRAINS TO AN EXISTING STORMWATER MANAGEMENT FACILITY THAT WAS DESIGNED WITH THE ORCHARDS, APPLEWOOD 9 AND ADJACENT AREAS. MUCH OF THE SITE IS ALREADY DISTURBED, BUT PORTIONS OF THE SITE CONSIST OF GRASS, LIGHT UNDERBRUSH, AND WOODS.

ADJACENT AREAS:
THIS DEVELOPMENT IS BORDERED ON THE NORTH AND WEST BY FUTURE AREAS OF DEVELOPMENT, TO THE SOUTH BY HUNTRIDGE GROVE, SECTION No. 1, AND TO THE EAST BY HUNTRIDGE ROAD.

OFF-SITE AREAS:
THE LOCATION OF ALL OFFSITE FILL OR BORROW AREAS ASSOCIATED WITH THIS CONSTRUCTION PROJECT MUST BE PROVIDED TO ROANOKE COUNTY COMMUNITY DEVELOPMENT. AN EROSION AND SEDIMENT CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THESE AREAS. NO OFFSITE BORROW OR FILL SITES ARE EXPECTED TO BE ASSOCIATED WITH THIS PROJECT, NOR ARE ANY COVERED BY THESE DEVELOPMENT PLANS.

SOILS:
THIS AREA WAS FORMERLY A POND THAT HAS BEEN DRAINED AND FILLED. NO SOILS INFORMATION IS AVAILABLE ON THE MATERIAL USED TO FILL THE POND AREA. SOILS INFORMATION FOR THE EXISTING SOILS IN THE AREAS OUTSIDE THE FORMER POND IS LISTED BELOW AND IS BASED ON AN INSPECTION OF SHEET No. 7 OF THE SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, VIRGINIA, ISSUED IN 1987 AND HAS NOT BEEN FIELD VERIFIED. THE GROSELOUSE SILT LOAM, 15 TO 25% SLOPES (MAP SYMBOL 240) HAS HIGH EROSION POTENTIAL, SLOW PERMEABILITY, LOW SHRINK-SWELL POTENTIAL IN THE SURFACE LAYER, AND HIGH SHRINK-SWELL POTENTIAL IN THE SUBSOIL AREAS. THE TYPICAL SOIL LAYERS ARE AS FOLLOWS: THE SURFACE LAYER IS 0 TO 9 INCHES - DARK BROWN SILT LOAM, THE SUBSOIL LAYERS ARE 9 TO 18 INCHES - BROWN SILT LOAM, 18 TO 32 INCHES - BROWN SILTY CLAY LOAM, 32 TO 50 INCHES - YELLOWISH RED AND BROWN SILTY CLAY, THE SUBSTRATUM LAYER IS 50 TO 62 INCHES - YELLOWISH RED AND BROWN SILTY CLAY LOAM. THE TUMBLING LOAM, 7 TO 15% SLOPES (MAP SYMBOL 490) HAS HIGH EROSION POTENTIAL, MODERATE PERMEABILITY, AND LOW SHRINK-SWELL POTENTIAL. THE TYPICAL SOIL LAYERS ARE AS FOLLOWS: THE SURFACE LAYER IS 0 TO 2 INCHES - VERY DARK GRAYISH BROWN LOAM, THE SUBSURFACE LAYER IS 2 TO 11 INCHES - BROWNISH YELLOW LOAM, THE SUBSOIL LAYERS ARE 11 TO 15 INCHES - STRONG BROWN GRAVELLY CLAY LOAM HAVING BROWNISH YELLOW MOTTLES, 15 TO 28 INCHES - YELLOWISH RED GRAVELLY CLAY HAVING RED MOTTLES, 28 TO 19 INCHES, YELLOWISH RED VERY GRAVELLY CLAY HAVING RED MOTTLES, 49 TO 62 INCHES, MOTTLED STRONG BROWN, RED, DARK RED, AND WHITE CLAY. THE TUMBLING LOAM, 15 TO 25% SLOPES (MAP SYMBOL 400) HAS HIGH EROSION POTENTIAL, MODERATE PERMEABILITY, AND LOW SHRINK-SWELL POTENTIAL. THE TYPICAL SOIL LAYERS ARE AS FOLLOWS: THE SURFACE LAYER IS 0 TO 2 INCHES - VERY DARK GRAYISH BROWN LOAM, THE SUBSURFACE LAYER IS 2 TO 11 INCHES - BROWNISH YELLOW LOAM, THE SUBSOIL LAYERS ARE 11 TO 15 INCHES - STRONG BROWN COBBLY CLAY LOAM HAVING BROWNISH YELLOW MOTTLES, 15 TO 28 INCHES - YELLOWISH RED COBBLY CLAY HAVING RED MOTTLES, 28 TO 19 INCHES, YELLOWISH RED VERY COBBLY CLAY HAVING RED MOTTLES, 49 TO 62 INCHES, MOTTLED STRONG BROWN, RED, DARK RED, AND WHITE CLAY.

CRITICAL AREAS:
CONSTRUCTION FOR THIS DEVELOPMENT IS ADJACENT TO EXISTING JURISDICTIONAL STREAMS AND WETLANDS. THESE STREAMS AND WETLANDS SHALL NOT BE DISTURBED AND THE CONTRACTOR SHOULD TAKE EVERY PRECAUTION NECESSARY TO PROTECT THESE AREAS.

GENERAL STANDARDS:
ALL EROSION AND SEDIMENT CONTROL PRACTICES AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

MINIMUM STANDARDS:
SEE DCR'S MINIMUM STANDARDS LISTED ON THE ROANOKE COUNTY ESC DETAIL SHEET.

EROSION AND SEDIMENT CONTROL MEASURES:

STANDARD AND SPECIFICATION 3.02 - CONSTRUCTION ENTRANCE (CE)
A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE THE CONSTRUCTION ACCESS ROAD LEAVES EXISTING PAVEMENT. DURING WET WEATHER CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING THE STREET. WHEN CONSTRUCTION VEHICLES MUST ENTER DISTURBED AREAS, THE TIRES OF THE VEHICLE SHALL BE MANUALLY CLEANED PRIOR TO LEAVING THE SITE, IF NECESSARY.

STANDARD AND SPECIFICATION 3.03 - CONSTRUCTION ROAD STABILIZATION (CRS)
CONSTRUCTION ROAD STABILIZATION WILL BE INSTALLED AS SHOWN ON THE PLAN AS SOON AS THE AREA HAS BEEN BROUGHT TO SUBGRADE. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO CRS ACCESS ROADS AND AREAS TO BE GRADED. TRAFFIC IS PROHIBITED FROM ENTERING DRAINAGE SWALES OR STREAMS UNLESS ABSOLUTELY NECESSARY.

STANDARD AND SPECIFICATION 3.05 - SILT FENCE (SF)
SILT FENCE SHALL BE INSTALLED AT THE LOWER EDGE OF DISTURBED AREAS AS SHOWN ON THE PLAN. TWO TYPES OF SILT FENCE ARE SHOWN ON THE PLANS IN ACCORDANCE WITH VDOT STANDARDS. THE TALLER FENCE IS SPECIFIED AS SILT FENCE, "SF". A SHORTER FENCE IS SPECIFIED AS FILTER BARRIER, "FB".

STANDARD AND SPECIFICATION 3.07 - INLET PROTECTION (IP)
INLET PROTECTION WILL BE INSTALLED AT EACH STORM DRAIN INLET TO MINIMIZE THE AMOUNT OF SEDIMENT LADEN RUNOFF FROM ENTERING THE STORM DRAIN SYSTEM.

STANDARD AND SPECIFICATION 3.09 - DIVERSION DIKE (DD)
DIVERSION DIKES WILL BE INSTALLED TO DIVERT OFFSITE RUNOFF AROUND THE CONSTRUCTION AREA AND ALSO TO DIVERT SEDIMENT LADEN RUNOFF INTO THE SEDIMENT TRAPS.

STANDARD AND SPECIFICATION 3.13 - TEMPORARY SEDIMENT TRAP (ST)
SEDIMENT TRAPS WILL BE UTILIZED TO ALLOW SEDIMENT TO SETTLE OUT OF RUNOFF PRIOR TO EXITING THE SITE.

STANDARD AND SPECIFICATION 3.16 - OUTLET PROTECTION (OP)
OUTLET PROTECTION WILL BE INSTALLED TO PREVENT EROSION AND SCOUR AT THE OUTLET ENDS OF CULVERTS.

STANDARD AND SPECIFICATION 3.28 - SURFACE ROUGHENING (SR)
ALL DISTURBED SLOPES STEEPER THAN 3:1 SHALL RECEIVE SURFACE ROUGHENING AS SHOWN ON THE PLAN.

STANDARD AND SPECIFICATION 3.30 - TOPSOILING
TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR FUTURE USE. TOPSOIL STOCKPILES SHALL BE PROTECTED BY SILT FENCE INSTALLED ALONG THE DOWNHILL SIDES AROUND THE STOCKPILE. TOPSOIL SHALL BE UNIFORMLY SPREAD OVER DISTURBED AREAS PRIOR TO PERMANENT SEEDING.

STANDARD AND SPECIFICATION 3.31 - TEMPORARY SEEDING (TS)
THE TEMPORARY DIVERSION DIKES, TOPSOIL STOCKPILES AND ALL AREAS TO BE ROUGH GRADED, BUT NOT FINISH GRADED DURING THE INITIAL PHASE OF CONSTRUCTION, SHALL BE SEEDED WITH FAST GERMINATING, TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OR INSTALLATION IF A TEMPORARY MEASURE. SEE ALSO MINIMUM STANDARDS.

STANDARD AND SPECIFICATION 3.32 - PERMANENT SEEDING (PS)
PERMANENT SEEDING SHALL BE INSTALLED ON ALL DISTURBED AREAS OF THE SITE NOT OTHERWISE STABILIZED.

STANDARD AND SPECIFICATION 3.35 - MULCHING (MU)
ALL DISTURBED AREAS SHALL BE MULCHED AFTER SEEDING. STRAW MULCH SHALL BE APPLIED AT A RATE OF TWO TONS PER ACRE AND ANCHORED WITH 750 LBS PER ACRE OF FIBER MULCH OVER THE SEEDED AREA.

MAINTENANCE:
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED BI-WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL. A LOG OF DATES AND INSPECTIONS SHALL BE KEPT. ANY DEFICIENCIES THAT ARE FOUND SHALL BE CORRECTED IMMEDIATELY. ACCUMULATED SEDIMENT AT TRAPPING MEASURES SHALL BE ROUTINELY REMOVED.

ALL DITCHES, SWALES, AND NATURAL WATERCOURSES DOWNSTREAM OF THIS PROJECT SHALL BE FIELD INSPECTED DURING AND AFTER CONSTRUCTION BY THE RLD TO ENSURE COMPLIANCE WITH DCR'S MS-19. IF EROSION OR SCOUR IS OCCURRING THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL AFTER ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED AND THEN TEMPORARY MEASURES PROPERLY REMOVED.

THE SEDIMENT TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP. CLEAN OUT AS NECESSARY TO MAINTAIN DESIGN VOLUMES.

INLET AND OUTLET PROTECTION WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF STONE IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR REPLACED.

THE SILT FENCE WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT BUILDUP REACHES THE MIDWAY POINT OF THE SILT FENCE.

ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS REQUIRED TO ACHIEVE A GOOD STAND OF GRASS. IN PARTICULAR, THE DIVERSION DIKES SHALL BE INSPECTED REGULARLY.

THE CONSTRUCTION ENTRANCE SHALL BE CHECKED REGULARLY TO ENSURE THAT MUD IS NOT TRANSPORTED ONTO THE ADJACENT ROADS. THE STONE SHALL BE REMOVED, CLEANED, OR REPLACED AS REQUIRED FOR THE CONSTRUCTION ENTRANCE TO FUNCTION PROPERLY.

STORM WATER MANAGEMENT CONSIDERATION:
THE DEVELOPMENT OF THIS SITE WILL RESULT IN A NET INCREASE IN STORMWATER RUNOFF AS COMPARED TO THE PREDEVELOPMENT RATES. HOWEVER, THIS AREA AND INCREASE WAS ACCOUNTED FOR IN THE DESIGN AND CONSTRUCTION OF THE EXISTING STORMWATER MANAGEMENT FACILITY WITH THE PLANS FOR THE ORCHARDS, APPLEWOOD, SECTION No. 9 AND ADJACENT AREAS. THEREFORE, NO ADDITIONAL STORMWATER MANAGEMENT FACILITIES ARE REQUIRED FOR THIS DEVELOPMENT.

| REVISIONS | | | | |
|-----------|---------|-------------|--------------------------------|--|
| NO. | DATE | DESCRIPTION | REVISED LOT LINES TO FIT UNITS | |
| 1 | 8/15/06 | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

DATE: June 8, 2006

SCALE: 1" = 50'

COMMISSION NO: 2004-375

SHEET 9 OF 12