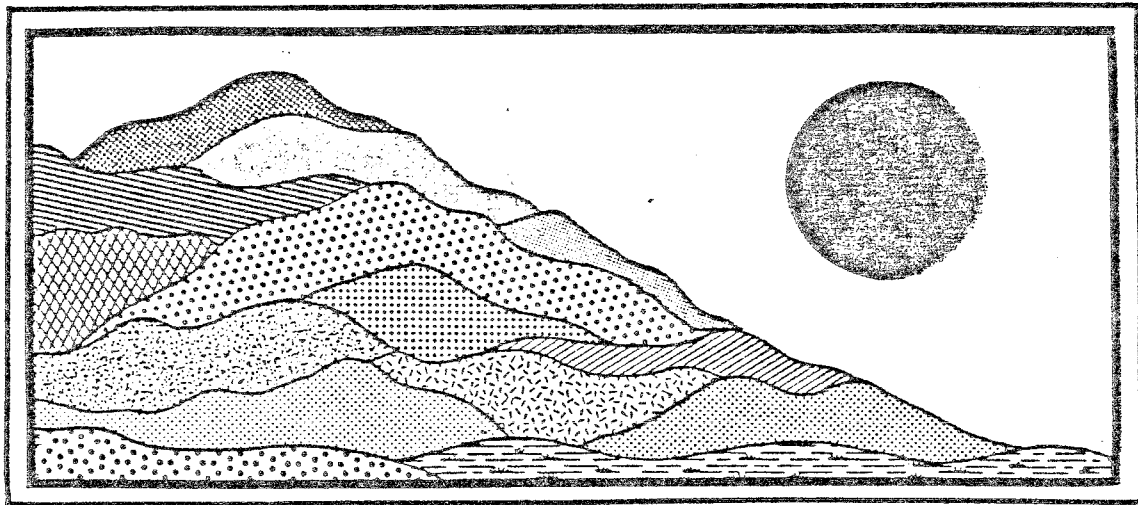


# Cider Mill Heights

Ellington, Connecticut

December 1986



ENVIRONMENTAL

REVIEW TEAM

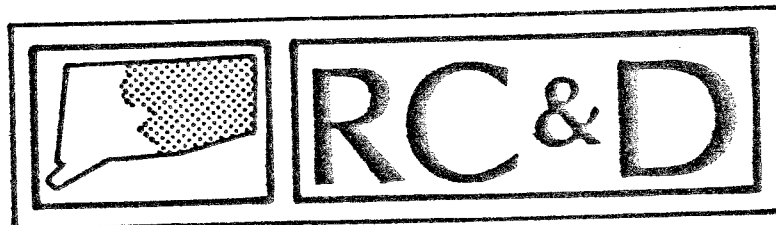
REPORT

# Cider Mill Heights

Ellington, Connecticut

Review Date: OCTOBER 30, 1986

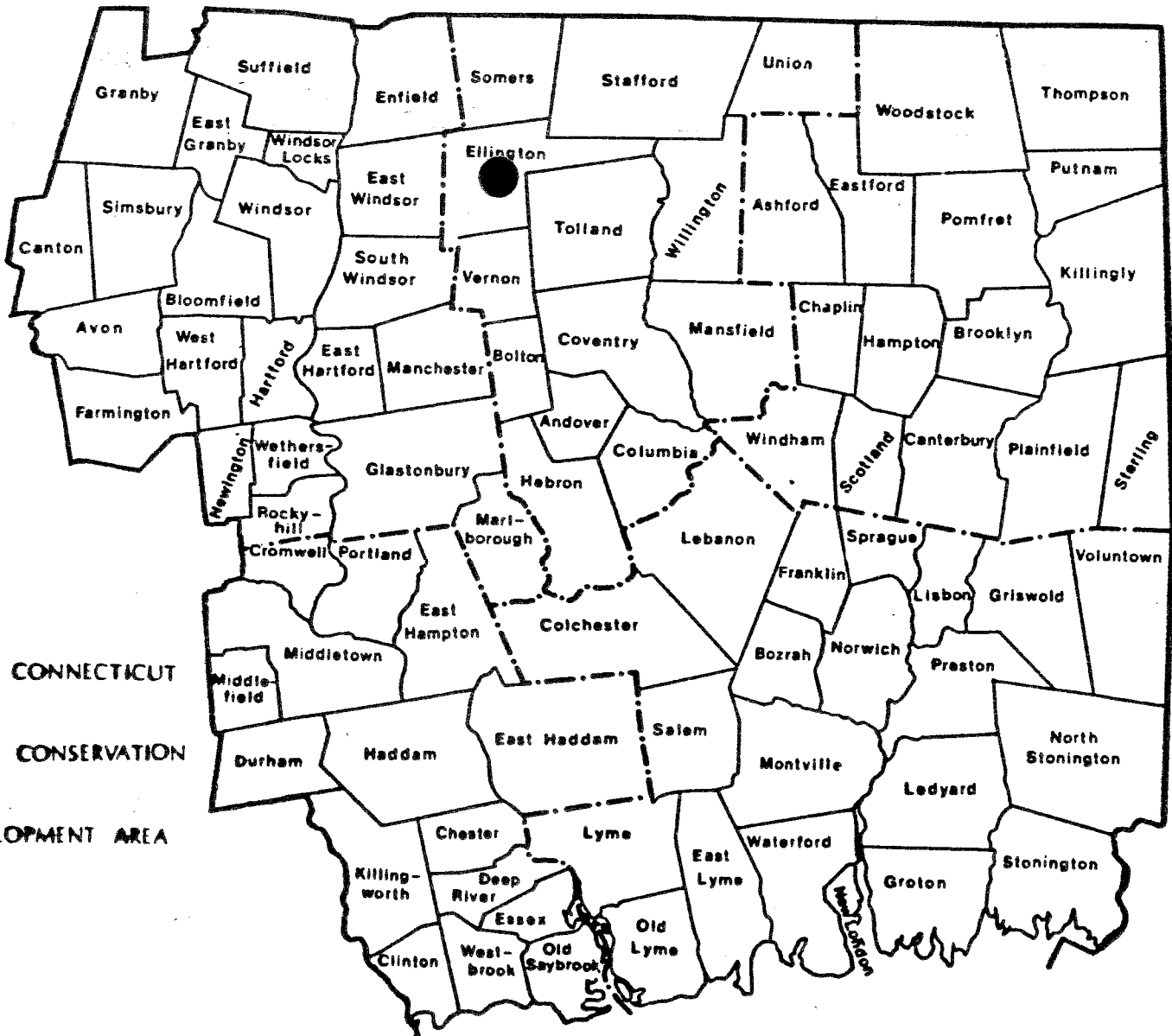
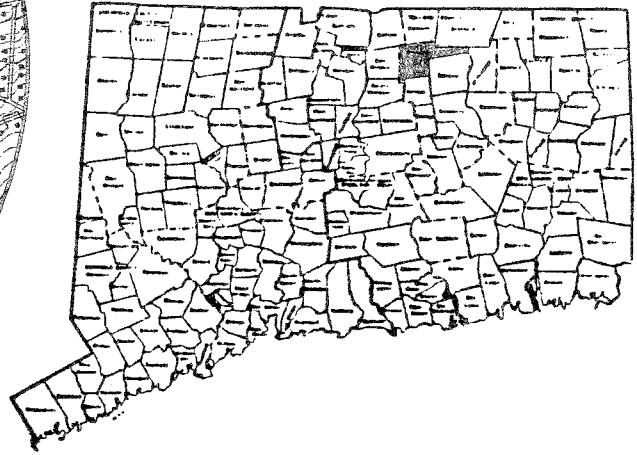
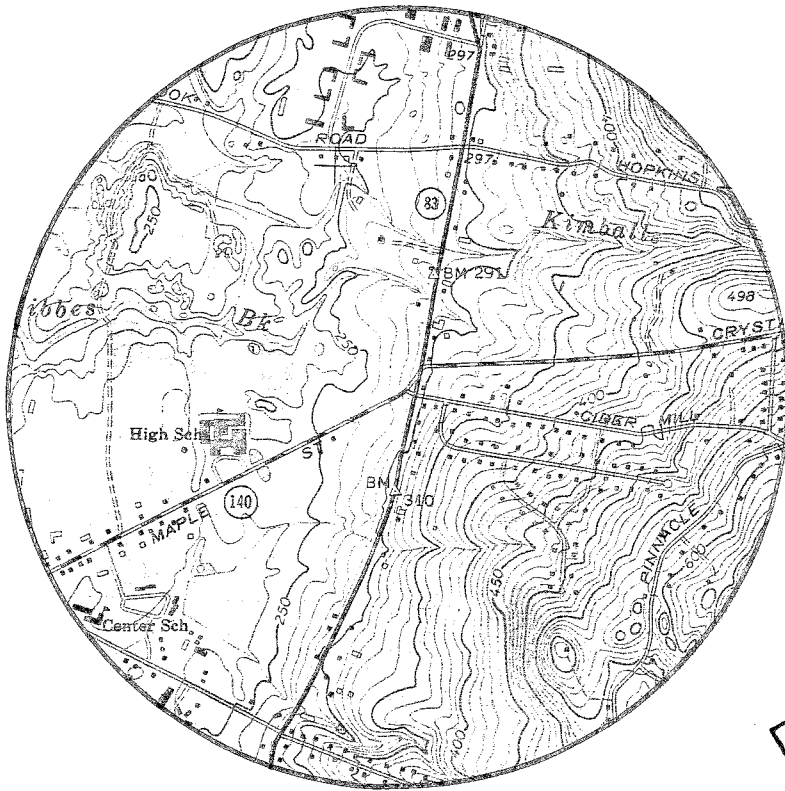
Report Date: DECEMBER 1986



ENVIRONMENTAL REVIEW TEAM  
PO BOX 198  
BROOKLYN, CONNECTICUT 06234

# Site Location

CIDER MILL HEIGHTS CONDOMINIUMS  
 ELLINGTON, CONNECTICUT



EASTERN CONNECTICUT

RESOURCE CONSERVATION

& DEVELOPMENT AREA

ENVIRONMENTAL REVIEW TEAM REPORT  
ON  
CIDER MILL HEIGHTS CONDOMINIUMS  
ELLINGTON, CONNECTICUT

THIS REPORT IS AN OUTGROWTH OF A REQUEST FROM THE ELLINGTON CONSERVATION COMMISSION TO THE TOLLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT (S&WCD). THE S&WCD REFERRED THIS REQUEST TO THE EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT (RC&D) AREA EXECUTIVE COMMITTEE FOR THEIR CONSIDERATION AND APPROVAL. THE REQUEST WAS APPROVED AND THE MEASURE REVIEWED BY THE EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM (ERT).

THE ERT MET AND FIELD CHECKED THE SITE ON THURSDAY, OCTOBER 30, 1986. TEAM MEMBERS PARTICIPATING ON THIS REVIEW INCLUDED:

JOYCE PURCELL	--SOIL CONSERVATIONIST - U.S.D.A., SOIL CONSERVATION SERVICE
AL ROBERTS	--SOIL RESOURCE SPECIALIST - U.S.D.A., SOIL CONSERVATION SERVICE
HARRY SIEBERT	--TRANSPORTATION PLANNER - CONNECTICUT DEPARTMENT OF TRANSPORTATION
DWIGHT SOUTHWICK	--ENGINEERING SPECIALIST - U.S.D.A., SOIL CONSERVATION SERVICE
ELAINE SYCH	--ERT COORDINATOR - EASTERN CONNECTICUT RC&D AREA
BILL WARZECHA	--GEOLOGIST - DEP, NATURAL RESOURCES CENTER

PRIOR TO THE REVIEW DAY, EACH TEAM MEMBER RECEIVED A SUMMARY OF THE PROPOSED PROJECT, A LIST OF THE TOWN'S CONCERNS, A LOCATION MAP, A TOPOGRAPHIC MAP, A SOILS MAP AND A SITE PLAN. THE TEAM MET WITH, AND WERE ACCOMPANIED BY MEMBERS OF THE CONSERVATION COMMISSION, THE DEVELOPER AND THE PROJECT ENGINEER. FOLLOWING THE REVIEW, REPORTS FROM EACH TEAM MEMBER WERE SUBMITTED TO THE ERT COORDINATOR FOR COMPILATION AND EDITING INTO THIS FINAL REPORT.

THIS REPORT REPRESENTS THE TEAM'S FINDINGS. IT IS NOT MEANT TO COMPETE WITH PRIVATE CONSULTANTS BY PROVIDING SITE DESIGNS OR DETAILED SOLUTIONS TO DEVELOPMENT PROBLEMS. THE TEAM DOES NOT RECOMMEND WHAT FINAL ACTION SHOULD BE TAKEN ON A PROPOSED PROJECT -- ALL FINAL DECISIONS AND CONCLUSIONS REST WITH THE TOWN AND LANDOWNER. THIS REPORT IDENTIFIES THE EXISTING RESOURCE BASE AND EVALUATES ITS SIGNIFICANCE TO THE PROPOSED DEVELOPMENT, AND ALSO SUGGESTS CONSIDERATIONS THAT SHOULD BE OF CONCERN TO THE DEVELOPER AND THE TOWN. THE RESULTS OF THIS TEAM ACTION ARE ORIENTED TOWARD THE DEVELOPMENT OF BETTER ENVIRONMENTAL QUALITY AND THE LONG-TERM ECONOMICS OF LAND USE.

THE EASTERN CONNECTICUT RC&D EXECUTIVE COMMITTEE HOPES YOU WILL FIND THIS REPORT OF VALUE AND ASSISTANCE IN MAKING YOUR DECISIONS ON THIS PROPOSED CONDOMINIUM DEVELOPMENT.

IF YOU REQUIRE ANY ADDITIONAL INFORMATION, PLEASE CONTACT:

ELAINE A. SYCH  
ERT COORDINATOR  
EASTERN CONNECTICUT RC&D AREA  
P. O. BOX 198  
BROOKLYN, CT 06234  
(203) 774-1253

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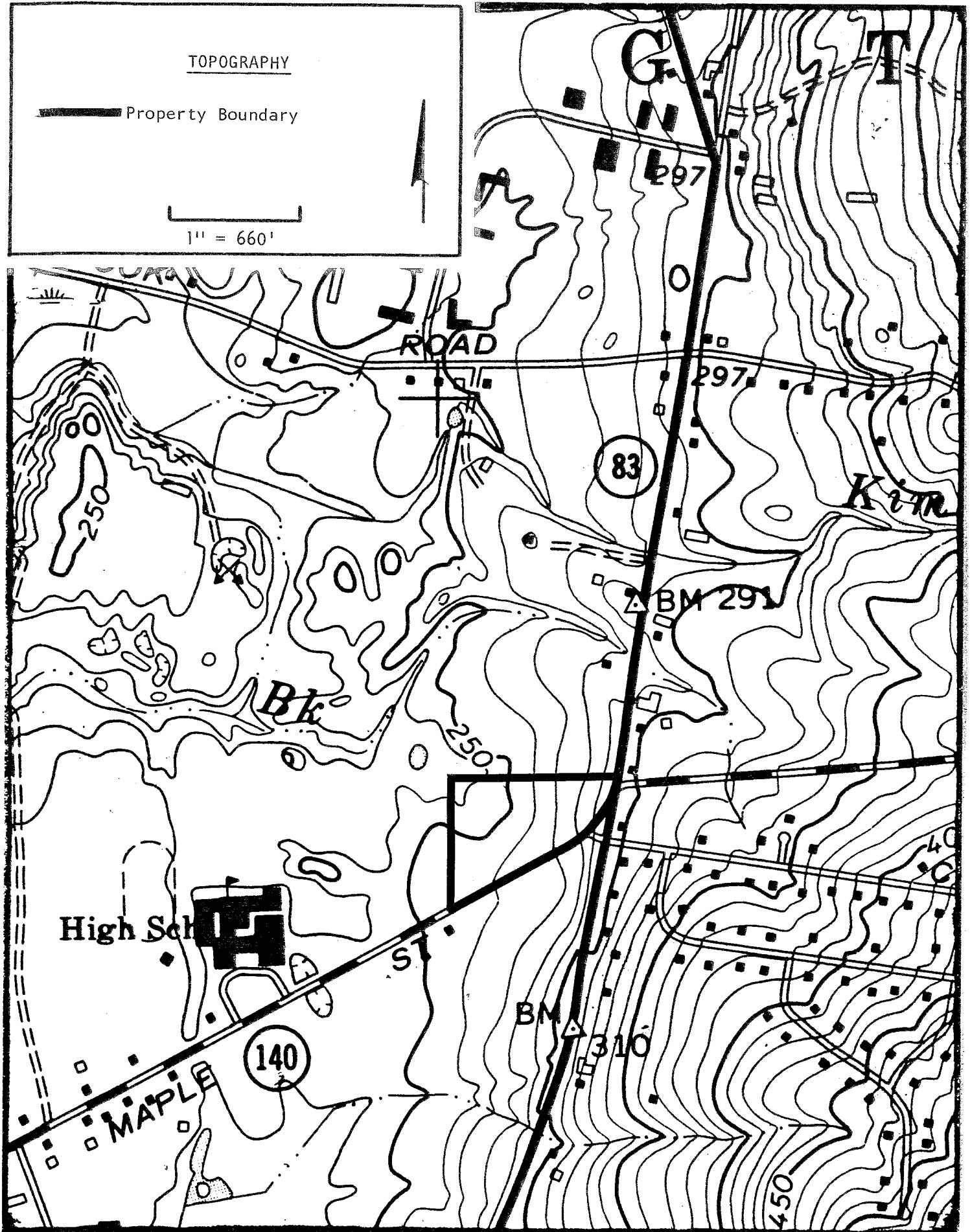
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TOPOGRAPHY

Property Boundary

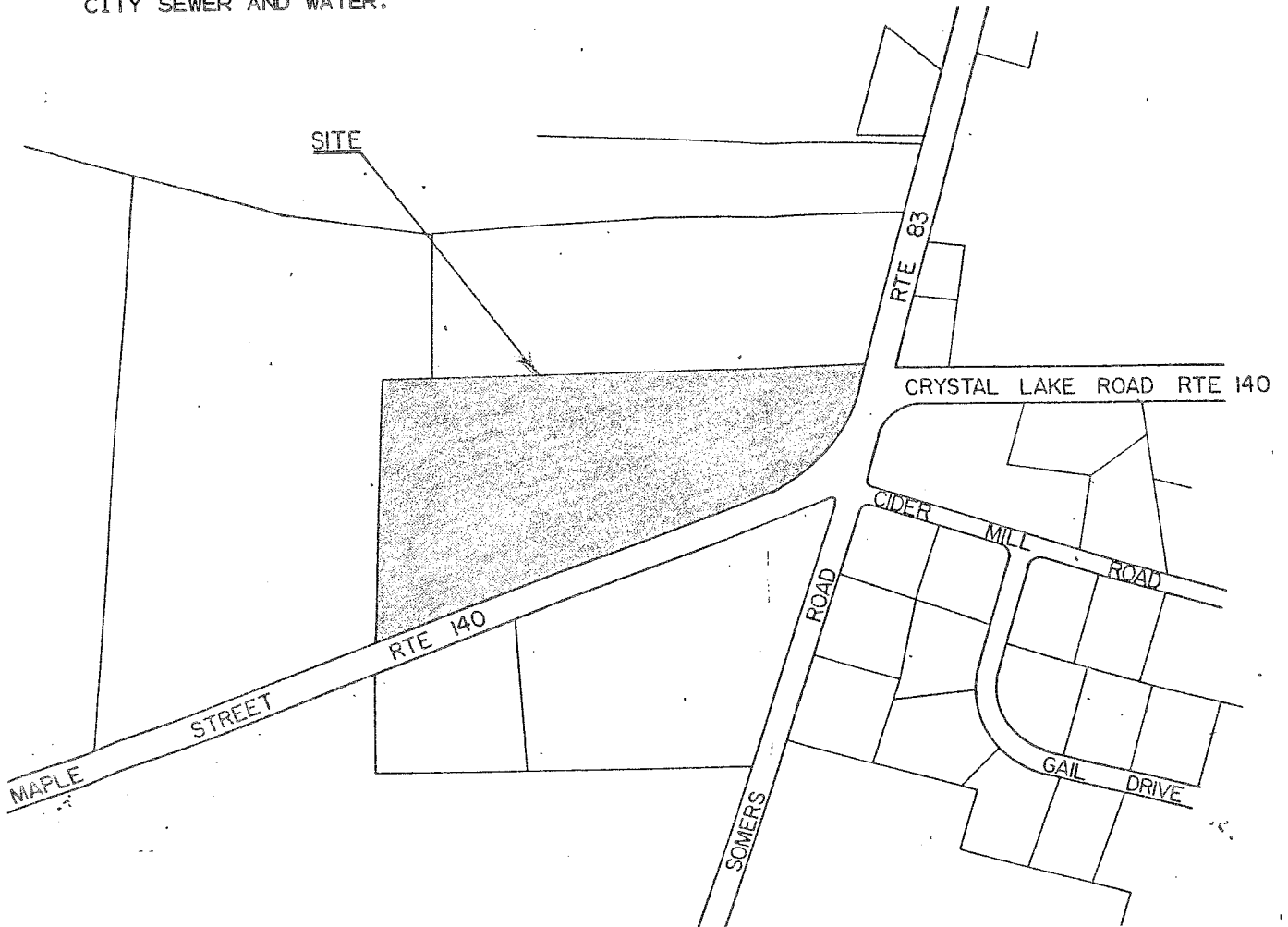
1" = 660'



A. INTRODUCTION

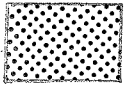
THE EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM WAS ASKED TO PERFORM AN ENVIRONMENTAL REVIEW AND EVALUATION OF THE PROPOSED CIDER MILL HEIGHTS CONDOMINIUM DEVELOPMENT FOR THE ELLINGTON CONSERVATION COMMISSION. THIS REPORT HIGHLIGHTS AREAS OF CONCERN AND POTENTIAL PROBLEMS, AND MAKES RECOMMENDATIONS TO THE TOWN AND DEVELOPER.

THE TEN (10) ACRE CIDER MILL HEIGHTS CONDOMINIUM SITE IS LOCATED AT THE INTERSECTION OF ROUTE 83 (SOMERS ROAD AND ROUTE 140 (MAPLE STREET)). THE PROPOSAL IS FOR FOURTEEN (14) 4-UNIT BUILDINGS AND TWO (2) 3-UNIT BUILDINGS TO BE BUILT. A ROAD WILL ALSO BE CONSTRUCTED WITH TWO (2) CUL-DE-SACS, AS WELL AS PARKING AREAS. THE DEVELOPMENT WILL BE SERVED BY CITY SEWER AND WATER.





BEDROCK GEOLOGY



Portland Formation



1" = 660'

ROAD

G

T

297

297

83

BM 291

Bk

250

High Sch

ST

BM

310

140

MAPLE

450

## B. TOPOGRAPHY

THE PROPOSED CONDOMINIUM SITE CONSISTS OF  $\pm$  10 ACRES OF OPEN FIELDS IN CENTRAL ELLINGTON. THE LAND HAS A PAST HISTORY OF AGRICULTURAL USE. THE LAND SURFACE SLOPES GENTLY TO THE PROPOSED DETENTION BASIN SITE IN THE NORTH-WESTERN PARTS. NO MAJOR STREAM COURSES ARE VISIBLE ON THE PARCEL. THE WETTEST PART OF THE SITE FLOWS NORTHWESTWARD TOWARDS KIBBES BROOK.

## C. GEOLOGY

THE PROPOSED CONDOMINIUM SITE IS LOCATED IN A SECTION OF ELLINGTON THAT IS INCLUDED IN THE ELLINGTON TOPOGRAPHIC QUADRANGLE. A BEDROCK GEOLOGIC MAP OF THE QUADRANGLE (MAP QR-4, BY G. E. COLLINS) HAS BEEN PUBLISHED BY THE CONNECTICUT GEOLOGICAL AND NATURAL HISTORY SURVEY). A SURFICIAL GEOLOGIC MAP (GQ-965, BY R. B. COLTEN) OF THE QUADRANGLE HAS BEEN PUBLISHED BY THE U. S. GEOLOGICAL SURVEY.

BEDROCK UNDERLYING THE SITE IS DESCRIBED AS A REDDISH-BROWN ARKOSE (BROWNSTONE). THE TERM "ARKOSE" REFERS TO A SANDSTONE WHICH CONTAINS A HIGH PERCENTAGE OF THE MINERALS QUARTZ AND FELDSPAR. IT DOES NOT SURFACE ANYWHERE ON THE SITE. BORINGS DRILLED ON THE SITE BY THE APPLICANT'S GEOTECHNICAL ENGINEER DEMONSTRATE THAT BEDROCK WAS ENCOUNTERED IN SEVERAL BORE HOLES, AT DEPTHS RANGING BETWEEN 7.5 FEET AND 14 FEET. MOST OF THESE BORINGS WERE LOCATED ALONG MAPLE STREET (ROUTE 140).

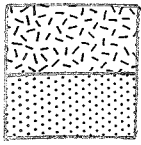
ACCORDING TO COLTEN'S MAP (GQ-965) THE SITE IS COVERED ALMOST ENTIRELY BY A GLACIAL SEDIMENT KNOWN AS STRATIFIED DRIFT. A SMALL AREA ALONG THE EASTERN BORDER IS COVERED BY ANOTHER GLACIAL SEDIMENT CALLED TILL.

STRATIFIED DRIFT, WHOSE MAIN COMPONENTS ARE SAND AND GRAVEL, WAS DEPOSITED ON THE SITE BY GLACIAL MELTWATER. THESE DEPOSITS ARE GENERALLY REDDISH-BROWN, AND RANGE IN SIZE FROM COARSE GRAVEL TO SILT.

TILL CONSISTS OF SEDIMENTS THAT WERE DEPOSITED DIRECTLY FROM AN ICE SHEET. THESE SEDIMENTS ARE GENERALLY NON-SORTED (I.E., THEY ARE THOROUGHLY MIXED BY GRAIN SIZE), AND THEY USUALLY CONTAIN THE FULL RANGE OF CLAY, SILT, SAND, GRAVEL AND BOULDERS. ALTHOUGH THE TEXTURE OF THE TILL VARIES, IT IS COMMONLY SANDY, STONY AND RELATIVELY LOOSE IN THE UPPER FEW FEET, BUT MAY BECOME SILTIER AND MORE COMPACT AT DEPTH.

AS MENTIONED EARLIER, AN INFORMATIONAL REPORT ON SOIL BORINGS DRILLED THROUGHOUT THE SITE WAS MADE AVAILABLE TO TEAM MEMBERS. ACCORDING TO THE FINDINGS OF THIS REPORT, THE DISTRIBUTION OF SURFICIAL GEOLOGIC MATERIAL IN THE AREA OF THE BORINGS GENERALLY REFLECTS THE ABOVE DESCRIPTION OF STRATIFIED DRIFT OVER TILL ; A TOPSOIL LAYER, UNDERLAIN FIRST BY COMPACT SILTS WITH LITTLE

SURFICIAL GEOLOGY

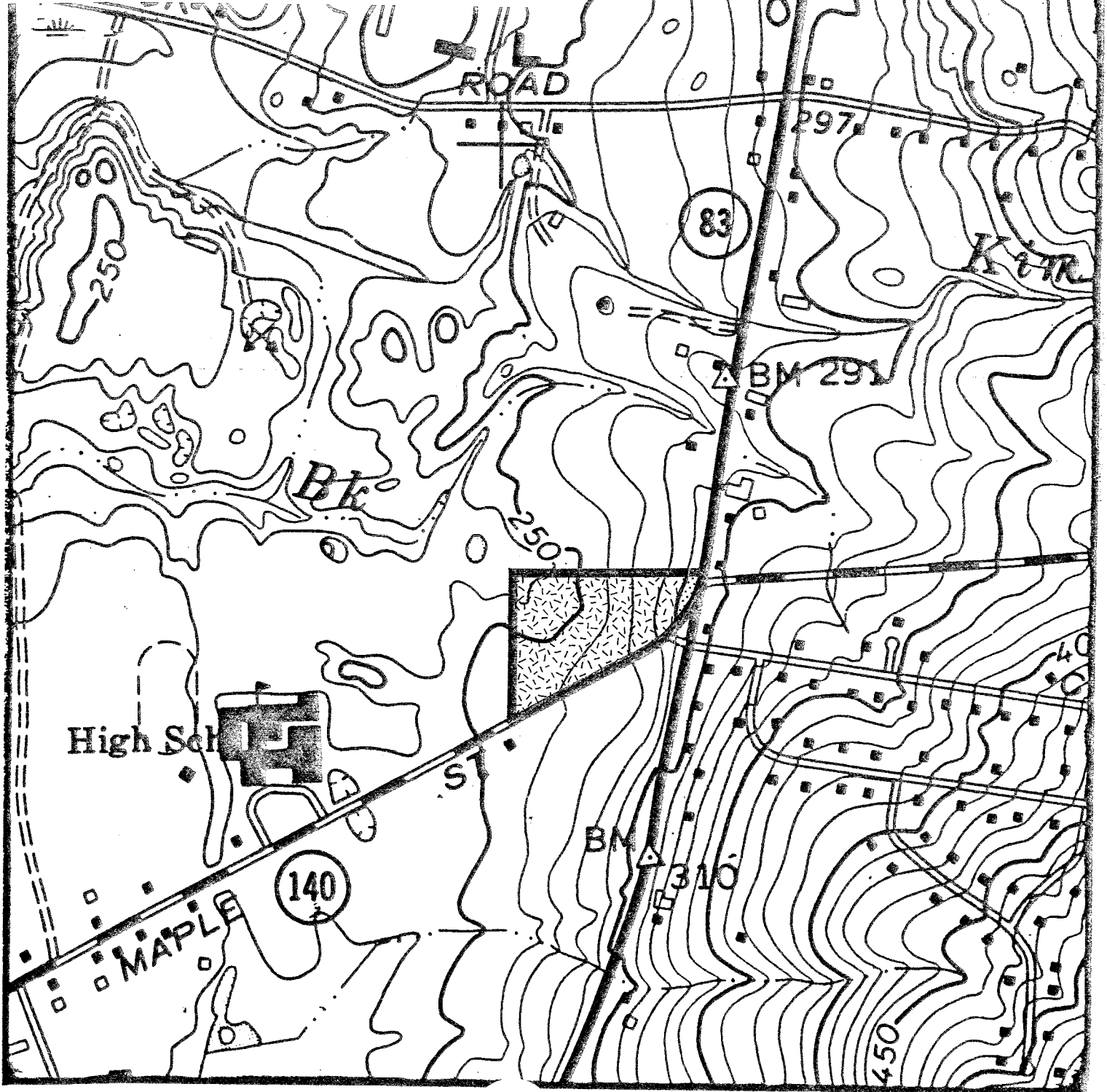


Stratified Drift

Till



1" = 660'



SAND AND GRAVEL, AND THEN HARDPAN OR BEDROCK.

ACCORDING TO PLANS SUBMITTED TO TEAM MEMBERS, AN AREA FLAGGED BY A SOIL SCIENTIST INDICATES A RELATIVELY WIDE BAND OF WETLANDS BISECTING THE CENTRAL PARTS OF THE SITE. BASED ON A 1934 AIR PHOTO OF THE AREA, IT APPEARS THAT THE CENTRAL PARTS OF THE SITE MAY HAVE BEEN WETTER THEN THEY ARE AT PRESENT. ROAD DRAINAGE WORK ALONG ROUTE 140 MAY HAVE AFFECTED THE HYDROLOGY OF THE WETLANDS.

PRESENT PLANS INDICATE THAT THREE (3) BUILDINGS AND THEIR RESPECTIVE PARKING AREAS WOULD BE CONSTRUCTED IN THIS AREA. IN ADDITION, ABOUT 240 FEET OF ROAD WOULD ALSO TRAVERSE THE MAPPED WETLANDS AREAS. A DETENTION BASIN FOR HANDLING STORM WATER FROM THE SITE IS PROPOSED IN THE LOWER PARTS OF THE WETLAND.

WETLAND AREAS CAN HAVE IMPORTANT HYDROLOGICAL FUNCTIONS, INCLUDING STREAM-FLOW REGULATIONS, EROSION CONTROL AND SURFACE WATER QUALITY PROTECTION. IT MAY, IN ADDITION, BE A VALUABLE ECOLOGICAL ASSET. FOR THESE REASONS, AND BECAUSE THE WETLANDS WITHIN THE SITE RANGE FROM SEASONALLY TO PERMANENTLY WET, THEY GENERALLY HOLD LOW POTENTIAL FOR BUILDING PURPOSES. IT SHOULD BE POINTED OUT THAT THE APPLICANT'S GEOTECHNICAL ENGINEER INDICATED THAT THE UPPER PARTS OF WETLAND AREAS COULD SUPPORT DEVELOPMENT PROVIDED CERTAIN ENGINEERING MEASURES ARE IMPLEMENTED. EVEN WITH THESE POTENTIAL MITIGATIVE MEASURES, THE TEAM'S GEOLOGIST DOES NOT RECOMMEND THE CONSTRUCTION OF BUILDINGS IN THE WETLAND. THE CONSTRUCTION OF BUILDINGS AND PARKING AREAS IN THE WETLAND MAY TAKE AWAY ANY OF THE NATURAL HYDROLOGICAL AND GEOLOGICAL FUNCTIONS THAT THE WETLAND PERFORMS.

AS NOTED EARLIER, APPROXIMATELY 240 FEET OF WETLAND ROAD CROSSINGS WILL BE REQUIRED BY THE PROPOSAL. ALTHOUGH UNDESIRABLE, WETLAND ROAD CROSSINGS ARE FEASIBLE PROVIDED THEY ARE PROPERLY ENGINEERED. THE ROAD SHOULD BE CONSTRUCTED ADEQUATELY ABOVE THE SURFACE EVALUATION OF THE WETLANDS. THIS WILL ALLOW FOR BETTER DRAINAGE OF THE ROAD AND ALSO DECREASE THE FROST HEAVING POTENTIAL OF THE ROAD. ROAD CONSTRUCTION THROUGH WETLANDS SHOULD PREFERABLE BE DONE DURING THE DRY TIME OF THE YEAR, AND SHOULD INCLUDE PROVISIONS FOR EFFECTIVE EROSION AND SEDIMENT CONTROL. FINALLY, CULVERT(S) SHOULD BE PROPERLY SIZED AND LOCATED SO AS NOT TO ALTER THE WATER LEVELS IN THE WETLAND OR CAUSE FLOODING PROBLEMS.

ANY ACTIVITY SUCH AS FILLING, MODIFYING OR DISTURBING REGULATED WETLAND SOILS WILL REQUIRE A PERMIT FROM THE TOWN.

THE PROPOSED CONDOMINIUM DEVELOPMENT WILL BE SERVED BY PUBLIC SEWERS TIED INTO THE ELLINGTON MUNICIPAL SYSTEM AND PUBLIC WATER SUPPLIED BY THE CONNECTICUT WATER COMPANY. AS A RESULT, THE MAJOR GEOLOGIC IMPACTS COMMONLY ASSOCIATED WITH RESIDENTIAL DEVELOPMENT WOULD NOT BE EXPECTED TO BE OVERLY PROBLEMATIC, EXCEPT FOR THE WETLAND ISSUE DISCUSSED ABOVE, AND POTENTIAL PROBLEMS ARISING FROM CONSTRUCTION, I.E., EROSION AND SEDIMENTATION.

WATERSHED BOUNDARY



Approximate watershed boundary\*



Point of outflow into the farm pond.



Direction of surface flow

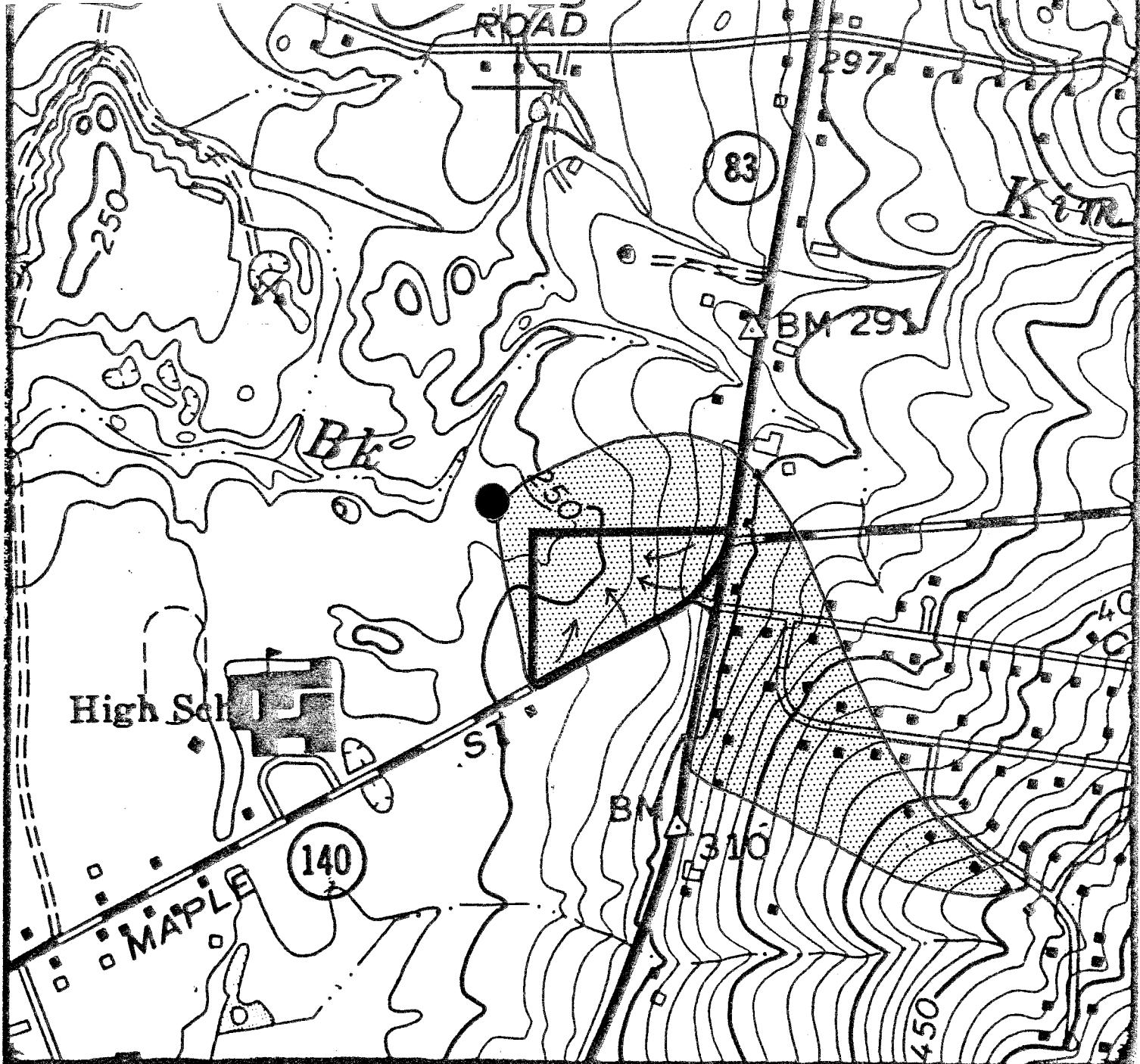


Property boundary



1" = 660'

\*Watershed boundary shown may not account for all road drainage re-routing.



#### D. HYDROLOGY

THE SITE LIES ENTIRELY WITHIN THE KIBBES BROOK WATERSHED. SURFACE RUNOFF ON MOST OF THE SITE DRAINS INTO THE WETLAND AREA PROPOSED AS DETENTION.

DEVELOPMENT OF THE PROPERTY AS PROPOSED CAN BE EXPECTED TO LEAD TO INCREASES IN THE AMOUNT OF RUNOFF SHED FROM THE SITE. THESE INCREASES WOULD BE CAUSED BY REMOVAL OF VEGETATION, COMPACTION OF SOIL AND CREATION OF IMPERVIOUS SURFACES, SUCH AS ROOFS, PAVED ROADS AND PARKING AREAS. THE AMOUNT OF THE INCREASES WILL DEPEND UPON THE ULTIMATE DENSITY OF DEVELOPMENT.

IN ORDER TO MITIGATE THE EFFECT OF INCREASED RUNOFF FROM THE SITE FOLLOWING DEVELOPMENT, THE DEVELOPER HAS PROPOSED TO INSTALL A STORM WATER DETENTION POND IN THE WETLAND AT THE LOWER END OF THE PROPERTY. THIS DETENTION BASIN MIGHT ALSO SERVE A SEDIMENT RETENTION FUNCTION DURING INITIAL CONSTRUCTION AND FOR ROAD SAND AND PARKING LOT DEBRIS ONCE THE PROJECT IS COMPLETE. IF SEDIMENT DOES ACCUMULATE IN THE POND, IT WILL HAVE TO BE REMOVED PERIODICALLY IN ORDER TO INSURE THAT THE RUNOFF-STORAGE CAPACITY OF THE POND IS NOT SERIOUSLY DIMINISHED. PROVISIONS SHOULD BE MADE BEFOREHAND TO DETERMINE WHO WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE POND. ANOTHER PROBLEM COMMONLY ASSOCIATED WITH INCREASED RUNOFF ON A SITE IS THE CHANCE FOR EROSION AND SEDIMENTATION. IN ORDER TO PREVENT POTENTIAL EROSION PROBLEMS, EVERY EFFORT SHOULD BE MADE TO CONTAIN AND FILTER DISTURBED WATER FROM DEVELOPMENT ACTIVITY TAKING PLACE ON THE SITE. THIS WILL ENSURE THAT ENVIRONMENTAL DAMAGE DOES NOT OCCUR ON OR OFF THE SITE. THEREFORE, IT IS STRONGLY ADVISED THAT A DETAILED EROSION AND SEDIMENT CONTROL PLAN BE DEVELOPED AND CLOSELY ENFORCED. (SEE SECTION G) IT SEEMS LIKELY THAT ONCE DEVELOPMENT IS COMPLETED AND THE SITE STABILIZED, POTENTIAL EROSION AND SEDIMENTATION PROBLEMS SHOULD CEASE. HOWEVER, IT SHOULD BE POINTED OUT THAT THE ROAD SAND FROM PARKING LOTS MAY FIND ITS WAY INTO THE STORM WATER SYSTEM WITHIN THE PROPOSED DEVELOPMENT, AND ULTIMATELY INTO WATERCOURSES OFF-SITE. THIS POTENTIAL PROBLEM CAN BE MINIMIZED BY 1) SWEEPING PARKING AREAS IN THE SPRING; 2) MINIMIZING ROAD SANDING IN PARKING LOTS; AND 3) MAINTAINING CATCH BASINS.

#### E. SOILS

THE ATTACHED REVISED SOIL MAP SHOWS THE APPROXIMATE AREAS OF SOILS OVER THIS PARCEL. WETLAND SOILS WERE ADEQUATELY FLAGGED IN THE FIELD AND ACCURATELY INDICATED ON THE DEVELOPER'S PLOT PLAN.

ALL SOILS ON THIS PARCEL, EXCEPT THOSE INDICATED AS WETLANDS, ARE PRIME FARMLAND SOILS. THE SLOPES ARE NEARLY LEVEL TO GENTLY SLOPING.



ACCORDING TO THE DEVELOPER'S PLAN, THREE (3) OF THE CONDOMINIUM UNITS AND A PROPOSED ROAD WILL BE PLACED ENTIRELY IN AN AREA REGULATED BY THE TOWN. IT IS, THEREFORE, THE TOWN'S RESPONSIBILITY TO DECIDE IF THEY WILL ALLOW CONSTRUCTION IN THIS AREA.

THE MAIN SOIL LIMITATION ON THIS SITE IS THE HIGH WATER TABLE IN THE POORLY DRAINED RAYPOL SOILS MAPPED IN THE CENTER OF THE PROPERTY.

LIST OF SOIL MAP SYMBOLS WITH THEIR CURRENT INTERPRETIVE NAME:

CsB	--	CHESHIRE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
EFA	--	ELLINGTON SILT LOAM
Rc	--	RAYPOL SILT LOAM
WGB	--	WATCHAUG FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES

THE FOLLOWING IS A DETAILED DESCRIPTION OF EACH SOIL MAPPED ON THIS SITE.

CsB -- CHESHIRE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES: THIS GENTLY SLOPING, WELL DRAINED SOIL IS ON BROAD HILLS AND RIDGETOPS. SLOPES ARE SMOOTH AND CONVEX. THEY ARE MOSTLY LESS THAN 300 FEET LONG. THE AREAS ARE DOMINANTLY IRREGULAR IN SHAPE.

TYPICALLY, THE SURFACE LAYER IS DARK BROWN FINE SANDY LOAM EIGHT (8) INCHES THICK. THE SUBSOIL IS EIGHTEEN (18) INCHES THICK. IT IS REDDISH-BROWN, FRIABLE FINE SANDY LOAM. THE SUBSTRATUM, TO A DEPTH OF SIXTY (60) INCHES, IS REDDISH-BROWN, FRIABLE, GRAVELLY SANDY LOAM AND HAS DISCONTINUOUS FIRM LENSES UP TO TWO (2) INCHES THICK.

INCLUDED WITH THIS SOIL IN MAPPING ARE SMALL INTERMINGLED AREAS, OF MODERATELY WELL DRAINED WATCHAUG AND LUDLOW SOILS AND WELL DRAINED WETHERSFIELD SOILS. IN A FEW AREAS, THE SUBSTRATUM IS GRAVELLY LOAMY SAND. ALSO INCLUDED ARE AREAS WHERE THE SURFACE LAYER IS SILT LOAM AND A FEW AREAS WHERE SLOPES ARE LESS THAN THREE (3) PERCENT. INCLUDED AREAS MAKE UP FIVE (5) TO FIFTEEN (15) PERCENT OF THIS MAP UNIT.

THIS SOIL HAS MODERATE PERMEABILITY. IT HAS A HIGH AVAILABLE WATER CAPACITY. RUNOFF IS MEDIUM. THIS SOIL TENDS TO DRY OUT AND WARM UP FAIRLY EARLY IN THE SPRING.

THIS SOIL IS WELL SUITED TO COMMUNITY DEVELOPMENT. IT IS FAIRLY EASY TO EXCAVATE BUT COMMONLY CONTAINS STONES AND BOULDERS. WASTE DISPOSAL SYSTEMS, SUCH AS ON-SITE SEPTIC SYSTEMS, WILL FUNCTION SATISFACTORILY WITH NORMAL DESIGN AND INSTALLATION. THIS SOIL HAS GOOD POTENTIAL FOR LANDSCAPING. DURING PERIODS OF BUILDING AND CONSTRUCTION, CONSERVATION MEASURES ARE NEEDED TO PREVENT EXCESSIVE RUNOFF, EROSION, AND SILTATION.



THE INCLUDED SOILS ARE FAIRLY SUITED TO COMMUNITY DEVELOPMENT. WATCHAUG SOILS HAVE A SEASONAL HIGH WATER TABLE, LUDLOW SOILS HAVE A SEASONAL HIGH WATER TABLE AND A SLOWLY OR VERY SLOWLY PERMEABLE SUBSTRATUM, AND WETHERSFIELD SOILS HAVE A SLOWLY OR VERY SLOWLY PERMEABLE SUBSTRATUM. ON-SITE TESTING WILL DETERMINE IF ANY OF THE INCLUDED SOILS ARE ON ANY SPECIFIC SITE.

EFA -- ELLINGTON SILT LOAM: THIS IS A NEARLY LEVEL, MODERATELY WELL DRAINED SOIL IN SLIGHT DEPRESSIONS ON BROAD OUTWASH TERRACES AND ALONG NARROW STREAMS. THIS SOIL HAS SMOOTH SLOPES OF ZERO (0) TO THREE (3) PERCENT. MOST SLOPES ARE LESS THAN 250 FEET LONG. THE AREAS DOMINANTLY ARE IRREGULAR IN SHAPE.

TYPICALLY, THE SURFACE LAYER IS DARK REDDISH-BROWN SILT LOAM EIGHT (8) INCHES THICK. THE UPPER PART OF THE SUBSOIL IS REDDISH-BROWN SILT LOAM TEN (10) INCHES THICK, AND THE LOWER PART IS MOTTLED, REDDISH-BROWN VERY FINE SANDY LOAM EIGHT (8) INCHES THICK. THE SUBSTRATUM, TO A DEPTH OF SIXTY (60) INCHES, IS DARK REDDISH-BROWN VERY GRAVELLY SAND.

INCLUDED WITH THIS SOIL IN MAPPING ARE SMALL INTERMINGLED AREAS OF THE WELL DRAINED BRANFORD SOILS, THE MODERATELY WELL DRAINED SCIO SOILS, AND THE POORLY DRAINED RAYPOL AND RAYNHAM SOILS. IN A FEW AREAS, THE SOILS HAVE A FINE SANDY LOAM SURFACE LAYER. THE INCLUDED SOILS MAKE UP FIVE (5) TO FIFTEEN (15) PERCENT OF THIS MAP UNIT.

PERMEABILITY IS MODERATE IN THE SURFACE LAYER AND SUBSOIL AND RAPID OR VERY RAPID IN THE SUBSTRATUM. THIS SOIL HAS A MODERATE AVAILABLE WATER CAPACITY. RUNOFF IS SLOW. THIS SOIL DRIES OUT AND WARMS UP SLOWLY IN SPRING.

THIS SOIL IS FAIR TO POORLY SUITED FOR COMMUNITY DEVELOPMENT. IT HAS A SEASONAL HIGH WATER TABLE AT A DEPTH OF ABOUT TWENTY (20) INCHES. THIS SOIL IS EASY TO EXCAVATE; HOWEVER, THE STEEP SLOPES OF EXCAVATIONS ARE UNSTABLE. THIS SOIL HAS POOR POTENTIAL FOR WASTE DISPOSAL SYSTEMS, SUCH AS SEPTIC TANK ABSORPTION FIELDS, BECAUSE THE WATER TABLE IS HIGH FROM LATE IN FALL UNTIL MID OR LATE SPRING. IN ADDITION, THE SEPTIC SYSTEM CAN POLLUTE THE GROUNDWATER. FOUNDATIONS AND BASEMENTS MUST BE PROPERLY DESIGNED AND CONSTRUCTED TO ENSURE A STABLE FOUNDATION AND TO PREVENT WET BASEMENTS. DURING PERIODS OF BUILDING AND CONSTRUCTION, CONSERVATION MEASURES ARE NEEDED TO PREVENT EXCESSIVE RUNOFF, EROSION, AND SILTATION.

Rc -- RAYPOL SILT LOAM: THIS NEARLY LEVEL, POORLY DRAINED SOIL IS IN DEPRESSIONS ON BROAD OUTWASH TERRACES. SLOPES ARE ZERO (0) TO THREE (3) PERCENT AND ARE SMOOTH AND CONCAVE. THEY ARE MOSTLY 100 TO 300 FEET LONG. THE AREAS ARE DOMINANTLY IRREGULAR IN SHAPE.

TYPICALLY, THE SURFACE LAYER IS VERY DARK BROWN SILT LOAM EIGHT (8) INCHES THICK. THE SUBSOIL IS TWENTY-ONE (21) INCHES THICK; IT IS GRAYISH-BROWN, DARK YELLOWISH-BROWN, AND OLIVE BROWN, MOTTLED SILT LOAM AND VERY FINE SANDY LOAM. THE SUBSTRATUM, TO A DEPTH OF SIXTY (60) INCHES, IS LIGHT OLIVE BROWN, MOTTLED GRAVELLY SAND.

INCLUDED WITH THIS SOIL IN MAPPING ARE SMALL INTERMINGLED AREAS OF MODERATELY WELL DRAINED ELLINGTON AND NINIGRET SOILS AND POORLY DRAINED RAYNHAM AND WALPOLE SOILS. IN A FEW AREAS, THE SOILS HAVE A FINE SANDY LOAM SURFACE LAYER. THE INCLUDED SOILS MAKE UP FIVE (5) TO FIFTEEN (15) PERCENT OF THIS MAP UNIT.

THIS SOIL HAS A SEASONAL HIGH WATER TABLE AT A DEPTH OF ABOUT EIGHT (8) INCHES FROM FALL UNTIL MID-SPRING. PERMEABILITY IS MODERATE IN THE SURFACE LAYER AND SUBSOIL AND RAPID OR VERY RAPID IN THE SUBSTRATUM. THIS SOIL HAS A HIGH AVAILABLE WATER CAPACITY. RUNOFF IS SLOW. THIS SOIL DRIES OUT AND WARMS SLOWLY IN THE SPRING.

THIS SOIL IS POORLY SUITED TO COMMUNITY DEVELOPMENT. IT IS EASY TO EXCAVATE; HOWEVER, WATER INUNDATES THE EXCAVATIONS, AND STEEP SLOPES OF EXCAVATIONS ARE UNSTABLE WHEN SATURATED. THIS SOIL HAS POOR POTENTIAL FOR WASTE DISPOSAL SYSTEMS, SUCH AS SEPTIC TANK ABSORPTION FIELDS, BECAUSE OF THE SEASONAL HIGH WATER TABLE. IN ADDITION, THE SEPTIC SYSTEM MAY POLLUTE THE GROUNDWATER. ATTENTION NEEDS TO BE GIVEN TO PROPERLY DESIGNING AND CONSTRUCTING FOUNDATIONS AND BASEMENTS TO INSURE A STABLE FOUNDATION AND PREVENT WET BASEMENTS. THIS USUALLY REQUIRES EXTENSIVE FILLING. THIS SOIL IS POORLY SUITED TO LANDSCAPING BECAUSE IT IS WET AND SOGGY MUCH OF THE YEAR. MANY PLANTS DO NOT ADAPT TO THE WETNESS. DURING PERIODS OF CONSTRUCTION, CONSERVATION MEASURES ARE NEEDED TO PREVENT EXCESSIVE RUNOFF, EROSION, AND SILTATION.

WGB -- WATCHAUG FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES: THIS GENTLY SLOPING, MODERATELY WELL DRAINED SOIL IS IN SLIGHT DEPRESSIONS AND NEAR THE BASE OF SLOPES OF GLACIAL UPLANDS. SLOPES ARE SMOOTH AND CONCAVE. THEY GENERALLY ARE 100 TO 400 FEET LONG. THE AREAS ARE DOMINANTLY IRREGULAR IN SHAPE.

TYPICALLY, THE SURFACE LAYER OF THIS SOIL IS DARK REDDISH-BROWN FINE SANDY LOAM EIGHT (8) INCHES THICK. THE SUBSOIL IS SIXTEEN (16) INCHES THICK; IT IS REDDISH-BROWN AND YELLOWISH-RED FINE SANDY LOAM AND IS MOTTLED IN THE LOWER SIX (6) INCHES. THE SUBSTRATUM, DESCRIBED TO A DEPTH OF SIXTY (60) INCHES, IS REDDISH-BROWN, MOTTLED, FRIABLE, GRAVELLY SANDY LOAM WITH DISCONTINUOUS FIRM LENSES UP TO TWO (2) INCHES THICK.

INCLUDED WITH THIS SOIL IN MAPPING ARE SMALL INTERMINGLED AREAS OF WELL DRAINED CHESHIRE SOILS, MODERATELY WELL DRAINED LUDLOW SOILS, AND POORLY DRAINED WILBRAHAM SOILS. ALSO INCLUDED ARE AREAS WHERE THE SURFACE LAYER IS SILT LOAM AND A FEW AREAS WHERE UP TO THREE (3) PERCENT OF THE SURFACE IS COVERED WITH STONES AND BOULDERS. INCLUDED AREAS MAKE UP TO FIVE (5) TO FIFTEEN (15) PERCENT OF THIS MAP UNIT.

THIS SOIL HAS A SEASONAL HIGH WATER TABLE AT A DEPTH OF ABOUT TWENTY (20) INCHES FROM LATE IN FALL UNTIL MID-SPRING. THIS SOIL HAS MODERATE PERMEABILITY.

IT HAS A HIGH AVAILABLE WATER CAPACITY. RUNOFF IS MEDIUM. THIS SOIL TENDS TO DRY OUT AND WARM UP RATHER SLOWLY IN SPRING.

THIS SOIL IS FAIRLY SUITED TO COMMUNITY DEVELOPMENT. IT IS FAIRLY EASY TO EXCAVATE BUT HAS STONES AND BOULDERS IN MANY PLACES. THE SEASONAL HIGH WATER TABLE FREQUENTLY INUNDATES EXCAVATIONS. PARTICULAR ATTENTION NEEDS TO BE GIVEN TO BUILDING HOMES WITH BASEMENTS BECAUSE THE BASEMENTS ARE USUALLY BELOW THE DEPTH OF THE SEASONAL HIGH WATER TABLE. THIS RESULTS IN WET BASEMENTS, UNLESS THE SOIL IS DRAINED. WASTE DISPOSAL SYSTEMS, SUCH AS AN ON-SITE SEPTIC SYSTEM, WILL GENERALLY NOT FUNCTION SATISFACTORILY WITH ONLY NORMAL DESIGN AND INSTALLATION BECAUSE OF THE SEASONAL HIGH WATER TABLE. VERY CAREFUL AND OFTEN COSTLY DESIGN AND INSTALLATION ARE REQUIRED TO ENSURE THAT ON-SITE SEPTIC SYSTEMS FUNCTION SATISFACTORILY AND ARE NOT FLOODED BY THE WATER TABLE. THIS SOIL IS WELL SUITED TO LANDSCAPING, BUT IT MAY REMAIN WET AND SOGGY FOR SEVERAL DAYS AFTER HEAVY RAINS. DURING CONSTRUCTION OF COMMUNITY DEVELOPMENTS, CONSERVATION MEASURES ARE NEEDED TO PREVENT EXCESSIVE RUNOFF, EROSION, AND SILTATION.

#### F. ENGINEERING CONCERNS

THE SITE IS LOCATED ON THE NORTHWEST CORNER OF THE ROUTE 140 AND ROUTE 83 INTERSECTION. DRAINAGE FROM OFF THE SITE ON THE SOUTH IS PRESENTLY DIRECTED WEST ALONG ROUTE 140 AND DOES NOT FLOW ONTO THE SITE. DRAINAGE FROM ROUTE 83 PRESENTLY FLOWS ALONG THE NORTHERLY PROPERTY LINE AND ONTO THE ABUTTING PROPERTY. THEREFORE, THE ONLY SURFACE DRAINAGE THAT CROSSES THE SITE IS FROM THE RAIN THAT FALLS ON THE SITE.

DURING THE DISCUSSION WITH TOWN OFFICIALS, AND ERT MEMBERS, THE PROPERTY OWNER INDICATED WILLINGNESS TO REMOVE THE THREE (3) CONDOMINIUM UNITS FROM THE WETLAND. THE REMOVAL OF THE CONDOMINIUM UNITS FROM THE WETLAND AREA WOULD BE A WISE MOVE AND WOULD DECREASE THE VOLUME OF THE BASIN.

THE DETENTION BASIN PROPOSED HAS AN EXCAVATION BELOW NATURAL GROUND OF ABOUT THREE (3) FEET, WITH AN OUTLET PIPE EXTENDING ABOUT 300 FEET ACROSS ANOTHER PROPERTY. THIS ALLOWS THE DETENTION BASIN TO BE COMPLETELY DRAINED AFTER EACH STORM. THE OTHER ALTERNATIVE IS TO KEEP THE OUTLET PIPE ABOVE GROUND AND BUILD A DIKE TO CONTAIN THE STORM RUNOFF. THIS MEANS KEEPING THE ROAD, PARKING, AND HOUSING ABOVE THE HIGH WATER LINE DURING STORM RUNOFF EVENTS.

THE WETLAND SOIL IS A RAYPOL SILT LOAM AND WOULD ALLOW VERY SMALL AMOUNTS OF WATER RECHARGE UNLESS THE DETENTION BASIN WAS EXCAVATED BELOW TWENTY-FOUR (24) INCHES TO INTERCEPT THE DEEP SANDS AND GRAVELS.

THE DETENTION BASIN CALCULATIONS WERE CALCULATED USING THE UNIVERSAL RATIONAL HYDROGRAPH METHOD. THIS METHOD IS NOT WRITTEN IN ANY TEXTBOOKS THAT THE TEAM ENGINEER IS FAMILIAR WITH, AND IS NOT LISTED AS A VALID METHOD IN THE GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL FOR CONNECTICUT.

#### G. EROSION AND SEDIMENT CONTROL

1) THE SITE CONTAINS INLAND WETLANDS THAT WILL REQUIRE FILL OR EXCAVATION TO FACILITATE THE CONSTRUCTION OF THREE (3) CONDOMINIUM UNITS, A ROADWAY CROSSING, AND THE PROPOSED DETENTION BASIN AND OUTLET. ONE POSSIBLE ALTERNATIVE TO LOCATING THE ROADWAY THROUGH THE CENTER OF THE WETLANDS WOULD BE TO CONSTRUCT THE ROADWAY AS PART OF THE DETENTION BASIN DIKE.

2) THE SOIL EROSION AND SEDIMENT CONTROL PLAN THAT WAS SUBMITTED APPEARS TO BE ADEQUATE. TWO (2) MINOR DEFICIENCIES HAVE BEEN NOTED ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN SHEETS AND HAVE BEEN RETURNED TO PALMBERG AND RUSSO. A CHECKLIST OF THE PROPOSED SEQUENCE OF MEASURE INSTALLATION, AND COLUMNS FOR DOCUMENTING INSTALLATION DATES, INITIALS OF INSPECTOR AND MAINTENANCE DATES SHOULD BE PROVIDED ON THE PLAN. THE SEEDING DATES PROVIDED ARE INCORRECT AND SHOULD BE APRIL 15 THROUGH JUNE 15 AND AUGUST 15 THROUGH SEPTEMBER 15.

3) THE SITE PLAN SHOULD STATE THE NAME OF THE SOIL SCIENTIST WHO FLAGGED THE WETLANDS AND THE DATE IT WAS DONE. THE SOIL SCIENTIST SHOULD ALSO CERTIFY THAT THE WETLAND BOUNDARIES AS THEY APPEAR ON THE SITE PLAN ARE SUBSTANTIALLY CORRECT BY SIGNING THE SITE PLAN.

4) THE TOLLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT WOULD APPRECIATE THE OPPORTUNITY TO REVIEW THE REVISED PLANS PRIOR TO FINAL APPROVAL TO ENSURE ADEQUACY OF THE PROPOSED MEASURES.

#### H. CONNDOT CONCERNS

IT WOULD BE ADVISABLE FOR THE DEVELOPER/APPLICANT TO CONTACT THE CONNDOT DISTRICT OFFICE ONCE THE SITE DESIGN IS COMPLETE (AT LEAST SIXTY (60) DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY) TO DISCUSS AND DETERMINE WHAT MUST BE SUBMITTED FOR A REVIEW. THIS WILL ALLOW THE NECESSARY TIME FOR THE REVIEW OF THE SITE AND THE GRANTING OF A PERMIT TO ENCRDACH UPON THE DOT RIGHT-OF-WAY.

THE PROPOSED ENCROACHMENT ONTO ROUTE 140 APPEARS REASONABLE RELATIVE TO TRAFFIC OPERATIONS. A REVIEW OF THE DRAINAGE IMPACT OF THE ENTIRE SITE WILL BE NECESSARY.

THE FOLLOWING MATERIAL IS INCLUDED TO INDICATE THE INFORMATION AND TYPE OF REVIEW THAT WILL BE REQUIRED FOR BOTH DRAINAGE AND ACCESS ROADS.

Sec. 13b-17-13 - Drainage Requirements

- (1) The following information is required on the plans for drainage review:
  - (a) Original and proposed finished grades and contours, sufficient to determine the original slope of the land and the proposed slope at all points.
  - (b) Size and location of all buildings, existing and to be erected, and their provision for roof drainage.
  - (c) Location of all driveways, roads and/or areas to be paved, showing type of paving and provision for berm or curbs.
  - (d) Grades along the traveled path and gutter of the State highway in front of and adjacent to the proposed work, sufficient to determine the slope of the highway at any point and the capacity of the gutter.
  - (e) All existing and proposed drainage structures and/or outlets into, out of, and adjacent to the property to be developed (including existing State drainage facilities), showing types of structures and size of pipe, and elevations of grates and inverts, with drainage computations as specified in the current edition of the Bureau of Highways Drainage Manual.

(f) All existing and proposed drainage easements, to whom deeded, and the current owner of record.

(2) No diversion of runoff from another watershed into State property will be allowed until proper drainage rights have been recorded.

(3) The Bureau of Highways is not obligated to allow a connection of private storm drainage to its facilities. Where State facilities are adequate, the Bureau may allow a connection after it has been determined that sufficient drainage rights exist or have been obtained by the permittee.

(4) In cases where the State drainage system is not adequate, the permittee may be required to replace the State facilities with a system of adequate capacity. Where no State drainage system exists, the permittee may be caused to install a separate outlet after obtaining necessary easements. A special agreement must be made with the Bureau of Highways covering the maintenance of such a separate outlet. The maintenance of the system may be undertaken by the town if the permit involves a street to be accepted by the town. A letter covering this maintenance must be obtained from the appropriate town officials, prior to the issuance of the permit.

(5) Agreements consummated with a private owner or corporation for the installation and maintenance of a private storm sewer within the State's right of way shall be recorded in the Town Land Records, and proof of recording must be submitted to the District Maintenance Manager prior to the effective date of the permit.

(6) Minor connections from private properties to the State drainage system may be allowed if they discharge clean water only, do not overtax the State system, will not jeopardize the State's drainage rights, and are made at drainage structures in a manner approved by the Bureau of Highways. The permission to connect is of a temporary nature only and may be withdrawn at any time for any reason. Drainage Connection Concurrence form must be completed and filed in the Bureau of Highways' records. In some instances, these agreements may require filing with the town clerk. In such cases, the responsibility and cost of filing shall rest with the

permittee and shall be accomplished prior to the issuance of the permit, with proof of filing submitted to the District Maintenance Manager.

(7) In order to protect the State highway system, permittee may be required to present plans for the control of silting and erosion during construction, particularly in cases where extensive excavations are to be made above the grade of the highway.

(8) For drainage facilities crossing non-access lines, when it is advantageous to the State from the standpoint of hydraulic characteristics or aesthetics, a permit may be issued to install pipes within the highway right of way to extend an existing storm sewer outlet. It is also possible that, in some cases, it is of benefit to the State to allow a drainage outlet to be extended across a non-access highway. In these cases, a sleeve must be jacked or bored under the highway with the drainage pipe encased in the sleeve. Access for installation and maintenance shall be from other than the limited or non-access highways. Applications for this type of permit shall conform to the current policy on inviolability of non-access lines.

(9) The computations and plans shall consider all drainage areas contributing to the site, including roof areas, whether within the proposed development or outside of it.

(10) Drainage of subdivisions and commercial sites shall be designed so that no flooding or damage to the State highway facilities will be caused by a storm having a 10 year frequency for surface runoff, or as otherwise directed, and a 50 year frequency for watercourses.

#### Sec. 13b-17-14 - Construction of Roads and Streets

All permits for the construction of roads or future streets crossing or intersecting State highways must be requested by the property owner or developer, and a

surety bond must be filed with the District Maintenance Manager by either or both.

The required number of sets of plans and profiles shall be produced by the applicant for all proposed roads or streets, in sufficient extent and detail to indicate all restrictions to sight distance at the intersection, existing and proposed drainage installations, and existing and proposed right of way lines. This information shall be used by the State in determining stipulations to be inserted in the permit to be issued. All streets constructed to intersect a State highway must be surfaced with bituminous concrete or other material acceptable to the District Maintenance Manager for the entire area graded toward the State highway. The side slopes draining to these streets shall be stabilized to prevent erosion.

The intersection shall be designed and constructed to meet the existing gutter grade of the State highway unless specified otherwise by the District Maintenance Manager. Grades and drainage installations shall conform with the requirements of Department policy. Sight distances shall conform to the Department's Geometric Design Standards. Width of road or street and the radii of intersection flares shall be adequate to permit turning by a Entering or Exiting WB50 design vehicle without encroachment on an opposing directional lane of the State highway or the intersecting road or street.

The town official responsible for public works shall be contacted by the permit applicant to determine the town's requirements for acceptance of public streets or roads, if this is a factor in the applicant's plan.

#### Sec. 13b-17-15 - Driveways

Approval of an application for a permit for a driveway shall be subject to the following conditions:

(1) The applicant is the owner of the property, or owner jointly with the contractor, and any driveway approach constructed by or for him is for the bona fide purpose of securing access to his property and not for the purpose of parking or servicing vehicles on the highway right of way.



(2) Any driveway, approach or improvement constructed under permit within the right of way shall be subject to inspection at any time by the State. The District Maintenance Manager reserves the right to require such changes, additions and relocations thereto as, in his opinion, may be necessary for the relocation, reconstruction, widening or maintenance of the highway or to provide protection to life and property on or adjacent to the highway.

(3) No driveway, approach or other improvement constructed on the right of way, under permit, shall be relocated or its dimensions altered without written permission of the District Maintenance Manager.

(4) The applicant agrees to hold harmless the Department of Transportation Commissioner and his duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of the permit.

(5) The proposed location, design and construction of any driveways under permit shall be evaluated by the State in accordance with the following criteria:

(a) For permit purposes, the priority of use by the abutting landowner of that portion of the roadside fronting on his land shall be confined between lines drawn from the frontage corners of his property to the centerline of the roadway either at right angles to the centerline on tangents or on a radial line on curves.

(b) No more than one combination entrance and exit shall be allowed for any property with frontage of less than 50 feet. Parcels having a frontage from 50 to 100 feet may be permitted two entrances if a minimum of one-third of the total frontage is used as channelizing islands. Lots with frontage in excess of 100 feet shall conform to such driveway and channelization layout as the District Maintenance Manager shall prescribe.

- (c) The width of any entrance or exit shall not exceed 30 feet, measured parallel to the direction of the State highway at the property line, except as may otherwise be designated by the District Maintenance Manager because of municipal ordinances or other valid reason. The area within State property between the entrance and exit shall not be improved to facilitate vehicular traffic or parking. This area shall be considered restricted and may be developed only as hereinafter provided in paragraph (1).
- (d) The grade of entrance and exits shall conform to current Highway Design Standards for typical treatment of drives.
- (e) In rural or suburban regions, no entrance or exit shall be so constructed that any part of such entrance or exit is less than ten feet from the extended common boundary separating adjacent private properties, except for returns, the radius of which shall not exceed 50 feet. In urban areas, or where there is a curb and gutter, the distance from the boundary may be five feet. See paragraph 5 (a) above for limitations on radius termini.
- (f) The construction of parking areas on the highway right of way is prohibited, except as provided for under the regulations governing parking areas under lease within the highway right of way. Places of business requiring parking space for their customers shall provide such facilities on their own premises.
- (g) Drainage discharged from a State highway or flowing within the right of way shall not be altered or impeded and the applicant must provide suitable drainage structures as directed by the District Maintenance Manager.

- (h) When a curb and gutter are removed, the entrance and exit shall be constructed so that the curbing along the highway shall be returned into the entrance and exit on a radius of not less than two feet or more than 50 feet.
- (i) All entrances and exits shall be so located that vehicle operators approaching or using them shall have adequate sight distances in both directions along the State highway. All slopes shall be stabilized by the permit applicant by loaming and seeding or other method directed by the Permit Inspector.
- (j) All entrances and exits constructed under permit shall be paved on the entire section within the State highway right of way with bituminous concrete, portland cement concrete, or as directed by the District Maintenance Manager. The remainder of the area graded to drain to the State highway shall be stabilized to prevent erosion and washing of material onto the State highway. All costs of such paving shall be borne by the permittee. This pavement shall be joined in a straight line at its intersection with the State highway shoulder and shaped as the Inspector shall require, to accommodate highway drainage.
- (k) No entrance or exit shall be constructed at the intersection of two State highways, town road, or city street within the area lines drawn perpendicular to the centerline of the highway from points on the right of way lines, for a distance of 25 feet from the intersection of said right of way lines.
- (l) The area between entrances and exits and those portions of rights of way which have been defined hereinabove in (c) as restricted area may be filled in only when surface drainage

is provided, so that all surface water on the improved area is carried away from the highway roadbed and shoulder in a suitable manner, and when the drainage facility installed under any filled area is adequate to carry the water along the State highway. No headwall or other drainage structure so designed as to be a hazard to an errant vehicle shall be constructed in the highway right of way up to 30 feet from the travel path. The District Maintenance Manager will determine whether or not berms or curbs are to be constructed around this separating island area and also along the edges of any end island areas.

- (m) At locations of new, single homes being constructed adjacent to and lower than the State highway pavement, the property owner is required to grade the frontage within highway limits so as to confine highway surface water to the gutter or construct a bituminous concrete berm. These berms, either grassed earth or bituminous concrete, are maintained by the State upon satisfactory completion by the permittee. Particular care must be exercised to see that the permittee constructs driveway entrances so as to confine surface drainage to the highway gutter.
- (n) At new housing developments and shopping centers, the owners may be required to construct a bituminous concrete berm adjacent to the gutter along the entire frontage of the property being developed or as directed. This requirement applies regardless of the relative elevation of the private property.

(o) Where developments abut non-access lines of major highways, the developer shall provide 6' chain link fence along the non-access line between his side line boundaries. Any existing stock fence removed shall become the property of the State. The cost for establishing the boundary line and the fence installation shall be borne by the developer.

(Also see Section 13a-143a of the Connecticut General Statutes)

Sec. 13b-17-16 - Major Traffic Generators

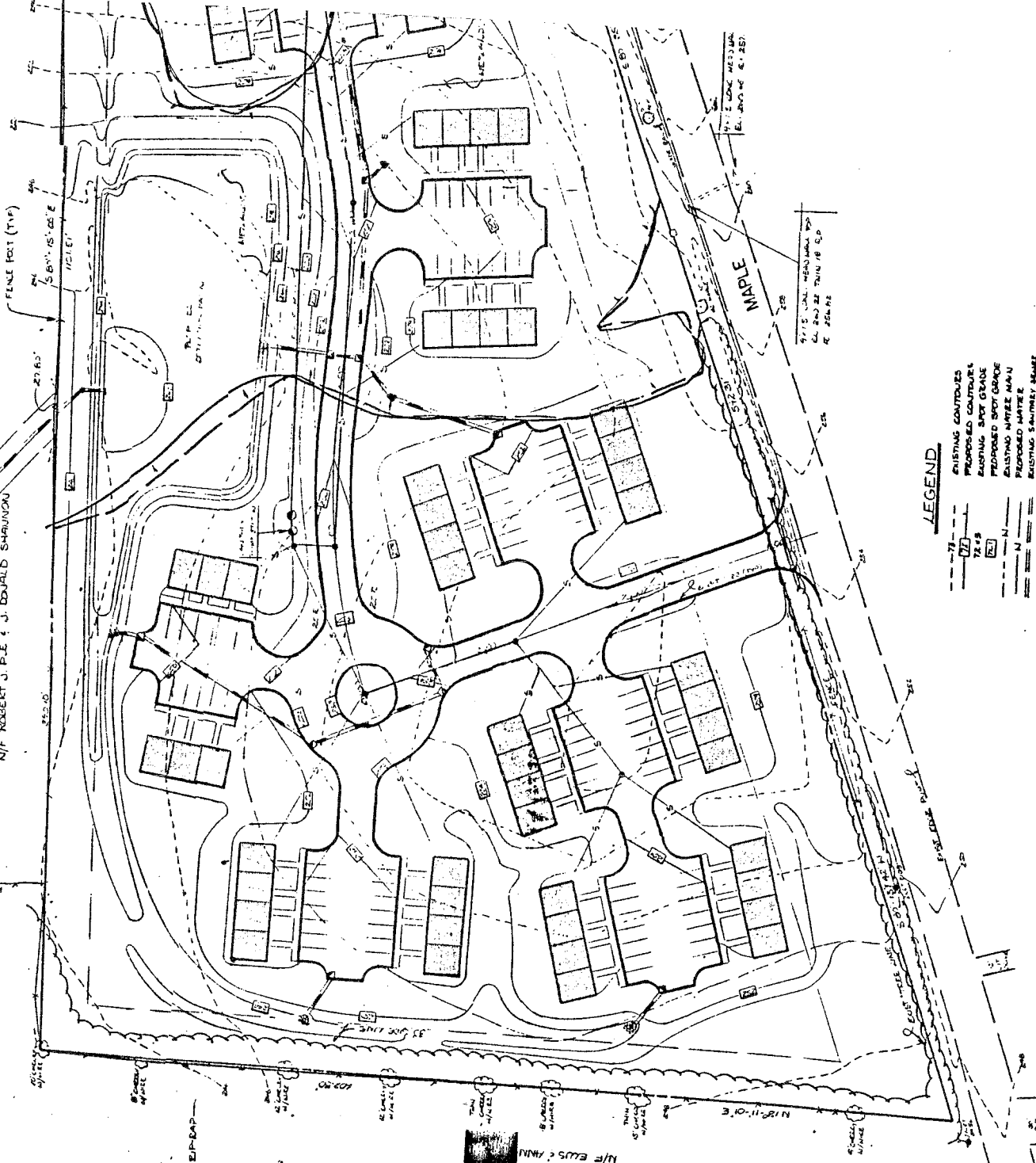
No permit for work under Section 14-311 will be issued by the District Maintenance Manager and no work shall be started by the permittee until a State Traffic Commission Certificate is issued, a town or municipal government building permit has been obtained by the developer, and a complete review of the applicant's plans and drainage proposals has been made and approved by the State.

Subsequent to completion of the work described in the Bureau of Highways permit and prior to opening the theater, shopping center, or development to the public, the permittee must notify the District Maintenance Manager that the work within the State highway right of way is ready for inspection. The District Maintenance Manager will report his findings to the State Traffic Commission, by copy of the letter of acceptance sent to the developer.

SITE SOUTH  
 ZONE C  
 AREA 7.17 A

40' WINDWARD EXHAUSTIVE SEE P. 10

N/F ROBERT J. P.E. & J. DONALD SHANNON



7.17.15 UNAL. HEADWINDS 80'  
 E. 250' 22' TRUN 18 S.D.  
 E. 250' 92'

**LEGEND**

- EXISTING CONTOURS
- - - PROPOSED CONTOURS
- EXISTING SPOT GRADE
- - - PROPOSED SPOT GRADE
- EXISTING MATRIZ MAN
- - - PROPOSED MATRIZ
- EXISTING SANITARY SEWER
- - - PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- - - PROPOSED STORM SEWER
- TRUP SANITARY SEWER

## I. SUMMARY

NOTE: This is a brief summary of the major concerns and recommendations of the Team. You are strongly urged to read the entire report, and to refer back to a specific section to obtain all the information about a certain topic.

--THE REGULATED INLAND WETLANDS WITHIN THE SITE HOLD LOW POTENTIAL FOR BUILDING PURPOSES. IT IS RECOMMENDED THAT NO BUILDINGS BE PLACED IN THIS AREA.

--WETLAND ROAD CROSSINGS ARE FEASIBLE PROVIDED THEY ARE PROPERLY ENGINEERED.

--THE PROPOSED STORM WATER DETENTION POND WILL HAVE TO BE CLEANED OF SEDIMENT PERIODICALLY TO ENSURE RUN OFF CAPACITY. IT SHOULD BE DETERMINED WHO WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE POND.

--POTENTIAL SEDIMENTATION PROBLEMS ARISING FROM THE SANDING OF ROADS AND PARKING LOTS CAN BE MINIMIZED BY 1) SWEEPING PARKING AREAS IN THE SPRING, 2) MINIMIZING SANDING IN PARKING LOTS AND 3) MAINTAINING CATCH BASINS.

--THE WETLAND SOILS WERE ADEQUATELY FLAGGED IN THE FIELD AND ACCURATELY INDICATED ON THE SITE PLAN.

--THE MAIN SOIL LIMITATION ON THIS SITE IS A HIGH WATER TABLE IN THE POORLY DRAINED RAYPOL SOILS.

--ANOTHER ALTERNATIVE TO THE PROPOSED DETENTION BASIN IS TO KEEP THE OUTLET PIPE ABOVE GROUND AND BUILD A DIKE TO CONTAIN THE STORM RUNOFF.

--UNLESS THE DETENTION BASIN IS EXCAVATED BELOW TWENTY-FOUR (24) INCHES IT WOULD ONLY ALLOW VERY SMALL AMOUNTS OF WATER RECHARGE.

--THE DETENTION BASIN CALCULATIONS WERE CALCULATED USING THE UNIVERSAL RATIONAL HYDROGRAPH METHOD, THIS METHOD IS NOT WRITTEN IN ANY TEXTBOOKS THAT THE TEAM ENGINEER IS FAMILIAR WITH, AND IT IS NOT LISTED AS A VALID METHOD IN THE GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL FOR CONNECTICUT.

--ONE POSSIBLE ALTERNATIVE TO LOCATING THE PROPOSED ROADWAY THROUGH THE CENTER OF THE WETLANDS WOULD BE CONSTRUCT THE ROAD AS PART OF THE DETENTION BASIN DIKE.

--THE SOIL EROSION AND SEDIMENT CONTROL PLAN THAT WAS SUBMITTED APPEARS TO BE ADEQUATE. TWO (2) MINOR DEFICIENCIES HAVE BEEN NOTED AND RETURNED TO THE PROJECT ENGINEER FOR CORRECTION.

--THE SITE PLAN SHOULD STATE THE NAME OF THE SOIL SCIENTIST WHO FLAGGED THE WETLANDS, AND HE/SHE SHOULD CERTIFY THAT THE BOUNDARIES OF THE WETLANDS AS THEY APPEAR ON THE SITE PLAN ARE SUBSTANTIALLY CORRECT.

--THE TOLLAND COUNTY SWCD WOULD LIKE THE OPPORTUNITY TO REVIEW ANY REVISED PLANS PRIOR TO FINAL APPROVAL TO ENSURE ADEQUACY OF THE PROPOSED MEASURES.

--THE DEVELOPER/APPLICANT SHOULD CONTACT THE CONNDOT DISTRICT OFFICE AT LEAST SIXTY-(60) DAYS PRIOR TO THE START OF CONSTRUCTION TO DISCUSS AND DETERMINE WHAT INFORMATION MUST BE SUBMITTED FOR REVIEW.

--THE PROPOSED ENCROACHMENT ONTO ROUTE 140 APPEARS REASONABLE. A REVIEW OF THE DRAINAGE IMPACT OF THE ENTIRE SITE WILL BE NECESSARY BY CONNDOT.



# About The Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area--an 86 town area.

The Team is available as a public service at no cost to Connecticut towns.

## PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

## REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, a statement identifying the specific areas of concern the Team should address, and the time available for completion of the ERT study. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Elaine A. Sych (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.