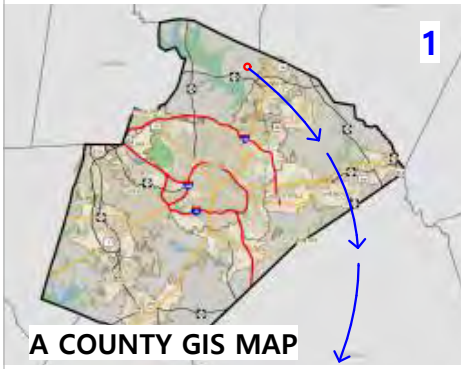
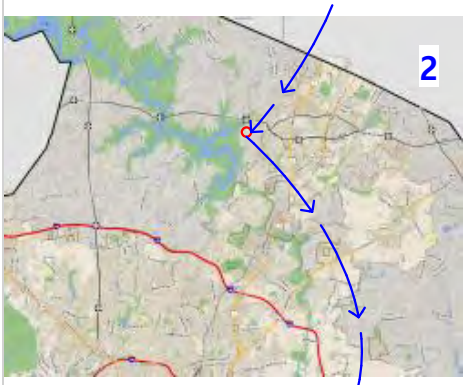
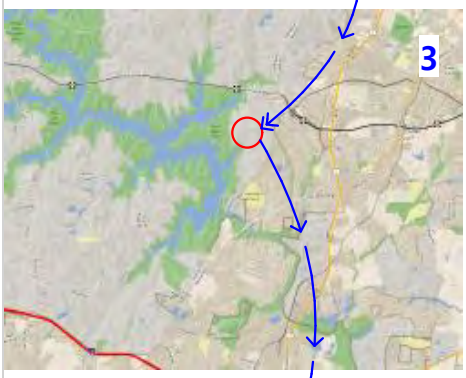


A COUNTY GIS MAP





ZOOMING IN ON A PROPERTY

THE BIG PICTURE:

***THE NATURAL CHARACTERISTCS:** TOPOGRAPHY, VIEWS, SUN, TREES, SET THE IMMEDIATE PHYSICAL ENVIRONMENT. A SITE CAN BE MANAGED & DESIGNED ONLY TO AN EXTENT. ITS PRIMARY ASSETS & LIABILITIES ARE PRETTY MUCH THERE FOREVER.

***A PRACTICAL WORKING LOCATION:** OUTSIDE THE BOUNDARIES OF THE SITE ITSELF ARE A LOT OF CONSIDERATIONS. ACCESS, TRAFFIC, CHARACTER & QUALITY OF APPROACH, NECESSARY CONVENIENCES, SECOND TIER CONVENIENCES, MEDICAL SERVICES, SCHOOL DISTRICTS, NOISE, NEIGHBORS (OR LACK OF THEM). FINANCIAL CONSIDERATIONS ARE CHALLENGE TO BUILD, LAND COST AND (DEVELOPED) PROPERTY TAXES.

***A LOCATIONS CULTURE:** A LOCATION OR NEIGHBORHOOD MAY ALSO POSSESS A KIND OF CULTURE. PICKING UP ON THIS AND EVALUATING SAME MAY BE A FACTOR.

SITE FIRST OR PLAN FIRST?:

***THIS DESIGN GUIDE:** THE COMPATIBILITY OF SITE AND HOME DESIGN IS ESSENTIAL. A MAJOR EMPHASIS IN THIS DESIGN GUIDE IS BREAKING DOWN AND EXPLAINING BOTH SITE AND HOME CONDITIONS AND CHALLENGES. WISDOM SUGGESTS SOME PRELIMINARY THINKING ABOUT BOTH SITE AND HOME WILL ESTABLISH A CRITERION SET AND BENEFIT THE SEARCH.

***SITE FIRST:** A PIECE OF LAND MAY BE IRRESISTIBLE. GO FOR IT. SMART DESIGN THINKING WILL GET YOU A VERY SATISFACTORY BUILDING SOLUTION. CONSIDER THAT THE ASSETS (AND LIABILITIES) OF A SITE ARE THERE FOREVER.

***PLAN FIRST:** IF THERE IS A DESIGN IDEA (A HOME PLAN) THAT IS IRRESISTIBLE, THEN YOU WILL HAVE TO FIND A SYMPATHETIC SITE. WHAT SITE CHARACTERISTICS WILL BENEFIT THAT DESIGN REQUIRES A LITTLE REVERSE DESIGNING. SEE (d3-d4)

SITE SEARCH:

***CONVENTIONAL SEARCH:** FINDING THE RIGHT PIECE OF LAND TO BUILD ON CAN BE A CHALLENGING SEARCH. WORD OF MOUTH & ASKING AROUND, SALES SIGNS, REAL ESTATE FOLKS, AND MLS LISTINGS ARE THE USUAL SOURCES. THE MLS (**M**ULTIPLE **L**ISTING **S**ERVICE) SYSTEM IS GOOD. THE SEARCH ENGINES ALLOW YOU TO QUALIFY A SEARCH BY PRICE, SIZE, LOCATION ETC.. AND THEY ARE MAPPED. YOU CAN DO THIS, AND SHOULD DO THIS, BEFORE CONTACTING A REALTOR. THIS TYPE OF SEARCH HELPS ONE DEFINE THE QUEST.

***REALTORS:** MOST REALTORS GRAVITATE TO HOME SALES AS IT IS GENERALLY A BETTER RETURN ON TIME. SO FIND A REALTOR WHO IS LAND SAVVY AND LOCAL, AND CAN OFFER OPPORTUNITIES BEYOND THOSE ALREADY MLS LISTED.

***FIND & SEEK:** THERE IS LOTS OF LAND OUT THERE THAT IS NOT ACTIVELY FOR SALE OR LISTED. ONE APPROACH IS TO FIND A DESIRABLE SITUATION, RESEARCH IT, AND APPROACH AN EXISTING OWNER WITH AN INQUIRY OR PROPOSAL.

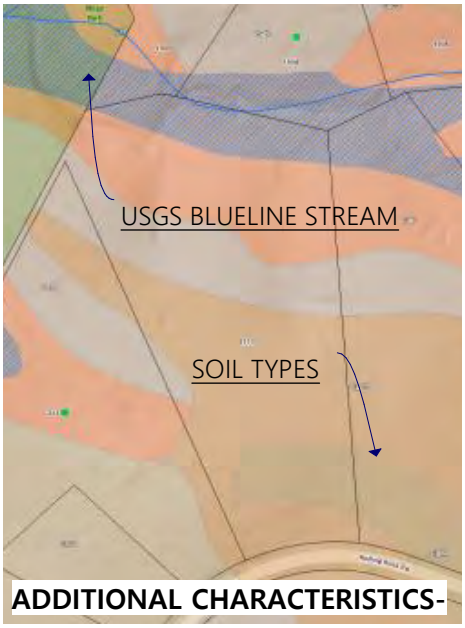
***TAX RECORDS:** THE EXISTING OWNER OF ANY PIECE OF LAND CAN BE TRACKED THROUGH LOCAL TAX RECORDS, WHICH IS PART OF THE "PUBLIC RECORD" AND CAN BE FOUND AT THE CITY OR COUNTY REGISTRAR OF DEEDS OFFICE.

***GIS DATA:** GIS (**G**EOGRAPHIC **I**NFORMATION **S**YSTEMS) DATA IS THE FAST WAY TO RESEARCH TAX RECORDS AND PROPERTY OWNERSHIP, AND A LOT OF OTHER DATA. ALL THE IMAGES ON THIS PAGE ARE GIS IMAGES FROM A COUNTY GIS SITE. GIS SITES VARY IN THEIR SOPHISTICATION AND 'LAYERS' OF DATA.

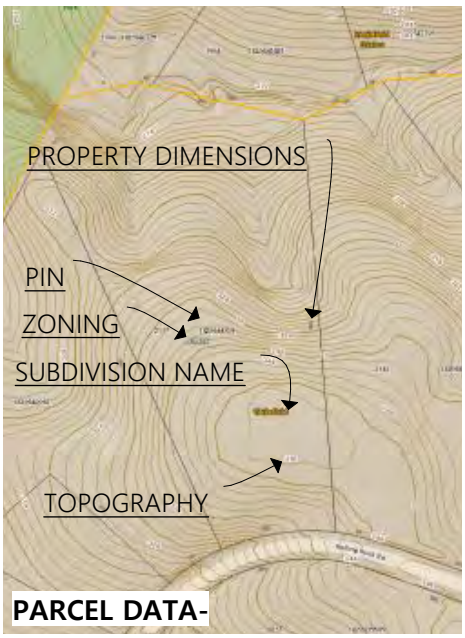
***GOOGLE EARTH:** FLY OVER THE PROSPECTIVE SITE ON THE COMPUTER. THEN TURN AROUND AND FLY BACK. A VERY POWERFUL INVESTIGATIVE TOOL.

***PIN:** EVERY PROPERTY HAS A PIN NUMBER (**P**ROPERTY **I**DENTIFICATION **N**UMBER). A PIN NUMBER IS A CONVENIENT REFERENCE. MOST PROPERTIES TODAY CAN ALSO BE SEARCHED THROUGH ADDRESS OR OWNER.

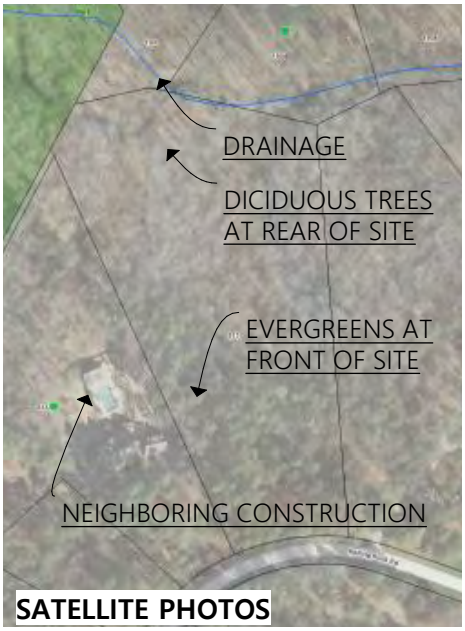
***ZONING:** THE GIS DATA WILL USUALLY PROVIDE A ZONING CLASSIFICATION APPLICABLE TO A PROPERTY. ZONING DETAILS WILL REQUIRE A DIFFERENT SEARCH INTO THE LOCAL ZONING ORDINANCE. (d1.2)



ADDITIONAL CHARACTERISTICS-

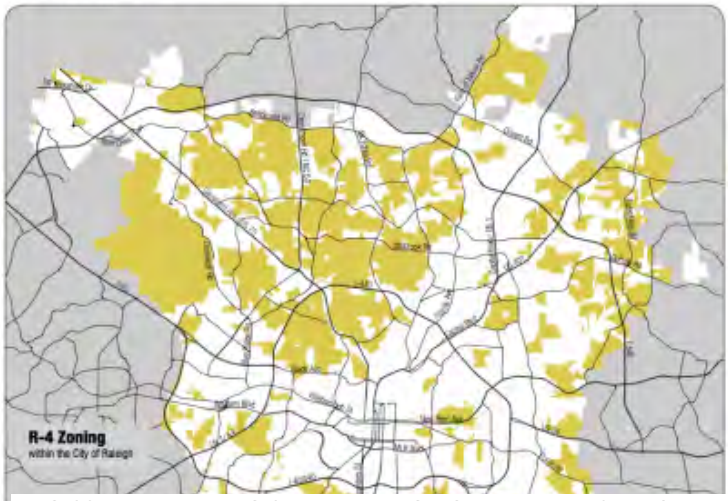


PARCEL DATA-



SATELLITE PHOTOS

Residential-4



THIS COMMUNITY HAS 6 DIFFERENT SINGLE FAMILY ZONING DISTRICTS, WITH LOT MIN SIZES RANGING FROM 1/10th ACRE (4000+ s.f.), UP TO 1 ACRE (40,000+s.f.)

R-4

This is a *low density residential* district. The R-4 District is Raleigh's most common zoning district. It is a residential district with a minimum lot size of a quarter of an acre. Residential development is generally limited to a *single family detached dwellings* unless the development is 20 acres or more. In that case *multifamily development* or a cluster unit development is permitted, so long as the development is at least 20 acres and the density is 4 units per acre or less.

Residential Density:	4 dwelling units per acre	
Minimum Lot Requirements (Residential uses)	Lot Area	10,890 square feet
	Lot Width	65 feet
	Corner Lot Width	80 feet
	Lot Depth	100 feet
Minimum Setback Requirements:	Front Yard	20 feet for block faces platted after Oct. 3, 1989 30 feet for block faces platted before Oct. 3, 1989
	Side Yard	10 feet
	Corner Lot Side Yard	20 feet
	Rear Yard	30 feet
Maximum Height:	Determined by lot depth and building setback. Maximum setback height is 40 feet. Please see illustration on page 102.	
Allowable Ground Sign (freestanding sign)	*Tract identification sign*	
Common Uses:	*Single-family detached residences* on individual lots *Residential institutions* (place of worship, school, day care, fire station) Civic clubs	
Other allowable uses include but are not limited to:	*Cluster unit development* for tracts greater than 20 acres in size Public park Public water and sewage treatment plant Utility services and substation Cemetery *Supportive housing residence (Americans with Disabilities Act)*	
Allowable uses requiring a special use permit:	Day care/special care facility (child or adult) Private golf course Private schools Riding stable Outdoor theater with more than 250 seats Telecommunication tower	

Table 6. Height Limits in All Districts

HEIGHT IN FEET	ZONING DISTRICT
25	Office and Institution-3
40 (increase of 1 foot per 1 foot added in setback width)	Rural Residential Residential-2 Residential-4 Special Residential-6 Residential-6

(5) **Impervious Surface**

(See definition, Section 1-1-1, above.) The maximum lot coverage by total impervious surfaces shall be determined as follows:

Impervious surface area shall not exceed thirty (30) percent of the site, except where stormwater is detained or retained on the site. In no case shall impervious surface area exceed fifty (50) percent of the site.

Any additional runoff resulting from lot coverage in excess of thirty (30) percent must be detained in on-site detention or retention facilities. The minimum capacity of these facilities shall be such that the stormwater discharge shall not exceed that expected before development from the impervious portion in excess of thirty (30) percent for the following frequency storms:

AN EXAMPLE OF AN IMPERVIOUS SURFACE AREA LIMITATION

THE ZONING IDEA:

***DISTRICTS:** A ZONING DISTRICT FIRST AND FOREMOST DEFINE USE(S) PERMITTED WITHIN ITS BOUNDARIES. RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND AGRICULTURAL ARE THE CORE DISTRICTS IN MOST ZONING ORDINANCES. A DISTRICT'S BOUNDARIES ARE PHYSICALLY SEPARATE, AND THEREFORE THE ACTIVITIES ARE SEPARATED. THIS IS GENERALLY DESIRABLE. BECAUSE OF ZONING, FOR EXAMPLE, A FACTORY CANNOT MOVE INTO A SINGLE FAMILY NEIGHBORHOOD. SOME ZONING ORDINANCES MAY HAVE MORE CORE DISTRICTS AND OR LAYERED DISTRICTS. THERE MAY BE SEVERAL INDUSTRIAL ZONING DISTRICTS DEFINED BY PROPERTY SIZE, AND OR BY TYPE OF INDUSTRY. SIMILARLY WITH RESIDENTIAL ZONING, THERE MAY BE MULTIPLE DISTRICTS ADDRESSING APARTMENTS, CONDOMINIUMS, TOWNHOMES, DUPLEXES, AND MULTIPLE DISTRICTS FOR SINGLE FAMILY HOMES. SINGLE FAMILY ZONING DISTRICTS ARE GENERALLY DEFINED BY LOT SIZE, WHICH IN TURN, HAS AN EFFECT ON NEIGHBORHOOD DENSITY, AND HOME SIZE AND VALUE.
***THE USUAL EXCEPTIONS:** SCHOOLS, CHURCHES, AND RECREATIONAL USES ARE GRANTED GREATER FLEXIBILITY RELATIVE TO ZONING. WE NEED THESE COMMUNITY FUNCTIONS TO BE SPRINKLED AROUND SO EVERYONE CAN BE SERVED.
***ZONING GETS COMPLICATED:** ZONING REGULATIONS HAVE EVOLVED AND IN SOME LOCATIONS AND REGIONS, PARTICULARLY WHERE THERE IS A GREATER DENSITY OF POPULATION, HAVE GOTTON PRETTY COMPLICATED. CONVERSELY THERE ARE RURAL LOCATIONS AND REGIONS WHERE ZONING HAS BEEN RESISTED, OR TOTALLY REJECTED.
***KNOW YOUR CLASSIFICATION:** IF A PROPERTY IS NOT ZONED THEN THESE KIND OF SUMMARIZED RESTRICTIONS WILL NOT EXIST. IF A PROPERTY IS ZONED THEN THE ZONING CLASSIFICATION AND CONDITIONS REQUIRE RESEARCH.

THE BIG ZONING CONDITIONS THAT IMPACT HOME DESIGN

LOT SIZES:

***SINGLE FAMILY ZONING & LOT SIZE:** SINGLE FAMILY ZONING DISTRICTS (THE ONLY REAL CONCERN HERE) ARE USUALLY BASED ON A MINIMUM LOT SIZE. SO WITHIN A GIVEN ZONING DISTRICT ALL LOTS WILL SHARE THE RESTRICTION OF THAT MINIMUM SIZE. LOTS MAY BE LARGER, AND IN ANY GIVEN NEIGHBORHOOD THERE LKELY WILL BE A SMALLER PERCENTAGE OF LARGER LOTS.

SETBACKS:

***DEFINITION:** MINIMUM REQUIRED DISTANCES FROM EACH PROPERTY LINE THAT THE PROPOSED HOME CONSTRUCTUION MUST BE CONTAINED WITHIN.THE PROPERTY LINES ESTABLISH THE BOUNDARY OF OWNERSHIP. THE SETBACK LINES ESTABLISH THE BOUNDARY OF BUILDING.
***RATIONALE:** MAINTAINS A DISTANCE FROM STRUCTURE TO STRUCTURE TO ESSENTIALLY PRESERVE A SENSE OF SPACE & PRIVACY FOR EACH STRUCTURE. DISTANCE SEPARATION IS ALSO A FIRE CONTAINMENT MEASURE.
***TYPICAL:** FRONT & REAR YARD SETBACKS ARE GREATER. SIDE YARD SETBACKS ARE TYPICALLY LESS. SMALLER LOTS WITH DENSER ZONING HAVE SMALLER SETBACKS, AND LESS DENSE ZONING WILL HAVE LARGER LOTS AND LARGER SETBACKS

HEIGHT RESTRICTIONS:

***DEFINITION:** A VERTICAL DIMENSIONAL RESTRICTION,
***RATIONALE:** IN DENSER NEIGHBORHOODS HEIGHT CAN BLOCK SUN & VIEWS. WILDLY DIFFERENT BUILDING HTS CAN CREATE AN AWKWARD STREET SCAPE.
***FORMULA:** THE SPECIFIC METHOD OF MEASURING HEIGHT WILL VARY, AND CAN BE CONFUSING. CHECK LOCAL ZONING.
***NOTES:** SEE(d6.9) HEIGHT RESTRICTION ISSUES ARE DETAILED.

STORMWATER MANAGEMENT:

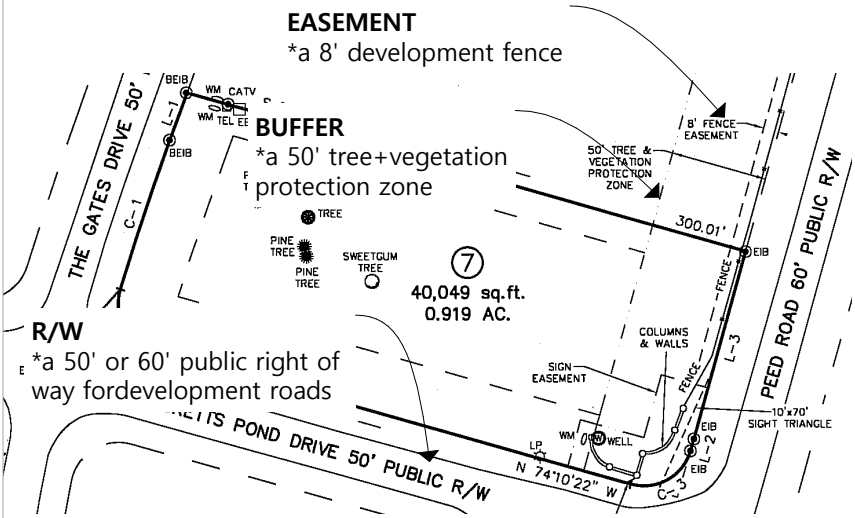
***DEFINITION:** COMMUNITIES ARE INCREASINGLY RECOGNIZING THAT MANAGING STORM WATER ON A SITE BY SITE OR DEVELOPMENT BY DEVELOPMENT BASIS IS JUST NECESSARY. CHECK LOCALLY.
***RATIONALE:** (d2.10) FLOOD MANAGEMENT AND WATER QUALITY CONTROL
***LIMITING IMPERVIOUS SURFACE:** CONTROLS WATER RUNOFF VOLUME.MPERVIOUS SURFACES (ROOF, DRIVEWAY, WALKWAYS, PATIOS) ARE LIMITED EITHER BY SETTING A MAXIMUM SQUARE FOOTAGE OR BY APERCENTAGE OF LOT COVERAGE.
***ON SITE RETENTION:** IS ANOTHER METHOD. COLLECTING, RETAINING, AND THEN RELEASING WATER IN A MANAGED WAY IS GOOD PRACTICE. THIS MAY BE RQUIRED AND MUST BE ENGINEERED.

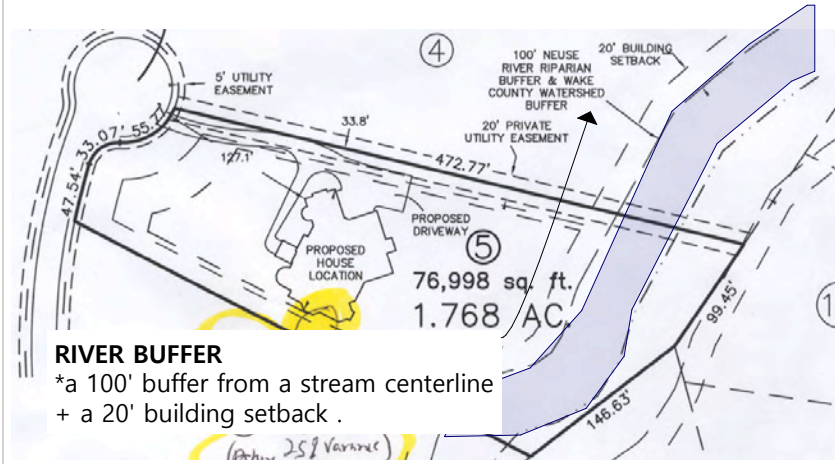
OTHER USE RESTRICTIONS: CHECK LOCALLY

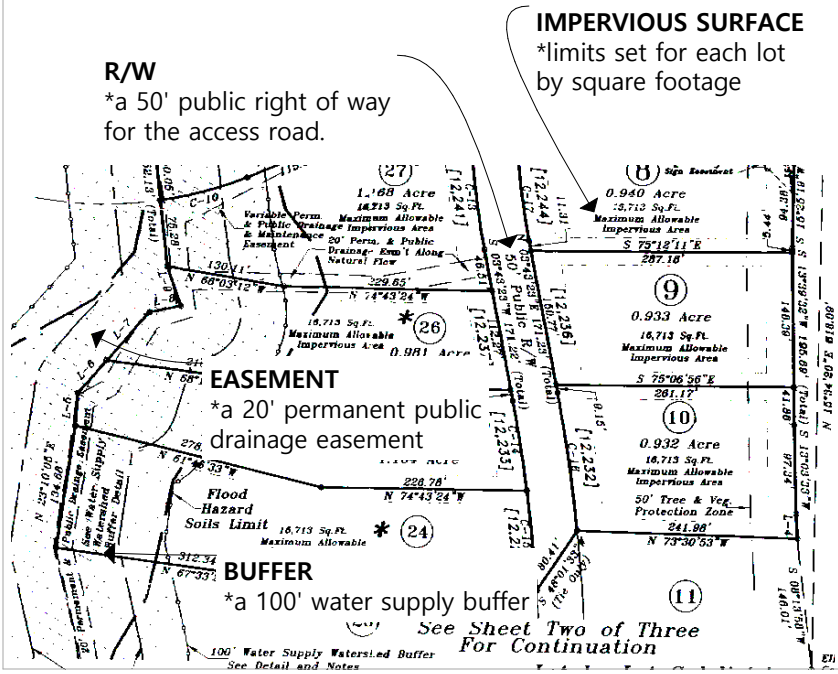
***RENTAL/APARTMENT DISINCENTIVES:**
***SHEDS:**
***FENCES:**
***ON & OFF STREET PARKING**
***BUSINESS USES ON PREMISES**
***CHILD CARE SERVICES LIMITATIONS ON PREMISES**
***ANIMALS ON PREMISES BY TYPE AND QUANTITY**
***HISTORIC DISTRICT CONDITIONS**

SITE researching d1.3
EASEMENTS, RIGHTS OF WAY, BUFFERS

GENERAL
***CONDITIONS ON A LOT:** EASEMENTS, RIGHTS OF WAY, AND BUFFERS ARE CONDITIONS ON A LOT. EASEMENTS AND RIGHTS OF WAY ARE RECORDED IN THE DEED AS PART OF THE PROPERTY DESCRIPTION. BUFFERS TO BE CONCERNED WITH ARE ONES IMPOSED ON A LOT USUALLY AS A PART OF SOME ENVIRONMENTAL CONCERN. A BUFFER MAY NOT BE RECORDED ON A DEED, BUT WILL BE RECORDED ON PUBLIC PLANNING AND ZONING MAPPING.
***WHAT TO DO:** THESE CONDITIONS NEED TO BE UNDERSTOOD, AND DESIGNED AROUND. THEY DO NOT NECESSARILY CREATE A HARDSHIP. HAVING ALL SITE DATA SUMMARIZED AND DOCUMENTED ON A PROPERTY SPECIFIC SURVEY IS RECOMMENDED. THE SURVEY BECOMES AN INDESPENSIBLE DESIGN TOOL.
***REAL ESTATE LANGUAGE:** THE DESCRIPTIONS THIS SHEET ARE AWARENESS SUMMARIES. THEY ARE NOT COMPLETE, OR INTENDED TO EXPLAIN THE LEGAL LANGUAGE THAT ACCOMPANIES THESE REAL ESTATE DISCUSSIONS.



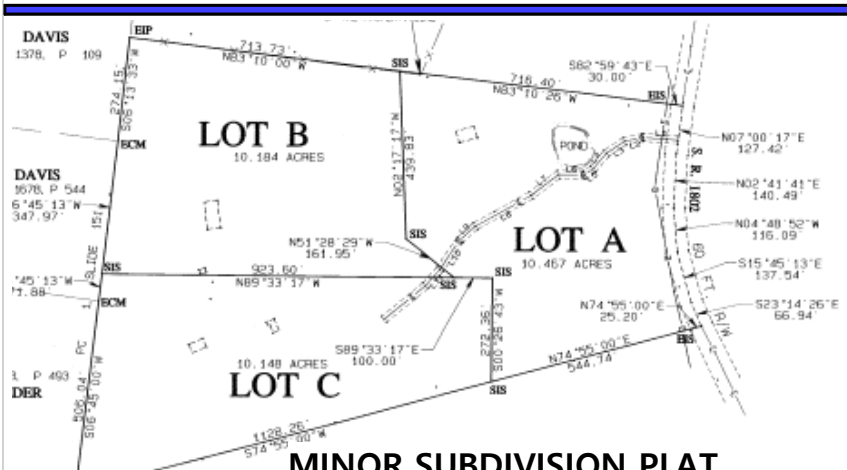




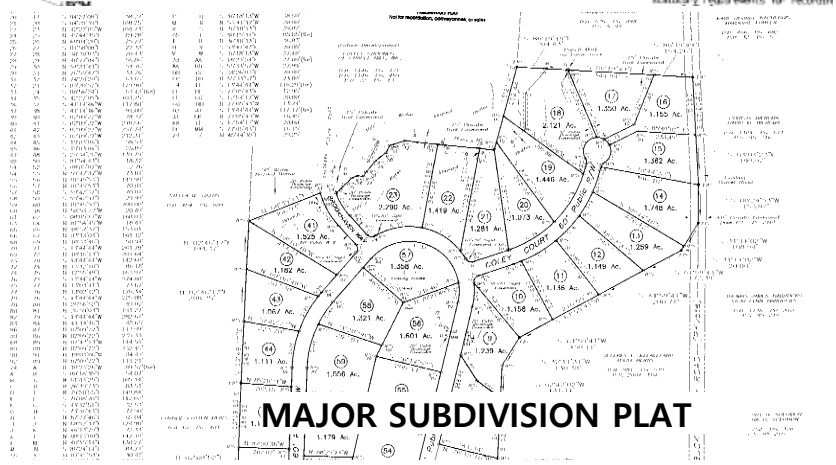
EASEMENTS
***PART OF THE DEED:** AN EASEMENT GRANTS A DEFINED USE OF A PROPERTY BY A THIRD PARTY. SUCH AN AGREEMENT WILL REMAIN WITH THE PROPERTY UNTIL/UNLESS THE MENTIONED PARTIES CHANGE THE AGREEMENT LEGALLY. THE PROPERTY DEED MUST BE SO ALTERED AND RE-RECORDED.
***EXAMPLES:**
*A THIRD PARTY MAY HAVE THE RIGHT TO FOREST, MINE, OR DRILL FOR NATURAL RESOURCES ON A PROPERTY.
*A THIRD PARTY MAY BE A UTILITY COMPANY THAT HAS BEEN GRANTED AN EASEMENT TO BUILD AND MAINTAIN A UTILITY ON A PROPERTY. (THESE MAY BE REFERRED TO BOTH AS A UTILITY EASEMENT, OR A UTILITY RIGHT OF WAY.)
*A THIRD PARTY MAY HAVE AN AGREEMENT FOR A SPECIFIC USE, SUCH AS USE OF A DRIVEWAY, SHARING A WELL, ACCESS TO A DOCK, PERMISSION TO BUILD A STORAGE SHED.
***TERMS:** THE CONDITIONS OF THE EASEMENT, INCLUDING ITS LONGEVITY, SHOULD BE DESCRIBED IN THE DEED DOCUMENTS.

RIGHTS OF WAY
***TERMINOLOGY:** A RIGHT OF WAY (aka R/W, R.O.W.) IS AN EASEMENT. IT ALLOWS PASSAGE THRU A PROPERTY.
***LOGICAL HISTORY:** WAY BACK THIS BIG COUNTRY CONSISTED OF SOME PRETTY LARGE "TRACTS" OF LAND. OVER TIME PROPERTY HAS BEEN SUBDIVIDED INTO SMALLER AND SMALLER PIECES. THE PIECES ARE CONTIGUOUS. THERE WAS NEVER ANY PLANNING FORETHOUGHT TO ACCESS THRU PROPERTIES, NOR TO ANY INFRASTRUCTURE REQUIREMENTS. SO THERE WAS NO WAY TO MOVE PEOPLE, ANIMALS, CARTS, MATERIALS & SERVICES, WITHOUT PASSING THRU SOMEONE ELSES PROPERTY. SO A LOT OF DEALS WERE CUT. RIGHTS OF WAY.
*'PRIVATE' RIGHTS OF WAY:** WOULD BE THOSE DEALS THAT INVOLVED SPECIFIC NEIGHBORING THIRD PARTY REQUESTING A RIGHT OF WAY FOR A SPECIFIC REASON. ACCESS TO A BODY OF WATER IS A GENERIC EXAMPLE.
*'PUBLIC' RIGHTS OF WAY:** THE WALKING PATH BECOMES THE CART PATH, BECOMES THE THOROUGHFARE, BECOMES THE HIGHWAY. AT SOME POINT THE 'PUBLIC' TAKES THESE OVER. A PLOTTED R.O.W IS CREATED. ONE'S ACTUAL PROPERTY MAY EXTEND TO THE CENTERLINE OF THE ROADWAY. OR THE PUBLIC ENTITY MAY HAVE TAKEN THE LAND THROUGH THE EMINENT DOMAIN PROCESS. IN NEWER SUBDIVISIONS PROPERTY LINES WILL NOT GO TO THE ROAD CENTERLINE, BUT TO THAT RIGHT OF WAY. THE R.O.W. LAND MAY BE HELD BY THE DEVELOPER, OR MAY HAVE BEEN DEDICATED TO THE PUBLIC JURISDICTION.
***UTILITY RIGHTS OF WAY:** WHEN UTILITIES FOLLOW A ROAD PATH THEY WILL BE INSTALLED AND MAINTAINED WITHIN THE ESTABLISHED ROAD R.O.W.. UTILITIES MAY ALSO RUN INDEPENDENTLY OF THE ROAD SYSTEM. SEE EASEMENT NOTE.

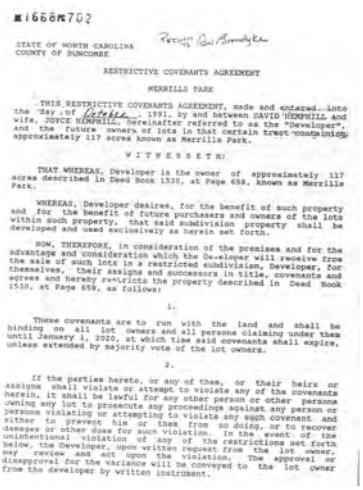
BUFFERS
***DEFINITION:** BUFFERS REFERENCE A PROTECTION SPACE BETWEEN 2 ENTITIES/ACTIVITIES/LAND USES.
***EXAMPLES:**
***A BUFFER** CAN BE A LAND SET ASIDE SEPARATING 2 DIFFERENT ZONING DISTRICTS.(SAY INDUSTRIAL AND RESIDENTIAL)
***A BUFFER** CAN BE A LAND SET ASIDE PROVIDING LANDSCAPE SPACE FOR RECREATIONAL USE
***A BUFFER** CAN BE LAND SET ASIDE FOR NOISE ABATEMENT (I.E. ADJACENT TO HIGHWAYS)
***A BUFFER** CAN BE A NATURAL PROTECTION ZONE FOR TREES, OR DRAINAGE, OR WETLAND PROTECTION
***PROPERTY OWNERSHIP:** BUFFERS ON INDEPENDENTLY OWNED LAND MAY BE A NEIGHBORHOOD CONCERN BUT WOULD NOT BE AN IMMEDIATE CONDITION UPON A PROPERTY. BUFFERS ON THE PROPERTY NEED INVESTIGATION. MOST ARE ENVIRONMENTAL. SOME MAY PRECLUDE ANY CONSTRUCTION AT ALL INSIDE THEIR BOUNDRIES. SOME MAY PERMIT RESTRICTED USE.



MINOR SUBDIVISION PLAT



MAJOR SUBDIVISION PLAT

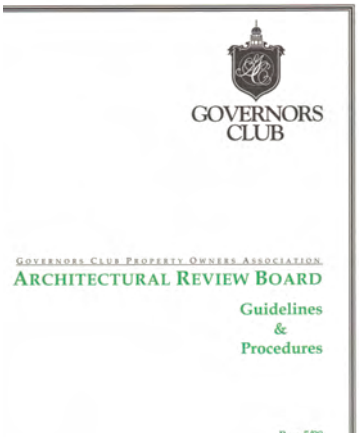


STATE OF NORTH CAROLINA
COUNTY OF BUNCOMBE

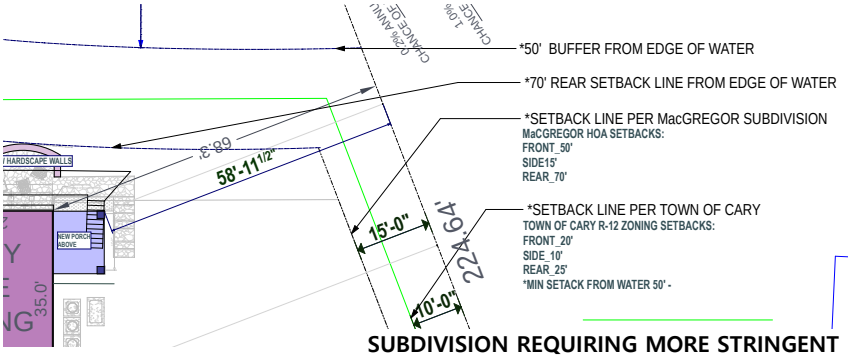
RESTRICTIVE COVENANTS AGREEMENT

MERRILLS PARK

SMALL SUBDIVISION WITH A SIMPLE LIST OF COVENANTS



LARGER SUBDIVISION WITH A VERY DETAILED SET OF COVENANTS AND APPROVAL PROCEDURES



SUBDIVISION REQUIRING MORE STRINGENT SETBACKS THAN THE LOCAL JURISDICTION

NOTE ON SUBDIVISIONS:

***OVERVIEW:** A SUBDIVISON IS A PIECE OF LAND THAT HAS BEEN SUBDIVIDED. COULD BE A CORN FIELD THAT UNCLE HARRY SPLIT IN TWO, OR AN ENTIRE COMMUNITY WITH 15,000 LOTS WITH LAKES, GOLF COURSES, FIRE, POLICE AND HEALTH SERVICES. BECAUSE THERE IS SUCH A HUGE VARIETY OF SUBDIVISION TYPES AND SIZES IT IS HARD TO OFFER SUMMARY OBSERVATIONS.

***ZONING OVERSIGHT:** LOCAL ZONING DEFINES SUBDIVISION PARAMETERS. EVEN HARRY SPLITTING HIS FIELD IN TWO WILL NEED TO BE 'ALLOWED' BY ZONING REGULATIONS. ZONING REGULATIONS MAY BE VERY LOOSE, OR TIGHT & TOUGH.

***MINOR & MAJOR SUBDIVISION CLASSIFICATIONS:** MANY LOCAL JURISDICTIONS MAKE A DISTINCTION BETWEEN MINOR AND MAJOR SUBDIVISIONS USUALLY BASED ON A NUMBER OF LOTS BEING CREATED. WITH A MINOR SUBDIVISION (SAY 3 LOTS OR LESS) THERE MAY BE NO NEW RESTRICTIONS OR REQUIREMENTS PLACED ON THE LAND. WITH A LARGER (MAJOR) SUBDIVISION, RESTRICTIONS AND CONDITIONS USUALLY EXIST. THE ACCESS ROAD, ROAD LIGHTING, UTILITY PROVISIONS AND STORMWATER MANAGEMENT ARE THE BASICS. THE RESTRICTIONS AND CONCERNS USUALLY GROW WITH THE SIZE OF A SUBDIVISION, AND THE DENSITY OF THE SURROUNDING POPULATION.

***BENEFIT OR LIABILITY**: FROM A BUYERS POINT OF VIEW OBVIOUSLY ANY PROPERTY BEING CONSIDERED FOR PURCHASE NEEDS TO BE FULLY INVESTIGATED. CHARACTERISTICS OF THE "UNDEVELOPED' LOT MAY BE FEWER RESTRICTIONS, LITTLE TO NO PREPARED INFRASTRUCTURE, AND A LOWER COST PER LAND UNIT. THE FULLY 'DEVELOPED' LOT WILL BE MORE RESTRICTIVE, WITH CERTAIN INFRASTRUCTURE ASSETS IN PLACE, AND A HIGHER COST PER LAND UNIT. ANOTHER CHOICE.

COVANENTS:

***DEFINITION:** COVENANTS ARE SUBDIVISION SPECIFIC CONDITIONS AND RESTRICTIONS THAT EACH HOMEOWNER WITHIN A SUBDIVISION IS OBLIGED TO COMPLY WITH. THEY ARE WRITTEN AND BECOME CONTRACTUAL WHEN PROPERTY IS PURCHASED.

***INTENDED CONSEQUENCES:** COVENANTS ARE DESIGNED TO CREATE & SUPPORT A HOMOGENITY WITHIN A COMMUNITY. SOME MAY FIND THAT HOMOGENEITY COMFORTING AND OTHERS DICTATORIAL. THE ADVISE IS TO READ **ALL** THE COVENANTS BEFORE COMMITTING.

***SITE/PLANNING COVANENTS:** SETBACKS OR PERCENTAGE OF LAND USE MAY BE MORE STRINGENT THAT THOSE OF THE LOCAL JURISDICTION. STORM WATER MANAGEMENT MAY BE MANAGED WITHIN THE SUBDIVISION.

***ARCHITECTURAL COVENANTS:** COVENANTS MAY SPECIFY ACHITECTURAL STYLE, PERMITTTED MATERIALS, PERMITTED COLORS, ROOF PITCH AND STYLE. THEY MAY GO FARTHER AND HAVE A PALETTE OF VERY SPECIFIC ARCHITECTURAL DETAILS AND COLORS THAT MUST BE INCORPORATED.

***MAINTENANCE COVENANTS:** YARD AND HOME MAY BE REQUIRED TO BE MAINTAINED TO A DEFINED STANDARD.

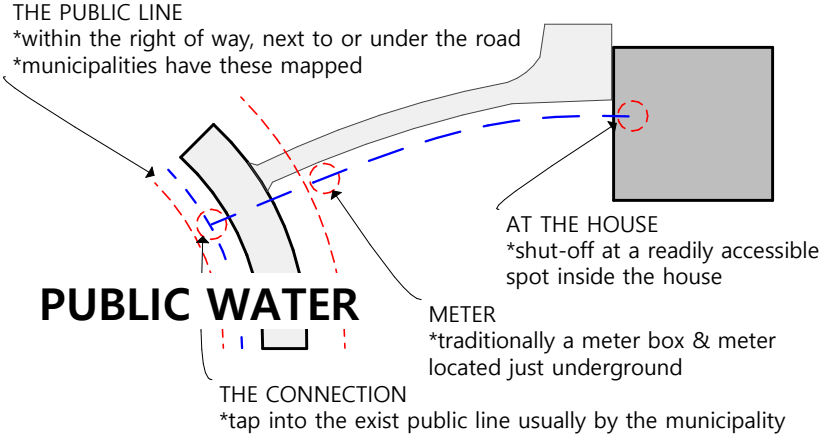
***USE COVENANTS:** BUSINESS USE AND RELATED PARKING MAY BE LIMITED. SOME ACTIVITIES MAY BE RESTRICTED. CERTAIN ANIMAL SPECIES (AND FENCES) MAY NOT BE PERMITTED.

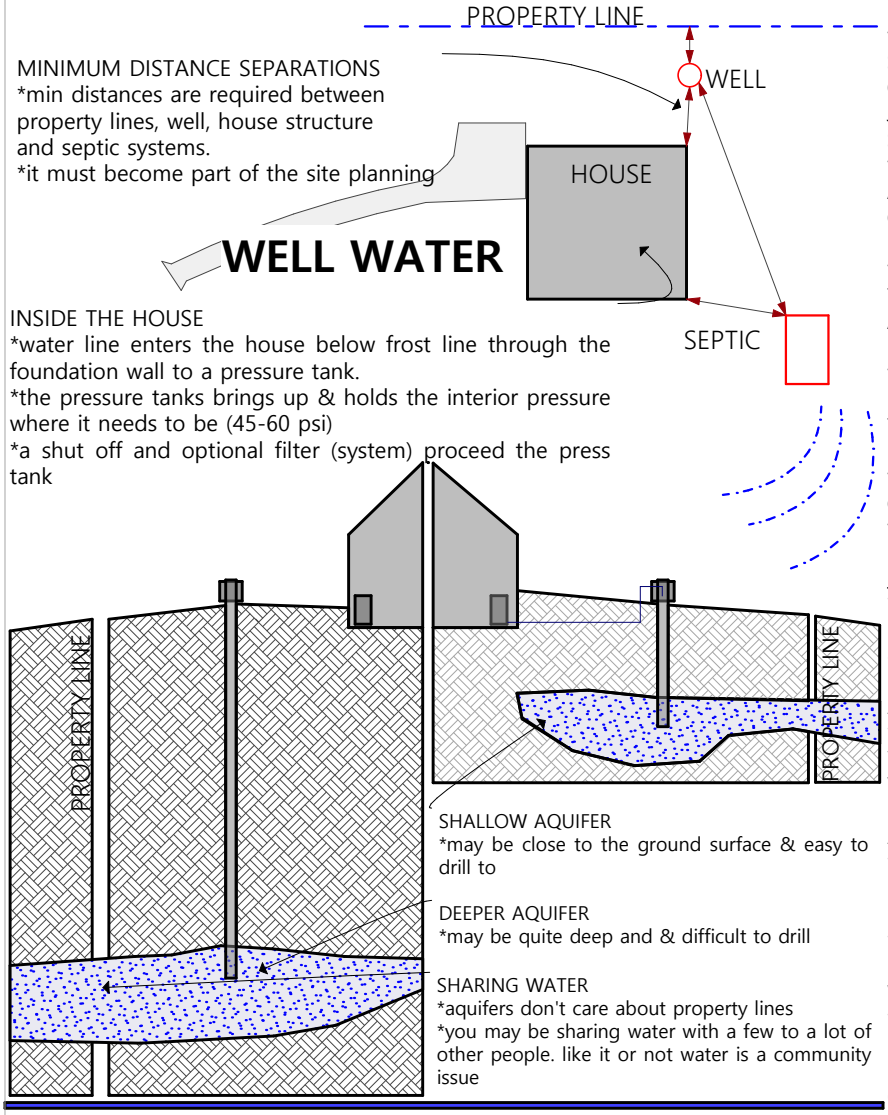
***BEHAVIORAL COVENANTS:** NOISE AND EXCESSIVE NIGHT ACTIVITY MAY BE LIMITED, AND LIGHTING MAY BE REGULATED.

***ENFORCEMENT:** THERE ARE INSTANCES WHERE A SUBDIVISION AND A LOCAL JURISDICTION HAVE MADE A MUTUAL COMMITTMENT THAT SUBDIVISION REQUIREMENTS MUST BE MET BEFORE CONSTRUCTION PERMITS WILL BE ISSUED BY THE LOCAL JURISDICTION. IN THESE INSTANCES THE REQUIREMENTS OF THE SUBDIVISION ARE MORE STRINGENT THAN THOSE OF THE LOCAL JURISDICTION, AND THE SUBDIVISION HAS A RIGOROUS APPROVAL PROCEDURE. THERE ALSO ARE INSTANCES WHERE A LOCAL JURISDICTION HAS NO INTEREST OR CONCERN WITH SUBDIVISION COVENANTS, AND THAT SUBDIVISION IS THEREFORE SELF GOVERNING.

***POA/HOA:** USUALLY A SUBDIVISION IS MANAGED BY THE DEVELOPER FOR A STATED PERIOD OF TIME, AND THEN THAT MANAGEMENT IS TRANSFERED TO A DEMOCRATIC BODY OF HOMEOWNERS (POA-PROPERTY OWNERS ASSOCIATION, HOA-HOME OWNERS ASSOCIATION), AND OR TO A PROFESSIONAL PROPERTY MANAGEMENT COMPANY.

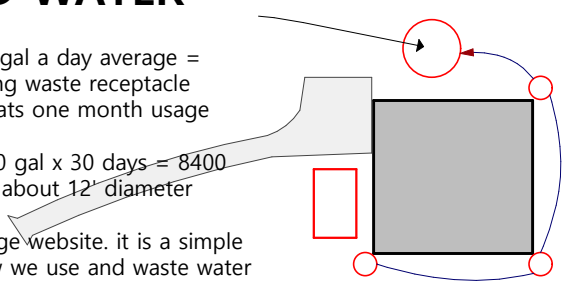
SITE researching d1.5
UTILITIES- DOMESTIC WATER





DELIVERD WATER

VOLUME
*a human uses 80-100 gal a day average = the size of a large rolling waste receptacle
*line up 30 of them. thats one month usage for 1 person.
*a family of 4 using 280 gal x 30 days = 8400 gallons requires a tank about 12' diameter and 12' high.
*check out a water usage website. it is a simple way to understand how we use and waste water



GENERAL WATER STUFF:

***WEB SITE: http://water.usgs.gov/edu/** THE USGS HAS AN INCREDIBLE WEB SITE ADRESSING IN SIMPLE LANGUAGE EVERYTHING YOU MAY WANT TO LEARN ABOUT WATER.

WATER QUALITY STUFF:

***WEB SITE:**
http://water.epa.gov/infrastructure/drinkingwater/pws/factoids.cfm
ALL MUNICIPAL AND PRIVATELY OWNED (PUBLIC) WATER SERVICE PROVIDERS ARE NECESSARILY UNDER THE JURISDICTION OF THE EPA, AND ANY ALL WATER QUALITY REGULATIONS ARE APPLICABLE.
***REAL WORLD QUALITY:** WHETHER PUBLIC OR WELL WATER, AND DESPITE EPA REGULATIONS, WATER IS NOT ALL THE SAME.
ITS COMPOSITION, ITS TASTE AND SMELL, CAN BE QUITE DIFFERENT EVEN ATER 'TREATMENT'. JUST A FACT.

MUNICIPAL & PRIVATELY OWNED WATER SYSTEMS:

***MUNICIPAL SYSTEMS:** ARE TAX PAYER OWNED & MANAGED BY THE LOCAL JURISDICTION
***PRIVATELY OWNED PUBLIC SYSTEMS:** PRIVATELY OWNED WATER SERVICE PROVIDERS ARE ALL OVER THE COUNTRY AND FILL IN A LOT OF REGIONAL SERVICE GAPS NOT PROVIDED BY LOCAL JURISDICTIONS. THE TERM PUBLIC IS PRESENT BECASE THESE SERVICES ARE PUBLICLY REGULATED.
***SPECIFICS:** WEB SITES OR SERVICE REPRESENTATIVES CAN PROVIDE ALL SPECIFIC DATA REGARDING EXISTING WATER LINE LOCATIONS, CONNECTIONS, METERS, TRENCHING, NEW SERVICE LINES & INSPECTION REQUIREMENTS.
***THE TAP:** WATER LINES TYPICALLY RUN BESIDE ROADWAYS WITHIN THE R.O.W.. THERE IS USUALLY IS A "TAP" FEE FOR THE CONNECTION. AND A METER WILL BE INSTALLED ON THE PROPERTY SIDE OF THE R.O.W. TO MONITOR/QUANTIFY USE.
***THE LINE:** THE SUPPLY LINE FROM THE TAP OR METER TO THE HOUSE IS USUALLY THE RESPONSIBILITY OF THE PROPERTY OWNER. THERE IS A COST PER LINEAR FT FOR TRENCHING, INSTALLATION, & BACKFILL.
***USAGE:** TYPICALLY A MINIMUN CHARGE OR METERED USAGE CHARGE PER BILLING PERIOD. (MONTHLY, BIMONTHLY, QUARTERLY)
***SITE PLAN DESIGN IMPACT:** LITTLE EXCEPT THE LINE INSTALLATION.

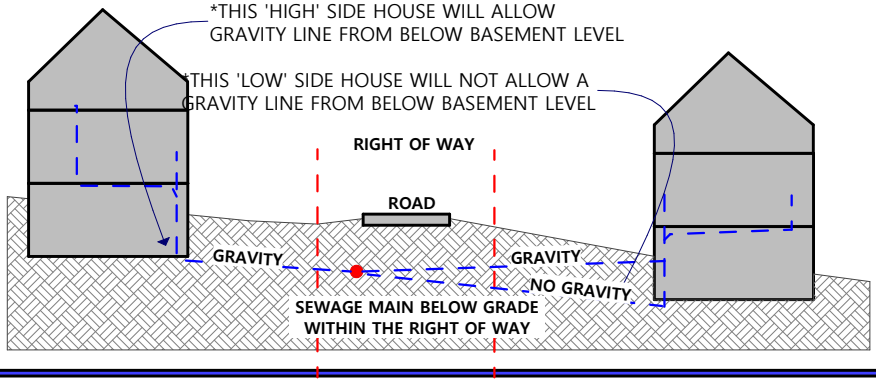
INDIVIDUAL WELL WATER:

***OVERVIEW:** MOST FOLKS WILL TAKE ADVANTAGE OF PUBLIC WATER SERVICE WHERE & WHEN IT IS AVAILABLE. CENSUS DATA SUGGEST 86% OF WATER SUPPLY IS PUBLICLY PROVIDED (PROBSBLY SOURCED FROM A GROUNDWATER AQUIFER). WHERE PUBLIC WATER IS NOT AVAILABLE DRILLING A WELL IS THE NEXT VIABLE CHOICE.
***DRILLING:** IS THE PRIMARY EXPENSE IN A PRIVATE WELL SYSTEM. YOU DRILL TILL YOU HIT SUFFICIENT WATER. YOU PAY BY THE VERTICAL FOOT. THERE ARE QUANTITY/ FLOW RATES THAT THE WELL DRILLER CIPHERS TO DETERMINE WHEN A WELL IS AT A GOOD OR ADEQUATE DEPTH.
***LOCAL:** THERE ARE USUALLY SOME LOCAL PARAMETERS TO WELL DEPTH AND WATER CHARACTERISTICS. NEIGHBORS, AND LOCAL WELL DRILLERS ARE PROBABLY THE BEST SOURCE FOR THAT DATA
***EXCEPTIONS:** FINDING WATER CAN BE A REAL WILDCARD. IF LOCAL INQUIRIES ARE INCONCLUSIVE ONE CAN MAKE FINDING ADEQUATE WELL WATER A CONDITION OF AN OFFER TO PURCHASE.
***SITE PLAN DESIGN IMPACT:** THERE ARE DISTANCE SEPARATIONS REQUIRED BETWEEN PROPERTY LINE, WELL HEAD, FOUNDATION, AND SEPTIC SYSTEM. ON SITE ACCESS FOR A DRILLING RIG NEEDS CONSIDERATION.

DELIVERED WATER & WATER RE-USE:

***OVERVIEW:** STRATEGIES FOR DEALING WITH LIMITED OR SPORADIC WELL WATER DELIVERY, AND OR A DESIRE TO RE-USE AND CONSERVE NET WATER CONSUMPTION CAN INVOLVE STORING DELIVERED BULK WATER OR STORING AND RE-USING GRAY WATER AND OR RAIN WATER.
***STORAGE:** ACCOMPLISHING THIS INVOLVES STORAGE TANKS AND A DELIVERY SYSTEM. THE PHYSICAL VOLUME REQUIRED TO STORE WATER IS SIGNIFICANT. DO THE USAGE MATH FIRST__ TO DETERMINE SPACE REQUIRED.
***SITE PLAN DESIGN IMPACT:** TYPE, SIZE AND LOCATION OF WATER TANKS REQUIRE SOME ENGINEERING AND GENERAL DESIGN LOGIC FOR BEST RESULTS

SITE researching d1.6
UTILITIES - SEWAGE + SEPTIC

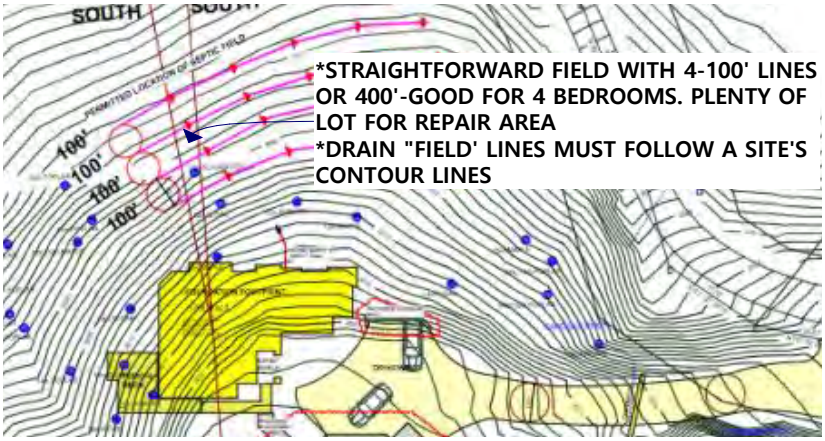


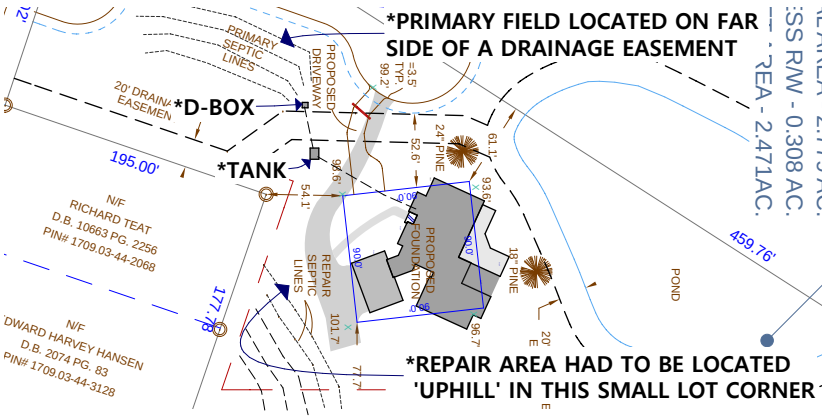
PUBLIC SEWERS:

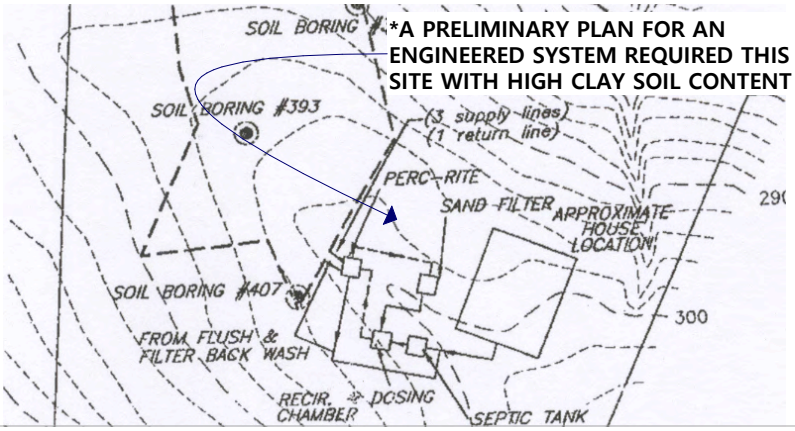
***OVERVIEW:** IF A PUBLIC SEWAGE SYSTEM IS AVAILABLE AT A SITE IT IS SMART TO CONNECT TO IT.
***REQUIREMENTS:** AS WITH ALL UTILITIES, THE LOCAL COMMUNITY (OR SANCTIONED PRIVATE PROVIDER) WILL SPECIFY EVERYTHING REQUIRED FOR THE LINE AND THE CONNECTION.
***GRAVITY:** CHANCES ARE THE PROPOSED HOME CONSTRUCTION WILL BE "ABOVE" THE PUBLIC SEWAGE LINE, SO THE DRAIN LINE FROM HOUSE WILL BE A GRAVITY LINE. THE RELATIVE ELEVATIONS OF THE SEWER MAIN AND APPROPRIATE EXIT POINT FROM THE HOUSE SHOULD BE CHECKED.
***NO GRAVITY:** UPHILL CONDITIONS ARE NOT HOPELESS. LIFT STATIONS ARE USED TO PUMP THE EFFLUENT TO A HIGHER ELEVATION WHERE IS IT GRAVITY RELEASED TO THE SEWAGE MAIN

SEPTIC SYSTEMS:

***OVERVIEW:** THIS SUMMARY IS NOT INTENDED TO EXPLAIN THE SCIENCE OF THE SEPTIC SYSTEM . IT IS ALL EASILY RESEARCHED. THIS OVERVIEW DEALS WITH THE MOST BASIC CONCEPTS AND ALERT ONE TO SPACE, COST, AND POSSIBLE COMPLICATIONS.
***KEEPING THE WATER SHED HEALTHY:** THERE HAS BEEN AN INCREASING DILIGENCE ON THE PART OF COMMUNITIES TO KEEP THE WATER SHED HEALTHY. SEPTIC FIELD FAILURES HAVE A HISTORY AND ARE A CONCERN. JURISDICTIONS HAVE GOTTON INCREASINGLY CONSERVATIVE AND CAREFUL WITH FIELD REQUIREMENTS AND INSTALLATIONS. THE SUGGESTION IS TO TAKE THIS SERIOUSLY IN THE PLANNING STAGES.
***THE SOIL:** THE CAPACITY OF THE ON SITE NATIVE SOIL TO ABSORB WATER IS THE KEY STARTING POINT TO ANY SEPTIC DESIGN. SEPTIC FIELD SIZE AND SYSTEM DESIGN ARE BASED ON THAT ABSORBTION CAPACITY. TYPICALLY LOCAL JURISDICTIONS (COUNTY HEALTH DEPARTMENTS), OR APPROVED REPRESENTATIVES, WILL PERFORM OR OVERSEE THE SOIL ANALYSIS, SYSTEM DESIGN, AND APPROVE SYSTEM INSTALLATIONS.







SIMPLE PRIVATE GRAVITY SEPTIC SYSTEMS:

***OVERVIEW:** WASTE WATER IS PIPED FROM HOUSE TO A SEPTIC HOLDING TANK AND THEN DISTRIBUTED TO A DRAIN FIELD (aka LEACH FIELD,SEPTIC FIELD). THAT WATER IS THEN ABSORBED INTO THE SOIL BENEATH THE DRAIN TILE THAT HAS DISTRIBUTED THE WATER.
***SPACE AND SOIL:** USUALLY THE NUMBER OF BEDROOMS AND THE CAPACITY OF A SITE SPECIFIC SOIL IS TABULATED RESULTING IN A SPECIFIED MINIMAL LINEAR FT OF ABSORPTION TRENCH (DRAIN LINE). TRENCH SIZE AND CONSTRUCTION ARE CONDITIONAL ON SITE SOIL AND TOPOGRAPHY, AND REGIONAL PRACTICE.
***REPAIR AREA:** JURISDICTIONS MAY REQUIRE A REPAIR AREA, WHICH IS A DUPLICATE AREA ON SITE SET ASIDE AS A BACK UP SHOULD THE PRIMARY FIELD FAIL.

NOT AS SIMPLE PRIVATE GRAVITY SYSTEMS:

***OVERVIEW:** SITE CONDITIONS CAN REQUIRE CREATIVE SOLUTIONS. THE CHALLENGES ARE SOIL, SPACE, AND ELEVATION.
***SOILS:** SOILS THAT DON'T PERC WELL REQUIRE MORE DRAIN LINE TO SPREAD THE SAME VOLUME OF WATER OUT. MORE DRAIN LINE REQUIRES MORE SITE AREA.
***SPACE:** TOTAL AREA FOR THE PRIMARY AND REPAIR AREAS CAN BE IN THE SAME LOCATION OR INDEPENDENT OF EACH OTHER-SPACE MUST BE FOUND FOR BOTH.
***GRAVITY:** TIGHTER LOTS MAY NOT PERMIT BOTH FIELD AREAS TO BE 'DOWNHILL'. THEY MAY BE SPLIT UPHILL AND DOWN, OR BOTH UPHILL. THIS SURVEY SHOWS A SPLIT FIELD. THE REPAIR AREA IS 'UPHILL'.
***PUMPING:** THE IDEA IS TO PUMP EFFLUENT UP TO THE SEPTIC/HOLDING TANK AND LET THE FIELD ITSELF BE "DOWNHILL' FROM THAT TANK SO IT CAN FUNCTION ON A GRAVITY BASIS.

ENGINEERED SYSTEMS:

***WHY:** WHEN THERE JUST IS NOT ENOUGH SPACE, AND OR NATURAL SOILS RESIST ABSORBING WATER, A STANDARD GRAVITY SYSTEM MAY NOT DO THE JOB.
***OPTIONS:** THERE ARE A NUMBER OF OPTIONS FOR THESE CONDITIONS. A TERM FOR THESE REALLY QUITE DIFFERENT TECHNOLOGIES ARE 'ENGINEERED' OR 'ALTERNATIVE' SEPTIC SYSTEMS. EXAMPLES ARE
*PLASTIC LEACHING CHAMBERS SEPTIC FIELDS
*SOIL AMENDMENT TO ACHIEVE PERCOLATION
*MOUNDING SYSTEMS-A SYSTEM ABOVE NATURAL GRADE
*SLOW RELEASE PRESSURIZED (DOSING) SYSTEMS
*AEROBIC SYSTEMS WITH DRIP IRRIGATION
*EVAPORATION AND TRANSPIRATION SYSTEMS
*EVAPORATION ONLY SYSTEMS
***A UNIVERSAL PROBLEM:** THE PROBLEM OF EFFECTIVELY DEALING WITH HUMAN WASTE HAS A PRETTY LONG HISTORY. IT IS A FOREVER PROBLEM, AND NO WONDER WE KEEP TRYING TO FIND A BETTER WAY. LOTS OF SITES HAVE PROBLEMATIC SOILS. SO ALTERNATIVE SYSTEMS MAY WELL NEED SERIOUS INVESTIGATION.

UTILITIES- ELECTRIC+COMMUNICATION SERVICES

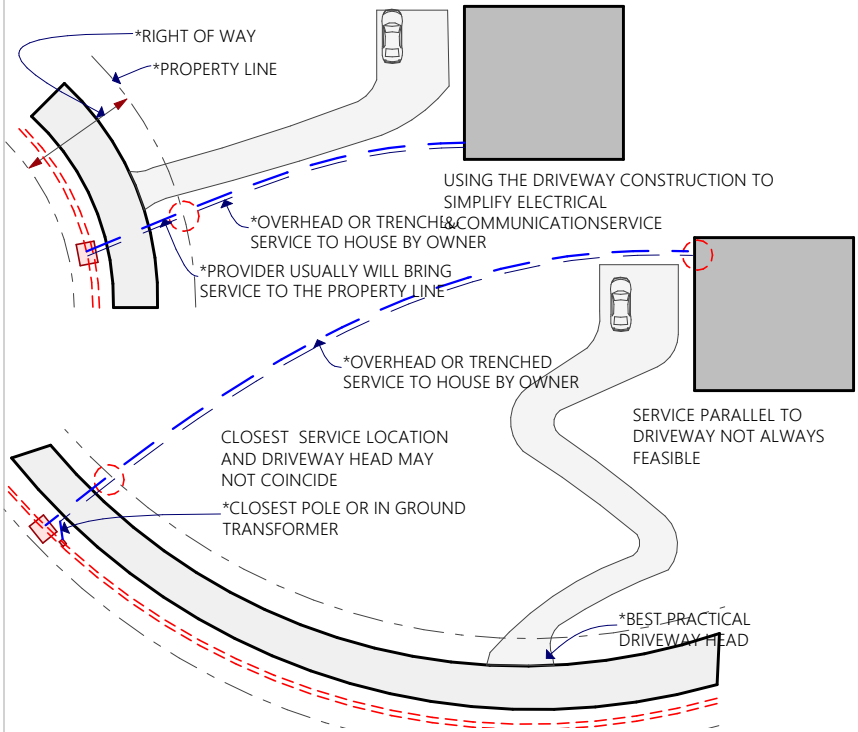
*ELECTRICAL SERVICE:

***OVERVIEW:** UNLESS BUILDING WAY OUT THERE, ELECTRICAL SERVICE IS GOING TO BE WITHIN REACH. LOCAL POWER AUTHORITIES ALL HAVE NEW INSTALLATION REPRESENTATIVES THAT CAN OUTLINE THE EXACT STEPS REQUIRED TO BRING POWER TO THE HOUSE.

***SITE DEMANDS:** ELECTRIC SERVICE IS VERY STRAIGHTFORWARD. NORMALLY THE POWER COMPANY HAS ALREADY, (OR WILL EXTEND) SERVICE TO THE SITE ALONG A PUBLIC ROAD AND RIGHT OF WAY. AT THAT SITE LOCATION THE POWER IS TRANSFORMED DOWN TO 120V/240V SINGLE PHASE AC AND THE NEW CUSTOMER'S ELECTRICAL CONTRACTOR RUNS THE POWER FROM THAT 'CONNECTION BOX' ONTO PRIVATE LAND AND TO THE HOUSE. THE POWER AT THE ROAD MAY BE UNDERGROUND, AND THEN TYPICALLY RUN TO THE HOUSE UNDERGROUND. OR THE THE POWER AT THE PUBLIC ROAD MAY BE OVERHEAD IN WHICH CASE POWER MAY BE RUN EITHER OVERHEAD OR UNDERGROUND. UNDERGROUND SERVICE IS GENERALLY CONSIDERED DESIRABLE AS IT IS OUT OF VISIBLE SITE AND NOT SUBJECT TO TREE DAMAGE. UNDERGROUND SERVICE IS ALMOST UNIVERSAL IN 'MODERN' SUBDIVISIONS. BUT MORE RURAL SITE CONDITIONS MAY EXIST WHERE UNDERGROUND SERVICE IS IMPOSSIBLE OR NOT PRACTICAL.

***THE DRIVEWAY DEFAULT:** NORMALLY OVERHEAD OR UNDERGROUND SERVICE WILL RUN PARALLEL TO THE DRIVEWAY CONSTRUCTION. TREE CLEARING AND EXCAVATION/GRADING HAS NECESSARILY BEEN DONE AND THEREFORE IS A PATH OF LEAST RESISTANCE. AS ALWAYS EXCEPTIONS DO EXIST. IF THE SERVICE LOCATION PROVIDED BY THE POWER COMPANY DOES NOT COINCIDE WITH THE DRIVEWAY HEAD, OR IF A DRIVEWAY LAYOUT IS TOPOGRAPHICALLY REQUIRED TO TWIST & TURN, AN ALTERNATIVE PATH WILL LIKELY BE REQUIRED

***WHO DOES WHAT EXCEPTIONS:** THE LOCAL AUTHORITY WILL ALSO HAVE A PRETTY EXACTING SET OF CONDITIONS HOW SERVICE MUST BE INSTALLED, WHO IS RESPONSIBLE FOR WHAT WORK, AND WHO PAYS.



POWER OUTAGES & GENERATORS:

***INTERRUPTIONS:** FREQUENCY OF INTERRUPTIONS, AND DURATION OF INTERRUPTIONS IS LOCATION SPECIFIC AND NEEDS TO BE LOCALLY RESEARCHED. THAT DATA, ALONG WITH AN UNDERSTANDING OF PERSONAL TOLERANCES, MAY CONVINCE THAT BACK UP POWER IS, OR IS NOT, WORTH CONSIDERATION.

***PRIMARY INCONVENIENCES:** LOSS OF HEAT AND POSSIBLE LOSS OF WATER (WELL WATER REQUIRES AN ELECTRIC PUMP) AND ANY LIFE SUPPORT ELECTRIC DEVICES.

***SECONDARY INCONVENIENCES :** THE REFRIGERATOR, THE COMPUTER (AND ENTERTAINMENT DEVICES), THE LIGHTS.

***TARGETED LOW COST FIXES:** WOOD BURNING FIREPLACES/STOVES CAN PROVIDE HEAT, SMALL PORTABLE GENERATORS CAN POWER LIMITED SELECTED DEVISES. POTABLE WATER AND (FLUSHING) WATER CAN BE STORED, CANDLES AND CAMP LIGHTS CAN PROVIDE ENOUGH LIGHT TO GET AROUND.

***THE BIG GENERATOR:** REQUIRES FUEL TO RUN AND DO ITS JOB. THAT FUEL CAN BE NATURAL GAS, DELIVERED GAS OR OIL. (THIS GENERATOR REQUIREMENT THEN MIGHT INFLUENCE A COMBUSTIBLE FUEL SELECTION REQUIRED FOR OTHER REASONS. d1.8) A BIG GENERATOR IS INTERGRATED INTO THE HOME'S ELECTRIC SYSTEM TO MAINTAIN POWER WHERE IT IS MOST WANTED/NEEDED. THE SIZE AND COST OF A GENERATOR IS SUBJECT TO THE EXTENT OF THAT SYSTEM INTEGRATION.

***THE BIG BATTERY:** THE BIG BATTERIES NEEDED TO DO THE JOB OF THE BACK UP GENERATOR ARE HERE AND LOGIC SAYS WILL BECOME BOTH MORE POWERFULL (LONGER LASTING) AND AFFORDABLE. THIS IS A VERY WELCOME TECHNOLOGICAL ADDITION TO HOME DESIGN FOR MANY REASONS. THE TESLA POWERWALL IS PROBABLY THE PLACE TO START A SEARCH FOR MORE/ONGOING INFORMATION.

PHOTOVOLTAIC OPTIONS:

***SEE** _____

ELECTRICAL SERVICE REQUIREMENTS:

***SHORT SUMMARY:** POWER COMPANY LINES RUN AT A HIGHER VOLTAGE THAN IS SUITED TO RESIDENTIAL END USE . AT EACH RESIDENTIAL SITE, USUALLY ON THE PUBLIC RIGHT OF WAY ADJACENT TO THE SITE'S ACCESS ROAD, A TRANSFORMER WILL EXIST OR BE INSTALLED BY THE POWER COMPANY TO 'TRANSFORM' THE POWER DOWN TO 120/240 VOLTS WHICH IS UNIVERSALLY SUITED TO RESIDENTIAL USE. SO THAT DEFAULT POWER AVAILABLE IS SINGLE PHASE ALTERNATING CURRENT (AC) RUNNING AT 120/240 VOLTS. THE SERVICE (WIRE/CONDUIT SIZE) IS THEN BASED ON ANTICIPATED USE OR LOAD WHICH IS MEASURED IN **AMPS.**

***CALCULATING SERVICE REQUIREMENTS:** THE GENERAL IDEA IS TO ADD UP ALL THE ELECTRICAL DEMANDS FOR THE HOUSE AND QUANTIFY THAT SERVICE SIZE IN **AMPS.** THERE ARE DOZENS OF WEB SITES THAT EXPLAIN ALL THIS AND ASSIST IN THE **AMP** MATH

***220V/240V:** SOME APPLIANCES AND EQUIPMENT RUN MORE EFFICIENTLY AT THE HIGHER VOLTAGE. COMPRESSORS FOR HVAC EQUIP, ELECTRIC RANGES, CLOTHES DRYERS, CAR CHARGING STATIONS ARE TYPICAL. AMP DRAW IS ASSOCIATED WITH EACH OR THOSE PIECES OF 'EQUIPMENT'

***110V/120V:** PRACTICALLY ALL OTHER RESIDENTIAL REQUIREMENTS ARE SERVICED WITH 110V/120V WIRING, SWITCHES, OUTLETS, RECEPTACLES.

***LOW VOLTAGE:** MANY DEVICES WITHIN THE HOME REQUIRE AND RUN ON 'LOW VOLTAGE'. HOME ELECTRONICS OF ALL TYPES, AND SOME LIGHTING INCLUDED. THESE DEVICES REQUIRE 'INTERNAL' TRANSFORMERS THAT REDUCE THE 110V/120V CURRENT TO (USUALLY) 12V. WORKS BUT NOT EFFICIENT. EXPECT CHANGES IN HOME WIRING TO MORE EFFICIENTLY ADDRESS OUR LOW VOLTAGE HOME REQUIREMENTS

***AMPERAGE IS THE SERVICE SIZE LANGUAGE:** TOTAL HOUSE REQUIREMENTS ARE ADDED UP AND A SERVICE SIZE IS DETERMINED. THE 'AVERAGE' HOME TODAY WILL USE A 100 AMP, 150 AMP, OR 200 AMP SERVICE. HIGHLY EFFICIENT SMALL FOOTPRINT HOMES MAY BE FINE WITH 60 AMPS, AND MEGA HOMES MAY NEED 300 OR 400 AMPS. CORRECT AND REALISTIC SIZING IS BEST. MORE IS NOT BETTER.

COMMUNICATION SERVICE:

***THE OLD DAYS:** MA BELL USE TO RUN A TELEPHONE LINE TO YOUR HOUSE. ONE CHOICE. PRETTY SIMPLE.

***THESE DAYS:** COMMUNICATION SERVICES ARE INCREASINGLY COMPLICATED IN THIS FAR MORE SOPHISTICATED ELECTRONIC AGE. AND WE SEEM TO BE IN THE MIDST OF ANOTHER DELIVERY TECHNOLOGY TRANSITION.

***HARDWIRED SERVICES:** MAY OR MAY NOT EXIST, MAY BE INCAPABLE OF TAKING NEW SUBSCRIBERS, MAY BE A GENERATION OLD, OR MIGHT BE ABSOLUTELY UP TO DATE USING THE LATEST FIBER OPTIC DELIVERY 'WIRING'.

***WIRELES SERVICES:** ANTENAE NETWORK TELEVISION, SATELLITE SERVICE FOR TV AND INTERNET CONNECTION, AND NEWER (WIRELESS) LTE CELL AND WIFI CONNECTIONS ALL MAY OR MAY NOT BE REPRESENTED LOCALLY AND AVAILABLE. VIABILITY MIGHT BE A FUNCTION OF REAL TIME RECEPTION. REPRESENTATIVES FROM THE SATELLITE SERVICE PROVIDERS CAN WALK A SITE AND GET RECEPTION READS. WALKING A SITE WITH A CELL PHONE WILL PROVIDE A CLUE THERE. AND IT IS POSSIBLE A SPECIFIC CELL PROVIDER IS A BEST CHOICE FOR A GIVEN SPECIFIC SITE.

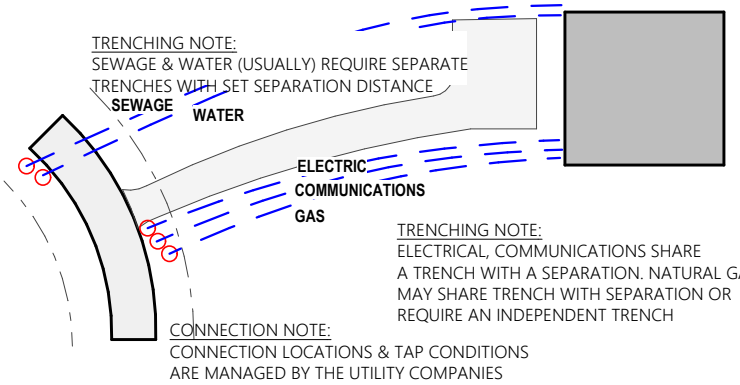
UTILITIES- COMBUSTIBLE FUEL

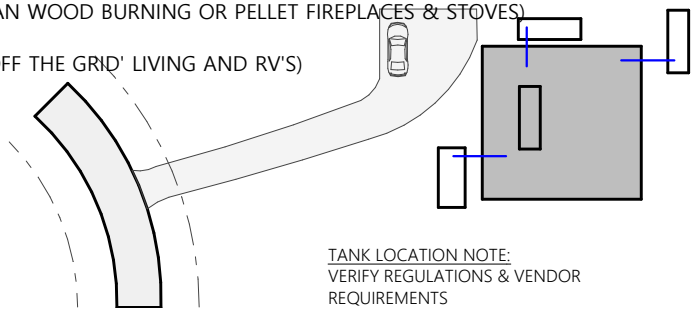
FUEL CONSIDERATIONS:

***THINKING AHEAD:** THE IMMEDIATE SITE CONCERN RELATIVE TO COMBUSTIBLE FUELS IS ITSELF NOT A BIG DEAL. IF NATURAL GAS IS AVAILABLE THEN A TRENCH FROM RAOD TO HOUSE IS NEEDED TO BURY THE SUPPLY PIPE. IF LP GAS OR OIL IS CHOSEN, THEN A PLACE FOR A STORAGE TANK IS REQUIRED.
***ALL ELECTRIC:** IS A CONVERSATION STARTING POINT BECAUSE ALL HOMES REQUIRE ELECTRICAL SERVICE. HOMES IN MANY LOCATIONS DO WELL WITH ONE TYPE OR ANOTHER OF HEAT PUMP SYSTEM THAT PROVIDES HEATING AND COOLING. THE HEAT PUMP IS AN INCLUSIVE HEATING AND COOLING TECHNOLOGY THAT HAS BEEN ADVANCING REGULARLY TO MANAGE A BROADER RANGE OF CLIMATES PRETTY EFFECTIVELY AND EFFICIENTLY. THE ALL ELECTRIC HOME IS KIND OF TIDY. NO MESS OR MAINTENANCE AND 1 MONTHY BILL. SO WHY SHOULD COMBUSTIBLE FUELS BE CONSIDERED? THE SHORT ANSWER IS A QUICKER, WARMER HEAT, AND THE POTENTIAL OF ENERGIZING OTHER APPLIANCES THAT ELECTRIC ENERGY EITHER CAN'T, OR AS COST EFFECTIVELY.
***COMBUSTIBLE FUEL SOURCES:** NATURAL GAS IS PIPED UNDERGROUND, AND THAT PIPED SYSTEM IS EITHER AVAILABLE AT A SITE, OR NOT. LP GAS AND OIL ARE 'PORTABLE' AND WIDELY AVAILABLE (PARTICULARLY WHERE NATURAL GAS IS NOT). LP AND OIL ARE DELIVERED BY TRUCK AND STORED IN TANKS ON SITE. SEE BELOW. IF NATURAL GAS IS AVAILABLE, IT WOULD LOGICALLY BE THE FIRST CHOICE.

COMBUSTIBLE FUEL USES:

***ENERGY FOR HEAT:** NATURAL GAS, LP GAS OR OIL.
***HOT WATER HEATERS:** NATURAL, LP GAS OR OIL.
***GENERATORS:** NATURAL, LP GAS OR OIL.
***COOKING:** NATURAL OR LP GAS COOKTOPS, OVENS, AND OUTSIDE GRILLS.
***FIREPLACES:** NATURAL OR LP GAS. (GAS FIREPLACES ARE A DIFFERENT ANIMAL THAN WOOD BURNING OR PELLET FIREPLACES & STOVES)
***CLOTHES DRYERS:** NATURAL OR LP GAS.
***REFRIGERATORS:** NATURAL OR LP GAS. (NOT MAINSTREAM. PRIMARILY USED IN 'OFF THE GRID' LIVING AND RV'S)





STORAGE TANKS AND THE SITE:

***TANK LONGEVITY:** EASY TO THINK OF THESE STORAGE TANKS AS BEING MAINTENANCE FREE & LASTING FOREVER. BUT THEY CAN FAIL. UNDERGROUND TANKS THAT FAIL CONTAMINATE SOIL AND CAN BECOME A FAIRLY SERIOUS LIABILITY.
***SO THERE ARE RULES:** TANK CONSTRUCTION & PLACEMENT IS THEREFORE REGULATED. COMMUNITIES MAY HAVE MINIMUM SPECIFICATIONS AND VENDORS** WILL KNOW ALL YOUR OPTIONS.. THEY WILL VARY DEPENDING ON WHETHER IN GROUND, ABOVE GROUND OR INSIDE THE STRUCTURE.
***ACCESS:** TANKS NEED TO BE ACCESSIBLE. FILLING A TANK IS DONE WITH A HOSE SO THERE IS SOME DISTANCE FLEXIBILITY FROM WHERE A DELIVERY TRUCK CAN GAIN ACCESS TO. ALSO WISE TO CONSIDER TANK REMOVAL & REPLACEMENT.

*FUEL OPTIONS-COST, EFFICIENCY+ENVIRONMENTAL IMPACT:

***OVERVIEW:** AN IMMEDIATE QUESTION MAY BE WHICH FUEL OPTION IS CLEANER AND MORE EFFICIENT TO OPERATE AND OFFERS MORE COST EFFECTIVE ENERGY. REPRESENTATIVE CONCERNS FROM EACH OF THESE 3 PRIMARY FUEL TYPE OPTIONS WILL ARGUE THAT THIER PRODUCT IS BEST, AND WILL HAVE SELECTED DATA VERIFYING THAT. IF THERE IS A CHOICE AND DECISION TO MAKE, THEN RESEARCH THOSE AVAILABLE PRODUCTS THROUGHOUT THE SUPPLY CHAIN, FROM IN THE GROUND TO YOUR DOOR. CONSIDER THE HEATING AND APPLIANCE CHOICES AND EFFICIENCIES.
***CONSIDER THE BIGGER PICTURE:** IN TERMS OF TOTAL ENVIRONMENTAL AND COST EFFICIENCY, THE HOME 'SYSTEMS' MAY PLAY A BIGGER ROLE THAN THE ENERGY SOURCE ITSELF. OR PUT ANOTHER WAY, THE FUEL CHOICE DOES NOT ASSURE EFFICIENCY. A LEAKY REFRIGERATOR DOOR, OR A FRONT DOOR THAT DOESN'T COSE PROPERLY CAN WASTE A FRIGHTENING AMOUNT OF ENERGY. ITS THE WEAK LINK IN THE CHAIN METAPHOR IS APT HERE. EVERYHTING NEEDS TO BE 'TIGHT'.
***MARKET FORCES:** PIPED NATURAL GAS IS USUALLY CONTROLLED BY A UTILITY COMPANY THAT IN ESSENCE IS A MONOPOLY , BUT ONE THAT IS PUBLICLY REGULATED. PRICE CHANGES REQUIRE APPROVAL. THIS CHECK TENDS TO KEEP UNIT COSTS LESS VOLATILE. LP AND OIL ARE SUPPLIED AND DELIVERED BY PRIVATE CONCERNS THAT ARE MORE IMMEDIATELY SUBJECT TO THE LAWS OF SUPPLY AND DEMAND. PRICES GO UP AWFULLY QUICKLY WHEN DEMAND IS HIGH & SUPPLY IS LOW, AND TEND TO TRICKLE DOWN WHEN SUPPLY IS HIGH.

NATURAL GAS:

***OVERVIEW:** AS NOTED ABOVE, IF NATURAL GAS IS AVAILABLE THEN IS UNIVERSALLY CONSIDERED WISE TO TAKE ADVANTAGE. IT IS PIPED (USUALLY) UNDERGROUND AND WOULD BE RUNNING IN THE UTILITY RIGHT OF WAY AT THE SITE'S ACCESS ROAD.
***THE INSTALL:** THE LOCAL GAS COMPANY (AND THERE IS USUALLY ONLY ONE) WILL BE ABLE TO PROVIDE ALL INSTALL DETAILS AND COSTS TO BRING THE GAS LINE TO THE HOME. THE HOME OWNERS PLUMBING CONTRACTOR USUALLY RUN THE GAS LINES INTERNALY TO THE GAS FIRED APPLIANCES AS SELECTED. THESE ARE USUALY RUN IN A BRIGHT YELLOW REINFORCED FLEX PIPE, AND NOT A COMPLICATED INSTALL.

LP GAS:

***NOMENCLATURE:** LIQUIFIED PETROLEUM GAS (LPG), LIQUIFIED PETROLEUM (LP), PROPANE, ARE USED SYNONYMOUSLY. THEY ARE ALL GAS IN LIQUID FORM. THIS TEXT WILL USE THE LP TERMINOLOGY
***OVERVIEW:** LP IS DELIVERED BY TRUCK AND STORED ON SITE IN A TANK. WHEN THE LIQUID GAS EXITS THE (PRESSURIZED) TANK IT BECOMES A XXXGAS AND PIPED SIMILARLY TO NATURAL GAS--TO ALL APPROPRIATE APPLIANCES.
***BURIED TANKS:** LARGER TANKS ARE TYPICALLY BURIED.
***ABOVE GROUND TANKS:** SMALLER TANKS MAY BE ABOVE GROUND ON A STRUCTURE STAND.
***PORTABLE TANKS:** PORTABLE TANKS THAT CAN BE REFILLED AT THE LOCAL HOME STORE HAS A SMALLER STORAGE CAPACITY AND ARE USED PRIMARILY FOR OUTSIDE GRILL APPLIANCES.
***PROJECTED USE AND TANK SIZE:** THIS IS ANOTHER MATH GAME. TOTAL PROJECTED USE = ANNUAL CONSUMPTION IN GALLONS = # OF DELIVERIES PER YEAR BASED ON THE TANK SIZE.
***THE LP SUPPLIER:** IS THE LOCAL INFORMATION SOURCE ABOUT TANK SIZE, TANK INSTALLATION, FREQUENCY OF DELIVERIES.

OIL:

***OVERVIEW:** "HEATING" OIL IS A LIQUID FUEL THAT IS DELIVERED AND TANK STORED.
***TANKS:** OIL TANKS MAY BE ABOVE GROUND OR IN GROUND, OR IN A BASEMENT.
***PROJECTED USE AND TANK SIZE:** THIS IS ANOTHER MATH GAME. TOTAL PROJECTED USE = ANNUAL CONSUMPTION IN GALLONS = # OF DELIVERIES PER YEAR BASED ON THE TANK SIZE.
***GRADES OF FUEL:** MORE SCIENCE. THERE ARE GRADES OF OIL, JUST LIKE GASOLINE. MORE REFINED GRADES BURN 'CLEANER', MORE EFFICIENTLY AND ARE MORE EXPENSIVE. LESS REFINED GRADES BURN 'DIRTIER', LESS EFFICIENTLY AND ARE LESS EXPENSIVE. THE DEFAULT OIL FOR HOME HEATING IS #2, BUT THERE ARE EXCEPTIONS. EQUIPMENT IS DESIGNED TO USE A CERTAIN GRADE AND IS SO DESIGNATED.

DEED

***THE DEED:** THE DEED IS THE DOCUMENT OF OWNERSHIP. DEEDS ARE OFFICIALLY RECORDED WITH THE LOCAL JURISDICTION THROUGH A REGISTRAR OF DEEDS. THE DEED STATES OWNERSHIP AND REFERENCES THE LEGAL DESCRIPTION OF THE PROPERTY THAT IS A MATTER OF RECORD AND AVAILABLE TO THE PUBLIC TO VIEW IN ITS ORIGINAL RECORDED FORM OR (POSSIBLY) ON LINE.

***METES AND BOUNDS:** IS THE WRITTEN DESCRIPTION OF A PROPERTY STARTING AT THE "POINT OF BEGINNING", WHICH IS AN EXACT AND IDENTIFIABLE LOCATION. THEN EACH PROPERTY LINE IS DESCRIBED WITH A BEGINNING AND END AND A DIRECTION (REFERRED TO AS A 'CALL'). THESE SEQUENTIALLY CONNECTED PROPERTY LINES GET BACK TO THE 'POINT OF BEGINNING' AND THE BOUNDARY IS CLOSED. SEE THE PARTIAL EXTRACTION OF A METES AND BOUNDS DESCRIPTION BELOW.

***THE SURVEY DOCUMENT:** IS THE GRAPHIC DESCRIPTION OF THE PROPERTY. THERE IS A 'POINT OF BEGINNING' AND THE THE SEQUENCE OF PROPERTY LINES ARE DRAWN TO SCALE IN A VERY SPECIFIC DIRECTION- THE 'CALLS'. WHEN BACK AT THE 'POINT OF BEGINNING' THE BOUNDARY IS COMPLETE.

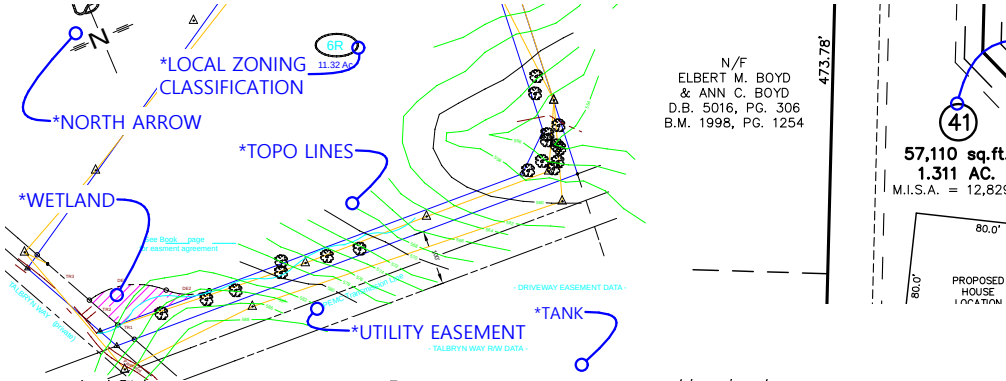
***BOOK AND PAGE:** TYPICAL LANGUAGE FOR FINDING THIS RECORDED DATA IS BY BOOK AND PAGE. THE DEED WTH A METES AND BOUNDS DESCRIPTION, OR SURVEY PLAN DESCRIPTION, WILL BE FOUND IN THAT BOOK, ON THAT PAGE.THIS IS CLEARLY A PRE-COMPUTER DOCUMENTING SYSTEM. BUT IT WORKS, AND PERMITS ONE TO UNCOVER THE WHOLE HISTORY OF A PROPERTY. GENERALLY OLDER MORE RURAL PROPERTIES MAY STILL BE DESCRIBED USING A METES AND BOUNDS WRITTEN TERMINOLOGY. NEWER RECORDED SUBDIVISION PROPERTIES WILL ALSO BE REFERENCED BY SUBDIVISION NAME AND LOT NUMBER AND BE DESCRIBED WITH THE GRAPHIC SURVEY DOCUMENT.

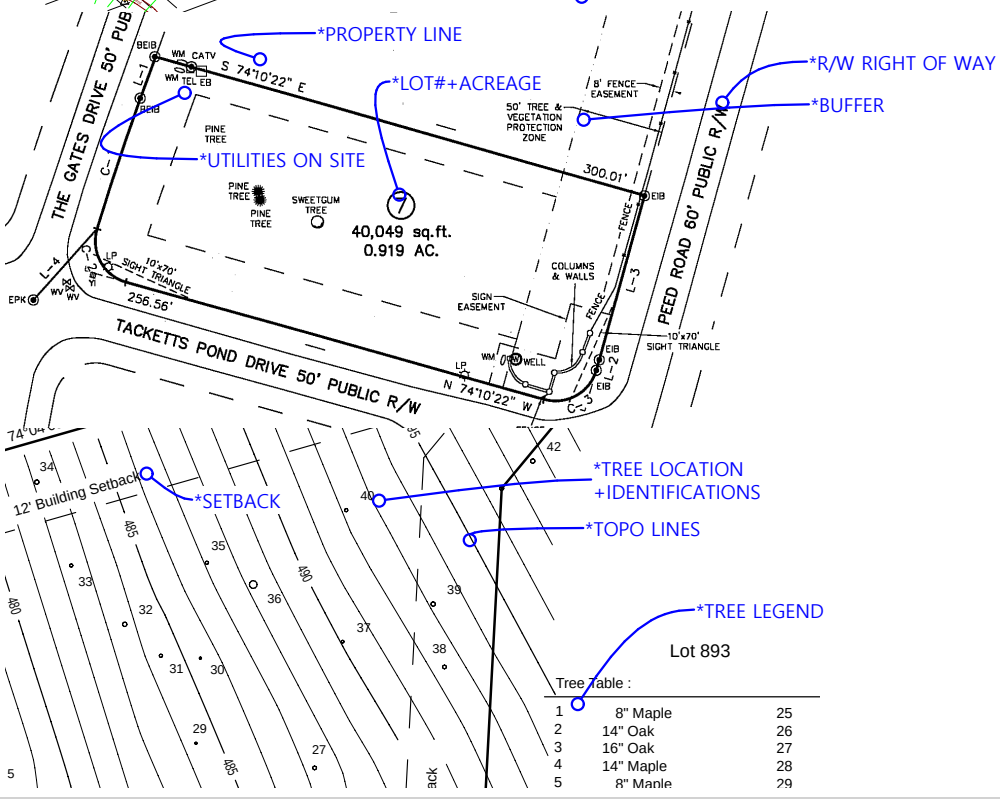
Beginning at an iron pin in an oak stump, said pin being the same beginning corner set forth in a Deed from W. C. Johnson et ux to E. Henry Conrad et al dated June 15, 1970 and recorded in Buncombe County Deed Book 1020 at page 315, said beginning corner also being the northeast corner of the Haslam property described in Deed Book 1323 at page 354, and running thence with the Presley lines the following five courses and distances, to wit: North 19 deg. 56 min. 16 sec. West 305.86 feet to an iron pin, North 46 deg. 3

***A PORTION OF A METES AND BOUNDS DESCRIPTION:**
* NOT A DOCUMENT OF MUCH USE AS A DESIGN AND PLANNING TOOL BUT CERTAINLY INTERESTING. THIS EXERPT IS BEING CAREFUL IN REFERENCING THE 'POINT OF BEGINNING'. IF A POINT OF BEGINNING IS NOT ACCURATE THE WHOLE SURVEY IN NOT ACCURATE.

SURVEY

***THE SURVEY AS PROPERTY DESCRIPTION AND MORE:** A GOOD SURVEY IS A VERY USEFUL DOCUMENT, PARTICULARLY WHEN ALL APPROPRIATE DATA HAS BEEN INCLUDED AND CAN BE DEPENDED UPON. BELOW ARE SAMPLE SURVEYS THAT INCLUDE DIFFERENT DATA, BUT EACH DATA SET IS APPROPRIATE TO THE PARTICULAR PROPERTY AND PROJECT. REMEMBER THE ONLY 'STANDARD' DATA ON A SURVEY ARE THE PROPERTY BOUNDARIES AND NORTH ARROW. SO ONE NEEDS TO DISCUSS AND REQUEST FROM A SURVEYOR THE SITE SPECIFIC DATA THAT WOULD BE OF BENEFIT. A SURVEY WITH THE RIGHT DATA IS A SMART INVESTMENT. EVERY SITE RELATED ITEM OUTLINED THIS CHAPTER COULD POSSIBLY AND BENEFICIALLY BE INCLUDED IN A SURVEY.





MINIMUM DATA ALL SURVEYS

*NORTH ARROW (SUN ORIENTATION)
*PROPERTY BOUNDARIES

OPTIONAL DATA TO BE REQUESTED

GENERAL DESCRIPTION
*AREA IN ACRES+SQUARE FEET
*DEED BOOK AND PAGE

ZONNG
*ZONING CLASSIFICATION
*SETBACKS
*HT RESTRICTIONS
*IMPERVIOUS RESTRICTIONS

ENCUMBRANCES
*EASEMENTS
*RIGHTS OF WAY
*BUFFERS

PUBLICLY PROVIDED UTILITIES
*WATER
*SEWAGE
*ELECTRIC SERVICE
*COMMUNICATIONS SERVICE
*NATURAL GAS SERVICE

NATURAL CHARACTERISTICS
*TOPOGRAPHY
*TREES
*BIG ROCK/BEDROCK
*WET AREAS/WETLAND AREAS
*FLOOD ZONES