

VICINITY MAP
NTS

- General:**
- Contractor is responsible for locating all existing utilities prior to start of construction.
 - All encroachment devices shall be constructed into established in accordance with the most current standards of the Land Quality Section of the NC DENR.
 - Stabilization stone under piping to be placed as required by City Inspector when conditions warrant.
 - As a minimum requirement, all graded areas not under pavement and within the right-of-way and/or easements shall be prepared, fertilized and limed, seeded, and mulched immediately upon completion of construction as follows (Application rate PER 1,000 SQUARE FEET):

- Type I Seeding (Lawns or other focal areas)**
100 lbs. of lime
20 lbs. of 10-20-20 or 20 lbs. of 10-10-10 in combination with 4 lbs. of 0-46-0
5 lbs. of tall fescue, containing a blend of 2 or more tall fescues
1 lb. of Kentucky Bluegrass
1 lb. of winter annual ryegrass (November 1 to March 1)
- Type II Seeding (General or low maintenance areas)**
100 lbs. of lime
15 lbs. of 10-20-20 or 15 lbs. of 10-10-10 in combination with 3 lbs. of 0-46-0
4 lbs. of tall fescue, containing a blend of 2 or more tall fescues
1 lb. of winter annual ryegrass (use unscarified seed August 15 to February 1)
1 lb. of German millet (May 1 to August 15)
1 lb. of rye grass (prior to May 1 or after August 15)

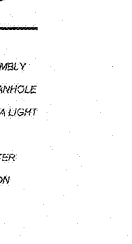
- Seeding mixtures other than those listed above must be approved by the City Inspector prior to seeding.
- Prior to requesting a final inspection, the Owner must submit Record Drawings and Engineer's Certification to the Engineering Division's Record Center. The Owner must also submit the construction checklist to the City Inspector.
 - All work must carry a one-year warranty to cover all defects in materials and workmanship.
 - Prior to beginning any work within NCDOT right-of-way, the Contractor must have a copy of the three-party encroachment agreement on the job site. Contact 336-773-8600.
 - Contact Construction and Maintenance at 336-773-5130 to arrange for construction inspection. A City Inspector will approve Backflow Preventer Type, vault, exact location, and inspection requirements prior to installation. A City Inspector shall be present when making or terminating water and sewer connections into new or existing water and sewer lines.
 - All construction, materials, and sanitation procedures shall meet or exceed the requirements of the North Carolina Plumbing Code and The City of Winston-Salem Technical Specifications and Detail Drawings.
 - Contact Permits Leonard at 336-747-6998 or City Clerk at 336-727-8000 for street cut permit and prior to any street cuts. Note: Martin Trail Lane is a private street.
 - Cross-connection control protection devices are required based on degree of health hazard involved as listed in Appendix B of the rules governing Public Water Systems in North Carolina. These guidelines are the minimum requirements. The devices shall meet American Society of Sanitary Engineering (ASSE) Standards as set on the University of Southern California approved list. The devices shall be installed and tested (both initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross-connection control program, whichever is more stringent.
 - As of July 1, 2011, all meters shall be purchased through the City/County Utilities Division. Contractors and Developers can purchase meters at the Utilities Business Office off the lobby of the Smart Municipal Building, 100 E. First Street.
 - Engineer of record is responsible for ensuring that the Fire Line from the back of the Back Flow Preventer to the Building is installed to the most current edition of the North Carolina Fire Code.
 - If work is to be done on an existing hydrant more than thirty years old, contact Utilities Construction and Maintenance to have hydrant exchanged for a new hydrant.
 - Existing water connections not intended for reuse shall be terminated at the main. 1/2" through 2" connections the corporation shall be cut-off and the copper service line cut thru at the corporation. 3" through 10" connections the opening valve and sleeve or tee shall be removed and replaced with mechanical joint elbows and ductile iron pipe installed to City of Winston-Salem standard. Valves or boxes shall be properly removed or demounted. Connections intended for reuse are subject to assessment and upgrades. Contact the meter shop 336-773-5130, for assistance.
 - Engineer of Records is responsible for ensuring all fire line backflow preventers and 3" and larger domestic water backflow preventers are installed to the most current edition of the Winston-Salem/Forsyth County Utilities Cross-Connection Control Standards.

- Water and/or Sanitary Sewer**
- The most current edition of The City of Winston-Salem Technical Specifications and Detail Drawings for Water Line and Sanitary Sewer Line Construction will govern all water and sanitary sewer construction.
 - Acceptable working conditions of sanitary sewer structures and piping shall be verified by the contractor and all conditions found to be unacceptable shall be reported to Utilities Construction and Maintenance at 336-727-8000, prior to any connections, extensions, or structures being installed. The Contractor shall be responsible for cleanup and repair of unacceptable conditions that result from failure to report such conditions prior to commencing work or that result from work being performed.
 - Sanitary Sewer connections shall be service weight cast iron soil pipe with 4-inch elbows and shall meet City of Winston-Salem specifications.
 - Proposed public or private hydrants installed or relocated shall meet or exceed City of Winston-Salem specifications and detail 104.56 to indicate hydrant line, valve, and Winston-Salem threads. Private hydrants shall be equipped with a double check detector assembly and shall be painted red.
 - Density tests by an independent testing lab are to be made as directed by the City Inspector at the Owner's expense.

- Final Inspection Procedure**
- Owner submits Record Drawings and Engineer's Certification to the Engineering Division's Record Center.
 - Upon approval by the Record Center, Owner may request final inspection for water and/or sanitary sewer. Owner shall then submit the construction checklist for water and/or sanitary sewer to the City Inspector.

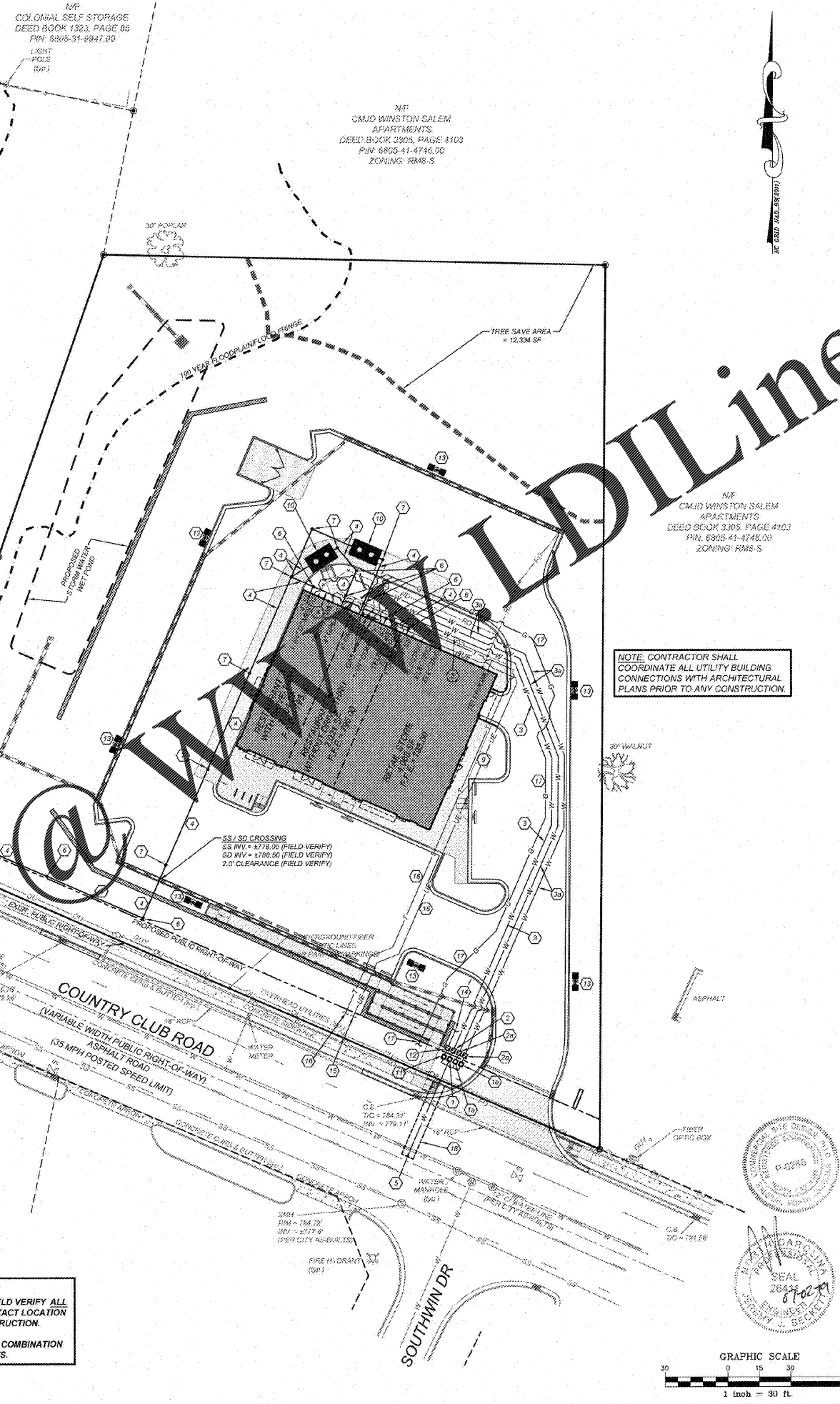
UTILITY KEYNOTES:

- 1" DOMESTIC WATER METER, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1 1/2" DOMESTIC WATER METER, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1" DOMESTIC REDUCED PRESSURE BACKFLOW PREVENTER IN ABOVE GRADE HEATED, INSULATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1 1/2" DOMESTIC REDUCED PRESSURE BACKFLOW PREVENTER IN ABOVE GRADE HEATED, INSULATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1" DOMESTIC WATER SERVICE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 1 1/4" DOMESTIC WATER SERVICE, CONTRACTOR SHALL COORDINATE WITH CITY.
- 4" PVC SANITARY SEWER SERVICE @ 1/4" PER LINEAR FOOT SLOPE (MINIMUM), CONTRACTOR SHALL COORDINATE WITH CITY.
- 12" SADDLE WITH 3" CORPORATION STOP, CONTRACTOR FIELD VERIFY SIZE AND LOCATION OF EXISTING WATER MAIN PRIOR TO ANY CONSTRUCTION AND SHALL COORDINATE WITH CITY.
- SANITARY SEWER CLEANOUT, SEE DETAIL SHEET.
- TRAFFIC RATED SANITARY SEWER CLEANOUT, SEE DETAIL SHEET.
- EXISTING FIRE HYDRANT.
- TRANSFORMER PAD, CONTRACTOR SHALL COORDINATE LOCATION AND SIZE WITH ELECTRIC UTILITY.
- 2000 GALLON TRAFFIC RATED GREASE TRAP, COORDINATE WITH MANUFACTURER AND CITY.
- 1" IRRIGATION WATER METER, CONTRACTOR SHALL COORDINATE WITH IRRIGATION CONTRACTOR AND CITY.
- 1" IRRIGATION REDUCED PRESSURE BACKFLOW PREVENTER IN ABOVE GRADE HEATED, INSULATED ENCLOSURE, CONTRACTOR SHALL COORDINATE WITH CITY.
- POLE MOUNTED AREA LIGHT, SEE LIGHTING PLAN.
- COORDINATE IRRIGATION CONNECTION WITH IRRIGATION CONTRACTOR
- UNDERGROUND ELECTRIC SERVICE, CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY.
- UNDERGROUND TELEPHONE SERVICE, CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY.
- GAS SERVICE, CONTRACTOR SHALL COORDINATE WITH GAS COMPANY.
- OPEN CUT AND REPAIR ASPHALT PAVEMENT AS NECESSARY TO MAKE UTILITY CONNECTION PER CITY STANDARDS. COORDINATE ALL WORK WITH CITY.
- CONNECT TO EXISTING SANITARY SEWER CLEANOUT, CONTRACTOR SHALL FIELD VERIFY SIZE, LOCATION, AND ELEVATION OF EXISTING SANITARY SEWER SERVICE PRIOR TO ANY CONSTRUCTION TO ENSURE REQUIRED PIPE SLOPE, COVER, AND CLEARANCES CAN BE ACHIEVED AND COORDINATE ALL WORK WITH CITY.

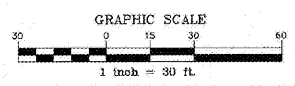


811
Know what's below.
Call before you dig.
nc811.org or 1-800-632-4949

NOTE TO CONTRACTOR:
GENERAL CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES FOR VERIFICATION OF EXACT LOCATION AND DEPTH PRIOR TO ANY CONSTRUCTION.
UTILITY INFORMATION SHOWN IS A COMBINATION OF SURVEY AND COUNTY AS-BUILTS.



NOTE: CONTRACTOR SHALL COORDINATE ALL UTILITY BUILDING CONNECTIONS WITH ARCHITECTURAL PLANS PRIOR TO ANY CONSTRUCTION.



UTILITY NOTES:

- UTILITY INFORMATION SHOWN HEREON WAS OBTAINED FROM THE BEST AVAILABLE SOURCE AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATIONS OF EXISTING UTILITIES AND IS RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITIES, EITHER PUBLIC OR PRIVATE, SHOWN HEREON OR NOT SHOWN HEREON. ANY REPAIRS SHALL BE DONE TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY.
- THE GENERAL CONTRACTOR SHALL CONFIRM ALL NEW UTILITY TAP LOCATIONS WITH THE UTILITY OWNERS. ALL FEES SHALL BE THE RESPONSIBILITY OF DEVELOPER.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
- NEW LOT LIGHT FOUNDATION BASES, CONDUIT AND WIRING ARE BY THE GENERAL CONTRACTOR. POLES, FACTURES, ANCHOR BOLTS & HARDWARE SHALL BE COORDINATED WITH THE OWNER AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ALL NEW LOT LIGHTS AND THE MAIN IDENTIFICATION SIGN SHALL HAVE A MINIMUM 10 FEET CLEARANCE FROM ALL OVERHEAD UTILITIES.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND APPROVALS NECESSARY FOR ANY WORK IN ROADWAY OR RIGHT-OF-WAY.
- ALL TRENCH EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH TRENCH BACKFILL DETAIL SHOWN ON THESE PLANS.
- MINIMUM COVER FOR UTILITIES SHALL BE 36" UNLESS OTHERWISE SHOWN OR NOTED ON THESE PLANS.
- ALL MANHOLES, VALVES, AND TERMINAL FRAMES SHALL BE SET TO FINISH GRADE AFTER PAVING.
- THE CONTRACTOR SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS. TRENCHES SHALL BE SHORED IN ACCORDANCE WITH OSHA.
- THE MINIMUM COVER FOR SANITARY SEWER LINES SHALL BE AS FOLLOWS: 1) 14" FOR 4" LINES AND 2) 18" FOR 6" LINES. CLEANOUTS SHALL BE PLACED AT 75' INTERVALS.
- WATER LINES SHALL HAVE A FINAL COVER DEPTH OF 3'-0" IN NON-TRAFFIC AREAS AND 4'-0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE.
- ALL SEWER LINES SHALL HAVE A FINAL COVER DEPTH 4'-0" IN NON-TRAFFIC AREAS AND 5'-0" MINIMUM IN TRAFFIC AREAS UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS.
- SANITARY SEWER SERVICES SHALL BE PVC SDR 35 TO RW, THEN PVC SCH 40 TO BUILDING. WATER SERVICE SHALL BE TYPE "K" COPPER.
- CABLE TV SERVICE ROUTING IS NOT PART OF THIS PLAN. CONTRACTOR TO COORDINATE WITH CABLE COMPANY.
- EXISTING MANHOLES SHOULD BE FIELD VERIFIED FOR RIMS AND INVERTS.
- ALL WORK SHALL BE GOVERNED BY THE LATEST EDITIONS OF THE STATE MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION, BUILDING CODE, ENERGY CONSERVATION, HANICAP ACCESSIBILITY, NATIONAL ELECTRICAL CODES AND NATIONAL FIRE PROTECTION ASSOCIATION CODES AND AS ADOPTED BY THE AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
- CONTRACTOR SHALL GUARANTEE, FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF SYSTEMS BY OWNER, EACH AND EVERY PIECE OF APPARATUS WHICH HAS BEEN INSTALLED UNDER THIS CONTRACT.
- THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS/METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
- OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS: 581 RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING 5 FEET IN DEPTH.
- EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
- EQUIPMENT AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED PROVIDED PRIOR APPROVAL HAS BEEN OBTAINED FROM THE OWNER IN WRITING PRIOR TO ORDERING OR INSTALLATION. THE CONSTRUCTION SHALL WAIVE ANY CLAIM FOR ADDITIONAL COST RELATED TO THE SUBSTITUTION OF ALTERNATE EQUIPMENT.
- CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
- ONLY SEWAGE NOT CONTAINING GREASE IS ALLOWED TO BYPASS THE GREASE TRAP.
- ALL SANITARY SEWER SERVICES AND STORM DRAIN PIPING 8" IN DIAMETER OR SMALLER SHALL BE SCH. 40 PVC WITH ADHESIVE WELDED JOINTS, UNLESS SPECIFIED OTHERWISE OR REQUIRED BY LOCAL GOVERNING MUNICIPALITY. MINIMUM SLOPES ON SANITARY SEWER SERVICE: 4" - 1/4" FT. - 1/8" FT.
- BELOW GRADE WATER SERVICE PIPING SHALL BE TYPE "K" HARD DRAIN COPPER TUBING WITH SILVER SOLDER JOINTS. SOLDER JOINTS CONTAINING LEAD SHALL NOT BE USED FOR ANY PURPOSE ON THIS PROJECT, WHERE PIPING IS REQUIRED TO RUN BELOW BUILDING SLAB, IT SHALL BE INSTALLED WITHOUT JOINTS BELOW SLAB.
- WATER PIPING SHALL BE CONNECTED TO BUILDING STUDS, VERIFY LOCATIONS PRIOR TO BEGINNING WATER PIPE INSTALLATION.
- WASTE PIPING SHALL BE CONNECTED TO BUILDING STUDS, VERIFY LOCATIONS AND INVERTS PRIOR TO BEGINNING ANY WASTE PIPE INSTALLATION.
- CONTRACTOR SHALL NOTIFY NORTH CAROLINA 811 OR CALL 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENTLY.
- ALL UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WINSTON-SALEM PUBLIC UTILITIES AND CROSS CONNECTION CONTROL REGULATIONS AND STANDARDS.
- SITE UTILITY CONTRACTOR TO PROVIDE WATER, SANITARY SEWER, AND ROOF DRAIN LEADERS TO WITHIN 5 FEET OF THE BUILDING. CONTRACTOR SHALL COORDINATE SITE PLAN CONNECTIONS WITH THE ARCHITECTURAL BUILDING PLANS.
- SANITARY CLEANOUTS SHALL BE PLACED NO MORE THAN 25 FEET APART, CLEAN OUTS LOCATED IN PAVEMENT AREAS SHALL HAVE HEAVY DUTY TRAFFIC RATED CONSTRUCTION.
- CONNECTION OF SANITARY SEWER SERVICE TO AN EXISTING MANHOLE SHALL COMPLY WITH THE CITY OF WINSTON-SALEM STANDARDS, INCLUDING: CORE DRILL FOR OPENING INTO MANHOLE AND INSTALL WITH FLEXIBLE BOOT. IF FLEXIBLE BOOT IS REQUIRED, CONTRACTOR SHALL PATCH PAVEMENT WITH A SECTION TO MATCH EXISTING PAVEMENT. 3" 1/2, 9" ABC OR BETTER.
- RELATION OF WATER MAINS TO SEWERS:
A. LATERAL SEPARATION OF SEWER AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10 FOOT LATERAL SEPARATION, IN WHICH CASE:
1. THE WATER MAIN IS LAID IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER OR
2. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER LINE WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OR UNDISTURBED EARTH, AND ABOVE THE TOP OF THE SEWER.
B. CROSSING A WATER MAIN OVER A SEWER MAIN:
WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION, IN WHICH CASE BOTH THE WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
C. CROSSING A WATER MAIN UNDER A SEWER MAIN:
WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN BOTH THE WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
D. CROSSING A SEWER LINE OVER OR UNDER A STORM DRAIN:
WHENEVER IT IS NECESSARY FOR A SEWER LINE TO CROSS A STORM DRAIN PIPE, THE SEWER LINES SHALL BE LAID AT SUCH AN ELEVATION THAT THE OUTSIDE OF THE SEWER LINE NEAREST TO THE OUTSIDE OF THE STORM DRAIN PIPE SHALL MAINTAIN A 12 INCH CLEAR SEPARATION DISTANCES, OF OR ENCASED IN EITHER CONCRETE OR DUCTILE IRON PIPE FOR AT LEAST 5 FEET ON EITHER SIDE OF THE CROSSING.
- UNDERGROUND CONDUITS TO SIGNS, LIGHTS, ETC., SHALL BE PLACED IN GRASS OR LANDSCAPE AREAS UNLESS OTHERWISE NOTED. THE CONDUIT AS SHOWN ON THESE PLANS SHALL BE CONSIDERED TO BE SCHEMATIC WITH ACTUAL LOCATION TO BE VERIFIED BY THE GENERAL CONTRACTOR. PVC SCH. 40 SLEEVES SHALL BE INSTALLED FOR ALL CONDUIT CROSSING UNDER PAVED AREAS.
- SEE ELECTRICAL SHEETS FOR SIZE OF CONDUIT AND WIRE ON ALL ELECTRICAL SERVICE.
- TRANSFORMER BY ELECTRIC COMPANY. GENERAL CONTRACTOR TO PROVIDE PAD. REFER TO ELECTRIC COMPANY SPECIFICATIONS FOR PAD CONSTRUCTION.

REVIEWS		CITY COMMENTS	DATE	BY
NO.	DESCRIPTION			
1	06-14-19	UPDATE BUILDING AREAS		
2	06-20-19	CITY COMMENTS #2		
3	06-26-19	CITY COMMENTS #3		

CLIENT:
GEMCAP DEVELOPMENT
4809 COUNTRY CLUB ROAD
SUITE 200
WINSTON-SALEM, NC 27101

UTILITY PLAN

PROJECT NO: GEM-1808
FILENAME: GEM1808-UP
DRAWN BY: RCN
SCALE: 1" = 30'
DATE: 01-17-19
SHEET NO: C-4

COMMERICAL SITE DESIGN

811

811 CREEDMOOR ROAD
RALEIGH, NORTH CAROLINA 27603
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