

# ENGINEERS NOTES

SPECTRUM ENGINEERS, PC assumes no responsibility for information or adequacy of the plans until they have been approved by required public authorities.

Commencement of any work on the project is at the sole risk of the Owner/Developer.

SPECTRUM ENGINEERS, PC assumes no responsibility for the completion or quality of performance of the Contracts of the General Contractor, Sub-contractors or other third parties.

## GENERAL NOTES

The location of utilities shown on the plan is a result of a combination of visual observation and city supplied maps. Contractor shall verify location, depth, and size of all utilities on site prior to the commencement of work. The Engineer shall be contacted immediately.

- If any location or elevation is different from that shown on the plans,
- if there appears to be any conflict, or
- upon discovery of any utility not shown on the plans.

TO MISS UTILITIES CALL (MISS UTILITY) OF VIRGINIA (TOLL FREE) 1-800-552-7001 48 HOURS BEFORE YOU DIG. The Contractor shall minimize disturbance to existing utilities during construction and shall be responsible for damage caused to any utility as a result of this work.

PLANS, PERMITS, INSPECTION, VERIFICATION: The Contractor shall be responsible for obtaining any and all necessary permits, including paying fees. No work shall begin on this project without written approval of Construction Documents from the City of Roanoke. An approved set of Construction Documents shall be available on-site at all times while work is in progress. All work shall be subject to inspection by the City of Roanoke and Virginia Department of Transportation (VDOT) Inspectors (where applicable). Contractor shall verify and be responsible for all dimensions on site.

FIELD CORRECTIONS: Field corrections shall be approved by the City of Roanoke Engineering Department prior to such construction.

DEBRIS: Construction debris shall be contained in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site. All damaged material or surplus excavated material not suitable for use as fill, backfill or topsoil shall become the property of the Contractor to dispose of offsite as he wishes, without injury to the Owner or any individual.

CLEANUP & RESTORATION: Keep the construction site neat, clean and orderly at all times. Cleanup shall be vigorous and continuous to minimize hazards or obstructions.

Materials at the site shall be stored in a neat and orderly manner. All damaged material shall be removed from the site immediately and disposed of in a proper manner. After trenching, remove all excavated materials unsuitable for, or in excess of, backfill requirements.

VISIBILITY TRIANGLE: At the intersection of any entrance with a public/private street, no material impediment to visibility between a height of 2.5 - 8 feet shall be erected or planted within a triangular area as described by the following points:

1. Intersection of the center line of the entrance with the R/W
2. 35 feet along the R/W in the direction toward approach traffic
3. 25 feet back into the entrance on the same center line.

UTILITY COMPANIES: The Developer and/or Contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.

LIGHTING: Care shall be taken in illuminating off-street parking areas to minimize light intensity on adjoining streets or residential uses (recommend 1.0 foot candle or less). Security lighting (at other than business operating hours) should also be limited to 1.0 foot candle measured at the base of the lighting structure.

BUSINESS SIGNS: The Developer shall obtain a Sign Permit as required in the City of Roanoke Zoning Ordinance Article IV, Division 3, Section 36-440. All permitted signs shall be set back at least fifteen (15) feet from the street Right-of-Way.

OTHER SIGNS: Proposed signage shall meet all applicable state and local ordinances including conformance in design and placement with the Virginia Supplement to the Manual on Uniform Traffic Control Devices, latest edition. Any existing signs shall be moved if necessary to meet the same criteria (edge of signs shall be 12" off edge of pavement or 6" off shoulder or 2' behind face of curb; clear height shall be 7' above grade).

STANDARDS: All materials and methods shall comply with the applicable standards of the American Society of Testing and Materials (ASTM), American National Standards Institute (ANSI), Virginia Department of Transportation (VDOT), Virginia Erosion and Sediment Control Handbook (ESC Handbook), Commonwealth of Virginia Department of Health (VDH) and/or the City of Roanoke, latest editions. Recommendations of applicable materials manufacturers shall also be followed as part of this Contract.

MECHANICAL EQUIPMENT SCREENING: All ground and roof based mechanical equipment shall be screened from view.

## GRADING & TRENCHING NOTES

### SOILS INVESTIGATION/TESTING:

General: Prior to beginning grading operations the Owner shall employ a qualified Soils Testing Laboratory which staffs a Professional Soils or Geotechnical Engineer registered in Virginia (hereinafter GE). The GE shall make a site inspection, review governing requirements for this Work and the test results and make recommendations on applicable portions of the Work (detention basin lining and berm, traffic bearing areas and building foundation, etc.). The GE shall submit two (2) certified copies of their test results and recommendations to the Design Engineer and copy the Owner with one (1). The recommendations of the GE shall be followed as part of this Contract. The GE shall provide an As-Built certification of rough grade and pavement base suitability (same distribution).

Specific: For General Earthwork, the GE shall determine the maximum density in accordance with VTM-1 (Standard Proctor) of material proposed for use beneath buildings and pavement, whether cut or fill. The GE shall inspect potential existing problems when unearthed by the Excavating Contractor, perform tests as necessary and make recommendations regarding any special condition and/or treatments to be implemented. The GE shall also perform inspections, supervision and testing of all filling operations.

For Pavement, the GE shall determine the maximum density in accordance with VTM-1 (Standard Proctor) and the VTM-8 (California Bearing Ratio (CBR)) of material proposed for use beneath pavement, whether cut or fill. Final pavement design shall be based on a sufficient number of certified CBR tests to determine the support value of the subgrade. The GE shall certify the location and results of the CBR tests and submit a pavement redesign using the Vaswani method whenever the actual CBR value is less than ten (10). When the CBR value is greater than ten (10), the GE shall redesign the pavement using the Vaswani method to minimize cost of construction.

CLEAR, GRUB & STRIP: All vegetation and overburden including topsoil, organic material and any unsatisfactory soil materials, shall be removed to the extent of grading indicated on the grading plan.

EXISTING FILL: Any existing fill material present on the site shall be removed and replaced with fill as herein specified, or tested in place by the Geotechnical Engineer (GE) and his recommendations followed.

NEW FILL AND BACKFILL: Fill material shall be satisfactory soil materials as determined by the GE and be free of rock or gravel larger than two (2) inches in any dimension, debris, waste, frozen materials, organics and other deleterious matter.

EXISTING SUBGRADE PREPARATION: Scarify existing subgrade and compact to specifications for new fill below. Bench beneath areas of slopes.

COMPACTION: Fill material shall be placed in lifts not exceeding eight (8) inches and compacted to one hundred (100) percent of its maximum density as determined in accordance with VTM-1 (Standard Proctor). Separate Proctors shall be run for each soil type being used. It shall be the Contractor's responsibility to inform the GE of sources of fill material other than that obtained on-site.

TESTING: Each compacted lift shall be inspected and tested by the Soils Engineer by conducting a minimum of three (3) field density tests per lift. Additional tests per lift shall be required if deemed appropriate by the GE.

GRADING LIMITS: Transition along the grading limits shall be smooth and uniform and prevent surface water ponding. Transitions at top and toe of slopes shall be graded smooth with uniformly rounded surfaces.

SOILS REPORT: In the event that a Soils Report has previously been prepared for the site and becomes a part of this Contract, applicable recommendations therein shall take precedent.

STAKING: Grade stakes shall be set for all curb (& gutter), culvert, sanitary and storm sewer.

## WATER NOTES

STANDARDS: Construction of all water lines, structures, and pavement replacement shall conform to the requirements of the Virginia Department of Transportation (VDOT) Road and Bridge Standards and Specifications and the Commonwealth of Virginia/State Board of Health (VSH) Water Works Regulations latest editions, as minimum standards, as well as those of the City of Roanoke.

SURFACE & COVER: In areas of water line construction, grades shall be within six (6) inches of finished subgrade prior to the commencement of this work. Minimum clear cover over all water pipe shall be three (3) feet.

TAPS/CONNECTIONS: All connections to existing water mains and meter boxes shall be done by the City of Roanoke Water Department at standard fees.

SEPARATION: The Contractor shall comply with the State Water Works Regulations pertaining to separation of water and sanitary sewer.

MATERIALS: Water line pipe shall be AWWA approved Ductile Iron pipe. Roanoke City standard reaction block shall be used at all bends. See detail sheet C9.

SERVICE: Water service pipe shall be Type K, hard drawn, copper tubing. All connections shall use compression fittings. Fittings for service lines shall meet AWWA spec. C-800.

FINISH GRADE: The Contractor shall locate and uncover all valve boxes after pavement/surface treatment of roads and adjust the tops to final road grades, if necessary.

## SEWER NOTES

STANDARDS: Construction of all sanitary sewer lines, structures, and pavement replacement shall conform to the requirements of the Virginia Department of Transportation (VDOT) Road and Bridge Standards and Specifications and the Commonwealth of Virginia/State Board of Health (VSH) Sewage Handling and Disposal Regulations latest editions, as minimum standards, as well as those of the City of Roanoke. See details.

SURFACE & COVER: In areas of sewer construction, grades shall be three (3) feet over the crown of the pipe to be laid or within six (6) inches of finished subgrade prior to the commencement of this work. Minimum clear cover over proposed lines shall be three (3) feet.

SEPARATION: The Contractor shall comply with the State Water Works Regulations pertaining to separation of water and sanitary sewer. When the sewer cannot maintain ten (10) feet horizontal separation measured edge to edge or eighteen (18) inches vertical separation edge to edge (below centerline), the sewer shall be constructed of AWWA approved mechanical joint water pipe and pressure tested in place to fifty (50) psi without leakage prior to backfilling.

MATERIAL & BEDDING: Pipe and fittings shall be Polyvinyl Chloride (PVC) SDR-35 and shall conform to ASTM D-3034. Bedding shall be per VDOT Standard and Spec. (Class B min.). All trenches shall be compacted according to VDOT Standards.

TAPS: All connections to existing sanitary sewer mains shall be made by the City Utility Department.

MANHOLE CONNECTIONS: Pipe shall be connected to manholes through precast openings and joined with either a flexible boot adapter or a pipe seal gasket. Laterals from manholes shall be of sufficient length to provide two (2) feet of bearing on natural ground. Transitions between allowable types of pipe shall be made with an adapter coupling within the right-of-way.

SERVICE [LIGHT COMMERCIAL]: (Connection to New Main) Light commercial service connections shall be made with a four (4) inch pipe through a wye or tee-wye branch fitting and shall be installed on a minimum grade of one-quarter (1/4) inch per one (1) foot from the sewer main or manhole to the property or easement line where a cleanout shall be placed and the service lateral plugged/capped until extension. If an existing service connection no longer exists or is unusable, one shall be made with a four (4) inch pipe through a wye or tee-wye branch fitting installed on a minimum grade of one-quarter (1/4) inch per one (1) foot from the sewer main to the property line where a cleanout shall be placed and the service lateral plugged/capped until extension. The location and invert depth of the service connection shall be shown on the as-built plans (this shall be the responsibility of the Contractor).

## PAVEMENT NOTES

STANDARDS: All construction methods and materials shall be in accordance with the VDOT Road & Bridge Standards & Specifications, latest edition and the latest requirements of the City of Roanoke.

FINISH GRADE: The Contractor shall locate and uncover all valves and manholes after pavement/surface treatment of roads and adjust the tops to final road grades, if necessary.

UTILITIES: All utilities shall be in place prior to laying the base material.

PAVEMENT ONSITE: Onsite paving shall consist of a six (6) inch base course of #21-A (based upon a CBR = 10 (VTM-8)), prime coat and two (2) inches of SM-2A. Subbase fill shall be compacted to 100% of VTM-1 (Standard Proctor).

CURBING: All drives and islands as well as the perimeter of all parking lots shall be bordered by VDOT Std. CO-6 curb and gutter or CO-2 (curb only). See Plan for delineation.

STRIPING: Parking lot striping shall be four (4) inch painted lines. Marking paint shall be Chlorinated rubber-alkyd type, AASHTO M248, Type III, and applied in accordance with the manufacturer's instructions. Handicap Space Marking shall conform to Americans With Disabilities Act (ADA) requirements. Color shall be white, unless required otherwise by ordinance.

## DIMENSIONAL NOTES

DIMENSIONS: All dimensions referred to on the plan are from bottom face of curb, face of wall, center of painted line.

RADI: All radii are 5.0' unless otherwise shown.

SCALING: Do not scale from drawing. Contact Engineer for exact measurements.

## DRAINAGE NOTES

NATURAL DRAINAGE: The Contractor shall make provisions at all times to allow natural drainage to flow through the work area with minimum damage to the new construction and NO damage to adjacent property or to existing downstream storm drainage system, whether natural or man-made.

UTILITY TRENCHES: The contractor shall not allow storm water runoff to collect in excavated utility trenches, nor allow the trenches to be used to convey storm water runoff.

FLOOD: The subject property is not within the limits of the FEMA 100 Year Flood boundary.

BUILDING FINISHED FLOOR ELEVATION: Habitable areas of proposed building shall be held a minimum of one (1) foot above the 100 Year Flood Elevation.

## DEMOLITION NOTES

STORED ITEMS: All items to be removed and replaced shall be stored in a protected area either on or off site until installation.

TRAFFIC SIGNS: The contractor shall consult with the City Traffic Engineer regarding replacement of traffic signs.

DEMOLISHED MATERIAL DISPOSAL: All material to be demolished shall be removed from the site prior to commencing grading operations, and disposed of in an appropriate manner.

ABANDONMENT OF UTILITY LINES: Refer to City of Roanoke regulations and specifications for abandonment of existing water and sewer lines.

## EROSION CONTROL NOTES

STANDARDS: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained in accordance with the minimum standards and specifications outlined by the Virginia Uniform Erosion and Sediment Control System in the Virginia Erosion and Sediment Control (ESC) Handbook, latest edition. References to VDOT refer to the Virginia Department of Transportation Road and Bridge Standards and Specifications, latest edition.

APPROVAL/PERMIT: The Erosion and Sediment Control Plan must be approved and land disturbing permit obtained prior to any work on the site. Plan approval in no way relieves the Developer or Contractor of the responsibilities contained in state and local erosion and sediment control ordinances/standards.

NARRATIVE: The ESC Narrative, as approved by the City of Roanoke Engineering Department, shall be considered as part of the Approved Construction Documents.

RIGHT OF ENTRY: Owner/Developer grants right of entry to City personnel for the purpose of monitoring compliance with the Code of Virginia, Erosion and Sediment Control Law (Title 21, Chapter 1, Article 6.1).

DETAILS: All details, unless otherwise referenced, are from the ESC Handbook, which shall supplant these Plans, should a discrepancy exist.

CITY MAY REQUIRE MORE ESC: Upon inspection of the erosion control devices the City Inspector may require that further steps be taken to control silt.

TIMING: All siltation controls shall be in place prior to clearing, stripping of topsoil or grading and shall remain in place until all disturbed areas have adequate ground cover.

MAINTENANCE & ADJUSTMENT OF ESC MEASURES: Erosion and sediment control measures shall be inspected after each rainfall and daily during periods of prolonged rainfall. The Contractor shall be responsible for maintaining and adjusting or relocating ESC measures or providing any other device or measure needed or required by existing conditions to prevent erosion, mud, or other debris from flowing in or upon the public right-of-way, waterways or abutting properties.

PUBLIC STREETS: The Contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets. It is the Contractor's responsibility to insure that adjacent streets are in a clean, mud and dust free condition at all times.

SEEDING: All cut and fill slopes shall be seeded and mulched as soon as possible after grading. All areas to be landscaped shall be seeded or receive finished surface treatment within seven (7) days of finished grading.

DRAINAGE DIVIDES & FLOOD: Construction shall honor/maintain proposed drainage divides as shown on the plans. Restrictions pertaining to construction within the 100 year floodway and/or flood plain (if such boundaries exist on the site) shall be honored.

REMOVAL: Erosion control devices shall remain in place until all disturbed areas have adequate ground cover.

OFFSITE BARRROW AND FILL: The City of Roanoke may require a separate Erosion and Sediment Control plan and permit for any offsite borrow or fill site.

## GAS SERVICE

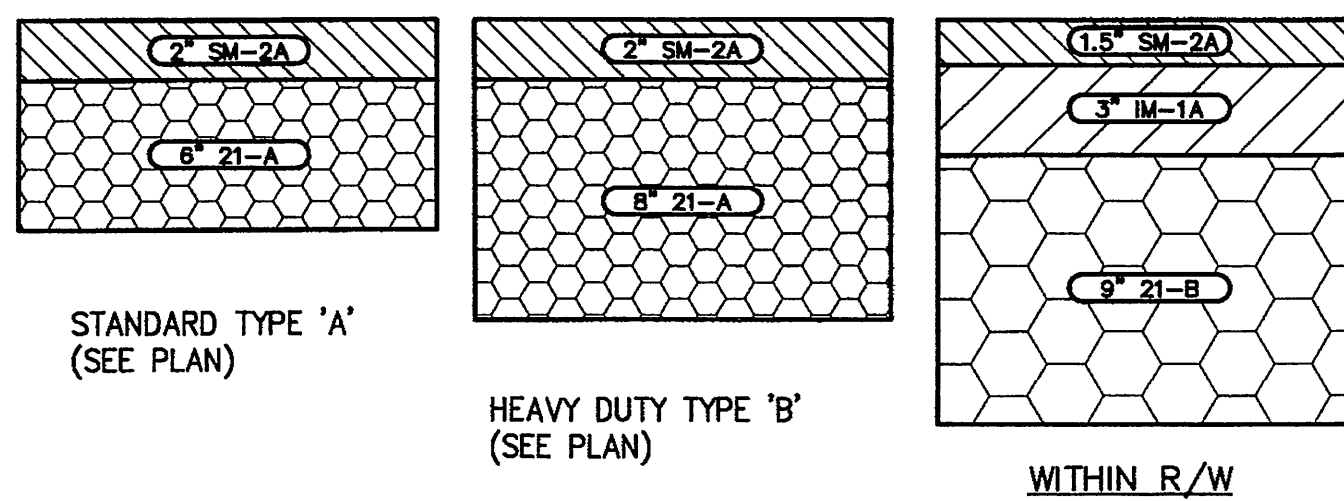
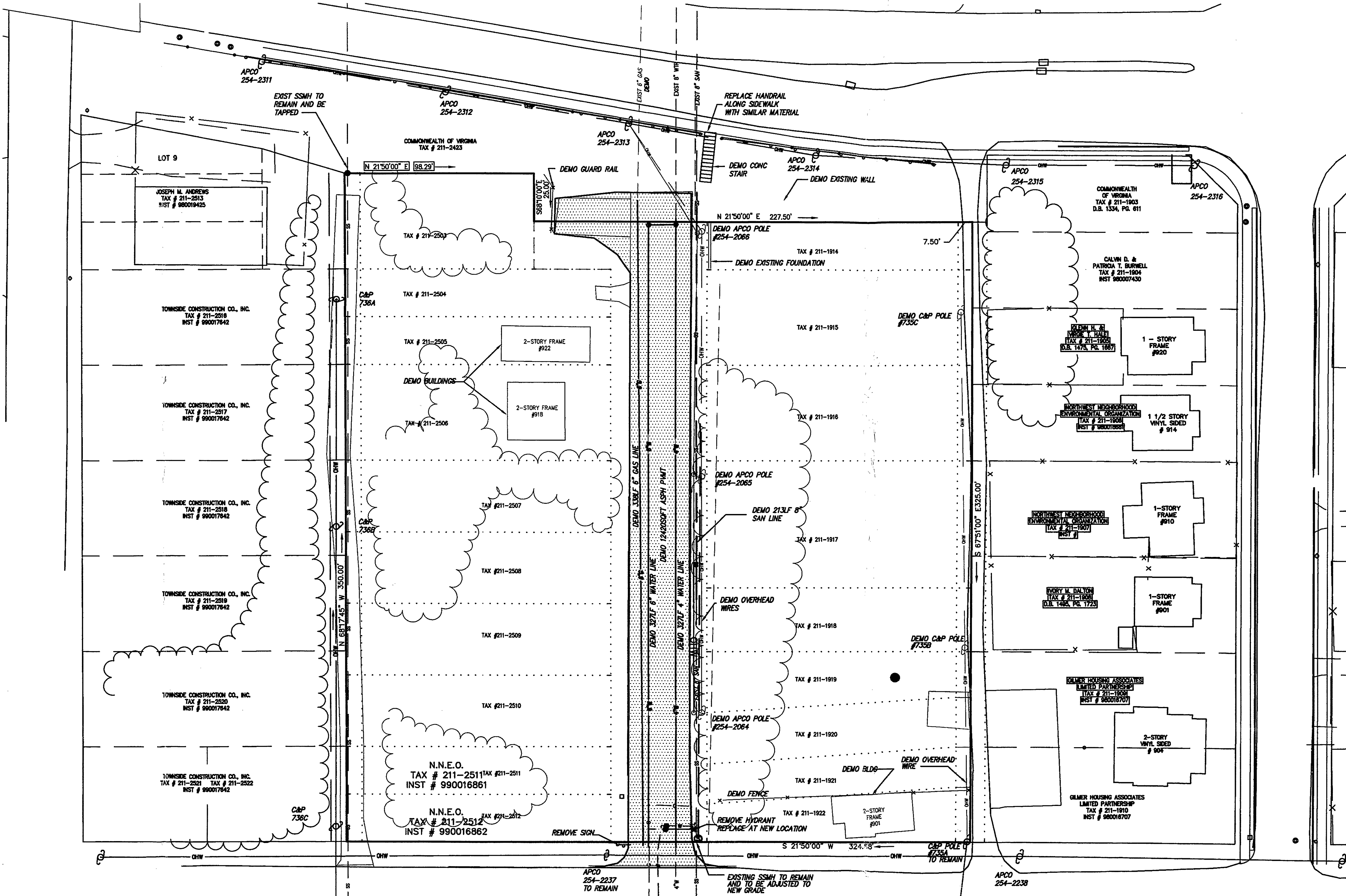
LOCATION AND SIZING: Contractor to coordinate location of gas meters and lines with plumbing engineer and Roanoke Gas Company. Sizing to be determined by plumbing engineer. Refer to plumbing plan.

## ELECTRIC SERVICE

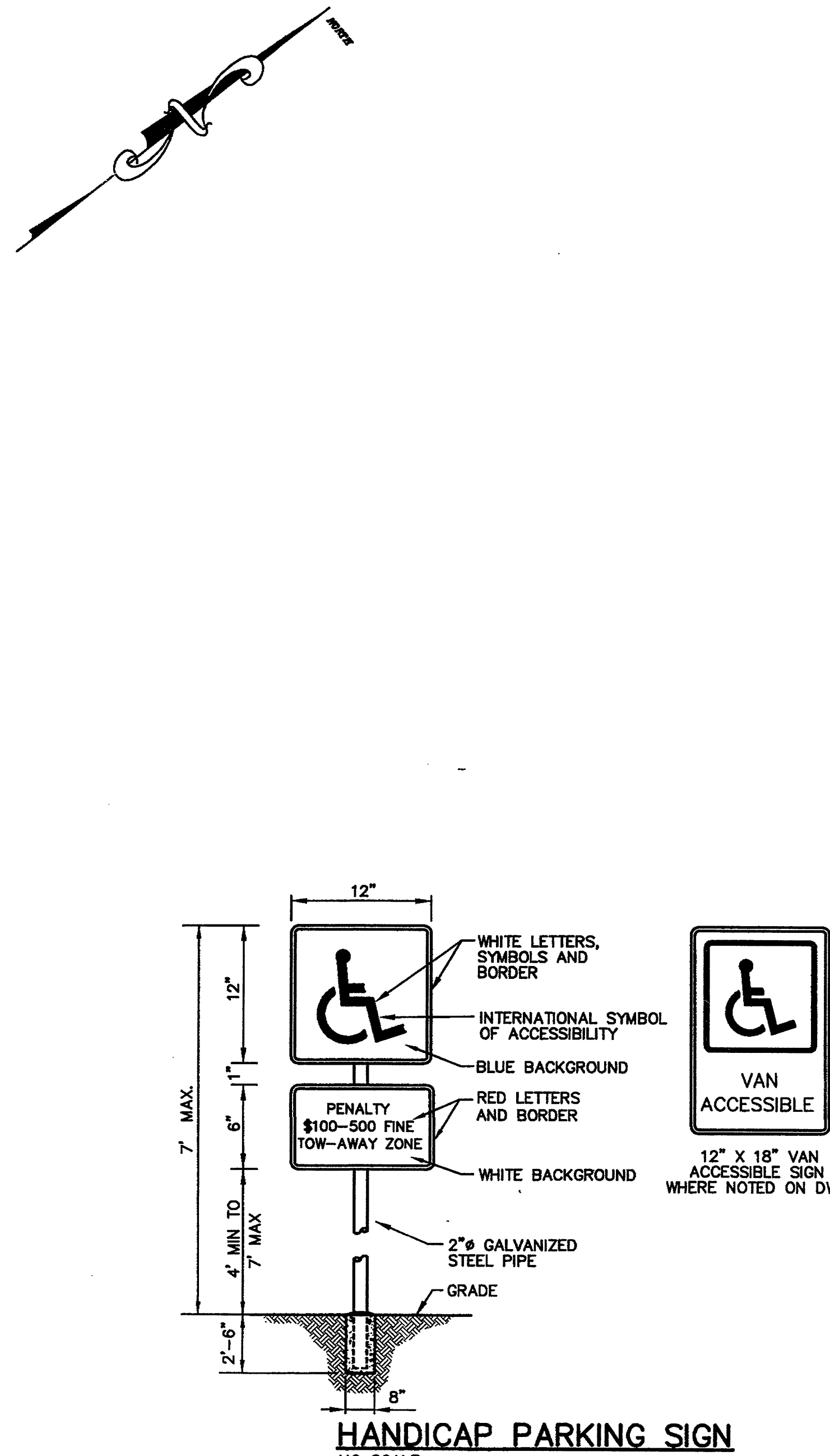
LOCATION AND SIZING: Contractor to coordinate location and load requirements of underground electrical service with AEP and electrical engineer. Refer to electrical plan. Contractor to provide 4" underground conduit for service line.

## TELEPHONE SERVICE

LOCATION AND SIZING: Contractor to coordinate location and load requirements of underground telephone service with TEC and electrical engineer. Refer to electrical plan. Contractor to provide 4" underground conduit for service line.



PAVING SECTIONS  
NO SCALE



HANDICAP PARKING SIGN  
NO SCALE

540-342-5283  
540-345-5625

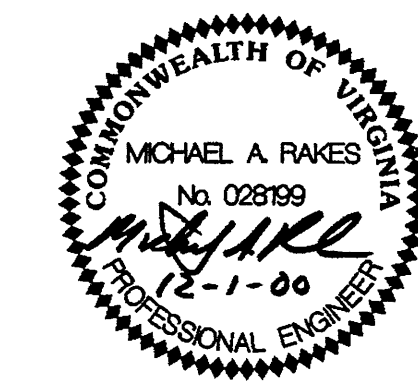
120 WEST CAMPBELL AVENUE  
ROANOKE, VIRGINIA  
24011

P.O. BOX 1204  
ROANOKE, VIRGINIA  
24008



338 MOUNTAIN AVENUE  
ROANOKE, VIRGINIA 24018  
540-346-8000  
ROANOKE  
VA  
VIRGINIA BEACH

McCRAY COURT LIMITED PARTNERSHIP  
McCRAY COURT SENIOR HOUSING  
DEMOLITION PLAN



Date: December 1, 2000  
Scale: As Shown  
Revision: No: Date:

Drawn: KDK  
Project No.

9954/99130

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