ENGINEERS NOTES

SPECTRUM DESIGN, PC ASSUMES NO RESPONSIBILITY FOR INFORMATION ON THE 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.

GENERAL NOTES

STANDARDS: ALL MATERALS AND METHODS SHALL COMPLY WITH THE APPLICABLE STANDARDS OF THE AMRICAN SOCIETY OF TESTING AND MATERIALS (ASTM), AMERICAN NATIONAL STNDARDS INSTITUTE (ANSI), VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT, VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (ESC HANDBOOK), COMMONWELTH OF VIRGINIA DEPARTMENT OF HEALTH (VDH) AND/OR THE CITY OF ROANOKE, ATEST EDITIONS. RECOMMENDATIONS OF APPLICABLE MATERIALS MANUFACTUERS SHALL ALSO BE FOLLOWED AS PART OF THIS CONTRACT.

DEBRIS: CONSTRUCTION EBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTRC ACT. NO LESS THAN ONE LITTER RECEPTACLE SHALL BE PROVIDED ON SITE. AL DAMAGED MATERIAL OR SURPLUS EXCAVATED MATERIAL NOT SUITABLE FOR USE AS LL, BACKFILL OR TOPSOIL SHALL BECOME THE PROPERTY OF THE CONTRACTOR TO DPOSE OF OFFSITE AS HE WISHES, WITHOUT INJURY TO THE OWNER OR ANY INDIVIDUAL.

ALL WORK WITHIN PUBLIR/W SHALL ADHERE TO THE CITY OF ROANOKE EXCAVATION AND RESTORATION STANARDS. COPIES OF THESE STANDARDS ARE AVAILABLE AT THE CITY OR ONLINE IN'.PDF FORMAT AT WWW.ROANOKEVA.GOV.

SPECIFIC AREAS TO ADDESS INCLUDE:

A. WIDTHS AND DEPTHSOF PAVEMENT RESTORATION INCLUDING EITHER REPLACEMENT OR MILL AND OVERLAY.

B. PAVEMENT MARKING EPLACEMENT OR ADDITIONS WHERE DISTURBED OR

C. SIGNALIZED INTERSECIONS: AFTER LOOP DETECTOR LOCATION BY MISS UTILITY, ALL LOOPS DISTURBED HALL BE REPLACED OR REPAIRED WITHIN THREE BUSINESS DAYS.

D. FORMS: PERMIT APPLICATION, PERMIT BOND, AND WORK LOCATION SHEET.

OBTAIN AND PAY FOR AL REQUIRED PERMITS AND FEES TO PERFORM WORK WITHIN ALLEY AND PUBLIC RIGH-OF-WAY.

OBTAIN AND PAY FOR AL STREET OPENING PERMITS REQUIRED BY THE CITY FOR

REFER TO ARCHITECTURL DRAWINGS FOR CONCRETE SCORING PATTERNS.

UTILITY OR RETAINING WILL INSTALLATIONS.

CONTRACTOR TO SUPPL' CITY WITH TRAFFIC CONTROL PLAN PRIOR TO ANY WORK WITHIN THE RIGHT OF WY OF LUCK AVE AND WEST OR SOUTH PUBLIC ALLEYS.

UTILITIES SHOWN WERE BITAINED FROM BEST AVAILABLE SOURCES. CONTRACTOR SHALL ASSUME MINOR (SCREPANCIES AND ASSUME COSTS ASSOCIATED TO CONNECT OR PROVIDE MINOR ADJISTMENTS.

GRADING & TRENCHING JOTES

CLEAR, GRUB & STRIP: ALL VEGETATION AND OVERBURDEN INCLUDING TOPSOIL, ORGANIC MATERIAL ANDANY UNSATISFACTORY SOIL MATERIALS, SHALL BE REMOVED TO THE EXTENT OF GRAING INDICATED ON THE GRADING PLAN.

BACKFILL: MATERIAL, COPACTION AND METHODS PER VDOT REQUIREMENTS.

COMPACTION: FILL MATRIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING SIX (6) INCHES AND COMPACTEL TO NINETY—FIVE (95) PERCENT OF ITS MAXIMUM DENSITY AS DETERMINED IN ACCRDANCE WITH ASTM D698 (STANDARD PROCTOR). SEPARATE PROCTORS SHALL BE RUL FOR EACH SOIL TYPE BEING USED. IT SHALL BE THE CONTRACTOR'S RESPONBILITY TO INFORM THE TESTING AGENCY OF SOURCES OF FILL OR BACKFILL MATERIAL ITHER THAN THAT OBTAINED ON—SITE.

RIGHT-OF-WAY: ALL TRUCHING, BACKFILLING AND PATCHING WITHIN PUBLIC RIGHT-OF-WAY SHALL TRUCHING TO THE CITY OF ROANOKE AND WVWA STANDARDS AND REQUIREMENTS INCUDING TESTING AND INSPECTION PROCEDURES.

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.

UTILITIES: ALL UTILITIES SHALL BE IN PLACE PRIOR TO LAYING THE BASE MATERIAL.

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 THE EXISTING DOWNSTREAM STORM DRAINAGE SYSTEM, WHETHER NATURAL OR MAN-MADE.

MATERIALS: RAIN WATER COLLECTION PIPE AND FITTINGS SHALL BE POLYVINYL—CHLORIDE PIPE (PVC) INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND CONFORMING TO ASTM F-405 AND VDOT SECTION 240. ALL VISIBLE OUTLETS SHALL BE CAST IRON AS APPROVED BY THE ARCHITECT.

FLOOD: THE SUBJECT PROPERTY IS NOT WITHIN THE LIMITS OF THE FEMA 100 YEAR FLOOD BOUNDARY.

RECONDITIONING EXISTING SURFACES TO REMAIN: RECONDITION EXISTING SURFACES DAMAGED BY CONTRACTOR'S OPERATIONS, INCLUDING STORAGE OF MATERIALS AND EQUIPMENT, AND MOVEMENT OF VEHICLES. ALSO RECONDITION EXISTING LANDSCAPED AREAS WHERE MINOR REGRADING IS REQUIRED.

WATER NOTES

STANDARDS: CONSTRUCTION OF ALL WATER LINES, STRUCTURES, AND PAVEMENT REPLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VIOT) "ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS" AND THE COMMONWEALTH OF VIRGINIA/STATE BOARD OF HEALTH (VDH) "WATER WORKS REGULATIONS" LATEST EDITIONS, AS MINIMUM STANDARDS, AS WELL AS THOSE OF THE WESTERN VIRGINIA WATER AUTHORITY (WVWA). SEE DETAILS.

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, UNLESS NOTED OTHERWISE — COORDINATE WITH WVWA AND OTHER UTILITY OWNERS WITHIN LUCK AVENUE RIGHT OF WAY.

TAPS/CONNECTIONS: ALL CONNECTIONS TO EXISTING WATER MAINS AND METER BOXES SHALL BE PERFORMED BY THE CONTRACTOR AND COORDINATED WITH WVWA.

SEPARATION: THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS PERTAINING TO SEPARATION OF WATER AND SANITARY SEWER.

MATERIALS AND BEDDING: WATER PIPE SHALL BE DUCTILE IRON WITH PUSH-ON JOINTS. DUCTILE IRON PIPE SHALL CONFORM TO AWWA C-151/ANSI 21.51, LATEST REVISION, AND FITTINGS SHALL CONFORM TO AWWA C-110/ANSI 21.10, LATEST REVISION. THE PIPE AND FITTINGS SHALL BE BITUMINOUS COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C-104/ANSI 21.50, LATEST REVISION, AND SHALL BE CLASS 50 AND PRESSURE CLASS SHALL BE 350, AS A MINIMUM, UNLESS SPECIFIED OR INDICATED OTHERWISE. BEDDING AND BACKFILLING SHALL BE PER VDOT STANDARDS AND SPEC.

SERVICE: WATER SERVICE PIPE SHALL BE TYPE K COPPER TUBING. ALL CONNECTIONS SHALL USE COMPRESSION FITTINGS. FITTINGS FOR SERVICE LINES SHALL MEET AWWA SPEC. C-800-05. TRANSITION TO CPVC INSIDE BUILDING.

FINISH GRADE: THE CONTRACTOR SHALL LOCATE AND UNCOVER ALL VALVE BOXES AFTER PAVEMENT/SURFACE TREATMENT OF PAVED AREAS 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 (VDH) "SEWAGE HANDLING AND DISPOSAL REGULATIONS" LATEST EDITIONS, AS MINIMUM STANDARDS, AS WELL AS THOSE OF THE WVWA. 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 WATERLINE), 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 CONTRACTOR AND COORDINATED WITH THE WVWA.

MANHOLE CONNECTIONS: PIPE SHALL BE CONNECTED TO MANHOLES THROUGH PRECAST OPENINGS AND JOINED WITH EITHER A FLEXIBLE BOOT ADAPTER OR A PIPE SEAL GASKET. TRANSITIONS BETWEEN ALLOWABLE TYPES OF PIPE SHALL BE MADE WITH AN ADAPTER COUPLING APPROVED BY THE WVWA WITHIN THE RIGHT-OF-WAY.

FINISH GRADE: THE CONTRACTOR SHALL LOCATE AND UNCOVER ALL SEWER MANHOLES AFTER PAVEMENT/SURFACE TREATMENT OF PAVED AREAS AND ADJUST THE TOPS TO FINAL ROAD GRADES, IF NECESSARY.

City Construction Notes to be Included on Plans

Notice: All Landowners, Developers and Contractors

FAILURE TO COMPLY WITH THE CONSTRUCTION PROCEDURE REQUIREMENTS LISTED BELOW MAY RESULT IN THE COSTLY REMOVAL OF STRUCTURES, TIME DELAYS OR THE ISSUANCE OF A STOP WORK ORDER.

Construction Procedure Requirements

1. Right-of-Way Excavation Permit - Prior to the commencement of any digging, alteration or construction within the public right-of-way (streets, alleys, public casements), a right-of-way excavation permit shall be applied for and obtained by the contractor from the City of Roanoke.

2. Land Disturbance Permit - An approved erosion and sediment control plan for any borrow/fill sites associated with the project must be submitted prior to the issuance of a land disturbance permit.

3. Plans and Permits - A copy of the plans as approved by the City (signed by the proper City officials) and all permits issued by the City shall be available at the construction site at all times of ongoing construction.

4. Location of Utilities - The contractor shall verify the location of all existing utilities prior to the commencement of

5. Construction Entrance - The contractor shall install an adequate construction entrance for all construction related egress from the site. Size and composition of construction entrance shall be as shown on the plans.

6. Streets to Remain Clean - It shall be the responsibility of the contractor to insure that the public street adjacent to the construction entrance remains free of mud, dirt, dust, and/or any type of construction materials or litter at all times.

7. Barricades/Ditches - The contractor shall maintain the integrity of all excavated ditches and shall furnish and

ensure that all barricades proper and necessary for the safety of the public are in place.

8. Sewer and Pavement Replacement - Construction of sanitary sewers and the replacement of pavement shall be in

accordance with approved standards and specifications of the City of Roanoke and the Western Virginia Water Authority

9. Approved Plans/Construction Changes - Any change or variation from construction design as shown on the

officially approved plans shall be approved by the erosion and sediment control agent prior to said changes or variation in construction being made.

10. Final Acceptance/City - The owner or developer shall furnish the City of Roanoke's Planning Building and Development Department with a field surveyed final correct set of as-built plans of the newly constructed storm drain and/or stormwater management facilities prior to final acceptance and issuance of a certificate of occupancy by the City. As-built plans shall be provided in the State Plane Virginia South Coordinate System, NAD 1983, FIPS 4502 Feet, US Survey Feet, Datum NA 83, in the form of 1 paper copy and 1 digital AUTOCAD file.

Note: The above City construction notes should be shown on the front or cover sheet of the development or construction

07/10

Baskervil



SPECTRUM DESIGN
architects | engineers

PROJECT ENGINEER MAR MAR MAR THL



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PROJECT NUMBER
2.12018.0
SPECTRUM JOB #
18007

120 LUCK AVENUE 120 LUCK AVENUE SW ROANOKE, VA

07/02/2018
PERMIT DRAWINGS

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