

CITY OF MANASSAS QUARRY STREET SIDEWALK IMPROVEMENTS

OWNER/DEVELOPER: CITY OF MANASSAS
9027 CENTER STREET
MANASSAS, VIRGINIA 20110

CONTACT: SUNG JIN CHUNG
TELEPHONE NO: 703-257-8251
FAX NO: 703-330-4429

ENGINEER: DRAPER ADEN ASSOCIATES
7639 COPPERMINE DRIVE
MANASSAS, VIRGINIA 20109

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TAX MAP ID : 101/01 001/455B//, 101/01 00/456//, 101/01 001/457//, 101/01 00/450//

LOCATION: QUARRY STREET, OLD TOWN MANASSAS, VA 20110

PRESENT ZONING: B3- CITY CENTER COMMERCIAL (OLD TOWN DISTRICT)

PROJECT SUMMARY:
EXISTING USE: COMMERCIAL
PROPOSED USE: COMMERCIAL
ACREAGE: 1.59 ACRES (PARCEL AREA FROM CITY GIS)

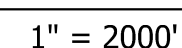
FLOOD ZONE X FIRM COMMUNITY-PANEL NUMBER: 51153C0113D DATED JANUARY 1, 1995

LAND DISTURBANCE: 0.44 ACRES

WETLANDS ON-SITE: NO
WETLAND PERMITS REQUIRED NO
VSMP PERMIT: NO
RPA ON-SITE: NO
RMA ON-SITE: NO
WATER: CITY OF MANASSAS
SEWER: CITY OF MANASSAS

PERMIT CHECKLIST:

WETLANDS DISTURBANCE (STATE) NO
PLUMBING (CITY) NO
BUILDING (CITY) NO
WORK IN STREET (CITY) NO
VSMP (STATE) NO



THIS PROJECT INCLUDES THE CONSTRUCTION OF NEW SIDEWALK ALONG QUARRY STREET ASSOCIATED WITH PROPOSED ROAD RENOVATION WITHIN THE CITY OF MANASSAS. THE TOTAL AREA OF LAND DISTURBANCE FOR THIS PROJECT IS 0.44 ACRES.

AUGUST 21, 2020

DAA PROJECT #19020645-010303

These documents, including drawings and specifications, were prepared by Draper Aden Associates, Consulting Engineers, pursuant to a contract by and between Draper Aden Associates and City of Manassas, with respect to the project described in said contract. All of the documents were prepared by Draper Aden Associates, Consulting Engineers, without written verification or adaptation by Draper Aden Associates for the specific purpose intended to be at the sole risk of the individual or entity utilizing said documents, and without any special representation or warranty by Draper Aden Associates, Consulting Engineers. Draper Aden Associates, Consulting Engineers, shall have no legal liability resulting from any and all claims, damages, losses, and expenses, including attorney's fees arising out of the unauthorized use of these documents, drawings, specifications, reports, or any other documents or materials.

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TIER 1 PROJECT

RECOMMENDED FOR APPROVAL
FOR RIGHT OF WAY ACQUISITION

| | |
|------|--|
| | |
| | |
| DATE | DISTRICT PLANNING AND INVESTMENT MANAGER |
| | |
| | |
| DATE | DISTRICT PROJECT DEVELOPMENT ENGINEER |

APPROVED FOR RIGHT OF WAY ACQUISITION

| | |
|------|---------------------------------|
| | |
| DATE | DISTRICT ENGINEER/ADMINISTRATOR |

**RECOMMENDED FOR APPROVAL
FOR CONSTRUCTION**

| | |
|---------------------------|--|
| | |
| DATE | DISTRICT PLANNING AND INVESTMENT MANAGER |
| | |
| DATE | DISTRICT PROJECT DEVELOPMENT ENGINEER |
| APPROVED FOR CONSTRUCTION | |
| | |
| DATE | DISTRICT ENGINEER/ADMINISTRATOR |

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SHEET TITLE: COVER SHEET

| | |
|-----------------|-----------|
| PROJECT | SHEET NO. |
| 19020645-010303 | C1.0 |

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

A

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

| STATE | FEDERAL AID | STATE | | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | ROUTE | PROJECT | |
| VA. | | | | |

| GENERAL NOTES | LEGEND | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------------|----------------------------------|-------------------|--------------|---------------------------|-------------|----------------------------------|--|----------------------------------|-----------------------------|-------------------------|--------------|--------------------------|--|--------------------------|--------------|-----------------------------|--|--|--|-----------------------|--|--|--|--------------------------------------|--|--|--|--|
| <p>1. This site has been addressed by the City of Manassas Mapping Office as _____ (addresses for subdivision lots shall appear on the approved plat for recordation).</p> <p>2. Addresses assigned are for the layout of individual businesses or dwelling units and are for exterior doors as shown on this plan only. Any deviation in design or layout will require that a revised plan be submitted to the Office of Mapping for re-addressing. It is the responsibility of the developer to inform the City Office of Mapping before a change in layout occurs and to submit complete and accurate information for re-addressing. City of Manassas does not assume any responsibility where re-addressing is required even though tenants have already occupied a portion of the building.</p> <p>3. Methods and materials used in the construction of the improvements herein shall conform to the current City construction standards and specifications and/or current VDOT standards and specifications.</p> <p>4. The contractor or developer is required to notify the City of Manassas Department of Public Works in writing three (3) days prior to the beginning of the construction and specifically request inspection before beginning 703-792-7070.</p> <p>A. Installation of approved erosion control devices.</p> <p>B. Clearing and Grading</p> <p>C. Subgrade excavation.</p> <p>D. Installing storm sewers or culverts.</p> <p>E. Setting curb and gutter forms.</p> <p>F. Placing curb and gutter.</p> <p>G. Placing other concrete.</p> <p>H. Placing gravel base.</p> <p>I. Placing any bituminous surfacing.</p> <p>*J. Installing water mains outside the Service Authority's boundaries.</p> <p>*K. Installing sanitary sewer outside the Service Authority's boundaries.</p> <p>5. Measures to control erosion and siltation, including detention ponds serving as silt basins during construction, must be provided prior to issuance of the site development permit. The approval of these plans in no way relieves the developer or his agent of the responsibilities contained in the Virginia Erosion and sediment Control Handbook.</p> <p>6. A permit must be obtained from the Office of the Resident Engineer, Virginia Department of Transportation (VDOT) City of Manassas, prior to construction in existing State right-of-way, 707-366-1900.</p> <p>7. Approval of this plan does not guarantee issuance of an entrance permit by VDOT when such permit is required under State law.</p> <p>8. The exact location of all guard rails will be determined by VDOT personnel. "A joint inspection will be held with the Developer, City Representatives, and Representatives, of the Virginia Department of Transportation (VDOT) to determine if and where guard rail and/or paved ditches will be needed. The developer will be responsible for providing guardrail and paved ditches as determined by this joint inspection." Refer to Virginia Department of Transportation (VDOT) Guard Rail and Paved Ditch Specifications.</p> <p>9. An approved set of plans and all applicable permits must be available at the construction site. Also, a representative of the developer must be available at all times.</p> <p>10. Warning signs, markers, barricades or flagmen should be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).</p> <p>11. All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.</p> <p>12. All pavement sections on the approved plans are based on a minimum CBR value of 10. CBR tests are to be performed by the engineer and submitted to the City of Manassas Planning Office for review prior to placement of base material. CBR values less than 10 will require submittal of revised pavement section.</p> <p>13. All roadside ditches at grades of more than 5% shall be paved with cement concrete to the limits indicated on the plans and as required at the field inspection.</p> <p>14. All springs shall be capped and piped to the nearest storm sewer manholes or curb inlet. The pipe shall be minimum 6" diameter and conform to VDOT standard SB-1.</p> <p>15. All standard street name signs, traffic control devices, and street lights shall be installed by the developer when the first building unit is occupied.</p> <p>16. Construction debris shall be containerized in accordance with the Virginia Litter Control Act; no less than one litter receptacle shall be provided at the construction site.</p> <p>17. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets, and it is the contractors responsibility to clean streets, alloy dust, and to take whatever measures are necessary to insure that the streets are maintained in a clean, mud and dust free condition at all times.</p> <p>18. Notification shall be given to the appropriate utility Company (Service Authority, Virginia-American Water Company, or Dale Service Corporation) prior to construction of water and/or sanitary sewer lines. Information should also be obtained from the appropriate authority concerning permits, cut sheets, and connections to existing lines.</p> <p>19. All sanitary sewers and water mains and appurtenances shall be constructed in accordance with the current standards and specifications of City of Manassas and/or the Service Authority.</p> <p>20. The developer and/or contractor shall be responsible to supply all utility companies with copies of plans that have been approved by City of Manassas and advising them that all grading shall conform to the approved plans, and further that the utility companies shall be responsible for honoring these plans and the finished grades in the installation of their utility lines.</p> <p>21. Contractors shall notify operators who maintain underground utility lines in the area of proposed excavating or blasting at least two (2) working days, but not more than ten (10) working days, prior to commencement of excavation or demolition. Names and telephone numbers of the operators underground utility lines in City of Manassas appear below. These numbers shall also be used to serve in an emergency condition.</p> <table><tbody><tr><td>Washington Gas Light Co.</td><td></td><td>Service Authority</td><td>703-335-7900</td></tr><tr><td>Virginia Power Co.</td><td></td><td>(After hours-Emergency 335-7990)</td><td></td></tr><tr><td>Northern Virginia Electric Co-op</td><td>MISS UTILITY 1-800-552-7001</td><td>Virginia-American Water</td><td>703-491-2136</td></tr><tr><td>Columbia Gas of Virginia</td><td></td><td>Dale Service Corporation</td><td>703-494-4161</td></tr><tr><td>Continental Telephone of VA</td><td></td><td></td><td></td></tr><tr><td>Colonial Pipeline Co.</td><td></td><td></td><td></td></tr><tr><td>Transcontinental Gas Pipe Line Corp.</td><td></td><td></td><td></td></tr></tbody></table> <p>22. The service Authority requires that a clean-out be placed within one foot (0.3 meters) of the property line.</p> <p>23. The location of existing utilities shown in these plans are taken from existing records. It shall be the contractors responsibility to verify the exact horizontal and vertical location of all existing utilities as needed prior to construction. The contractor shall inform the engineer of any conflicts arising from his existing utility verification and the proposed construction.</p> <p>24. The developer will be responsible for any damage to the existing streets and utilities which occurs as a result of his construction project within or contiguous to the existing right-of-way.</p> <p>25. All utilities placed under existing streets shall be bored or jacked.</p> <p>26. When grading is proposed within easements of utilities, letters of permission from all involved companies must be provided to Prince William County Planning Office prior to issuance of grading and/or site development permits.</p> <p>27. The developer will be responsible for the relocation of any utilities which is required as a result of his project prior to construction.</p> <p>28. Before burning, blasting, transportation or storage of explosives in City of Manassas, a permit shall be obtained from the Fire Marshal's Office, 792-6360.</p> <p>29. Fire and Rescue Services must be notified immediately (703-792-6810) in the event that unusual items such as tanks, cylinders, unidentified containers, etc. which could contain potentially hazardous materials are discovered or observed. All activities must cease and not be resumed until authorization to proceed is given by the Fire Marshal's Office.</p> <p>30. Sidewalk underdrains shall be installed per Section 650.65 of the Design and Construction Standards Manual.</p> <p>31. All walkways outside of the right-of-way limits will be maintained by the homeowners association.</p> <p>32. Maintenance of the Storm Drainage or Storm Water Management facilities located therein shall be pursuant to Section 700 of the City of Manassas Design and Construction Standards Manual.</p> <p>33. If units shown on this plan will be occupied in phases, a phasing plan must be approved by the engineering inspection branch prior to the issuance of any occupancy permits. (Detached single family subdivision exempt.)</p> <p>34. These plans identify the location of all known gravesites. Gravesites shown on this plan will be protected in accordance with state law. In the event gravesites are discovered during construction, the County's Archaeologist must be notified immediately (792-6830). All activities must cease and not be resumed until authorization to proceed is given by the County Archaeologist.</p> <p>35. Roof top mechanical equipment, if any, must be enclosed within a wall or similar screening barrier, designed in harmony with the building.</p> <p>36. Individual sign permits will be required from the Zoning Office for all free standing and facade signs prior to erecting the signs.</p> <p>37. All buffer areas shall be screened according to the Design and Construction Standards Manual.</p> <p>38. For proffer statements and proffer analyses, see project booklet.</p> <p>39. For waivers see sheet(s) <u>N/A</u> of ____.</p> <p>40. Anticipated sewage flows: <u>N/A</u></p> <p>41. Anticipated fire flows: <u>N/A</u></p> <p>42. Distance to nearest existing school or proposed school site: <u>N/A</u></p> | Washington Gas Light Co. | | Service Authority | 703-335-7900 | Virginia Power Co. | | (After hours-Emergency 335-7990) | | Northern Virginia Electric Co-op | MISS UTILITY 1-800-552-7001 | Virginia-American Water | 703-491-2136 | Columbia Gas of Virginia | | Dale Service Corporation | 703-494-4161 | Continental Telephone of VA | | | | Colonial Pipeline Co. | | | | Transcontinental Gas Pipe Line Corp. | | | | <p>EXISTING INTERMEDIATE CONTOUR</p> <p>EXISTING INDEX CONTOUR</p> <p>PROPOSED CONTOUR</p> <p>EXISTING EDGE OF PAVEMENT</p> <p>PROPOSED EDGE OF PAVEMENT</p> <p>EXISTING CURB AND GUTTER</p> <p>PROPOSED CURB AND GUTTER</p> <p>TRANSITION FROM CG-6 TO CG-6R</p> <p>EXISTING TELEPHONE LINE</p> <p>PROPOSED TELEPHONE LINE</p> <p>EXISTING STORM SEWER</p> <p>PROPOSED STORM SEWER</p> <p>EXISTING SANITARY SEWER</p> <p>PROPOSED SANITARY SEWER</p> <p>EXISTING ELECTRIC SERVICE</p> <p>PROPOSED ELECTRIC SERVICE</p> <p>EXISTING GAS LINE</p> <p>PROPOSED GAS LINE</p> <p>PROPERTY LINE</p> <p>EASEMENT LINE</p> <p>CENTERLINE</p> <p>LIMITS OF CLEARING AND GRADING</p> <p>EXISTING SPOT ELEVATION</p> <p>PROPOSED SPOT ELEVATION</p> <p>EXISTING TREE DRIP LINE</p> <p>EXISTING TREE</p> <p>PROPOSED TREE</p> <p>FLOW LINE</p> <p>FENCELINE</p> <p>EXISTING UTILITY POLE</p> <p>PROPOSED UTILITY POLE</p> <p>EXISTING WATERLINE W/ TEE</p> <p>PROPOSED WATERLINE W/ TEE</p> <p>EXISTING FIRE HYDRANT</p> <p>PROPOSED FIRE HYDRANT</p> <p>EXISTING WATER VALVE</p> <p>PROPOSED WATER VALVE</p> <p>EXISTING REDUCER</p> <p>PROPOSED REDUCER</p> <p>STOP SIGN</p> <p>HANDICAP RAMP (CG-12)</p> <p>INDICATES LOCATION OF STD. VDOT STANDARD RAMP CONSTRUCTION</p> <p>PARKING INDICATOR</p> <p>INDICATES THE NUMBER OF TYPICAL PARKING SPACES</p> <p>TEST PIT LOCATION</p> <p>CRITICAL SLOPE</p> <p>SHOULDER TO BE SETBACK, WALKWAY & TICKET</p> <p>INDICATES LOCATION OF STD. VDOT STANDARD RAMP CONSTRUCTION</p> <p>VEHICLES PER DAY COUNT</p> <p>PROPOSED BUILDING ENTRANCE</p> <p>EXISTING STREET LIGHT</p> <p>PROPOSED STREET LIGHT</p> <p>PROPOSED STREET NAME SIGN</p> <p>PROPOSED SANITARY LATERAL CLEANOUT</p> <p>SANITARY MANHOLE IDENTIFIER</p> <p>STORM DRAIN STRUCTURE IDENTIFIER</p> |
| Washington Gas Light Co. | | Service Authority | 703-335-7900 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Virginia Power Co. | | (After hours-Emergency 335-7990) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Northern Virginia Electric Co-op | MISS UTILITY 1-800-552-7001 | Virginia-American Water | 703-491-2136 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Columbia Gas of Virginia | | Dale Service Corporation | 703-494-4161 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Continental Telephone of VA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Colonial Pipeline Co. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transcontinental Gas Pipe Line Corp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>SURVEY AND TOPOGRAPHIC INFORMATION</p> <p>1. Horizontal and vertical control surveys were performed by the City of Manassas, in _____.</p> <p>2. All elevations must be referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).</p> <p>3. Source of topographic mapping is a ground survey by SAM, LLC, dated June 3, 2019.</p> <p>4. Boundary survey was performed by _____, dated _____.</p> <p>5. The application of the professional's seal and signature as required by Section 1.14 of the STATE BOARD OF ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS AND CERTIFIED LANDSCAPE ARCHITECTS' RULES AND REGULATIONS shall be evidence that the boundary data is correct to the best of the land surveyor's knowledge, and complies with the minimum standards and procedures of the said Board; the topographic information is accurate to within one-half of the contour interval, as shown. Application of the seal and signature indicates acceptance of responsibility for the work shown hereon.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>DESIGNATED PLANS EXAMINER CERTIFICATE</p> <p>1ST SUBMISSION REVIEWED AND RECOMMENDED FOR SUBMISSION</p> <table><tbody><tr><td>DESIGNATED PLANS EXAMINER</td><td>REG. NUMBER</td><td>DATE</td></tr></tbody></table> <p>2ND SUBMISSION REVIEWED AND RECOMMENDED FOR SUBMISSION</p> <table><tbody><tr><td>DESIGNATED PLANS EXAMINER</td><td>REG. NUMBER</td><td>DATE</td></tr></tbody></table> | | DESIGNATED PLANS EXAMINER | REG. NUMBER | DATE | DESIGNATED PLANS EXAMINER | REG. NUMBER | DATE | | | | | | | | | | | | | | | | | | | | | | |
| DESIGNATED PLANS EXAMINER | REG. NUMBER | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESIGNATED PLANS EXAMINER | REG. NUMBER | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>BOND ESTIMATE</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

A

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Manassas, VA 20105 Charlottesville, VA Fayetteville, NC
804-264-2228 Fax: 804-264-8773 Hampton Roads, VA Virginia Beach, VA

SHEET TITLE: NOTES

| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C2.0 |

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

STATE MINIMUM STANDARDS FOR EROSION CONTROL

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840.
- ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

MINIMUM STANDARDS

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

- MS-1 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- MS-2 DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- MS-3 A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.
- MS-4 SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
- MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- MS-6 SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
- A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
- B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SOIL STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- MS-8 CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- MS-10 ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- MS-11 BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- MS-12 WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COVERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- MS-13 WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
- A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

- MS-17 WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- MS-18 ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- MS-19 PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:
- A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
- (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
- (2)(A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
- (2)(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
- (2)(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
- C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
- (1) IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL THE BED OR BANKS; OR
- (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
- (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
- (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
- D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
- E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.
- F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
- I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
- J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
- L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (i) DETAIN THE WATER QUANTITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (ii) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (iii) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
- M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (i) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870-47 OR GRANDFATHERING IN 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSPM) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL APPLY, OR (ii) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT.
- N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSPM) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.
- STATUTORY AUTHORITY
- § 62.1-44.15:52 OF THE CODE OF VIRGINIA.

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO PROVIDE A CONCRETE SIDEWALK WITH CURB AND GUTTER ALONG QUARRY STREET IN THE CITY OF MANASSAS. THIS WILL INCLUDE THE REMOVAL, REPLACEMENT, AND/OR THE ADDITION OF A NEW CONCRETE SLAB AS WELL AS ROAD RENOVATION. A TOTAL OF 0.44 ACRES ACRES WILL BE DISTURBED DURING CONSTRUCTION.

EXISTING SITE CONDITIONS

THE AREA TO BE DISTURBED CONSISTS OF CONCRETE SIDEWALK, GRAVEL LOTS, DRIVEWAYS, AND OPEN SPACE.

ADJACENT PROPERTY

RESIDENTS BORDER THE PROJECT TO THE NORTH AND SOUTH. MAIN STREET FORMS THE WESTERN BORDER. NEW CONSTRUCTION ON THE CORNER OF CENTERVILLE RD AND QUARRY STREET RESIDES AT THE BOUNDARY TO THE SOUTHEAST AND THE MANASSAS VOLUNTEER FIRE COMPANY RESIDES AT THE NORTHEAST SIDE OF THE SITE.

OFF-SITE AREAS

NO OFFSITE STOCKPILE AREAS OR BORROW AREAS ARE PROPOSED.

PER NRCS

URBAN LAND – UDORTMENTS COMPLEX, 0 TO 7 PERCENT SLOPES (MAP UNIT SYMBOL 54B)

CRITICAL EROSION AREAS

SEDIMENTATION OF THE EXISTING STORM SEWER SYSTEMS, ADJACENT DEVELOPED AREAS, AND THE ADJACENT ROADS MUST BE PREVENTED.

STOCKPILING

SOIL STOCKPILES ARE NOT PROPOSED.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

STRUCTURAL PRACTICES

| | VESCH STD. & SPEC. NUMBER |
|------------------------------|---------------------------|
| SAFETY FENCE | #3.01 |
| SILT FENCE | #3.05 |
| STORM DRAIN INLET PROTECTION | #3.07 |

VEGETATIVE PRACTICES

| | |
|-------------------|-------|
| TEMPORARY SEEDING | #3.31 |
| PERMANENT SEEDING | #3.32 |
| MULCHING | #3.35 |
| DUST CONTROL | #3.39 |

MANAGEMENT STRATEGIES

- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
- TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
- AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED.
- THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY EROSION AND SEDIMENT CONTROLS WILL BE CLEANED UP AND REMOVED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE ESTABLISHED WITH PERMANENT SEEDING, SODDING, OR HARDSCAPE IMMEDIATELY FOLLOWING FINISH GRADING.

EROSION CONTROL SEQUENCE OF CONSTRUCTION

- INSTALL PHASE 1 EROSION CONTROL DEVICES.
- PERFORM DEMOLITION AS INDICATED.
- INSTALL PHASE 2 EROSION CONTROL DEVICES AS CONSTRUCTION PROGRESSES.
- CONSTRUCT PROPOSED INFRASTRUCTURE.
- INSPECT AND ADJUST AS NECESSARY ALL EROSION CONTROL DEVICES IN ORDER TO MAINTAIN PROPER FUNCTION.
- STABILIZE SITE DURING AND AT THE CONCLUSION OF CONSTRUCTION PER VESCH STDs.
- ONCE ALL AREAS HAVE BEEN STABILIZED, AND ONLY WITH THE APPROVAL OF THE EROSION CONTROL INSPECTOR, REMOVE ALL REMAINING EROSION CONTROL DEVICES.

INSPECTIONS

INSPECTIONS SHALL BE CONDUCTED AT A FREQUENCY OF (i) AT LEAST ONCE EVERY FOUR BUSINESS DAYS OR (ii) AT LEAST ONCE EVERY FIVE BUSINESS DAYS AND NO LATER THAN 48 HOURS FOLLOWING A MEASURABLE STORM EVENT. IN THE EVENT THAT A MEASURABLE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 48 HOURS BETWEEN BUSINESS DAYS, THE INSPECTION SHALL BE CONDUCTED ON THE NEXT BUSINESS DAY.

MAINTENANCE

- SILT FENCE SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEED.
- THE INLET PROTECTION STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

STORM WATER MANAGEMENT

THE STORMWATER MANAGEMENT REQUIREMENTS ARE WAIVED FOR THE SCOPE OF THIS PROJECT PER THE CITY OF MANASSAS DCSM SEC. 8-510.6. ADEQUATE OUTFALL ANALYSIS BASED UPON DOWNSTREAM STORM SEWER DATA WILL BE PROVIDED.



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SHEET TITLE: NOTES

PROJECT

19020645-010303

SHEET NO.

C2.1

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VPDES General Permit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) issued July 1, 2019 and VDOT's approved Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance (construction) activities that disturb an area equal to or greater than 10,000 square feet, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

The VDOT RLD will ensure that the information shown on the SWPPP General Information sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/revised sheets shall be maintained with the designated record set of plans (or other such documents)for the land disturbance (construction) activity.

SECTION VI – PERMANENT BMP INFORMATION

* Denotes information that is to be completed by the RLD.
() See note referenced by number in parentheses.

INSTALLED BMP INFORMATION
(VDOT Owned/Operated)

| Plan Sheet(s) | Date BMP Made Functional | Type of BMP Installed (See Table A and C) | Geographic Location (County or City) | Latitude/Longitude (1) | | VA 6th Order HUC (7) | Receiving Water (2) | Name of Impaired Water (9) | Acres Treated Per BMP (3) | | | *BMP Maintenance ID Number (10) | BMP Maintenance Manual (11) | BMP Inspection Manual (11) |
|---------------|--------------------------|---|---|---------------------------|------|-------------------------|------------------------|-------------------------------|---------------------------|----------|-------|------------------------------------|--------------------------------|-------------------------------|
| | | | | LAT | LONG | | | | Impervious | Pervious | TOTAL | | | |
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ALTERNATIVE BMP INFORMATION

| Plan Sheet(s) | Date | Type of BMP Installed (See Table B) | Geographic Location (County or City) (5) | Latitude/Longitude (1) (5) | | VA 6th Order HUC (5) (7) | Receiving Water (2) | Name of Impaired Water (9) |
|---------------|------|--|--|-------------------------------|------|-----------------------------|------------------------|-------------------------------|
| | | | | LAT | LONG | | | |
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Perpetual Nutrient Credits Acquired for Project

| Name of Nutrient Credit Generating Entity (6) | Nutrient Credits (lbs./TP./year) Acquired (6) (12) |
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Any changes to the proposed SWM Plan or BMPs necessitated during the construction phase of the project that affects the proposed construction details or potentially affects the information shown in the BMP Tables A and/or B shall be coordinated by the VDOT RLD with the appropriate VDOT District Hydraulics Engineer. The construction plans and the BMP Tables A and/or B are to be formally revised to reflect any authorized/ approved changes to the proposed SWM Plan and/or the proposed BMP construction details. All plan revisions shall be completed in accordance with the Road Design Manual and the Construction Division IIM–CD–2013–12.01, signed and sealed in accordance with Department's sealing and signing policy IIM–LD–243 and filed with the construction record drawings maintained in the VDOT Central Office Plan File Room (ProjectWise). Prior to submitting for termination of coverage under the VPDES General Permit For The Discharge Of Stormwater From Construction Activities, the RLD shall have the District Maintenance Division review the BMPs installed with the project (BMP Table A) for acceptance of maintenance responsibility and to obtain a Maintenance ID number for each BMP listed in BMP Table A. The RLD shall use the information in BMP Tables A and B along with the assigned Maintenance ID number and the date that the BMP became functional as a permanent control measure (for BMPs in Table A only) to complete the LD–445D form when certifying the construction of the BMPs and submitting for termination of coverage under the VPDES General Permit For The Discharge Of Stormwater From Construction Activities.

Table A: Permanent BMP Types (1999 Va. SWM Handbook)

Bio-retention Basin
Bio-retention Filter
Constructed Stormwater Wetlands
Extended Detention Basin
Extended Detention Basin Enhanced
Grassed Swale
Infiltration Basin
Infiltration Trench
Manufactured Treatment Device (MTD) (8)
Retention Basin I
Retention Basin II
Retention Basin III
Sand Filter
Vegetated Filter Strip
Other Approved Types (List Type)
Detention Basin

Table C: Permanent BMP Types (BMP Clearing House)


Sheet Flow to Vegetated Filter Strip
Grass Channel
Soil Compost Amendment
Permeable Pavement (Level 1)
Permeable Pavement (Level 2)
Infiltration Practice (Level 1)
Infiltration Practice (Level 2)
Bioretention (Level 1)
Bioretention (Level 2)
Dry Swale (Level 1)
Dry Swale (Level 2)
Wet Swale (Level 1)
Wet Swale (Level 2)
Filtering Practice (Level 1)
Filtering Practice (Level 2)
Constructed Wetlands (Level 1)
Constructed Wetlands (Level 2)
Extended Detention Pond (Level 1)
Extended Detention Pond (Level 2)
Wet Pond (Level 1)
Wet Pond (Level 2)
Manufactured Treatment Device (MTD)(8)
Other Approved Types (List Type)

NOTES:

- (1) In decimal degrees to the nearest one ten–thousandth of a degree.
(2) For streams with no names, list "(Unnamed Tributary to downstream name)".
(3) Show acres treated to the nearest one hundredths acre.
(4) Include agreements with off–site BMP owners.
(5) Information pertains to the alternative BMP option location, where applicable. Exception – Not required for nutrient credit purchase option.
(6) Applies to the purchase of nutrient credits only.
(7) Virginia 6th Order HUC (VAHU6) Example – Y030.
(8) Final approved shop drawings of Manufactured Treatment Devices (MTDs) are to be included with the BMP information submitted with the LD–445D form.
(9) List the name of any impaired water to which the BMP discharges. The determination of impaired water shall be based on those streams listed as impaired in the DEQ 2012 305(b)/303(d) Water Quality Assessment Integrated Report and shall be the first named waterbody to which the BMP discharges. The impaired waters are those impaired by sediment, total suspended solids, turbidity, nitrogen or phosphorus.
(10) BMP Maintenance ID Number is to be assigned by the District Maintenance Division at permit termination or project completion. This ID number shall be assigned prior to the permit close out process and entered by the area construction engineer under this column, per IIM–LD–95

- (11) Provide the section of each Maintenance manual that pertains to the type of BMP. Both manuals can be found at www.vdot.virginia.gov/business/manuals in the Maintenance selections. Example: Section 4 would be noted for both the maintenance and inspection manuals for a Bioretention I infiltration BMP.
(12) Nutrient credits purchased to the nearest one hundredth pound.

Revised 5/1/19

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PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL INFORMATION SHEET

| STATE | FEDERAL AID | STATE | | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | ROUTE | PROJECT | |
| VA. | | | | |

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VPDES General Permit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) issued July 1, 2019 and VDOT's approved Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance (construction) activities that disturb an area equal to or greater than 10,000 square feet outside the Chesapeake Bay Preservation Area, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

The VDOT RLD will ensure that the information shown on the SWPPP General Information sheets is updated/ revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/ revised sheets shall be maintained with the designated record set of plans (or other such documents) for the land disturbance (construction) activity.

SECTION IV SWPPP

1. All documents related to the SWPPP for this land disturbance (construction) activity shall be maintained at the activity site and shall be readily available for review upon request during normal business hours. Such documents include, but are not limited to, the construction plans (or other such documents), the ESC Plan, the Pollution Prevention Plan, the post construction SWM Plan (if applicable), the VDOT R&B Standards and Specifications, Supplemental Specifications, Special Provisions and Special Provision Copied Notes. Documents related to stormwater pollution prevention which are not a part of those documents referenced above, such as copies of the VPDES Construction Permit coverage letter (when applicable) and the VPDES General Permit For Discharges Of Stormwater From Construction Activities (when applicable) and those required to be developed by the contractor for pollution prevention associated with any on-site support facilities being included in the VPDES Construction Permit coverage for this land disturbance (construction) activity are to be maintained at the activity site with the other SWPPP documents for this land disturbance (construction) activity. Where no facilities are available at the activity site to maintain the SWPPP documents, they are to be kept by or with the designated RLD at a location convenient to the activity site where they would be made available for review upon request during normal business hours.

2. The SWPPP and any subsequent amendments, modifications and updates shall be implemented from commencement of land disturbance until termination of VPDES Construction Permit coverage or completion of land disturbance (construction) activities where no VPDES Construction Permit coverage is required.

*3. For all on-site support facilities that will be included in the VPDES Construction Permit coverage for this land disturbance (construction) activity, the contractor shall develop a SWPPP in accordance with, but not limited to, Section 106.08, 107.02 and 107.16 of the VDOT Road and Bridge Specifications. The SWPPP for the on-site support facilities shall be maintained with and become a component of the SWPPP for this land disturbance (construction) activity. Support facilities shall include, but not be limited to, borrow and disposal areas, construction and waste material storage areas, equipment and vehicle washing, maintenance, storage and fueling areas, storage areas for fertilizers, fuels or chemicals, concrete wash out areas, sanitary waste facilities and any other areas that may generate a stormwater or non-stormwater discharge directly related to the construction site.

4. For those land disturbing (construction) activities requiring coverage under the VPDES Construction Permit, the SWPPP shall be made available for review upon the request of the DEQ, the EPA, the VSMP Authority, the VESCP Authority, local government officials or the operator of a municipal separate storm sewer system (MS4) receiving discharge from the construction site.

*5. For those land disturbing (construction) activities requiring coverage under the VPDES Construction Permit, the VDOT RLD shall post, or have posted, a copy of the General Permit coverage letter and a copy of a completed LD-445A form, noting the name and contact information for the VDOT person responsible for the land disturbing (construction) activity and its SWPPP, outside the project's construction office along with other Federal and State mandated information. Where there is no construction office (e.g., a maintenance activity), the permit coverage letter and the LD-445A form are to be maintained with the other SWPPP documents for the land disturbing (construction) activity.

6. The SWPPP shall be made available for review by the public upon request. Such reviews shall be at a time and publicly accessible location convenient to the VDOT and shall be scheduled during normal business hours and no less than once per month.

SECTION V – POLLUTION PREVENTION PLAN

1. The following non-stormwater discharges from this land disturbing (construction) activity and any on-site support facilities are prohibited:
- Wastewater from concrete washouts.
 - Wastewater from the washout and cleanout of stucco, paint, from release oils, curing compounds and other construction materials.
 - Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance.
 - Oils, toxic substances or hazardous substances from spills or other releases.
 - Soaps, solvents or detergents used in equipment and vehicle washing.
 - There shall be no discharge of floating solids or visible foam in other than trace amounts
2. The following non-stormwater discharges from this land disturbing (construction) activity and any on-site support facilities are allowed when discharged in compliance with the VPDES Construction Permit:
- Discharges from firefighting activities.
 - Fire hydrant flushings.
 - Waters used to wash vehicles or equipment where soaps, solvents or detergents have not been used and the wash water has been filtered, settled or similarly treated prior to discharge.
 - Water used to control dust that has been filtered, settled or similarly treated prior to discharge.
 - Potable water sources including uncontaminated waterline flushings managed in a manner to avoid stream impacts.
 - Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled or similarly treated prior to discharge.
 - Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing), where soaps, solvents or detergents have not been used and where the wash water has been filtered, settled or similarly treated prior to discharge.
 - Uncontaminated air conditioning or compressor condensate.
 - Uncontaminated ground water or spring water.
 - Foundation or footing drains where flows are not contaminated with process materials such as solvents.
 - Uncontaminated excavation dewatering, including dewatering trenches and excavations that have been filtered, settled or similarly treated prior to discharge.
 - Landscape irrigation.

**3. The contractor shall develop a Pollution Prevention Plan to address any of his on-site operations that have a potential to generate a pollutant that may reasonably be expected to affect the quality of stormwater discharges from this land disturbance (construction) activity. The Pollution Prevention Plan shall be developed in accordance with, but not limited to, Sections 106.08, 107.02 and 107.16 of the VDOT Road and Bridge Specifications and shall include a narrative with appropriate plan detail and shall be provided on standard 8.5 x 11 inch paper or larger and shall:

- Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater.
- Describe the location where the potential pollutant-generating activities will occur, or if identified on the record set of plans, reference the record set of plans.
- Identify all non-stormwater discharges, as described in note two of this section, that are or will be commingled with stormwater discharges from the construction activity, including any on-site support activities.
- Identify the person(s) or contractor(s) responsible for implementing and maintaining the pollution prevention practice or practices for each pollutant-generating activity.
- Describe the pollution prevention practices and procedures that will be implemented to:
 - Prevent and respond to leaks, spills, and other releases, including procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases, and procedures for reporting leaks, spills, and other releases in accordance with Section 107.16 of the VDOT Road and Bridge Specifications and the requirements within the VPDES Construction Permit.

- Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities.
- Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including procedures for the clean-up of stucco, paint, form release oils, and curing compounds.
- Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing.
- Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters.
- Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including building products (such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures), pesticides, herbicides, insecticides, fertilizers, landscape materials, construction and domestic wastes (such as packaging materials), scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.
- Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, waste concrete and sanitary wastes.
- Address any other discharge from any potential pollutant-generating activity not listed herein.
- Minimize the exposure of waste materials to precipitation by closing or covering waste containers during precipitation events and at the end of the business day, or implementing other similarly effective practices. Minimization of exposure is not required in case where the exposure to precipitation will not result in a discharge of pollutants.
- Describe and implement procedures for providing pollution prevention awareness (including but not limited to prevention practices, disposal practices and appropriate disposal locations) for all applicable wastes (including any wash water), to appropriate personnel.

* Denotes information that is to be provided/completed by the RLD.

** Denotes information that is to be provided/completed by the contractor.

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

SECTION II EROSION AND SEDIMENT CONTROL

- ✱✱
1. The intended sequence and timing of activities that disturb soils at the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation, etc.) shall be provided by the contractor in accordance with the current edition of Section 108.03 of the VDOT R&B Specifications and shall be included with the other SWPPP documents for this land disturbance (construction) activity.

2. Directions of stormwater flow and approximate slopes anticipated after major grading activities are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.

3. Areas of soil disturbance and areas of the site which will not be disturbed are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.

4. Locations of major structural and nonstructural ESC measures intended to filter, settle or similarly remove sediment are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.

5. Locations where stabilization practices are expected to occur are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.

6. A description of interim and permanent stabilization practices for the site are identified in the applicable sections of the documents identified in the Note 1 of Section IV.
- ✱✱
7. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated will be provided by the contractor and maintained with the record set of plans or other SWPPP documents for this land disturbance (construction) activity: (List how this will be tracked and the location)

8. A description and schedule of procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good and effective operating conditions are identified in the current edition of Sections 107.16 and 303.03 of the VDOT R&B Specifications.

9. Nutrients shall be applied in accordance with the current edition of Sections 603 and 604 of the VDOT Road and Bridge Specifications. Nutrients shall not be applied during rainfall events. Top soil shall be applied in accordance with the current edition of section 602 of the latest Road and Bridge Specifications.

10. All engineering calculations supporting the design of erosion and sediment control measures proposed for this land disturbance (construction) activity are contained in the project drainage file located in the (insert appropriate location, i.e., VDOT Central Office Hydraulics Section or the VDOT (specify) District Hydraulics Section or the VDOT (specify) Residency Office) and will be made available for review upon request during normal business hours.

11. The temporary erosion and siltation control items shown on the ESC Plan for this land disturbing (construction) activity are intended to provide a general plan for controlling erosion and sediment within the project limits. The ESC Plan is based on field conditions at the time of plan development and an assumed sequence of construction for the project. The contractor, in conjunction with the VDOT Project Engineer and/or ESC Inspector, shall adjust the location, quantity and type of erosion and sediment control items required based on the actual field conditions encountered at the time of construction and the actual scheduling and sequencing of the construction activities. Significant changes to the proposed ESC Plan (e.g., those that require an engineering analysis, elimination of a perimeter control, change to ESC concept that would affect the quantity or direction of flow of water) shall be submitted to the applicable District Hydraulics Engineer for review and approval. Any changes to the proposed ESC Plan must be noted on the designated record set of plans which shall be retained on the project site and made available upon request during normal business hours.

12. The areas beyond the project's construction limits are to be protected from siltation. Perimeter controls such as silt fence, diversion dikes, turbidity curtains, etc. shall be installed prior to any grubbing operations or other earth moving activities.

13. Temporary earthen structures such as dikes and berms are to be stabilized immediately upon installation. Stabilization may include temporary or permanent seeding, riprap, aggregate, sod, mulching, and/or soil stabilization blankets and matting in conjunction with seeding.

14. All channel relocations are to be constructed during the earliest stage of construction and shall be constructed in accordance with all applicable permit requirements and shall be constructed in the dry wherever possible. Stabilization or vegetation shall be established before flow is redirected through the constructed area as directed by the Engineer.

15. The contractor shall plan and implement his land disturbance operations in order to:

a. Control the volume and velocity of stormwater runoff within the site to minimize erosion.

b. Control the peak flow rates, volume and velocity of stormwater discharges to minimize erosion at outlets and in downstream channels.

c. Minimize the amount of soil exposed.

d. Minimize the disturbance of steep slopes.

e. Minimize sediment discharge from the site.

f. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas and maximize stormwater infiltration, unless infeasible.

g. Minimize soil compaction (except in those areas where compaction is required by the contract documents) and preserve topsoil where feasible.
- ✱✱

16. The name of the individual(s) or contractor(s) responsible for the installation and maintenance of the erosion and sediment control measures shall be supplied by the contractor and maintained with the other SWPPP documents for this land disturbance (construction) activity.

17. Soil stockpiles temporarily placed within the project area or on VDOT right of way or easement shall be identified, stabilized, and protected with sediment trapping measures.

18. A construction entrance or other approved measure shall be installed at all locations where construction vehicular traffic access routes intersect a paved or a public road in order to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or a public road surface, the road shall be cleaned thoroughly at the end of each work day by shoveling or sweeping. Removed sediment shall be disposed of in accordance with Section 106.04 of the R&B Specifications.

19. Any variance, exception or deviation approved by DEQ must be listed below and supporting documentation (exception/variance/deviation request and DEQ approval) must be maintained with the SWPPP.

The following exceptions to the Water Quantity criteria of the VSMP Regulation have been approved by the DEQ for this land disturbance (construction) activity: (list all approved exceptions and include a brief description of the exception, the date approved and the approving DEQ Office)
- | Type(1) | Regulation Modified(2) | Approval Date(3) | Description of Variance |
|---------|------------------------|------------------|-------------------------|
| | | | |
| | | | |
- (1) Type of modification (Variance from ESC regulations, or Deviation from published guidance)

(2) Section of Regulation or Guidance Document Modified (e.g. ESC Min. Std. 15)

(3) Date that variance/exception/deviation was approved by DEQ.
- SECTION III POST CONSTRUCTION STORMWATER MANAGEMENT
- Choose the appropriate note 1A or 1B that is applicable to the proposed post construction SWM Plan for this land disturbance (construction) activity: (Delete, strikethrough or mark as NA those notes not applicable.)
1. (Include one of the following notes as appropriate)

✱ A. This land disturbance activity is grandfathered under Section 9VAC25–870–48 of the VSMP Regulations and utilizes the Part IIC technical criteria (i.e., Performance or Technology Based, MS 19, etc.) in Section 9VAC25–870–93 et seq. of the VSMP Regulations.

✱ B. This land disturbance activity utilizes the Part IIB technical criteria (i.e., Runoff Reduction Method, Energy Balance Equation, etc.) in Section 9VAC25–870–62 et seq. of the VSMP Regulations.

2. An exception for (number) pounds of phosphorus removal has been granted for this land disturbance activity by the DEQ in its letter dated (date).

3. Any variance, exception or deviation approved by DEQ must be listed below and supporting documentation (exception/variance/deviation request and DEQ approval) must be maintained with the SWPPP.

The following exceptions to the Water Quantity criteria of the VSMP Regulation have been approved by the DEQ for this land disturbance activity: (list all approved exceptions and include a brief description of the exception, the date approved and the approving DEQ Office)

| Type(1) | Regulation Modified(2) | Approval Date(3) | Description of Waiver |
|---------|------------------------|------------------|-----------------------|
| | | | |
| | | | |

(1) Type of modification (Variance, or Exception from SWM Regulations or Deviation from published guidance)

(2) Section of Regulation or Guidance Document Modified (e.g. ESC Min. Std. 15)

(3) Date that variance/exception/deviation was approved by DEQ.

4. The permanent onsite SWM facilities or offsite strategies proposed to meet the water quality/quantity requirements for this land disturbance (construction) activity are listed in Section VI.
- | STATE | FEDERAL AID | STATE | | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | ROUTE | PROJECT | |
| VA. | | | | |
5. A description of all post–construction stormwater management measures that will be installed during the construction process to control pollutants in stormwater discharges after construction operations have been completed is included in the construction plan set (or other such documents) for this land disturbance (construction) activity.

6. All engineering calculations supporting the design of the post–construction stormwater management measures for this land disturbance (construction) activity, including an explanation of the technical basis used to select the practices, are contained in the project drainage file located in the (insert appropriate location, i.e., VDOT Central Office Hydraulics Section or the VDOT (specify) District Hydraulics Section or the VDOT (specify) Residency Office) and will be made available for review upon request during normal working business hours.
- ACRONYMS
- CBPA – Chesapeake Bay Preservation Act

BMP – Best Management Practice

DEQ – Department of Environmental Quality

EPA – U.S. Environmental Protection Agency

ESC – Erosion and Sediment Control

IIM – Instructional and Informational Memorandum

R&B – Road and Bridge

RDL – Responsible Land Disturber

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

VDOT – Virginia Department of Transportation

VPDES – Virginia Pollutant Discharge Elimination System


VSMP – Virginia Stormwater Management Program

VESCP – Virginia Erosion and Sediment Control Program

MLA – Waste Load Allocation

SWM – Stormwater Management
- ✱ Denotes information that is to be provided/ completed by the RLD.

✱✱ Denotes information that is to be provided/completed by the contractor.
- A
- Revised 5/1/19



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804-264-2228 Fax: 804-264-8773

Charlottesville, VA
Fayetteville, NC
Northern Virginia
Hampton Roads, VA
Virginia Beach, VA
- | SHEET | TITLE: POLLUTION PREVENTION PLAN | SHEET NO. |
|---------|----------------------------------|-----------|
| PROJECT | 19020645–010303 | C2.4 |

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VPDES General Permit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) issued July 1, 2019 and VDOT's approved Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance activities that disturb an area equal to or greater than 10,000 square feet outside the Chesapeake Bay Preservation Area, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

The VDOT RLD (as defined in the latest IIM 242) will ensure that the information shown on the SWPPP General Information sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/revised sheets shall be maintained with the designated record set of plans (or other such documents)for the land disturbance (construction) activity.

I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that this document and all other documents related to the SWPPP, as identified on the SWPPP General Information Sheets, are maintained at the activity site, or at a location convenient to the activity site where no on-site facilities are available, and such documents will be made available for review upon request in accordance with the provisions of the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) when applicable. Where the SWPPP documents are not stored on-site, a copy of such documents shall be in the possession of those with day to day operational control over the implementation of the SWPPP whenever they are on site.

Signature: _____ * or ** Delegated Authority Signature**
Printed Name: _____
Date: _____

(1) See Section 1, Item 11 relating to delegation of authority, and form LD-445H (Delegation of Authority).

ACRONYMS

| | |
|--|---|
| CBPA – Chesapeake Bay Preservation Act | SWPPP – Stormwater Pollution Prevention Plan |
| BMP – Best Management Practice | TMDL – Total Maximum Daily Load |
| DEQ – Department of Environmental Quality | VDOT – Virginia Department of Transportation |
| EPA – U.S. Environmental Protection Agency | VPDES – Virginia Pollutant Discharge Elimination System |
| ESC – Erosion and Sediment Control | VSMP – Virginia Stormwater Management Program |
| IIM – Instructional and Informational Memorandum | VESCP – Virginia Erosion and Sediment Control Program |
| R&B – Road and Bridge | WLA – Waste Load Allocation |
| RLD – Responsible Land Disturber | SWM – Stormwater Management |

SECTION I GENERAL INFORMATION

1. Activity Description – (insert appropriate text)

2. This land disturbance (construction) activity site is located in (insert the appropriate County/City) and approximately (insert the appropriate number to the nearest one hundredth of an acre) acres will be disturbed by excavation, grading or other construction activities.

3. (Include one of the following notes as appropriate)

A. This proposed activity disturbs one acre or greater and requires coverage under the VPDES General Permit for Discharges Of Stormwater from Construction Activities (the VPDES Construction Permit) as issued by the DEQ. A copy of the VPDES Construction Permit (VAR10), the registration information (LD-445 & LD-445C forms) and the permit coverage letter received from DEQ shall be maintained with other SWPPP documents for this land disturbing activity.

B. This proposed activity disturbs less than one acre and is exempt from coverage under the VPDES General Permit for Discharges of Stormwater from Construction Activities (the VPDES Construction Permit) as issued by the DEQ.

C. This proposed activity is exempt from coverage under the VPDES General Permit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) as issued by the DEQ because it is considered a routine maintenance activity (i.e., the proposed activity is intended to maintain the original line and grade, hydraulic capacity or original construction of the project or involves the paving of an existing roadway with a compacted or impervious surface and the reestablishment of associated ditches and shoulders).

** 4. The location of on-site support facilities that will be covered under the VPDES Construction Permit coverage for this land disturbance (construction) activity shall be provided by the contractor and identified on the record set of plans or in other appropriate contract documents. Support facilities shall include, but not be limited to, borrow and disposal areas, construction and waste material storage areas, equipment and vehicle washing, maintenance, storage and fueling areas, storage areas for fertilizers, fuels or chemicals, concrete wash out areas, sanitary waste facilities and any other areas that may generate a stormwater or non-stormwater discharge directly related to the construction site.

** 5. Written Evidence of permit coverage shall be provided by the contractor for all support activities located outside of VDOT right of way or easement in the form of the Construction General Permit coverage letter: (List VPDES Permit # or Letter from VSMP Authority stating coverage not needed)

6. List the surface waters that have been identified as impaired in the DEQ 2012 305(b)/303(d) Water Quality Assessment Integrated Report for sediment, total suspended solids, turbidity, Nitrogen or Phosphorus. These pollutants are considered benthic impairments: (List the impaired surface waters, when applicable)

7. Identify the TMDL's where stormwater from construction activities discharges into a watershed with a TMDL waste load allocation established and approved by the State Water Control Board prior to July 1, 2016 for sediment, total suspended solids, turbidity, nitrogen or phosphorus: (List the TMDL and pollutant(s) of concern, when applicable)

8. This land disturbance activity discharges stormwater to the following surface waters that have been identified as exceptional in Section 9VAC25-260-30 A 3 c of the Virginia Administrative Code: (List name of surface waters) or not applicable (N/A).

9. Locations of surface waters and locations where concentrated stormwater is discharged from this land disturbance (construction) activity are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity. (List name of surface waters and locations here if not shown in construction plan or other such documents).

10. The ESC and SWM plans (where applicable) for this land disturbance (construction) activity have been developed in accordance with VDOT's Approved Annual Erosion and Sediment Control and Stormwater Management Standards and Specifications as approved by the DEQ.

11. List the RLD and other responsible parties for the land disturbance activity: (required for erosion and sediment control). The following individual(s) have "delegated authority" to sign all reports required by the construction permit including the SWPPP General Information Sheets and Inspection Reports (C-107). Reference form LD-445H for delegation of authority (form 445H for the project is hereby incorporated by reference into this SWPPP). These individual(s) has/have overall responsibility or the environmental matters for the project: (required only for permitted projects):

| Name | Position | Responsibility |
|------|---------------------|--------------------------------------|
| | RLD | Certify the SWPPP (with date & sig.) |
| | Certified Inspector | Sign (C-107) Inspection Form Part 1 |
| | Certified Inspector | Sign (C-107) Inspection Form Part 2 |
| | | |
| | | |
| | | |

* 12. The name of the VDOT individual(s) responsible for the oversight inspection in accordance with IIM-LD-256 on these land disturbance construction activities as identified on these SWPPP General Information Sheets. The names will be updated and maintained with the other SWPPP documents for this land disturbance activity.

| VDOT Individuals | Position | Responsibility |
|------------------|---------------------|--|
| | NPDES | NPDES coordinator responsible for the oversight inspection in accordance with IIM-LD-256 |
| | Dist. Hyd. Engineer | District Hydraulic Engineer or designee(s) responsible for the review & the coordination approval of ESC SWM plan modification(s). |
| | | |
| | | |
| | | |

* 13. The ESC and P2 inspections for this land disturbing (construction) activity shall follow (Select Schedule 1 or 2, if schedule #2 is used, void note #14) as defined in 2016 R&B Specifications except for Section 107.16(e) 4.an Inspection Requirements Rain gauge notes apply only to Inspection Schedule 1.

** 14. The location of the on-site rain gage that will be used to determine the occurrence of a measurable storm event for the purposes of ESC and Pollution Prevention inspections will be provided by the contractor and identified on the record set of plans or in other appropriate SWPPP documents for this land disturbance activity: (List location of rain gage).

The rain gage shall be observed daily at " _____ " to determine the occurrence of a measurable storm event (i.e., 0.25 inches of rainfall or greater in a 24 hour period). A log book shall be maintained to record observation information which shall include (1) the date, (2) the time, (3) whether or not rainfall is occurring at the time of the observation, (4) the amount of accumulated rainfall in the gage, if any, and (5) whether or not an inspection is required based on the amount of accumulated rainfall in the gage. If there is no rainfall occurring at the time of the observation, the observation information shall be noted in the log book and the rain gage emptied and replaced. An inspection is required if there is 0.25 inches or more accumulation noted in the rain gage. If there is rainfall occurring at the time of the observation, the observation information is to be noted in the log book. The rain gage is not to be emptied but left to accumulate additional rainfall until the conclusion of the rainfall event. At the conclusion of the rainfall event, an observation of the rain gage shall be made and the observation information shall be noted in the log book and the rain gage emptied and replaced. An inspection is required if there is 0.25 inches or more accumulation noted in the rain gage.

15. The following VDOT documents are applicable to a) permitted projects b) non-permitted projects in Chesapeake Bay Preservation Areas (CBPA) with 2,500 S.F. to 1.0 acre of land disturbance c) non-permitted projects requiring a SWPPP and d) Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP:

VDOT LD-445: Permitted projects, CBPA projects and Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP and ESC projects > 10,000 s.f. but <1 acre.

VDOT LD-445A: Permitted projects only.

VDOT LD-445C: Projects that require a permit, ESC Plan, or SWPPP.

VDOT LD-445D: Permitted projects, CBPA projects and Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP.

VDOT LD-445F: Emergency work projects (when applicable).

Water Quality Requirement (when applicable)

VDOT LD-445H: Permitted projects only.

VDOT C-107 Part I and Part II. All projects that require a permit or SWPPP.

VDOT LD-445I: AS&S Approval Form (when applicable)

16. If there is an excessive loading of sediment from the project (i.e. more than to be expected from the project with an implemented ESC plan) that is discovered within a local watershed with a sediment TMDL that allocates a WLA to VDOT's MS4, (see note #7) the contractor shall investigate the area of concern at the site within 24 hours of discovery and ensure all erosion and sediment control best management practices are being implemented in accordance with the permits approved standards and specifications required by Part I.B of the current Construction General Permit. If corrective action is necessary, the contractor shall initiate corrective actions no later than 5 business days after the initial investigation.

17. If excessive loading of sediment from a land disturbing activity that is not the responsibility of the contractor is discovered discharging into a MS-4, the contractor shall notify the municipality with jurisdiction over erosion and sediment control activities.

* Denotes information that is to be provided/completed by the RLD.

** Denotes information that is to be provided/completed by the contractor.

LEGEND AND ABBREVIATIONS

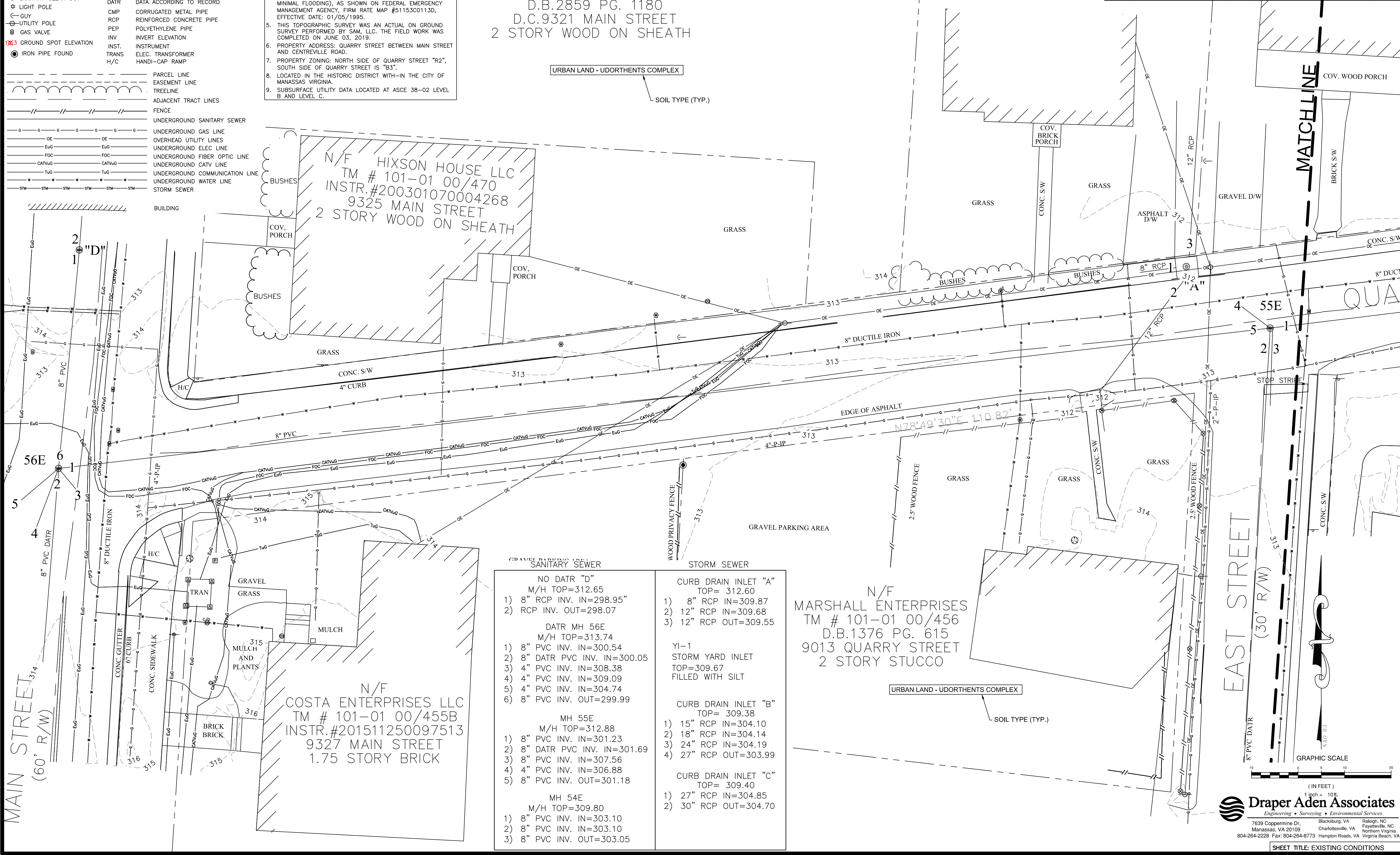
- STREET SIGN
WATER METER
WATER VALVE
STORM MANHOLE
SANITARY MANHOLE
SANITARY CLEAN OUT
LIGHT POLE
GUY
UTILITY POLE
GAS VALVE
GROUND SPOT ELEVATION
IRON PIPE FOUND
- CONIFEROUS TREE
DECIDUOUS TREE
IRON PIPE FOUND
DATA ACCORDING TO RECORD
CMP CORRUGATED METAL PIPE
RCP REINFORCED CONCRETE PIPE
PEP POLYETHYLENE PIPE
INV INVERT ELEVATION
INST. INSTRUMENT
TRANS. ELEC. TRANSFORMER
H/C HANDI-CAP RAMP
- PARCEL LINE
EASEMENT LINE
TREELINE
ADJACENT TRACT LINES
FENCE
UNDERGROUND SANITARY SEWER
UNDERGROUND GAS LINE
OVERHEAD UTILITY LINES
UNDERGROUND ELEC. LINE
UNDERGROUND FIBER OPTIC LINE
UNDERGROUND CATV LINE
UNDERGROUND COMMUNICATION LINE
UNDERGROUND WATER LINE
STORM SEWER

- NOTES:
- HORIZONTAL & VERTICAL DATUM AND SURVEY CONTROL ARE BASED UPON THE INFORMATION PROVIDED BY THE CITY OF MANASSAS.
 - CONTOUR INTERVAL = 1 FOOT.
 - THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE, THEREFORE NOT ALL EASEMENTS OF RECORD MAY BE SHOWN HEREON.
 - THIS PROPERTY IS LOCATED IN FLOOD ZONE X (AREA OF MINIMAL FLOODING), AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY, FIRM RATE MAP #51153C01130, EFFECTIVE DATE: 01/05/1995.
 - THIS TOPOGRAPHIC SURVEY WAS AN ACTUAL ON GROUND SURVEY PERFORMED BY SAM, LLC. THE FIELD WORK WAS COMPLETED ON JUNE 03, 2019.
 - PROPERTY ADDRESS: QUARRY STREET BETWEEN MAIN STREET AND CENTREVILLE ROAD.
 - PROPERTY ZONING: NORTH SIDE OF QUARRY STREET "R2", SOUTH SIDE OF QUARRY STREET IS "B3".
 - LOCATED IN THE HISTORIC DISTRICT WITH-IN THE CITY OF MANASSAS VIRGINIA.
 - SUBSURFACE UTILITY DATA LOCATED AT ASCE 38-02 LEVEL B AND LEVEL C.

N/F ARRINGTON PAUL HIXSON
& RAYMONDA TRACY
TM # 101-01 00/469
D.B.2859 PG. 1180
D.C.9321 MAIN STREET
2 STORY WOOD ON SHEATH

N/F BARRINGER C
TM # 101-01 00/4
INSTR.#20150529004
9016 QUARRY STREET
1.5 STORY ALUMINUM

| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| VA. | PROJECT | | PROJECT | |



| SANITARY SEWER | | STORM SEWER | |
|-------------------------------|--|-----------------------|--|
| NO DATR "D" | | CURB DRAIN INLET "A" | |
| M/H TOP=312.65 | | TOP= 312.60 | |
| 1) 8" RCP INV. IN=298.95" | | 1) 8" RCP IN=309.87 | |
| 2) RCP INV. OUT=298.07 | | 2) 12" RCP IN=309.68 | |
| | | 3) 12" RCP OUT=309.55 | |
| DATR MH 56E | | YI-1 | |
| M/H TOP=313.74 | | STORM YARD INLET | |
| 1) 8" PVC INV. IN=300.54 | | TOP=309.67 | |
| 2) 8" DATR PVC INV. IN=300.05 | | FILLED WITH SILT | |
| 3) 4" PVC INV. IN=308.38 | | | |
| 4) 4" PVC INV. IN=309.09 | | CURB DRAIN INLET "B" | |
| 5) 4" PVC INV. IN=304.74 | | TOP= 309.38 | |
| 6) 8" PVC INV. OUT=299.99 | | 1) 15" RCP IN=304.10 | |
| | | 2) 18" RCP IN=304.14 | |
| MH 55E | | 3) 24" RCP IN=304.19 | |
| M/H TOP=312.88 | | 4) 27" RCP OUT=303.99 | |
| 1) 8" PVC INV. IN=301.23 | | | |
| 2) 8" DATR PVC INV. IN=301.69 | | CURB DRAIN INLET "C" | |
| 3) 8" PVC INV. IN=307.56 | | TOP= 309.40 | |
| 4) 4" PVC INV. IN=306.88 | | 1) 27" RCP IN=304.85 | |
| 5) 8" PVC INV. OUT=301.18 | | 2) 30" RCP OUT=304.70 | |
| MH 54E | | | |
| M/H TOP=309.80 | | | |
| 1) 8" PVC INV. IN=303.10 | | | |
| 2) 8" PVC INV. IN=303.10 | | | |
| 3) 8" PVC INV. OUT=303.05 | | | |

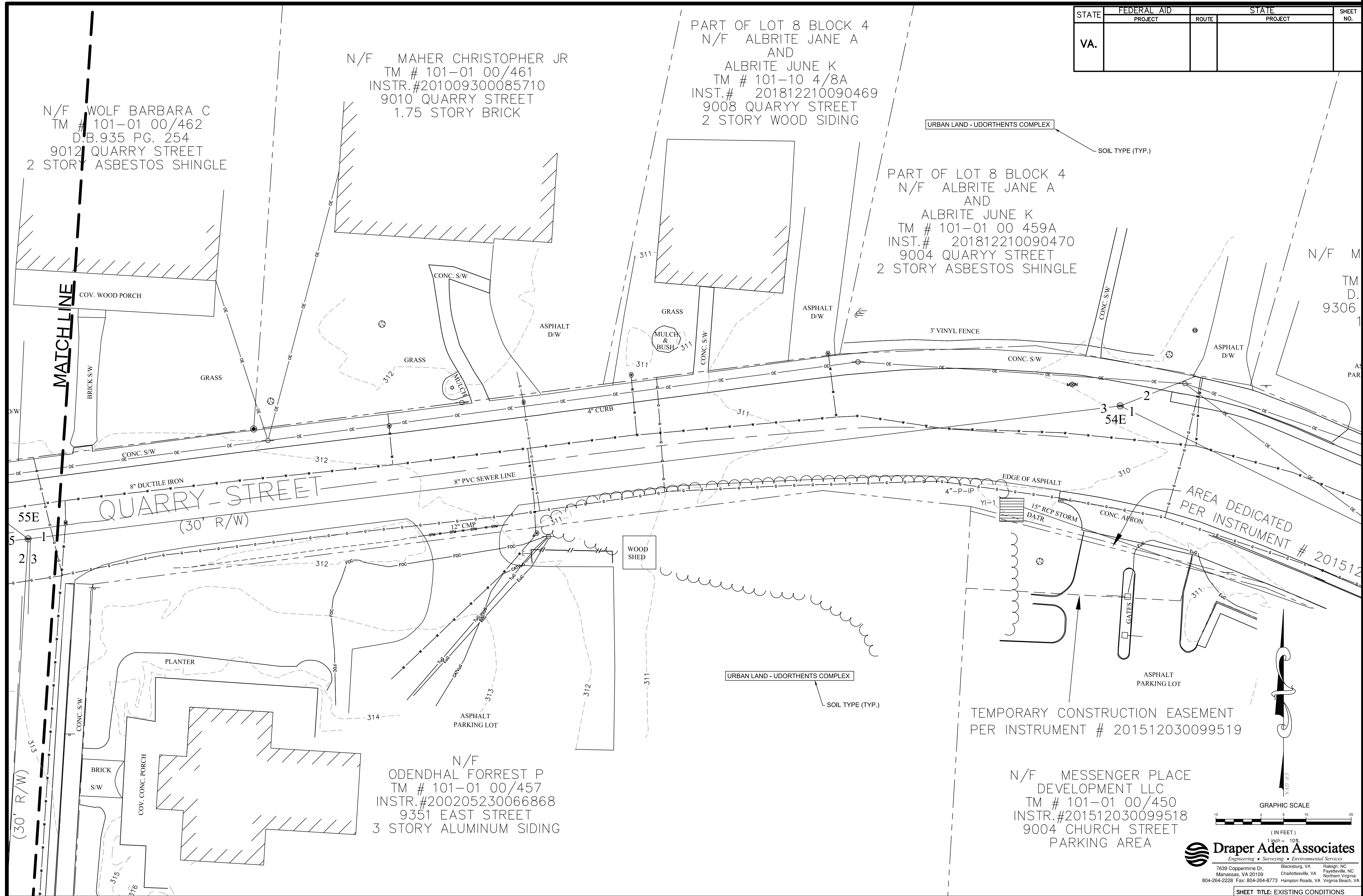
PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

A

Draper Aden Associates
Engineering • Surveying • Environmental Services
7639 Coppermine Dr., Blacksburg, VA
Manassas, VA 20109
804-264-2228 Fax: 804-264-8773
Charlottesville, VA
Fayetteville, NC
Northern Virginia
Virginia Beach, VA

| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C3.0 |

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____



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Northern Virginia
Hampton Roads, VA
Virginia Beach, VA

SHEET TITLE: EXISTING CONDITIONS

PROJECT SHEET NO.
19020645-010303 C3.1

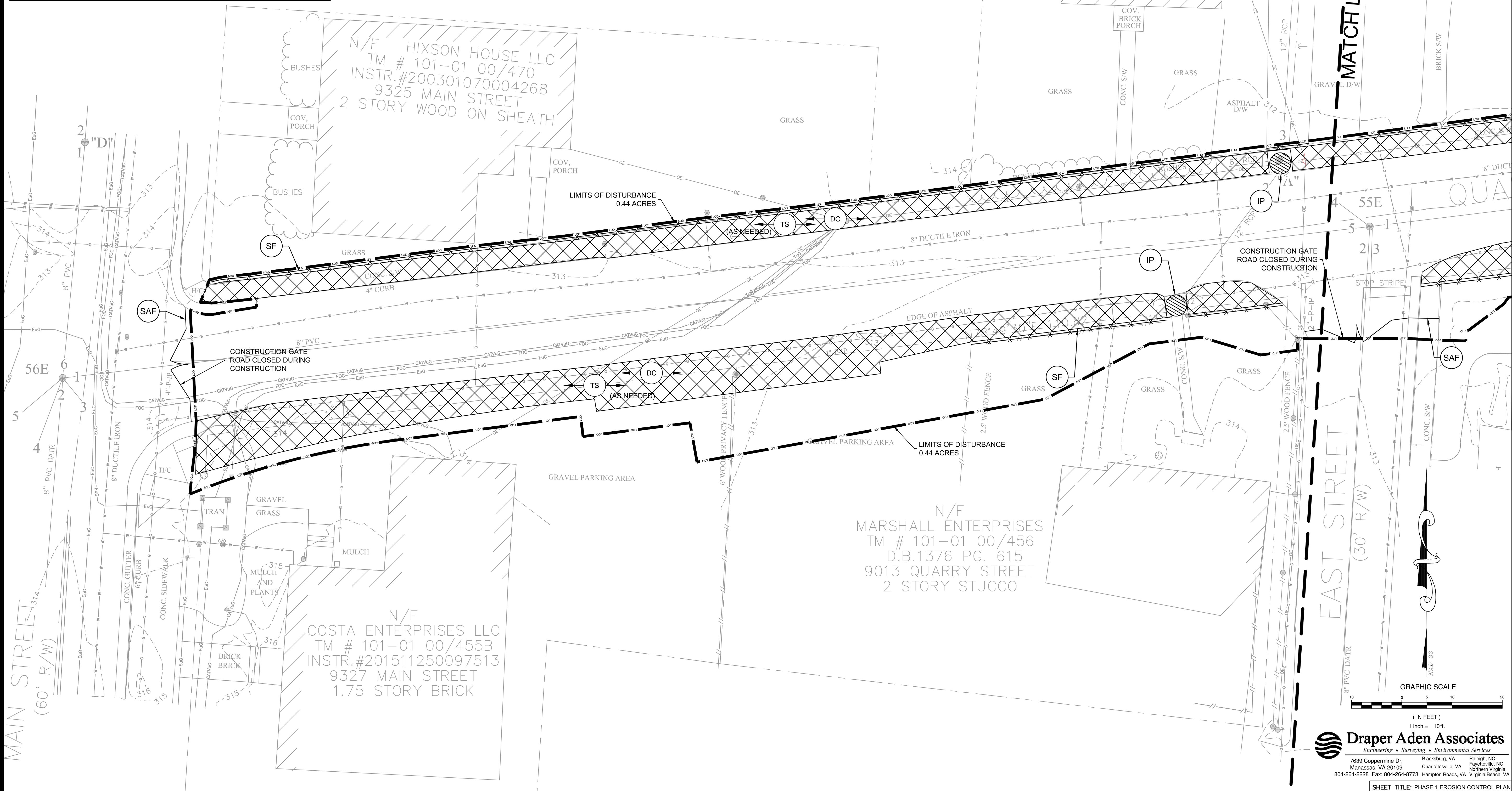
EROSION & SEDIMENT CONTROL LEGEND

| No. | TITLE | KEY | SYMBOL |
|------|------------------------------|-----|--------|
| 3.01 | SAFETY FENCE | SAF | |
| 3.05 | SILT FENCE | SF | |
| 3.07 | STORM DRAIN INLET PROTECTION | IP | |
| 3.31 | TEMPORARY SEEDING | TS | |
| 3.39 | DUST CONTROL | DC | |

N/F ARRINGTON PAUL HIXSON
& RAYMONDA TRACY
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D.B.2859 PG. 1180
D.C.9321 MAIN STREET
2 STORY WOOD ON SHEATH

N/F BARRINGER
TM # 101-01 00/4
INSTR.#20150529004
9016 QUARRY STR
1.5 STORY ALUMINUM

| STATE | FEDERAL AID | ROUTE | STATE | SHEET |
|---------|-------------|-------|---------|-------|
| PROJECT | | | PROJECT | NO. |
| VA. | | | | |



PROJECT MANAGER
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SUBSURFACE UTILITY BY, DATE

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Charlottesville, VA
Fayetteville, NC
Northern Virginia
Hampton Roads, VA
Virginia Beach, VA

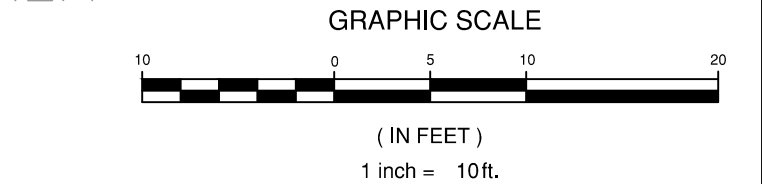
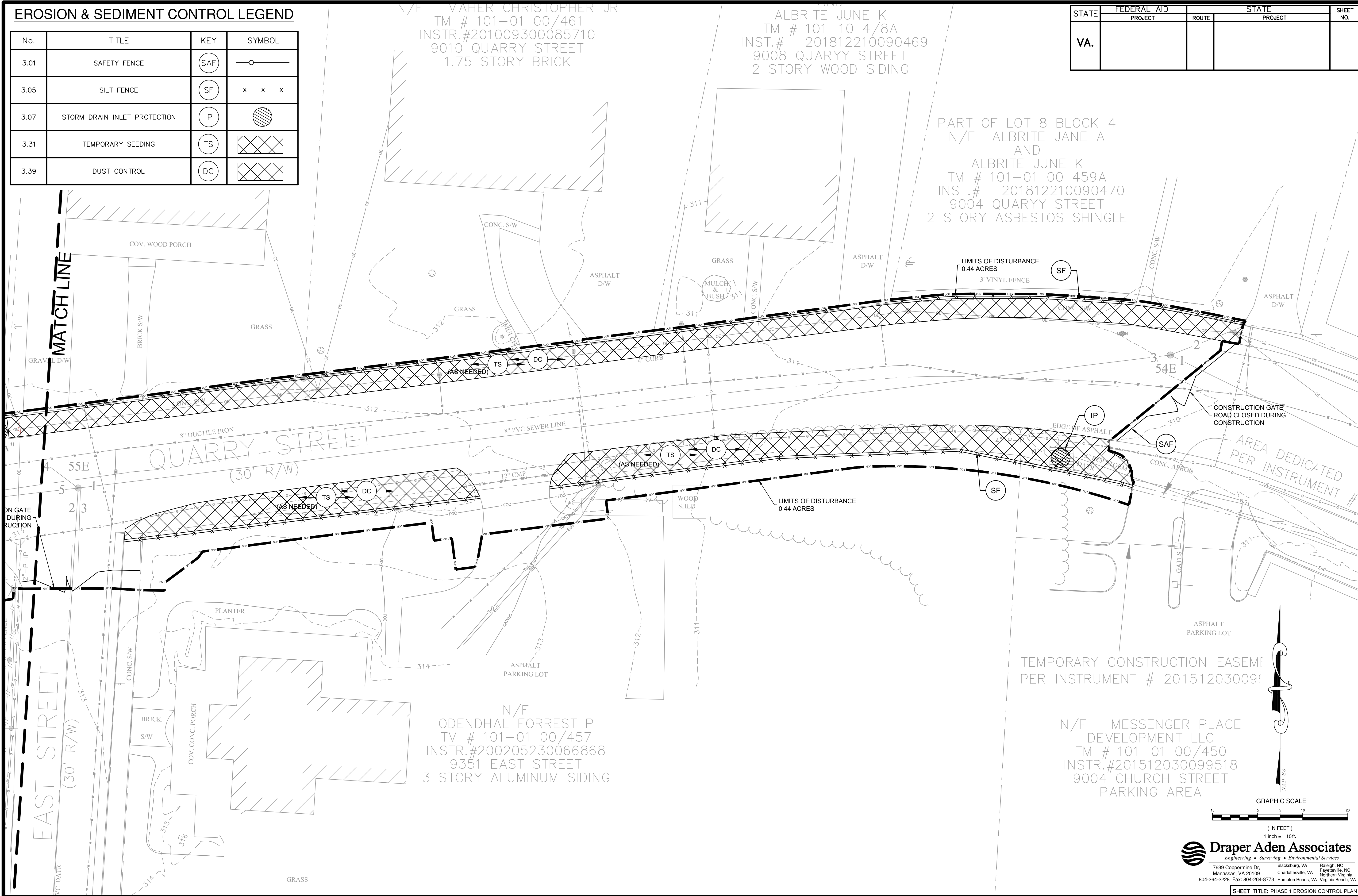
SHEET TITLE: PHASE 1 EROSION CONTROL PLAN

| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C4.0 |

EROSION & SEDIMENT CONTROL LEGEND

| No. | TITLE | KEY | SYMBOL |
|------|------------------------------|-------|---------|
| 3.01 | SAFETY FENCE | (SAF) | —○— |
| 3.05 | SILT FENCE | (SF) | —x—x—x— |
| 3.07 | STORM DRAIN INLET PROTECTION | (IP) | ⊗ |
| 3.31 | TEMPORARY SEEDING | (TS) | ⊠ |
| 3.39 | DUST CONTROL | (DC) | ⊞ |

| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |



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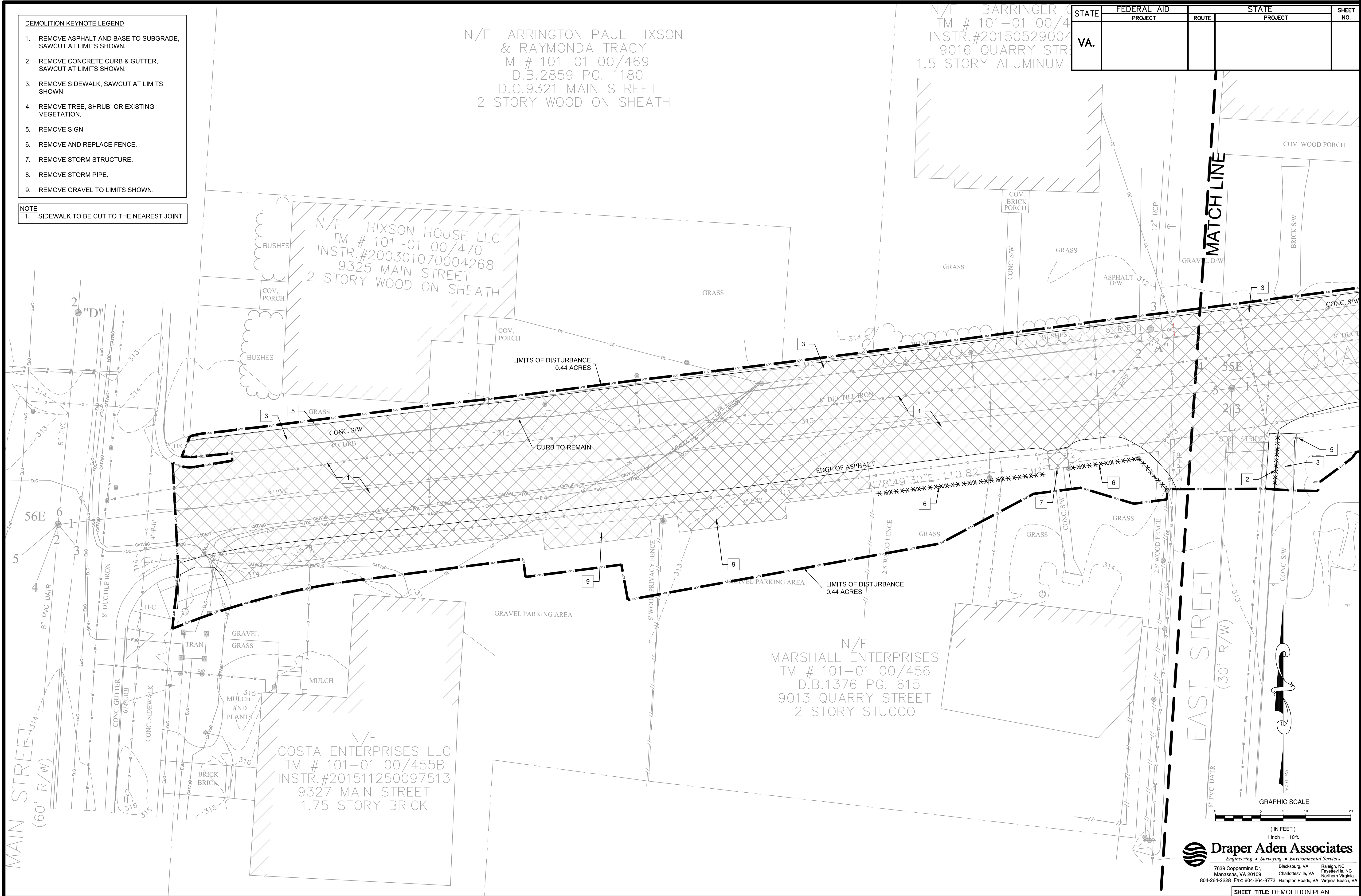
SHEET TITLE: PHASE 1 EROSION CONTROL PLAN

| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C4.1 |

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

- DEMOLITION KEYNOTE LEGEND
1. REMOVE ASPHALT AND BASE TO SUBGRADE, SAWCUT AT LIMITS SHOWN.
 2. REMOVE CONCRETE CURB & GUTTER, SAWCUT AT LIMITS SHOWN.
 3. REMOVE SIDEWALK, SAWCUT AT LIMITS SHOWN.
 4. REMOVE TREE, SHRUB, OR EXISTING VEGETATION.
 5. REMOVE SIGN.
 6. REMOVE AND REPLACE FENCE.
 7. REMOVE STORM STRUCTURE.
 8. REMOVE STORM PIPE.
 9. REMOVE GRAVEL TO LIMITS SHOWN.

- NOTE
1. SIDEWALK TO BE CUT TO THE NEAREST JOINT



| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |

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| SHEET TITLE: DEMOLITION PLAN | | |
|------------------------------|-----------|--|
| PROJECT | SHEET NO. | |
| 19020645-010303 | C4.2 | |

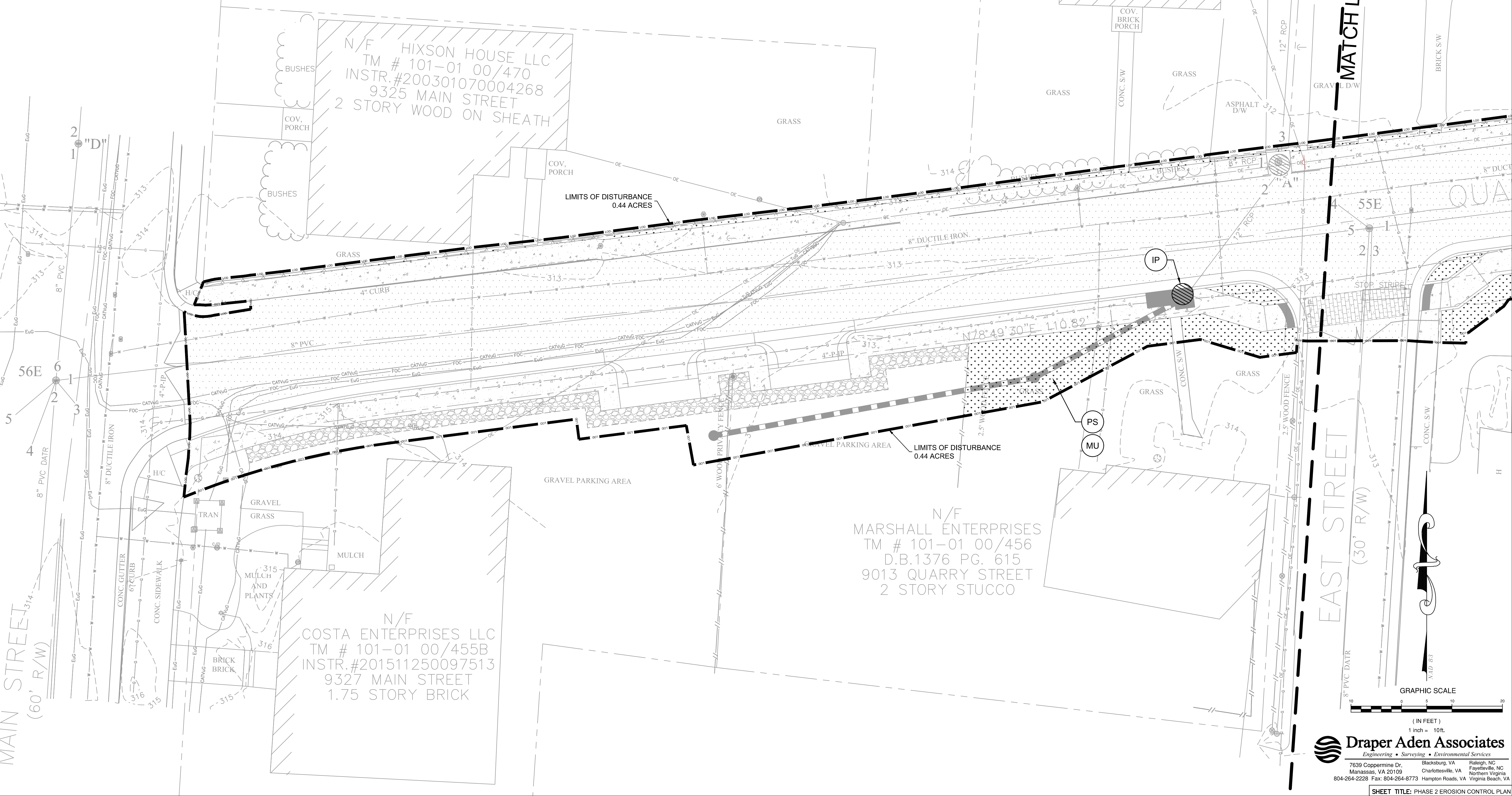
EROSION & SEDIMENT CONTROL LEGEND

| No. | TITLE | KEY | SYMBOL |
|------|------------------------------|-----|--------|
| 3.01 | SAFETY FENCE | SAF | |
| 3.05 | SILT FENCE | SF | |
| 3.07 | STORM DRAIN INLET PROTECTION | IP | |
| 3.32 | PERMANENT SEEDING | PS | |
| 3.35 | MULCHING | MU | |

N/F ARRINGTON PAUL HIXSON
& RAYMONDA TRACY
TM # 101-01 00/469
D.B.2859 PG. 1180
D.C.9321 MAIN STREET
2 STORY WOOD ON SHEATH

N/F BARRINGER
TM # 101-01 00/4
INSTR.#20150529004
9016 QUARRY STREET
1.5 STORY ALUMINUM

| STATE | FEDERAL AID PROJECT | ROUTE | STATE PROJECT | SHEET NO. |
|-------|---------------------|-------|---------------|-----------|
| VA. | | | | |



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PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

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Manassas, VA 20109 Charlottesville, VA Fayetteville, NC
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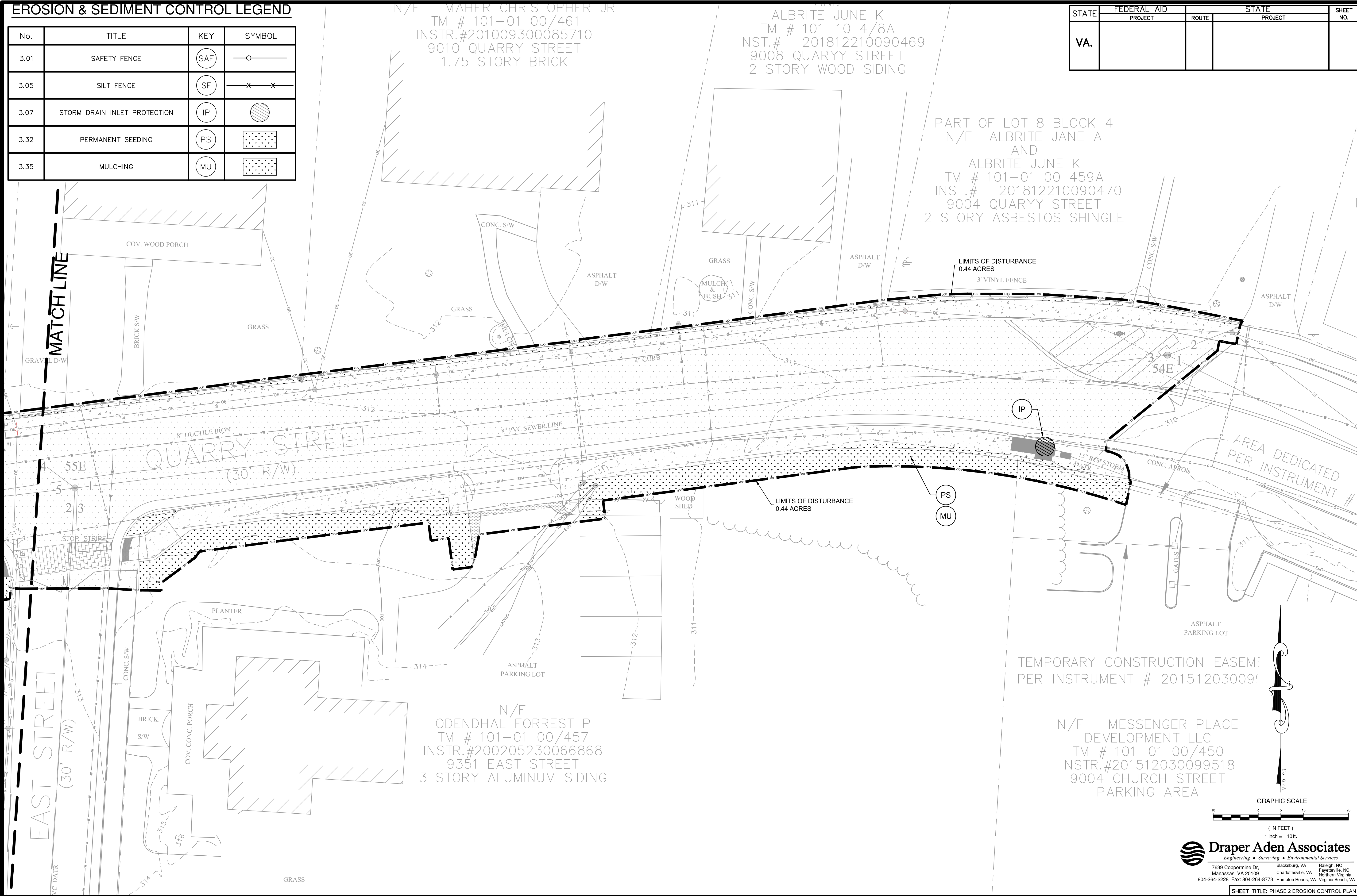
| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C4.4 |

EROSION & SEDIMENT CONTROL LEGEND

| No. | TITLE | KEY | SYMBOL |
|------|------------------------------|-------|--------|
| 3.01 | SAFETY FENCE | (SAF) | —○— |
| 3.05 | SILT FENCE | (SF) | —x—x— |
| 3.07 | STORM DRAIN INLET PROTECTION | (IP) | ⊙ |
| 3.32 | PERMANENT SEEDING | (PS) | ⬢ |
| 3.35 | MULCHING | (MU) | ⬢ |

| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____



GRAPHIC SCALE

(IN FEET)

1 inch = 10 ft.

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Manassas, VA 20109, Charlottesville, VA, Fayetteville, NC
804-264-2228 Fax: 804-264-8773 Hampton Roads, VA, Virginia Beach, VA

A

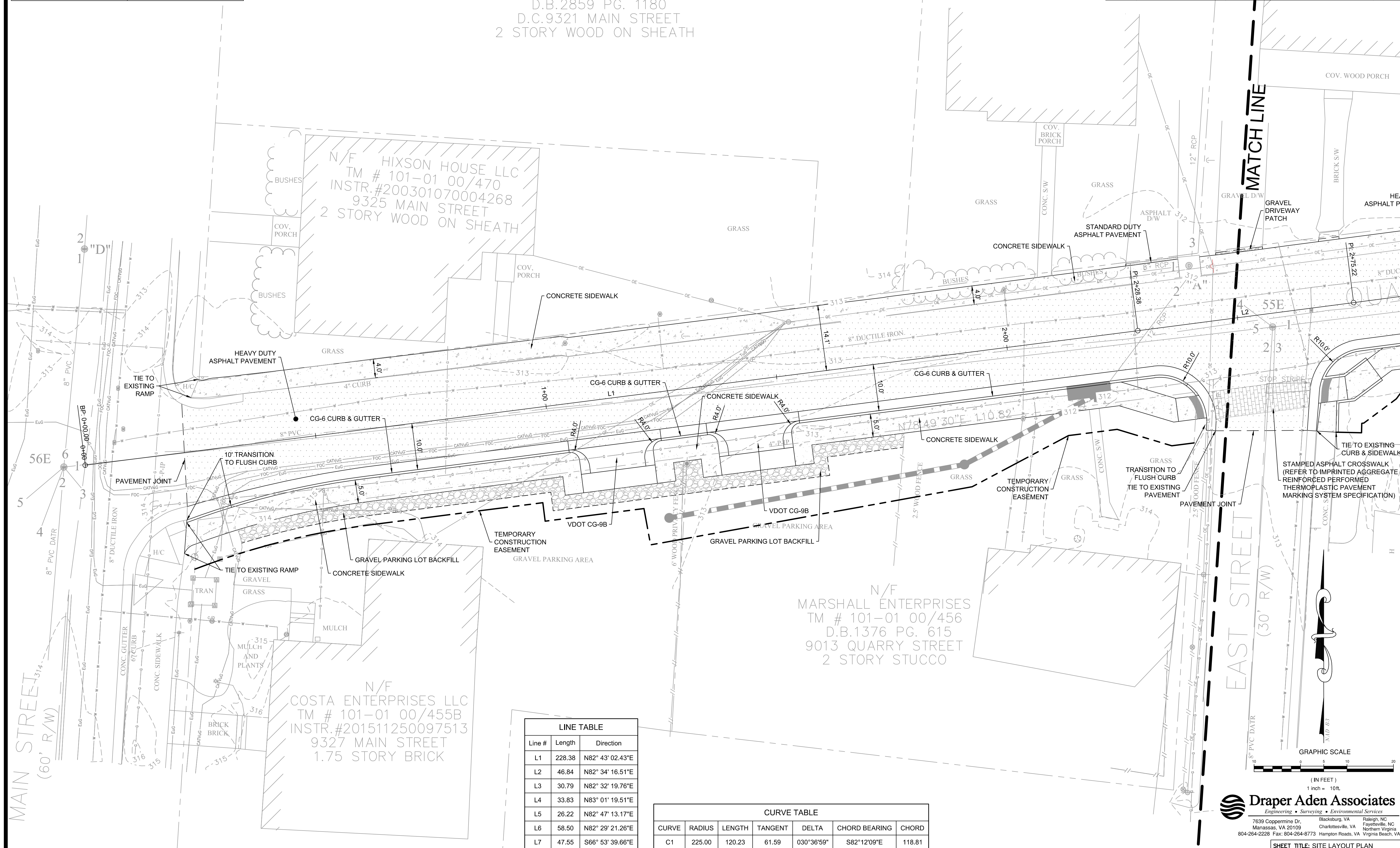
| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C4.5 |

| R.O.W REQUIRED FOR 5' SIDEWALK | |
|--------------------------------|----------|
| TAX I.D. | ROW (SF) |
| 101-01 00/455B | 228 |
| 101-01 00/456 | 246 |
| 101-01 00/457 | 322 |

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& RAYMONDA TRACY
TM # 101-01 00/469
D.B.2859 PG. 1180
D.C.9321 MAIN STREET
2 STORY WOOD ON SHEATH

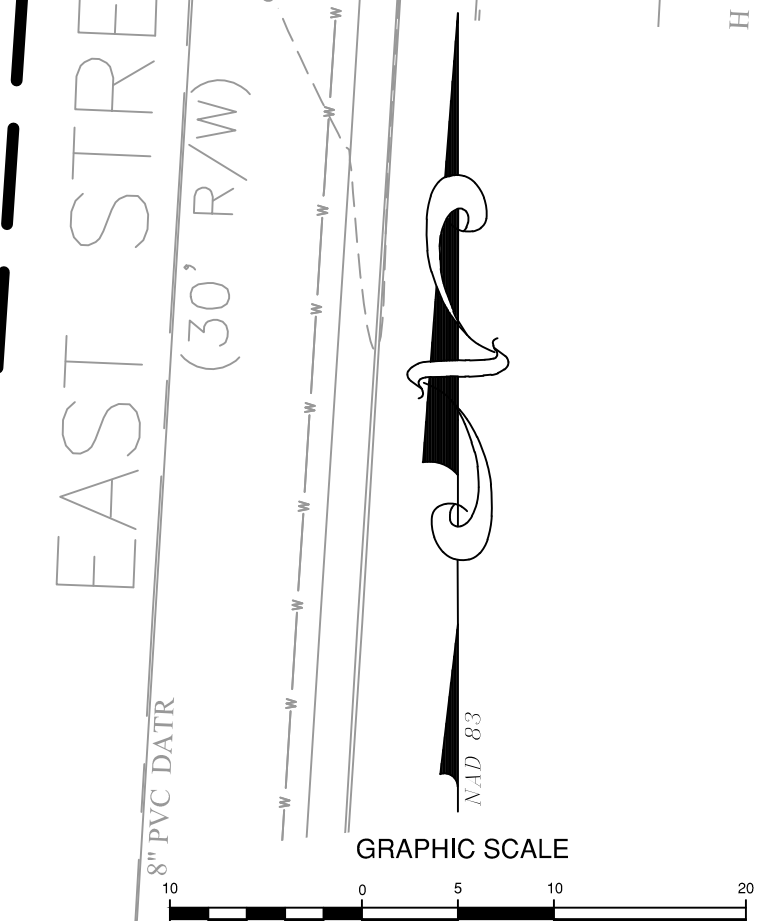
N/F BARRINGER
TM # 101-01 00/4
INSTR.#20150529004
9016 QUARRY STR
1.5 STORY ALUMINUM

| STATE | FEDERAL AID PROJECT | ROUTE | STATE PROJECT | SHEET NO. |
|-------|---------------------|-------|---------------|-----------|
| VA. | | | | |



| LINE TABLE | | |
|------------|--------|------------------|
| Line # | Length | Direction |
| L1 | 228.38 | N82° 43' 02.43"E |
| L2 | 46.84 | N82° 34' 16.51"E |
| L3 | 30.79 | N82° 32' 19.76"E |
| L4 | 33.83 | N83° 01' 19.51"E |
| L5 | 26.22 | N82° 47' 13.17"E |
| L6 | 58.50 | N82° 29' 21.26"E |
| L7 | 47.55 | S66° 53' 39.66"E |

| CURVE TABLE | | | | | |
|-------------|--------|--------|---------|------------|---------------|
| CURVE | RADIUS | LENGTH | TANGENT | DELTA | CHORD BEARING |
| C1 | 225.00 | 120.23 | 61.59 | 030°36'59" | S82°12'09"E |



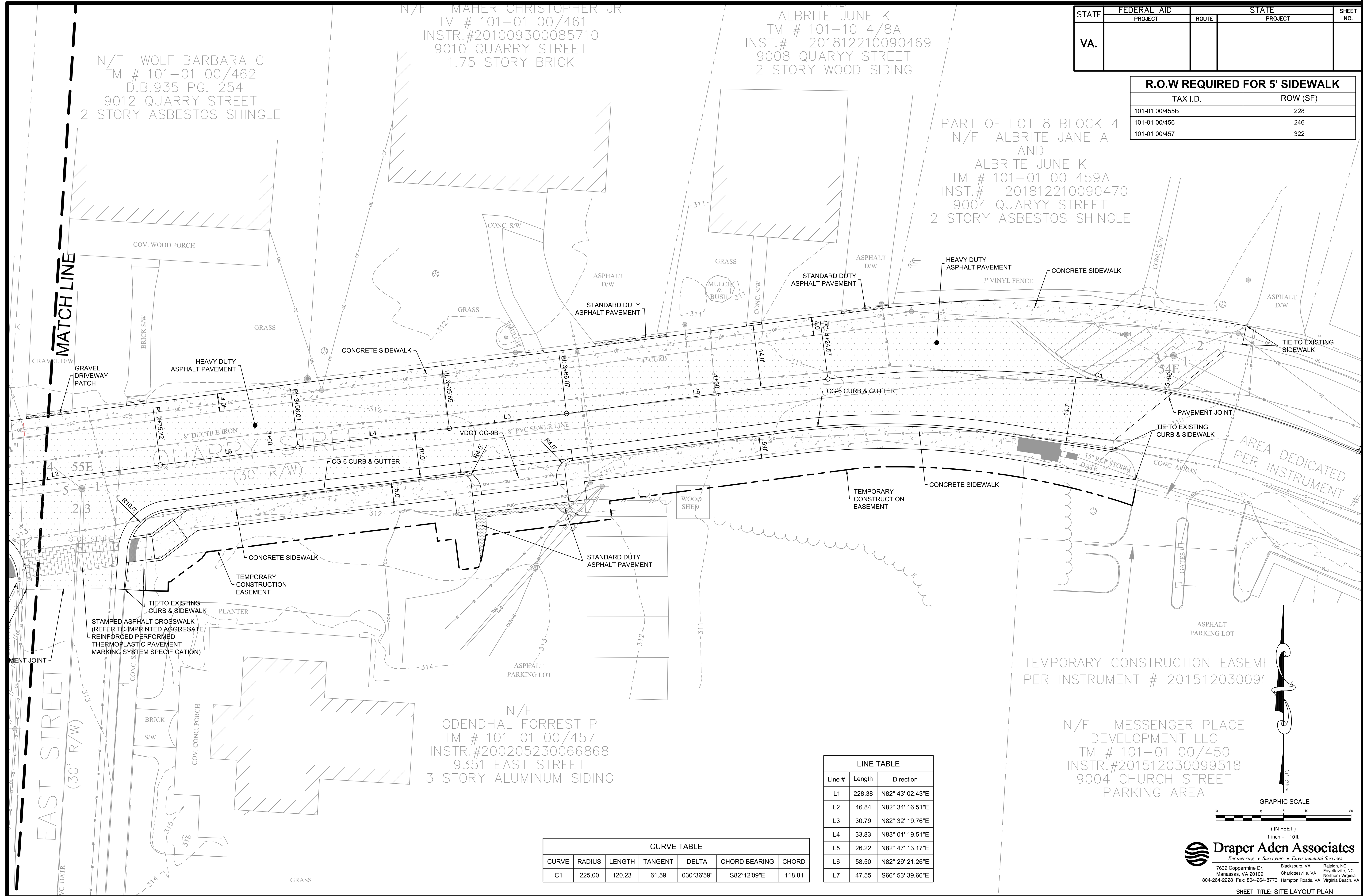
Draper Aden Associates
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7639 Coppermine Dr. Blacksburg, VA 24060
Manassas, VA 20109
804-264-2220 Fax: 804-264-8773
Charlottesville, VA 22902
Fayetteville, NC 28531
Northern Virginia
Hampton Roads, VA 23661

| SHEET TITLE: SITE LAYOUT PLAN | |
|-------------------------------|-----------|
| PROJECT | SHEET NO. |
| 19020645-010303 | C5.0 |

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

A

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

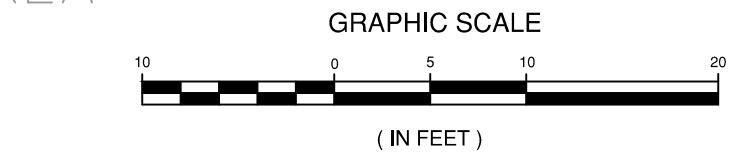


| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |

| R.O.W REQUIRED FOR 5' SIDEWALK | |
|--------------------------------|----------|
| TAX I.D. | ROW (SF) |
| 101-01 00/455B | 228 |
| 101-01 00/456 | 246 |
| 101-01 00/457 | 322 |

| LINE TABLE | | |
|------------|--------|------------------|
| Line # | Length | Direction |
| L1 | 228.38 | N82° 43' 02.43"E |
| L2 | 46.84 | N82° 34' 16.51"E |
| L3 | 30.79 | N82° 32' 19.76"E |
| L4 | 33.83 | N83° 01' 19.51"E |
| L5 | 26.22 | N82° 47' 13.17"E |
| L6 | 58.50 | N82° 29' 21.26"E |
| L7 | 47.55 | S66° 53' 39.66"E |

| CURVE TABLE | | | | | | |
|-------------|--------|--------|---------|------------|---------------|--------|
| CURVE | RADIUS | LENGTH | TANGENT | DELTA | CHORD BEARING | CHORD |
| C1 | 225.00 | 120.23 | 61.59 | 030°36'59" | S82°12'09"E | 118.81 |

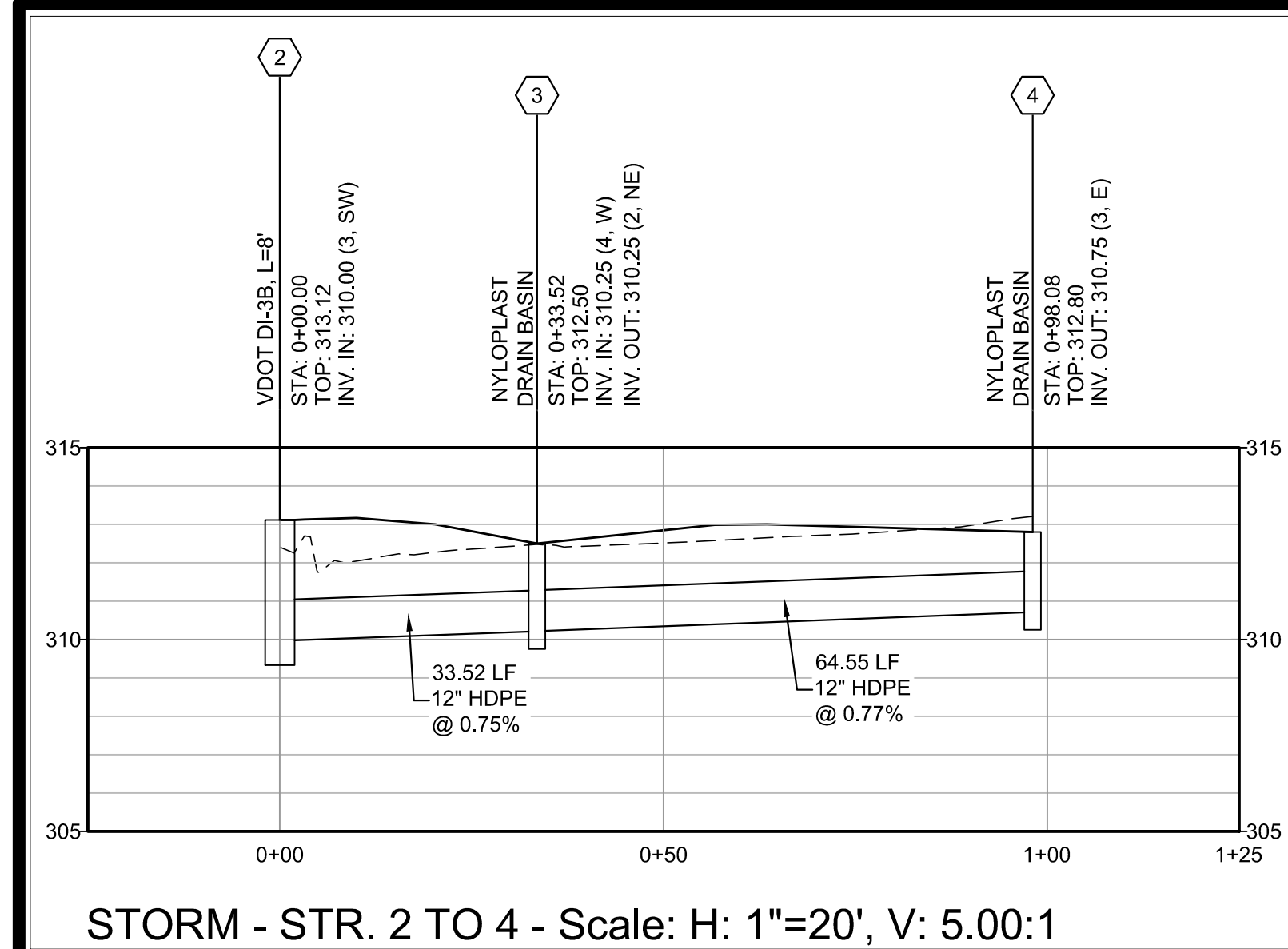


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Manassas, VA 20109
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Fayetteville, NC
Northern Virginia
Virginia Beach, VA

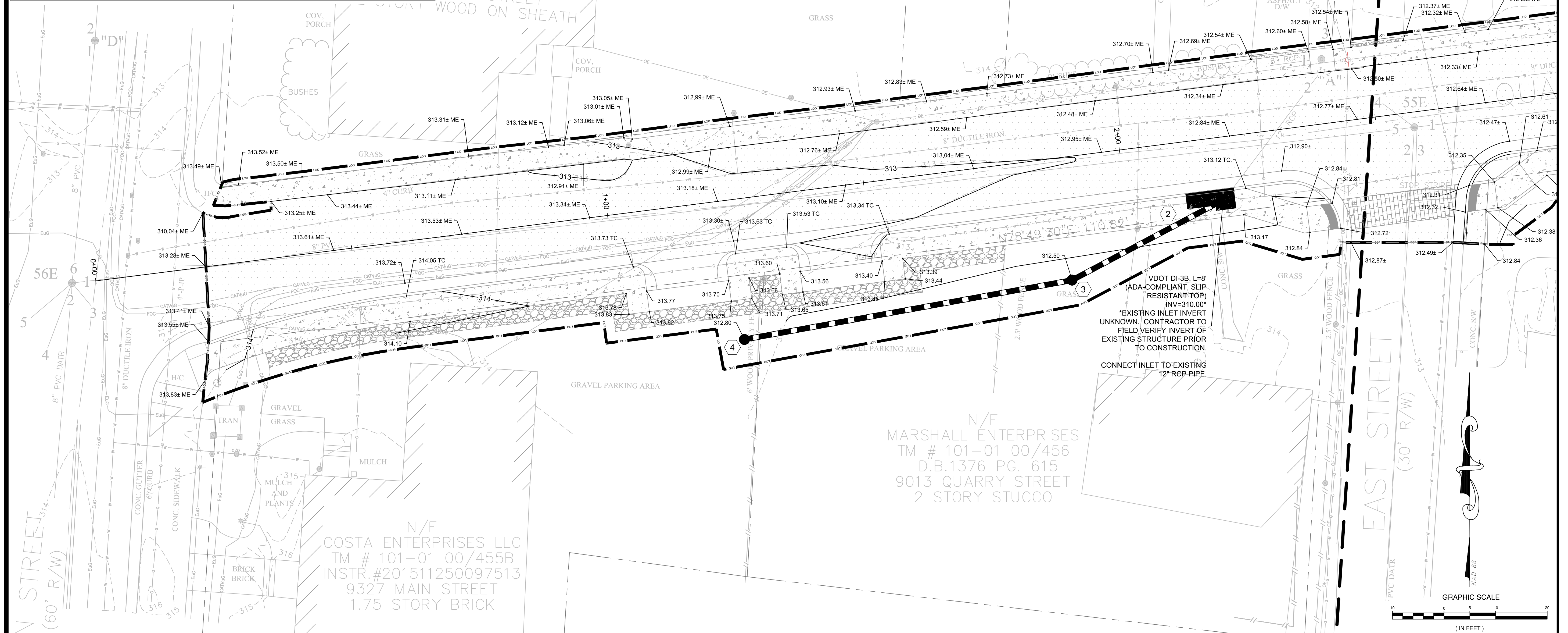
SHEET TITLE: SITE LAYOUT PLAN

| PROJECT | SHEET NO. |
|-----------------|-----------|
| 19020645-010303 | C5.1 |

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE



STORM - STR. 2 TO 4 - Scale: H: 1"=20', V: 5.00:1

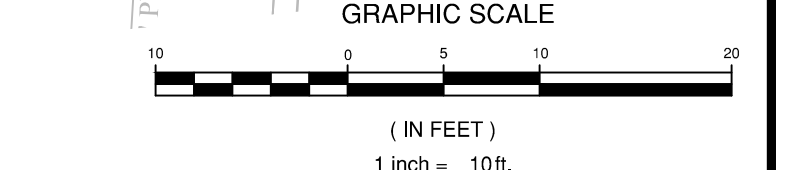


| Curb Inlet On Grade | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|------------|----------------|--------------------------|-----------------------|-----------------------------|-------------------|---------------|-------------------|----------------------------|--------------------------|---------------------|--------------------------|---------------------|-------------|------------|-----------------|------------------------|-----------------------|-----------------|--------------------------------|---------------|--------------------------------|
| Label | Solve For | Efficiency (%) | Curb Opening Length (ft) | Local Depression (in) | Local Depression Width (ft) | Discharge (ft³/s) | Slope (ft/ft) | Gutter Width (ft) | Gutter Cross Slope (ft/ft) | Road Cross Slope (ft/ft) | Manning Coefficient | Intercepted Flow (ft³/s) | Bypass Flow (ft³/s) | Spread (ft) | Depth (ft) | Flow Area (ft²) | Gutter Depression (ft) | Total Depression (ft) | Velocity (ft/s) | Equivalent Cross Slope (ft/ft) | Length Factor | Total Interception Length (ft) |
| STR-1 | Efficiency | 92.82 | 8 | 1 | 18 | 1.97 | 0.01 | 2 | 0.08 | 0.04 | 0.013 | 1.83 | 0.14 | 5.00 | 3.4 | 0.6 | 1 | 2 | 3.42 | 0.106 | 0.77 | 10.4 |
| STR-2 | Efficiency | 94.96 | 8 | 1 | 18 | 1.72 | 0.005 | 2 | 0.08 | 0.01 | 0.013 | 1.63 | 0.09 | 12.40 | 3.2 | 0.9 | 1.7 | 2.7 | 1.89 | 0.075 | 0.81 | 9.9 |

NOTE:
1. CONTRACTOR TO VERIFY ALL EXISTING ROAD, SIDEWALK, CURB, STORM STRUCTURE INVERTS, AND UTILITY ELEVATIONS PRIOR TO PERFORMING WORK. NOTIFY ENGINEER OF RECORD IMMEDIATELY FOR ANY DISCREPANCY IN ELEVATIONS SHOWN.

MATCH LINE

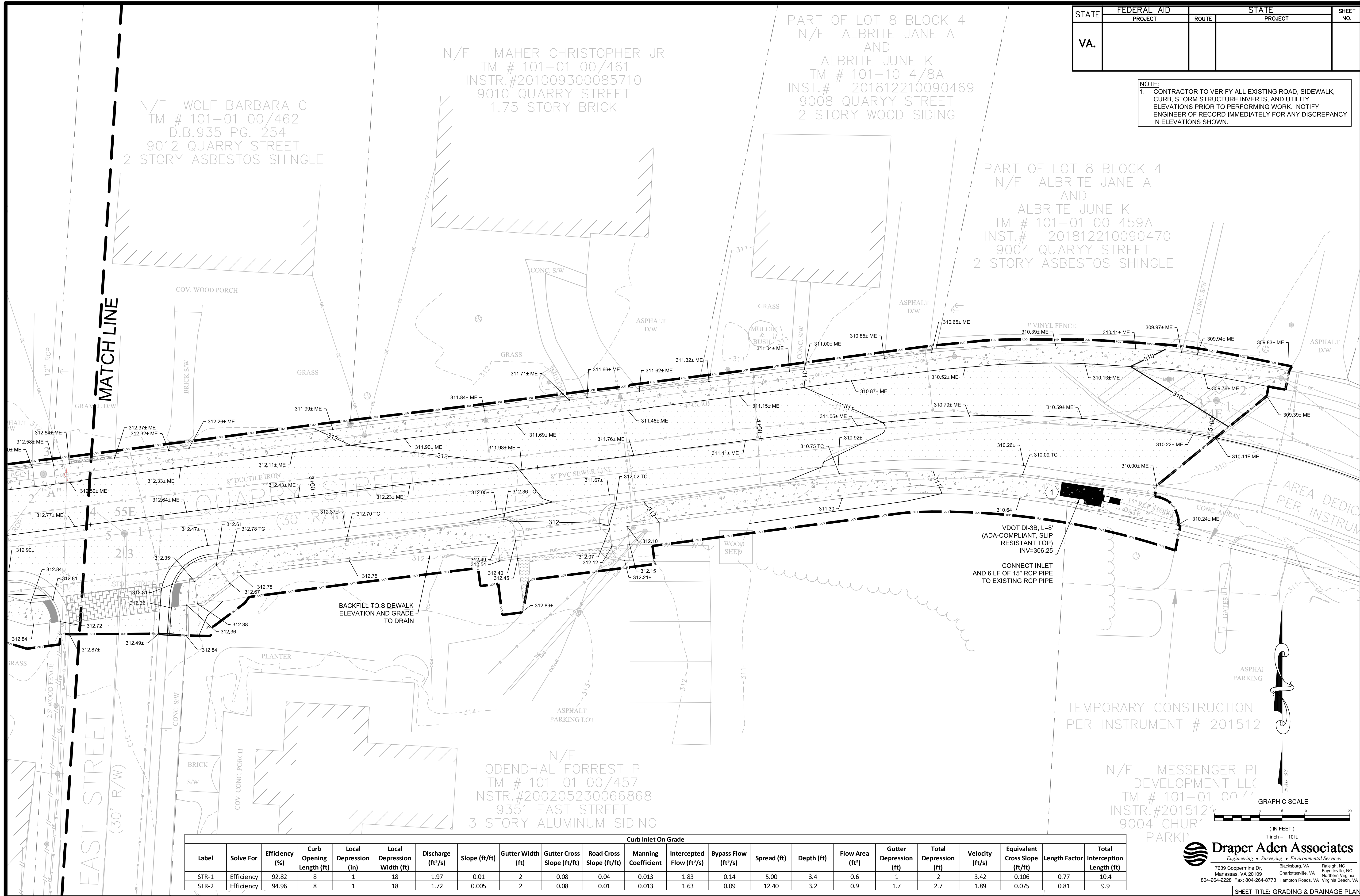
EAST STREET
(30' R/W)



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Virginia Beach, VA

| SHEET TITLE: GRADING & DRAINAGE PLAN | |
|--------------------------------------|-----------|
| PROJECT | SHEET NO. |
| 19020645-010303 | C6.0 |

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE



A

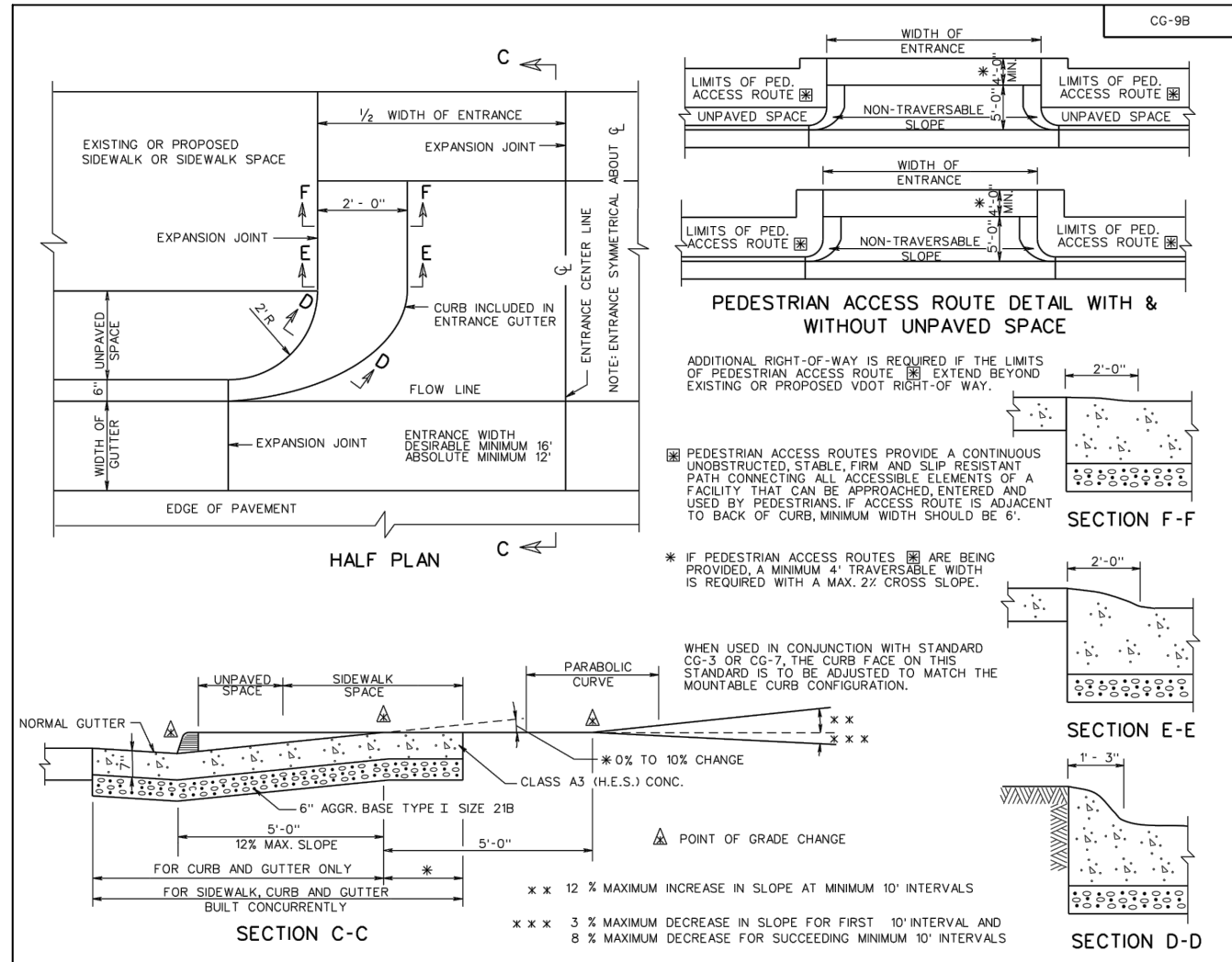
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Charlottesville, VA
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Fayetteville, NC
Northern Virginia
Virginia Beach, VA

SHEET TITLE: GRADING & DRAINAGE PLAN

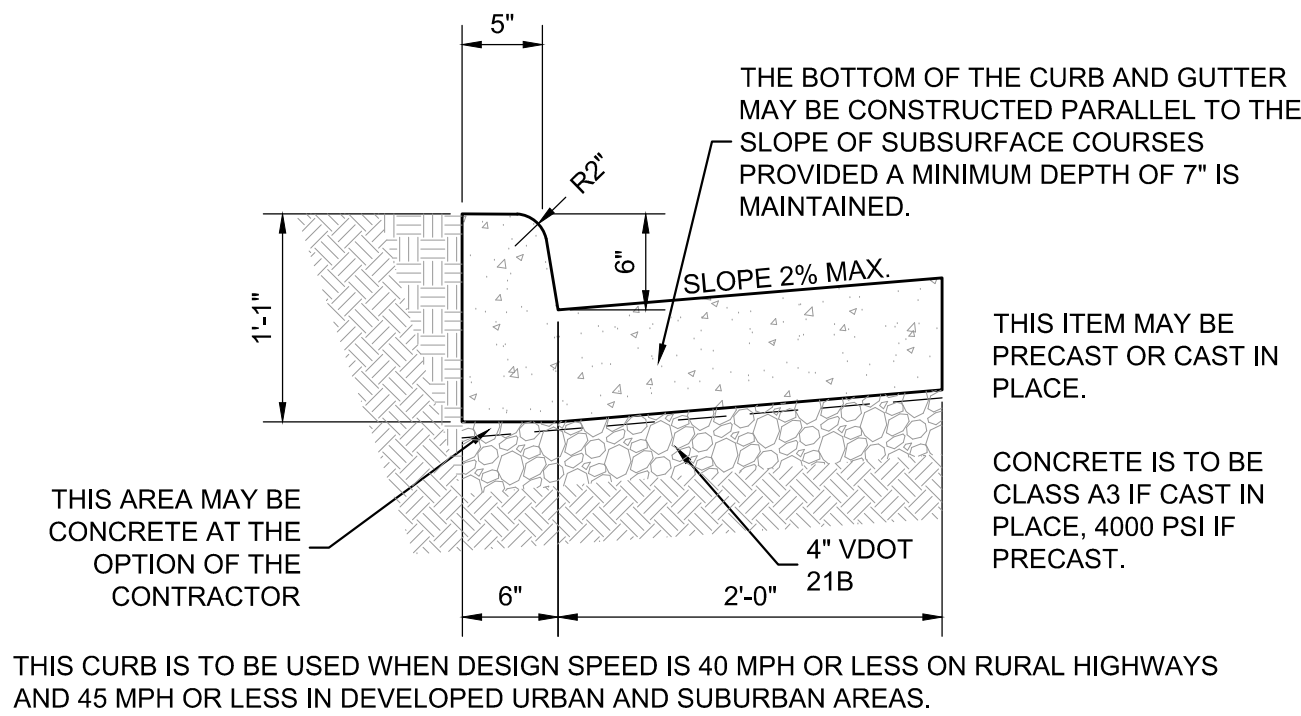
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SHEET NO.: C6.1

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

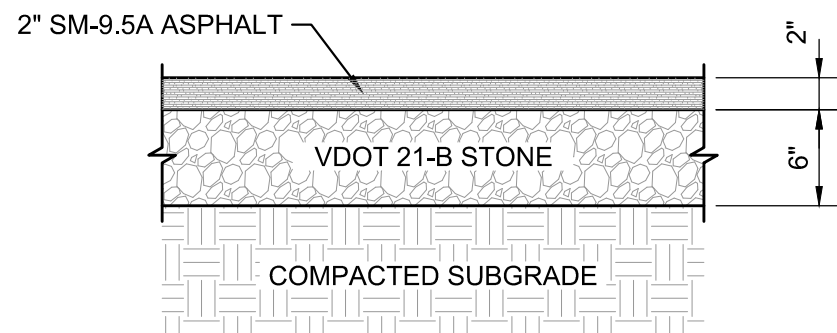
| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |



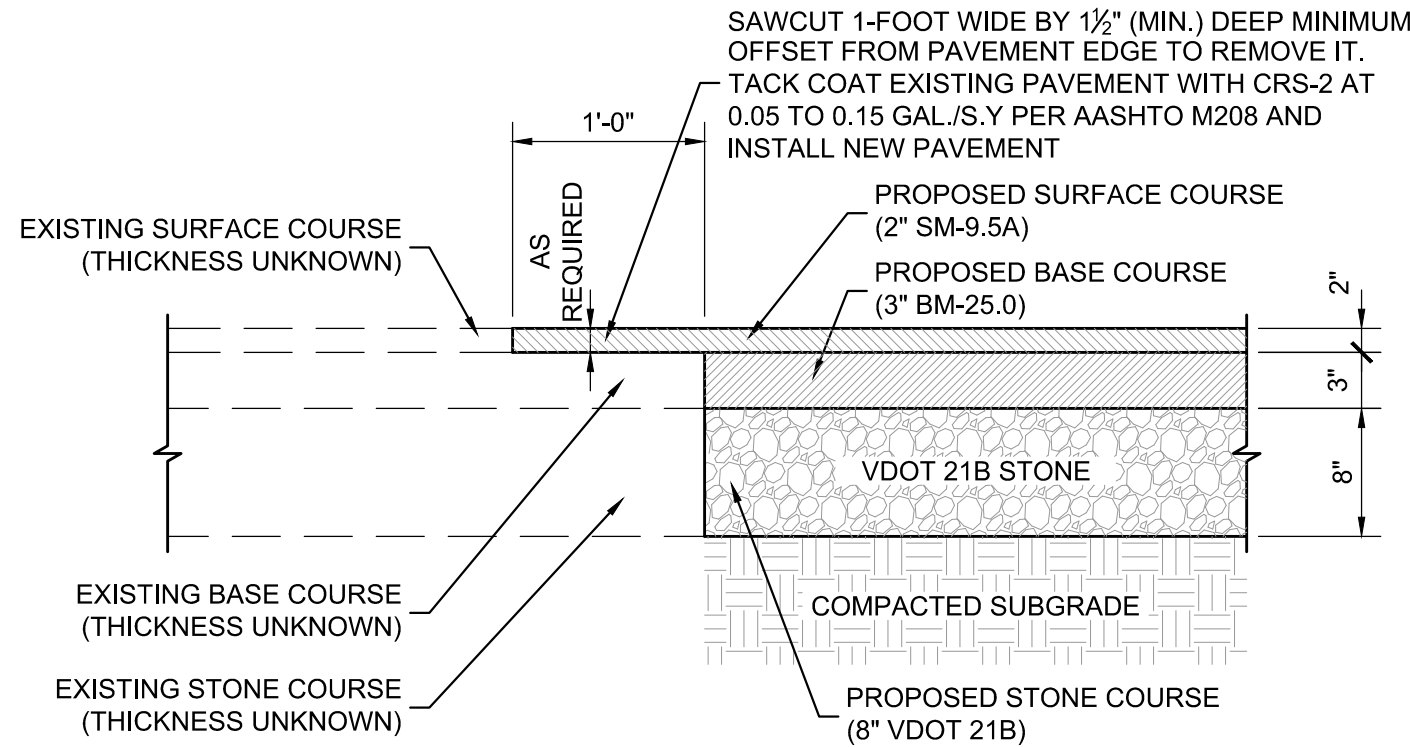
1 VDOT CG-9B DETAIL
C5.0 | C7.1 NOT TO SCALE



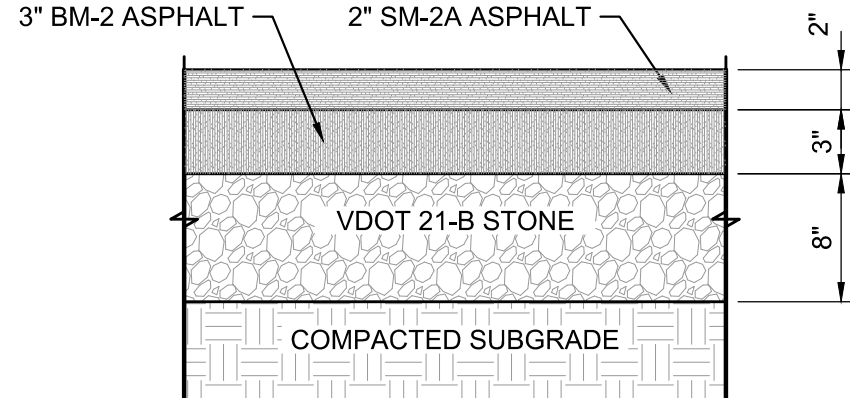
2 STANDARD CG-6 CURB AND GUTTER
C5.0 | C7.0 NOT TO SCALE



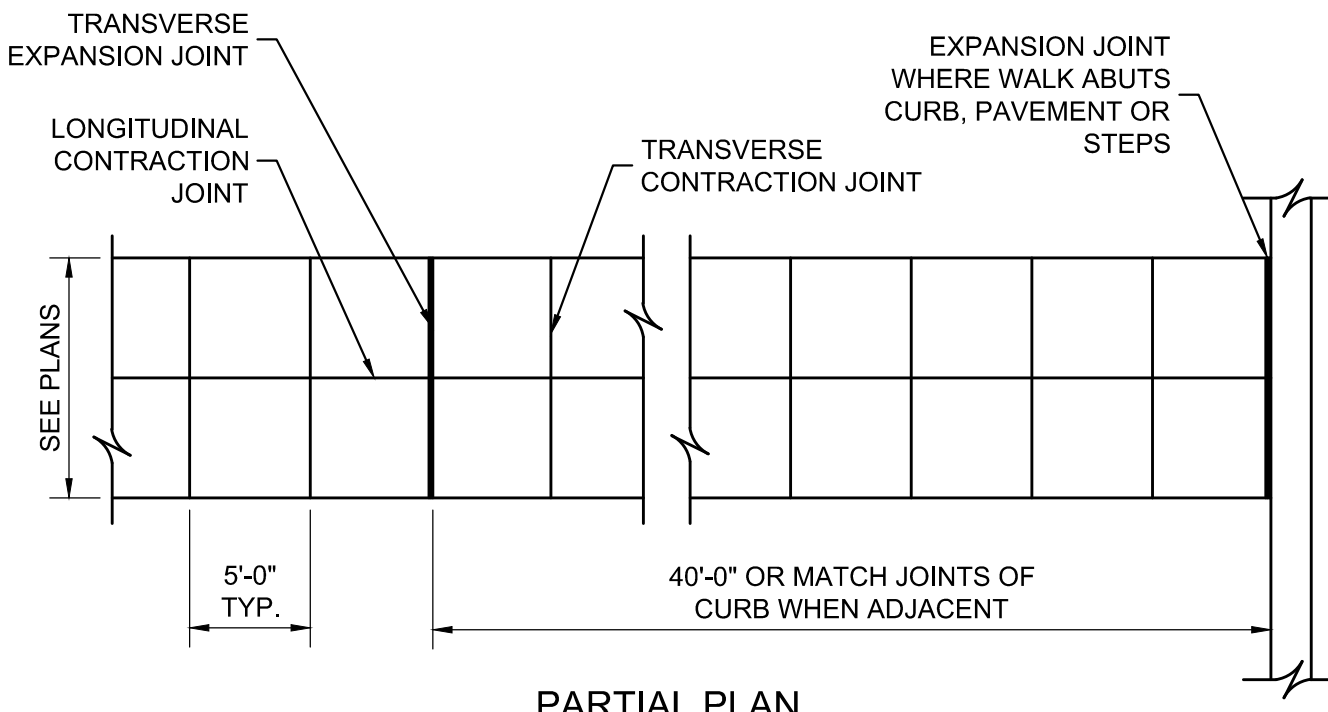
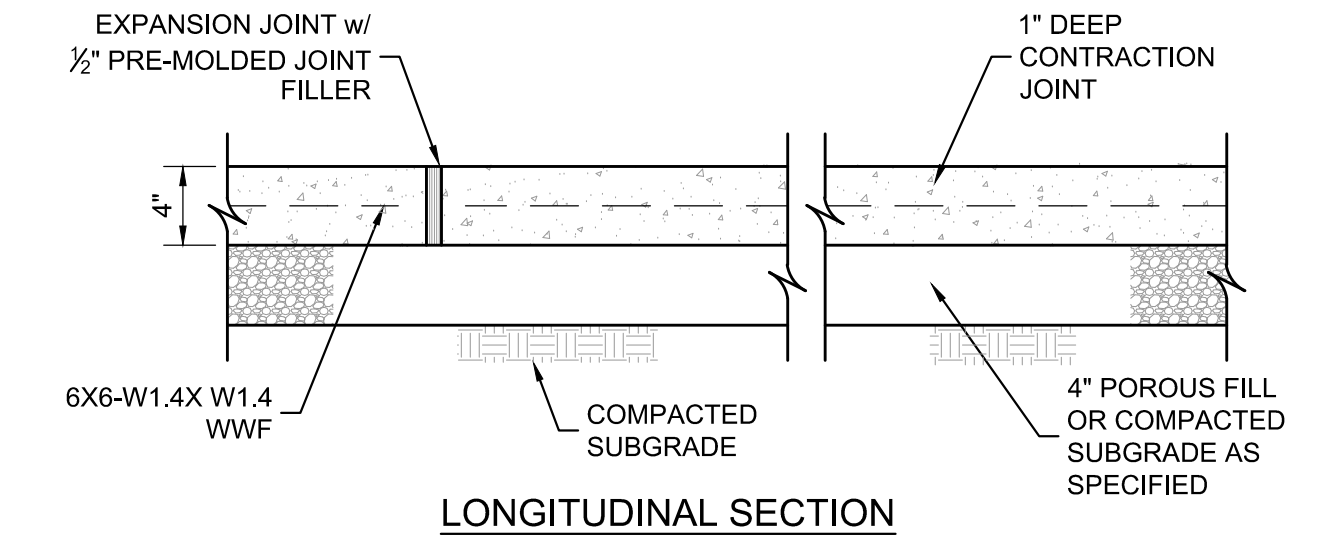
3 STANDARD DUTY ASPHALT PAVEMENT DETAIL
C5.0 | C7.1 NOT TO SCALE



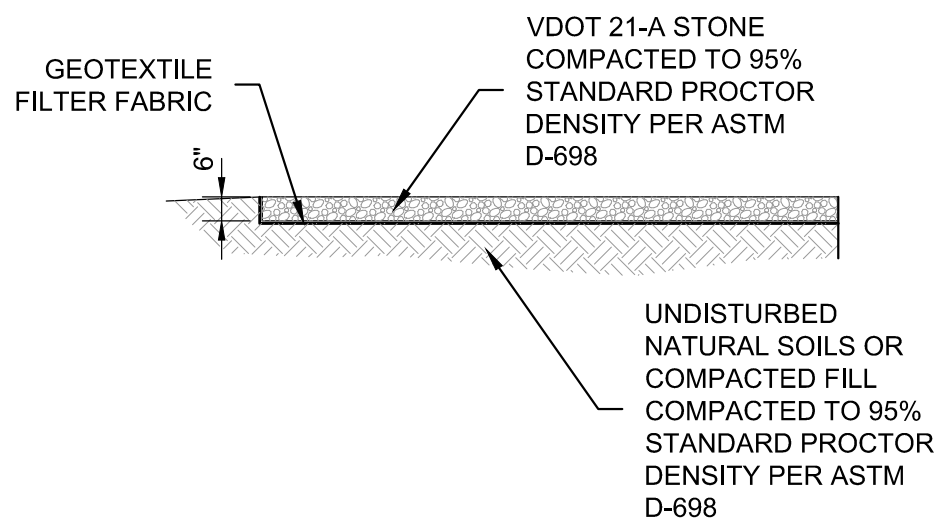
4 PAVEMENT JOINT DETAIL
C5.0 | C7.1 NOT TO SCALE



5 HEAVY DUTY ASPHALT PAVEMENT DETAIL
C5.0 | C7.1 NOT TO SCALE



6 TYPICAL SIDEWALK DETAIL
C5.0 | C7.1 NOT TO SCALE



7 TYPICAL GRAVEL PARKING LOT BACKFILL DETAIL
C5.0 | C7.1 NOT TO SCALE

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

| STATE | FEDERAL AID | ROUTE | STATE | SHEET NO. |
|-------|-------------|-------|---------|-----------|
| | PROJECT | | PROJECT | |
| VA. | | | | |

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Typical Traffic Control
Shoulder Operation with Minor Encroachment
(Figure TTC-5.2)

NOTES

Standard

1. For required sign assemblies for multi-lane roadways see Note 1, TTC-4.¹

Guidance

- Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
- When work takes up part of a lane on a high volume roadway; vehicular traffic volumes, vehicle mix, speed and capacity should be analyzed to determine whether the affected lane should be closed. Unless the lane encroachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet.

Option:

- The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

Standard:

- A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-intensity amber rotating, flashing, or oscillating light shall be parked 80' - 120' in advance of the first work crew.
- Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.

7. Taper length (L) and channelizing device spacing shall be at the following:

| Taper Length L | | | | | |
|-------------------|-----|-----|-----|-----|----------|
| Speed Limit (mph) | 9 | 10 | 11 | 12 | Remarks |
| 25 | 95 | 105 | 115 | 125 | L=S*W/60 |
| 30 | 135 | 150 | 165 | 180 | L=S*W/60 |
| 35 | 185 | 205 | 225 | 245 | L=S*W/60 |
| 40 | 240 | 270 | 295 | 320 | L=S*W/60 |
| 45 | 405 | 450 | 495 | 540 | L=S*W |
| Speed Limit (mph) | 50 | 55 | 60 | 65 | Remarks |
| 50 | 450 | 500 | 550 | 600 | L=S*W |
| 55 | 495 | 550 | 605 | 660 | L=S*W |
| 60 | 540 | 600 | 660 | 720 | L=S*W |
| 65 | 585 | 650 | 715 | 780 | L=S*W |
| 70 | 630 | 700 | 770 | 840 | L=S*W |

Limited Access highways shall use a 1000' merging taper regardless of the posted speed, a 750' shifting taper for posted speeds < 65 mph and a 1000' shifting taper for posted speeds ≥ 65 mph.²

Shoulder Taper = 75' L Minimum

8. Channelizing device spacing shall be at the following:

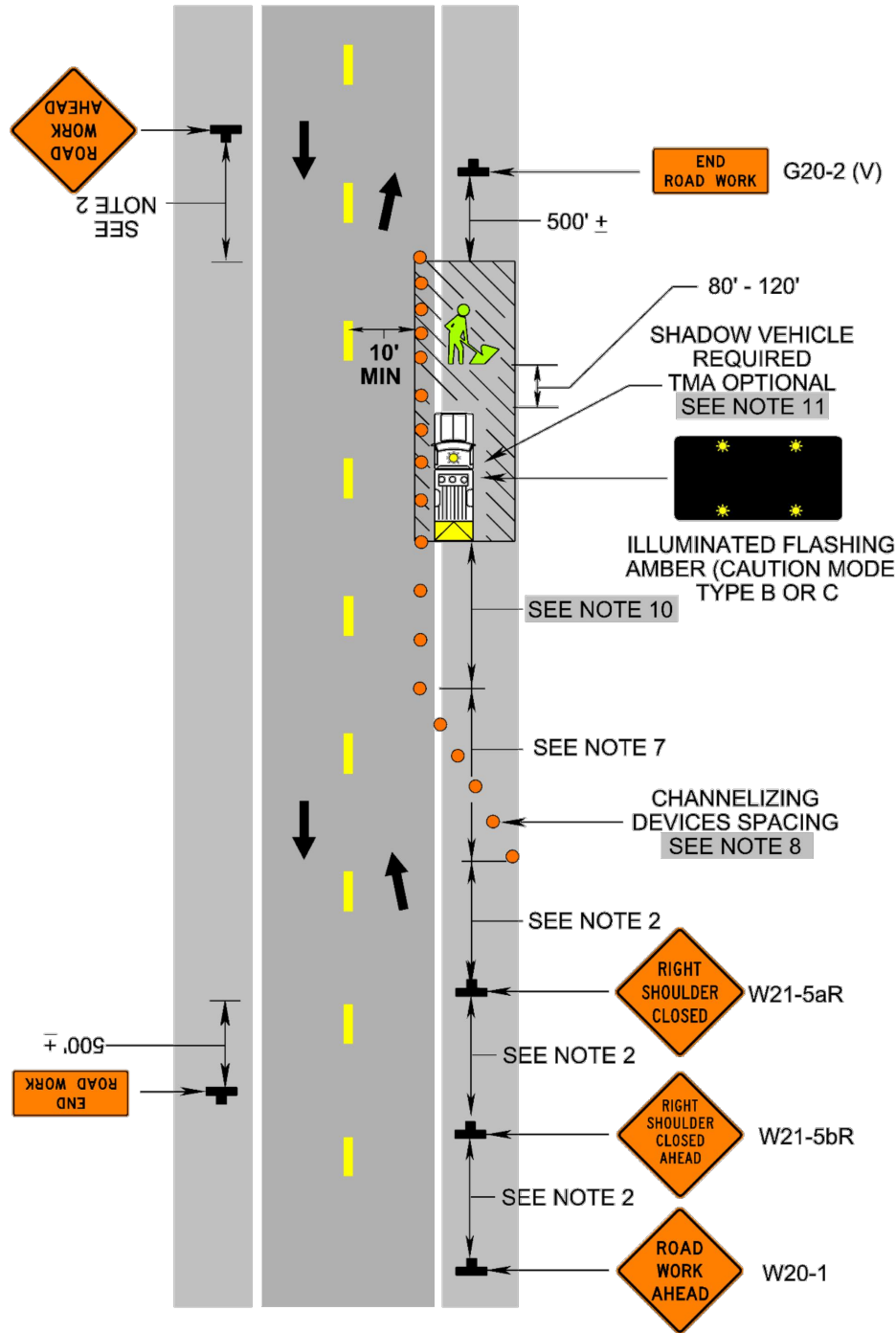
| Channelizing Device Spacing | | | |
|-----------------------------|-------------------|------------------|-------------------|
| Location Spacing | Speed Limit (mph) | Location Spacing | Speed Limit (mph) |
| Transition | 0-35 36+ | Travelway | 0-35 36+ |
| | 20' 40' | | 40' 80' |

*Construction access spacing may be increased to this distance, but shall not exceed one access per 1/4 mile.

- On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.²
- The buffer space length The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
- A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph.
- When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

1: Revision 1 - 4/1/2015
2: Revision 2 - 9/1/2019

Shoulder Operation with Minor Encroachment
(Figure TTC-5.2)



1: Revision 1 - 4/1/2015
2: Revision 2 - 9/1/2019

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)

NOTES

Guidance:

- Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.
- Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.
- To maintain efficient traffic flow in a flagging operation on a two-lane roadway, the maximum time motorists should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.²

Standard:

- Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6E.99.²
- Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).
- All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).
- Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.¹
- A shadow vehicle with at least one high intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew.

Option:

- A SLOW (W21-V10) sign² may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

- If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the PTRS, should be readjusted at greater distances.
- When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).

Standard:

- At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).

Option:

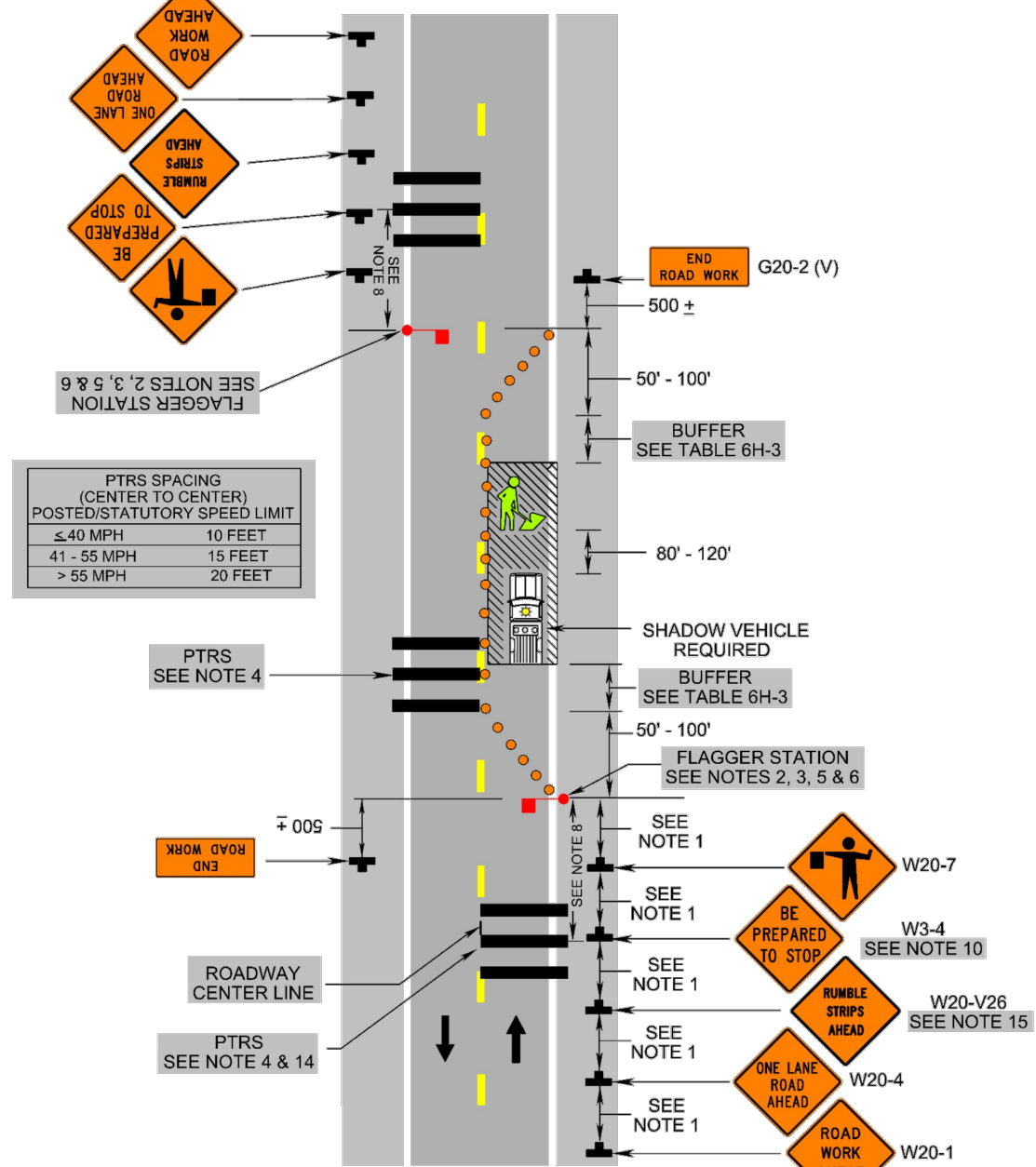
- Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
- For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

Standard:

- When used², three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.

1: Revision 1 - 4/1/2015
2: Revision 2 - 9/1/2019

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)



1: Revision 1 - 4/1/2015
2: Revision 2 - 9/1/2019

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Typical Traffic Control
Lane Closure Operation in an Intersection
(Figure TTC-28.2)

NOTES

Guidance:

- The control of traffic through the intersection in order of preference should be:
 - Obtain the services of law enforcement personnel.
 - Detour the effective routes to other roads and streets as approved and directed by the District Traffic Engineer.
 - Place a state certified flagger on each leg of the intersection controlling a single lane of traffic. Appropriate signing as shown should be used for law enforcement and flagging operations. For detour signs see Figure TTC-34.
- Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.
- To maintain efficient traffic flow in a flagging operation on a two-lane roadway the maximum time motorist should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.

Standard:

- Channelizing device spacing shall be on 20' centers or less.
- PTRS shall be used as noted in Section 6F.99.

Guidance:

- If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber flashing or oscillating light should be parked 80'-120' in advance of the first work crew.

Standard:

- For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber flashing or oscillating lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

Guidance:

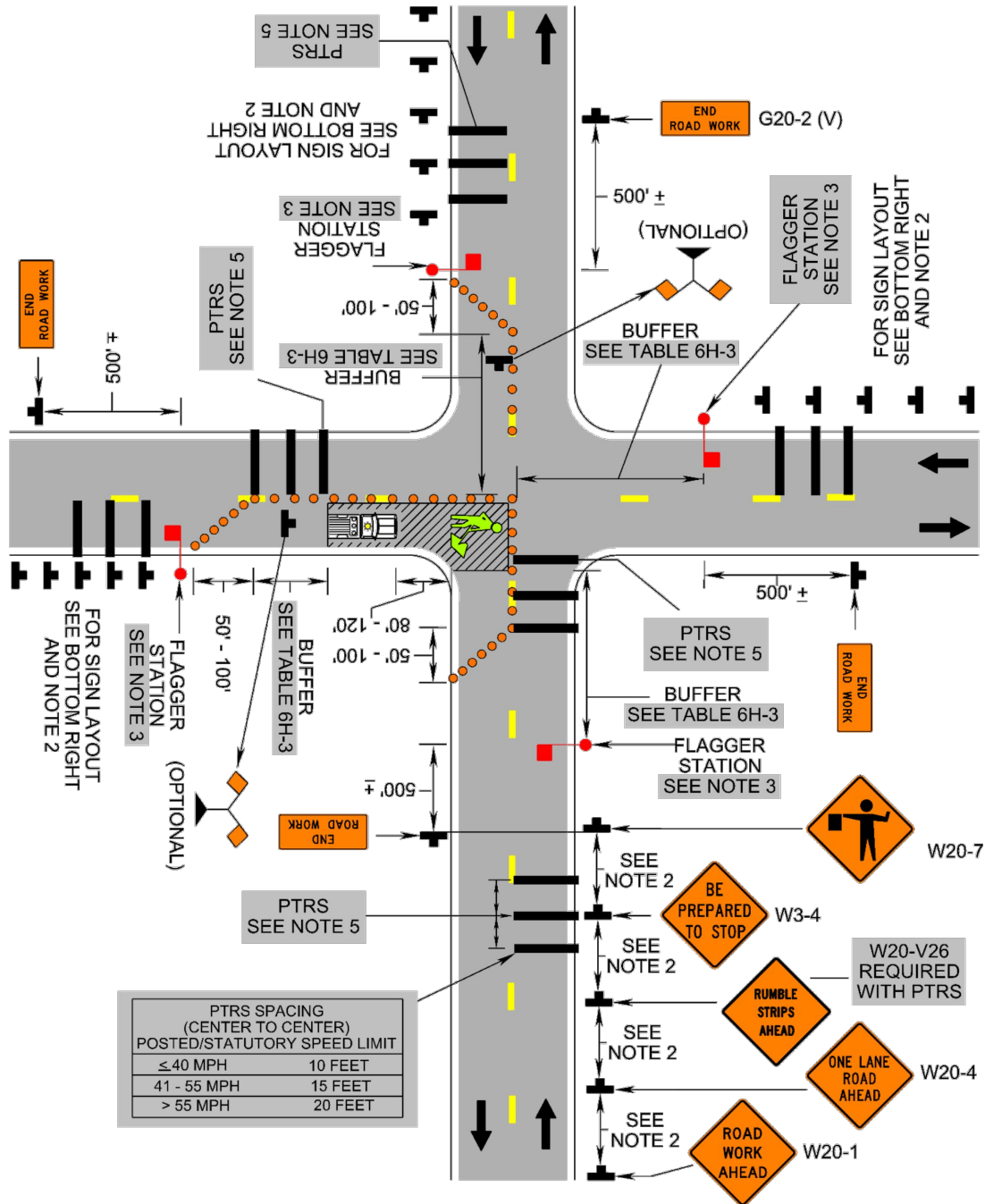
- If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

Support:

- Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

1: Revision 1 - 4/1/2015
2: Revision 2 - 9/1/2019

Lane Closure Operation in an Intersection
(Figure TTC-28.2)



2: Revision 2 - 9/1/2019

Typical Traffic Control
Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.1)

NOTES

Standard:

- When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Guidance:

- Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.
- Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
- Temporary markings should be considered for operations exceeding three days in duration.

Option:

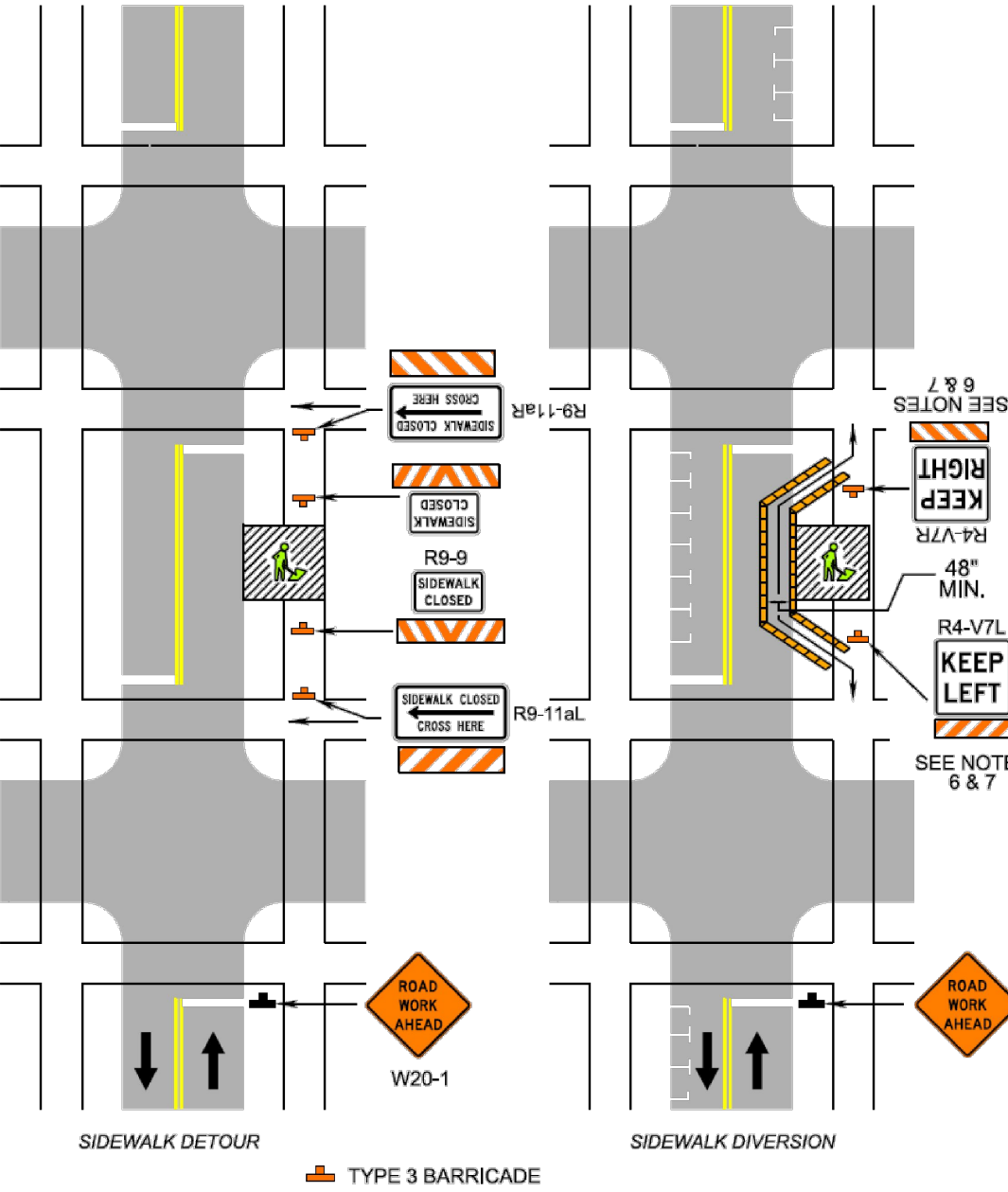
- Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
- For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
- Signs, such as KEEP RIGHT (R4-V7R) and KEEP LEFT (R4-V7L), may be placed along a temporary sidewalk to guide or direct pedestrians.

Standard:

- All sidewalk closures shall be closed with Type 3 Barricades. The SIDEWALK CLOSED (R9-9) sign and the SIDEWALK CROSS HERE (R9-11) sign shall be installed above the Type 3 barricade. The KEEP RIGHT sign can cover the top rail of the Type 3 Barricade.

2: Revision 2 - 9/1/2019

Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.1)



2: Revision 2 - 9/1/2019

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Typical Traffic Control
Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.2)

NOTES

Standard:

1. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.

Guidan

3. Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
4. Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.
5. Temporary markings should be considered for operations exceeding three days in duration.

Option:

6. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.

Standard:

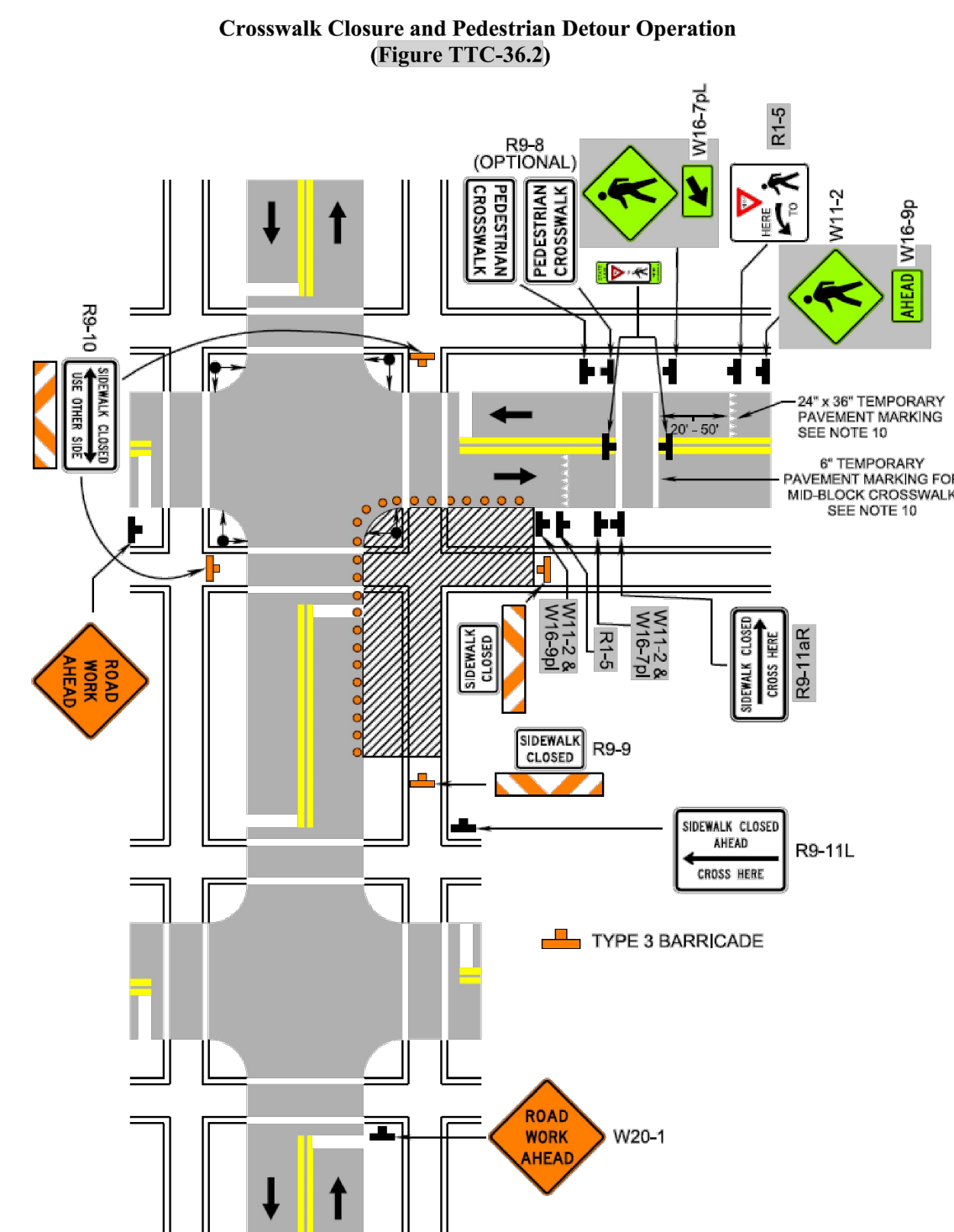
8. In order to maintain the systematic use of the fluorescent yellow-green background for school warning signs in a jurisdiction, the fluorescent yellow-green background for school warning signs shall be used in TTC zones.²
9. All sidewalk closures shall be closed with Type 3 Barricades. The SIDEWALK CLOSED (R9-9) sign and the SIDEWALK CROSS HERE (R9-11) sign shall be installed above the Type 3 Barricade. The KEEP RIGHT sign can cover the top rail of the Type 3 Barricade.²

Support

10. Refer to Sections 3B-16 through 3B-18 of the 2009 MUTCD and the Virginia Supplement to the MUTCD¹ for crosswalk¹ lines, yield lines and other related TTC devices that may be used to control vehicular traffic at midblock crosswalks.

Standard:

11. The YIELD HERE TO PEDESTRIANS (R1-5) sign shall be placed at the Yield Line.
12. Fluorescent yellow-green PEDESTRIAN TRAFFIC (W11-2) symbol sign, AHEAD (W16-9p) plaque and ARROW (W16-7p) plaque shall be used to identify the work zone crosswalk.



1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Typical Traffic Control
Road Closure Operation with a Detour
(Figure TTC-48.2)

NOTES

Guidance.

1. Regulatory traffic control devices should be modified as needed for the duration of the detour.
2. Sign spacing distance should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less. The directional sign should be placed at the intersection.
3. If the road is opened for some distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED LOCAL TRAFFIC ONLY (R1-30) and DETOUR (M4-10) signs on Type 3 Barricades should be located at the corners of intersecting closing roadway or the traveled way.

Options:

4. If the road is open for some distance beyond the intersection the Route Sign Directional assembly may be placed in the travelway as shown to augment or replace the one shown on the corners.
5. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
6. Cardinal direction plaques, W16-5pl, may be used with route (M4-V5a) and closure (R11-V2) signs.

Standard

7. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
8. For short-term duration work the M4-9 or M4-V4 series of signs shall be used. For long-term duration work the route shield assembly shall be used with the detour sign.

Option:

9. Long-term detours may be signed with a street name (M4-VP1a or M4-VP1b) plaque above the DETOUR (M4-9 or M4-V4 series) sign (see Figure TTC-34).

Support:

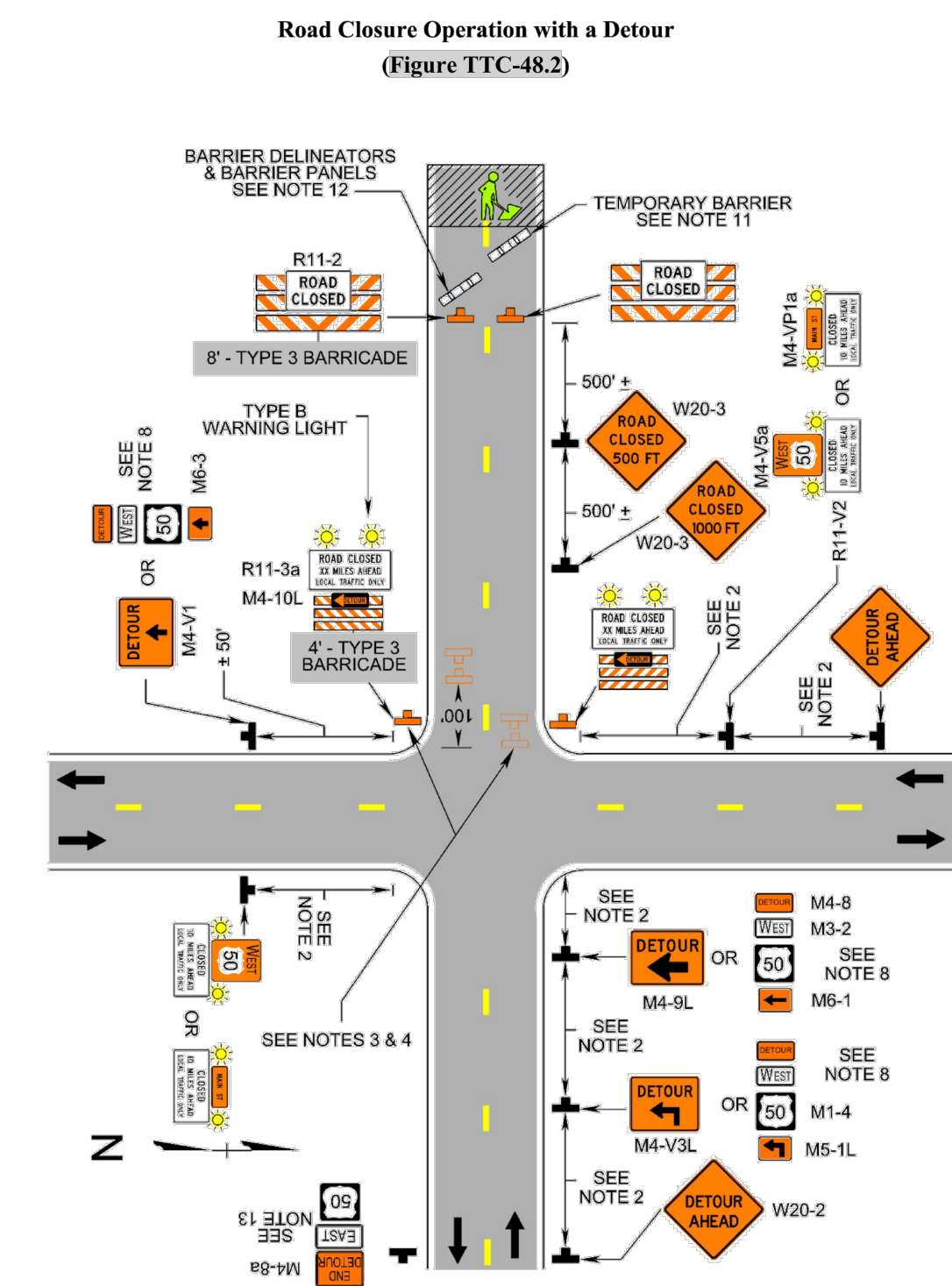
10. See Chapter 6I for additional information on incident management traffic control.

Guidance.

11. Temporary barrier should be placed at a 45° angle to the travelway a sufficient distance beyond the Type 3 Barricade but before the work space while providing equipment access to the work space.


Standard

12. Barrier panels 8 inches in width and 12 inches in height shall be placed on top of the temporary concrete barrier, facing traffic, and spaced on 10' centers along the barrier sections. ReflectORIZED surface shall be fluorescent orange prismatic lens sheeting. Barrier delineators shall be spaced on 10' centers along the transition or taper sections and centered in-between the barrier panels along the parallel or tangent sections¹ approximately 24 inches up from the roadway surface.
13. An END DETOUR (M4-8a) sign shall be used with a Cardinal Route shield and a Cardinal Directional sign to terminate the detour route.



1: Revision 1 – 4/1/2019
2: Revision 2 – 9/1/2019

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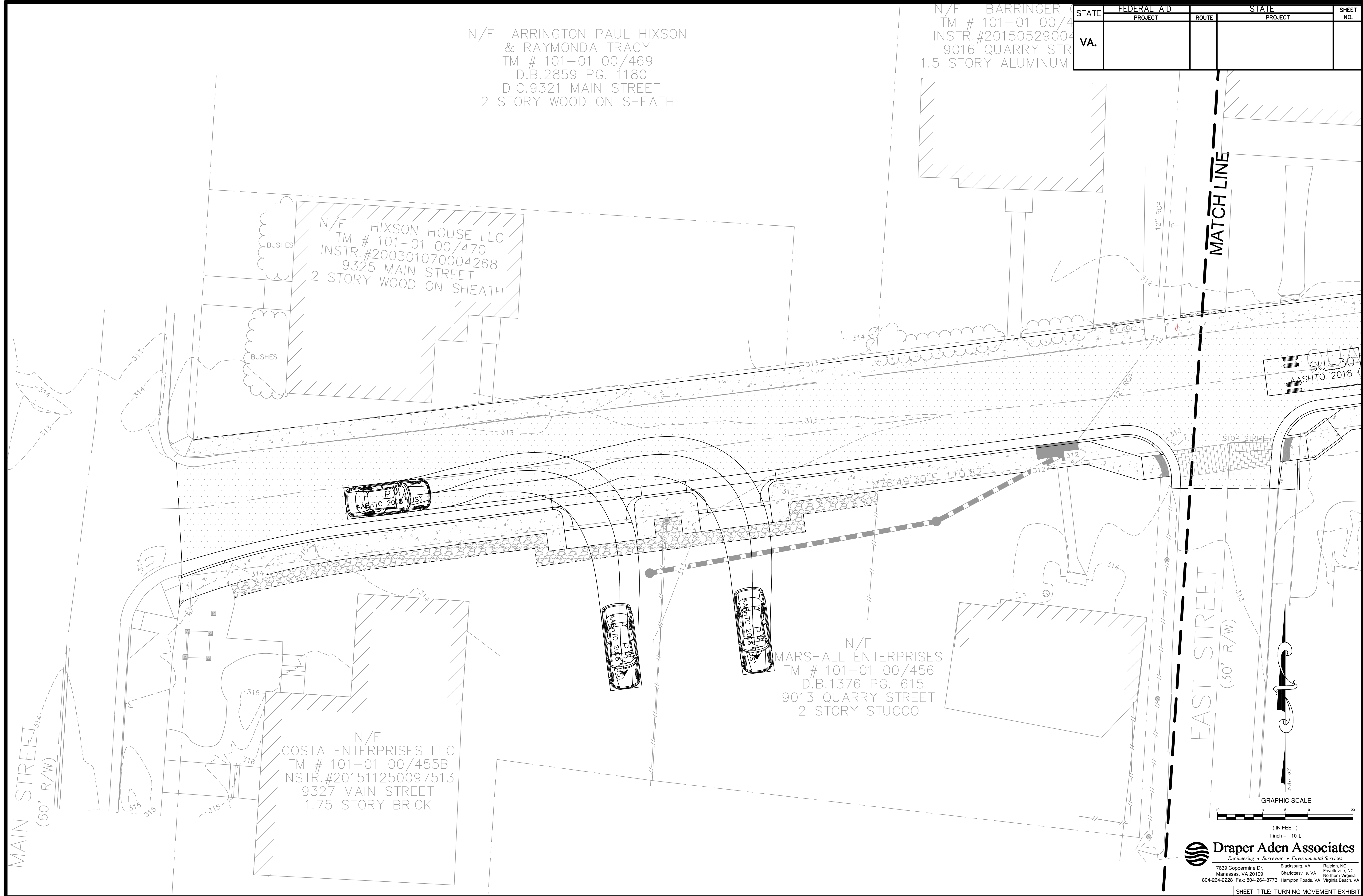
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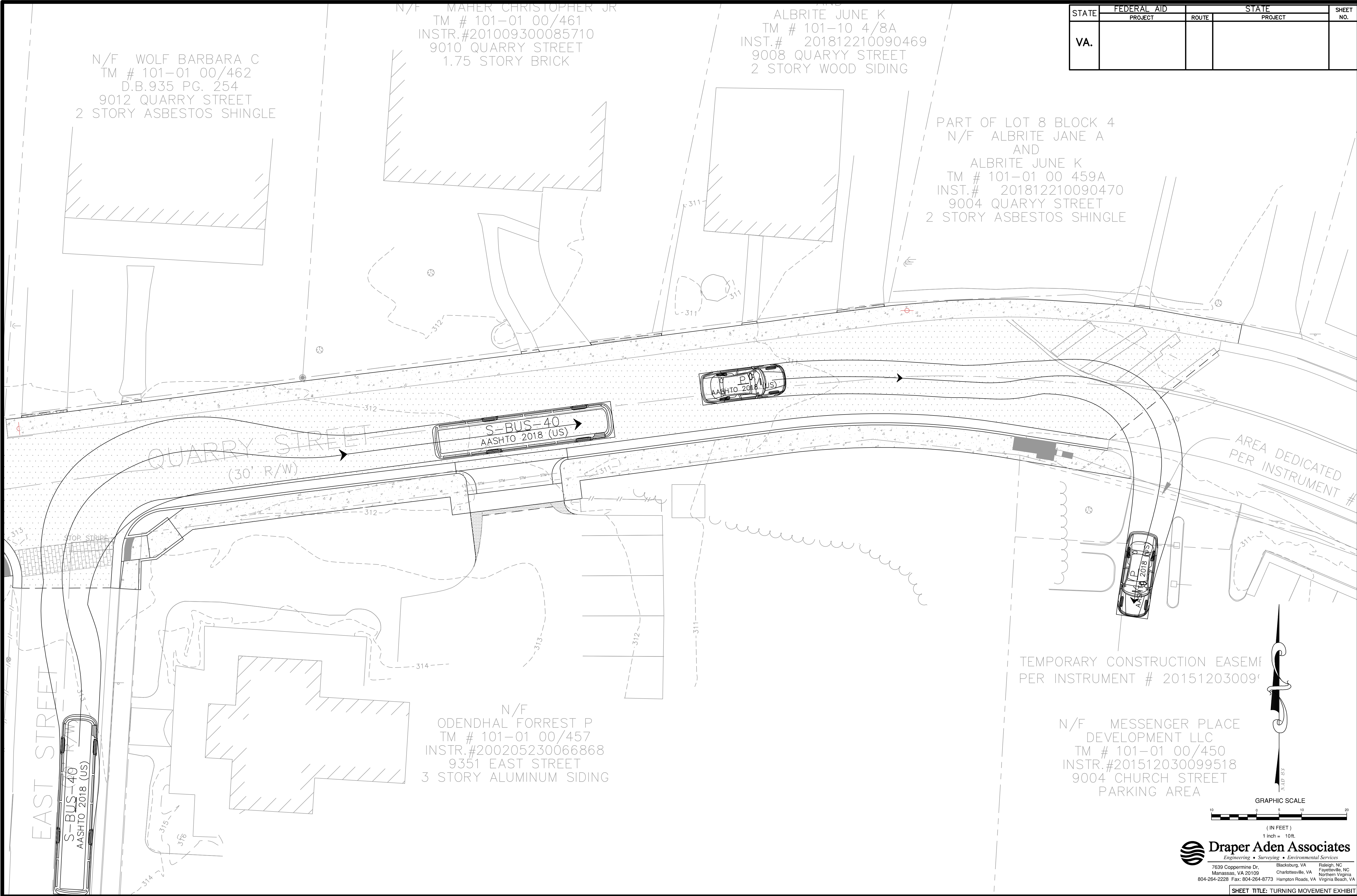


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| SHEET TITLE: TURNING MOVEMENT EXHIBIT | |
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| 19020645-010303 | C9.0 |

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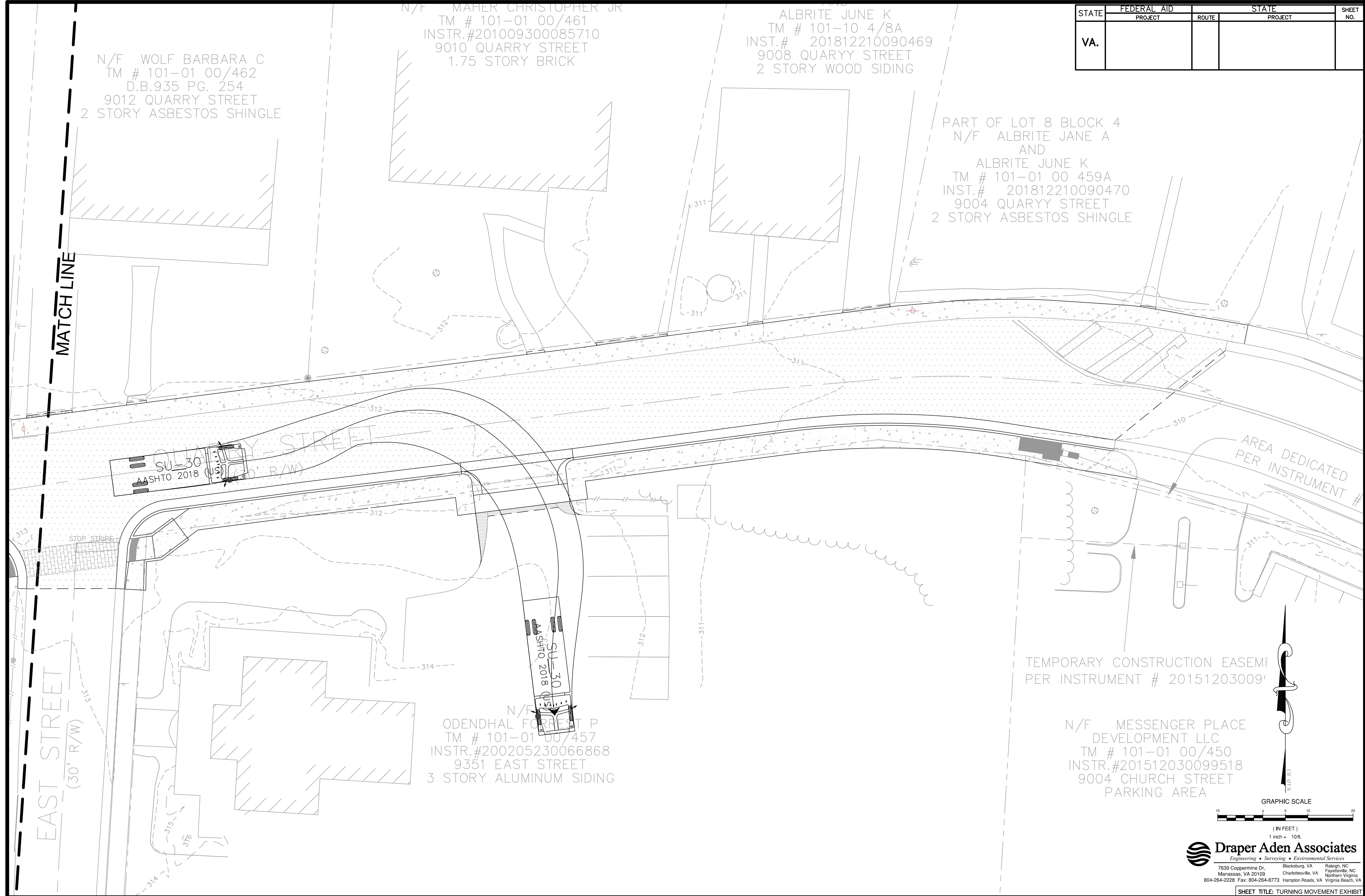
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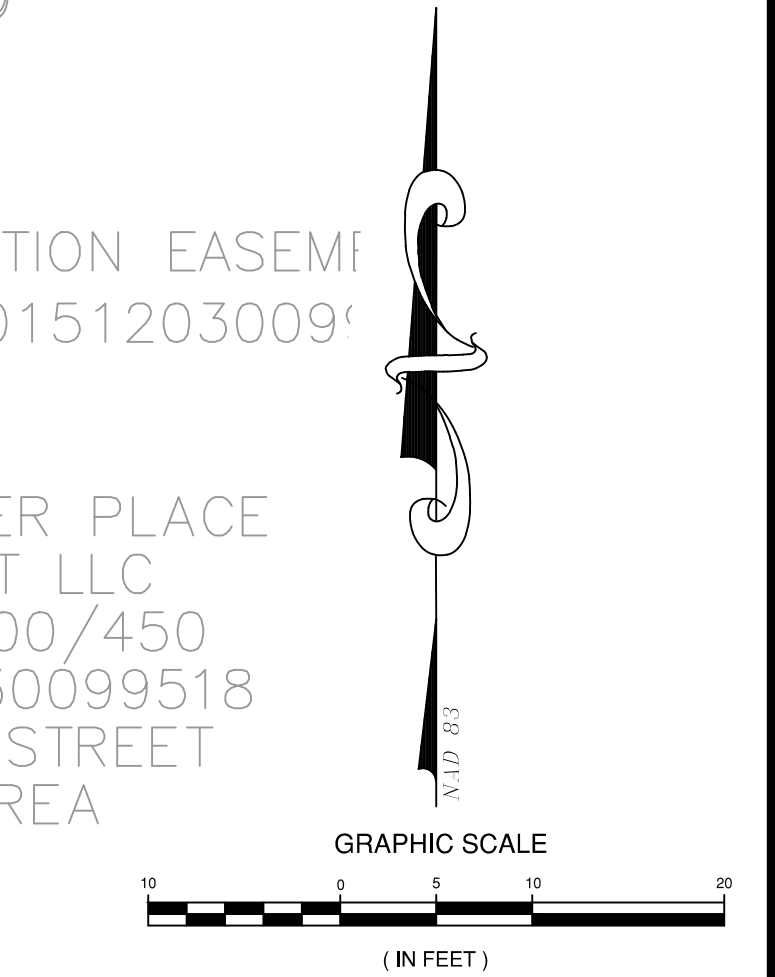
SHEET TITLE: TURNING MOVEMENT EXHIBIT

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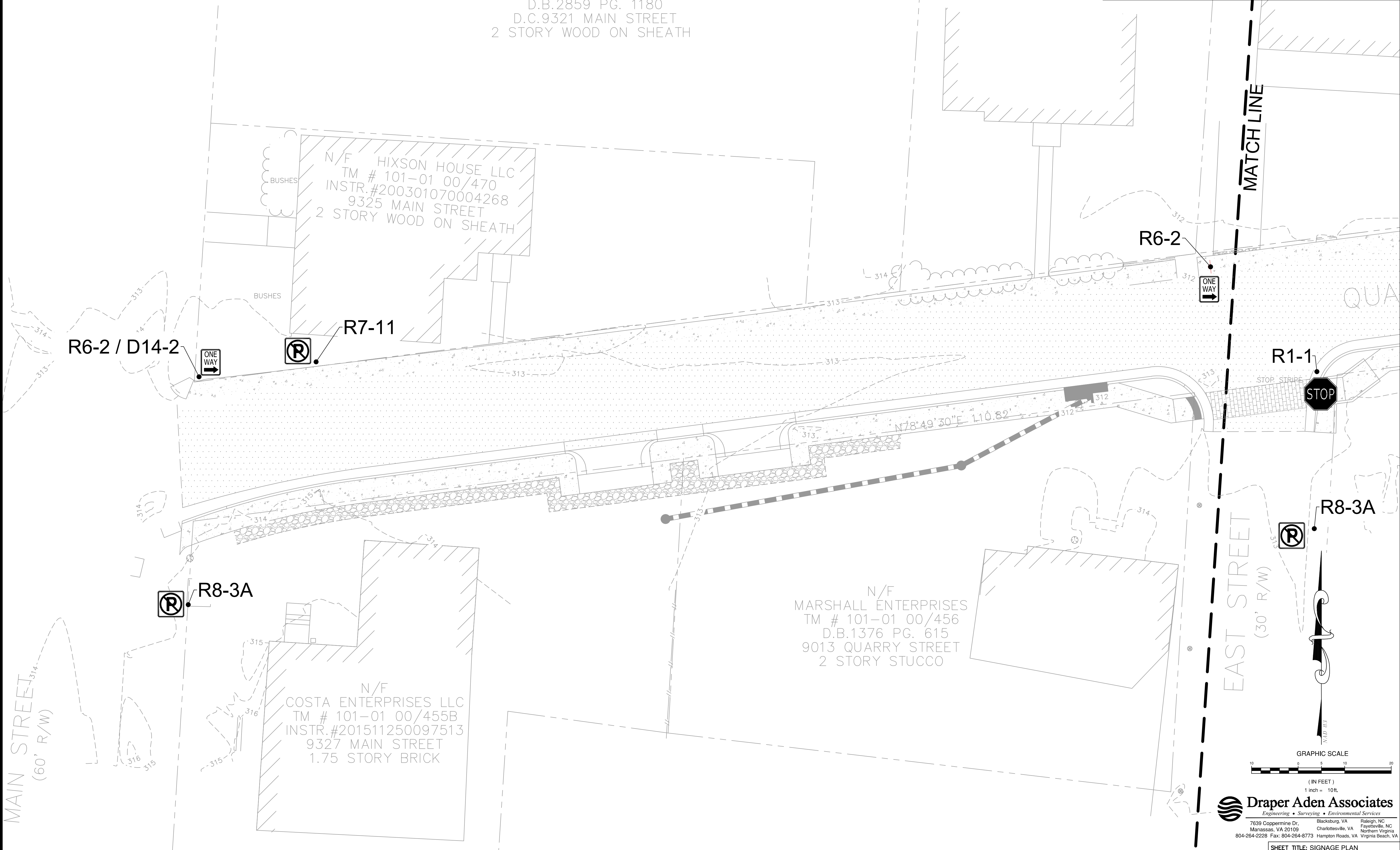
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NOTE
1. ALL SIGNS ARE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION

N/F ARRINGTON PAUL HIXSON
& RAYMONDA TRACY
TM # 101-01 00/469
D.B.2859 PG. 1180
D.C.9321 MAIN STREET
2 STORY WOOD ON SHEATH

N/F BARRINGER
TM # 101-01 00/4
INSTR.#20150529004
9016 QUARRY STR
1.5 STORY ALUMINUM

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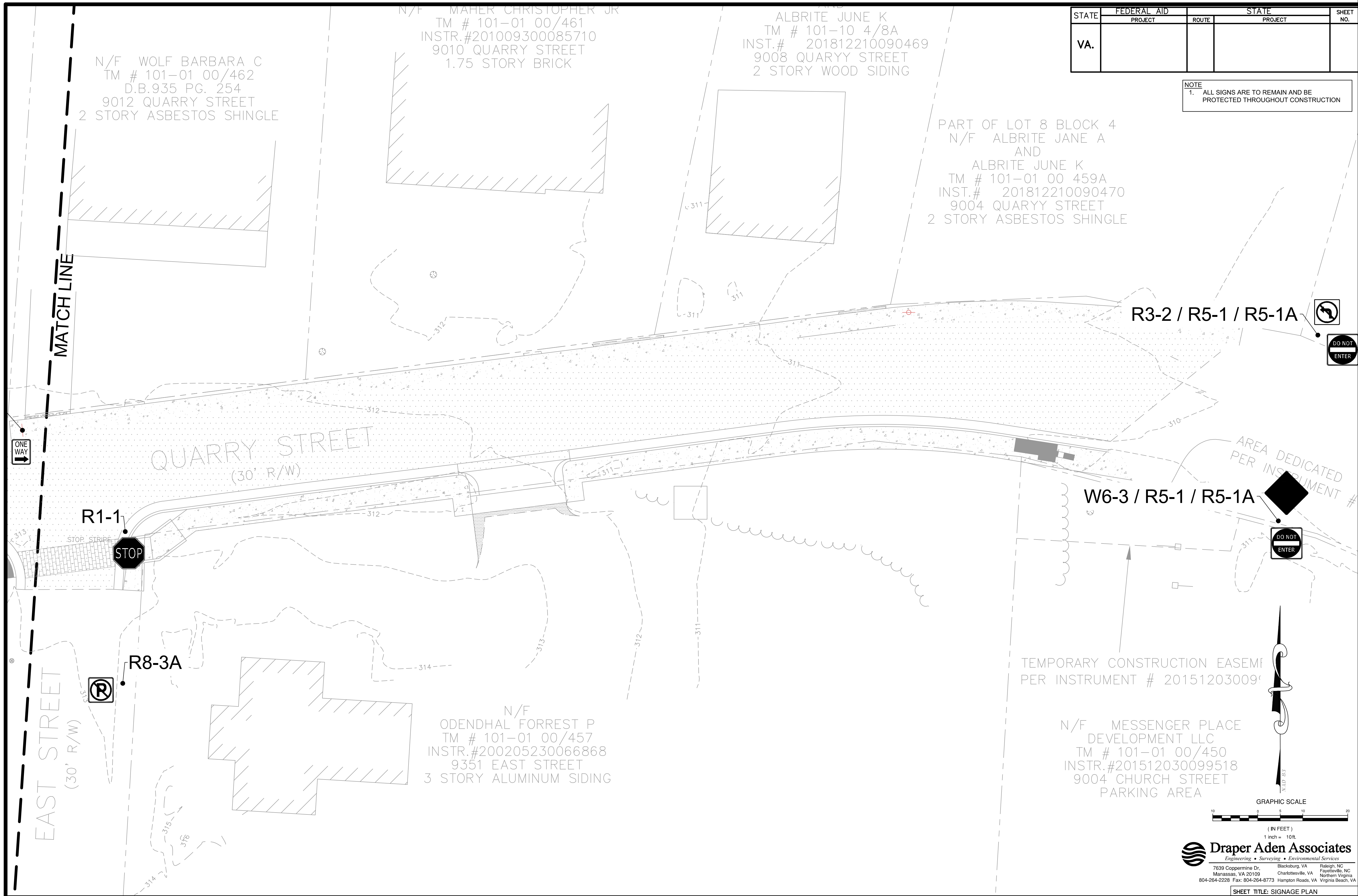
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NOTE
1. ALL SIGNS ARE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

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