Earthwork drawings for structures and pavements include clearing and grubbing, excavation, fill and backfill, compaction, and grading. Show the following on project drawings. See DCSM sections 2.3 and 2.6 for additional details on drawings. See DCSM sections 4.8, 7.7, and 7.8 for additional information on transportation, traffic, and parking requirements.

**Instructions**:

Indicate your response to each item in the checklist. Select ‘Yes’ if the checklist item has been completed in full. Select ‘No’ or ‘N/A’ if that item is not included or not required for the specific project. Explain why that item has not been included in the submittal.

| **RESPONSE** | **REQUIREMENTS** |
| --- | --- |
|  | General |
| Choose an item. | Submit a statement of compliance with the VTAS&S for Erosion and Sediment Control and Stormwater Management. Confirm that SID has been included in site planning discussions. |
| Choose an item. | Show location and logs of soil borings and test pits. Include ground water level observations and topsoil thickness encountered in boring and include soil classifications. |
| Choose an item. | Provide hydrologic data including 100-year floodplain, where available. |
| Choose an item. | Show existing and new surface elevations (contours, spot elevations, or both). |
| Choose an item. | Show location of underground obstructions and existing utilities. |
| Choose an item. | Submit a site plan and composite utility plan for new construction and additions. Base the site plan on the latest approved comprehensive Virginia Tech Master Plan. |
| Choose an item. | Show the exterior Accessible route on the site plan. Confirm that the route includes paths from the Accessible parking area to the curb cut, sidewalk, and entry (or entries) to the facility. Note the slope of route where applicable. |
| Choose an item. | Show plan scale and north arrow. |
| Choose an item. | Show floor and contour elevations. |
| Choose an item. | Show applicable boundaries with survey computations. |
| Choose an item. | Provide georeferenced attributes for site drawings. |
| Choose an item. | Show dimensioned relationship of new work to boundaries and existing structures. |
| Choose an item. | Show location of test borings. |
| Choose an item. | Show items to be demolished including structures, walks, utilities, trees, etc. |
| Choose an item. | Indicate proposed landscaping (planting materials). See landscape architecture drawings checklists and DCSM section 4.1. |
| Choose an item. | Indicate existing and new utilities. Include storm drainage and sewers, sanitary sewers, water supply and distribution, fuel gas distribution, steam distribution pipes and tunnels, building utility distribution pipes and tunnels, electric and telephone poles and lines, data infrastructure, and hydrant locations with data on fire flow test. |
| Choose an item. | Show site improvements such as fencing, lighting, etc. |
| Choose an item. | Provide typical paving section of each type and thickness required. |
| Choose an item. | Indicate any special earthwork recommendations and construction considerations noted in geotechnical or soils report. |
| Choose an item. | Show construction site fencing and locations. |
| Choose an item. | Provide details of over-excavation and replacement with suitable materials. |
| Choose an item. | Provide details of subsurface profiles (boring logs) and limits showing the extent of rock, existing fill materials, water, and existing unsuitable bearing materials. |
| Choose an item. | Provide a statement that earthwork is included in the base bid. Confirm that earthwork beyond the extent indicated will be considered for an extra cost, only if necessary and approved by the A/E, and not a result of the Contractor’s failure to maintain site or excavation stability, drainage, or protection from frost penetration. |
|  | Clearing and Grubbing |
| Choose an item. | Indicate limits of areas to be cleared of trees, shrubs, and brush. |
| Choose an item. | Show property lines. |
| Choose an item. | Indicate the trees and shrubs to remain in area to be cleared and provide details of the protection required. |
| Choose an item. | Indicate trees to be removed in areas which are not to be cleared. |
| Choose an item. | Indicate clearing, stripping, and grubbing limits, if different from clearing limits. |
|  | Earthwork |
| Choose an item. | Include all soil classification(s) per ASTM D2487 and properties. |
| Choose an item. | Provide a description and details of any special subgrade requirements or use of synthetic fiber filter fabric. |
| Choose an item. | Provide details of special construction such as under railroad or highway right-of-way. |
| Choose an item. | Provide typical cross sections of embankments or roadway construction and indicate depths and extents of special compaction. |
| Choose an item. | Provide details of all subsurface drain construction including foundation drains and drains behind retaining walls. |
| Choose an item. | Confirm that specifications are tailored for this project. |
| Choose an item. | Confirm that the “suitable soils” listing is tailored to suit this project. |
| Choose an item. | Provide a list of unsuitable soils. |
| Choose an item. | Provide the definition of “rock” for the project area. |
| Choose an item. | Confirm that procedures for filling, backfilling, and compaction are specified. |
| Choose an item. | Confirm that specifications have identified the tests to be performed on the fill/backfill and the standards to be met to assure proper compaction. |
|  | General Excavation, Backfilling, and Compaction |
| Choose an item. | Provide details on shoring and sheeting (if required). Provide the design requirements and criteria to be used by Contractor's shoring and sheeting designer. |
| Choose an item. | Provide all sources of borrow material and soil classification(s) of borrow. |
| Choose an item. | Provide pipe trench excavation details. |
|  | Excavation, Backfill, and Compaction for Utilities |
| Choose an item. | Provide location and length of continuous concrete cradles, arches, or sleeves. |
| Choose an item. | Provide details or a table of width and depth of trenches and pits for each type of pipe or appurtenance. |
| Choose an item. | Provide details of bedding for each type of pipe in varying earth and rock conditions. Provide backfill details. |
| Choose an item. | Provide typical detail of method of stabilizing weak foundation material. |
| Choose an item. | Provide details of special construction such as under railroad and highways and provide right-of-way requirements for jacking and boring. |
| Choose an item. | Provide details of sewage absorption trenches, absorption pits, and subsurface drains. |
| Choose an item. | Provide details of pavement repair. |
|  | General Transportation and Traffic |
| Choose an item. | For capital projects, include information showing the existing and proposed traffic pathways for pedestrians, ADA, vehicles, and any other relevant modes of transportation on the plan sheets for all phases of design. Show the information at a scale that is at least twice the scale of the disturbed area. Show all proposed staging areas. |
| Choose an item. | Provide location and quantities of general and accessible parking spaces. |
| Choose an item. | Show accessible routes. |
| Choose an item. | Show pedestrian traffic routes. |
| Choose an item. | Confirm that all modes of movement (vehicles, bikes, transit, scooters, pedestrians, etc.) have been included in transportation and traffic planning. |
| Choose an item. | Confirm that VDOT standards have been followed for all road and trail design. |
| Choose an item. | Confirm that all ADA routes have been maintained in the design (or that sufficient ADA routes have been designed in the plan). Coordinate with OUP and the Office for Equity and Accessibility for any changes. |
| Choose an item. | Confirm that transportation signage conforms to the VT Wayfinding Standards, VDOT, and MUTCD. |
| Choose an item. | Clearly show the limits of disturbance and construction for each construction phase, if multiple phases. Indicate all fence locations. |
| Choose an item. | Show all transportation routes for each construction phase. |
| Choose an item. | Confirm all construction activities shall not block transportation sight distances including intersections and screening used on construction fencing. Follow VDOT standards for sight distances. |
| Choose an item. | Include the following in the general notes: All vehicle, bike, transit (road and trail), and other mobility mode disruptions shall be coordinated with the VT PM and shall require a minimum notice of 3 weeks, beginning with the combined submission of a detailed and clear plan and a Traffic and Construction Impact request through the [VT Campus Closures Map Viewer](https://www.arcgis.com/apps/webappviewer/index.html?id=75e09297df2b4307b0235645580bb7b5) website. Traffic disruption requests may be initiated using the “Submit Construction/Road Closure Request” link at the top of the web page. Contact the VT Transportation Planning Engineer for more information. Traffic disruptions during VT events such as large home sporting events and commencements shall not be permitted. Requests for exceptions during these events shall be submitted 6 months in advance, but these requests are typically denied. |
| Choose an item. | Show any traffic disruptions with adequate signage. Plans shall be detailed and clear. See DCSM Appendix H. |
| Choose an item. | Indicate emergency routes on the plans and provide notification details and requirements for appropriate agencies when there are changes. |
| Choose an item. | Confirm that all delivery routes and site access shall be maintained. Access shall include mail, vending, general deliveries, garbage collection, and construction traffic. |
| Choose an item. | Confirm that all transportation routes have been designed for the largest vehicles expected to access the site using each route (garbage trucks, recycling trucks, delivery trucks, fire engines, etc.). |
| Choose an item. | Show that the proposed curb radii shall be large enough to accommodate all traffic including tractor-trailers, transit vehicles, and emergency vehicles. Indicate the turning movements and paths of the largest vehicles on the plans. |
| Choose an item. | Show all transportation routes of completed construction. |
| Choose an item. | Confirm that the landscaping and the future growth of the landscaping shall not impact transportation site distance, specifically avoiding impacts within sight lines from 2 feet to 7 feet above the paved traffic route. |
| Choose an item. | Confirm that a VDOT permit has been obtained for all road work unless waived by Virginia Tech. |
| Choose an item. | Indicate on the plans that all road work shall be inspected at subgrade prior to placement of base stone, at base stone prior to placement of pavement, and at pavement prior to pavement markings. |
| Choose an item. | Show the smooth transition between all proposed and existing grades including asphalt, landscaping, concrete, etc. |
| Choose an item. | Show the grade to drain (i.e., positive drainage) for all work including asphalt, landscaping, concrete, etc. No ponding shall be permitted. |
| Choose an item. | Provide geotechnical testing that confirms subgrade and pavement design per VDOT standards. |
| Choose an item. | Confirm pavement structure if existing pavement is being used in the design. |
| Choose an item. | Use the “continental” style pavement markings for crosswalks. See the standard crosswalk detail in the VT Design Standard Detail Library. |
| Choose an item. | Confirm that crosswalks cross roads perpendicular to the vehicle traffic flow. See the standard crosswalk detail in the VT Design Standard Detail Library. |
| Choose an item. | Confirm that crosswalks shall follow the lighting specifications in the crosswalk light standard in the VT Design Standard Detail Library. |
| Choose an item. | Confirm that truncated domes shall follow the detectable warning surfaces detail in the VT Design Standard Detail Library. |
|  | Alternative Transportation |
| Choose an item. | Confirm that all bike lanes, transit stops and routes, and pedestrian routes shall be maintained during construction. If routes must be altered, indicate new routes and proper signage for the new routes. |
| Choose an item. | Confirm that the VT Bicycle Parking Master Plan has been used to determine the need and number of bike racks. |
| Choose an item. | Confirm that the location of bike racks has been reviewed and approved by OUP and Parking Services Alternative Transportation. |
| Choose an item. | Confirm that bike racks, bike shelters, and bike hubs/corrals shall follow the VT Site Furnishing Guide and the VT Bicycle Parking Master Plan. |
|  | Parking |
| Choose an item. | Confirm that the contractor parking statement has been included in the contract. |
| Choose an item. | Show that all parking spaces are 8.5' 🞨 18'. |
| Choose an item. | Show that all striped or hatched-out areas next to ADA parking are 8.5' 🞨 18'. |
| Choose an item. | Confirm that parking lot curbing shall meet VDOT standards. |
| Choose an item. | Show required service vehicle parking spaces on the plan. |
| Choose an item. | Show automated access gates where needed. |
| Choose an item. | Indicate the total number of parking spaces lost on the plans. Loss of parking spaces shall be minimized. Reduction of parking spaces shall be considered in project budget. |
|  | Pavement and Associated Work |
| Choose an item. | Provide typical section of each type or thickness of pavement showing dimensions and geometry, slopes, etc. |
| Choose an item. | Provide dimensions defining the limits and shape of the paved areas. |
| Choose an item. | Provide details with dimensions of curbs, curb and gutter, raised islands, medians, curb cuts, ramps, and drainage structures. |
| Choose an item. | Show layout of parking spaces, pavement markings, traffic control signage, and painted indicators including accessible parking spaces meeting requirements of the ADA Standards for Accessible Design, latest edition. |
| Choose an item. | Show existing and new grading contours or spot elevations. |
| Choose an item. | Indicate new contours and spot elevations of paved areas showing drainage swales, slopes and directions of drainage flow. |
| Choose an item. | Show drainage structures including manholes, drop inlets, piping, culverts, sizes of piping/culverts and lighting standard locations. |
|  | Chain Link Fencing |
| Choose an item. | Indicate fence alignment. |
| Choose an item. | For posts, indicate minimum height to accommodate fabric and clearance, post size for line posts, corner posts, pull posts and gate posts. |
| Choose an item. | For post setting dimensions, confirm that post setting dimensions are not less than indicated in the chain link manufacturer's installation standards. Confirm that embedment length in concrete slabs and walls will be at least 12 inches. Show typical details for each condition to be encountered. |
| Choose an item. | For chain link fabric, show height and size or gauge on detail or section. |
| Choose an item. | As required, include the top rail, bottom rail, top and bottom reinforcing wires, and where a higher degree of security is required other than provided by fabric, include barbed wire on supporting arms. Note method of supporting arm attachment to post tops (bolts, screws, tamper-proof fasteners, or welding). |
| Choose an item. | For sleeve type expansion couplings, specify or note as maximum of 21 feet on centers, if used. |
| Choose an item. | For gates, indicate the location, size, and type. Include framing members size, weight, bracing, locking hasps, hinges, center pins, etc. |
| Choose an item. | Confirm where special fencing requirements exist, such as wolf-proofing, anti-burrowing provisions, crossing drainage ditches, provisions for electrical installations, or special security installations. Modify specifications and include appropriate details on the drawings. Provide modifications and details for security equal to that of the fence. |
| Choose an item. | Confirm where special entrance security requirements exist such as electronic locks, motor operated gates, and closed circuit video. Add details and modify the specification accordingly. |
| Choose an item. | Provide other information necessary to indicate layout and general configuration of the fence. |
|  | Topsoil |
| Choose an item. | Identify, detail, or note areas to receive topsoil and the thickness of topsoil to be placed in those areas. |
| Choose an item. | Confirm topsoil specification is in compliance with DCSM section 4.2.1. |
|  | Turf |
| Choose an item. | Clearly indicate all areas to be turfed and if more than one type of turf is specified, delineate areas for each type. |
| Choose an item. | Identify the areas to be seeded or sodded. |
| Choose an item. | Provide all turf specifications to reflect the environmental conditions peculiar to the project area. |
|  | Landscaping, Trees, and Shrubs |
| Choose an item. | Provide description, number and size of trees and plants. |
| Choose an item. | Provide layout and location of various trees and plants including groupings. |
| Choose an item. | Provide details of planting requirements including depth and diameter of excavations, mulching, protection, and supports. |
| Choose an item. | Provide layouts and controls for irrigation systems if included in project |
| Choose an item. | Confirm that trees and plants are located away from existing and new underground utility lines, site improvements, and surface drainage patterns. |