

Site Plans

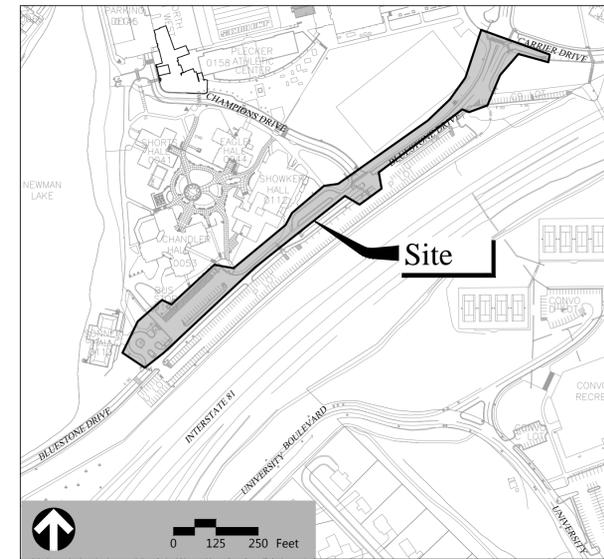
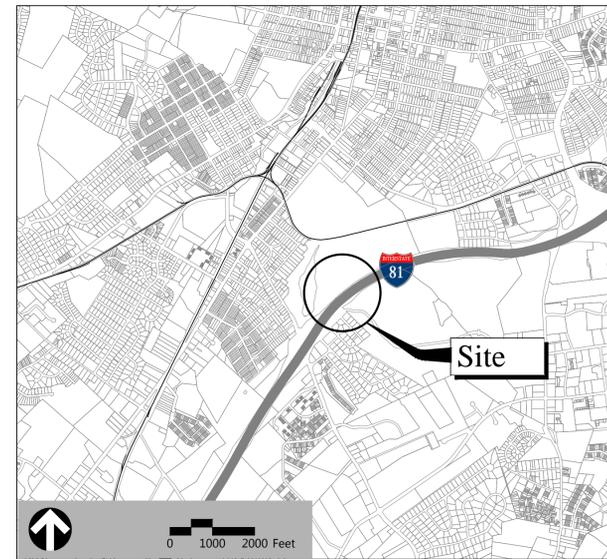
Issued for	Bid Set
Date Issued	February 5, 2016
Latest Issue	February 5, 2016

Bluestone Trail Extension

Bluestone Drive
Harrisonburg, Virginia

Owner

James Madison University
Facilities Management
University Services Building
Harrisonburg, Virginia 22807
Project Manager: Abram Kaufman



Sheet Index

No.	Drawing Title	Latest Issue
C1.01	Legend, Abbreviations & General Notes	February 05, 2016
C1.02	General Notes (Cont.)	February 05, 2016
C1.03	Erosion and Sediment Control Notes	February 05, 2016
C2.01 - C2.02	Demolition Plan	February 05, 2016
C3.00	Overall Erosion and Sediment Control Plan	February 05, 2016
C3.01 - C3.02	Erosion and Sediment Control Plan	February 05, 2016
C4.01 - C4.02	Layout and Materials and Utility Plan	February 05, 2016
C5.01 - C5.04	Grading Plan	February 05, 2016
C6.01 - C6.02	Trail Profiles	February 05, 2016
C7.01 - C7.05	Site Details	February 05, 2016
LA1.00	Overall Planting Plan	February 05, 2016
LA1.01 - LA1.02	Planting Plan	February 05, 2016
LA2.01	Planting Notes and Details	February 05, 2016
B1.01 - B1.02	Boring Location Plan	February 05, 2016
B1.03 - B1.04	Boring Logs	February 05, 2016
E0.1	Electric Demolition Plan	February 05, 2016
E0.2	Electric Site Plan	February 05, 2016
E0.3	Photometric Plan	February 05, 2016

Reference Drawings

No.	Drawing Title	Latest Issue
Sv-1	Existing Conditions Topographic Survey	September 28, 2015
Sv-2	Existing Conditions Topographic Survey	September 28, 2015

Resource List

Tom Hartman Public Works 320 East Mosby Road Harrisonburg, Virginia 22801 (540) 434-5928	James Leeth Public Utilities 2155 Beery Road Harrisonburg, Virginia 22801 (540) 434-9959
Mike Armstrong Harrisonburg Fire Department 101 North Main Street, 3rd Floor Harrisonburg, Virginia 22802 (540) 432-7703	Brian O'Dell Harrisonburg Electric Commission 89 West Bruce Street Harrisonburg, Virginia 22801 (540) 434-5361
Larry Knicely Verizon 105 Newman Avenue Harrisonburg, Virginia 22801 (540) 432-8055	Pat Fahrney Columbia Gas 107 S. Coalter Steet Staunton, Virginia 24401 (540) 851-2314
Dale Chestnut JMU Stormwater Coordinator MSC 7004 181 Patterson Street Harrisonburg, Virginia 22807 (540) 568-7606	
Miss Utility Miss Utility of Virginia 204 Rivers Bend Boulevard Chester, VA 23831 811	

vhb.com



Two Columbus Center
4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132

Electrical

Moseley Architects
780 Lynnhaven Parkway,
Suite 200
Virginia Beach, VA 23452
757-368-2800

Geotechnical Services

Froehling & Robertson, Inc.
3015 Dumbarton Road
Richmond, VA 23228
804-264-2701

Utility Locating Services

Accumark
9500 King Air Court
Ashland, VA 23005
804-550-7740





Two Columbus Center
4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132

Legend

Exist.	Prop.	Exist.	Prop.
			CONCRETE PAVEMENT
			STANDARD DUTY PAVEMENT
			HEAVY DUTY PAVEMENT
			RIPRAP
			CONSTRUCTION ENTRANCE
			TOP OF CURB ELEVATION
			BOTTOM OF CURB ELEVATION
			FLOW LINE ELEVATION
			EDGE OF PAVEMENT ELEVATION
			SPOT ELEVATION
			TOP & BOTTOM OF WALL ELEVATION
			BORING LOCATION
			TEST PIT LOCATION
			MONITORING WELL
			UNDERDRAIN
			DRAINAGE LINE
			ROOF DRAIN
			SEWER LINE
			OVERHEAD WIRE
			WATER LINE
			FIRE PROTECTION LINE
			DOMESTIC WATER LINE
			GAS LINE
			UNDERGROUND ELECTRIC
			TELEPHONE LINE
			FIRE ALARM
			CABLE TV
			DRAIN INLET (VOOT DI-1 OR DI-7)
			DRAIN INLET (VOOT DI-3B)
			DRAIN INLET (VOOT DI-3C)
			DRAIN MANHOLE
			TRENCH DRAIN
			PLUG OR STUB
			FLARED END SECTION
			HEADWALL
			SEWER MANHOLE
			SEWER CLEANOUT
			CURB STOP & BOX
			WATER VALVE & BOX
			TAPPING SLEEVE, VALVE & BOX
			SIAMESE CONNECTION
			FIRE HYDRANT
			WATER METER
			POST INDICATOR VALVE
			WATER WELL
			GAS GATE
			GAS METER
			ELECTRIC MANHOLE
			ELECTRIC METER
			LIGHT POLE
			TELEPHONE MANHOLE
			METAL END SECTION
			TRANSFORMER PAD
			INVERT ELEVATION
			PAVED WATER WAY
			GUY WIRE & ANCHOR
			HAND HOLE
			PULL BOX
			HIGH DENSITY POLYETHYLENE PIPE
			ELECTRIC HANDHOLE
			HEADWALL
			HYDRANT
			METAL END SECTION
			INVERT ELEVATION
			INVERT ELEVATION
			PAVED WATER WAY
			POLYVINYLCHLORIDE PIPE
			REINFORCED CONCRETE PIPE
			RIM ELEVATION
			SEWER MANHOLE
			TAPPING SLEEVE, VALVE AND BOX
			UTILITY POLE

Abbreviations

General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EXIST	EXISTING
FDN	FOUNDATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PLF	POUNDS PER LINEAR FOOT
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TP	TYPICAL
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
DI	DRAIN INLET
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
ES	END SECTION
EW	END WALL
FES	FLARED END SECTION
FG	FRAME AND GRATE
F&C	FRAME AND COVER
FM	FORCE MAIN
GI	GREASE TRAP
GT	GUTTER INLET
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	ELECTRIC HANDHOLE
HW	HEADWALL
HYD	HYDRANT
MES	METAL END SECTION
INV	INVERT ELEVATION
I=	INVERT ELEVATION
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UP	UTILITY POLE

General Notes:

- General**
- THE "MISS UTILITY LAW" REQUIRES FOR THE CONTRACTOR TO CALL 811 AT LEAST 3 WORKING DAYS IN ADVANCE OF THE PLANNED WORK TO ALLOW TIME FOR MARKING, THAT THE MARKS BE RESPECTED AND PROTECTED, AND THAT EXCAVATION BE COMPLETED CAREFULLY.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
 - ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
 - AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPEROUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL FOLLOW DETAIL PROVIDED BY VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK FOR SITE SPECIFIC SEEDING MIXTURES IN ACCORDANCE WITH STANDARD & SPECIFICATION 3.32.
 - WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
 - UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
 - TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
 - AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
 - IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
 - CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
 - DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
 - CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
 - THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSPM), GENERAL CONSTRUCTION PERMIT (GCP) PROGRAM AS ADMINISTERED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) UNDER THE JURISDICTION OF THE EPA. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FILE A GCP NOTICE OF INTENT WITH THE DEQ AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE VSPM REGULATIONS.
- Utilities**
- THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
 - WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
 - SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
 - RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
 - PAVEMENTS AND CONCRETE SURFACES: FLUSH
 - ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
 - LANDSCAPE, TOPSOIL AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
 - THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
 - CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
 - UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
 - STORM DRAINAGE PIPES SHALL BE DUCTILE IRON (DI) CLASS 52 OR REINFORCED CONCRETE PIPE (RCP) CLASS III UNLESS OTHERWISE INDICATED ON THE PLANS.
 - CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEMARK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
 - CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
 - ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
 - LOCATION OF FITTINGS SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL DETERMINE ALL FITTING REQUIREMENTS AND LOCATIONS FROM ACTUAL FIELD CONDITIONS.
 - PIPE LENGTHS SHOWN HEREON ARE FROM CENTERLINE TO CENTERLINE OF STRUCTURE AND ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL PIPE LENGTHS FROM FIELD CONDITIONS.
 - INVERTS CONTROL ELEVATIONS AT ALL STRUCTURES, SLOPES AND LENGTHS ARE APPROXIMATE ONLY.

- Layout and Materials**
- DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
 - CURB RADII ARE 5 FEET TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - CURBING SHALL BE CG-6 WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
 - PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
 - PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
 - SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
 - CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
- Demolition**
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
 - EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
 - CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
 - THE DEMOLITION LIMITS DEPICTED IN THE PLANS ARE INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEFINE EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
 - UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.
- Erosion Control**
- PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
 - CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
 - CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR DIRECT DEPOSIT.
 - CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION.
 - UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
- Existing Conditions Information**
- BASE PLAN: THE PROPERTY LINES SHOWN WERE DETERMINED BY AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB IN AUGUST 2015, AND FROM DEEDS AND PLANS OF RECORD. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB IN AUGUST 2015.
 - THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATION DESIGNATIONS AND INFORMATION OR RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. UNDERGROUND DESIGNATED LINES WERE PROVIDED BY ACCUMARK UNDERGROUND UTILITY LOCATIONS DATED SEPTEMBER 25, 2015.
 - TOPOGRAPHY: ELEVATIONS HEREON ARE IN FEET AND ARE TIED INTO JAMES MADISON UNIVERSITY CONTROL NETWORK WHICH IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - THE MERIDIAN SOURCE: HORIZONTAL CONTROL IS TIED INTO JAMES MADISON UNIVERSITY CONTROL NETWORK WHICH IS BASED ON VIRGINIA STATE PLAN COORDINATE SYSTEM NORTH ZONE NAD83-CORS96-EPOCH 2002.0000.
 - THIS PROPERTY IS IN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), ZONE X SHADED (AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR DRAINAGE AREAS LESS THAN 1 SQUARE MILE) AND ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) (FLOODWAY AREA) AS INDICATED ON FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, VIRGINIA HAVING COMMUNITY PANEL NUMBER 51165C 0411D, DATED FEBRUARY 6, 2008.
 - GEOTECHNICAL DATA INCLUDING TEST PIT AND BORING LOCATIONS AND ELEVATIONS WERE OBTAINED FROM FROEHLING & ROBERTSON, INC.
- Document Use**
- THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.

Bluestone Trail Extension

Bluestone Drive Harrisonburg, Virginia

No.	Revision	Date	Apprd.

Designed by **CFR/ENW** Checked by **JDH**
 Issued for _____ Date _____
Bid Set February 05, 2016

Drawing Title
**Legend, Abbreviations
 & General Notes**

Drawing Number
C1.01

Sheet **2** of **33**

Project Number
34072.00





Two Columbus Center
4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132

Erosion and Sediment Control Narrative

Project Description

THE PROPOSED DEVELOPMENT, BLUESTONE TRAIL EXTENSION, IS LOCATED ADJACENT TO BLUESTONE DRIVE AT JAMES MADISON UNIVERSITY (JMU) IN THE CITY OF HARRISONBURG, VIRGINIA. THE PROPOSED DEVELOPMENT SITE IS THE NORTH SIDE OF BLUESTONE DRIVE BETWEEN CARRIER DRIVE AND SONNER HALL. THE PROPOSED DEVELOPMENT CONSISTS OF AN EXTENSION OF THE EXISTING BLUESTONE TRAIL, HARDSCAPE, AND LANDSCAPED AREA. THE PROJECT SITE AREA IS APPROXIMATELY 1.26 ACRES. EXISTING SITE IMPERVIOUS AREA IS 0.76 ACRES. PROPOSED SITE IMPERVIOUS IS 0.76 ACRES. AS SHOWN ON THE SITE PLANS, APPROXIMATELY 1.26 ACRES WILL BE DISTURBED.

Existing Site Conditions

THE PROJECT SITE IS MODERATELY SLOPED WITH SLOPES OF 3-10%. SLOPES OF GREATER THAN 15% ARE IDENTIFIED IN THE NORTHERN PORTIONS OF THE SITE. THE EXISTING LAND COVER IS ROADWAY, SIDEWALK, PARKING LOT, BUS LANES, AND LANDSCAPED AREAS. SITE ELEVATIONS RANGE FROM 1305 FEET TO 1322 FEET ON NAVD-88 VERTICAL DATUM. BASED ON THE PRELIMINARY GEOTECHNICAL DATA, THE SOILS WITHIN THE PROJECT SITE CONSIST OF LEAN CLAY (CL) AND FAT CLAY (CH) WITH VARYING AMOUNTS OF SAND, GRAVEL, CLAYEY GRAVEL, AND ORGANICS. FILL MATERIALS WERE DARK BROWN, BROWN, AND TAN IN COLOR WITH MOISTURE CONTENTS VISUALLY CHARACTERIZED AS MOIST TO WET. THE TERMINATION DEPTH FOR EACH BORING WAS AT 10 FEET BELOW EXISTING SURFACE.

Adjacent Areas

THE SITE IS BOUND BY CARRIER DRIVE TO THE NORTHEAST, INTERSTATE 61 TO THE SOUTHEAST, NEWMAN LAKE TO THE SOUTHWEST AND SONNER HALL, CHANDLER HALL, SHOWER HALL, AND A LARGE FIELD TO THE NORTHWEST.

THIS PROJECT WILL BE WORKING IN AND AND MODIFYING A PIPED SECTION OF TRIBUTARY 3 TO BLACKS RUN.

Offsite Areas

THERE ARE NO OFFSITE AREAS ANTICIPATED TO BE DISTURBED WITH THIS PROJECT. IF OFFSITE LAND DISTURBING ACTIVITY IS FOUND TO BE NECESSARY, IT SHALL BE CONDUCTED UNDER AN APPROVED EROSION AND SEDIMENT CONTROL PLAN.

Critical Areas

AREAS OF CRITICAL EROSION HAZARDS SLOPES GREATER THAN 15% ARE ON THE PROJECT SITE, AND ARE OBSERVED WITH RESPECT TO HIGHLY ERODIBLE SOILS OR STEEP SLOPES.

THIS PROJECT INCLUDES WORK WITHIN TRIBUTARY 3 TO BLACKS RUN.

Erosion and Sediment Control Measures

ALL STRUCTURAL AND VEGETATIVE EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992. THE FOLLOWING EROSION AND SEDIMENTATION CONTROLS MAY/MAY NOT BE EMPLOYED DURING THE EARTHWORK AND CONSTRUCTION PHASES OF THE PROJECT.

SAFETY FENCE (STANDARD 3.01)

SAFETY FENCE SHALL BE INSTALLED AROUND THE SITE PERIMETER TO PREVENT UNWANTED ACCESS TO THE SITE.

SILT FENCE (STANDARD 3.05)

SILT FENCE SHALL BE PLACED ALONG THE LIMIT OF LAND DISTURBANCE. THE SILT FENCE SHALL BE REPAIRED OR REPLACED AS DETERMINED BY PERIODIC FIELD INSPECTIONS.

STORM DRAIN INLET PROTECTION (STANDARD 3.07)

NEWLY CONSTRUCTED AND EXISTING STORM DRAIN INLETS WILL BE PROTECTED WITH SEDIMENT FILTERS AND/OR SILT FENCE BARRIERS THROUGHOUT CONSTRUCTION.

RIGHT-OF-WAY DIVERSION (STANDARD 3.11)

TEMPORARY RIGHT-OF-WAY DIVERSIONS SHALL BE INSTALLED WITHIN THE RIGHT-OF-WAY IN ORDER TO DIVERT RUNOFF TO OUTLET STRUCTURES.

SOIL STABILIZATION BLANKETS & MATTING (STANDARD 3.36)

BLANKETS & MATTING SHALL BE PLACED ON PLANTING AREAS OF STEEP SLOPE, CHANNEL OR SHORELINE TO PROTECT AREAS WHERE THERE IS A HIGH POTENTIAL FOR EROSION HAZARD.

TREE PROTECTION (STANDARD 3.38)

TREE PROTECTION FENCING OR OTHER SUITABLE DEVICES SHALL BE PLACED ALONG THE LIMITS OF CLEARING TO PROTECT DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.

TEMPORARY AND PERMANENT STABILIZATION

TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. SILT FENCE SHALL BE PLACED ALONG THE PERIMETER OF ANY STOCKPILES.

ALL DISTURBED AREAS SHALL BE SEEDD WITH FAST-GERMINATING, TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OR WHERE EXPOSED SOIL SURFACES WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF TIME EXCEEDING 15 DAYS. SELECTION OF THE APPROPRIATE SEED MIXTURE AS RECOMMENDED BY THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992 WILL DEPEND ON THE TIME OF YEAR IT IS TO BE APPLIED. ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO-SEEDING.

VEGETATIVE SLOPE STABILIZATION WILL BE USED TO MINIMIZE EROSION ON SLOPES OF 3:1 OR FLATTER. EROSION CONTROL MATTING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

PERMANENT STABILIZATION WILL BE COMPLETED WITH THE PLANTING OF PERENNIAL GRASSES OR LEGUMES. ESTABLISHMENT OF PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO-SEEDING OR SODDING. A SUITABLE TOPSOIL, GOOD SEEDBED PREPARATION, AND ADEQUATE LIME, FERTILIZER AND WATER SHALL BE PROVIDED FOR EFFECTIVE ESTABLISHMENT OF THESE VEGETATIVE STABILIZATION METHODS. STRAW MULCH SHALL BE USED AFTER PERMANENT SEEDING TO PROTECT SOIL DURING SEED ESTABLISHMENT.

Management Strategies and Construction Sequence

THE FOLLOWING CONSTRUCTION SEQUENCE IS EXPECTED TO TAKE APPROXIMATELY 6 MONTHS TO COMPLETE FROM MARCH 2016 TO SEPTEMBER 2016.

CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM JURISDICTIONAL AGENCIES PRIOR TO COMMENCING WORK.

- SCHEDULE AND CONDUCT PRECONSTRUCTION MEETING WITH JMU.
- ESTABLISH CLEARING LIMITS FLAGGING AND INSTALL SAFETY FENCE.
- CLEAR SUFFICIENT AREA TO ALLOW FOR THE PLACEMENT OF THE CONSTRUCTION ENTRANCE. THE CONSTRUCTION ENTRANCE SHALL BE PLACED IMMEDIATELY (NO LONGER THAN 24 HOURS) FOLLOWING CLEARING ACTIVITIES.
- INSTALL CONSTRUCTION TRAFFIC SIGNAGE INDICATING CONSTRUCTION ENTRANCE LOCATIONS AND PRESENCE OF CONSTRUCTION TRAFFIC.
- INSTALL PERIMETER PROTECTION (SILT FENCE, DIVERSION DIKES, INLET PROTECTION) AND TREE PROTECTION AND MAINTAIN THROUGHOUT CONSTRUCTION.
- CONSTRUCT LAY DOWN/STAGING AREAS AS INDICATED ON THE DRAWINGS.
- DUMP TRUCK STAGING WILL BE PERFORMED WITHIN BLUESTONE DRIVE TRAVEL LANES. BLUESTONE DRIVE SHALL NOT BE CLOSED AND THROUGH TRAFFIC SHALL BE MAINTAINED.
- IF TEMPORARY STOCKPILES ARE USED, THE CONTRACTOR SHALL INSTALL DOUBLE SILT FENCE AT THE BASE TO PREVENT SEDIMENT RUNOFF.
- PROCEED WITH OVERALL CLEARING AND GRUBBING OPERATIONS.
- INSTALL AND RELOCATE STORM SEWER PIPING.
- BEGIN EARTHWORK OPERATIONS.
- THE CONTRACTOR SHALL PREPARE THE SUB-GRADE FOR ALL STRUCTURES AND HARD SURFACES.
- TEMPORARY/PERMANENT STABILIZATION OPERATIONS SHALL BE INITIATED WITHIN SEVEN DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR ANTICIPATED DURATION OF GREATER THAN 14 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.
- INSTALL ELECTRICAL, CURB AND GUTTER, SUB-BASE MATERIALS AND PAVEMENT SURFACES.
- REMOVE ALL TEMPORARY EQUIPMENT, CONSTRUCTION MATERIALS AND DEBRIS FROM SITE.

Maintenance

- THE CONTRACTOR OR SUBCONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EACH CONTROL MEASURE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND THOSE DEEMED NECESSARY AS CONSTRUCTION CONTINUES.
- THE ON-SITE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROL STRUCTURES PERIODICALLY (AT A MINIMUM FREQUENCY OF ONCE PER TWO WEEKS) AND AFTER EACH RAINFALL EVENT.
- SILT SHALL BE REMOVED FROM BEHIND SEDIMENT BARRIERS ONCE THE DEPTH IS EQUAL TO SIX INCHES OR AS REQUIRED TO MAINTAIN FUNCTIONALITY.
- DAMAGED OR DETERIORATED ITEMS WILL BE REPAIRED IMMEDIATELY AFTER IDENTIFICATION.
- ALL SPOILS MATERIALS SHALL BE DISPOSED OF LEGALLY, OFFSITE, BY THE CONTRACTOR AT THEIR EXPENSE. ALL OFFSITE LAND DISTURBING ACTIVITY SHALL BE CONDUCTED UNDER AN APPROVED SEPARATE EROSION AND SEDIMENT CONTROL PLAN.
- EROSION CONTROLS AND PERIMETER CONTROLS SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN SECURELY STABILIZED. AFTER REMOVAL OF STRUCTURES, DISTURBED AREAS SHALL BE REGRABBED AND STABILIZED AS NECESSARY.
- ALL SEEDD AREAS SHALL BE CHECKED REGULARLY TO INSURE A GOOD STAND OF GRASS IS MAINTAINED. SEEDD AREAS DEFICIENT SHALL BE RESEEDD AS NECESSARY.

Erosion and Sediment Control Notes

Virginia Erosion and Sediment Control Notes (DEQ)

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 (9VAC25-84.0).

ES-2: THE PLAN APPROVING AUTHORITY (AMU STORMWATER COORDINATOR @ (540) 568-7606) 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, THE NAME OF THE RESPONSIBLE LAND DISTURBER MUST BE PROVIDED TO THE PLAN-APPROVING AUTHORITY PRIOR TO ACTUAL ENGAGEMENT IN LAND-DISTURBING ACTIVITY SHOWN ON THE APPROVED SITE PLAN. IF THE NAME IS NOT PROVIDED PRIOR TO ENGAGING IN THE LAND-DISTURBING ACTIVITY THE PLAN'S APPROVAL WILL BE REVOKED.

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 AND THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK 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. AFTER WHICH UPON APPROVAL OF THE DCR STORMWATER COMPLIANCE SPECIALIST, THE CONTROLS SHALL BE REMOVED, TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

ES-8: DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST EVERY 2 WEEKS AND IMMEDIATELY AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

ES-10: THE CONTRACTOR IS RESPONSIBLE FOR THE DAILY REMOVAL OF SEDIMENT THAT HAS BEEN TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE.

ES-11: SODDING OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR ANTICIPATED DURATION OF GREATER THAN 14 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.

ES-12: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOILS WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS, OR HARM ANIMAL OR PLANT LIFE.

Minimum Standard Notes

- UNLESS OTHERWISE SPECIFIED, ALL TREES AND SHRUBS WITHIN THE PROJECT LIMITS SHALL BE CLEARED, GRUBBED, AND DISPOSED OF OFFSITE. VOIDS FROM TREE STUMPS SHALL BE BACKFILLED WITH SELECT MATERIAL OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE.
- ALL SILT FENCING MUST BE INSTALLED OUTSIDE THE CRITICAL ROOT ZONE (CRZ-CROWN SPREAD) TO AVOID ROOT DAMAGE DURING INSTALLATION.
- ALL EXCAVATED MATERIAL SHALL BE STORED USING APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES AND DISPOSED OF IN A LAWFUL MANNER.
- IN COMPLIANCE WITH 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.
- IN COMPLIANCE WITH MS-2, DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- IN COMPLIANCE WITH MS-3, A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.
- IN COMPLIANCE WITH 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.
- IN COMPLIANCE WITH MS-5, STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- IN COMPLIANCE WITH MS-6, SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. SEDIMENT TRAPS SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES WITH A MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. SEDIMENT BASINS SHALL ONLY CONTROL DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES WITH A MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY FIVE YEAR STORM OF 24-HOUR DURATION.
- IN COMPLIANCE WITH MS-7 AND 8 THE CONTRACTOR SHALL CONSTRUCT SLOPES TO MINIMIZE EROSION AND PROVIDE MEASURES TO PREVENT CONCENTRATED RUNOFF. SLOPES FOUND TO BE ERODING SHALL BE REPAIRED WITH PERMANENT STABILIZATION.
- IN COMPLIANCE WITH MS-9 ADEQUATE DRAINAGE SHALL BE PROVIDED TO PROTECT WATER SEEPS FROM A SLOPE FACE.
- IN COMPLIANCE WITH MS-10 ALL OPERATIONAL STORMWATER INLETS MUST BE PROTECTED.
- IN COMPLIANCE WITH MS-11 ADEQUATE OUTLET PROTECTION AND REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND THE RECEIVING CHANNEL BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL.
- IN COMPLIANCE WITH 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 COFFERDAMS.
 - EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- IN COMPLIANCE WITH MS-13 AND MS-14, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED IF A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN A SIX-MONTH PERIOD. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS MUST BE MET.
- IN COMPLIANCE WITH MS-15, WATERCOURSE BEDS AND BANKS SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- IN COMPLIANCE WITH MS-16, THE CONTRACTOR SHALL:
 - OPEN NO MORE THAN 500 LF. OF UTILITY TRENCH AT A TIME.
 - PLACE EXCAVATED TRENCH MATERIAL ON HIGH SIDE OF TRENCH.
 - FILTER SITE EFFLUENT WITH AN APPROVED SEDIMENT TRAPPING DEVICE.
 - BACKFILL TRENCHES WITH PROPER COMPACTION TO MINIMIZE EROSION.
 SEED/500 DISTURBED AREA WITHIN (7) DAYS OF REACHING FINAL GRADE.
- IN COMPLIANCE WITH MS-17, WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS:
 - MINIMIZE VEHICULAR SEDIMENT TRACKING ONTO THE PAVED SURFACE.
 - CLEAN THE ROAD SURFACE THOROUGHLY AT THE END OF EACH DAY.
 - SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND THEN TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- IN COMPLIANCE WITH MS-18, ALL TEMPORARY EROSION AND SEDIMENT 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 PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- IN COMPLIANCE WITH 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. 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.
- INLET PROTECTION FOR INLETS SCHEDULED TO BE CAPPED MAY BE REMOVED UPON MODIFICATION OF EXISTING STRUCTURE.

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Apprd.

Designed by **CFR/ENW** Checked by **JDH**

Issued for **Bid Set** Date **February 05, 2016**

Drawing Title
Erosion and Sediment Control Notes

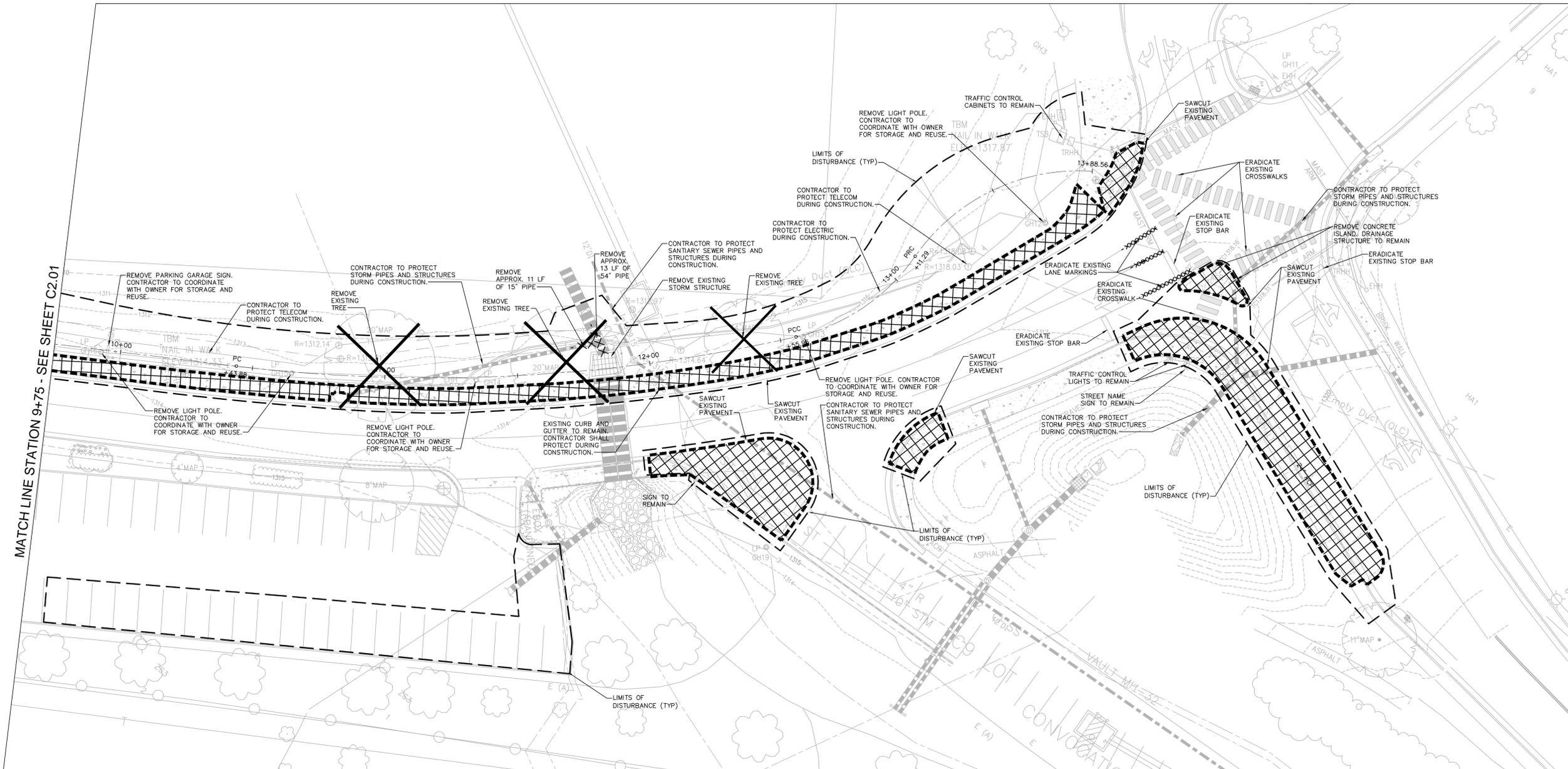
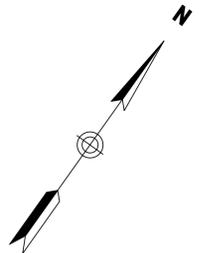
Drawing Number

C1.03

Sheet **4** of **33**

Project Number
34072.00

JOHN D. HINES
Lic. No. 040808
01/05/2016



Demolition Legend

-  DENOTES TREE REMOVAL
-  DENOTES REMOVAL OF NOTED SITE FEATURE
-  DENOTES REMOVAL OF ALL SURFACE FEATURES WITHIN SHADED AREA
-  DENOTES LIMITS OF DEMOLITION
-  SAWCUT

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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Designed by	Checked by
CFR/ENW	JDH
Issued for	Date
Bid Set	February 05, 2016

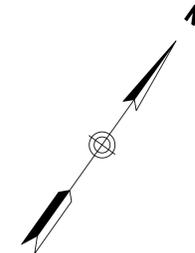
Demolition Plan



C2.02
Sheet 6 of 33
Project Number 34072.00



Two Columbus Center
4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132



Legend	
	DRAINAGE AREA
	CSF CONSTRUCTION SAFETY FENCE
	EL EROSION LOG
	PEDESTRIAN DETOUR
	IP STORM DRAIN INLET PROTECTION
	SF SILT FENCE
	TS TEMPORARY SEEDING
	OP OUTFALL PROTECTION
	B/M BLANKET AND MATTING
	R9-9 SIGN

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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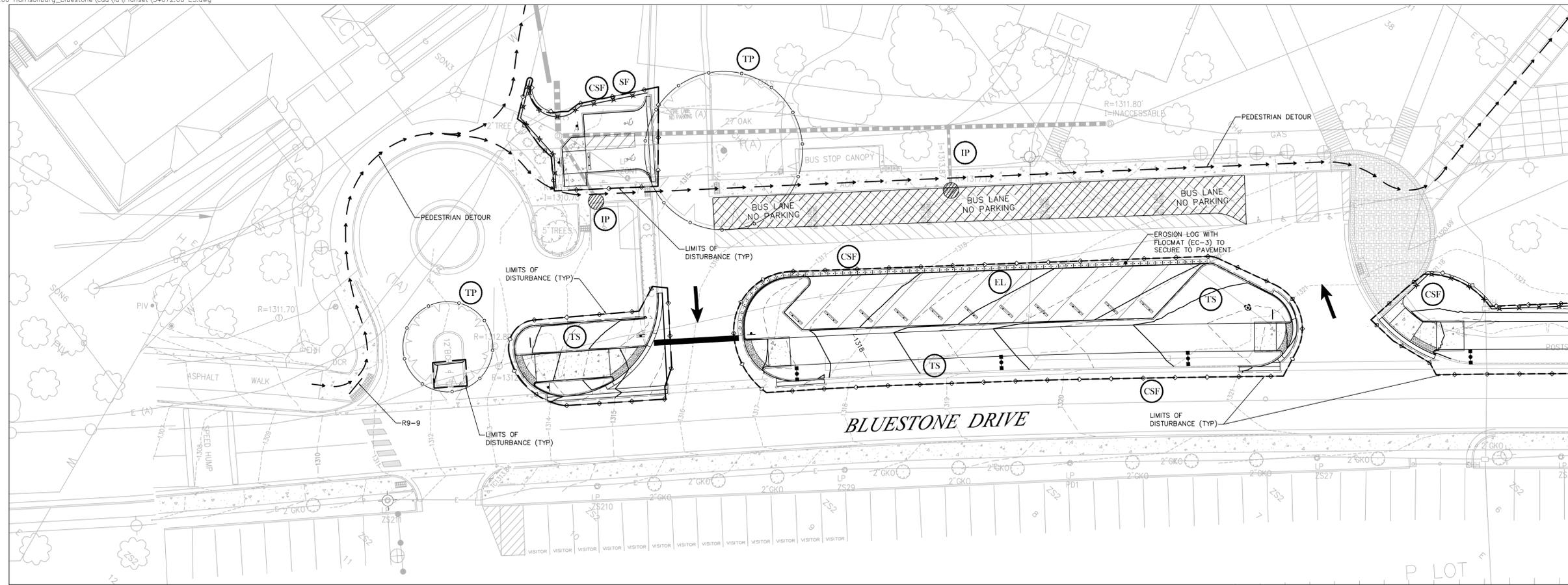
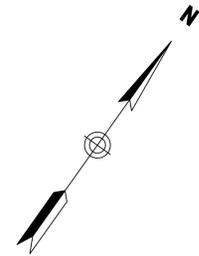
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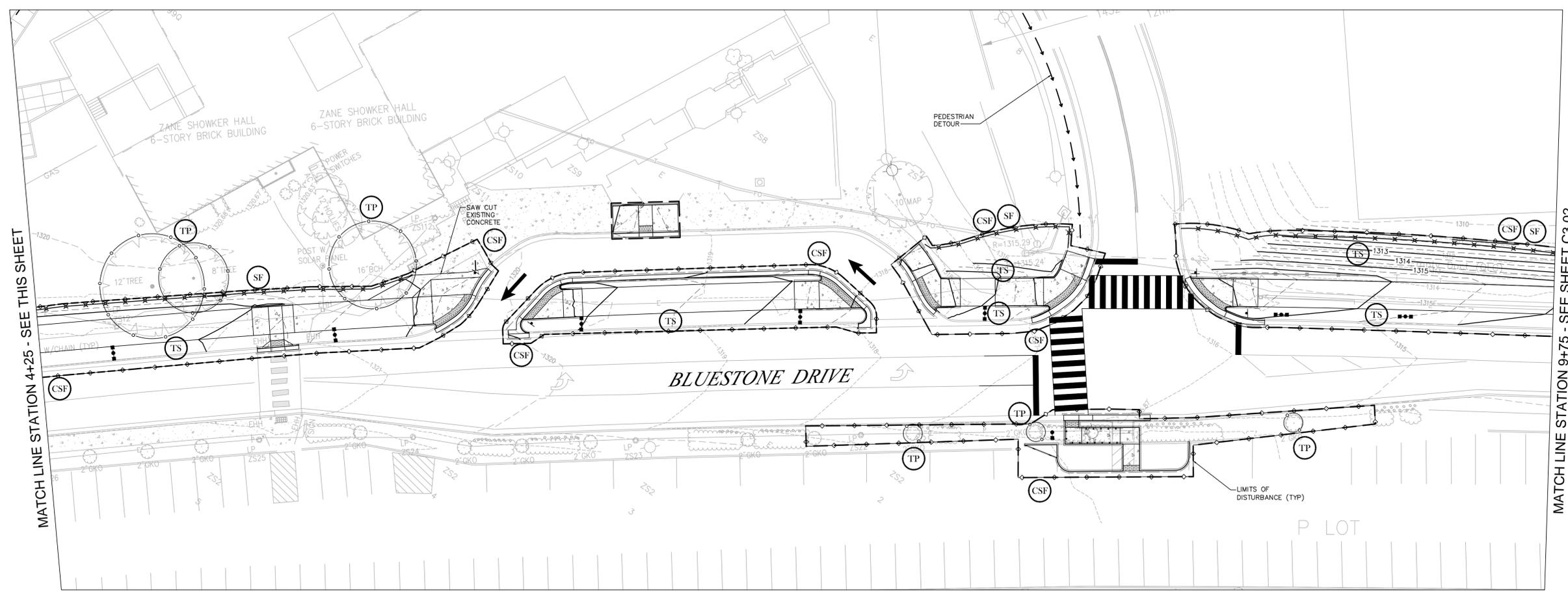
C3.00

Sheet 7 of 33

Project Number
34072.00



MATCH LINE STATION 4+25 - SEE THIS SHEET



MATCH LINE STATION 4+25 - SEE THIS SHEET

MATCH LINE STATION 9+75 - SEE SHEET C3.02

Legend	
	DRAINAGE AREA
	CONSTRUCTION SAFETY FENCE
	EROSION LOG
	RIGHT-OF-WAY DIVERSION
	STORM DRAIN INLET PROTECTION
	SILT FENCE
	TEMPORARY SEEDING
	OUTFALL PROTECTION
	TREE PROTECTION
	R9-9 SIGN

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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Erosion and Sediment Control Plan

Drawing Number



C3.01

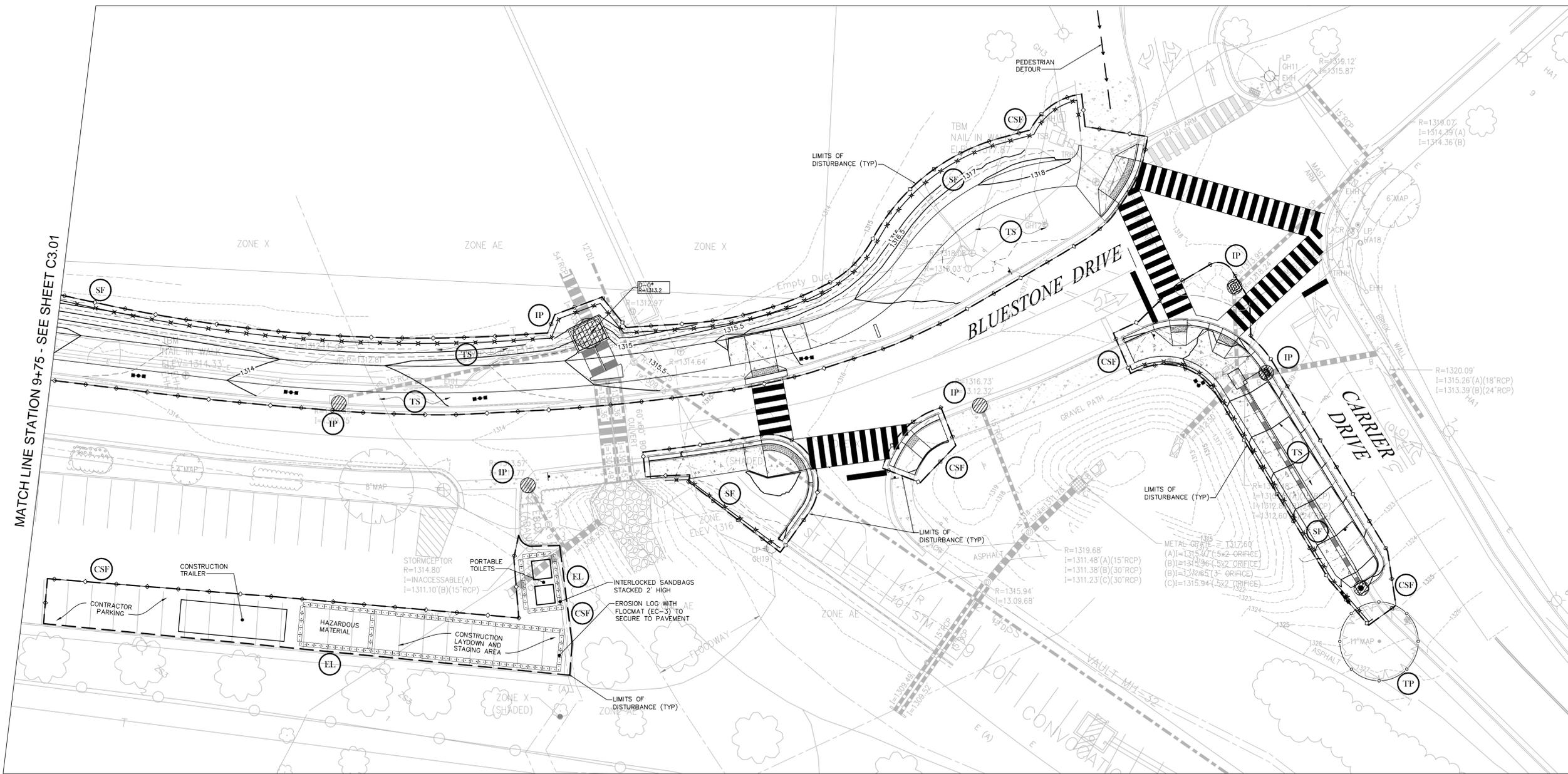
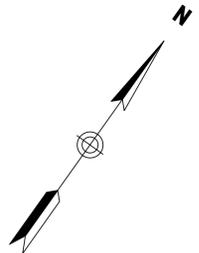
Sheet 8 of 33

Project Number 34072.00





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MATCH LINE STATION 9+75 - SEE SHEET C3.01

Legend	
	DRAINAGE AREA
	CONSTRUCTION SAFETY FENCE
	EROSION LOG
	RIGHT-OF-WAY DIVERSION
	STORM DRAIN INLET PROTECTION
	SILT FENCE
	TEMPORARY SEEDING
	OUTFALL PROTECTION
	BLANKET AND MATTING



- Notes*:**
- CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, POWER, MAINTENANCE, ETC. TO IMPLEMENT A TEMPORARY BYPASS PUMPING SYSTEM FOR THE PURPOSE OF DIVERTING THE BASE FLOW OF THE EXISTING TRIBUTARY 3 AROUND THE WORK AREA FOR THE DURATION OF THE INSTALLATION OF STRUCTURE D-O. THE DESIGN INSTALLATION AND OPERATION OF THE TEMPORARY PUMPING SYSTEM SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT HE AND/OR HIS SUBCONTRACTOR SPECIALIZES IN THE DESIGN OF TEMPORARY BYPASS PUMPING SYSTEMS. THE BYPASS SYSTEM SHALL MEET THE REQUIREMENTS OF ALL CODES AND REGULATORY AGENCIES HAVING JURISDICTION. CONTRACTOR SHALL PROVIDE A COPY OF THE BYPASS PUMPING PLAN TO JMU 72 HOURS PRIOR TO IMPLEMENTATION. FOR APPROVAL. A TRIAL RUN FOR LEAKAGE OF THE BYPASS PUMPING DISCHARGE PIPING SHALL BE DEMONSTRATED USING CLEAN WATER PRIOR TO ACTUAL OPERATION. PUMPING SYSTEM MUST BE CONTINUOUSLY MANNED UNTIL GRAVITY FLOW CAN BE RE-ESTABLISHED. THE FLOW THAT SHALL BE BYPASSED IS 3,500 GPM (BASE FLOW). WHILE BYPASS PUMP IS IN OPERATION, CONTRACTOR SHALL MAINTAIN TRAFFIC.
 - UTILITY TRENCHES WITHIN TRIBUTARY 3 SHALL BE OPEN FOR A MAXIMUM OF TWO(2) WEEKS DURING THE DRY SEASON. CONTRACTOR SHALL OPEN UTILITY TRENCHES WITHIN TRIBUTARY 3 DURING TIME PERIODS WHEN THE TEN(10) DAY WEATHER FORECAST SHOWS MINIMAL RAIN EVENTS. RIP-RAP SHALL BE PROVIDED WITHIN UTILITY TRENCHES FOR SOIL STABILIZATION. UTILITY TRENCHES SHALL BE DEWATERED THROUGH A FILTER BAG.
 - IN THE EVENT THAT A LARGE STORM EVENT FLOODS THE UTILITY TRENCH, SEDIMENT LADEN RUNOFF WILL FLOOD INTO THE DOWNSTREAM LAWN AREA. CONTRACTOR IS RESPONSIBLE FOR CLEANUP OF ANY EXCESS SEDIMENT DEPOSITION.

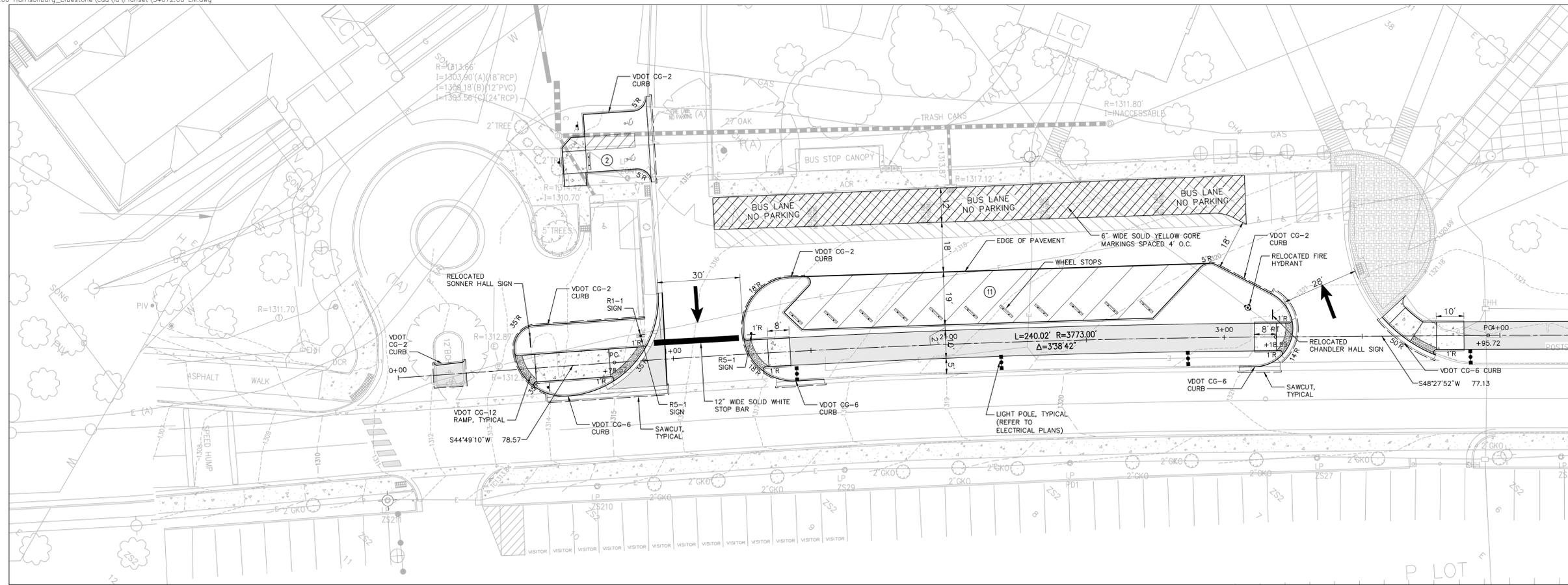
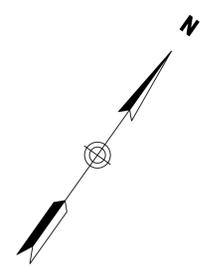
Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH
Issued for: Date: February 05, 2016

Erosion and Sediment Control Plan

Sheet **C3.02** of 33
Project Number 34072.00



MATCH LINE STATION 4+25 - SEE THIS SHEET

Pavement Legend

- ASPHALT PAVEMENT
2" ASPHALT CONCRETE SURFACE COURSE
TYPE SM-9.5A
8" BASE AGGREGATE TYPE-1 SIZE 21A
COMPACTED SUBGRADE TO 95% DRY DENSITY
- CONCRETE DRIVES/WALKS
6" CONCRETE (4,000 PSI) AIR ENTRAINED
SYNTHETIC STRAND-FIBER REINFORCING
6" BASE AGGREGATE TYPE-1 SIZE 21A
GEOTEXTILE FABRIC
COMPACTED SUBGRADE TO 95% DRY DENSITY

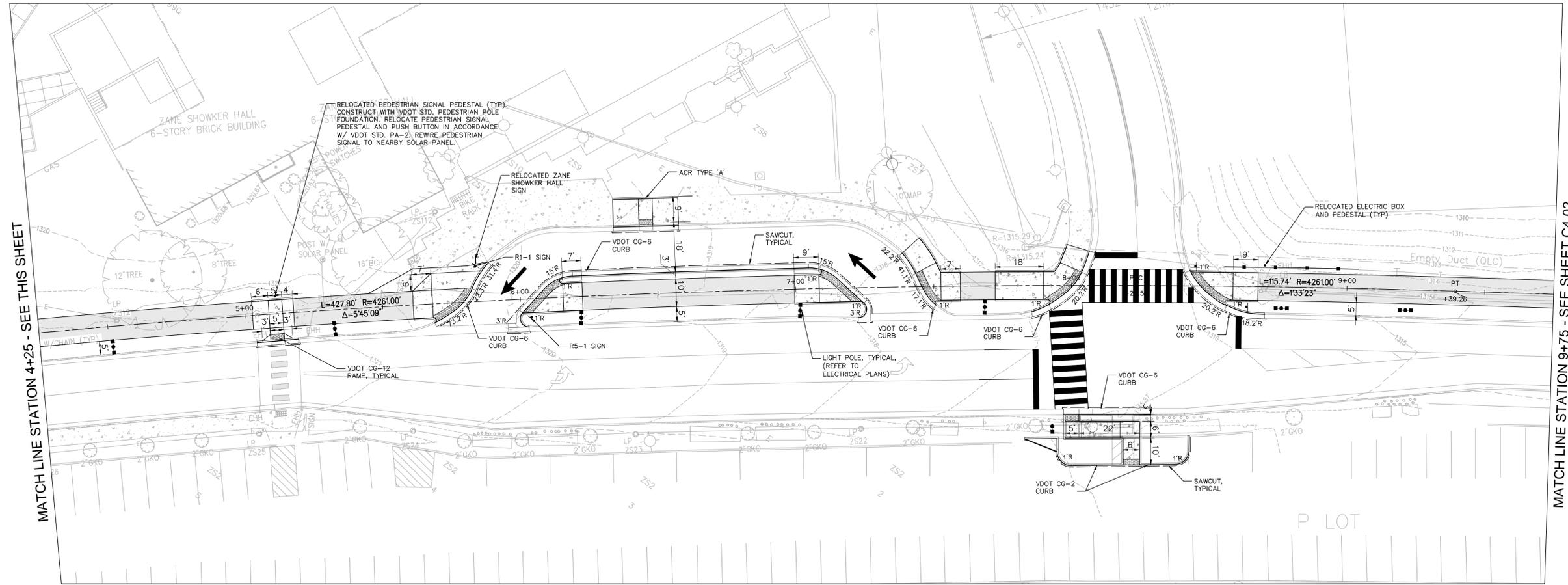
Sign Summary

M.U.T.C. D. Number	Specification		Desc.
	Width	Height	
R1-1	30"	30"	
R5-1	30"	30"	

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

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 Issued for: Bid Set Date: February 05, 2016



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MATCH LINE STATION 9+75 - SEE SHEET C4.02

Layout and Material and Utility Plan



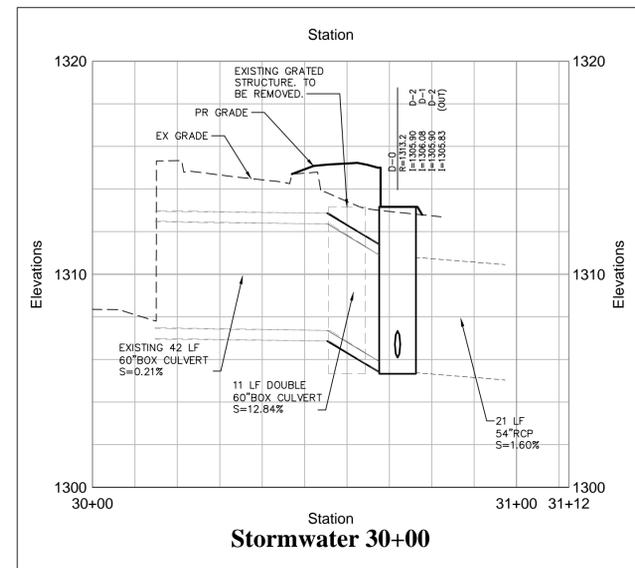
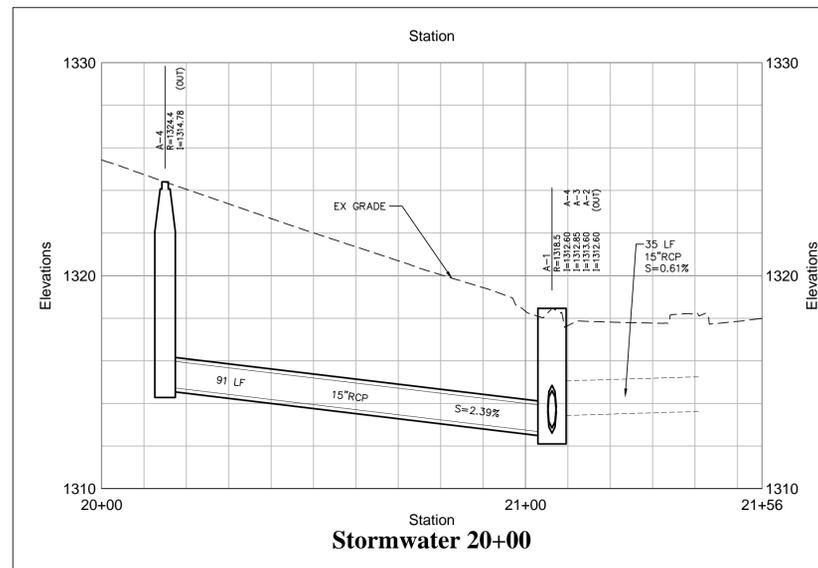
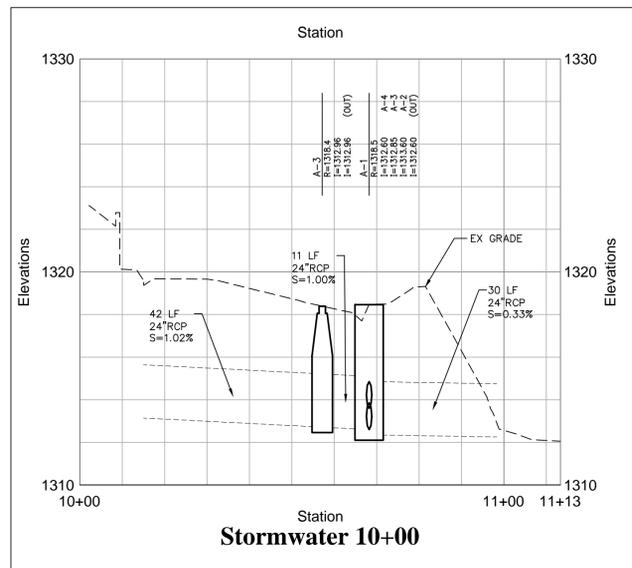
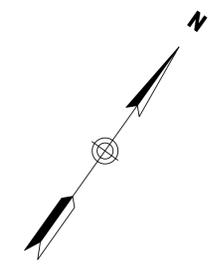
C4.01

Sheet 10 of 33

Project Number 34072.00



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4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132



Structure D-0 Notes

1. CONTRACTOR SHALL RELOCATE STEAM VAULT VENT TO NEW STRUCTURE D-0
2. CONTRACTOR SHALL MAINTAIN POWER TO STEAM VAULT SUMP PUMP DURING CONSTRUCTION OF STRUCTURE D-0. CONTRACTOR SHALL PROVIDE NEW ELECTRICAL SERVICE THROUGH THE NEW BOX CULVERTS
3. CONTRACTOR SHALL PROVIDE 8'X11.5' PRECAST JUNCTION BOX
4. CONTRACTOR SHALL PROVIDE VEHICLE RATED ALUMINUM GRATE TOP TO MATCH EXISTING WITH BEARING BARS AT 1' O.C. BOLTED TO WALLS OF JB-1 STRUCTURE
5. CONTRACTOR SHALL SLOPE CONCRETE TOP/RIM FROM 1315.00 TO 1313.12 TOWARDS FIELD

Pedestrian Signal Notes

1. CONTRACTOR SHALL ADJUST PEDESTRIAN SIGNAL HEAD VISIBILITY ANGLE WITH VDOT AND THE CITY OF HARRISONBURG TO HAVE MAXIMUM VISIBILITY FROM APPROPRIATE CROSSWALK

Pavement Legend

- ASPHALT PAVEMENT
- 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- 8" BASE AGGREGATE TYPE-1 SIZE 21A COMPACTED SUBGRADE TO 95% DRY DENSITY
- CONCRETE DRIVES/WALKS
- 6" CONCRETE (4,000 PSI) AIR ENTRAINED SYNTHETIC STRAND-FIBER REINFORCING
- 6" BASE AGGREGATE TYPE-1 SIZE 21A GEOTEXTILE FABRIC
- COMPACTED SUBGRADE TO 95% DRY DENSITY

Sign Summary

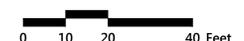
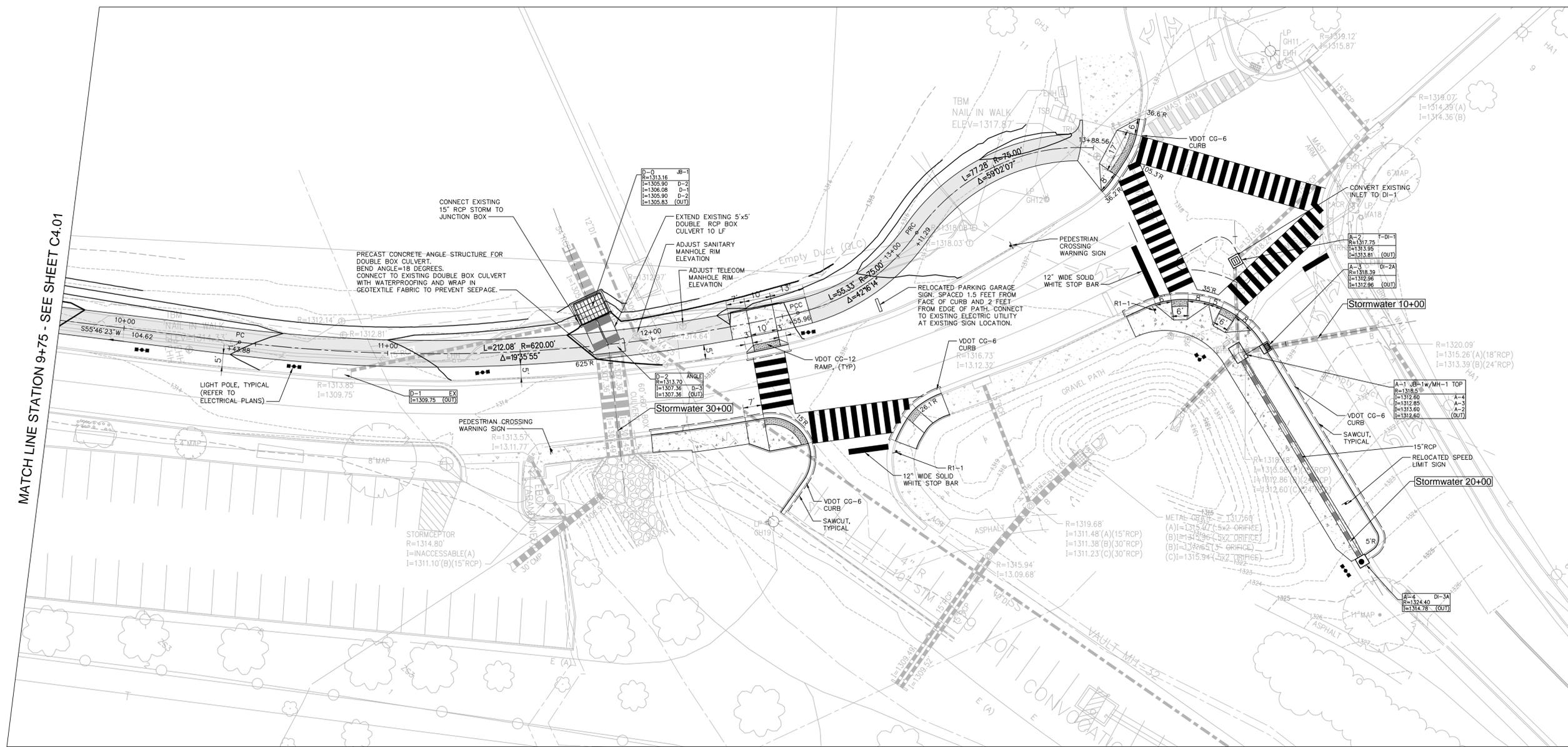
M.U.T.C. D. Number	Specification		Desc.
	Width	Height	
R1-1	30"	30"	
R5-1	30"	30"	

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH
Issued for: Date: February 05, 2016
Bid Set

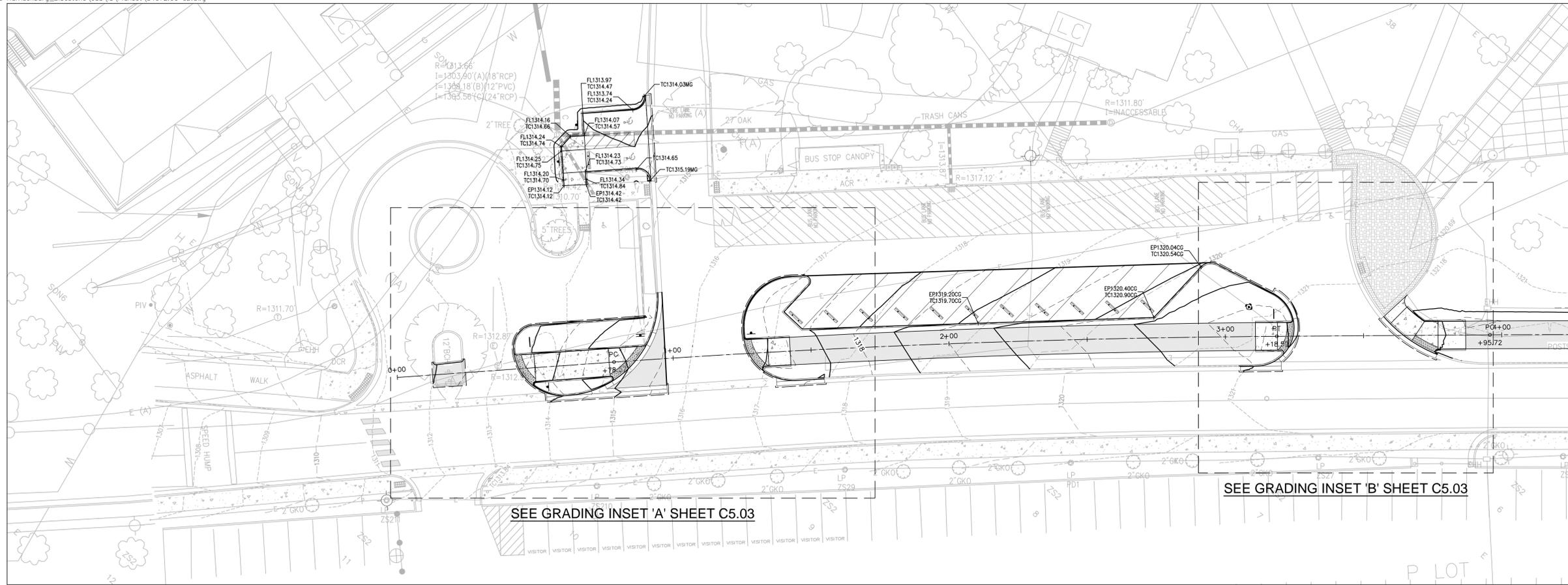
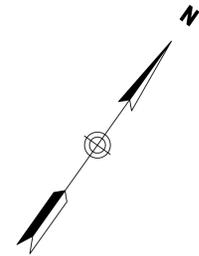
Layout and Material and Utility Plan



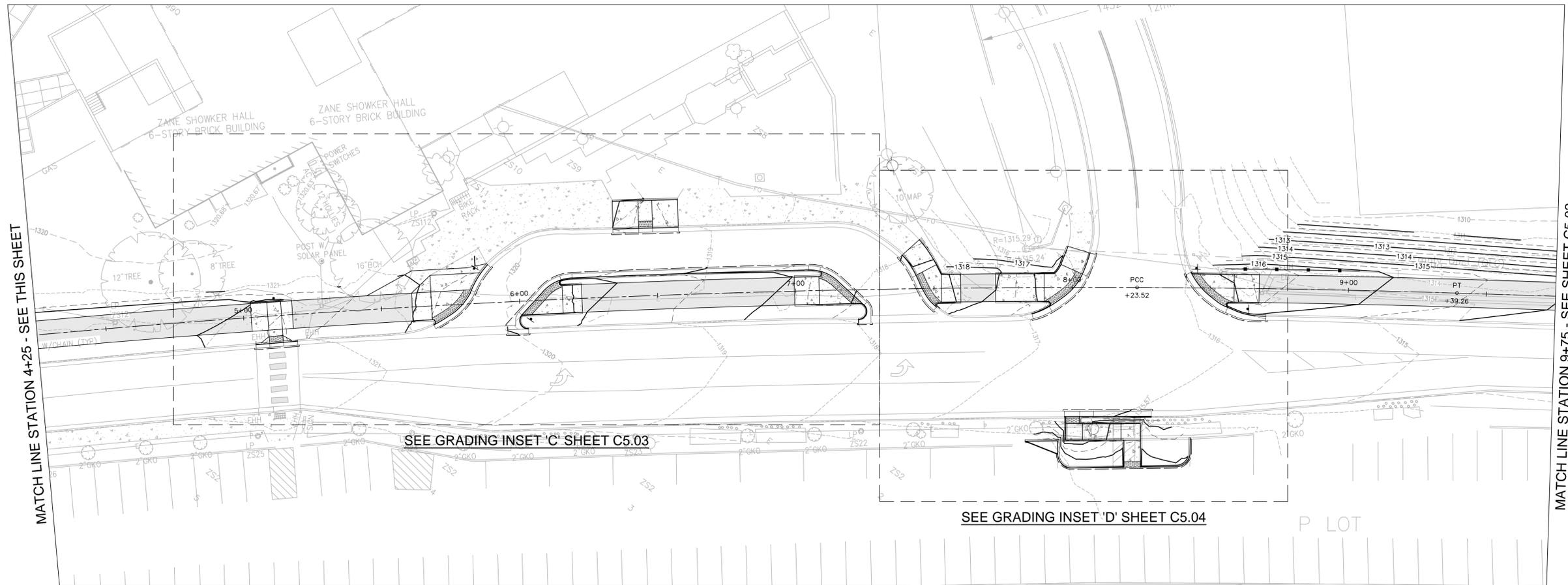
C4.02

Sheet 11 of 33

Project Number: 34072.00



MATCH LINE STATION 4+25 - SEE THIS SHEET



MATCH LINE STATION 9+75 - SEE SHEET C5.02

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH
Issued for: Date: February 05, 2016

Grading Plan

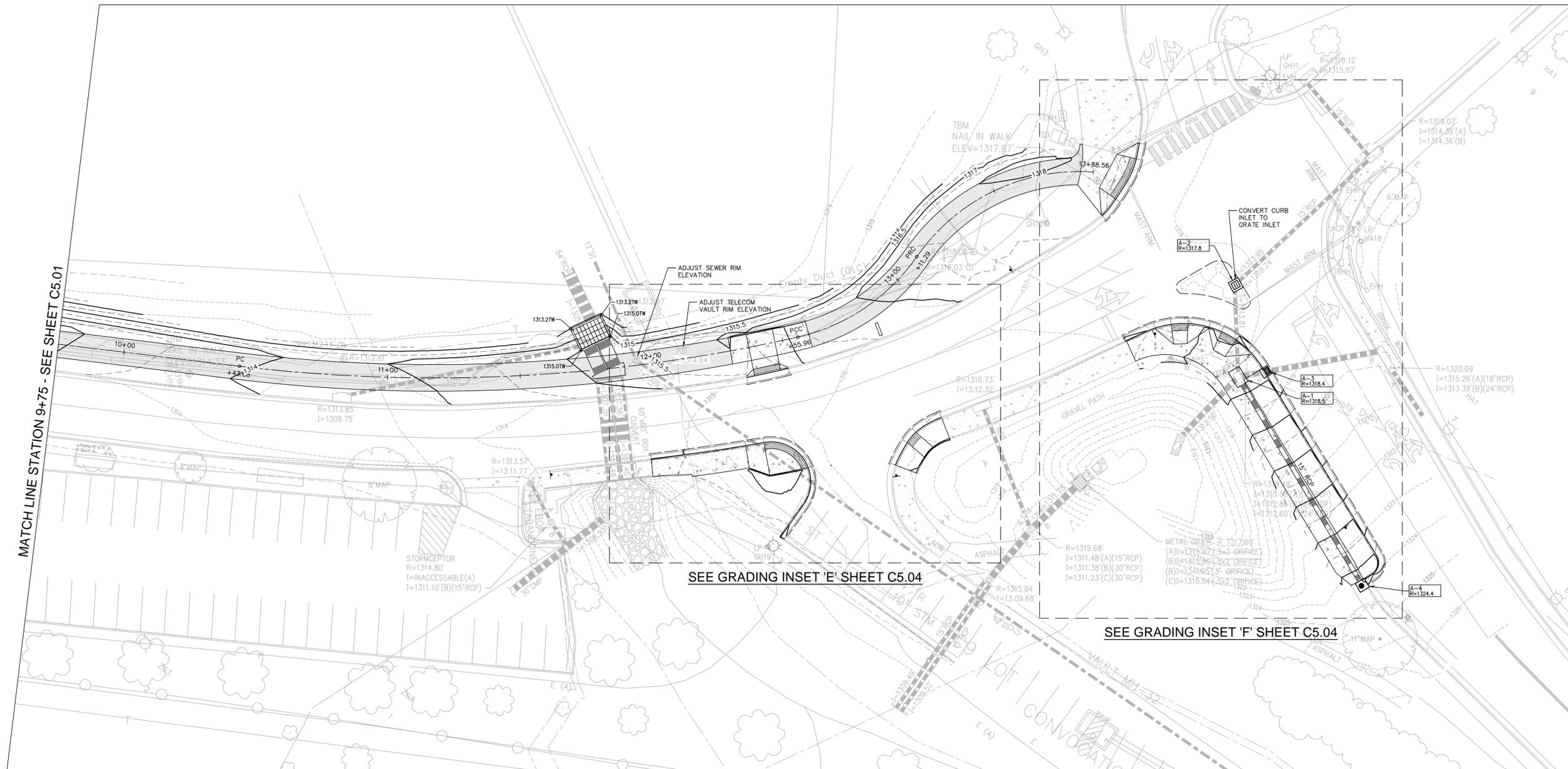
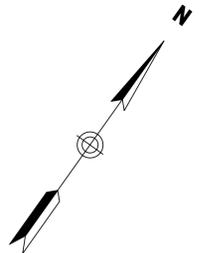


C5.01

Sheet 12 of 33

Project Number: 34072.00

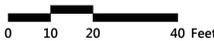




MATCH LINE STATION 9+75 - SEE SHEET C5.01

SEE GRADING INSET 'E' SHEET C5.04

SEE GRADING INSET 'F' SHEET C5.04



Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

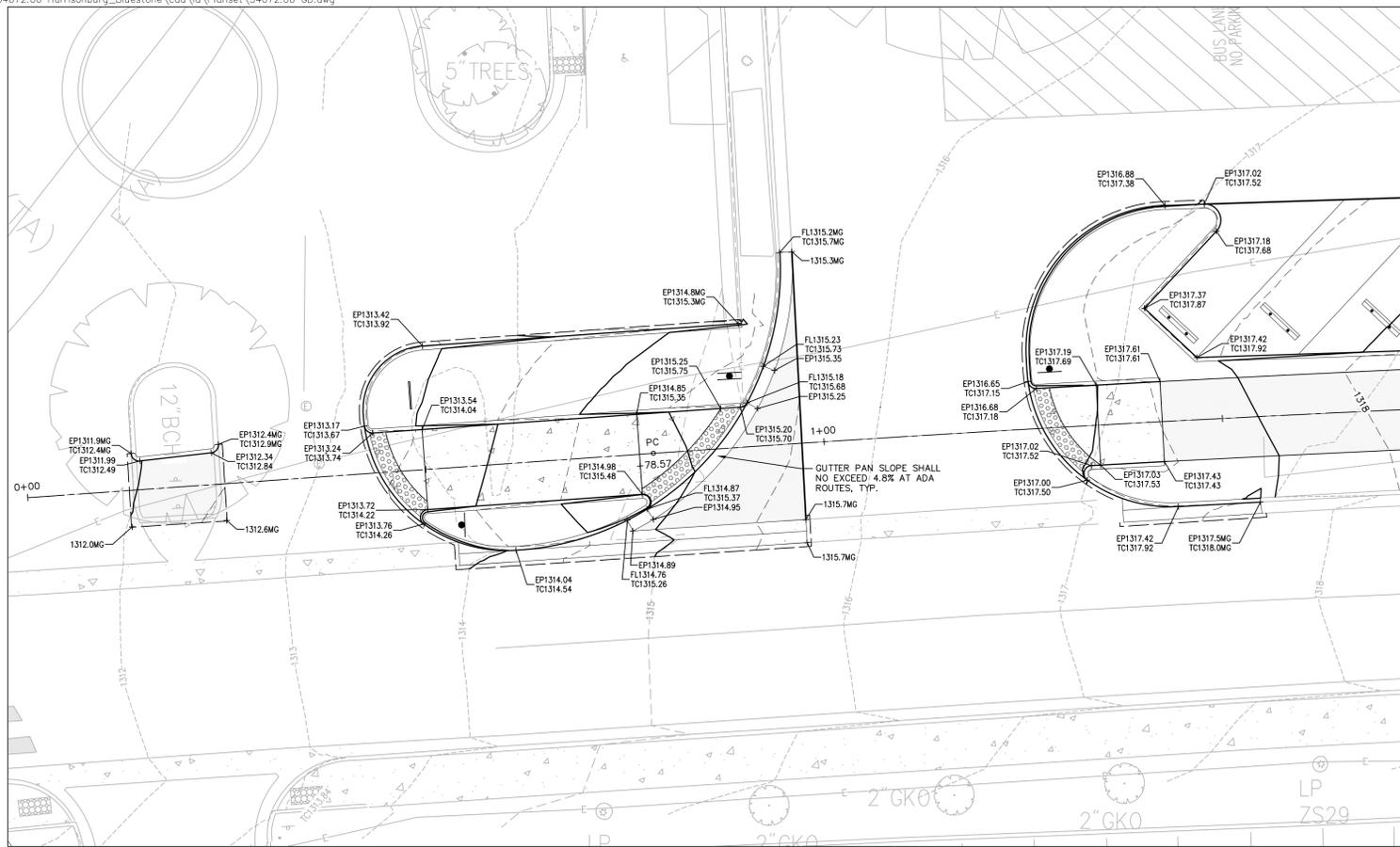
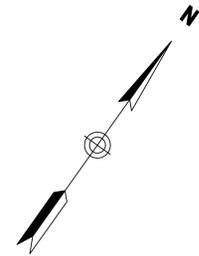
No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH
Issued for: Date: February 05, 2016
Bid Set

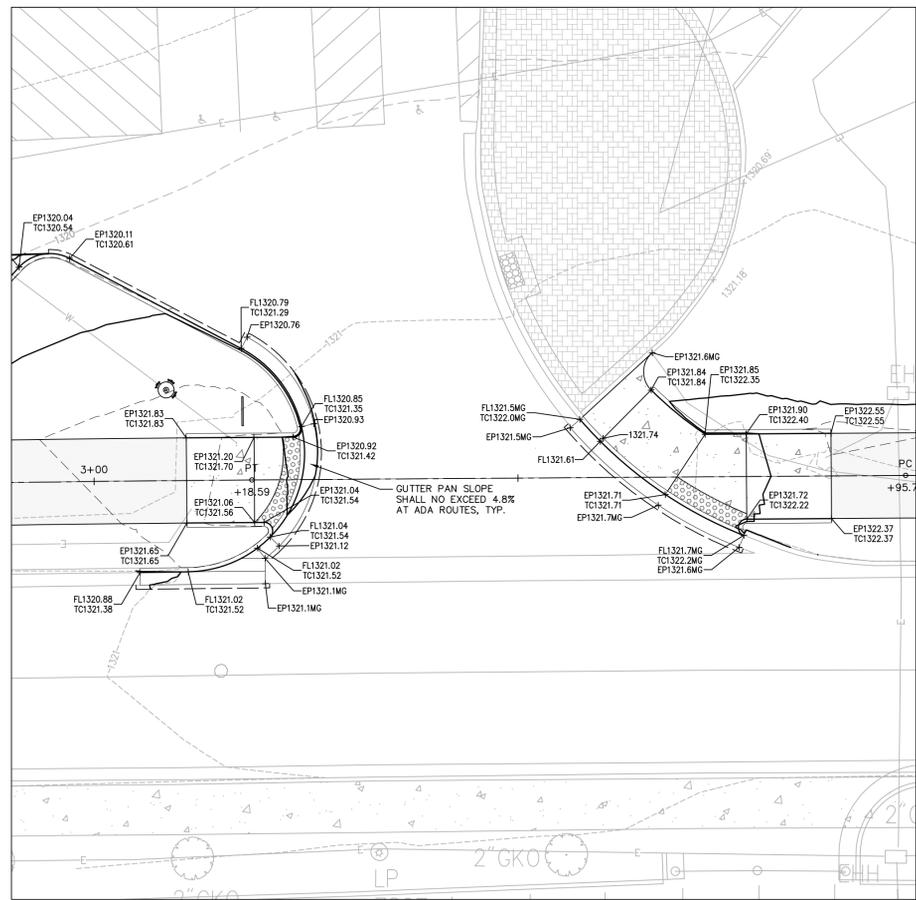
Drawing Title
Grading Plan
Drawing Number



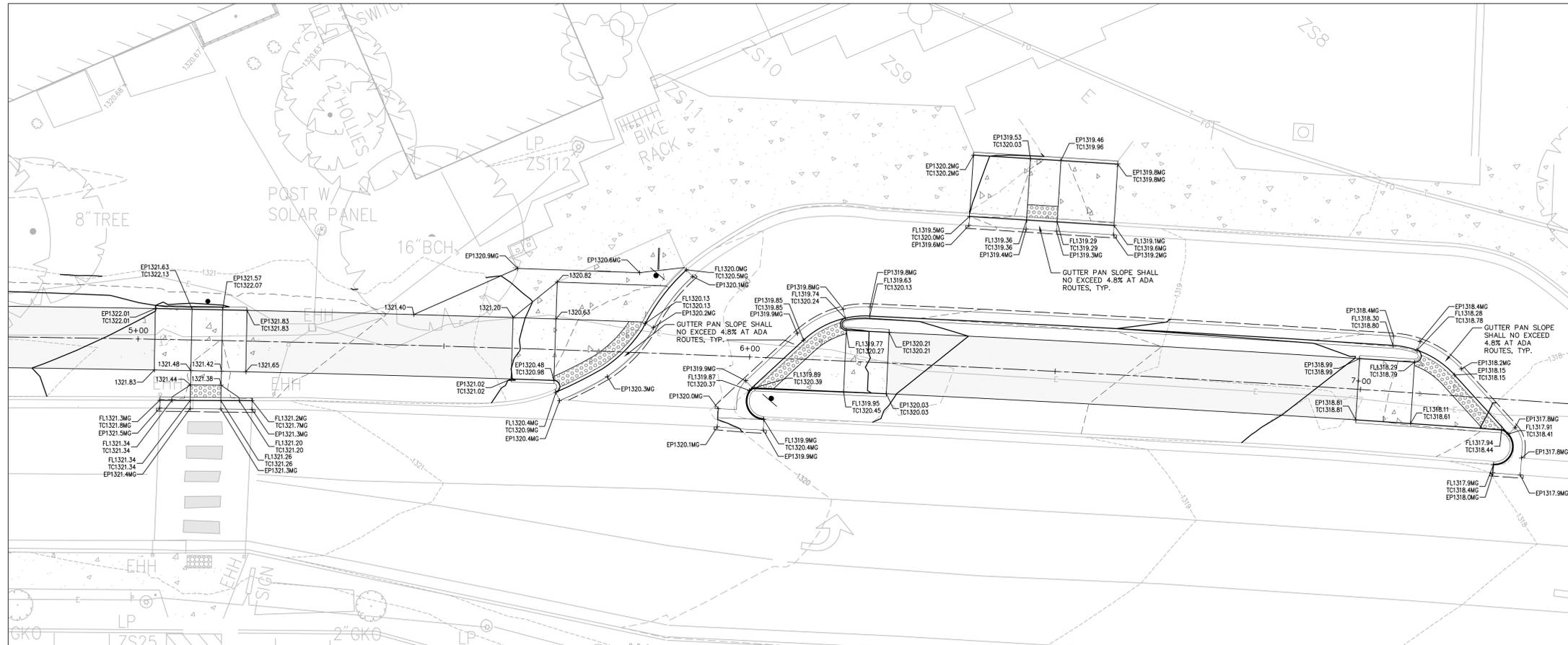
C5.02
Sheet 13 of 33
Project Number: 34072.00



GRADING INSET 'A'



GRADING INSET 'B'



GRADING INSET 'C'



Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH

Bid Set February 05, 2016

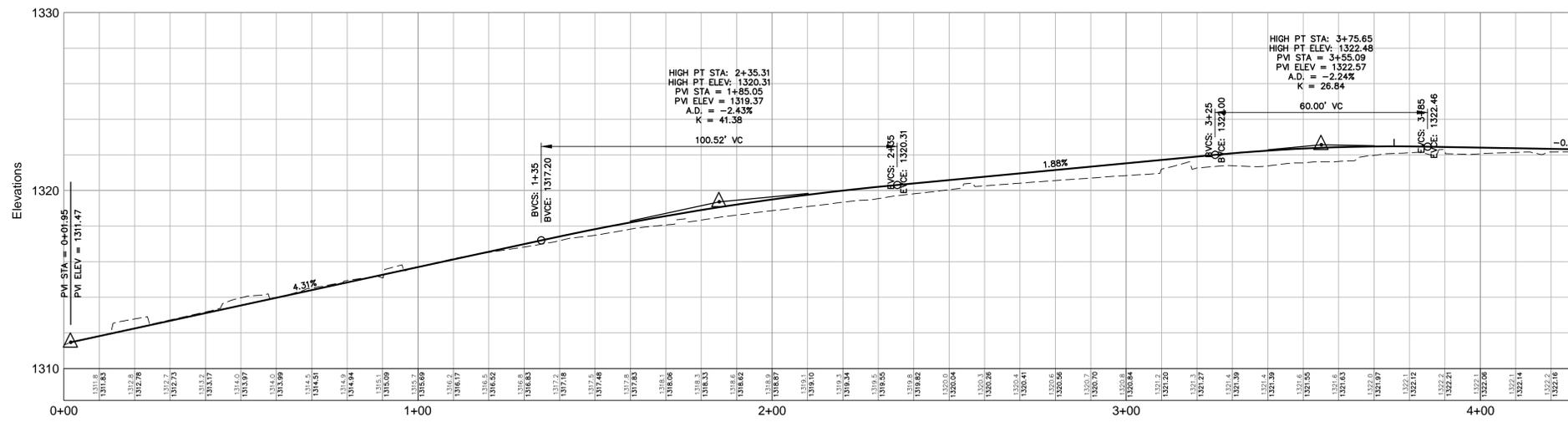
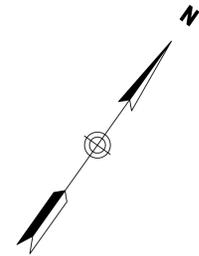
Drawing Title: **Grading Plan**



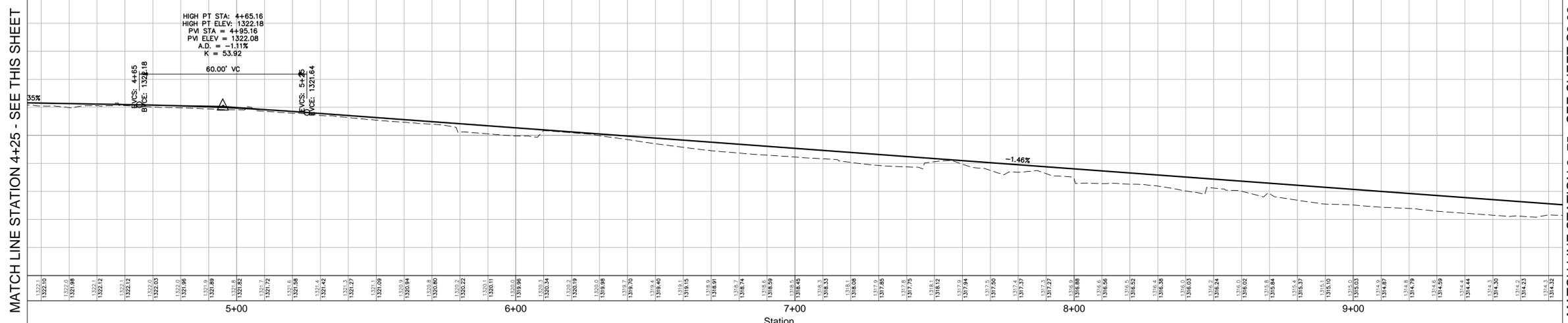
C5.03

Sheet 14 of 33

Project Number: 34072.00

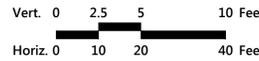


MATCH LINE STATION 4+25 - SEE THIS SHEET



MATCH LINE STATION 4+25 - SEE THIS SHEET

MATCH LINE STATION 9+75 - SEE SHEET C6.02



Bluestone Trail Extension

Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	App'd.

Designed by: CFR/ENW
 Checked by: JDH
 Issued for: Bid Set
 Date: February 05, 2016

Drawing Title

Trail Profile

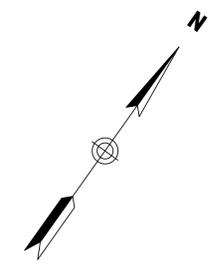
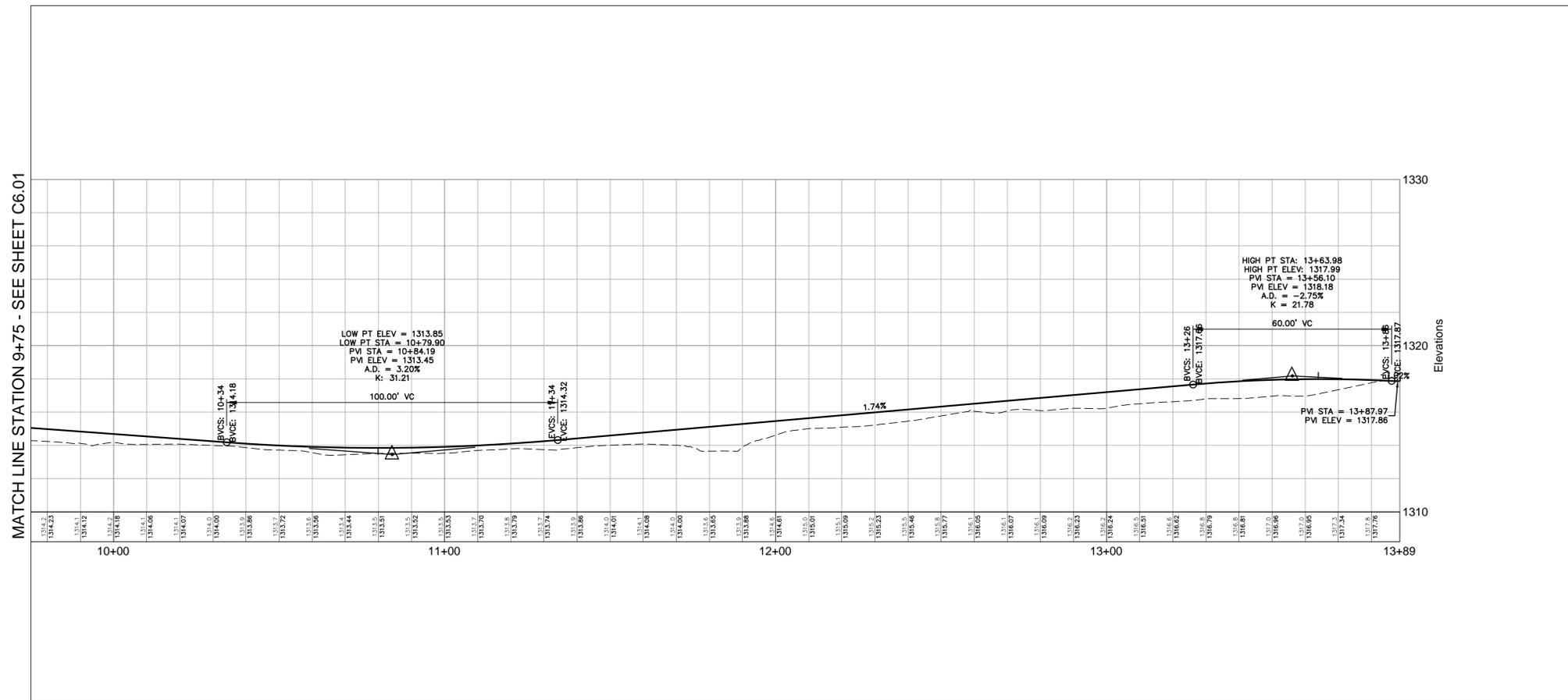
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C6.01

Sheet 16 of 33

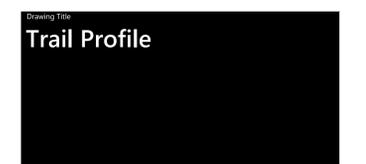
Project Number
34072.00



Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by CFR/ENW Checked by JDH
Issued for Date
Bid Set February 05, 2016



C6.02
Sheet 17 of 33
Project Number 34072.00

TABLE 3.31-B
(Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS
QUICK REFERENCE FOR ALL REGIONS

SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (<i>Lolium multi-florum</i>) & Cereal (Winter) Rye (<i>Secale cereale</i>)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (<i>Lolium multi-florum</i>)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME	
• Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)	
• Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)	

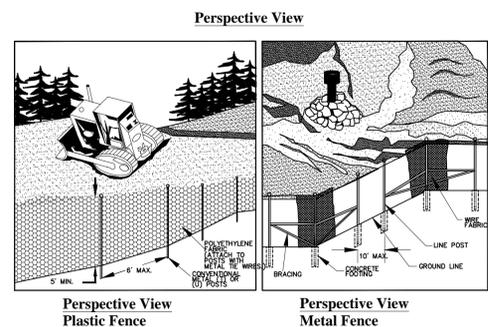
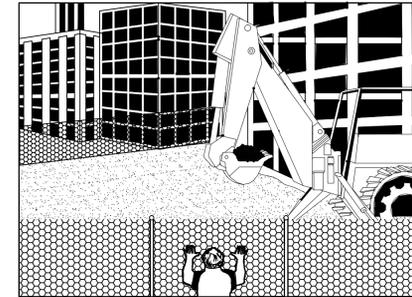
NOTE:
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.
3 - When applying Slowly Available Nitrogen, use rates available in *Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites* at <http://www.dcr.state.va.us/sw/e&ss.htm#toub>

TABLE 3.31-C
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

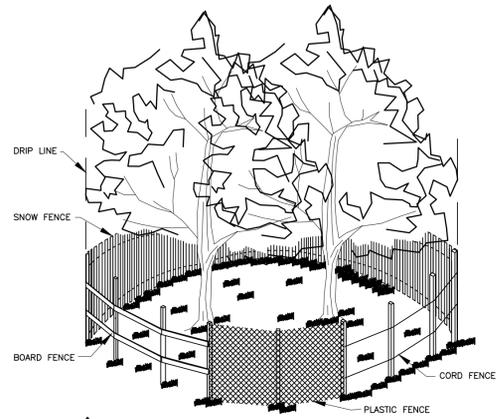
SPECIES	SEEDING RATE		NORTH ^a				SOUTH ^b			PLANT CHARACTERISTICS
	Acre	1000 ft ²	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15		
OATS (<i>Avena sativa</i>)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).	
RYE ^c (<i>Secale cereale</i>)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.	
GERMAN MILLET (<i>Setaria italica</i>)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.	
ANNUAL RYEGRASS ^d (<i>Lolium multi-florum</i>)	60 lbs.	1 1/2 lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.	
WEEDING LOVEGRASS (<i>Eragrostis curvula</i>)	15 lbs.	5 1/2 ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.	
KOREAN LESPEDEZA ^e (<i>Lespedeza stipularia</i>)	25 lbs.	approx. 1 1/2 lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.	

^a Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
^b Southern Piedmont and Coastal Plain.
^c May be used as a cover crop with spring seeding.
^d May be used as a cover crop with fall seeding.
X May be planted between these dates.
- May not be planted between these dates.

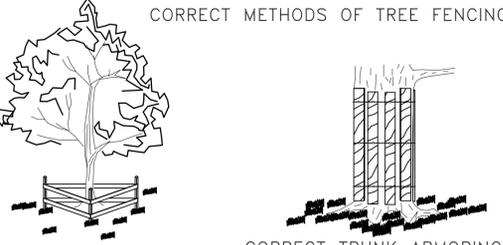
Temporary Seeding Specifications 6/08 13
N.T.S. Source: Virginia Erosion And Sediment Control Handbook PL 3.31-C



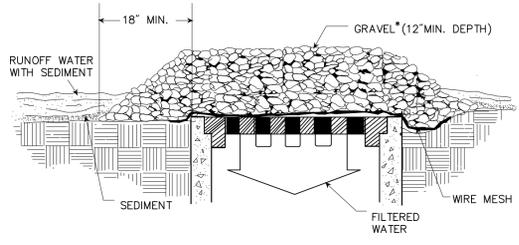
Construction Safety Fence 6/08 14
N.T.S. Source: Virginia Erosion And Sediment Control Handbook Plate 3.01-1
• TO BE JMU STANDARD BLACK VINYL COATED CHAIN LINK FENCE (8' HIGH)



CORRECT METHODS OF TREE FENCING



Fencing and Armoring 6/08 15
N.T.S. Source: Virginia Erosion And Sediment Control Handbook PL 3.38.2

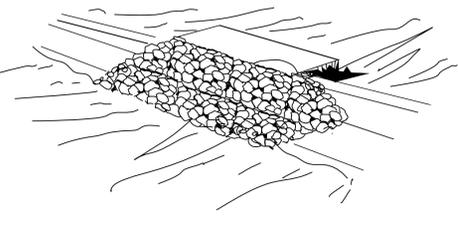


Specific Application

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

- GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Gravel And Wire Mesh Drop Inlet Sediment Filter 6/08 16
N.T.S. Source: Virginia Erosion And Sediment Control Handbook Plate 3.07-2

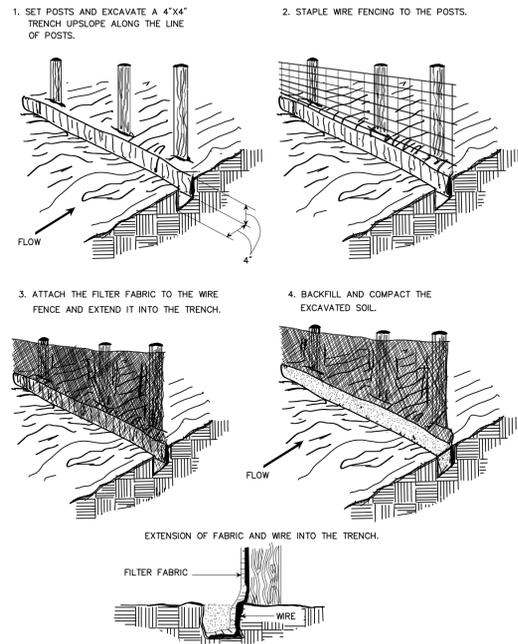


Specific Application

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

- GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

Gravel Curb Inlet Sediment Filter 6/08 17
N.T.S. Source: Virginia Erosion And Sediment Control Handbook Plate 3.07-6



Construction Of A Silt Fence (With Wire Support) 6/08 18
N.T.S. Source: Virginia Erosion And Sediment Control Handbook Plate 3.05-1

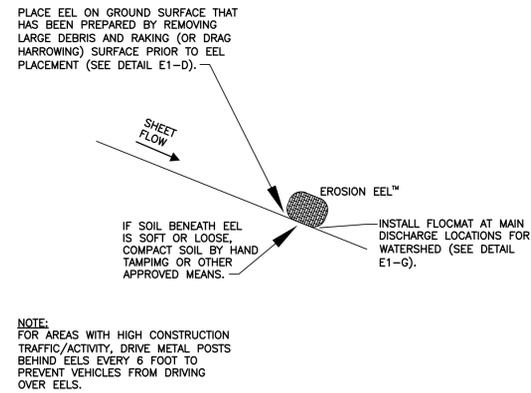
Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	App'd

Designed by: CFR/ENW Checked by: JDH
Issued for: Bid Set Date: February 05, 2016

Site Details



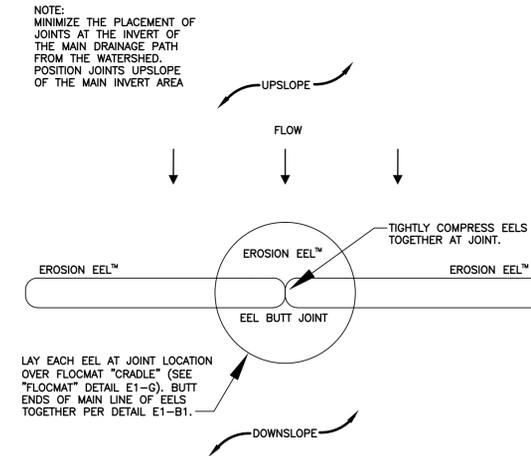


DETAIL E1-C: INTERCEPTING SHEET FLOW PERPENDICULAR TO FLOW PATH - PLAN VIEW

Erosion Logs-Intercepting Sheet Flow

(EL)

N.T.S. Source: Erosion Eel (or Approved Equal) E1-C

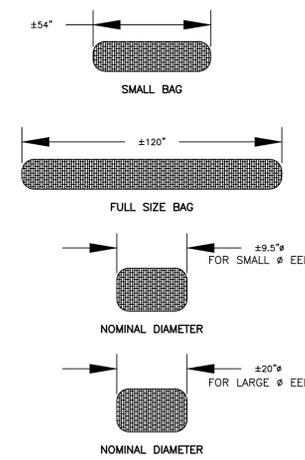


DETAIL E1-E: PLAN VIEW - OVERLAP/JOINT DETAIL NEAR DISCHARGE POINTS FROM WATERSHED N.T.S.

Erosion Logs-Overlap/Join

(EL)

N.T.S. Source: Erosion Eel (or Approved Equal) E1-E

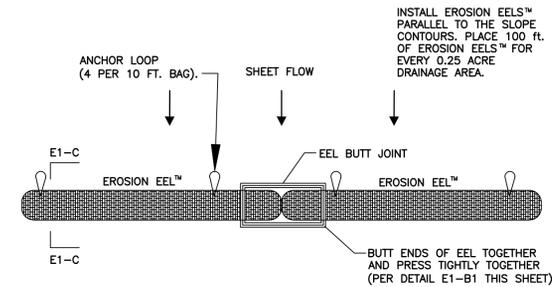


DETAIL E1-A: EROSION EELS™ N.T.S.

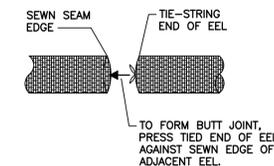
Erosion Logs

(EL)

N.T.S. Source: Erosion Eel (or Approved Equal) E1-A



DETAIL E1-B: INTERCEPTING SHEET FLOW PERPENDICULAR TO FLOW PATH - PLAN VIEW



BUTT JOINT DETAIL E1-B1

Erosion Logs-Butt Joint

(EL)

N.T.S. Source: Erosion Eel (or Approved Equal) E1-B & E1-B1

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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Issued for: Date:

Bid Set February 05, 2016

Site Details

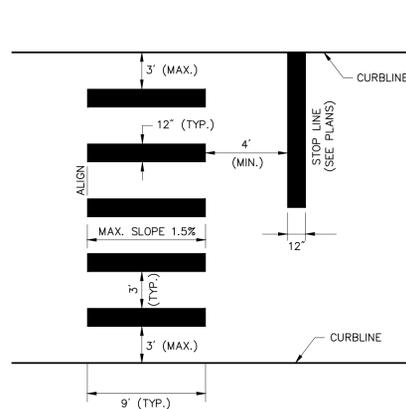
Drawing Number



C7.02

Sheet 19 of 33

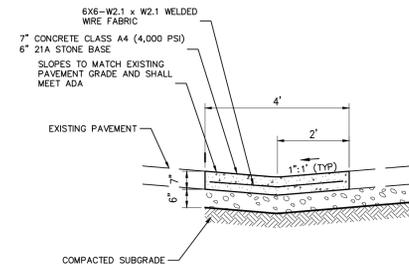
Project Number 34072.00



- Notes:**
1. LINES TO BE APPLIED USING PREFORMED THERMOPLASTIC.
 2. LONGITUDINAL CROSSWALK LINES TO BE PARALLEL TO CURBLINE.
 3. ALL LONGITUDINAL CROSSWALK LINES TO BE THE SAME LENGTH AND PROPERLY ALIGNED.
 4. CROSSWALK SIDE SLOPE SHALL NOT EXCEED 1.5%.

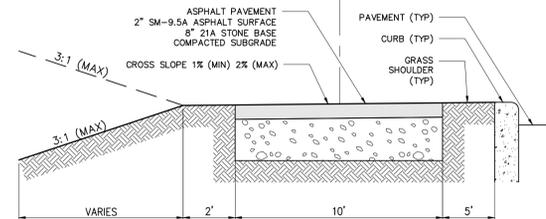
Crosswalk

N.T.S. Source: VHB 6/08 REV LD_553



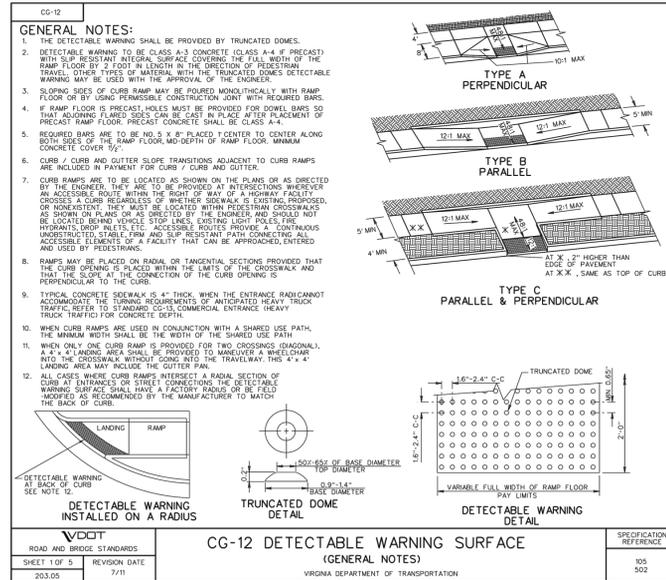
Valley Gutter

Source: VHB N.T.S.



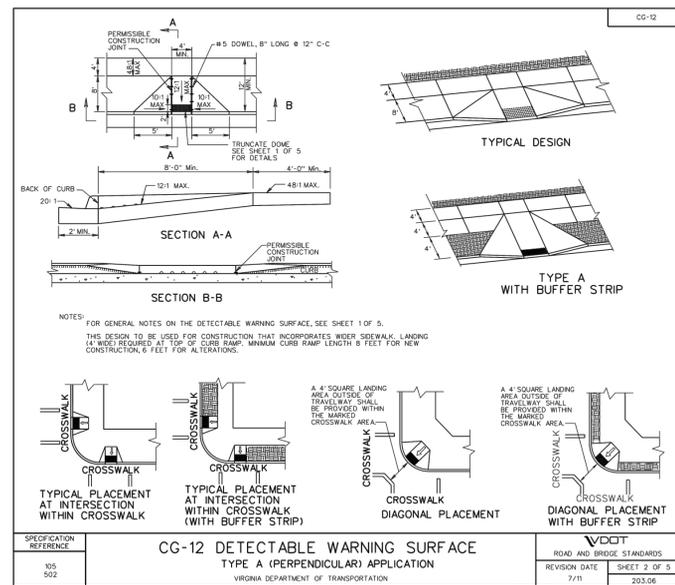
Trail Typical Section

N.T.S. Source: VHB



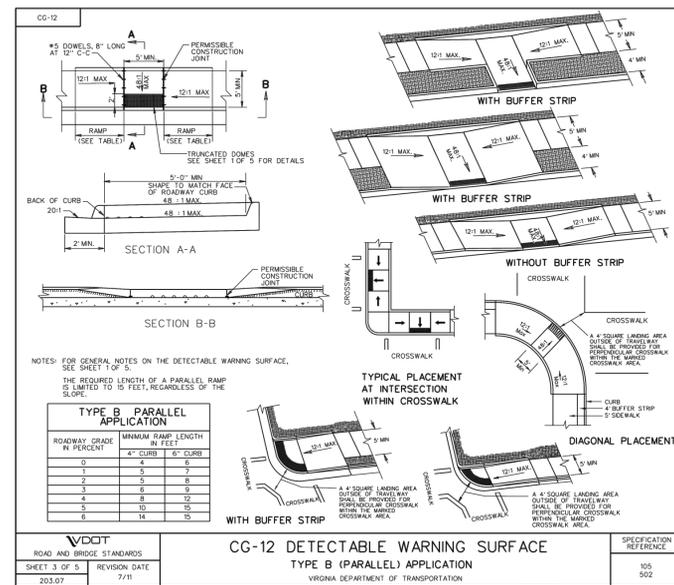
CG-12 Detectable Warning Surface (General Notes)

N.T.S. Source: Virginia Department of Transportation



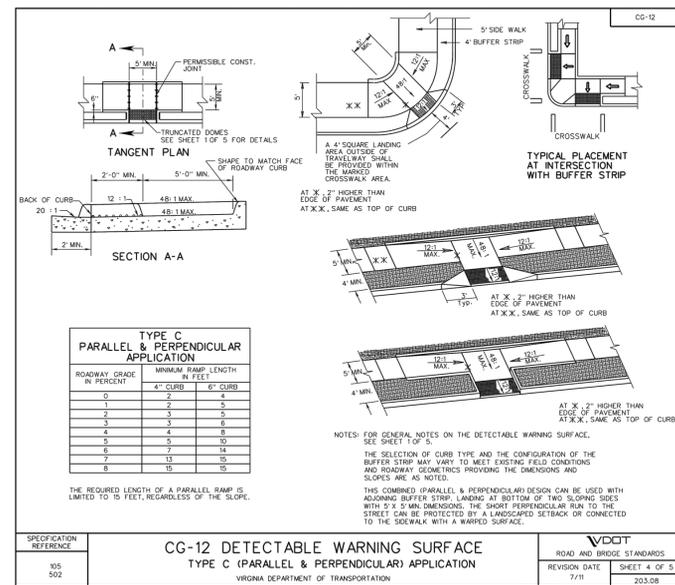
CG-12 Detectable Warning Surface (Type A)

N.T.S. Source: Virginia Department of Transportation



CG-12 Detectable Warning Surface (Type B)

N.T.S. Source: Virginia Department of Transportation



CG-12 Detectable Warning Surface (Type C)

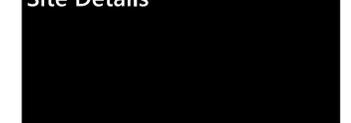
N.T.S. Source: Virginia Department of Transportation

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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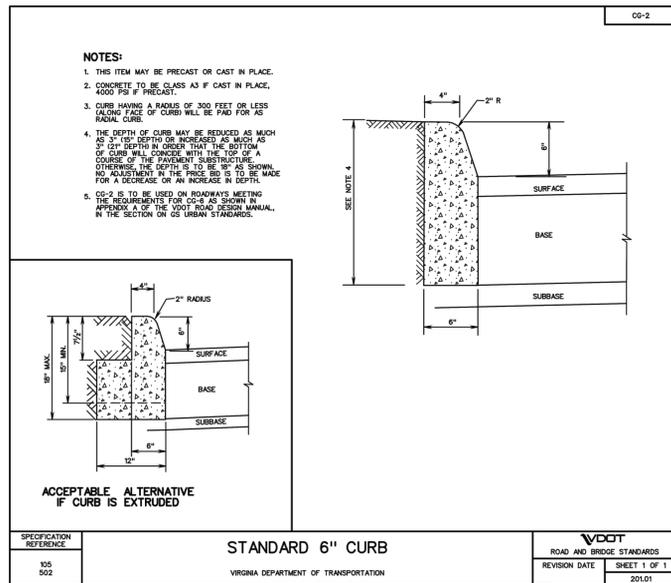
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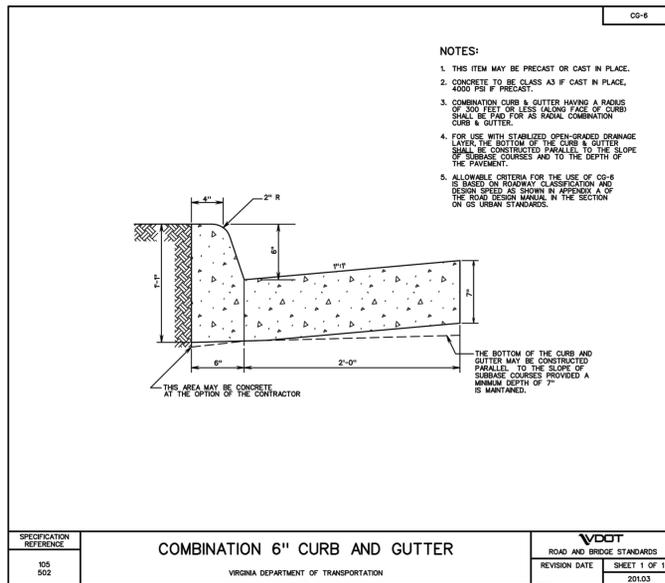
C7.04

Sheet 21 of 33

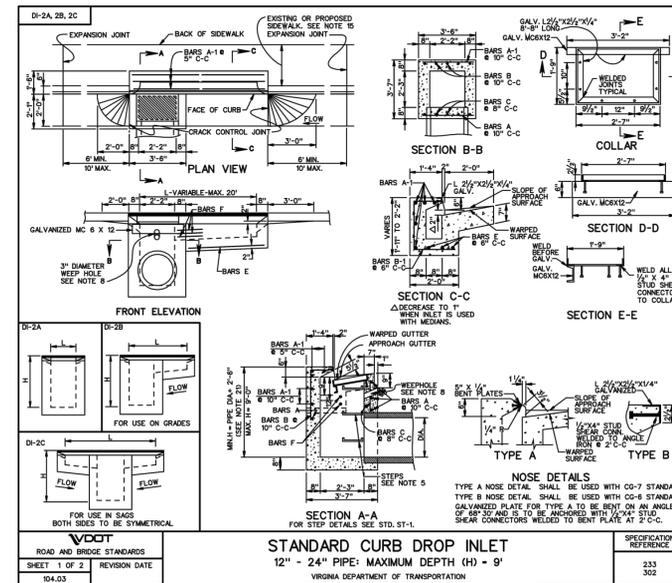
Project Number: 34072.00



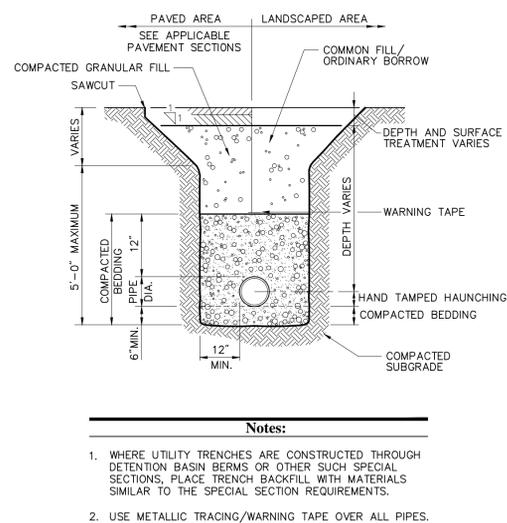
CG-2 Standard 6" Curb
N.T.S. Source: Virginia Department of Transportation



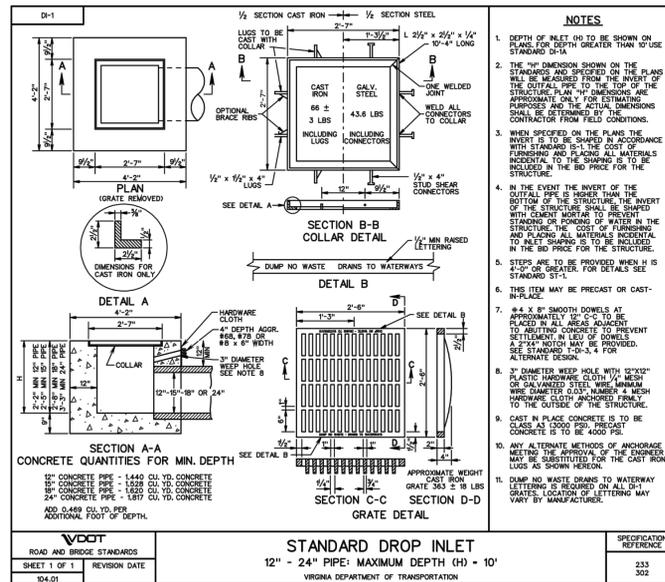
CG-6 Standard 6" Curb and Gutter
N.T.S. Source: Virginia Department of Transportation



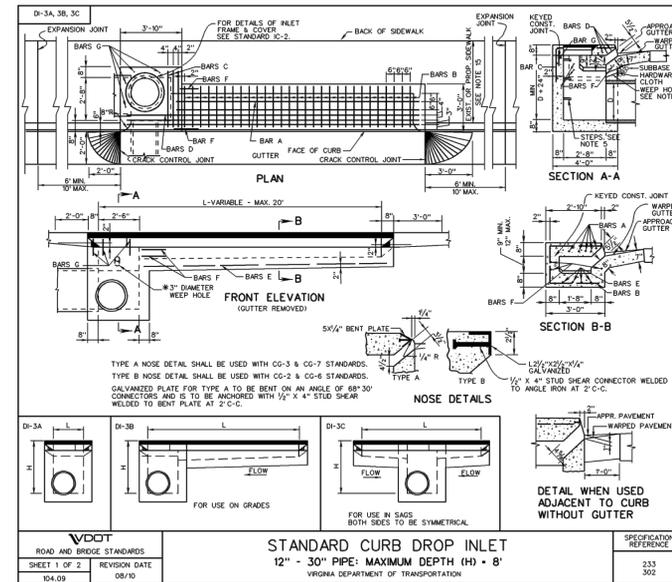
Standard Curb Drop Inlet (DI-2A)
N.T.S. Source: Virginia Department of Transportation



Utility Trench
N.T.S. Source: VHB LD_300



Standard Drop Inlet (DI-1)
N.T.S. Source: Virginia Department of Transportation



Standard Curb Drop Inlet (DI-3A)
N.T.S. Source: Virginia Department of Transportation

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

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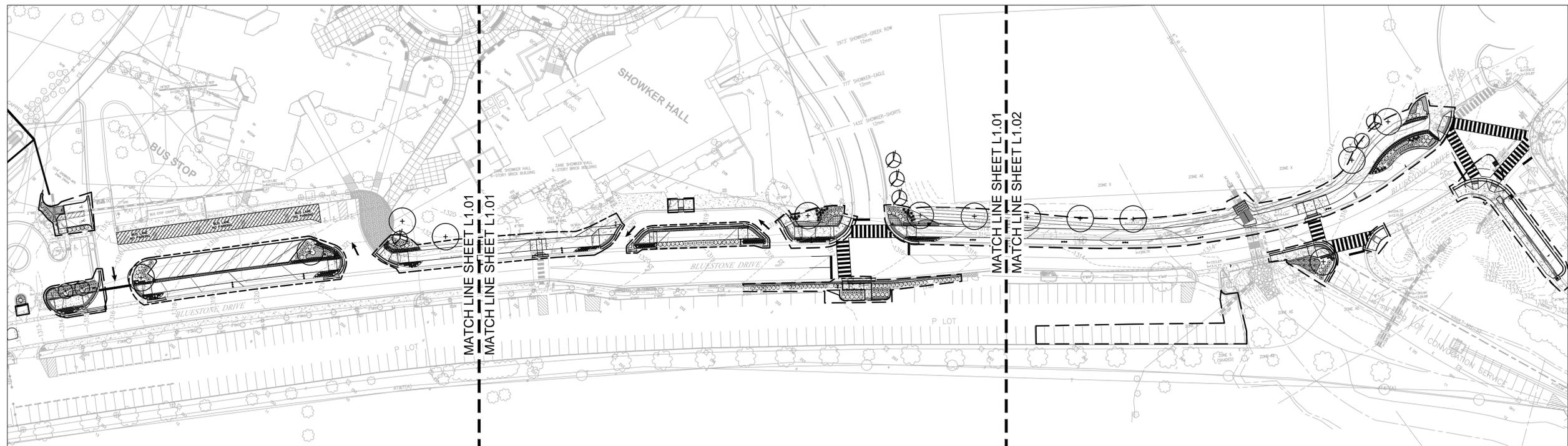
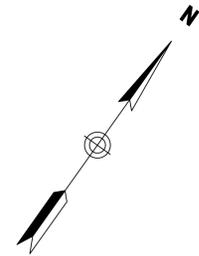
Site Details

C7.05

Sheet 22 of 33

Project Number 34072.00

JOHN D. HINES
Lic. No. 040808
01/05/2016
PROFESSIONAL ENGINEER



Bluestone Trail Extension Bluestone Drive Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by **SMT** Checked by **NJR**
 Issued for _____ Date _____
Bid Set February 05, 2016

Overall
Planting Plan

Project Number
LA 1.00
Sheet **23** of **33**
Project Number
34072.00

Saved Thursday, February 04, 2016 3:21:22 PM STALLEY Plotted Wednesday, February 10, 2016 4:22:06 PM Waggen, Evan

Landscape Notes

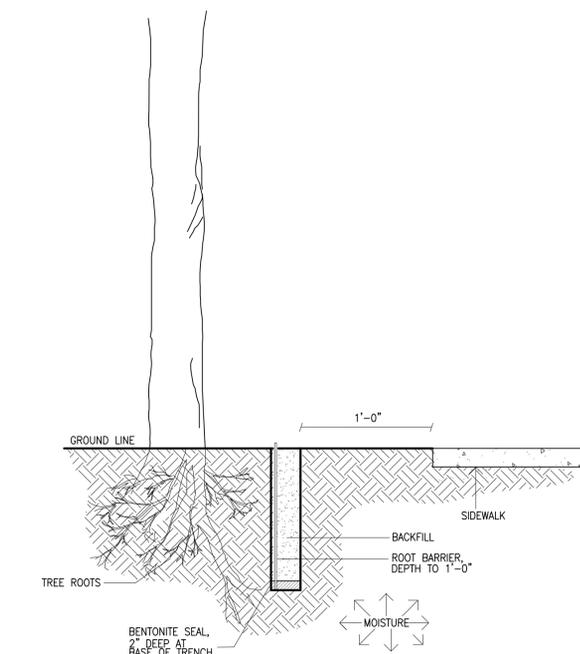
- ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
- ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE SEED, SOD, OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Tree Protection

- EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY CONSTRUCTION FENCE. ERECT FENCE AT EDGE OF THE TREE DRIPLINE PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
- DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.

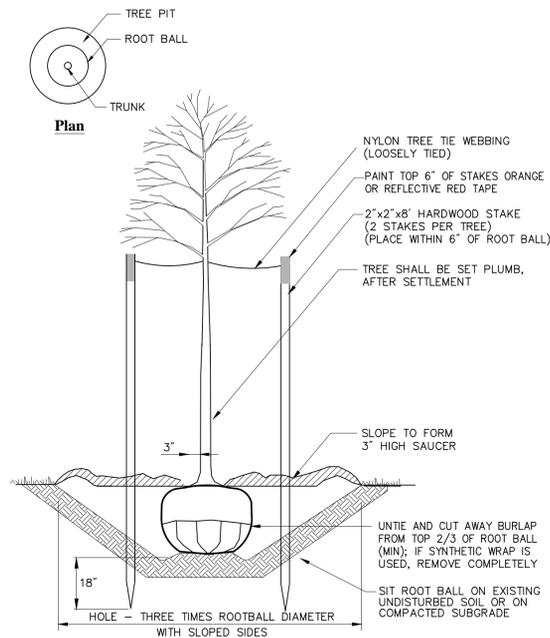
Plant Maintenance Notes

- CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS UNTIL ACCEPTANCE BY THE OWNER
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK.
- WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK. WATER SHALL BE PROVIDED BY THE CONTRACTOR UNTIL ACCEPTANCE BY THE OWNER.
- WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
- CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.



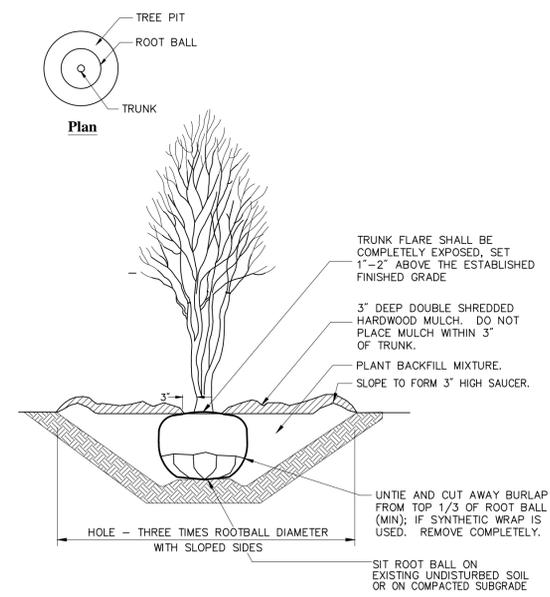
Root Barrier Detail

N.T.S. Source: VHB 10/12



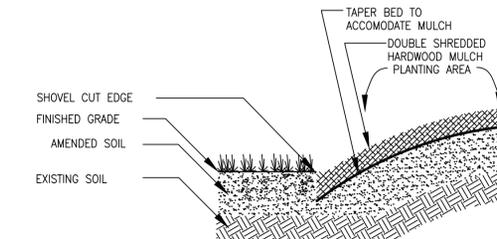
Typical Tree Staking

N.T.S. Source: VHB 1/10 LD_602



Multistem Tree Planting

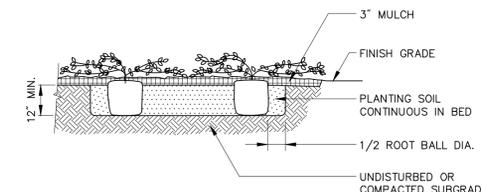
N.T.S. Source: VHB



Shovel Cut Edging Detail

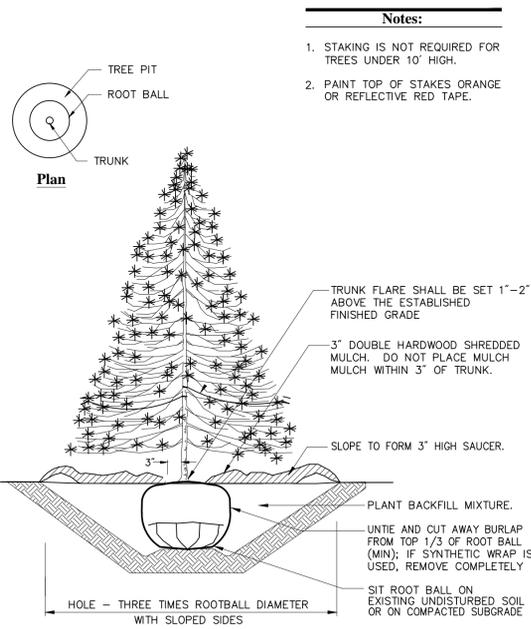
N.T.S. Source: VHB 11/10 REV

PLANT SPACING ("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8-1/2 IN. O.C.
12 IN. O.C.	10-1/2 IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.



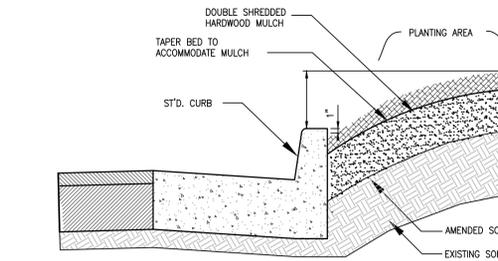
Ground Cover Planting

N.T.S. Source: VHB 11/09 LD_615



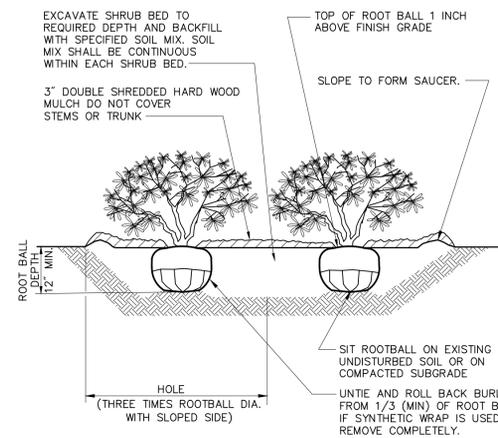
Evergreen Tree Planting

N.T.S. Source: VHB 6/08 REV LD_604



Curb-Bed Edging Detail

N.T.S. Source: VHB 11/10 REV

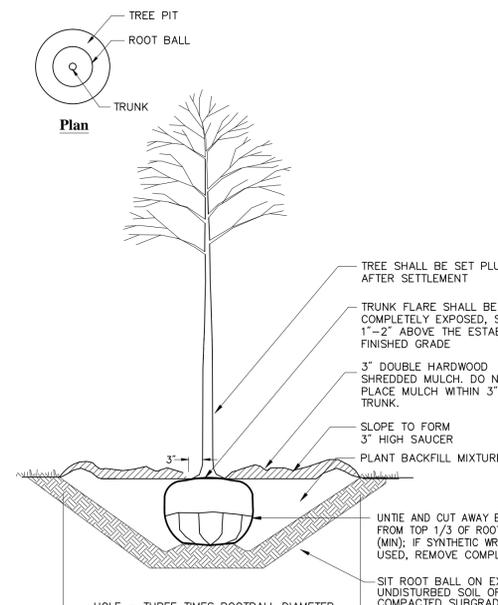


Notes:

- LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

Shrub Bed Planting

N.T.S. Source: VHB 6/08 LD_601



Tree Planting

N.T.S. Source: VHB 1/10 LD_602



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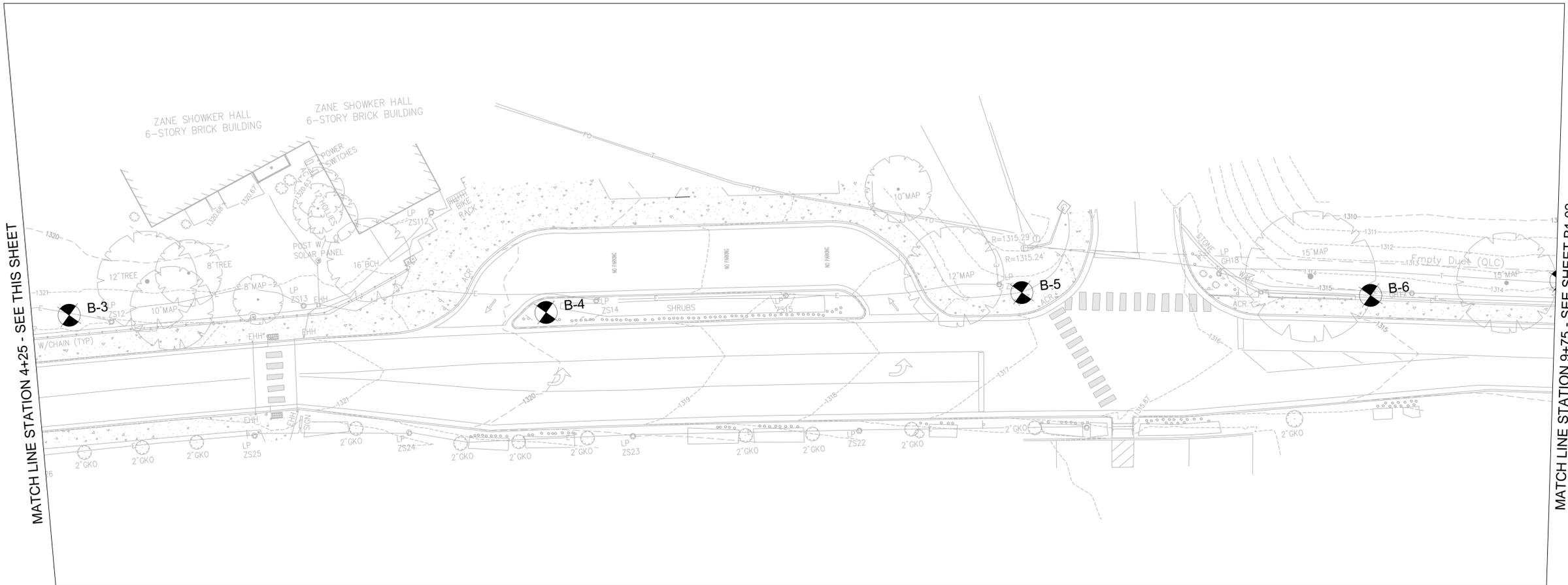
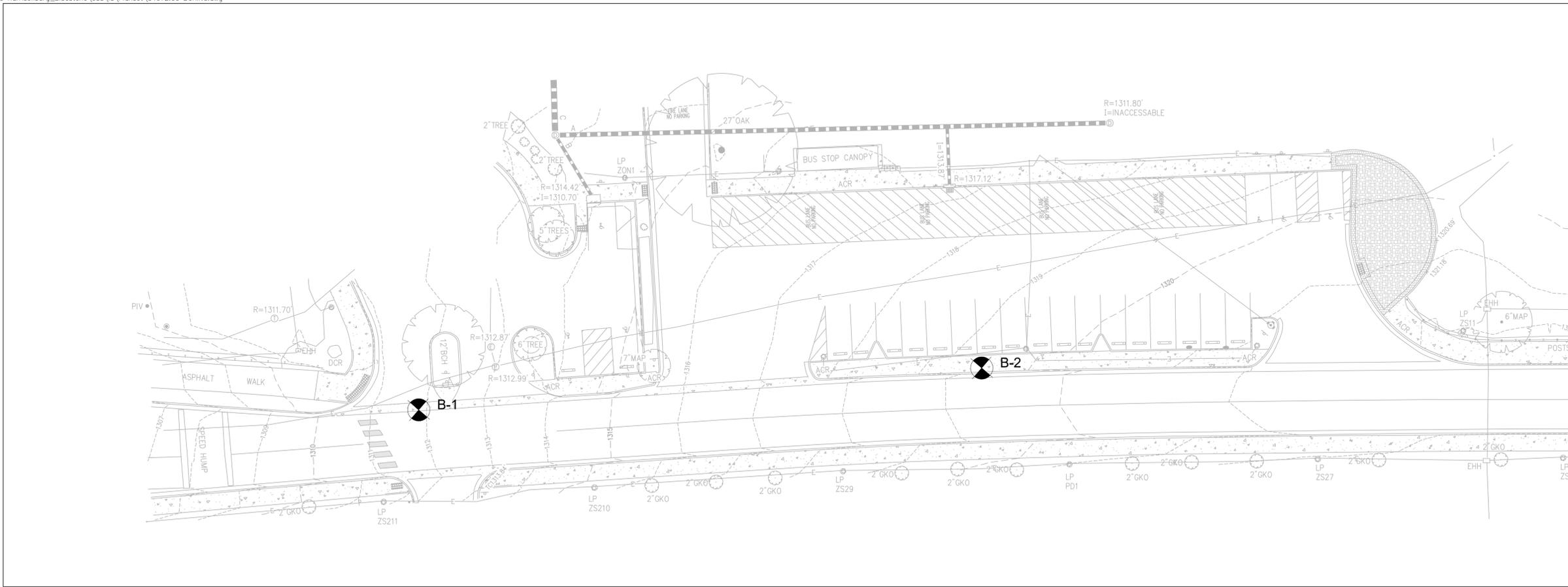
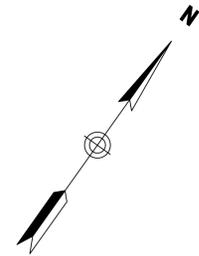
Bid Set February 05, 2016

Planting Notes & Details

LA 2.01
Sheet 26 of 33
Project Number 34072.00
Nancy J. Rodriguez
Landscape Architect
01/05/2016



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Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: CFR/ENW Checked by: JDH
Issued for: Date: February 05, 2016
Bid Set

Drawing Title
Boring Locations

Drawing Number

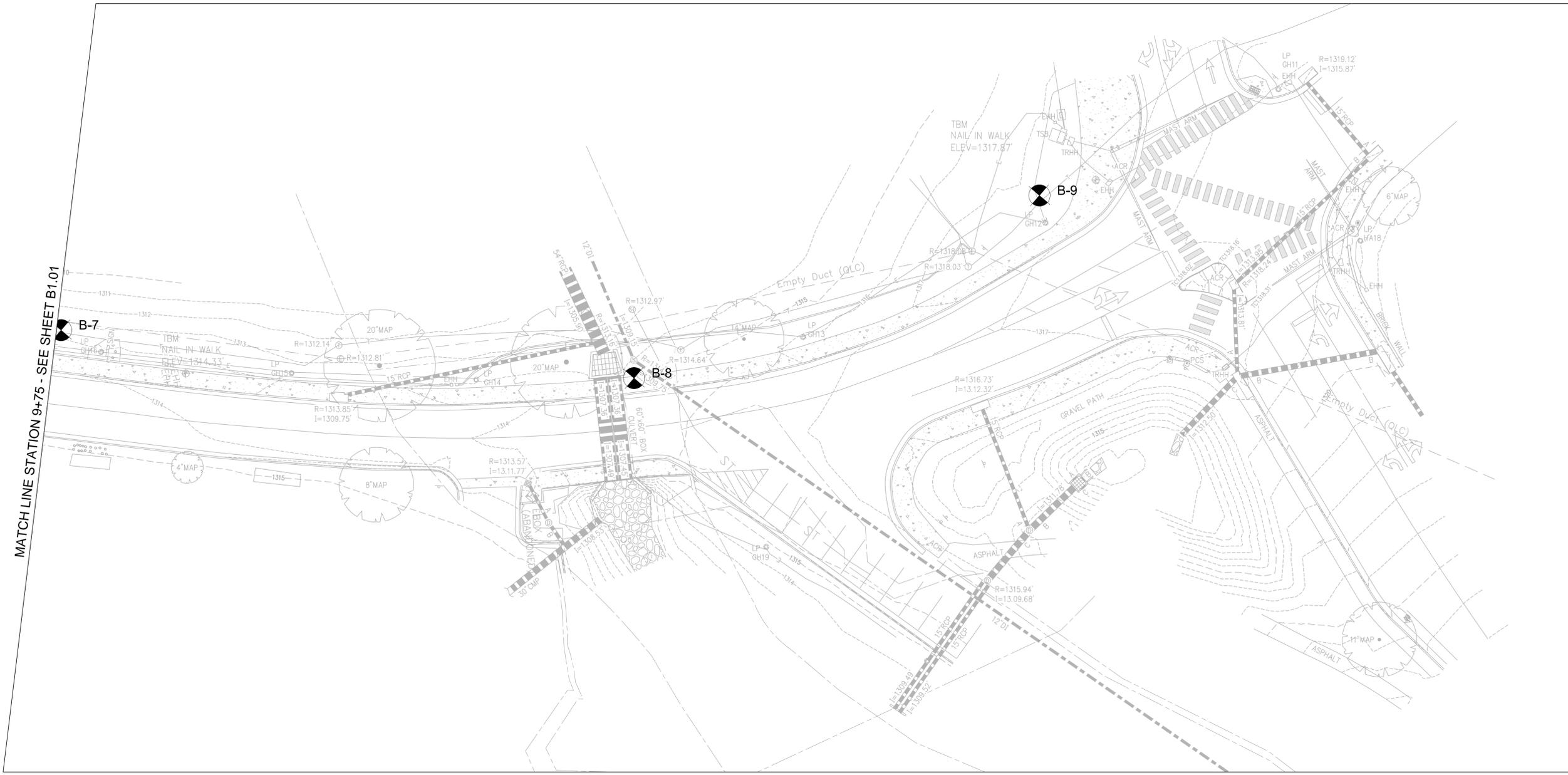
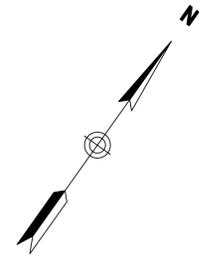


B1.01

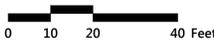
Sheet 27 of 33

Project Number
34072.00





MATCH LINE STATION 9+75 - SEE SHEET B1.01



Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by CFR/ENW	Checked by JDH
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Drawing Title
Boring Locations

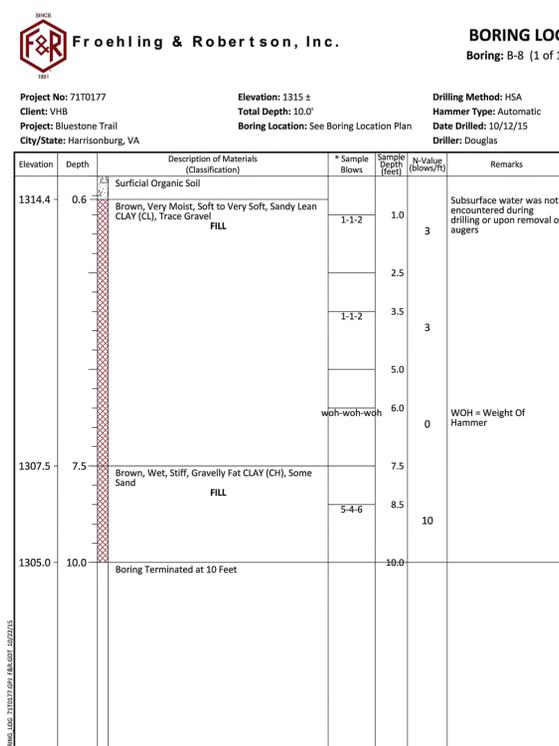
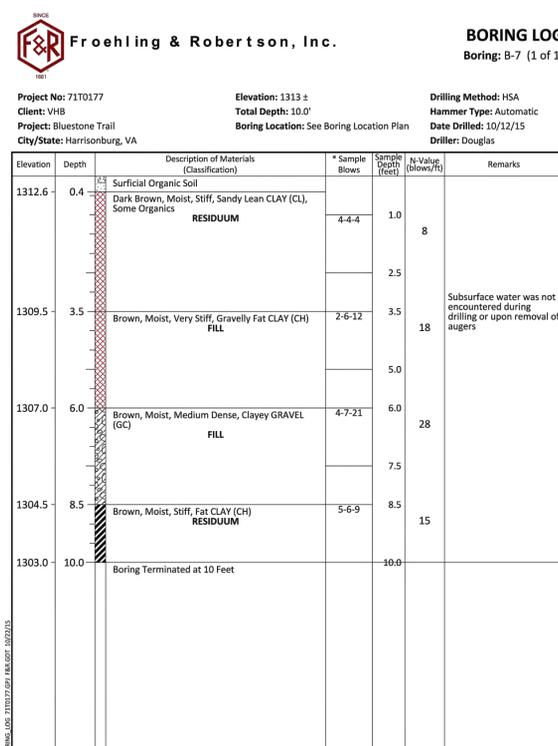
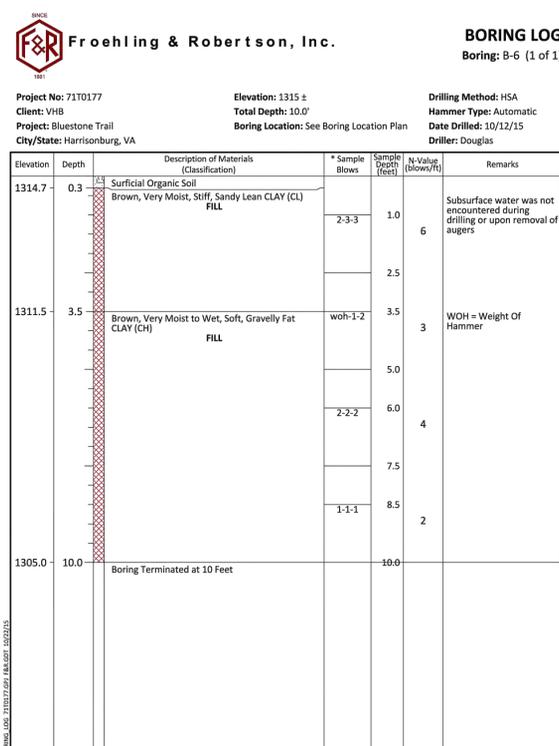
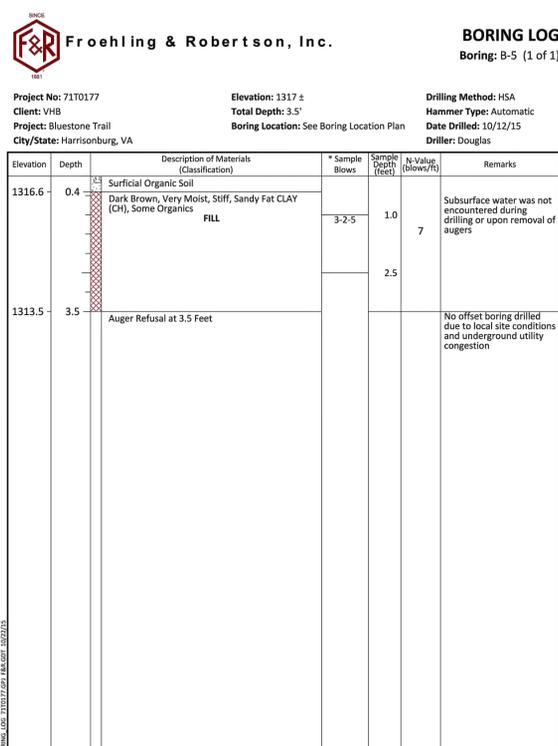
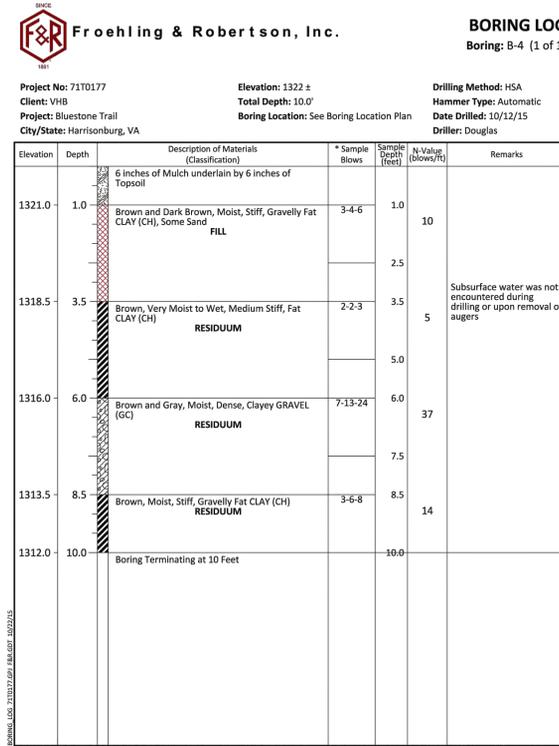
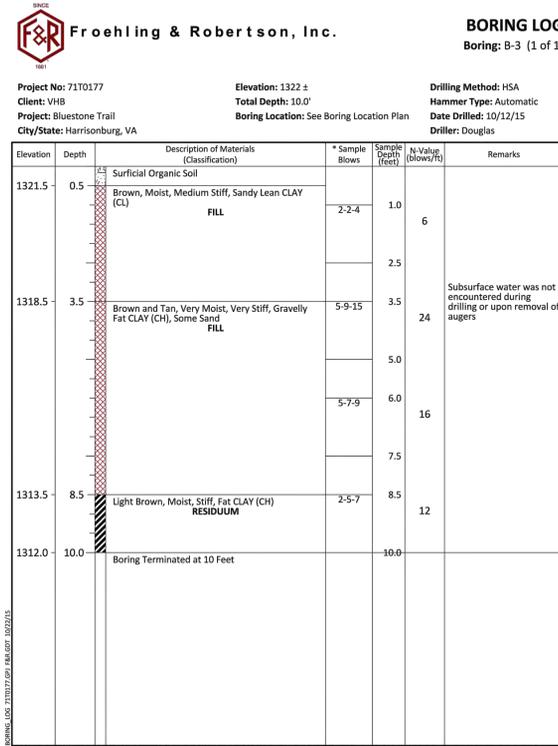
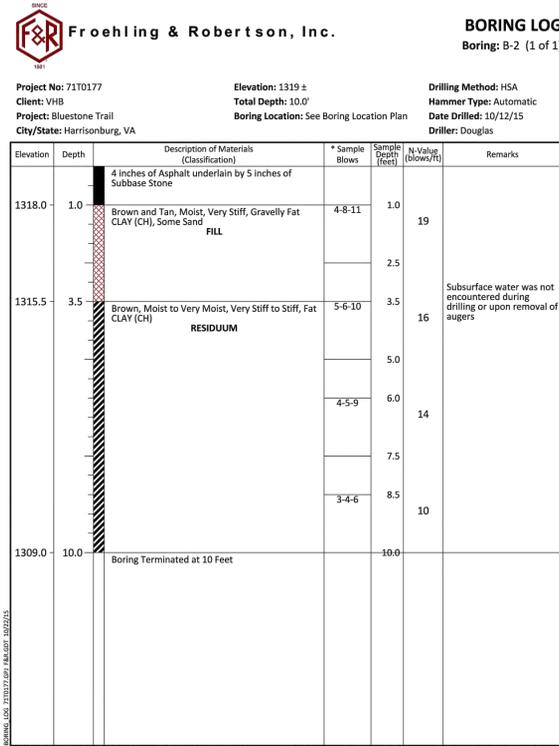
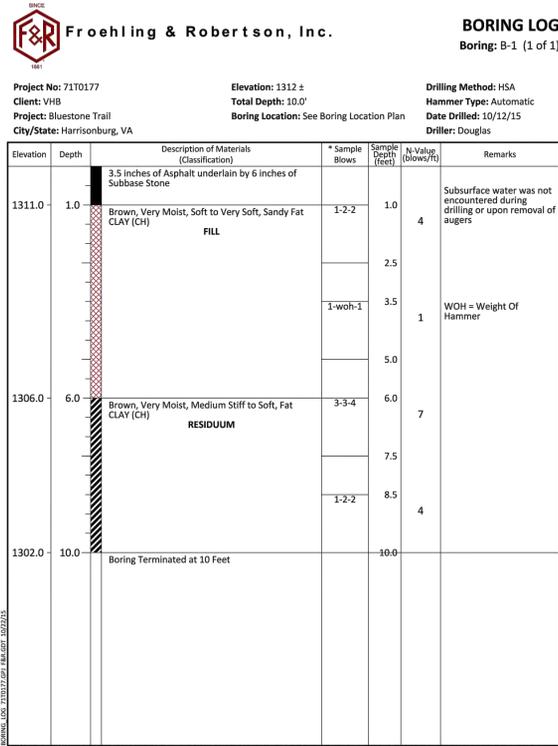
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B1.02
Sheet 28 of 33
Project Number
34072.00



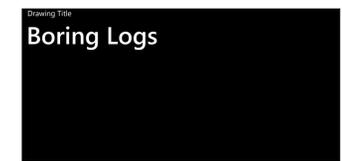
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B1.03

Sheet 29 of 33

Project Number: 34072.00



BORING LOG
Boring: B-9 (1 of 1)

Project No: 7170177 Elevation: 1317 ± Drilling Method: HSA
 Client: VHB Total Depth: 2.5' Hammer Type: Automatic
 Project: Bluestone Trail Boring Location: See Boring Location Plan Date Drilled: 10/12/15
 City/State: Harrisonburg, VA Driller: Douglas

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
1316.7	0.3	Surficial Organic Soil Brown and Gray, Moist, Very Dense, Clayey GRAVEL (GC) FILL				Subsurface water was not encountered during drilling or upon removal of augers
			10-50/2	1.0	100+	
				1.7		
1314.5	2.5	Auger Refusal at 2.5 Feet				No offset boring drilled due to local site conditions and underground utility congestion

* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

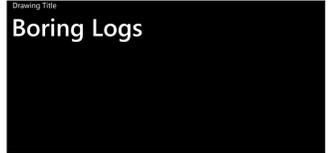
Bluestone Trail Extension
Bluestone Drive
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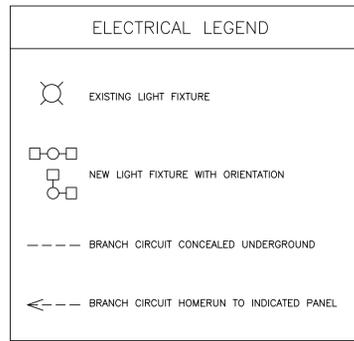
Drawing Number



B1.04

Sheet 30 of 33

Project Number: 34072.00



- ### KEYNOTES E0.1
1. REMOVE LIGHT FIXTURE, POLE, AND CONCRETE FOUNDATION. POLE SHALL BE STORED TO BE REUSED FOR NEW LIGHT FIXTURES.
 2. REMOVE UNDERGROUND BRANCH CIRCUIT.
 3. REMOVE UNDERGROUND CONDUCTORS. CONDUIT SHALL BE REUSED FOR NEW WORK.
 4. HOMERUN CIRCUIT TO CONTACTOR ZS SHALL REMAIN.
 5. UNDERGROUND PULLBOX AND BRANCH CIRCUIT SHALL REMAIN.
 6. PUSHBUTTON PEDESTAL CONTROLLING CROSS-WALK ROAD LIGHTS SHALL BE RELOCATED AS INDICATED ON DRAWING E0.2.
 7. LIGHT FIXTURE AND POLE SHALL BE RELOCATED AS INDICATED ON DRAWING E0.2. REMOVE FOUNDATION. MODIFY BRANCH CIRCUIT TO RE-FEED THE FIXTURE.
 8. HOMERUN CIRCUIT TO CONTACTOR GH SHALL REMAIN.
 9. THE 60A, 3-PHASE, 120/208V POWER PEDESTAL SERVES SPECIAL EVENTS ON THE GROUNDS. RELOCATE POWER PEDESTAL AS INDICATED ON DRAWING E0.2.
 10. UNDERGROUND FEEDER SHALL REMAIN TO SERVE PEDESTAL IN NEW LOCATION.
 11. REMOVE UNDERGROUND BRANCH CIRCUIT TO SIGN.
 12. RELOCATE SIGN AS INDICATED ON DRAWING E0.2. REMOVE FOUNDATIONS.
 13. IN GODWIN HALL, POLE LIGHTS ARE FED FROM PANEL 1-A, 20A, 3-POLE, 480V CIRCUIT BREAKER 14, 16, 18.
 14. THE POWER PEDESTAL IS SERVED FROM A 60A, 3-P, 208V CIRCUIT BREAKER IN PANEL 1L10, CIRCUIT 38, 40, 42.
 15. THERE ARE THREE LIGHTING CONTACTORS IN ZANE - SHOWKER HALL.
 - ZS1-1 THROUGH 18
 - ZS2-1 THROUGH 24
 - ZS3-1 THROUGH 14

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NOMENCLATURE DENOTES BUILDING AND POLE NUMBER ON CONTACTOR. POLES ARE FED FROM ONE 20A, 3-POLE, 480V CIRCUIT BREAKER. POLES ARE CIRCUITED ALTERNATELY ACROSS ALL THREE PHASES.

Bluestone Trail Extension

Bluestone Drive
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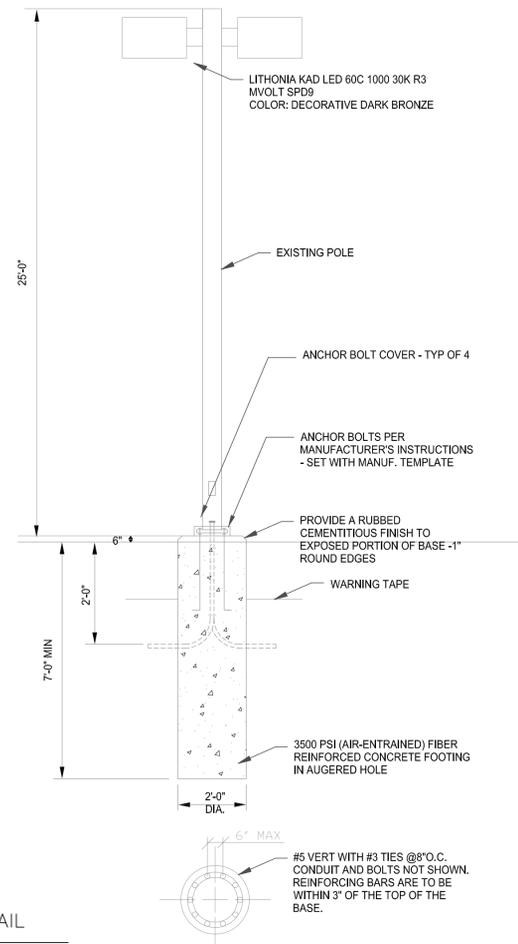
DRAWING TITLE
ELECTRICAL DEMOLITION PLAN

Drawing Number
E0.1

Sheet of
31 of **33**

Project Number
34072.00





FOUNDATION DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 2000PSF AND ALLOWABLE PASSIVE PRESSURE OF 100PSF. NOTED DESIGN PARAMETERS SHALL BE CONFIRMED BY OWNER'S GEOTECHNICAL ENGINEER. IF INSITU DESIGN PARAMERS ARE BELOW INDICATED VALUES, ENGINEER SHALL BE NOTIFIED TO DETERMINE IF FOOTING REDESIGN IS REQUIRED.

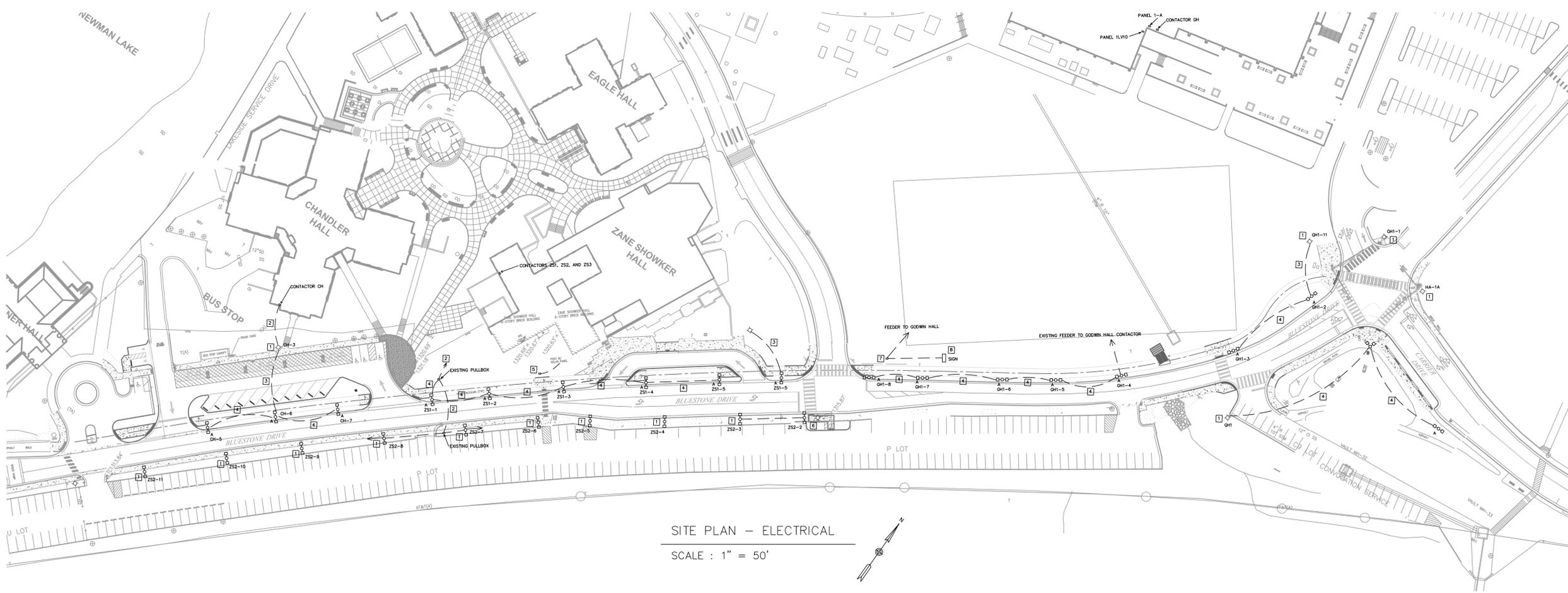
LIGHT POLE FOUNDATION DETAIL

N.T.S.

- ### KEYNOTES E0.2
- EXISTING LIGHT POLE AND CIRCUIT TO REMAIN.
 - EXISTING BRANCH CIRCUIT 208VOLTS, 3-PHASE, #6AWG TO REMAIN.
 - EXTEND EXISTING CONDUIT TO NEW LIGHT POLE. PROVIDE 2#10,1#10G. FROM LIGHT FIXTURE AND SPLICE INTO FEEDER.
 - PROVIDE NEW FEEDER 2#6,1#6G,3/4"C. PROVIDE 2#10,1#10G. FROM LIGHT FIXTURE AND SPLICE INTO FEEDER.
 - RELOCATE EXISTING PUSH BUTTON FOR LIGHTED CROSS WALK. RECONNECT TO CONTROLS AT SOLAR PANEL. EXTEND CONDUIT AND PROVIDE NEW CONDUCTORS.
 - RELOCATE EXISTING LIGHT POLE AS INDICATED. PROVIDE NEW POLE FOUNDATION AS DETAILED ABOVE. REUSE EXISTING LIGHT FIXTURE. RE-ROUTE CONDUIT INTO BASE OF POLE. PROVIDE NEW CONDUCTORS TO ADJACENT POLE.
 - RELOCATE POWER PEDESTAL TO THIS LOCATION. PROVIDE NEW CONCRETE FOUNDATION PAD. EXTEND 60A FEEDER TO POWER PEDESTAL AND RECONNECT.
 - RELOCATE SIGN TO THIS LOCATION. PROVIDE NEW CONCRETE FOUNDATIONS. PROVIDE 2 #12, 1 #12G, 1"C. FROM POWER PEDESTAL CIRCUIT BREAKER TO SIGN.
- GENERAL NOTE:**
EXISTING LIGHT POLES SHALL BE CLEANED AND REUSED. ATTACH NEW LIGHT FIXTURES TO EXISTING POLES

- ### LOAD CALCULATION
- CHANDLER HALL**
CONTACTOR CH POLES CH1 THROUGH CH7. ALL FIXTURES CONNECTED TO 20A, 3-P, 208V C.B. FIXTURES ARE CIRCUITED TO ALTERNATE LINE-TO-LINE PHASES.
EXISTING LOAD
10 FIXTURES ON 7 POLES. 10 X 480 WATT = 4800 WATTS
400 WATT PLUS 20% FOR BALLAST = 480 WATT PER FIXTURE.
NEW LOAD
(4 X 480 WATTS) + (6 X 216 WATTS) = 3216 WATTS
4800 WATTS - 3216 WATTS = 1584 WATTS REDUCTION IN LOAD
- ZANE SHOWKER**
CONTACTOR ZS1 POLES ZS1-1 THROUGH ZS-18. ALL FIXTURES CONNECTED TO 20A, 3-P, 480V C.B. FIXTURES ARE CIRCUITED TO ALTERNATE LINE-TO-NEUTRAL PHASES.
CONTACTOR ZS1 POLES ZS1-1 THROUGH ZS1-18
EXISTING LOAD
21 FIXTURES ON 18 POLES. 21 X 480 WATT = 10080 WATTS
NEW LOAD
(12 X 480 WATTS) + (9 X 216 WATTS) = 7704 WATTS
10080 WATTS - 7704 WATTS = 2376 WATTS REDUCTION IN LOAD
- GODWIN HALL**
CONTACTOR GH1 POLES GH1-1 THROUGH GH1-12. ALL FIXTURES CONNECTED TO 20A, 3-P, 480V C.B. FIXTURES ARE CIRCUITED TO ALTERNATE LINE-TO-NEUTRAL PHASES.
CONTACTOR GH1 POLES GH1-1 THROUGH GH1-12
EXISTING LOAD
14 FIXTURES ON 12 POLES. 14 X 480 WATTS = 6720 WATTS
NEW LOAD
(5 X 480 WATTS) + (18 X 216 WATTS) = 6288 WATTS
6720 WATTS - 6288 WATTS = 432 WATTS REDUCTION IN LOAD

LIGHT FIXTURE SCHEDULE								
TYPE	DESCRIPTION	MANUFACTURER	SERIES NO.	CURRENT	COLOR TEMP	COLOR	MOUNTING	VOLTAGE
A	2 HEAD LIGHT POLE MOUNTED 180 DEGREES APART	LITHONIA	KAD LED	1000 mA	3000K	DARK BRONZE	POLE MOUNT 25'-0"	M-VOLT
B	2 HEAD LIGHT POLE MOUNTED 90 DEGREES APART	LITHONIA	KAD LED	1000 mA	3000K	DARK BRONZE	POLE MOUNT 25'-0"	M-VOLT



SITE PLAN - ELECTRICAL
SCALE : 1" = 50'

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Drawing Title
ELECTRICAL SITE PLAN

Drawing Number
E0.2

Sheet of
32 of **33**

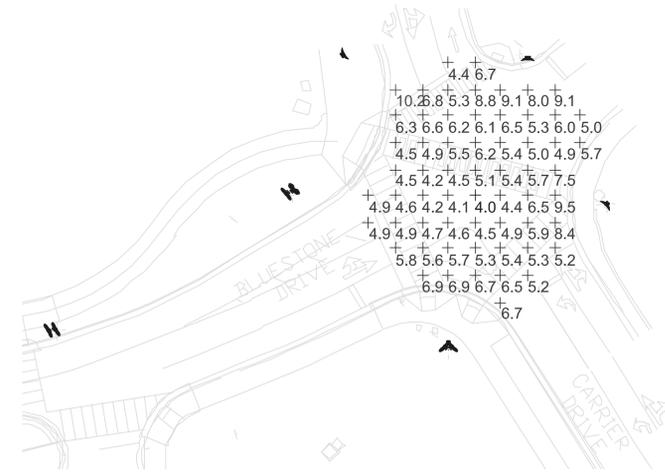
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34072.00



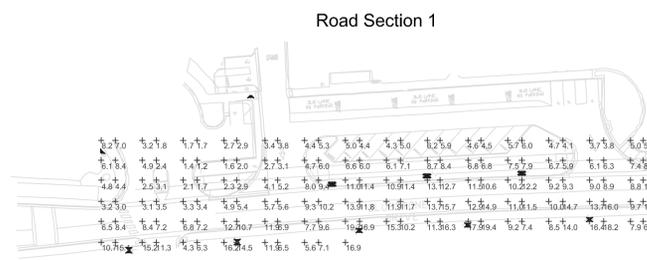


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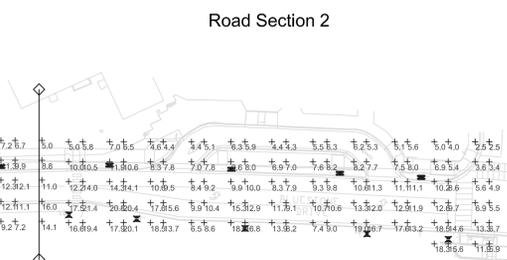
Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
INTERSECTION	+	5.9 fc	10.2 fc	4.0 fc	2.6:1	1.5:1	0.6:1



PHOTOMETRICS STUDY - INTERSECTION
NOT TO SCALE



Road Section 1



Road Section 2

Road Section 3



Road Section 4

Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
ROAD SECTION 1	+	8.5 fc	19.7 fc	1.2 fc	16.4:1	7.1:1	0.4:1
ROAD SECTION 2	+	9.8 fc	21.4 fc	2.5 fc	8.6:1	3.9:1	0.5:1
ROAD SECTION 3	+	4.5 fc	9.6 fc	2.0 fc	4.8:1	2.3:1	0.5:1
ROAD SECTION 4	+	4.6 fc	10.1 fc	0.9 fc	11.2:1	5.1:1	0.5:1

PHOTOMETRICS STUDY
NOT TO SCALE

Bluestone Trail Extension

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No.	Revision	Date	App'd.

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Issued for	Date
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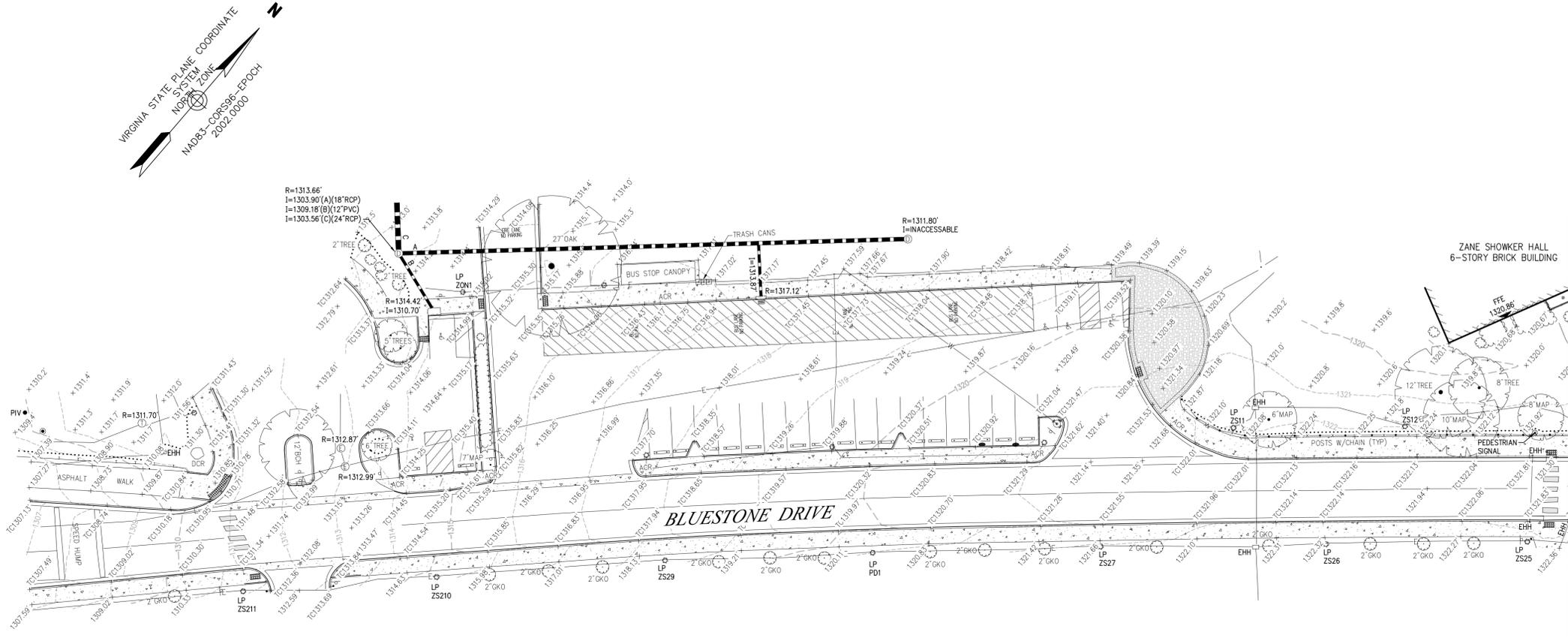
Drawing Title

LIGHTING PHOTOMETRICS STUDY

Drawing Number

Sheet **E0.3** of 33

Project Number 34072.00



General Notes

- THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB IN AUGUST 2015
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATION DESIGNATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. LOCATION OF UNDERGROUND UTILITY DESIGNATED LINES PROVIDED BY ACCUMARK DATED SEPTEMBER 25, 2015.
- MERIDIAN SOURCE: HORIZONTAL CONTROL IS TIED INTO JAMES MADISON UNIVERSITY CONTROL NETWORK WHICH IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD83-CORS96-EPOCH 2002.0000
- ELEVATIONS HEREON ARE IN FEET AND ARE TIED INTO JAMES MADISON UNIVERSITY CONTROL NETWORK WHICH IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- THIS PROPERTY LIES IN FLOOD ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), ZONE X SHADED (AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR DRAINAGE AREAS LESS THAN 1 SQUARE MILE) AND ZONE AE (BASE FLOOD ELEVATIONS DETERMINED)(FLOODWAY AREA) AS INDICATED ON FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, VIRGINIA HAVING COMMUNITY PANEL NUMBER 51165C 0411D. DATED FEBRUARY 6, 2008.
- THIS EXISTING CONDITIONS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF DAVID W. ANDREA FROM AN ACTUAL GROUND OR AIRBORNE SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON AUGUST 24-28, 2015; AND THAT THIS PLAT, MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

Legend

- | | | |
|----------------------------------|---------------------------|---|
| ● IPF IRON PIPE FOUND | □ HH - HANDHOLE | —OHW— OVERHEAD WIRE |
| ● IRF IRON ROD FOUND | □ TPE TELEPHONE PEDESTAL | —E— UNDERGROUND ELECTRIC |
| ● DHF DRILL HOLE FOUND | □ CATV CABLE TV BOX | —T— TELEPHONE LINE |
| ● DHS DRILL HOLE SET | ⚡ TRAFFIC SIGNAL | —CATV— CABLE TV |
| ● P PROPERTY ANGLE POINT | □ S SIGNAL BOX | —G— GAS LINE |
| ● S STORM SEWER MANHOLE | □ T TRANSFORMER PAD | —W— WATER LINE |
| □ CDI CURB DRAIN INLET (CDI) | ⊙ LIGHT POLE ON CONC BASE | —○— STONE WALL |
| ■ DRAIN INLET (YDI) | ⊙ UTILITY POLE | —H— HEDGEROW |
| ▶ FLARED END SECTION | ⊙ UTILITY POLE W/LIGHT | —50RMA— 50-FT RMA LINE |
| ⊙ SANITARY SEWER MANHOLE | ⊙ GUY WIRE | —100RPA— 100-FT RPA LINE |
| ⊙ SEWER CLEANOUT | ⊙ PEDESTRIAN PEDESTAL | —100BZ— 100-FT BUFFER ZONE |
| ⊙ ELECTRIC MANHOLE | ⊙ BOLLARD | —MLW— LIMIT MEAN LOW WATER |
| ⊙ TELEPHONE MANHOLE | ⊙ STREET SIGN | —BFT-100— LIMIT OF BANK |
| ⊙ WATER MANHOLE | ⊙ MONITORING WELL | —WF1-100— VEGETATED WETLAND BOUNDARY |
| ⊙ MANHOLE | ⊙ BORING LOCATION | —2— MINOR CONTOUR |
| ⊙ WATER VALVE | ⊙ TEST PIT LOCATION | —10— MAJOR CONTOUR |
| ⊙ FIRE HYDRANT | ⊙ WELL | —CONC. PAVEMENT— CONC. PAVEMENT |
| ⊙ WATER METER | ⊙ EDGE OF PAVEMENT | —RIP RAP— RIP RAP |
| ⊙ SIAMSE CONNECTION | ⊙ CONCRETE CURB | —HANDICAP WARNING STRIP— HANDICAP WARNING STRIP |
| ● PIV POST INDICATOR VALVE (PIV) | ⊙ CONCRETE CURB & GUTTER | —BUILDING W/OVERHANG— BUILDING W/OVERHANG |
| ⊙ GAS VALVE | ⊙ GUARD RAIL | |
| ⊙ GAS METER | ⊙ CHAIN LINK FENCE | |
| ⊙ ELECTRIC BOX | ⊙ STORM SEWER LINE | |
| ⊙ ELECTRIC METER | ⊙ SANITARY SEWER LINE | |

Abbreviations

- | | |
|------|----------------------------|
| AC | AIR CONDITION UNIT |
| ACR | ACCESSIBLE CURB RAMP |
| BCH | BEECH |
| DCR | DECORATIVE ROCK |
| EHH | ELECTRIC HANDHOLE |
| FFE | FINISH FLOOR ELEVATION |
| GKO | GINKGO |
| LP | LIGHT POLE |
| MAP | MAPLE |
| OHW | OVERHEAD WIRE |
| PCS | PEDESTRIAN CROSSING SIGNAL |
| PIV | POST INDICATOR VALVE |
| R/W | RIGHT OF WAY |
| S.F. | SQUARE FEET |
| TBM | TEMPORARY BENCHMARK |
| TRHH | TRAFFIC HANDHOLE |
| TSB | TRAFFIC SIGNAL BOX |

Bluestone Trail Extension
Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by **OWPENW** Checked by **IDMA**
Issued for _____ Date _____
September 28, 2015

Not Approved for Construction

Drawing Title
Existing Conditions
Topographic Survey

Drawing Number _____

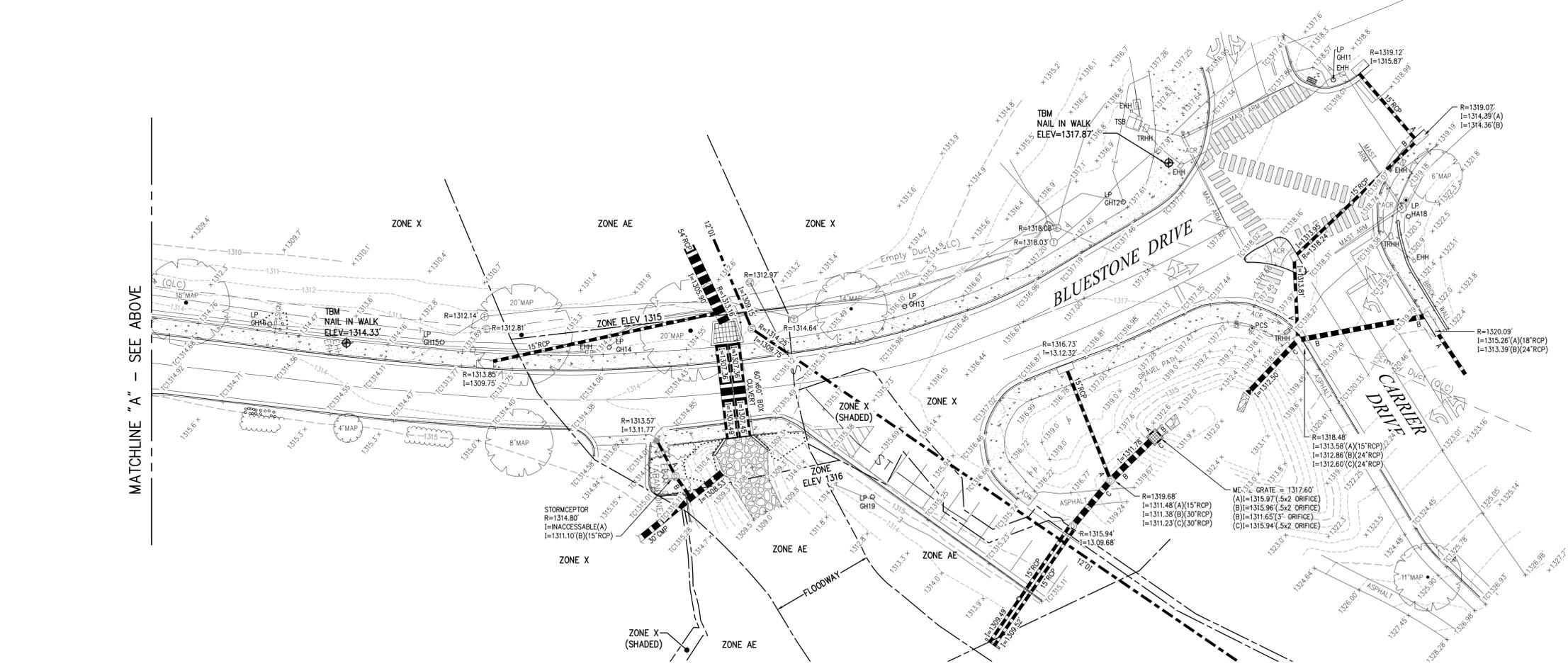
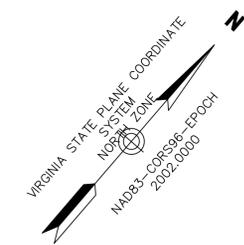
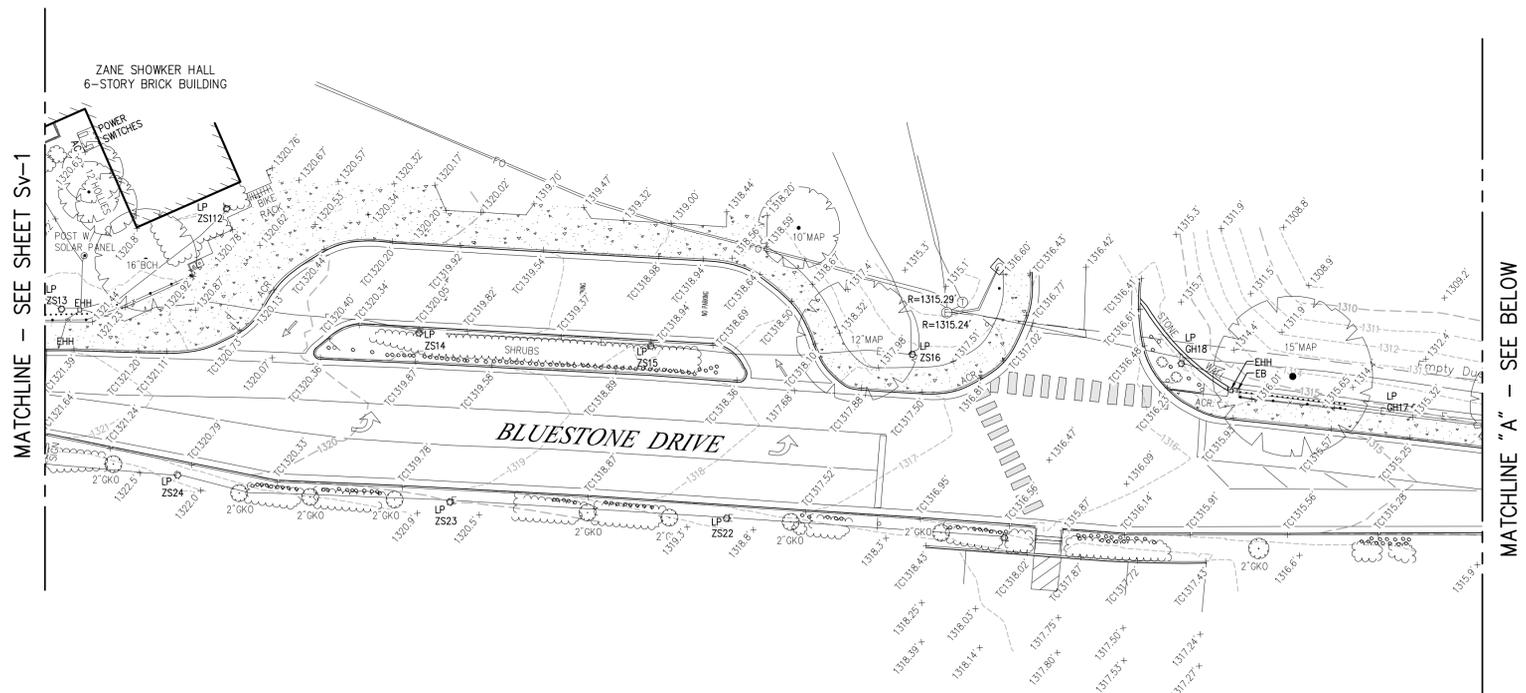
COMMONWEALTH OF VIRGINIA

DAVID W. ANDREA
Lic. No. 2215
9/28/15
LAND SURVEYOR

Sv-1

Sheet 1 of 2

Project Number
34072.00



Bluestone Trail Extension

Bluestone Drive
Harrisonburg, Virginia

No.	Revision	Date	Aspd.

Designed by: **OWPENW** Checked by: **IDMA**
Issued for: _____ Date: _____
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Sv-2
Sheet 2 of 2
Project Number 34072.00