



# COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS SUFFOLK, VA

LOCALLY ADMINISTERED PROJECTS	
	CITY OF SUFFOLK, VIRGINIA
	SHERRY B EARLEY, P.E.
	RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION
DATE	TITLE OF POSITION
	SHERRY B EARLEY, P.E.
	RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
DATE	TITLE OF POSITION

**COLLEGE DRIVE BULKHEAD AND SIDEWALK  
IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

CN NO: 5613A  
 DATE: 6/27/2016  
 DESIGN: EMC  
 DRAWN: TSJ  
 REVIEW: CTA  
 REVISIONS  
 No. Date Description By

TITLE SHEET

G1

SHEET 1 OF 12

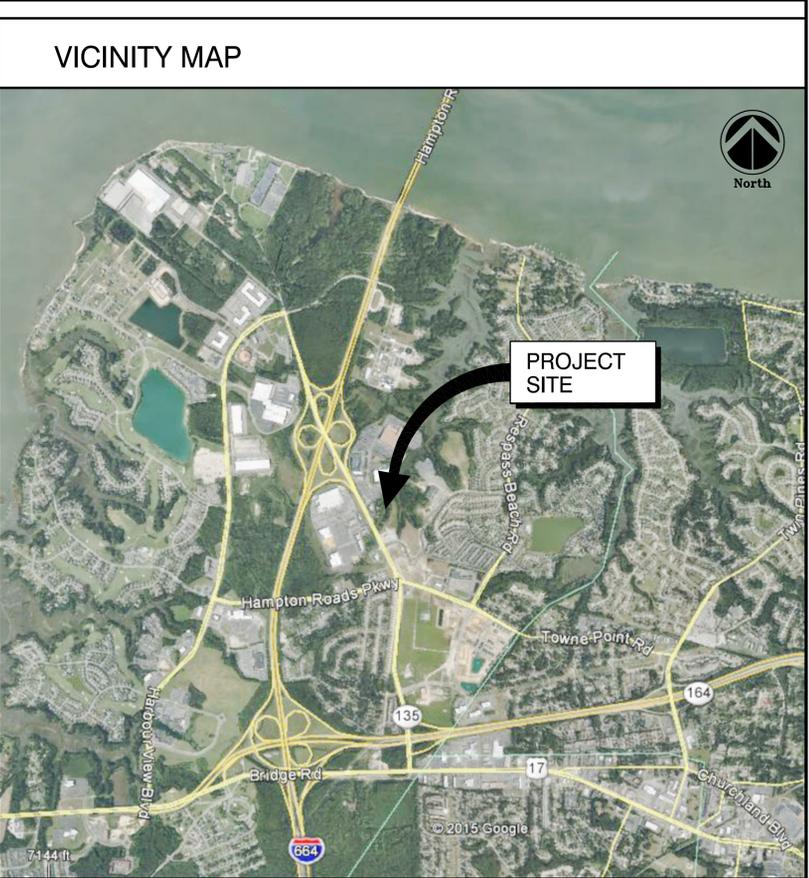
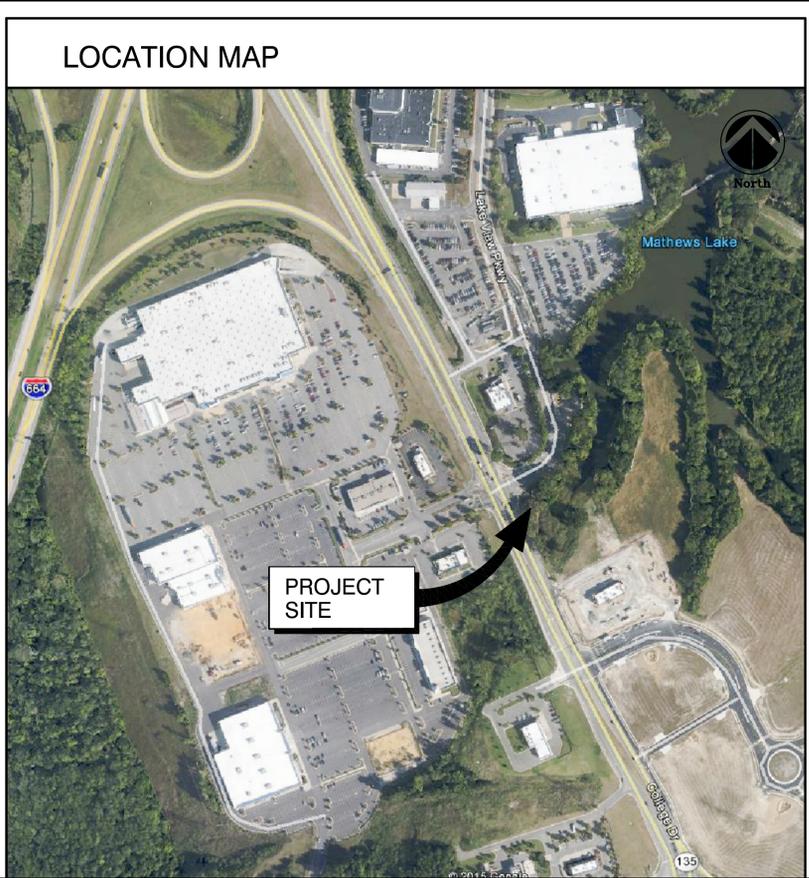
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**PROPERTY INFORMATION**

OWNER	PROPERTY INFORMATION	AREA OF DISTURBANCE (SQUARE FEET)
CITY OF SUFFOLK	COLLEGE DRIVE, VARIABLE WIDTH RIGHT OF WAY, S.R.135	711
LAKE VIEW DEVELOPMENT GROUP, LLC	INST. # 20081016000141660, P.B. 14, PG.154, TAX MAP #6'9"1	1,700
	TOTAL AREA OF DISTURBANCE	2,411



I:\Projects\5600\5613-A-College Drive Sidewalk Improvements\CAD\Sheets\G1.dwg Wed, 27 Jul 2016 - 10:14am TJACKSON

## GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE CITY OF SUFFOLK PUBLIC WORKS DEPARTMENT (757-514-7716) A MINIMUM OF 36 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION AND/OR CONSTRUCTION.
- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE VDOT ROAD AND BRIDGE STANDARDS (2008) AND SPECIFICATIONS (2007), VDOT SPECIFICATIONS (SPS&SSS), VIRGINIA STORMWATER MANAGEMENT REGULATIONS, CITY OF SUFFOLK UNIFIED DEVELOPMENT ORDINANCE, CITY OF SUFFOLK PUBLIC FACILITIES MANUAL, HAMPTON ROADS REGIONAL CONSTRUCTION STANDARDS, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2009), VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, VIRGINIA WORK AREA PROTECTION MANUAL (2011, REV. 1) AND ANY OTHER APPLICABLE CITY OR STATE ORDINANCES, CODES, LAWS, AND FEDERAL REGULATIONS.
- ALL SITE IMPROVEMENTS ARE SUBJECT TO CITY INSPECTION UNDER CITY CODES, VDOT AND THE CITY OF SUFFOLK DEPARTMENT OF PUBLIC UTILITIES SPECIFICATIONS, AS APPLICABLE.
- UNDERGROUND EXPLORATIONS AND A TITLE SEARCH WERE NOT PERFORMED TO DETERMINE THE ABSENCE OR PRESENCE OF SOIL CONTAMINATION.
- UPON CONSTRUCTION COMPLETION, ONE (1) COPY OF THE FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED TO PUBLIC WORKS ON CD IN AUTOCAD 2011 OR LATER VERSION. DRAWINGS SHALL INDICATE LOCATION OF STRUCTURE IN CORRECT COORDINATE SPACE HAVING BEARINGS AND DISTANCES AND SHOULD BE TIED TO THE NAD 83 OF THE VIRGINIA STATE PLANE COORDINATE SYSTEM SOUTH.
- THE CONTRACTOR SHALL WORK WITHIN THE RIGHT-OF-WAY AND EASEMENTS AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT, SPOILS, MATERIAL STOCKPILES AND OTHER ITEMS ASSOCIATED WITH THE WORK WITHIN THE EXISTING RIGHT-OF-WAY OR AT AN OFFSITE LOCATION APPROVED BY THE CITY AND ENGINEER.
- PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST WITHIN THE AREA OF CONSTRUCTION. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL CALL "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION AT HIS EXPENSE.
- THE CONTRACTOR IS TO MAINTAIN ACCESS TO ALL ADJACENT PRIVATE AND COMMERCIAL PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
- A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY TRAFFIC ENGINEERING PRIOR TO APPLICATION FOR LAND USE PERMIT.
- A LAND USE PERMIT SHALL BE SECURED BY THE CONTRACTOR FOR ALL WORK.

## GRADING, DRAINAGE AND INCIDENTAL

- ALL TRANSITIONS IN GRADING SHALL BE SMOOTH ROUND CURVES.
- THE GEOTECHNICAL ENGINEER SHALL EVALUATE SUBGRADE SOILS TO DETERMINE IF UNSUITABLE MATERIAL EXISTS AND PROPOSE A MEANS TO STABILIZE THE MATERIAL.

## SEQUENCE OF CONSTRUCTION

- INSTALL CONSTRUCTION SIGNS AND MAINTENANCE OF TRAFFIC DEVICES ON APPROACHES TO PROJECT AREA.
- INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO CONSTRUCTION.
- DEMOLISH ITEMS AS SHOWN ON SHEET C2.
- CLEAR AND ROUGH GRADE AREA OF CONSTRUCTION.
- INSTALL SIDEWALK INCLUDING SHEET PILING AND CONCRETE FOUNDATION.
- FINE GRADE AND SEED ALL DISTURBED AREAS.
- REMOVE EROSION AND SEDIMENT CONTROL DEVICES AFTER SITE IS STABILIZED.

## SURVEYOR'S NOTES

- THE MERIDIAN SOURCE OF THIS TOPOGRAPHIC SURVEY IS BASED ON THE CITY OF SUFFOLK CONTROL NETWORK, VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM 1983 / 1984 HARN (U.S. SURVEY FOOT).
- ELEVATIONS REFER TO NAVD 88.
- THIS SURVEY WAS PREPARED TO SHOW EXISTING FEATURES AS OF OCTOBER 26, 2015 AND DOES NOT CERTIFY AS TO THE ACCURACY OF PROPOSED OR FUTURE ITEMS WHICH ARE ADDED TO THIS DRAWING.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT OR LEASE EXHIBIT AND MAY NOT SHOW ALL EASEMENTS OR RESTRICTIONS THAT MAY AFFECT THE PROPERTY.
- THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY NOR A SUBDIVISION OF LAND.
- THIS SURVEY DOES NOT INTEND TO DEPICT ANY WETLANDS, HAZARDOUS WASTE AND ENVIRONMENTAL FEATURES THAT MAY AFFECT SAID PROPERTY SHOWN HEREON EXCEPT AS SHOWN.
- THE UNDERGROUND UTILITIES SHOWN, IF ANY, HAVE BEEN DESIGNATED BY "ACCUMARK" AND THE PAINT DESIGNATION LINES HAVE BEEN LOCATED IN THE FIELD. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE SURVEYOR FURTHER NOTICIES ALL PARTIES THAT VIRGINIA LAW REQUIRES "MISS-UTILITY" TO BE CONTACTED PRIOR TO ANY EXCAVATION.
- THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, IVAN R. LINEBERRY, L.S. FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE ORIGINAL DATA WAS OBTAINED ON 10/26/2015; AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
- THIS PROPERTY IS ZONED B-2, GENERAL COMMERCIAL DISTRICT.
- THIS PROPERTY APPEARS TO BE IN ZONE X AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AND ZONE AF BASE FLOOD ELEVATIONS DETERMINED, FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 510156 0043E, MAP REVISED: AUGUST 3, 2015.
- THIS TOPOGRAPHIC SURVEY WAS PREPARED BY:



**PRECISION MEASUREMENTS, INC.**  
 SURVEYORS - GPS - GIS - MAPPING - 3-D LASER SCANNING  
 851 SEAHAWK CIRCLE, SUITE 103  
 VIRGINIA BEACH, VA 23452  
 (757) 368-0945  
 WWW.PRECISIONMEASUREMENTS.COM  
 VIRGINIA BEACH - NEWPORT NEWS - RICHMOND, VIRGINIA

## ABBREVIATIONS

BM	BENCH MARK
C&G	CURB AND GUTTER
CDI	CURB DROP INLET
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CMH	COMMUNICATION MANHOLE
DI	DROP INLET
ESFMHRSD	EXISTING UNDERGROUND FIBER OPTIC/LEVEL 3
EM	EXISTING METER
EOI	END OF INFORMATION
ESD	EXISTING STORM DRAIN
EUC	EXISTING UNDERGROUND TELEPHONE
EUE	EXISTING UNDERGROUND ELECTRICAL
EUFLO/L3	EXISTING UNDERGROUND CABLE TV
EUT/VZN	EXISTING UNDERGROUND TELEPHONE/VERIZON
EX/EXIST	EXISTING
EW/IRR	EXISTING WATER/IRRIGATION LINE
FH	FIRE HYDRANT
FL	FLOW LINE
INV	INVERT
L/P	LIGHT POLE
LF	LINEAR FEET
P/L	PROPERTY LINE
P/P	POWER POLE
RCP	REINFORCED CONC PIPE
R/W	RIGHT OF WAY
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TOB	TOP OF BANK
TOS	TOP OF SLOPE
TP	TREE PROTECTION
TELE PED	TELEPHONE PEDESTAL
TRHH	TRAFFIC HANDHOLE
TYP	TYPICAL
VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
WM	WATER METER
WV	WATER VALVE
&	AND

## LEGEND

EXISTING	NEW	
		ASPHALT PAVEMENT
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONCRETE WALK
		SHEET PILE SIDEWALK
		SIDEWALK BRIDGE
		STORM DRAIN MANHOLE
		CURB DROP INLET
		REINFORCED CONCRETE PIPE
		FIRE HYDRANT
		WATER METER
		WATER VALVE
		ELECTRIC METER
		LIGHT POLE W/MAST
		LIGHT POLE / YARD LAMP
		TELEPHONE PEDESTAL
		COMMUNICATION MANHOLE
		WITNESS POST
		TRAFFIC L/P
		TRAFFIC HAND HOLE
		SOIL BORING
		WETLAND FLAG / OBSERVATION POINT
		DITCH
		TOP OF BANK
		TOE OF SLOPE
		TOP CURB/FLOW LINE
		SPOT ELEVATION
		SHRUB
		TREE
		SIGN
		TEMPORARY BENCH MARK
		TRAVERSE POINT
		GUARDRAIL
		SILT FENCE
		TREE PROTECTION
		DEMOLITION
		TEMPORARY CONSTRUCTION FENCE
		EASEMENT
		INLET PROTECTION
		TEMPORARY SEEDING
		PERMANENT SEEDING
		REMOVE TO THIS POINT
		CONNECT TO EXISTING

CLARK NEXSEN

4525 Main Street, Suite 1400  
 Virginia Beach, VA 23462  
 757.455.5800



COLLEGE DRIVE BULKHEAD AND SIDEWALK  
 IMPROVEMENTS  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
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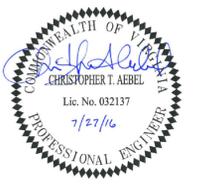
GENERAL NOTES  
 LEGEND AND  
 ABBREVIATIONS

C1

SHEET 2 OF 12

## RIGHT OF WAY DATA

PARCEL NO.	LANDOWNER	SHEET NO.	AREA				EASEMENTS				
			TOTAL	FEE TAKING	PRESCRIPTIVE R/W	FEE REMAINDER	PERMANENT	UTILITY	TEMPORARY	PROFFERS	
			ACRES OR SQUARE FEET	YES/NO							
001	LAKE VIEW DEVELOPMENT GROUP, LLC	C3	1.67 AC	...		1.67 AC		0.021 AC		0.040 AC	NO



**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

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**EROSION & SEDIMENT CONTROL AND DEMOLITION PLAN**  
C2  
 SHEET 3 OF 12

### # DEMOLITION NOTES

1. NOT USED
2. REMOVE AND DISPOSE OF GUARD RAIL
3. NOT USED
4. TEMPORARY SILT FENCE
5. REMOVE SIDEWALK TO NEAREST JOINT
6. TREE PROTECTION

### EROSION AND SEDIMENT CONTROL NARRATIVE (CONT'D)

**MAINTENANCE**  
 THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

SILT FENCE SHALL BE CHECKED REGULARLY FOR UNDERMINING AND DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALFWAY TO THE TOP OF THE BARRIER. SEDIMENTS AND EXCESS SPOILS SHALL BE DISPOSED BY THE CONTRACTOR AT A FACILITY APPROVED BY LOCAL AND STATE REGULATIONS.

**STRUCTURAL PRACTICES**  
 THE STRUCTURAL PRACTICES TO BE USED ON THIS PROJECT ARE DISCUSSED BELOW AND ARE REFERENCED TO THE RESPECTIVE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK NUMBER.

**1. SILT FENCE - 3.05**  
 A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND, IN SOME CASES, A WIRE SUPPORT FENCE, PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE. APPLICABLE WHERE SHEET AND RILL EROSION OR SMALL CONCENTRATED FLOWS MAY BE A PROBLEM. MAXIMUM EFFECTIVE LIFE OF 6 MONTHS.

**VEGETATIVE PRACTICES**  
 THE VEGETATIVE PRACTICES TO BE USED ON THIS PROJECT ARE DISCUSSED BELOW AND ARE REFERENCED TO THE RESPECTIVE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK NUMBER.

**1. TOPSOILING - 3.30**  
 PRESERVING AND USING TOPSOIL TO PROVIDE A SUITABLE GROWTH MEDIUM FOR VEGETATION USED TO STABILIZE DISTURBED AREAS. APPLICABLE WHERE PRESERVATION OR IMPORTATION OF TOPSOIL IS MOST COST-EFFECTIVE METHOD OF PROVIDING A SUITABLE GROWTH MEDIUM; NOT RECOMMENDED FOR SLOPES STEEPER THAN 2:1 UNLESS ADDITIONAL MEASURES ARE TAKEN TO PREVENT SLOUGHING AND EROSION.

**2. TEMPORARY SEEDING - 3.31**  
 ALL DISTURBED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

**3. PERMANENT SEEDING - 3.32**  
 ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEED ON ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED ON FINE-GRADED AREAS.

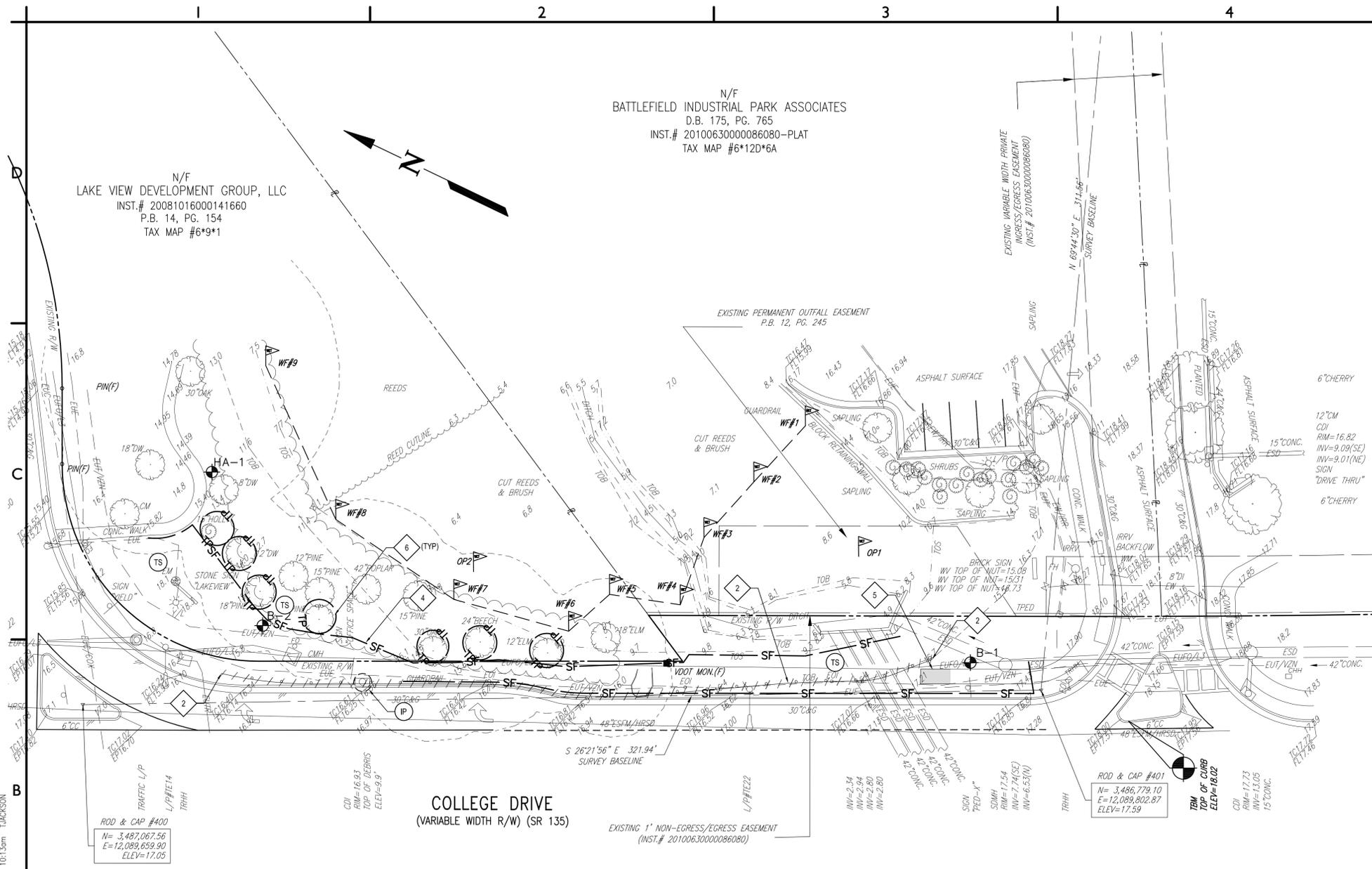
**4. TREE PRESERVATION AND PROTECTION - 3.38**  
 PROTECTING EXISTING TREES FROM MECHANICAL AND OTHER INJURY DURING LAND-DISTURBING AND CONSTRUCTION ACTIVITY TO ENSURE THE SURVIVAL OF DESIRABLE TREES WHERE THEY WILL BE EFFECTIVE FOR EROSION AND SEDIMENT CONTROL AND PROVIDE OTHER ENVIRONMENTAL AND AESTHETIC BENEFITS.

A FENCE BARRIER SHALL BE PLACED AROUND THE TREES THAT WILL NOT BE DISTURBED TO PROTECT THE TREES AND OTHER VEGETATION FROM CONSTRUCTION EQUIPMENT AND SOIL COMPACTION.

**5. DUST CONTROL - 3.39**  
 REDUCING SURFACE AND AIR MOVEMENT OF DUST DURING LAND DISTURBANCE. DEMOLITION, OR CONSTRUCTION ACTIVITIES IN AREAS SUBJECT TO DUST PROBLEMS IN ORDER TO PREVENT SOIL LOSS AND REDUCE THE PRESENCE OF POTENTIALLY HARMFUL AIRBORNE SUBSTANCE.

MEASURES TO PREVENT AND CONTROL DUST DURING DEMOLITION, EXCAVATION, PAVING, GRADING AND ALL OTHER POTENTIAL LAND DISTURBING ACTIVITIES SHALL BE USED DURING CONSTRUCTION.

### GRAPHIC SCALE(S)



### EROSION AND SEDIMENT CONTROL NARRATIVE

**PROJECT DESCRIPTION**  
 THE EROSION AND SEDIMENT CONTROL PLAN WILL ADDRESS LAND DISTURBANCE FOR THE COLLEGE DRIVE SIDEWALK IMPROVEMENTS PROJECT LOCATED IN SUFFOLK, VA. THE PROJECT WILL CONNECT EXISTING SIDEWALKS FROM THE SOUTHEAST INTERSECTION OF LAKE VIEW PARKWAY AND COLLEGE DRIVE TO THE EXISTING SIDEWALK IN FRONT OF THE CHIPOTLE AND JERSEY MIKE'S RESTAURANTS LOCATED JUST SOUTH OF THAT INTERSECTION. APPROXIMATELY 300 FEET OF SIDEWALK WILL BE INSTALLED. DUE TO THE SEVERE SIDE SLOPES NEXT TO COLLEGE DRIVE IN THAT LOCATION, PORTIONS OF THE SIDEWALK WILL BE CONSTRUCTED WITH SHEET PILES AND A BRIDGE STRUCTURE. THE PROJECT ALSO INCLUDES THE REMOVAL OF GUARDRAIL.

**EXISTING SITE CONDITIONS**  
 THE EXISTING SITE IS LOCATED ON THE EAST SIDE OF COLLEGE DRIVE. THE SITE CONSISTS OF SEVERAL TREES ON THE NORTH PORTION ALONG WITH A DIRT PATH THAT PEDESTRIANS HAVE BEEN USING TO ACCESS THE EXISTING RESTAURANTS IN THAT AREA. FROM THE BACK OF CURB AT COLLEGE DRIVE, THE SITE SLOPES STEEPLY AT APPROXIMATELY 2:1 SIDE SLOPES DOWN TO A BRANCH OF MATTHEWS LAKE. THERE ARE ALSO FOUR 42-INCH RCP CULVERTS LOCATED AT THE SOUTHERN PORTION OF THE NEW SIDEWALK WHICH ARE LOCATED UNDERNEATH COLLEGE DRIVE AND DRAIN THE WEST SIDE OF COLLEGE DRIVE.

**ADJACENT AREAS**  
 THE PROJECT SITE IS LOCATED IN A DEVELOPED AREA WITH MANY BUSINESSES AND RESTAURANTS SUCH AS HARBOR VIEW EAST SHOPPING CENTER TO THE NORTHWEST, APPLEBEE'S TO THE NORTH, AND CHIK-FIL-A AND PANDA EXPRESS TO THE SOUTH. THE UNITED STATES JFCOM JOINT WARFIGHTING CENTER IS LOCATED TO THE NORTHEAST OF THE SITE. THERE IS AN EXISTING SIDEWALK THAT ORIGINATES FROM THE WARFIGHTING CENTER TO WHICH THE NEW SIDEWALK WILL CONNECT.

**OFF-SITE AREAS**  
 THERE ARE NO OFF-SITE AREAS ASSOCIATED WITH THIS PROJECT.

**SOILS**  
 BASED ON SOIL BORINGS TAKEN AT THE PROJECT SITE, SOILS CONSIST OF APPROXIMATELY 4 INCHES OF

TOPSOIL MATERIALS UNDERLAIN BY ABOUT 2 TO 4 FEET OF FILL MATERIALS CONSISTING OF SILTY SAND (SM) AND TRACES OF GRAVEL, ASPHALT AND ORGANICS. SOILS FROM 4 FEET TO APPROXIMATELY 33 FEET DEEP ARE GRANULAR IN NATURE AND CONSIST OF SAND (SM, SC, AND SP) WITH VARYING AMOUNTS OF SILT AND/OR CLAY.

**CRITICAL EROSION AREAS**  
 CRITICAL EROSION AREAS ASSOCIATED WITH THIS PROJECT INCLUDE THE SIDE SLOPES FROM THE BACK OF CURB AT COLLEGE DRIVE DOWN TO THE LOW LYING AREAS ASSOCIATED WITH MATTHEWS LAKE.

**WETLANDS**  
 JURISDICTIONAL WETLANDS ASSOCIATED WITH MATTHEWS CREEK ARE LOCATED CLOSE TO THE PROJECT AREA, APPROXIMATELY 20 FEET FROM THE BACK OF CURB. THERE WILL BE NO WETLAND DISTURBANCE ASSOCIATED WITH THIS PROJECT.

**EROSION AND SEDIMENT CONTROL MEASURES**  
 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESH) AND THE CITY OF SUFFOLK PUBLIC FACILITIES MANUAL.

MEASURES INCLUDE SILT FENCE, TOPSOILING, PERMANENT SEEDING, TREE PRESERVATION AND PROTECTION, AND SILT FENCE.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO DEMOLITION AND EARTH-MOVING ACTIVITIES.

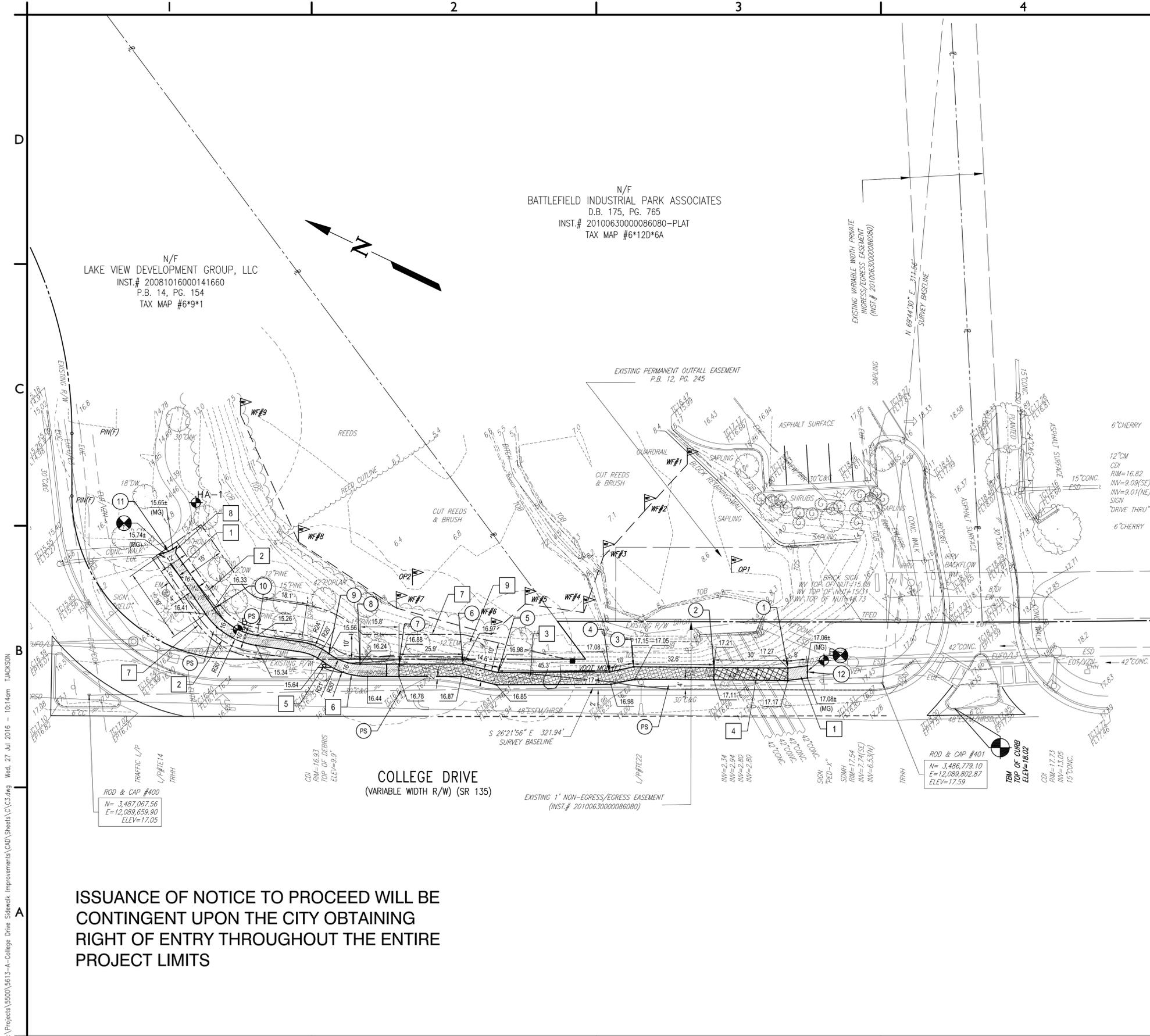
A GENERAL VPDOS PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES (CONSTRUCTION GENERAL PERMIT) MUST BE OBTAINED FROM DEQ PRIOR TO COMMENCEMENT OF LAND-DISTURBING ACTIVITIES OF ONE ACRE OR GREATER. APPLICANT MUST PROVIDE EITHER EVIDENCE OF A VALID CONSTRUCTION GENERAL PERMIT FOR THE LAND-DISTURBING ACTIVITY OR MUST PROVIDE A COMPLETE AND ACCURATE REGISTRATION STATEMENT TO THE CITY OF SUFFOLK FOR REVIEW AND SUBMISSION TO DEQ IN ORDER TO OBTAIN A CONSTRUCTION GENERAL PERMIT. UPON RECEIPT OF VERIFICATION FROM DEQ THAT

THE REGISTRATION STATEMENT HAS BEEN ACCEPTED AND THAT A CONSTRUCTION GENERAL PERMIT WILL BE ISSUED BY DEQ, A LAND DISTURBANCE PERMIT WILL BE ISSUED BY THE CITY OF SUFFOLK. PLEASE BE AWARE THAT LAND-DISTURBING ACTIVITIES MAY NOT COMMENCE UNTIL THE DEQ CONSTRUCTION GENERAL PERMIT IS RECEIVED BY THE PERMITTEE.

**MANAGEMENT STRATEGIES / SEQUENCE OF CONSTRUCTION**

1. THE CONTRACTOR SHALL INSTALL SILT FENCE AND TREE PROTECTION ON THE PROJECT SITE BEFORE ANY SITE DEMOLITION OR EARTH-MOVING ACTIVITY. SITE ACCESS BY CONSTRUCTION VEHICLES SHALL BE IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, LATEST EDITION.
2. THE CONTRACTOR SHALL STOCKPILE SOIL AND OTHER CREDIBLE MATERIALS AND STABILIZE OR PROTECT WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY AND PERMANENT STABILIZATION MEASURES FOR STOCKPILES LOCATED WITHIN THE PROJECT SITE OR THOSE TRANSPORTED FROM THE PROJECT SITE.
3. THE CONTRACTOR SHALL MONITOR AND CONTAIN DUST USING WATER, MULCH, CHEMICAL DUST ADHESIVES OR OTHER MEASURES AS DIRECTED BY THE CITY INSPECTOR.
4. THE CONTRACTOR SHALL COMPLETE MAJOR GRADING AS SOON AS POSSIBLE AFTER BEGINNING CONSTRUCTION. APPROVED SOIL STABILIZATION MEASURES SHALL BE APPLIED TO ALL DENUDED OR DISTURBED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR MORE THAN 14 DAYS. THE CONTRACTOR SHALL INSTALL PERMANENT STABILIZATION WITHIN 7 DAYS OR AS DIRECTED BY THE CITY INSPECTOR AFTER FINAL GRADING IS COMPLETED.
5. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CITY INSPECTOR.
6. ONCE THE CITY INSPECTOR DETERMINES CONSTRUCTION IS SUBSTANTIALLY COMPLETE AND THE WORK AREA IS STABILIZED, THE CONTRACTOR SHALL REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND DISPOSE OF SEDIMENTS WITHIN 30 DAYS.

I:\Projects\5500\5613-A-C2.dwg Wed, 27 Jul 2016 10:13am JACKSON



I:\Projects\5500\5613-A-College Drive Sidewalk Improvements\CAD\Sheets\C3.dwg Wed, 27 Jul 2016 - 10:14am TACKSON

**ISSUANCE OF NOTICE TO PROCEED WILL BE CONTINGENT UPON THE CITY OBTAINING RIGHT OF ENTRY THROUGHOUT THE ENTIRE PROJECT LIMITS**

N/F  
**BATTLEFIELD INDUSTRIAL PARK ASSOCIATES**  
 D.B. 175, PG. 765  
 INST.# 20100630000086080-PLAT  
 TAX MAP #6\*12D\*6A

N/F  
**LAKE VIEW DEVELOPMENT GROUP, LLC**  
 INST.# 20081016000141660  
 P.B. 14, PG. 154  
 TAX MAP #6\*9\*1

**COLLEGE DRIVE**  
 (VARIABLE WIDTH R/W) (SR 135)

**GENERAL NOTES**

- DIMENSIONS SHOWN ARE FROM BACK OF CURB
- THERE ARE EXISTING UNDERGROUND UTILITIES LOCATED IN THE VICINITY OF THIS PROJECT WHICH INCLUDE, BUT ARE NOT LIMITED TO, LEVEL 3 FIBER OPTIC, VERIZON TELEPHONE AND DOMINION VIRGINIA POWER. COORDINATE WITH UTILITY OWNERS MINIMUM 14 DAYS PRIOR TO CONSTRUCTION. THE LEVEL 3 CONTACT IS SHAWN DEYO AT 804-400-7413. THE VERIZON TELEPHONE CONTACT IS BUDDY HUSKEY AT 757-465-1137. DOMINION POWER CONTACT IS TRIPP BARTHOLOMEW AT 757-857-2166.
- SEE STRUCTURAL PLANS FOR SHEET PILE AND BRIDGE DETAILS.
- CONTRACTOR MUST COORDINATE ITS SCHEDULE OF OPERATIONS WITH THE UTILITY OWNERS LISTED ABOVE WHILE UNCOVERING AND RELOCATING UTILITY LINES.

**CONSTRUCTION NOTES**

- HYDRAULIC CEMENT CONCRETE SIDEWALK 4"
- PEDESTRIAN EASEMENT
- SHEET PILE SUPPORTED SIDEWALK
- SIDEWALK BRIDGE-REINFORCED CONCRETE SLAB
- RELOCATED SIGN
- 4' WIDE SIDEWALK TO 5' WIDE SIDEWALK TRANSITION
- TEMPORARY CONSTRUCTION EASEMENT
- 2' SIDEWALK CHAMFER CONNECTION, BOTH SIDES
- PRUNE EXISTING BRANCH IF NECESSARY TO INSTALL NEW SHEET PILES

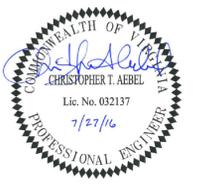
Point Table

Point #	Northing	Easting
1	3486816.33	12089791.84
2	3486843.51	12089779.14
3	3486873.05	12089765.33
4	3486880.97	12089759.29
5	3486921.79	12089739.59
6	3486936.06	12089736.56
7	3486959.46	12089725.33
8	3486973.68	12089718.55
9	3486987.00	12089716.94
10	3487036.92	12089713.28
11	3487063.47	12089726.28
12	3486808.53	12089793.88

**GRAPHIC SCALE(S)**



4525 Main Street, Suite 1400  
 Virginia Beach, VA 23462  
 757.455.5800



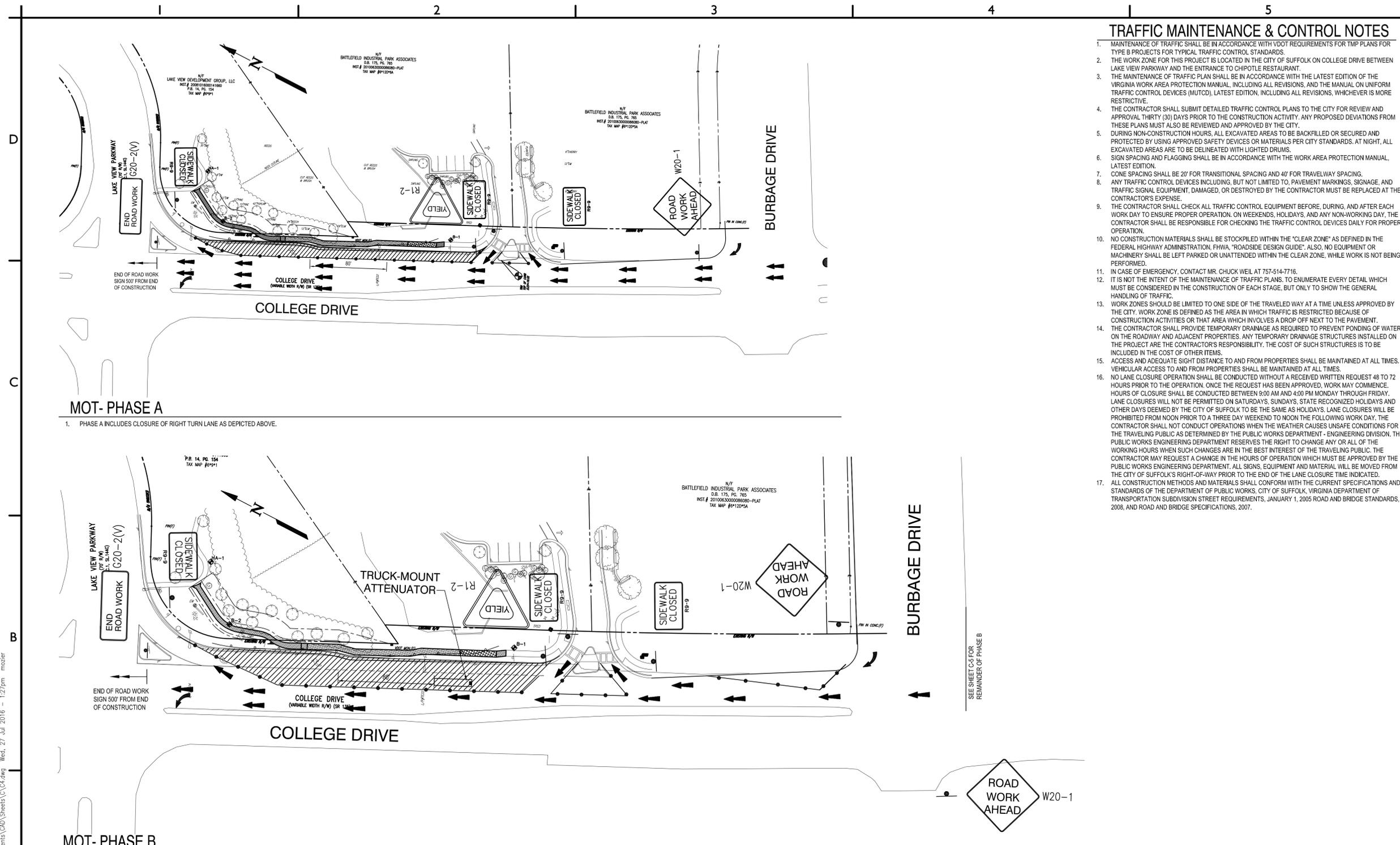
**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

CN NO: 5613A  
 DATE: 6/27/2016  
 DESIGN: EMC  
 DRAWN: TSJ  
 REVIEW: CTA  
 REVISIONS  
 No. Date Description By

**SITE LAYOUT PLAN**

**C3**

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### TRAFFIC MAINTENANCE & CONTROL NOTES

1. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH VDOT REQUIREMENTS FOR TMP PLANS FOR TYPE B PROJECTS FOR TYPICAL TRAFFIC CONTROL STANDARDS.
2. THE WORK ZONE FOR THIS PROJECT IS LOCATED IN THE CITY OF SUFFOLK ON COLLEGE DRIVE BETWEEN LAKE VIEW PARKWAY AND THE ENTRANCE TO CHIPOTLE RESTAURANT.
3. THE MAINTENANCE OF TRAFFIC PLAN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, INCLUDING ALL REVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, INCLUDING ALL REVISIONS, WHICHEVER IS MORE RESTRICTIVE.
4. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW AND APPROVAL THIRTY (30) DAYS PRIOR TO THE CONSTRUCTION ACTIVITY. ANY PROPOSED DEVIATIONS FROM THESE PLANS MUST ALSO BE REVIEWED AND APPROVED BY THE CITY.
5. DURING NON-CONSTRUCTION HOURS, ALL EXCAVATED AREAS TO BE BACKFILLED OR SECURED AND PROTECTED BY USING APPROVED SAFETY DEVICES OR MATERIALS PER CITY STANDARDS. AT NIGHT, ALL EXCAVATED AREAS ARE TO BE DELINEATED WITH LIGHTED DRUMS.
6. SIGN SPACING AND FLAGGING SHALL BE IN ACCORDANCE WITH THE WORK AREA PROTECTION MANUAL, LATEST EDITION.
7. CONE SPACING SHALL BE 20' FOR TRANSITIONAL SPACING AND 40' FOR TRAVELWAY SPACING.
8. ANY TRAFFIC CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO, PAVEMENT MARKINGS, SIGNAGE, AND TRAFFIC SIGNAL EQUIPMENT, DAMAGED, OR DESTROYED BY THE CONTRACTOR MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL CHECK ALL TRAFFIC CONTROL EQUIPMENT BEFORE, DURING, AND AFTER EACH WORK DAY TO ENSURE PROPER OPERATION, ON WEEKENDS, HOLIDAYS, AND ANY NON-WORKING DAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE TRAFFIC CONTROL DEVICES DAILY FOR PROPER OPERATION.
10. NO CONSTRUCTION MATERIALS SHALL BE STOCKPILED WITHIN THE 'CLEAR ZONE' AS DEFINED IN THE FEDERAL HIGHWAY ADMINISTRATION, FHWA, "ROADSIDE DESIGN GUIDE". ALSO, NO EQUIPMENT OR MACHINERY SHALL BE LEFT PARKED OR UNATTENDED WITHIN THE CLEAR ZONE, WHILE WORK IS NOT BEING PERFORMED.
11. IN CASE OF EMERGENCY, CONTACT MR. CHUCK WEIL AT 757-514-7716.
12. IT IS NOT THE INTENT OF THE MAINTENANCE OF TRAFFIC PLANS, TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE CONSTRUCTION OF EACH STAGE, BUT ONLY TO SHOW THE GENERAL HANDLING OF TRAFFIC.
13. WORK ZONES SHOULD BE LIMITED TO ONE SIDE OF THE TRAVELED WAY AT A TIME UNLESS APPROVED BY THE CITY. WORK ZONE IS DEFINED AS THE AREA IN WHICH TRAFFIC IS RESTRICTED BECAUSE OF CONSTRUCTION ACTIVITIES OR THAT AREA WHICH INVOLVES A DROP OFF NEXT TO THE PAVEMENT.
14. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE AS REQUIRED TO PREVENT PONDING OF WATER ON THE ROADWAY AND ADJACENT PROPERTIES. ANY TEMPORARY DRAINAGE STRUCTURES INSTALLED ON THE PROJECT ARE THE CONTRACTOR'S RESPONSIBILITY. THE COST OF SUCH STRUCTURES IS TO BE INCLUDED IN THE COST OF OTHER ITEMS.
15. ACCESS AND ADEQUATE SIGHT DISTANCE TO AND FROM PROPERTIES SHALL BE MAINTAINED AT ALL TIMES. VEHICULAR ACCESS TO AND FROM PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
16. NO LANE CLOSURE OPERATION SHALL BE CONDUCTED WITHOUT A RECEIVED WRITTEN REQUEST 48 TO 72 HOURS PRIOR TO THE OPERATION. ONCE THE REQUEST HAS BEEN APPROVED, WORK MAY COMMENCE. HOURS OF CLOSURE SHALL BE CONDUCTED BETWEEN 9:00 AM AND 4:00 PM MONDAY THROUGH FRIDAY. LANE CLOSURES WILL NOT BE PERMITTED ON SATURDAYS, SUNDAYS, STATE RECOGNIZED HOLIDAYS AND OTHER DAYS DEEMED BY THE CITY OF SUFFOLK TO BE THE SAME AS HOLIDAYS. LANE CLOSURES WILL BE PROHIBITED FROM NOON PRIOR TO A THREE DAY WEEKEND TO NOON THE FOLLOWING WORK DAY. THE CONTRACTOR SHALL NOT CONDUCT OPERATIONS WHEN THE WEATHER CAUSES UNSAFE CONDITIONS FOR THE TRAVELING PUBLIC AS DETERMINED BY THE PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION. THE PUBLIC WORKS ENGINEERING DEPARTMENT RESERVES THE RIGHT TO CHANGE ANY OR ALL OF THE WORKING HOURS WHEN SUCH CHANGES ARE IN THE BEST INTEREST OF THE TRAVELING PUBLIC. THE CONTRACTOR MAY REQUEST A CHANGE IN THE HOURS OF OPERATION WHICH MUST BE APPROVED BY THE PUBLIC WORKS ENGINEERING DEPARTMENT. ALL SIGNS, EQUIPMENT AND MATERIAL WILL BE MOVED FROM THE CITY OF SUFFOLK'S RIGHT-OF-WAY PRIOR TO THE END OF THE LANE CLOSURE TIME INDICATED.
17. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT SPECIFICATIONS AND STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS, CITY OF SUFFOLK, VIRGINIA DEPARTMENT OF TRANSPORTATION SUBDIVISION STREET REQUIREMENTS, JANUARY 1, 2005 ROAD AND BRIDGE STANDARDS, 2008, AND ROAD AND BRIDGE SPECIFICATIONS, 2007.

#### MOT- PHASE A

1. PHASE A INCLUDES CLOSURE OF RIGHT TURN LANE AS DEPICTED ABOVE.

#### MOT- PHASE B

1. PHASE B INCLUDES CLOSURE OF RIGHT TURN AND OUTSIDE LANE OF NORTHBOUND COLLEGE DRIVE, AS DEPICTED ABOVE.
2. PHASE B TO BE UTILIZED DURING SHEET DRIVING OPERATIONS ONLY.

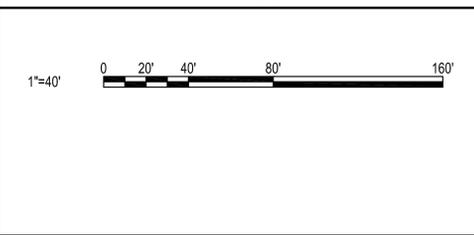
#### NOTES

1. FROM THE VIRGINIA WORK AREA PROTECTION MANUAL, UTILIZE TTC 27.0 LANE CLOSURE OPERATION - FAR SIDE OF AN INTERSECTION AND TTC-39, HALF ROAD CLOSURE OPERATION ON A MULTI-LANE ROADWAY

#### LEGEND

- WORK ZONE
- TEMPORARY SIGN
- TRAFFIC FLOW (NOT FOR CONSTRUCTION)
- GROUP 2 CHANNELIZING DEVICE

#### GRAPHIC SCALE(S)



CLARK NEXSEN

4525 Main Street, Suite 1400  
Virginia Beach, VA 23462  
757.455.5800



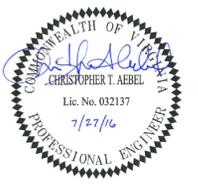
**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

CN NO:	5613A		
DATE:	6/27/2016		
DESIGN:	EMC		
DRAWN:	TSJ		
REVIEW:	CTA		
REVISIONS			
No.	Date	Description	By

### MAINTENANCE OF TRAFFIC PLAN

**C4**

SHEET 5 OF 12



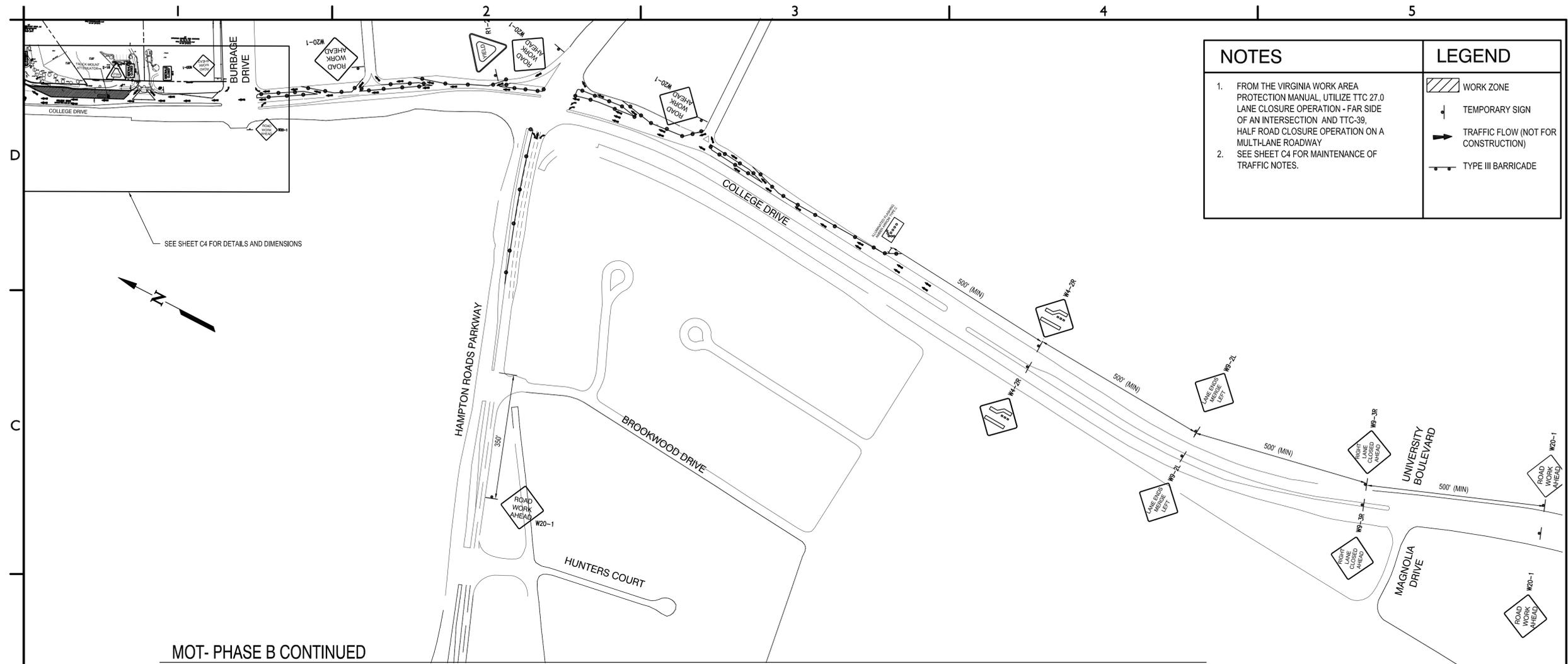
**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
**INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY SUFFOLK, VA**

CN NO: 5613A  
 DATE: 6/27/2016  
 DESIGN: EMC  
 DRAWN: TSJ  
 REVIEW: CTA  
 REVISIONS  
 No. Date Description By

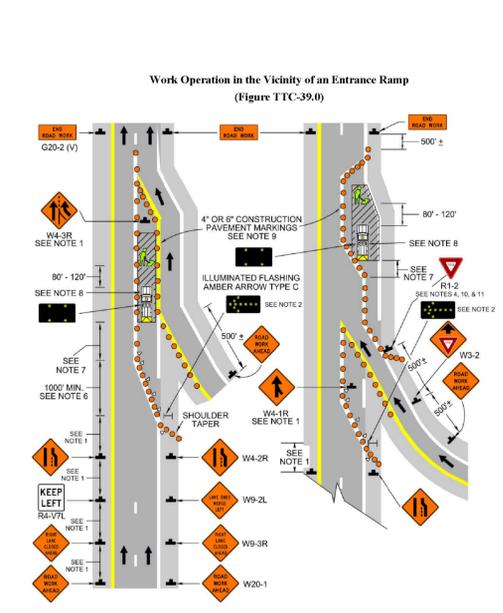
**MAINTENANCE OF TRAFFIC PLAN**

C5

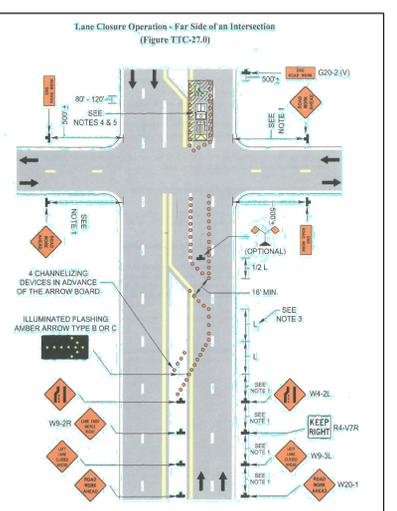
NOTES	LEGEND
1. FROM THE VIRGINIA WORK AREA PROTECTION MANUAL, UTILIZE TTC-27.0 LANE CLOSURE OPERATION - FAR SIDE OF AN INTERSECTION AND TTC-39. HALF ROAD CLOSURE OPERATION ON A MULTILANE ROADWAY 2. SEE SHEET C4 FOR MAINTENANCE OF TRAFFIC NOTES.	WORK ZONE TEMPORARY SIGN TRAFFIC FLOW (NOT FOR CONSTRUCTION) TYPE III BARRICADE



**MOT- PHASE B CONTINUED**



- Typical Traffic Control Work Operation in the Vicinity of an Entrance Ramp (Figure TTC-39.0)**
- NOTES**
- Sign spacing distance should be 1300'-1500' for Limited Access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 250'-500' where the posted speed limit is 45 mph or less.
  - Caution should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3.
  - An acceleration lane of sufficient length should be provided whenever possible as shown on the left diagram.
- Standard:**
- For the information shown on the diagram on the right-hand side of the typical application, where inadequate acceleration distance exists for the temporary entrance, the YIELD (R1-2) sign shall be replaced with STOP (R-1-1) signs (one on each side of the approach).
  - On divided highways having a median wider than 8', right and left sign assemblies shall be required.
  - For taper lengths and channelizing device spacing, Note 5 of TTC-37 shall be used. The minimum length of a lane closure taper on a Limited Access highway shall be 1000'.
  - The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
  - A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or equipped with at least one high intensity rotating, oscillating, or amber strobe light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.
  - For long-term work zones existing conflicting pavement markings and markers shall be removed and temporary pavement markings and markers shall be installed per Figure TTC-66.
- Guidance:**
- When used, the YIELD or STOP sign should be located so that ramp vehicular traffic has adequate sight distance of oncoming mainline vehicular traffic to select an acceptable gap in the mainline vehicular traffic flow, but should not be located so far forward that motorists will be encouraged to step in the path of the mainline traffic. Also, a longer acceleration lane should be provided beyond the sign to reduce the gap size needed. If insufficient gaps are available, consideration should be given to closing the ramp.
  - Where STOP signs are used, a temporary stop line should be placed across the ramp at the desired stop location.
  - The mainline merging taper with the arrow board at its starting point should be located sufficiently in advance so that the arrow board does not confuse the drivers on the entrance ramp, and so that the mainline merging vehicular traffic from the lane closure has the opportunity to stabilize before encountering the vehicular traffic merging from the ramp.
  - If the ramp curves sharply to the right, warning signs with advisory speeds located in advance of the entrance terminal should be placed in pairs (one on each side of the ramp).
- Options:**
- Where the acceleration distance is significantly reduced, a NO MERGE AREA (W4-5D) supplemental plaque may be placed below the Yield Ahead (W3-2) sign.
  - A Type B high-intensity flashing warning light with a red lens may be placed above the STOP sign.
  - When operations are 3 days or less in duration, lanes may be delineated by channelizing devices in lieu of temporary markings.



**Typical Traffic Control Lane Closure Operation - Far Side of an Intersection (Figure TTC-27.0)**

**NOTES**

- Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.
- On divided highways having a median wider than 8', right and left sign assemblies shall be required.
- Taper length (L) and channelizing device spacing shall be:

Speed Limit (mph)	Taper Length (L)			
	8	10	11	12
25	95	105	115	125
30	105	150	165	180
35	165	200	225	245
40	240	270	285	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840

Minimum taper lengths for Limited Access highways shall be 1000 feet.  
Shoulder Taper = 1/2 L, Minimum

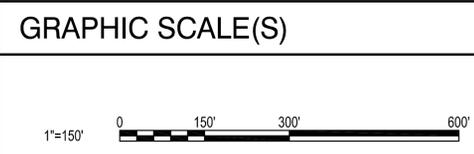
**Channelizing Device Spacing**

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

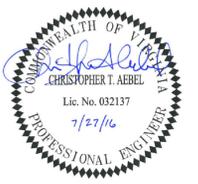
On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

**Guidance:**

- If road permits, a shadow vehicle with at least one rotating, oscillating, or high intensity amber strobe light should be parked 80'-120' in advance of the first work crew.
- For emergency situations (any non-planned operations) of 30 minutes or less duration, two rotating amber lights or high intensity amber strobe lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals or amber oscillating lights shall be used.
- If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.



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**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

CN NO: 5613A  
 DATE: 6/27/2016  
 DESIGN: EMC  
 DRAWN: TSJ  
 REVIEW: CTA  
 REVISIONS  
 No. Date Description By

**DETAILS**

**C6**

1 2 3 4 5

**TABLE 3.32-E**  
(Revised June 2003)  
**PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA**

LAND USE	SEED <sup>1</sup>	
	SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue <sup>1</sup> or Bermudagrass <sup>1</sup>	175 - 200 lbs.
		75 lbs.
High-Maintenance Lawn	Tall Fescue <sup>1</sup> or Bermudagrass <sup>1</sup> (seed) or Bermudagrass <sup>1</sup> (by other vegetative establishment method, see Std. & Spec. 3.34)	200-250 lbs. 40 lbs. (unhulled) 30 lbs. (hulled)
		TOTAL: 150 lbs.
General Slope (3:1 or less)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>2</sup>	128 lbs. 2 lbs. 20 lbs.
		TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue <sup>1</sup> Bermudagrass <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>2</sup> Sericea Lespedeza <sup>3</sup>	93-108 lbs. 0-15 lbs. 2 lbs. 20 lbs. 20 lbs.
		TOTAL: 150 lbs.

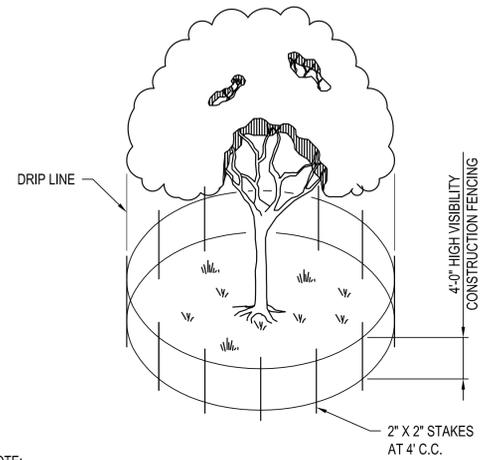
1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at <http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.htm>  
 2 - Use seasonal nurse crop in accordance with seeding dates as stated below:  
 February, March - April ..... Annual Rye  
 May 1<sup>st</sup> - August ..... Foxtail Millet  
 September, October - November 15<sup>th</sup> ..... Annual Rye  
 November 16<sup>th</sup> - January ..... Winter Rye  
 3 - May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40 lbs/acre.

**FERTILIZER & LIME**

- Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

**NOTE:**

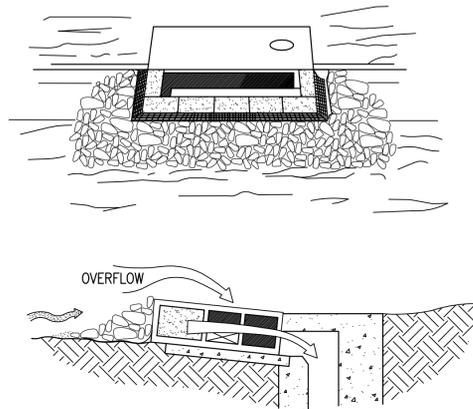
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control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



NOTE:  
DRIVE STAKES FIRMLY INTO GROUND AT LEAST 12"

**TREE PROTECTION**

NO SCALE

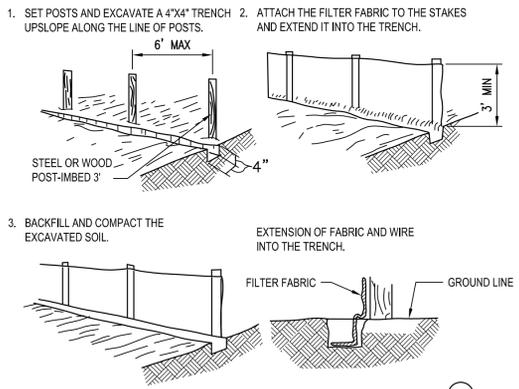


THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

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

**INLET PROTECTION, TYPE B**

NO SCALE

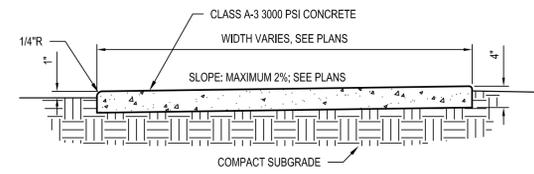


**TEMPORARY SILT FENCE**

NO SCALE

**PERMANENT SEEDING**

NO SCALE



**HYDRAULIC CEMENT CONCRETE SIDEWALK 4"**

NO SCALE

**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 (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50-100 (lbs/acre)
Feb. 16-Apr. 30	Annual Ryegrass (lolium multi-florum)	60-100 (lbs/acre)
May. 1-Aug. 31	German Millet	50 (lbs/acre)

**FERTILIZER & LIME**

- Apply 10-10-10 FERTILIZER at a rate 450 lbs./acre (or 10 lbs./1,000sq ft)
- Apply PULVERIZED AGRICULTURAL LIMESTONE at a rate of 2 tons/acre (or 90 lbs./1,000 sq ft)

**NOTE:**

1 - A soil test as necessary to determine the actual amount of lime required to adjust the soil pH of site.

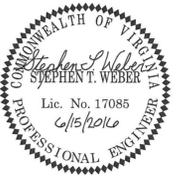
2 - Incorporate the lime and fertilizer into the top 4-6 inches of the soil by disking or by other means.

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&s.htm#pubs>

**TEMPORARY SEEDING**

NO SCALE

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COLLEGE DRIVE BULKHEAD AND SIDEWALK  
IMPROVEMENTS  
INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
SUFFOLK, VA

CN NO: 5613A  
DATE: 6/27/2016  
DESIGN: STW  
DRAWN: JG  
REVIEW: DWP

REVISIONS		
No.	Date	Description

### GENERAL NOTES

# S1

### STEEL RAILING NOTES

- STEEL RAILING SHALL BE VDOT ROAD AND BRIDGE STANDARDS HR-1, TYPE II PEDESTRIAN RAILING. RAILING COMPONENTS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A153, AS APPLICABLE, AFTER FABRICATION.
- UNLESS OTHERWISE INDICATED, ALL BOLTS AND NUTS SHALL CONFORM TO ASTM A307. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36. NUTS SHALL CONFORM TO ASTM A563.
- UNLESS OTHERWISE INDICATED, ALL HARDWARE; SUCH AS ANCHOR RODS, BOLTS, NUTS AND WASHERS; SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A153 AS APPLICABLE.
- REPAIR AND RECOAT ZINC COATING WHICH HAS BEEN FIELD OR SHOP CUT, BURNED BY WELDING, ABRADED, OR OTHERWISE DAMAGED TO SUCH AN EXTENT AS TO EXPOSE THE BASE METAL. THOROUGHLY CLEAN THE DAMAGED AREA BY WIRE BRUSHING AND REMOVE TRACES OF WELDING FLUX AND LOOSE OR CRACKED ZINC COATING PRIOR TO PAINTING. PAINT CLEANED AREA IN ACCORDANCE WITH ASTM A780.
- MISCELLANEOUS STEEL SHAPES, PLATES, AND BARS SHALL CONFORM TO ASTM A36 AND BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A153, AS APPLICABLE, AFTER FABRICATION.
- STAINLESS STEEL (SS) ADHESIVE ANCHORS SHALL CONFORM TO ASTM F593, ALLOY GROUP 2 (TYPE 316). STAINLESS STEEL NUTS SHALL CONFORM TO ASTM F594, ALLOY GROUP 2 (TYPE 316).
- ALL RAIL POSTS AND PICKETS SHALL BE TRULY VERTICAL.

### FOUNDATION NOTES

- FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT PREPARED BY ENGINEERING & TESTING SERVICES, INC., AND DATED NOVEMBER 10, 2015 (ETS REPORT NO.: ETS-15E146-1).
- FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON UNDISTURBED, FIRM NATURAL SOIL OR ENGINEERED FILL CAPABLE OF SUPPORTING A NET ALLOWABLE DESIGN SOIL BEARING PRESSURE OF 2,000 PSF.
- PRIOR TO PLACING FOUNDATION CONCRETE, THE CONTRACTOR SHALL ENSURE THAT THE FOUNDATION EXCAVATIONS ARE INSPECTED BY AN INDEPENDENT TESTING LABORATORY AND GEOTECHNICAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA TO EVALUATE THE EXTENT OF LOOSE, SOFT OR OTHERWISE UNSATISFACTORY SOIL MATERIAL AND TO VERIFY THE DESIGN BEARING CAPACITY. SOILS NOT SUITABLE FOR FOUNDATION SUPPORT SHALL BE UNDERCUT AND REPLACED WITH ENGINEERED FILL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- ADEQUATELY PROTECT FOUNDATION EXCAVATIONS TO PREVENT WATER FROM ACCUMULATING AND STANDING IN THE EXCAVATION BOTTOMS.
- DO NOT PLACE FOUNDATION CONCRETE ON FROZEN OR SATURATED SUBGRADES.
- ENSURE THAT EARTH-FORMED FOOTINGS CONFORM TO THE SHAPE, LINES AND THICKNESSES INDICATED. EXCAVATION WIDTHS SHALL BE A MINIMUM OF 4 INCHES GREATER THAN DIMENSIONS INDICATED.
- PLACE FOUNDATION CONCRETE THE SAME DAY EXCAVATIONS ARE MADE OR AS SOON AS PRACTICAL THEREAFTER.
- DO NOT INSTALL FOUNDATIONS UNTIL FOUNDATION WORK HAS BEEN COORDINATED WITH ADJACENT UNDERGROUND UTILITIES (SUCH AS VERIZON AND LEVEL 3) AND STRUCTURES.

### STEEL CONSTRUCTION NOTES

- STEEL SHAPES (ANGLES) SHALL CONFORM TO ASTM A36; W-SHAPES SHALL CONFORM TO ASTM A992 OR ASTM A572, GRADE 50. STEEL CHANNELS, PLATES AND BARS SHALL CONFORM TO ASTM A572, GRADE 50. DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) STEEL CONSTRUCTION MANUAL (THIRTEENTH EDITION - ASD) WHICH INCLUDES "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS," "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," AND "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."
- WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS), STRUCTURAL WELDING CODE-STEEL, D1.1-10. WELDS SHALL BE MADE USING LOW HYDROGEN E70XX ELECTRODES. ALL SHOP CONNECTIONS SHALL BE WELDED.
- BOLTS INDICATED THUS: H.S., SHALL BE HIGH-STRENGTH BOLTS CONFORMING TO ASTM A325. NUTS AND WASHERS SHALL BE FURNISHED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A325. HIGH-STRENGTH BOLTED CONNECTIONS SHALL BE TYPE X.
- HOLES TO BE MADE IN STEEL SHAPES, PLATES, AND BARS SHALL BE DRILLED OR PUNCHED. FLAME CUTTING OR ENLARGEMENT OF HOLES IS PERMITTED IN STEEL SHEET PILES FOR REINFORCING STEEL AND TIEBACKS.
- PRIOR TO WELDING, CERTIFICATION FOR EACH WELDER SHALL BE SUBMITTED STATING THE TYPE OF WELDING AND POSITIONS QUALIFIED FOR, THE CODE AND PROCEDURE QUALIFIED UNDER, DATE QUALIFIED, AND THE FIRM AND INDIVIDUAL CERTIFYING THE QUALIFICATION TESTS. IF THE QUALIFICATION DATE OF THE WELDING OPERATOR IS MORE THAN ONE-YEAR OLD, THE WELDING OPERATOR'S QUALIFICATION CERTIFICATE SHALL BE ACCOMPANIED BY A CURRENT CERTIFICATE BY THE WELDER ATTESTING TO THE FACT THAT HE HAS BEEN ENGAGED IN WELDING SINCE THE DATE OF CERTIFICATION, WITH NO BREAK IN WELDING SERVICE GREATER THAN 6 MONTHS.
- FIELD CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED. FIELD WELDING WILL BE PERMITTED ONLY WHEN SPECIFICALLY SHOWN ON THE DRAWINGS.
- UNLESS OTHERWISE INDICATED, ALL HARDWARE; SUCH AS BOLTS, NUTS, AND WASHERS; SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM F2329, AS APPLICABLE.
- STRUCTURAL TUBING/STEEL PIPE SHALL CONFORM TO ASTM A500, GRADE B OR D, OR ASTM A53, TYPE E OR S, GRADE B.
- REPAIR DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS IN ACCORDANCE WITH ASTM A780.

### STEEL SHEET PILE NOTES

- STEEL SHEET PILES SHALL BE HOT-ROLLED Z-SHAPED SECTIONS CONFORMING TO THE ASTM SPECIFICATION INDICATED IN THE STEEL SHEET PILE SCHEDULE BELOW. SEE STEEL SHEET PILE SCHEDULE BELOW FOR MINIMUM SHEET PILE REQUIREMENTS.

STEEL SHEET PILE SCHEDULE				
SECTION	MINIMUM SECTION MODULUS	MINIMUM MOMENT OF INERTIA	MINIMUM STEEL THICKNESS	ASTM SPECIFICATION
PZC13 OR AZ13-700	24.2 IN <sup>3</sup> /FT	150.4 IN <sup>4</sup> /FT	0.375 IN	A572, GRADE 50

- STRUCTURAL STEEL PLATES AND SHAPES FOR FABRICATION OF APPURTENANCES, SUCH AS CORNERS, SHALL CONFORM TO ASTM A572, GRADE 50.
- ALL WELDING SHALL BE PERFORMED USING LOW HYDROGEN E80XX ELECTRODES IN ACCORDANCE WITH AWS D1.1.
- STEEL SHEET PILES IN RETAINING WALL SHALL BE COATED WITH COAL TAR EPOXY-POLYAMIDE ON OUTBOARD SURFACE TO ELEVATION 0.0'. EXTEND THE COATING 6 INCHES MINIMUM INTO THE CONCRETE CAP CONSTRUCTION.
- THE SHEET PILE LAYOUTS SHOWN ON THE PLANS ARE PROVIDED TO INDICATE THE GENERAL INTENT OF SHEET PILE WORK.
- THE MINIMUM PHYSICAL PROPERTIES AND SHEET PILE LAYOUTS ARE BASED ON THE STEEL SHEET PILE SECTIONS INDICATED.
- UNLESS OTHERWISE INDICATED, OUTBOARD SURFACES OF STEEL SHEET PILES IN RETAINING WALL SHALL BE COATED AS FOLLOWS:
  - SHOP SURFACE PREPARATION: IN ACCORDANCE WITH SSPC SP 1, SOLVENT CLEANING, AND SSPC SP 10, NEAR-WHITE BLAST CLEANING (MINIMUM 2 1/2-MIL SURFACE PROFILE).
  - SHOP PRIME COAT: ONE COAT OF COAL TAR EPOXY-POLYAMIDE (SSPC PAINT 16, SSPC PS 11.01) TO A DRY FILM THICKNESS OF 8 MILS.
  - SHOP FINISH COAT: ONE COAT OF COAL TAR EPOXY-POLYAMIDE TO A DRY FILM THICKNESS OF 8 MILS. COLOR OF FINISH COAT SHALL BE BLACK.
  - FIELD TOUCH UP SHALL BE PERFORMED TO REPAIR ANY COATING DAMAGED IN CONSTRUCTION AND SHALL BE IN ACCORDANCE WITH THE COATING MANUFACTURER'S RECOMMENDATIONS.
  - PROVIDE TOTAL SYSTEM MINIMUM DRY FILM THICKNESS OF 16 MILS. MEASURE USING A MAGNETIC GAGE.
  - COATING APPLICATION SHALL BE IN STRICT ACCORDANCE WITH THE COATING MANUFACTURER'S WRITTEN RECOMMENDATIONS.

### GENERAL NOTES

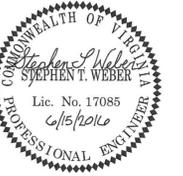
- DETAILS ENTITLED OR NOTED AS "TYPICAL" SHALL APPLY NOT ONLY WHERE SPECIFICALLY INDICATED OR REFERENCED, BUT ALSO IN ALL OTHER CASES WHERE THE NATURE OF THE CONSTRUCTION REQUIRES THEIR USE. APPLICATION OF TYPICAL DETAILS SHALL BE DETERMINED FROM DESCRIPTIVE TITLES OR FROM THE SIMILARITY OF A CONSTRUCTION CONDITION TO ANOTHER CONDITION WHERE THE DETAIL IS SPECIFICALLY INDICATED OR REFERENCED.
- DISCREPANCIES BETWEEN DIFFERENT DRAWINGS SHALL BE REPORTED TO THE OWNER FOR CLARIFICATION PRIOR TO BEGINNING CONSTRUCTION IN THE AREAS AFFECTED BY SUCH DISCREPANCIES.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE REGARDING ALL DEMOLITION AND NEW WORK TO BE ACCOMPLISHED WITHIN THE LIMITS OF CONSTRUCTION.
- THE SHEET PILE WALL DESIGN IS BASED ON THE DESIGN SCOUR DEPTH INDICATED.
- CONTRACTOR SHALL PERFORM A PRECONSTRUCTION SURVEY OF THE PROJECT SITE AND ADJACENT PROPERTIES, ROADWAY, AND STRUCTURES WITH THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS OR VIDEO, SHOWING EXISTING CONDITIONS IN AND ADJACENT TO THE SITE, AS NECESSARY.
- THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH OTHER DISCIPLINE DRAWINGS. THE CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF THE WORK OF OTHER TRADES TO BE PROVIDED IN THE STRUCTURAL WORK. THE CONTRACTOR SHALL VERIFY THIS DATA FROM APPROVED SHOP DRAWINGS.

### DESIGN CRITERIA NOTES

- STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS:
  - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-11).
  - AISC STEEL CONSTRUCTION MANUAL, ALLOWABLE STRESS DESIGN, THIRTEENTH EDITION.
  - STRUCTURAL WELDING CODE-STEEL, AWS D1.1-10.
  - U.S. ARMY CORPS OF ENGINEERS DESIGN OF SHEET PILE WALLS, EM 1110-2-2504, MARCH 31, 1994.
- DESIGN VERTICAL UNIFORM LIVE LOAD:
  - RETAINING WALL SURCHARGE - 250 PSF
  - BRIDGE - 100 PSF

### CONCRETE CONSTRUCTION NOTES

- ALL CONCRETE CONSTRUCTION, INCLUDING REINFORCING STEEL, SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-11) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301-10).
- ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (F'C) OF 5,000 PSI (VDOT CLASS A5) AND SHALL BE AIR-ENTRAINED 4 TO 7 PERCENT. MAXIMUM WATER-CEMENT RATIO SHALL BE 0.40 BY WEIGHT. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 1 INCH (SIZE NO. 57).
- ALL REINFORCING STEEL SHALL BE CARBON STEEL BARS CONFORMING TO ASTM A615, GRADE 60.
- SPLICES IN REINFORCING STEEL SHALL BE STAGGERED WHERE POSSIBLE AND PROVIDED ONLY WHERE INDICATED ON THE DRAWINGS. UNLESS OTHERWISE NOTED, THE MINIMUM LENGTH OF LAP FOR LAP SPLICES SHALL BE AS REQUIRED FOR CLASS B SPLICES, BUT NOT LESS THAN 12 INCHES.
- UNLESS OTHERWISE INDICATED, MINIMUM CONCRETE COVER OVER REINFORCEMENT SHALL BE 3 INCHES.
- UNLESS OTHERWISE INDICATED, ALL EXPOSED EDGES SHALL BE CHAMFERED 1 INCH.
- REINFORCEMENT SHALL BE SPREAD AT ANCHOR RODS, TIEBACKS, AND OTHER EMBEDDED ITEMS UNLESS OTHERWISE INDICATED. REINFORCEMENT SHALL NOT BE CUT. LOCATE EMBEDDED ITEMS WHERE SHOWN ON THE DRAWINGS.
- CEMENTITIOUS GROUT SHALL BE A PREPACKAGED, NON-SHRINK, HIGH STRENGTH, HYDRAULIC CEMENT MIXTURE CONFORMING TO ASTM C1107 AND SHALL DEVELOP A MINIMUM 7-DAY COMPRESSIVE STRENGTH OF 5,000 POUNDS PER SQUARE INCH AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 8,000 POUNDS PER SQUARE INCH. MIXING, PLACEMENT, AND CURING SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- STRUCTURAL EPOXY RESIN ADHESIVE FOR ANCHORING STEEL EMBEDMENTS SHALL CONFORM TO ASTM C881 OR ASTM D1763 AS APPLICABLE, AND SHALL BE A TWO-COMPONENT, 100 PERCENT SOLIDS, MOISTURE-INSENSITIVE, HIGH MODULUS, HIGH-STRENGTH, STRUCTURAL EPOXY ADHESIVE. EPOXY RESIN ADHESIVE SHALL BE FORMULATED TO ACHIEVE HIGH STRENGTH ANCHORING OF BOLTS, DOWELS, AND BARS TO HORIZONTAL, VERTICAL, AND OVERHEAD CONCRETE SUBSTRATES, AS APPLICABLE. THE EPOXY ADHESIVE SHALL BE PACKAGED IN A STANDARD COMMERCIAL CONTAINER SO CONSTRUCTED AS TO PROTECT THE PRODUCT FROM CONTAMINATION. SHIPPING CONTAINERS SHALL BE MARKED WITH THE NAME OF THE PRODUCT AND ITS MANUFACTURER, ITS TYPE AND GRADE, LOT OR CONTROL NUMBER AND THE QUANTITY CONTAINED. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- IN JOINING FRESH CONCRETE TO SET CONCRETE, THE WORK ALREADY IN PLACE SHALL HAVE ITS SURFACE ROUGHENED (1/4" INCH MINIMUM AMPLITUDE) THOROUGHLY. SHAVINGS, SAWDUST, AND OTHER LOOSE AND FOREIGN MATERIAL SHALL BE REMOVED. THE SURFACE SHALL BE WASHED AND SCRUBBED WITH WIRE BROOMS WHEN NECESSARY TO REMOVE SUBSTANCES THAT WILL INTERFERE WITH BONDING. CONCRETE OF THE PRECEDING PLACEMENT SHALL BE THOROUGHLY WETTED (SATURATED SURFACE DRY) PRIOR TO PLACEMENT OF THE NEXT UNIT OF FRESH CONCRETE.



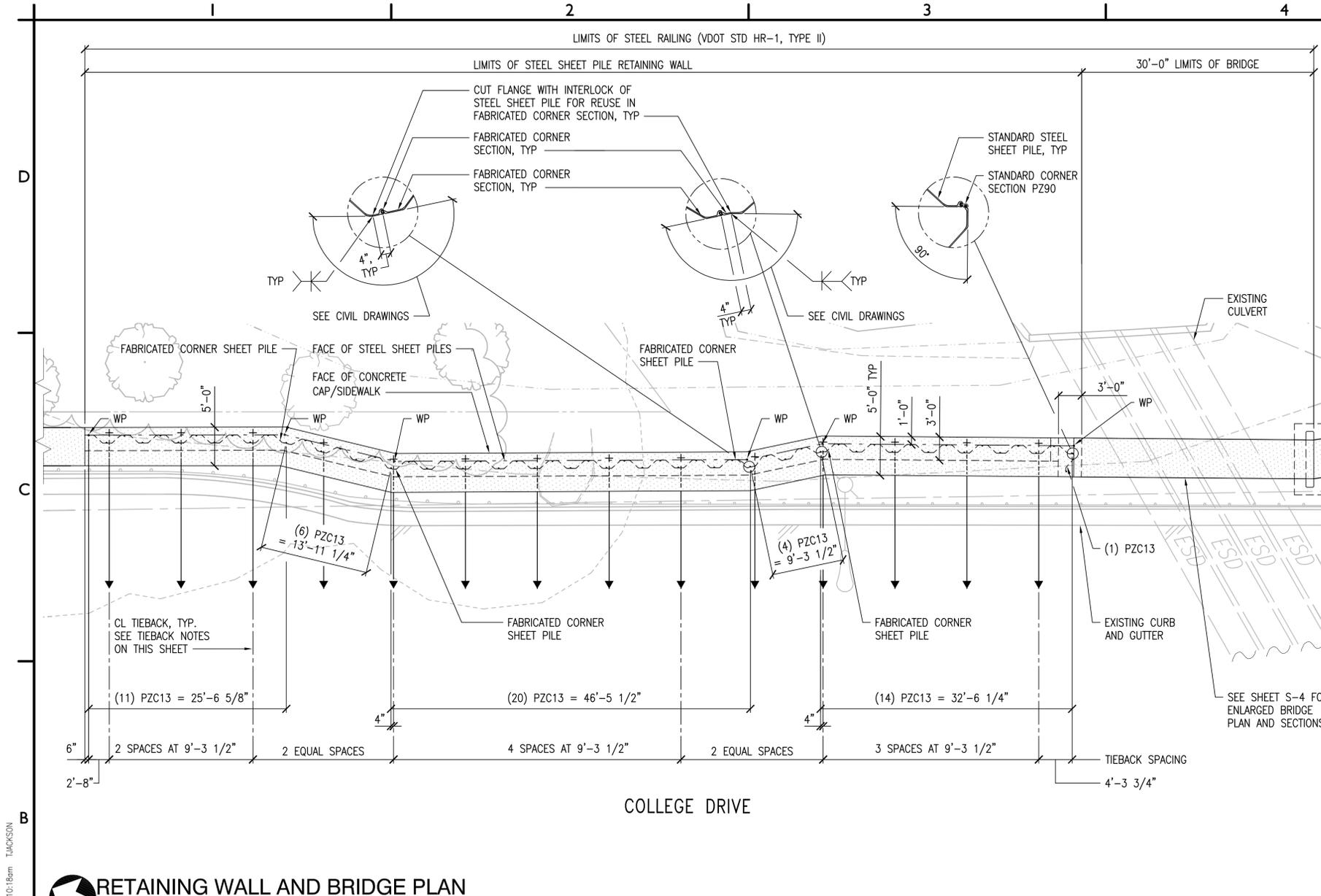
**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
SUFFOLK, VA

CN NO: 5613A  
DATE: 6/27/2016  
DESIGN: STW  
DRAWN: JG  
REVIEW: DWP

REVISIONS		
No.	Date	Description

**PLAN, GENERAL NOTES, AND LEGEND**

**S2**



**STRUCTURAL LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
$[\pm X'-X"]$	SPOT ELEVATION	AB	ANCHOR BOLT
$[\pm X'-X"]$	INDICATES ELEVATION	AHR	ANCHOR
DN	SLOPE DIRECTION	APPROX	APPROXIMATELY
1	PILE REFERENCE GRID LINE (CENTER LINE OF PILE)	BD	BAR DIAMETER
1	DEMOLITION CONSTRUCTION NOTE	BOC	BOTTOM OF CONCRETE
1	RETAINING WALL TYPE	BOS	BOTTOM OF STEEL
[Hatched]	EARTH FILL	BRG	BEARING
[Dotted]	GROUT	CJ	SLAB CONSTRUCTION JOINT
[Riprap]	RIPRAP, ARMOR STONE OR BEDDING STONE	CL	CENTER LINE
[Diagonal lines]	STEEL	CLR	CLEAR
[Stippled]	CONCRETE	CONN	CONNECTION
[Cross-hatched]	DEMOLITION	CONC	CONCRETE
[Dotted with lines]	EXISTING CONCRETE	CONT	CONTINUOUS
		DIA, $\phi$	DIAMETER
		DWG(S)	DRAWING(S)
		EA	EACH
		EF	EACH FACE
		EJ	EXPANSION JOINT
		ELEV	ELEVATION
		EOS	EDGE OF SLAB
		EQ	EQUAL
		EW	EACH WAY
		FT	FOOT
		FTG	FOOTING
		GA	GAGE
		GALV	GALVANIZED
		HORIZ	HORIZONTAL
		HS	HIGH STRENGTH
		ID	INSIDE DIAMETER
		KIPS (K)	1000 POUNDS
		LB	POUNDS
		LG	LONG
		LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
		LSH	LONG SIDE HORIZONTAL
		LSV	LONG SIDE VERTICAL
		MAX	MAXIMUM
		MFR	MANUFACTURER
		MHW	MEAN HIGH WATER
		MLW	MEAN LOW WATER
		MIN	MINIMUM
		NIC	NOT IN CONTRACT
		NO	NUMBER
		NTS	NOT TO SCALE
		OC	ON CENTER
		OPP	OPPOSITE
		OD	OUTSIDE DIAMETER
		PL	PLATE
		PLF	POUNDS PER LINEAR FOOT
		PSF	POUNDS PER SQUARE FOOT
		REINF	REINFORCEMENT
		SCHED	SCHEDULE
		SIM	SIMILAR
		SJ	SLAB SAWED (CONTRACTION) JOINT
		SL	SLOPE(D)
		SS	STAINLESS STEEL
		STD	STANDARD
		T&B	TOP AND BOTTOM
		TOC	TOP OF CONCRETE
		TOF	TOP OF FOOTING
		TOS	TOP OF STEEL
		TYP	TYPICAL
		UHMW	ULTRA HIGH MOLECULAR WEIGHT UNLESS OTHERWISE NOTED
		UON	ULTRA-VIOLENT
		UV	ULTRA-VIOLENT
		VERT	VERTICAL
		WP	WORKING POINT
		WWF	WELDED WIRE FABRIC

**RETAINING WALL AND BRIDGE PLAN**  
SCALE: 1/8" = 1'-0"

**TIEBACK NOTES**

1. THE WORK CONSISTS OF PROVIDING ALL ENGINEERING AND DESIGN SERVICES, SUPERVISION, LABOR, TOOLS, MATERIALS, AND EQUIPMENT TO FURNISH AND INSTALL THE HELICAL TIEBACK ANCHORS AS SHOWN ON THE DRAWINGS.
2. THE DETAILS SHOWN ON THE DRAWINGS ARE PROVIDED TO INDICATE THE GENERAL INTENT OF THE TIEBACK WORK. THE ACTUAL TIEBACKS DESIGNED, FURNISHED, AND INSTALLED SHALL BE IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS AND DESIGN DATA AS PROVIDED AND SUBMITTED BY THE TIEBACK CONTRACTOR/DESIGNER.
3. DESIGN TENSILE SERVICE LOAD FOR TIEBACK = 40 KIPS EACH (AT 20° ANGLE OF INCLINATION FROM HORIZONTAL) AS INDICATED WITH A MINIMUM ULTIMATE TENSILE CAPACITY OF 80 KIPS EACH.
4. TIEBACKS AND ALL APPURTENANCES THEREOF SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A153, AS APPLICABLE, COATING GRADE 100 (2.3 oz/sq-ft).
5. SEE PLAN ON THIS SHEET FOR TIEBACK LOCATIONS AND SPACING.
6. FILL/BACKFILL SHALL BE PLACED TO NOT LESS THAN THE TOP-OF-WALL ELEVATION BEFORE APPLYING TIEBACK LOADS IN EXCESS OF 15 PERCENT OF THE DESIGN LOAD INDICATED FOR THE TIEBACKS.
7. REPAIR DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS IN ACCORDANCE WITH ASTM A780.

**PLAN NOTES**

1. SEE CIVIL DRAWINGS FOR RETAINING WALL DIMENSIONS.
2. SEE CIVIL DRAWINGS FOR RETAINING WALL AND BRIDGE ALIGNMENT DATA AND WORKING POINT.
3. SEE CIVIL DRAWINGS FOR TOP OF CONCRETE CAP/SIDEWALK ELEVATIONS.
4. STEEL RAILING NOT SHOWN.

**GRAPHIC SCALE(S)**



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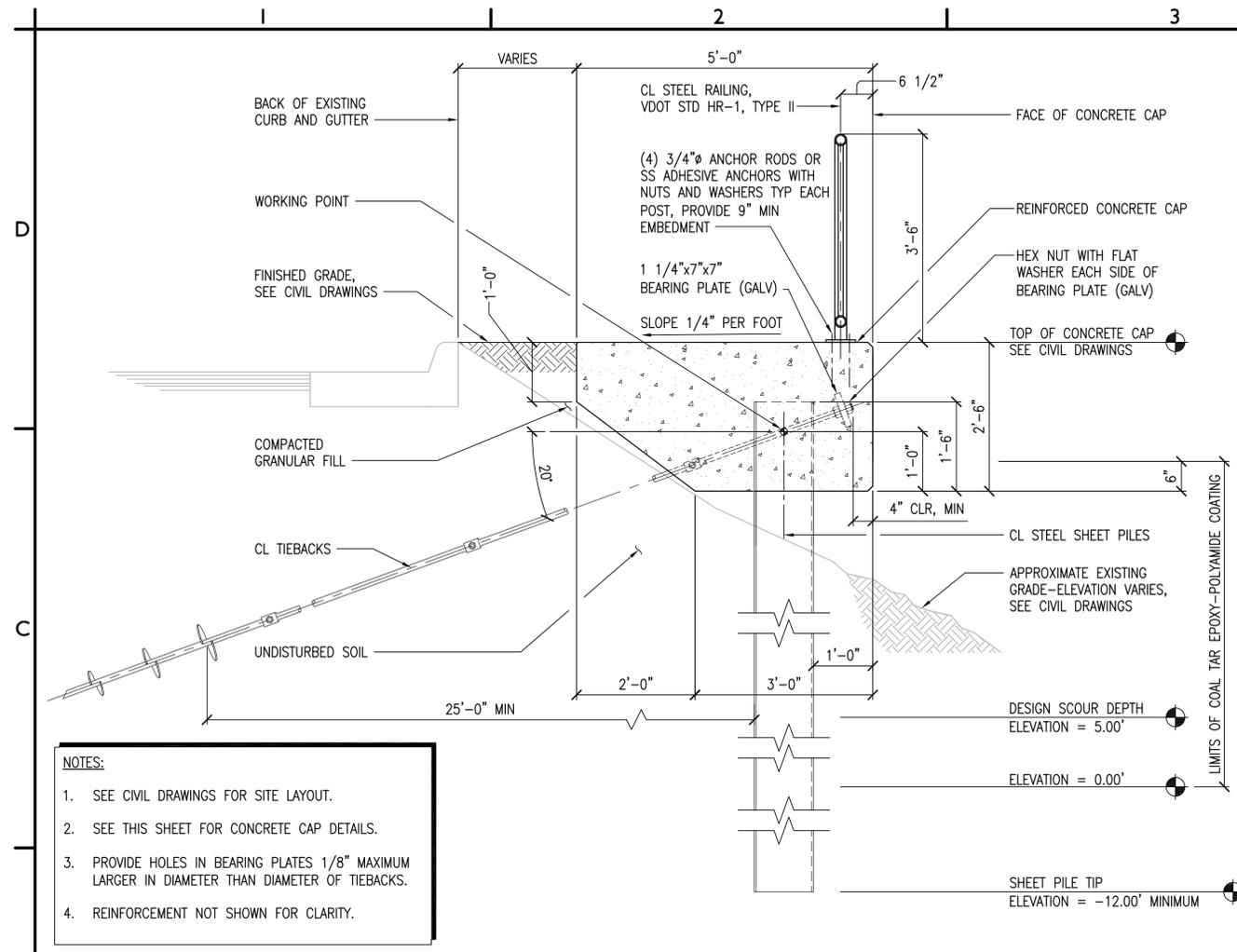


**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
 INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY  
 SUFFOLK, VA

CN NO: 5613A  
 DATE: 6/27/2016  
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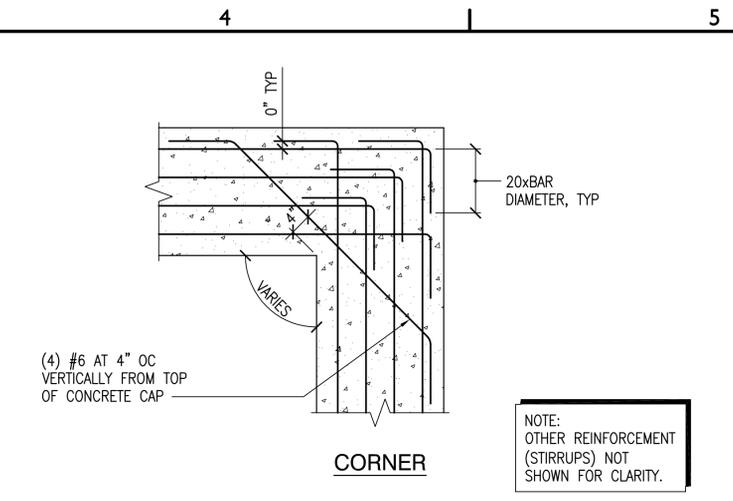
**SECTIONS AND DETAILS**

**S3**

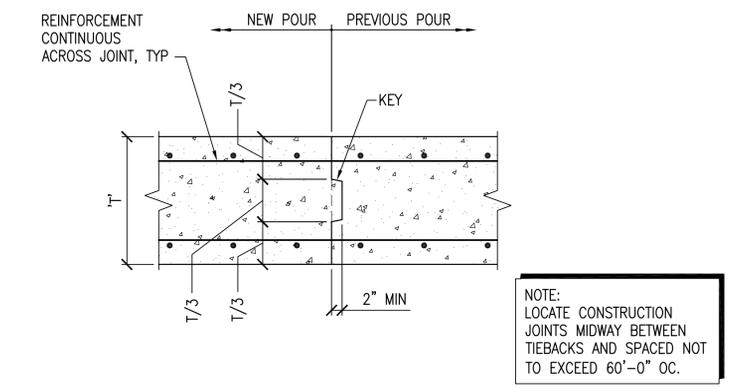


- NOTES:**
- SEE CIVIL DRAWINGS FOR SITE LAYOUT.
  - SEE THIS SHEET FOR CONCRETE CAP DETAILS.
  - PROVIDE HOLES IN BEARING PLATES 1/8\"/>

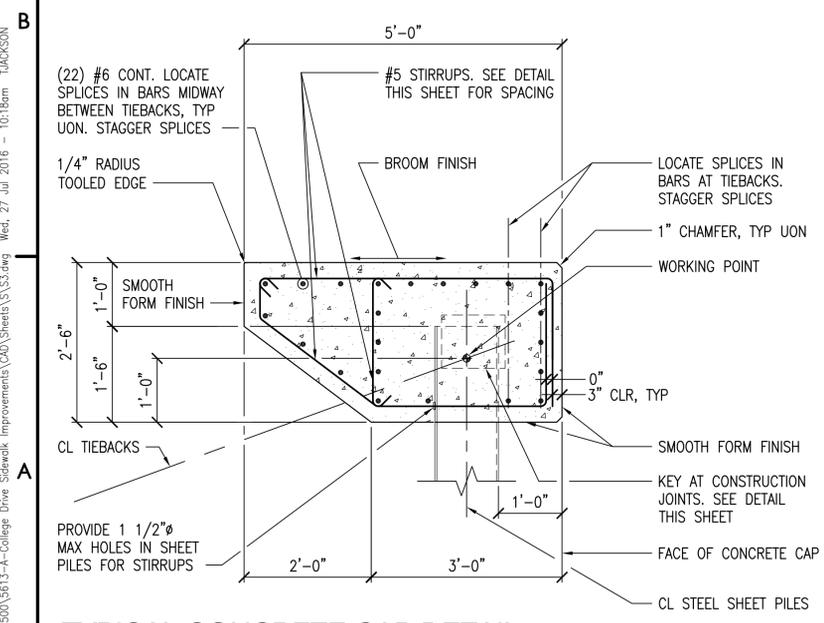
**TYPICAL RETAINING WALL SECTION**  
SCALE: 3/4\"/>



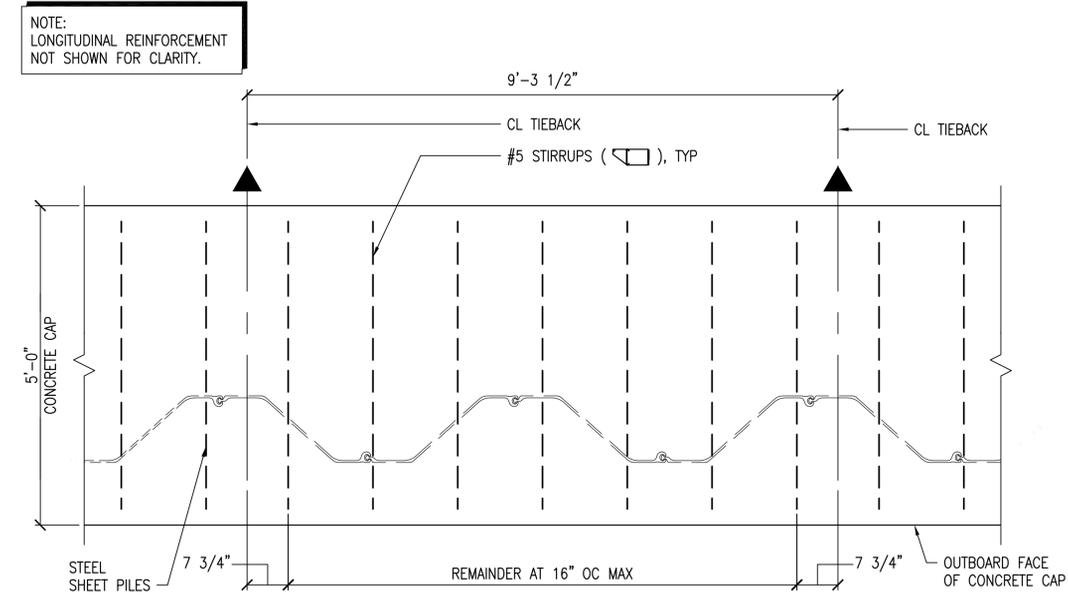
**TYPICAL CONTINUOUS REINFORCEMENT DETAIL**  
NOT TO SCALE



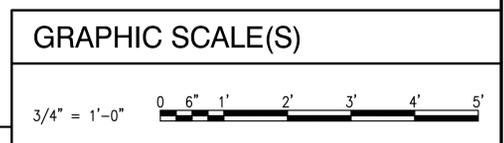
**TYPICAL CONSTRUCTION JOINT DETAIL**  
NOT TO SCALE



**TYPICAL CONCRETE CAP DETAIL**  
SCALE: 3/4\"/>

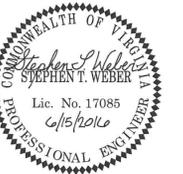


**PARTIAL CAP PLAN (STIRRUP SPACING DETAIL)**  
SCALE: 3/4\"/>



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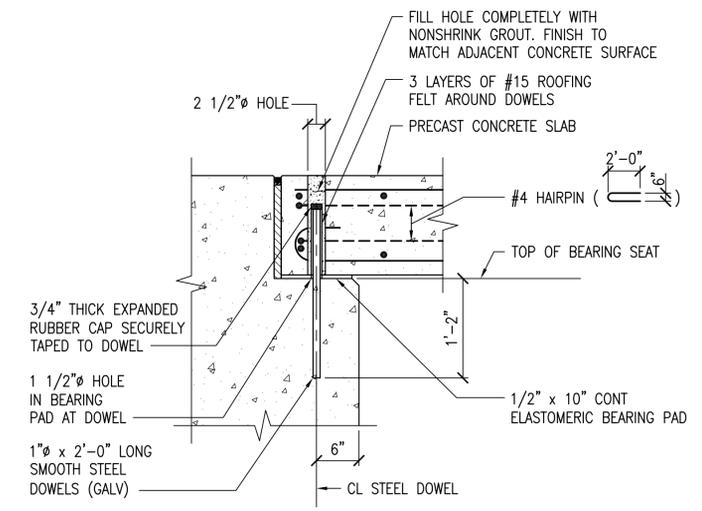
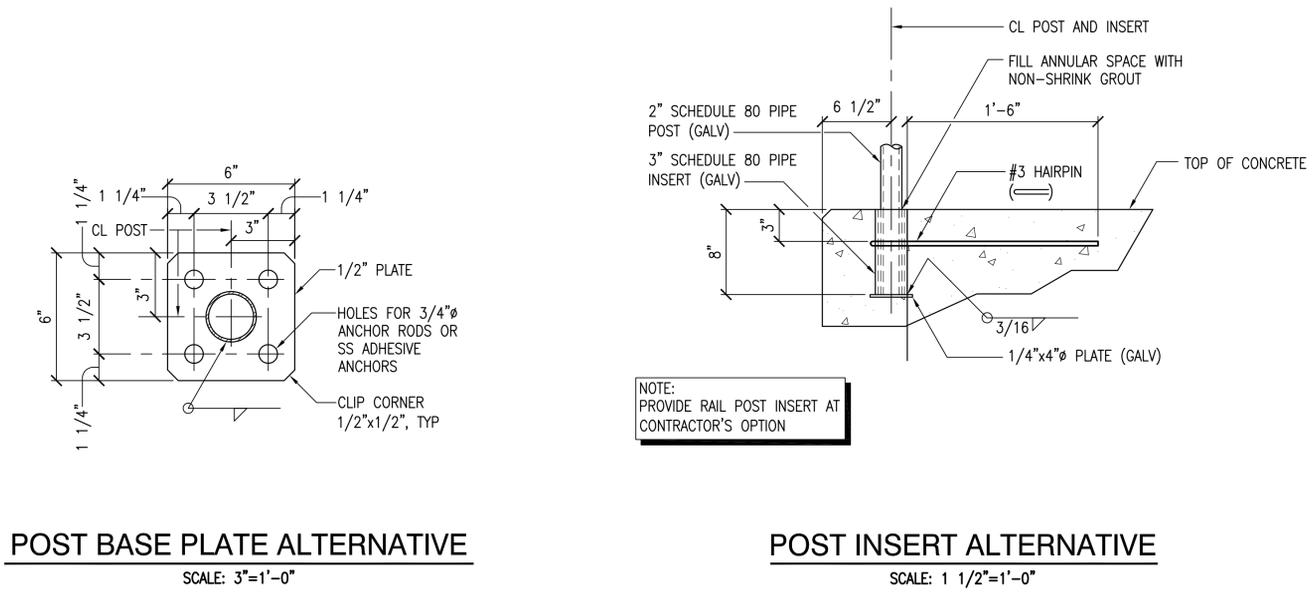


**COLLEGE DRIVE BULKHEAD AND SIDEWALK IMPROVEMENTS**  
**INTERSECTION OF COLLEGE DRIVE AND LAKE-VIEW PARKWAY SUFFOLK, VA**

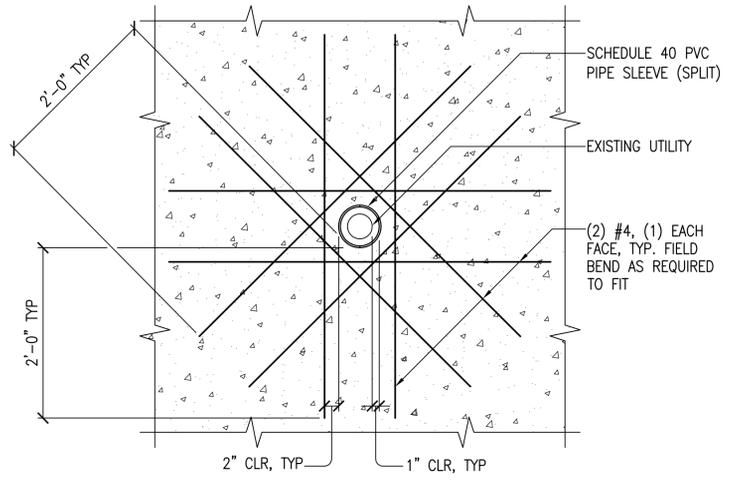
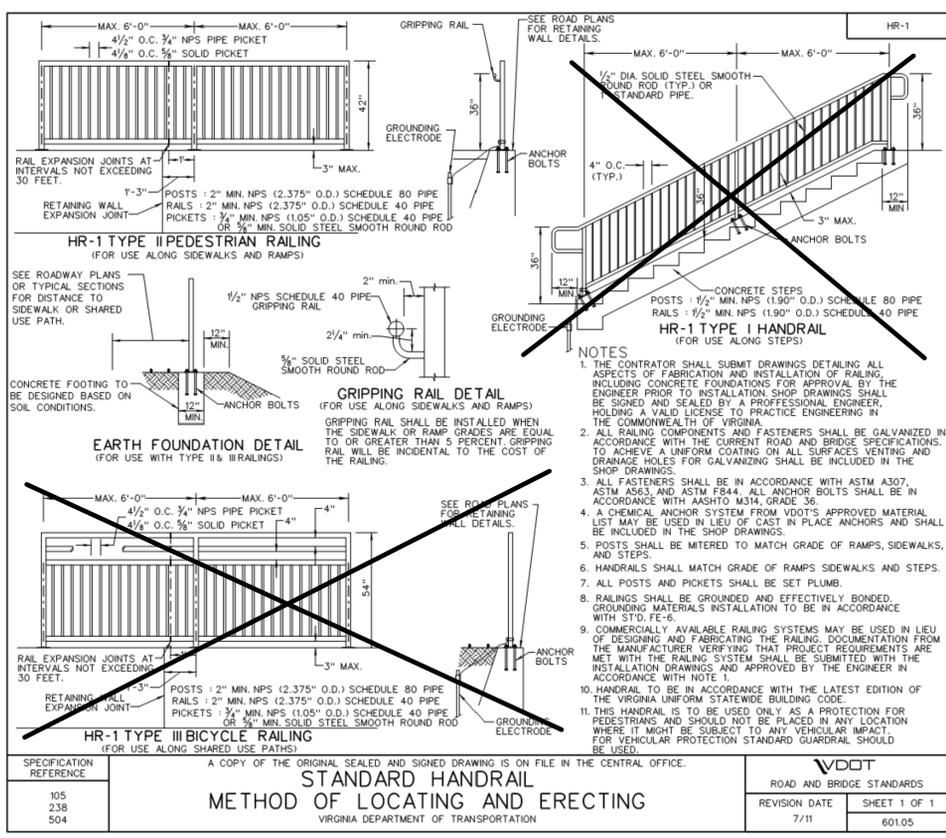
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**RAILING DETAILS**

**S5**



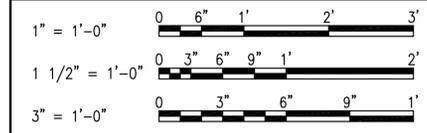
**STEEL RAILING CONNECTION DETAILS**  
SCALE: AS NOTED



- NOTES:
- TYPICAL WALL REINFORCEMENT NOT SHOWN FOR CLARITY.
  - SPECIAL REINFORCEMENT IS NOT REQUIRED FOR OPENINGS 4" OR LESS IN DIAMETER.

**TYPICAL WALL OPENING DETAIL**  
SCALE: 1"=1'-0"

**GRAPHIC SCALE(S)**



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