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CITY OF SUFFOLK DEPARTMENT OF PUBLIC WORKS ROUTE 460 CULVERT DESIGN

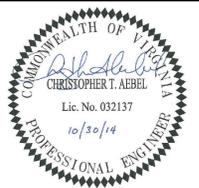
SUFFOLK, VIRGINIA



OCTOBER 30, 2014

CLARK NEXSEN
Architecture & Engineering

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ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: JPP
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REVISIONS
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TITLE SHEET

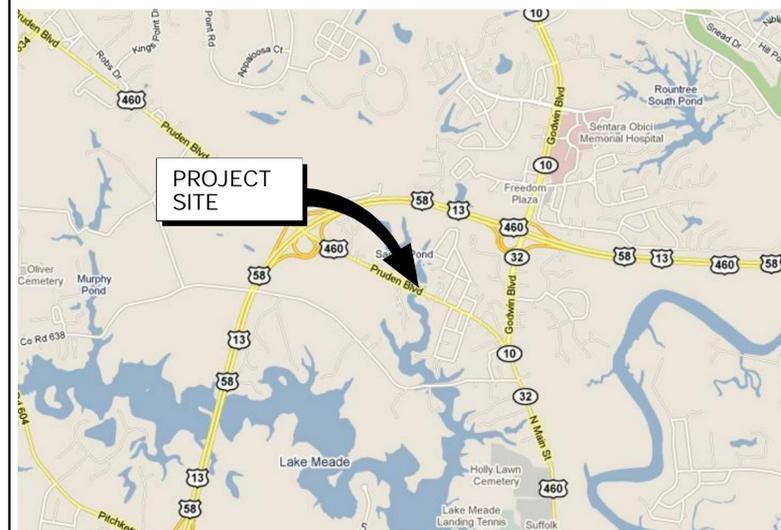
GI001

SHEET 1 OF 15

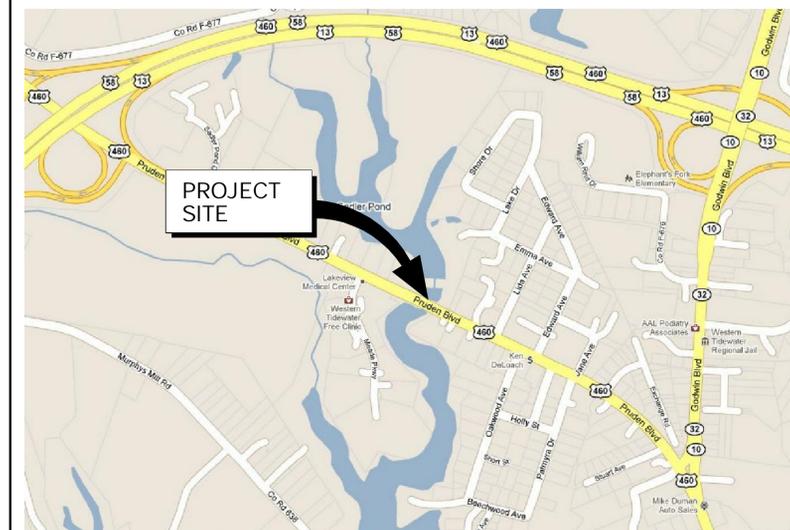
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LOCATION MAP



SITE PLAN



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GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF SUFFOLK PUBLIC WORKS DEPARTMENT A MINIMUM OF 36 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION AND/OR CONSTRUCTION. PUBLIC WORKS - 757-514-7681.
2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT CITY OF SUFFOLK DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND ANY OTHER APPLICABLE CITY OR STATE ORDINANCES, CODES, LAWS, AND FEDERAL REGULATIONS.
3. ALL SITE IMPROVEMENTS ARE SUBJECT TO CITY INSPECTION UNDER CITY CODES, VDOT AND THE DEPARTMENT OF PUBLIC UTILITIES SPECIFICATIONS AS APPLICABLE.
4. UNDERGROUND EXPLORATIONS AND A TITLE SEARCH WERE NOT PERFORMED TO DETERMINE THE ABSENCE OR PRESENCE OF SOIL CONTAMINATION.
5. ONE (1) COPY OF THE FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED TO THE DEPARTMENT OF PUBLIC WORKS ON CD IN MICROSTATION SE OR LATER VERSION OR AUTOCAD 2000 OR LATER VERSION, A MYLAR COPY AND A BLUE LINE COPY. THE DRAWINGS SHALL INDICATE LOCATIONS OF STRUCTURES IN CORRECT COORDINATE SPACE HAVING BEARINGS AND DISTANCES WITH AT LEAST TWO COORDINATES TIED TO THE CITY OF SUFFOLK'S GEODETIC CONTROL NETWORK.

PAVEMENT AND OPEN CUTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIAL SPECIFIED IN THE ASPHALT PAVEMENT SECTION DETAIL ON SHEET C-501 ANY PAVEMENT THAT IS CUT OR DAMAGED DURING CONSTRUCTION.
2. SUB-BASE MATERIAL: VARIABLE DEPTH SELECT MATERIAL (SAND), IF REQUIRED. SUBBASE TO BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS.

SEQUENCE OF CONSTRUCTION

1. INSTALL CONSTRUCTION SIGNS AND MAINTENANCE OF TRAFFIC DEVICES ON APPROACHES TO PROJECT AREA.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO CONSTRUCTION.
3. DEMOLISH ITEMS AS SHOWN ON SHEET CD101.
4. CLEAR AND ROUGH GRADE AREA OF CONSTRUCTION.
5. RELOCATE UTILITIES.
6. INSTALL NEW CULVERT
7. INSTALL UTILITY STRUCTURES AND PIPES AS SHOWN ON SHEETS C101 AND C1201.
8. CONSTRUCT PAVEMENT SECTION.
9. FINE GRADE AND SEED ALL DISTURBED AREAS.
10. REMOVE EROSION AND SEDIMENT CONTROL DEVICES AFTER SITE IS STABILIZED.

GRADING DRAINAGE AND INCIDENTAL

1. THE CULVERT, HEADWALL AND WINGWALLS SHALL CONFORM TO CURRENT VDOT ROAD AND BRIDGE STANDARDS AND CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND CURRENT AMENDMENTS TO EACH DOCUMENT.
2. ALL TRANSITIONS IN GRADING SHALL BE SMOOTH ROUND CURVES.
3. ALL STORM SEWER PIPE JOINTS SHALL BE INSTALLED SILT FREE AND SHALL BE COMPLETELY WRAPPED WITH A TWO-FOOT WIDE OR APPROVED FILTER FABRIC AND SECURED IN PLACE PRIOR TO BACKFILLING.
4. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED IN SUCH A MANNER SO AS TO PREVENT FLOODING UPSTREAM.
5. ALL PIPE CULVERTS LOCATED WITHIN RIGHT-OF-WAY EXCAVATION AREAS THAT WILL BE SUBJECT TO TRAFFIC LOADINGS SHALL BE BACKFILLED WITH SELECT MATERIAL AND PLACED IN SIX-INCH LAYERS AND COMPACTED TO 95 PERCENT THEORETICAL AASHTO DENSITY IN ACCORDANCE WITH THE CURRENT VIRGINIA DEPARTMENT TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS. GEOTECHNICAL ENGINEER SHALL EVALUATE SUBGRADE SOILS TO DETERMINE IF UNSUITABLE MATERIAL EXISTS AND PROPOSE A MEANS TO STABILIZE THE MATERIAL.
6. GUARDRAIL SHALL CONFORM TO CURRENT VDOT ROAD AND BRIDGE STANDARDS AND CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND CURRENT AMENDMENTS TO EACH.

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 ROUTE 460 BETWEEN MEADE PARKWAY AND LIDA AVENUE.
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 BEEN PERFORMED. IN CASE OF EMERGENCY, CONTACT MS SHERRY EARLEY AT 757-514-7703.
12. IT IS NOT THE INTENT OF THE MAINTENANCE OF TRAFFIC PLANS (MT101) 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. FOR WORK ON ROUTES 460, THERE SHALL BE AT LEAST ONE LANE OPEN AT ALL TIMES.
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.

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	N	NORTH
BOV	BLOW OFF VALVE	NAVD	NORTH AMERICAN VERTICAL DATUM
C-C	CENTER TO CENTER	NE	NORTHEAST
CDI	CONCRETE DROP INLET	NO	NUMBER
CMP	CORRUGATED METAL PIPE	NTS	NOT TO SCALE
CONC	CONCRETE	NW	NORTHWEST
COR	CORNER	PB	PLAT BOOK
DB	DEED BOOK	PG	PAGE
DIA	DIAMETER	PMI	PRECISION MEASUREMENTS, INC
DI	DROP INLET	P/P	POWER POLE
E	EAST	PS	PUMP STATION
EG	EXISTING GAS	PVC	POLYVINYL CHLORIDE
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
ES	EXISTING SANITARY SEWER	RW R/W	RIGHT OF WAY
ESD	EXISTING STORM DRAIN	S	SOUTH
ESFM	EXISTING SEWER FORCE MAIN	SE	SOUTHEAST
ETC	UNDERGROUND TRAFFIC	SF	SILT FENCE
EUT	EXISTING UNDERGROUND TELEPHONE	SMH	SANITARY MANHOLE
EW	EXISTING WATER/EACH WAY/ENDWALL	SQ	SQUARE
F	FOUND	SQ FT	SQUARE FEET
FES	FLARED END SECTION	SW	SOUTHWEST
FHWA	FEDERAL HIGHWAY ADMINISTRATION	TBM	TEMPORARY BENCHMARK
FT	FEET	TP T/P	TREE PROTECTION/TELEPHONE POLE /TELEPHONE PEDESTAL
GIS	GEOGRAPHIC INFORMATION SYSTEMS	TRHH	TRAFFIC HAND HOLD
GPS	GLOBAL POSITIONING SYSTEM	TYP	TYPICAL
GV	GAS VALVE	USDA	UNITED STATES DEPARTMENT OF AGRICULTURE
HARN	HIGH ACCURACY REFERENCE NETWORK	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
HDPD	HIGH DENSITY PLASTIC PIPE	W	WEST
HRPDC	HAMPTON ROADS PLANNING DISTRICT COMMITTEE	WW	WATER VALVE
INV	INVERT		
INST	INSTRUMENT		
LBS	POUNDS		
LN	LINEAR		
MAX	MAXIMUM		
MB	MAP BOOK/MAIL BOX		
MIN	MINIMUM		

UTILITIES

1. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST AND CROSS THROUGH THE AREA OF CONSTRUCTION THAT ARE NOT SHOWN ON THESE PLANS. BEFORE YOU DIG, CALL "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AT HIS EXPENSE ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION.
2. WATER AND SEWER INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CITY OF SUFFOLK CONSTRUCTION SPECIFICATIONS AND STANDARDS FOR PUBLIC WATER AND SANITARY SEWERAGE FACILITIES. A COPY OF THE STANDARDS IS AVAILABLE THRU THE PUBLIC UTILITIES ENGINEERING DIVISION.
3. THE CONTRACTOR SHALL FURNISH THE CITY OF SUFFOLK DEPARTMENT OF PUBLIC UTILITIES A COMPLETE SET OF REPRODUCIBLE DRAWINGS, SHOWING THE AS-BUILT LOCATIONS AND DIMENSIONS. ALL AS-BUILT DIMENSIONS SHALL BE EXPRESSED IN FEET AND VERTICAL DATUM ELEVATIONS SHALL BE BASED ON CITY OF SUFFOLK NAVD 1988. ALL AS-BUILT INFORMATION SHALL BE "BLOCKED" OR "FRAMED" FOR IDENTIFICATION AS FINAL AS-BUILT INFORMATION. RECORD PLANS SHALL BE BASED UPON REVISIONS TO THE APPROVED PLANS AND SHALL BE CERTIFIED BY THE INSPECTING DESIGN ENGINEER OF RECORD. INCLUDED WITH THE AS-BUILT INFORMATION SHALL BE CCTV RECORDS OF ALL SEWER MAINS IN RIGHT-OF WAY OR EASEMENT TO BE DEDICATED TO THE CITY. RECORDS SHALL BE SUBMITTED ON DVDS, INCLUDING DOCUMENTATION IN ACCORDANCE WITH NASSSCO STANDARDS, GENERALLY IN CONFORMANCE WITH HRPDC CONSTRUCTION STANDARDS REQUIREMENTS.
4. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF SUFFOLK DEPARTMENT OF PUBLIC UTILITIES A MINIMUM OF 5 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY WATER OR SEWER WORK FOR THE PROJECT. PLEASE CONTACT GENE WEAVER, CONSTRUCTION MANAGER, AT 757-514-7078.
5. THE CONTRACTOR IS TO NOTIFY THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC UTILITIES (393-8561) WHEN CONSTRUCTION BEGINS AND AT PROJECT COMPLETION.

SOIL INFORMATION

THE SOIL TYPE AS IDENTIFIED IN THE USDA SOIL CONSERVATION SERVICE PUBLICATION, "SOIL SURVEY OF CITY OF SUFFOLK, VIRGINIA" IS NANSEMOND AND SUFFOLK LOAMY SAND. THE PERMEABILITY OF THIS SOIL IS MODERATELY WELL DRAINED TO WELL DRAINED AND THE EROSION HAZARD IS MODERATE TO HIGH.

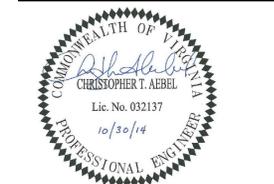
LEGEND

	EXISTING		NEW	ASPHALT PAVEMENT
	CONC		MILL AND OVERLAY	MILL AND OVERLAY
	ESFM		CONCRETE	CONCRETE
	ES		REMOVE / DEMOLISH	REMOVE / DEMOLISH
	SMH		CURB AND GUTTER	CURB AND GUTTER
	CB		SANITARY FORCE MAIN	SANITARY FORCE MAIN
	DI		SANITARY SEWER	SANITARY SEWER
	EW		SANITARY MANHOLE	SANITARY MANHOLE
	WV		STORM SEWER	STORM SEWER
	P/P		CATCH BASIN	CATCH BASIN
	T/P		DROP INLET	DROP INLET
	EUT		GATE VALVE	GATE VALVE
	TRHH		AIR RELEASE ASSEMBLY	AIR RELEASE ASSEMBLY
	TP		WATER LINE	WATER LINE
	TP		OVERHEAD LINES	OVERHEAD LINES
	TP		WATER VALVE	WATER VALVE
	TP		SPOT ELEVATION	SPOT ELEVATION
	TP		CONTOUR	CONTOUR
	TP		POWER POLE	POWER POLE
	TP		TELEPHONE POLE	TELEPHONE POLE
	TP		UNDERGROUND TELEPHONE	UNDERGROUND TELEPHONE
	TP		TRAFFIC HANDHOLD	TRAFFIC HANDHOLD
	TP		TELEPHONE PEDESTAL	TELEPHONE PEDESTAL
	TP		MAIL BOX	MAIL BOX
	TP		TRAVERSE POINT	TRAVERSE POINT
	TP		UNDERGROUND GAS LINE	UNDERGROUND GAS LINE
	TP		WETLANDS	WETLANDS
	TP		WETLAND FLAGS	WETLAND FLAGS
	TP		CONNECT NEW TO EXISTING	CONNECT NEW TO EXISTING
	TP		PROJECT LIMITS	PROJECT LIMITS
	TP		CENTERLINE OF DITCH/SWALE	CENTERLINE OF DITCH/SWALE
	TP		TREE	TREE
	TP		SHRUB	SHRUB
	TP		TREE LINE	TREE LINE
	TP		METAL GUARD RAIL	METAL GUARD RAIL
	TP		END OF INFORMATION	END OF INFORMATION
	TP		SIGN	SIGN
	TP		EASEMENT	EASEMENT
	TP		PROPERTY LINE	PROPERTY LINE
	TP		RIGHT-OF-WAY	RIGHT-OF-WAY
	TP		UTILITY TEST PIT	UTILITY TEST PIT
	TP		TEMPORARY BENCHMARK	TEMPORARY BENCHMARK
	TP		TREE PROTECTION	TREE PROTECTION
	TP		INLET PROTECTION	INLET PROTECTION
	TP		SILT FENCE	SILT FENCE
	TP		UNDERGROUND TRAFFIC	UNDERGROUND TRAFFIC
	TP		QUALITY LEVEL	QUALITY LEVEL
	TP		TURBIDITY CURTAIN	TURBIDITY CURTAIN
	TP		RIPRAP	RIPRAP
	TP		PERMANENT DRAINAGE EASEMENT	PERMANENT DRAINAGE EASEMENT
	TP		TEMPORARY CONSTRUCTION EASEMENT	TEMPORARY CONSTRUCTION EASEMENT
	TP		SURVEY BASELINE	SURVEY BASELINE
	TP		CONSTRUCTION BASELINE	CONSTRUCTION BASELINE
	TP		SANITARY SEWER BASELINE	SANITARY SEWER BASELINE
	TP		REMOVE TO THIS POINT	REMOVE TO THIS POINT
	TP		LIMITS OF WATER MAIN	LIMITS OF WATER MAIN
	TP		RESTRAINED PIPE	RESTRAINED PIPE

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GENERAL NOTES LEGEND AND ABBREVIATIONS

C-001

SHEET 2 OF 15

RIGHT OF WAY DATA

PARCEL NO.	LANDOWNER	SHEET NO.	AREA							
			TOTAL	FEE TAKING	PRESCRIPTIVE R/W	FEE REMAINDER	EASEMENTS			
							PERMANENT	UTILITY	TEMPORARY	PROFFERS
ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	ACRES OR SQUARE FEET	YES/NO		
001	CITY OF PORTSMOUTH LAKE MEADE RESERVOIR	6	44.210 AC	...		44.210 AC	0.175 AC			NO
002	WILLIAM M. CONES & NATALIE C. CONES	6	2.250 AC	...		1.971 AC	0.010 AC		0.111 AC	NO

Spell checked by GSEFDKA on 12/29/2010 9:20am

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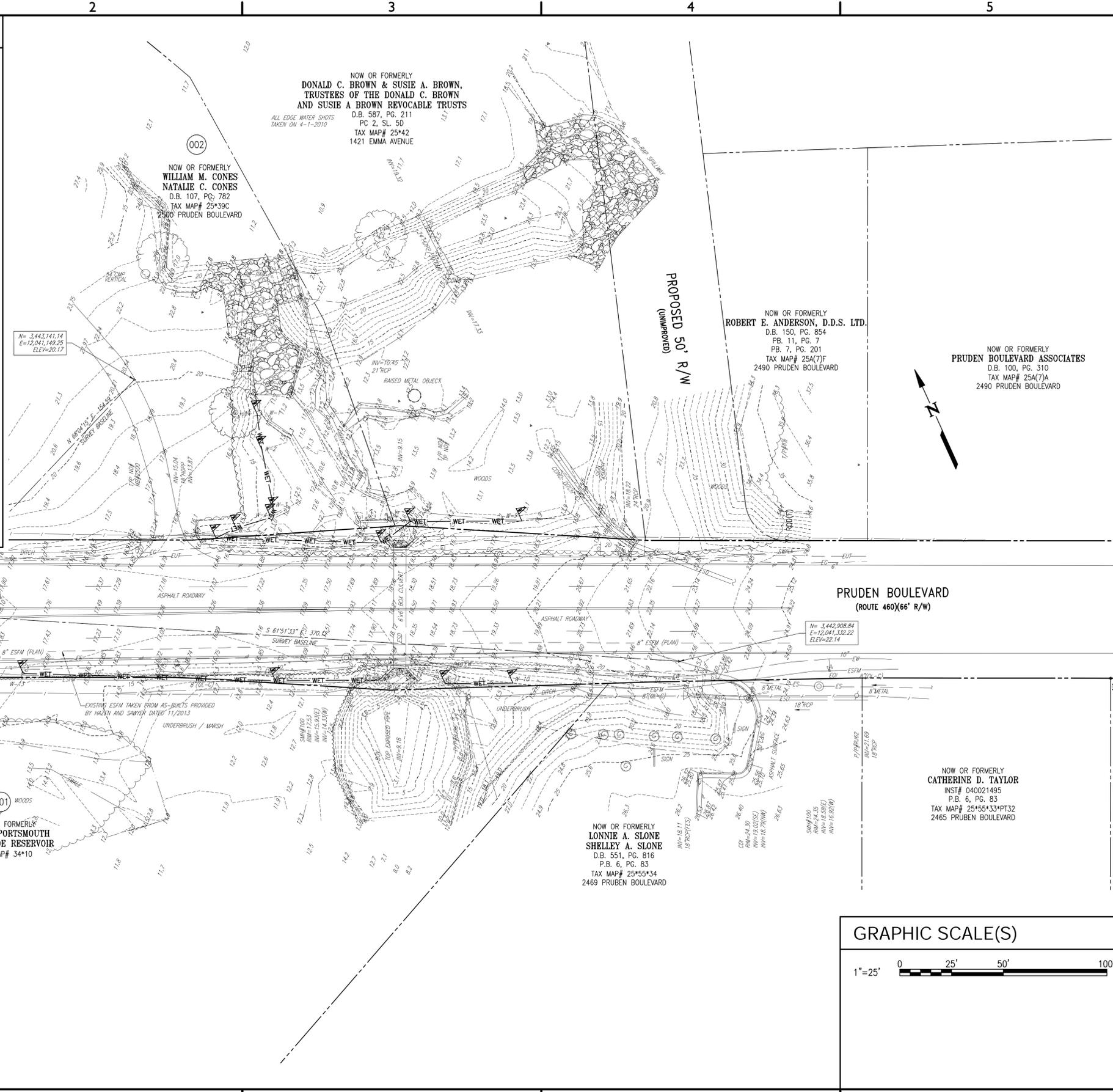
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H:\P\3631\CAO\Sheets\CS101.dwg Wed, 29 Oct 2014 - 10:26am nlancke

SURVEYOR NOTES

1. THE MERIDIAN SOURCE OF THIS TOPOGRAPHIC SURVEY IS BASED ON THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM 1983(HARN). THE PROJECT MERIDIAN WAS ESTABLISHED USING GPS METHODS.
2. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988(NAVD88) AND WERE ESTABLISHED USING GPS METHODS.
3. THIS SURVEY WAS PREPARED TO SHOW EXISTING FEATURES AS OF OCTOBER 22, 2010 AND DOES NOT CERTIFY TO CHANGES TO SITE CONDITIONS WHICH OCCUR SUBSEQUENT TO THIS DATE AND OR TO PROPOSED IMPROVEMENTS.
4. THIS PROPERTY APPEARS TO BE IN ZONE 4 NO BASE FLOOD ELEVATIONS DETERMINED. REFERENCE: FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 510156 0016 B, MAP REVISED NOVEMBER 16, 1990.
5. THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY NOR A SUBDIVISION OF LAND.
6. THIS SURVEY DOES NOT INTEND TO DEPICT ANY WETLANDS, HAZARDOUS WASTE AND ENVIRONMENTAL FEATURES THAT MAY AFFECT SAID PROPERTY SHOWN HEREON EXCEPT AS SHOWN.
7. PIPE MATERIAL TYPES ARE DETERMINED BY FIELD OBSERVATIONS TO THE BEST OF OUR ABILITY. PMI DOES NOT WARRANT THE MATERIAL TYPE OF PIPES LOCATED IN CONFINED OR INACCESSIBLE SPACES.
8. 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 NOTIFIES ALL PARTIES THAT VIRGINIA LAW REQUIRES MISS-UTILITY TO BE CONTACTED PRIOR TO ANY EXCAVATION.
9. THE TOPOGRAPHY AND PHYSICAL FEATURES SHOWN ON THIS MAP WERE OBTAINED UNDER THE DIRECT AND RESPONSIBLE CHARGE AND SUPERVISION OF GAETANO JOHN LENTINI FROM AN ACTUAL GROUND SURVEY. THIS MAP MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
10. THIS TOPOGRAPHIC SURVEY WAS PREPARED/COMPILED BY:

PRECISION MEASUREMENTS, INC.
 SURVEYORS - GPS - GIS - MAPPING - 3-D LASER SCANNING
 813 DILIGENCE DRIVE, SUITE 119
 NEWPORT NEWS, VA. 23606
 (757) 595-7570
 WWW.PRECISIONMEASUREMENTS.COM
 VIRGINIA BEACH - NEWPORT NEWS - RICHMOND, VIRGINIA



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GRAPHIC SCALE(S)



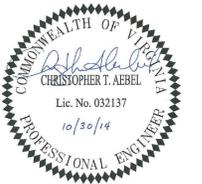
**EXISTING
 CONDITIONS**

CS101

SHEET 3 OF 15

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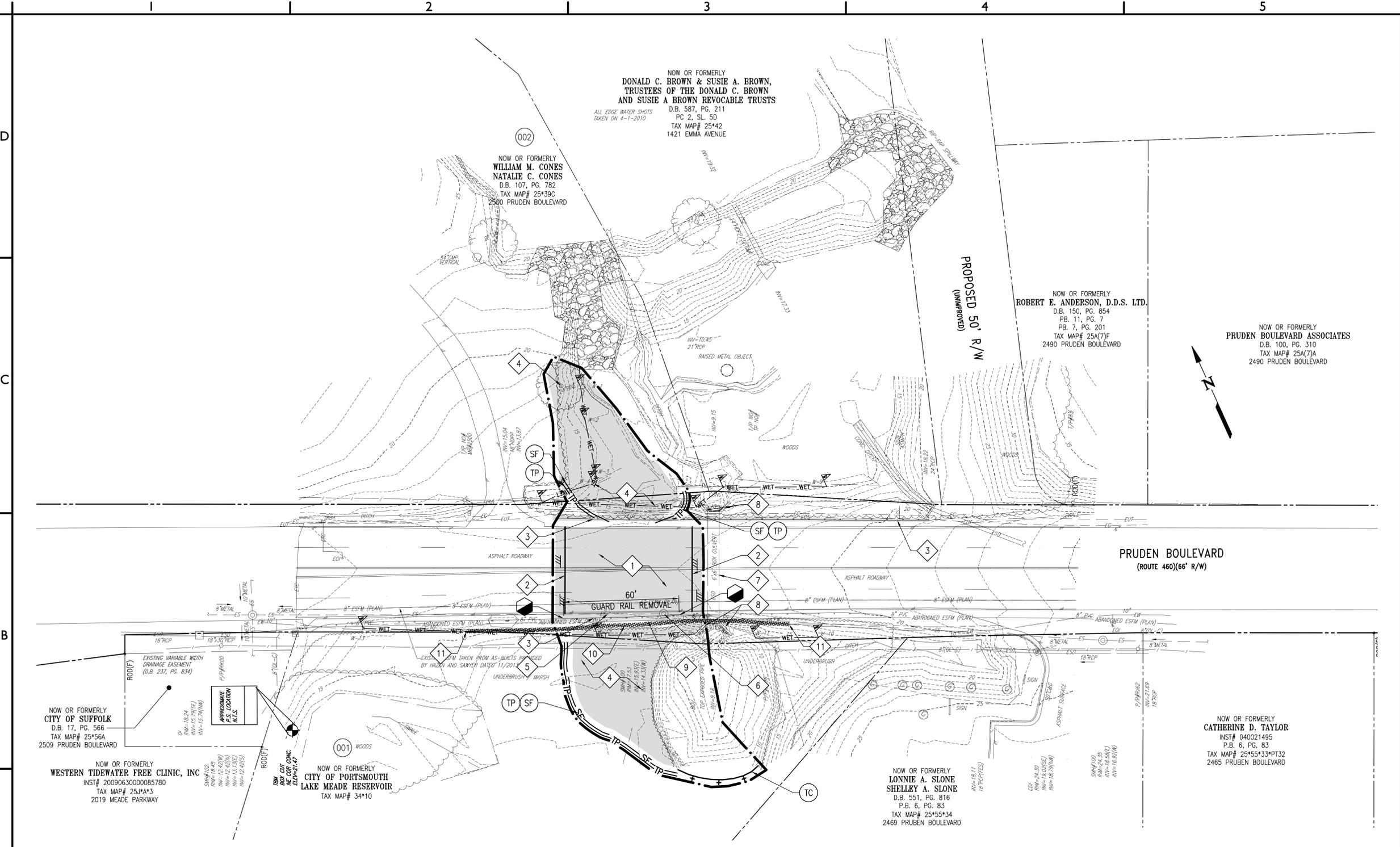


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**DEMOLITION
EROSION AND
SEDIMENT
CONTROL PLAN
CD101**
SHEET 4 OF 15



DEMOLITION NOTES

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. REMOVE PAVEMENT 2. SAWCUT PAVEMENT 3. REMOVE GUARDRAIL 4. REMOVE TREES/SHRUBS 5. REMOVE 8" SANITARY SEWER PIPE 6. REMOVE SANITARY SEWER MH 7. CULVERT TO REMAIN 8. WINGWALLS TO REMAIN 9. REMOVE SANITARY SEWER FORCE MAIN 10. REMOVE WATER LINE | <ol style="list-style-type: none"> 11. LIMITS OF RESTRAINED 10" WATER PIPE. CONTRACTOR SHALL USE SPLIT MEGALUG RETAINER GLANDS. |
|--|--|

GENERAL NOTES

1. FOR THE LIMITS OF UTILITY REMOVAL SEE SHEET C1201.

GRAPHIC SCALE(S)





ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

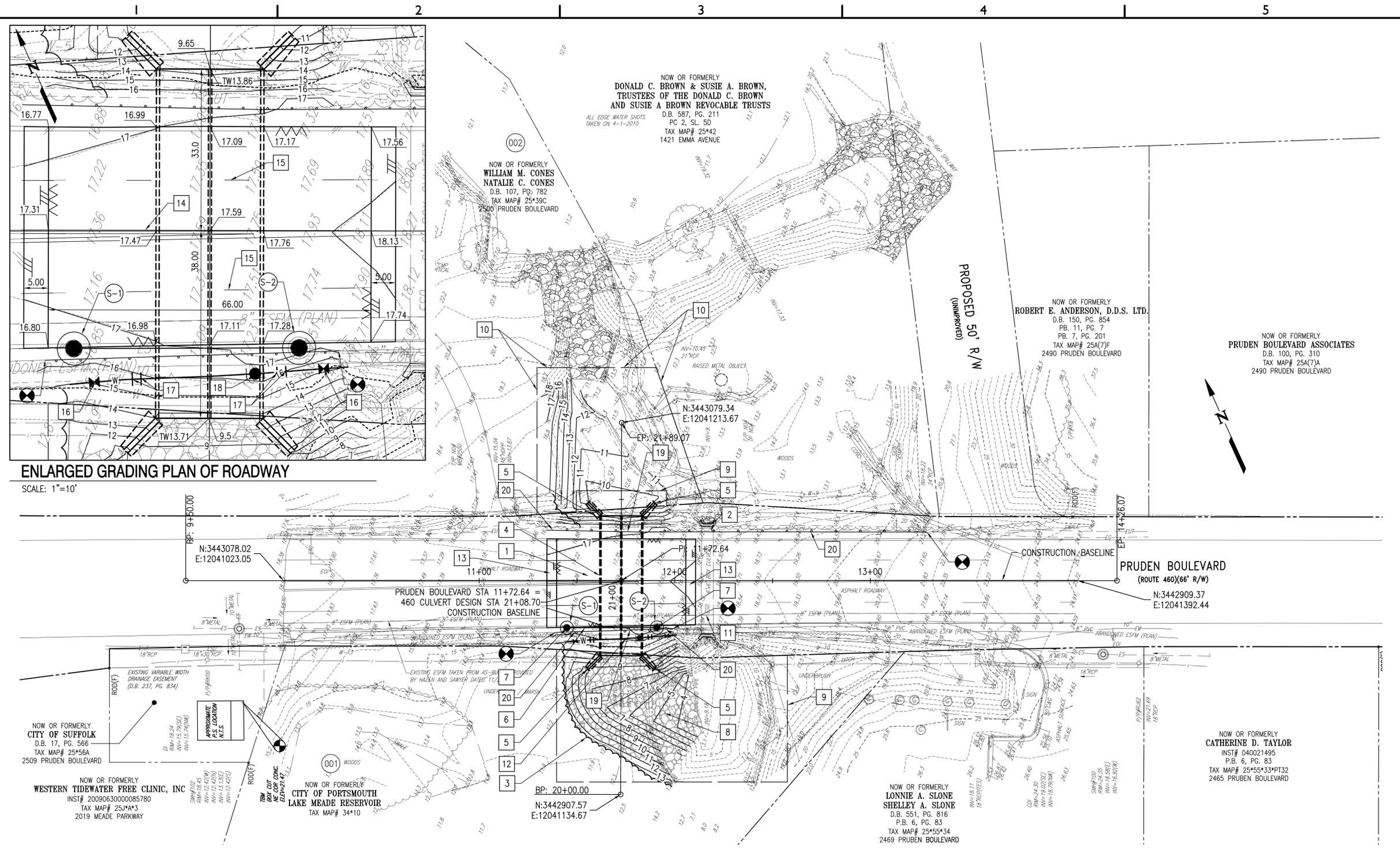
CN NO: 3631.A
DATE: 10/30/14
DESIGN: JPP
DRAWN: GMD
REVIEW: CTA
REVISIONS
No. Date Description By

SITE IMPROVEMENT PLAN

CI101

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ENLARGED GRADING PLAN OF ROADWAY

SCALE: 1"=10'

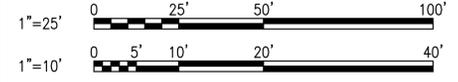
CONSTRUCTION NOTES

1. NEW PAVEMENT, SEE DETAIL ON C-501
2. NEW GUARDRAIL, VDOT STD GR-10
3. NEW TREE LINE
4. NEW VDOT STD BCD-05 10X4 DOUBLE BOX CULVERT
5. NEW VDOT STD BCW-21 WINGWALL
6. NEW 8" DIP, CLASS 52 SANITARY SEWER PIPE, SEE CI201
7. NEW PRECAST CONCRETE SHALLOW MANHOLE, SEE DETAIL ON C-502
8. RIP RAP, VDOT STD CLASS II
9. PROPOSED PERMANENT DRAINAGE EASEMENT
10. PROPOSED TEMPORARY CONSTRUCTION EASEMENT
11. PROVIDE STRUCTURAL SUPPORT FOR THE 8" EXISTING SANITARY SEWER FORCEMAIN
12. OFFSET 10" WATER LINE, SEE CI201
13. MILL AND OVERLAY (2" DEPTH)
14. 4" SOLID YELLOW LINE
15. 6" WHITE BROKEN LANE LINES TO MATCH EXISTING LANE LINES AT BOTH ENDS OF NEW PAVEMENT
16. 10" GATE VALVE, VALVE BOX AND COVER
17. 22 1/2" VERTICAL BEND
18. AIR RELEASE ASSEMBLY
19. NEW GUARDRAIL, VDOT STD BGR-01 WITH TEXAS T-6 RAILING
20. VDOT STD GR-2

SANITARY SEWER SCHEDULE

- (S-1) SANITARY SEWER SHALLOW MANHOLE
N 3442996.13
E 12041144.86
RIM=16.77
INV. IN=14.23(SE)
INV. OUT=14.13(NW)
- (S-2) SANITARY SEWER SHALLOW MANHOLE
N 3442977.12
E 12041186.83
RIM=17.36
INV. IN=15.93(SE)
INV. OUT=14.43(NW)
- (S-2) - (S-1) 46LF - 8" DIP CLASS 52 SANITARY SEWER PIPE @ 0.45%

GRAPHIC SCALE(S)





ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: JPP
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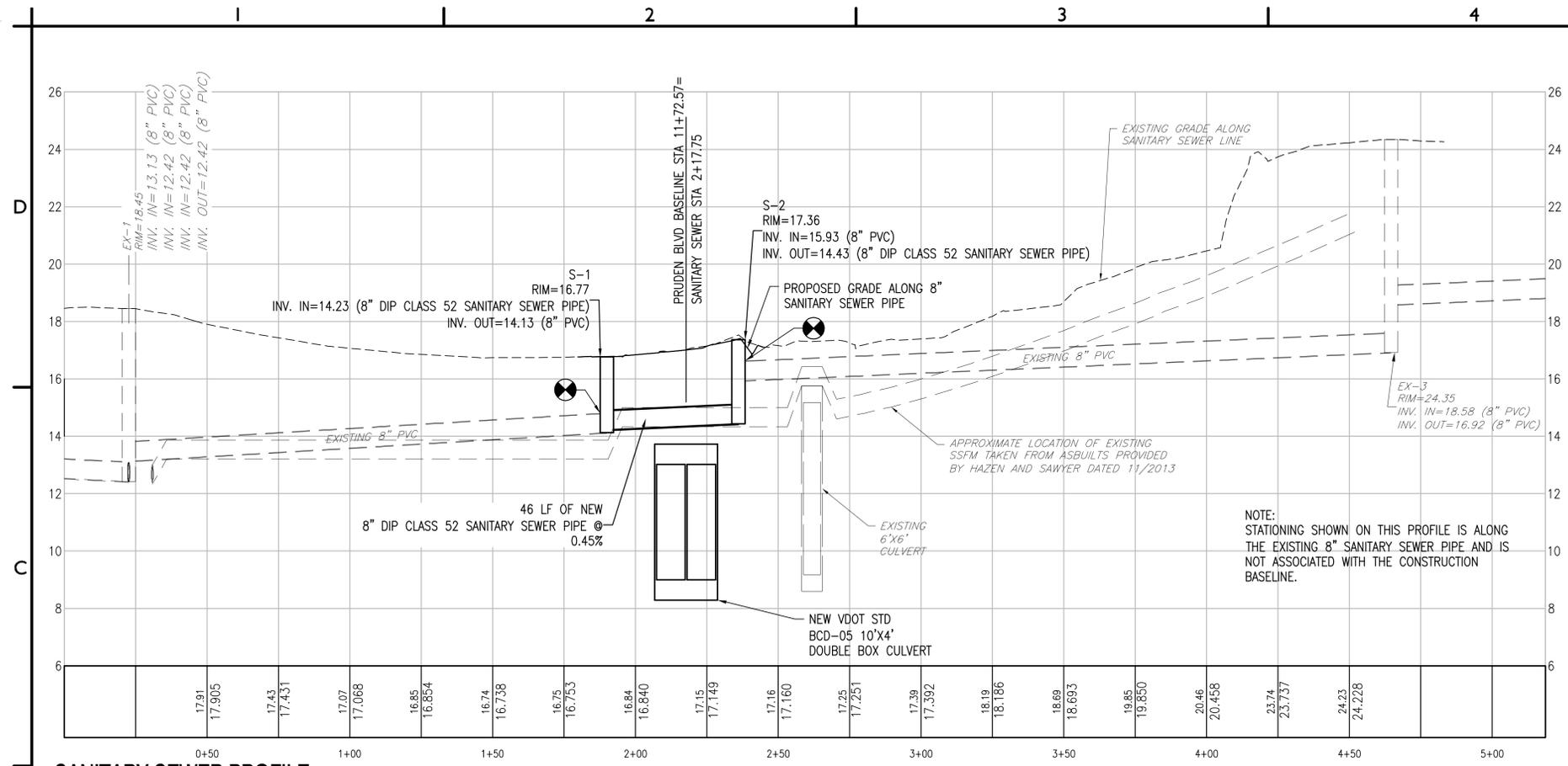
REVISIONS

No.	Date	Description	By

PROFILES

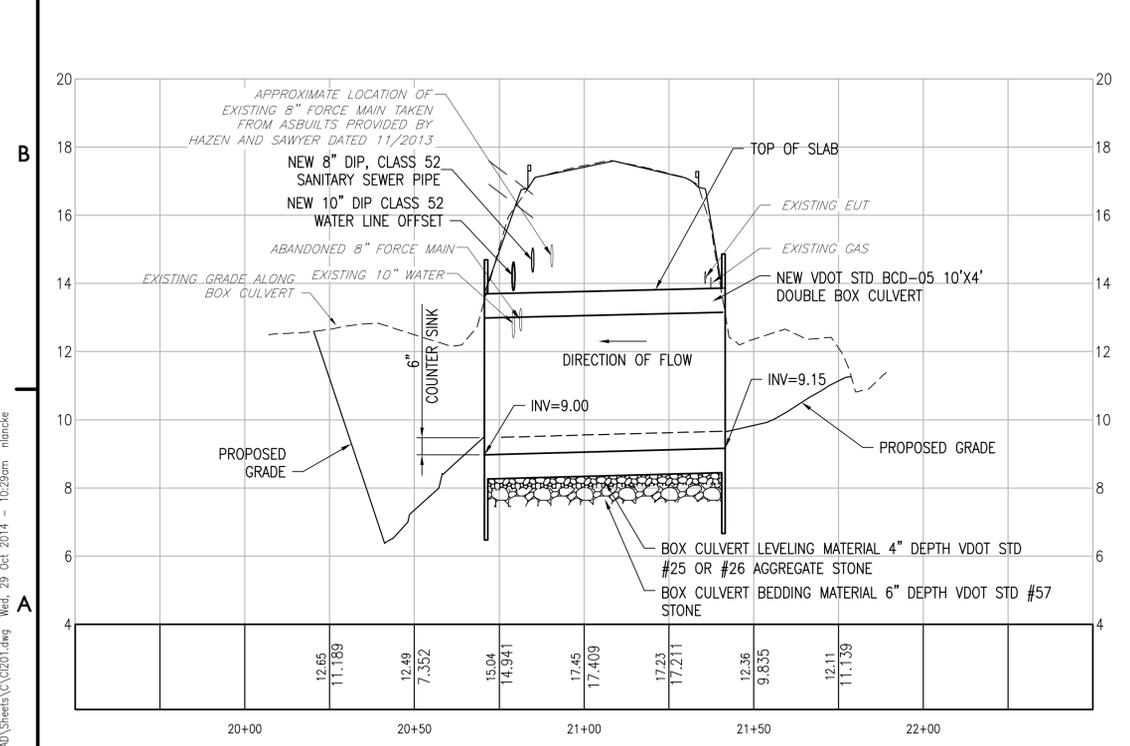
CI201

SHEET 6 OF 15



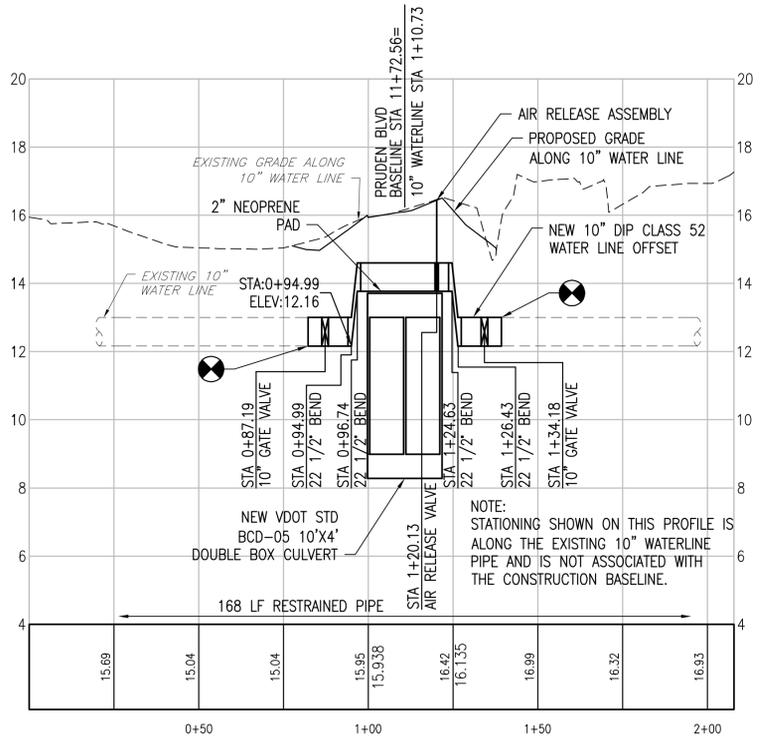
SANITARY SEWER PROFILE

HORIZONTAL: 1"=25' ; VERTICAL: 1"=2.5'



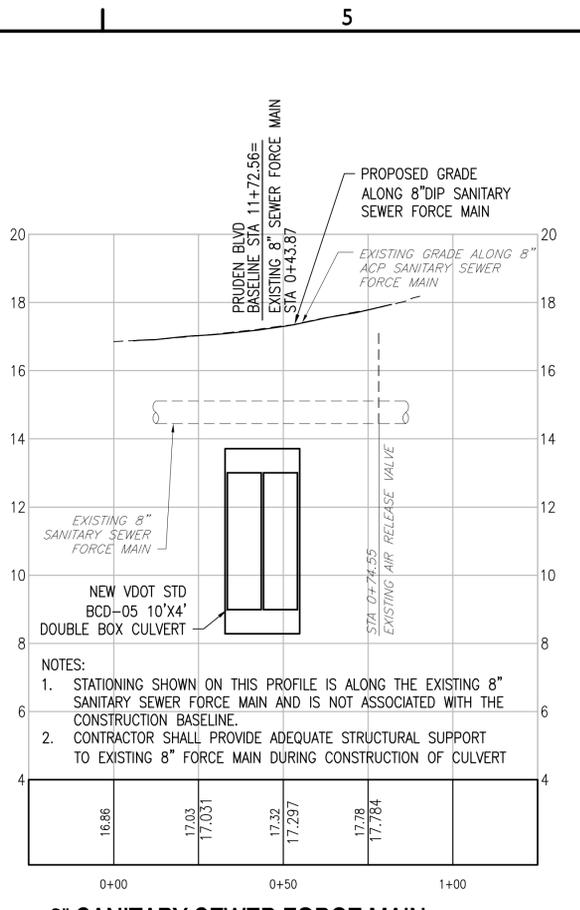
BOX CULVERT PROFILE

HORIZONTAL: 1"=25' ; VERTICAL: 1"=2.5'



10" WATER LINE OFFSET

HORIZONTAL: 1"=25' ; VERTICAL: 1"=2.5'



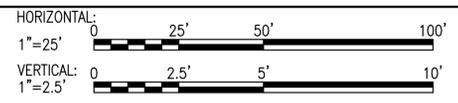
8" SANITARY SEWER FORCE MAIN

HORIZONTAL: 1"=25' ; VERTICAL: 1"=2.5'

UTILITY NOTES:

- BEFORE RELOCATING EXISTING UTILITIES, CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING BENDS AND CONNECTION WITHIN CONSTRUCTION LIMITS.
- CITY RECORDS INDICATE THAT THE ABANDONED 8" FORCE MAIN IS ASBESTOS CEMENT PIPE. CONTRACTOR SHALL DISPOSE OF PIPE ACCORDINGLY. LAWFUL DISPOSAL OF ASBESTOS CEMENT PIPE TO BE PAID FOR BY CONTRACTOR.
- DESIGN RESTRAINTS FOR 10" WATERLINE:
 - DESIGN PRESSURE: 150 PSI
 - SAFETY FACTOR: 1.5
 - MINIMUM COVER: 2.0 FT
- VALVES ARE TO BE RESTRAINED AS DEAD END PIPES.
- CONTRACTOR SHALL PERFORM BYPASS PUMPING FROM MANHOLE @ STA 9+77.34 TO MANHOLE @ STA 14+18.99 ON CONSTRUCTION BASE LINE, SEE SHEET CI101 FOR CONSTRUCTION BASE LINE. A BYPASS PUMPING PLAN MUST BE SUBMITTED TO THE CITY OF SUFFOLK PUBLIC UTILITIES FOR REVIEW AND APPROVAL PRIOR TO REPLACEMENT OF THE SANITARY SEWER.
- DEACTIVATION OF THE WATER MAIN FOR REMOVAL AND RELOCATION WILL REQUIRE THE WORK TO BE ACCOMPLISHED AT NIGHT WHEN DEMANDS ARE LOWER. THE WATER MAIN RELOCATION SHALL BE COORDINATED WITH THE CITY OF SUFFOLK PUBLIC UTILITIES INSPECTION PERSONNEL.

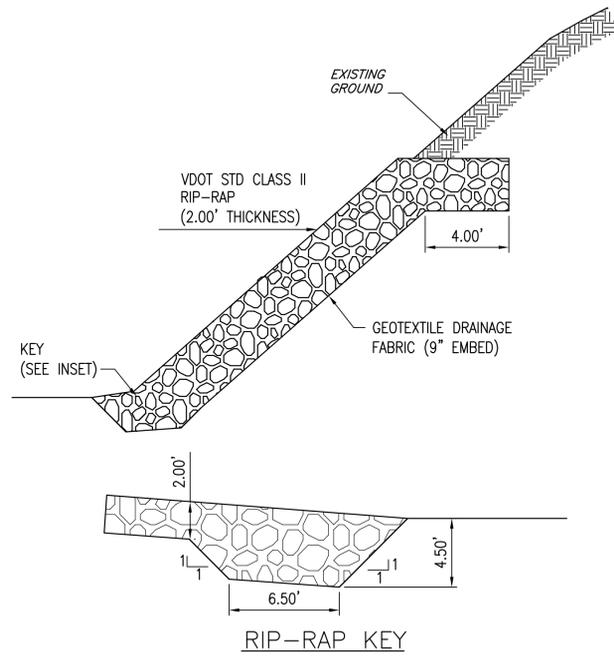
GRAPHIC SCALE(S)



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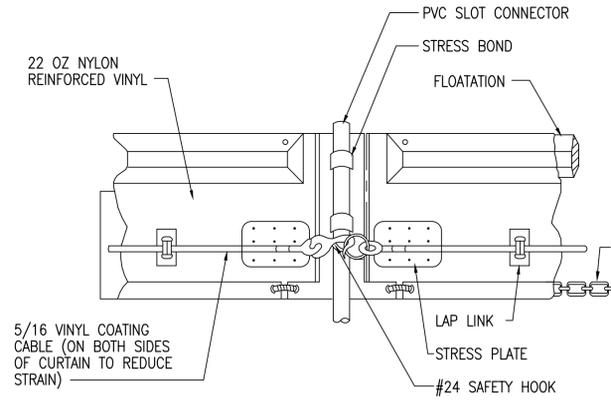


TYPICAL SHORELINE STABILIZATION

NO SCALE

TURBIDITY CURTAIN (TYPE I)

NO SCALE



EROSION AND SEDIMENT CONTROL NOTES

- 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 (LATEST EDITION) AND THE CITY OF SUFFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
- THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING, AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
- ALL EROSION AND SEDIMENT CONTROL MEASURES AND TREE PROTECTION DEVICES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN LAND DISTURBANCE.
- THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
- THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO EXISTING GRAVEL ENTRANCES. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
- STOCKPILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
- THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST, INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC. EFFLUENT FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
- TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.
- A COPY OF THE APPROVED EROSION AND SEDIMENT PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- 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 CITY OF SUFFOLK.
- PERMANENT VEGETATION SHALL NOT BE CONSIDERED ADEQUATELY STABILIZED UNTIL THE VEGETATION IS UNIFORM IN HEIGHT, THICK ENOUGH TO PREVENT EROSION AND MATURE ENOUGH TO SURVIVE.
- A VSMP/VDES PERMIT WILL BE REQUIRED FROM DCR FOR SITES OVER 2,500 SQUARE FEET THAT PRODUCE STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.

CULVERT NOTES

- BACKFILL WITH SELECT MATERIAL - VDOT STD TYPE II COMPACTED TO 95% MAXIMUM DENSITY ASTM D 698 (STANDARD PROCTOR)
- EXCAVATE 2 FEET BEYOND EDGE OF FOUNDATION
- BIAXIAL GEOGRID/ TENSAR BX1100 OR EQUAL. EXTEND TO EXISTING PAVEMENT SUBGRADE ELEVATION. LAP A MINIMUM OF 2 FEET (TYPICAL)
- BOX CULVERT LEVELING MATERIAL VDOT STANDARD CRUSHER RUN #25 OR #26 (4-INCH DEPTH). COMPACT TO NON YIELDING CONDITION. EXTEND STONE COMPLETELY UNDER WINGWALL FOUNDATIONS. STONE SHALL EXTEND A MINIMUM OF 2 FEET OUTSIDE THE PERIMETER OF ALL FOUNDATIONS
- BOX CULVERT BEDDING MATERIAL VDOT STANDARD #57 STONE (6-INCH MINIMUM DEPTH). COMPACT TO NON YIELDING CONDITION. EXTEND STONE COMPLETELY UNDER WINGWALL FOUNDATIONS. STONE SHALL EXTEND A MINIMUM OF 2 FEET OUTSIDE THE PERIMETER OF ALL FOUNDATIONS
- NEW ASPHALT PAVEMENT
- MILL AND OVERLAY (2-INCH DEPTH) VDOT STD SM 9.5A

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

- THE EROSION AND SEDIMENT CONTROL PLAN AND SEQUENCE WILL ADDRESS LAND DISTURBANCE FOR THE ROUTE 460 CULVERT DESIGN PROJECT LOCATED ON PRUDEN BLVD/ROUTE 460 BETWEEN GODWIN BLVD AND THE ROUTE 58 BY-PASS IN SUFFOLK, VIRGINIA.
- THE PROJECT INVOLVES INSTALLATION OF APPROXIMATELY 72 LINEAR FEET OF DOUBLE BOX CULVERT WITH APPROXIMATELY 0.20 ACRES OF DISTURBANCE INCLUDING WATER AND STAGING AREA IMPACTS. THE SITE WILL NOT INCREASE THE IMPERVIOUS COVER.
- THE PROJECT WILL REQUIRE COFFER DAMMING AND DEWATERING TO INSTALL THE DOUBLE BOX CULVERT IN DRY CONDITIONS TO OBTAIN PROPER COMPACTION OF SUPPORTING AND OVERLYING SOILS AND PROTECTING THE LAKE MEADE FROM CONSTRUCTION ACTIVITIES.

EXISTING SITE CONDITIONS

PRUDEN BOULEVARD (ROUTE 460) IS A FOUR-LANE UNDIVIDED URBAN MINOR ARTERIAL LOCATED NORTH OF DOWNTOWN SUFFOLK. A LOW AREA IN THE ROAD NEAR A DRAINAGE WAY CONVEYING RUNOFF FROM SADLER POND SOUTH INTO LAKE MEADE THROUGH AN EXISTING 6 FT X 6 FT BOX CULVERT HAS OVERTOPPED SEVERAL TIMES IN THE PAST AS A RESULT OF STORM EVENTS. THE ROUTE 460 CULVERT WATERSHED DRAINS INTO LAKE MEADE, WHICH MAINTAINS A WATER SURFACE ELEVATION OF APPROXIMATELY 12.7 (NAVD88).

ADJACENT PROPERTY

THE SITE IS BORDERED BY SADLER POND TO THE NORTH AND LAKE MEADE TO THE SOUTH. THE AREA IS RURAL IN CHARACTER.

OFF-SITE AREAS

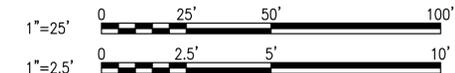
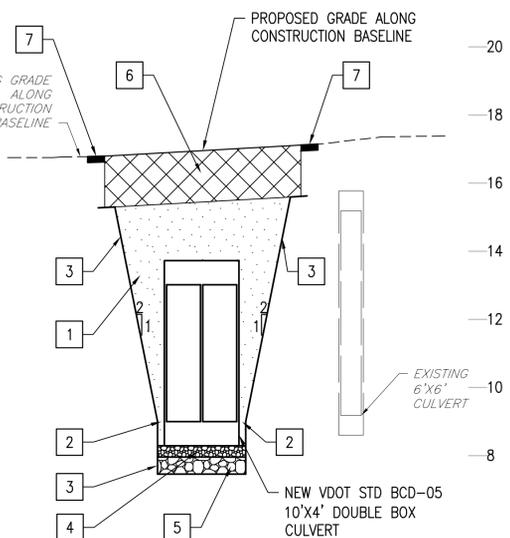
STAGING AND STOCKPILE AREAS WILL BE AT A LOCATION OFFSITE ON PROPERTY TO BE DETERMINED PRIOR TO CONSTRUCTION ACTIVITIES. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED AT THE STAGING AND STOCKPILING AREA AS REQUIRED TO REDUCE EROSION AND SEDIMENTATION.

SOILS

GEOTECHNICAL INFORMATION IS PROVIDED IN THE PROJECT SPECIFICATIONS.

CRITICAL EROSION AREAS

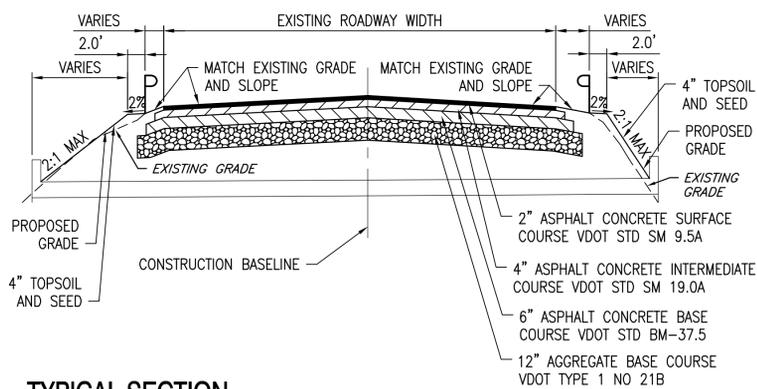
THE EMBANKMENT IS SUBJECT TO EROSION WHEN THE SURFACES ARE DENUDED DURING CONSTRUCTION ACTIVITIES. RISING WATER SURFACES AND WIND-DRIVEN WAVES IMPACTING ALONG THE SHORELINE CAN EXACERBATE EROSION.



CULVERT DETAIL / PROFILE

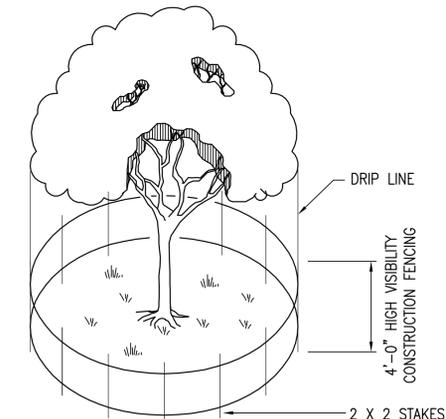
SCALE: HORIZ 1"=25', VERT 1"=2.5'

B



TYPICAL SECTION

NO SCALE



NOTE:
DRIVE STAKES FIRMLY INTO GROUND AT LEAST 12"

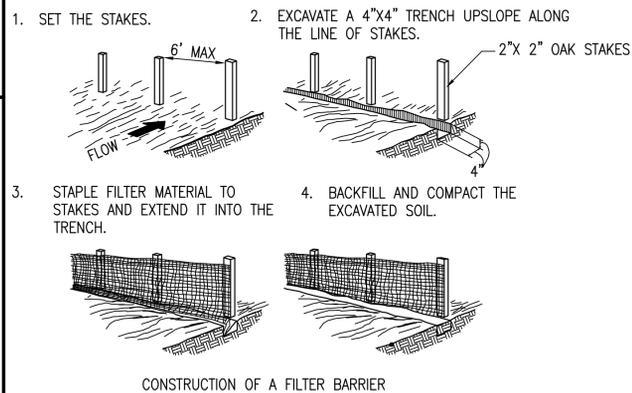
TREE PROTECTION

NO SCALE

CULVERT CONSTRUCTION GENERAL NOTES

- EXCAVATION AND BORING WITHIN THE RIGHT OF WAY SHOULD ONLY BE MADE AFTER APPROPRIATE SHEETING AND SHORING HAS BEEN INSTALLED TO PROTECT WORKERS AND PREVENT SUBSIDENCE OF THE EMBANKMENTS. EXCAVATIONS SHOULD BE MADE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS FOR TYPE C SOIL CONDITIONS IN ADDITION TO ANY CITY OF SUFFOLK REQUIREMENTS.
- EXCAVATION BRACING SYSTEMS SHOULD BE DESIGNED BY THE CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER.
- DEWATERING OF THE BOX CULVERT EXCAVATION SHALL BE CONDUCTED DURING CONSTRUCTION.
- BEDDING SHOULD BE PLACED ALONG THE FULL LENGTH AND WIDTH OF THE BOX CULVERT IN ACCORDANCE WITH VDOT STANDARD 107.04.

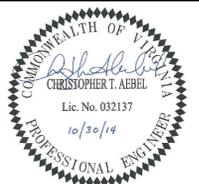
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TEMPORARY SILT FENCE

NO SCALE

4525 MAIN STREET, SUITE 1400
VIRGINIA BEACH, VIRGINIA 23462
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ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: JPP
DRAWN: GMD
REVIEW: CTA

REVISIONS		
No.	Date	Description

DETAILS

C-501

SHEET 7 OF 15

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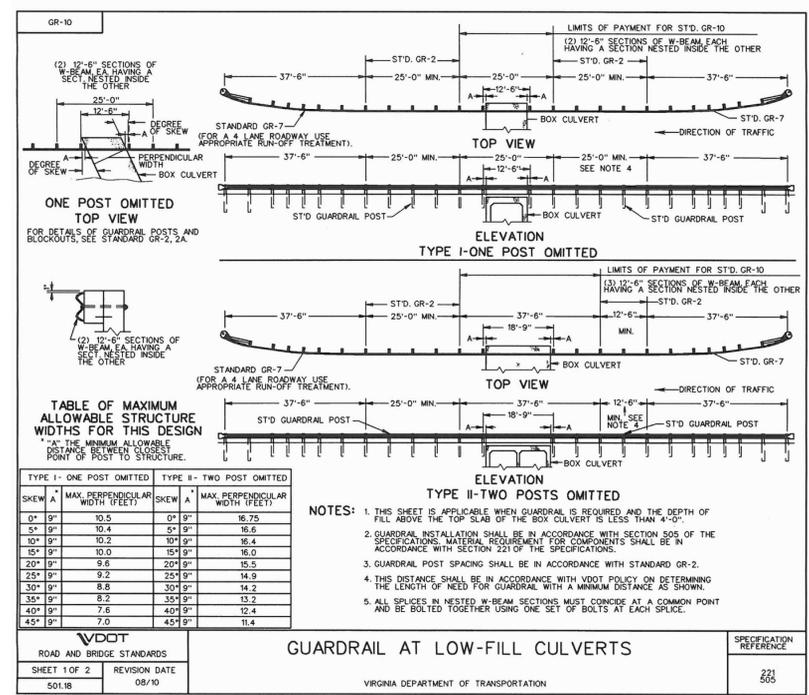
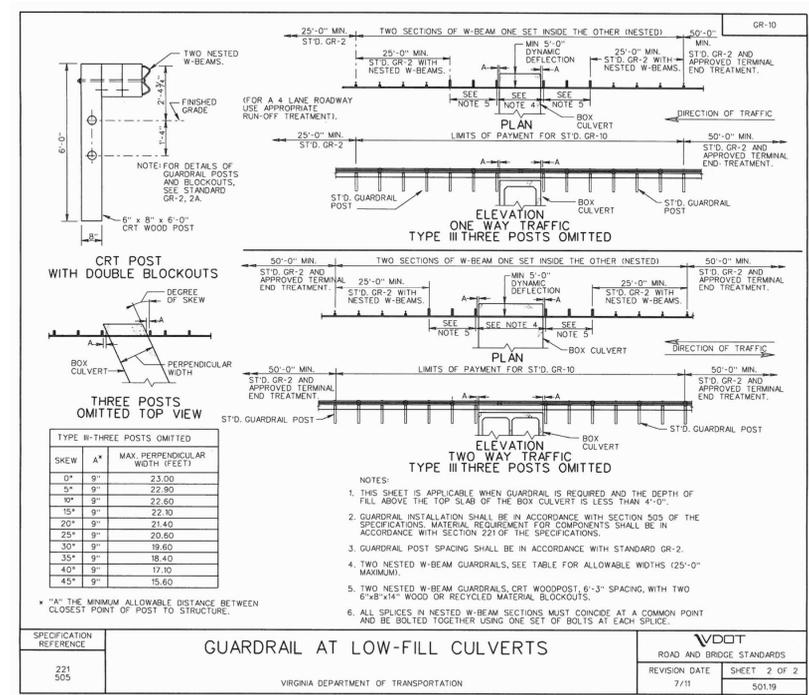
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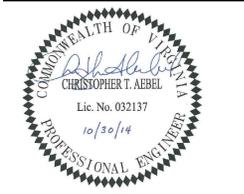
5



VDOT STANDARD GUARDRAIL (DETAIL GR-10)
NO SCALE

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ROUTE 460 CULVERT DESIGN

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DESIGN: JPP
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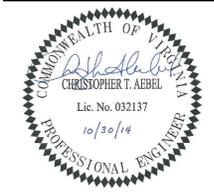
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DETAILS

C-503
SHEET 9 OF 15

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ROUTE 460 CULVERT DESIGN

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SUFFOLK, VIRGINIA

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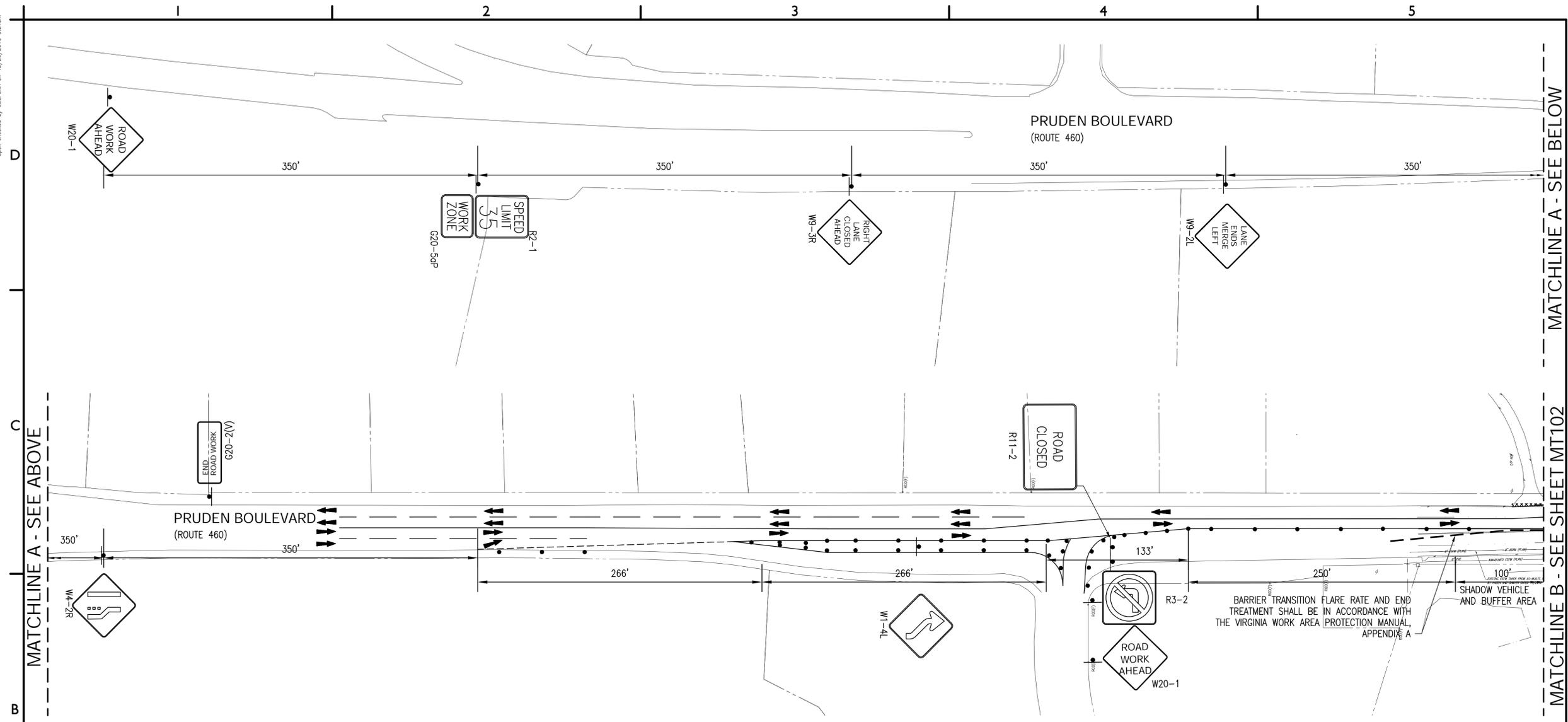
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MAINTENANCE OF TRAFFIC PHASE 1

MT101

SHEET 10 OF 15



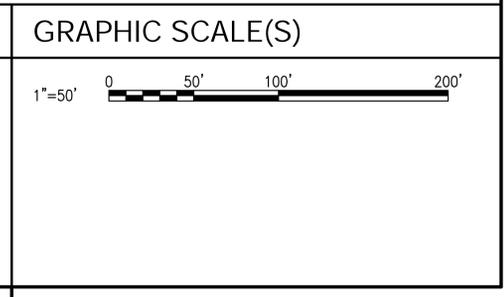
MAINTENANCE OF TRAFFIC PHASE 1

HORIZONTAL: 1"=50'

- NOTES - PHASE I**
- UTILIZE TTC-41, HALF ROAD CLOSURE OPERATION ON A MULTI-LANE ROADWAY OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
 - SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
 - REDUCE SPEED LIMIT TO 35 MPH AND INSTALL CONSTRUCTION SIGNS ON APPROACHES TO CONSTRUCTION AREA.
 - MERGE LEFT LANE OF WEST BOUND PRUDEN BOULEVARD TO THE RIGHT LANE.
 - MERGE EAST BOUND LANES TO THE WEST BOUND LANE THAT IS CLOSED TO WEST BOUND TRAFFIC.
 - WHILE MAINTAINING ONE LANE OF TRAFFIC IN BOTH DIRECTIONS, CONSTRUCT THE RELOCATED UTILITIES AND THE SOUTHERN PORTION OF THE NEW CULVERT.
 - REPLACE PAVEMENT REMOVED DURING CONSTRUCTION.
 - REPLACE GUARDRAIL REMOVED DURING CONSTRUCTION.

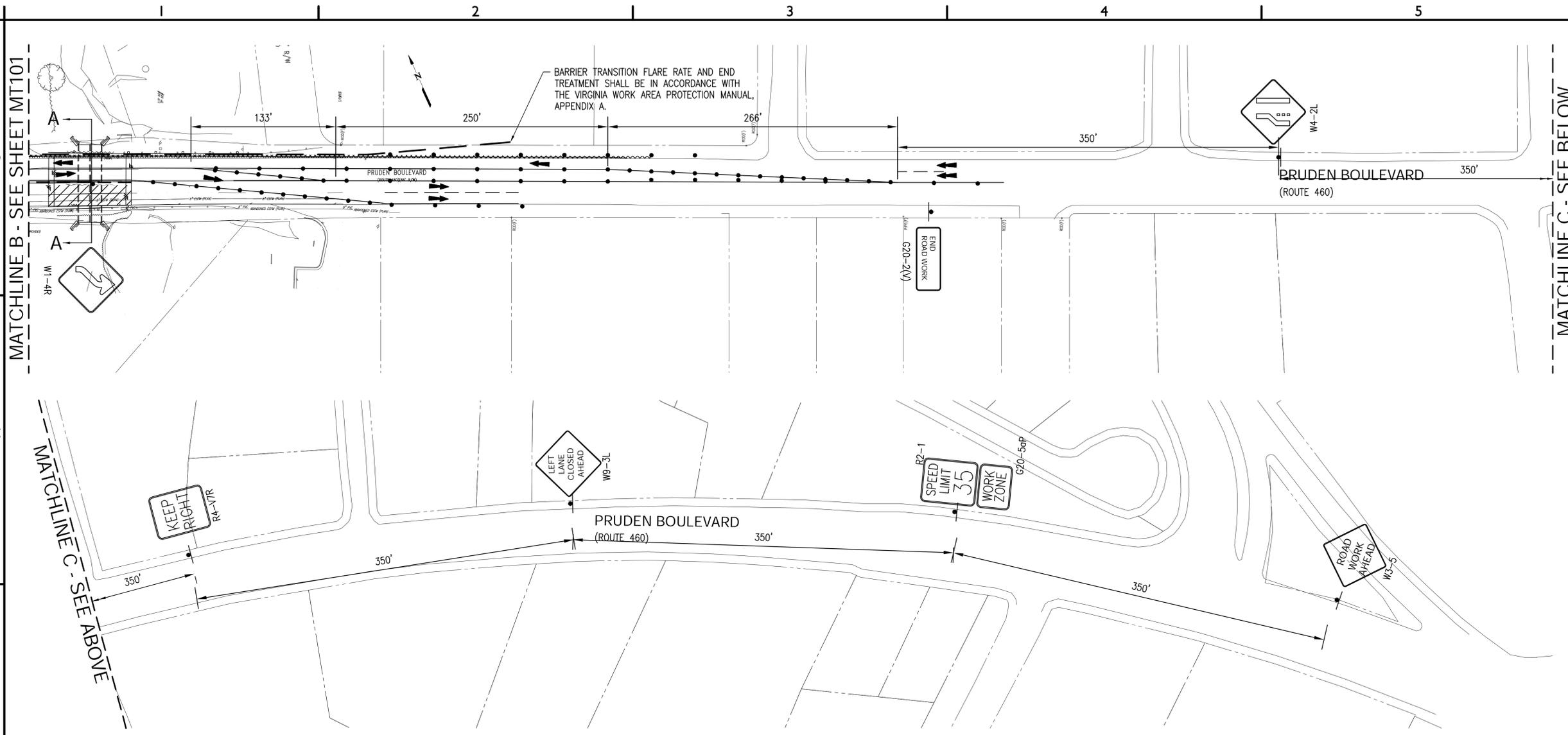
LEGEND

WORK ZONE	TEMPORARY SIGN
GROUP 2 CHANNELIZING DEVICE	VDOT STD MB-10A
TRAFFIC FLOW	IMPACT ATTENUATOR
TEMPORARY PAVEMENT	SHEETPILE WALL
TYPE III BARRICADE	



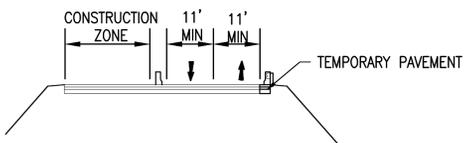
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MAINTENANCE OF TRAFFIC PHASE 1

HORIZONTAL: 1"=50'



TYPICAL SECTION AA - PHASE 1

NO SCALE

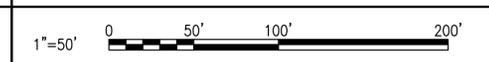
NOTES - PHASE I

1. SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
2. SEE SHEET MT101 FOR PHASE 1 NOTES AND DETAILS.

LEGEND

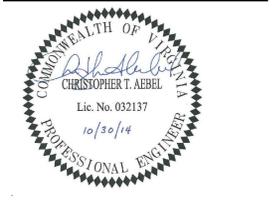
- | | |
|-----------------------------|-------------------|
| WORK ZONE | TEMPORARY SIGN |
| GROUP 2 CHANNELIZING DEVICE | VDOT STD MB-10A |
| TRAFFIC FLOW | IMPACT ATTENUATOR |
| TEMPORARY PAVEMENT | SHEETPILE WALL |
| TYPE III BARRICADE | |

GRAPHIC SCALE(S)



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SUFFOLK, VIRGINIA

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DESIGN:	NAL		
DRAWN:	NAL		
REVIEW:	IDJ		
REVISIONS			
No.	Date	Description	By

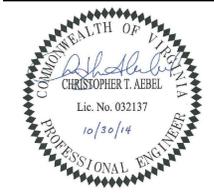
MAINTENANCE OF TRAFFIC PHASE 1

MT102

SHEET 11 OF 15

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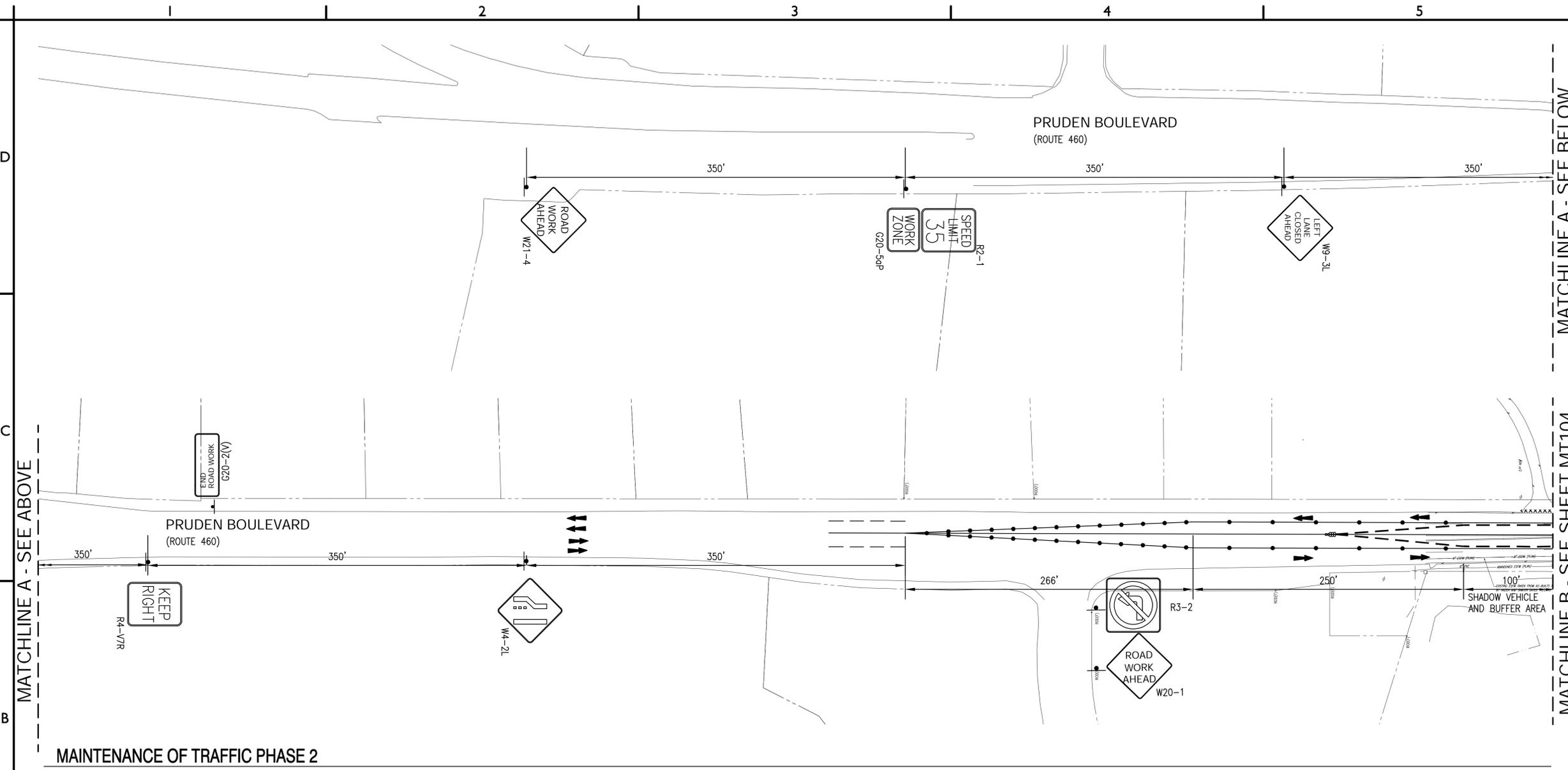
ROUTE 460 CULVERT DESIGN

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SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: NAL
DRAWN: NAL
REVIEW: IDJ

REVISIONS

No.	Date	Description	By



MAINTENANCE OF TRAFFIC PHASE 2

HORIZONTAL: 1"=50'

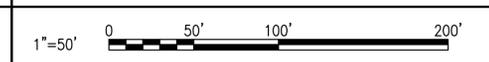
NOTES - PHASE 2

- UTILIZE TTC-42, INTERIOR LANE CLOSURE OPERATION ON A MULTI-LANE ROADWAY OF THE WORK AREA PROTECTION MANUAL.
- SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
- REDUCE SPEED LIMIT TO 35 MPH AND INSTALL CONSTRUCTION SIGNS ON APPROACHES TO CONSTRUCTION AREA.
- MERGE EAST BOUND AND WEST BOUND LEFT LANES TO THE RIGHT LANE.
- WHILE MAINTAINING ONE LANE OF TRAFFIC IN THE EAST BOUND AND WEST BOUND DIRECTIONS, CONSTRUCT THE CENTER PORTION OF THE NEW CULVERT.
- REPLACE PAVEMENT REMOVED DURING CONSTRUCTION.

LEGEND

- WORK ZONE
- GROUP 2 CHANNELIZING DEVICE
- TRAFFIC FLOW
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- TEMPORARY SIGN
- VDOT STD MB-10A
- IMPACT ATTENUATOR
- SHEETPILE WALL

GRAPHIC SCALE(S)

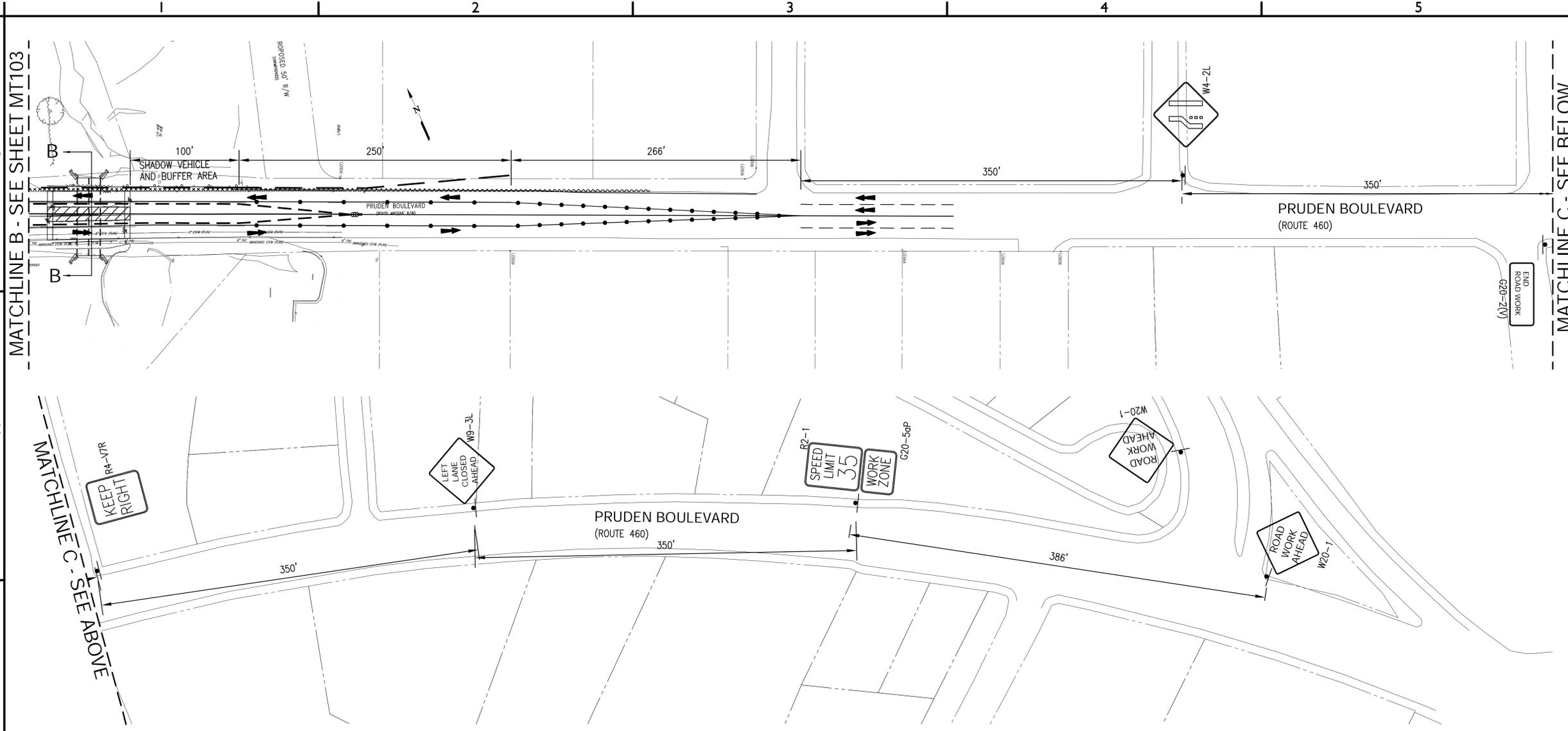


MAINTENANCE OF TRAFFIC PHASE 2

MT103

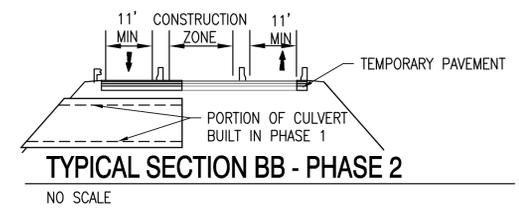
Spell checked by GDFPDA on 12/29/2010 9:24am

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MAINTENANCE OF TRAFFIC PHASE 2

HORIZONTAL: 1"=50'



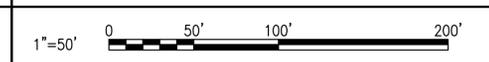
NOTES - PHASE 2

1. SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
2. SEE SHEET MT103 FOR PHASE 2 NOTES AND DETAILS.

LEGEND

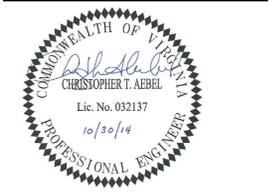
- WORK ZONE
- GROUP 2 CHANNELIZING DEVICE
- TRAFFIC FLOW
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- TEMPORARY SIGN
- VDOT STD MB-10A
- IMPACT ATTENUATOR
- SHEETPILE WALL

GRAPHIC SCALE(S)



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757-455-5800 FAX 757-455-5638
WWW.CLARKNEXSEN.COM



ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: NAL
DRAWN: NAL
REVIEW: IDJ

REVISIONS

No.	Date	Description	By

MAINTENANCE OF TRAFFIC PHASE 2

MT104

SHEET 13 OF 15

Spell checked by GSEFDMA on 12/29/2010 9:24am

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ROUTE 460 CULVERT DESIGN

CITY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

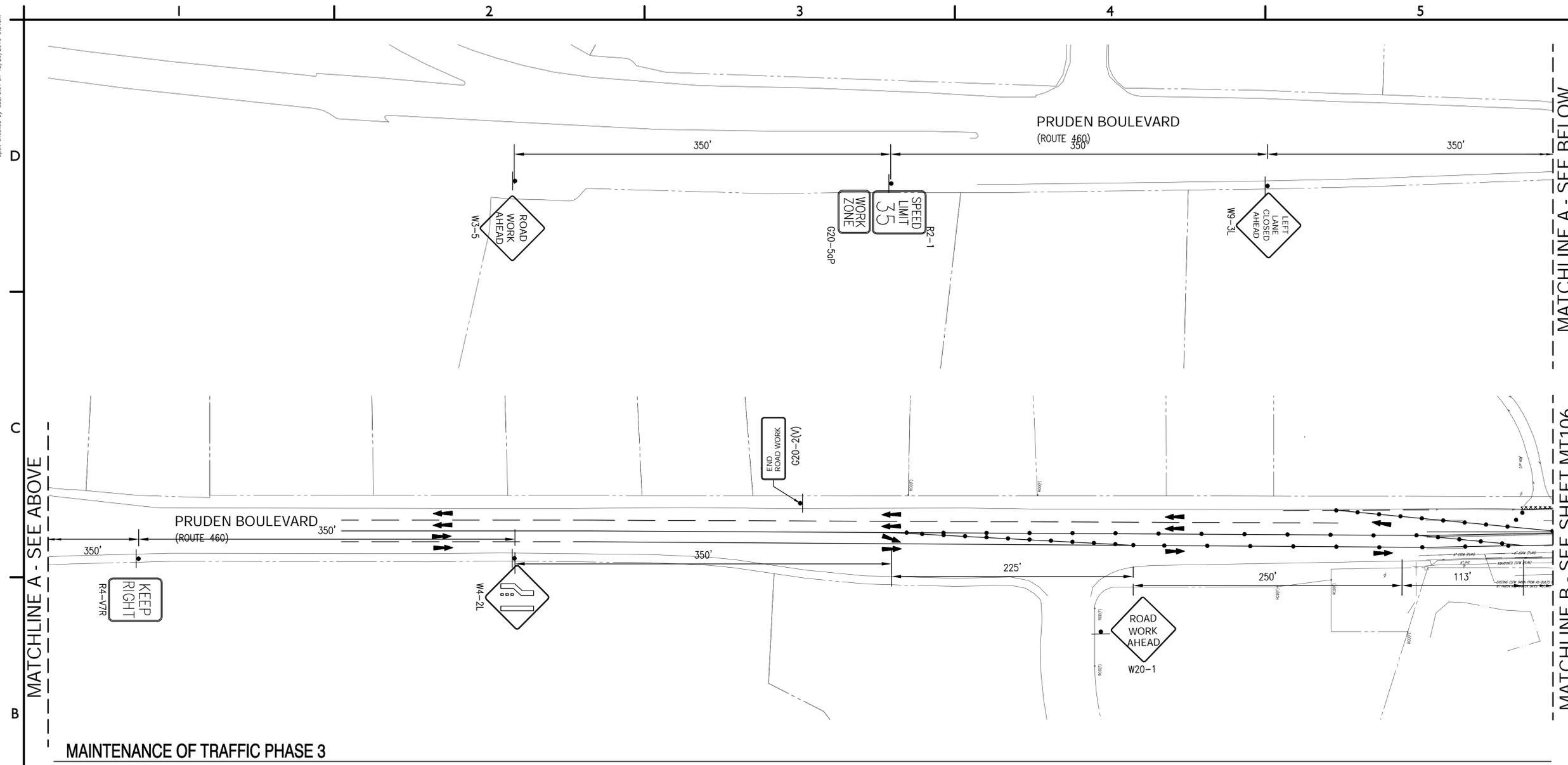
CN NO: 3631.A
DATE: 10/30/14
DESIGN: NAL
DRAWN: NAL
REVIEW: IDJ
REVISIONS

No.	Date	Description	By

MAINTENANCE OF TRAFFIC PHASE 3

MT105

SHEET 14 OF 15



MAINTENANCE OF TRAFFIC PHASE 3

HORIZONTAL: 1"=50'

NOTES - PHASE 3

- UTILIZE TTC-41, HALF ROAD CLOSURE OPERATION ON A MULTI-LANE ROADWAY OF THE WORK AREA PROTECTION MANUAL.
- SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
- REDUCE SPEED LIMIT TO 35 MPH AND INSTALL CONSTRUCTION SIGNS ON APPROACHES TO CONSTRUCTION AREAS.
- MERGE THE LEFT LANE OF EAST BOUND PRUDEN BOULEVARD TO THE RIGHT LANE.
- MERGE THE WESTBOUND LANES TO THE EASTBOUND LANE THAT IS CLOSED TO EASTBOUND TRAFFIC.
- WHILE MAINTAINING ONE LANE OF TRAFFIC IN THE EASTBOUND AND WESTBOUND DIRECTIONS, CONSTRUCT THE NORTHERN PORTION OF THE NEW CULVERT.
- REPLACE PAVEMENT REMOVED DURING CONSTRUCTION.
- REPLACE GUARDRAIL REMOVED DURING CONSTRUCTION.

LEGEND

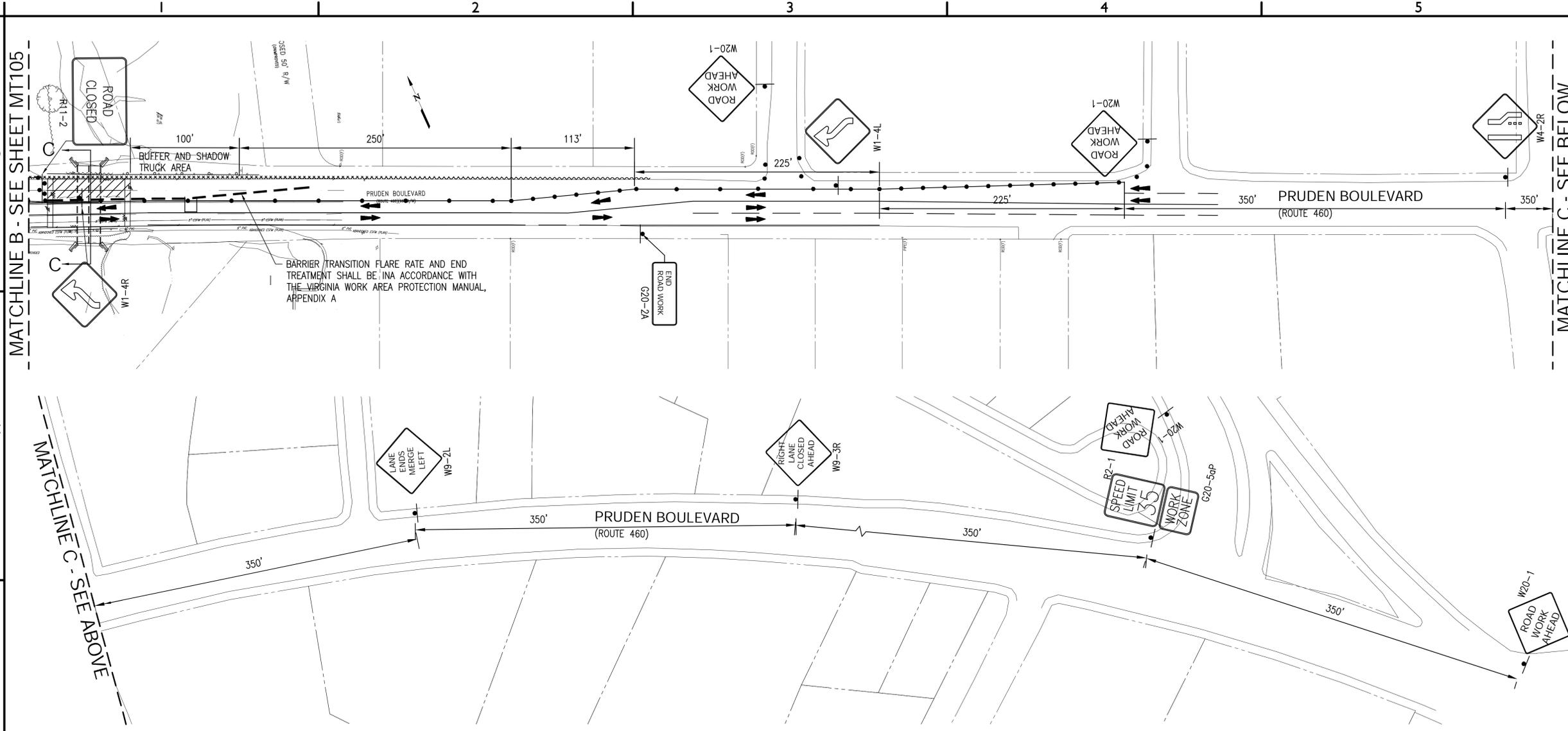
- WORK ZONE
- GROUP 2 CHANNELIZING DEVICE
- TRAFFIC FLOW
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- TEMPORARY SIGN
- VDOT STD MB-10A
- IMPACT ATTENUATOR
- SHEETPILE WALL

GRAPHIC SCALE(S)



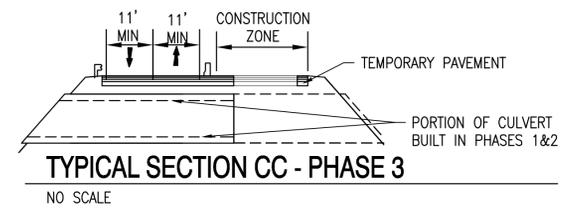
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MAINTENANCE OF TRAFFIC PHASE 3

HORIZONTAL: 1"=50'



TYPICAL SECTION CC - PHASE 3
NO SCALE

NOTES - PHASE 3

1. SEE SHEET C-001 FOR MAINTENANCE OF TRAFFIC NOTES.
2. SEE SHEET MT105 FOR PHASE 3 NOTES AND DETAILS.

LEGEND

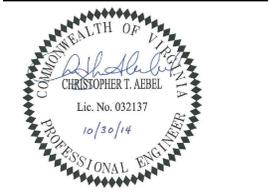
WORK ZONE	TEMPORARY SIGN
GROUP 2 CHANNELIZING DEVICE	VDOT STD MB-10A
TRAFFIC FLOW	IMPACT ATTENUATOR
TEMPORARY PAVEMENT	SHEETPILE WALL
TYPE III BARRICADE	

GRAPHIC SCALE(S)



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ROUTE 460 CULVERT DESIGN

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DEPARTMENT OF PUBLIC WORKS
SUFFOLK, VIRGINIA

CN NO: 3631.A
DATE: 10/30/14
DESIGN: NAL
DRAWN: NAL
REVIEW: IDJ

REVISIONS

No.	Date	Description	By

MAINTENANCE OF TRAFFIC PHASE 3

MT106

SHEET 15 OF 15