

December 15, 2020 - 10:18am By: Kevin.VanOrd

Sheet List Table	
Sheet Number	Sheet Title
000-000	COVER
000-001	GENERAL NOTES
600-001	PLAN & PROFILE
600-002	PLAN & PROFILE
600-003	PLAN & PROFILE
600-004	PLAN & PROFILE
600-005	PLAN & PROFILE
800-001	DETAILS
800-002	E&SC DETAILS
800-003	E&SC DETAILS CONT.
800-004	NCG01 GROUND STABILIZATION AND MATERIALS HANDLING
800-005	NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING
900-001	WORK ZONE ADVANCE WARNING
900-002	TEMPORARY LANE CLOSURE
900-003	TRAFFIC CONTROL DESIGN LENGTHS
900-004	TRAFFIC CONTROL BUFFER & SIGHT DISTANCE
900-005	TRAFFIC CONTROL BARRIER FLARE RATES
900-006	TRAFFIC CONTROL SIGN SPACING



GAS DISTRIBUTION SYSTEM IMPROVEMENTS MEMORIAL DRIVE BRIDGE GAS MAIN RELOCATION

CONTACTS	
OWNER:	GREENVILLE UTILITIES COMMISSION 401 SOUTH GREENE STREET GREENVILLE, NC 27834 PHONE: (252) 551-1594 CONTACT: DILLON WADE, P.E.
CIVIL ENGINEER:	KIMLEY-HORN AND ASSOCIATES, INC. 4525 MAIN STREET, SUITE 1000 VIRGINIA BEACH, VA 23462 PHONE: (757) 548-7353 CONTACT: RYAN CLARK, P.E.
24-HOUR CONTACT:	GUC EMERGENCY HOTLINE PHONE: (855) 767-2482

SITE INFO
5525' X 8" STEEL PIPE
MAOP = 60 PSIG



NOT TO SCALE
PROJECT LOCATION

PREPARED IN THE OFFICE OF:
Kimley»Horn

4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462
PHONE: (757) 213-8600

REVISIONS				ISSUED FOR CONSTRUCTION BY DATE
NO.	DATE	DESCRIPTION	BY	

This document, together with the concepts and designs presented herein, as an instrument of services, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.		
Copyright Kimley-Horn and Associates, Inc., 2020	SEAL:	
DRAWING:	DATE: DECEMBER 14, 2020	JOB NUMBER: 116780000

K:\VAB_Civil\116780000 - GUC Memorial Bridge\CADD\Plan Sheets\000-000 Cover & Notes.dwg

SITE PLAN ABBREVIATIONS

AB	ANCHOR BOLT	FAB	FABRICATE	MAINT	MAINTENANCE	S	SOUTH/SLOPE
AC	ALTERNATING CURRENT/ ASBESTOS CEMENT	F&C	FRAME AND COVER	MATL	MATERIAL	SAN	SANITARY
ACT	ACOUSTIC TILE	F&G	FLUSHING CONNECTION	MAX	MAXIMUM	SBL	SURVEY BASELINE
AD	ADDITIONAL	FD	FLOOR DRAIN	MECH	MECHANICAL	SCH	SCHEDULE
ADDL	ADJUSTABLE	FDN	FOUNDATION	MEMB	MEMBRANE	SD	STORM/SITE DRAIN
AFF	AGGREGATE	FE	FIRE EXTINGUISHER	MET	METAL	SECT	SECTION
AGGR	ALUMINUM	FF	FINISH FLOOR	MFS	MILLION GALLONS	SERV	SERVICE
AL	ALLOWANCE/ALLOWABLE	FH	FIRE HYDRANT	MGD	MILLION GALLONS PER DAY	SEW	SEWER
ALT	ALTERNATE	FIN	FINISH	MH	MANHOLE	SF	SQUARE FEET
APPROX	APPROXIMATE	FIX	FIXTURE	MIN	MINIMUM	SHT	SHEET
ARCH	ARCHITECTURAL	FL	FLASHING/FLOOR	MISC	MISCELLANEOUS	SI	SQUARE INCH
ASB	ASBESTOS	FLEX	FLEXIBLE	MJ	MECHANICAL JOINT	SIM	SIMILAR
ASPH	ASPHALT	FLG	FLANGE	MLDG	MOLDING	SJ	STEEL JOIST
AT	ASPHALT TILE	FLUOR	FLUORESCENT	MO	MASONRY OPENING	SQ	SPECIFICATION
		FLXC	FLEXIBLE CONNECTION	MOD	MODIFY/MODIFIED	SQUARE	SQUARE
		FM	FORCE MAIN	MON	MONUMENT	SS	SANITARY SEWER
		FPRF	FIREPROOF	MOT	MOTOR	SST	STAINLESS STEEL
		FRP	FIBERGLASS REINFORCED POLYESTER LAMINATE	MTD	MOUNTED	ST	STREET
B	BORING	FT	FEET	MTG	MOUNTING	STA	STATION
BD	BOARD	FTG	FOOTING/FITTING	MULT	MULTIPLE	STD	STANDARD
BFE	BOTTOM OF FITTING ELEV	FURR	FURRING/FURRED			STG	STORAGE
BFV	BUTTERFLY VALVE					STR	STIRRUP
BITUM	BITUMINOUS					STR	STEEL
BL	BUILDING LINE					STR	STRUCTURAL
BLDG	BUILDING					SUB	SUBSTITUTE
BLK	BLOCK					SUP	SUPPLY
BM	BENCH MARK					SUPT	SUPERINTENDENT
BOC	BACK OF CURB	G	GAS/GAS LINE	N	NORTH	SUR	SURFACE
BOT	BOTTOM	GA	GAUGE	NA	NOT APPLICABLE	SUSP	SUSPENDED
BRG	BEARING	GAL	GALLON	NF	NEAR FACE	SW	SWITCH
BRK	BRICK	GALV	GALVANIZED	NGVD	NATIONAL GEODETIC	SWBD	SWITCHBOARD
BRZ	BRONZE	GC	GENERAL CONTRACTOR	NIC	NOT IN CONTRACT	SWD	SIDE WATER DEPTH
BSMT	BASEMENT	GEN	GENERATOR	NO	NUMBER	SYM	SYMMETRICAL
BT	BOLT	GI	GALVANIZED IRON	NOM	NOMINAL		
BUR	BUILT-UP ROOFING	GL	GLASS	NPW	NON POTABLE WATER		
BV	BALL VALVE	GPM	GALLONS PER MINUTE	NTS	NOT TO SCALE		
		GR	GRADE			T	TREAD
C	CLOSET/CARPET/CHANNEL	GRV	GRAVEL			T&B	TOP AND BOTTOM
CAB	CABINET	GV	GATE VALVE			T&G	TONGUE AND GROOVE
CB	CATCH BASIN	GW	GUY WIRE	OC	ON CENTER	TAN	TANGENT
C/C	CENTER TO CENTER	GWB	GYPSPUM WALL BOARD	O.D.	OUTSIDE DIAMETER	TBM	TEMPORARY BENCH MARK
CE	CONSTRUCTION EASEMENT	GWF	GLAZED WALL FINISH	O.F.	OUTSIDE FACE	TC	TOP OF CURB
CEM	CEMENT	GYP	GYPSPUM	OFF	OFFICE	TCHH	TRAFFIC CONTROL HAND HOLD
CER	CERAMIC			OPER	OPERATOR	TDH	TOTAL DYNAMIC HEAD
CF	CUBIC FEET			OPER	OPERATOR	TECH	TECHNICAL
CFM	CUBIC FEET PER MINUTE			OPNG	OPENING	TEL	TELEPHONE
CI	CAST IRON/CUBIC INCHES			OPP	OPPOSITE	TEMP	TEMPERATURE
CIP	CAST IRON PIPE			ORIG	ORIGINAL	TER	TERRAZZO
C	CENTER LINE	H	HEIGHT	OT	OPEN TRUSS	THERMO	THERMOSTAT
CL	CHLORINE	HDW	HARDWARE	OVHD	OVERHEAD	THK	THICK
CLG	CEILING	HEX	HEXAGONAL			THRU	THROUGH
CLKG	CAULKING	HM	HOLLOW METAL			TOD	TOP OF DECK
CLR	CLEAR	HORZ	HORIZONTAL			TOF	TOP OF FOOTING
CMP	CORRUGATED METAL PIPE	HP	HORSEPOWER			TOM	TOP OF MASONRY/MANHOLE
CMU	CONCRETE MASONRY UNIT	HPT	HIGH POINT	PAR	PARALLEL	TOS	TOP OF SLAB
CO	CLEANOUT	HTR	HEATER	PC	POINT OF CURVE/PIECE	TOW	TOP OF WALL
COL	COLUMN	HVAC	HEATING, VENTILATION AND AIR CONDITIONING	PCC	POINT OF COMPOUND CURVE	TOL	TOLERANCE
CONC	CONCRETE			PCF	POUNDS PER CUBIC FOOT	TPS	TWISTED PAIR SHIELDED
CONST	CONSTRUCTION	HW	HOT WATER	PE LINING	POLYETHYLENE LINING	TRANS	TRANSFORMER
CONT	CONTINUOUS	HWL	HIGH WATER LEVEL	PERF	PERFORATED	TYP	TYPICAL
CONTR	CONTRACTOR	HWY	HIGHWAY	PERP	PERPENDICULAR		
CORP	CORPORATION	HYD	HYDRAULIC	PI	POINT OF INTERSECTION	UG	UNDERGROUND
CORR	CORRIDOR			PL	PROPERTY LINE/PLATE	UH	UNIT HEATER
CP	CONCRETE PLANK			PNL	PANEL	UNFIN	UNFINISHED
CRS	COURSE			PP	POWER POLE	UR	URNAL
CT	CERAMIC TILE			PREFAB	PREFABRICATED	UTIL	UTILITY
CTJ	CONTROL JOINT			PRV	PRESSURE RELIEF VALVE		
CU	COPPER			PS	PUMPING STATION		
CV	CHECK VALVE	I	IRON	PSF	POUNDS PER SQUARE FOOT		
CW	COLD WATER	ID	INSIDE DIAMETER	PSI	POUNDS PER SQUARE INCH		
CY	CUBIC YARD	IF	INSIDE FACE	PT	POINT OF TANGENT/POINT	VAC	VACUUM
		IN	INCH	PTN	PARTITION	VAT	VINYL ASBESTOS TILE
DC	DIRECT CURRENT	INCL	INCLUDED	PV	PLUG VALVE	VCP	VITRIFIED CLAY PIPE
DET	DETAIL	INF	INFLUENT	PVC	POLYVINYL CHLORIDE	VEL	VELOCITY
DF	DRINKING FOUNTAIN	INS	INSULATION	PVC	POINT OF VERTICAL CURVE	VENT	VENTILATING/VENTILATION
DIA (Ø)	DIAMETER	INT	INTERIOR	PVI	POINT OF VERTICAL INTERSECTION	VERT	VERTICAL
DIAG	DIAGONAL	INV	INVERT	PVMT	PAVEMENT	VOL	VOLUME
DIM	DIMENSION			PVT	POINT OF VERTICAL TANGENCY	VP	VENT PIPE
DIP	DUCTILE IRON PIPE			PW	POTABLE WATER	VWC	VINYL WALL COVERING
DISCH	DISCHARGE						
DIST	DISTRIBUTION						
DJ	DOUBLE JOIST			QTY	QUANTITY		
DL	DEAD LOAD	J	JOIST			W	WEST/WIDTH
DN	DOWN	JB	JUNCTION BOX			W/	WITH
DOZ	DOZEN	JCT	JUNCTION			WC	WATER CLOSET
DR	DOOR	JT	JOINT			WF	WIDE FLANGE
DWG	DRAWING			R	RADIUS/RISER	WH	WALL HYDRANT
DWL	DOWEL			RCP	REINFORCED CONCRETE PIPE	WI	WROUGHT IRON
DVP	DOMINION VIRGINIA POWER			RD	ROAD/ROOF DRAIN	WL	WATER LEVEL
				RECIR	RECIRCULATION	WIL	WATER LINE
E	EAST/EASEMENT			RECP	RECEPTACLE	WO	WINDOW OPENING
EA	EACH			RECT	RECTANGULAR	W/O	WITHOUT
ECC	ECCENTRIC	L	LENGTH/ANGLE	RED	REDUCER	WP	WATER PROOFING
EF	EACH FACE	LA	LINE AHEAD	REF	REFERENCE	WPF	WATER PROOFING
EFF	EFFLUENT	LAB	LABORATORY	REG	REGISTER	WPT	WALL PENETRATING TYPE
EIP	EXIST IRON PIPE	LAM	LAMINATED	REINF	REINFORCING	WSE	WATER SURFACE ELEVATION
EL OR ELEV	ELEVATION	LAT	LATERAL	REM	REMOVE	WSP	WEATHERSTRIP
ELEC	ELECTRIC/ELECTRICAL	LAV	LAVATORY	REQD	REQUIRED	WT	WEIGHT
ELL	ELBOW	LB	POUND/LINE BACK	REST	RESTRAINED	W.T.	WALL THICKNESS
ENGR	ENGINEER	LF	LINEAR FEET	REV	REVISE	WV	WATER VALVE
ENT	ENTRANCE	LG	LONG	RF	ROOF	WWF	WELDED WIRE FABRIC
EOG	EDGE OF GRAVEL	LL	LONG LEG VERTICAL	RFG	RESTRAINED JOINT		
EOP	EDGE OF PAVEMENT	LLH	LONG LEG HORIZONTAL	RJ	RESTRAINED JOINT		
EQ	EQUAL	LLV	LONG LEG VERTICAL	RM	ROOM		
EQPT	EQUIPMENT	LP	LIGHT POLE	RND	ROUND		
EW	EACH WAY	LPT	ROUGH POINT	RO	ROUGH OPENING		
EX	EXISTING	LT	LIGHT	RPM	REVOLUTIONS PER MINUTE	YD	YARD
EXC	EXCAVATE	LTO	LIGHTING	RR	RAILROAD	YR	YEAR
EXH	EXHAUST	LVR	LOUVER	RT	RIGHT		
EXP	EXPANSION	LWL	LOW WATER LEVEL	RTU	REMOTE TERMINAL UNIT		
EXT	EXTERIOR			RW	RAW WATER		
					RIGHT OF WAY		

GUC MEMORIAL DRIVE BRIDGE REPLACEMENT - BILL OF MATERIALS									
		ITEM #	QTY.	UNIT	NOM. SIZE (IN.)	W.T.	SCH.	GRADE	DESCRIPTION
PIPE	1.0	1.1	1463	LF	8	0.322	STD	X-52	PIPE - 8" NOMINAL DIAMETER, 0.322" W.T., ERW, API 5L, GR X-52, EXTERNALLY COATED WITH 12-14 MILS FBE, PREFERRED PRODUCT 3M SCOTCHKOTE 226N/6233
		1.2	4572	LF	8	0.322	STD	X-52	PIPE - 8" NOMINAL DIAMETER, 0.322" W.T., ERW, API 5L, GR X-52, EXTERNALLY COATED WITH 12-14 MILS FBE, PREFERRED PRODUCT 3M SCOTCHKOTE 226N/6233 AND MIN. 60 MILS TOPCOAT ARO, PREFERRED PRODUCT POWERCREE
ELBOWS	4.0	4.1	2	EA	8	0.322	STD	Y-52	ELL, 90 DEG - LR, 8", 0.322" WT, WELD, CONTINUOUS INTERNAL DIAMETER 7.981" MIN. I.D., FIELD SEGMENTING 1% OVALITY, GR WPHY-52, MSS SP75
		4.2	2	EA	8	0.322	STD	Y-52	ELL, 45 DEG - LR, 8", 0.322" WT, WELD, CONTINUOUS INTERNAL DIAMETER 7.981" MIN. I.D., FIELD SEGMENTING 1% OVALITY, GR WPHY-52, MSS SP75
TEE-IN FITTINGS	5.0	5.1	2	EA	8	0.322	STD	Y-52	TEE, SPHERICAL 3-WAY - 8", SHORTSTOPP STYLE W/ COMPLETION PLUG, ANSI 150, DESIGNED TO ASME B31.8 WITH DESIGN FACTOR 0.50, TDW PART NUMBER 06-7225-0000
		5.2	4	EA	2	N/A	N/A	N/A	THREAD-O-RING (TOR), 2" DIA. BRANCH PIPE X 8" DIA. RUN PIPE, ANSI 150, MATERIALS DESIGNED FOR NATURAL GAS SERVICE
END CAPS	6.0	6.1	4	EA	8	0.322	STD	Y-52	CAP - 8", 0.322" W.T., WELD, GR WPHY-52, MSS SP75

NOTES:
1. PIPE QUANTITIES INCLUDE +10% ADDED LENGTH.



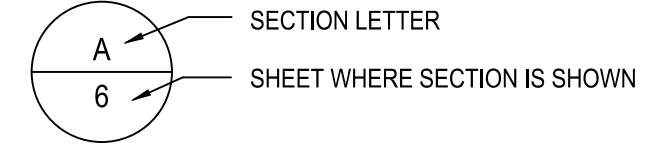
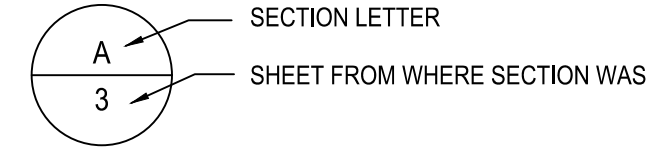
GENERAL NOTES:

- EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE OWNER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED. AFTER COMPLETION OF THE PROJECT THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES WHERE A GOOD STAND OF GRASS HAS BEEN ESTABLISHED AND EROSION IS NO LONGER EVIDENT. REMOVAL OF THE REMAINDER OF THE EROSION CONTROL DEVICES SHALL OCCUR AS OTHER AREAS ARE ESTABLISHED. REMOVAL OF THE EROSION CONTROL DEVICES SHALL BE PERMITTED ONLY WITH THE PRIOR APPROVAL OF THE OWNER.
- ALL AREAS DISTURBED BY GRADING, EXCAVATION, AND GENERAL CONSTRUCTION SHALL BE SEEDED, MULCHED, AND RESTORED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL STABILIZED, ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR DIVERT SEDIMENT LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
- LOCATIONS OF EXISTING SHOWN UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION, ORIENTATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO EXCAVATION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL VERIFY EXACT MATERIALS, LOCATION, ELEVATION, DIMENSIONS, AND LAYOUT OF EXISTING PIPING TO BE CONNECTED TO PRIOR TO ORDERING MATERIALS.
- TYPICAL DEPTH OF COVER FOR BURIED PIPELINE SHALL BE 4 FEET UNLESS OTHERWISE SHOWN OR SPECIFIED.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SHEETING REQUIRED FOR THE INSTALLATION. ALL EXCAVATIONS SHALL BE KEPT WITHIN THE DESIGNATED EASEMENT WIDTHS. EXCAVATION WITHIN PAVED AREAS IS PROHIBITED, UNLESS OTHERWISE SHOWN OR SPECIFIED. SHEETING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE APPROPRIATE COMPANY ANY ADDITIONAL SUPPORT OF EXISTING POWER POLES AS REQUIRED FOR TRENCH EXCAVATION. ALL COSTS OF SUCH WORK SHALL BE PAID BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE AND REINSTALL ALL EXISTING FENCE AS REQUIRED FOR THE INSTALLATION. ANY ADDITIONAL FENCE MATERIALS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY CONSTRUCTION AREAS. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT.
- THE CONTRACTOR SHALL RESTORE GRADE TO PRE CONSTRUCTION CONDITION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- CONSTRUCTION ENTRANCES SHALL BE PLACED AS NEEDED BY THE CONTRACTOR ACCORDING TO THE DRAWING STANDARD DETAILS.
- CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING BONDED TO EXISTING PIPING DURING CONSTRUCTION.
- SLOPES AND GROUND COVER ARE TO BE RESTORED WITHIN FIVE (5) WORKING DAYS.
- CONTRACTOR TO VERIFY DEPTH OF EXISTING UTILITIES BY TEST PIT AND ADJUST DEPTH OF BORE ACCORDINGLY.
- CONTRACTOR SHALL COORDINATE WITH THE LOCAL WATER PROVIDER FOR THE HYDROSTATIC TEST WATER.

CONSTRUCTION SEQUENCE

- OBTAIN APPROPRIATE CONSTRUCTION PERMITS
- INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES
- CLEAR AND GRUB
- ROUGH GRADE SITE
- EXCAVATE AND INSTALL GAS PIPELINES AND ASSOCIATED INFRASTRUCTURE
- FINISH FINAL GRADING AND SURFACE RESTORATION
- REMOVE EROSION AND SEDIMENTATION CONTROL MEASURES. (E&S MEASURES SHALL REMAIN UNTIL ENTIRE SITE IS APPROPRIATELY REESTABLISHED)

LEGEND

E&S SYMBOLS	SECTION AND DETAIL KEYING
 INLET PROTECTION  CULVERT INLET PROTECTION	<p>DRAWINGS ARE CROSS REFERENCED IN THE FOLLOWING METHOD:</p> <p>(A) A SECTION CUT ON SHEET 3 IS IDENTIFIED AS FOLLOWS:</p>  <p>(B) THE SECTION SHOWN ON SHEET 6 IS IDENTIFIED AS FOLLOWS:</p>  <p>STANDARD DETAILS ARE REFERENCED BY A UNIQUE SEVEN DIGIT NUMBER AND ARE SHOWN ON THE DRAWINGS BY ONE OF TWO METHODS:</p> <p>2000003 — REFERENCED ITEM</p> <p>OR</p> <p>SEE 2000003 — REFERENCED ITEM</p> <p>STANDARD DETAILS ARE COMPILED IN APPROXIMATE NUMERICAL ORDER IN</p>

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adoption by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.


© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
 PITT COUNTY, NORTH CAROLINA

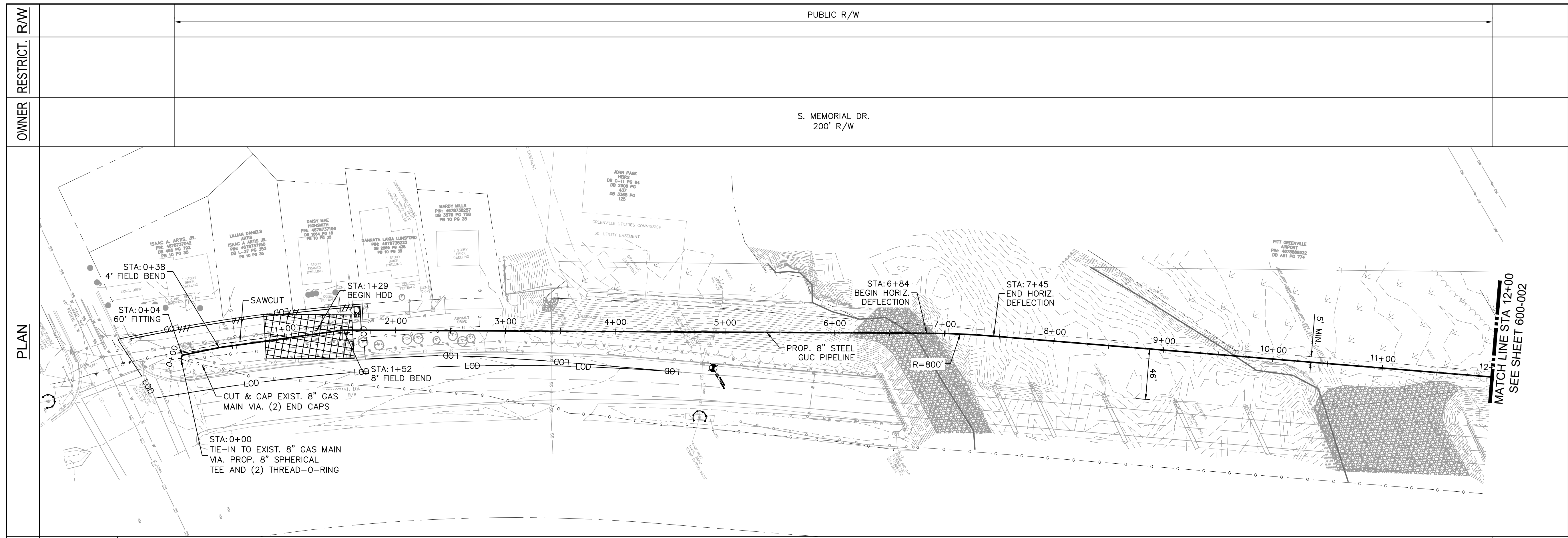
SHEET TITLE: **GENERAL NOTES**

DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

SEAL: 

KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 000-001
 SHEET INDEX: 2 OF 18

December 15, 2020 1:10:30pm by: Kevin VonOrt



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OH OVERHEAD POWER LINE
- SS SANITARY SEWER LINE
- S STORM LINE
- SFM SANITARY SEWER FORCE MAIN
- UGT UG TELECOMMUNICATIONS
- W SUBSURFACE WATER
- RW SUBSURFACE RECLAIMED WATER
- G SUBSURFACE GAS
- E SUBSURFACE ELECTRIC
- UK SUBSURFACE UNKNOWN UTILITY
- ACCESS PATH
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- SILT FENCE
- TPF TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- HAYBALE LINE
- CONSTRUCTION EASEMENT
- MATTING
- CONSTRUCTION ENTRANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- POND
- MILL AND OVERLAY
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

PIPE BAR

DETAIL	1	1	1
PIPE			B
COATING	A	A	
LENGTH (LF)	4'	144'	1052'
FITTINGS	3	1	
CAT. PROTECTION			

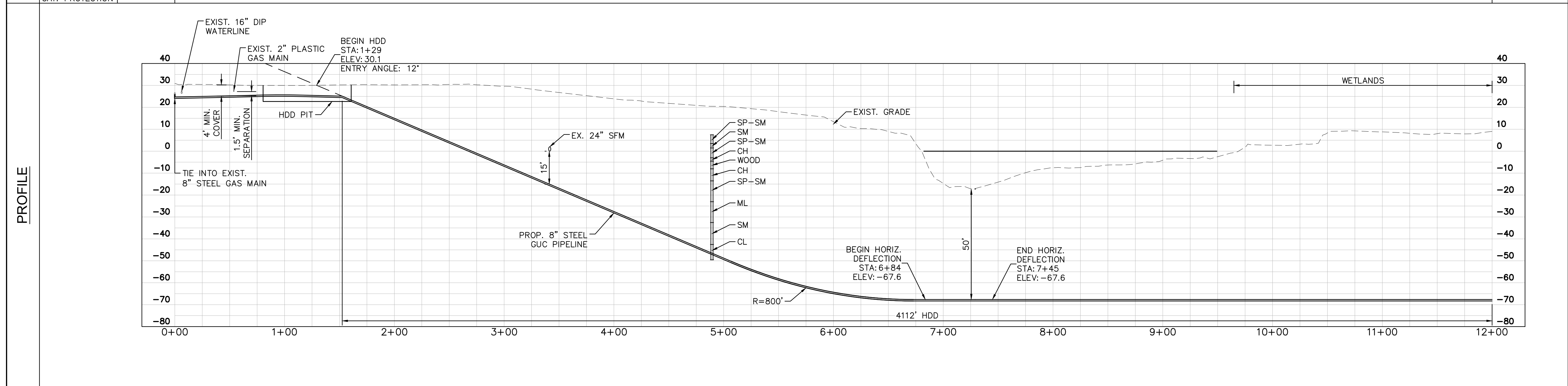
0 25 50 100
HORIZONTAL SCALE: 1"=50'

MATERIAL

PIPE
1 = 8.625" O.D. 0.322" W.T., API-5L X-52, ERW

PIPE COATING
A = MIN. 12-14 MILS FBE
B = MIN. 12-14 MILS FBE, DUAL COAT W/ 60 MILS POWERCONCRETE

FITTINGS
1 = 90° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
2 = 45° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
3 = 8" SPHERICAL TEE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 12.5 25 50
VERTICAL SCALE: 1"=25'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

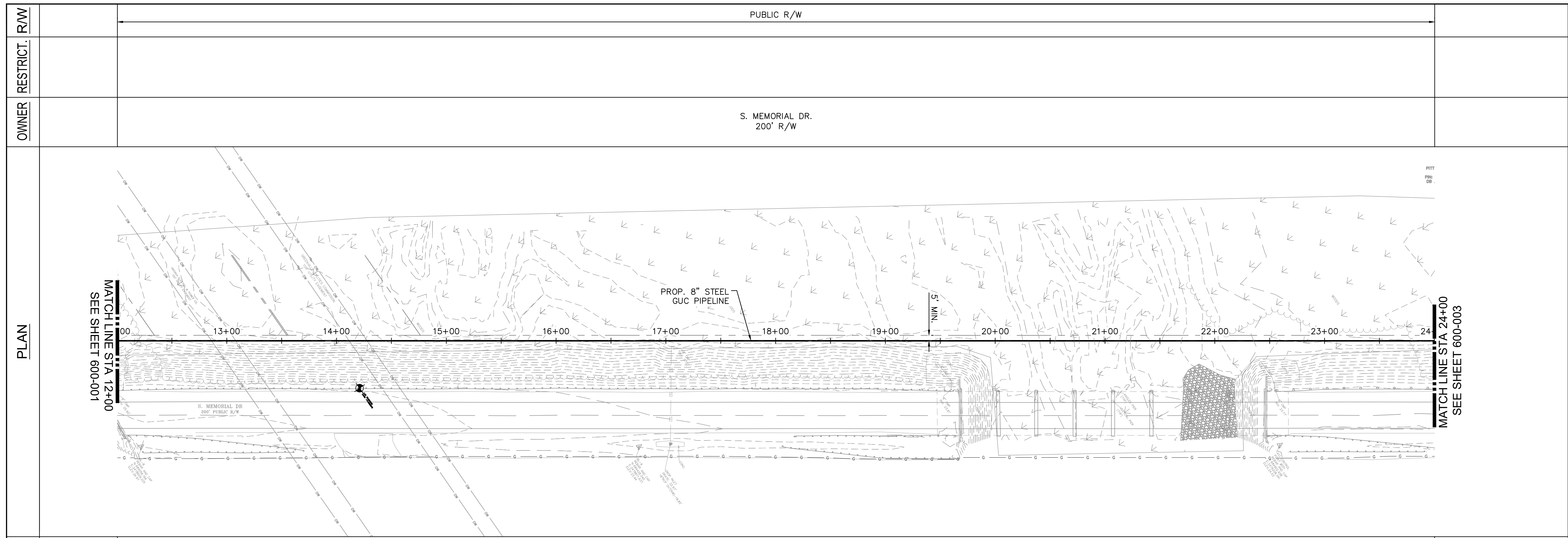
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 44899 P.Y. AND C. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 600-001
SHEET INDEX: 3 OF 18

© 2020 Kimley-Horn & Associates, Inc.

December 15, 2020 - 10:18am By: Kevin.VanOrd

R:\VAB_CAD\116780000 - GC Memorial Bridge\CAD\Plan Sheets\600-000 Plan & Profile.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OH OVERHEAD POWER LINE
- SS SANITARY SEWER LINE
- S SANITARY SEWER FORCE MAIN
- SFM SANITARY SEWER FORCE MAIN
- UGT UG TELECOMMUNICATIONS
- W SUBSURFACE WATER
- RW SUBSURFACE RECLAIMED WATER
- G SUBSURFACE GAS
- E SUBSURFACE ELECTRIC
- UK SUBSURFACE UNKNOWN UTILITY
- ACCESS PATH
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- SILT FENCE
- TPF TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- HAYBALE LINE
- CONSTRUCTION EASEMENT
- MATTING
- CONSTRUCTION ENTRANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- POND
- MILL AND OVERLAY
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

DETAIL	PIPE	COATING	LENGTH (LF)	FITTINGS	CAT. PROTECTION
	1	B	1200'		

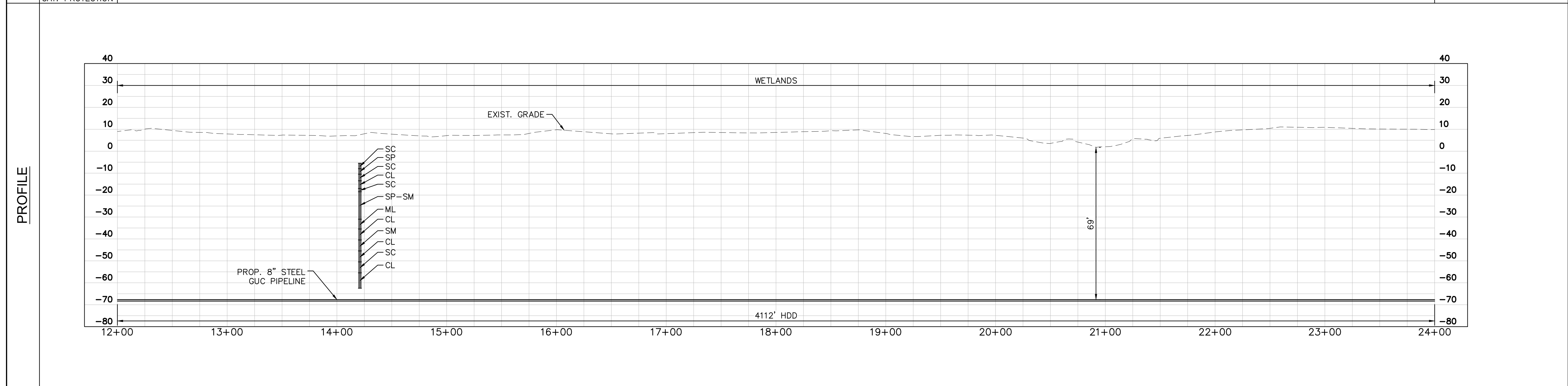
0 25 50 100
HORIZONTAL SCALE: 1"=50'

MATERIAL

PIPE
1 = 8.625" O.D. 0.322" W.T., API-5L X-52, ERW

PIPE COATING
A = MIN. 12-14 MILS FBE
B = MIN. 12-14 MILS FBE, DUAL COAT W/ 60 MILS POWERCRETE

FITTINGS
1 = 90° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
2 = 45° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
3 = 8" SPHERICAL TEE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 12.5 25 50
VERTICAL SCALE: 1"=25'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

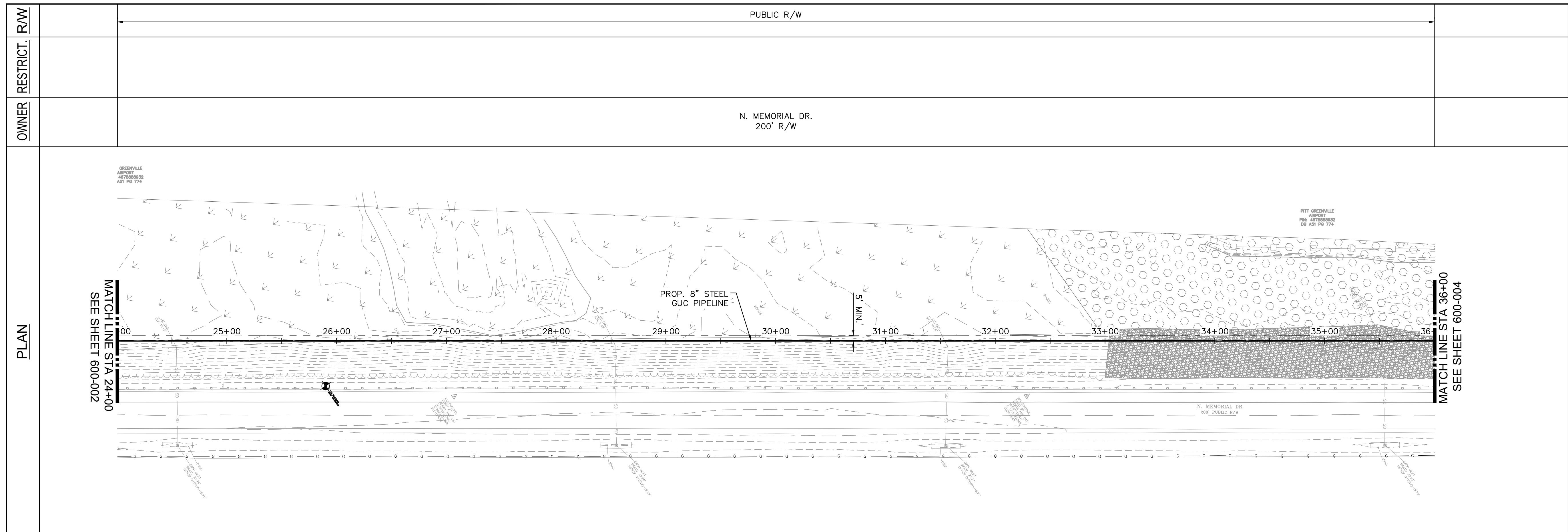
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER PLYND. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 600-002
SHEET INDEX: 4 OF 18

© 2020 Kimley-Horn & Associates, Inc.

December 15, 2020 - 10:18am By: Kevin.VanOrd

K:\VAB-CAD\116780000 - GUC Memorial Drive Bridge\CAD\Plan Sheets\600-000 Plan & Profile.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OH OVERHEAD POWER LINE
- SS SANITARY SEWER LINE
- S SANITARY SEWER FORCE MAIN
- SFM SANITARY SEWER FORCE MAIN
- UGT UG TELECOMMUNICATIONS
- W SUBSURFACE WATER
- RW SUBSURFACE RECLAIMED WATER
- G SUBSURFACE GAS
- E SUBSURFACE ELECTRIC
- UK SUBSURFACE UNKNOWN UTILITY
- ACCESS PATH
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- SILT FENCE
- TPF TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- HAYBALE LINE
- CONSTRUCTION EASEMENT
- MATTING
- CONSTRUCTION ENTRANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- POND
- MILL AND OVERLAY
- DRILL/JAB PIT
- CURB INLET FILTER
- INLET PROTECTION
- FILTER RING
- TEST HOLE LOCATION
- SILT FENCE OUTLET

SCALE
0 25 50 100
HORIZONTAL SCALE: 1"=50'

MATERIAL

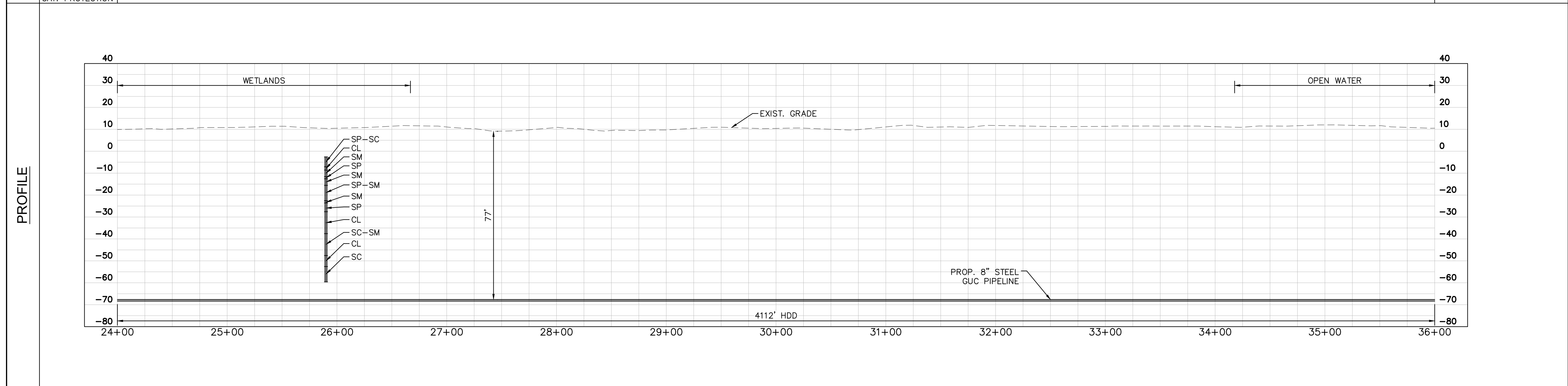
PIPE
1 = 8.625" O.D. 0.322" W.T., API-5L X-52, ERW

PIPE COATING
A = MIN. 12-14 MILS FBE
B = MIN. 12-14 MILS FBE, DUAL COAT W/ 60 MILS POWERCRETE

FITTINGS
1 = 90° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
2 = 45° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
3 = 8" SPHERICAL TEE

SCALE
0 25 50 100
HORIZONTAL SCALE: 1"=50'
0 12.5 25 50
VERTICAL SCALE: 1"=25'

DETAIL	QUANTITY
PIPE	1
COATING	B
LENGTH (LF)	1200'
FITTINGS	
CAT. PROTECTION	



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adoption by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

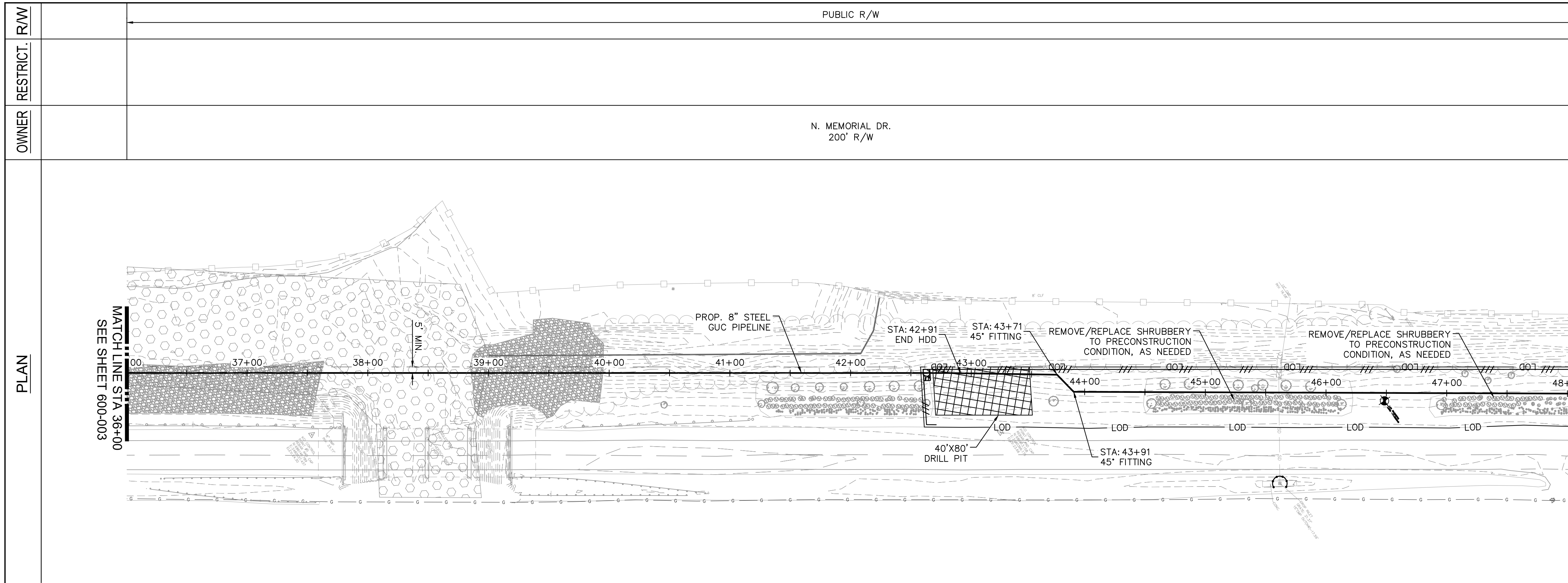
DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

SEAL: **North Carolina Professional Engineer**
44899
RYAN D. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 600-003
SHEET INDEX: 5 OF 18

December 15, 2020 - 10:18am By: Kevin.VanOrd

K:\VAB_CAD\116780000 - GUC Memorial Bridge\CAD\Plan Sheets\600-000 Plan & Profile.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OH OVERHEAD POWER LINE
- SS SANITARY SEWER LINE
- S STORM LINE
- SFM SANITARY SEWER FORCE MAIN
- UGT UG TELECOMMUNICATIONS
- W SUBSURFACE WATER
- RW SUBSURFACE RECLAIMED WATER
- G SUBSURFACE GAS
- E SUBSURFACE ELECTRIC
- UK SUBSURFACE UNKNOWN UTILITY
- ACCESS PATH
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- SILT FENCE
- TPF TREE PROTECTION FENCE
- LOD LIMITS OF DISTURBANCE
- HAYBALE LINE
- CONSTRUCTION EASEMENT
- MATTING
- CONSTRUCTION ENTRANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- POND
- MILL AND OVERLAY
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

PIPE BAR

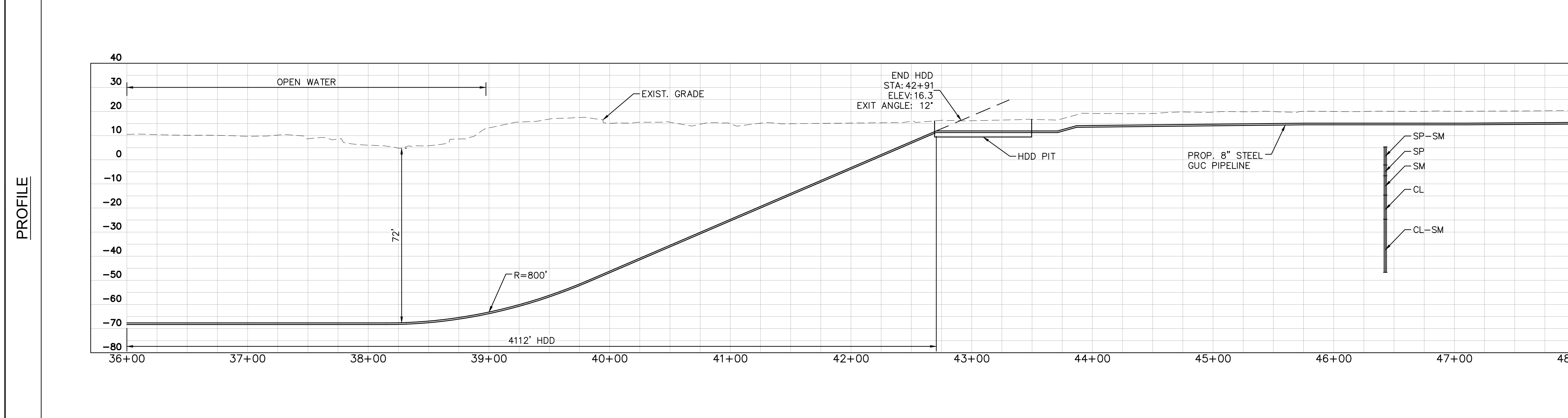
DETAIL						
PIPE	1	1	1	1	1	1
COATING	B	A	A	A	A	A
LENGTH (LF)	660'	80'	50'	2	2	379'
FITTINGS						
CAT. PROTECTION						

MATERIAL

PIPE
1 = 8.625" O.D. 0.322" W.T., API-5L X-52, ERW

PIPE COATING
A = MIN. 12-14 MILS FBE
B = MIN. 12-14 MILS FBE, DUAL COAT W/ 60 MILS POWERCRETE

FITTINGS
1 = 90° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
2 = 45° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
3 = 8" SPHERICAL TEE



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

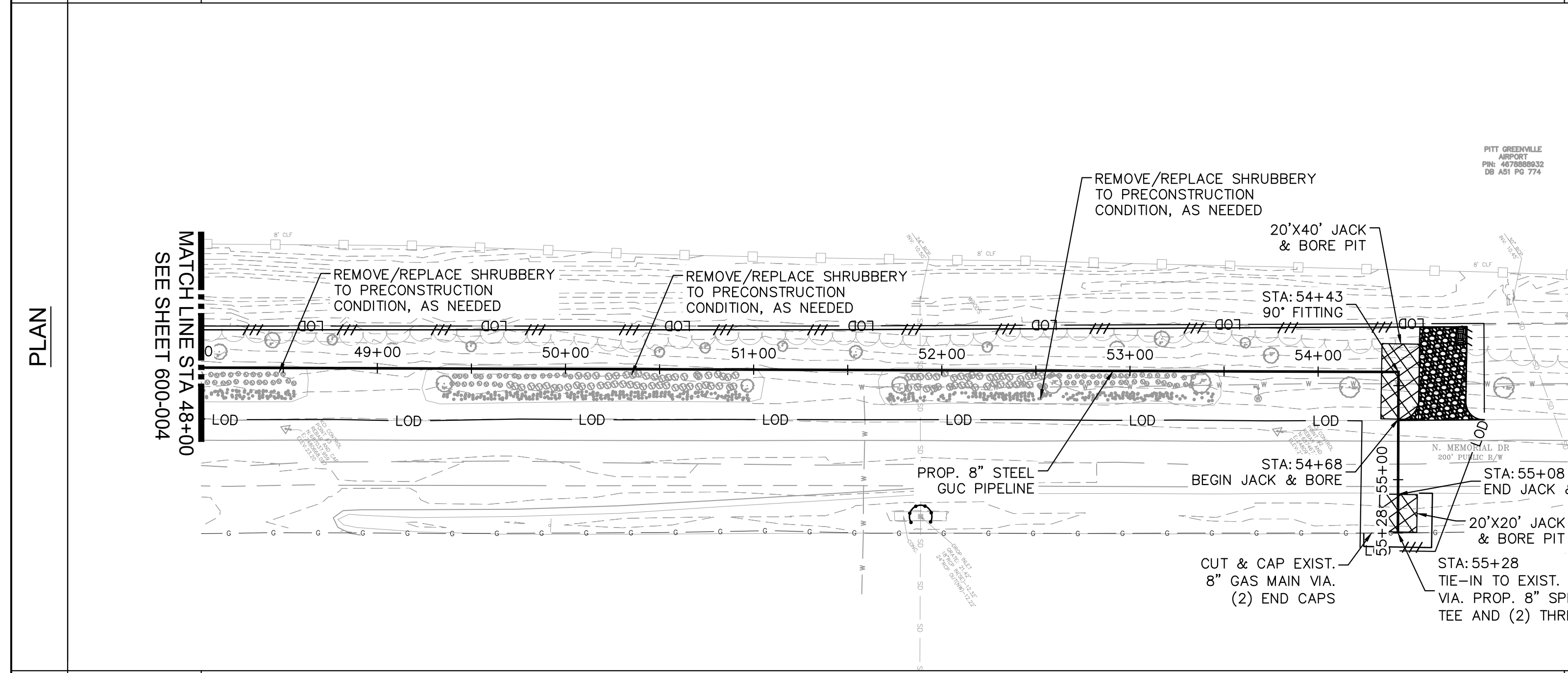
SEAL: **North Carolina Professional Engineer**
44899
RYAN D. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 600-004
SHEET INDEX: 6 OF 18

December 15, 2020 - 10:18am By: Kevin.VanOrd

R:\VAB-CAD\116780000 - GUC Memorial Drive Bridge\CAD\Plan Sheets\600-000 Plan & Profile.dwg

OWNER	N. MEMORIAL DR. 200' R/W
RESTRICT.	
R/W	PUBLIC R/W



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OH OVERHEAD POWER LINE
- SS SANITARY SEWER LINE
- S STORM LINE
- SFM SANITARY SEWER FORCE MAIN
- UGT SUBSURFACE TELECOMMUNICATIONS
- W SUBSURFACE WATER
- RW SUBSURFACE RECLAIMED WATER
- G SUBSURFACE GAS
- E SUBSURFACE ELECTRIC
- UK SUBSURFACE UNKNOWN UTILITY
- ACCESS PATH
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- SILT FENCE
- TPF TREE PROTECTION FENCE
- LOD LIMITS OF DISTURBANCE
- HAYBALE LINE
- CONSTRUCTION EASEMENT
- MATTING
- CONSTRUCTION ENTRANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT CONSTRUCTION EASEMENT
- POND
- MILL AND OVERLAY
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

PIPE BAR

DETAIL				
PIPE	1	1	1	1
COATING	A	A	B	A
LENGTH (LF)	643'	25'	40'	20'
FITTINGS		1		3
CAT. PROTECTION				

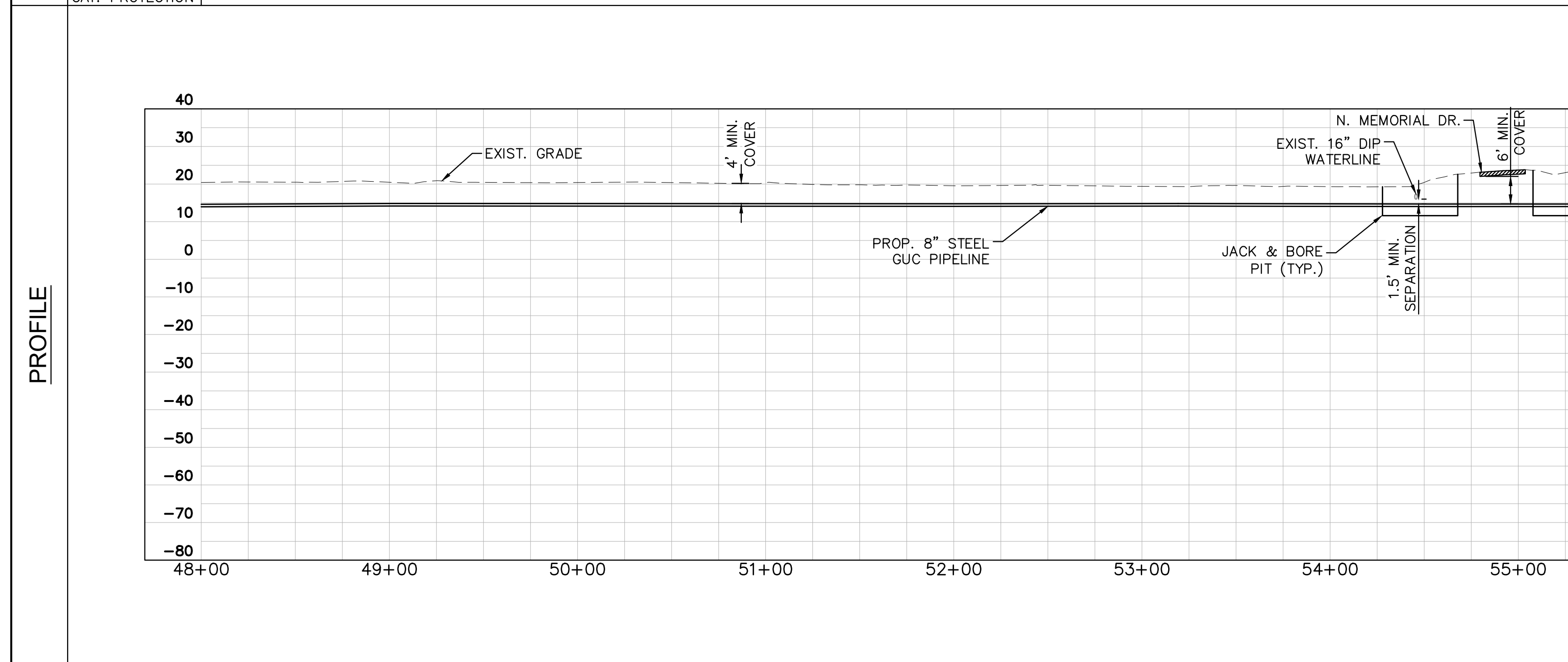
0 25 50 100
HORIZONTAL SCALE: 1"=50'

MATERIAL

PIPE
1 = 8.625" O.D. 0.322" W.T., API-5L X-52, ERW

PIPE COATING
A = MIN. 12-14 MILS FBE
B = MIN. 12-14 MILS FBE, DUAL COAT W/ 60 MILS POWERCRETE

FITTINGS
1 = 90° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
2 = 45° 8.625" O.D. 0.322" W.T. Y-52-LR, C.I.D. FIELD SEGMENTABLE
3 = 8" SPHERICAL TEE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 12.5 25 50
VERTICAL SCALE: 1"=25'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

PROJECT NAME:
MEMORIAL DRIVE BRIDGE REPLACEMENT
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

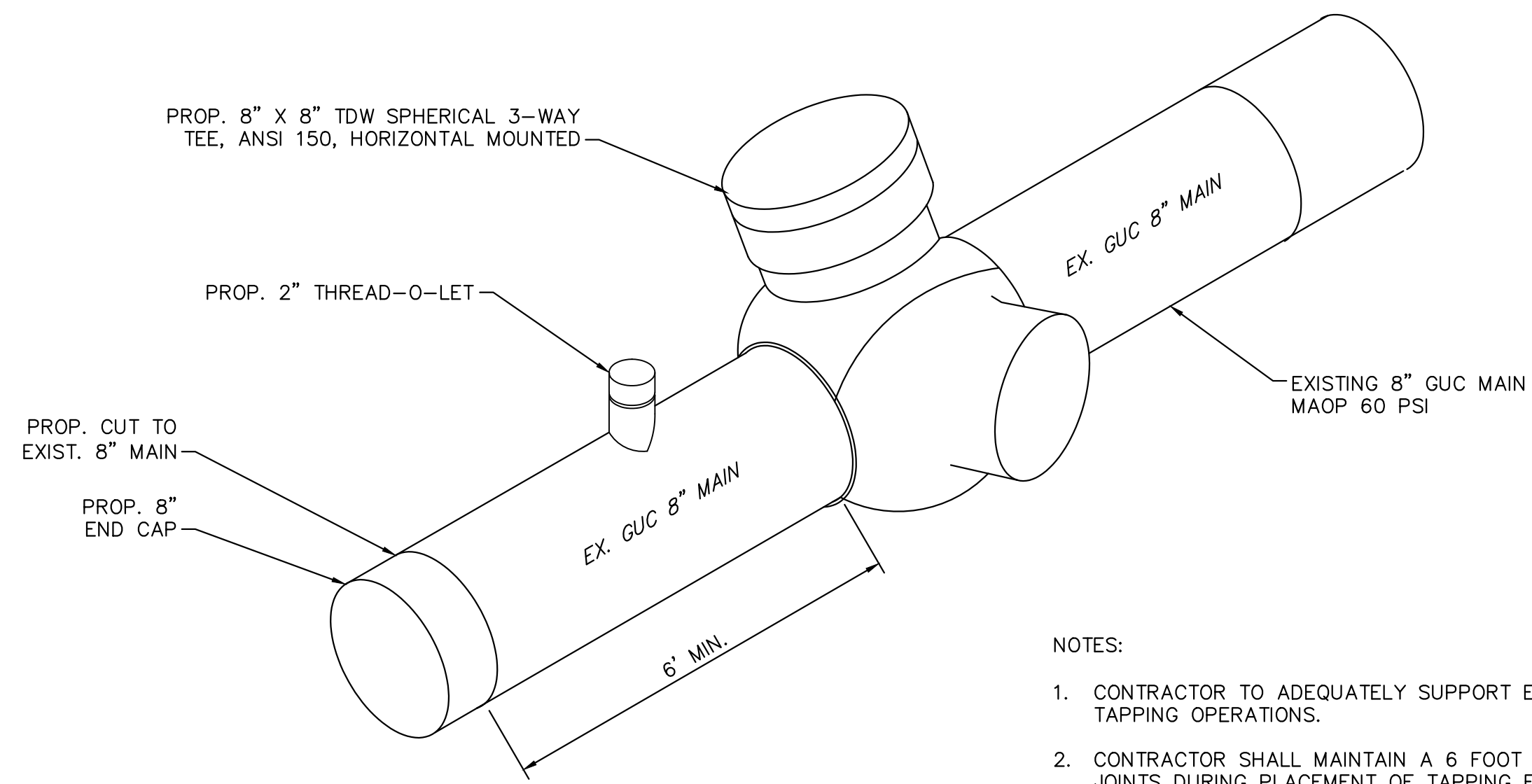
DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

SEAL: **NORTH CAROLINA PROFESSIONAL ENGINEER 44899 P. AND C. CLARK**

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 600-005
SHEET INDEX: 7 OF 18

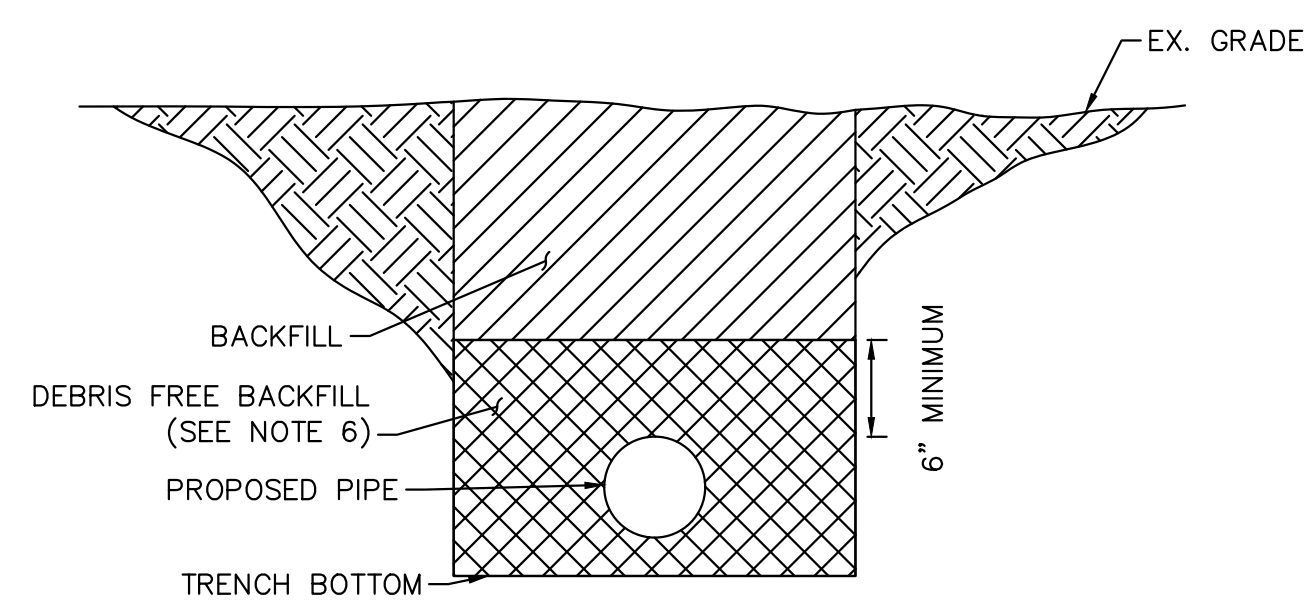
December 15, 2020 - 10:10am By: Kevin.VanOrt

R:\VAB_CAD\116780000 - GUC Memorial Drive\Plan Sheets\600-000 Plan & Profile.dwg



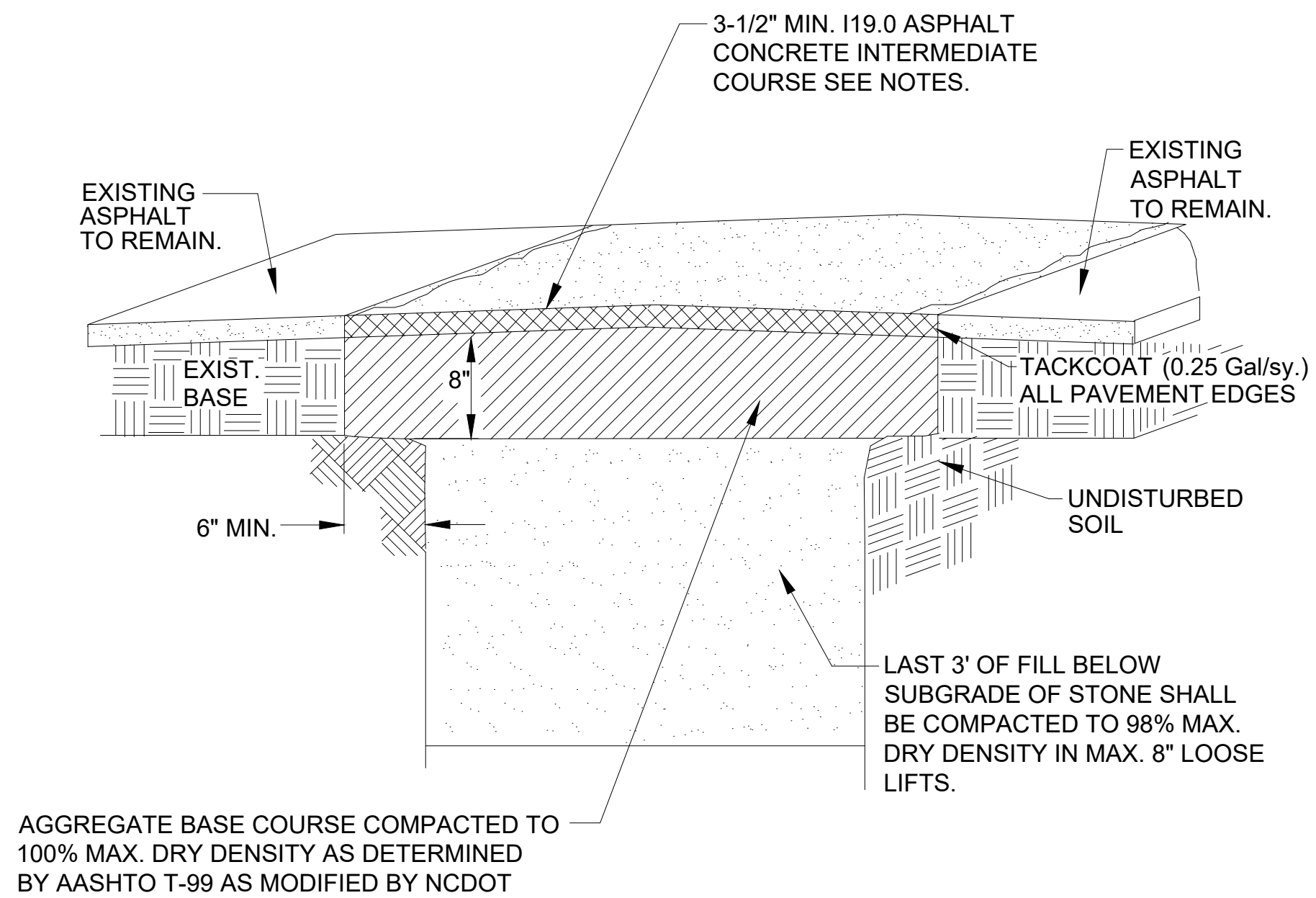
- NOTES:
1. CONTRACTOR TO ADEQUATELY SUPPORT EXISTING 8" MAIN DURING TAPPING OPERATIONS.
 2. CONTRACTOR SHALL MAINTAIN A 6 FOOT SEPARATION FROM EXISTING JOINTS DURING PLACEMENT OF TAPPING FITTING.

8" HOT TAP DETAIL
N.T.S.



TRENCH DETAIL
N.T.S.

- NOTES:
1. ENSURE TRENCH IS FREE OF ROCKS AND OTHER OBJECTS THAT COULD DAMAGE THE PIPE
 2. ENSURE TRENCH IS AT THE PROPER DEPTH TO ALLOW 3 FEET OF COVER FROM TOP OF PIPE TO FINISHED SURFACE.
 3. USE A HOLIDAY DETECTOR TO FIND PINHOLES IN COATING AND REPAIR PRIOR TO LOWERING PIPE INTO DITCH.
 4. IF ROCK IS FOUND ALONG TRENCH CONTRACTOR SHALL INSTALL SAND BAGS OR FOAM PILLOWS EVERY 15 FEET TO SUPPORT PIPE ALONG TRENCH BED.
 5. PIPE SHALL BE ADEQUATELY SUPPORTED DURING LOWERING INTO DITCH. LIFT PIPE USING NYLON SLING OR OTHER APPROPRIATE DEVICES.
 6. FIRST 6" OF BACKFILL SHOULD BE FREE OF ROCK AND OTHER MATERIALS THAT COULD DAMAGE THE PIPE OR PIPE COATING.
 7. DO NOT USE EXCESSIVE FORCE TO TAMPER DIRECTLY OVER THE PIPE ON THE FIRST 6" OF BACKFILL.
 8. ENSURE FINAL DITCH COVER IS FLUSH WITH SURROUNDING GROUND.



- NOTES:
1. CONTRACTOR SHALL PATCH PAVEMENT TO THE SAME PAVEMENT PROFILE AS EXISTED PRIOR TO REMOVING PAVEMENT.
 2. WHERE PATCH OF ASPHALT CURBING OCCURS CONTRACTOR SHALL MATCH EXISTING CURB GRADES WITHIN 0.02 FEET. PATCHES THAT ARE ABOVE THE CURB GRADE LINE WILL NOT BE ACCEPTABLE AND SHALL BE REMOVED AND REPLACED. CURB PATCH SHALL BE THE SAME SHAPE/TEMPLATE AS THE EXISTING CURB.
 3. CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE M.U.T.C.D. OR N.C. SUPPLEMENT. WORK CANNOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE.
 4. CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT STRAIGHT AND TRUE IMMEDIATELY PRIOR TO PAVING. THE FINAL PRODUCT SHALL BE SUBJECT TO THE OWNERS APPROVAL.
 5. PATCH PAVING ON N.C.D.O.T. MAINTAINED ROADS SHALL BE IN ACCORDANCE WITH THE APPROVED N.C.D.O.T. ENCROACHMENT.
 6. PAVEMENT REPAIR DETAIL DOES NOT INCLUDE ASPHALT SURFACE COURSE BECAUSE IT IS INTENDED FOR AREAS THAT WILL HAVE UTILITY WORK DONE IN ADVANCE OF FINAL PAVEMENT SURFACE. MILL AND OVERLAY OF THE PAVEMENT REPAIR AREA ALONG WITH ADJACENT ROADWAY IS ANTICIPATED.

PAVEMENT REPAIR DETAIL
N.T.S.

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

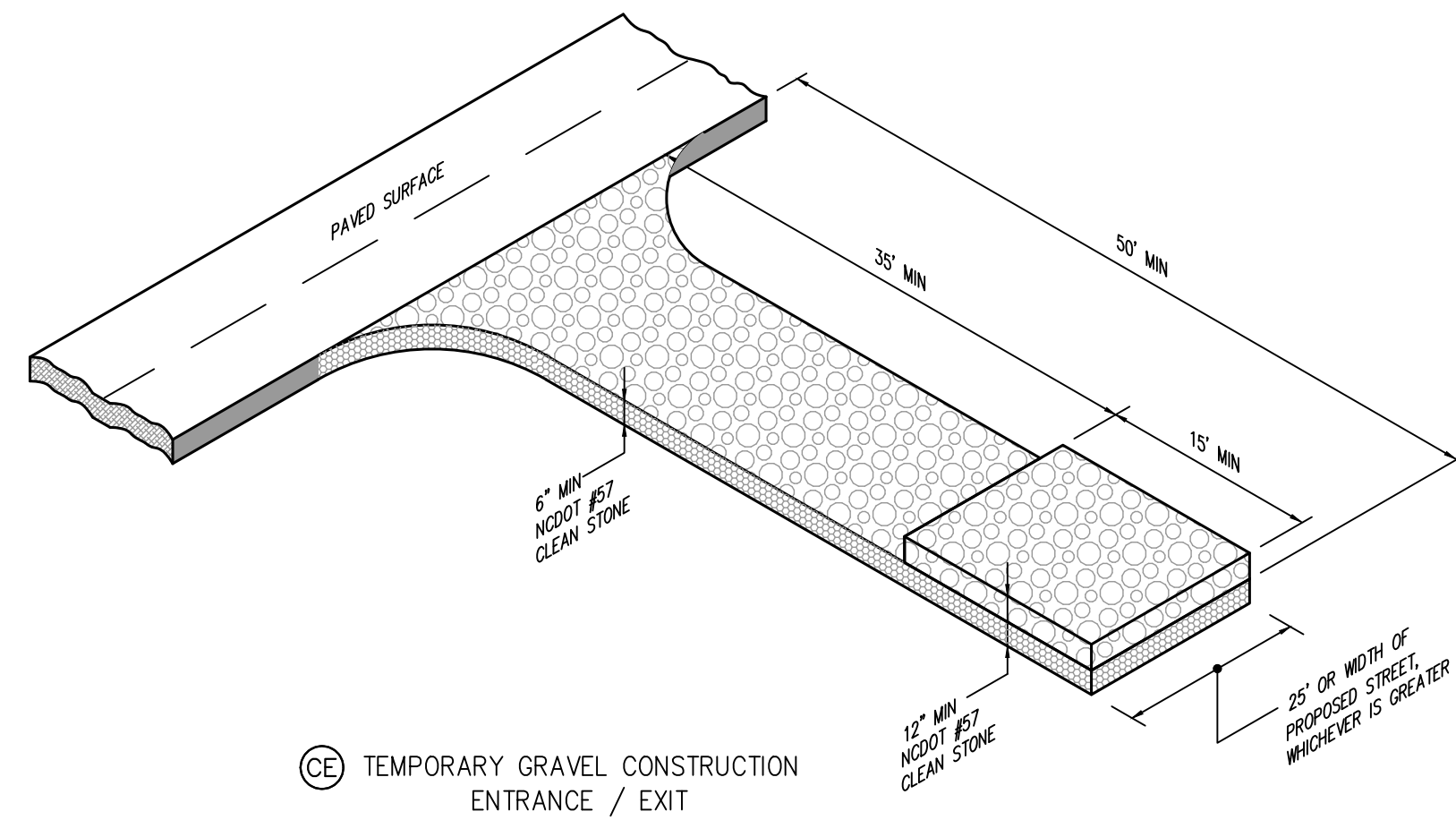
ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.



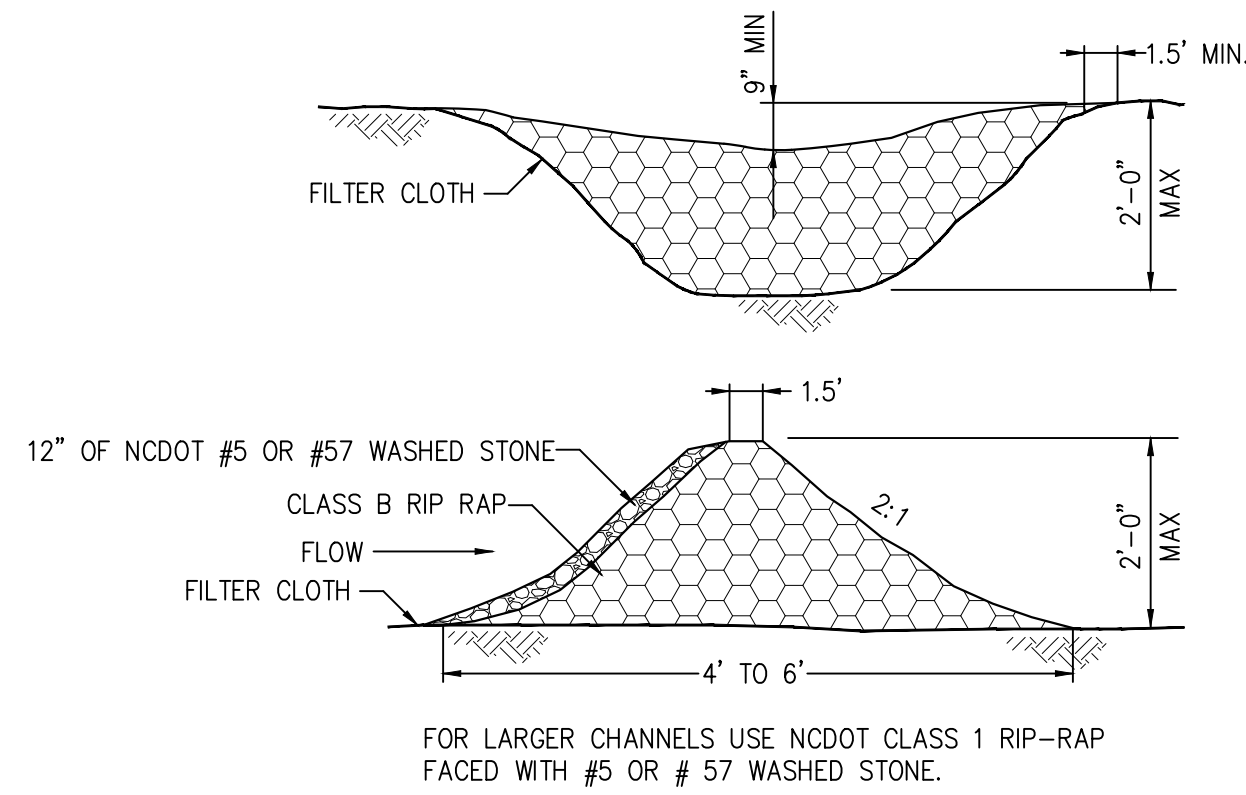
PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA
SHEET TITLE: **DETAILS**

DATE: 10/15/20
SCALE (H.V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 44899 P. AND. CLARK ENGINEER

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 800-001
SHEET INDEX: 8 OF 18



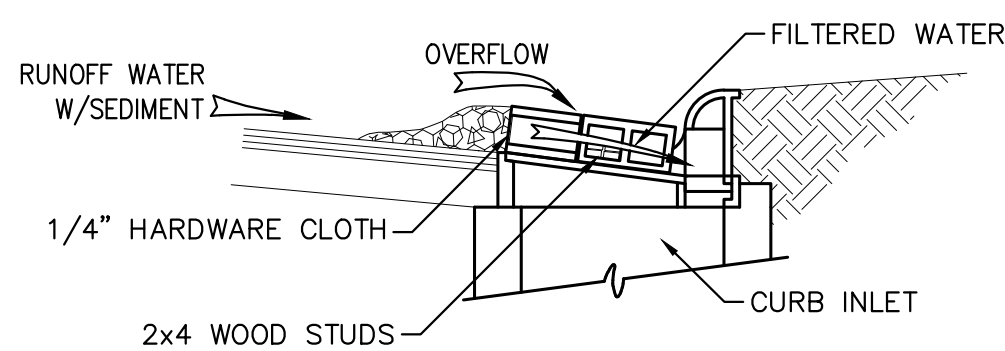
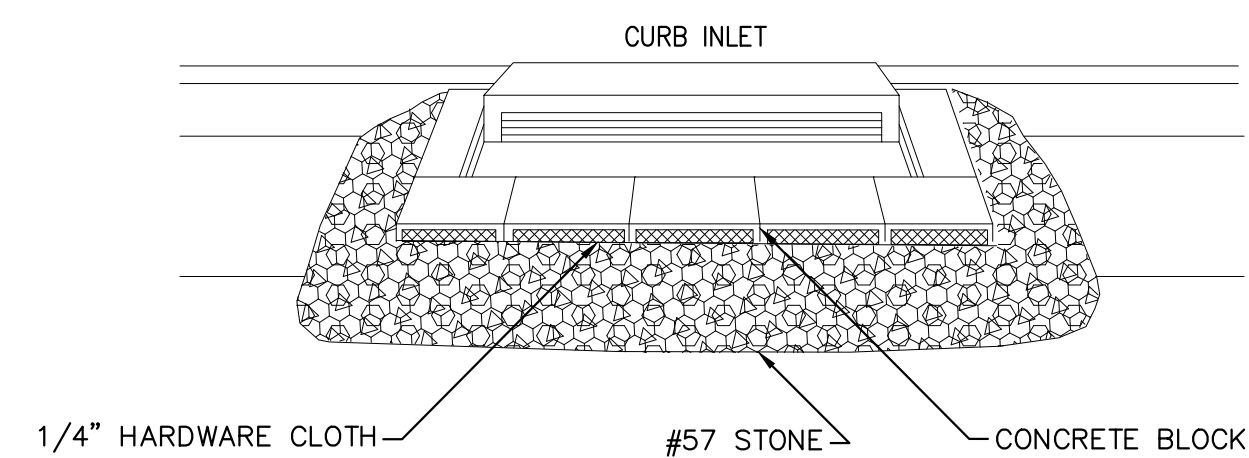
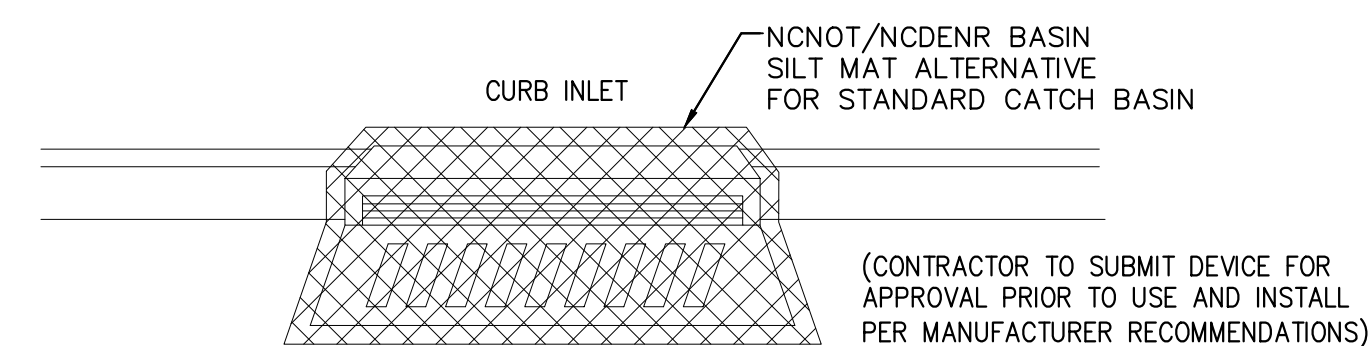
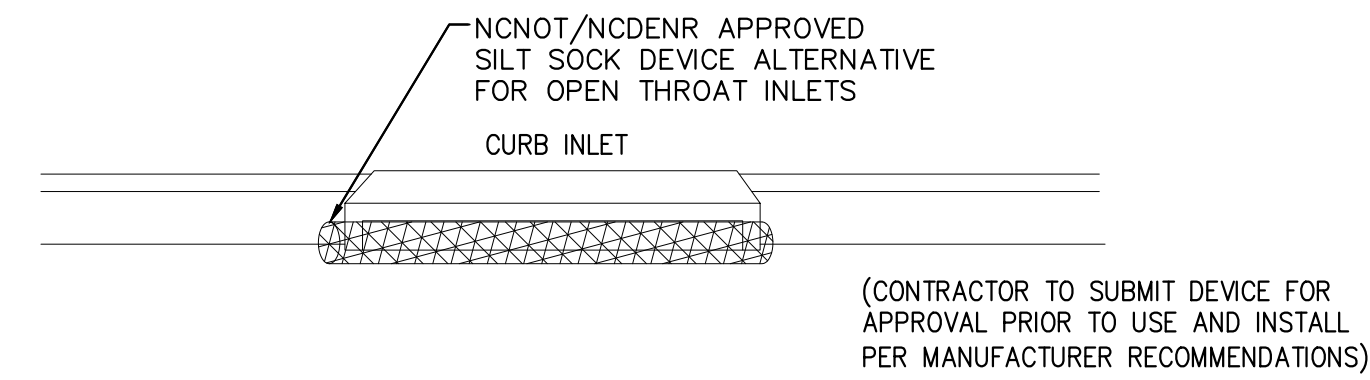
CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT



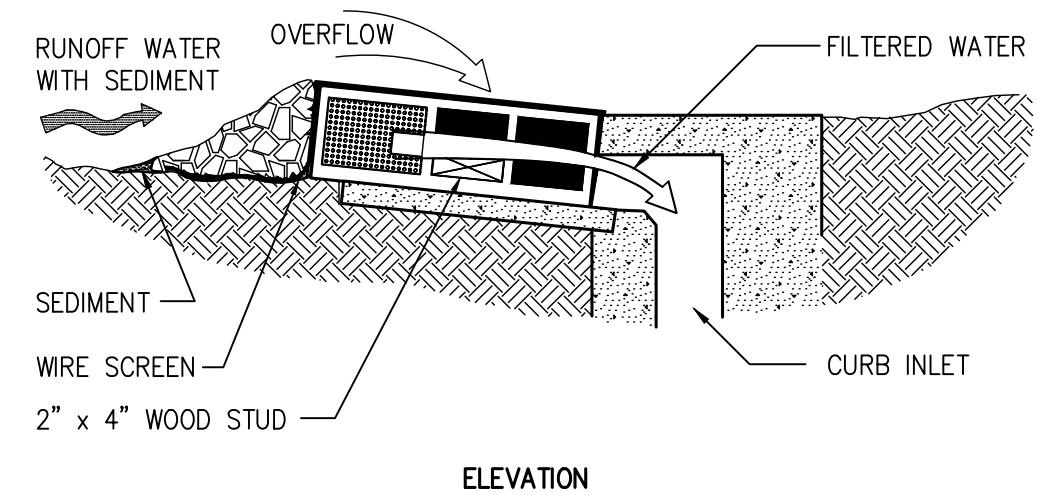
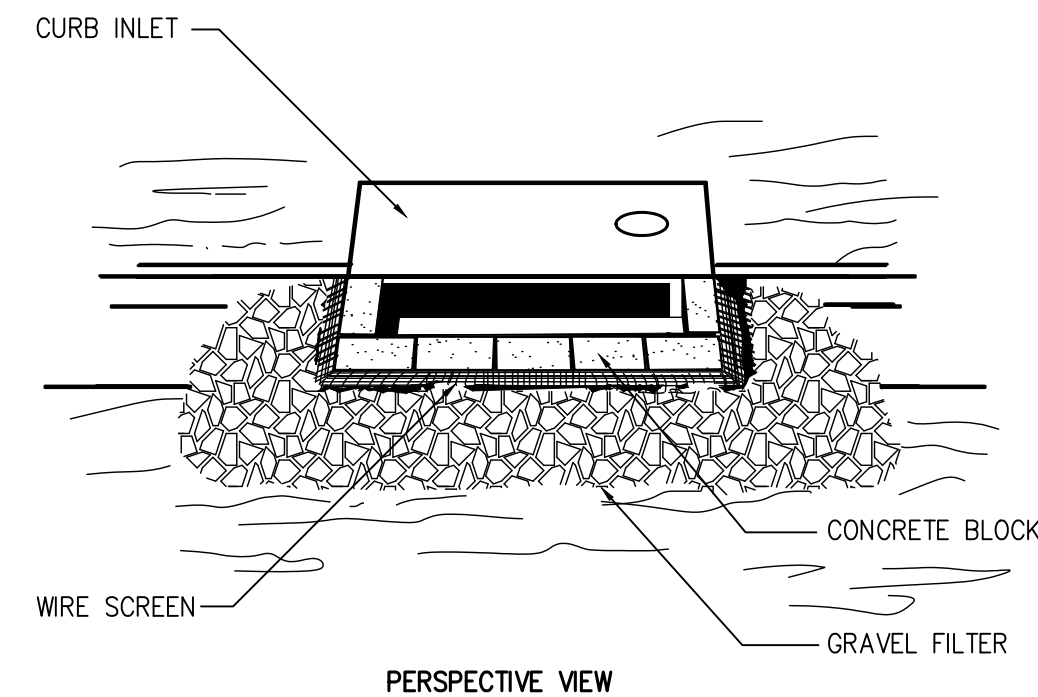
CD STONE CHECK DAM

NOTES:

1. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED.
2. STOCKPILE LOCATIONS AND LAY DOWN AREAS SHALL BE LOCATED WITHIN THE EXISTING CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. CONSTRUCTION ENTRANCES SHALL BE PLACED AS NEEDED BY THE CONTRACTOR ACCORDING TO THE STANDARD DETAILS IN THE DRAWINGS.
3. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
4. SEEDING SHALL BE AS SPECIFIED FOR DISTURBED AREAS. AFTER SEEDING, THE AREA SHALL BE ROLLED AND MULCHED WITH FINE GRAIN STRAW AT THE APPLICATION RATE SPECIFIED (SEE CONTRACT DOCUMENTS). AN ASPHALTIC COAT, OR APPROVED EQUAL TREATMENT AT RATE OF 25-35 GAL. / 1,000 SQ.FT..
5. PROVIDE FOR GROUNDCOVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER), FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.



IP CURB INLET PROTECTION



SPECIAL APPLICATION
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

IP BLOCK & GRAVEL CURB INLET SEDIMENT FILTER

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

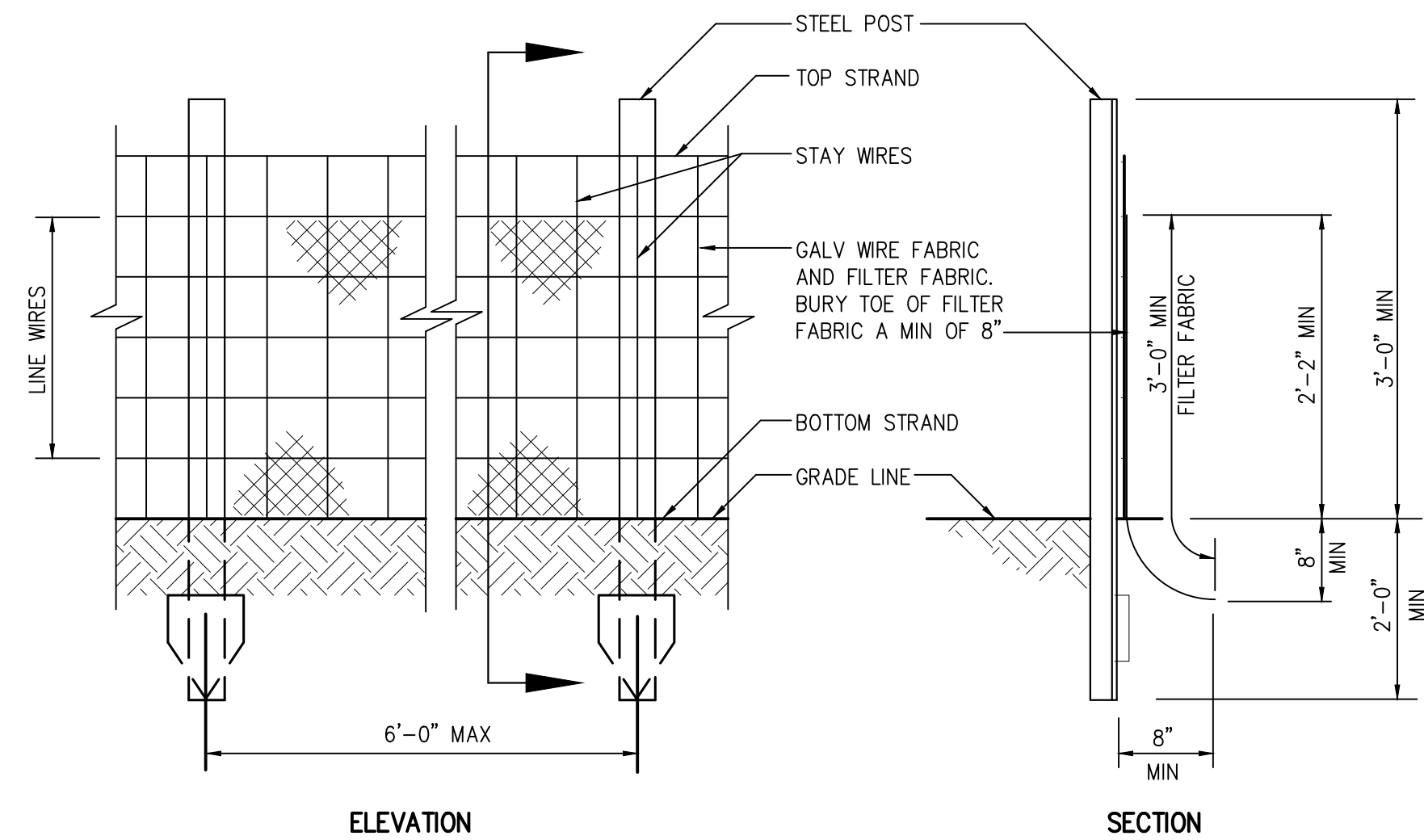
PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA
SHEET TITLE: **E&SC DETAILS**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

SEAL: **North Carolina Professional Engineer**
44899
RYAN D. CLARK

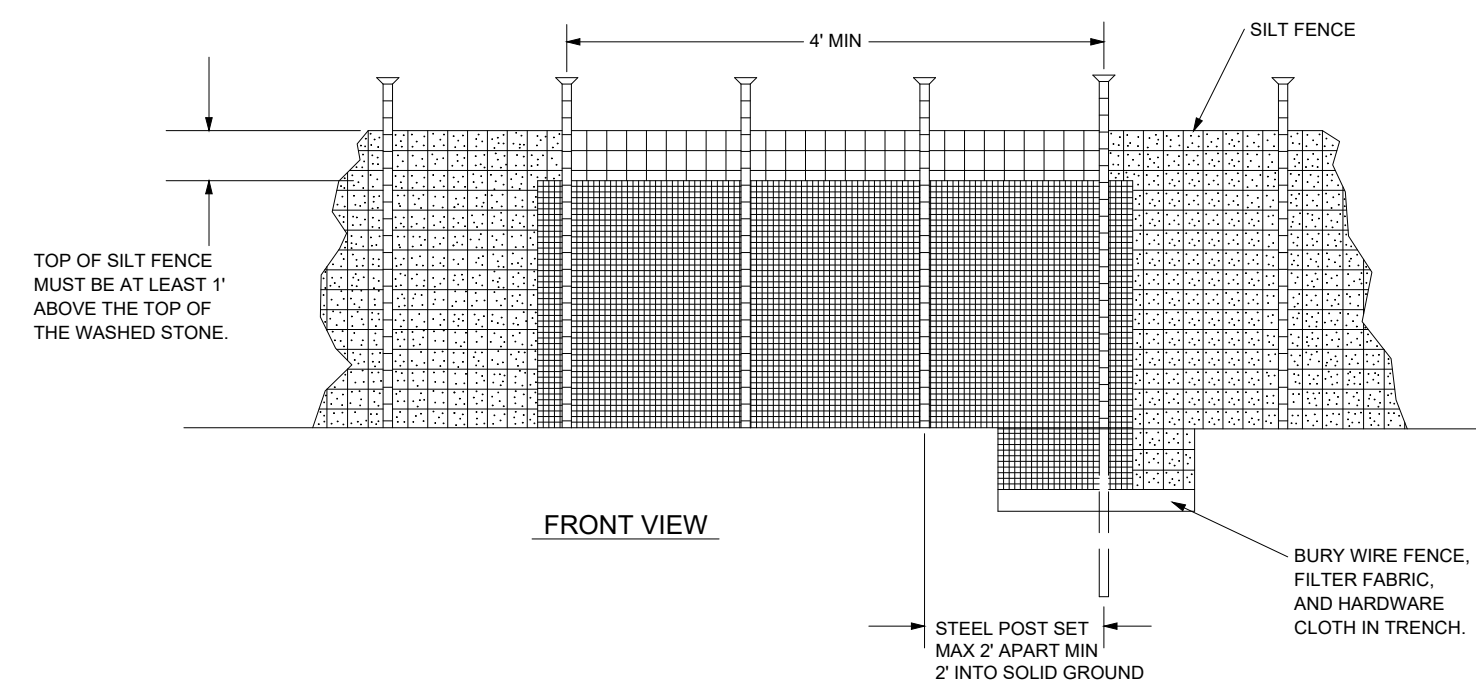
KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 800-002
SHEET INDEX: 9 OF 18

- NOTES:
1. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED.
 2. STOCKPILE LOCATIONS AND LAY DOWN AREAS SHALL BE LOCATED WITHIN THE EXISTING CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. CONSTRUCTION ENTRANCES SHALL BE PLACED AS NEEDED BY THE CONTRACTOR ACCORDING TO THE STANDARD DETAILS IN THE DRAWINGS.
 3. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
 4. SEEDING SHALL BE AS SPECIFIED FOR DISTURBED AREAS. AFTER SEEDING, THE AREA SHALL BE ROLLED AND MULCHED WITH FINE GRAIN STRAW AT THE APPLICATION RATE SPECIFIED (SEE CONTRACT DOCUMENTS). AN ASPHALTIC COAT, OR APPROVED EQUAL TREATMENT AT RATE OF 25-35 GAL. / 1,000 SQ.FT..
 5. PROVIDE FOR GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER), FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

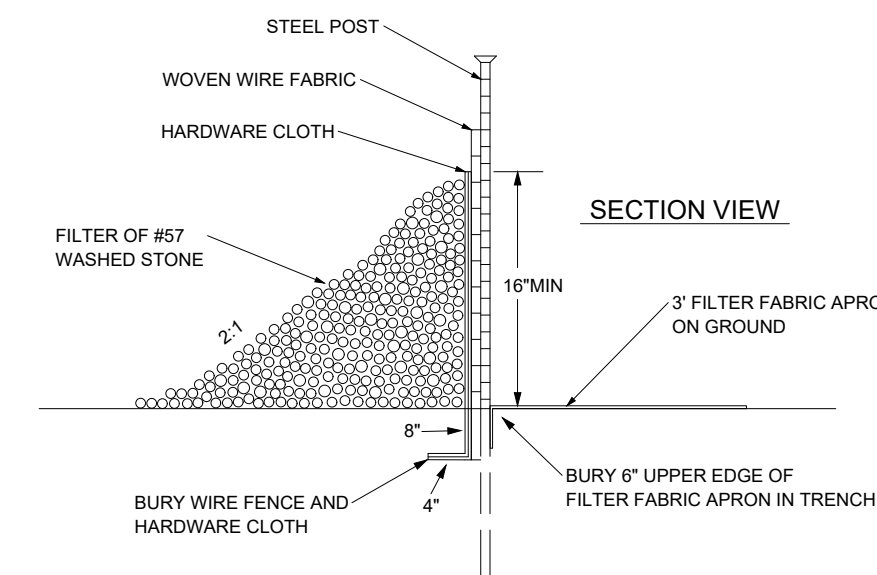


(SF) SILT FENCE

- NOTE:
1. EXTRA STRENGTH FILTER FABRIC (AS APPROVED BY ENGINEER) WITH 6'-0" POST SPACING DOES NOT REQUIRE MESH SUPPORT FENCE.
 2. FILTER FABRIC SHALL BE WIRED DIRECTLY TO POST.



- NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
 2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.



(SF) SILT FENCE OUTLET

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
 PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **E&SC DETAILS CONT.**

DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

SEAL: **PROFESSIONAL ENGINEER**
 NORTH CAROLINA
 SEAL 12/18/20
 44899
 P. AND. CLARK

KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 800-003
 SHEET INDEX: 10 OF 18

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT
 Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Rolled erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

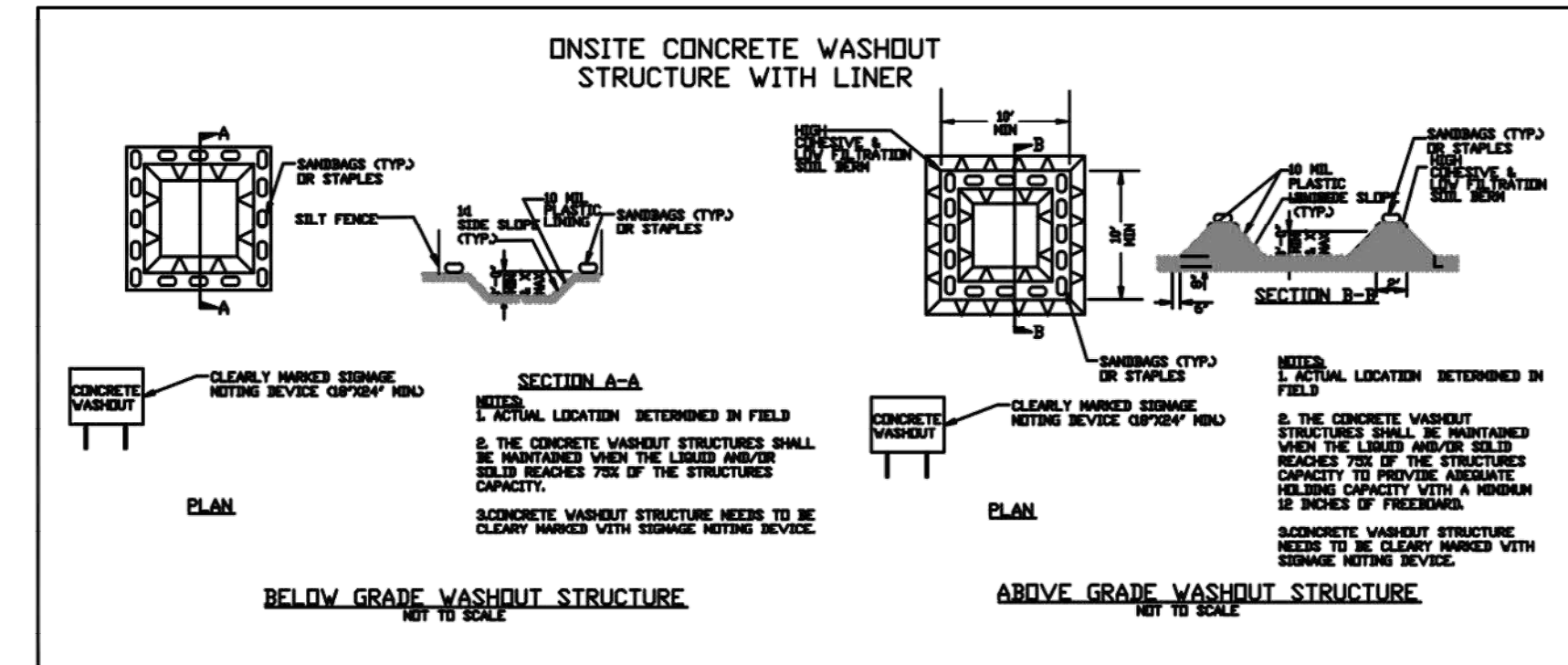
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adoption by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
 © 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
 PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **NCG01 GROUND STABILIZATION AND MATERIALS HANDLING**

DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

SEAL: **North Carolina Professional Engineer**
 44899
 P. AND C. CLARK

KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 800-004
 SHEET INDEX: 11 OF 18

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- (a) This general permit as well as the certificate of coverage, after it is received.
- (b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- (c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION C: REPORTING

1. Occurrences that must be reported

- Permittees shall report the following occurrences:
- (a) Visible sediment deposition in a stream or wetland.
 - (b) Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
 - (a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
 - (b) Anticipated bypasses and unanticipated bypasses.
 - (c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)]. • Division staff may waive the requirement for a written report on a case-by-case basis.



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adoption by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
 © 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT
PITT COUNTY, NORTH CAROLINA**

SHEET TITLE: **NCG01 SELF-INSPECTION,
RECORDKEEPING AND REPORTING**

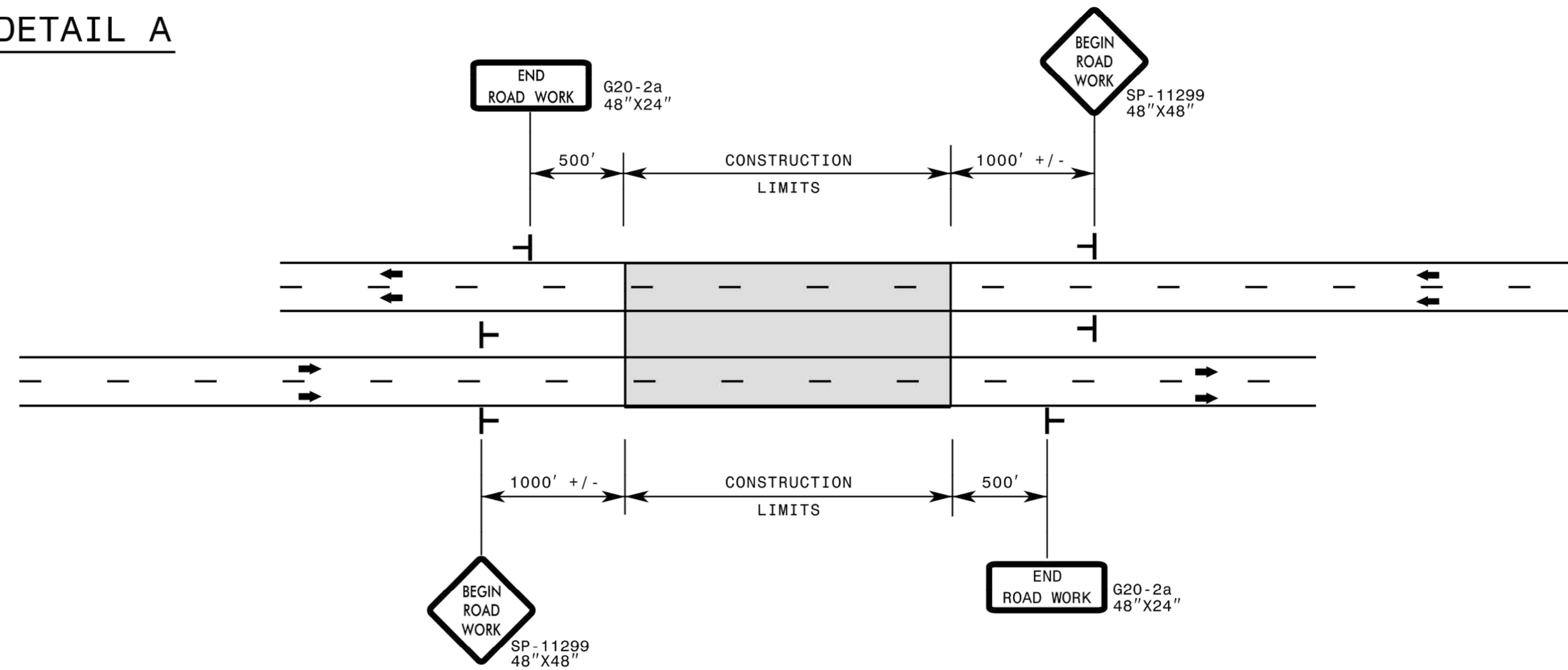
DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

SEAL:

KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 800-005
 SHEET INDEX: 12 OF 18

December 15, 2020 - 10:20am By: Kevin.VanOrd
 P:\VAB-CAD\116780000 - GIC Memorial Bridge\CAD\Plan Sheets\800-000 Dwg01.dwg

DETAIL A



GENERAL NOTES

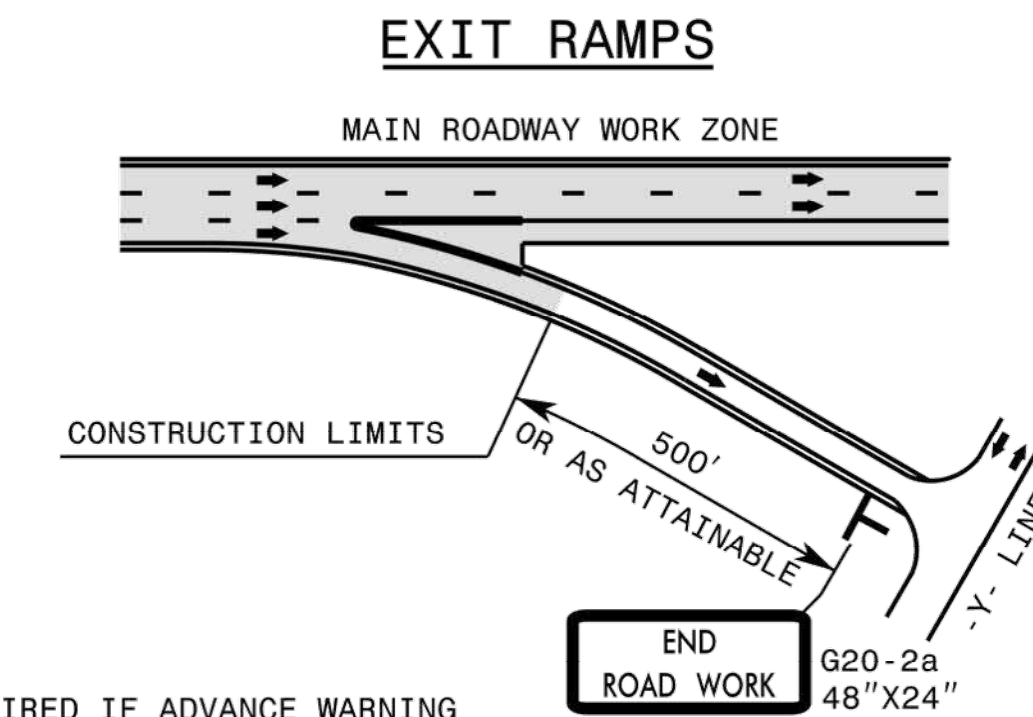
- 1- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.
- 2- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT LONGER THAN 3 CONSECUTIVE DAYS.
- 3- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- 4- ERECT SIGNS PER RSD. 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATIONS FOR WORK ZONE SIGNS.
- 5- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH RSD. 1110.01.
- 6- DO NOT BACK BRACE SIGN SUPPORTS.
- 7- TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

└ STATIONARY SIGN

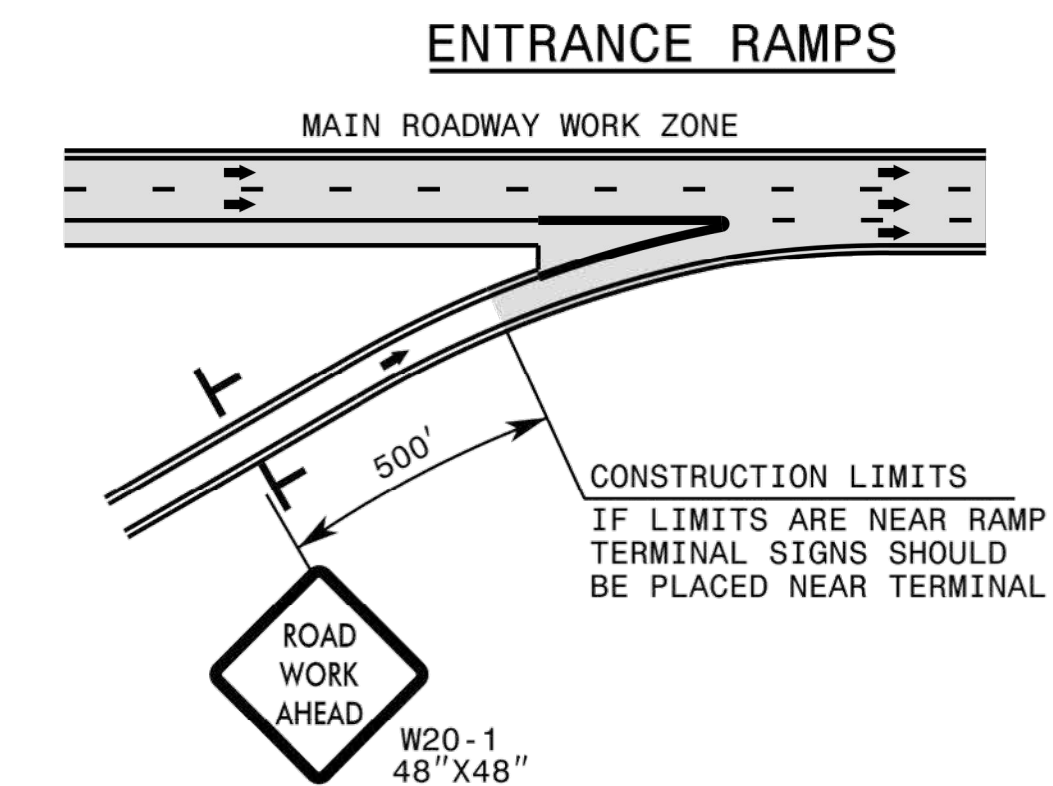
← DIRECTION OF TRAFFIC FLOW

DETAIL B

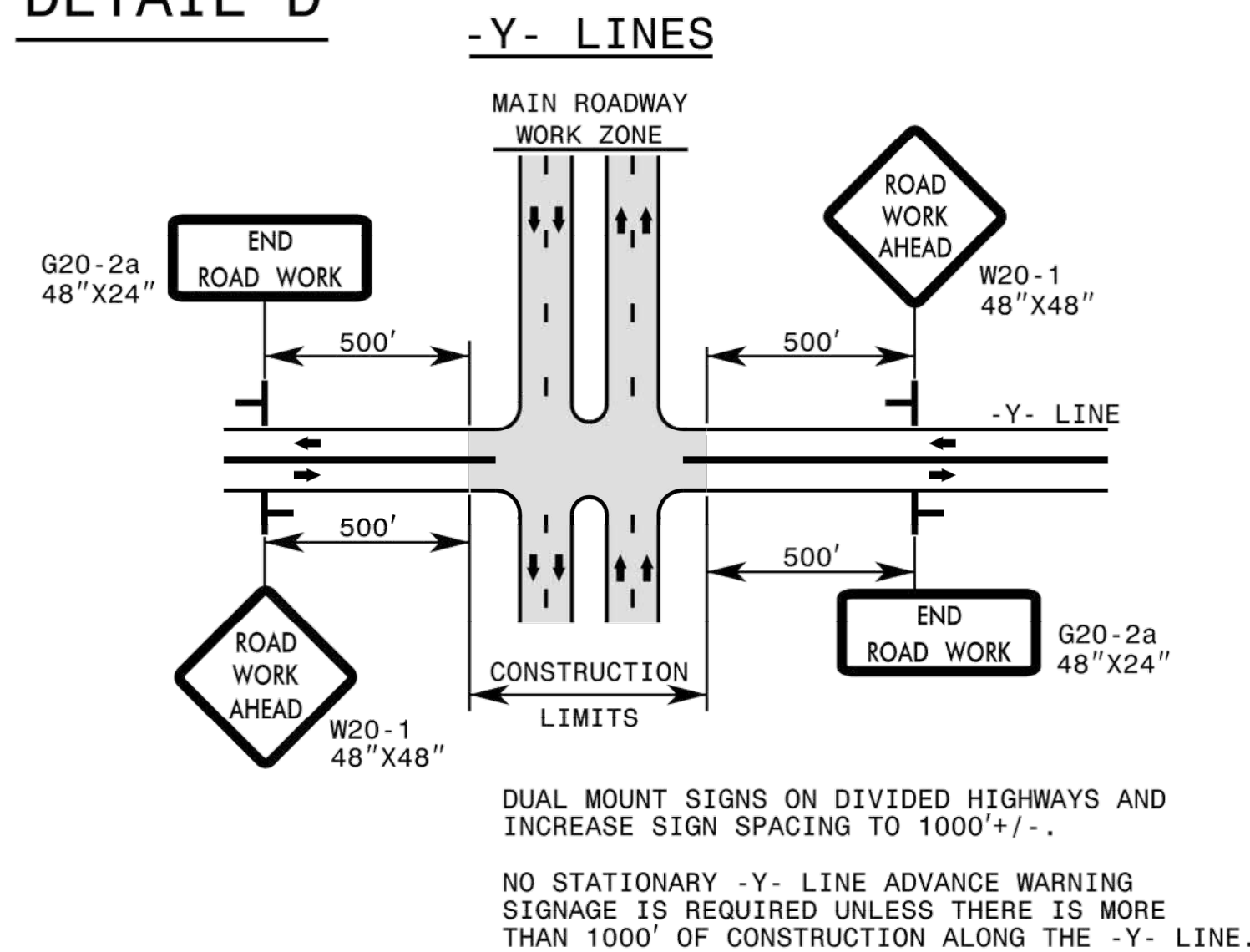


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

DETAIL C



DETAIL D



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH

SHEET 2 OF 3
1101.01

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

© 2020 Kimley-Horn & Associates, Inc.



PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **WORK ZONE ADVANCE WARNING**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

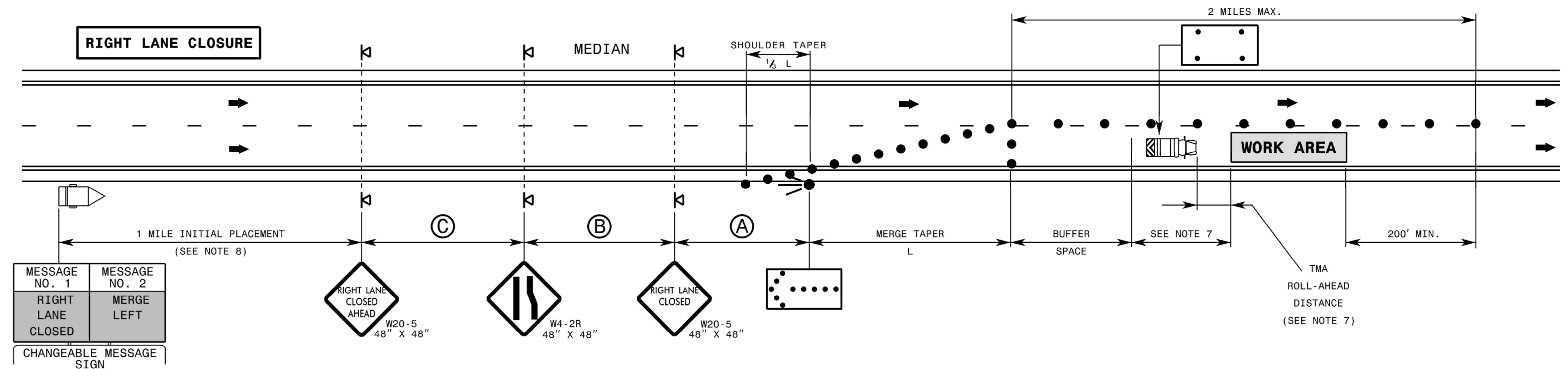
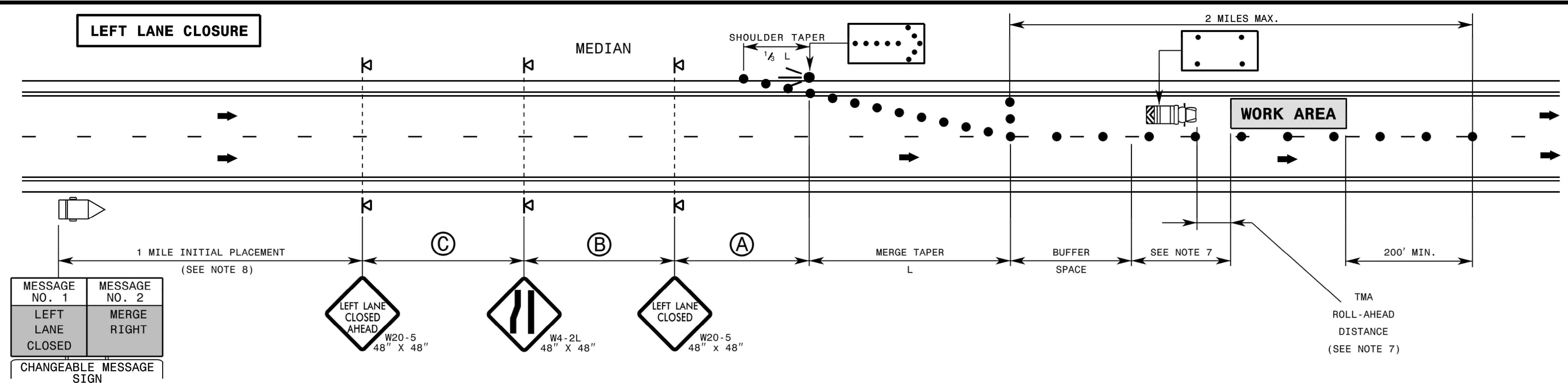
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER PLYMOUTH, N.C.

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 900-001
SHEET INDEX: 13 OF 18

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
DIVIDED MULTI-LANE ROADWAY-1 LANE CLOSED
(FOR ROADWAYS < 60 MPH)

SHEET 3 OF 14
1101.02



GENERAL NOTES

- IF NECESSARY USE THIS RSD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- PLACE FLASHING ARROW BOARDS (FAB) ON THE SHOULDER (PAVED OR UNPAVED). PLACE FAB WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE FAB LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE FAB IS MET (SEE RSD. 1101.11, SHEET 2).
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO RSD. 1101.11, SHEETS 1, 2, & 4, FOR "L" DISTANCE, BUFFER SPACE, AND SIGN SPACING.
- REFER TO RSD. 1101.02, SHEETS 9 & 10, FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- POSITION THE TMAs TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMAs AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE FIRST W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. MONITOR TRAFFIC, AND WHEN NECESSARY, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

LEGEND

- FLASHING ARROW BOARD
- FLASHING ARROW BOARD (96"X48" MIN.), "CAUTION MODE"
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN (CMS)
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.



PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **TEMPORARY LANE CLOSURE**

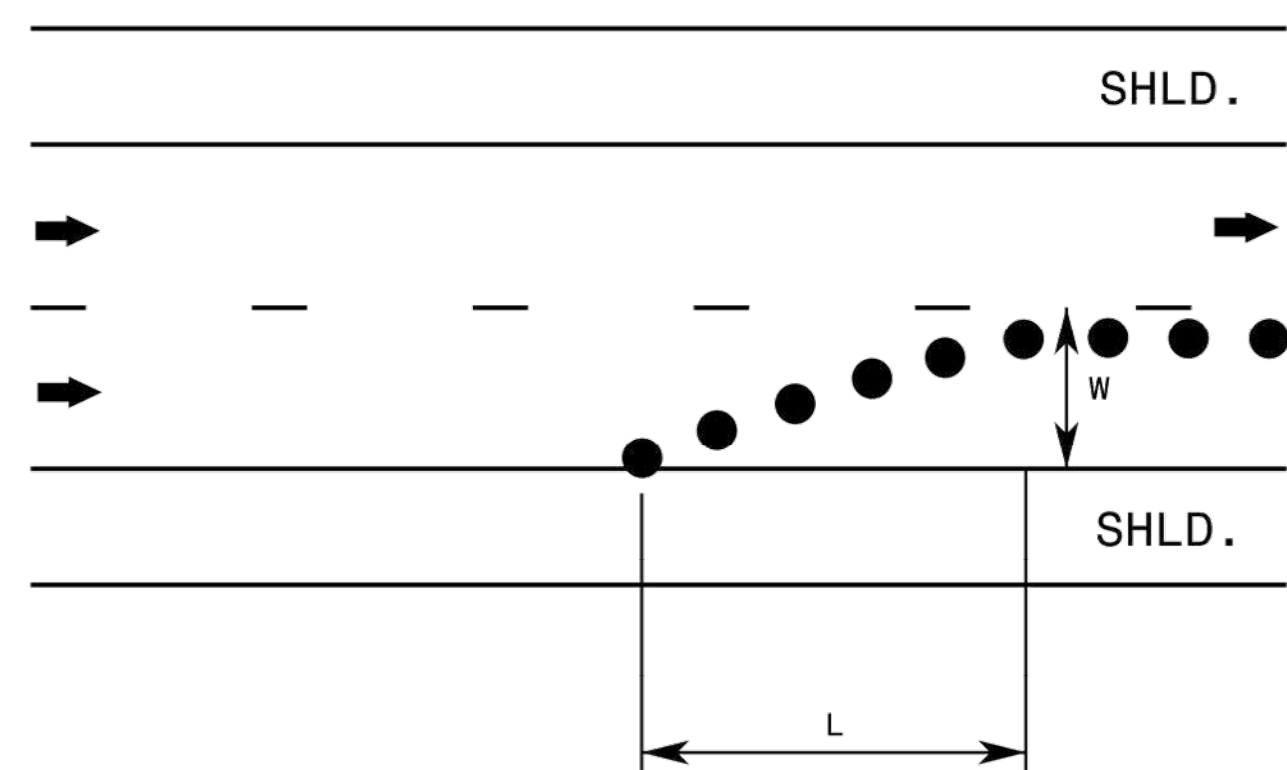
DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER 44899 PLYND. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 900-002
SHEET INDEX: 14 OF 18

December 15, 2020 - 10:20am By: Kevin.VanOrd

EXAMPLE OF "L" & "W" DESIGNATIONS



TAPER LENGTH CRITERIA FOR CHANNELIZING DEVICES IN WORK ZONES

TYPES OF TAPERS

UPSTREAM TAPER

- MERGING TAPER..... L MINIMUM
- SHIFTING TAPER..... 1/2 L MINIMUM
- SHOULDER TAPER..... 1/3 L MINIMUM
- TWO-WAY TRAFFIC TAPER..... .50 - 100 FEET MAXIMUM

DOWNSTREAM TAPER

.....100 FEET MAXIMUM

TAPER LENGTH

DO NOT INTRODUCE A MERGING OR SHIFTING TAPER WITHIN A CURVE OF THE ROADWAY

QUICK REFERENCE - "L" DISTANCE TABLE												
MINIMUM LONGITUDINAL DISTANCE "L" (FEET) (ROUNDED VALUES)												
POSTED SPEED "S" (MPH)	LATERAL WIDTH "W" (FEET)											
	1	2	3	4	5	6	7	8	9	10	11	12
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	25	45	65	85	105	125	145	165	185	205	225	245
40	30	55	80	110	135	160	190	215	240	270	295	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

GENERAL NOTES

1- TABLE FOR "L" DISTANCE IS BASED ON CHANNELIZATION TAPER FORMULA FROM THE MUTCD.
WHERE:

<u>SPEED LIMIT</u>	<u>FORMULA</u>
40 MPH OR LESS	$L_{MIN} = \frac{W \times S^2}{60}$
45 MPH OR GREATER	$L_{MIN} = W \times S$

L = MINIMUM TAPER LENGTH IN FEET (LONGITUDINAL DISTANCE)
W = WIDTH OF OFFSET IN FEET (LATERAL DISTANCE)
S = POSTED SPEED LIMIT, OR OFF-PEAK 85 PERCENTILE SPEED IN MPH PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

2- "L" DISTANCE IS FOR APPLICATION WITH CHANNELIZING DEVICE AND PAVEMENT MARKING TAPERS AND TRANSITIONS. CHANNELIZING DEVICES INCLUDE DRUMS, CONES, TUBULAR MARKERS, BARRICADES, RAISED ASPHALT ISLANDS, AND VERTICAL PANELS.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
"L" DISTANCE AND CHANNELIZING
DEVICE TAPER CRITERIA

SHEET 1 OF 4

1101.11

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adoption by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT
PITT COUNTY, NORTH CAROLINA**

SHEET TITLE: **TRAFFIC CONTROL DESIGN LENGTHS**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

SEAL: **PROFESSIONAL ENGINEER
44899
RYAN D. CLARK**

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 900-003
SHEET INDEX: 15 OF 18

DESIGN SPEED (MPH)	MINIMUM SIGHT DISTANCE		MINIMUM LONGITUDINAL BUFFER SPACE (FEET)
	STOPPING SIGHT DISTANCE (FEET)	PASSING SIGHT DISTANCE (FEET)	
30	200	1090	85
35	250	1280	120
40	305	1470	155
45	360	1625	195
50	425	1835	240
55	495	1985	290
60	570	2135	345
65	645	2285	405
70	730	2480	470
75	820	2580	540
80	910	2680	615

GENERAL NOTES

- 1- TABLES ARE BASED ON THE AASHTO GREEN BOOK "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". MINIMUM SIGHT DISTANCE VALUES ARE FOR PASSENGER CAR VEHICLES ON WET AND LEVEL ROADWAYS. CONSULT THE AASHTO GREEN BOOK TO MAKE FINAL DETERMINATION OF STOPPING SIGHT DISTANCE REQUIREMENTS.
- 2- BUFFER SPACE TABLE IS BASED ON THE BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS.
- 3- USE OF STOPPING SIGHT DISTANCE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE FOR TRAFFIC APPROACHING A LANE CLOSURE. PROVIDE 2-LANE, 2-WAY ROADWAYS STOPPING SIGHT DISTANCE TO THE FLAGGER. FOR LANE CLOSURES ON MULTILANE ROADWAYS PROVIDE STOPPING SIGHT DISTANCE TO THE BEGINNING OF THE LANE CLOSURE MERGE TAPER, OR FLASHING ARROW BOARD. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED.
- 4- USE OF MINIMUM PASSING SIGHT DISTANCE TABLE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE REQUIREMENTS FOR PLACEMENT OF PAVEMENT MARKING PASSING/NO-PASSING ZONES FOR 2-LANE, 2-WAY ROADWAYS.

1-18
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
BUFFER SPACE & SIGHT DISTANCE

SHEET 2 OF 4
1101.11

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
© 2020 Kimley-Horn & Associates, Inc.

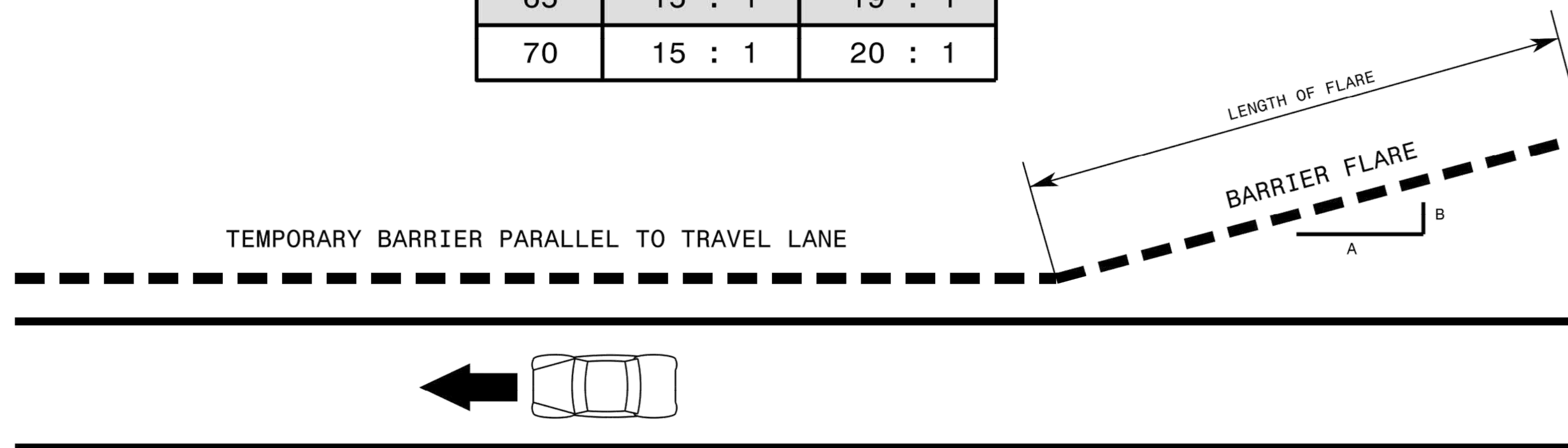


PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
PITT COUNTY, NORTH CAROLINA
SHEET TITLE: **TRAFFIC CONTROL BUFFER & SIGHT DISTANCE**

DATE: 10/15/20
SCALE (H,V): AS SHOWN
DRAWN BY: CJM
DESIGNED BY: RDC
CHECKED BY: RDC (PM)
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK

KHA PROJECT NUMBER: 11678000
DRAWING NUMBER: 900-004
SHEET INDEX: 16 OF 18

TEMPORARY BARRIER FLARE RATES		
POSTED SPEED LIMIT (MPH)	UNANCHORED (A:B)	ANCHORED (A:B)
≤ 30	7 : 1	8 : 1
35	8 : 1	9 : 1
40	8 : 1	10 : 1
45	10 : 1	12 : 1
50	11 : 1	14 : 1
55	12 : 1	16 : 1
60	14 : 1	18 : 1
65	15 : 1	19 : 1
70	15 : 1	20 : 1



GENERAL NOTES

- 1- REFER TO THE 2011 ROADSIDE DESIGN GUIDE OR THE LATEST EDITION.
- 2- A BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
 TEMPORARY BARRIER FLARE RATES

SHEET 3 OF 4

1101.11

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
 © 2020 Kimley-Horn & Associates, Inc.



PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT**
 PITT COUNTY, NORTH CAROLINA
 SHEET TITLE: **TRAFFIC CONTROL BARRIER FLARE RATES**

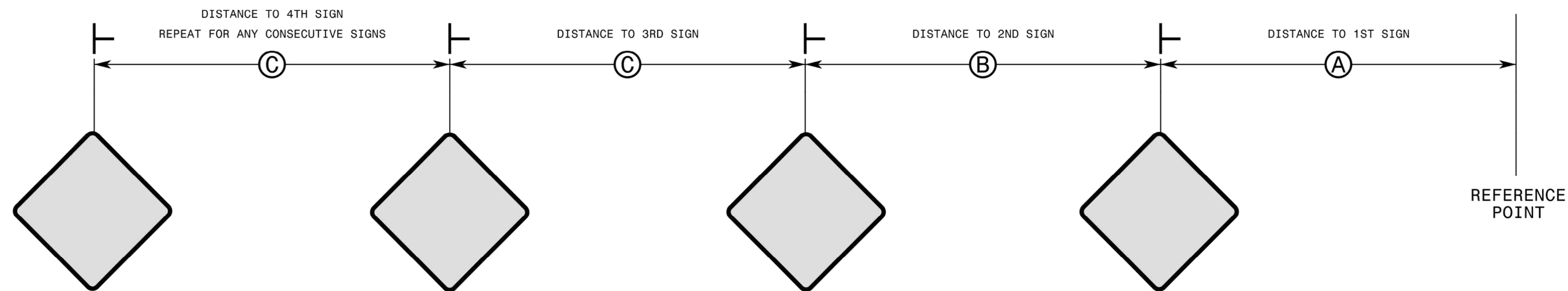
DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)



KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 900-005
 SHEET INDEX: 17 OF 18

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET) ±		
	(A)	(B)	(C)
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

STATIONARY OR PORTABLE SIGNS



GENERAL NOTES

- 1- REFER TO 2009 MUTCD OR THE LATEST EDITION.
- 2- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- 3- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

1-18
 STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
 SPACING OF TEMPORARY SIGNS IN SERIES

SHEET 4 OF 4

1101.11

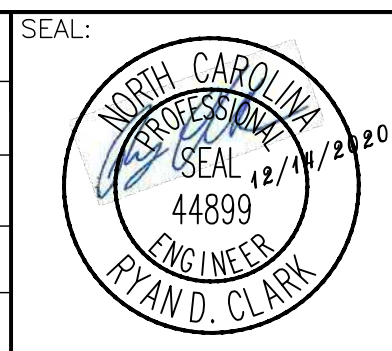
REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
 © 2020 Kimley-Horn & Associates, Inc.

CLIENT: **Greenville Utilities**

PROJECT NAME: **MEMORIAL DRIVE BRIDGE REPLACEMENT
 PITT COUNTY, NORTH CAROLINA**
 SHEET TITLE: **TRAFFIC CONTROL SIGN SPACING**

DATE: 10/15/20
 SCALE (H,V): AS SHOWN
 DRAWN BY: CJM
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)



KHA PROJECT NUMBER: 11678000
 DRAWING NUMBER: 900-006
 SHEET INDEX: 18 OF 18