May 08, 2024 – 11:03am By: Chris.Margaritis

Sheet List Table		
INDEX	Sheet Number	Sheet Title
1	000–000	COVER SHEET
2	000–001	NOTES
3	000–002	OVERALL SITE EXHIBIT
4	600–001	PLAN AND PROFILE
5	600–002	PLAN AND PROFILE
6	600–003	PLAN AND PROFILE
7	600–004	PLAN AND PROFILE
8	600–005	PLAN AND PROFILE
9	600–006	PLAN AND PROFILE
10	600–007	PLAN AND PROFILE
11	600–008	PLAN AND PROFILE
12	600–009	PLAN AND PROFILE
13	600–010	PLAN AND PROFILE
14	600–011	PLAN AND PROFILE
15	600–012	PLAN AND PROFILE
16	800–001	DETAILS
17	800–002	E&SC DETAILS
18	800–003	NCG01 GROUND STABILIZATION AND MATERIALS
19	800–004	NCG01 SELF–INSPECTION, RECORDKEEPING, AND REPORTING
20	800–005	JACK AND BORE DETAILS
21	900–001	WORK ZONE ADVANCE WARNING
22	900–002	TEMPORARY LANE CLOSURE
23	900–003	TRAFFIC CONTROL DESIGN LENGTHS
24	900–004	TRAFFIC CONTROL BUFFER & SIGHT DISTANCES
25	900–005	TRAFFIC CONTROL BARRIER FLARE RATES
26	900–006	TRAFFIC CONTROL DESIGN SPACING
27	900–007	NCDOT NOTES AND DETAILS

Greenville Utilities

GAS DISTRIBUTION SYSTEM IMPROVEMENTS NC 11 NORTH NATURAL GAS MAIN EXTENSION

GCP-10124
RFB 24-14

PROJECT LOCATION

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
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CONTACT: RYAN CLARK, P.E.

24-HOUR CONTACT: GUC EMERGENCY HOTLINE
PHONE: (855) 767-2482

SITE INFO

12,815' X 8" MDPE PIPE
MAOP = 60 PSIG

ISSUED FOR CONSTRUCTION
BY DATE

REVISIONS

NO.	DATE	REVISION	BY
7			
6			
5			
4			
3			
2			
1	5/8/24	UPDATE BOM: SPHERICAL TEE AND CASING PIPE	CJM

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NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

DRAWING:

DATE: APRIL 29, 2024

JOB NUMBER: 116780001

PREPARED IN THE OFFICE OF:

Kimley»Horn
4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462
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SITE PLAN ABBREVIATIONS

AB	ANCHOR BOLT
AC	ALTERNATING CURRENT/ ASBESTOS CEMENT
ACT	ACOUSTIC TILE
AD	AREA DRAIN
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AL	ALUMINUM
ALLOW	ALLOWANCE/ALLOWABLE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
AT	ASPHALT TILE
B	BORING
BD	BOARD
BFE	BOTTOM OF FITTING ELEV
BFV	BUTTERFLY VALVE
BITUM	BITUMINOUS
BL	BASELINE
BL	BUILDING LINE
BLDG	BUILDING
BLK	BLOCK
BM	BENCH MARK
BOC	BACK OF CURB
BOT	BOTTOM
BRG	BEARING
BRK	BRICK
BRZ	BRONZE
BSMT	BASEMENT
BT	BOLT
BUR	BUILT-UP ROOFING
BV	BALL VALVE
C	CLOSET/CARPET/CHANNEL
CAB	CABINET
CB	CATCH BASIN
C/C	CENTER TO CENTER
CE	CONSTRUCTION EASEMENT
CEM	CEMENT
CER	CERAMIC
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON/CUBIC INCHES
CIP	CAST IRON PIPE
℄	CENTER LINE
CL_2	CHLORINE
CLG	CEILING
CLKG	CAULKING
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORP	CORPORATION
CORR	CORRIDOR
CP	CONCRETE PLANK
CRS	COURSE
CT	CERAMIC TILE
CTJ	CONTROL JOINT
CU	COPPER
CV	CHECK VALVE
CW	COLD WATER
CY	CUBIC YARD
DC	DIRECT CURRENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA (Ø)	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIST	DISTRIBUTION
DJ	DOUBLE JOIST
DL	DEAD LOAD
DN	DOWN
DOZ	DOZEN
DR	DOOR
DWG	DRAWING
DWL	DOWEL
E	EAST/EASEMENT
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EFF	EFFLUENT
EIP	EXIST IRON PIPE
EL OR ELEV	ELEVATION
ELEC	ELECTRIC/ELECTRICAL
ELL	ELBOW
ENGR	ENGINEER
ENT	ENTRANCE
EOG	EDGE OF GRAVEL
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQPT	EQUIPMENT
EW	EACH WAY
EX	EXISTING
EXC	EXCAVATE
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERIOR

FAB	FABRICATE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FC	FLUSHING CONNECTION
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FH	FIRE HYDRANT
FIN	FINISH
FIX	FIXTURE
FL	FLASHING/FLOOR
FLEX	FLEXIBLE
FLG	FLANGE
FLUOR	FLUORESCENT
FLXC	FLEXIBLE CONNECTION
FM	FORCE MAIN
FPRF	FIREPROOF
FRP	FIBERGLASS REINFORCED POLYESTER LAMINATE
FT	FEET
FTG	FOOTING/FITTING
FURR	FURRING/FURRED
G	GAS/GAS LINE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GI	GALVANIZED IRON
GL	GLASS
GPM	GALLONS PER MINUTE
GR	GRADE
GRV	GRAVEL
GV	GATE VALVE
GW	GUY WIRE
GWB	GYPSUM WALL BOARD
GWF	GLAZED WALL FINISH
GYP	GYPSUM
H	HEIGHT
HDW	HARDWARE
HEX	HEXAGONAL
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HORSEPOWER
HPT	HIGH POINT
HTR	HEATER
HVAC	HEATING,VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRAULIC
I	IRON
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INCL	INCLUDED
INF	INFLUENT
INS	INSULATION
INT	INTERIOR
INV	INVERT
J	JOIST
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
L	LENGTH/ANGLE
LA	LINE AHEAD
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND/LINE BACK
LF	LINEAR FEET
LG	LONG
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LIGHT POLE
LPT	LOW POINT
LT	LIGHT
LTG	LIGHTING
LVR	LOUVER
LWL	LOW WATER LEVEL

MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MLDG	MOLDING
MO	MASONRY OPENING
MOD	MODIFY/MODIFIED
MON	MONUMENT
MOT	MOTOR
MTD	MOUNTED
MTG	MOUNTING
MULT	MULTIPLE
N	NORTH
NA	NOT APPLICABLE
NF	NEAR FACE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
OC	ON CENTER
O.D.	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFF	OFFICE
OPER	OPERATOR
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OT	OPEN TRUSS
OVHD	OVERHEAD
PAR	PARALLEL
PC	POINT OF CURVE/PIECE
PCC	POINT OF COMPOUND CURVE
PCF	POUNDS PER CUBIC FOOT
PE LINING	POLYETHYLENE LINING
PERF	PERFORATED
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
ℙ	PROPERTY LINE/PLATE
PNL	PANEL
PP	POWER POLE
PREFAB	PREFABRICATED
PRV	PRESSURE RELIEF VALVE
PS	PUMPING STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT/POINT
PTN	PARTITION
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PW	POTABLE WATER
QTY	QUANTITY
R	RADIUS/RISER
RCP	REINFORCED CONCRETE PIPE
RD	ROAD/ROOF DRAIN
RECIR	RECIRCULATION
RECP	RECEPTACLE
RECT	RECTANGULAR
RED	REDUCER
REF	REFERENCE
REG	REGISTER
REINF	REINFORCING
REM	REMOVE
REQD	REQUIRED
REST	RESTRAINED
REV	REVISE
RF	ROOF
RFG	ROOFING
RJ	RESTRAINED JOINT
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
RW	RAW WATER
R/W	RIGHT OF WAY

S	SOUTH/SLOPE
SAN	SANITARY
SBL	SURVEY BASELINE
SCH	SCHEDULE
SD	STORM/SITE DRAIN
SECT	SECTION
SERV	SERVICE
SEW	SEWER
SF	SQUARE FEET
SHT	SHEET
SI	SQUARE INCH
SIM	SIMILAR
SJ	STEEL JOIST
SPEC	SPECIFICATION
SQ	SQUARE
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STG	STORAGE
STIR	STIRRUP
STL	STEEL
STR	STRUCTURAL
SUB	SUBSTITUTE
SUP	SUPPLY
SUPT	SUPERINTENDENT
SUR	SURFACE
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
SWD	SIDE WATER DEPTH
SYM	SYMMETRICAL
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCHH	TRAFFIC CONTROL HAND HOLD
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE
TER	TERRAZZO
THERMO	THERMOSTAT
THK	THICK
THRU	THROUGH
TOD	TOP OF DECK
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY/MANHOLE
TOS	TOP OF SLAB
TOW	TOP OF WALL
TOL	TOLERANCE
TPS	TWISTED PAIR SHIELDED
TRANS	TRANSFORMER
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNFIN	UNFINISHED
UR	URINAL
UTIL	UTILITY
VAC	VACUUM
VAT	VINYL ASBESTOS TILE
VCP	VITRIFIED CLAY PIPE
VEL	VELOCITY
VENT	VENTILATING/VENTILATION
VERT	VERTICAL
VOL	VOLUME
VP	VENT PIPE
VWC	VINYL WALL COVERING
W	WEST/WIDTH
W/	WITH
WC	WATER CLOSET
WF	WIDE FLANGE
WH	WALL HYDRANT
WI	WROUGHT IRON
WL	WATER LEVEL
W/L	WATER LINE
WO	WINDOW OPENING
W/O	WITHOUT
WP	WATERPROOF
WPFG	WATER PROOFING
WPT	WALL PENETRATING TYPE
WSE	WATER SURFACE ELEVATION
WSP	WEATHERSTRIP
WT	WEIGHT
W.T.	WALL THICKNESS
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
YD	YARD
YR	YEAR

GUC NC 11 NORTH NATURAL GAS MAIN EXTENSION BILL OF MATERIALS

		ITEM #	QTY	U/NIT	NOM. SIZE (IN.)	W.T.	GRADE	DESCRIPTION
PIPE	2.0	1.1	14,343	LF	8	0.764	MDPE	Pipe, ASTM D2513 & ASTM D2683, 0.764" min. wall thickness, 8.625" o.d., SDR 11, PE 2406/2708, 40 LF sticks, MARKED DOT SECT. 192.63, ENDS CAPPED
		1.2	18	LF	4	0.391	MDPE	Pipe, ASTM D2513 & ASTM D2683, 0.391" min. wall thickness, 4.500" o.d., SDR 11.5, PE 2406/2708, 40 LF sticks, MARKED DOT SECT. 192.63, ENDS CAPPED
		1.3	225	LF	2	0.216	MDPE	Pipe, ASTM D2513 & ASTM D2683, 0.216" min. wall thickness, 2.375" o.d., SDR 11, PE 2406/2708, Coil, MARKED DOT SECT. 192.63, ENDS CAPPED
		1.4	18	LF	1-1/4	0.166	MDPE	Pipe, ASTM D2513 & ASTM D2683, 0.166" min. wall thickness, 1.660" o.d., SDR 10, PE 2406/2708, Coil, MARKED DOT SECT. 192.63, ENDS CAPPED
		1.5	31	LF	3/4	0.095	MDPE	Pipe, ASTM D2513 & ASTM D2683, 0.095" min. wall thickness, 1.050" o.d., SDR 11, PE 2406/2708, Coil, MARKED DOT SECT. 192.63, ENDS CAPPED
		1.6	12	LF	8	0.322	X-52	PIPE, STEEL 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, Domestic
		1.7	320	LF	12	0.375	B	PIPE - CASING, 12" NOMINAL DIAMETER, 0.375" W.T., ERW, API-5L, GRADE B CARBON STEEL OR HIGHER, Bare, Domestic
		1.8	8	EA	8	0.764	MDPE	8" PLASTIC PIPE, 8" GRADE PE 2708 MDPE, SDR 11, DR 9, 0.764" PE, ASTM D2513
		1.9	80	LF	2	0.154	X-52	Pipe, STD Wall (WT=0.154"), ST API 5L-GR.X-52, EXTERNALLY COATED WITH 12-14 MILS FBE, PREFERRED PRODUCT 3M SCOTCHKOTE 226N/6233, Domestic
		1.10	4	EA	2	0.154	Y-52	90 deg.ELL, STD Wall (WT=0.154"), Long Radius, ST API 5L-GR-Y-52, Domestic
		1.11	4	EA	2	0.154	Y-52	180 deg.Return, STD Wall (WT=0.154"), ST API 5L-GR.Y-52, Domestic
VALVES	2.0	2.1	7	EA	8	0.764	MDPE	Polyethylene Valve, Full Port, Ball, SDR 11.5, Butt Fusion, Medium Density PE 2406/2708, Must Meet or Exceed Requirements of USDOT 49CFR-part 192 for Natural Gas Distribution.
		2.2	1	EA	4	0.391	MDPE	Polyethylene Valve, Full Port, Ball, SDR 11.5, Butt Fusion, Medium Density PE 2406/2708, Must Meet or Exceed Requirements of USDOT 49CFR-part 192 for Natural Gas Distribution.
		2.3	5	EA	2	0.216	MDPE	Polyethylene Valve, Full Port, Ball, SDR 11.5, Butt Fusion, Medium Density PE 2406/2708, Must Meet or Exceed Requirements of USDOT 49CFR-part 192 for Natural Gas Distribution.
		2.4	1	EA	8	0.322	X-52	Valve, Ball, Weld End, Full Port, Class 150, Keystone Weldball or equivalent (Gear Operated).
END CAP	3.0	3.1	4	EA	8	0.764	MDPE	End Cap, ASTM D2513 & ASTM D2683, Butt fuse, injection molded, SDR 11, PE 2406/2708, ASTM MARKED DOT SECT. 192.63
		3.2	2	EA	4	0.391	MDPE	End Cap, ASTM D2513 & ASTM D2683, Butt fuse, injection molded, SDR 11.5, PE 2406/2708, ASTM MARKED DOT SECT. 192.63
		3.3	8	EA	2	0.216	MDPE	End Cap, ASTM D2513 & ASTM D2683, Butt fuse, injection molded, SDR 11, PE 2406/2708, ASTM MARKED DOT SECT. 192.63
		3.4	2	EA	1-1/4	0.166	MDPE	End Cap, ASTM D2513 & ASTM D2683, Butt fuse, injection molded, SDR 10, PE 2406/2708, ASTM MARKED DOT SECT. 192.63
		3.5	4	EA	3/4	0.095	MDPE	End Cap, ASTM D2513 & ASTM D2683, Butt fuse, injection molded, SDR 11, PE 2406/2708, ASTM MARKED DOT SECT. 192.63
ELS	4.0	4.1	20	EA	8	-	MDPE	Electrofusion Coupling, ASTM D2513 & ASTM D2683, Injection Molded, SDR 11, PE 2406/2708
		4.2	1	EA	4	-	MDPE	Electrofusion Coupling, ASTM D2513 & ASTM D2683, Injection Molded, SDR 11.5, PE 2406/2708
		4.3	5	EA	2	-	MDPE	Electrofusion Coupling, ASTM D2513 & ASTM D2683, Injection Molded, SDR 11, PE 2406/2708
		4.4	1	EA	1-1/4	-	MDPE	Electrofusion Coupling, ASTM D2513 & ASTM D2683, Injection Molded, SDR 10, PE 2406/2708
		4.5	2	EA	3/4	-	MDPE	Electrofusion Coupling, ASTM D2513 & ASTM D2683, Injection Molded, SDR 11, PE 2406/2708
		5.1	5	EA	8	0.764	MDPE	90 deg.ELL, ASTM D2513 & ASTM D2683, Butt Fuse, Injection Molded, SDR 11, PE2406/2708, ASTM Marked DOT SECT. 192.63
		5.2	2	EA	8	0.764	MDPE	45 deg.ELL, ASTM D2513 & ASTM D 2683, SDR 11, Butt Fusion, Injection Molded, Medium Density PE 2406/2708, ASTM MARKED DOT SECT. 192.63
TEES	6.0	6.1	3	EA	8	0.764	MDPE	Tee, ASTM D2513 & ASTM D 2683, SDR 11, Butt Fusion, Injection Molded, Medium Density PE 2406/2708, ASTM MARKED DOT SECT. 192.63
		6.2	1	EA	8X4	0.764	MDPE	8" X 4" REDUCING TEE, BUTT FUSION, ASTM D2513, SDR 11
		6.3	1	EA	8	0.322	Y-52	10W 8" SPHERICAL TEE W/ LOCK-O-RING ASSEMBLY & COMPLETION PLUG, ANSI 150, DESIGNED TO ASME B31.8, 0.322" W.T. ON RUN PIPE, 0.322" W.T. ON BRANCH PIPE, 10W-2 PART NUMBER 26-1858-08LC-50
TAPPING TEES	7.0	7.1	4	EA	8 X 2	0.764	MDPE	Electrofusion High Volume Taping Tee, ASTM D2513 & ASTM D2683, SDR 11, Butt Fusion Outlet, Rectangular Base, Medium Density PE 2406/2708
		7.2	1	EA	8 X 1-1/4	0.764	MDPE	Electrofusion High Volume Taping Tee, ASTM D2513 & ASTM D2683, SDR 11, Butt Fusion Outlet, Rectangular Base, Medium Density PE 2406/2708
		7.3	2	EA	8 X 3/4	0.764	MDPE	Electrofusion High Volume Taping Tee, ASTM D2513 & ASTM D2683, SDR 11, Butt Fusion Outlet, Rectangular Base, Medium Density PE 2406/2708
MISCELLANEOUS	8.0	8.1	3	EA	8	0.764	-	STEEL TO PLASTIC TRANSITION FITTING, ASTM D2513 & ASTM D2683, SDR 11, 0.322" min. wall, Medium Density PE 2406/2708
		8.2	66	EA	-		-	TRACER WIRE #8 Yellow Thhn, Stranded Copper, 500' Hand Spools
		8.3	25	EA	6	-	-	Valve Box, Flush Mount, Gas Lid
		8.4	25	EA	-		-	Pre-Cast Concrete Collar
		8.5	4	EA	8	-	-	Casing End Seals, PSI (GPT Industries) Link-Seal Modular Seals LS-410-0-12 (Two Sets Required); Or As Approved By Engineer
		8.6	86	EA	8 X 12	-	-	Concentric Casing Spacers (Insulators), Bolt-On, Polyethylene
		8.7	2	EA	2	-	-	2" THREAD-O-RING, 8" DIA. RUN PIPE, CARBON STEEL NIPPLE/CAP/PLUG, BUNA-N N674-70 O-RING

NOTES:
1. PIPE QUANTITIES INCLUDE 30% ADDITIONAL LENGTH FOR CONTINGENCY.

PROJECT NOTES:

GENERAL NOTES:

1. 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.
2. ALL AREAS DISTURBED BY GRADING, EXCAVATION, AND GENERAL CONSTRUCTION SHALL BE SEEDED, MULCHED, AND RESTORED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION.
4. 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.
5. 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.
6. 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.
7. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL VERIFY EXACT MATERIALS, LOCATION, ELEVATION, DIMENSIONS, AND LAYOUT OF EXISTING PIPING TO BE CONNECTED TO PRIOR TO ORDERING MATERIALS.
9. TYPICAL DEPTH OF COVER FOR BURIED PIPELINE SHALL BE 3 FEET UNLESS OTHERWISE SHOWN OR SPECIFIED.
10. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SHEETING REQUIRED FOR THE INSTALLATION. ALL EXCAVATIONS SHALL BE KEPT WITHIN THE DESIGNATED EASEMENT WIDTHS AND RIGHT-OF-WAY. EXCAVATION WITHIN PAVED AREAS IS PROHIBITED, UNLESS OTHERWISE SHOWN OR SPECIFIED. SHEETING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING UTILITIES.
11. 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.
12. 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.
13. 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.
14. THE CONTRACTOR SHALL RESTORE GRADE TO PRE CONSTRUCTION CONDITION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
15. CONSTRUCTION ENTRANCES SHALL BE PLACED AS NEEDED BY THE CONTRACTOR ACCORDING TO THE DRAWING STANDARD DETAILS.
16. CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING BONDED TO EXISTING PIPING DURING CONSTRUCTION.
17. SLOPES AND GROUND COVER ARE TO BE RESTORED WITHIN FIVE (5) WORKING DAYS.
18. CONTRACTOR TO VERIFY DEPTH OF EXISTING UTILITIES BY TEST PIT AND ADJUST DEPTH OF BORE ACCORDINGLY.
19. ALL AREAS WITHIN RIGHT OF WAY (I.E. CULVERTS, DRIVEWAYS, DITCHLINES, SLOPES, GUARD RAIL, PAVEMENT, ETC.) DISTURBED BY CONSTRUCTION SHALL AT A MINIMUM BE REPAIRED TO THEIR ORIGINAL CONDITION.
20. NO EQUIPMENT OR MATERIAL STORAGE WILL BE PERMITTED WITHIN THE STATE RIGHT OF WAY.
21. CONTRACTOR SHALL MAINTAIN 2' MINIMUM FROM POWER POLES AND UNDERGROUND UTILITIES.
22. PROPOSED PIPELINE SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE TO GREENVILLE UTILITIES TECHNICAL SPECIFICATIONS, & OPERATIONS & MAINTENANCE PLAN, LATEST EDITION.
23. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES AS NEEDED.
24. CONTRACTOR SHALL MAINTAIN ACCESS TO ROADS AT ALL TIMES.
25. GAS MAIN TO BE TESTED WITH AIR/NITROGEN. WATER AS A TEST MEDIUM IS NOT PERMITTED. NEW FACILITIES MUST BE SUBJECT TO PRESSURE TEST PER GUC REQUIREMENTS.
26. SOIL DRIVEWAYS ARE TO BE OPEN CUT. IF PROPERTY OWNER HAS ONE POINT OF ENTRY, THEY MUST BE NOTIFIED BEFORE RESTRICTING ACCESS.

CONSTRUCTION SEQUENCE

1. OBTAIN APPROPRIATE CONSTRUCTION PERMITS
2. INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES
3. CLEAR AND GRUB
4. ROUGH GRADE SITE
5. EXCAVATE AND INSTALL GAS PIPELINES AND ASSOCIATED INFRASTRUCTURE
6. FINISH FINAL GRADING AND SURFACE RESTORATION
7. REMOVE EROSION AND SEDIMENTATION CONTROL MEASURES. (E+SC MEASURES SHALL REMAIN UNTIL ENTIRE SITE IS APPROPRIATELY REESTABLISHED)

LEGEND

E&S SYMBOLS

IP — INLET PROTECTION

CIP — CULVERT INLET PROTECTION

SECTION AND DETAIL KEYING

DRAWINGS ARE CROSS REFERENCED IN THE FOLLOWING METHOD:

(A) A SECTION CUT ON SHEET 3 IS IDENTIFIED AS FOLLOWS:

A — SECTION LETTER
6 — SHEET WHERE SECTION IS SHOWN

(B) THE SECTION SHOWN ON SHEET 6 IS IDENTIFIED AS FOLLOWS:

A — SECTION LETTER
3 — SHEET FROM WHERE SECTION WAS TAKEN

STANDARD DETAILS ARE REFERENCED BY A UNIQUE SEVEN DIGIT NUMBER AND ARE SHOWN ON THE DRAWINGS BY ONE OF TWO METHODS:

2000003 → REFERENCED ITEM

OR:

SEE 2000003 → REFERENCED ITEM

STANDARD DETAILS ARE COMPILED IN APPROXIMATE NUMERICAL ORDER IN

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:
1	UPDATE BOM: CASING PIPE AND SPHERICAL TEE	5/8/24	CJM	RDC

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

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: NOTES

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 12/12/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 000-001
SHEET INDEX: 2 OF 27

May 08, 2024 – 11:03am By: Chris.Morgan@kimley-horn.com
K:\VAB_Drive\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\000-000 Cover & Notes.dwg

NORTH

GRAPHIC SCALE IN FEET
0 200 400 800

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
OVERALL SITE EXHIBIT

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 000-002
SHEET INDEX: 3 OF 27

May 08, 2024 – 11:03am By: Chris.Morgan1ts

K:\VAB_DWL\116780001 – GUC – RTE 11 Extension\CADD\PlanSheets\000-002 OVERALL SITE EXHIBIT.dwg

R/W

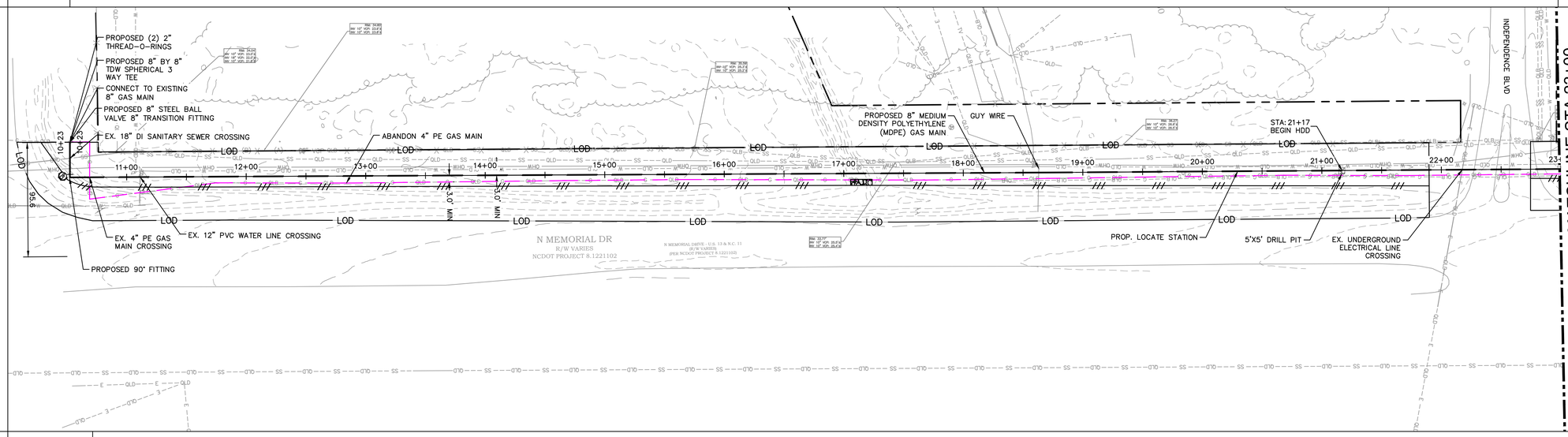
PUBLIC R/W

RESTRICT.

OWNER

N. MEMORIAL DR.
R/W VARIES

PLAN



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

PIPE BAR

DETAIL		
PIPE		1
COATING		N/A
LENGTH (LF)		1300'
FITTINGS	7, 8, 9	1
CAT. PROTECTION		N/A

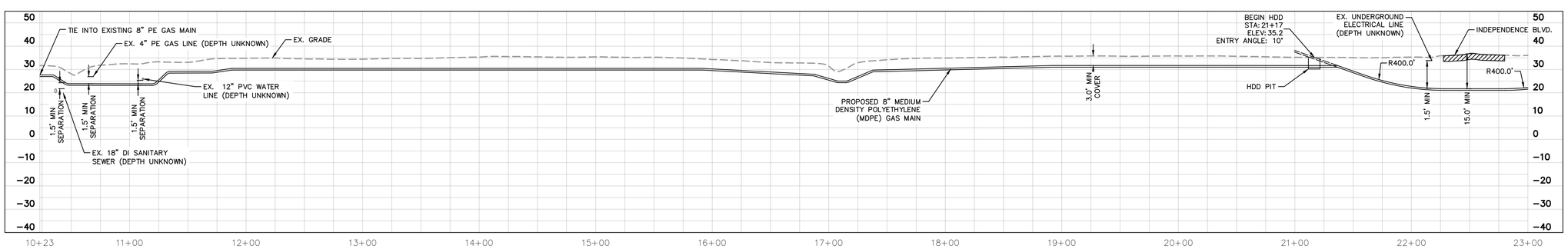
MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5' PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

PROFILE



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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-001
SHEET INDEX: 4 OF 27

May 08, 2024 – 11:04am By: Chris.Morgan@ts

K:\VAE_DWA\116780001 - GUC - RTE 11 Extension\CADD\Plan Sheet\V000-000 Plan & Profile.dwg

R/W

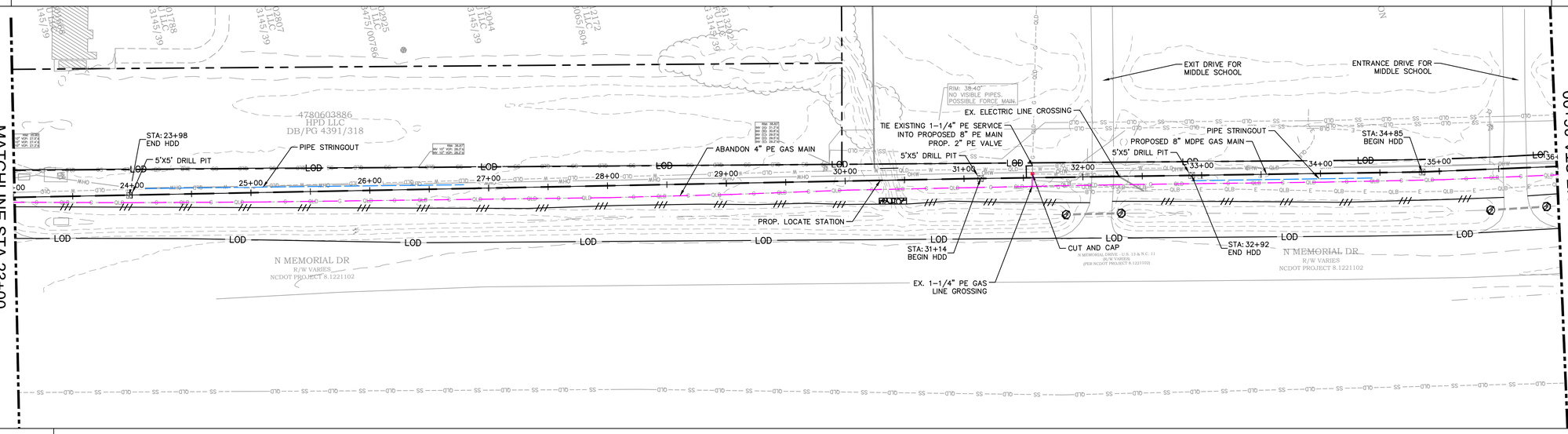
PUBLIC R/W

RESTRICT.

OWNER

N. MEMORIAL DR.
R/W VARIES

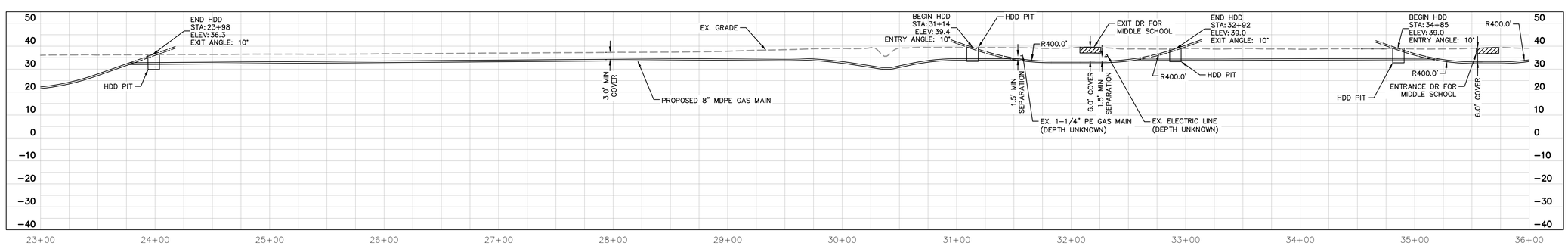
PLAN



PIPE BAR

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
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5 = 8" PE TEE
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7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

May 08, 2024 – 11:04am By: Chris.Morgantis

K:\VAE_CIVIL\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-002 Plan & Profile.dwg

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001

DRAWING NUMBER: 600-002

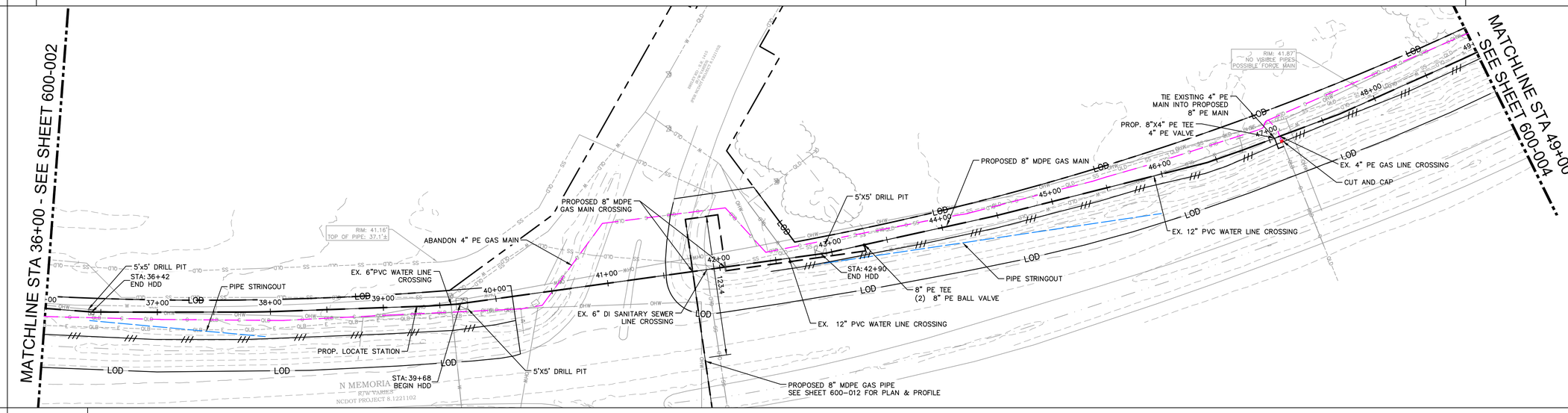
SHEET INDEX: 5 OF 27

R/W | RESTRICT. | OWNER

PUBLIC R/W

N. MEMORIAL DR.
R/W VARIES

PLAN



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
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- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
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- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

PIPE BAR

DETAIL				
PIPE	1		1	
COATING	N/A		N/A	
LENGTH (LF)	730'		570'	
FITTINGS	5	4	11	10
CAT. PROTECTION	N/A		N/A	

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

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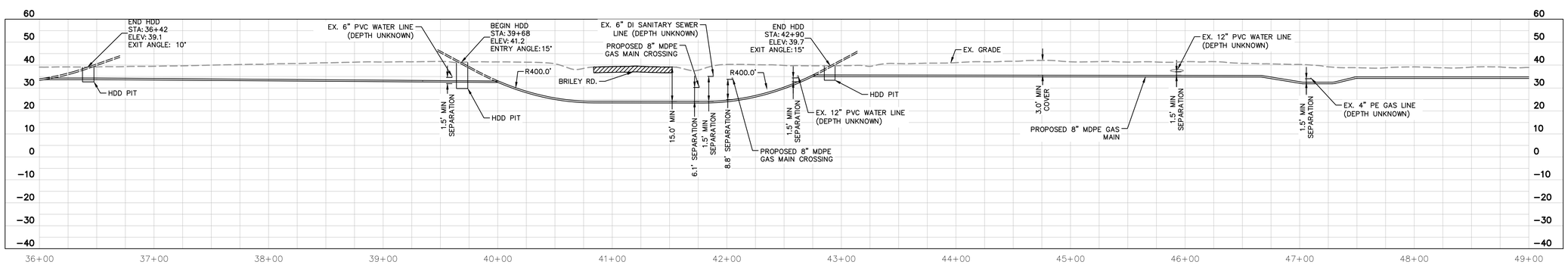
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

PROFILE



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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-003
SHEET INDEX: 6 OF 27

May 08, 2024 – 11:04am By: Chris.Morgantis

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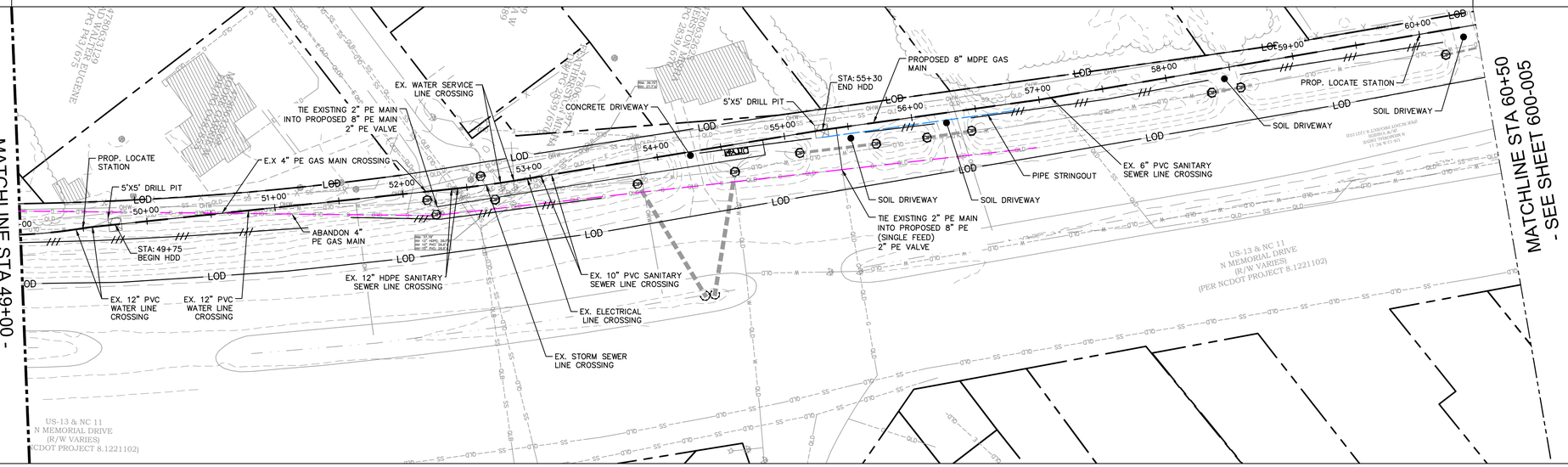
R/W | OWNER | RESTRICT.

PUBLIC R/W

N. MEMORIAL DR.
R/W VARIES

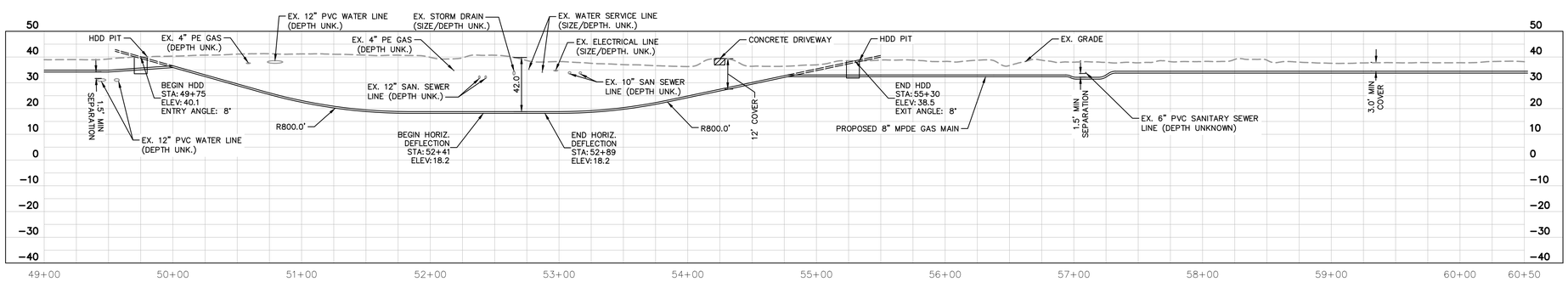
PLAN



PIPE BAR

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1150'
FITTINGS	
CAT. PROTECTION	N/A

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
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7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-004
SHEET INDEX: 7 OF 27

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May 08, 2024 – 11:05am By: Chris.Mangarillo

R/W

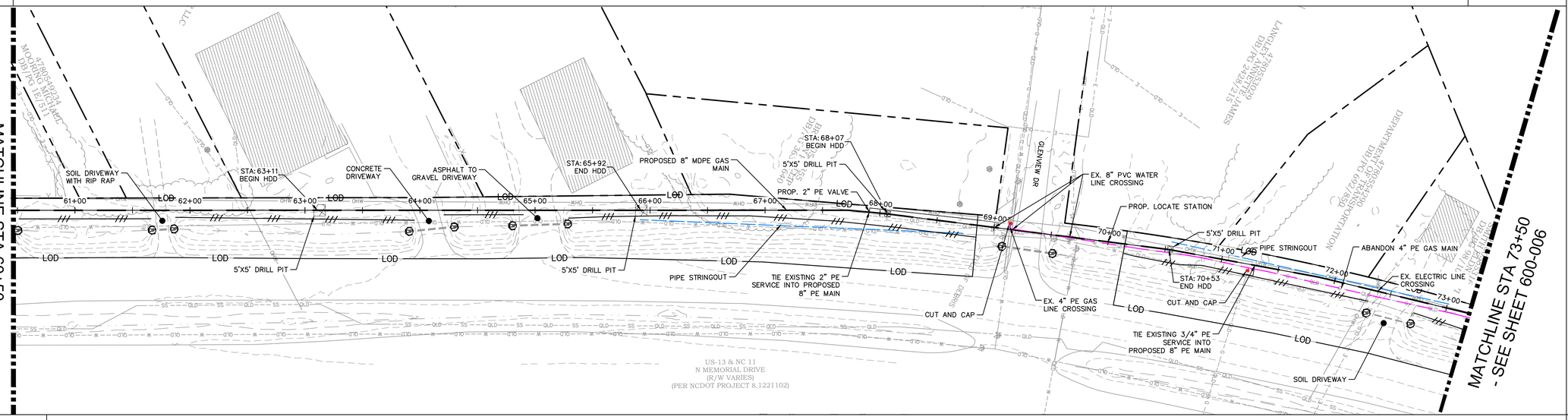
PUBLIC R/W

RESTRICT.

OWNER

N. MEMORIAL DR.
R/W VARIES

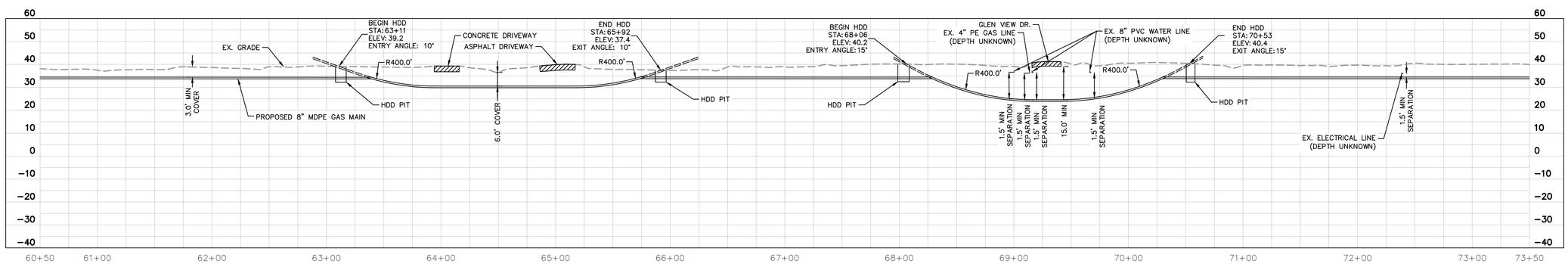
PLAN



PIPE BAR

DETAIL		
PIPE	1	
COATING	N/A	
LENGTH (LF)	1300'	
FITTINGS	N/A	12
CAT. PROTECTION	N/A	

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
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- SUBSURFACE WATER
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- STREAM BUFFER
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- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

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9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-005
SHEET INDEX: 8 OF 27

May 08, 2024 – 11:05am By: Chris.Margaritis

K:\VAE_CIVIL\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-005 Plan & Profile.dwg

R/W

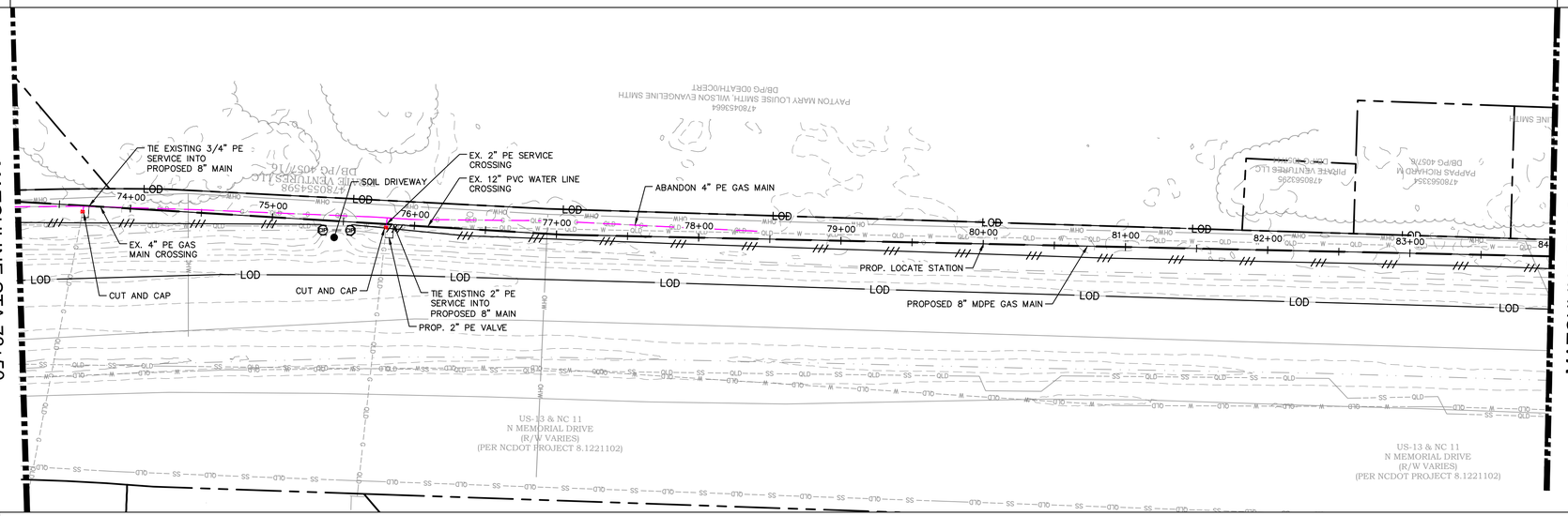
PUBLIC R/W

RESTRICT.

OWNER

N. MEMORIAL DR.
R/W VARIES

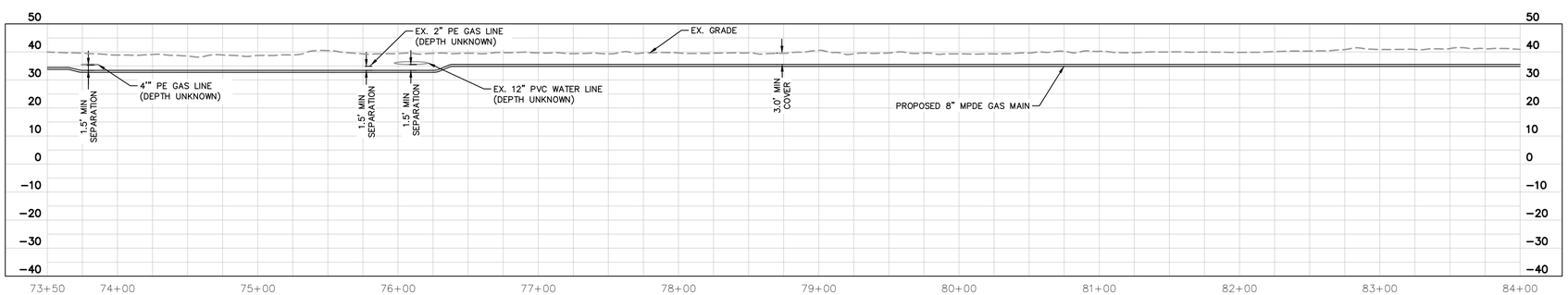
PLAN



PIPE BAR

DETAIL		
PIPE		1
COATING		N/A
LENGTH (LF)		1150'
FITTINGS	12	N/A
CAT. PROTECTION		N/A

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE SUBSURFACE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5' PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001

DRAWING NUMBER: 600-006

SHEET INDEX: 9 OF 27

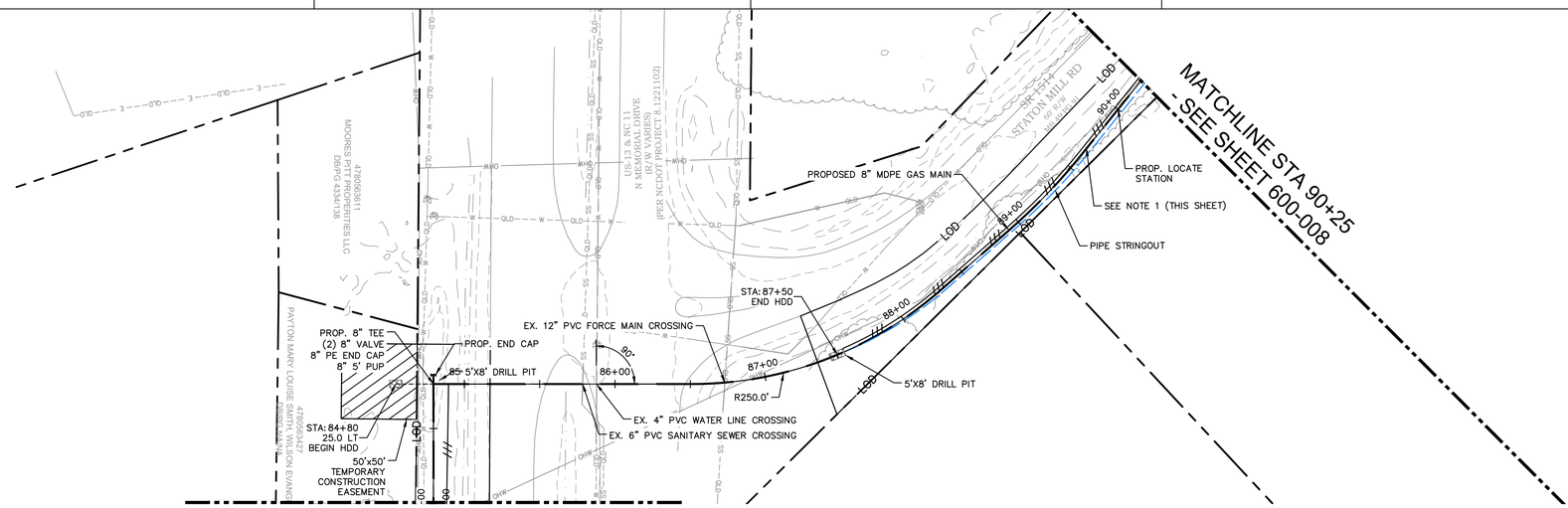
May 08, 2024 – 11:05am By: Chris.Margaritis

K:\VAE_CIVIL\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-005 Plan & Profile.dwg

x780001 – Survey|Bndy – Road ROW

R/W	PUBLIC R/W	PUBLIC R/W	
RESTRICT.			
OWNER	N. MEMORIAL DR. R/W VARIES	STATON MILL RD.. 60' R/W	

PLAN



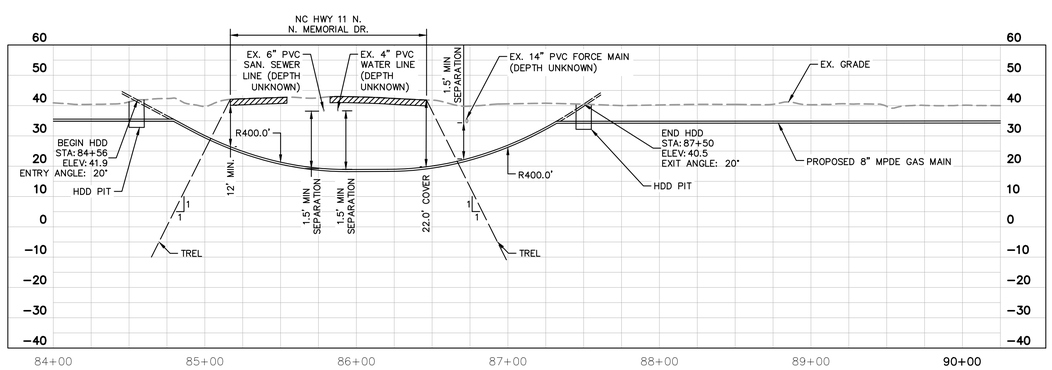
PIPE BAR

NOTE 1:

PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

DETAIL			
PIPE	1	1	
COATING	N/A	N/A	
LENGTH (LF)	79'	546'	
FITTINGS	1, 3,	4, 5, 6	N/A
CAT. PROTECTION	N/A	N/A	

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
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5 = 8" PE TEE
6 = 8" 5' PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-007
SHEET INDEX: 10 OF 27

May 08, 2024 – 11:06am By: Chris.Morgan1ts

K:\VAB_Civil\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-000 Plan & Profile.dwg

R/W

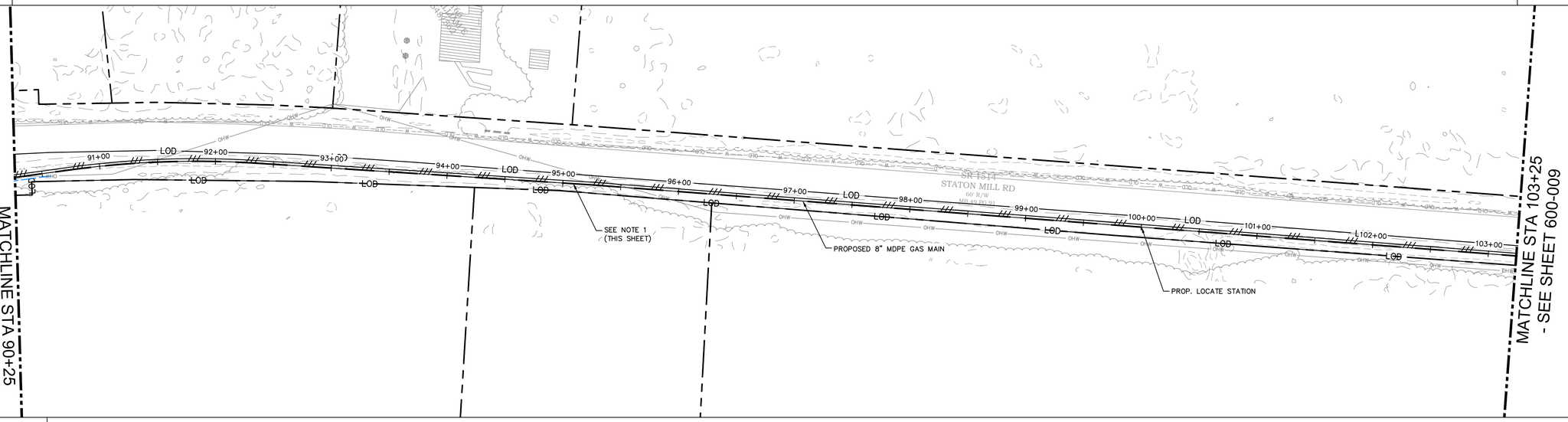
PUBLIC R/W

RESTRICT.

OWNER

STATON MILL RD.
60' R/W

PLAN



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

May 08, 2024 – 11:06am By: Chris.Morgan1ts

PIPE BAR

NOTE 1:

PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
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5 = 8" PE TEE
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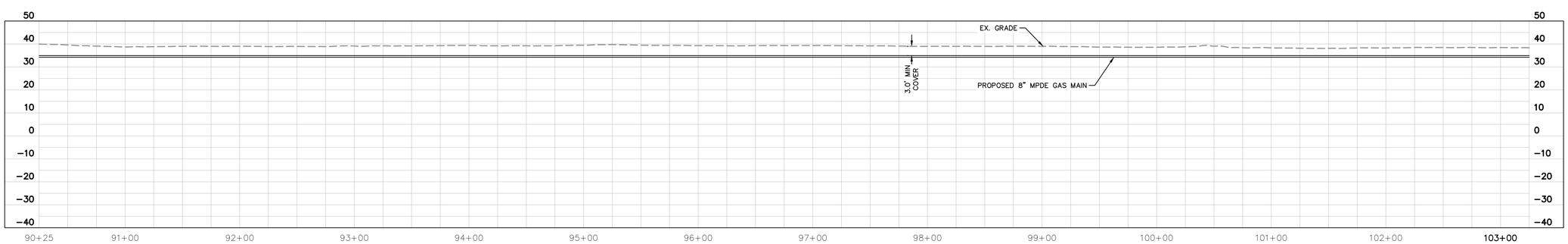
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

PROFILE



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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-008
SHEET INDEX: 11 OF 27

K:\VAE_DWA\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-000 Plan & Profile.dwg

R/W

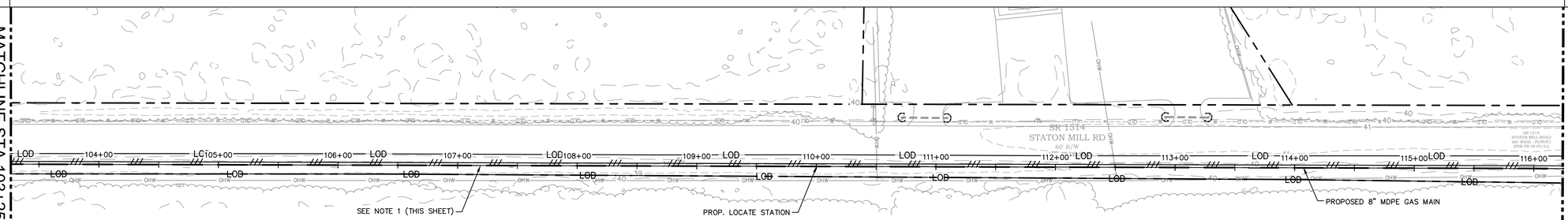
PUBLIC R/W

OWNER RESTRICT.

STATON MILL RD.
60' R/W

PLAN

MATCHLINE STA 103+25 - SEE SHEET 600-008



MATCHLINE STA 116+25 - SEE SHEET 600-010

LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

PIPE BAR

NOTE 1:

PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11
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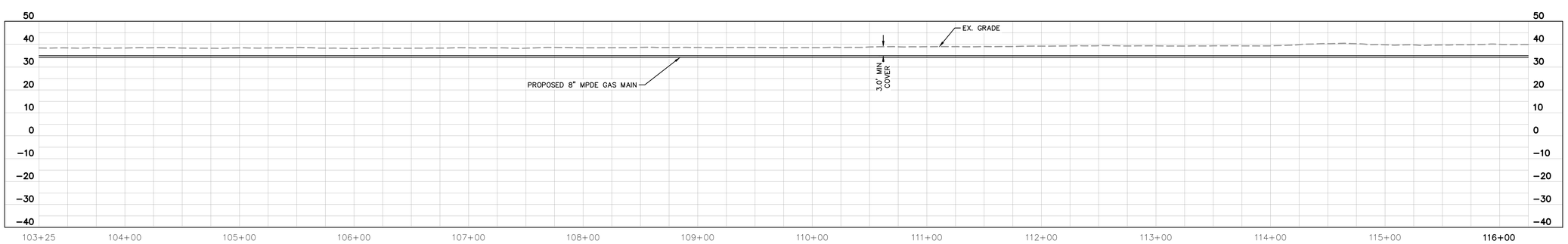
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

PROFILE



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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

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

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-009
SHEET INDEX: 12 OF 27

May 08, 2024 – 11:06am By: Chris.Morgan@ts

K:\VAB_CIVIL\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\600-000 Plan & Profile.dwg

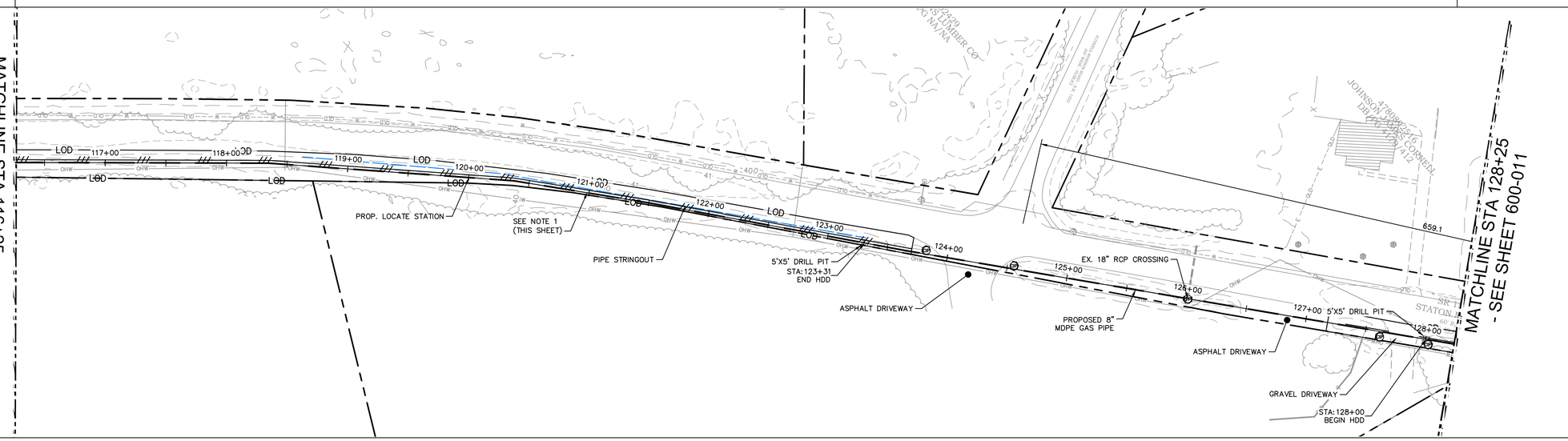
R/W

PUBLIC R/W

OWNER RESTRICT.

STATON MILL RD.
60' R/W

PLAN



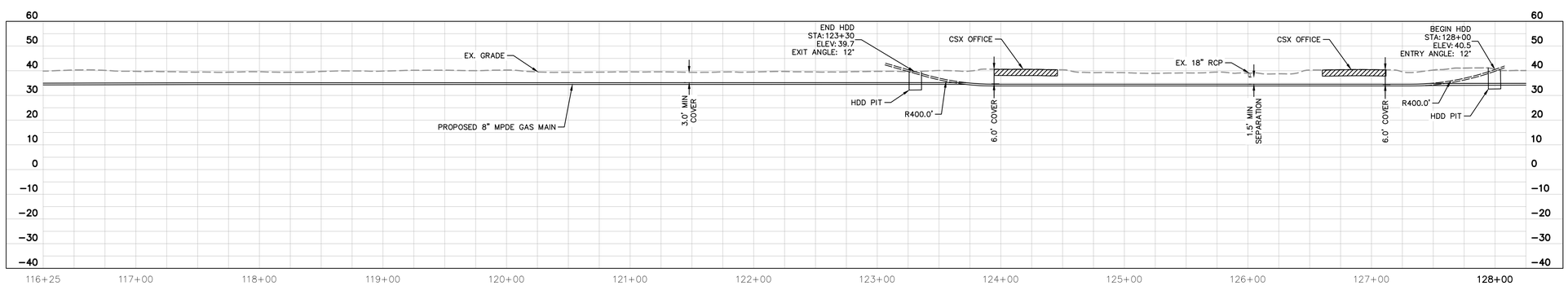
PIPE BAR

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1200'
FITTINGS	N/A
CAT. PROTECTION	N/A

NOTE 1:

PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

PROFILE



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
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8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

May 08, 2024 – 11:07am By: Chris.Mangarillo

K:\VAE_Civil\116780001 - GUC - RTE 11 Extension\CADD\Plan Sheets\600-000 Plan & Profile.dwg

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

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

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CLIENT: Greenville Utilities

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PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

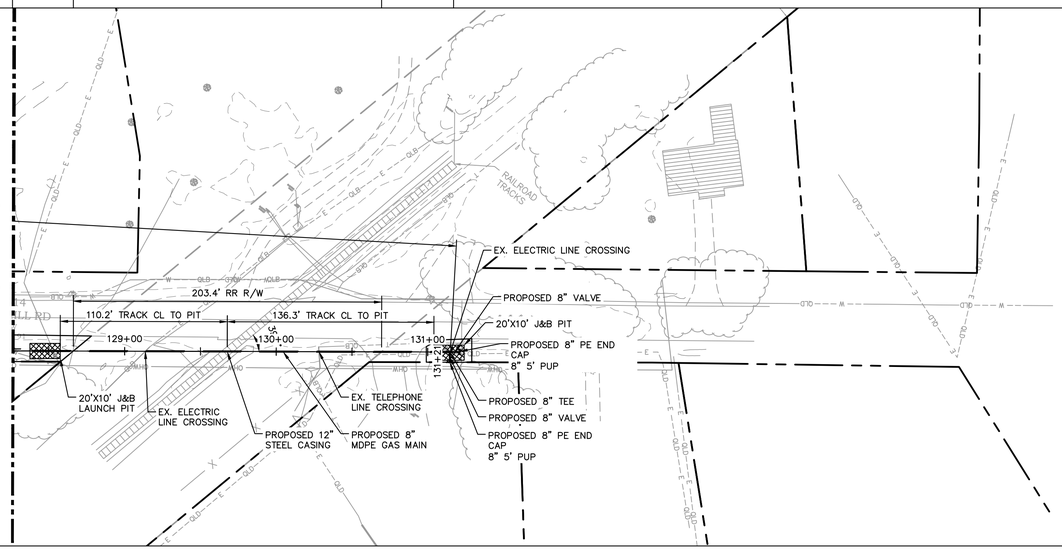
DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-010
SHEET INDEX: 13 OF 27

R/W	PUBLIC R/W	CSX 130' R/W	PUBLIC R/W
RESTRICT.			
OWNER	STATON MILL RD. 60' R/W	STATON MILL RD. 60' R/W	STATON MILL RD. 60' R/W

PLAN



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
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- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

PIPE BAR

DETAIL			
PIPE	1	A	1
COATING	N/A	N/A	N/A
LENGTH (LF)	32'	247'	17'
FITTINGS			5, 4, 3, 6
CAT. PROTECTION	N/A	N/A	N/A

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11
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7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
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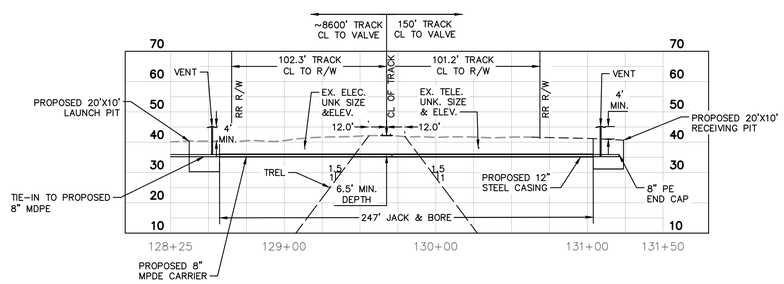
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

PROFILE



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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

ENGINEER: Kimley»Horn
4525 MAIN STREET
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TEL: (757) 213-8600

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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-011
SHEET INDEX: 14 OF 27

May 08, 2024 – 11:07am By: Chris.Margaritis

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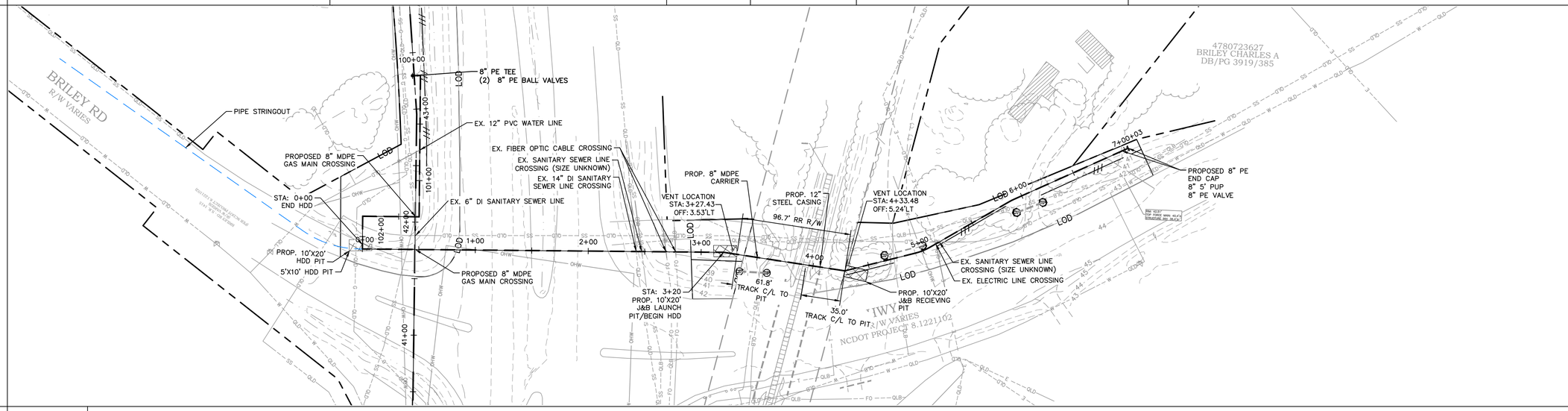
R/W	PUBLIC R/W	PUBLIC R/W	CSX 90' R/W	PUBLIC R/W	
RESTRICT.					
OWNER	N. MEMORIAL DR. R/W VARIES	NC HIGHWAY 903 N R/W VARIES	NC HIGHWAY 903 N R/W VARIES	NC HIGHWAY 903 N R/W VARIES	

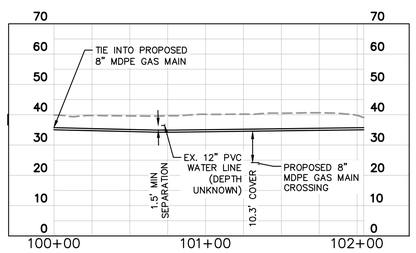
PLAN

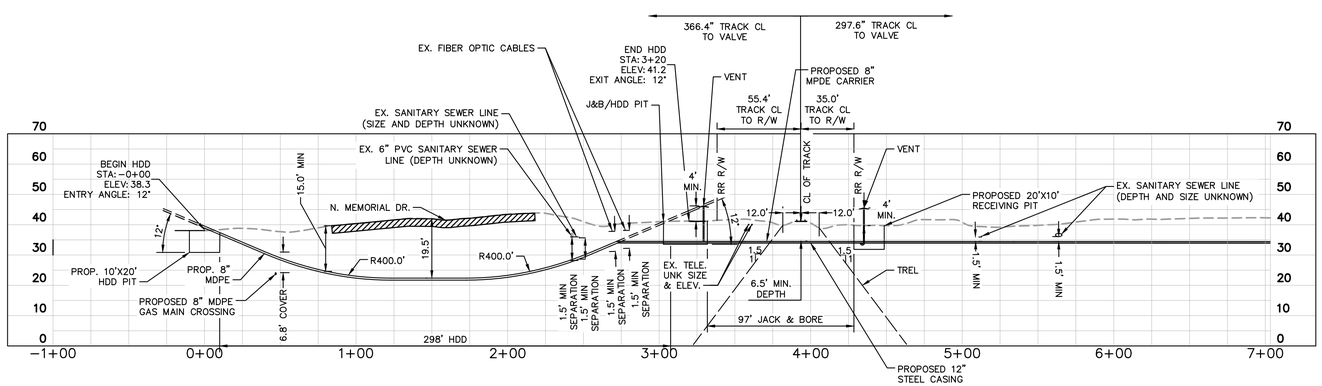


PIPE BAR

DETAIL								
PIPE	1	1	1		1	1, A	1	
COATING	N/A	N/A	N/A		N/A	N/A	N/A	
LENGTH (LF)	132'	50'	22'		332'	97'	275'	
FITTINGS	4, 5, 1	1	1		1		3, 4	6
CAT. PROTECTION	N/A	N/A	N/A		N/A	N/A	N/A	

PROFILE





LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE SUBSURFACE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

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

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CASING PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5' PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

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

0 2.5 5 10
VERTICAL SCALE: 1"=5'

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

ENGINEER: Kimley»Horn
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CLIENT: Greenville Utilities

PROJECT NAME:
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PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-012
SHEET INDEX: 15 OF 27

May 08, 2024 – 11:07am By: Chris.Margaritis

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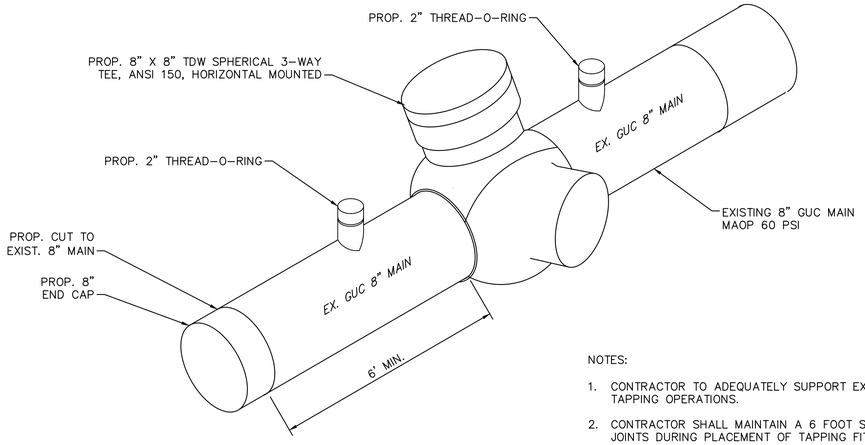
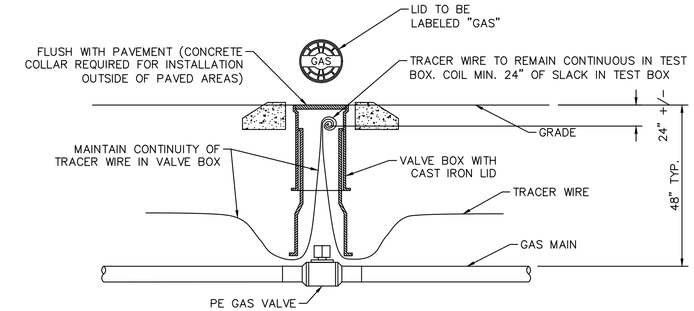


NOTES:

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.

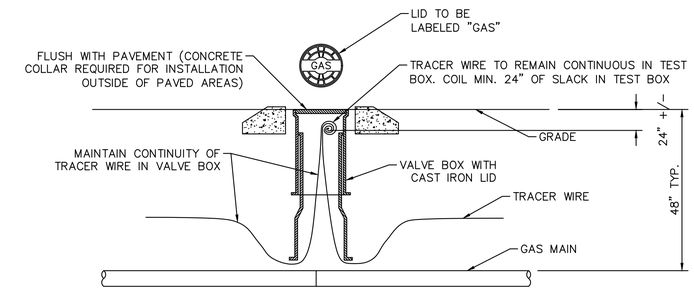
8" HOT TAP DETAIL

N.T.S.



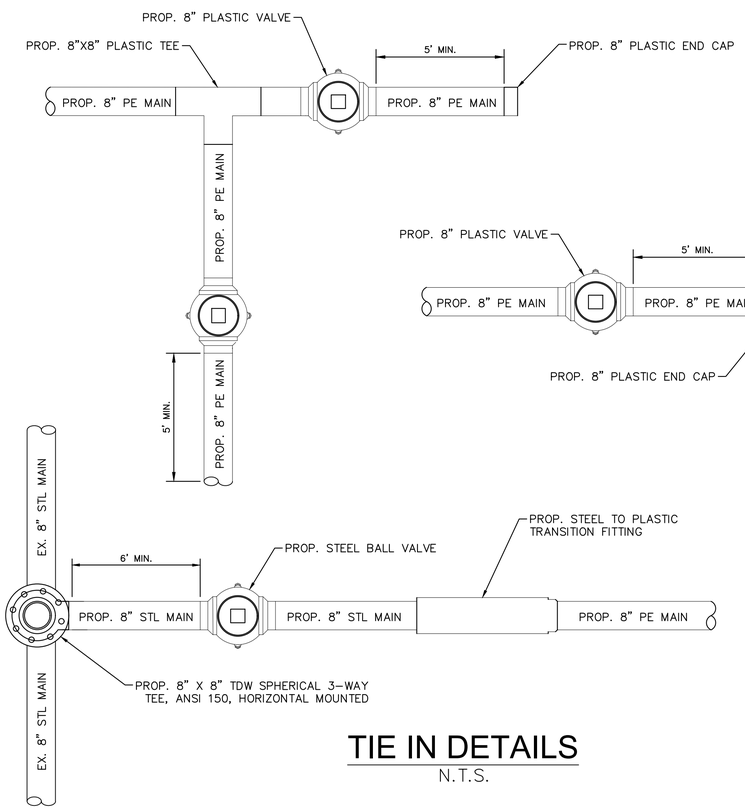
PLASTIC VALVE INSTALLATION DETAIL

N.T.S.



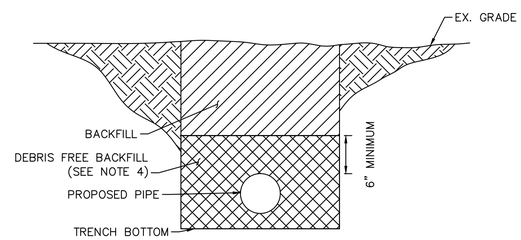
LOCATION BOX DETAIL

N.T.S.



TIE IN DETAILS

N.T.S.

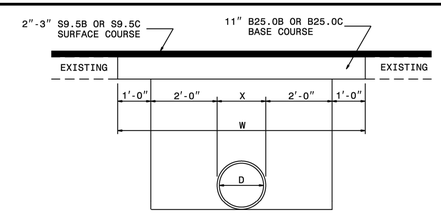


NOTES:

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. PIPE SHALL BE ADEQUATELY SUPPORTED DURING LOWERING INTO DITCH. LIFT PIPE USING NYLON SLING OR OTHER APPROPRIATE DEVICES.
4. FIRST 6" OF BACKFILL SHOULD BE FREE OF ROCK AND OTHER MATERIALS THAT COULD DAMAGE THE PIPE OR PIPE COATING.
5. DO NOT USE EXCESSIVE FORCE TO TAMPER DIRECTLY OVER THE PIPE ON THE FIRST 6" OF BACKFILL.
6. ENSURE FINAL DITCH COVER IS FLUSH WITH SURROUNDING GROUND.

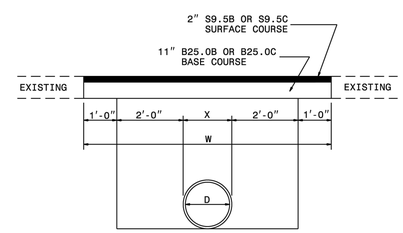
TRENCH DETAIL

N.T.S.



PAVEMENT REPAIRS ON ROADS TO BE RESURFACED (PIPE IS PLACED UNDER EXISTING PAVEMENT)

D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
18"	1'-10"	7'-10"
24"	2'-6"	8'-6"
30"	3'-1"	9'-1"
36"	3'-8"	9'-8"
42"	4'-5"	10'-5"
48"	5'-0"	11'-0"



PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED (PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)

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

ROADWAY STANDARD DRAWING FOR **PAVEMENT REPAIRS** FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1

654.01

PAVEMENT REPAIR DETAIL

N.T.S.

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VIRGINIA BEACH, VA 23462
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CLIENT: Greenville Utilities

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **DETAILS**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 800-001
SHEET INDEX: 16 OF 27

May 08, 2024 – 11:07am By: Chris.Mangarillo
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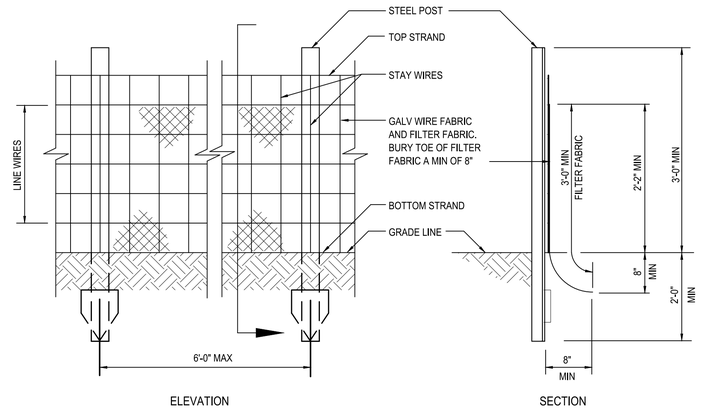
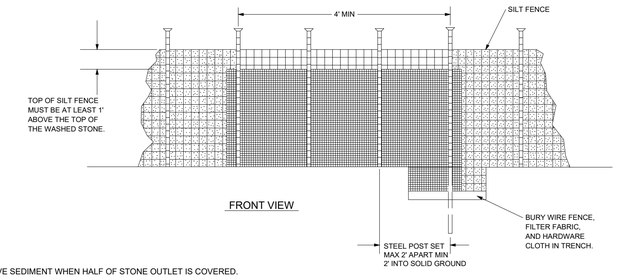
NOTES:
1. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED.
2. STOCKPILE LOCATIONS AND LAY DOWN AREAS SHALL BE LOCATED WITHIN THE EXISTING CONSTRUCTION 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.

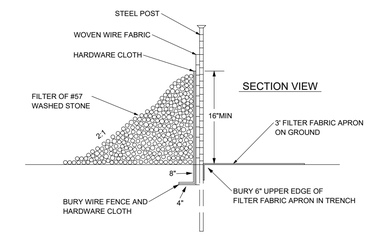


NOTE:
1. EXTRA STRENGTH FILTER FABRIC (AS APPROVED BY ENGINEER) WITH 6'-0" POST SPACING DOES NOT REQUIRE MESH SUPPORT FENCE.
2. FILTER FABRIC SHALL BE WIRED DIRECTLY TO POST.

SF SILT FENCE



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



SF SILT FENCE OUTLET

6.54

CIP **ROCK DOUGHNUT INLET PROTECTION (Temporary)**

Definition A doughnut shaped rock dam that prevents sediment from getting into a drop inlet. The rock dam has a built-in sediment storage area around the outside perimeter of the structure.

Purpose To prevent sediment from entering a storm drain.

Conditions Where Practice Applies To be used at drop inlets with large drainage areas or at drop inlets that receive high velocity water flows, possibly from many directions. Sediment is captured in an excavated depression surrounding the inlet. When drainage area exceeds 1 acre, additional measures are necessary. This practice must not divert water away from the storm drain.

Design Criteria Place measure at least 30 feet away from vehicular traffic. This inlet protection can be modified to protect one side of the inlet if only one side receives flow.

Stone—A minimum 1-foot wide level area set 4 inches below the drop inlet crest will add protection against the entrance of material. Structural stone should be Class B riprap with 2:1 side slope, and a minimum crest width of 18 inches. The height of the stone should be from 2 to 3.5 feet. The outside face of the riprap should be covered in a 12-inch thick layer of #5 or #57 washed stone. Wire mesh with 2-inch openings may be placed over the drain grating but must be inspected frequently to avoid blockage by trash.

The top elevation of the stone structure must be at least 12 inches lower than the ground elevation downslope from the inlet. **It is important that all stormwater flow over the structure into the storm drain, and not past the structure.** Temporary diking below the structure may be necessary to prevent bypass flow. Material may be excavated from inside the sediment pool for this purpose (Practice 6.52, *Block and Gravel Inlet Protection*).

Construction Specifications
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Grade shallow depression uniformly towards the inlet with side slopes no greater than 2:1. Grade a 1-foot wide level area set 4 inches below the area adjacent to the inlet.
3. Install the Class B or Class I riprap in a circle around the inlet. The minimum crest width of the riprap should be 18 inches, with a minimum bottom width of 7.5 feet. The minimum height of the stone is 2 feet.
4. The outside face of the riprap is then lined with 12 inches of NC DOT #5 or #57 washed stone.

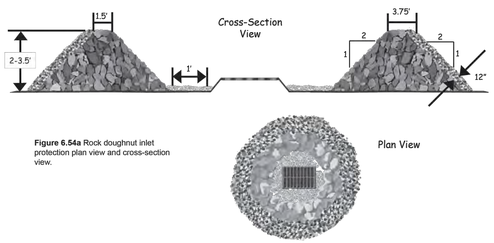


Figure 6.54a Rock doughnut inlet protection plan view and cross-section view.

Maintenance Inspect rock doughnut inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately.

To provide satisfactory inlet protection efficiency, remove sediment from the sediment pool area when the volume is decreased by half. This will help provide adequate storage volume for the next rain. Stabilize excavated material appropriately.

Take care not to damage or undercut the structure during sediment removal. Remove debris from the inlet and replace stone as needed. If the inlet was covered with wire mesh the mesh should be cleaned of debris.

When the contributing drainage area has been adequately stabilized, remove all materials and dispose of sediment properly. Bring the disturbed area to the grade of the drop inlet. Smooth and compact it as needed.

Appropriately stabilize all bare areas around the inlet with ground cover.

References *Inlet protection*
6.52, Block and Gravel Inlet Protection (Temporary)

North Carolina Department of Transportation
Erosion & Sedimentation Guidelines for Division Maintenance Operation, 1993.

6.55

CIP **ROCK PIPE INLET PROTECTION**

Definition A horseshoe shaped rock dam structure at a pipe inlet with a sediment storage area around the outside perimeter of the structure.

Purpose To prevent sediment from entering, accumulating in and being transferred by a culvert or storm drainage system prior to stabilization of the disturbed drainage area. This practice allows early use of the storm drainage system.

Conditions Where Practice Applies Rock pipe inlet protection may be used at pipes with a maximum diameter of 36 inches. This inlet protection may be used to supplement additional sediment traps or basins at the pipe outlet, or used in combination with an excavated sediment storage area to serve as a temporary sediment trap. Pipe inlet protection should be provided to protect the storm drainage system and downstream areas from sedimentation until permanent stabilization of the disturbed drainage area.

Do not install this measure in an intermittent or perennial stream.

Planning Considerations When construction on a project reaches a stage where culverts and other storm drainage structures are installed and many areas are brought to the desired grade, there is a need to protect the points where runoff can leave the site through culverts or storm drains. Similar to drop and curb inlets, culverts receiving runoff from disturbed areas can convey large amounts of sediment to lakes or streams. Even if the pipe discharges into a sediment trap or basin, the pipe or pipe system itself may clog with sediment.

Design Criteria When used in combination with an excavated sediment storage area to serve as a temporary sediment trap, the design criteria for temporary sediment traps must be satisfied. The maximum drainage area should be 5 acres, and 3600 cubic feet of sediment storage per acre of disturbed drainage area should be provided.

The minimum stone height should be 2 feet, with side slopes no steeper than 2:1. The stone "horseshoe" around the pipe inlet should be constructed of Class B or Class I riprap, with a minimum crest width of 3 feet. The outside face of the riprap should be coved with a 12-inch thick layer of #5 or #57 washed stone.

In preparing plans for rock pipe inlet protection, it is important to protect the embankment over the pipe from overtopping. The top of the stone should be a minimum of 1 foot below the top of the fill over the pipe. The stone should tie into the fill on both sides of the pipe. The inside toe of the stone should be no closer than 2 feet from the culvert opening to allow passage of high flows.

The sediment storage area should be excavated upstream of the rock pipe inlet protection, with a minimum depth of 18 inches below grade.

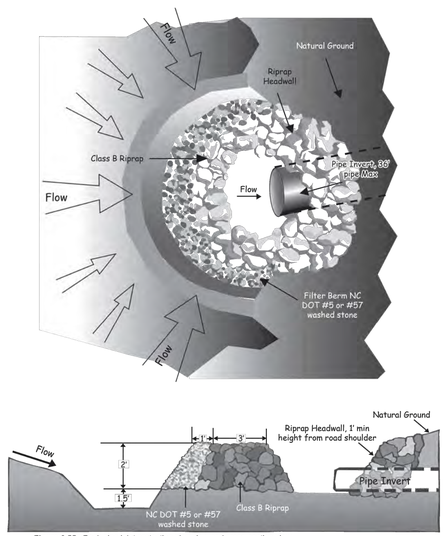


Figure 6.55a Rock pipe inlet protection plan view and cross-section view

Construction Specifications
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Install the Class B or Class I riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversions.
3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.
4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.
5. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact area properly, and stabilize with ground cover.

Maintenance Inspect rock pipe inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.

Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.

After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (*Surface Stabilization*).

References *Inlet protection*
6.52, Block and Gravel Inlet Protection (Temporary)

Sediment Trap and Barriers
6.60, Temporary Sediment Trap

Surface Stabilization
6.15, Riprap

North Carolina Department of Transportation
Erosion & Sedimentation Guidelines for Division Maintenance Operation, 1993.

Virginia Erosion and Sediment Control Handbook. 1992. STD & SPEC 3.08, Culvert Inlet Protection. pages III-46 - III-51 (Culvert Inlets Sediment Trap).

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

ENGINEER: Kimley»Horn
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CLIENT: Greenville Utilities

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
E&SC DETAILS

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
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CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 04/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 800-002
SHEET INDEX: 17 OF 27

May 08, 2024 – 11:07am By: Chris.Mangarillis
X:\VAB_Civil\116780001 - GUC - RTE 11 Extension\CADD\Plan Sheets\800-002 E&SC Details.dwg

Date:

Page:

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 feet 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
· 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	· 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

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

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. 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

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. 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.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

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

PORTABLE TOILETS

1. 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.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. 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.

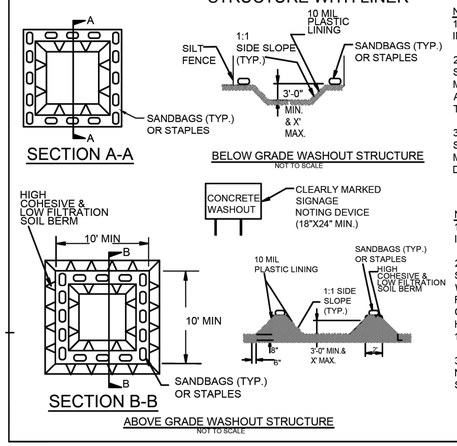
EARTHEN STOCKPILE MANAGEMENT

1. 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.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. 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.

HAZARDOUS AND TOXIC WASTE

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

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. 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.
3. 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.
4. Do not stockpile these materials onsite.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE: 11/12/2020

NCG-01 GROUND COVER & MATERIALS HANDLING

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

ENGINEER: Kimley»Horn
4525 MAIN STREET
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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK

KHA PROJECT NUMBER: 116780001

DRAWING NUMBER: 800-003

SHEET INDEX: 18 OF 27

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May 08, 2024 – 11:07am By: Chris.Morgan@ts

Date:

Page:

PART II, SECTION G, ITEM (4)

DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

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 on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (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 ≥ 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 ≥ 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 corrective actions taken
(4) Perimeter of Site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours.	If visible Sedimentation is found outside site limits, then record of the following shall be made: 1) Actions taken to clean up or stabilize sediment that has left the site limits 2) Description, Evidence and date of corrective actions taken 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 ≥ 1.0 inch in 24 hours.	If the stream or wetland has increased visible sedimentation or 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 2) Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) 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 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 kept on site and available for inspection at all times during normal business hours.

Item to Document	Document 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 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 to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for 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 twelve months. 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.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all 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).

(c) 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.

(d) Anticipated bypasses and unanticipated bypasses.

(e) 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 Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframe (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• 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 caused, 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	• 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)]	• *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)]	• 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)]	• 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.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE:11/12/2020

NCG-01 SELF INSPECTION

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

ENGINEER: Kimley»Horn
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VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/30/24

KHA PROJECT NUMBER: 116780001

DRAWING NUMBER: 800-004

SHEET INDEX: 19 OF 27

May 08, 2024 – 11:08am By: Chris.Morgan1ts
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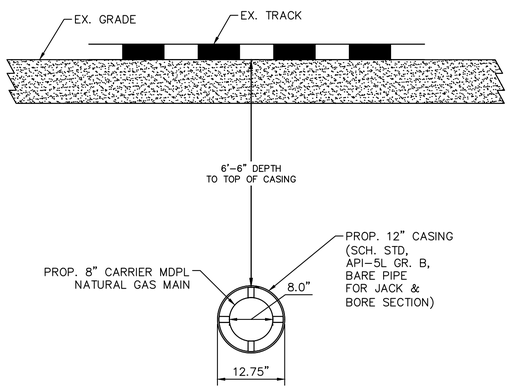
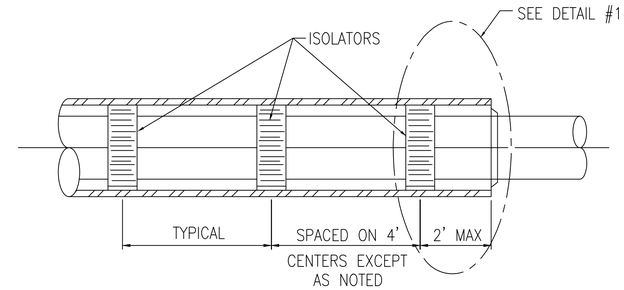
CROSS SECTION VIEW
B-B





NOTE:
FOR 24" AND SMALLER CARRIER PIPE USE 6' CENTERS.

DETAIL #1A
INTERMEDIATE ISOLATORS

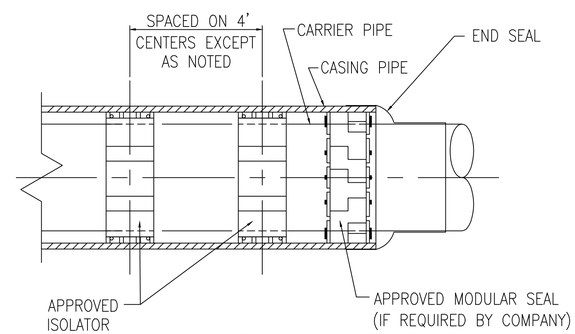
PIPELINE CONTENT DETAILS

Commodity Description:	Natural Gas (Methane, CH4)
Maximum Operating Pressure:	60 psig
Is Commodity Flammable:	☑ Yes ☐ No

CARRIER/CASING PIPE DETAILS

	Carrier Pipe	Casing Pipe
Pipe Material:	MDPE	Carbon Steel
Material Specifications & Grade:	ASTM D2513 Grade PE2708	API-5L Grade B
Specified Minimum Yield Strength:	2,000 psig	35,000 psig
Nominal Size Outside Diameter (Inches):	8.625	12.750
Wall Thickness (Inches):	0.784(SDR 11)	0.375(Sch. STD)
Type of Seam:	Seamless	Seamless or ERW
Type of Joints:	Butt-Fusion	Butt-Welded
Tunnel Liner Plates Required:	☐ Yes ☑ No	
Cathodic Protection:	☐ Yes ☑ No	Type: N/A
Protective Coating:	☐ Yes ☑ No	Type: N/A
Temp. Track Support or Rip-Rap Req.:	☐ Yes ☑ No	Must Describe & Show on Dwg.

NOTE:
CONTRACTOR SHALL CONFIRM THE DEPTHS OF ALL EXISTING UTILITIES. CONTACT ENGINEER IN THE CASE OF A CONFLICT.



DETAIL #1

NOTES:
1. CASING ISOLATORS SHALL BE COATED STEEL OR STAINLESS STEEL WITH PVC LINER AND 2" WIDE GLASS REINFORCED POLYMER RUNNER AS MANUFACTURED BY PIPELINE SEAL INSULATOR, ADVANCED PRODUCTS AND SYSTEMS, OR APPROVED EQUAL.
2. END SEAL SHALL BE WRAP-AROUND TYPE, 1/8" THICK SYNTHETIC RUBBER.

TYPICAL CASING ISOLATOR AND SEAL INSTALLATION

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

ENGINEER: Kimley»Horn
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: JACK & BORE DETAILS

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 800-005
SHEET INDEX: 20 OF 27

May 08, 2024 – 11:08am By: Chris.Mangarillis
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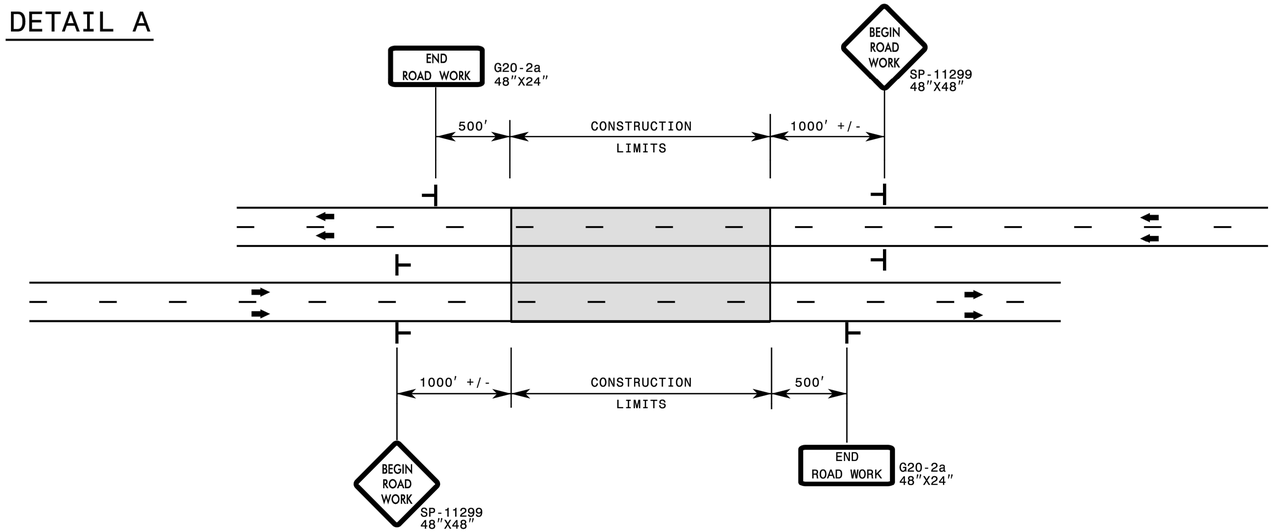
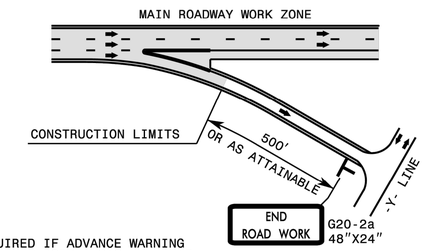
DETAIL A



DETAIL B

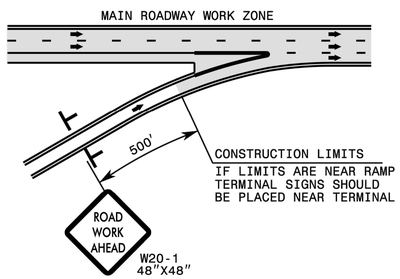
EXIT RAMPS



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.

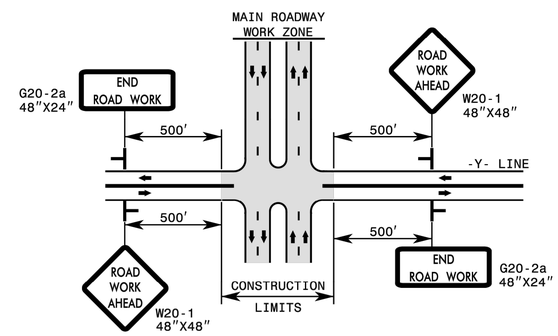
DETAIL C

ENTRANCE RAMPS



DETAIL D

-Y- LINES



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 1000'+/-.

NO STATIONARY -Y- LINE ADVANCE WARNING SIGNAGE IS REQUIRED UNLESS THERE IS MORE THAN 1000' OF CONSTRUCTION ALONG THE -Y- LINE.

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

1-18

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

VI

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

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: WORK ZONE ADVANCE WARNING

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

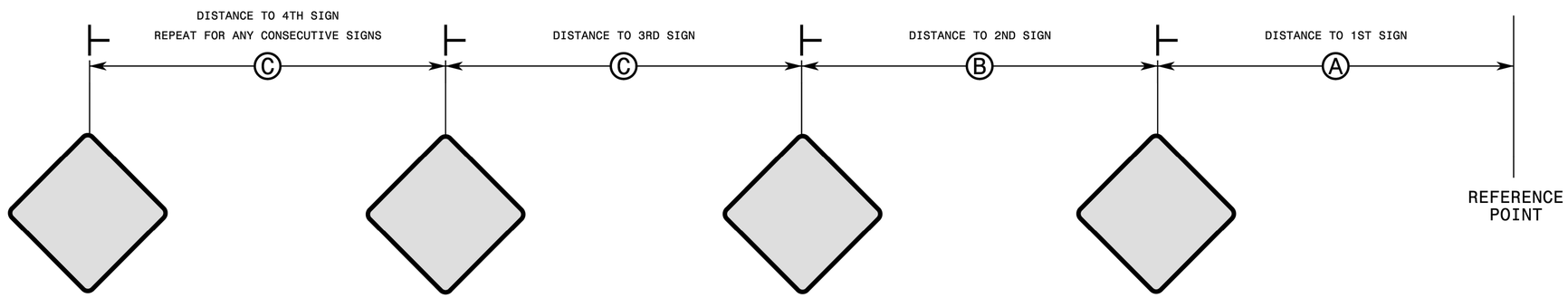
NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 4/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-001
SHEET INDEX: 21 OF 27

K:\RAL_DIV\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\900-001 WORK ZONE ADVANCE WARNING.dwg
May 08, 2024 – 11:08am By: Chris.Morgan@ts

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET)±		
	Ⓐ	Ⓑ	Ⓒ
≤ 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:

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: TEMPORARY LANE CLOSURE

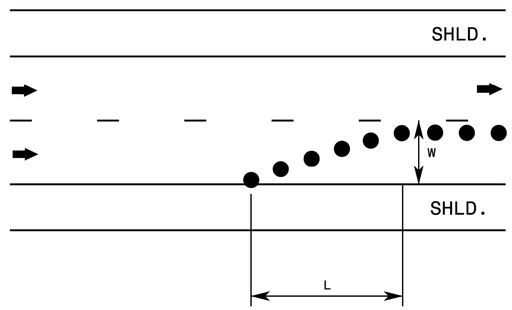
DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-002
SHEET INDEX: 22 OF 27

May 08, 2024 – 11:08am By: Chris.Mangonitis
K:\VAB_CIVIL\116780001 – GUC – RTE 11 Extension\CADD\PlanSheets\900-002 TEMPORARY LANE CLOSURE.dwg

EXAMPLE OF "L" & "W" DESIGNATIONS



TAPER LENGTH CRITERIA FOR CHANNELIZING DEVICES IN WORK ZONES

TYPES OF TAPERS	TAPER LENGTH
UPSTREAM TAPER	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	½ L MINIMUM
SHOULDER TAPER	⅓ L MINIMUM
TWO-WAY TRAFFIC TAPER	50 - 100 FEET MAXIMUM
DOWNSTREAM TAPER	100 FEET MAXIMUM

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:

SPEED LIMIT	FORMULA
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.

1-18

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

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
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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: TRAFFIC CONTROL DESIGN LENGTHS

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 5/2/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-003
SHEET INDEX: 23 OF 27

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May 08, 2024 - 11:08am By: Chris.Mangarillis

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:

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: TRAFFIC CONTROL BUFFER & SIGHT DISTANCE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 12/2/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-004
SHEET INDEX: 24 OF 27

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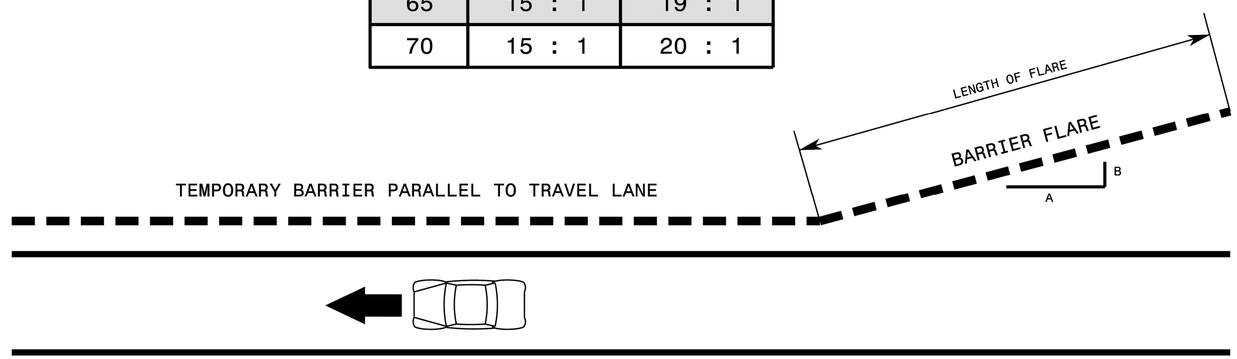
May 08, 2024 – 11:08am By: Chris.Mangarillis

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:

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: TRAFFIC CONTROL BARRIER FLARE RATES

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

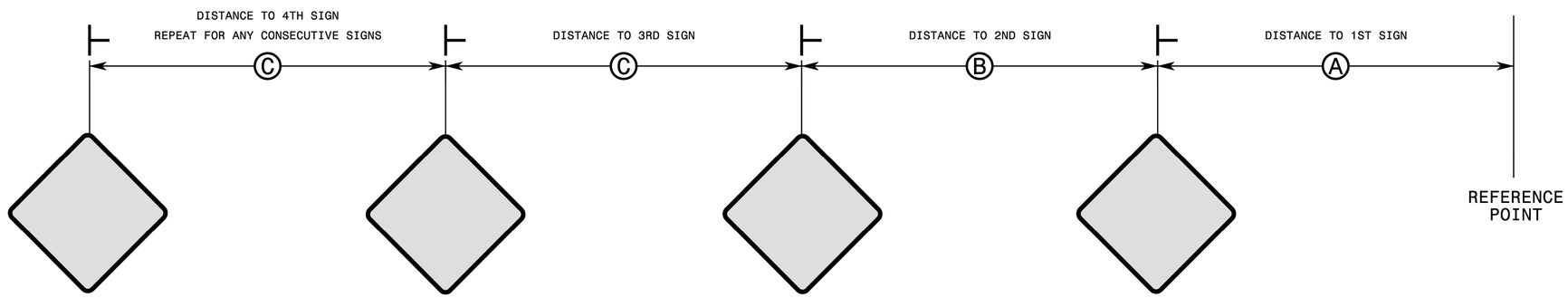
NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 04/29/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-005
SHEET INDEX: 25 OF 27

May 08, 2024 – 11:09am By: Chris.Mangarillis
K:\VAB_Civil\116780001 - GUC - PTE 11 Extension\CADD\Plan\Sheets\900-005 TRAFFIC CONTROL BARRIER FLARE RATES.dwg

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET)±		
	Ⓐ	Ⓑ	Ⓒ
≤ 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:

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: TRAFFIC CONTROL SIGN SPACING

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 5/2/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-006
SHEET INDEX: 26 OF 27

May 08, 2024 – 11:09am By: Chris.Mangantis
K:\VAB_CIVIL\116780001 – GUC – RTE 11 Extension\CADD\PlanSheets\900-006 TRAFFIC CONTROL SIGN SPACING.dwg

Notes on Shoulder/Ditch Construction Operation on Multilane Undivided Roadways

(1) The following options may be used as the first advance warning the motorists see:
   a. Portable warning signs
   b. Changeable message sign (CMS)

(2) Signs on vehicles should be mounted a minimum of one foot from the ground and should not block the motorist's sight of the flashing arrow board and/or warning lights.

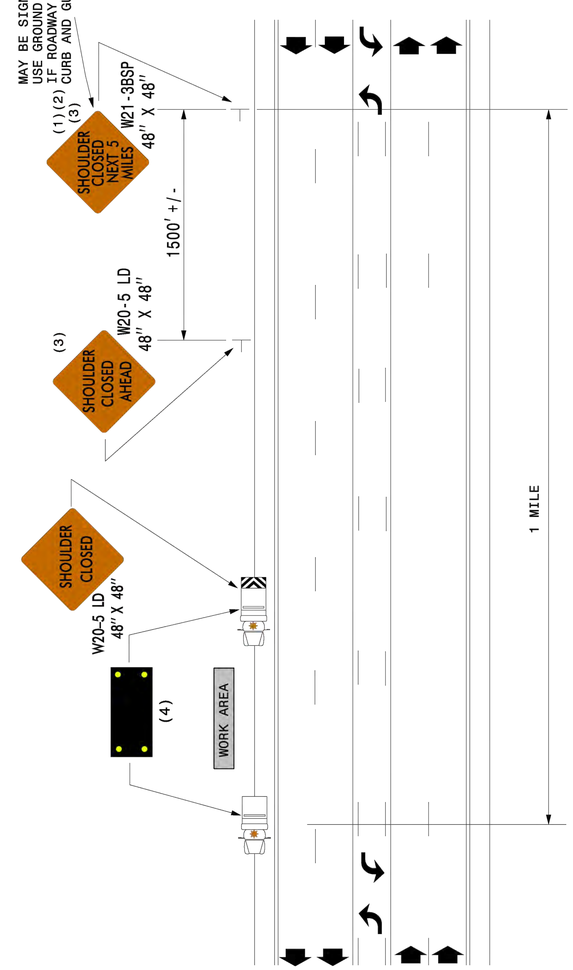
(3) Sign W20-L should be placed on back of protection vehicle

(4) Use a type "B" flashing arrow board.

Board Type	Min. Size
B	60" x 30"

Shoulder/Ditch Construction Operation

Multilane Undivided Roadways With Paved Shoulders 10′ or Wider



LEGEND

- DIRECTION OF TRAFFIC FLOW
- APPLICATION VEHICLE WITH WARNING LIGHTS
- PORTABLE SIGN
- PROTECTION VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA) AND WARNING LIGHTS (SEE ROADWAY STANDARD NO. 1165.01
- FLASHING ARROW BOARD, TYPE "B" "CAUTION MODE"

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

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CLIENT: Greenville Utilities

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: NCDOT NOTES AND DETAILS

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

NORTH CAROLINA PROFESSIONAL SEAL 44899 ENGINEER RYAN D. CLARK 5/2/24

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-007
SHEET INDEX: 27 OF 27

May 08, 2024 – 11:09am By: Chris.Mangonitis
X:\VAB_CIVIL\116780001 – GUC – RTE 11 Extension\CADD\PlanSheets\900-007 NCDOT NOTES AND DETAILS.dwg