

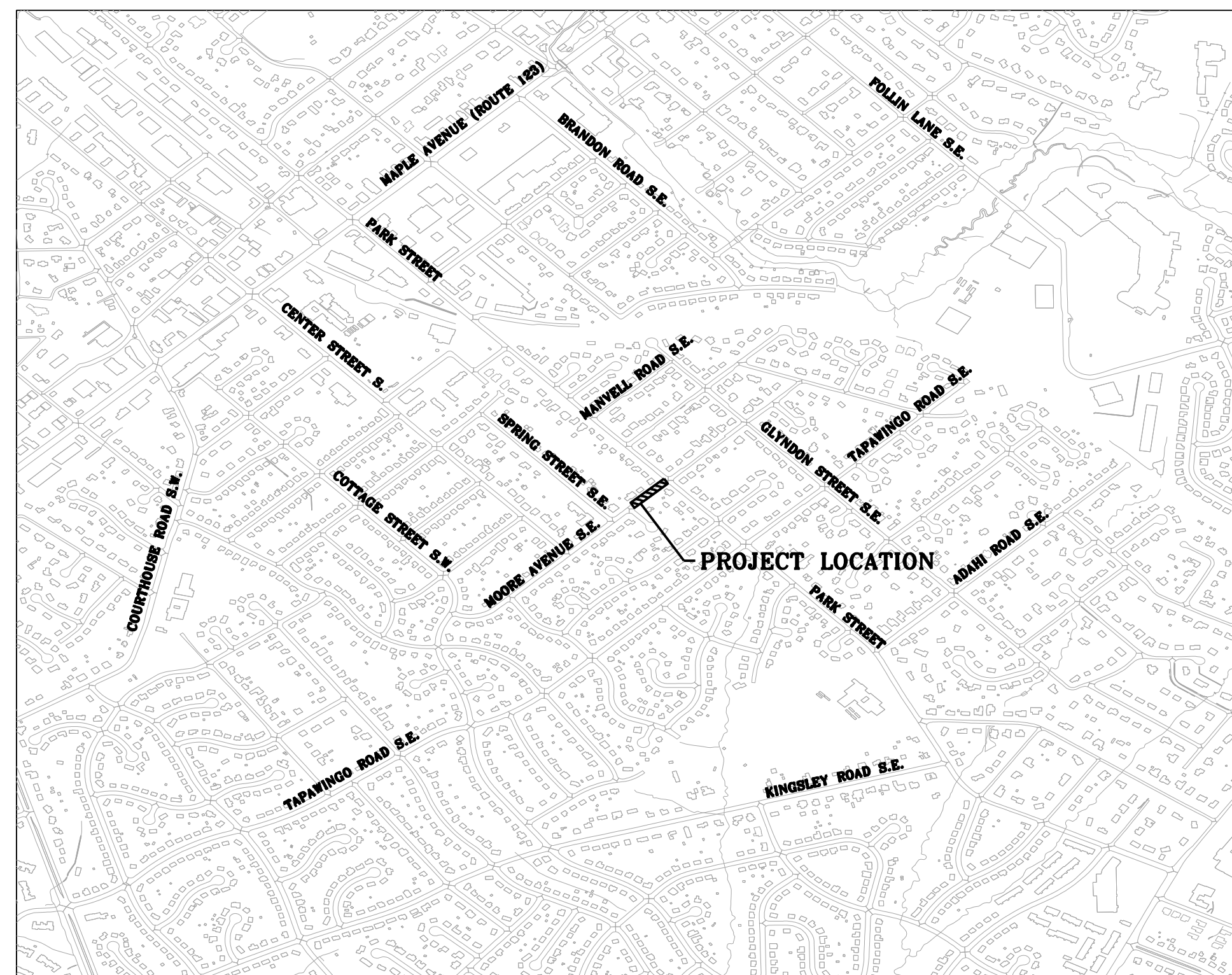


TOWN OF VIENNA

DEPARTMENT OF PUBLIC WORKS

MOORE AVENUE SE DRAINAGE IMPROVEMENT PLAN

GRADING GENERAL NOTES	
1	Earthwork quantities on this project are based on anticipated settlement and may require adjusting during construction.
DRAINAGE GENERAL NOTES	
1	When Town of Vienna Curb and Gutter (see Town's detail Sheet 2A) is specified on a radius (such as at a street intersection), the Town may approve a change in the cross slope of the gutter to facilitate proper drainage.
PAVEMENT GENERAL NOTES	
1	The pavement materials on this project will be paid for on a tonnage basis. The weight will vary in accordance with the specific gravity of the aggregates and the asphaltic content of the mix actually used to secure the design depth. The weight of the asphalt concrete is based on 95% of the theoretical maximum density.
INCIDENTALS GENERAL NOTES	
1	Certain trees shall be preserved as noted on plans or as directed by the Town.
2	When standard slope roundoffs would damage trees, bushes, or other desirable vegetation, they shall be omitted when so ordered by the Town.
3	Clearing and grubbing shall be confined to those areas needed for construction. No trees or shrubs in ungraded areas shall be cut without the permission of the Town.
4	The following outside sources, under contract with the Town, have provided information on this project: Roadway Design Whitman, Requardt & Associates, LLP Survey Rice Associates Utility Designation Rice Associates If questions arise during construction, please contact the Town. DO NOT CONTACT THE OUTSIDE SOURCES.
5	All electronic plan assemblies will include the construction plans in one format: .pdf files. Only the .pdf files will be considered as part of the official plan assembly.
UTILITIES GENERAL NOTES	
1	The utility information shown on these plans is taken from information provided by an underground utility designating and locating company and in some cases, from information received from the utility companies. The Town does not guarantee that the utility information shown on the plans is complete or accurate. The Contractor must verify the utility locations prior to construction.
2	All existing underground utilities shall be marked in the field by Miss Utility prior to construction. The Contractor shall be responsible for scheduling the field marking of utilities with Miss Utility. Miss Utility 1-800-552-7011 or 811 VAB11.com
3	All existing underground utilities shall be physically located by the Contractor prior to the beginning of any construction in the vicinity of these utilities.
TOWN OF VIENNA GENERAL NOTES	
1	A Pre-Construction meeting must be held prior to the start of construction. The Contractor shall contact the Town to schedule the Pre-Construction meeting.
2	All construction generated debris must be hauled away by the Contractor.
3	Prior to the removal of any Town trees (trees within the Right of Way), the Contractor shall contact the Town arborist to coordinate having the Town arborist onsite during all Town tree removal.
4	Tree protection for any Town tree, if shown on the plan, must be installed prior to any work.
5	Clearing, grubbing, tree removal, root pruning and tree protection shall be in accordance with VDOT Road and Bridge Specifications and the Town's PFM and Tree Preservation and Planting Guide and the Virginia Erosion and Sediment Control Handbook. The Contractor shall coordinate with the Town and property owners as directed by the Town prior to commencing any of these activities.



VICINITY MAP
SCALE: 1" = 1,000'

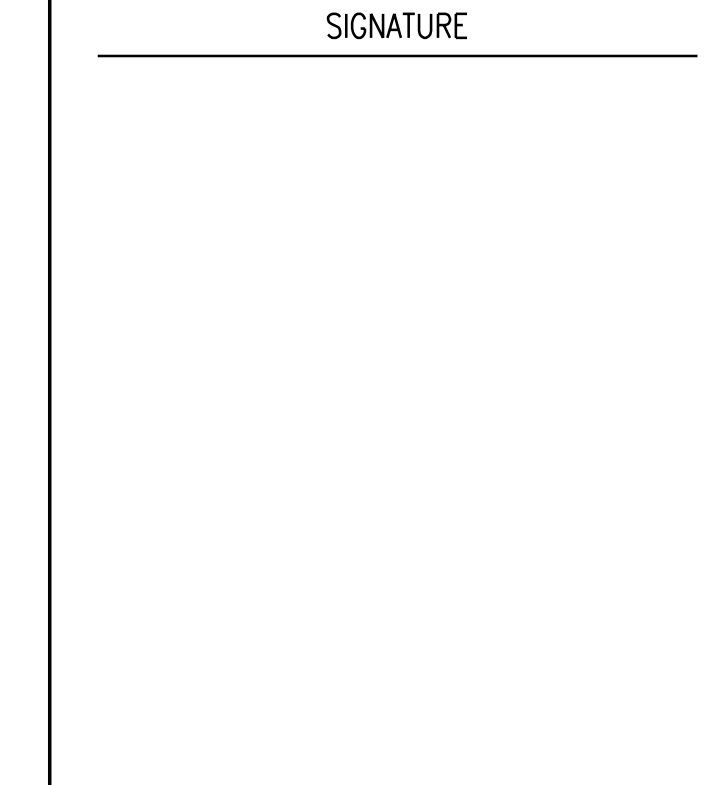
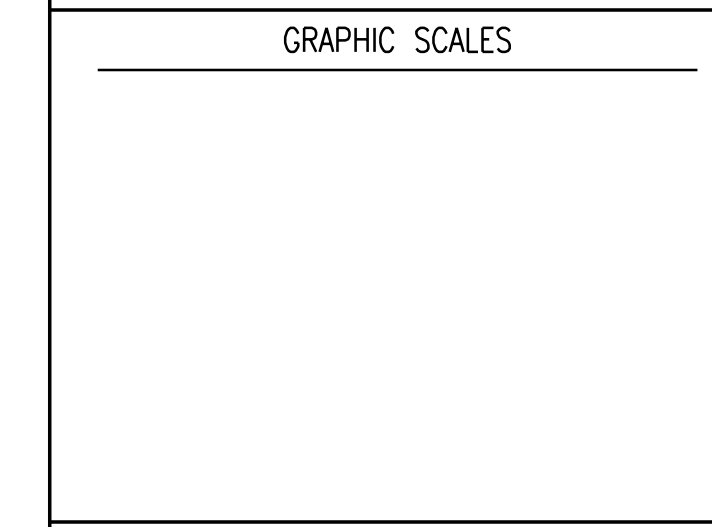
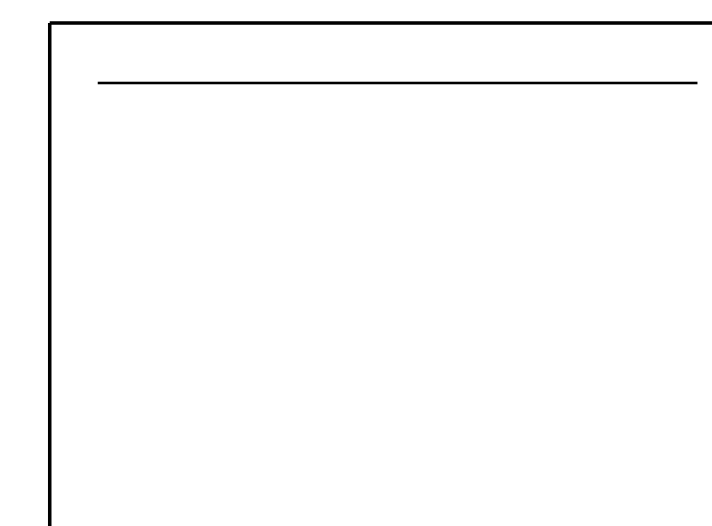
100% DESIGN CONSTRUCTION DRAWINGS

SHEET INDEX	
SHEET NO.	TITLE
1	COVER SHEET
1A	SURVEY DATA
2	TYPICAL SECTIONS
2A(1) - 2A(2)	TYPICAL DETAILS
2B	EXISTING CONDITIONS AND DEMOLITION PLAN
3	SITE PLAN
3A	PAVEMENT IMPROVEMENT PLAN
3B	EROSION AND SEDIMENT PLAN
4	EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS

REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
127 CENTER STREET SOUTH
VIENNA, VA, 22180

MOORE AVENUE IMPROVEMENTS



Whitman, Requardt & Associates, LLP
12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

COVER SHEET

SCALE: 1" = 1000'

DATE: 01/2024	SHEET 1 OF 4
DES: TL	DRAWN: JZ CHECK: KO

GENERAL NOTES:

- PROPERTY LINES SHOWN ON THIS SURVEY ARE A COMPILATION OF DEEDS AND PLATS OF RECORD, SURVEYS BY OTHERS, AND LIMITED MONUMENT TIES. LINES SHOWN HEREON ARE NOT THE RESULT OF A FIELD RUN BOUNDARY SURVEY.
- THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. NOT ALL EASEMENTS AND/OR ENCUMBRANCES ARE NECESSARILY SHOWN HEREON.
- THIS SURVEY WAS PREPARED FOR: WHITMAN, REQUARDT & ASSOCIATES, LLP 12700 FAIR LAKES & CIRCLE, SUITE 300 FAIRFAX, VA 22033
- THIS SURVEY WAS PREPARED BY: RICE ASSOCIATES 3145 VIRGINIA BEACH BLVD., SUITE 103 VIRGINIA BEACH, VIRGINIA 23452
- THE HORIZONTAL DATUM IS VIRGINIA COORDINATE SYSTEM 83 (NORTH ZONE), AND THE VERTICAL DATUM IS NAVD88, BOTH ESTABLISHED BY GPS OBSERVATIONS.
- THE CONTOUR INTERVAL IS TWO (2) FEET.
- THE HORIZONTAL AND VERTICAL UNIT OF MEASUREMENT IS THE U.S. SURVEY FOOT.
- THIS SURVEY FOR A PORTION OF MOORE AVE. S.E. WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF WILLIAM G. LIPPY JR. FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; DATA WAS OBTAINED ON NOVEMBER 4, 2022, THROUGH NOVEMBER 8, 2022; THIS SURVEY DATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

GENERAL UTILITY NOTES:

- ALL UTILITIES SHOWN HEREON WERE DESIGNATED ACCORDING TO ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"
- ALL UTILITY SHOWN HEREON ARE DEPICTED AS QUALITY LEVEL "B" UNLESS OTHERWISE NOTED.
- UTILITY DESIGNATED WITH A "DATUR" (DEPICTED ACCORDING TO UTILITY RECORDS) ARE QUALITY LEVEL "D". THESE UTILITIES ARE DEPICTED USING SOUND PROFESSIONAL JUDGEMENT INTERPERTING AVAILABLE THIRD-PARTY AND/OR ORAL HISTORIES.
- IF AVAILABLE, UTILITY SIZE AND TYPE FOR QUALITY LEVEL "B" DEPICTIONS ARE DETERMINED THROUGH AVAILABLE UTILITY OWNER INFORMATION. UTILITY LABELED AS UNKNOWN HAVE NO CORRELATED RECORDS OR VISIBLBLE APPURTENANCES TO DETERMINE FUNCTIONS OR TYPE.
- RELIANCE UPON THIS DATA FOR RISK MANAGEMENT PURPOSES DURING BIDDING DOES NOT RELIEVE THE EXCAVATOR OR UTILITY OWNER FROM FOLLOWING ALL APPLICABLE UTILITY DAMAGE PREVENTION STATUTES, POLICIES, AND/OR PROCEDURE DURING EXCAVATION
- IT IS IMPORTANT THAT THE CONTRACTOR INVESTIGATES AND UNDERSTANDS THE SCOPE OF WORK BETWEEN THE PROJECT OWNER AND THEIR ENGINEER REGARDING THE SCOPE AND LIMITS OF THE UTILITY INVESTIGATIONS LEADING TO THESE UTILITY DEPICTIONS.
- UTILITY MAPPING WAS COMPLETED ON 11/11/22. UTILITY MAY HAVE BEEN CHANGED OR BEEN ADDED AFTER THIS DATE. ALL UTILITIES SHOWN HEREON WERE DESIGNATED UNDER THE DIRECT SUPERVISION OF TIMOTHY PAYNE, LS #003090

Storm Sewer Table

EX. 01	EX. STM STR-01 POINT *80076/80096 MSMD *N/A Inv. In 15" RCP Inv. Out 15" RCP	* 422.24' * 421.61'
EX. 02	EX. STM STR-02 POINT *80111/80156 MSMD *N/A Inv. In 15" RCP Inv. Out 15" RCP	* 416.14' * 415.23'
EX. 03	EX. STM STR-03 POINT *80209 MSMD *N/A Inv. In 12"-15" RCP Mostly Buried Inv. Out Not Found (Completely Buried)	* 413.53'
EX. 04	EX. STM STR-04 POINT *80006 MSMD *N/A Top Inv. In 15" RCP from S.E. Inv. Out 15" RCP to EX.05	* 424.46' * 418.91' * 418.88'
EX. 05	EX. STM STR-05 POINT *80031 MSMD *N/A Top Inv. In 15" RCP from EX.04 Inv. In 15" RCP from EX.06 Inv. Out 15" RCP to N.E.	* 415.61' * 411.29' * 411.71' * 410.51'
EX. 06	EX. STM STR-06 POINT *80180 MSMD *N/A Top Inv. Out 15" RCP to EX.05	* 414.90' * 412.16'

UTILITY LEGEND

□ EB	Electric Box	□ TB	Telephone Booth
■	Electric Guy Pole	●	Telephone Guy Pole
⊛	Electric Ground Light	○	Telephone Guy Wire
⊙	Electric Guy Wire	⊛	Test Holes (All Utilities)
⊞	Electric Hand Hole	⊞	Telephone Cell Tower
⊠	Electric Meter	⊞	Telephone Hand Hole
⊡	Electric Manhole	⊞	Telephone Manhole
⊢	Electric Marker Post	⊞	Telephone Marker Post
⊣	Electric Pedestal	●	Telephone Pole
⊤	Electric Stub	⊞	Telephone Pedestal
⊥	Electric Power Pole	⊞	Telephone Riser Pole
⊦	Electric Power Riser Pole	⊞	Television Satellite Dish
⊧	Electric Light Pole	⊞	Tower Anchor
⊨	Electric Luminaire	⊞	Traffic Camera Pole
⊩	End of Information (All Utilities)	⊞	Traffic Control Hand Hole
⊪	Fire Hydrant	⊞	Traffic Control Manhole
⊫	Fiber Optic Hand Hole	⊞	Traffic Control Guy Wire
⊬	Fiber Optic Marker	⊞	Traffic Control Pedestal
⊭	Fiber Optic Manhole	⊞	Traffic Signal Guy Pole
⊮	Fiber Optic Pedestal	⊞	Traffic Signal Pole
⊯	Gas Meter	⊞	Traffic Signal Pole w/Luminaire
⊰	Gas Manhole	⊞	Telephone Stub
⊱	Gas Marker Post	⊞	Television Hand Hole
⊲	Gas Monitoring Well	⊞	Television Manhole
⊳	Gas Stub	⊞	Television Marker Post
⊴	Gas Test Station	⊞	Television Pedestal
⊵	Gas Valve	⊞	Television Stub
⊶	Gas Vent	⊞	Water Blow Off
⊷	Gas Well	⊞	Water Well
⊸	Sanitary Air Release Valve	⊞	Water Meter
⊹	Sanitary Flow Arrow	⊞	Water Manhole
⊺	Sanitary Stub	⊞	Water Marker Post
⊻	Sewer Clean Out	⊞	Water Spigot
⊼	Sanitary Force Main Valve	⊞	Water Slamese Connection
⊽	Sanitary Marker Post	⊞	Water Stub
⊾	Sanitary Manhole	⊞	Water Valve
⊿	Sewer Vent Pipe	⊞	Water Post Inspection Valve
⊿	Unknown Clean Out	⊞	Water Irrigation Valve
⊿	Unknown Hand Hole	⊞	Water Steam Manhole
⊿	Unknown Manhole	⊞	Water Steam Vent Pipe

CAFO	Fiber Optic Cable Television
CHEM	Chemical Line (above or below ground)
FO Duct	Underground Fiber Optic Duct
FUEL	Fuel Line (above or below ground)
G	Gas Line *
G Duct	Gas Line Duct
SAN	Gravity Sewer *
SFM	Sanitary Force Main *
TCFO	Traffic Control Fiber Optic
T/FO	Telephone Fiber Optic
FO	Underground Fiber Optic
Unk	Unknown Utility Line
E	Underground Power Cable
E Duct	Underground Power Cable Duct
T/Tg	Underground Telephone Cable
T/Tg Duct	Underground Telephone Cable Duct
TC	Underground Traffic Control
TC Duct	Underground Traffic Control Duct
CATV	Underground Television Cable
CATV Duct	Underground Television Cable Duct
VS	Vacuum Sewer
W	Water Line *
W Duct	Water Line Duct
Unk	Depicted According To Utility Records **
Unk	Abandoned According To Utility Records **
Unk	According To Miss Utility Information **
	* Designate size (Variable from 0.75" to 54")
	** Designate type (Unknown line is shown)

Sanitary Sewer Table

EX. 068	EX. SAN MH-068 POINT * 80002 FCWM * 038-4-068 Top Inv. Out 6" DIP to EX.069	* 425.13' * 418.93'
EX. 069	EX. SAN MH-069 POINT *80015 FCWM * 038-4-069 Top Inv. In 6" DIP from EX.068 Inv. In 8" DIP from S.W. Origin Unknown Inv. Out 8" DIP to EX.070	* 419.84' * 410.59' * 410.56' * 410.54'
EX. 070	EX. SAN MH-070 POINT * 80230 FCWM * 038-4-070 Top Inv. Inaccessible (Rim Is Frozen)	* 417.83'

PLANIMETRIC LEGEND

⊙	Advertising Sign
⊙	Bore Hole
⊙	Bench Mark
⊙	Ballard Post
⊙	Photo Control Point
⊙	Control Station
⊙	Drainage Flow Arrow (Storm Drainage)
⊙	Filler Cap (Gas Stations)
⊙	Flow Arrow (Streams & Rivers)
⊙	Flag Pole
⊙	Secondary Control Point
⊙	Filler Pipe (Gas Stations)
⊙	Gas Tank Access Manhole (Gas Stations)
⊙	Gravesite Marker
⊙	Guard Post
⊙	Gas Vent Pipe (Gas Stations)
⊙	Mail Box
⊙	Mine Entrance
⊙	Nade Point
⊙	Property Line Symbol
⊙	Found Monumentation
⊙	Property Monument
⊙	Metal or Wooden Post
⊙	Monitoring Well
⊙	Road Arrow
⊙	Reference
⊙	Right of Way Monument
⊙	VDOT Commission Monument
⊙	Iron Right of Way Pin
⊙	Railroad Mile Marker
⊙	Railroad Right of Way Monument
⊙	Railroad Signal Pole or Gate
⊙	Railroad Telegraph Pole
⊙	Railroad Telephone Pole
⊙	Railroad Switch
⊙	Shrub
⊙	Storm Sewer Manhole
⊙	Photogrammetric Target
⊙	Tree
⊙	Traffic Left Turn Arrow
⊙	Traffic Left-Right Arrow
⊙	Traffic Left-Thru Arrow
⊙	Traffic Left-Thru-Right Arrow
⊙	Traffic Right Turn Arrow
⊙	Traffic Thru Arrow
⊙	Traffic Thru-Right Arrow
⊙	Traffic Springback Marker
⊙	Wetland Flag Automatic
⊙	Wetland Flag Manual
⊙	Bridge Elevation
⊙	Plan Elevation
⊙	Water Elevation
⊙	Elevation Tick Mark
⊙	Connected Plat Symbol
⊙	Brush Line
⊙	Pipe Culverts *
⊙	City Line
⊙	County Line
⊙	Curb Only
⊙	Curb and Gutter
⊙	Fence Line
⊙	Guardrail
⊙	Hedge Row
⊙	Jersey Barrier
⊙	OBSC
⊙	Obscure Areas
⊙	Paved Ditches
⊙	Railroad
⊙	Right of Way
⊙	State Line
⊙	Edges of Water
⊙	Sidewalks
⊙	Wetlands
⊙	Woods
⊙	* Designate size of culverts (Variable from 12" to 120")

REVISIONS

CLIENT INFORMATION
TOWN OF VIENNA, VA
127 CENTER STREET SOUTH
VIENNA, VA, 22180



**MOORE AVENUE
IMPROVEMENTS**

GRAPHIC SCALES

SIGNATURE



Whitman, Requardt & Associates, LLP
12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

SURVEY DATA

SCALE: N/A

DATE: 01/2024 SHEET 1A OF 4

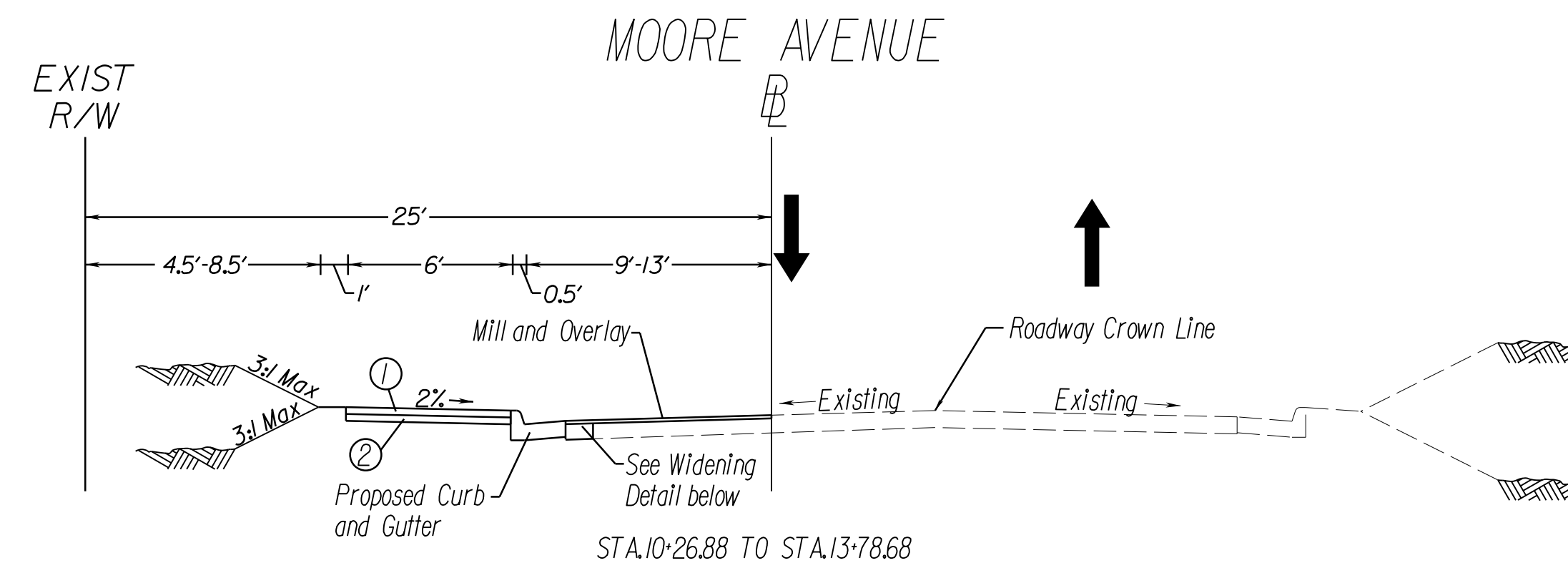
DES: TL DRAWN: CHC CHECK: KO

TYPICAL SECTIONS

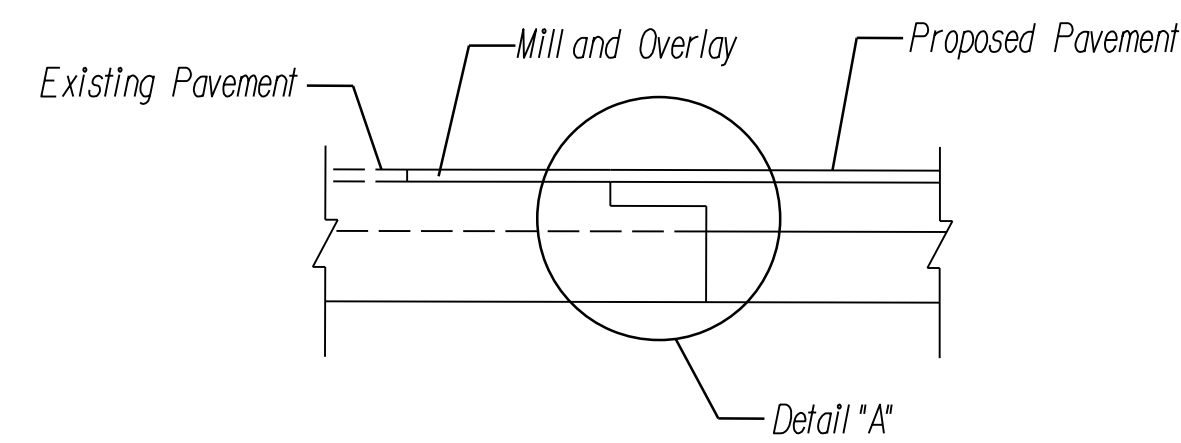
NOT TO SCALE

SIDEWALK SECTION

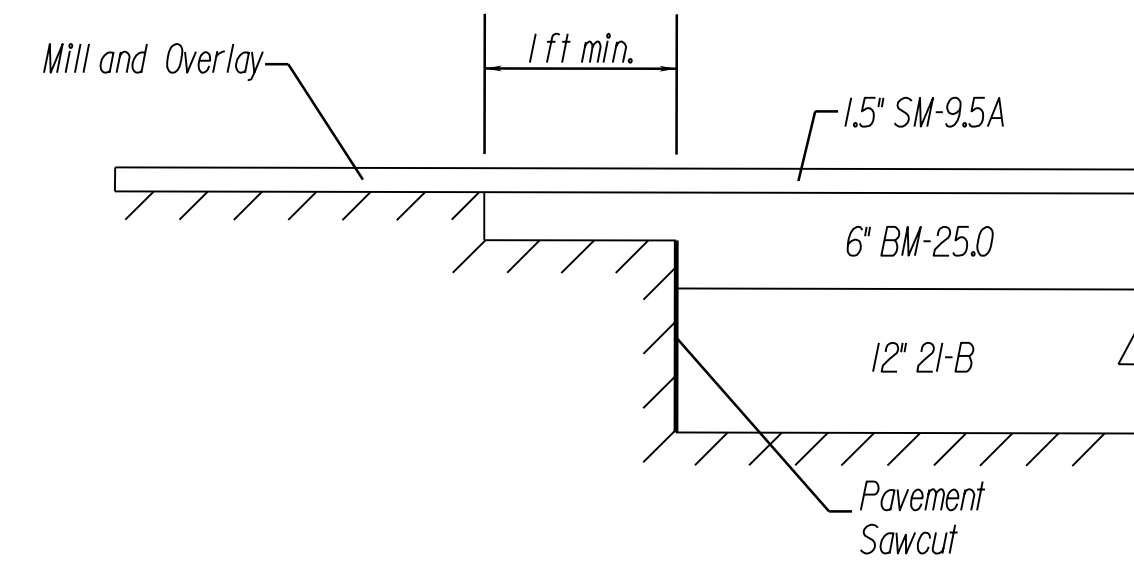
- ① 4" HYDRAULIC CEMENT CONCRETE CLASS A3 SIDEWALK REQ'D
- ② 4" AGGREGATE BASE MATERIAL SIZE 21B



TYPICAL PAVEMENT WIDENING DETAIL



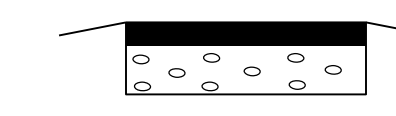
DETAIL "A"



PRIVATE ENTRANCE TYPE

NOT TO SCALE

TYPE III
Asphalt



Asphalt Conc. Type
SM-9.5A or SM-9.5D @ 220 Lbs. per S. Y.
4" Aggr. Base Mat'l. Ty. I
No. 21A or 21B

REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
127 CENTER STREET SOUTH
VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS

GRAPHIC SCALES

SIGNATURE



Whitman, Requardt & Associates, LLP
12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

TYPICAL SECTIONS

SCALE: N/A	
DATE: 01/2024	SHEET 2 OF 4
DES: TL	DRAWN: JZ CHECK: KO

TYPICAL DETAILS

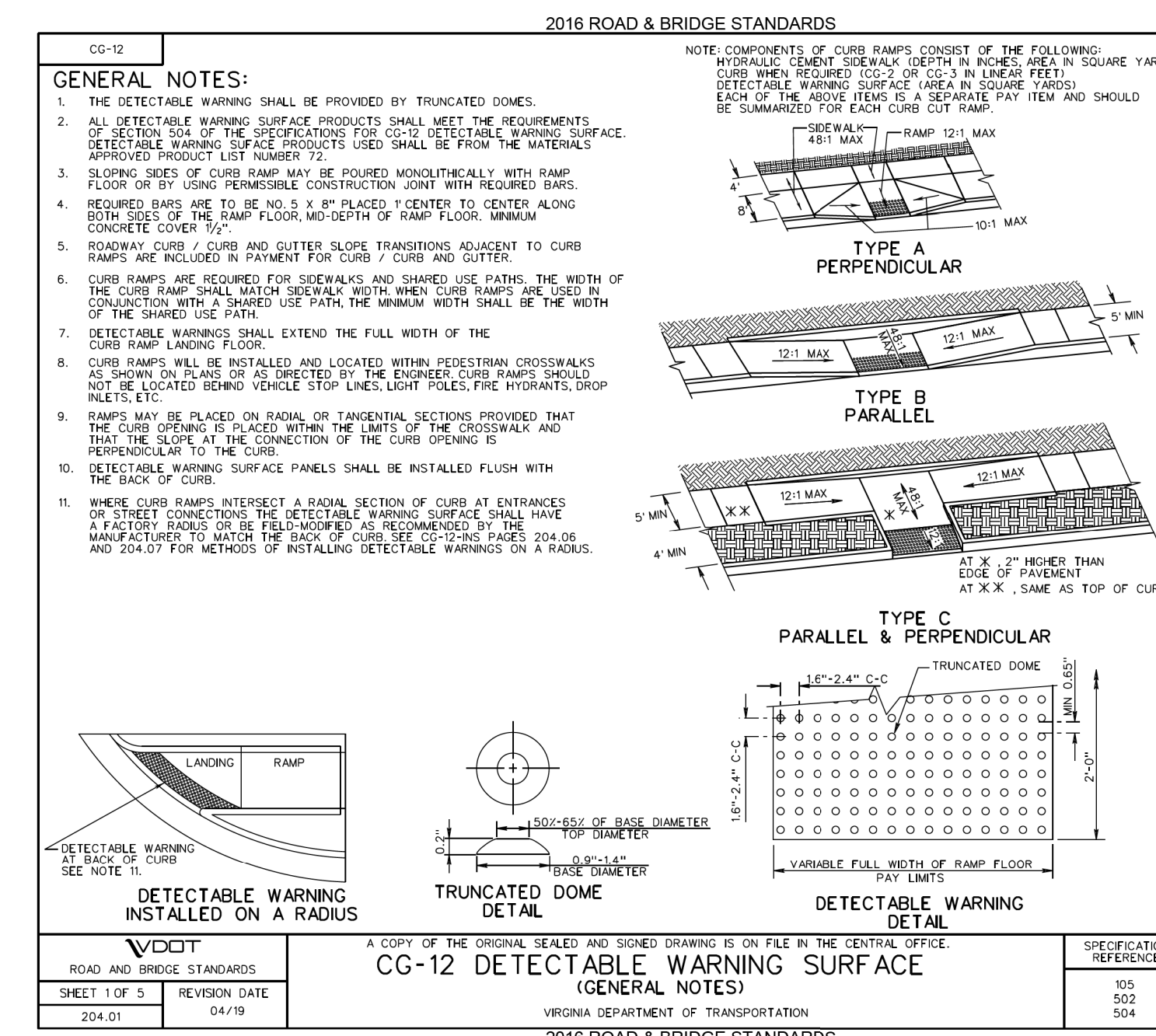
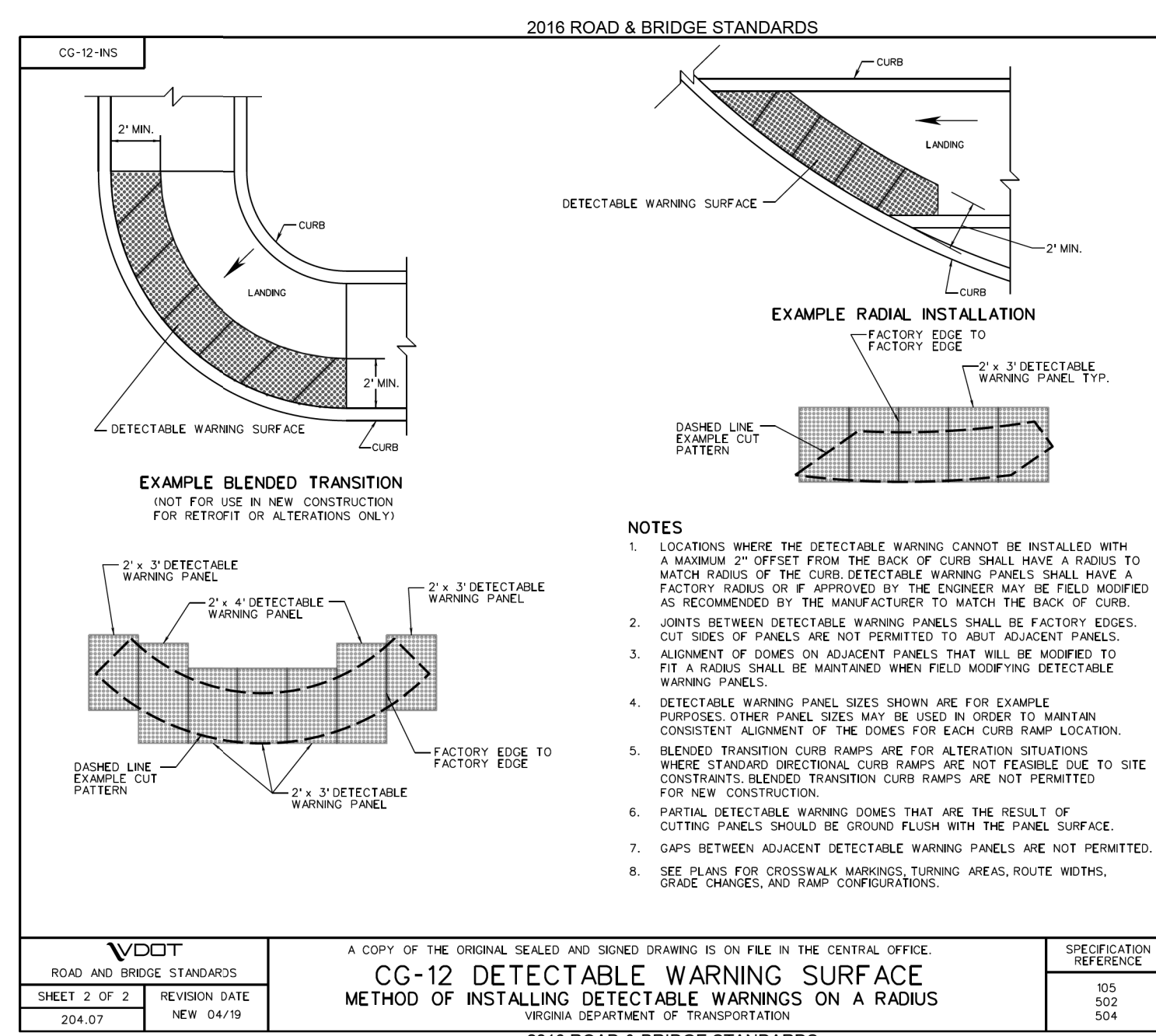
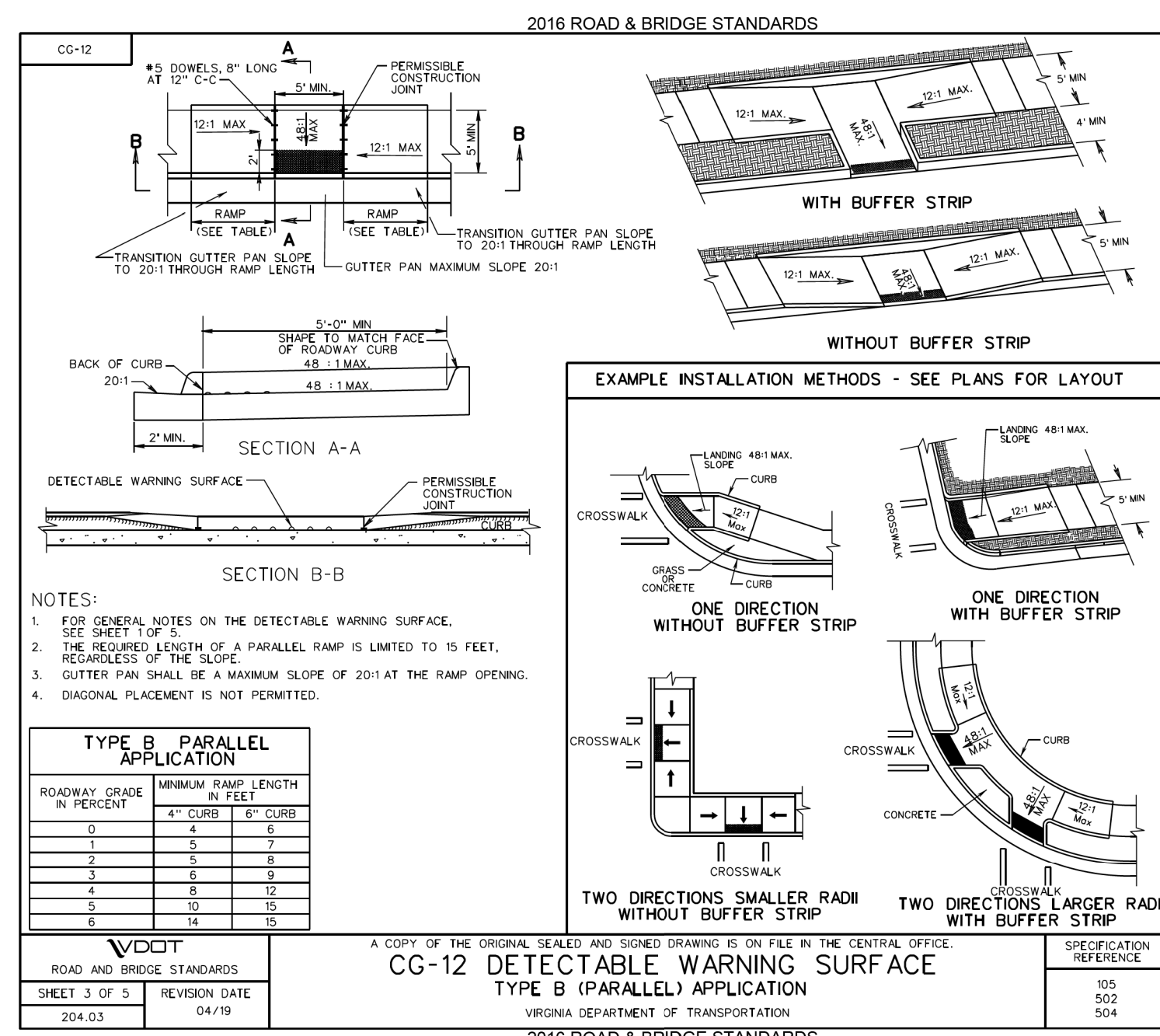
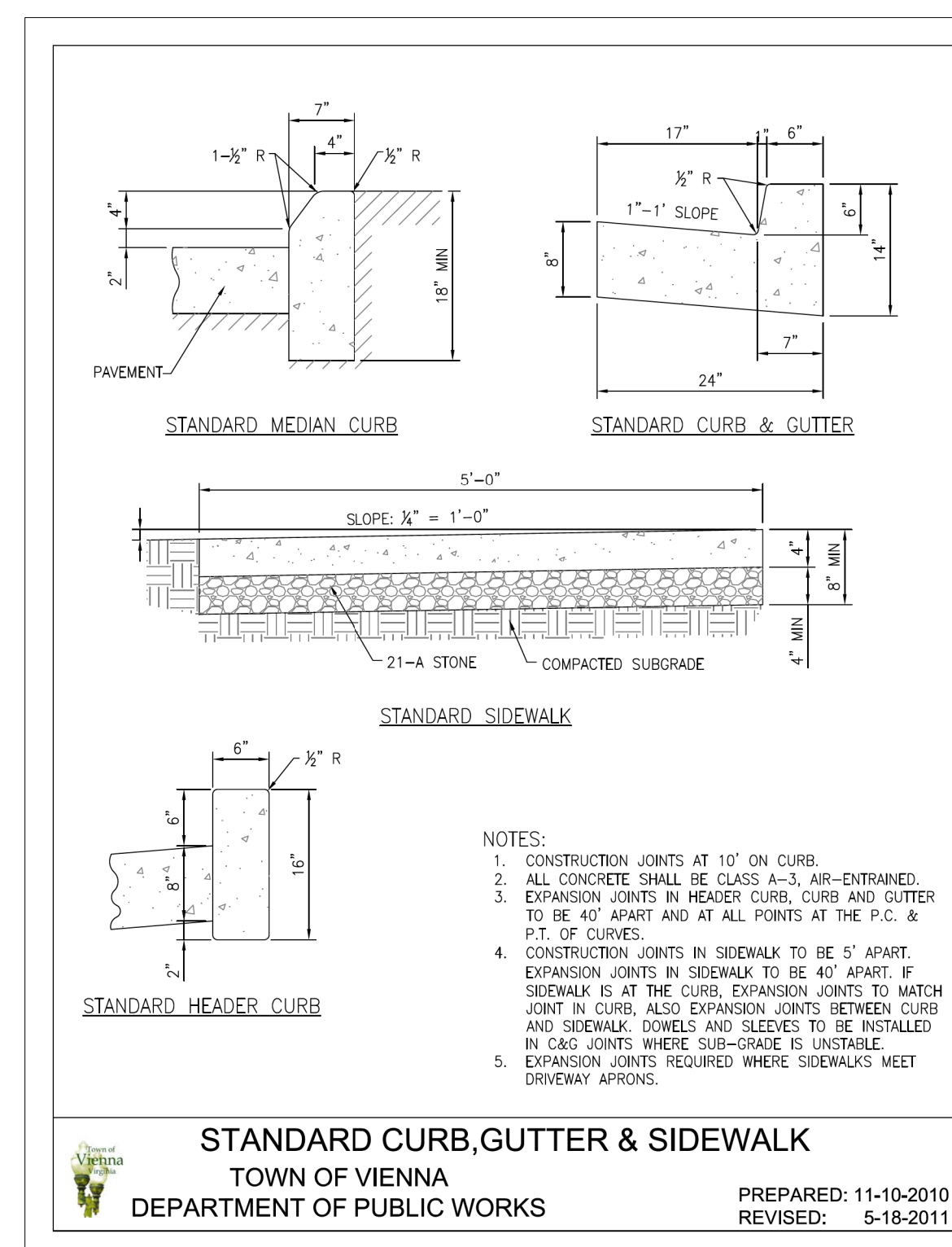
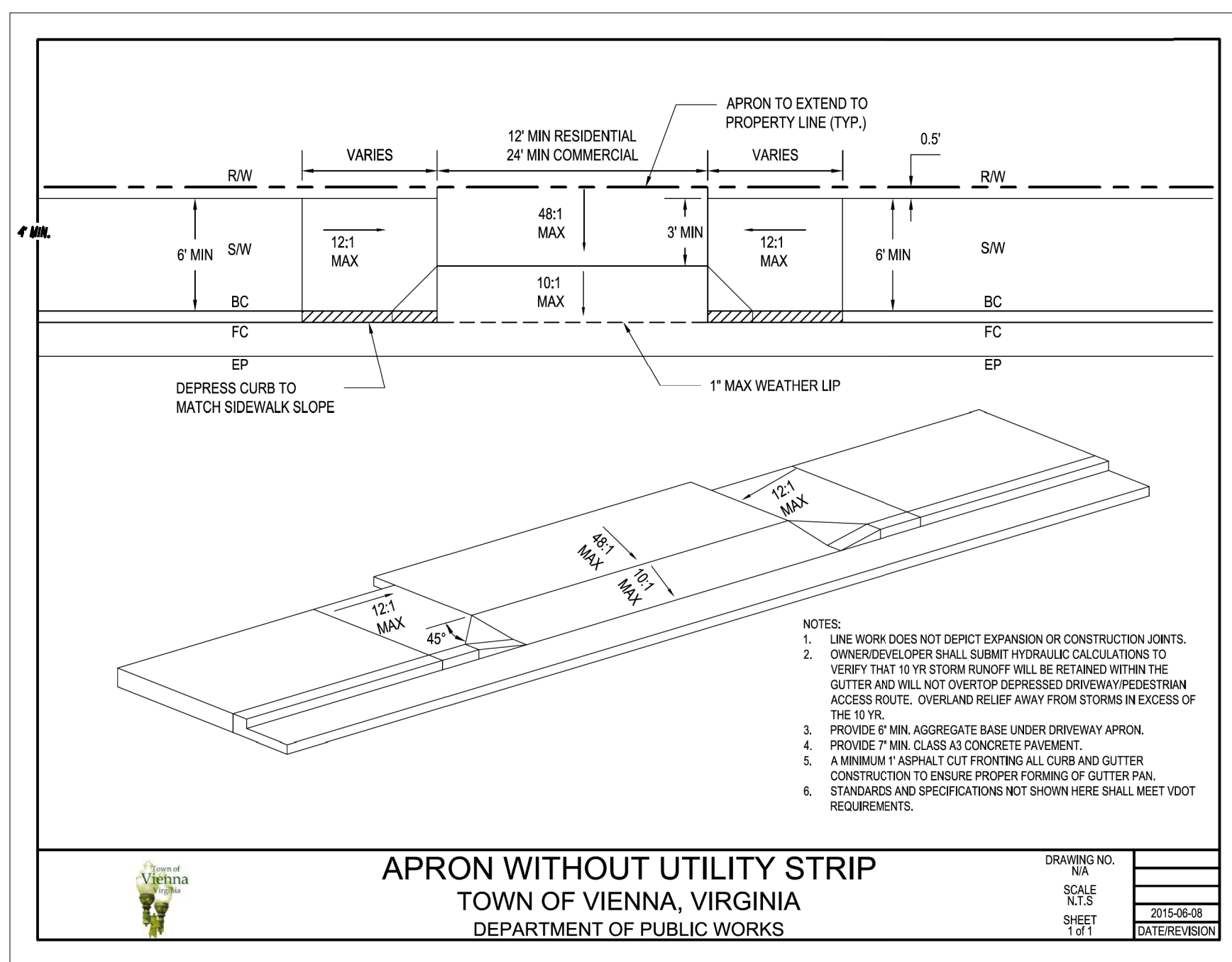
NOT TO SCALE

REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS



GRAPHIC SCALES

SIGNATURE



TYPICAL DETAILS

SCALE: N/A
 DATE: 01/2024 SHEET 2A(1) OF 4
 DES: TL DRAWN: JZ CHECK: KO

TYPICAL DETAILS

NOT TO SCALE

REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



**MOORE AVENUE
 IMPROVEMENTS**

2016 ROAD & BRIDGE STANDARDS

LEGEND	PAGE
A- FLAT SLAB TOP WITH FRAME AND GRATE (T-D-1)	03.03
B- DROP INLET TOP UNIT (T-D-2)	03.04
C- THROAT FACE BLOCK (T-D-3)	03.05, 03.06
D- CURB DROP INLET THROAT SECTION (T-D-3.4)	03.05, 03.06
E- SPACER UNIT (T-M-1)	03.09
F- FLAT SLAB TOP WITH HOLE (T-MH-1)	03.08
G- DROP INLET TOP UNIT (T-D-2)	03.04
H- FLAT SLAB TOP UNIT (T-M-2)	03.09
I- MANHOLE FRAME AND COVER (T-MH-1)	03.02 THRU 03.06
L- SPACER UNIT (T-M-2)	03.09
M- CONCENTRIC LAPERS UNIT (T-MH-2)	03.09
N- REINFORCING LAPERS UNIT (T-MH-2)	03.09
O- FLAT SLAB RESURFER (B-2)	03.10
P- FLAT SLAB RESURFER (B-2)	03.10
Q- RAVER REDUCER (B-3)	03.10
R- MONOLITHIC BASE UNIT - OVER #1 DA (B-1)	03.11
S- DODGERS BASE UNIT - OVER #1 DA (B-2)	03.11
T- FOOTING (B-2)	03.11
U- TEE SECTION BASE UNIT (B-3)	03.11
V- MONOLITHIC BASE UNIT - OVER #1 DA (B-1)	03.11
W- DODGERS BASE UNIT - OVER #1 DA (B-2)	03.11
X- FOOTING (B-2)	03.11
Y- ALTERNATE JOINT DETAIL	03.03

GENERAL NOTES - PRECAST

PRECAST STRUCTURES WILL CONFORM TO SECTION 302 OF THE SPECIFICATIONS. THE MANUFACTURER WILL HAVE THE OPTION OF SELECTING THE COMBINATION OF PRECAST UNITS TO COMPLETE A STRUCTURE UNLESS OTHERWISE NOTED ON THE PLANS.

THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE MASSIVE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.

IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THIS WILL APPLY TO ALL STRUCTURES MEETING THIS CONDITION AND IS NOT TO BE CONSIDERED WITH STANDARD S-1. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD S-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS NECESSARY TO THE SHAPING IS TO BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

ALL PRECAST STRUCTURES TO BE CONSTRUCTED WITH 4000 PSI MINIMUM CONCRETE. STEPS IN ACCORDANCE WITH STANDARD S-1 ARE TO BE PROVIDED IN ALL MANHOLES AND IN ALL DROP INLETS WITH AN "H" DIMENSION OF 4'-0" OR GREATER.

3" DIAMETER WEEP HOLES WILL BE REQUIRED IN PRECAST STRUCTURES LOCATED ADJACENT TO THE PAVEMENT TO DRAIN THE SUBBASE. PLACEMENT OF WEEP HOLES IN THE PRECAST UNIT WILL BE DETERMINED BY THE PROXIMITY OF THE STRUCTURE TO THE SUBBASE. WEEP HOLES MAY ALSO BE REQUIRED IN OTHER STRUCTURES WHEN CALLED FOR ON THE PLANS OR DIRECTED BY THE ENGINEER.

WEEP HOLES WILL HAVE 12" x 12" PLASTIC HARDWARE CLOTH 1/2" MESH OR GALVANIZED STEEL WIRE MESH WITH DIAMETER 0.025" NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE.

PRECAST UNITS LOCATED ADJACENT TO CAST-IN-PLACE CONCRETE ITEMS SUCH AS FURNISHING, GUTTERS AND SPOKES SHALL BE CONNECTED TO THE ADJACENT UNIT BY MEANS OF NO. 4 SMOOTH STEEL DOWELS SPACED ON APPROXIMATELY 12" CENTER THROUGHOUT THE CONTACT LENGTH AND EXTENDING AT LEAST 4" INTO BOTH THE PRECAST UNIT TO RECEIVE THE DOWELS. THEY SHALL NOT EXCEED 3/4" DIAMETER.

THE STANDARD SAFETY SLAB (S-1) IS TO BE USED ONLY WHEN SPECIFIED ON THE PLANS. ON THE DRAINAGE SUMMARY SHEET AND/OR THE DRAINAGE DESCRIPTION REFER TO STANDARD S-1 FOR SAFETY SLAB INFORMATION.

3/4" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

2016 ROAD & BRIDGE STANDARDS

T-D-1

STANDARD TOP

ALTERNATE TOP

PIPE SIZE	CONCRETE H DIMENSION	COVER METAL
12"	2'-0"	2'-0"
15"	2'-3/4"	2'-0"
18"	3'-0"	2'-10"
21"	3'-3/4"	3'-0"
24"	3'-7/8"	3'-0"

RECOMMENDED MINIMUM HEIGHT CHART

DI-1, 1A PO

NOTES:

- SEE GENERAL NOTES PRECAST FOR ADDITIONAL DETAILS.
- CONCRETE TO BE 4000 PSI MINIMUM.
- REINFORCING STEEL IN ACCORDANCE WITH ASTM C-478, ASTM A-497 WIRE FABRIC AND ASTM A-955 STEELWORKING BARS.
- CONCRETE COVER AND GRATE ARE TO BE FURNISHED AS A SINGLE UNIT.
- SEE STANDARD DI-1A FOR DETAILS OF FRAME AND GRATE.
- DIMENSIONS SHOWN ARE MINIMUM. ACTUAL DIMENSIONS MAY VARY WITH MANUFACTURER.

ALTERNATE JOINT DETAILS

VDOT
 ROAD AND BRIDGE STANDARDS
 SHEET 1 OF 1 REVISION DATE 03.08

VIENNA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 303 333 302

2016 ROAD & BRIDGE STANDARDS

D-1

STANDARD DROP INLET

12" - 24" PIPE: MAXIMUM DEPTH (H) = 10'

NOTES:

- DEPTH OF INLET DO TO BE SHOWN ON PLANS FOR DEPTH GREATER THAN 10' USE STANDARD D-1A.
- THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
- WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD S-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS NECESSARY TO THE SHAPING IS TO BE INCLUDED IN THE PRICE FOR THE STRUCTURE.
- IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THIS WILL APPLY TO ALL STRUCTURES MEETING THIS CONDITION AND IS NOT TO BE CONSIDERED WITH STANDARD S-1. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.
- STEPS ARE TO BE PROVIDED WHEN H IS 5'-0" OR GREATER FOR DETAILS SEE STANDARD S-1.
- THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
- #4 x 8' SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED AT ALL LEVELS SUBSIDENT TO ADJUTING CONCRETE TO PREVENT SETTLEMENT. 1/2" MESH HARDWARE CLOTH 1/2" MESH WIRE MESH (IF USED) NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
- CAST IN PLACE CONCRETE IS TO BE CLASS AS 4000 PSI. PRECAST CONCRETE IS TO BE 4000 PSI.
- ANY ALTERNATE METHODS OF ANCHORAGE METHOD THE APPROVAL OF THE ENGINEER. QUANTITIES ARE TO BE SUBSTITUTED FOR THE CAST IRON LUGS AS SHOWN HEREON.
- DUMP NO WASTE DRAINS TO WATERWAY. LETTERING IS REQUIRED ON ALL D-1 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.

SECTION A-A
 CONCRETE QUANTITIES FOR MIN. DEPTH

SECTION B-B
 COLLAR DETAIL

SECTION C-C
 GRATE DETAIL

SECTION D-D
 GRATE DETAIL

VDOT
 ROAD AND BRIDGE STANDARDS
 SHEET 1 OF 1 REVISION DATE 04.01

VIENNA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 303 333 302

GRAPHIC SCALES

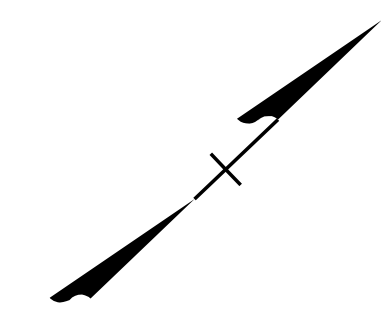
SIGNATURE



Whitman, Reardon & Associates, LLP
 12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

TYPICAL DETAILS

SCALE: N/A
 DATE: 01/2024 SHEET 2A(2) OF 4
 DES: TL DRAWN: JZ CHECK: KO

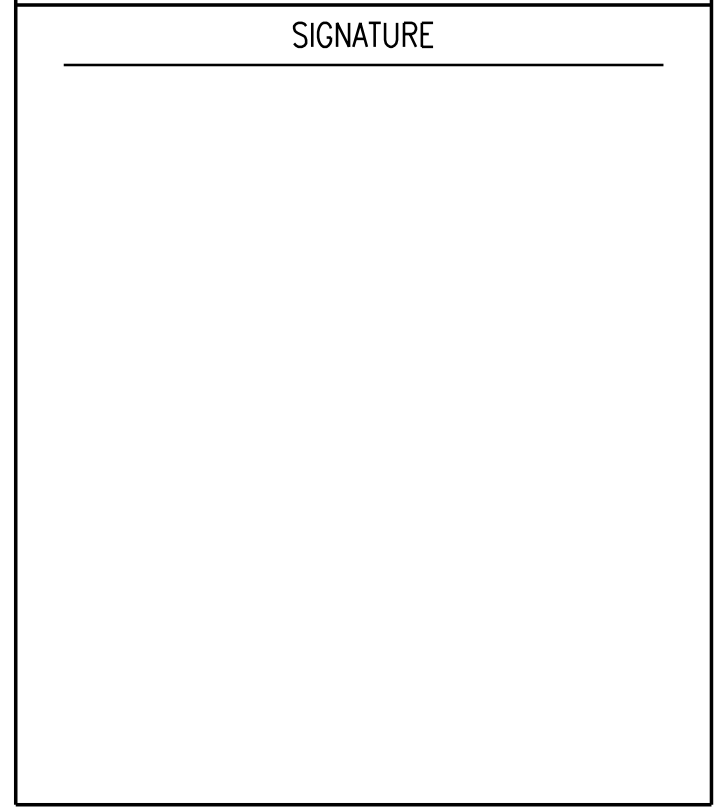
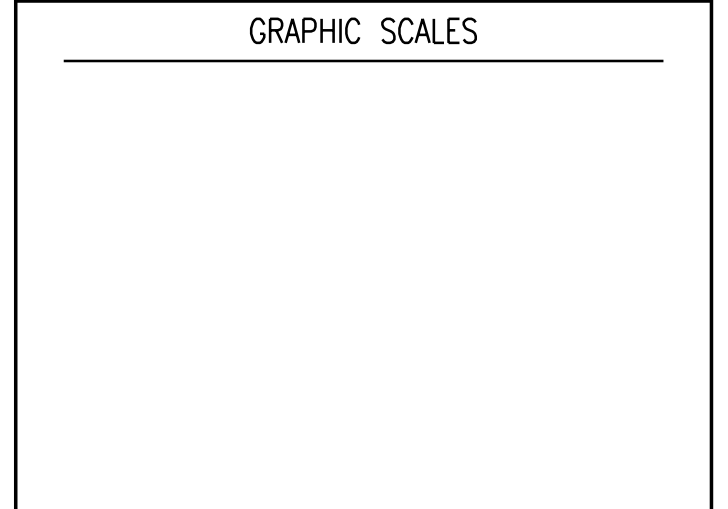
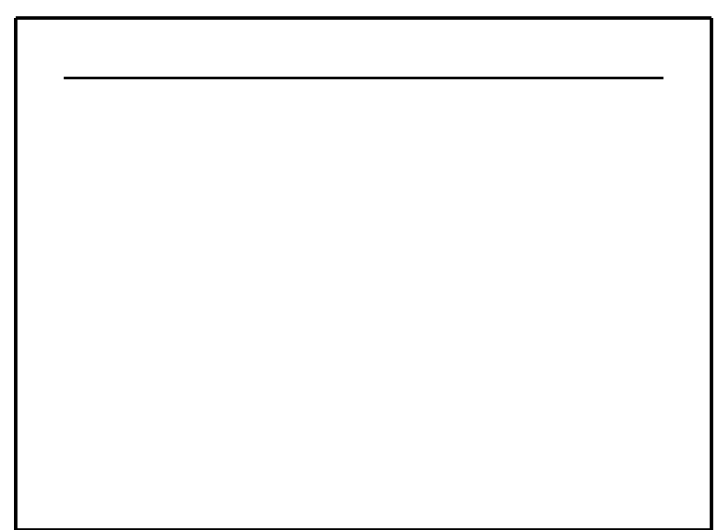


REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



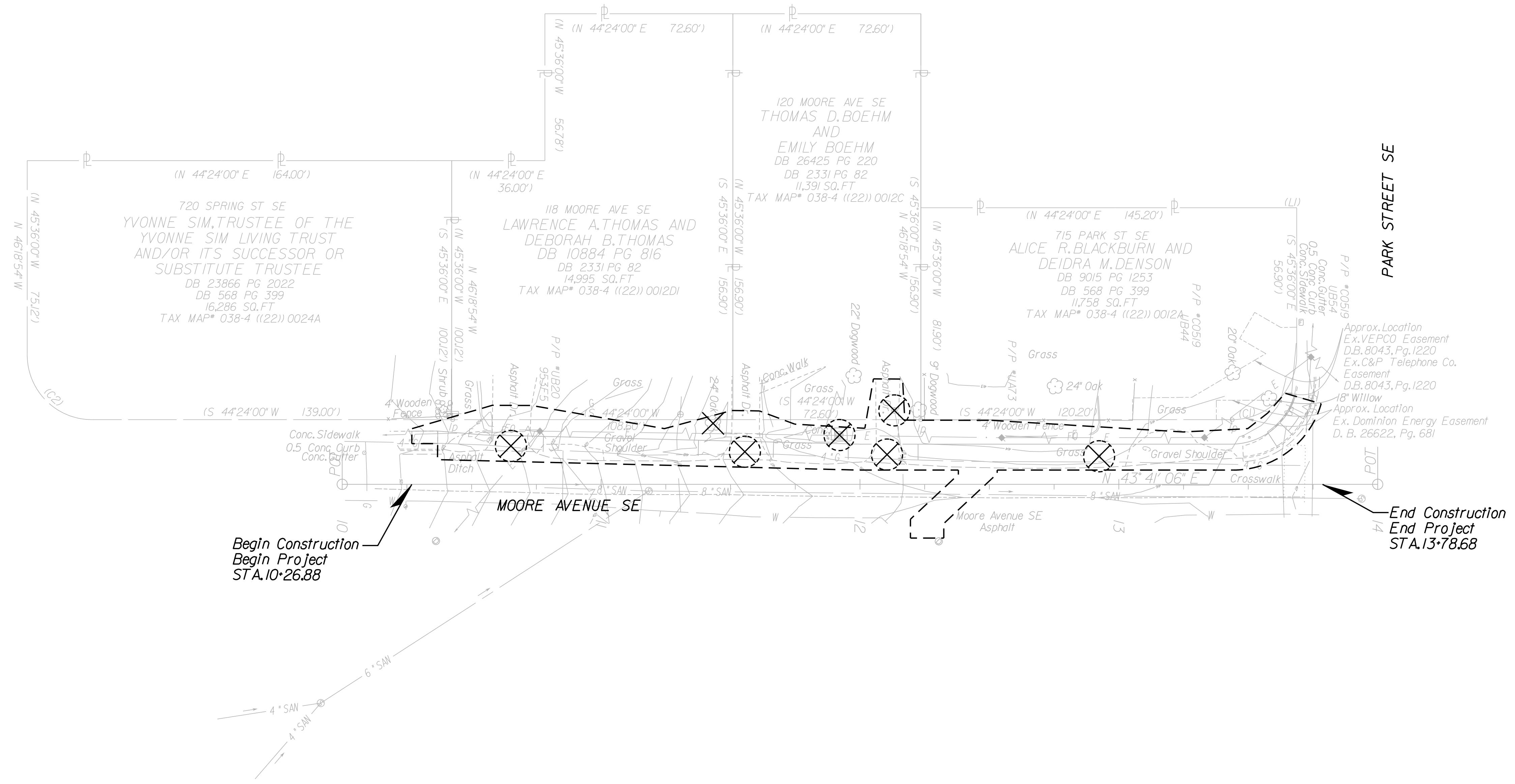
MOORE AVENUE IMPROVEMENTS



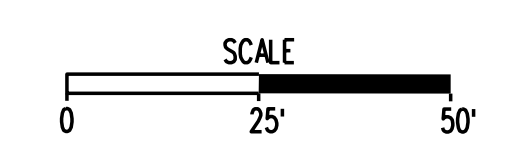
WRA
 Whitman, Reardon & Associates, LLP
 12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1"=25'
 DATE: 01/2024 SHEET 2B OF 4
 DES: TL DRAWN: JZ CHECK: KO




- LEGEND**
- Denotes Limits of Disturbance
 - ⊗ Denotes Item to be Relocated/Reconstructed
 - ⊗ Denotes Item to be Removed



REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS

GRAPHIC SCALES

SIGNATURE

SCALE: 1" = 25'

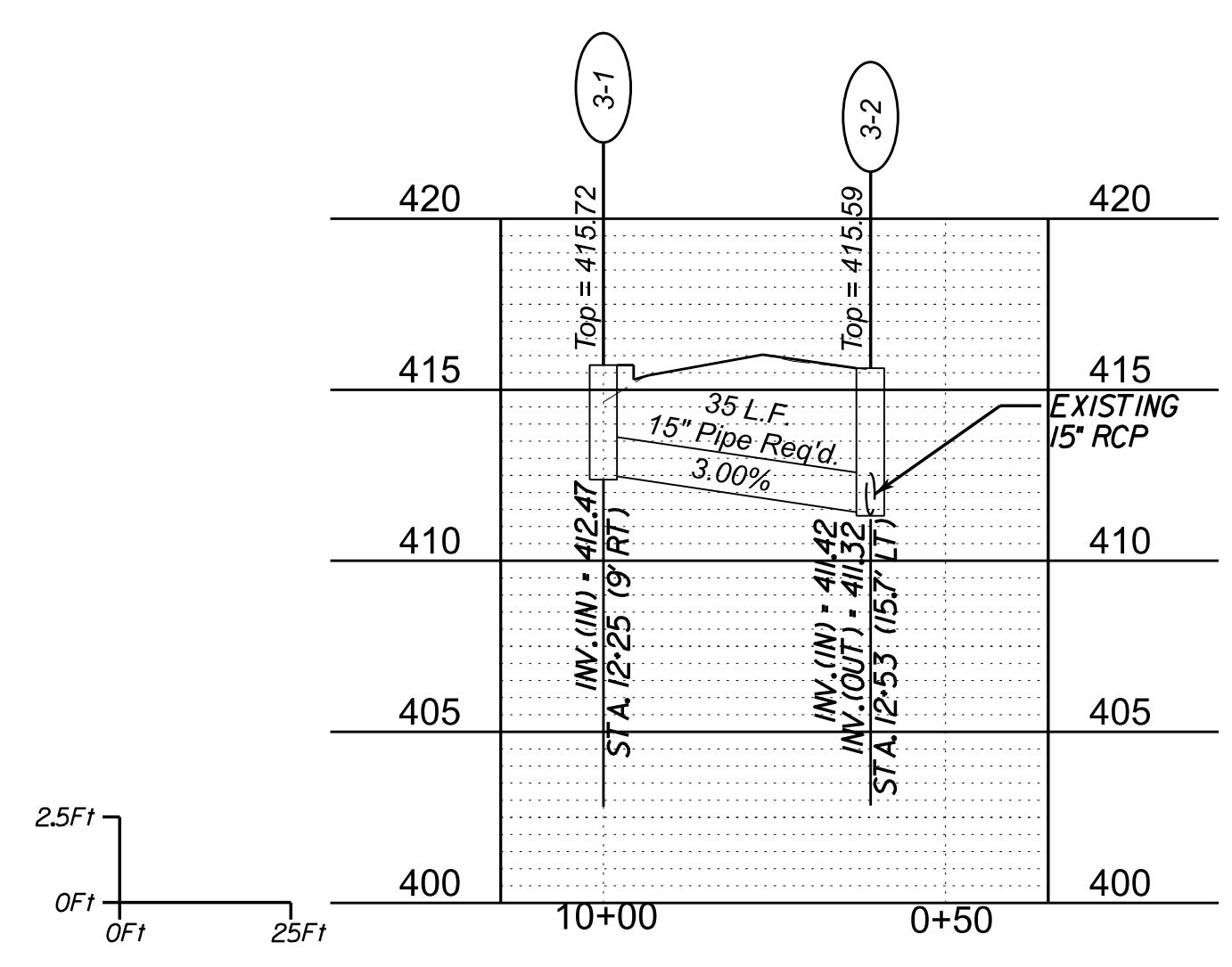
DATE: 01/2024 SHEET 3 OF 4

DES: TL DRAWN: JZ CHECK: KO

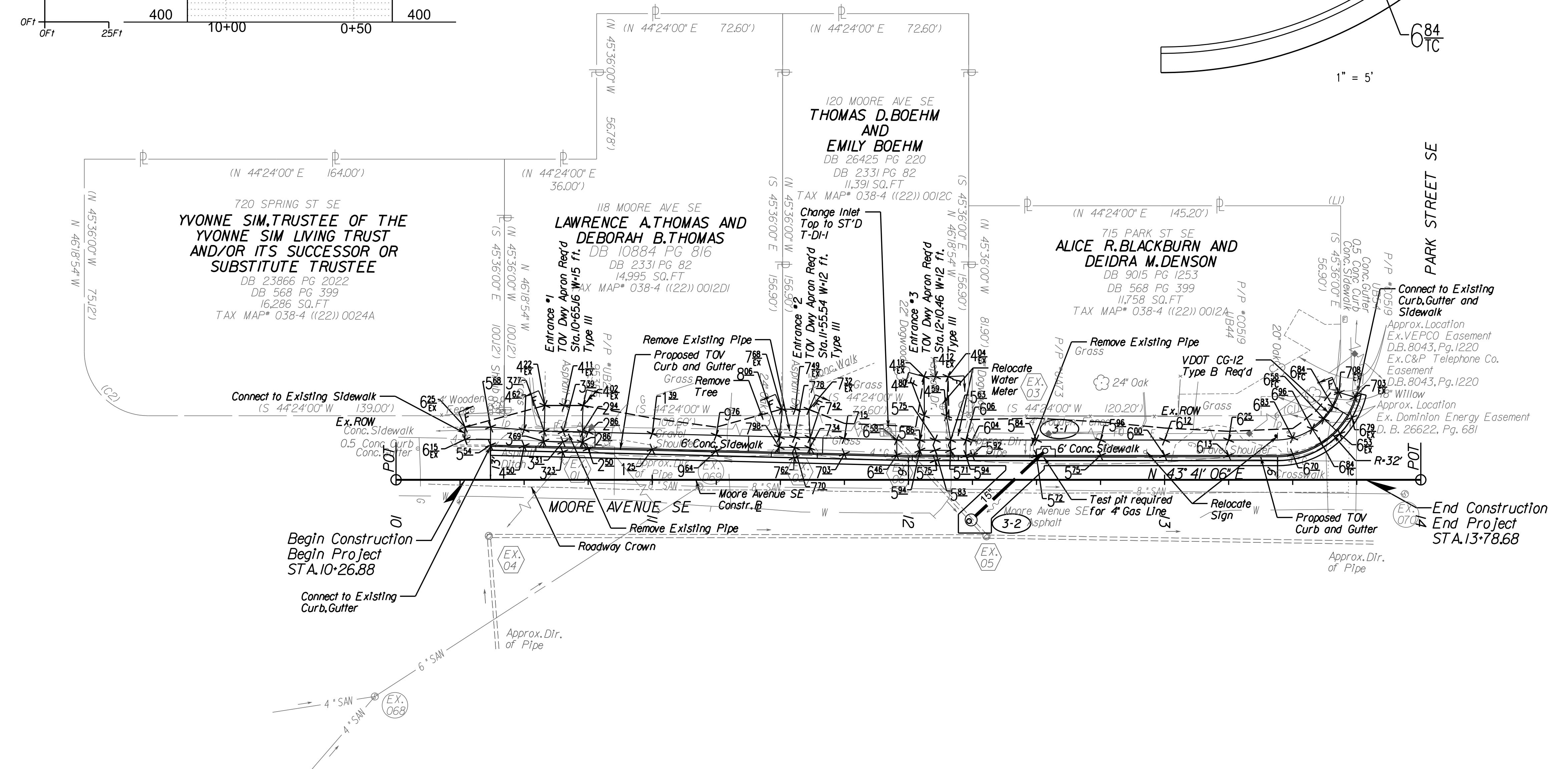
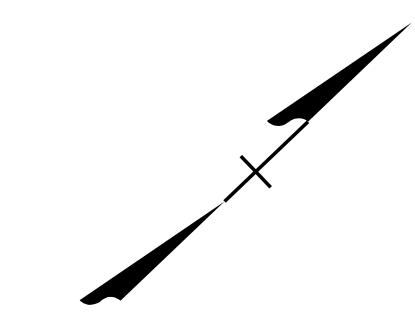
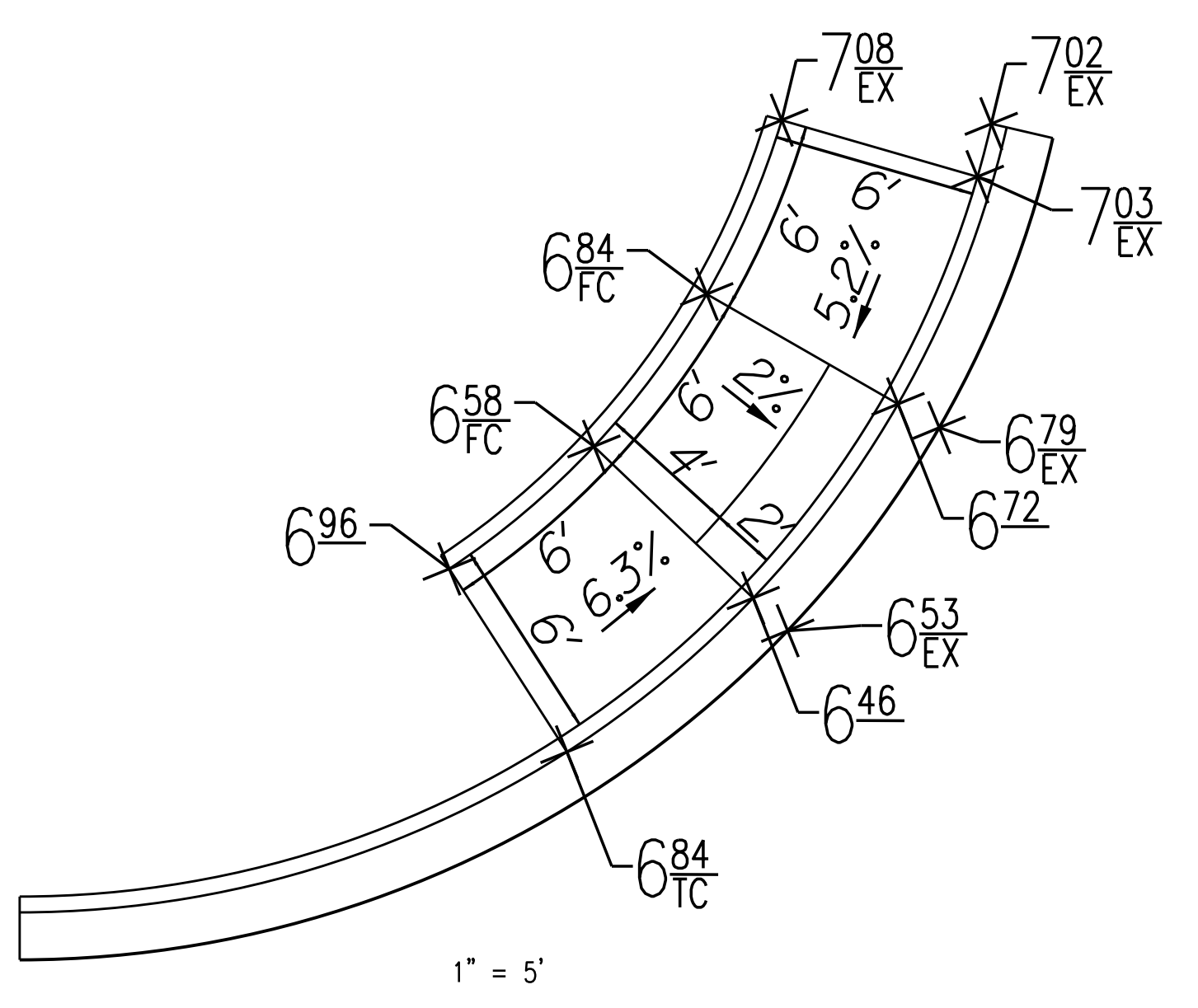


Whitman, Reardon & Associates, LLP
 12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

SITE PLAN

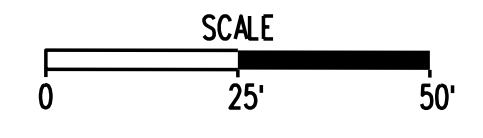


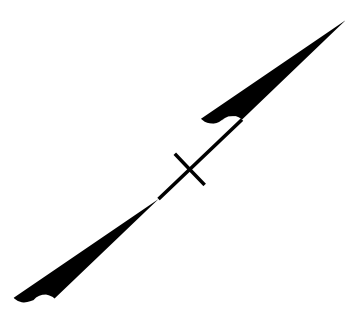
- 3-1 1 ST'D. DI-3C L-6' INV. - 412.47, TOP - 415.72'
- 3-2 1 ST'D. MH-1 OR MH-2 REQ'D ST'D. MH-1 FRAME AND COVER REQ'D INV. - 411.32', TOP - 415.59' ST'D IS-1 REQ'D
- 3-1 3-2 35' - 15" STORM SEWER PIPE REQ'D. INV. (IN) 412.47', (OUT) 411.42'



- NOTES:**
1. GRADE AROUND SIDEWALK TO ENSURE POSITIVE DRAINAGE
 2. PROPOSED SIDEWALK SHALL DRAIN TOWARDS ROADWAY AT 2%.
 3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FROM HARM OR REPLACE UNDER LICENSED LAND SURVEYOR ALL PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION.
 4. MINIMUM REQUIRED LATERAL OFFSET FROM FACE OF CURB TO SIGN PANELS SHALL BE 2 FT.
 5. PROPOSED SPOT ELEVATIONS ALONG CURB AND GUTTER ARE SHOWN FOR TOP OF CURB.

Beginning chain MOOREAV description
 Point MA001 N 7,011,980.4782 E 11,836,998.0066 Sta 10+00.00
 Course from MA001 to MA002 N 43° 41' 06.12" E Dist 400.0000
 Point MA002 N 7,012,269.7373 E 11,837,274.2840 Sta 14+00.00
 Ending chain MOOREAV description





REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS

GRAPHIC SCALES	

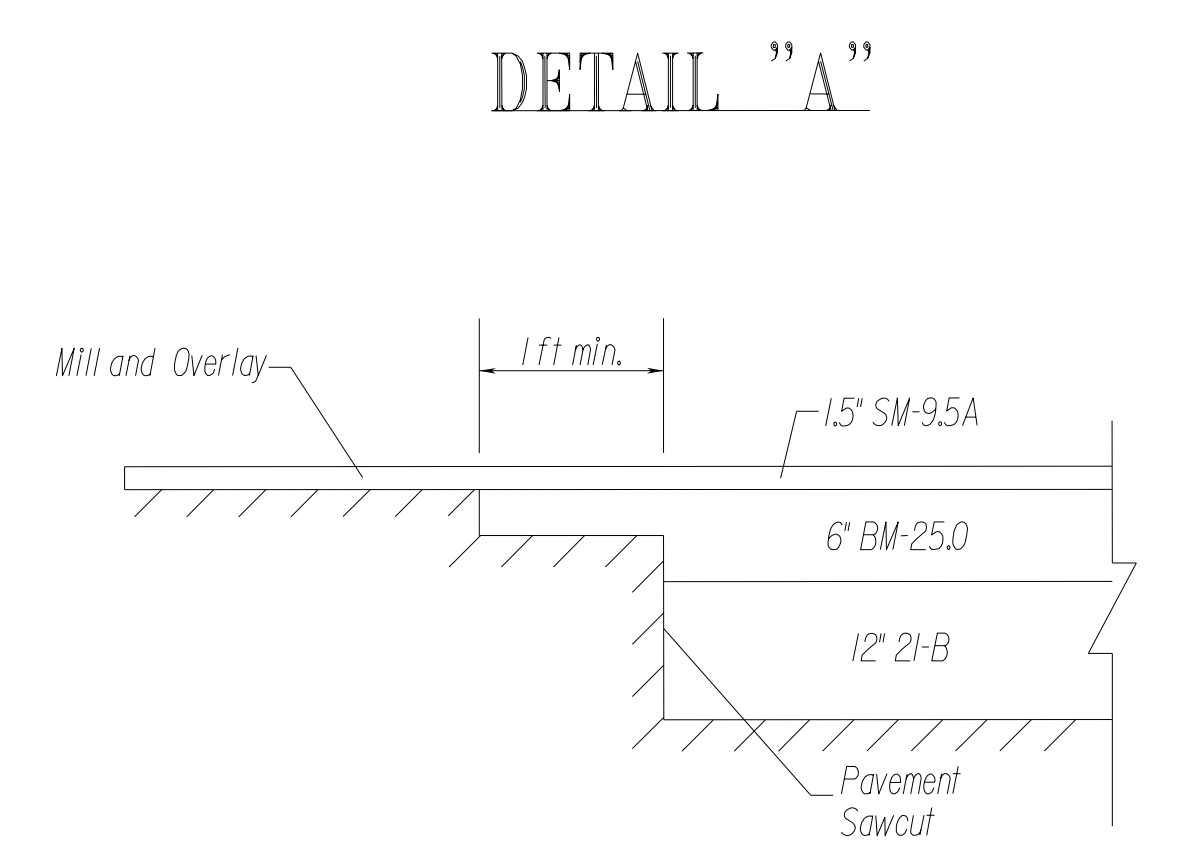
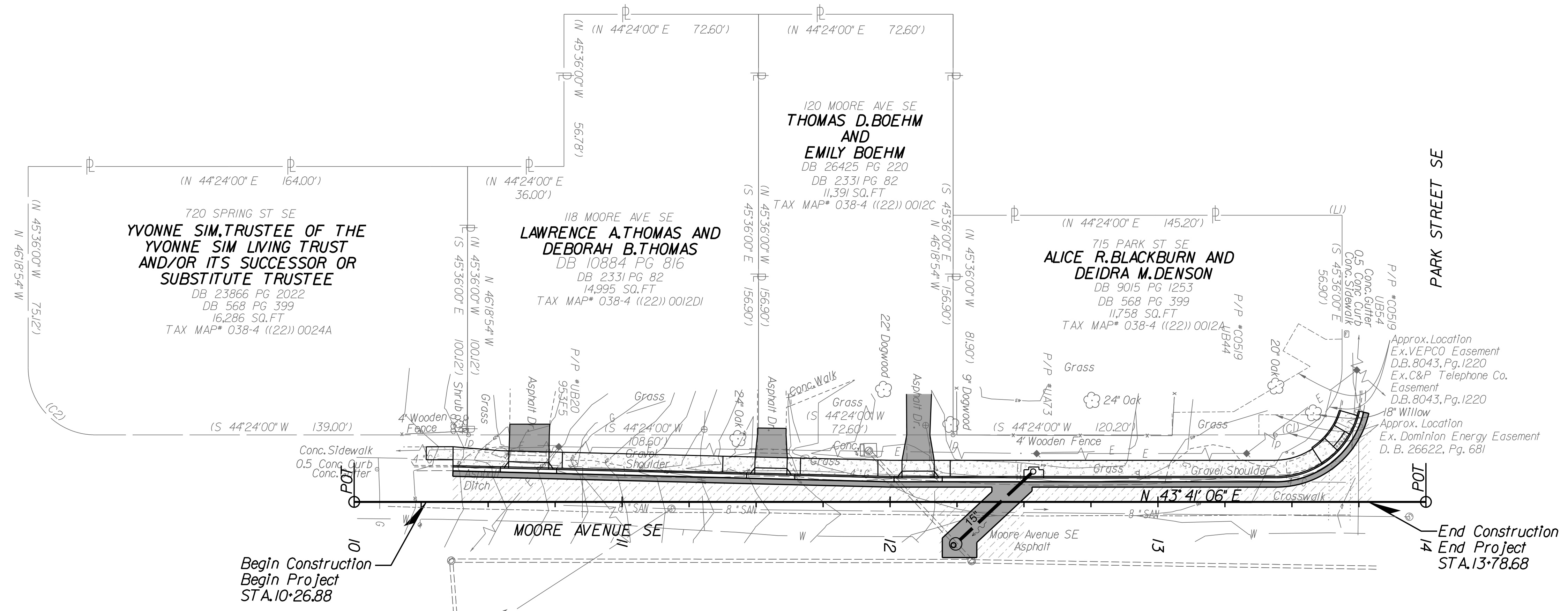
SIGNATURE	

SIGNATURE	

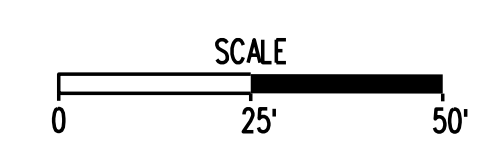
WRA
 Whitman, Reardon & Associates, LLP
 12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

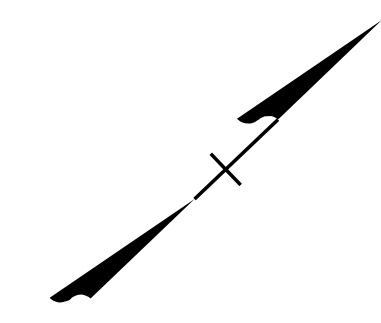
PAVEMENT IMPROVEMENT PLAN

SCALE: 1"=25'
 DATE: 01/2024 SHEET 3A OF 4
 DES: TL DRAWN: JZ CHECK: KO



- LEGEND**
- Proposed Mill and Overlay
 - Proposed Full Depth Pavement
 - Proposed Concrete (Curb & Gutter, CG-12, Sidewalk, etc)
 - Proposed CG-12 Detectable Warning Surface





REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
 127 CENTER STREET SOUTH
 VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS

GRAPHIC SCALES	

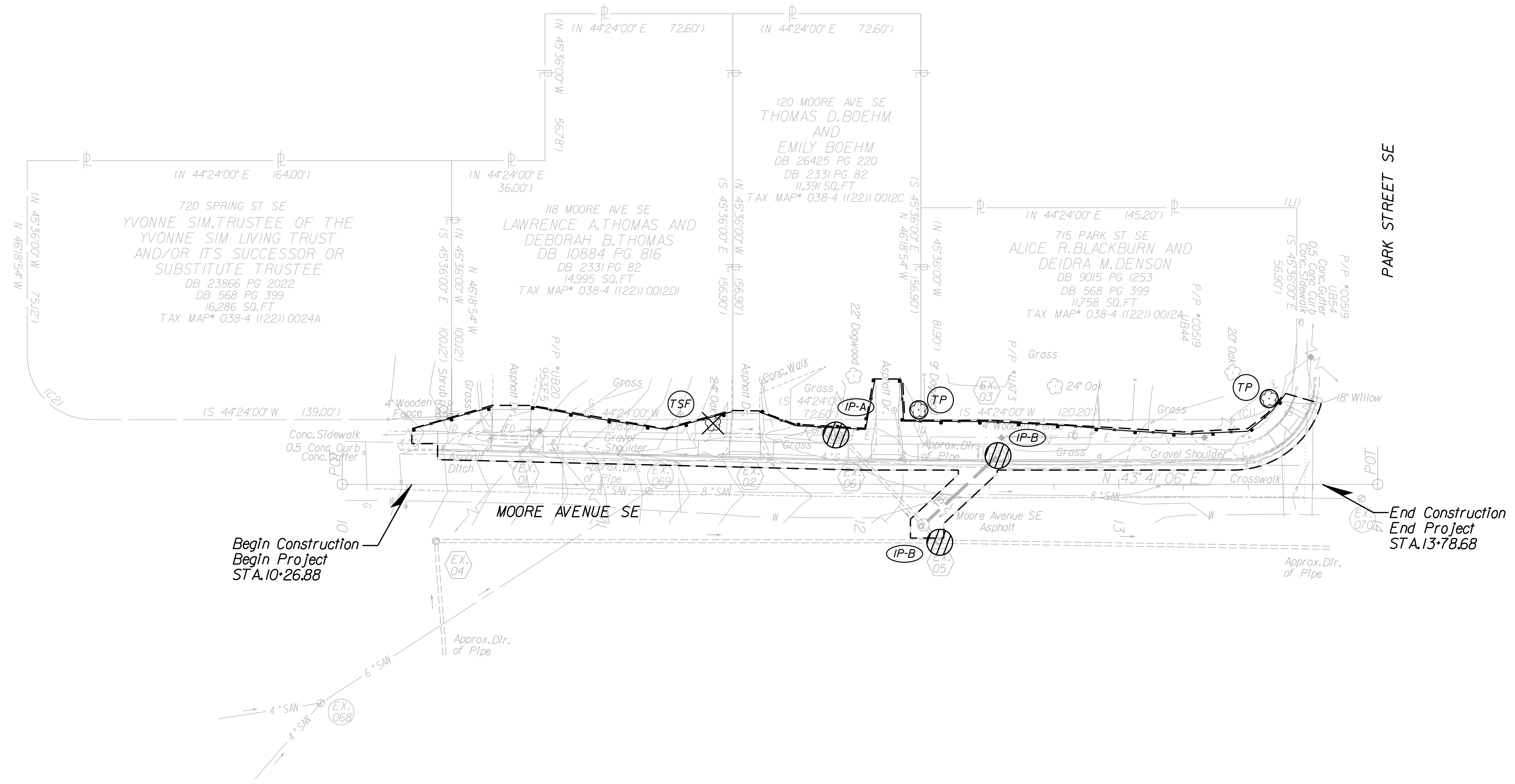
SIGNATURE	



Whitman, Reardon & Associates, LLP
 12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

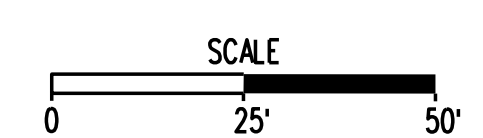
EROSION AND SEDIMENT PLAN

SCALE: 1"=25'		
DATE: 01/2024	SHEET 3B OF 4	
DES: TL	DRAWN: JZ	CHECK: KO



- LEGEND**
- Denotes Limit of Disturbance
 - IP-A IP-B Denotes Inlet Protection, IP-A VESCH 3.07-1, IP-B VESCH 3.07-8
 - TSF Denotes Temporary Silt Fence
 - TP Denotes Tree Protection
 - X Denotes Tree to be removed

NOTES:
 EXISTING 30\"/>



EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF SIDEWALK AND DRAINAGE IMPROVEMENTS FOR THE EXISTING MOORE AVENUE SE. IMPROVEMENTS INCLUDE CURB AND GUTTER, SIDEWALK, DRIVEWAY ENTRANCES, CURB RAMPS, A DRAINAGE INLET AND A MANHOLE. THE TOTAL DISTURBED AREA FOR THE PROJECT IS 0.16 ACRES.

EXISTING SITE CONDITIONS

THE SITE IS EXISTING ROADWAY, MOORE AVENUE SE, WITH CURB AND GUTTER, DRIVEWAY ENTRANCES, AND FRONT YARDS CONTAINING MAILBOXES, WATER METERS, TREES, FENCE, ETC.

ADJACENT PROPERTIES

THE SITE IS SURROUNDED ON ALL SIDES BY SINGLE-FAMILY LOTS.

OFF-SITE AREAS

THERE IS CONSTRUCTION ON OFF-SITE AREAS ADJACENT TO THE ROADWAY. EROSION AND SEDIMENT CONTROL DEVICES WILL BE PLACED OFFSITE AS SHOWN ON PLAN.

SOILS INFORMATION

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SOIL DRAINAGE	EROSION POTENTIAL	PROBLEM CLASS
105B	WHEATON-GLENELG COMPLEX	GOOD	GOOD	HIGH	IVB
105C	WHEATON-GLENELG COMPLEX	GOOD	GOOD	HIGH	IVB

CRITICAL EROSION AREAS

THERE ARE NO CRITICAL AREAS ASSOCIATED WITH THIS PROJECT. NO SLOPES ARE GREATER THAN 20%, AND THERE ARE NOT RESOURCE PROTECTION AREAS WITHIN THE PROJECT LIMITS.

EROSION AND SEDIMENT CONTROL MEASURES

THE EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT ARE DESCRIBED IN DETAIL IN THE EROSION AND SEDIMENT CONTROL PROGRAM ON THIS SHEET.

OVERALL MANAGEMENT STRATEGY

THE OVERALL STRATEGY FOR THIS SITE IS TO TREAT THE ONSITE RUNOFF WITH PERIMETER SILT FENCE AND INLET PROTECTION.

EROSION CONTROL PROGRAM (GENERAL GUIDELINES)

NOT MORE THAN 75% OF THE SITE IS TO BE DENUDE AT ONE TIME. TEMPORARY SEEDING AND MULCHING ARE TO BE APPLIED TO ANY AREA WITHIN THE SITE NOT CONTINUOUSLY WORKED FOR 5 DAYS AFTER CLEARING AND ROUGH GRADING. IN ADDITION, THE CONTRACTOR SHALL TAKE THE FOLLOWING STEPS TO MINIMIZE THE VOLUME OF SILT:

- CONTRACTOR SHALL EVALUATE THE SITE TO DETERMINE EXTENSIVE CUT AND FILL AREAS AND SHALL WORK THOSE AREAS TO MINIMIZE THE EXTENT OF HEAVY EQUIPMENT WORK. CONTRACTOR SHALL STRIVE TO BRING AREAS TO GRADE (ROUGH OF FINISH) AND TO STABILIZE, BY TEMPORARY OR PERMANENT VEGETATION, THESE DISTURBED AREAS PRIOR TO BEGINNING WORK IN OTHER AREAS.
- FILL AREAS SHALL BE COMPACTED COMPLETELY PRIOR TO THE END OF EACH WORK DAY. FILL SLOPE SURFACES SHALL BE LEFT ROUGHENED TO REDUCE SHEET EROSION OF THE SLOPES. CONTRACTOR SHALL REDIRECT CONCENTRATED RUNOFF, BY EARTH BERMS OR OTHER DEVICES, AROUND ACTIVELY DISTRIBUTED AREAS TO STABILIZE OUTLETS.
- CUT SLOPE, AS NECESSARY, SHALL BE PROTECTED FROM CONCENTRATED FLOW BY BERMS ABOVE THE SLOPE AND DIRECTED AROUND THE DISTURBED AREA TO STABILIZED OUTLETS.
- IN NEW PAVEMENT AREAS, PLACE THE AGGREGATE BASE STONE ON THE FINISHED SUBGRADE AT THE EARLIEST POSSIBLE TIME.
- MATERIALS AND METHODS USED IN CONSTRUCTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES REQUIRED SHALL CONFORM TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS IN CHAPTER 3 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), THIRD EDITION, 1992, AS WELL AS ANY OTHER APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
- WHERE APPROPRIATE AND FEASIBLE, AREAS IN WHICH NATURAL GRADES ARE NOT IMPACTED BY PROPOSED GRADING OR STOCKPILE AREAS, SHALL BE LEFT WITH THEIR EXISTING VEGETATION IN PLACE. ALL AREAS SUBJECT TO GRADING SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL.
- PERMANENT OR SOIL STABILIZATION SHALL BE APPLIED TO DENUDE AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDE AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 1 YEAR.

SEDIMENT CONTROL PROGRAM (PHASE 1)

- INSTALL PERIMETER CONTROLS AS SHOWN ON THE PHASE 1 PLAN SHEET 3B (SILT FENCE, INLET PROTECTION, ETC.)
- PERIMETER CONTROLS MUST BE APPROVED IN WRITING BY THE TOWN E&S INSPECTOR BEFORE CLEARING OF THE SITE CAN TAKE PLACE.
- BEGIN GRADING OF PROJECT SITE AND RELOCATION OF UTILITIES, IF NECESSARY.

SEDIMENT CONTROL PROGRAM (PHASE 2)

- BEGIN CONSTRUCTION OF SIDEWALK, DRIVEWAY ENTRANCES, PAVEMENT AND CURB AND GUTTER.
- INLET PROTECTION (IP) INSTALLED DURING PHASE 1 SHALL BE ROUTINELY INSPECTED AND REPLACED IF NECESSARY.
- PERMANENTLY STABILIZE UNPAVED AREAS WITH SOD (PER SEC. 3.33 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK).
- THE CONTROL MEASURES MAY NOT BE REMOVED UNTIL ALL OF THE DISTURBED AREAS HAVE BEEN STABILIZED AND ONLY AS APPROVED AND DIRECTED BY THE INSPECTOR.

MAINTENANCE

THE FOLLOWING IS A PROGRAM OF MAINTENANCE FOR THE MECHANICAL AND PERMANENT CONTROLS SPECIFIED IN THIS NARRATIVE AND ON THE PLAN:

- THE SITE SUPERINTENDENT, OR HIS REPRESENTATIVE, SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREAS (I.E., SEEDED OR SODDED AREAS) ON A DAILY BASIS (ESPECIALLY AFTER A HEAVY RAINFALL) TO ENSURE THAT ALL CONTROLS ARE IN PLACE AND THAT NONE HAVE BEEN DAMAGED. ANY DAMAGED CONTROL SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY TO INCLUDE RESEEDING OR RESETTING, IF NECESSARY. WHEN IT IS CLEAR THAT PLANTS HAVE NOT GERMINATED ON AN AREA OR HAVE DIED, THESE AREAS MUST BE RE-SEEDING IMMEDIATELY TO PREVENT EROSION DAMAGE.
- AFTER ALL CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS ARE STABILIZED, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED AND THE GROUND SHALL BE RESTORED ESTABLISHMENT OF VEGETATION, TO ITS NATURAL OR PROPOSED CONDITION. REMOVAL OF ANY CONTROL IS CONTINGENT UPON APPROVAL BY THE TOWN INSPECTOR.

PERMANENT STABILIZATION

AFTER CONSTRUCTION IS COMPLETE ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH SEC. 3.32 AND 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

STORMWATER MANAGEMENT

N/A

ADDITIONAL NOTES

- THE TOWN INSPECTOR SHALL HAVE THE AUTHORITY TO DIRECT THE ADDITION OR DELETION OF EROSION AND SEDIMENT CONTROLS AS SITE CONDITIONS WARRANT.
- EARTHEN STRUCTURES ARE TO BE STABILIZED IMMEDIATELY UPON COMPLETION.

EROSION AND SEDIMENT CONTROL MEASURES

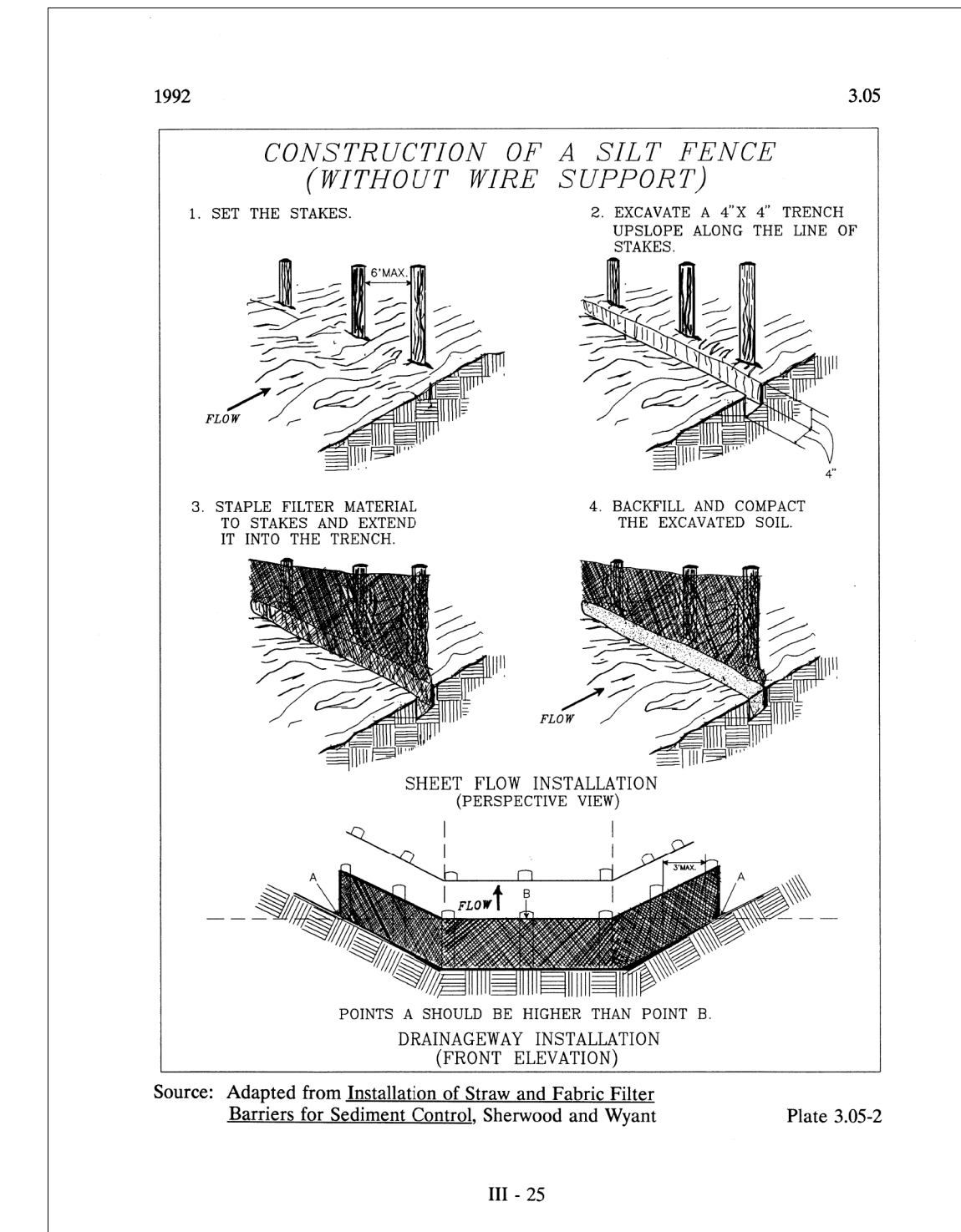
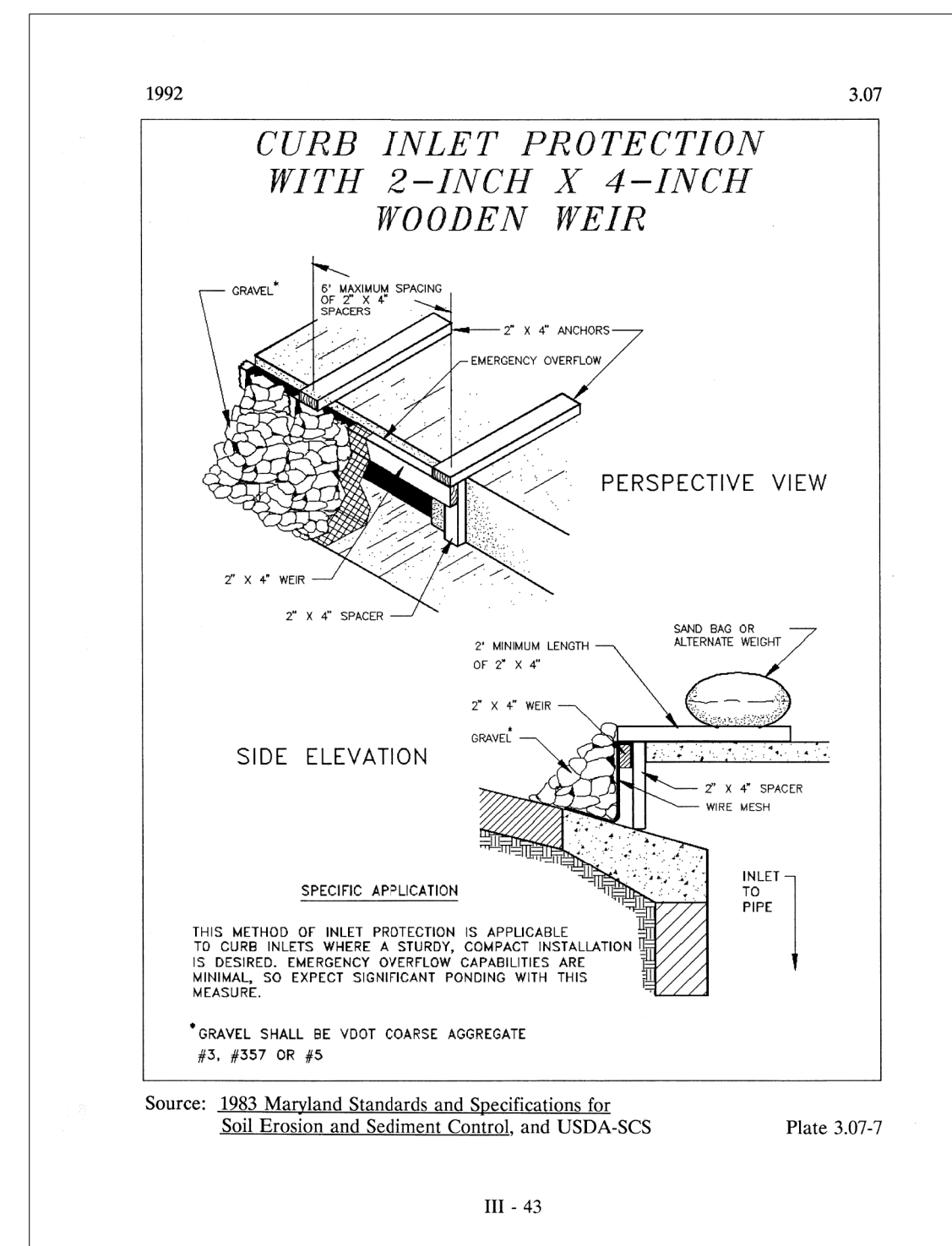
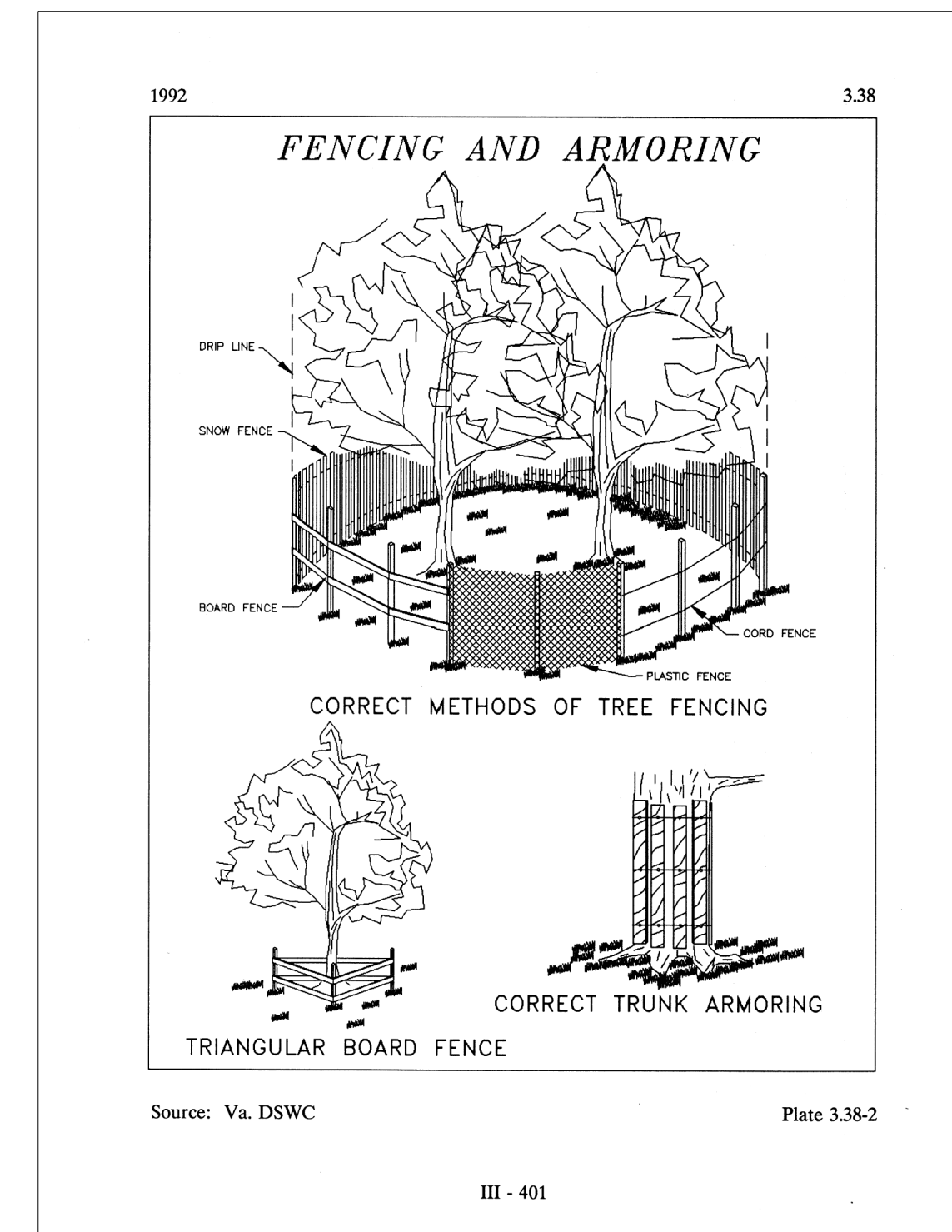
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESCH.

THE STRUCTURAL PRACTICES PROPOSED WITH THIS PLAN ARE AS FOLLOWS:

- SILT FENCE - 3.05**
A TEMPORARY SEDIMENT BARRIER CONSISTING OF A SYNTHETIC FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED.
- STORM DRAIN INLET PROTECTION - 3.07**
A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.
- TOPSOIL - 3.30**
PRESERVING AND REUSING THE SURFACE LAYER OF SOIL FROM AREAS TO BE GRADED.
- TEMPORARY SEEDING - 3.31**
THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.
- SODDING - 3.33**
STABILIZING FINE-GRADED DISTURBED AREAS BY ESTABLISHING PERMANENT GRASS STANDS WITH SOD.
- MULCHING - 3.35**
APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE.
- TREE PROTECTION - 3.38**
PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.
- DUST CONTROL - 3.39**
REDUCING SURFACE AND AIR MOVEMENT OF DUST DURING LAND DISTURBING, DEMOLITION, AND CONSTRUCTION ACTIVITIES, BY SPRAYING FROM A WATER TRUCK OR OTHER APPROVED METHOD.

GENERAL LAND CONSERVATION NOTES

- ALL LAND CONSERVATION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- NO DISTURBED AREA WILL REMAIN DENUDE FOR MORE THAN 14 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE TOWN.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
- ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS AFTER BACKFILL.
- ALL TEMPORARY EARTH BERMS, AND DIVERSIONS ARE TO BE MULCHED AND SEEDED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL SOIL STOCKPILES.
- DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
- AT THE COMPLETION OF CONSTRUCTION, ALL TEMPORARY SILTATION AND EROSION CONTROLS SHALL BE REMOVED AND ALL DISTURBED AREAS SHALL BE STABILIZED.



REVISIONS	

CLIENT INFORMATION
TOWN OF VIENNA, VA
127 CENTER STREET SOUTH
VIENNA, VA, 22180



MOORE AVENUE IMPROVEMENTS

GRAPHIC SCALES

SIGNATURE



Whitman, Requardt & Associates, LLP
12700 Fair Lakes Circle, Suite 300, Fairfax, Virginia 22033

EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS

SCALE: N/A

DATE: 01/2024

SHEET 4 OF 4

DES: TL

DRAWN: JZ

CHECK: KO