

# 100% PLAN SIGNATURES

DATE: March 26, 2021

TO: Amy Pflaum, Quality Control Engineer, DES  
Kamal 'Nick' Taktak, Construction Management Supervisor, DES  
Dave Hundelt, Planning Supervisor, WSS Bureau, DES  
Dennis Leach, Deputy Director, Transportation and Development, DES  
John Mir, Project Manager, Facilities Design and Construction Bureau, DES

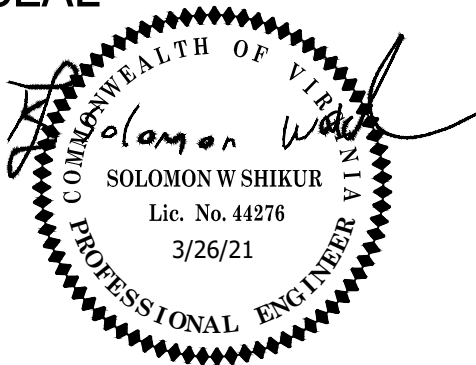
FROM: Sara Buckley, Design Engineer

PROJECT: 31st Street South - Parking Lot Expansion  
Between South Fern Street and South Eades Street

ATTACHMENT: 100% DESIGN PLAN SET (42 SHEETS)

Attached you will find the 100% design plan for the above-referenced project. Please conduct a final review of the set to confirm all the comments have been addressed. Once your 100% review is complete, please sign your name in your designated space on the signature block below, ensuring both your signature and date stay within the borders. Upon receiving all signatures, the signature block will be inserted into each sheet of the final design plan set to be included in the construction documents.

SEAL



APPROVALS DATE

Amy Pflaum 03/26/2021

QUALITY CONTROL ENGINEER

Kamal Taktak 3.30.21

CONSTRUCTION MANAGEMENT SUPERVISOR

[Signature] 04.02.2021

WATER, SEWER, STREETS BUREAU CHIEF

Dennis M. Leach 04/09/21

TRANSPORTATION DIRECTOR

John Mir 3/30/2021

PROJECT MANAGER

Reviewing Bureau/Agency	Reviewer	Review Completed Date
TE&O (Traffic Signal, MOT Plan, Pavement Markings and Signage)	Kevin Casadei	3/26/21
Transit	Diane Trent/Mark Mainardi	3/09/21
Water, Sewer, Streets	Regan Carver	3/12/21
DPR Forestry and Landscaping	Adam Lipera	3/09/21
DPR Planning & Development	Walter Gonzalez	3/09/21
Transportation Planning	Leah Gerber	3/09/21
Development Services	Diana McColgan	3/09/21
Construction	Ric Schultz	3/09/21
Engineering Bureau	Amy Pflaum	3/09/21

For 100% Signature Submissions only:  
I certify that all required approvals (LDA, WMATA, VDOT, TEO, etc) have been secured.

[Signature]

Design Team Supervisor

NOTE: DO NOT FORWARD. PLEASE RETURN THE PLAN SET AND THIS SIGNATURE SHEET TO SARA BUCKLEY.



ARLINGTON  
VIRGINIA

ENGINEER  
DEPARTMENT OF  
ENVIRONMENTAL SERVICES

FACILITIES & ENGINEERING DIVISION  
ENGINEERING BUREAU  
2100 CLARENDON BOULEVARD, SUITE 813  
ARLINGTON, VA 22201  
PHONE: 703.228.3629 FAX: 703.228.3606  
WWW.ARLINGTONVA.US

OWNER  
DES/FE/DC

CONTRACTOR  
TO BE DETERMINED

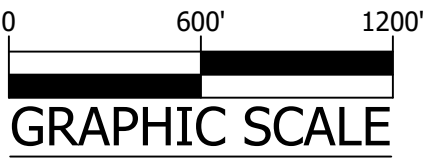
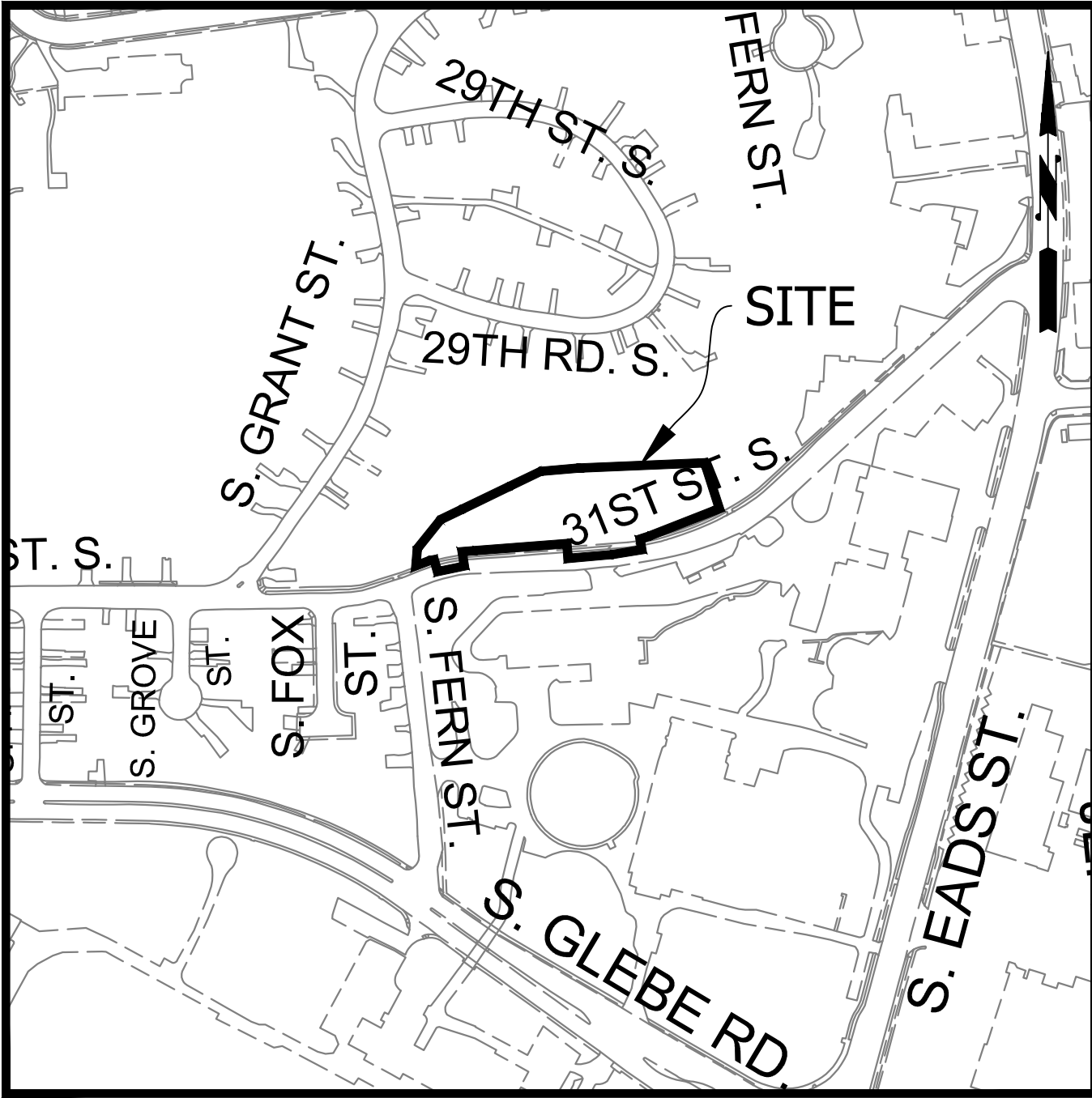
# CONSTRUCTION DRAWINGS FOR:

PROJECT NAME: 31ST STREET SOUTH PARKING LOT

PROJECT LOCATION: BETWEEN S. FERN STREET AND S. EADS STREET

PROJECT CODE: WPB5

## LOCATION MAP



## GENERAL NOTES:

### GENERAL CONSTRUCTION NOTES

- ALL CONSTRUCTION WORK FOR THIS PROJECT SHALL CONFORM TO THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES, CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND WHERE APPLICABLE THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, AND ROAD AND BRIDGE STANDARDS. THE LATEST EDITIONS OF EACH RELEVANT MANUAL SHALL BE USED.
- ALL CONSTRUCTION AND WORK ACTIVITIES SHALL COMPLY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND ALL OTHER RELEVANT WORK SAFETY REQUIREMENTS, LATEST EDITIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT OFFICER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLANS.
- THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 811 FOR MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES (i.e. WATER, SEWER, GAS, TELEPHONE, ELECTRIC, AND CABLE TV) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO IDENTIFY AND PROTECT ALL OTHER UTILITY LINES FOUND IN THE WORK SITE AREA BELONGING TO OTHER OWNERS THAT ARE NOT MEMBERS OF "MISS UTILITY". PRIVATE WATER, SEWER AND GAS LATERALS WILL NOT BE MARKED BY MISS UTILITY OR THE COUNTY. THE CONTRACTOR SHALL LOCATE AND PROTECT THESE SERVICES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL RETAIN A PROFESSIONAL LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA TO PROVIDE ALL NECESSARY CONSTRUCTION LAYOUTS AND ESTABLISH ALL CONTROL LINES, GRADES, AND ELEVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A COPY OF ALL CUT SHEETS FOR REVIEW, PER THE SPECIFICATIONS. THE COST OF ALL NECESSARY SURVEYING SERVICES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND, UNLESS OTHERWISE SPECIFIED, THE COST SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
- THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS ARE FROM BEST AVAILABLE RECORDS AND SHALL BE CONSIDERED TO BE APPROXIMATE. WHEN CONSTRUCTION ACTIVITY REACHES IN PROXIMITY TO EXISTING UTILITIES, THE TRENCH(ES) SHALL BE OPENED A SUFFICIENT DISTANCE AHEAD OF THE WORK OR TEST PITS SHALL BE MADE TO VERIFY THE EXACT LOCATION AND INVERTS OF THE UTILITY TO ALLOW FOR POSSIBLE CHANGES IN THE LINE OR GRADE AS DIRECTED BY OFFICER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES AND THE RELATED STRUCTURES. ALL EXISTING UTILITY SYSTEMS SHALL BE PROTECTED TO PREVENT DAMAGE DURING THE CONTRACTOR'S OPERATIONS. ANY SYSTEM DAMAGED SHALL BE PROMPTLY REPAIRED AT NO COST TO THE OWNER.
- EXISTING MANHOLE FRAMES, COVERS, VALVE BOXES, AND OTHER APPURTENANCES SHALL BE ADJUSTED TO THE FINAL GRADE OR REPLACED, AS NECESSARY. UNLESS OTHERWISE SPECIFIED, THE COST FOR THIS SHALL BE CONSIDERED INCIDENTAL TO THE WORK, AND SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
- THE CONTRACTOR SHALL PROVIDE ADA COMPLIANT ACCESS THROUGH OR AROUND THE SITE AT ALL TIMES AND SHALL ENSURE THE SAFETY OF ALL THOSE PASSING THROUGH OR ADJACENT TO THE SITE.
- ALL SIDEWALK AND CURB AND GUTTER DEMOLITION SHALL BEGIN AND END AT THE CONSTRUCTION JOINT NEAREST TO THE DEPICTED DEMOLITION EXTENTS WITH A NEAT SAWCUT LINE TO FULL DEPTH OF PAVEMENT SECTION.

### STORMWATER AND ENVIRONMENTAL PROTECTION

- THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES AT THE SITE ASSOCIATED WITH CONSTRUCTION ACTIVITIES, TO INCLUDE STORAGE OF EQUIPMENT AND OR MATERIALS, ACCESS TO THE WORK, FORMWORK, ETC. TO WITHIN THE DESIGNATED LIMITS OF DISTURBANCE (LOD).

### TREE PROTECTION

- TREES SHALL BE PROTECTED PER THE REQUIREMENTS OF ARLINGTON PARKS & RECREATION STANDARD.

### TRAFFIC CONTROL

- CONTRACTOR SHALL NOTIFY THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO DISTURBING ANY EXISTING, OR INSTALLING ANY NEW, TRAFFIC SIGNS, SIGNALS, OR OTHER TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL PREMARK THE LAYOUT OF ANY PERMANENT TRAFFIC CONTROL STRIPING, INDICATING THE PROPOSED LOCATION AND TYPE OF MARKING TO BE INSTALLED. THE PREMARKING MAY CONSIST OF TYPE D TAPE, CHALK, OR LUMBER CRAYONS. THE CONTRACTOR SHALL ALLOW 3 WORKING DAYS FOR THE INSPECTION AND APPROVAL OF THE PREMARKINGS PRIOR TO PLACING THE PERMANENT MARKINGS.
- THE CONTRACTOR SHALL SUBMIT ANY REQUESTS FOR TEMPORARY "NO PARKING" RESTRICTIONS TO THE PROJECT OFFICER AT LEAST 5 BUSINESS DAYS PRIOR TO THE DESIRED ONSET OF RESTRICTIONS. PRIOR TO A REQUEST FOR THE REMOVAL OF ACCESS TO ANY ADA PARKING SPACE THE CONTRACTOR MUST HAVE MADE PROVISION FOR ALTERNATIVE ADA PARKING AS INDICATED ON THE APPROVED PLAN OR AS DIRECTED BY THE PROJECT OFFICER.
- WHEN THE APPROVED PLAN CALLS FOR THE REMOVAL OF ANY PARKING METER THE CONTRACTOR MUST MAKE A REQUEST TO THE PROJECT OFFICER AT LEAST ONE WEEK IN ADVANCE OF THE DESIRED REMOVAL. THE PROJECT OFFICER WILL THEN COORDINATE THE PARKING METER REMOVAL WITH TRAFFIC ENGINEERING AND OPERATIONS.
- THE CONTRACTOR SHALL PRESERVE ALL BUS STOPS, INCLUDING MAINTAINING ADEQUATE ACCESSIBILITY THROUGH AND ADJACENT TO THE CONSTRUCTION FOR BUSES AND THEIR PASSENGERS. THE CONTRACTOR SHALL NOT CLOSE, RELOCATE, OR OTHERWISE MODIFY A BUS STOP WITHOUT PRIOR REQUEST OF THE PROJECT OFFICER. ANY RELOCATION OR CLOSURE OF A BUS STOP SHALL REQUIRE AT LEAST FOUR WEEKS ADVANCE NOTICE FOR COORDINATION WITH THE COUNTY'S BUS STOP COORDINATOR - 703-228-3049.
- WHEN CONDITIONS WARRANT DUE TO TRAFFIC VOLUMES, PATTERNS, OR SPECIAL EVENTS, THE COUNTY MAY SUSPEND OR OTHERWISE DIRECT THE CONTRACTOR'S ACTIVITIES TO PROTECT THE PUBLIC AND OR THE COUNTY'S TRANSPORTATION NETWORK.

### WATER DISTRIBUTION, STORM AND SANITARY SEWER SYSTEMS

- UNLESS OTHERWISE DIRECTED, CONTRACTORS ARE EXPRESSLY PROHIBITED FROM OPERATING ANY WATER VALVES OR APPURTENANCES. CONTRACTORS SHALL SUBMIT ALL REQUESTS FOR VALVE OPERATIONS TO THE PROJECT OFFICER AT LEAST 1 WEEK IN ADVANCE OF THE REQUIRED OPERATION.
- IN THE EVENT OF A WATER OR SEWER EMERGENCY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY'S WATER CONTROL CENTER AT 703-228-6555 AND THE PROJECT OFFICER.
- THE CONTRACTOR SHALL COORDINATE ALL UTILITY SHUTOFFS, DISCONNECTS, AND/OR ABANDONMENT WITH UTILITY OWNER AND PROJECT OFFICER AT LEAST 1 WEEK IN ADVANCE OF THE REQUIRED INTERRUPTION.

### FIRE DEPARTMENT NOTES:

- ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- IN THE EVENT THAT EXISTING FIRE DEPARTMENT CONNECTIONS OR FIRE APPARATUS ACCESS ROADS (FIRE LANES) MUST BE OBSTRUCTED TO FACILITATE CONSTRUCTION ACTIVITIES, CONTACT THE ARLINGTON COUNTY FIRE DEPARTMENT FIRE PREVENTION OFFICE AT 703-228-4644 TO COORDINATE REVIEW AND APPROVAL OF TEMPORARY FIRE DEPARTMENT CONNECTIONS AND/OR FIRE APPARATUS ACCESS ROADS PRIOR TO CREATING THE OBSTRUCTION.

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SWM: #SWM 21-0033

LDA: #LDA-25903

ADT

700 - 31ST STREET S. (FROM S. FERN STREET TO S. EADS STREET)

STREET CLASSIFICATION

NEIGHBORHOOD MINOR - 31ST STREET S.

POSTED SPEED

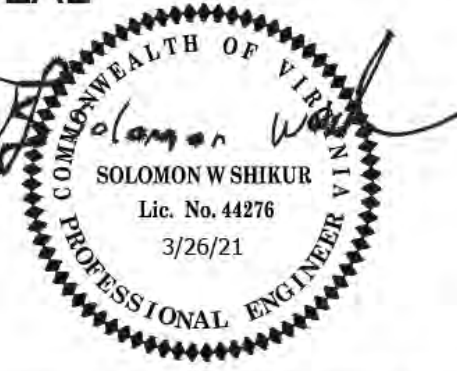
25 MPH - 31ST STREET S.

ARLINGTON  
VIRGINIA

DEPARTMENT OF  
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SEAL



APPROVALS DATE

Amy Pflaum 03/26/2021

QUALITY CONTROL ENGINEER

Kamal Tabak 3.30.21

CONSTRUCTION MANAGEMENT SUPERVISOR

04.02.2021

WATER, SEWER, STREETS BUREAU CHIEF

Dennis M. Leach 04/09/21

TRANSPORTATION DIRECTOR

John M. 3/30/2021

PROJECT MANAGER

REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
COVER SHEET

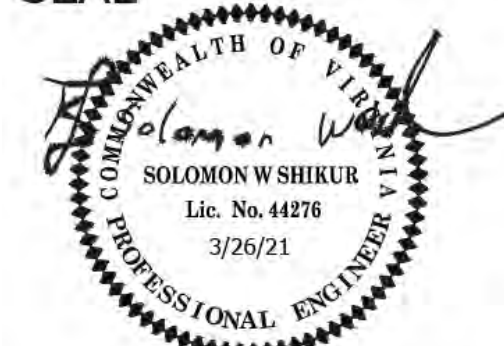
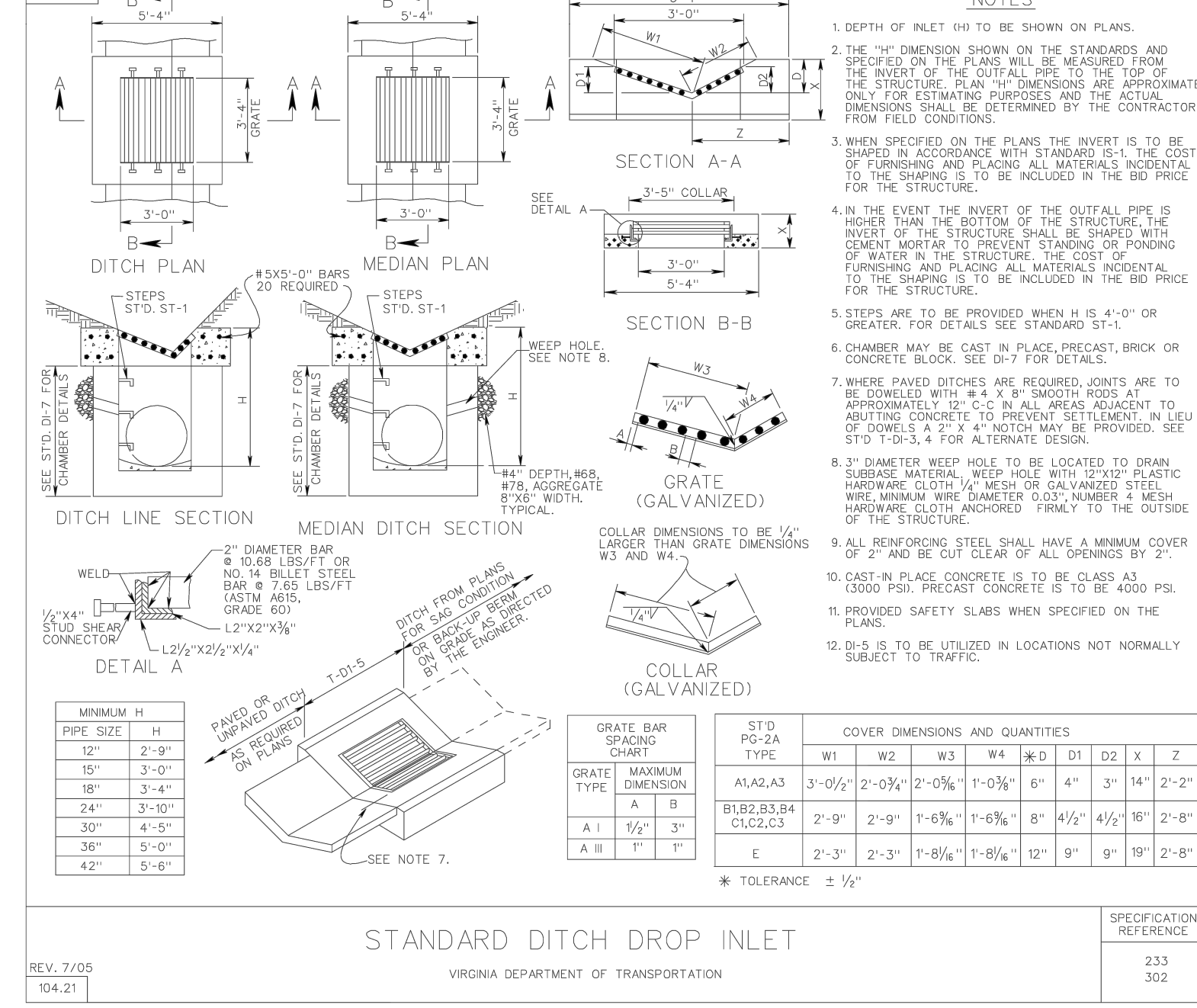
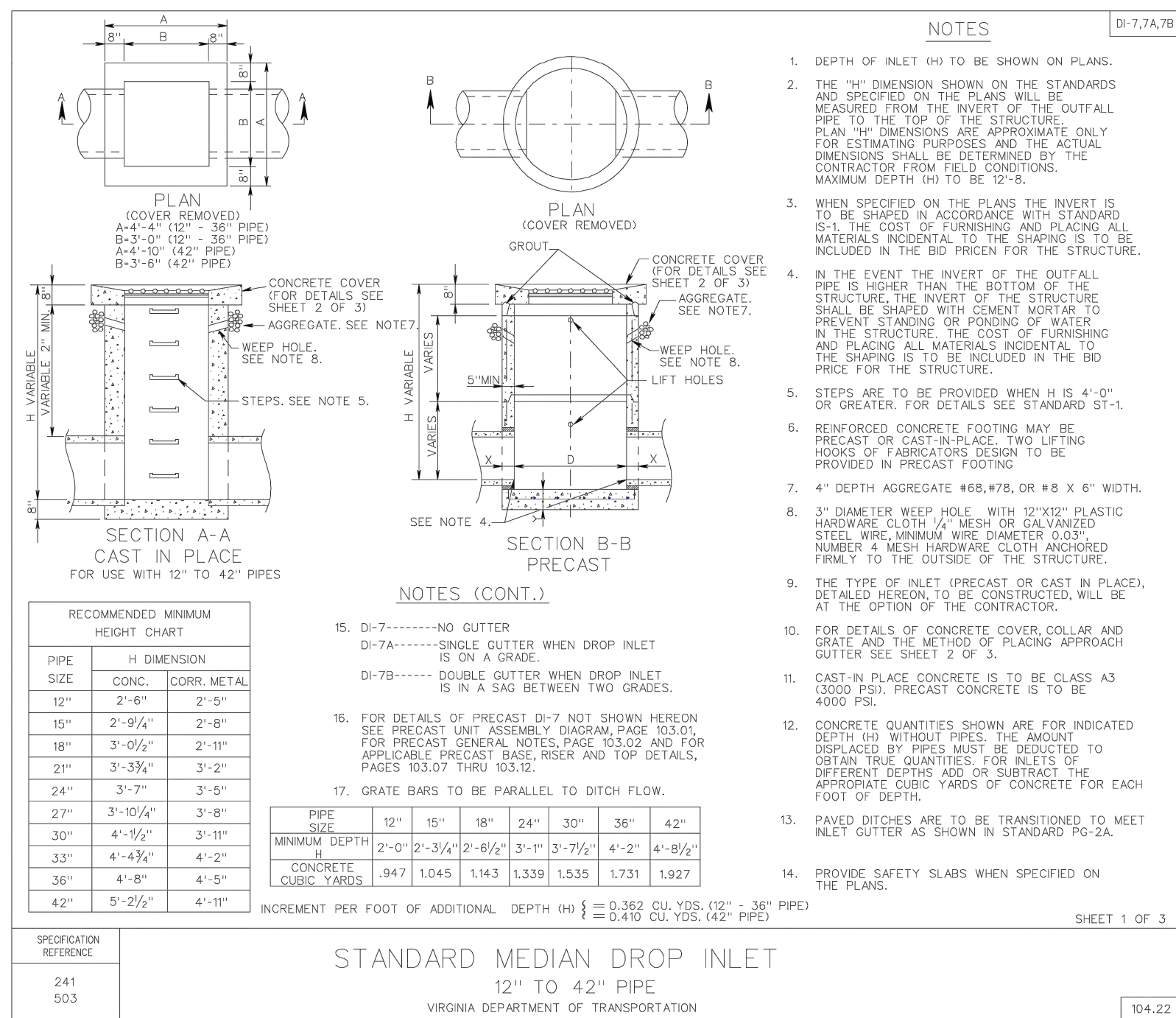
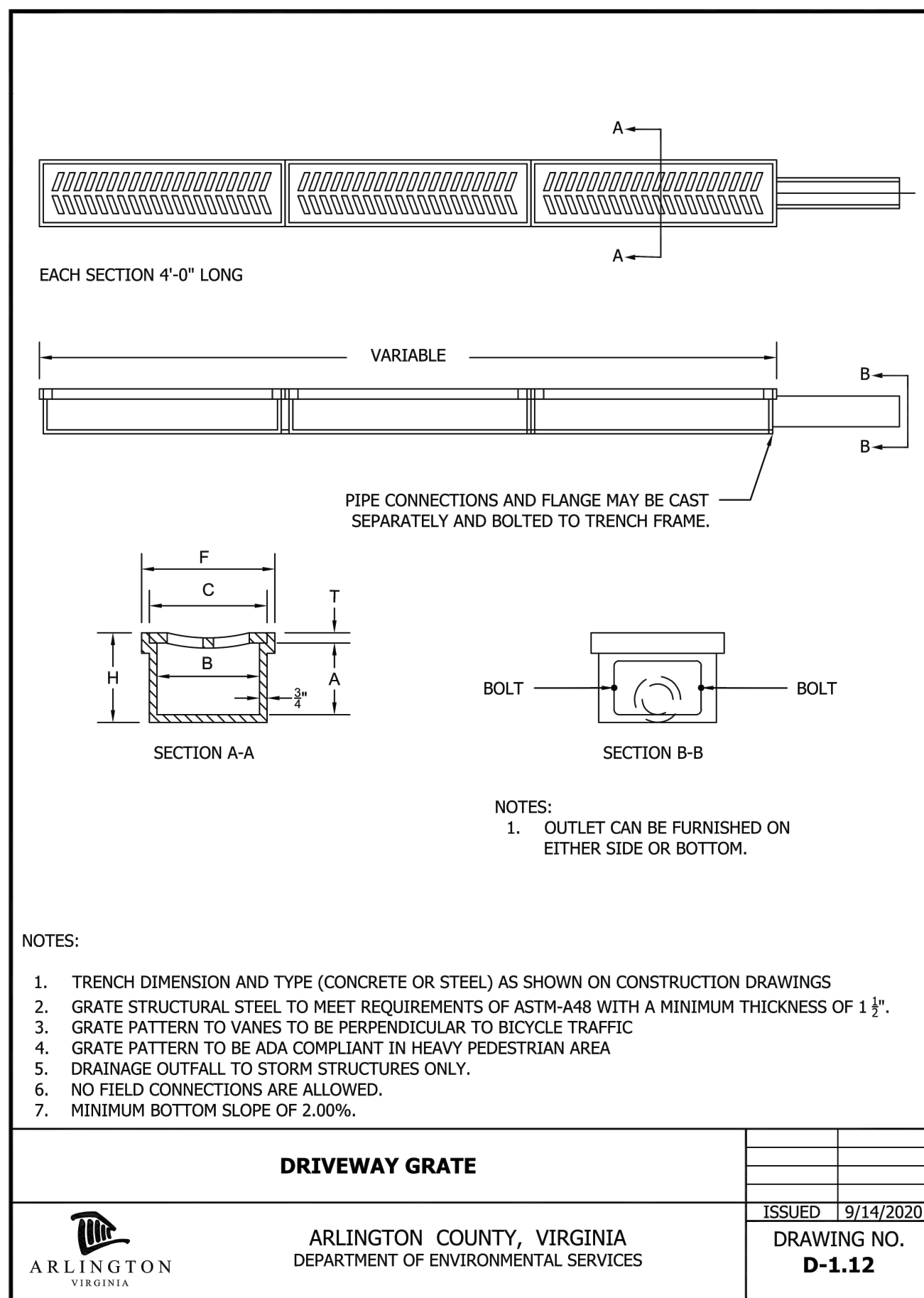
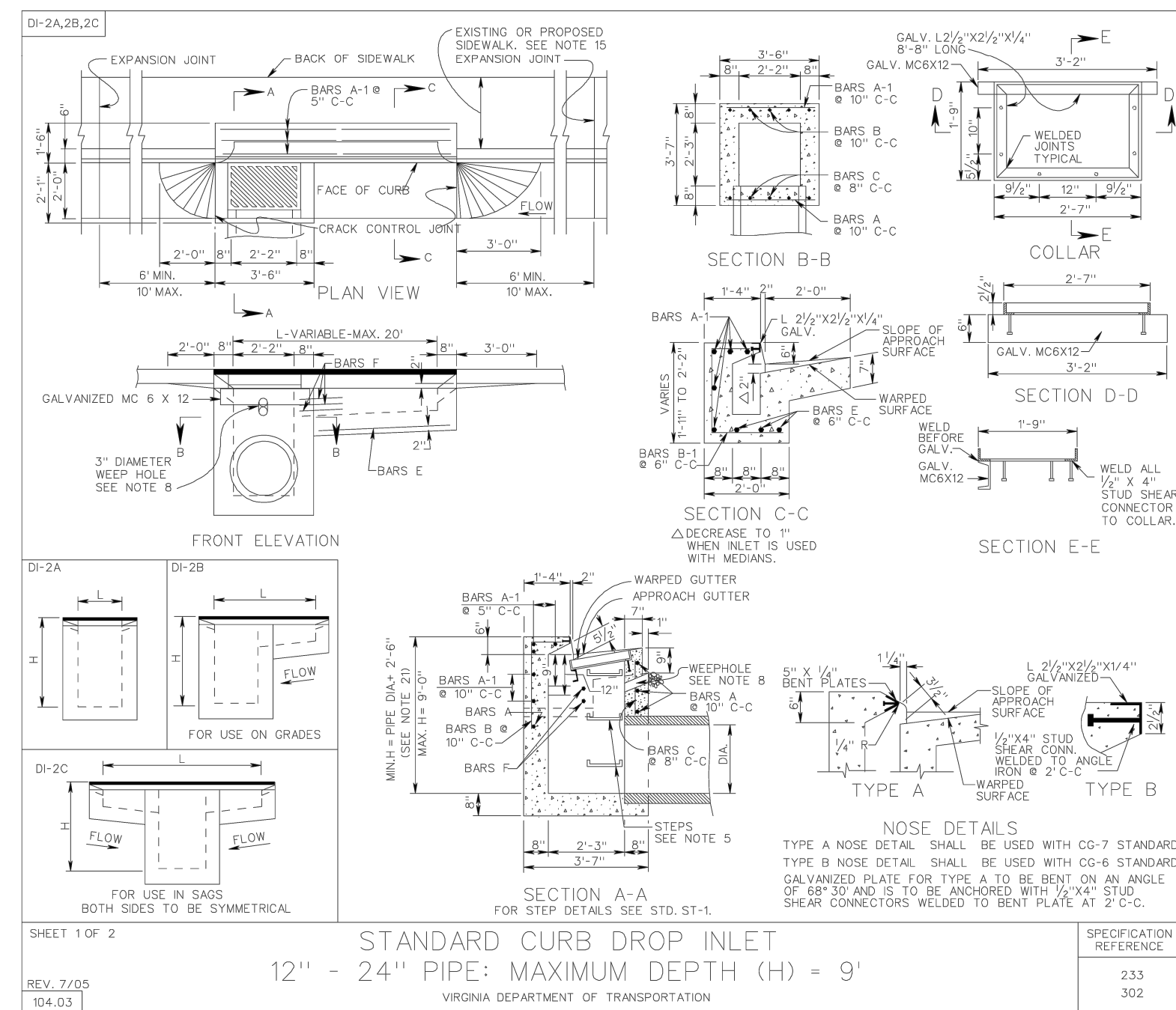
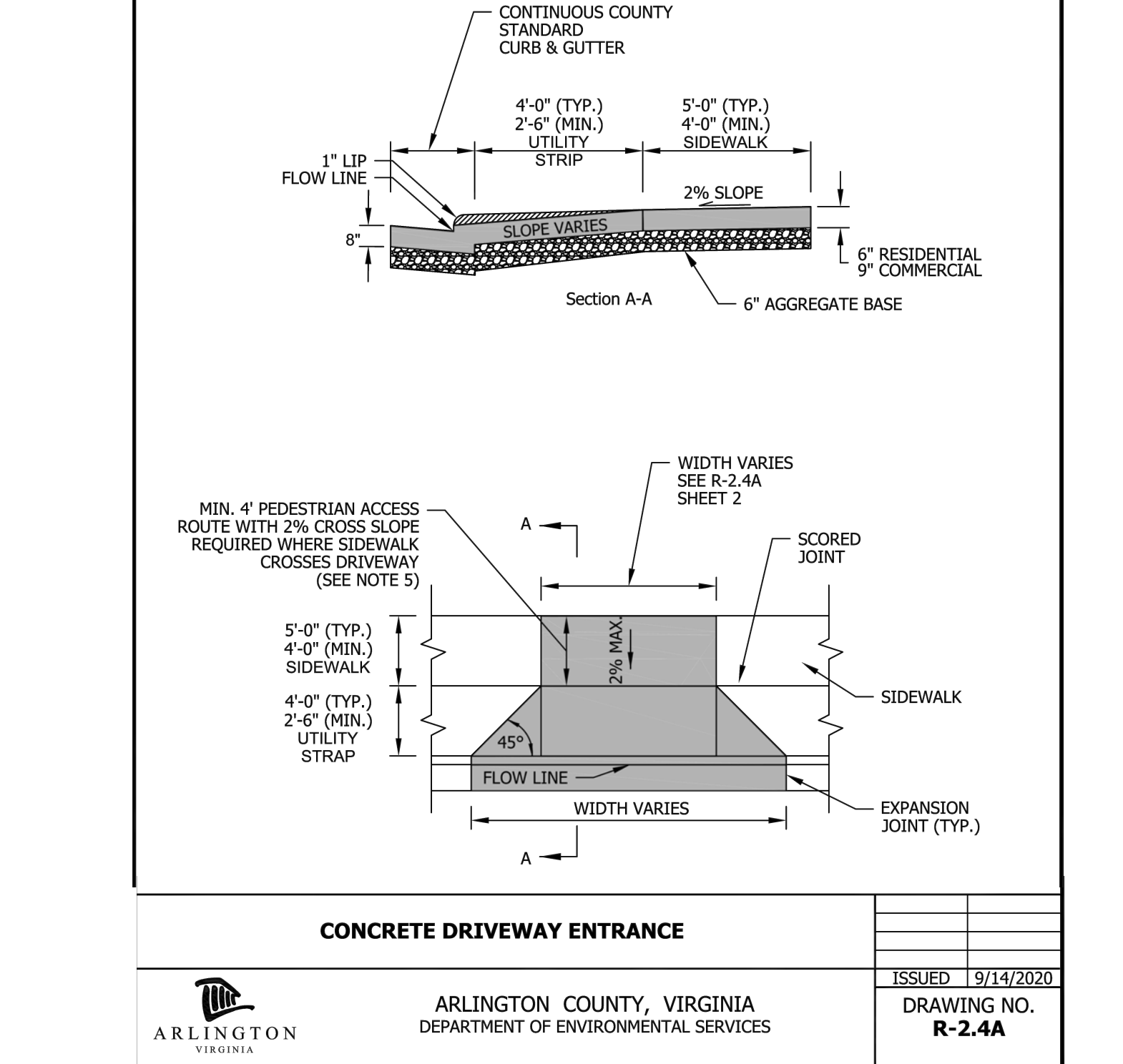
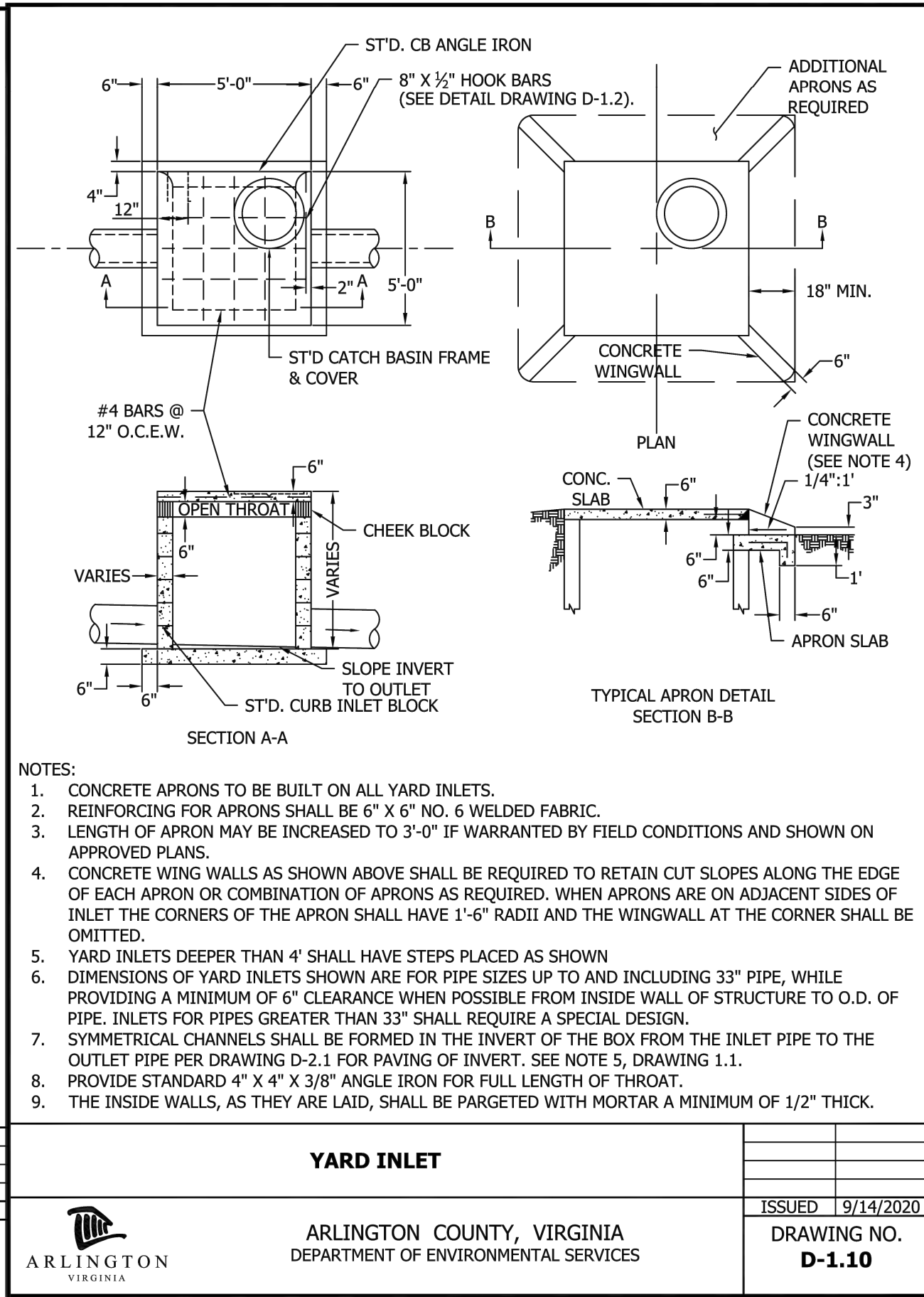
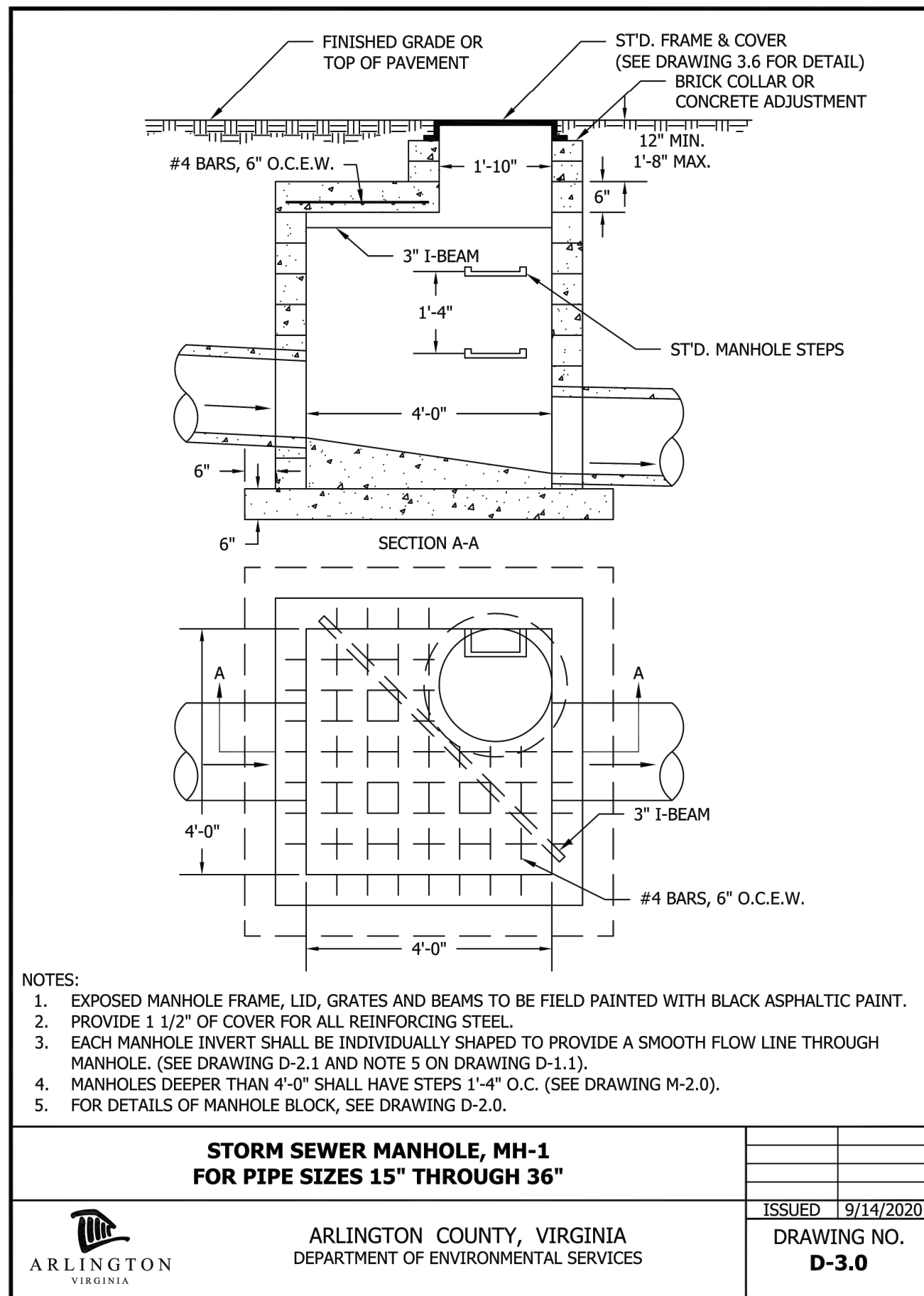
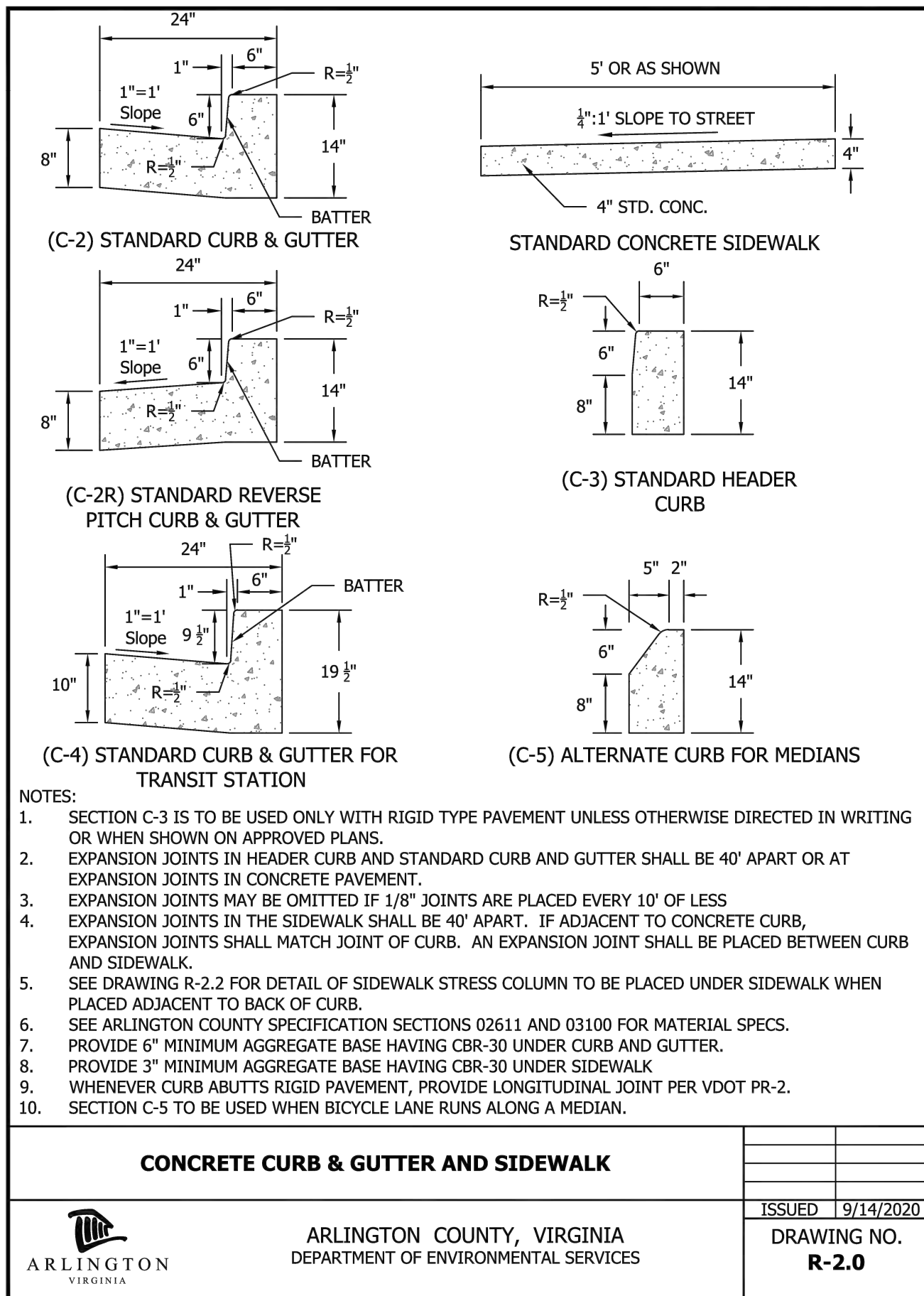
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DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE: AS NOTED

SHEET C000.1





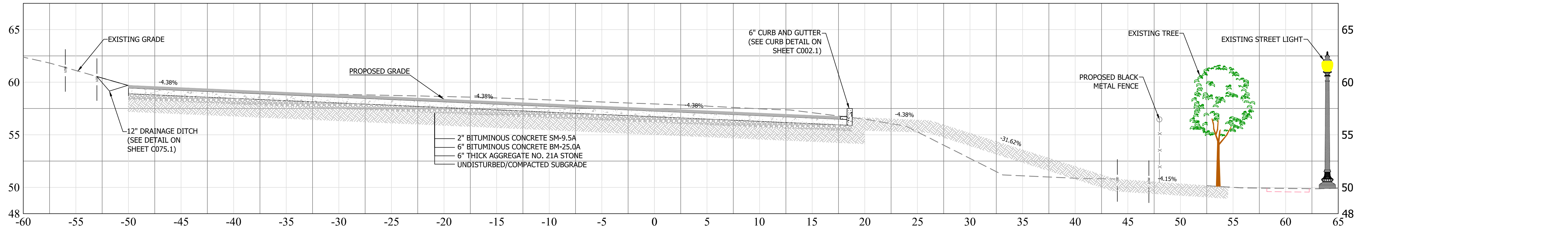
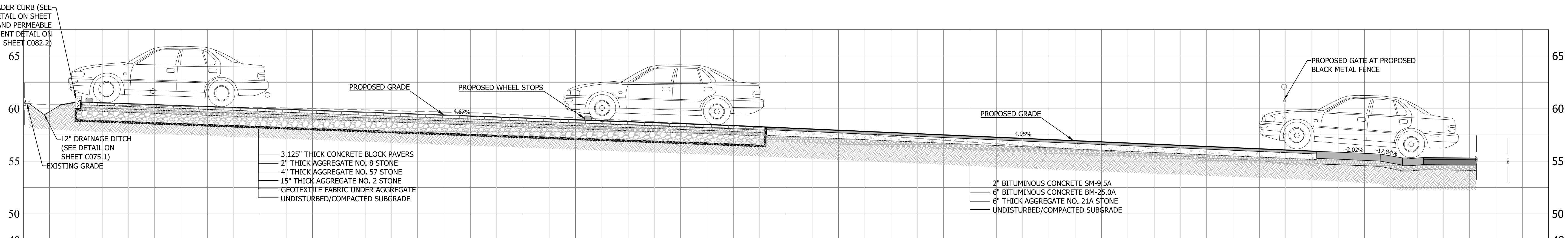
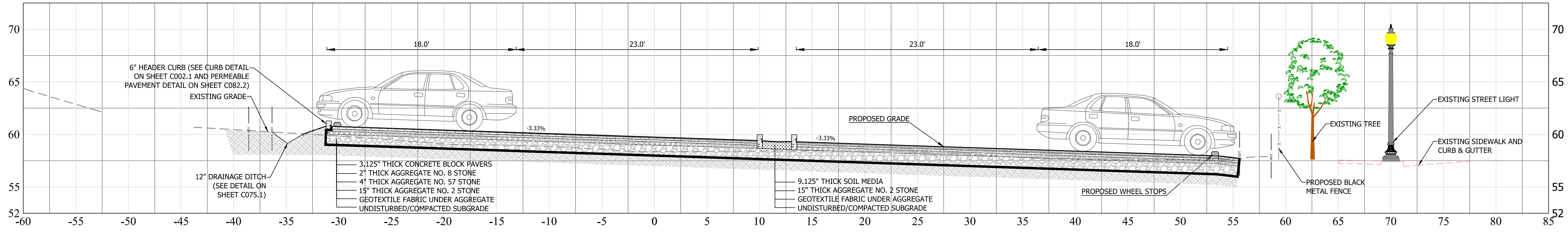
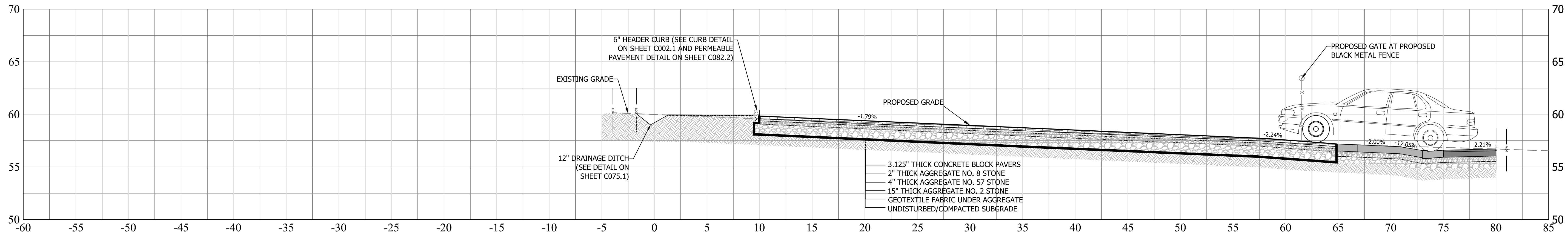
Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Kamal Tabak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
John M. 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
Dennis M. Leach 04/09/21  
TRANSPORTATION DIRECTOR  
John M. 3/30/2021  
PROJECT MANAGER

REVISIONS	DATE



REVISED ON 05/23/2018

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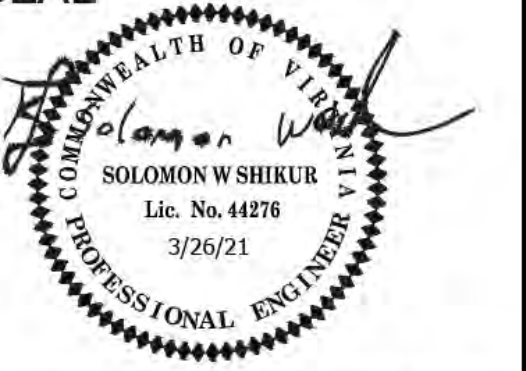


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APPROVALS	DATE
Amy Pflaum QUALITY CONTROL ENGINEER	03/26/2021
Kamal Takak CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
John M. Leach WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
Dennis M. Leach TRANSPORTATION DIRECTOR	04/09/21
John M. Leach PROJECT MANAGER	3/30/2021

REVISIONS	DATE

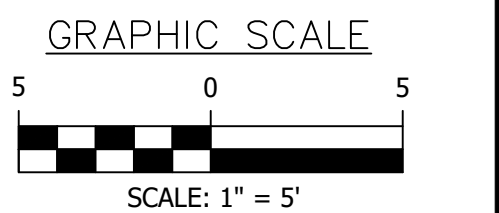
31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

TYPICAL SECTIONS

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:



SHEET C004.1

31ST STREET S. PARKING LOT WPB5



LINETYPE LEGEND

FEATURE	EXISTING	PROPOSED
BUILDING		
CENTERLINE / BASELINE		
COMMUNICATIONS CABLE		
CONTOURS MAJOR;MINOR?		
CRITICAL ROOT ZONE		
EASEMENT		
ELECTRIC (UNDERGROUND)		
FENCE (MATERIAL NOTED)		
FIBER OPTIC		
GAS LINE		
X" GAS LINE (SIZE INCLUDED IF AVAILABLE)		
GUARDRAIL		
HARDSCAPE FEATURE (MATERIAL NOTED)		
LIMITS OF DISTURBANCE		
LIMITS OF WORK		
OVERHEAD WIRES		
PAVEMENT MINI SKIP LINE		
PAVEMENT SKIP LINE		
PROPERTY LINE		
RIGHT-OF-WAY LINE		
ROOT PRUNING		
SANITARY SEWER		
X" SANITARY SEWER (SIZE INCLUDED IF AVAILABLE)		
SILT FENCE		
STORM (SIZE NOTED)		
STREAM		
STREET LIGHT CONDUIT		
TELEPHONE (UNDERGROUND)		
TREE LINE		
TREE PROTECTION FENCE		
WALL		
WATER		
X" WATER (SIZE INCLUDED IF AVAILABLE)		

SYMBOL LEGEND

EXISTING FEATURE	PROPOSED FEATURE
EX CABLE PEDESTAL	
EX ELECTRIC BOX	
EX FIRE HYDRANT	
EX GAS VALVE	
EX GROUND LIGHT	
EX GUY WIRES	
EX IRON PIPE OR PIN	
EX LIGHT POLE	
EX MAILBOX	
EX MONUMENT	
EX PARKING METER	
EX PAY STATION	
EX SANITARY MANHOLE	
EX STORM BASIN	
EX STORM MANHOLE	
EX TELEPHONE PEDESTAL	
EX TRAFFIC CONTROL BOX	
EX TRAFFIC SIGN	
EX TRASH CAN	
EX TRAVERSE	
EX TREES, WOODED AREA	
EX UTILITY MANHOLE TYPE INDICATED ELECTRIC, TELE, ETC	
EX UTILITY POLE	
EX WATER MANHOLE	
EX WATER METER	
EX WATER VALVE	
EX YARD INLET	
EX BENCHMARK	
	CONSTRUCTION NOTES (LEADER TO AREA AFFECTED)
	CURVE NUMBER (SEE CURVE TABLE)
	LINE NUMBER (SEE LINE TABLE)
	TEST HOLE
	NORTH ARROW

LABEL LEGEND

EXISTING	PROPOSED
EX SAN STRUC NO. EXISTING SANITARY STRUCTURE NUMBER	PROP SAN SEW STRUC NO. PROPOSED SANITARY SEWER STRUCTURE NUMBER
EX STRM SEW STRUC NO. EXISTING STORM SEWER STRUCTUE NUMBER	PROP STRM SEW STRUC NO. PROPOSED STORM SEWER STRUCTURE NUMBER

HATCH LEGEND

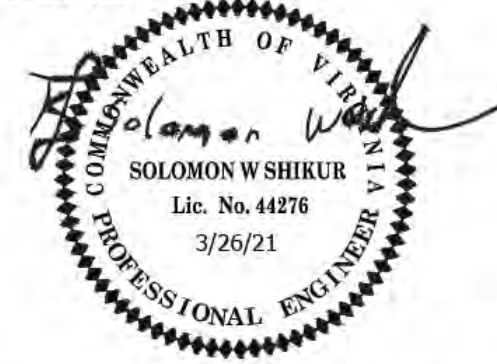
PROP MILL & OVERLAY SEE TYPICAL SECTION FOR DETAILS	
PROP FULL DEPTH ASPHALT SEE TYPICAL SECTION FOR DETAILS	
PROP CONCRETE	
REPLACE & MATCH EXISTING DRIVEWAY OR LEADWALK. SEE CONSTRUCTION NOTES	
DEMOLITION AREA	
CONCRETE BLOCK PERMEABLE PAVERS	

ARLINGTON VIRGINIA

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31ST STREET S. PARKING LOT

WPB5

BETWEEN S. FERN STREET AND S. EADS STREET

LEGEND

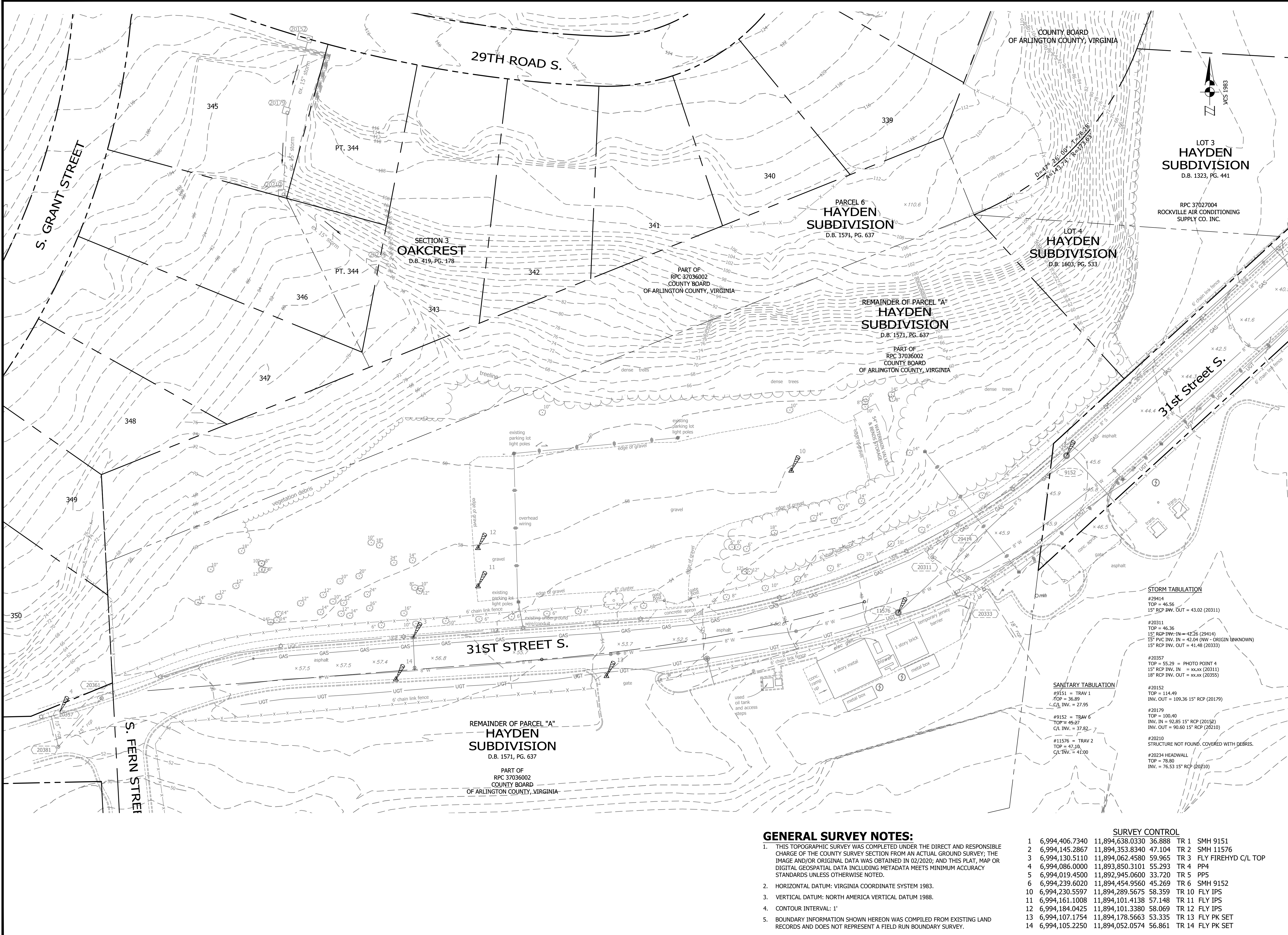
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DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:



REVISED ON 05/23/2018  
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GENERAL SURVEY NOTES:

1. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF THE COUNTY SURVEY SECTION FROM AN ACTUAL GROUND SURVEY; THE IMAGE AND/OR ORIGINAL DATA WAS OBTAINED IN 02/2020; AND THIS PLAT, MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. HORIZONTAL DATUM: VIRGINIA COORDINATE SYSTEM 1983.
3. VERTICAL DATUM: NORTH AMERICA VERTICAL DATUM 1988.
4. CONTOUR INTERVAL: 1'
5. BOUNDARY INFORMATION SHOWN HEREON WAS COMPILED FROM EXISTING LAND RECORDS AND DOES NOT REPRESENT A FIELD RUN BOUNDARY SURVEY.

SURVEY CONTROL

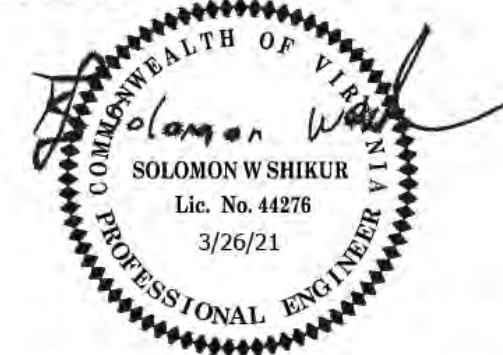
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11	6,994,161.1008	11,894,101.4138	57.148	TR 11	FLY IPS
12	6,994,184.0425	11,894,101.3380	58.069	TR 12	FLY IPS
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SEAL



APPROVALS DATE

Amy Pfaffen 03/26/2021  
QUALITY CONTROL ENGINEER  
Ramal Taktak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis M. Leach 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
John Min 04/09/21  
TRANSPORTATION DIRECTOR  
PROJECT MANAGER 3/30/2021

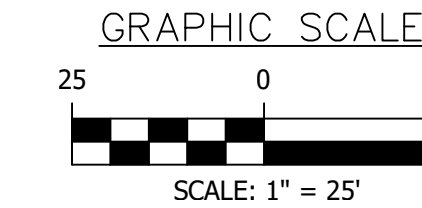
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
EXISTING CONDITIONS PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 30 2021

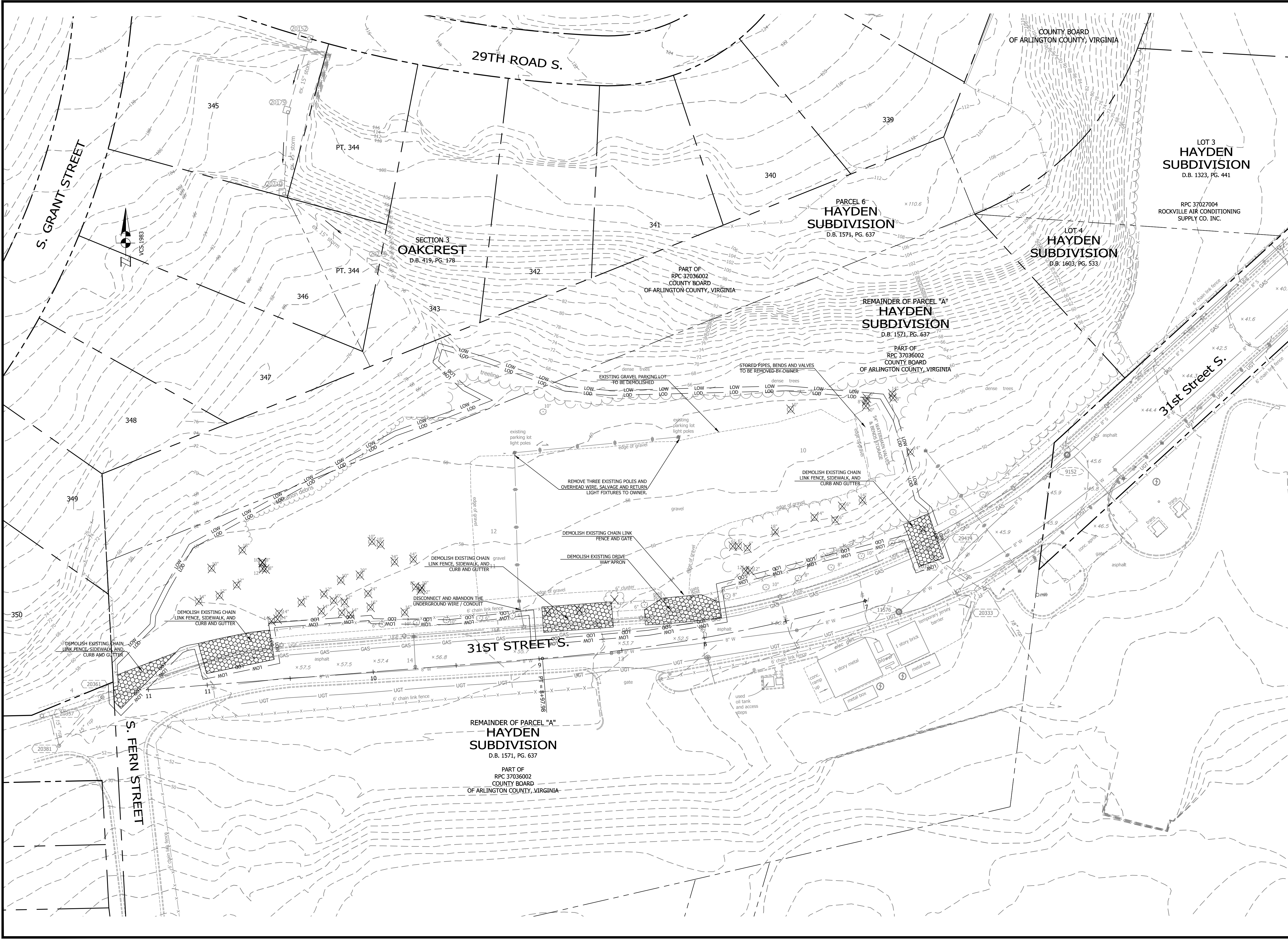
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SHEET C011.1



REVISED ON 05/23/2018  
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APPROVALS	DATE
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<i>Ramab Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04.02.2021
<i>John Wier</i> PROJECT MANAGER	04/09/21
	3/30/2021

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

DEMOLITION PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 30 2021

SCALE:

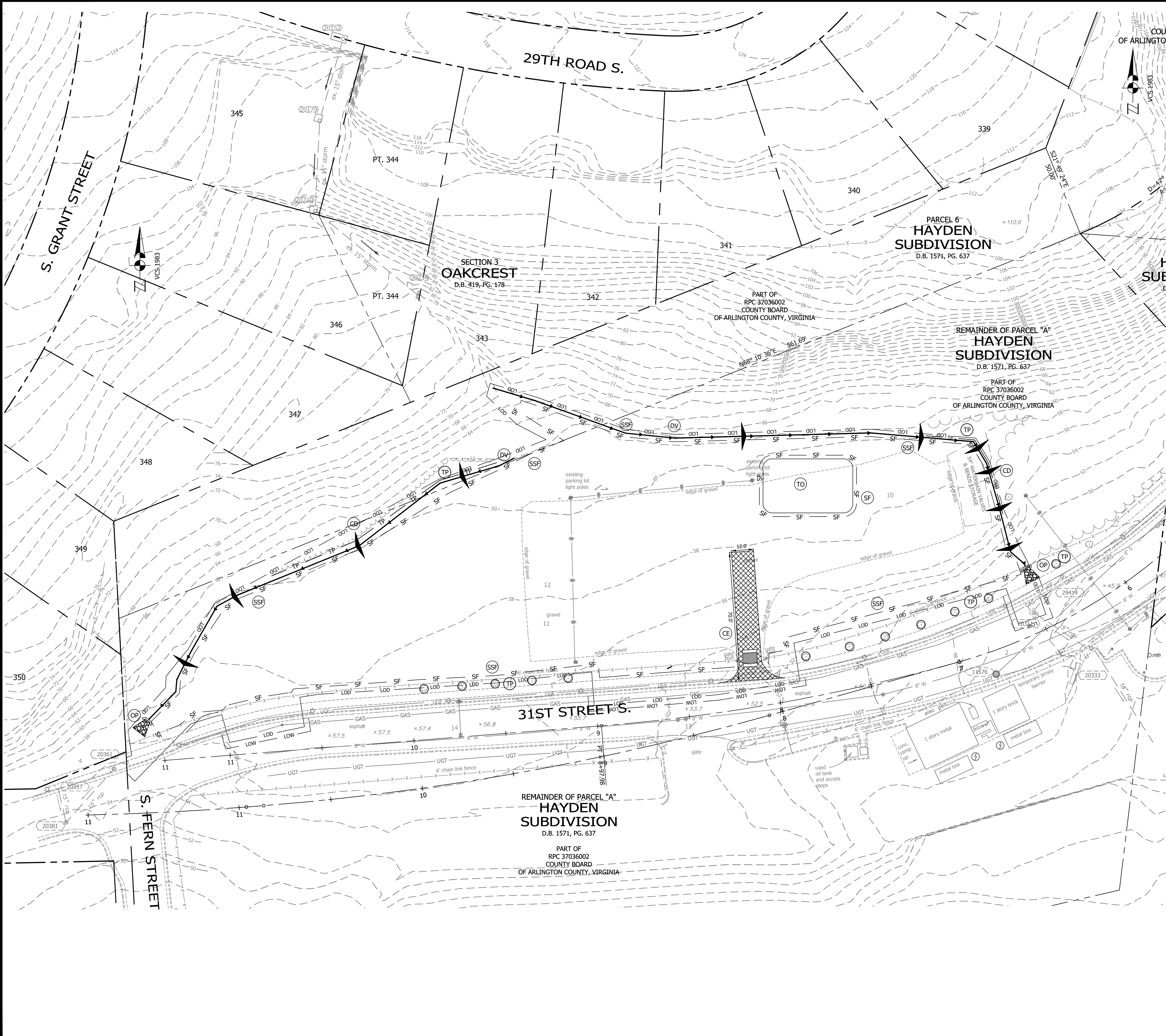
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SCALE: 1" = 25'

SHEET

C021.1



REVISED ON 05/23/2018  
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EROSION AND SEDIMENT  
CONTROL LEGEND

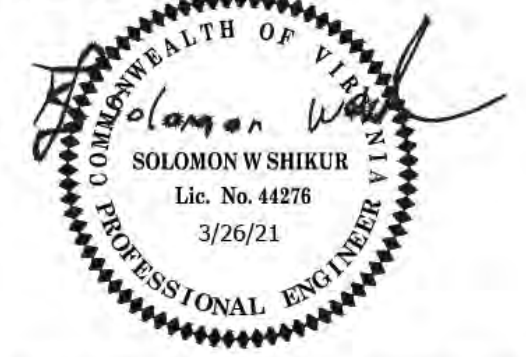
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3.05	TEMPORARY SILT FENCE	SF	
3.05	TEMPORARY SUPER SILT FENCE (SILT FENCE WITH WIRE SUPPORT)	SSF	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.12	TEMPORARY DIVERSION	DV	
3.18	OUTLET PROTECTION	OP	
3.20	ROCK CHECK DAMS	CD	
3.26	DEWATERING STRUCTURE	DS	
3.38	TREE PROTECTION	TP	
3.30	TOPSOILING - STOCKPILE	TO	
3.31	TEMPORARY SEEDING	TS	
	LIMITS OF DISTURBANCE		
	LIMITS OF WORK		

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TRANSPORTATION DIRECTOR  
*John W. Leach* 3/30/2021  
PROJECT MANAGER

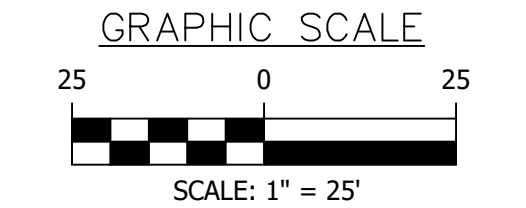
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
EROSION AND SEDIMENT CONTROL PLAN  
PHASE 1

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

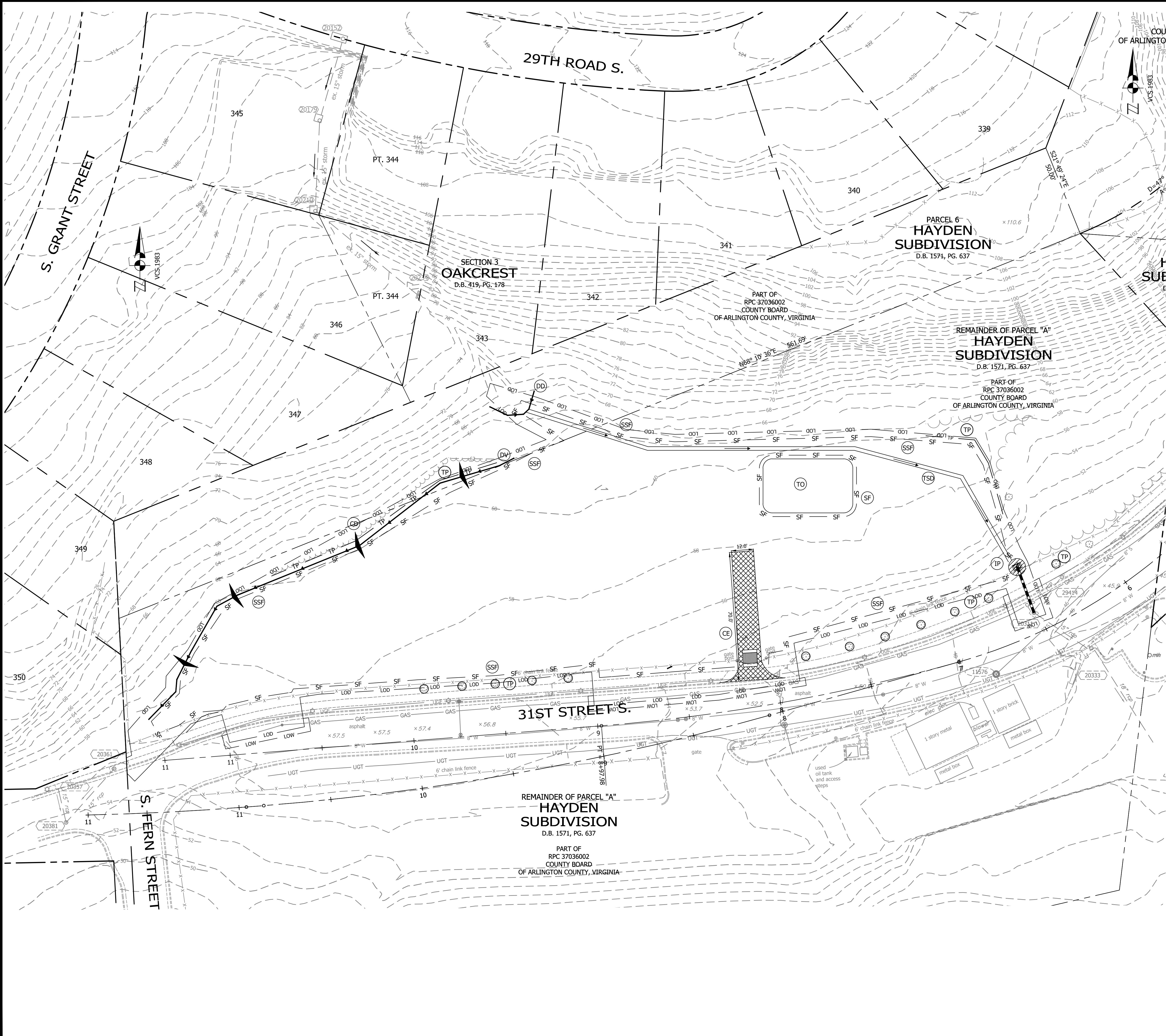


SHEET C031.1



REVISED ON 05/23/2018

FILENAME: WPB5-231-EROSION-SEDIMENT-CONTROL.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: BRUCKLEY



EROSION AND SEDIMENT  
CONTROL LEGEND

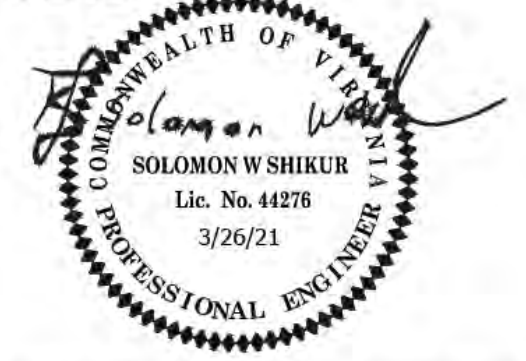
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3.07	STORM DRAIN INLET PROTECTION	IP	
3.09	TEMPORARY DIVERSION DIKE	DD	
3.15	TEMPORARY SLOPE DRAIN	TSD	
3.20	ROCK CHECK DAMS	CD	
3.26	DEWATERING STRUCTURE	DS	
3.38	TREE PROTECTION	TP	
3.30	TOPSOILING - STOCKPILE	TO	
3.31	TEMPORARY SEEDING	TS	
	LIMITS OF DISTURBANCE		
	LIMITS OF WORK		

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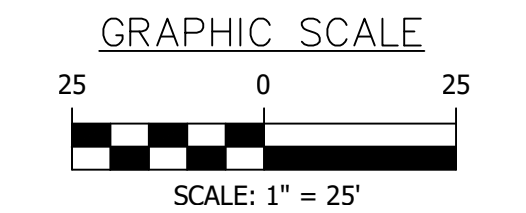
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
EROSION AND SEDIMENT CONTROL PLAN  
PHASE 2A

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 26 2021

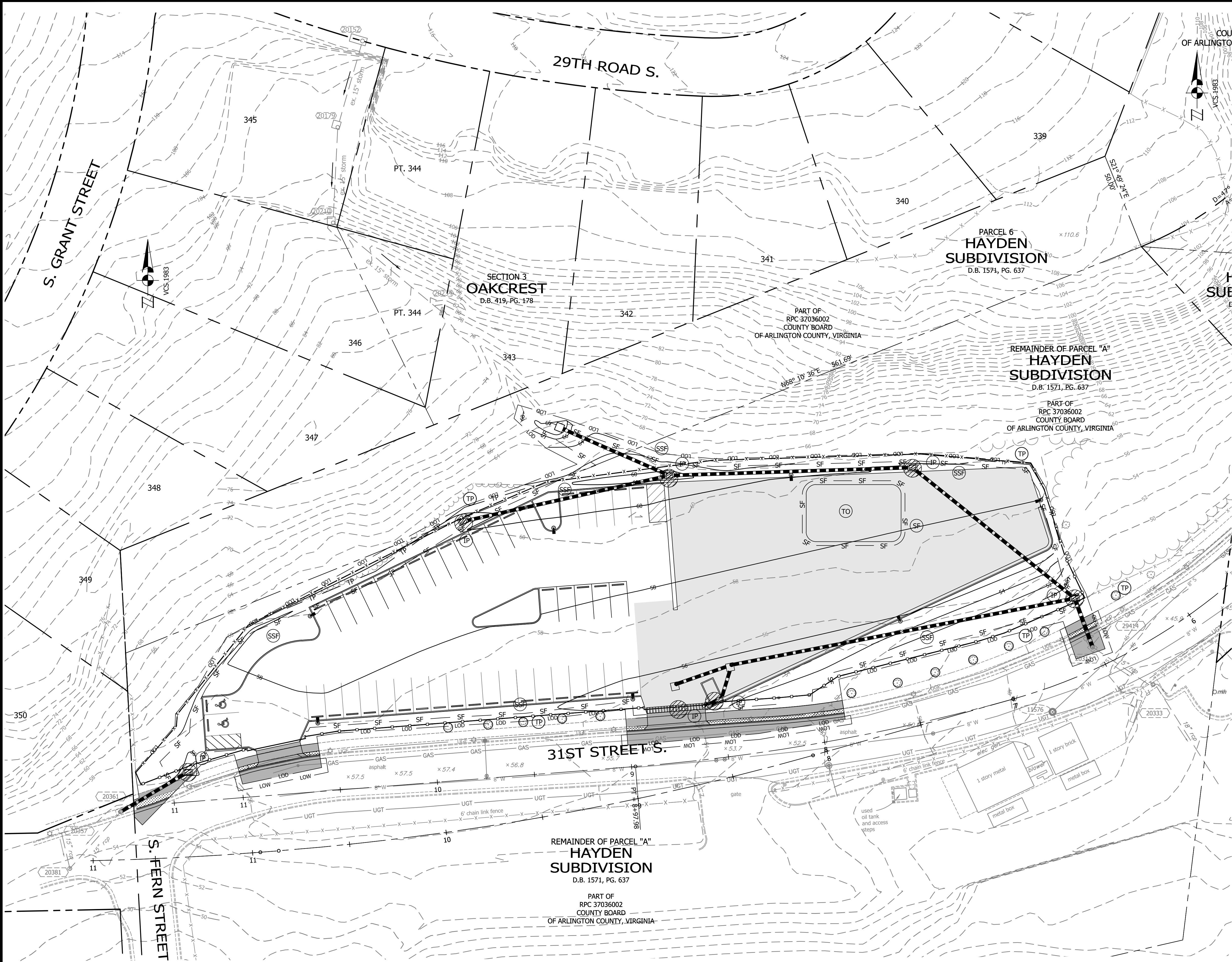
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SHEET C031.2



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EROSION AND SEDIMENT  
CONTROL LEGEND

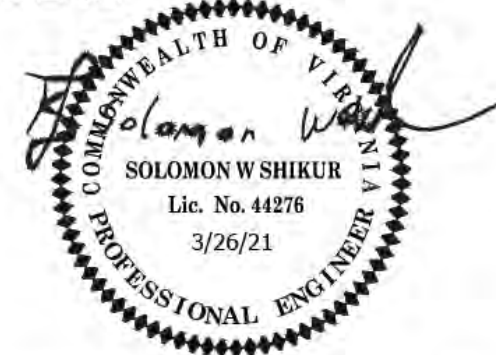
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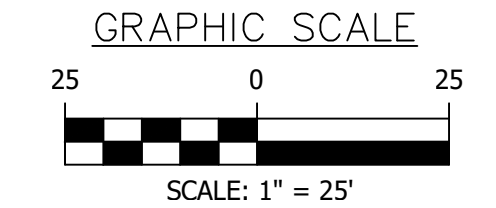
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
EROSION AND SEDIMENT CONTROL PLAN  
PHASE 2B

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 26 2021

SCALE:



SHEET C031.3

31ST STREET S. PARKING LOT WPB5



REVISED ON 05/23/2018

# EROSION AND SEDIMENT CONTROL NARRATIVE

## PROJECT DESCRIPTION:

THE PROJECT IS LOCATED ALONG 31ST STREET SOUTH ON THE NORTHERN SIDE, BETWEEN SOUTH FERN STREET AND SOUTH EADS STREET. THE LIMITS OF DISTURBANCE IS 1.17 AC (50,776 SF). THE PROJECT IS LOCATED IN THE FOUR MILE RUN, LOWER MAINSTEM WATERSHED. THE GOAL OF THE PROJECT IS TO INCREASE THE TOTAL AMOUNT OF PARKING FOR BOTH STANDARD VEHICLES AS WELL AS LAYAWAY PARKING FOR INDUSTRIAL VEHICLES. IMPROVEMENTS INCLUDE STORMWATER MANAGEMENT AND WATER QUALITY BMP'S ONSITE.

## EXISTING SITE CONDITIONS:

THE SITE IS LOCATED IN THE P-5 (PUBLIC SERVICE) ZONING DISTRICT. 31TH STREET SOUTH IS IDENTIFIED AS A NEIGHBORHOOD MINOR STREET. THE EXISTING SITE CONTAINS A 0.39 ACRE GRAVEL PARKING LOT, USED FOR FACILITY PARKING AND UTILITY STORAGE. WOODED AREA AND CLEARED WOODED AREA EXISTS ON THE SITE.

## ADJACENT PROPERTIES:

THE SITE IS BOUND BY SINGLE FAMILY RESIDENTIAL HOMES, LOCATED IN ZONE R-6 (ONE-FAMILY DWELLING), TO THE NORTH AND WEST, 31ST STREET SOUTH TO THE SOUTH, AND A VEHICLE REPAIR SHOP, LOCATED IN ZONE M-1 (LIGHT INDUSTRIAL) TO THE EAST. ZONE RAB-16 (APARTMENT DWELLING) BORDERS THE SITE TO THE NORTHEAST.

## OFF-SITE AREAS:

THERE ARE NO OFFSITE AREAS

## CRITICAL AREAS:

THERE ARE NO STEEP SLOPES OR CRITICAL AREAS LOCATED WITHIN THE LIMITS OF DISTURBANCE.

## EROSION AND SEDIMENT CONTROL MEASURES:

THE EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT AREA INCLUDE DIVERSION DITCHES, SILT FENCE, AND INLET PROTECTION. INLET PROTECTION IS REQUIRED OUTSIDE THE PROJECT LIMITS WHEN/WHERE WATER FROM DISTURBED AREA FLOWS.

## PERMANENT STABILIZATION:

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH GRASS, MULCH OR SOD. SEE THE PROPOSED PLANS FOR ADDITIONAL INFORMATION.

## STORMWATER RUNOFF CONSIDERATIONS:

NO ADDITIONAL IMPERVIOUS AREA WILL BE ADDED TO THIS PROJECT.

TOTAL LAND DISTURBANCE.....= 50,776 SF (1.1657 ACRES)

PRE-IMPROVEMENT IMPERVIOUS AREA.....= 19,811 SF (0.4548 ACRES)

POST-IMPROVEMENT IMPERVIOUS AREA.....= 36,972 SF (0.8488 ACRES)

INCREASED IMPERVIOUS AREA.....= 17,161 SF (0.3940 ACRES)

## SOILS INFORMATION:

THE FOLLOWING SOILS ARE FOUND ON SITE (SEE SOILS MAP ON SHEET C083.1 FOR LOCATION)

SOIL#: SOIL NAME: HYDROLOGIC GROUP: ERODABILITY:

12 URBAN LAND-UDORTHENTS D N/A

15D SASSAFRAS-URBAN LAND B N/A

## FLOODPLAIN AND RESOURCE PROTECTION AREA (RPA):

THERE ARE NO FLOODPLAIN OR RESOURCE PROTECTION AREAS LOCATED WITHIN THIS PROJECT SITE

## EROSION & SEDIMENT CONTROL PROJECT PHASING

### 1. PHASE I:

- PRE-CONSTRUCTION MEETING WITH THE PROJECT OFFICER, CONTRACTOR, AND COUNTY INSPECTOR.
- INSTALL THE TEMPORARY CONSTRUCTION ENTRANCE IN THE LOCATION SHOWN ON THE E&S PHASE I PLAN. MUD AND DEBRIS SHALL BE WASHED FROM ALL TRUCKS EXISTING THE SITE.
- INSTALL PERIMETER TREE DEMARCATION FENCING IN THE FORM OF TREE PROTECTION FENCE (TP) AS SHOWN ON E&S PHASE I PLAN.
- PERFORM INITIAL PERIMETER CLEARING TO INSTALL REMAINDER OF PERIMETER CONTROLS SUCH AS DIVERSION DIKE (DD), SILT FENCE (SF), AND SUPER SILT FENCE (SSF) AS PER THE PHASE I PLAN.
- SEED AND MULCH ALL EARTHEN CONTROLS.
- CONTACT ARLINGTON COUNTY PROJECT OFFICER FOR A PERIMETER INSPECTION PRIOR TO CLEARING THE REMAINDER OF THE SITE IN ORDER TO OBTAIN PHASE II GRADING PERMIT.
- CLEAR THE SITE TO THE LIMITS AS SHOWN ON THE CONSTRUCTION PLANS.

### 2. PHASE IA:

- CONNECT THE PROPOSED OUTFALL PIPE TO EXISTING STRUCTURE 20311 AND INSTALL 20311A.
- CONNECT THE PROPOSED SLOPE DRAIN TO STRUCTURE 20311A. CONTINUE INSTALLING PIPE AND STRUCTURES 20311A THOUGH 20311D AND CONNECT THE SLOPE DRAIN TO THE NEWLY CONSTRUCTED STRUCTURE UNTIL CONSTRUCTION OF 20311D IS COMPLETED

### 1. PHASE II:

- BEGIN UTILITY CONSTRUCTION, INSTALL ALL UTILITIES UNDERGROUND UTILITIES AND BEGIN SITE GRADING.
- INLET PROTECTION (IP) SHALL BE PROVIDED AT STORM DRAIN INLETS AS THEY ARE CONSTRUCTED.
- ONCE THE SITE IS BOUGHT TO NEAR FINAL GRADE, AND THE UTILITY CONSTRUCTION IS COMPLETE, COMMENCE CONSTRUCTION OF CURB & GUTTER, STREET, SIDEWALKS, AND OTHER IMPROVEMENTS
- 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.

RUNOFF SHALL BE TREATED WITH SILT FENCE AND INLET PROTECTION PRIOR TO ENTERING MAJOR STORM SEWER SYSTEMS.

## 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 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE ARLINGTON COUNTY EROSION AND SEDIMENT CONTROL ORDINANCE. THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

### 1. STRUCTURAL PRACTICES

- TEMPORARY CONSTRUCTION ENTRANCE - VESCH 3.02
  - A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED AT THE EXISTING ACCESS POINT TO THE SITE. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE RE-ENTERING THE LOCAL ROADWAYS.
  - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC WASHING OF THE MATS AND/OR REPLACEMENT OF WOOD CHIPS AS NECESSARY.
  - ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
  - THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED INTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
- SILT FENCE - VESCH 3.05
  - SILT FENCE WILL BE INSTALLED WITH THE E&S PLAN TO FILTER RUNOFF FROM DISTURBED AREAS. RUNOFF SHALL NOT BE DIRECTED PARALLEL TO THE INSTALLATION OF SILT FENCE.
  - SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
  - CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM UNDERCUTTING.
  - SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
  - SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
  - ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, THEN PREPARED AND SEEDED.
- TEMPORARY DIVERSION DIKE - VESCH 3.09
  - A SYSTEM OF TEMPORARY DIKES, TO DIRECT FLOW INTO PROPOSED & EXISTING STORM SEWER STRUCTURES WILL BE INSTALLED AS INDICATED IN EROSION & SEDIMENT CONTROL PLAN.
  - THE STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN EVENT AND REPAIRS SHALL BE MADE AS NECESSARY.
- STORM DRAIN INLET PROTECTION - VESCH 3.07
  - ALL EXISTING & PROPOSED STORM SEWER INLETS IN AND AROUND THE PROJECT LIMITS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS.
  - THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN EVENT AND REPAIRS SHALL BE MADE AS NECESSARY.
  - STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- DEWATERING STRUCTURE - VESCH 3.26
  - SEDIMENT LADEN OR TURBID WATER SHALL BE FILTERED, SETTLED OR SIMILARLY TREATED PRIOR TO DISCHARGE.
  - THE FILTERING DEVICES MUST BE INSPECTED FREQUENTLY AND REPAIRED OR REPLACED ONCE THE SEDIMENT BUILD-UP PREVENTS THE STRUCTURE FROM FUNCTIONING AS DESIGNED.
  - THE ACCUMULATED SEDIMENT WHICH IS REMOVED FROM A DEWATERING DEVICE MUST BE SPREAD ON-SITE AND STABILIZED OR DISPOSED

OF AT AN APPROVED DISPOSAL SITE AS PER THE APPROVED PLAN.

f. TREE PROTECTION - VESCH 3.38

- ALL TREES ARE TO BE PROTECTED UNLESS OTHERWISE DIRECTED BY THE COUNTY INSPECTOR AND URBAN FORESTER. THE COUNTY'S URBAN FORESTER (703-228-1863) SHALL INSPECT ALL TREE PROTECTION 72 HOURS PRIOR TO THE START OF CONSTRUCTION. IN SPTIE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES, THE FOLLOWING MAINTENANCE GUIDELINES SHALL BE FOLLOWED:
  - SOIL AERATION: IF THE SOIL HAS BECOME COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. THE BAR SHALL BE DRIVEN 1-FOOT DEEP AND THEN MOVED BACK AND FORTH UNTIL THE SOIL IS LOOSENEED. THIS PROCEDURE SHALL BE REPEATED EVERY 18 INCHES UNTIL ALL OF THE COMPACTED SOIL BENEATH THE CROWN OF THE TREE HAS BEEN LOOSENEED.
  - REPAIR OF DAMAGE:
    - ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE RETAINED ON THE SITE SHALL BE REPAIRED IMMEDIATELY.
    - WHENEVER MAJOR ROOT OR BARK DAMAGE OCCURS, REMOVE SOME FOLIAGE TO REDUCE THE DEMAND FOR WATER AND NUTRIENTS.
    - DAMAGED ROOTS SHALL IMMEDIATELY BE CUT OFF CLEARLY INSIDE THE EXPOSED OR DAMAGED AREA. CUT SURFACES SHALL BE PAINTED WITH APPROVED TREE PAINT, AND MOIST PEAT MOSS, BURLAP, OR TOPSOIL SHALL BE SPREAD OVER THE EXPOSED AREA.
    - TO TREAT BARK DAMAGE, CAREFULLY CUT AWAY ALL LOOSENEED BARK BACK INTO THE UNDAMAGED AREA, TAPER THE CUT AT THE TOP AND BOTTOM, AND PROVIDE DRAINAGE AT THE BASE OF THE WOUND.
    - ALL TREE LIMBS DAMAGED DURING CONSTRUCTION OR REMOVED FOR ANY OTHER REASON SHALL BE CUT OFF ABOVE THE COLLAR AT THE PRECEDING BRANCH JUNCTION.
    - CARE FOR SERIOUS INJURIES SHALL BE PRESCRIBED BY A FORESTER OR A TREE SPECIALIST.
  - FERTILIZATION: BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.
    - TREES SHALL BE FERTILIZED IN THE LATE FALL (AFTER OCTOBER 1) OR THE EARLY SPRING (FROM THE TIME FROST IS OUT OF THE GROUND UNTIL MAY 1). FALL APPLICATIONS ARE PREFERRED, AS THE NUTRIENTS WILL BE MADE AVAILABLE OVER A LONGER PERIOD OF TIME.
    - FERTILIZER SHALL BE APPLIED TO THE SOIL OVER THE FEEDER ROOTS. IN NO CASE SHALL IT BE APPLIED CLOSER THAN 3 FEET TO THE TRUNK. THE ROOT SYSTEM OF CONIFERS EXTENDS SOME DISTANCE BEYOND THE DRIP LINE. INCREASE THE AREA TO BE FERTILIZED BY ONE FOURTH THE AREA OF THE CROWN.
    - FERTILIZER SHALL BE APPLIED USING APPROVED FERTILIZATION METHODS AND EQUIPMENT.
    - FORMULATIONS AND APPLICATION RATES SHALL CONFORM TO THE GUIDELINES GIVEN IN TABLE 3.38-A OF VESCH.

### 2. VEGETATIVE PRACTICES

- TOPSOILING (STOCKPILE) - VESCH 3.30
  - TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS MAY HAVE TO BE LOCATED OFF-SITE AND ARE TO BE STABILIZED WITH TEMPORARY VEGETATION. PRIOR TO LAND-DISTURBING ACTIVITIES, THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY E&S PLAN (IF THE STOCKPILE IS LOCATED OFF-SITE). THIS SUPPLEMENTAL PLAN WOULD HAVE TO BE APPROVED BY THE PLAN APPROVING AUTHORITY BEFORE ANY OFF-SITE ACTIVITY COMMENCES.
- TEMPORARY SEEDING - VESCH 3.31
  - ALL DENUDED AREAS, WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.
  - SEE SHEET III-288 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) FOR ALLOWABLE PLANTING MATERIAL, SEEDING RATES, AND DATES. THE PLANTING REQUIREMENTS OF THE "SOUTH" SHALL BE FOLLOWED. LIMING SHALL BE BASED ON TABLE 3.31-A OF VESCH. FERTILIZERS SHALL BE APPLIED AS 600 LB/ACRE. THE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2-4" OF SOIL. SEED SHALL BE EVENLY APPLIED AND SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1.5" DEEP. SEEDING MADE IN FALL FOR WINTER COVER AND DURING HOT SUMMER MONTHS SHALL BE MULCHED.
- EROSION CONTROL BLANKET AND MULCHING - VESCH 3.36 AND 3.35
  - EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN SEEDING OPERATION.
- DUST CONTROL - VESCH 3.39
  - DUST SHALL BE CONTROLLED USING A VARIETY OF METHODS SUCH AS VEGETATIVE COVER, MULCH, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE BARRIERS, AND CALCIUM CHLORIDE. THE IMPLEMENTATION OF THE DUST CONTROL METHODS SHALL BE INSTALLED PER SECTION 3.39 OF VESCH
- PERMANENT SEEDING - VESCH 3.32
  - SINCE THE SUBJECT SITE IS LOCATED WITHIN THE COASTAL PLAIN AREA OF VIRGINIA, SHEET III-304 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK SHALL BE FOLLOWED FOR FINAL SEEDING MATERIAL, SEEDING RATES, AND DATES OF APPLICATION.
- SODDING - VESCH 3.33
  - SODDED AREAS SHALL BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLANS. SOIL TESTS SHALL BE MADE TO DETERMINE THE EXACT REQUIREMENTS FOR LIME AND FERTILIZER. PRIOR TO LAYING SOD, SOIL SURFACE SHALL BE CLEAR OF TRASH, DEBRIS AND LARGE OBJECTS. QUALITY OF SOD SHALL BE STATE CERTIFIED TO ENSURE GENETIC PURITY AND HIGH QUALITY. SOD SHALL NOT BE LAID ON FROZEN SOIL SURFACE, OR IN EXCESSIVELY WET OR DRY WEATHER. SOD SHALL BE DELIVERED AND INSTALLED WITHIN 36 HOURS, AND SHALL BE INSTALLED PER PAGE III-339 OF VESCH.

THE EROSION AND SEDIMENT CONTROL INSPECTOR SHALL HAVE THE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD. IN ADDITION, NO SEDIMENT TRAPS OR BASINS MAY BE REMOVED WITHOUT PRIOR APPROVAL OF THE INSPECTOR.

## EROSION AND SEDIMENT CONTROL MANAGEMENT MEASURES

### LANDSCAPE / TREE PRESERVATION NOTES

PRIOR TO ANY LAND DISTURBING ACTIVITY, THE CONTRACTOR SHALL CONTACT THE ARLINGTON COUNTY ARBORIST TO SCHEDULE AN INSPECTION.

### LAND CONSERVATION NOTES:

- NO DISTURBED AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
- 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.
- ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 100 FEET ARE TO BE OPEN AT ANY ONE TIME.
- ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS AFTER BACKFILLING.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS 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.
- ANY DISTURBED AREA NOT COVERED BY NOTE 1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOV. 1, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS/ACRE AND OVER-SEEDED BY APRIL 15.
- AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

### EROSION & SEDIMENT CONTROL PROGRAM:

- THE EROSION CONTROL PLAN IS INTENDED TO ESTABLISH ENTRANCES AND PERIMETER CONTROL MEASURES WHICH INCLUDES SILT FENCE (SF), INLET PROTECTION (IP), AND OTHER CONTROLS SPECIFIED ON THE PLANS.
- WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL SHALL BE PLACED IN STREAMBEDS. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 7 DAYS SHALL BE SEEDED AND MULCHED. WHEN SPOIL IS PLACED ON THE DOWNHILL SIDE OF TRENCH, IT SHALL BE BACKSLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCH, THE PUMP DISCHARGE HOSE SHALL OUTLET IN A STABILIZED AREA OR A SEDIMENT TRAPPING DEVICE.
- ALL PRACTICES AND CONTROL DEVICES DESCRIBED HEREIN SHALL CONFORM TO THE CURRENT VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). 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 USE OF HEAVY EQUIPMENT. CONTRACTOR SHALL BRING DISTURBED AREAS TO GRADE (ROUGH OR FINISHED) AND STABILIZE THOSE AREAS WITH TEMPORARY OR PERMANENT VEGETATION. THESE DISTURBED AREAS SHALL BE STABILIZED PRIOR TO BEGINNING WORK IN ANOTHER AREA.
  - FILL AREAS SHALL BE COMPACTED COMPLETELY PRIOR TO THE END OF EACH WORK DAY. FILL SLOPE SURFACES SHALL BE KEPT ROUGH TO REDUCE SHEET EROSION OF THE SLOPES. CONTRACTOR SHALL RE-DIRECT CONCENTRATED RUNOFF, BY EARTH BERMS OR OTHER DEVICES, AROUND ACTIVELY DISTURBED AREAS TO STABILIZED OUTLETS.
  - CUT SLOPES SHALL BE PROTECTED FROM CONCENTRATED FLOW BY BERMS (ABOVE THE SLOPE) AND DIRECTED AROUND THE DISTURBED AREA TO STABILIZED OUTLETS.
- MEASURES TO CONTROL EROSION AND SILTATION SHALL BE PROVIDED PURSUANT TO AND IN COMPLIANCE WITH CURRENT STATE AND LOCAL REGULATIONS. THE INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND/OR THE APPROVAL OF THE PLANS SHALL IN NO WAY RELIEVE THE CONTRACTOR OR HIS AGENT OF ANY LEGAL RESPONSIBILITY WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA AND CHAPTER 57 OF THE ARLINGTON COUNTY CODE.
- ALL AREAS, ON OR OFF-SITE, THAT ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS SEED MIXTURE OR SOD THAT IS INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. ALL SLOPES 3:1 AND GREATER SHALL BE RECEIVE SOIL STABILIZATION IN ACCORDANCE WITH THE SPECIFICATIONS.WHERE STREAM CROSSINGS ARE REQUIRED FOR EQUIPMENT, TEMPORARY CULVERTS SHALL BE PROVIDED.
- FOR FURTHER REQUIREMENTS AND DETAILS OF TREE PRESERVATION, PLANTING, EROSION AND SEDIMENT CONTROL, SEE COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

## GENERAL EROSION AND SEDIMENT CONTROL NOTES

- UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.
- THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN THE AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
- ALL BIOFILTERS SHALL BE KEPT OFF-LINE UNTIL CONSTRUCTION IS COMPLETED AND ALL AREAS HAVE BEEN PROPERLY STABILIZED. THIS SHALL BE ACHIEVED BY USING INLET PROTECTION AT THE CURB CUTS AND STORMWATER CATCH BASINS LEADING DIRECTLY INTO THE BIOFILTERS.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

## PRE-STORM EROSION & SEDIMENTATION CHECKLIST:

PER GENERAL EROSION AND SEDIMENT CONTROL NOTE 6, THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL (ESC) MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE COUNTY. THESE SUPPLEMENTARY PRACTICES ARE IN ADDITION TO THOSE SHOWN IN AN EROSION AND SEDIMENT CONTROL PLAN. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MODIFIED AS NEEDED TO ENSURE ONLY CLEAR WATER IS DISCHARGED FROM THE SITE.

THE FOLLOWING ACTIONS SHALL BE TAKEN PRIOR TO STORM EVENTS WITH PREDICTED HEAVY AND/OR LARGE VOLUME RAINFALL TO PREVENT SEDIMENT DISCHARGES FROM A CONSTRUCTION SITE. A TYPICAL SUMMER THUNDERSTORM IS AN EXAMPLE OF A STORM EVENT WITH PREDICTED HEAVY AND/OR LARGE VOLUME RAINFALL.

- PERIMETER CONTROLS
    - SILT FENCE SHALL BE CHECKED FOR UNDERMINING, HOLES, OR DETERIORATION OF THE FABRIC. FENCING SHALL BE REPLACED IMMEDIATELY IF THE FABRIC IS DAMAGED OR WON. SILT FENCE MUST BE TRENCHED INTO THE GROUND PER STATE SPECIFICATIONS (VESCH STD & SPEC 3.09).
    - WOODEN STAKES OR STEEL POSTS SHALL BE PROPERLY SECURED UPRIGHT INTO THE GROUND. DAMAGED POSTS OR STAKES MUST BE REPLACED.
    - SEDIMENT THAT HAS ACCUMULATED AGAINST THE SILT FENCE SHALL BE REMOVED. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE LEVEL REACHES ONE-HALF THE HEIGHT OF THE FENCING.
    - HAY BALES OR A STONE BERM SHALL BE PLACED ACROSS THE CONSTRUCTION ENTRANCE TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
  - EXPPOSED SLOPES AND SOIL
    - EXPPOSED SLOPES NOT AT THE FINAL STABILIZATION PHASE SHALL BE COVERED WITH TARPS, PLASTIC SHEETING, OR EROSION CONTROL MATTING. COVERING MATERIAL SHALL BE PROPERLY SECURED/ANCHORED.
    - CONTROLS SHALL BE INSTALLED TO PREVENT CONCENTRATED FLOW DOWN AN EXPOSED SLOPE. BERMS OR DIVERSION DIKES SHALL BE INSTALLED AT THE TOP OF CUT/EXPPOSED SLOPES TO DIRECT STORM FLOW AROUND THE DISTURBED AREA.
    - EXPPOSED SLOPES AT THE FINAL STABILIZATION PHASE SHALL BE STABILIZED USING SLOPE STABILIZATION PRACTICES SUCH AS SOIL STABILIZATION BLANKETS OR MATTING AS SPECIFIED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH STD & SPEC 3.36). BLANKETS OR MATS MUST BE PROPERLY SECURED AND ANCHORED TO THE SLOPE USING STAPLES, PINS, OR STAKES.
    - SEEDED AREAS SHALL BE CHECKED AND RESEEDED AS NECESSARY TO COVER EXPOSED SOIL. RECENTLY SEEDED AREAS SHALL BE PROTECTED BY STRAW OR SOIL STABILIZATION BLANKETS TO PREVENT SEEDING FROM BEING WASHED AWAY.
  - STOCKPILES
    - STOCKPILED SOIL AND OTHER LOOSE MATERIALS THAT CAN BE WASHED AWAY SHALL BE COVERED WITH A TARP, PLASTIC SHEETING, OR OTHER STABILIZATION MATTING. THE COVER MUST BE PROPERLY SECURED/ANCHORED DOWN TO PREVENT IT FROM BEING BLOWN OFF AND EXPOSING MATERIALS TO RAIN. CONTROLS SUCH AS HAY BALES OR BOOMS SHALL BE PLACED ALONG THE PERIMETER OF THE STOCKPILE (DOWNHILL SIDE).
  - INLET PROTECTION
    - INLET PROTECTION CONTROLS SHALL BE INSPECTED TO ENSURE THEY ARE FUNCTIONING PROPERLY AND FLOODING WILL NOT OCCUR. CLOGGED OR DAMAGED CONTROLS MUST BE REPLACED IMMEDIATELY. ENSURE CONTROLS ALLOW FOR OVERFLOW/BYPASS OF STORMWATER RUNOFF DURING SIGNIFICANT STORM EVENTS.
- IN ADDITION TO THESE PRE-STORM ACTIONS, ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES MUST BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL.
- ### POLLUTION PREVENTION PLAN NOTES (STORMWATER MANUAL - SECTION 2.4)
- ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY ARLINGTON COUNTY'S M54 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS:
    - WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS; UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES; FOUNDATION DRAINS; AIR CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR FLOWS FROM FIREFIGHTING; AND, OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.
  - APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (E.G., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO ARLINGTON COUNTY'S M54 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK.
  - PER CHAPTER 26 OF THE ARLINGTON COUNTY CODE, IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATERS, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

## UTILITY INSTALLATION:

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

- NO MORE THAN 100 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
- MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
- ANY DISTURBED AREA NOT COVERED BY NOTE #1 ABOVE AND PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.
- AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.

## MAINTENANCE PROGRAM:

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

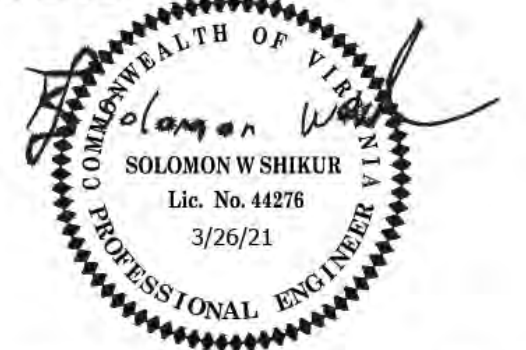
- THE SITE SUPERINTENDENT OR HIS/HER REPRESENTATIVE SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREA (I.E. SEEDED AND MULCHED AND/OR SODDED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO ENSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY.
- ALL SEDIMENT TRAPPING DEVICES SHALL BE CLEARED OUT AT 50% TRAP CAPACITY AND THE SEDIMENT SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR IF NOT SUITABLE FOR FILL, HAULING AWAY AND DEPOSITING AT AN ACCEPTABLE DUMP SITE.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT MUD AND/OR OTHER DEBRIS FROM BEING ENTERED ONTO EXISTING SWM/BMP FACILITIES OR DOWNSTREAM WATER WAYS. SHOULD OFF-SITE AREAS BECOME POLLUTED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE AFFECTED AREAS TO THE SATISFACTION OF THE INSPECTOR.
- AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ANY REMAINING DENUDED AREAS SHALL BE STABILIZED. CERTAIN DEVICES MAY BE REMOVED PRIOR TO CONSTRUCTION COMPLETION BUT ONLY WITH THE APPROVAL OF THE COUNTY INSPECTOR.
- AFTER CONSTRUCTION OPERATIONS HAVE ENDED, ALL DISTURBED AREAS SHALL BE STABILIZED. UPON APPROVAL OF THE COUNTY INSPECTOR, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED AND THE GROUND PERMANENTLY STABILIZED WITH VEGETATION WITHIN 30 DAYS.

ARLINGTON  
VIRGINIA

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## SEAL



## APPROVALS

## DATE

*Amy Pfaffman* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Kamal Tabak* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*John Min* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis M. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John Min* 3/30/2021  
PROJECT MANAGER

## REVISIONS

## DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
EROSION AND SEDIMENT CONTROL  
NOTES

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

## SCALE:

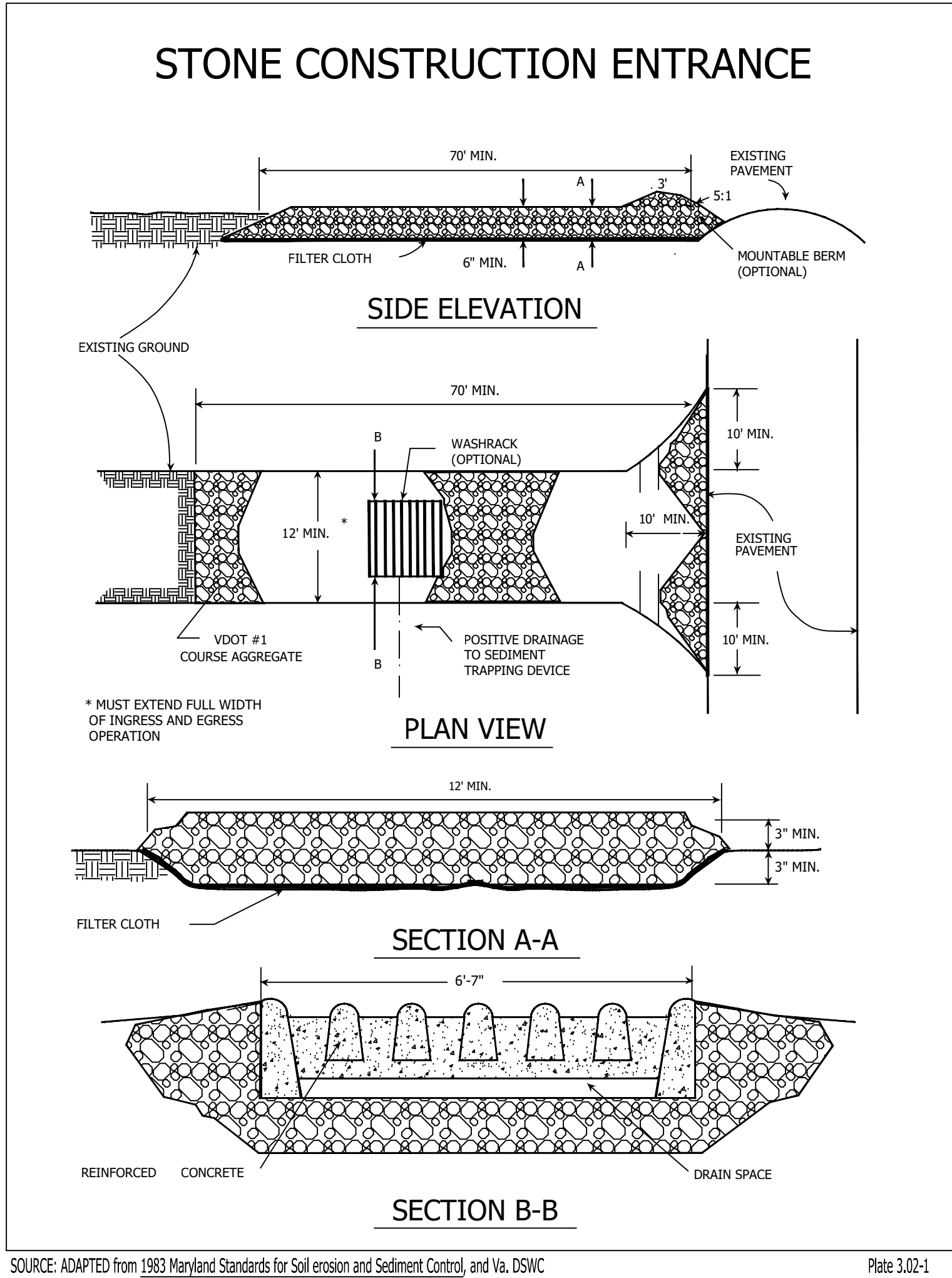
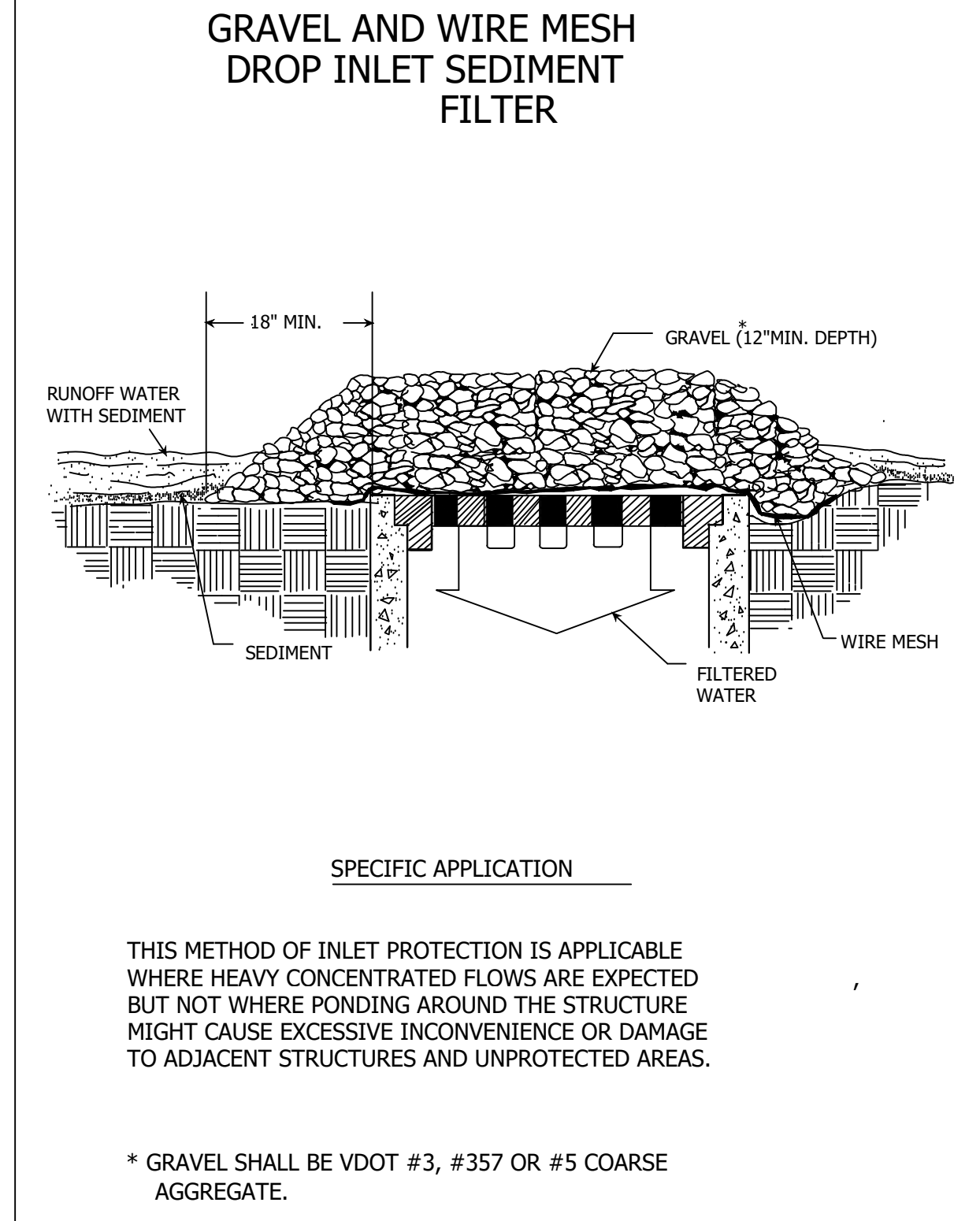
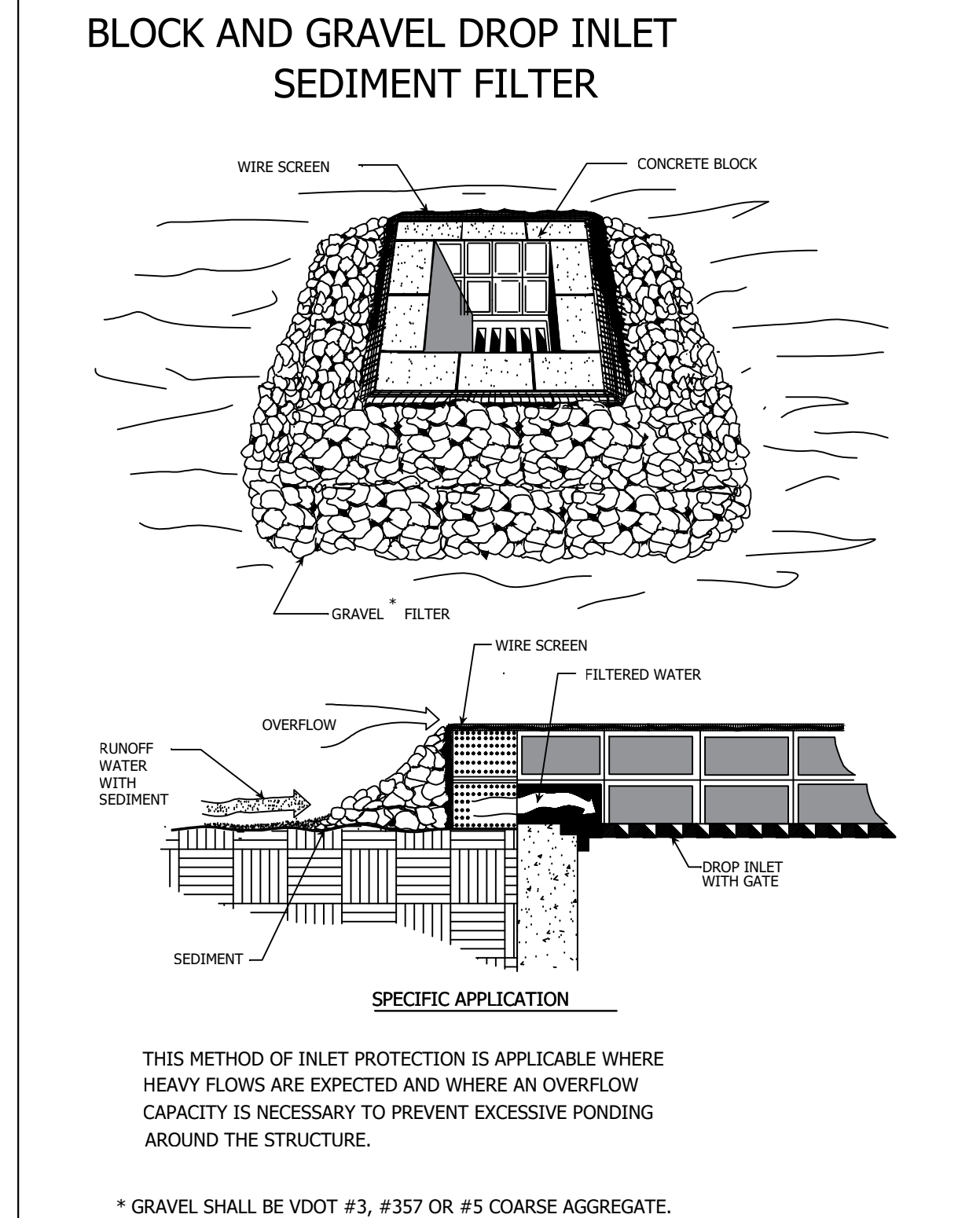
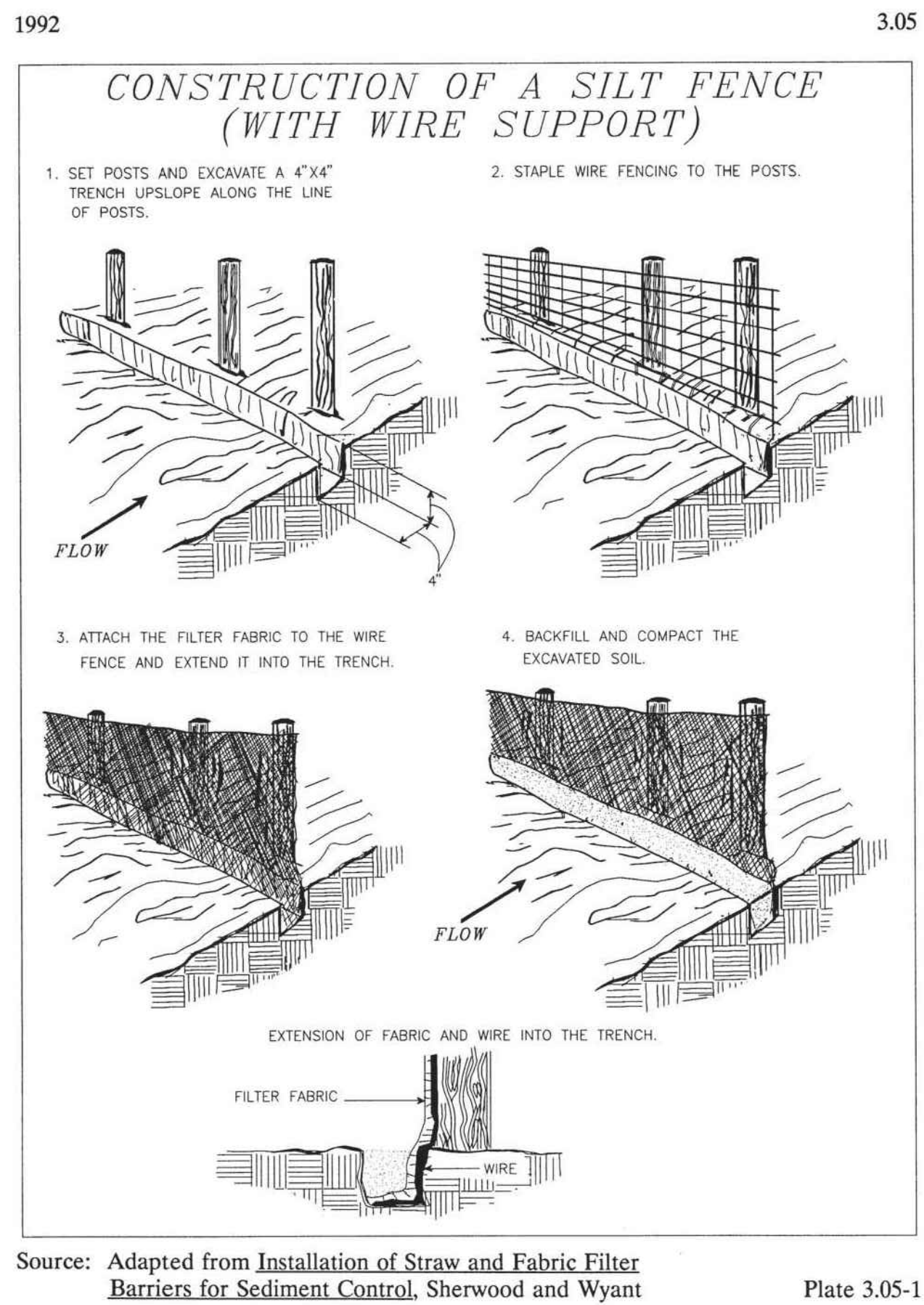
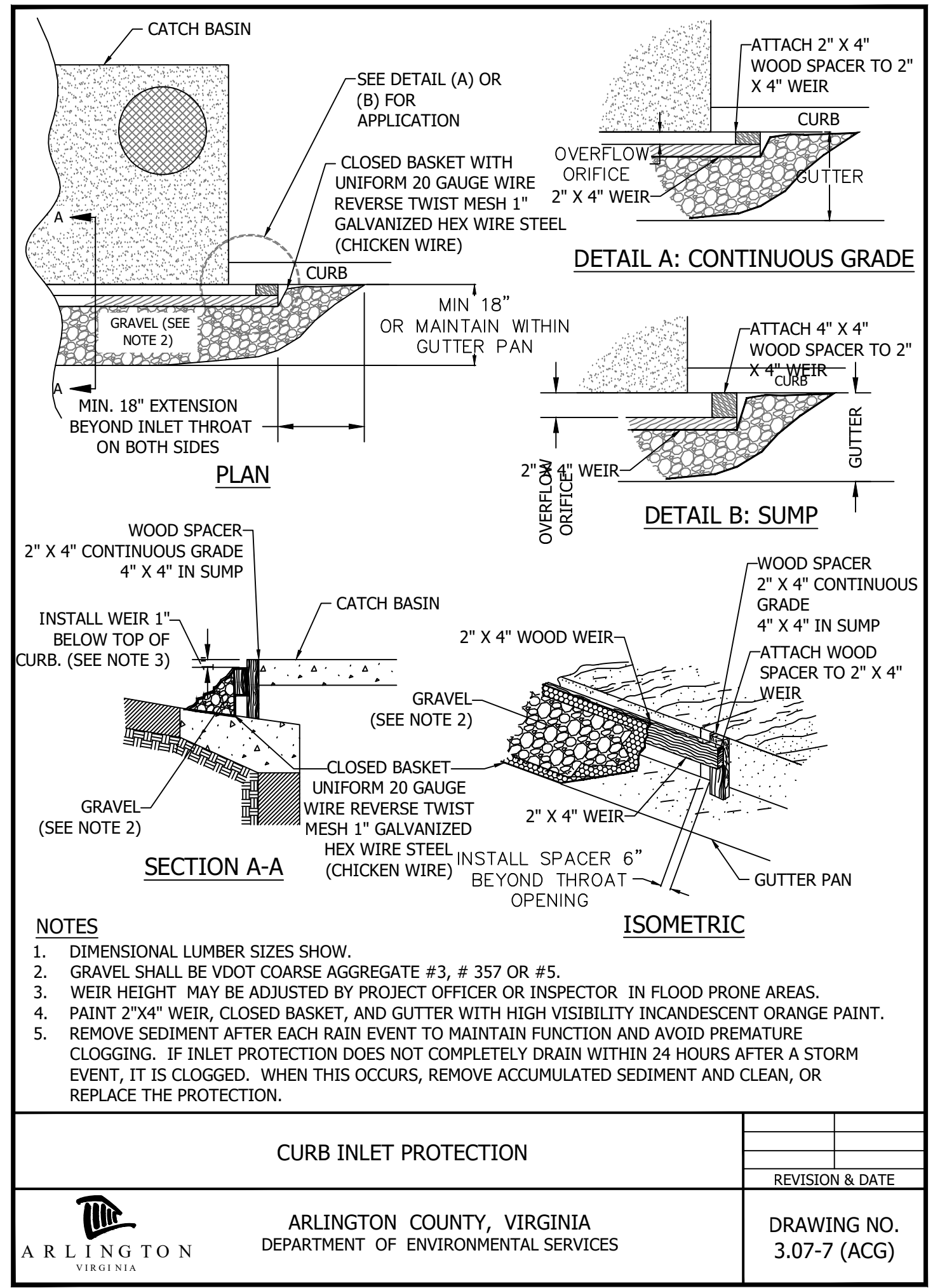
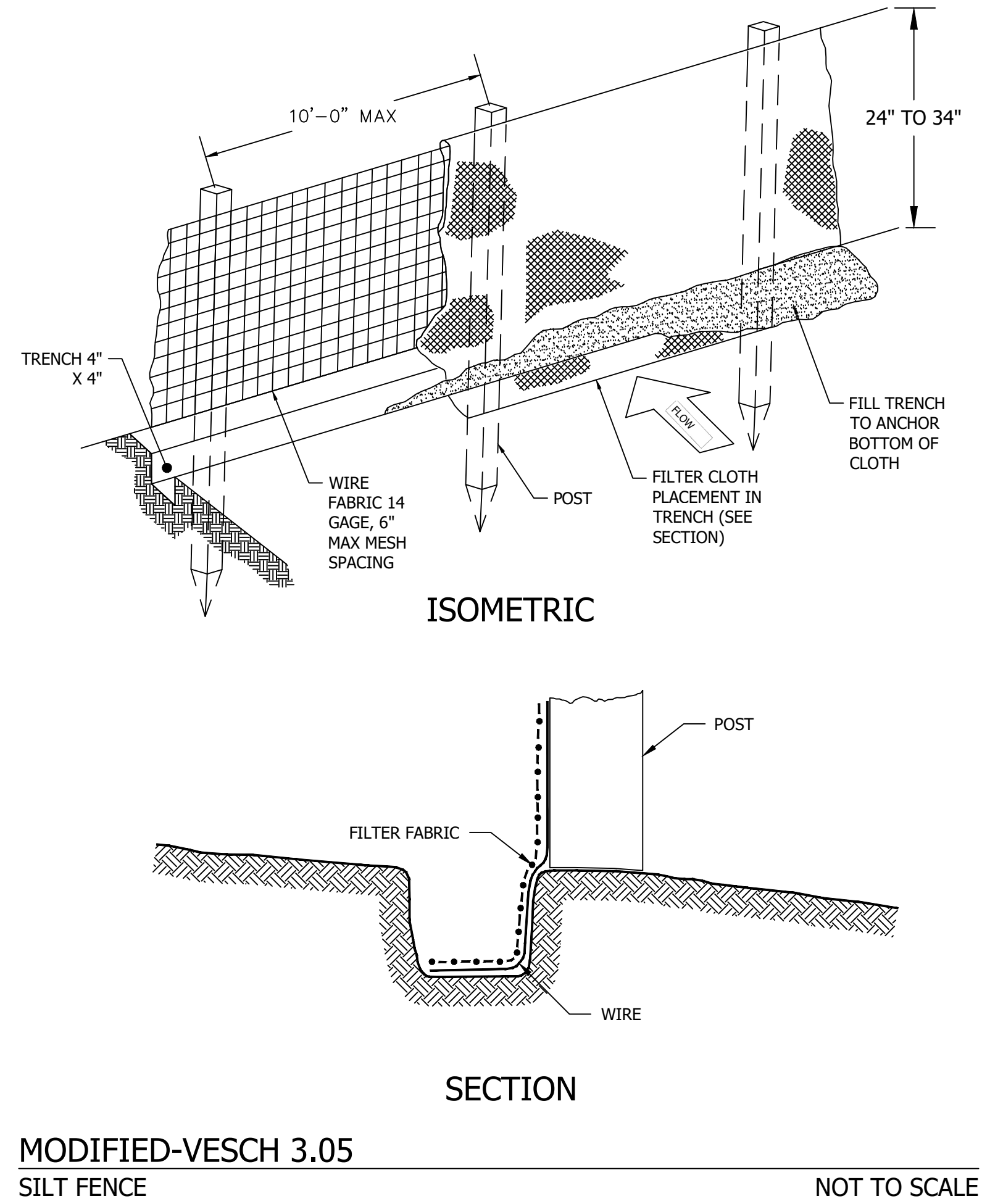
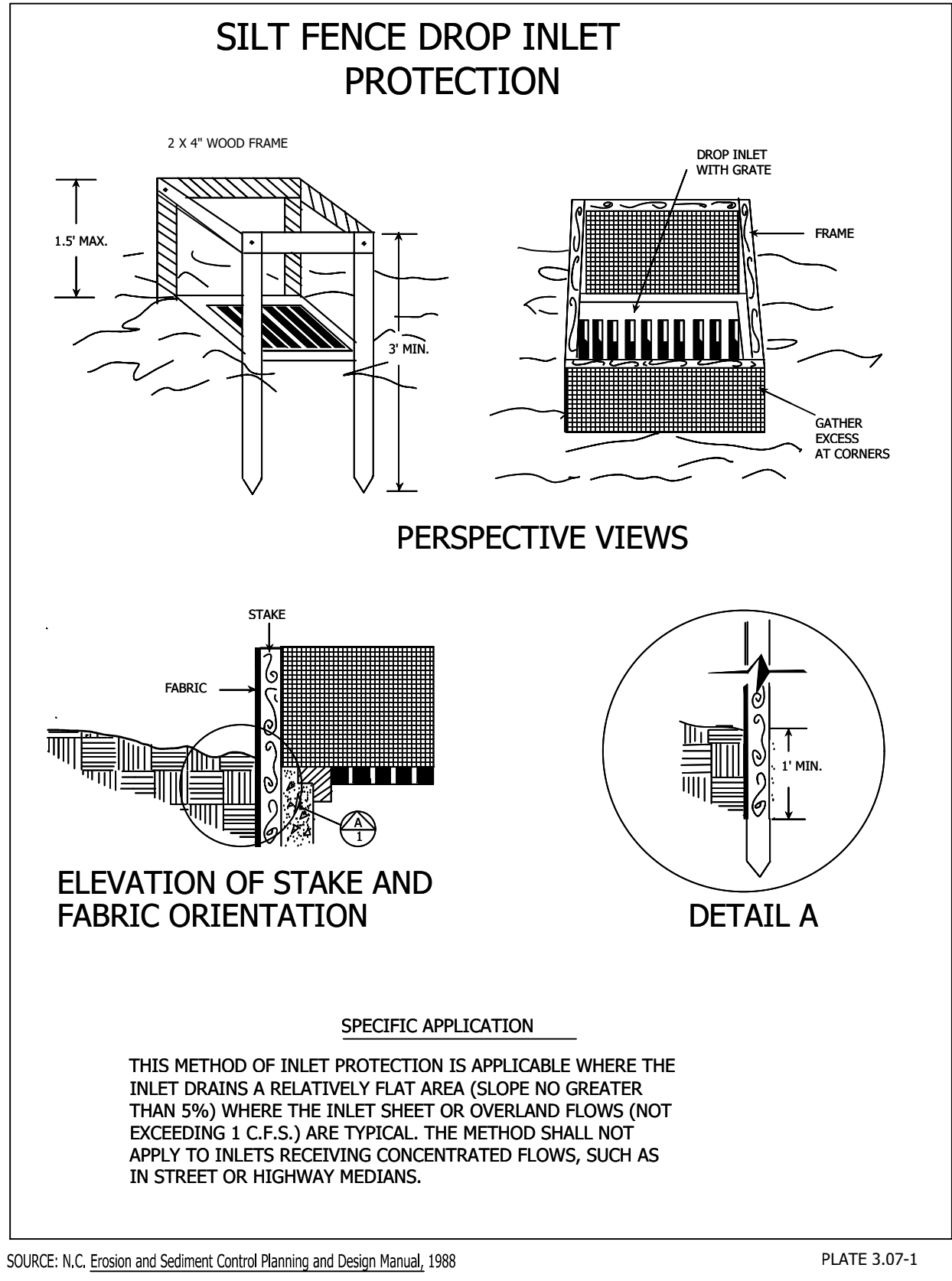
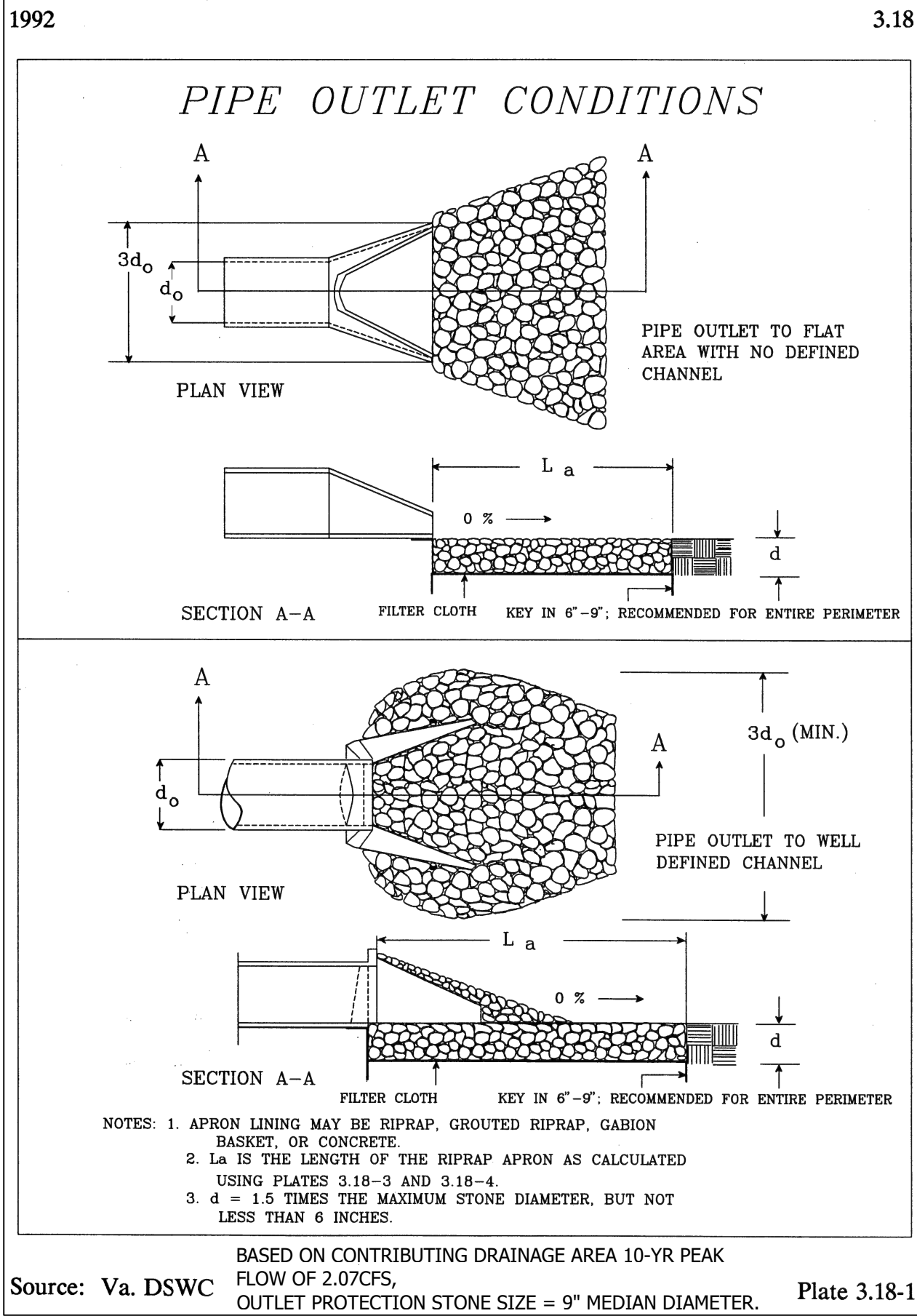
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ARLINGTON VIRGINIA

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SOLOMON W. SHUKER  
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3/26/21  
PROFESSIONAL ENGINEER

APPROVALS DATE

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QUALITY CONTROL ENGINEER

Ramab Taklak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR

04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF

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TRANSPORTATION DIRECTOR

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31ST STREET S. PARKING LOT  
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BETWEEN S. FERN STREET AND S. EADS STREET

EROSION AND SEDIMENT CONTROL  
DETAILS 1

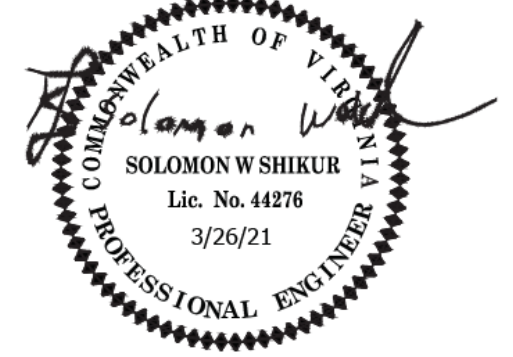
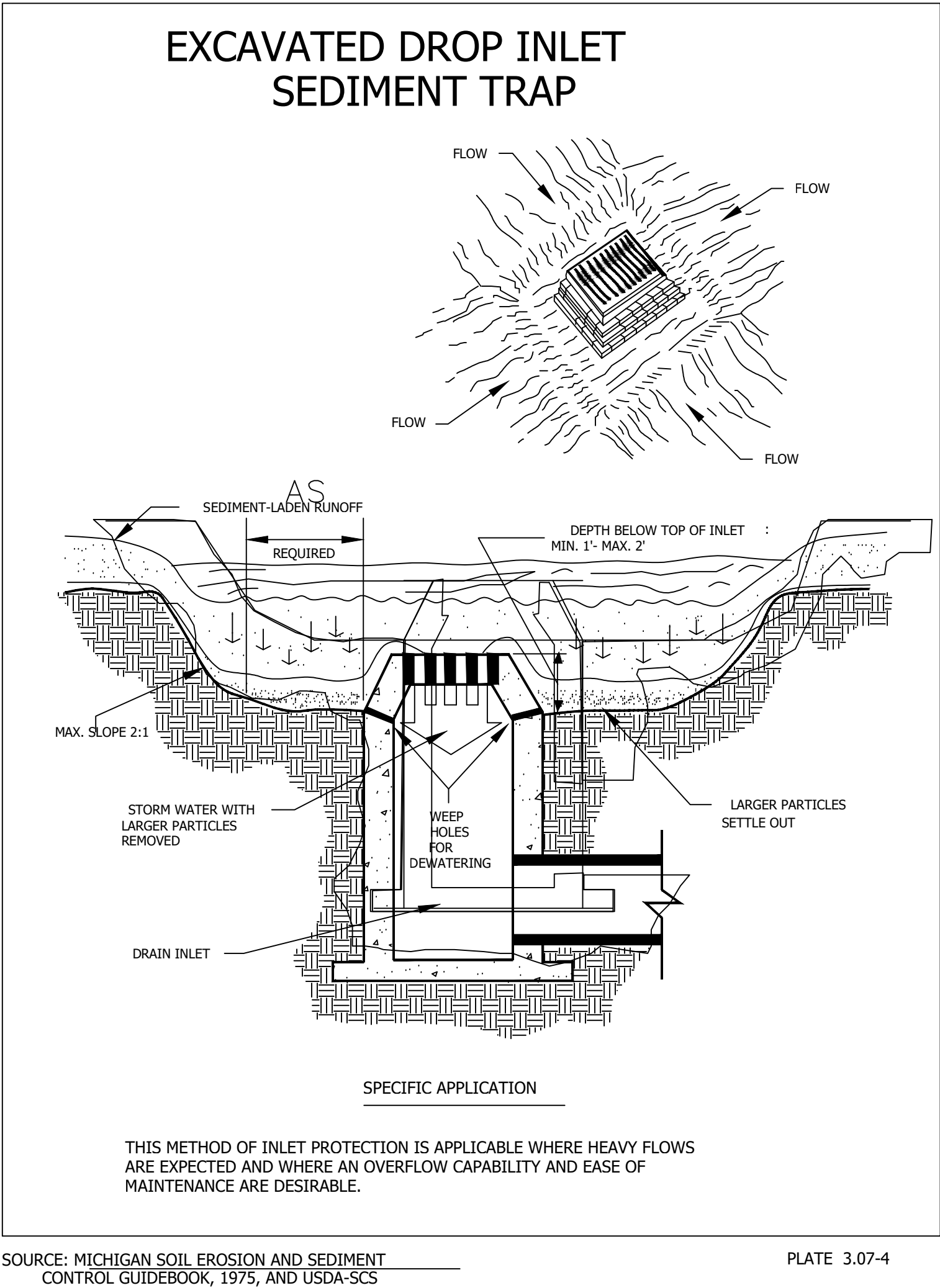
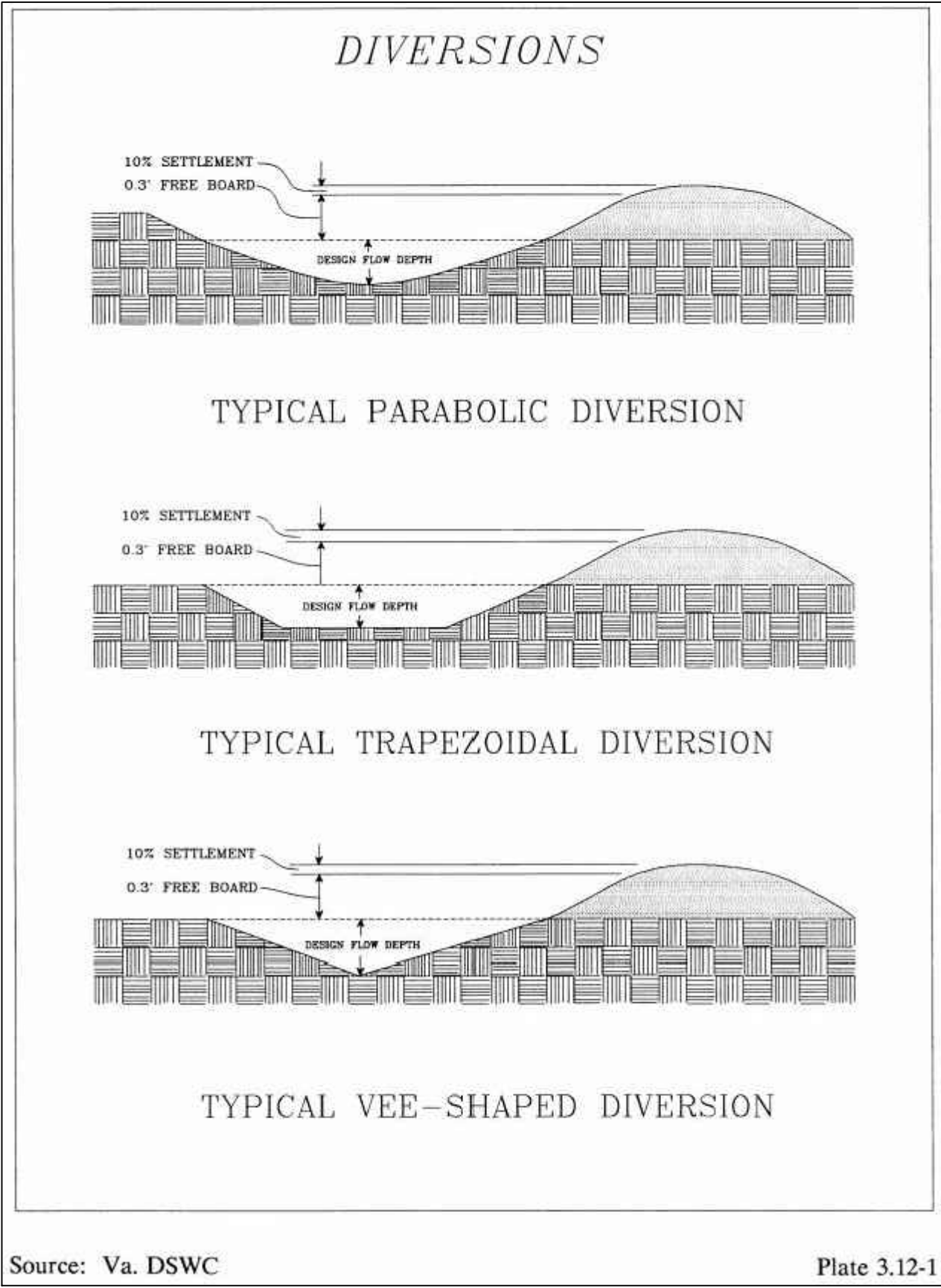
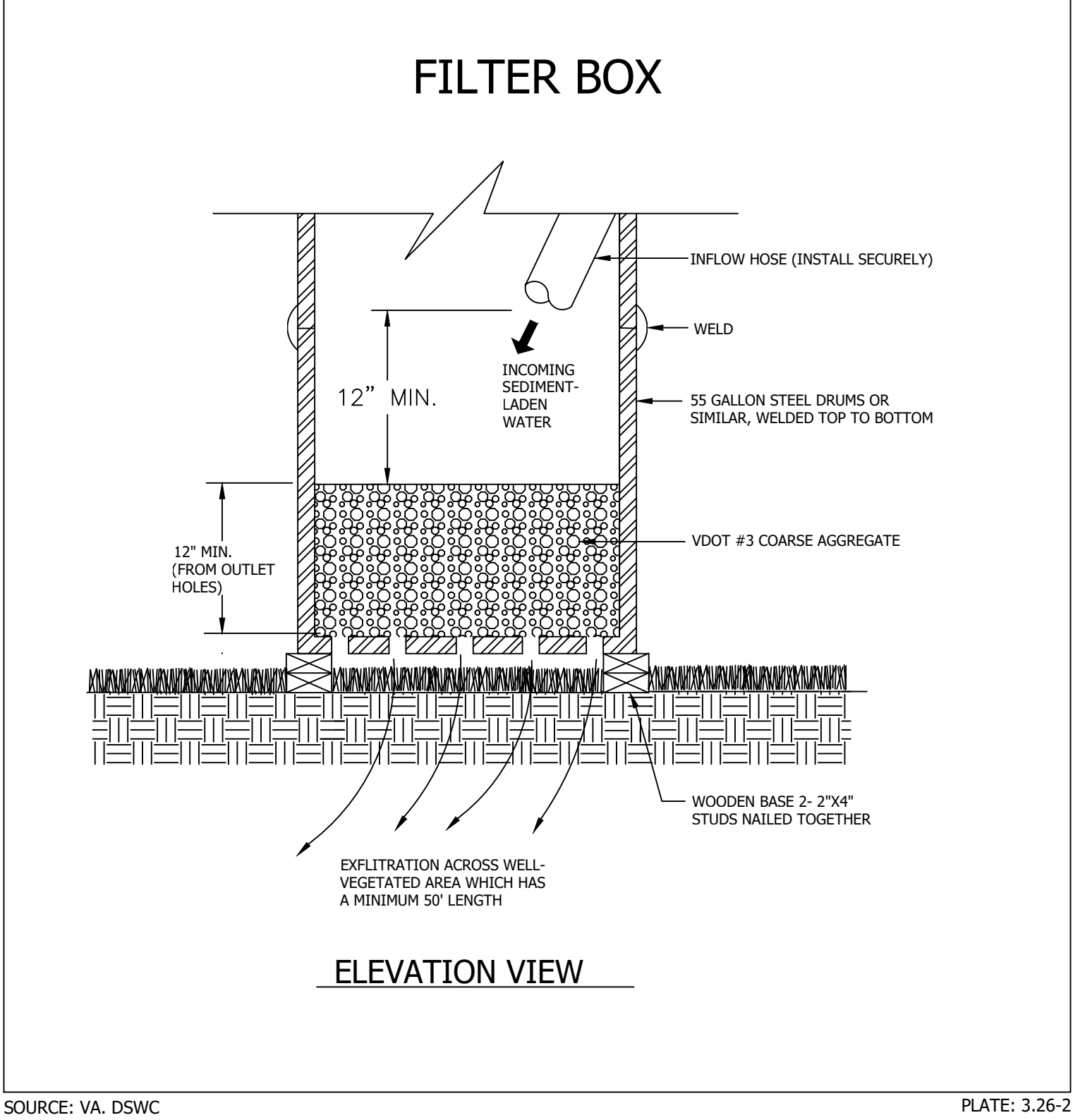
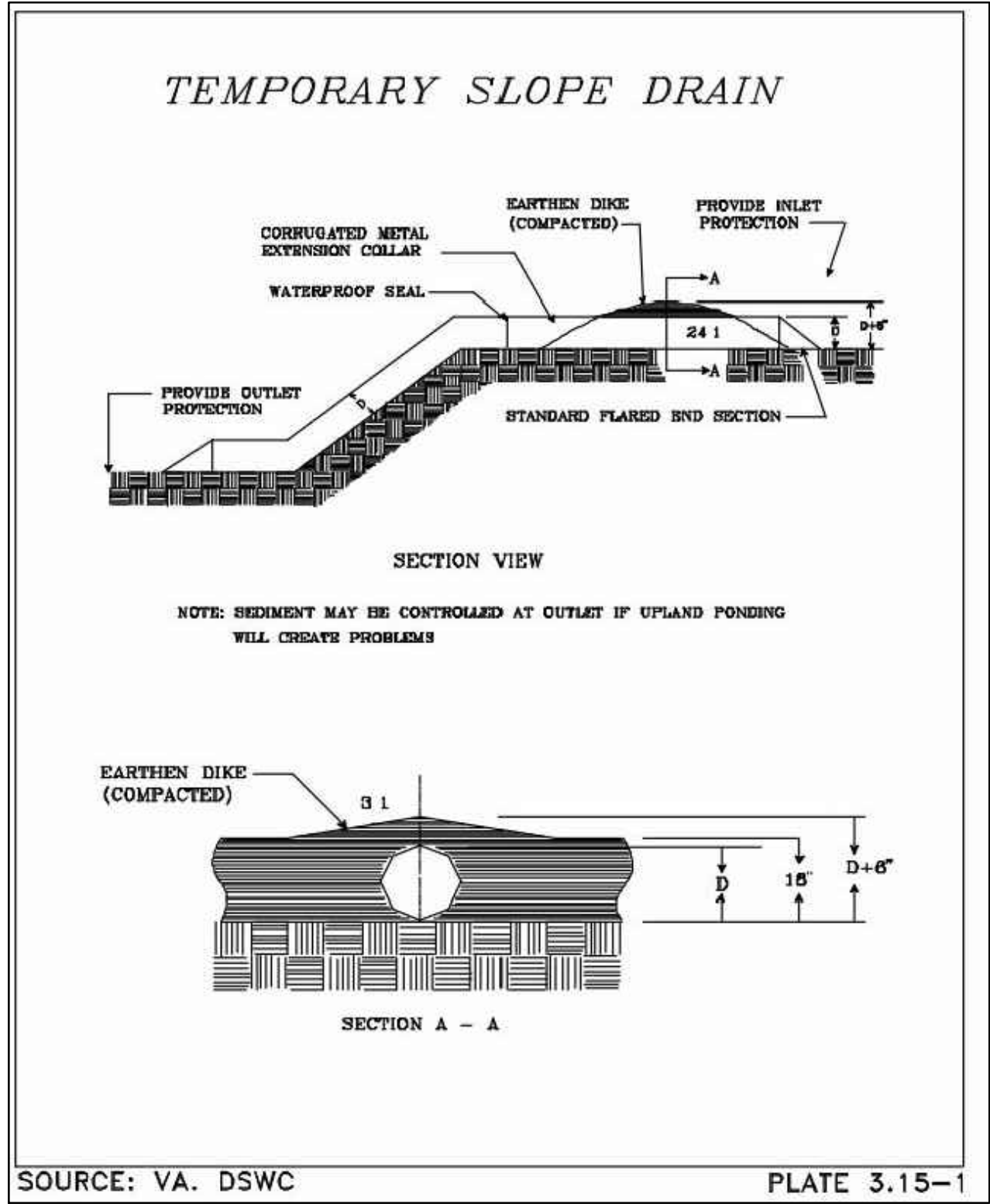
DESIGNED: SEB  
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CHECKED: SWS  
PLOTTED: MARCH 26 2021

SCALE: AS SHOWN

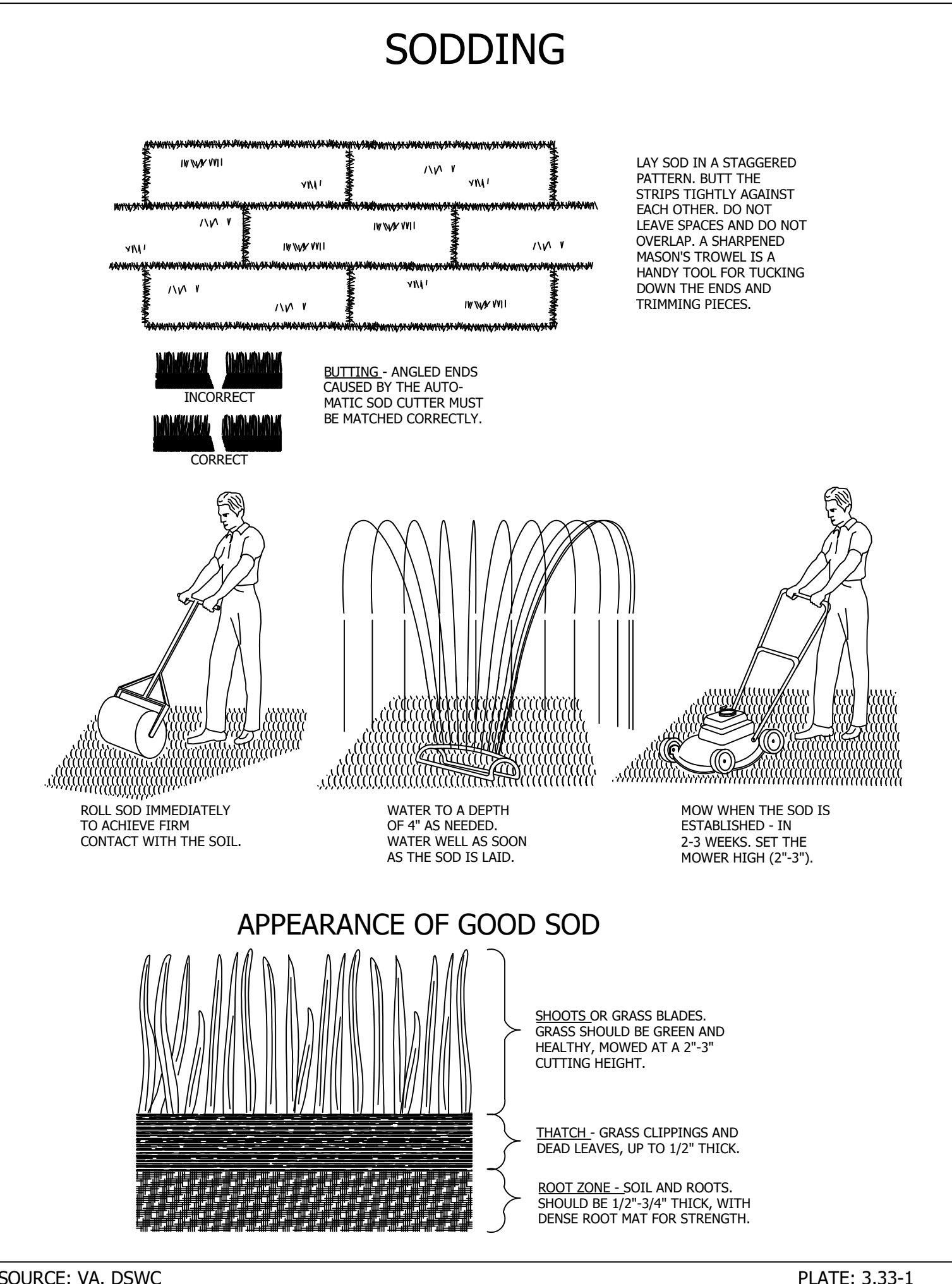
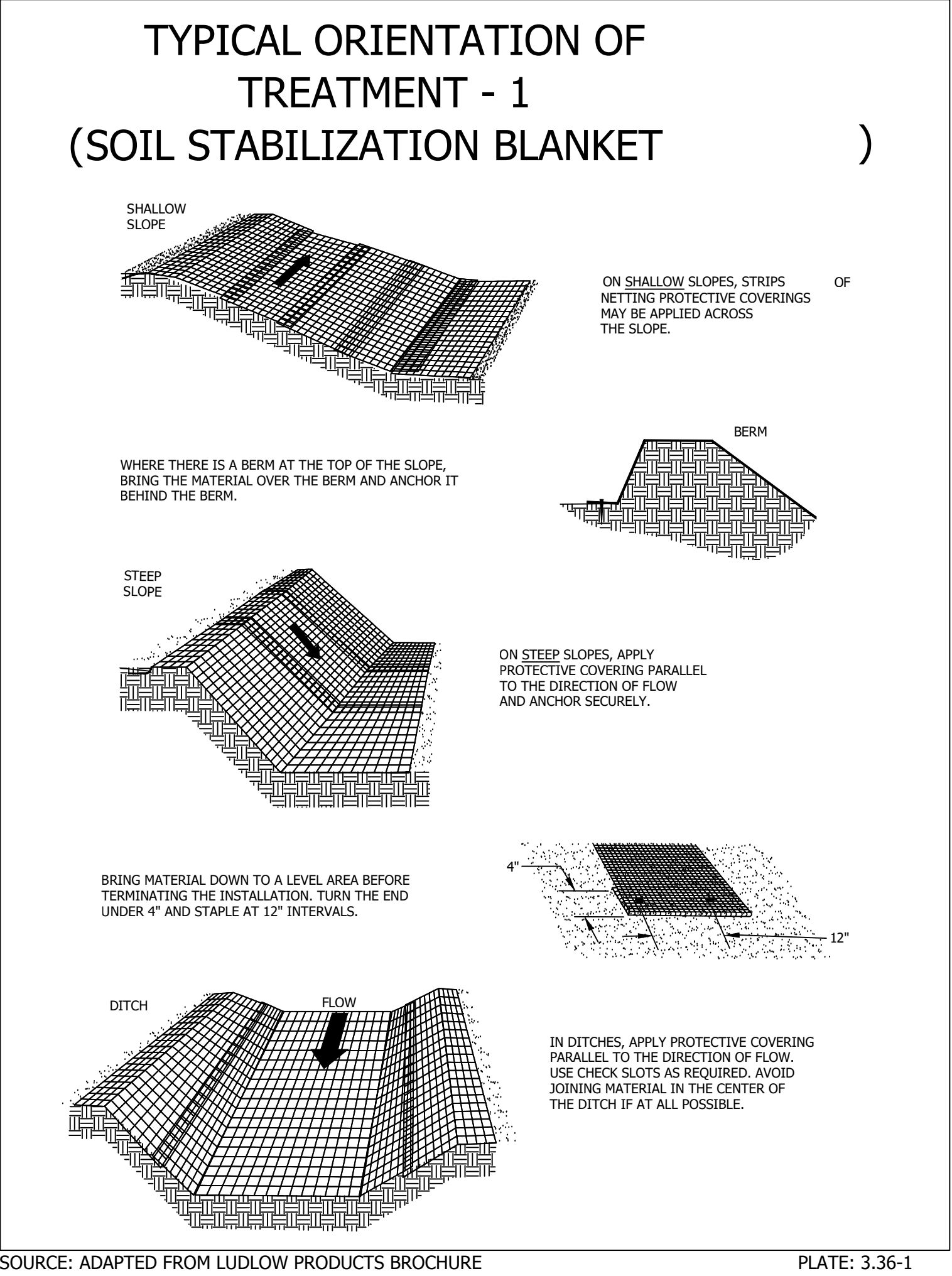
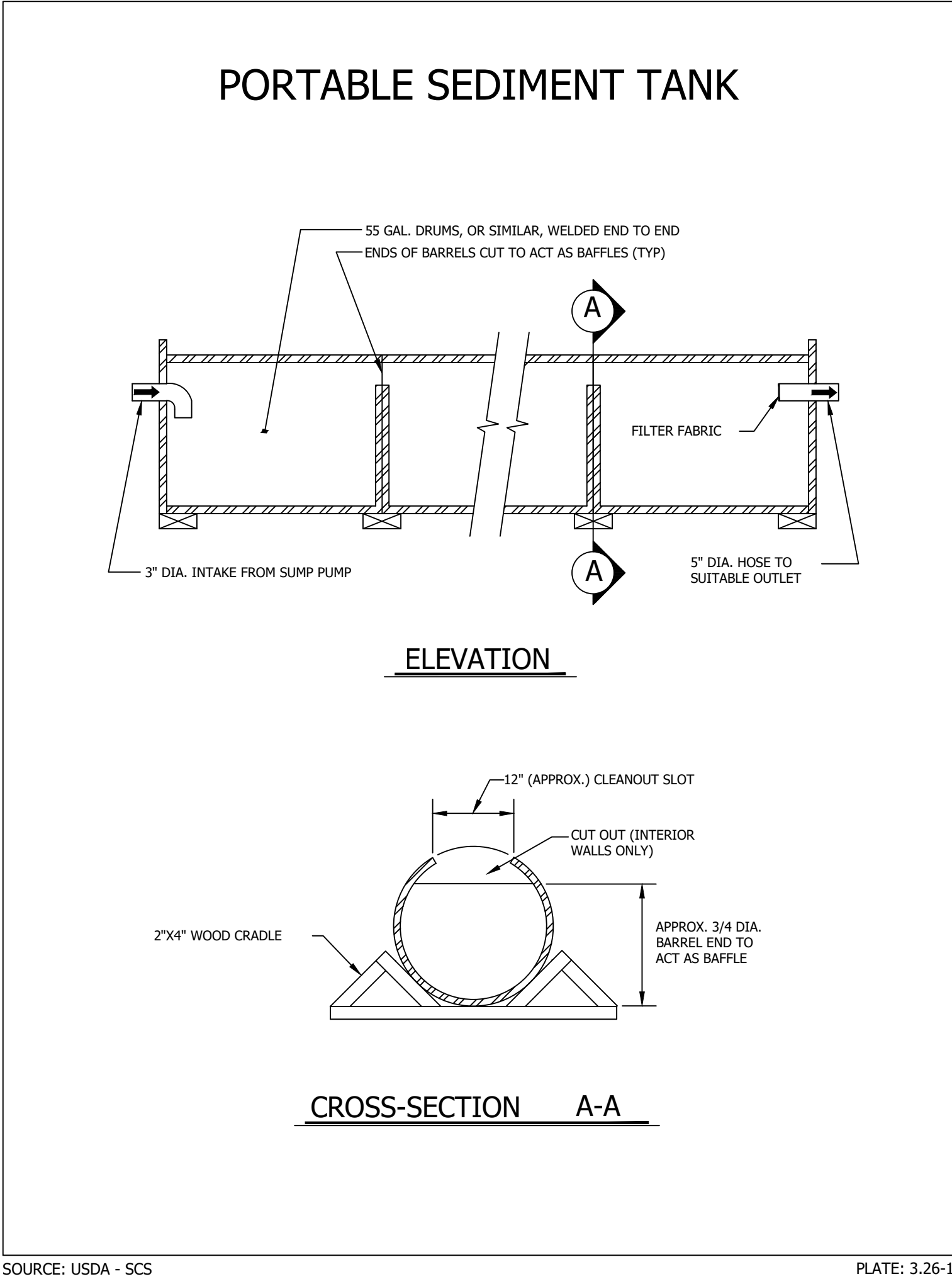
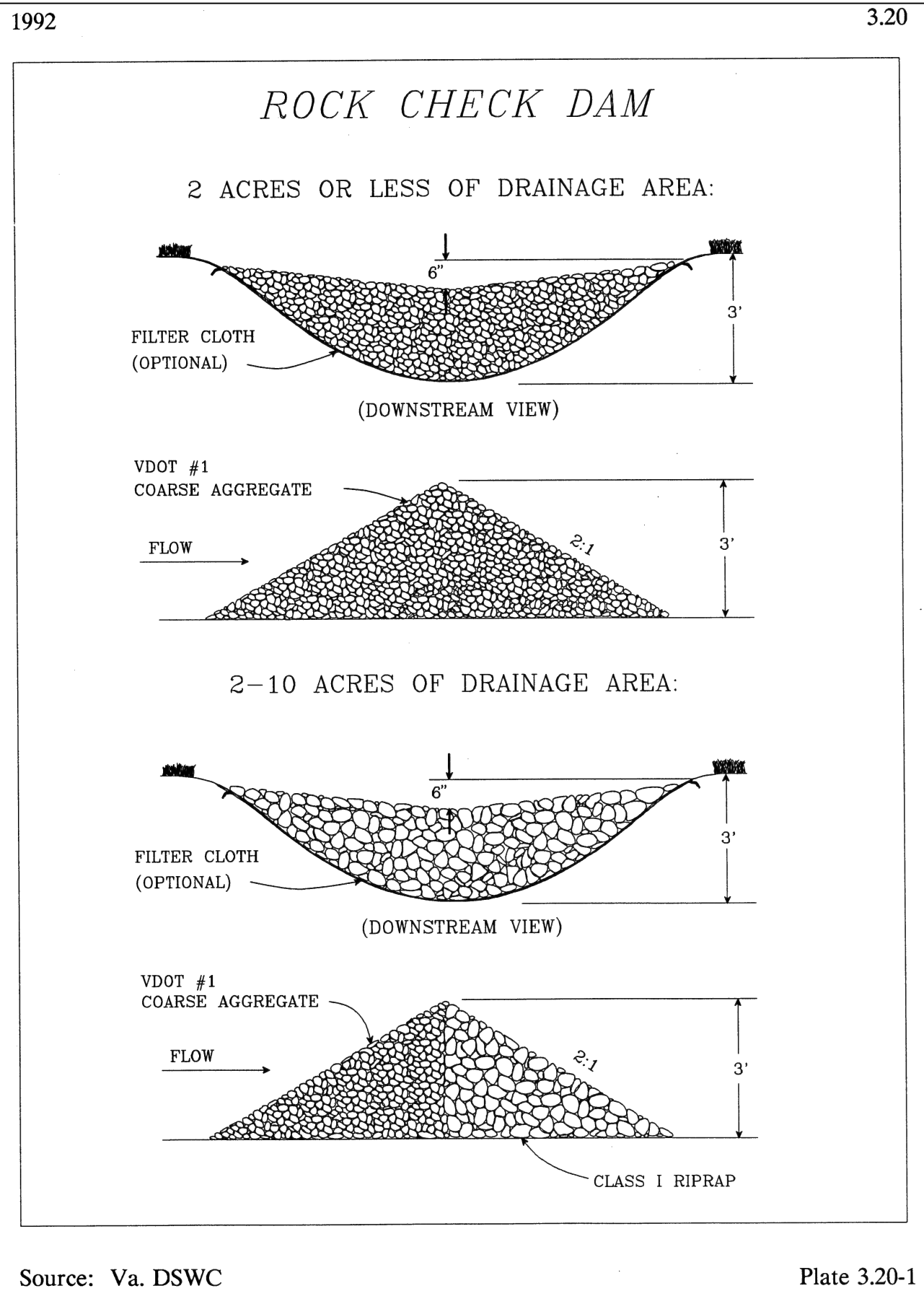
SHEET C032.2

31ST STREET S. PARKING LOT WPB5





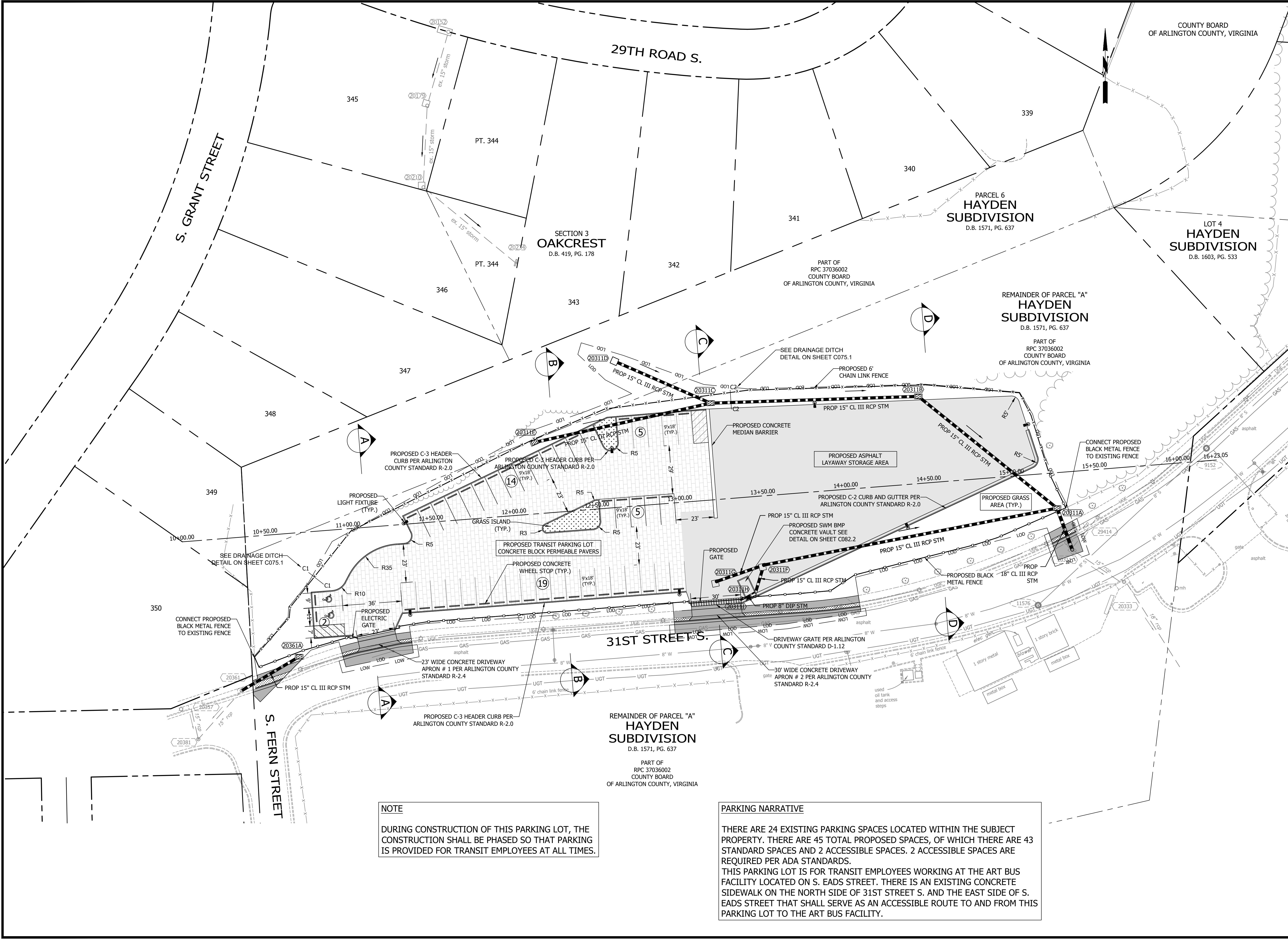
Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Kamal Takab 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
John M. Leach 04/02/2021  
WATER, SEWER, STREETS BUREAU CHIEF  
Dennis M. Leach 04/09/21  
TRANSPORTATION DIRECTOR  
John M. Leach 3/30/2021  
PROJECT MANAGER



REVISED ON 05/23/2018

FILENAME: WPB5-230-PLAN\_PROFILE.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



**NOTE**

DURING CONSTRUCTION OF THIS PARKING LOT, THE CONSTRUCTION SHALL BE PHASED SO THAT PARKING IS PROVIDED FOR TRANSIT EMPLOYEES AT ALL TIMES.

**PARKING NARRATIVE**

THERE ARE 24 EXISTING PARKING SPACES LOCATED WITHIN THE SUBJECT PROPERTY. THERE ARE 45 TOTAL PROPOSED SPACES, OF WHICH THERE ARE 43 STANDARD SPACES AND 2 ACCESSIBLE SPACES. 2 ACCESSIBLE SPACES ARE REQUIRED PER ADA STANDARDS.

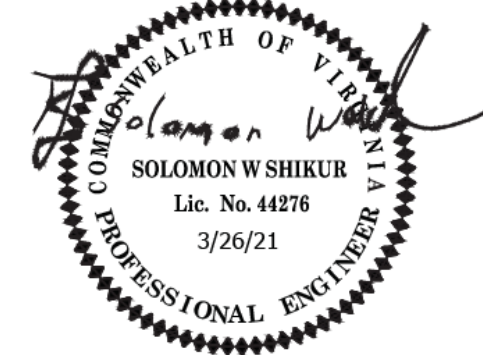
THIS PARKING LOT IS FOR TRANSIT EMPLOYEES WORKING AT THE ART BUS FACILITY LOCATED ON S. EADS STREET. THERE IS AN EXISTING CONCRETE SIDEWALK ON THE NORTH SIDE OF 31ST STREET S. AND THE EAST SIDE OF S. EADS STREET THAT SHALL SERVE AS AN ACCESSIBLE ROUTE TO AND FROM THIS PARKING LOT TO THE ART BUS FACILITY.

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APPROVALS DATE

*Amy Pflaum* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Kamal Taktak* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*John W. Leach* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis W. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John W. Leach* 3/30/2021  
PROJECT MANAGER

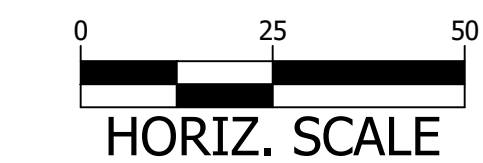
REVISIONS DATE

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
SITE PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS  
PLOTTED: MARCH 30 2021

SCALE:

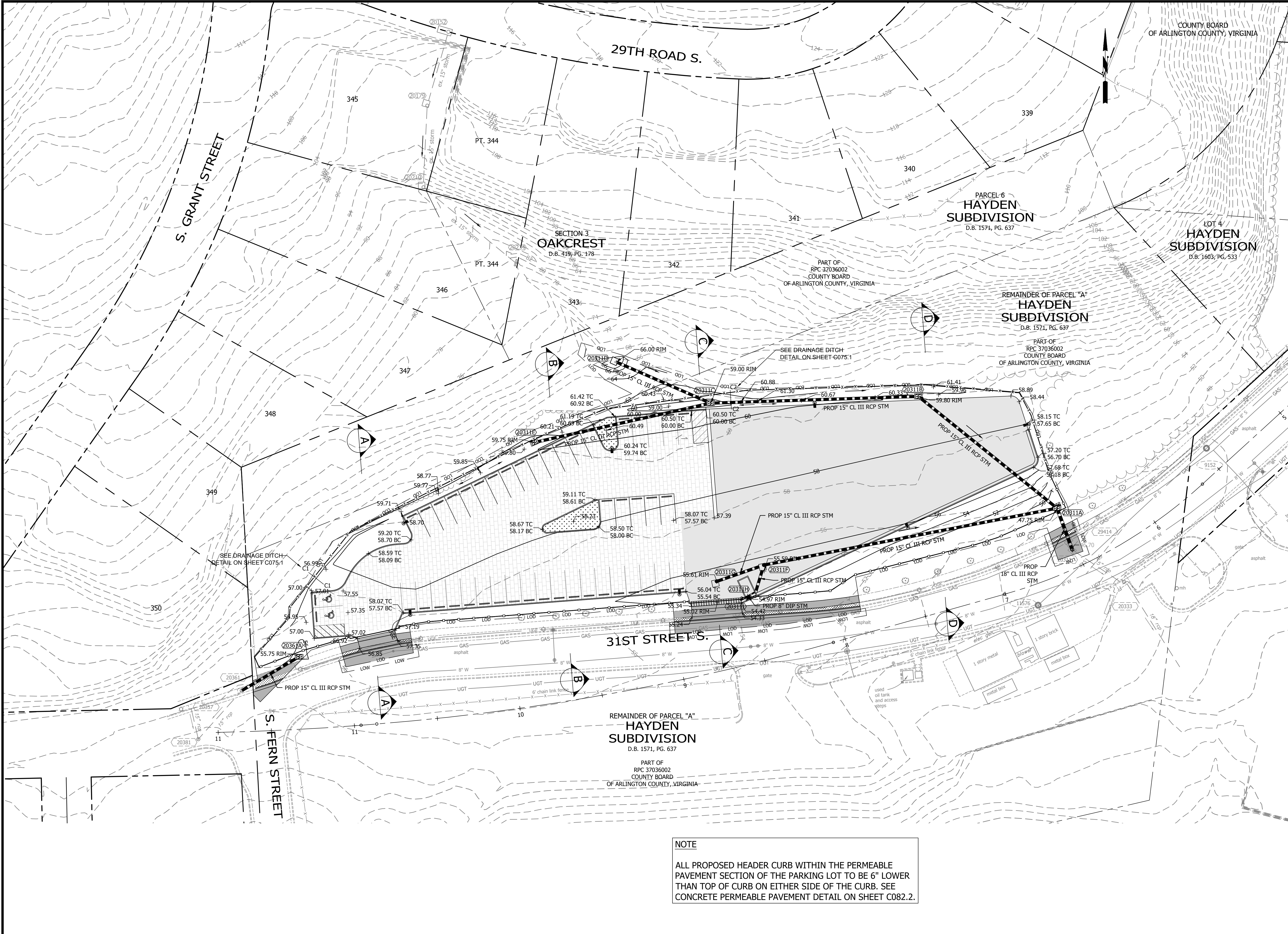


SHEET C041.1



REVISED ON 05/23/2018

FILENAME: WPB5-230-PLAN\_PROFILE.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



NOTE

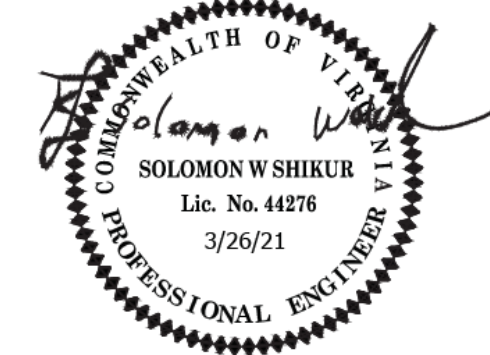
ALL PROPOSED HEADER CURB WITHIN THE PERMEABLE PAVEMENT SECTION OF THE PARKING LOT TO BE 6" LOWER THAN TOP OF CURB ON EITHER SIDE OF THE CURB. SEE CONCRETE PERMEABLE PAVEMENT DETAIL ON SHEET C082.2.

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APPROVALS DATE

Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Kamal Takla 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis W. Leach 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
TRANSPORTATION DIRECTOR  
John W. 3/30/2021  
PROJECT MANAGER

REVISIONS DATE

REVISIONS	DATE

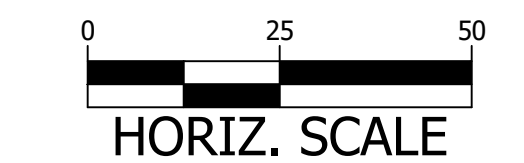
31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

GRADING PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 26 2021

SCALE:



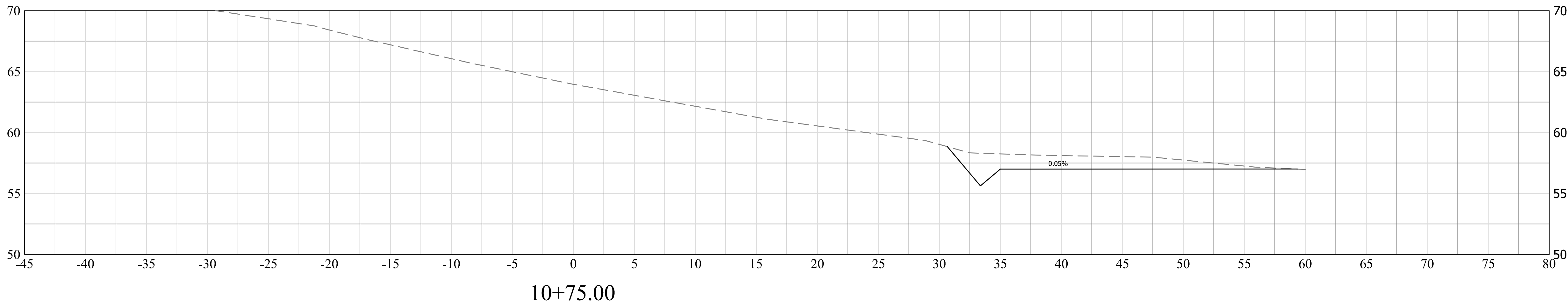
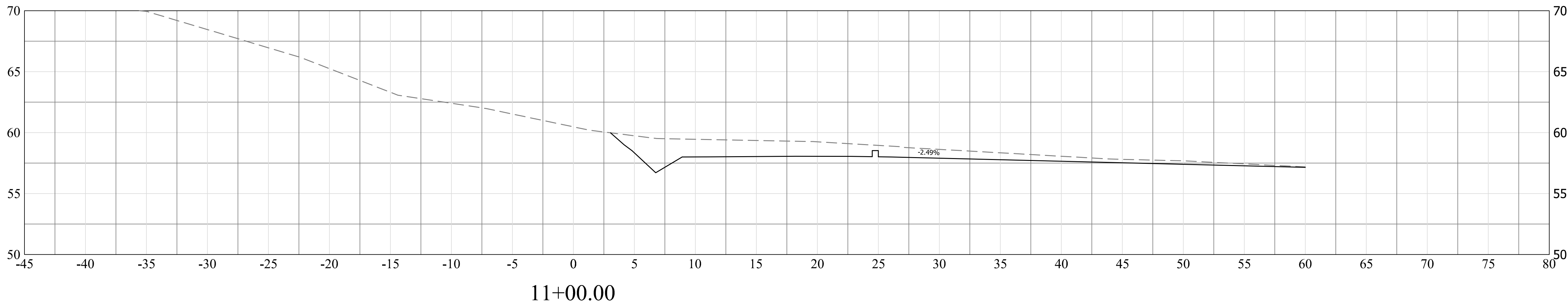
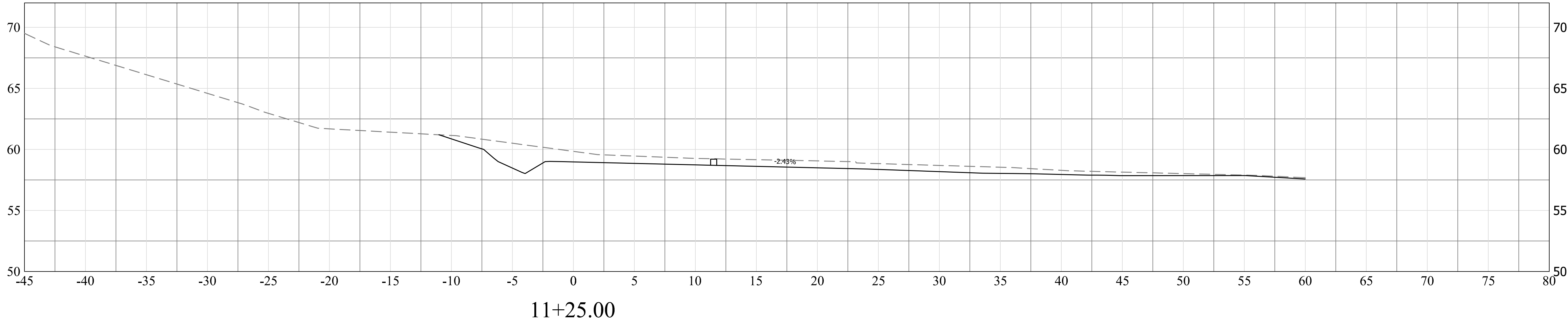
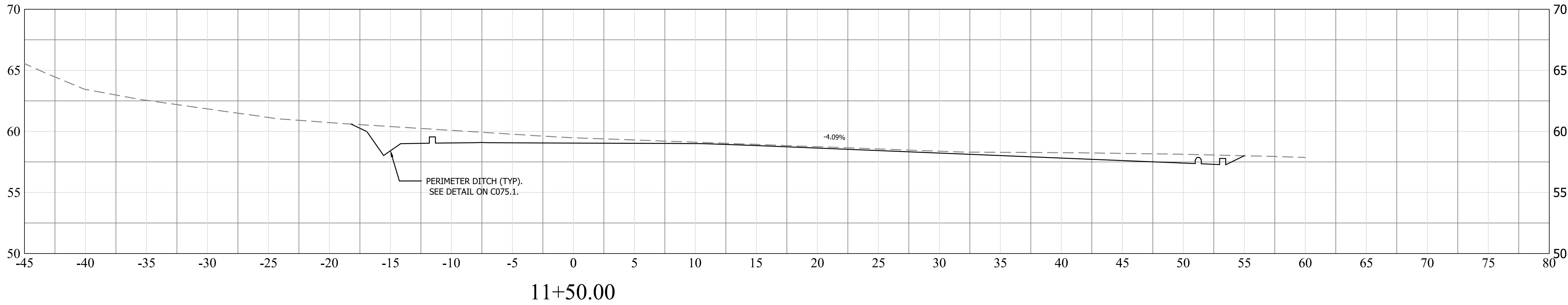
SHEET C041.2

31ST STREET S. PARKING LOT WPB5



REVISED ON 05/23/2018

FILENAME: WPB5-234-CROSS\_SECTIONS.DWG PATH: C:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY

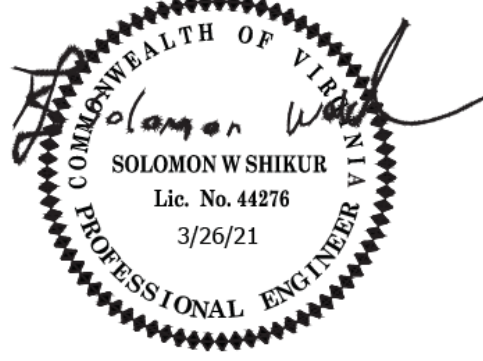


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APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>John M. Leach</i> WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
<i>Dennis W. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John M. Leach</i> PROJECT MANAGER	3/30/2021

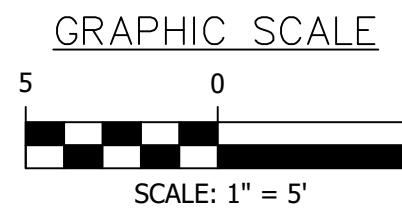
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
CROSS SECTIONS - 1

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

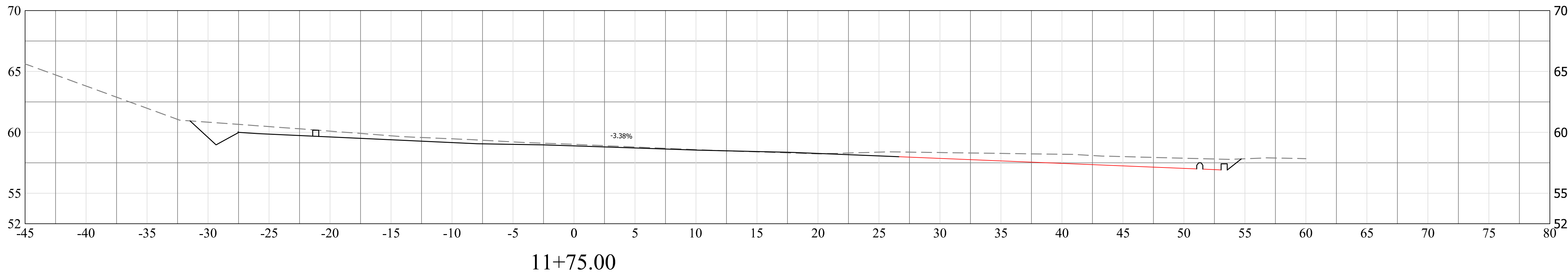
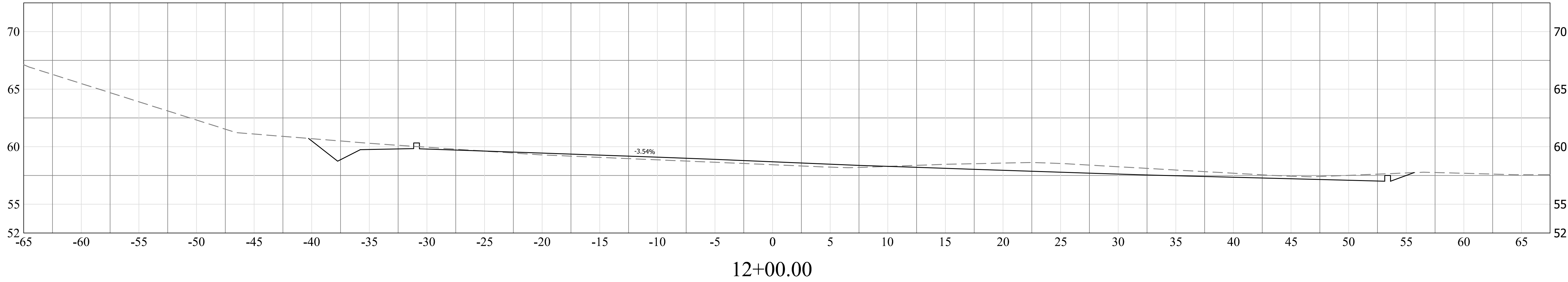
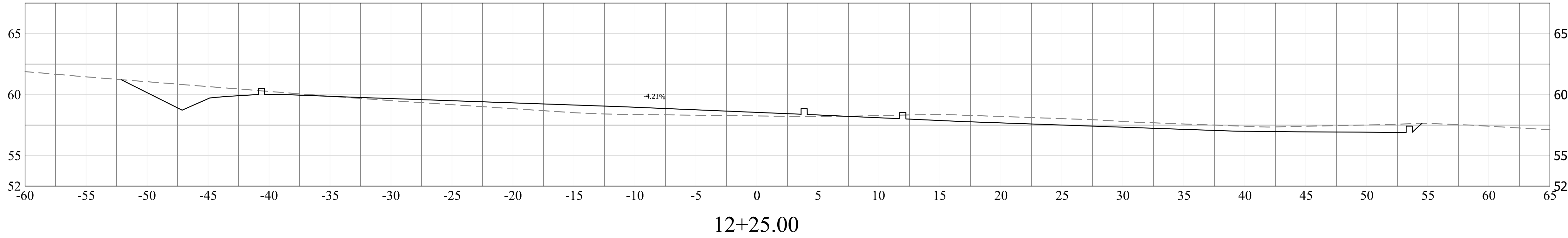
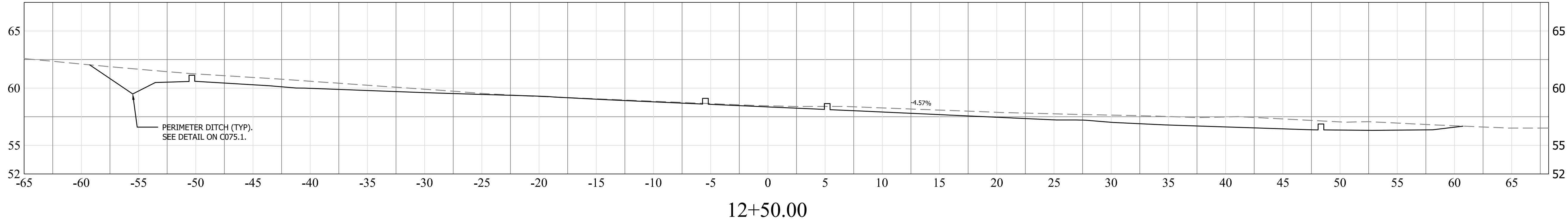


SHEET C044.1



REVISED ON 05/23/2018

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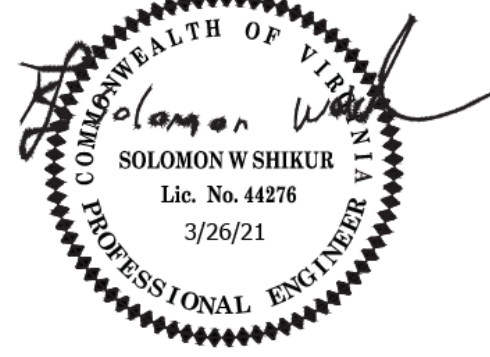


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<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>John M. Leach</i> WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John M. Leach</i> PROJECT MANAGER	3/30/2021

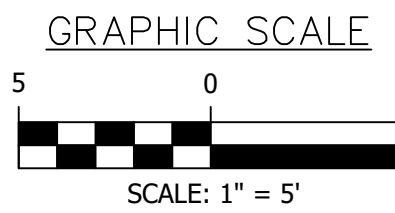
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
CROSS SECTIONS - 2

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

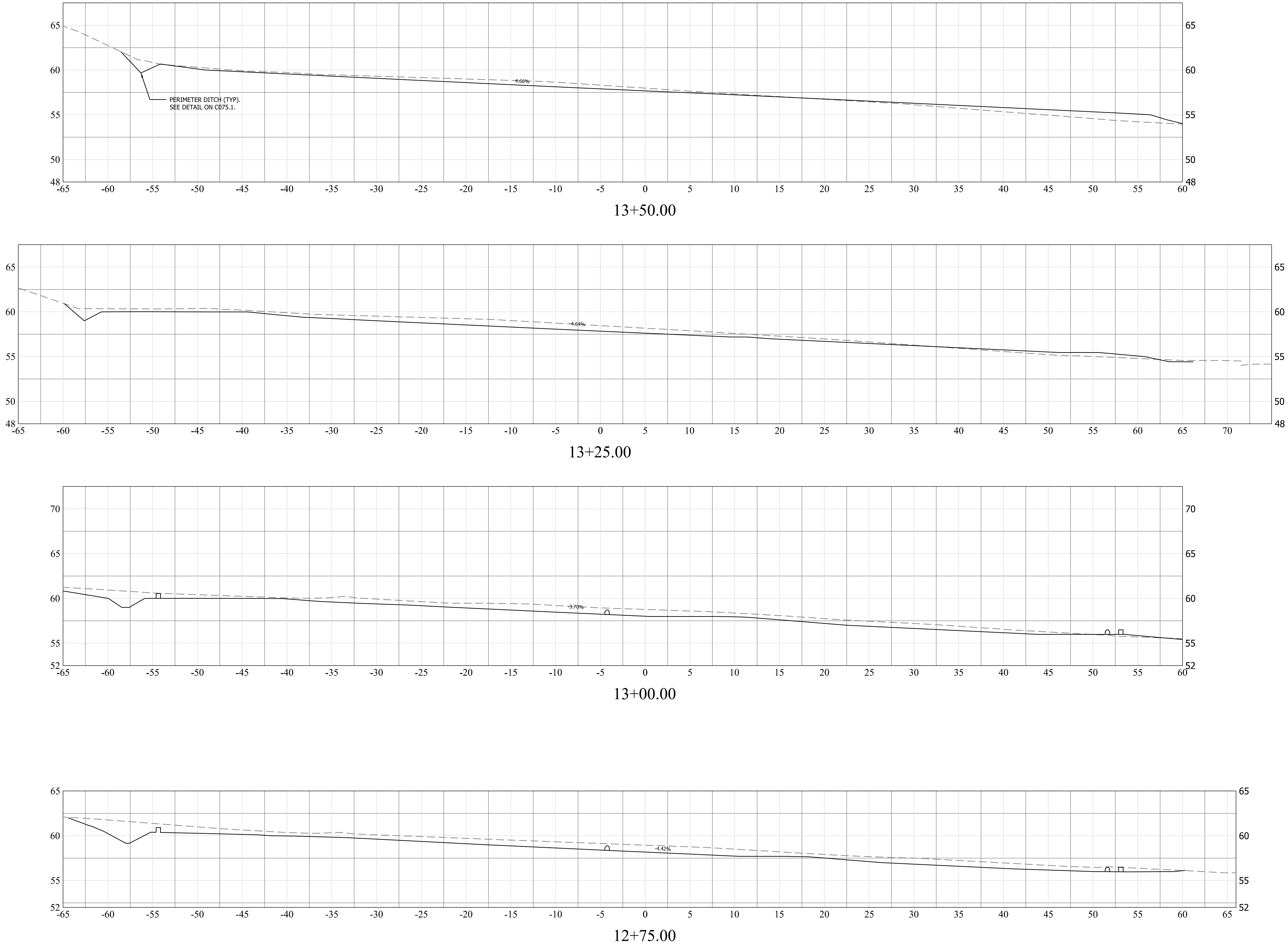


SHEET C044.2



REVISED ON 05/23/2018

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APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>John W. Leach</i> WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John W. Leach</i> PROJECT MANAGER	3/30/2021

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

CROSS SECTIONS - 3

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:  
  
SCALE: 1" = 5'

SHEET

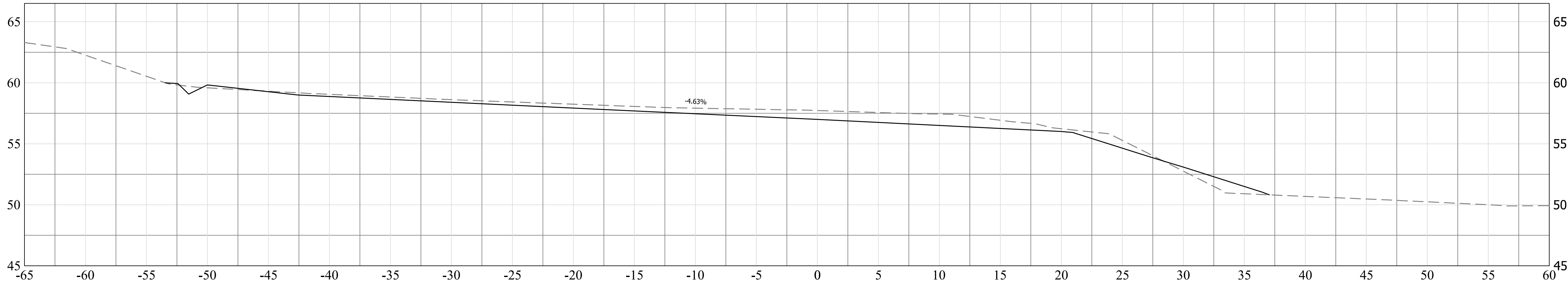
C044.3

31ST STREET S. PARKING LOT WPB5

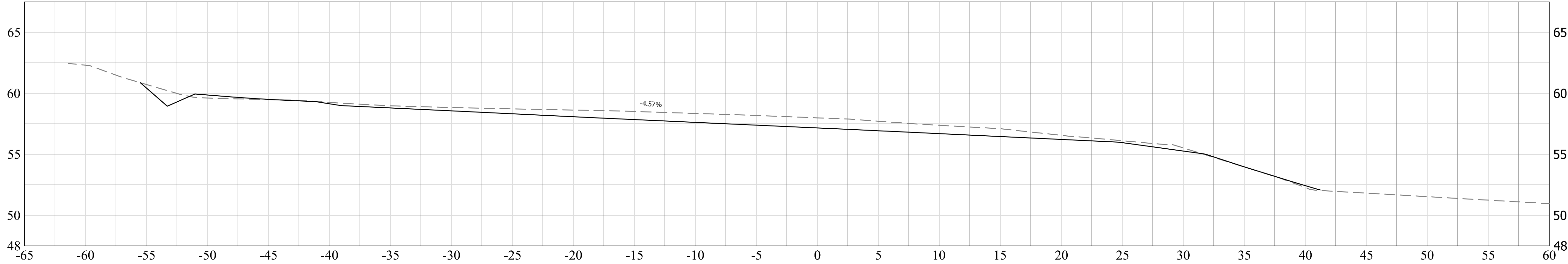


REVISED ON 05/23/2018

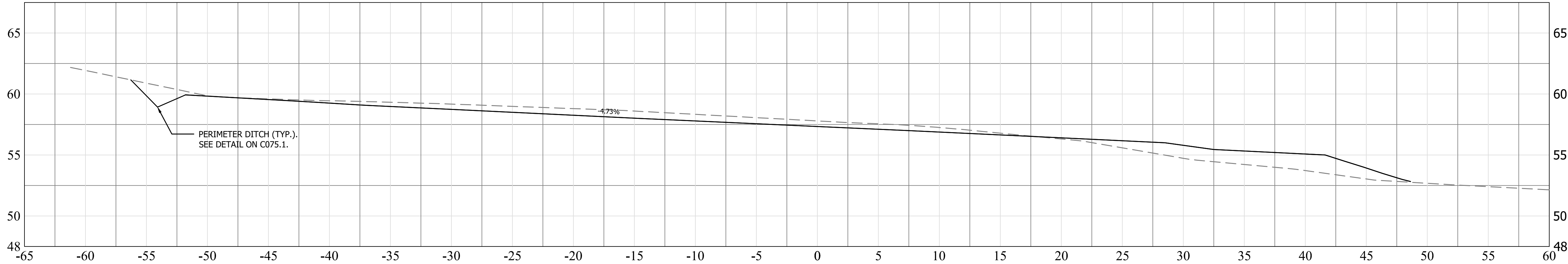
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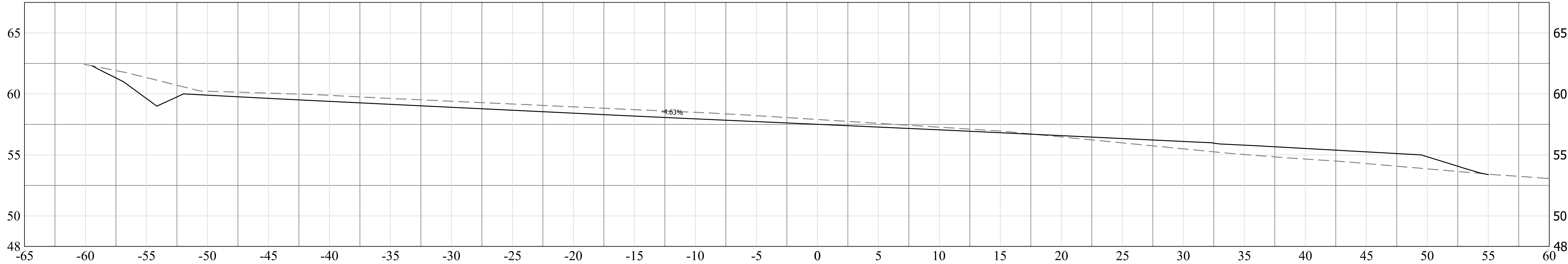
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14+25.00



14+00.00



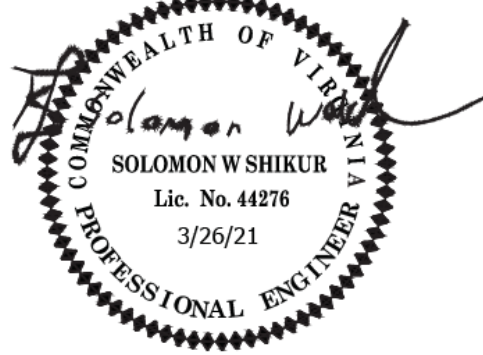
13+75.00

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APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>[Signature]</i> WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
<i>Dennis W. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John Mir</i> PROJECT MANAGER	3/30/2021

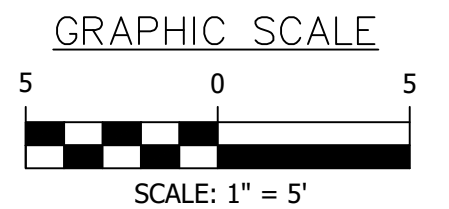
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
CROSS SECTIONS - 4

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

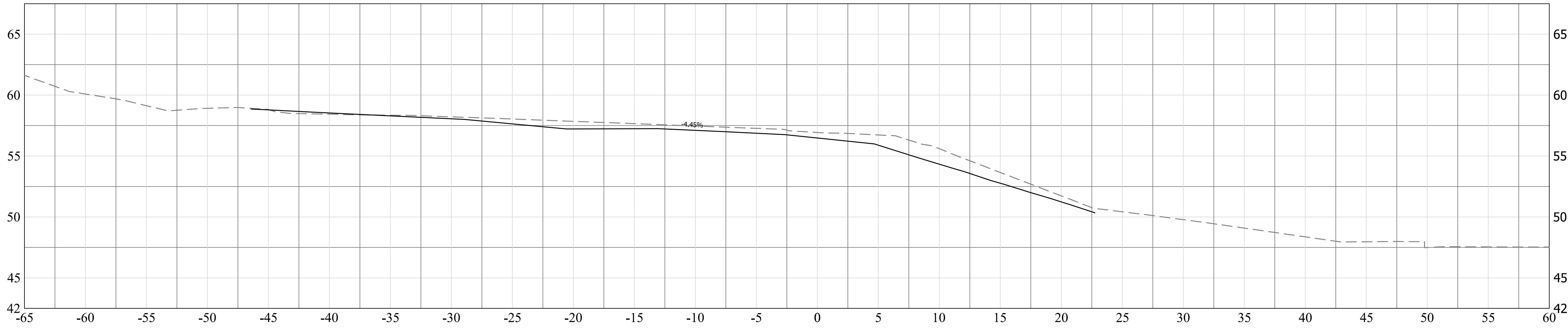


SHEET C044.4

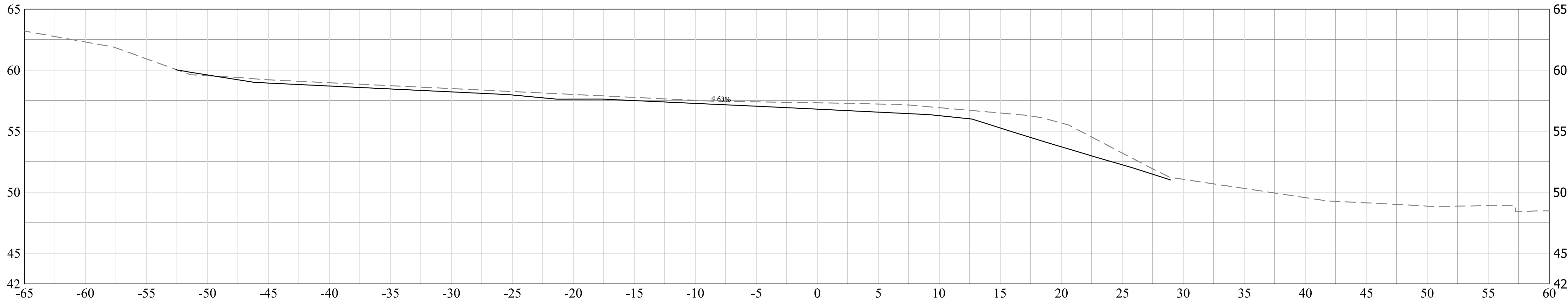


REVISED ON 05/23/2018

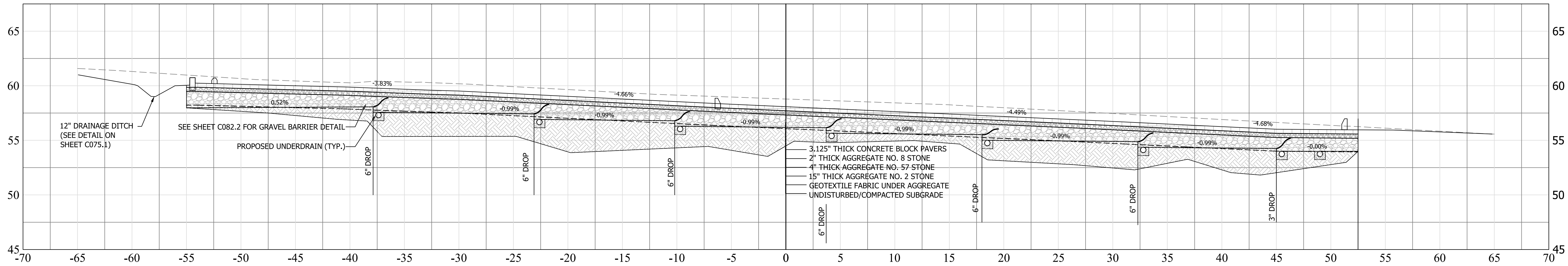
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15+00.00



14+75.00



12+88.44

**TYPICAL PERMEABLE PAVEMENT WITH DETENTION RESERVOIR LAYER**

SEE SHEET C082.2 FOR PERMEABLE PAVEMENT DETAIL

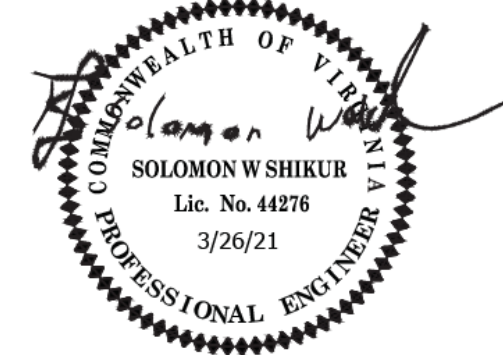
SEE SHEET C083.1 FOR UNDERDRAIN ALIGNMENT

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APPROVALS DATE

<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>John M. Leach</i> WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John M. Leach</i> PROJECT MANAGER	3/30/2021

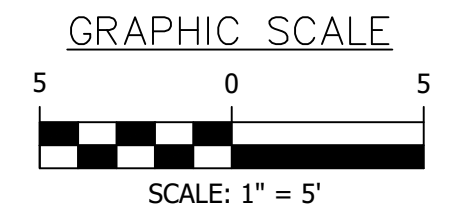
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
CROSS SECTIONS - 5

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

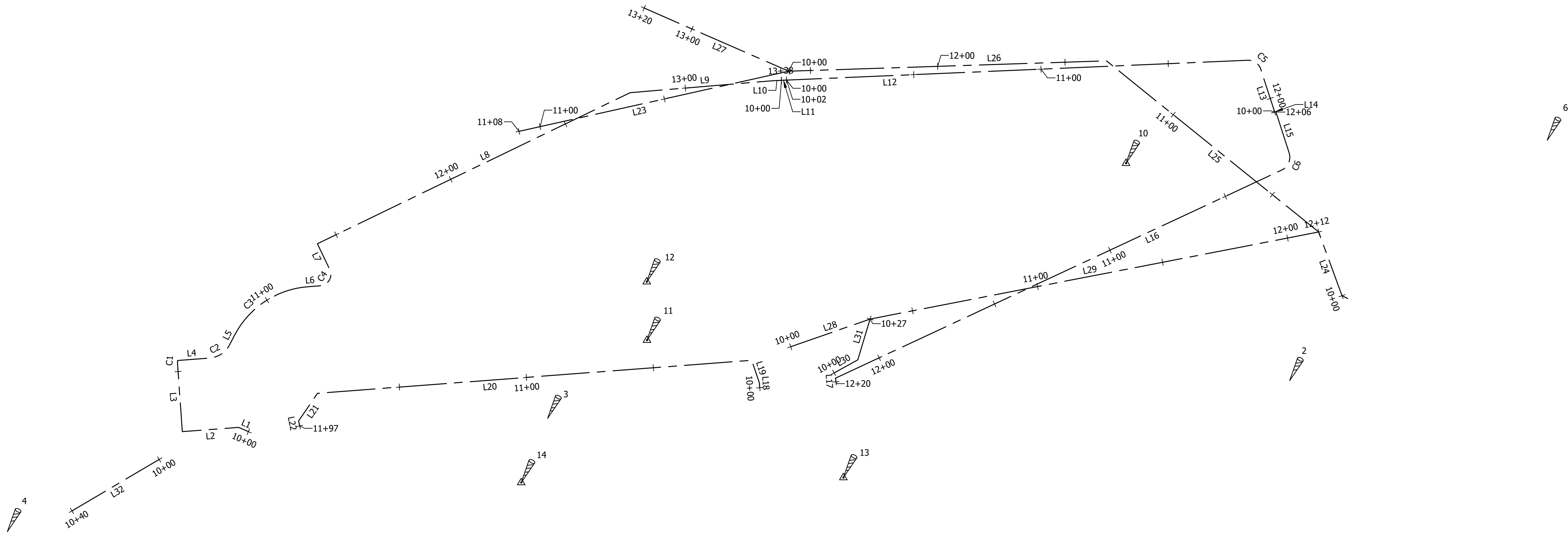
SCALE:



SHEET C044.5

31ST STREET S. PARKING LOT WPB5





ALIGNMENT: PERMEABLE PAVEMENT BACK OF CURB									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
C1	1.29'	5.50'	N2° 40' 58.26"E	1.29'	13° 27' 35"	0.65	10+53.07	10+54.36	6994151.88, 11893917.09
C2	9.63'	9.50'	N56° 36' 59.25"E	9.22'	58° 04' 33"	5.27	10+67.02	10+76.64	6994154.13, 11893929.77
C3	35.98'	35.50'	N56° 36' 58.08"E	34.46'	58° 04' 33"	19.71	10+81.10	11+17.09	6994163.15, 11893939.54
C4	8.75'	4.50'	N29° 56' 13.94"E	7.44'	111° 26' 03"	6.60	11+21.95	11+30.70	6994182.49, 11893973.16
L1	4.20'		N66° 45' 03.49"W				10+00.00	10+04.20	6994125.24, 11893944.92
L2	13.98'		S85° 42' 04.93"W				10+12.37	10+26.35	6994126.28, 11893932.92
L3	26.72'		N4° 02' 49.28"W				10+26.35	10+53.07	6994125.23, 11893918.98
L4	12.65'		N85° 39' 15.51"E				10+54.36	10+67.02	6994153.17, 11893917.15
L5	4.46'		N27° 34' 42.99"E				10+76.64	10+81.10	6994159.20, 11893937.47
L6	4.86'		N85° 39' 15.51"E				11+17.09	11+21.95	6994182.12, 11893968.31
L7	11.17'		N25° 46' 47.62"W				11+30.70	11+41.87	6994188.93, 11893976.87
L8	136.36'		N64° 13' 12.38"E				11+41.87	12+78.23	6994198.98, 11893972.02
L9	56.37'		N85° 12' 38.88"E				12+78.23	13+34.60	6994258.29, 11894094.81
L10	3.28'		N87° 32' 12.31"E				13+34.60	13+37.88	6994263.00, 11894150.98

ALIGNMENT: CONCRETE BARRIER									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L11	2.00'		N87° 32' 12.31"E				10+00.00	10+02.00	6994263.14, 11894154.26

ALIGNMENT: EDGE OF PAVEMENT									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
C5	6.51'	5.00'	S55° 10' 28.62"E	6.06'	74° 34' 38"	3.81	11+81.40	11+87.91	6994271.02, 11894337.49
L12	181.40'		N87° 32' 12.31"E				10+00.00	11+81.40	6994263.22, 11894156.26
L13	17.70'		S17° 53' 09.55"E				11+87.91	12+05.61	6994267.56, 11894342.47

ALIGNMENT: PAVEMENT BACK OF CURB									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
C6	7.96'	5.50'	S23° 34' 15.90"W	7.28'	82° 54' 51"	4.86	10+17.59	10+25.55	6994234.60, 11894353.63
L14	0.50'		N72° 06' 50.45"E				10+00.00	10+00.50	6994250.71, 11894347.90
L15	17.09'		S17° 53' 09.55"E				10+00.50	10+17.59	6994250.87, 11894348.38
L16	193.29'		S65° 00' 06.07"W				10+25.55	12+18.85	6994227.92, 11894350.72
L17	1.47'		S4° 42' 39.43"E				12+18.85	12+20.31	6994146.24, 11894175.53

ALIGNMENT: PERMEABLE PAVEMENT BACK OF CURB - STREET FACING									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L18	2.00'		N4° 27' 44.18"W				10+00.00	10+02.00	6994142.46, 11894145.73
L19	9.28'		N19° 00' 08.74"W				10+02.00	10+11.28	6994144.46, 11894145.58
L20	171.00'		S85° 39' 15.51"W				10+11.28	11+82.28	6994153.24, 11894142.55
L21	13.12'		S34° 16' 08.14"W				11+82.28	11+95.41	6994140.28, 11893972.05
L22	1.99'		S12° 00' 27.24"E				11+95.41	11+97.40	6994129.43, 11893964.66

ALIGNMENT: 20311C TO 20311E									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L23	108.48'		S77° 25' 57.35"W				10+00.00	11+08.48	6994266.71, 11894157.08

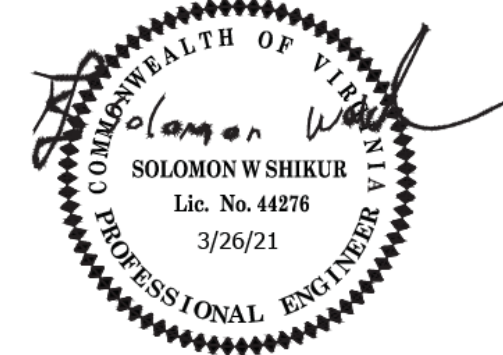
ALIGNMENT: 20311 TO 20311D									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L24	26.66'		N20° 05' 02.36"W				10+00.00	10+26.66	6994178.56, 11894374.36
L25	107.03'		N51° 07' 30.85"W				10+26.66	11+33.69	6994203.60, 11894365.21
L26	124.87'		S88° 08' 08.15"W				11+33.69	12+58.56	6994270.78, 11894281.88
L27	61.92'		N66° 23' 22.58"W				12+58.56	13+20.48	6994266.71, 11894157.08

ALIGNMENT: 20311G TO 20311A									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L28	33.02'		N70° 46' 40.76"E				10+00.00	10+33.02	6994158.55, 11894157.88
L29	179.44'		N79° 01' 07.95"E				10+33.02	12+12.45	6994169.42, 11894189.06

ALIGNMENT: 20311I TO 20311F									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L30	10.60'		N61° 11' 47.56"E				10+00.00	10+10.60	6994148.30, 11894174.93
L31	16.73'		N16° 48' 06.83"E				10+10.60	10+27.33	6994153.41, 11894184.22

ALIGNMENT: 20361A TO 20361									
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)
L32	39.76'		S59° 26' 31.28"W				10+00.00	10+39.76	6994114.32, 11893909.89

SURVEY CONTROL									
1	6,994,406.7340	11,894,638.0330	36.888	TR 1	SMH 9151				
2	6,994,145.2867	11,894,353.8340	47.104	TR 2	SMH 11576				
3	6,994,130.5110	11,894,062.4580	59.965	TR 3	FLY FIREHYD C/L TOP				
4	6,994,086.0000	11,893,850.3101	55.293	TR 4	PP4				
5	6,994,019.4500	11,892,945.0600	33.720	TR 5	PP5				
6	6,994,239.6020	11,894,454.9560	45.269	TR 6	SMH 9152				
10	6,994,230.5597	11,894,289.5675	58.359	TR 10	FLY IPS				
11	6,994,161.1008	11,894,101.4138	57.148	TR 11	FLY IPS				
12	6,994,184.0425	11,894,101.3380	58.069	TR 12	FLY IPS				
13	6,994,107.1754	11,894,178.5663	53.335	TR 13	FLY PK SET				
14	6,994,105.2250	11,894,052.0574	56.861	TR 14	FLY PK SET				



APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>Dennis W. Leach</i> TRANSPORTATION DIRECTOR	04.02.2021
<i>John Mir</i> PROJECT MANAGER	3/30/2021

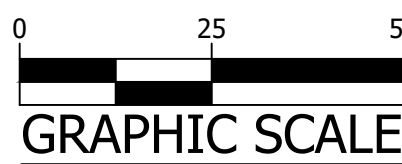
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
GEOMETRIC CONTROL PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

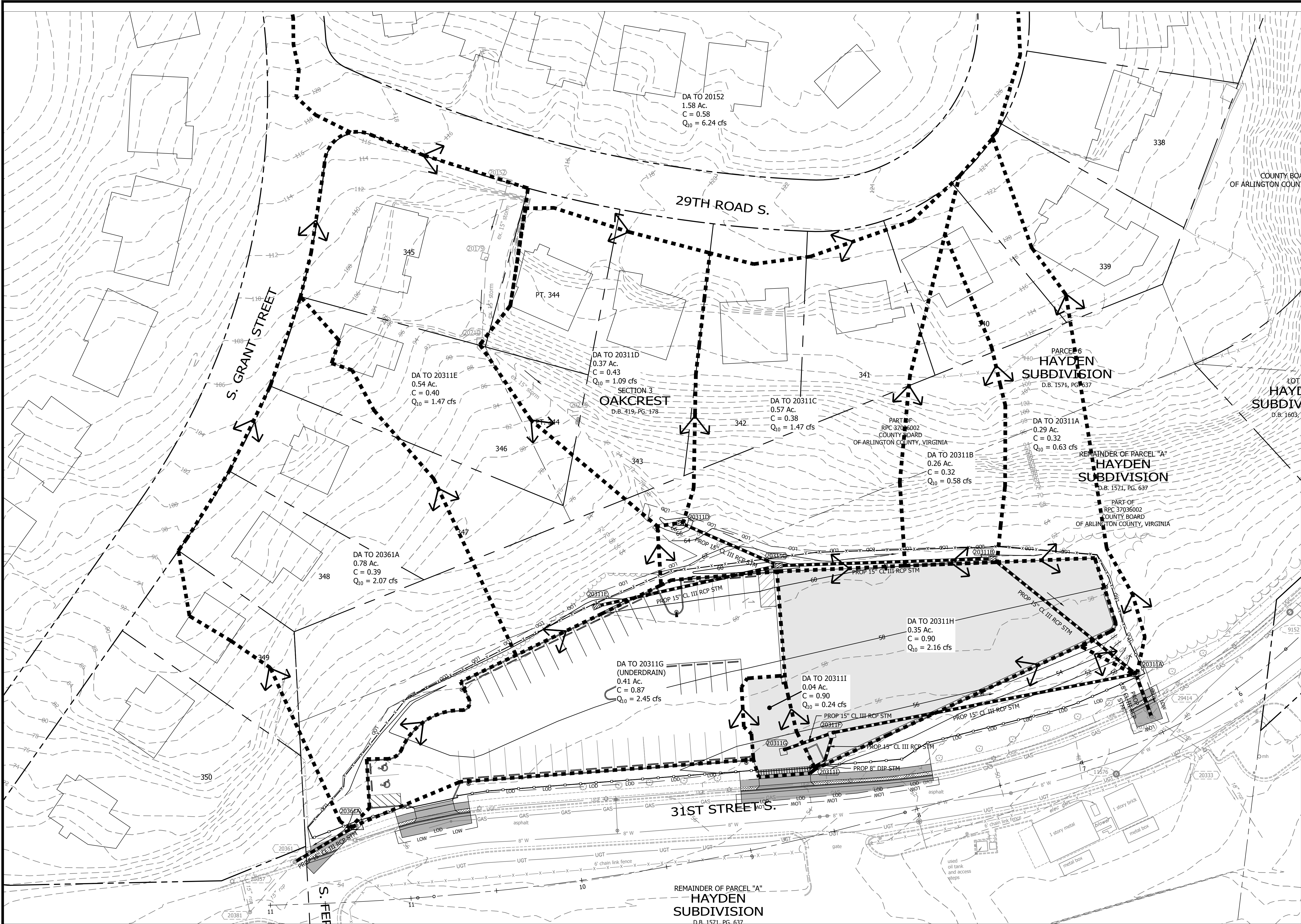
SCALE:





REVISED ON 05/23/2018

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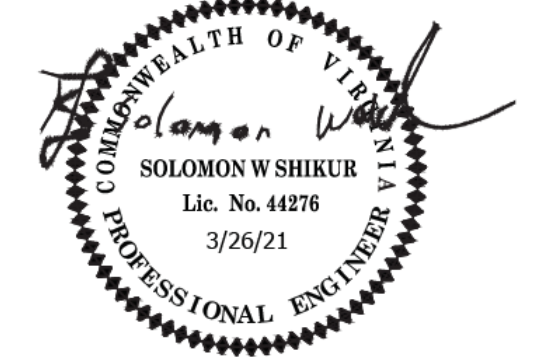


ARLINGTON  
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DEPARTMENT OF  
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FACILITIES & ENGINEERING DIVISION  
ENGINEERING BUREAU  
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SEAL



APPROVALS DATE

Amy Pflaum  
QUALITY CONTROL ENGINEER  
03/26/2021  
Kamal Taktak  
CONSTRUCTION MANAGEMENT SUPERVISOR  
3.30.21  
04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
Dennis W. Leach  
TRANSPORTATION DIRECTOR  
04/09/21  
John Mir  
PROJECT MANAGER  
3/30/2021

REVISIONS DATE

REVISIONS	DATE

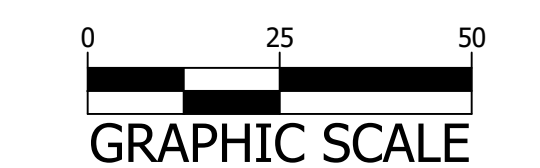
31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

STORM SEWER DRAINAGE DIVIDES

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 26 2021

SCALE:

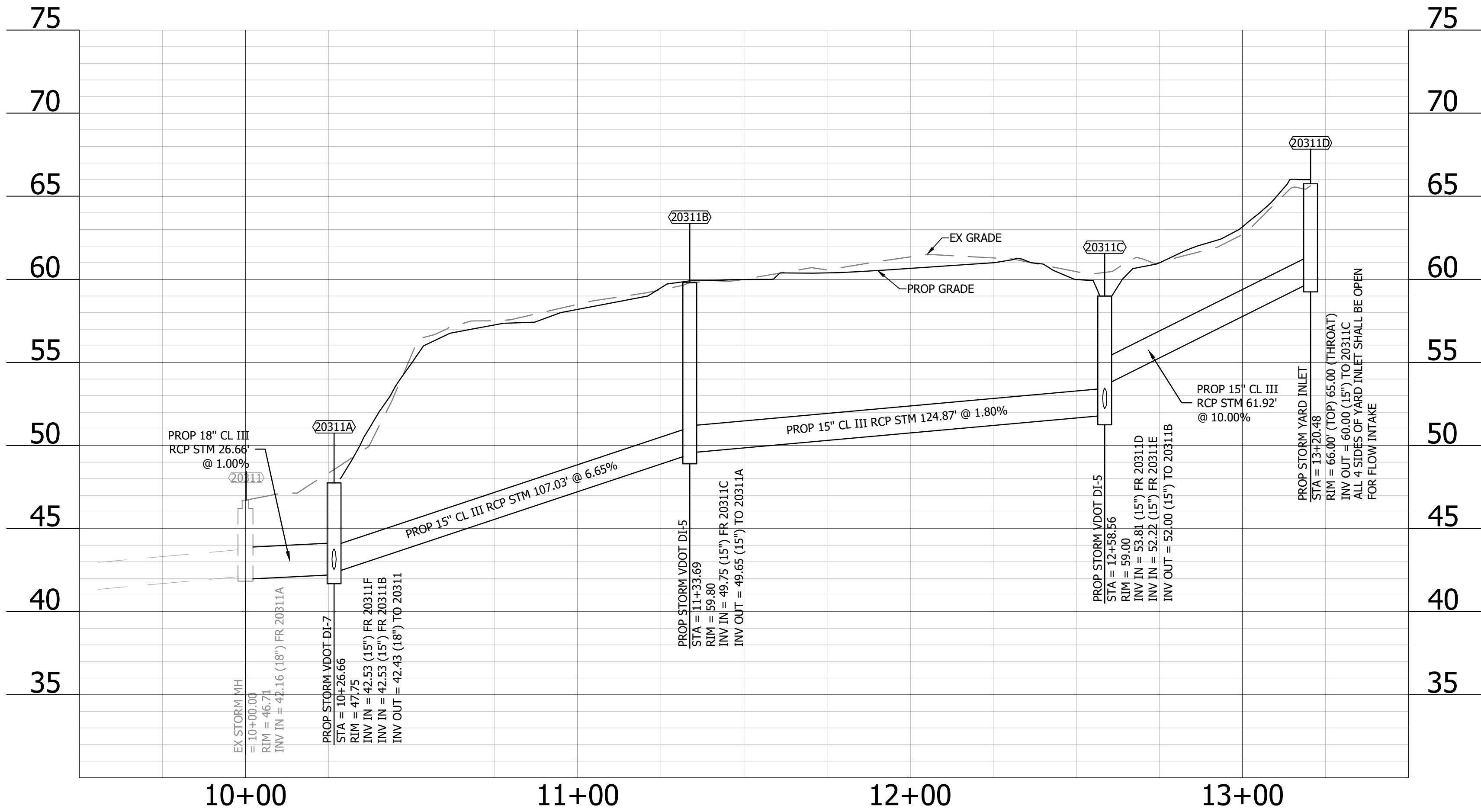


SHEET C071.1

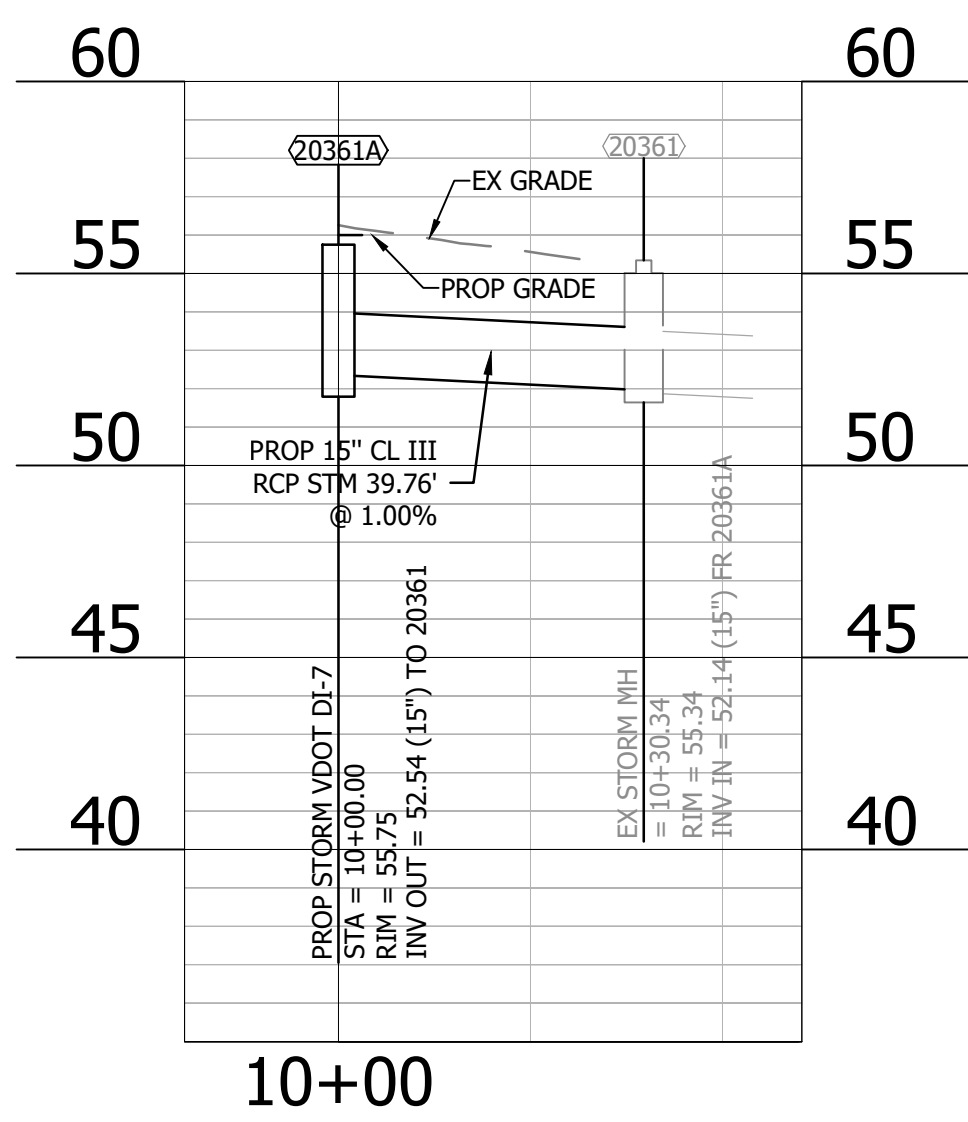
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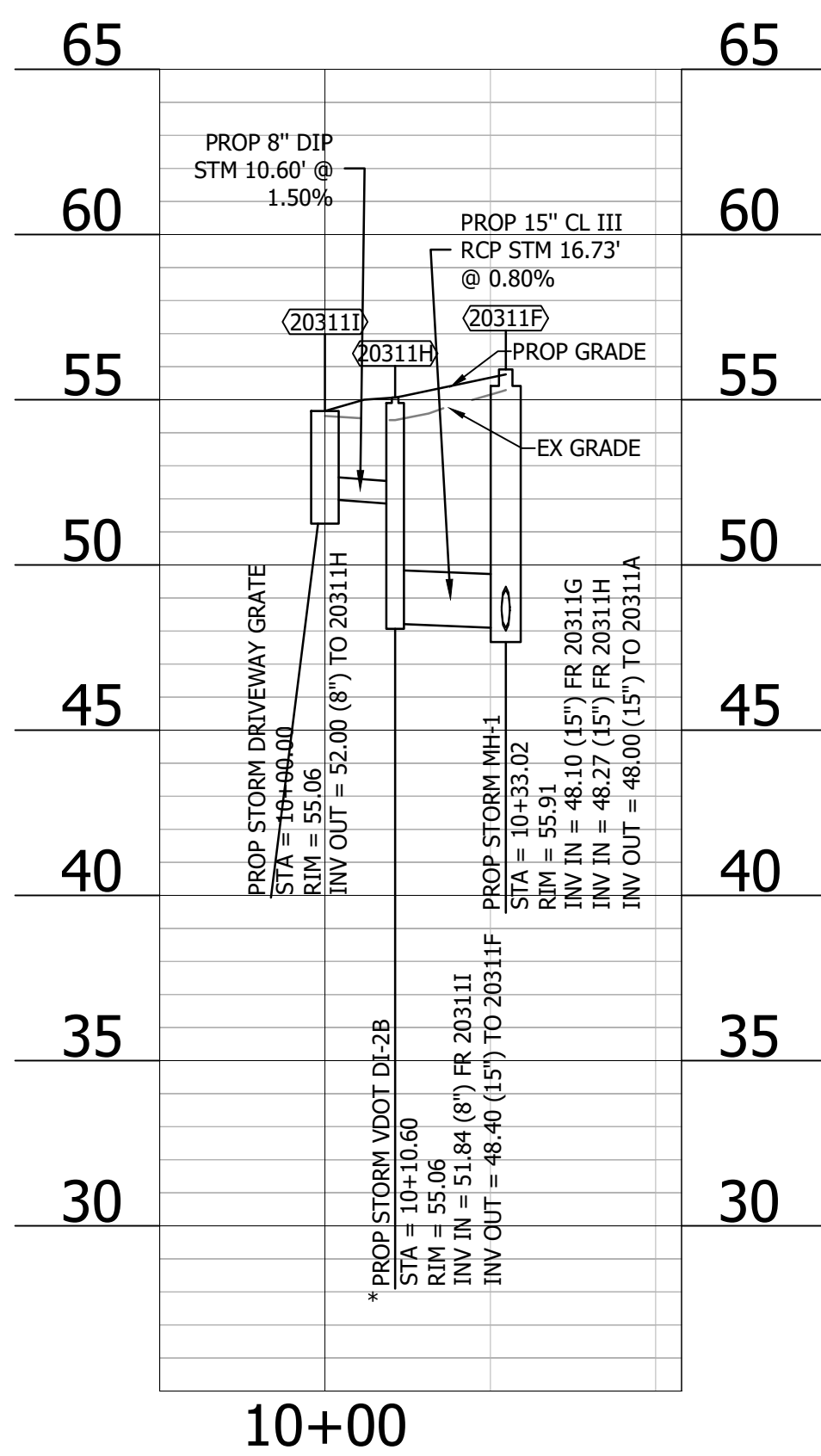
STORM PROFILE 20311 TO 20311D



STORM PROFILE 20361A TO 20361

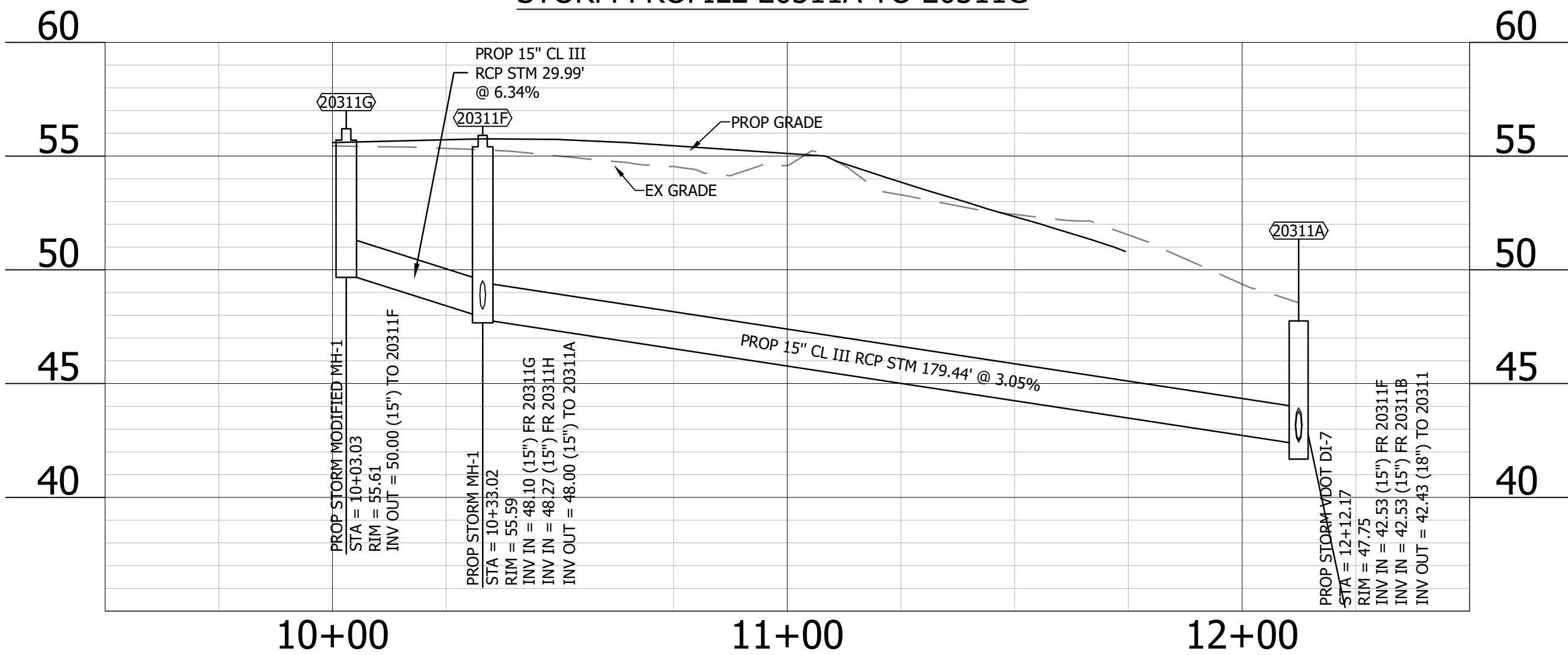


STORM PROFILE 20311I TO 20311F

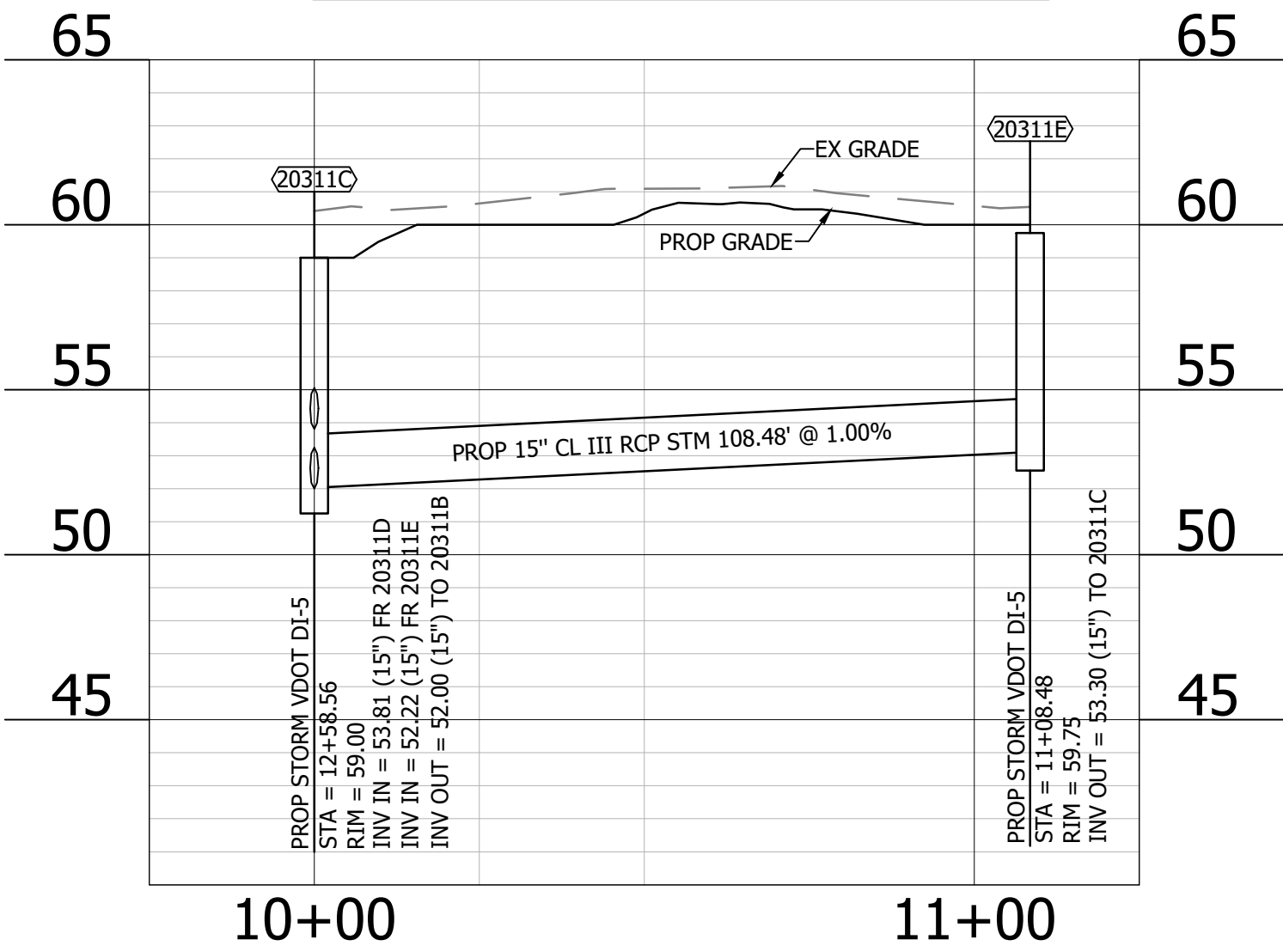


\*SEE DETAIL ON SHEET C082.2 FOR THE CONNECTION OF THE DI-2B TOP WITH THE STORMWATER MANAGEMENT BMP CONCRETE VAULT.

STORM PROFILE 20311A TO 20311G



STORM PROFILE 20311C TO 20311E

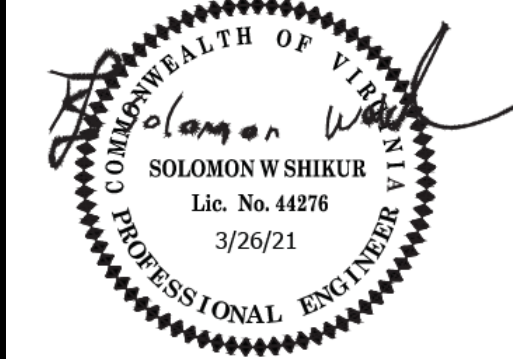


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SEAL



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Kamal Takla 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis M. Leach 04/02/2021  
WATER, SEWER, STREETS BUREAU CHIEF  
John M. 04/09/21  
TRANSPORTATION DIRECTOR  
John M. 3/30/2021  
PROJECT MANAGER

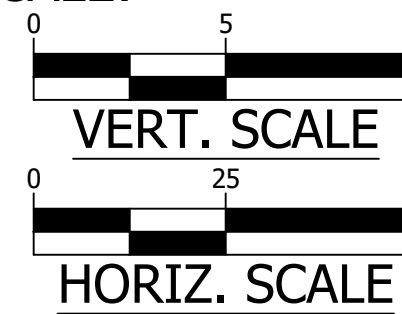
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
STORM SEWER PROFILES

DESIGNED: MAC  
DRAWN: MAC  
CHECKED: AM

PLOTTED: JULY 19 2021

SCALE:



SHEET C073.1



YARD INLET CAPACITY CALCULATION

YARD INLET YI-1 CAPACITY CALCULATION FOR STRUCTURE 20311D

TEN YEAR PEAK FLOW TO STRUCTURE = Q<sub>10</sub> = 6.24 CFS

YARD INLET OPENING (L)= 4' OPENING ON ALL 4 SIDES = 16 FT

CONSIDER A CONSERVATIVE SENARIO WHERE HAF THE OPENING ARE BLOCKED 16\*0.5 = 8 FT

USING SIMPLE WEIR FORMULA:

Q = 3.2\* $\sqrt{L}$ \*H<sup>3/2</sup>

SOLVING FOR H:

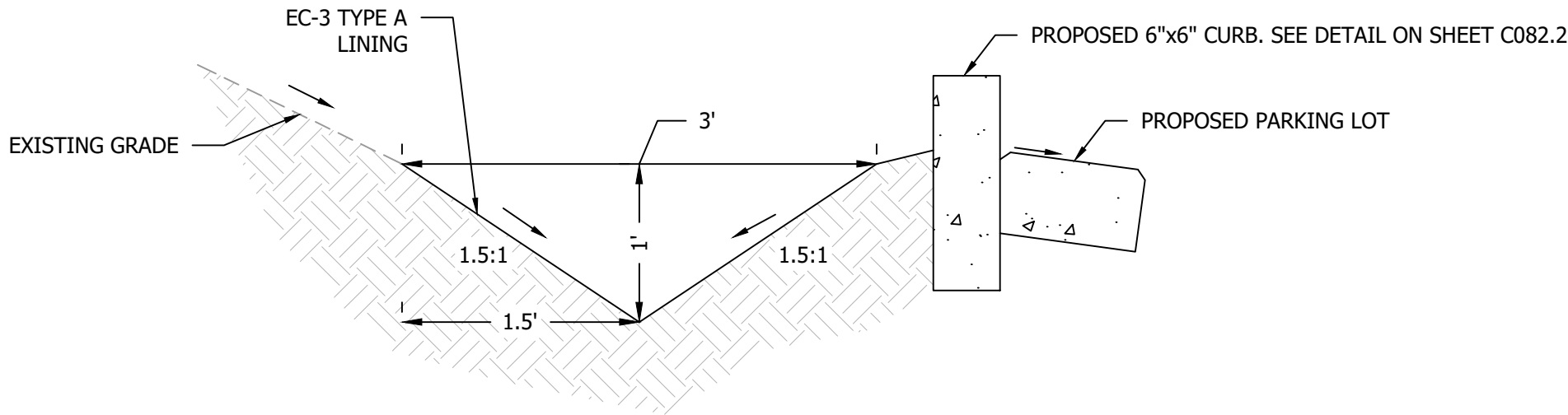
H = (Q / 3.2\*L)<sup>2/3</sup>

H = (6.24 CFS/3.2\*8)<sup>2/3</sup>

H = 0.39 FT

THEREFORE, THE PROPOSED STRUCTURE CAN PASS THE 10 YEAR PEAK FLOW DRAINING TO IT WITH OUT OVERFLOWING.

TYPICAL PERIMETER DITCH CROSS SECTION



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

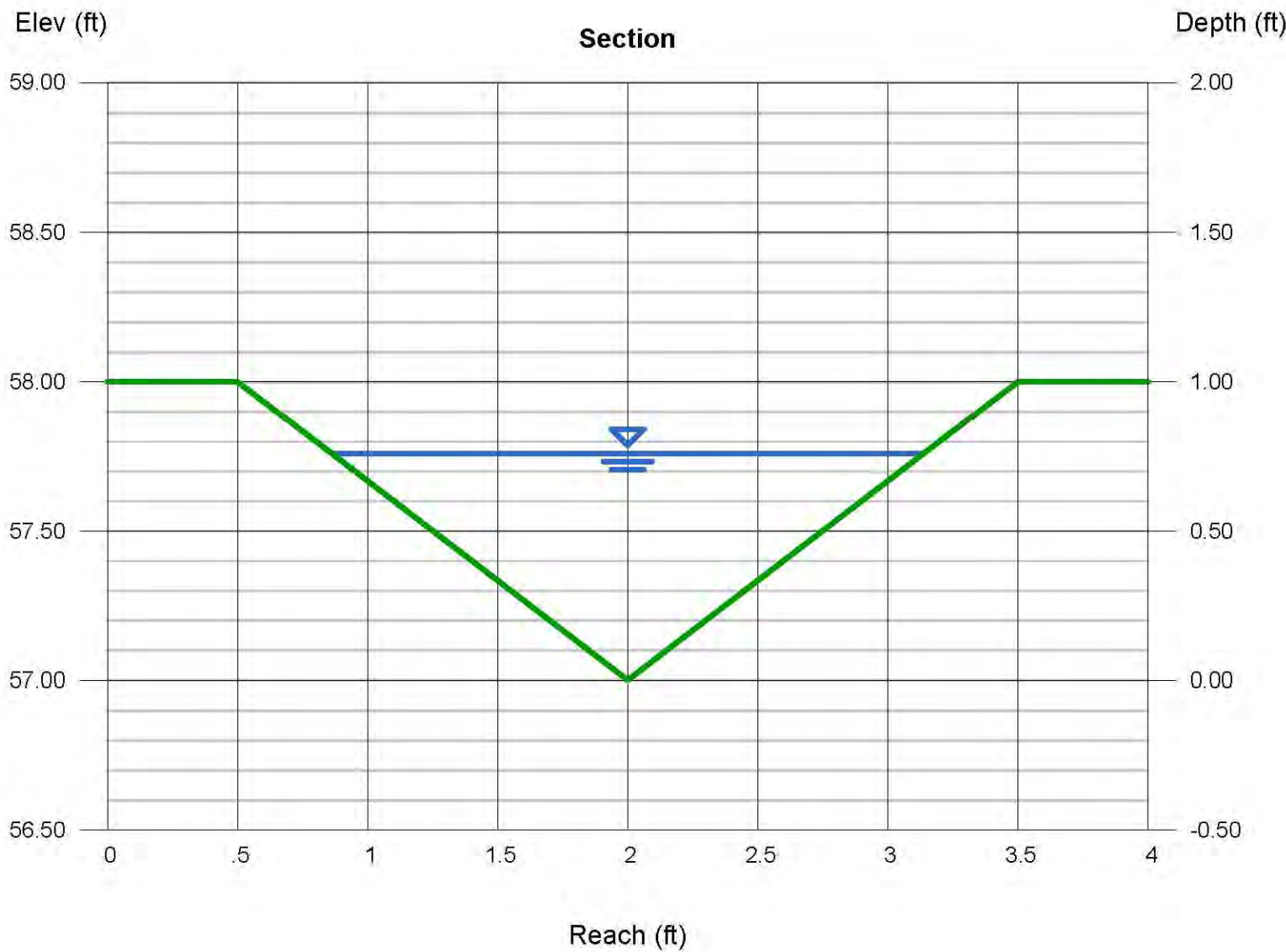
Monday, Jan 11 2021

Perimeter Ditch Section C1-C1

**Triangular**  
Side Slopes (z:1) = 1.50, 1.50  
Total Depth (ft) = 1.00  
  
Invert Elev (ft) = 57.00  
Slope (%) = 1.50  
N-Value = 0.035

**Highlighted**  
Depth (ft) = 0.76  
Q (cfs) = 2.070  
Area (sqft) = 0.87  
Velocity (ft/s) = 2.39  
Wetted Perim (ft) = 2.74  
Crit Depth, Yc (ft) = 0.66  
Top Width (ft) = 2.28  
EGL (ft) = 0.85

**Calculations**  
Compute by: Known Q  
Known Q (cfs) = 2.07



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

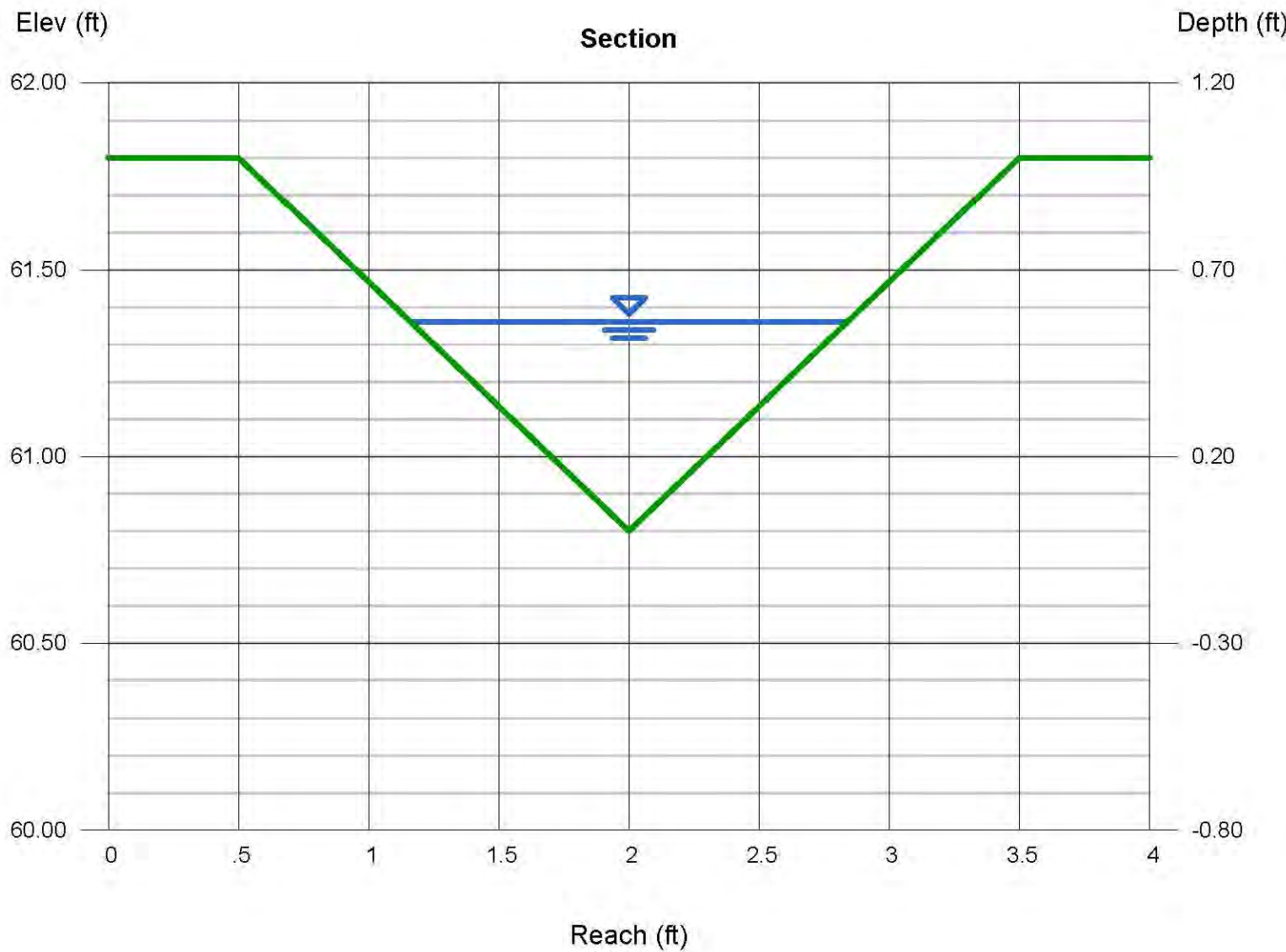
Monday, Jan 11 2021

Perimeter Ditch Section C2-C2

**Triangular**  
Side Slopes (z:1) = 1.50, 1.50  
Total Depth (ft) = 1.00  
  
Invert Elev (ft) = 60.80  
Slope (%) = 4.00  
N-Value = 0.035

**Highlighted**  
Depth (ft) = 0.56  
Q (cfs) = 1.470  
Area (sqft) = 0.47  
Velocity (ft/s) = 3.13  
Wetted Perim (ft) = 2.02  
Crit Depth, Yc (ft) = 0.57  
Top Width (ft) = 1.68  
EGL (ft) = 0.71

**Calculations**  
Compute by: Known Q  
Known Q (cfs) = 1.47



Storm Inlet Computations Sheet

Inlet				Flow								Curb Inlet												Grate Inlets				Yard Inlets				Operation					
Number	Type	Length (R)	Station	Drainage Area (Acres)	C	CA	I (In/Hr)	Q Incr (CFS)	Q Carryover (CFS)	QT (CFS)	S Gutter Slope (R/R)	Sx Crossslope (R/R)	T (Spread)	W (R)	W/T	Sw (R/R)	Sw/Sx	E0	Local Depression (in)	a (in)	S'w	Se (ft/R)	n Value	LT (R)	L/LT	d(FT)	T Spread @ Sag (R)	Perimeter (R)	Area (SF)	H Flow Depth (ft)	Q/L	h Throat Height (R)	H Flow Depth (R)	H/h	E(%)	Q <sub>i</sub> Intercepted (CFS)	
20311A	DI-7	....		0.29	0.32	0.09	5.21	0.48	0.00	0.48																			6.00	9.00	0.14					100%	0.48
20311B	DI-5	....		0.26	0.32	0.08	5.21	0.43	0.00	0.43																			6.33	9.99	0.05					100%	0.43
20311C	DI-5	....		0.57	0.38	0.22	5.21	1.13	0.00	1.13																			6.33	9.99	0.10					100%	1.13
20311D	YI-1	5		0.37	0.43	0.16	5.21	7.07	0.00	7.07																						1.41	0.50	0.48	0.96	100%	7.07
20311E	DI-5	....		0.54	0.40	0.22	5.21	1.13	0.00	1.13																			6.33	9.99	0.10					100%	1.13
20311F	MH-1																																				
20311H	DI-2B	6.85		0.35	0.90	0.32	5.21	1.64	0.00	1.64	Sag	0.020		2.00	0.00	0.050	2.50	1.00	0.0		0.72	0.03	0.05	0.012		0.23									100%	1.64	
20311I	DI-5	....		0.04	0.90	0.04	5.21	0.19	0.00	0.19																			33.00	90.00	0.03					100%	0.19
20311G	MH-1																																				
20361A	DI-7	....		0.78	0.39	0.30	5.21	1.59	0.00	1.59																			6.00	9.00	0.23					100%	1.59

Storm Sewer Design Computations

From Point	To Point	Area Drain "A"		Runoff Coefficient		CA		Inlet Time Min	Rainfall In/Hr	Runoff Q CFS	Invert Elevations		Length Ft	Slope %	Dia In	Capacity CFS	Velocity FPS	Flow Time Min	Remarks
		Acres	C	Incremental	Accumulative	Incremental	Accumulative				Upper End	Lower End							
20311A	20311	0.29	0.32	0.09	1.48	5.0	4.63	15.53	42.43	42.16	26.659	42.16	26.659	1.01%	18	10.57	8.83	0.05	
20311B	20311A	0.26	0.32	0.08	0.67	5.0	4.68	9.40	49.65	42.53	107.032	42.53	107.032	6.65%	15	16.66	7.77	0.23	
20311C	20311B	0.57	0.38	0.22	0.59	5.0	4.74	9.04	52.00	49.75	124.868	49.75	124.868	1.80%	15	8.67	7.82	0.28	
20311D	20311C	0.37	0.43	0.16	0.16	5.0	5.21	7.07*	60.00	53.81	62.000	53.81	62.000	9.98%	15	20.40	10.73	0.18	
20311E	20311C	0.54	0.40	0.22	0.22	5.0	5.21	1.13	53.30	52.22	108.478	52.22	108.478	1.00%	15	6.44	2.14	1.97	
20311F	20311A	0.00	0.00	0.00	0.71	0.0	5.09	6.05	48.00	42.53	179.948	42.53	179.948	3.04%	15	11.26	5.36	0.60	
20311H	20311F	0.35	0.90	0.32	0.35	5.0	5.13	1.80	48.40	48.27	13.333	48.27	13.333	0.98%	15	6.38	3.03	0.15	
20311I	20311H	0.04	0.90	0.04	0.04	5.0	5.21	0.19	52.00	51.84	10.603	51.84	10.603	1.51%	8	1.61	2.61	0.33	
20311G	20311F	0.41	0.87	0.36	0.36	0.0	0.00	2.45	50.00	48.10	29.218	48.10	29.218	6.50%	15	16.47	3.30	0.24	
20361A	20361	0.78	0.39	0.30	0.30	5.0	5.21	1.59	52.54	52.14	39.765	52.14	39.765	1.01%	15	6.48	2.88	0.51	

\*UPSTREAM CONTRIBUTING FLOW (6.24 CFS) FROM STRUCTURE 20152 HAS BEEN ADDED TO THE DRAINAGE AREA TO STRUCTURE 20311D. SEE C071.1 FOR STORM SEWER DRAINAGE AREA DIVIDES AND FLOWS.

Hydraulic Grade Line Computations

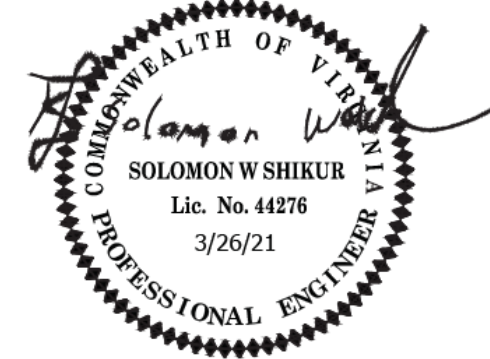
Inlet Structure	Upstream Structure	Outlet Water Surface Elev. (R)	Do (In)	Qo (CFS)	Lo (R)	Sfo (%)	Hf (R)	Junction Loss										1.3 Ht (R)	0.5 Ht (R)	Final H (R)	Inlet Water Surface Elev. (R)	Rim Elev. (R)
								Vo (R/S)	Ho (R)	Q	Vi (R/s)	QVi	V12/2g (R)	H1 (R)	Angle (deg)	H Del (R)	Ht (R)					
20311																					43.61	
20311A		45.97	18	15.53	26.659	2.19%	0.58	8.88	0.31					0.32		0.32	0.95	0.00	0.47	1.06	47.03	47.75
	20311B	15								9.40	7.66	72.00	0.91	0.32	31.04	0.32	0.36					
	20311F	15								6.05	4.93	29.83	0.38	0.13	82.06	0.25	0.67					
20311B		47.03	15	9.40	107.032	2.12%	2.27	7.66	0.23					0.35		0.43	1.01	0.00	0.51	2.77	51.16	59.80
	20311C	15								9.04	8.02	72.50	1.00	0.35	40.74	0.43	0.43					
20311C		51.16	15	9.04	124.868	1.96%	2.45	8.02	0.25					1.24		1.08	2.57	0.00	1.28	3.73	54.88	60.00
	20311D	15								7.07	15.11	106.83	3.55	1.24	25.48	1.08	0.30					
	20311E	15								1.13	1.14	1.29	0.02	0.01	10.70	0.00	0.14					
20311D		54.88	15	7.07	62.000	1.20%	0.74	15.11	1.06								1.06	0.00	0.53	1.27	61.53	66.00
20311F		47.03	15	6.05	179.948	0.88%	1.58	4.93	0.09					0.04		0.05	0.18	0.00	0.09	1.67	49.09	55.91
	20311H	15								1.80	2.44	4.39	0.09	0.03	55.51	0.05	0.53					
	20311G	15								2.45	2.61	6.39	0.11	0.04	0.00	0.00	0.00					
20311H		49.27	15	1.80	13.333	0.08%	0.01	2.44	0.02					0.05		0.06	0.14	0.18	0.09	0.10	49.49	55.11
	20311I	8								0.19	3.08	0.59	0.15	0.05	38.85	0.06	0.42					
20311I		49.49	8	0.19	10.603	0.08%	0.01	3.08	0.04								0.04	0.06	0.03	0.04	51.84	54.66
20311E		54.88	15	1.13	108.478	0.03%	0.03	1.14	0.01								0.01	0.01	0.00	0.04	54.92	59.75
20311G		49.09	15	2.45	29.218	0.14%	0.04	2.61	0.03								0.03	0.00	0.02	0.06	51.02	56.20

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PROJECT MANAGER

REVISIONS

DATE

31ST STREET S. PARKING LOT  
WPB5

BETWEEN S. FERN STREET AND S. EADS STREET

STORM COMPUTATIONS

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

N/A

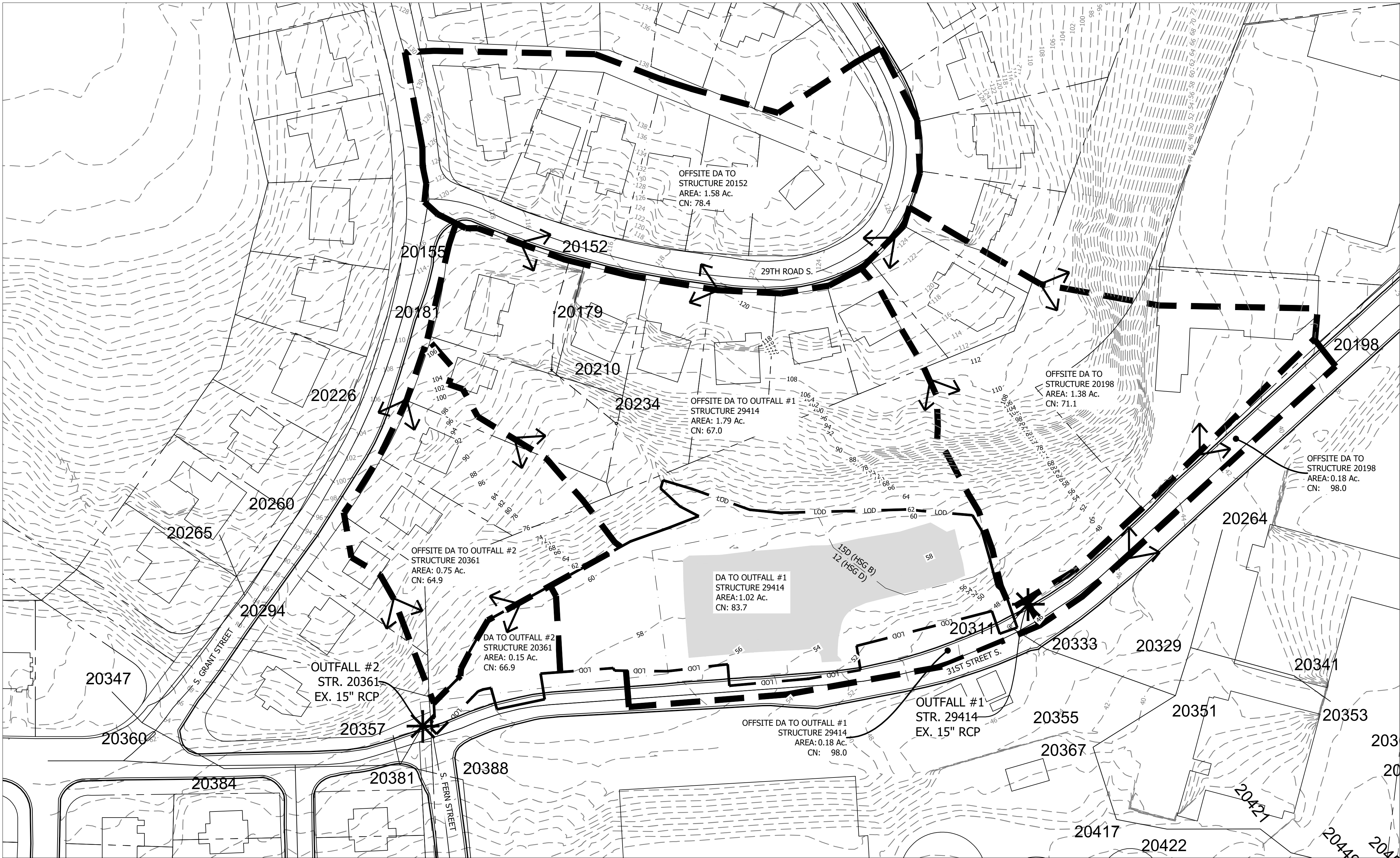
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C075.1

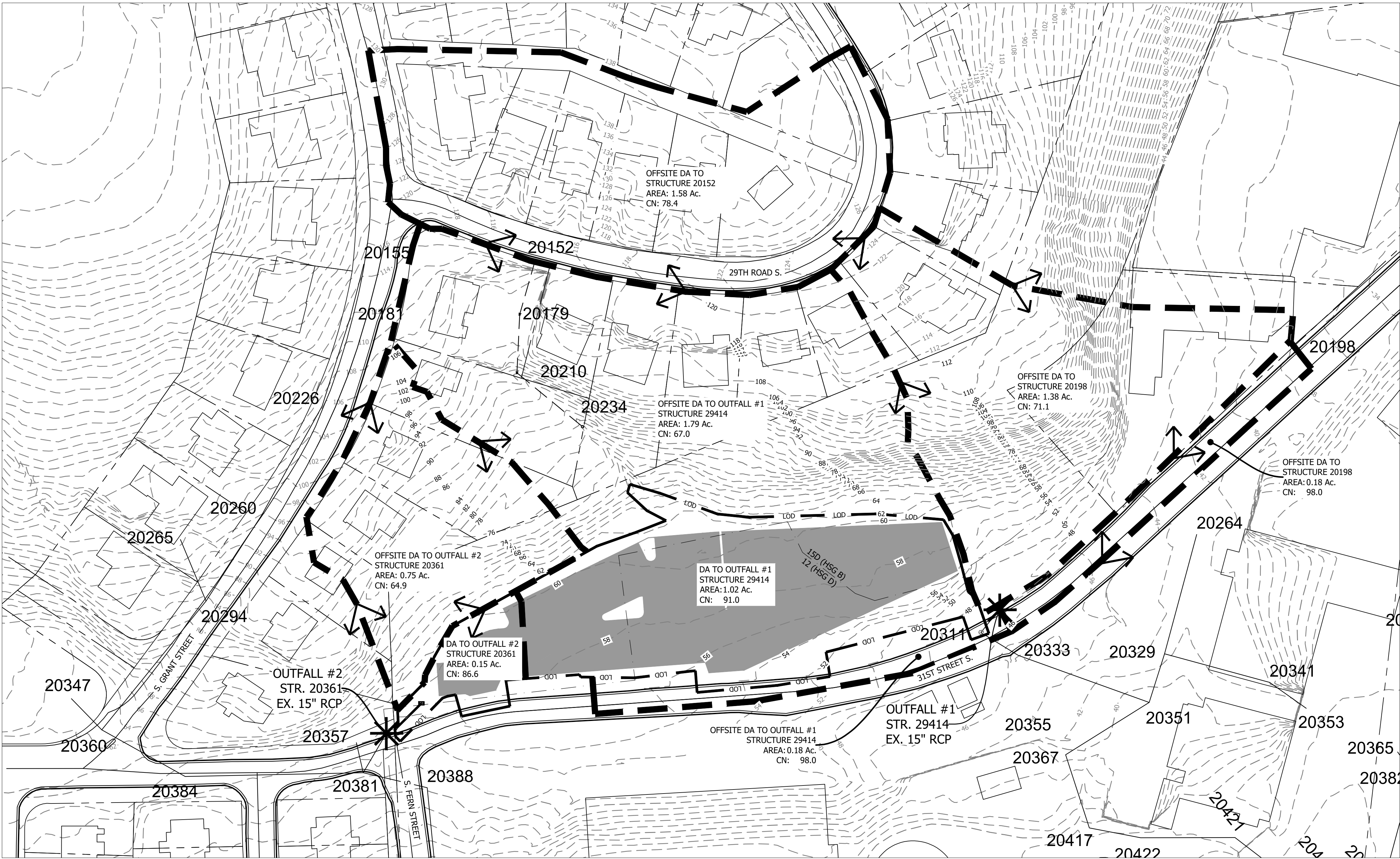


REVISED ON 05/23/2018

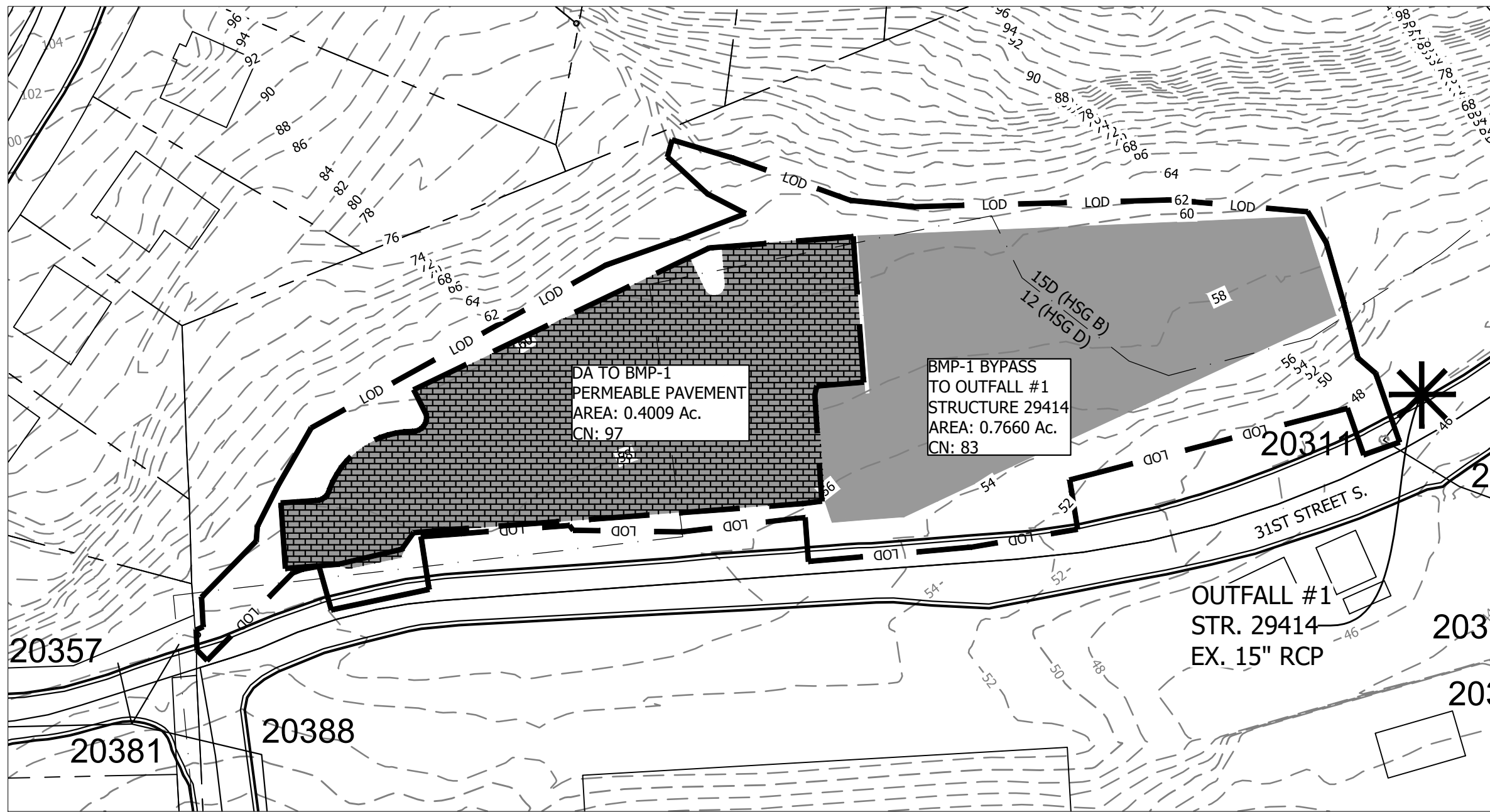
FILENAME: WPB5-254\_SWM\_DIVIDES\_AND\_COMPS.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SEUCKLEY







PROPOSED DRAINAGE AREA MAP TO OUTFALL 1 AND 2



PROPOSED SWM BMP DRAINAGE AREA MAP

DRAINAGE AREA MAP LEGEND

- LIMITS OF DISTURBANCE LOD LOD
- SOIL BOUNDARY
- DRAINAGE DIVIDE
- PROPOSED IMPERVIOUS AREA
- PROPOSED PERMEABLE PAVEMENT
- OUTFALL
- EXISTING STORM STRUCTURE IDENTIFIER 20388

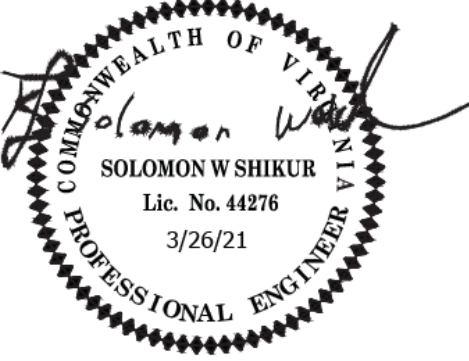
NOT FOR CONSTRUCTION  
THIS SHEET FOR CALCULATION PURPOSES ONLY

ARLINGTON  
VIRGINIA

DEPARTMENT OF  
ENVIRONMENTAL SERVICES  
FACILITIES & ENGINEERING DIVISION  
ENGINEERING BUREAU  
2100 CLARENDON BOULEVARD, SUITE 813  
ARLINGTON, VA 22201  
PHONE: 703.228.3629  
FAX: 703.228.3606

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SEAL



APPROVALS DATE

Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Ramel Taktak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis M. Leach 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
TRANSPORTATION DIRECTOR  
John Min 3/30/2021  
PROJECT MANAGER

REVISIONS DATE

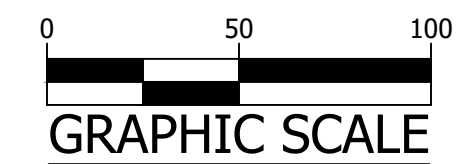
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
PROPOSED STORMWATER MANAGEMENT  
DRAINAGE AREA MAP

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:



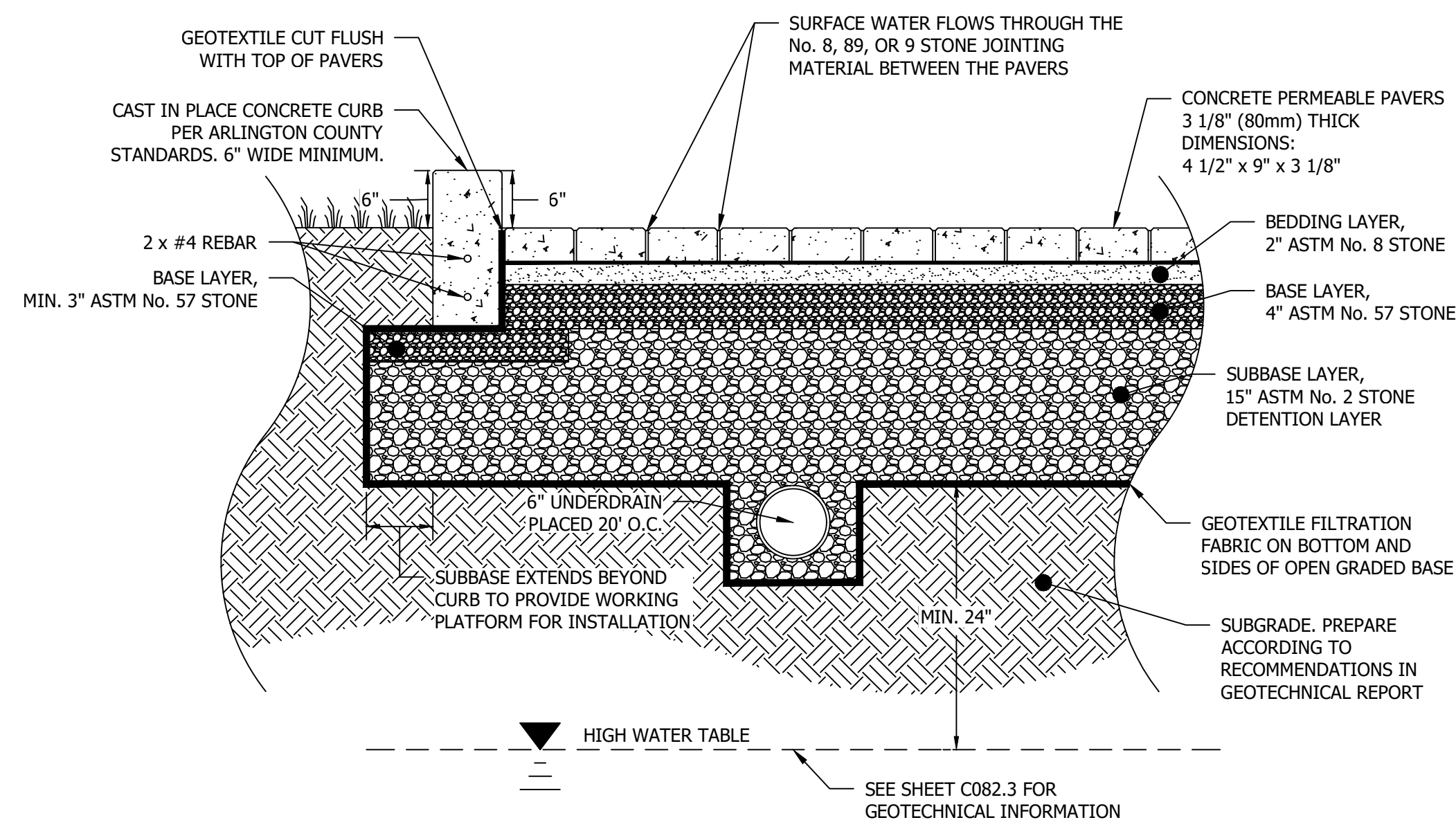
SHEET C081.2





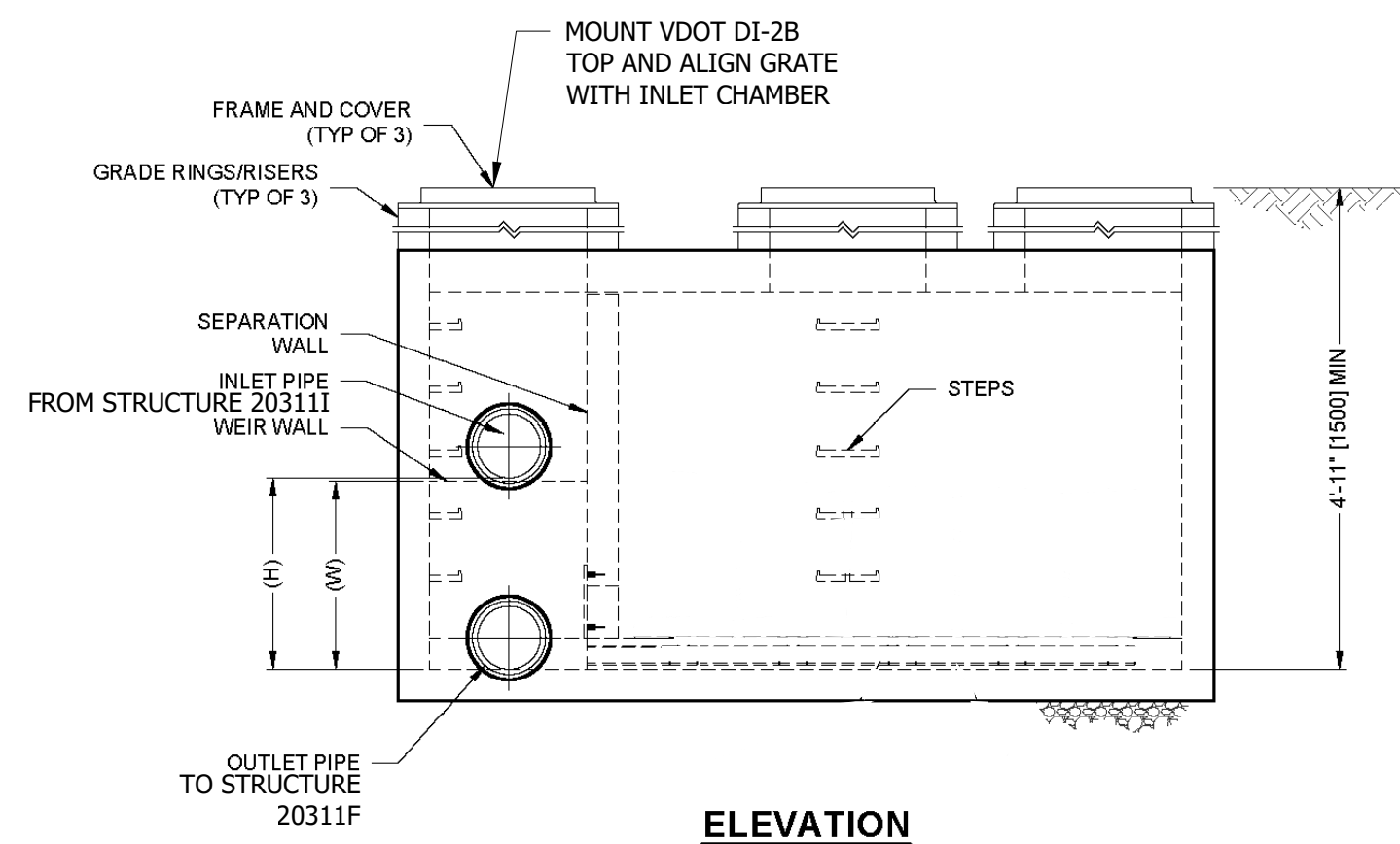
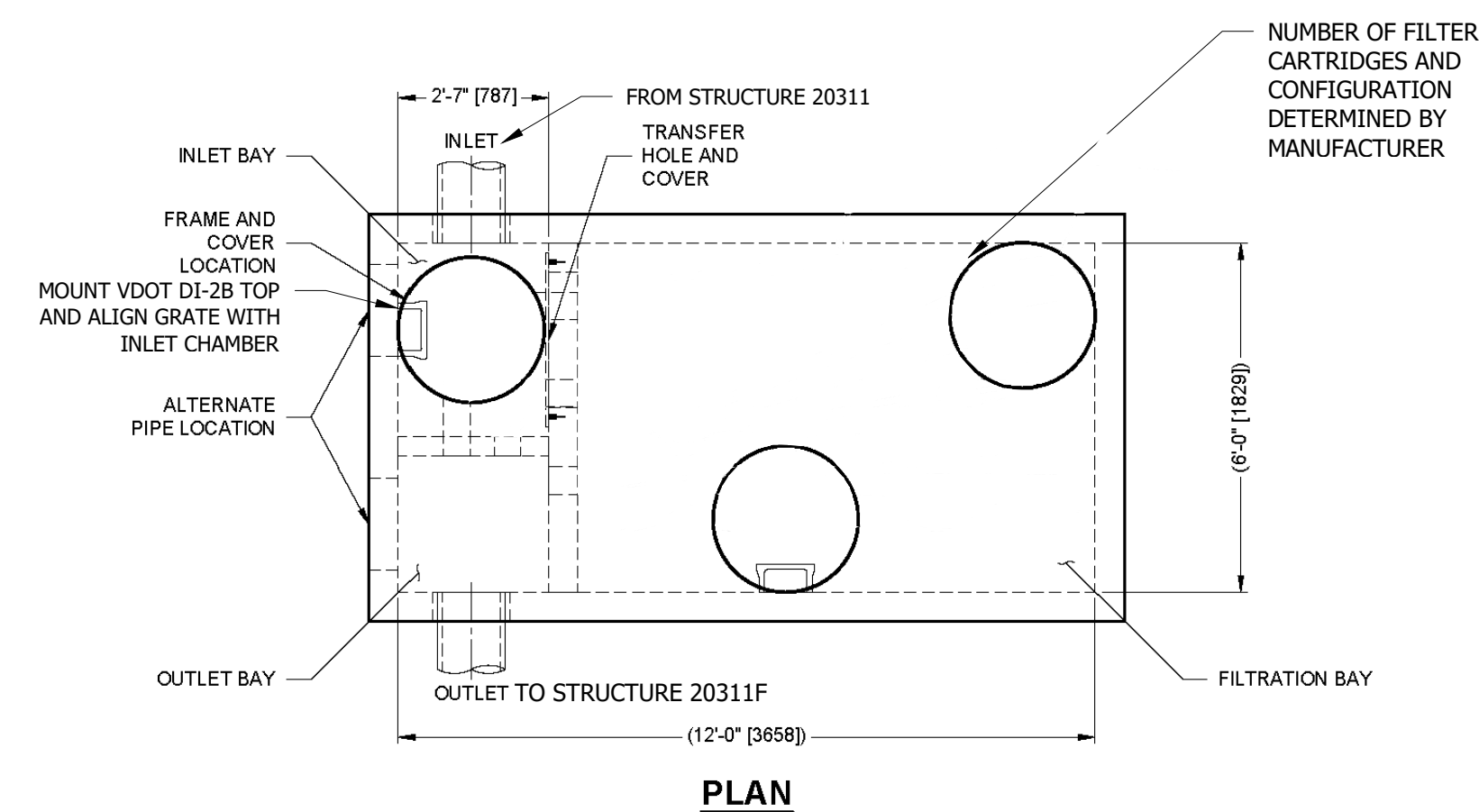
<b>Maintenance Task</b>	<b>Frequency<sup>1</sup></b>
<ul style="list-style-type: none"> <li>For the first 6 months following construction, the practice and contributing drainage area should be inspected at least twice after storm events that exceed 1/2 inch of rainfall. Conduct any needed repairs or stabilization.</li> </ul>	After installation
<ul style="list-style-type: none"> <li>Mow grass in grid paver applications</li> </ul>	At least 1 time every 1-2 months during the growing season
<ul style="list-style-type: none"> <li>Stabilize the CDA to prevent erosion</li> <li>Remove any soil or sediment deposited on pavement.</li> <li>Replace or repair any necessary pavement surface areas that are degenerating or spalling</li> </ul>	As needed
<ul style="list-style-type: none"> <li>Vacuum pavement with a standard street sweeper to prevent clogging</li> </ul>	2-4 times per year (depending on use)
<ul style="list-style-type: none"> <li>Conduct a maintenance inspection</li> <li>Spot weeding of grass applications</li> </ul>	Annually
<ul style="list-style-type: none"> <li>Remove any accumulated sediment in pre-treatment cells and inflow points</li> </ul>	Once every 2 to 3 years
<ul style="list-style-type: none"> <li>Conduct maintenance using a regenerative street sweeper</li> <li>Replace any necessary joint material</li> </ul>	If clogged

<sup>1</sup> Required frequency of maintenance will depend on pavement use, traffic loads, and surrounding land use.



- NOTES:
1. DEPTH OF SUBBASE SUBJECT TO SITE SPECIFIC HYDRAULIC AND STRUCTURAL REQUIREMENTS.
  2. PAVER DIMENSIONS SUBJECT TO ASPECT AND PLAN RATIO REQUIREMENTS BASED ON TRAFFIC LOADING.
  3. GEOTECHNICAL ENGINEER NEEDS TO BALANCE STRUCTURAL STABILITY AND SOIL INFILTRATION WHEN RECOMMENDING SUBGRADE CONDITIONS.
  4. WHEN THE FILTRATION GEOTEXTILE IS USED, VERIFY WITH THE MANUFACTURER THAT THE MATERIAL IS NOT SUBJECT TO CLOGGING AND MEETS REQUIREMENTS OF AASHTO M-288.
  5. ASTM NO. 2 STONE MAY BE SUBSTITUTED WITH No. 3 OR No. 4 STONE.
  6. STRICTLY PEDESTRIAN APPLICATIONS MAY SUBSTITUTE BASE/SUBBASE LAYERS WITH ONE 6" BASE LAYER OF ASTM No. 57 STONE.

## CONCRETE PERMEABLE PAVER DETAIL



### TYPICAL MANUFACTURED FILTERING DEVICE DETAIL

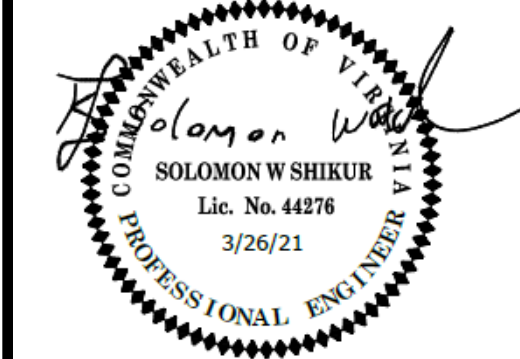
SELECTED MANUFACTURED TREATMENT DEVICE SHALL BE STORMFILTER OR APPROVED EQUAL AND SHALL HAVE A 50% PHOSPHORUS REMOVAL EFFICIENCY, AND SHALL BE ON THE VIRGINIA STORMWATER BMP CLEARINGHOUSE APPROVED LIST OF FILTERING DEVICES AWARDED 50% TP REMOVAL EFFICIENCY.

### MAINTENANCE NOTE

THE MAINTENANCE SCHEDULE AND LIST OF MAINTENANCE TASK AND METHODS WILL DEPEND ON THE MANUFACTURER SELECTED BY THE CONTRACTOR.

AT A MINIMUM INSPECTION OF THE FILTERING DEVICE SHALL TAKE PLACE TWICE A YEAR SEDIMENT ACCUMULATION OF 4" OR MORE AT THE BOTTOM OF THE VAULT SHOULD BE CLEANED. OTHER MAINTENANCE WORKS SUCH AS FILTER CLEANING AND / OR REPLACEMENT SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS.

SEAL



## APPROVALS

DATE \_\_\_\_\_

<u>Amy Pflaum</u>	<u>03/26/202</u>
QUALITY CONTROL ENGINEER	
<u>Kamal Taktak</u>	<u>3.30.21</u>
CONSTRUCTION MANAGEMENT SUPERVISOR	
<u>[Signature]</u>	<u>04.02.2021</u>
WATER, SEWER, STREETS BUREAU CHIEF	
<u>Dennis M. Leach</u>	<u>04/09/2</u>
TRANSPORTATION DIRECTOR	
<u>John Mir</u>	<u>3/30/202</u>
PROJECT MANAGER	

## REVISIONS

DATE \_\_\_\_\_

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

## SWM DETAILS

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: APRIL 12 2021

SCALE:

SCALE:

0 25 50

GRAPHIC SCALE

SHEET

C082.2



**F&R** **Froehling & Robertson, Inc.**

**BORING LOG**  
Boring: B-1 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 57.8 ±<sup>1</sup>  
Total Depth: 8.5'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
57.6	0.2	2 inches of <b>SURFICIAL SOIL</b> <b>COASTAL DEPOSITS:</b> Mottled gray, red brown, and brown, medium, CLAYEY SAND (SC), loose to medium dense, moist	3-4-3 -3	0.0	7	
			8-4-3 -3	2.0	7	LL: 54   PI: 28   <#200: 21.1   MC: 12.9
			3-3-4 -6	4.0	7	
			3-8-9 -13	6.0	17	
				8.0		
49.3	8.5	Boring terminated at 8.5 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.				Boring dry upon completion of drilling  Boring dry 24 hours after completion of drilling  Cave-in depth at 8 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-2 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 59.4 ±<sup>1</sup>  
Total Depth: 6.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
59.2	0.2	2 inches of <b>SURFICIAL SOIL</b> <b>FILL:</b> Mottled light brown and gray, medium, CLAYEY SAND (SC), loose, moist	2-3-3 -2	0.0	6	
		With organic matter at 2 feet	6-6-5 -3	2.0	11	
55.4	4.0	<b>COASTAL DEPOSITS:</b> Mottled light brown and gray, medium, <b>POORLY-GRADED SAND (SP)</b> , medium dense, moist	4-6-6 -3	4.0	12	
53.4	6.0	Boring terminated at 6 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		6.0		Boring dry upon completion of drilling  Boring dry 24 hours after completion of drilling  Cave-in depth at 6 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-3 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 58.3 ±<sup>1</sup>  
Total Depth: 6.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
58.1	0.2	2 inches of <b>SURFICIAL SOIL</b> <b>FILL:</b> Light brown and dark brown, medium, CLAYEY SAND (SC), little gravel, with organic matter, medium dense, moist	6-9-8 -12	0.0	17	
56.3	2.0	Light yellow brown, coarse, <b>POORLY-GRADED GRAVEL WITH SAND (GP)</b> , trace organic matter, trace metal shavings, with quartz fragments, very dense, dry	21-34-23 -21	2.0	57	
54.3	4.0	<b>COASTAL DEPOSITS:</b> Mottled red brown and light brown, <b>SANDY LEAN CLAY (CL)</b> , trace roots, very stiff, moist	13-14-4 -5	4.0	18	
52.3	6.0	Boring terminated at 6.0 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		6.0		Boring dry upon completion of drilling  Boring dry 24 hours after completion of drilling  Cave-in depth at 6 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-4 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 58.7 ±<sup>1</sup>  
Total Depth: 6.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
58.5	0.2	2 inches of <b>SURFICIAL SOIL</b> <b>FILL:</b> Light gray and dark gray, medium, CLAYEY SAND (SC), trace glass fragments, loose, moist	4-5-5 -5	0.0	10	
56.7	2.0	<b>COASTAL DEPOSITS:</b> Light gray, fine to medium, SILTY SAND (SM), loose to medium dense, moist	5-3-7 -10	2.0	10	
			7-9-9 -9	4.0	18	Subsurface water encountered at 4.7 feet 24 hours after completion of drilling
52.7	6.0	Boring terminated at 6 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		6.0		Boring dry upon completion of drilling  Cave-in depth at 5.6 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-5 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 57.5 ±<sup>1</sup>  
Total Depth: 6.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
57.3	0.2	2 inches of <b>SURFICIAL SOIL</b> <b>FILL:</b> Red brown and dark gray, fine to medium, SILTY SAND (SM), contains pocket of lean clay, trace gravel, medium dense, moist	4-5-6 -8	0.0	11	
55.5	2.0	<b>COASTAL PLAIN DEPOSITS:</b> Mottled light brown and light gray, fine to medium, CLAYEY SAND (SC), medium dense, moist	5-6-6 -7	2.0	12	LL: 50   PI: 22   <#200: 22   MC: 17.1
			6-7-8 -9	4.0	15	Subsurface water encountered at 5 feet 24 hours after completion of drilling Subsurface water encountered at 5.9 feet during drilling.
51.5	6.0	Boring terminated at 6 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		6.0		Cave-in depth at 5.8 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-6 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 59.8 ±<sup>1</sup>  
Total Depth: 6.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
		<b>FILL:</b> Light gray and dark brown, <b>SANDY LEAN CLAY (CL)</b> , little gravel, with wood fragments, very stiff, moist	8-9-9 -11	0.0	18	
			6-13-10 -12	2.0	23	
55.8	4.0	<b>COASTAL DEPOSITS:</b> Mottled gray brown and red brown, fine to medium, CLAYEY SAND (SC), medium dense, moist	7-9-8 -11	4.0	17	
53.8	6.0	Boring terminated at 6 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		6.0		Boring dry upon completion of drilling.  Boring dry 24 hours after completion of drilling  Cave-in depth at 5.6 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-7 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 56.2 ±<sup>1</sup>  
Total Depth: 10.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
		<b>FILL:</b> Light brown and dark gray, medium, CLAYEY SAND (SC), little gravel, medium dense, moist	17-11-10 -9	0.0	21	
		Trace glass and organic odor at 2 feet	14-10-13 -10	2.0	23	
52.2	4.0	Red brown, <b>SANDY LEAN CLAY (CL)</b> , little gravel, firm, moist	7-4-4 -4	4.0	8	
50.2	6.0	<b>POSSIBLE FILL:</b> Light brown, medium, CLAYEY SAND (SC), little organic matter, very loose, wet	2-1-1 -8	6.0	2	
48.2	8.0	<b>COASTAL DEPOSITS:</b> Light gray, fine, SILTY SAND (SM), medium dense, wet	6-7-11 -12	8.0	18	
46.2	10.0	Boring terminated at 10 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		10.0		Subsurface water encountered at 9.7 feet at completion of drilling Boring dry 24 hours after completion of drilling  Cave-in depth at 8.9 feet 24 hours after completion of drilling

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**F&R** **Froehling & Robertson, Inc.**

**Boring LOG**  
Boring: B-8 (1 of 1)

Project No: 72Y0060  
Client: Department of Environmental Services  
Project: 31st Street Parking Lot  
City/State: Arlington County, Virginia

Elevation: 58.3 ±<sup>1</sup>  
Total Depth: 8.0'  
Location: See Boring Location Plan

Drilling Method: HSA 2.25"  
Hammer Type: Automatic  
Date Drilled: 4/2/20  
Driller: North

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
		<b>FILL:</b> Dark gray and red brown, medium, CLAYEY SAND WITH GRAVEL (SC), little brick fragments, dense, moist	10-22-10 -11	0.0	32	
56.3	2.0	Dark gray, <b>LEAN CLAY WITH GRAVEL (CL)</b> , little sand, firm, moist	5-3-4 -6	2.0	7	
			5-6-2 -3	4.0	8	
52.3	6.0	<b>COASTAL DEPOSITS:</b> Mottled light gray and light brown, medium, CLAYEY SAND (SC), loose, moist	2-3-4 -13	6.0	7	
50.3	8.0	Boring terminated at 8 feet. Boring backfilled with soil cuttings 24 hours after completion of drilling  1. Elevations taken from the drawings titled <i>Soil Boring Locations, 31<sup>st</sup> Street S. Parking Lot, WPB5, Between S. Fern Street and S. Eads Street</i> prepared by Arlington County Department of Environmental Services and dated February 14, 2020.		8.0		Boring dry upon completion of drilling.  Boring dry 24 hours after completion of drilling  Cave-in depth at 7.2 feet 24 hours after completion of drilling

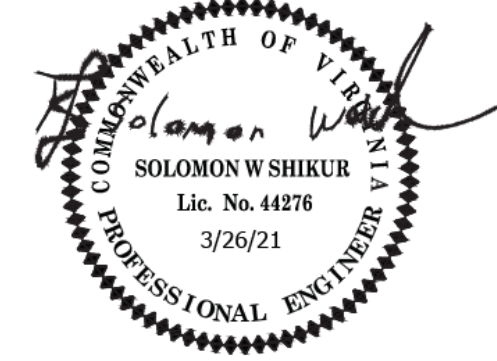
\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**ARLINGTON**  
VIRGINIA

DEPARTMENT OF  
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SEAL



APPROVALS DATE

*Amy Pfaffman* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Ramab Takatak* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*Shirley* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis M. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John Min* 3/30/2021  
PROJECT MANAGER

REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
GEOTECHNICAL DETAILS

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

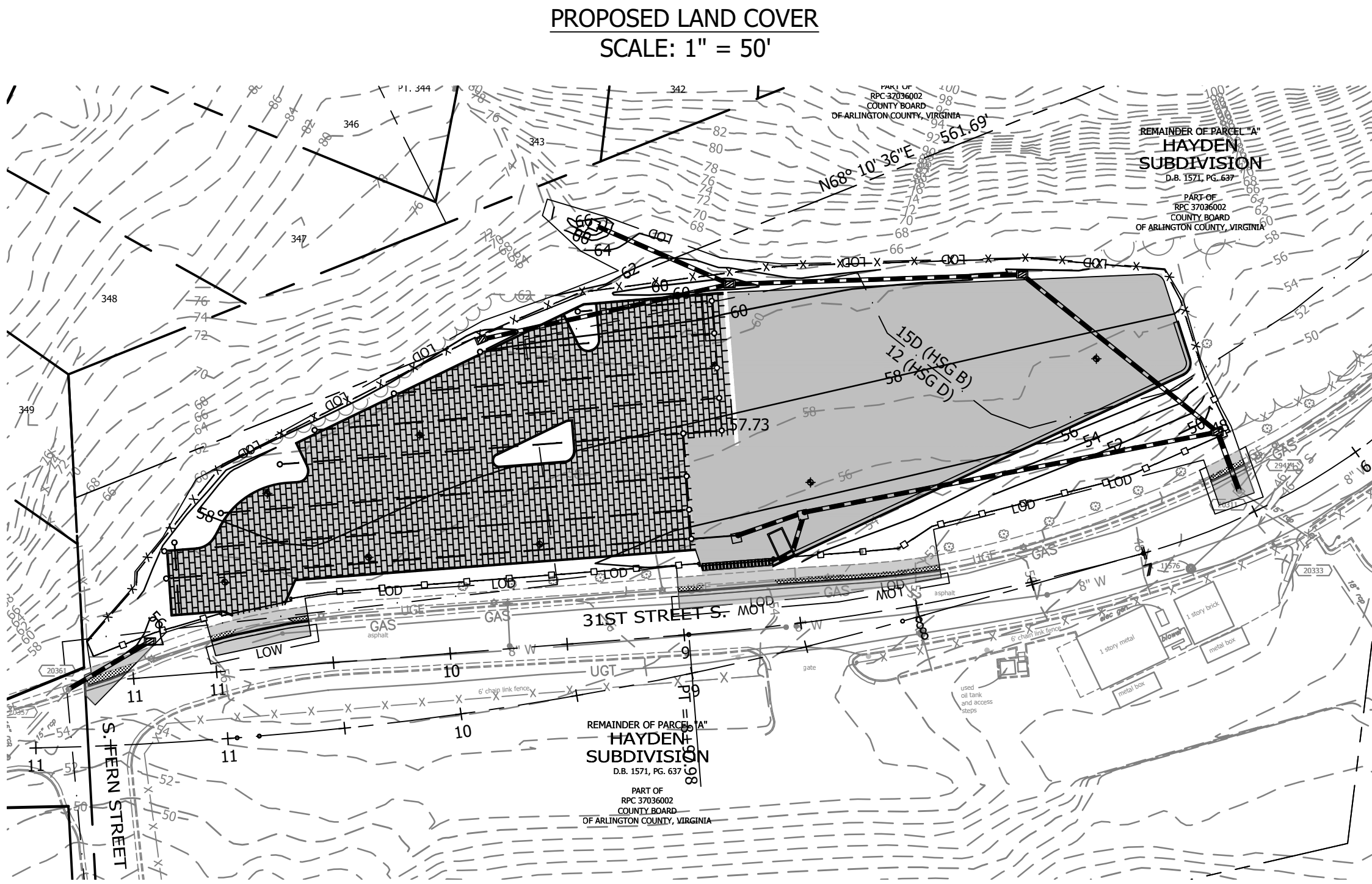
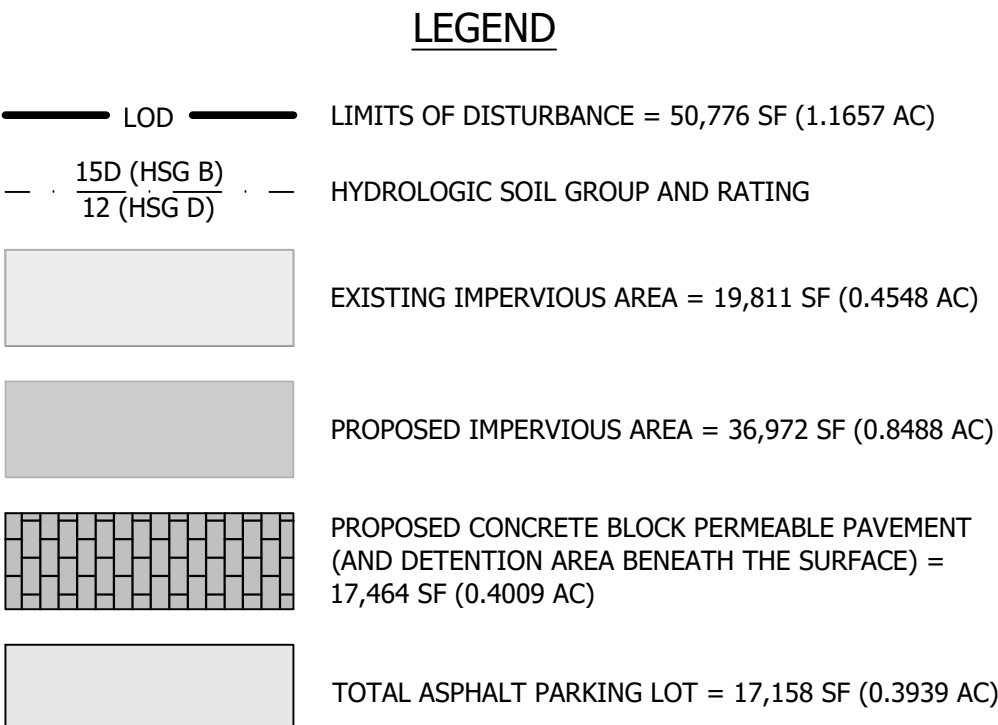
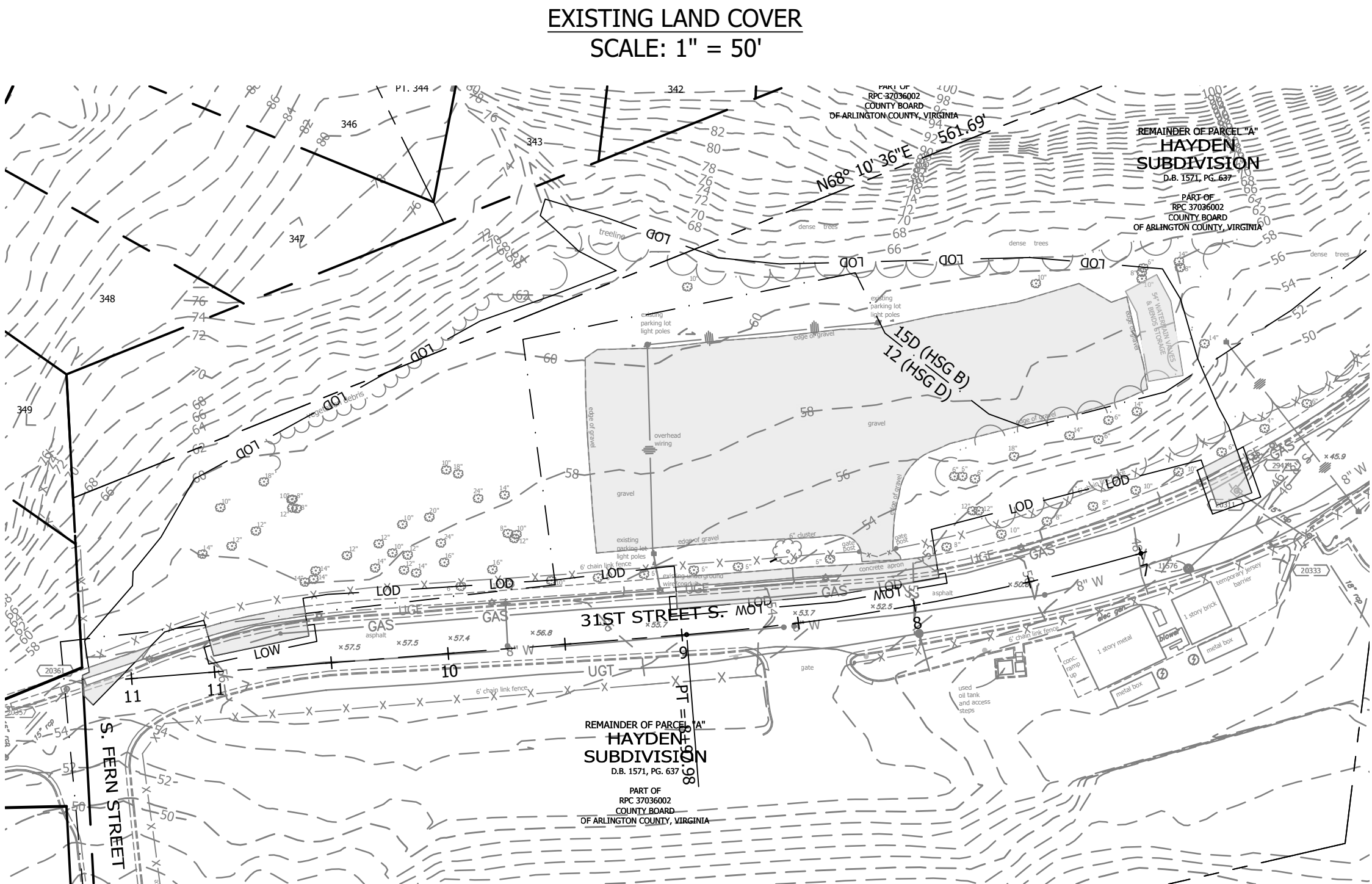
PLOTTED: MARCH 25 2021

SCALE:

N/A

SHEET C082.3





SWM NARRATIVE

THE SUBJECT PROPERTY IS LOCATED ON 31ST ST. S., BETWEEN S. FERN ST. AND S. EADES ST. THE PROJECT PROPOSES TO EXPAND AN EXISTING GRAVEL PARKING LOT ON THE SITE AND CLASSIFIES AS A REDEVELOPMENT PROJECT. THE LIMITS OF DISTURBANCE IS 1.1657 ACRES , WHERE THE EXISTING IMPERVIOUS AREA IS 0.4548 ACRES AND THE PROPOSED IMPERVIOUS AREA IS 0.8567 ACRES, RESULTING IN AN INCREASE OF IMPERVIOUS AREA BY 0.4019 ACRES. THE OUTFALL POINTS DIRECTLY DOWNSTREAM FROM THE LIMITS OF DISTURBANCE ARE CURB INLET #29414 AND CURB INLET #20361.

WATER QUALITY (9VAC25-870-63):  
THE WATER QUALITY REQUIREMENT OF THE SITE IS EVALUATED BASED ON 9VAC25-870-63A.2. COMPLIANCE WITH THE SUBJECT SECTION IS DETERMINED IN ACCORDANCE WITH 9VAC25-970-65 BY MAKING USE OF VA RUNOFF REDUCTION METHOD REDEVELOPMENT COMPLIANCE SPREADSHEET AS SHOWN ON SHEET C085.1. THE POST-DEVELOPMENT TP LOAD REDUCTION REQUIRED FOR THE SUBJECT PROPERTY IS 0.9213 LB/YR. A LEVEL 1 CONCRETE PERMEABLE PAVEMENT IS PROPOSED OVER 0.4009 ACRES OF THE PROPOSED PARKING LOT BECAUSE THE UNDERLYING SOIL LAYER DOES NOT HAVE ENOUGH PERMEABILITY TO ALLOW FOR A LEVEL 2. ADDITIONALLY A MANUFACTURED TREATMENT (FILTERING) DEVICE IS PROPOSED TO TREAT THE REMAINING 0.3939 ACRES OF THE PARKING. THE CALCULATIONS DEMONSTRATE THAT THE PROVISION OF THESE TWO BMP'S WILL SATISFY THE TOTAL POLLUTANT REDUCTION REQUIREMENT OF THE SITE.

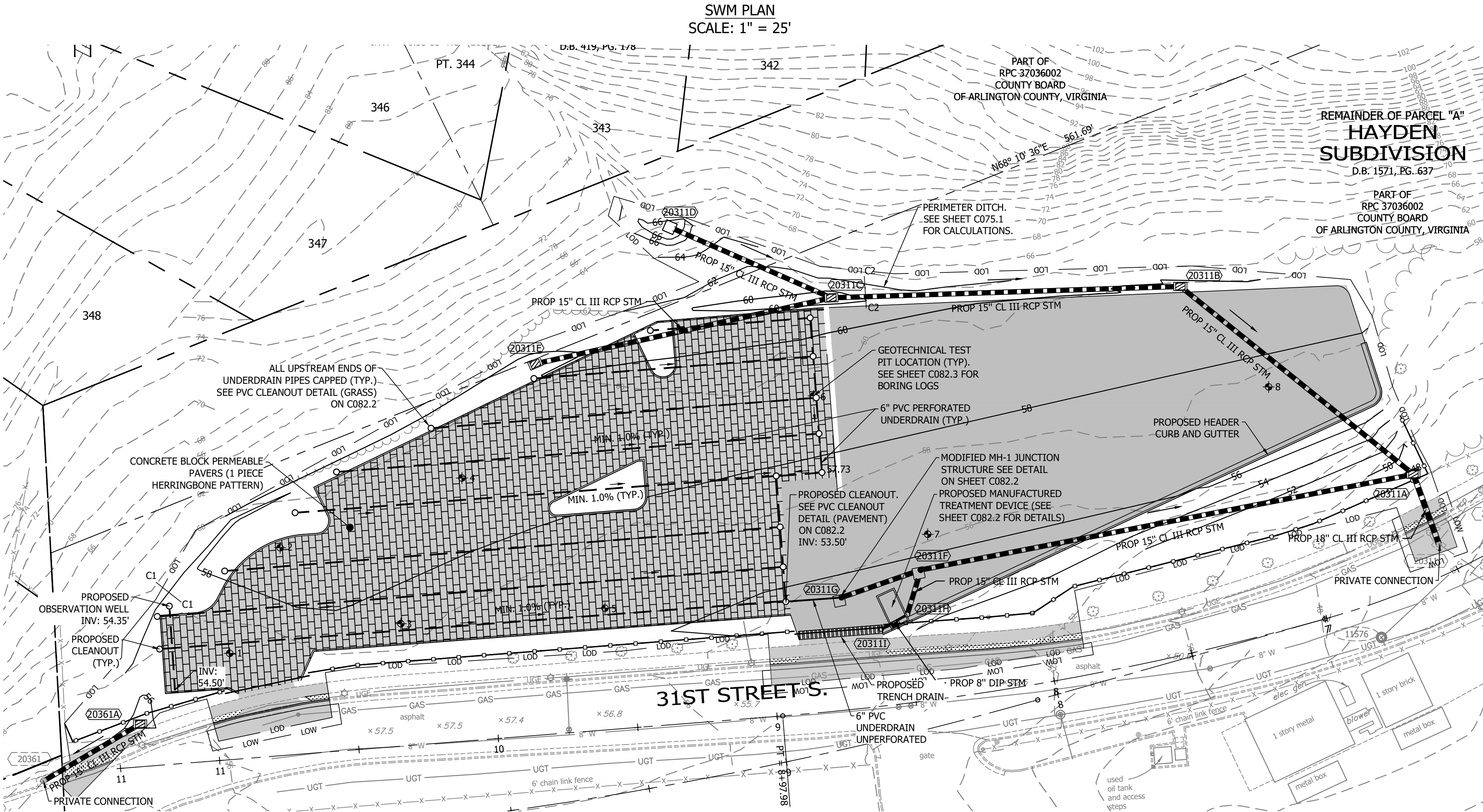
WATER QUANTITY (9VAC25-870-66):  
COMPLIANCE WITH CHANNEL & FLOOD PROTECTION REQUIREMENTS OF THE SITE IS DEMONSTRATED IN ACCORDANCE WITH 9VAC25-870-66B1a and b of THE VSMP. THE CHANNEL AND FLOOD PROTECTION STORAGE VOLUMES ESTIMATED BY THE WATER QUANTITY ENERGY BALANCE WORKSHEET (SHEET C085.1) ARE PROVIDED FOR IN THE ON-SITE UNDERGROUND DETENTION FACILITY BY MEANS OF A GRAVEL LAYER UNDER THE PERMEABLE PAVEMENT.  
PRE AND POST DEVELOPMENT RUNOFF CALCULATIONS ARE PERFORMED USING THE TR-55 APPLICATION FOR THE 1-YEAR STORM AND 10-YEAR STORM FOR THE 1.1657 ACRES OF DISTURBANCE. THE OFFSITE UNDISTURBED AREAS ARE PROPOSED TO BE DIRECTED AROUND THE DISTURBED ARE / PARKING LOT BY MAKING USE OF THE PERIMETER DITCH - TO THE EXISTING STORM INLET #29414 AND 20361. THE POST DEVELOPMENT DRAINAGE DIVIDES CLOSELY FOLLOW THAT OF THE POST DEVELOPMENT SEE SHEET C081.1 AND 2).  
THE 1 YEAR AND 10 YEAR PEAK RUNOFF ON THE PERMEABLE PAVEMENT WAS ROUTED THROUGH THE UNDERGROUND DETENTION FACILITY VIA THE 6" UNDERDRAIN OUTFALL AT JUNCTION STRUCTURE 20311.G. (SEE SHEET C085.2). THE RUNOFF FROM THE ASPHALT PARKING AREA AND THE REAMING OPEN SPACE OF THE SITE WAS SEPARATELY COMPUTED. THE 10 YEAR POST DEVELOPMENT RUNOFF COMPUTED IN THIS MANNER IS LESS THAN PREDEVELOPMENT CALCULATED IN ACCORDANCE WITH 9VAC25-870-66b.3a. THEREFORE, THE FLOOD PROTECTION REQUIREMENT OF THE SITE IS SATISFIED. AS THE ROUTING COMPUTATIONS SHOW, THE ENTIRE CHANNEL PROTECTION VOLUME IS DETAINED IN THE UNDERGROUND STORAGE AND THERE WILL BE NO FLOW COMING OUT OF FACILITY AT THE 1 YEAR PEAK STORM. THE CHANNEL PROTECTION REQUIREMENT IS MET BY 9VAC25-87066B1a. SEE OUTFALL NARRATIVE BELOW.

OUTFALL NARRATIVE

UNDER EXISTING CONDITIONS THE SITE OUTFALLS IN TO EXISTING INLETS STRUCTURES 29414 & 20361 LOCATED DIRECTLY DOWNSTREAM. RUNOFF IS THEN CONVEYED IN CLOSED CHANNEL - CONCRETE PIPES RANGING FROM 15" TO 54" TO FINALLY DRAIN IN TO FOUR MILE RUN.  
AT DRAINAGE AREA OF FOUR MILE RUN AT THE SITE OUTFALL POINT (EXTENT OF THE ANALYSIS) IS MORE THAN 100 TIMES THAT OF THE SITE.  
THE EXISTING CONCRETE PIPE STORM DRAINAGE SYSTEM THAT THE SITE OUTFALLS INTO CAN CONVEY THE 2 YEAR-24 HOUR STORM WITHOUT CAUSING EROSION.

STORMWATER NOTES

- ALL CONNECTIONS (INCLUDING THE PIPE) MADE TO THE COUNTY'S STORM SEWER SYSTEM ARE CONSIDERED PRIVATE AND ANY REQUIRED REPAIR OR MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CURBMENT AND FUTURE PROPERTY OWNER.
- CONNECTION SHALL BE CORE DRILLED IN THE PRESENCE OF THE ASSIGNED DES INFRASTRUCTURE INSPECTOR.
- THE OWNER OR PERMIT HOLDER OR REPRESENTATIVE THEREOF SHALL BE RESPONSIBLE TO REPAIR/RESTORE ALL STREETSCAPE ELEMENTS WITHIN THE ROW FROM THE PROPERTY LINE TO THE STREET.

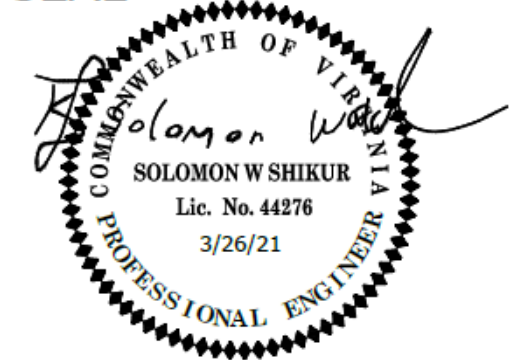


ARLINGTON  
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SEAL



APPROVALS DATE

Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Ramal Takak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Glenn 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
Dennis M. Leach 04/09/21  
TRANSPORTATION DIRECTOR  
John Min 3/30/2021  
PROJECT MANAGER

REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
SWM PLAN AND LAND COVER

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: APRIL 12 2021

SCALE:

AS SHOWN

SHEET C083.1



DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

© 2011 BMP Standards and Specifications

© 2013 Draft BMP Standards and Specifications

Project Name:31st Street South Parking Lot

Date:2/12/2021

Linear Development Project?No

CLEAR ALL  
(Ctrl+Shift+R)

data input cells

constant values

calculation cells

final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area (acres) → 1.1657

Maximum reduction required:	20%
The site's net increase in impervious cover (acres) is:	0.3940
Post-Development TP Load Reduction for Site (lb/yr):	0.9213

Check:  
BMP Design Specifications List: 2013 Draft Stds & Specs  
Linear project? No  
Land cover areas entered correctly? ✓  
Total disturbed area entered? ✓

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space					0.0000
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.4543		0.2566	0.7109
Impervious Cover (acres)		0.1128		0.3420	0.4548
					1.1657

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested					0.0000
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.1760		0.1409	0.3169
Impervious Cover (acres)		0.3911		0.4577	0.8488
Area Check	OK.	OK.	OK.	OK.	1.1657

Drainage Area A

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.0000	0.0000
Managed Turf (acres)		0.1760		0.1409	0.3169	0.2222
Impervious Cover (acres)		0.3911		0.4577	0.8488	0.9500
Total					1.1657	

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)	1.9997
Post Development Treatment Volume in D.A. A (ft³)	3,182.7296

3. Permeable Pavement (RR)													
3.a. Permeable Pavement #1 (Spec #7)	45		0.4009	0.0000	622.1266	760.3770	1,382.5037	25	0.0000	0.8676	0.5097	0.3579	
14. Manufactured Treatment Devices (no RR)													
14.b. Manufactured Treatment Device-Filtering	0		0.3939	0.0000	0.0000	1,358.3642	1,358.3642	50	0.0000	0.8525	0.4262	0.4262	

3. Permeable Pavement (RR)				
25	0.0000	6.2070	3.6466	2.5604
14. Manufactured BMP (no RR)				
0	0.0000	6.0986	0.0000	6.0986

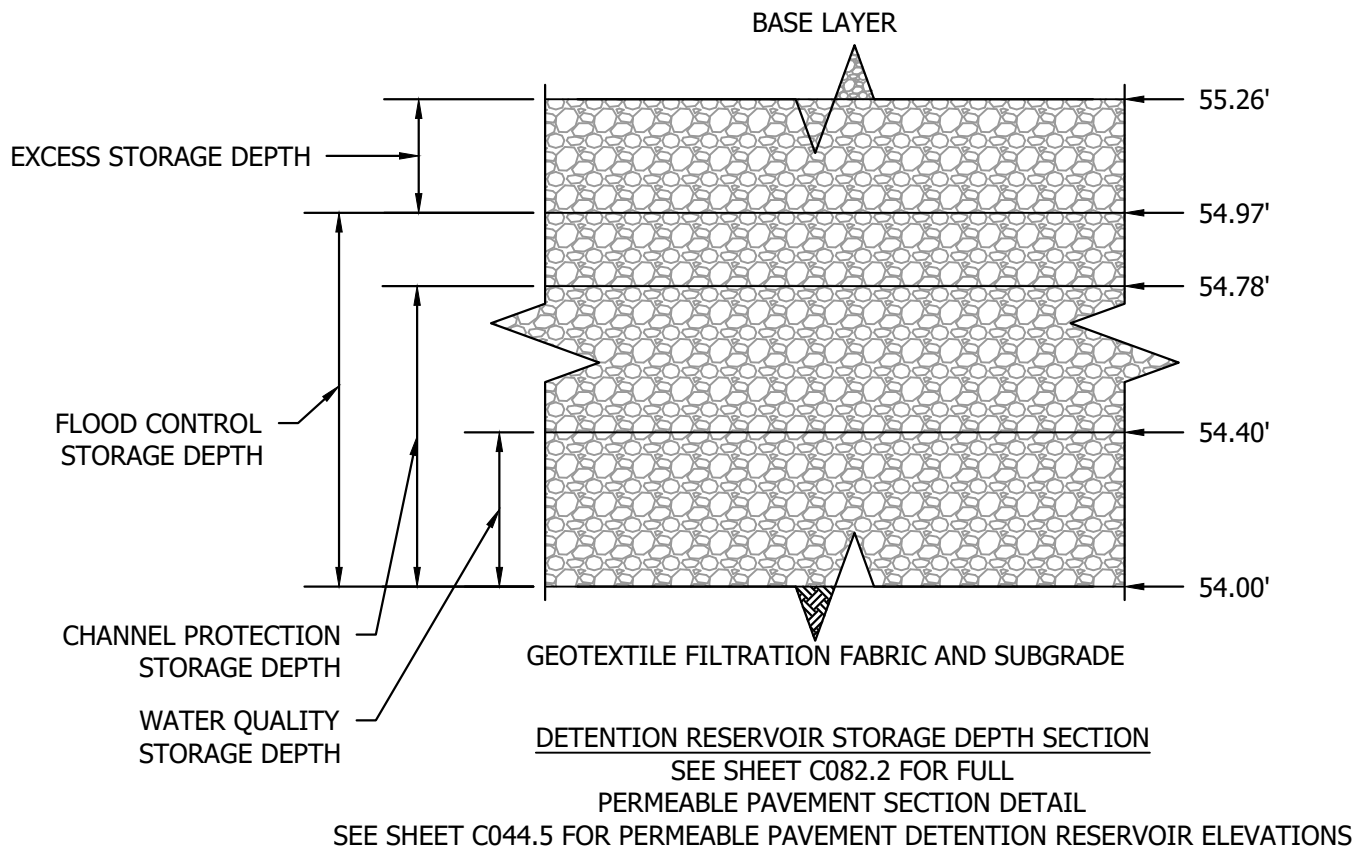
Drainage Area Curve Numbers and Runoff Depths\*

Curve numbers (CN, CNadj) and runoff depths (RV<sub>Developed</sub>) are computed with and without reduction practices.

Drainage Area A		A Soils	B Soils	C Soils	D Soils	Total Area (acres): 1.1657	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.0000	0.0000	0.0000	0.0000	Runoff Reduction Volume (ft³): 622.1266	
	CN	30	55	70	77		
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.0000	0.1760	0.0000	0.1409		
	CN	39	61	74	80		
Impervious Cover	Area (acres)	0.0000	0.3911	0.0000	0.4577		
	CN	98	98	98	98		
						CN <sub>(D.A. A)</sub>	
						90	
		1-year storm	2-year storm	10-year storm			
RV <sub>Developed</sub> (watershed-inch) with no Runoff Reduction*		1.6205	2.0762	3.7222			
RV <sub>Developed</sub> (watershed-inch) with Runoff Reduction*		1.4735	1.9291	3.5751			
Adjusted CN*		88	88	88			

RUNOFF REDUCTION NOTES:

- THE RUNOFF REDUCTION SPREADSHEET ON THIS PLAN IS FOR DATA TRACKING PURPOSES TO DOCUMENT THE AREA OF LAND DISTURBANCE AND TO CHARACTERIZE PRE- AND POST- DEVELOPMENT LAND USE CONDITIONS.
- IN ACCORDANCE WITH ARLINGTON COUNTY'S CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL) ACTION PLAN, APPROVED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) ON SEPTEMBER 1, 2015, LINEAR DEVELOPMENT PROJECTS CONDUCTED BY THE COUNTY ARE ADMINISTERED AND TRACKS AS FOLLOWS CONSISTENT WITH 9VAC25-870-69.A.4, 9VAC25-870-76, AND 9VAC25-870-92:
- POLLUTANT LOAD CHANGES WILL BE COMPUTED AS DESCRIBED IN SECTION 3.A OF THE ACTION PLAN.
- RETROFIT OPPORTUNITIES WILL BE EVALUATED FOR EACH PROJECT, USING THE SCREENING AND SELECTION CRITERIA APPLIED AND DESCRIBED IN THE ADOPTED STORMWATER MASTER PLAN.
- RETROFIT PROJECTS THAT MEET THE SCREENING CRITERIA AND ARE DETERMINED BY ARLINGTON TO BE FEASIBLE AND COST-EFFECTIVE WILL BE IMPLEMENTED WITH SPECIFIED LINEAR DEVELOPMENT PROJECTS. POLLUTANT LOAD REDUCTIONS FROM RETROFIT PROJECTS WILL BE COMPUTED AS DESCRIBED IN SECTION 5 OF THE ACTION PLAN.
- IN CASES WHERE RETROFIT PROJECTS ARE NOT FEASIBLE AND COST-EFFECTIVE FOR A PARTICULAR LINEAR PROJECT, ANY POC LOAD INCREASES THAT MIGHT OCCUR FOR THAT PROJECT WILL BE ADDRESSED BY LARGER OVERALL POC LOAD REDUCTIONS IN PLACE OR ADDED THROUGH TMDL ACTION PLAN IMPLEMENTATION.
- IN THE ABOVE MANNER ARLINGTON, AS THE MS4 OPERATOR AND THE CONSTRUCTION SITE OPERATOR FOR ITS LINEAR DEVELOPMENT PROJECTS, IMPLEMENTS LINEAR PROJECTS AND RETROFIT PROJECTS IN A MANNER THAT ACHIEVED THE MOST TMDL POC REDUCTION FOR THE LEAST COST, WHILE FULLY ACCOUNTING FOR LOAD CHANGES THAT OCCUR WITH LINEAR DEVELOPMENT PROJECT ACTIVITY CONSISTENT WITH THE DEQ CHESAPEAKE BAY TMDL SPECIAL CONDITION GUIDANCE.



Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.0000	0.0000	0.0000	0.0000	0.0000	OK.
IMPERVIOUS COVER (ac)	0.8567	0.0000	0.0000	0.0000	0.0000	OK.
IMPERVIOUS COVER TREATED (ac)	0.7988	0.0000	0.0000	0.0000	0.0000	OK.
MANAGED TURF AREA (ac)	0.3090	0.0000	0.0000	0.0000	0.0000	OK.
MANAGED TURF AREA TREATED (ac)	0.0000	0.0000	0.0000	0.0000	0.0000	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³) 3,204.8181

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft³)	628.3339	0.0000	0.0000	0.0000	0.0000	628.3339
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	2.0136	0.0000	0.0000	0.0000	0.0000	2.0136
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.9411	0.0000	0.0000	0.0000	0.0000	0.9411
TP LOAD REMAINING (lb/yr)	1.0725	0.0000	0.0000	0.0000	0.0000	1.0725
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	3.6830	0.0000	0.0000	0.0000	0.0000	3.6830

Total Phosphorus  
FINAL POST-DEVELOPMENT TP LOAD (lb/yr) 2.0136  
TP LOAD REDUCTION REQUIRED (lb/yr) 0.9346  
TP LOAD REDUCTION ACHIEVED (lb/yr) 0.9411  
TP LOAD REMAINING (lb/yr) 1.0725  
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.0000 \*\*  
\*\* TARGET TP REDUCTION EXCEEDED BY 0.0065 LB/YEAR \*\*

Total Nitrogen (For Information Purposes)	
POST-DEVELOPMENT LOAD (lb/yr)	14.4048
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	3.6830
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	10.7219

SWM Water Quantity Energy Balance Worksheet

SITE AREA (acre)	1.17	
	1-year	10-year
	PRE	POST (adjusted)
P	2.6	4.84
CN	80	88
S=1000/CN-10	2.50	1.36
0.25	0.50	0.27
RV=(P-0.25)²/(P-0.25)+S	0.96	1.47
	2.75	3.52

QPost Development <= I.F.\* (Qpre-development\* RVpre-development)/RVDeveloped

I.F. 0.8	
CHANNEL PROTECTION	
Qpre-development	1.66 *
QPost Development	2.6 *
RVPost Development (with runoff reduction)	1.4735
Qallowable	0.86

FLOOD CONTROL	
Qpre-development	4.86 *
QPost Development	6.07 *
RVPost Development (with runoff reduction)	3.5751
Qallowable	3.74

Qallowable/QPost Development	0.33
Vs/Vr	0.3584
Vs	0.53
Storage required (cf)	2243

Qallowable/QPost Development	0.62
Vs/Vr	0.2353
Vs	0.84
Storage required (cf)	3572

\* FLOWS OBTAINED FROM TR-55 APPLICATION. SEE SHEET C085.2 FOR REPORT. TOTAL DETENTION VOLUME (V) = 2,243 CF + 3,572 CF = 5,815 CF

RESERVOIR DEPTH CALCULATION  
(CHANNEL PROTECTION STORAGE VOLUME)

(D) = (V) / (A)\*(VR)

AREA = (A) = 17,464 ft²  
VOID RATIO = (VR) = 0.4  
VOLUME = (V) = 2,243 ft³  
DEPTH = (D)

(D) = [2243 / (17464)\*(0.4)]\*12 = 4.0 in (rounded to 4.5 in)

RESERVOIR DEPTH CALCULATION  
(FLOOD CONTROL STORAGE VOLUME)

(D) = (V) / (A)\*(VR)

AREA = (A) = 17,464 ft²  
VOID RATIO = (VR) = 0.4  
VOLUME = (V) = 3,572 ft³  
DEPTH = (D)

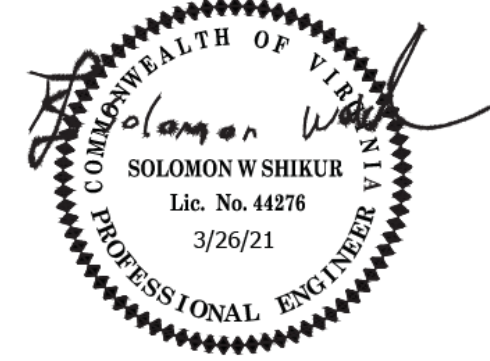
(D) = [3572 / (17464)\*(0.4)]\*12 = 6.25 in (rounded to 6.75 in)

ARLINGTON  
VIRGINIA

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SEAL



APPROVALS DATE

Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Kamal Taktak 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis M. Leach 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
TRANSPORTATION DIRECTOR  
John Min 3/30/2021  
PROJECT MANAGER

REVISIONS DATE


31ST STREET S. PARKING LOT

WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

SWM CALCULATIONS

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

N/A

SHEET C085.1



WinTR-55 Current Data Description

--- Identification Data ---

User: Sara  
Project: 31st Street S. Parking Lot  
SubTitle: Virginia  
County:  
Filename: Q:\Data\WPB5\Design\Docs\Active\Calcs\SWM\TR55\_31st\_St\_S.w55

Date: 2/15/2021  
Units: English  
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
EX-1	Existing LOD	Outlet	1.17	80	0.100
P-1	Proposed LOD	Outlet	1.17	88	0.100
Total area: 2.34 (ac)					

--- Storm Data --

Rainfall Depth by Rainfall Return Period

1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.57	3.1	3.99	4.77	5.96	7.02	8.22

Storm Data Source: User-provided custom storm data

Rainfall Distribution Type: Type II

Dimensionless Unit Hydrograph: <standard>

Sara 31st Street S. Parking Lot

County, Virginia

Storm Data

Rainfall Depth by Rainfall Return Period

1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.57	3.1	3.99	4.77	5.96	7.02	8.22

Storm Data Source: User-provided custom storm data

Rainfall Distribution Type: Type II

Dimensionless Unit Hydrograph: <standard>

Sara 31st Street S. Parking Lot

County, Virginia

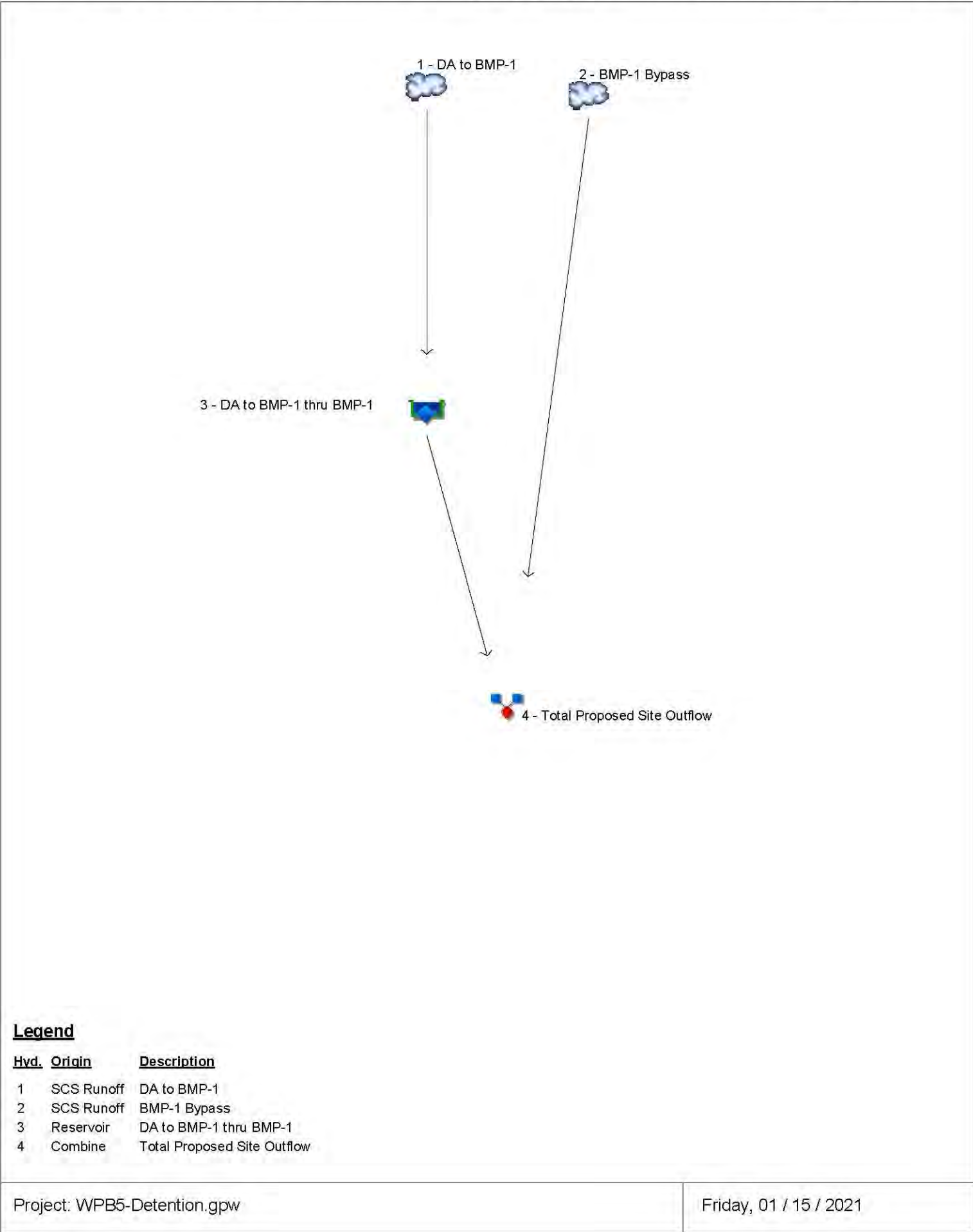
Watershed Peak Table

Sub-Area or Reach Identifier Peak Flow by Rainfall Return Period

	1-Yr (cfs)	10-Yr (cfs)
SUBAREAS		
EX-1	1.66	4.86
P-1	2.60	6.07
REACHES		
OUTLET	4.25	10.82

Precip. file name: Sample.pcp									
Storm Distribution	Rainfall Precipitation Table (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
SCS 24-hour	2.56	3.10	0.00	3.30	4.76	5.77	6.80	7.95	
SCS 6-Hr	1.84	2.22	0.00	0.00	3.29	0.00	0.00	4.00	
Huff-1st	0.00	0.00	0.00	2.75	0.00	5.38	6.50	0.00	
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Custom	0.00	0.00	0.00	2.80	0.00	5.25	6.00	0.00	

## Watershed Model Schematic



## Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	-----	1.224	-----	-----	-----	2.339	-----	-----	-----	DA to BMP-1
2	SCS Runoff	-----	1.253	-----	-----	-----	3.361	-----	-----	-----	BMP-1 Bypass
3	Reservoir	1	0.000	-----	-----	-----	0.034	-----	-----	-----	DA to BMP-1 thru BMP-1
4	Combine	2, 3	1.253	-----	-----	-----	3.361	-----	-----	-----	Total Proposed Site Outflow

## Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.224	3	717	3.026	-----	-----	-----	DA to BMP-1
2	SCS Runoff	1.253	3	717	2.848	-----	-----	-----	BMP-1 Bypass
3	Reservoir	0.000	3	n/a	0	1	54.43	3.026	DA to BMP-1 thru BMP-1
4	Combine	1.253	3	717	2.848	2, 3	-----	-----	Total Proposed Site Outflow

## Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.339	3	717	6,000	-----	-----	-----	DA to BMP-1
2	SCS Runoff	3.361	3	717	7,650	-----	-----	-----	BMP-1 Bypass
3	Reservoir	0.034	3	1059	707	1	54.76	5,335	DA to BMP-1 thru BMP-1
4	Combine	3.361	3	717	8,357	2, 3	-----	-----	Total Proposed Site Outflow

## Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

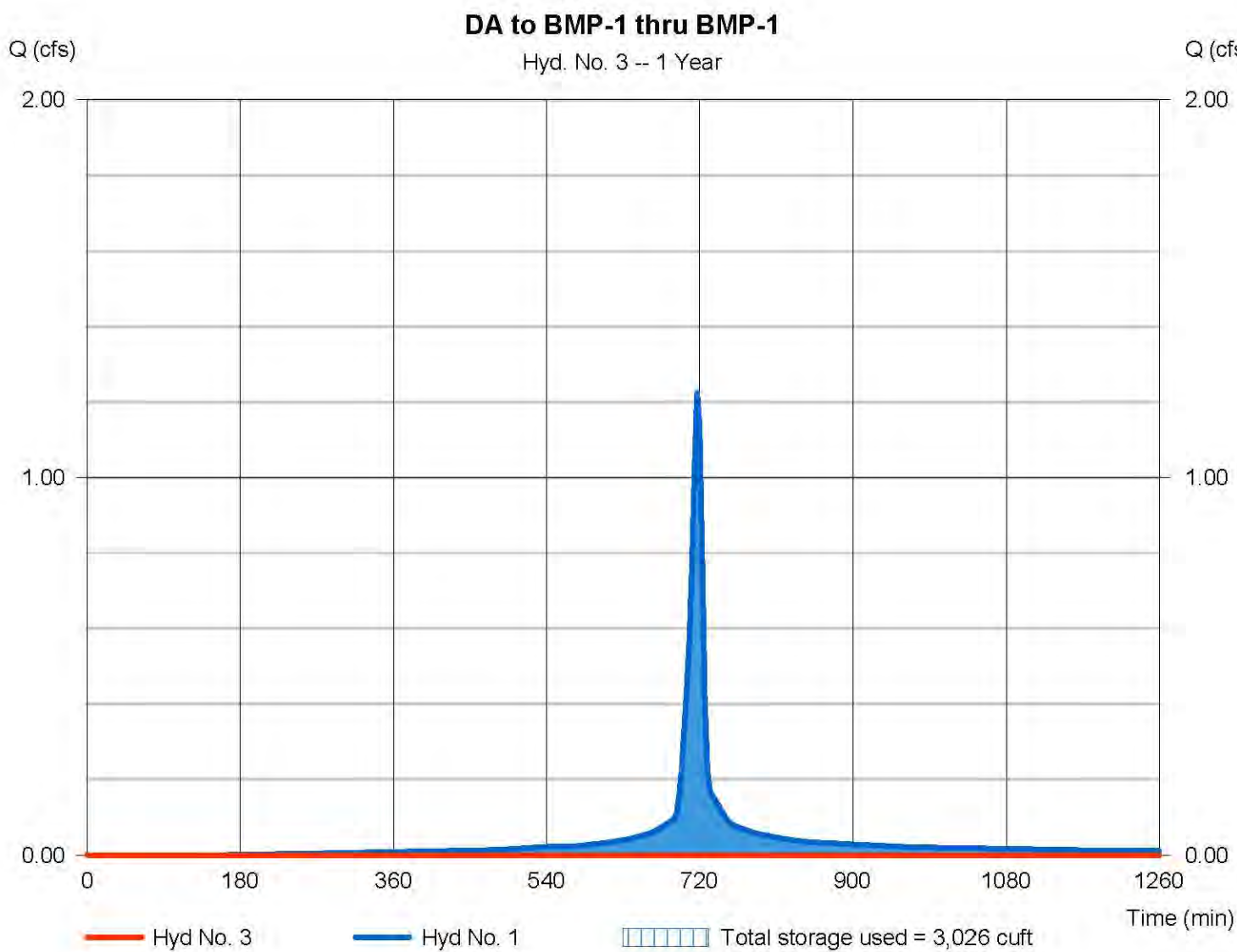
Friday, 01 / 15 / 2021

**Hyd. No. 3**

DA to BMP-1 thru BMP-1

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 3 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 1 - DA to BMP-1	Max. Elevation	= 54.43 ft
Reservoir name	= Permeable Pavers Gravel Detention Chamber	Max Storage	= 3,026 cuft

Storage Indication method used.



## Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

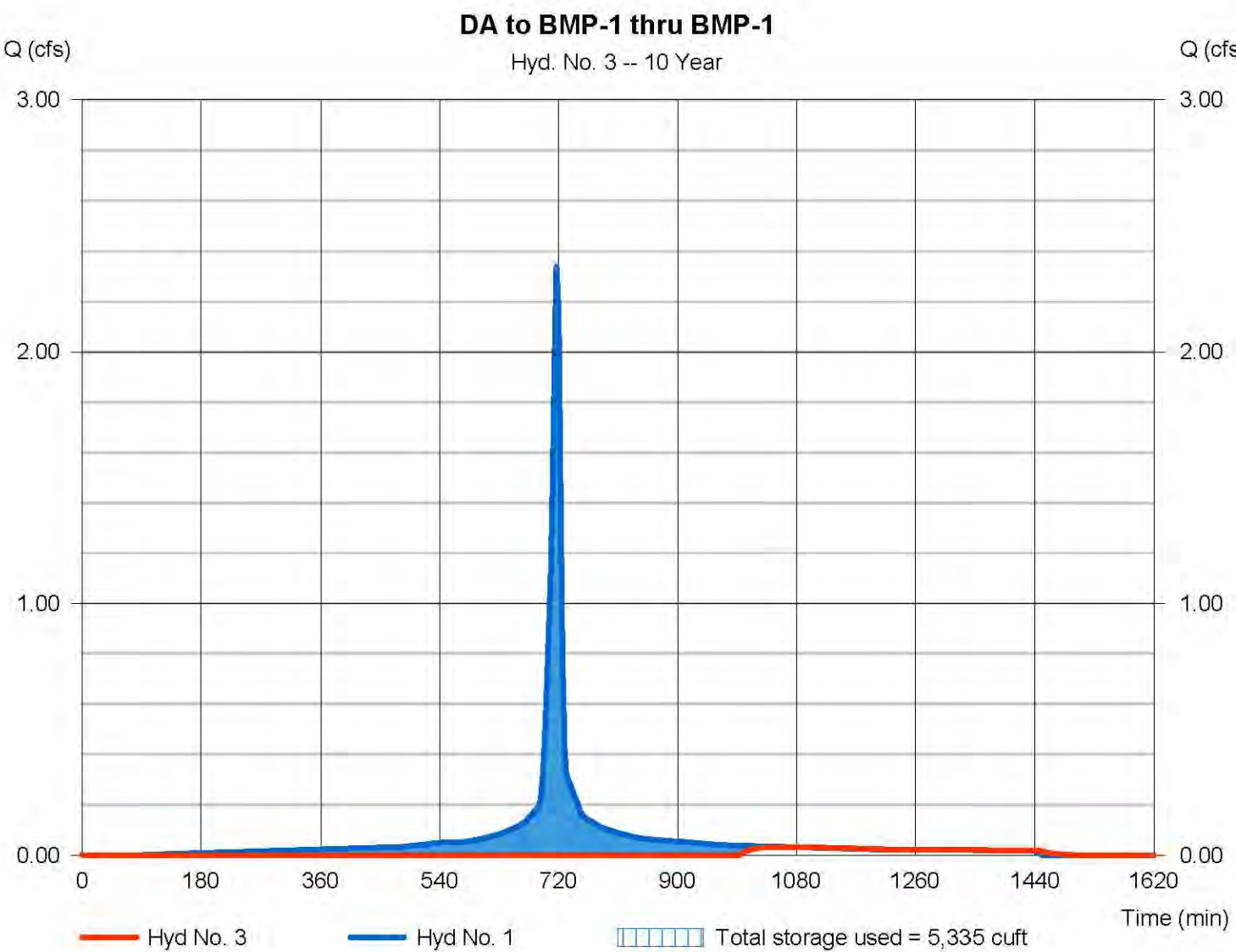
Friday, 01 / 15 / 2021

Hyd. No. 3

DA to BMP-1 thru BMP-1

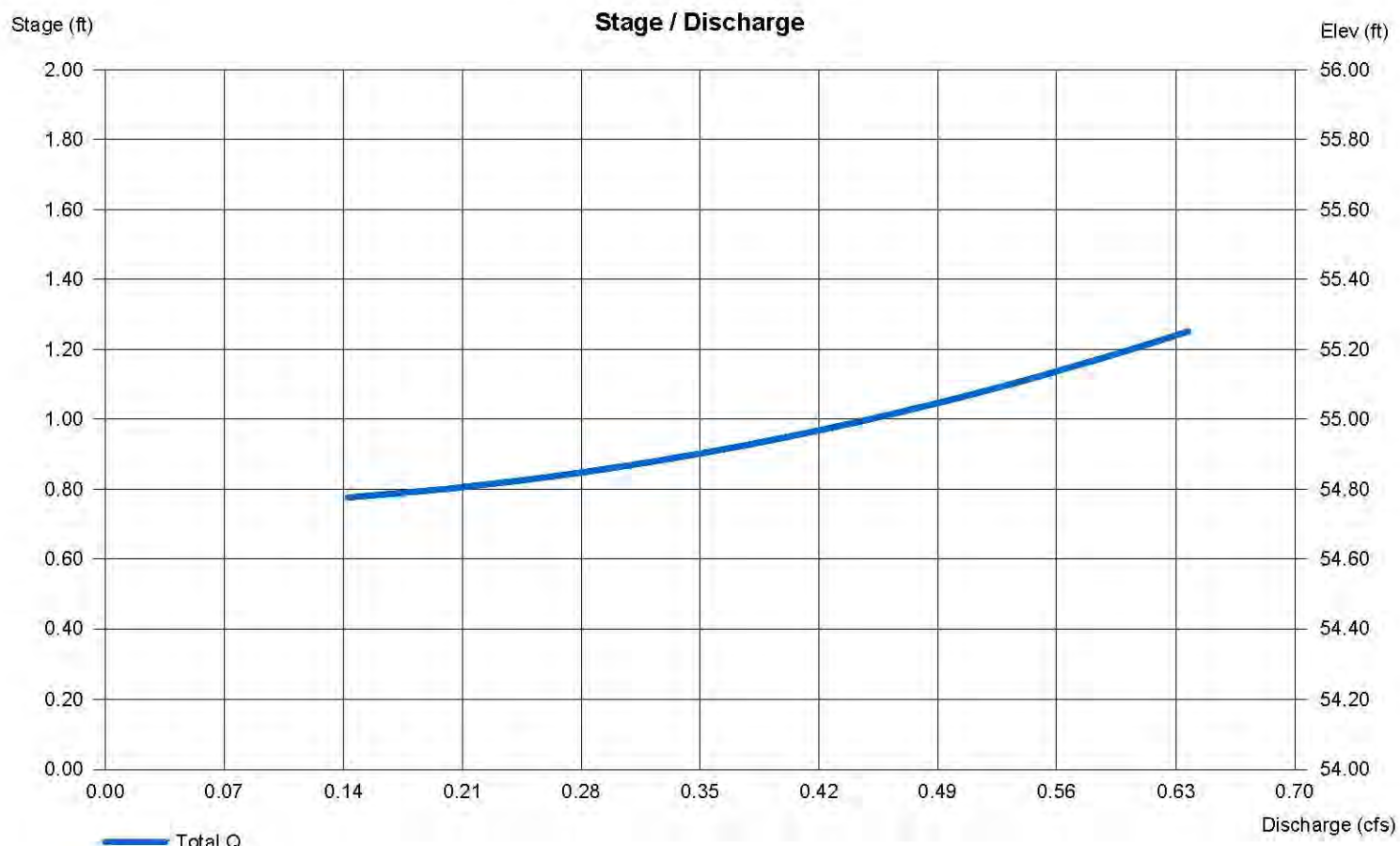
Hydrograph type	= Reservoir	Peak discharge	= 0.034 cfs
Storm frequency	= 10 yrs	Time to peak	= 1059 min
Time interval	= 3 min	Hyd. volume	= 707 cuft
Inflow hyd. No.	= 1 - DA to BMP-1	Max. Elevation	= 54.76 ft
Reservoir name	= Permeable Pavers Gravel Detention Chamber	Max Storage	= 5,335 cuft

Storage Indication method used.



## Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020										Friday, 01 / 15 / 2021	
Pond No. 2 - Permeable Pavers Gravel Detention Chamber											
Pond Data											
Pond storage is based on user-defined values.											
Stage / Storage Table											
Stage (ft)	Elevation (ft)	Contour area (sqft)		Incr. Storage (cuft)	Total storage (cuft)						
0.00	54.00	n/a		0	0						
0.25	54.25	n/a		1,764	1,764						
0.50	54.50	n/a		1,764	3,528						
0.75	54.75	n/a		1,764	5,292						
1.00	55.00	n/a		1,764	7,056						
1.25	55.25	n/a		1,764	8,820						
Culvert / Orifice Structures					Weir Structures						
	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]		
Rise (in)	= 6.00	0.00	0.00	0.00	Crest Len (ft)	= 0.00	0.00	0.00	0.00		
Span (in)	= 6.00	0.00	0.00	0.00	Crest El. (ft)	= 0.00	0.00	0.00	0.00		
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33		
Invert El. (ft)	= 54.00	0.00	0.00	0.00	Weir Type	= ---	---	---	---		
Length (ft)	= 20.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No		
Slope (%)	= 1.04	0.00	0.00	n/a							
N-Value	= 0.13	0.13	0.13	n/a							
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by Wet area)					
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 54.75					
Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s)											



## ARLINGTON VIRGINIA

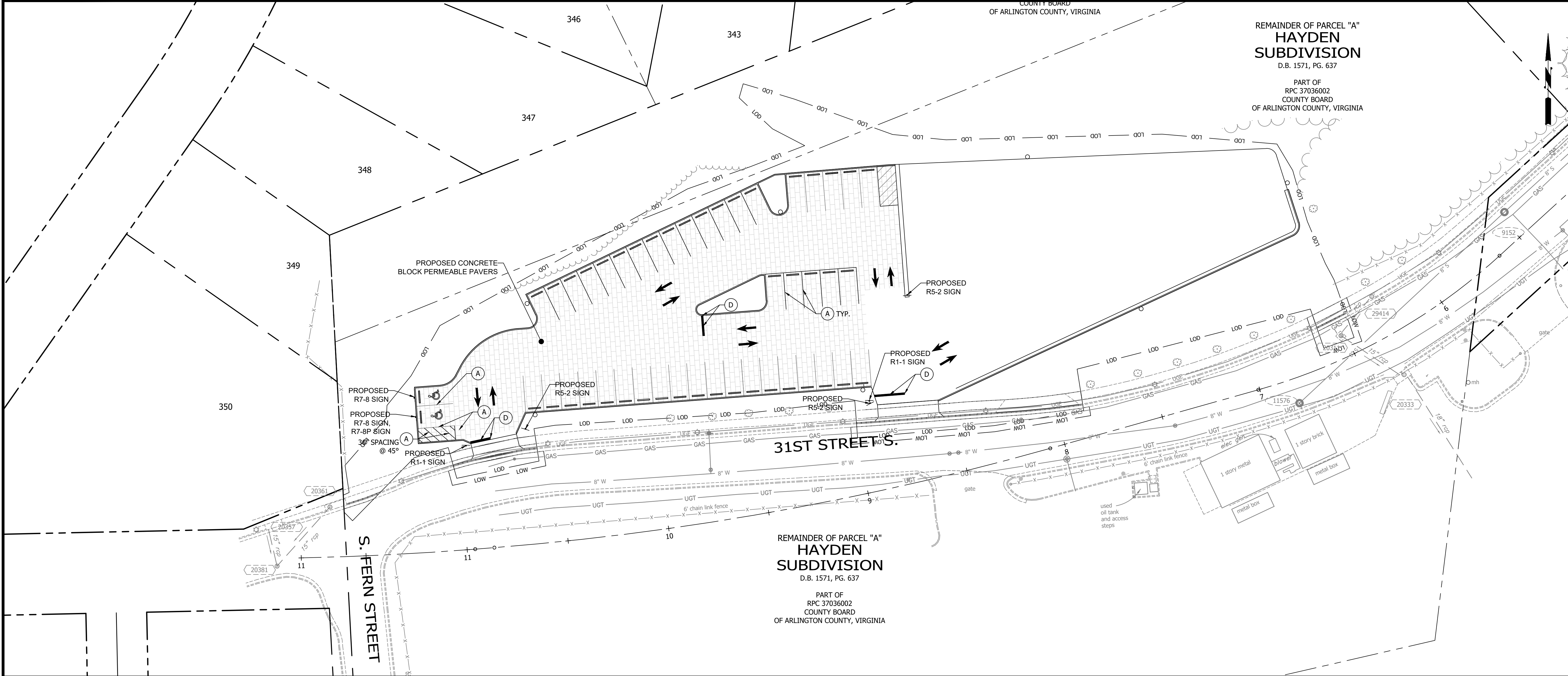
DEPARTMENT OF ENVIRONMENTAL SERVICES  
FACILITIES & ENGINEERING DIVISION  
ENGINEERING BUREAU  
2100 CLARENDON BOULEVARD, SUITE 813  
ARLINGTON, VA 22201  
PHONE: 703.228.3629  
FAX: 703.228.3606

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REVISED ON 05/23/2018

FILENAME: WPB5-380-SIGNAGE\_AND\_STRIPING.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



REMAINDER OF PARCEL "A"  
**HAYDEN  
SUBDIVISION**  
D.B. 1571, PG. 637  
  
PART OF  
RPC 37036002  
COUNTY BOARD  
OF ARLINGTON COUNTY, VIRGINIA

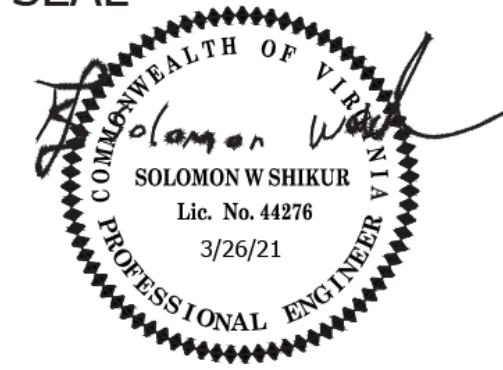
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VIRGINIA

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SEAL



APPROVALS DATE

*Amy Pflaum* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Kamal Taktak* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*John M. Leach* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis M. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John M. Leach* 3/30/2021  
PROJECT MANAGER

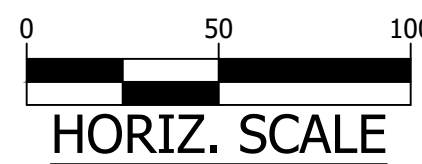
REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
  
SIGNING AND PAVEMENT MARKING PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:



SHEET C101.1

31ST STREET S. PARKING LOT WPB5

### STANDARD PAVEMENT MARKING LEGEND

(A)	TYPE B CLASS 1	WHITE 4" WIDTH	PARKING LANES, EDGE LINES, LANE LINES
(B)	TYPE B CLASS 1	WHITE 4" WIDTH, 10' LONG, 30' SPACING	DASHED LANE LINES
(C)	TYPE B CLASS 1	WHITE 4" WIDTH, 2' LONG 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(D)	TYPE B CLASS 1	WHITE 18" WIDTH	STOP BARS
(E)	TYPE B CLASS 1	WHITE 24" WIDTH	CONTINENTAL CROSS WALKS
(F)	TYPE B CLASS 1	WHITE 6" WIDTH	TURN LANES, TRANSVERSE CROSS WALKS, BIKE LANES
(G)	TYPE B CLASS 1	YELLOW 4" WIDTH, 10' LONG, 30' SPACING	DIVIDED TRAFFIC, TWO WAY TURN LANES
(H)	TYPE B CLASS 1	YELLOW 4" WIDTH	EDGE LINES
(I)	TYPE B CLASS 1	YELLOW 4" WIDTH, DOUBLE LINE, 4" SPACING	CENTERLINES
(J)	TYPE B CLASS 1	WHITE 6" WIDTH, 10' SPACING @45 DEGREE	HATCH LINES, SAFETY ZONES
(K)	TYPE B CLASS 1	WHITE SINGLE ARROW	TURN LANES
(L)	TYPE B CLASS 1	WHITE COMBINATION ARROW	TURN LANES
(M)	TYPE B CLASS 1	WHITE 8" LETTERS	PAVEMENT LETTERS (STOP, YIELD, BUS, ONLY, etc.)
(N)	TYPE B CLASS 1	WHITE 6" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(O)	TYPE B CLASS 1	WHITE 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
(P)	TYPE B CLASS 1	YELLOW 8" WIDTH @45 DEGREE	GORE MARKINGS
(Q)	TYPE B CLASS 1	WHITE 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS
(R)	TYPE B CLASS 1	WHITE 4" WIDTH, DOUBLE LINE, 4" SPACING	CURB EXTENSIONS
(S)	TYPE B CLASS 1	WHITE 24" WIDTH	VDOT - STOP BARS
(T)	TYPE B CLASS 1	YELLOW 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS

### PERMEABLE PAVEMENT COLOR SELECTION:



PERMEABLE PAVER COLOR SELECTION: SABLE BLEND

### PAVEMENT MARKING NOTES:

- STREET WIDTH MEASUREMENTS ARE FROM FACE OF CURB TO FACE OF CURB. LANES ARE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING .
- CONTACT DES-TRANSPORTATION ENGINEERING & OPERATIONS CONSTRUCTION MANAGEMENT SPECIALIST OR HIS DESIGNEE AT 703-228-6598 OR 571-437-1077 TO APPROVE MARKING LAYOUT 48 HOURS PRIOR TO INSTALLATION OF MARKINGS.
- PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING AND ANY REVISIONS HERE TO:  
A. THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.  
B. ARLINGTON COUNTY MARKING STANDARDS.
- ALL MARKINGS SHALL BE THERMOPLASTIC PER ARLINGTON COUNTY MARKING STANDARDS.
- STOP BARS SHALL BE A MINIMUM OF 4' IN ADVANCE OF A MARKED CROSSWALK. IF THERE IS NO MARKED CROSSWALK, STOP BAR SHALL BE NO MORE THAN 30' FROM THE NEAREST EDGE OF THE INTERSECTED TRAVELED WAY.
- CROSSWALKS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
- LEFT TURN ARROWS SHALL BE LOCATED 25' BACK FROM STOP BAR. FOR ADDITIONAL ARROWS FOLLOW COUNTY MARKING STANDARDS.
- ON-STREET PARKING LANE IS 7' WIDE (UNLESS OTHERWISE NOTED) AND MARKED WITH 4" WIDE WHITE LINES. BEGINNING AND END OF PARKING SHALL BE MARKED WITH AN END LINE PERPENDICULAR TO CURB EXCEPT AT NUBS OR WHERE OTHERWISE INDICATED.
- SHARED LANE MARKINGS SHALL BE PLACED IN CENTER OF LANE, 250' APART UNLESS OTHERWISE SPECIFIED.
- BIKE LANE SYMBOLS TO BE PLACED 330' APART UNLESS OTHERWISE SPECIFIED.
- EDGE LINES ARE ONLY REQUIRED WHERE SHOWN ON THE PLANS.
- FOR DETAILS SEE ARLINGTON COUNTY PAVEMENT MARKING SPECIFICATION, DETAILS MK-1 TO MK-12

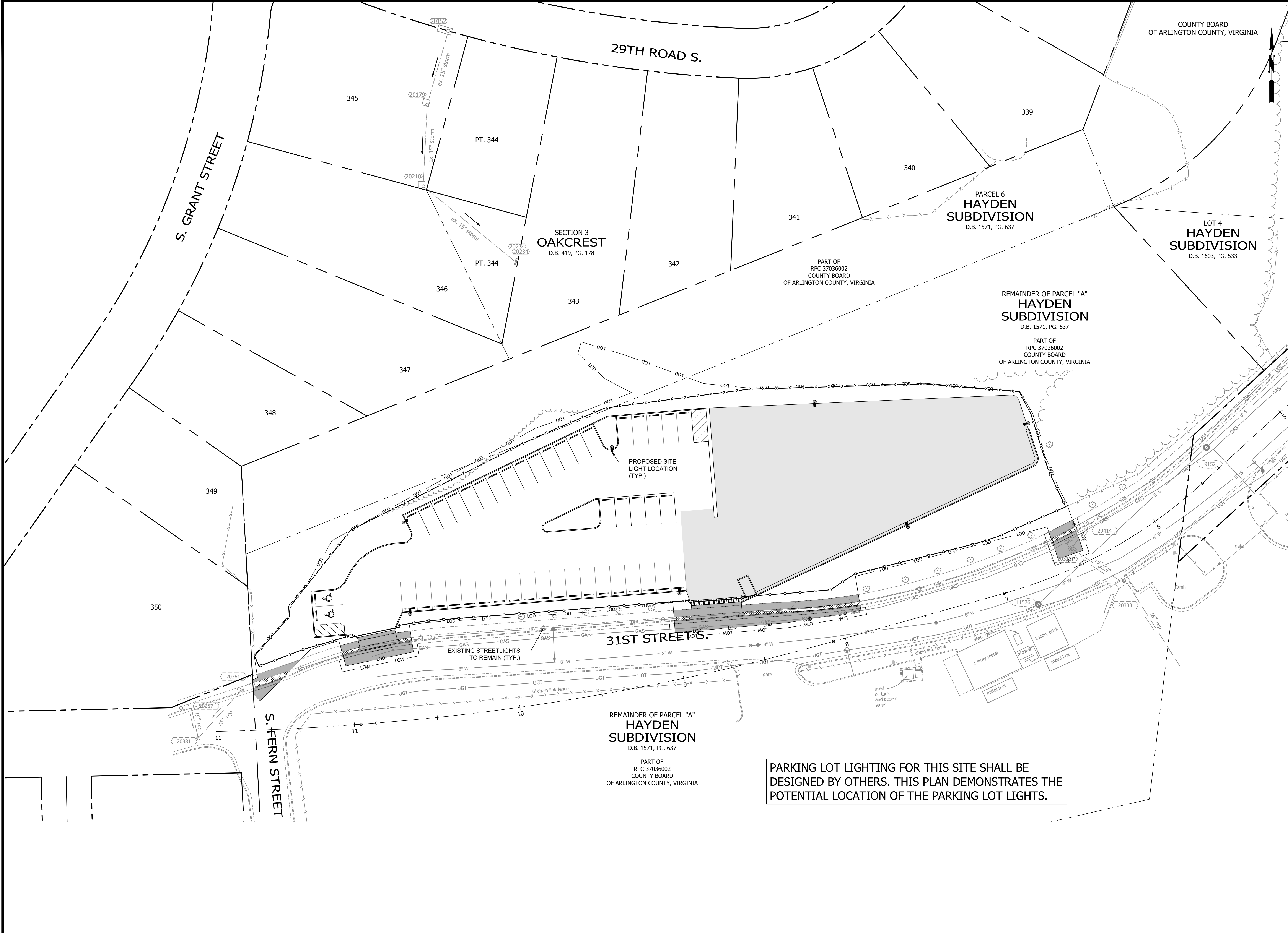
### SIGN NOTES:

- FOR ALL SIGN POSTS PLACED IN CONCRETE USE 7 GAUGE HEAVY DUTY ANCHOR (30"x2.50") WITH HARDWARE FOR 2" POST. USE 3/8" CORNER BOLT WITH FLANGED NUT AND 3/8" DRIVER RIVET WITH WASHER.
- CONTACT TE&O CONSTRUCTION MANAGER OR HIS DESIGNEE AT 703-228-6598 OR 571-437-1077 48 HRS PRIOR TO POURING CONCRETE. ALTERNATIVE CONTACT AT 703-228-3788 OR 571-414-7497.



REVISED ON 05/23/2018

FILENAME: WPB5-270-SITE\_LIGHTING\_Plan.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



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SEAL

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<i>Kamal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21 04.02.2021
<i>Dennis W. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John Min</i> PROJECT MANAGER	3/30/2021

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

SITE LIGHTING PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:  
  
GRAPHIC SCALE

SHEET

C111.1

31ST STREET S. PARKING LOT WPB5



GENERAL MOT NOTES:

- PROJECT IS A "TYPE A" TMP PROJECT. THIS PROJECT SUPPORTS FOR THE IMPROVEMENT OF 31ST STREET SOUTH PARKING LOT EXPANSION.
- THE DESIGN FOR THE 31ST STREET SOUTH PARKING LOT EXPANSION PROJECT INCLUDES ADDING A NEW PARKING LOT ENTRANCE OFF 31ST STREET SOUTH, DEMOLISHING THE EXISTING PARKING LOT AND EXPANDING THE PARKING LOT TO ALLOW TRANSIT PARKING AS WELL AS LAYDOWN STORAGE PARKING.
- THE WORKING HOURS WITHIN ARLINGTON COUNTY RIGHT-OF-WAY ARE AS FOLLOWS:
 

MON. TO FRI.	SATURDAY	SUNDAY
9:00 AM TO 4:00 PM	*Not Allowed	*Not Allowed
- BEFORE AND AFTER WORKING HOURS, ALL TRAVEL LANES SHALL BE OPENED TO THE MOTORISTS.
- NO LANE CLOSURES WILL BE ALLOWED FROM NOON ON THE DAY BEFORE A HOLIDAY UNTIL NOON ON THE WORKDAY FOLLOWING THE HOLIDAY. HOLIDAYS INCLUDE ALL STATE AND FEDERAL HOLIDAYS.
- MAINTENANCE OF TRAFFIC (MOT) PLAN WHICH INCLUDES THE SEQUENCE OF CONSTRUCTION (SOC) WAS REVIEWED AND APPROVED BY THE ARLINGTON COUNTY TRANSPORTATION ENGINEERING AND OPERATION (TE&O) BUREAU.
- THE CONTRACTOR SHALL COORDINATE WITH ARLINGTON COUNTY TRANSIT BUREAU (703-228-3049) AT LEAST 4 WEEKS PRIOR TO COMMENCEMENT OF WORK FOR APPROVAL, IF TRANSIT IS AFFECTED.
- THE CONTRACTOR SHALL RETAIN PEDESTRIAN ACCESS TO THE BUS STOPS LOCATED WITHIN THE CONSTRUCTION ZONE FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL :
  - DESIGNATE A PERSON ASSIGNED TO THE PROJECT WHO WILL HAVE THE PRIMARY RESPONSIBILITY, WITH SUFFICIENT AUTHORITY, FOR IMPLEMENTING THE TMP/MOT/SOC AND OTHER SAFETY AND MOBILITY ASPECTS OF THE PERMIT WORK. THIS PERSON SHALL COORDINATE WITH THE ARLINGTON COUNTY CONSTRUCTION MANAGER FOR THE DURATION OF THE PROJECT.
  - ENSURE THAT PERSONNEL ASSIGNED TO THE PROJECT ARE TRAINED IN TRAFFIC CONTROL TO A LEVEL COMMENSURATE WITH THEIR RESPONSIBILITIES IN ACCORDANCE WITH VDOT'S WORK ZONE TRAFFIC CONTROL TRAINING GUIDELINES.
  - PERFORM REVIEWS OF THE CONSTRUCTION AREA TO ENSURE COMPLIANCE WITH CONTRACT DOCUMENTS AT REGULARLY SCHEDULED INTERVALS AT THE DIRECTION OF THE ENGINEER. CONTRACTORS SHALL MAINTAIN AN APPROVED COPY OF THE TEMPORARY TRAFFIC CONTROL PLAN AT THE WORK SITE AT ALL TIMES.
- THIS TMP/MOT/SOC PLAN IS INTENDED AS A GUIDE. IT IS NOT TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE CONSTRUCTION OF EACH PHASE, BUT ONLY TO SHOW THE GENERAL HANDLING OF EXISTING TRAFFIC. IF THE CONTRACTOR IS TO DEViate FROM THE APPROVED TMP, A NEW OR REVISED TMP MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
- ALL AREAS EXCAVATED BELOW THE EXISTING PAVEMENT SURFACE AND WITHIN THE CLEAR ZONE AT THE CONCLUSION OF EACH WORKDAY, SHALL BE BACKFILLED UP TO EXISTING PAVEMENT OR NEWLY CONSTRUCTED PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL ADD ANY ADDITIONAL TEMPORARY MEASURES NECESSARY TO FACILITATE PROPER, POSITIVE DRAINAGE FOR THE DURATION OF CONSTRUCTION.
- EACH PHASE OF CONSTRUCTION SHALL BE COMPLETED PRIOR TO THE START OF THE NEXT PHASE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FIRE DEPARTMENT NOTES:

- ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
- IN THE EVENT THAT EXISTING FIRE DEPARTMENT CONNECTIONS OR FIRE APPARATUS ACCESS ROADS (FIRE LANES) MUST BE OBSTRUCTED TO FACILITATE CONSTRUCTION ACTIVITIES, CONTACT THE ARLINGTON COUNTY FIRE DEPARTMENT FIRE PREVENTION OFFICE AT 703-228-4644 TO COORDINATE REVIEW AND APPROVAL OF TEMPORARY FIRE DEPARTMENT CONNECTIONS AND/OR FIRE APPARATUS ACCESS ROADS PRIOR TO CREATING THE OBSTRUCTION.

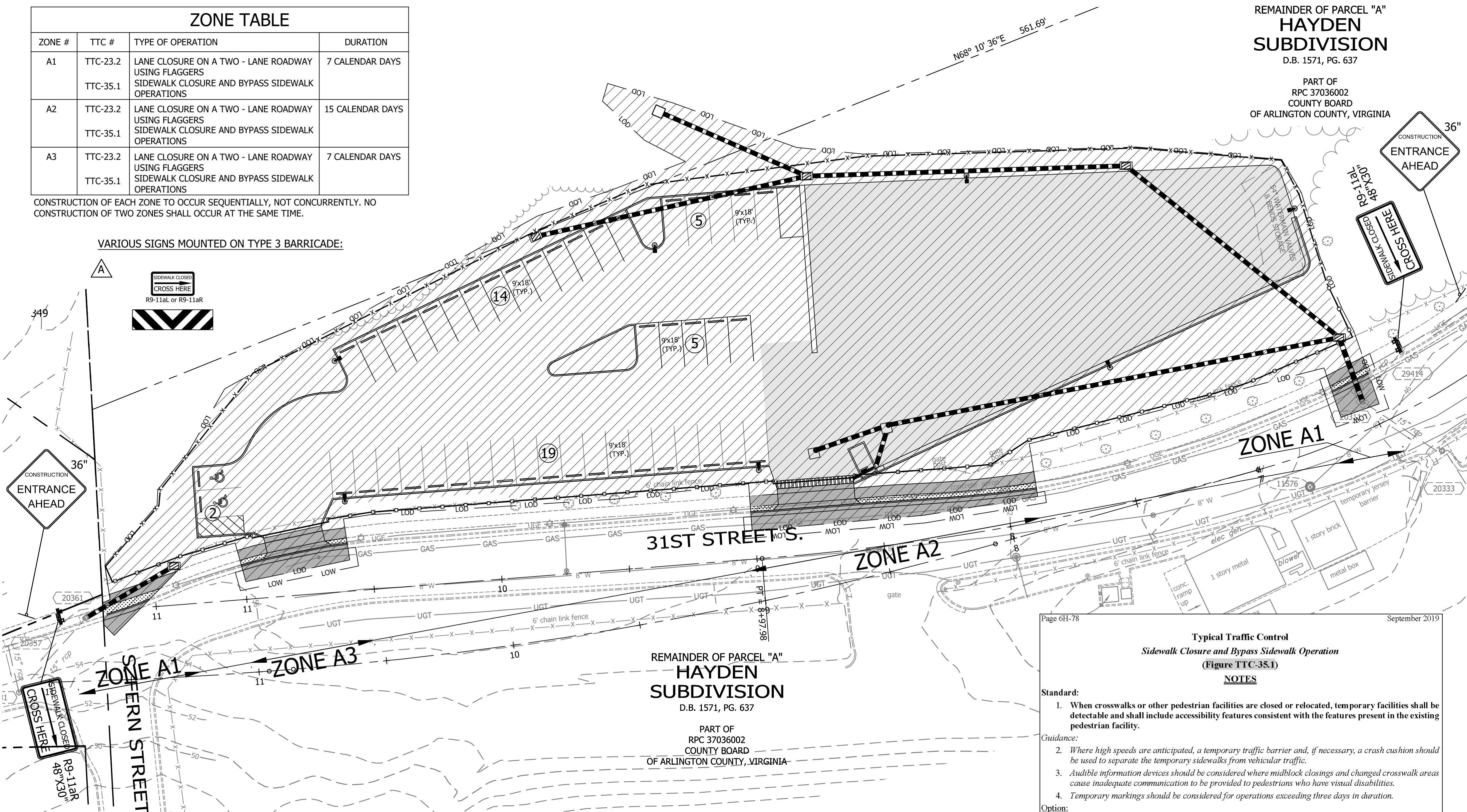
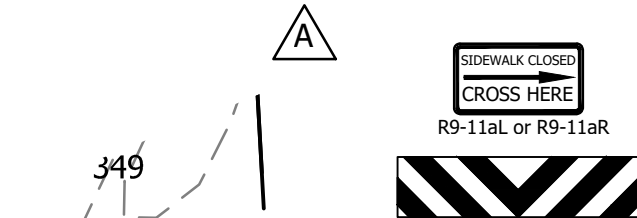
GENERAL SEQUENCE OF CONSTRUCTION:

- TRAFFIC CONTROL DEVICES AND SAFETY MEASURES SHALL COMPLY WITH THE LATEST EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, VDOT'S GUIDELINES FOR TEMPORARY TRAFFIC CONTROL, FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, ARLINGTON COUNTY STANDARDS, THE TRAFFIC CONTROL PLANS INCLUDED IN THE CONSTRUCTION DRAWINGS, AND/OR AS DIRECTED BY THE PROJECT OFFICER.
- THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE WHICH INDICATES START AND FINISH DATES FOR EACH SEGMENT OF THE WORK. THE SCHEDULE SHALL INDICATE THE DURATION OF ALL LANE OR SHOULDER CLOSURES. THE CONTRACTOR SHALL NOTIFY THE PROJECT OFFICER A MINIMUM OF 3 BUSINESS DAYS IN ADVANCE OF PROCEEDING TO THE NEXT WORK SEGMENT.
- THE CONTRACTOR SHALL NOTIFY THE PROJECT OFFICER OF PARKING RESTRICTION NEEDS A MINIMUM OF 3 BUSINESS DAYS PRIOR TO COMMENCEMENT OF WORK FOR EACH SEGMENT. COUNTY PROJECT OFFICER SHALL RESTRICT PARKING BY CONTACTING DES - PERMITTING SECTION, 703-228-4798.
- PORTABLE VARIABLE MESSAGE SIGNS WITH CLOSURE INFORMATION MUST BE INSTALLED AHEAD OF WORK AREA 3 WEEKS PRIOR TO CLOSURE.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL EITHER MAINTAIN APPROPRIATE SIGHT DISTANCE TO ALL TRAFFIC SIGNS OR PROVIDE FOR TEMPORARY SIGNAGE OR FLAGGERS TO GUIDE TRAFFIC THROUGH WORK ZONES.
- THE CONTRACTOR SHALL MINIMIZE THE DURATION OF ANY BLOCKAGE TO PRIVATE ENTRANCES AND DRIVEWAYS. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF DRIVEWAY CLOSURE FOR APPROVAL BY THE PROJECT OFFICER. THE PROJECT OFFICER SHALL BE NOTIFIED A MINIMUM OF 3 BUSINESS DAYS IN ADVANCE OF SUCH ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THE PROPERTY. THE CONTRACTOR SHALL MAKE ALL PRIVATE ENTRANCES AND DRIVEWAYS ACCESSIBLE AT THE CONCLUSION OF EACH WORKDAY.
- ANY EXCAVATIONS WHICH ARE SPECIFICALLY APPROVED BY THE PROJECT OFFICER TO REMAIN OPEN PAST NORMAL WORKING HOURS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PROTECTED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND AS APPROVED BY THE PROJECT OFFICER.
- PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, INCLUDING ACCESS TO BUS STOP SHELTERS, UNLESS OTHERWISE APPROVED IN THE PLANS.
- PEDESTRIAN TRAFFIC SHALL BE SEPARATED FROM WORK ZONES WITH APPROPRIATE MEASURES IN ACCORDANCE WITH MUTCD.
- ADEQUATE PROVISIONS FOR PERSONS WITH DISABILITIES SHALL BE PROVIDED AT ALL TIMES PER ADA REQUIREMENTS.
- WHEN NECESSARY, PEDESTRIANS SHALL BE APPROPRIATELY DIRECTED WITH ADVANCED WARNING SIGNS PLACED AT INTERSECTIONS, TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY IN ORDER TO PREVENT CONFLICT WITH MIDBLOCK WORK SITES.
- PEDESTRIANS SHALL NOT BE LED INTO CONFLICT WITH WORK SITE EQUIPMENT, OPERATIONS, AND/OR VEHICLES MOVING THROUGH OR AROUND THE WORK SITE.
- THE CONTRACTOR SHALL NOTIFY ARLINGTON COUNTY TRANSIT BUREAU, 703-228-3049, A MINIMUM OF 4 WEEKS PRIOR TO COMMENCEMENT OF WORK, IF TRANSIT IS AFFECTED.
- IF WORK DONE AT SIGNALIZED INTERSECTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VEHICLE DETECTION AT ALL TIMES DURING THE PROJECT. CONTACT SIGNAL ITS TEAM DONALD CUNNINGHAM AT 703-228-6655 72 HOURS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL COMPLY WITH "RESTRICTED" WORKING HOURS AS DEFINED BY VDOT AND AS NOTED ON THE APPROVED VDOT PERMIT WHEN WORKING WITHIN THE VDOT RIGHT-OF-WAY. THE CONTRACTOR IS RESPONSIBLE FOR SATISFYING ALL VDOT PERMIT REQUIREMENTS.
- MAINTENANCE OF TRAFFIC PLANS AND DETAILS SHOWN HERE SHALL BE FOLLOWED BY THE CONTRACTOR DURING CONSTRUCTION. SHOULD THE CONTRACTOR DESIRE TO FOLLOW AN ALTERNATE PLAN, HE SHALL SUBMIT THE PLAN PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL. ALTERNATIVE PLAN PREPARATION SHALL BE NO COST TO THE COUNTY.
- DIRECTIONAL ARROWS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS ARE FOR INFORMATION ONLY AND ARE NOT TO BE PLACED AS PAVEMENT MARKINGS.
- THE CONTRACTOR SHALL COVER ANY EXISTING SIGNS WHICH ARE NOT APPLICABLE OR ARE IN CONFLICT WITH THIS MOT PLAN.
- THE CONTRACTOR SHALL ERADICATE AND RE-STRIPE AS NECESSARY ANY EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH OR DO NOT ALIGN WITH THE TEMPORARY PAVEMENT MARKINGS OR NEW TRAFFIC PATTERNS.
- THE CONTRACTOR SHALL ERADICATE ALL TEMPORARY PAVEMENT MARKINGS, INCLUDING TEMPORARY MARKED CROSSWALKS ONCE THE WORK AREA(S) ASSOCIATED WITH THE MARKINGS HAS BEEN COMPLETED.
- CONTRACTOR SHALL NOTIFY ARLINGTON COUNTY PUBLIC SCHOOLS TWO WEEKS PRIOR TO STARTING CONSTRUCTION.

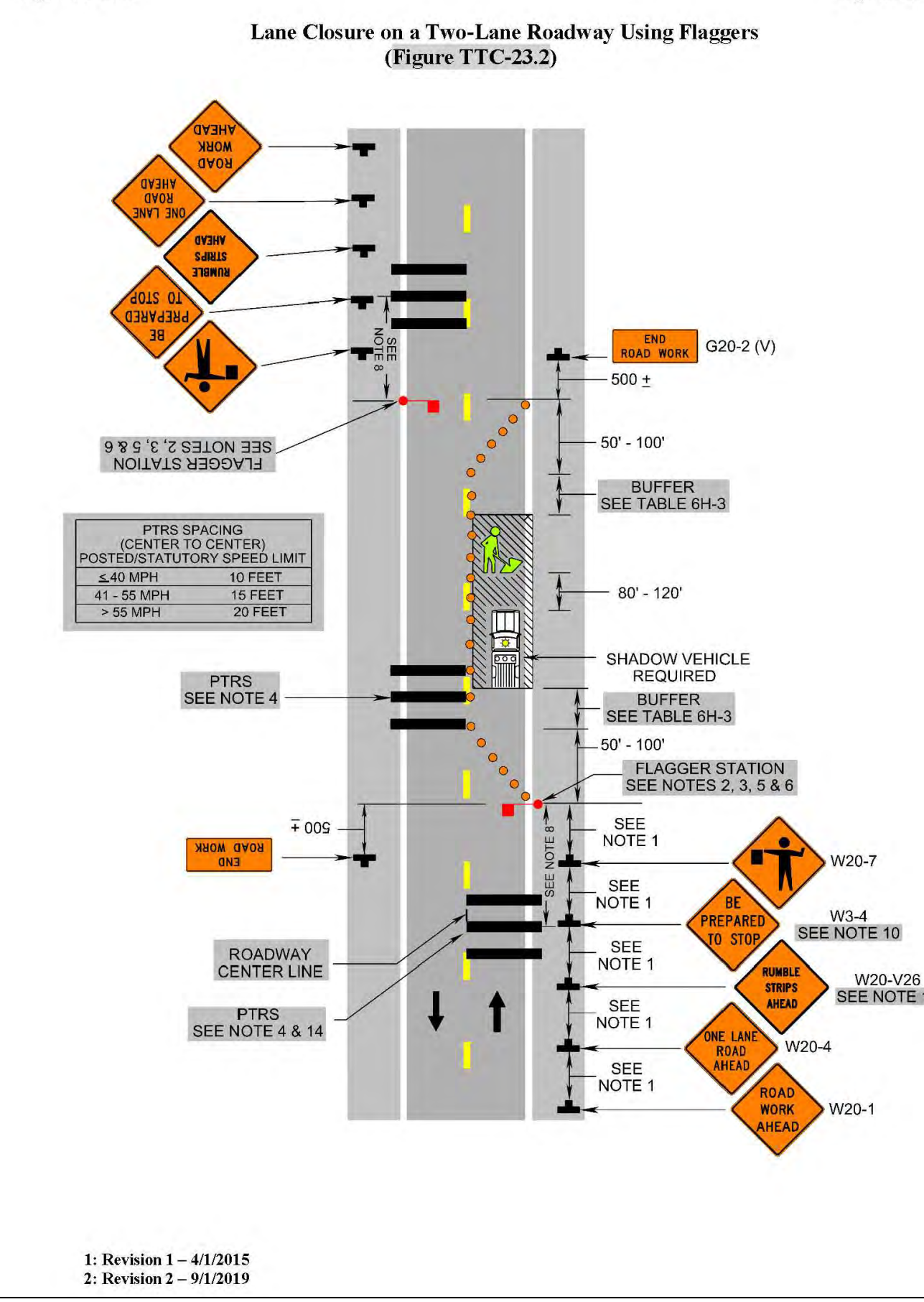
ZONE TABLE			
ZONE #	TTC #	TYPE OF OPERATION	DURATION
A1	TTC-23.2	LANE CLOSURE ON A TWO - LANE ROADWAY USING FLAGGERS	7 CALENDAR DAYS
	TTC-35.1	SIDEWALK CLOSURE AND BYPASS SIDEWALK OPERATIONS	
A2	TTC-23.2	LANE CLOSURE ON A TWO - LANE ROADWAY USING FLAGGERS	15 CALENDAR DAYS
	TTC-35.1	SIDEWALK CLOSURE AND BYPASS SIDEWALK OPERATIONS	
A3	TTC-23.2	LANE CLOSURE ON A TWO - LANE ROADWAY USING FLAGGERS	7 CALENDAR DAYS
	TTC-35.1	SIDEWALK CLOSURE AND BYPASS SIDEWALK OPERATIONS	

CONSTRUCTION OF EACH ZONE TO OCCUR SEQUENTIALLY, NOT CONCURRENTLY. NO CONSTRUCTION OF TWO ZONES SHALL OCCUR AT THE SAME TIME.

VARIOUS SIGNS MOUNTED ON TYPE 3 BARRICADE:

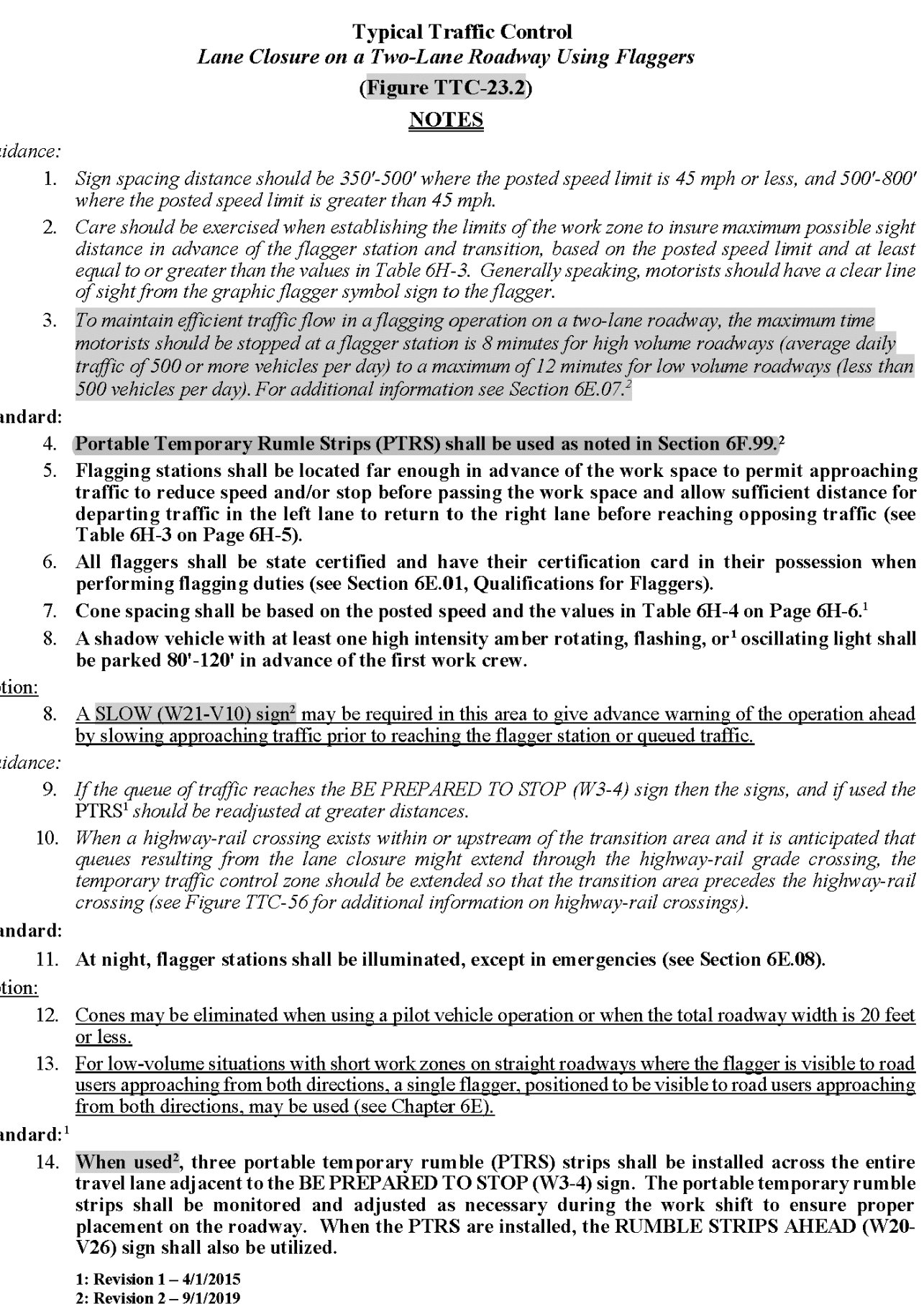


September 2019 Page 6H-55

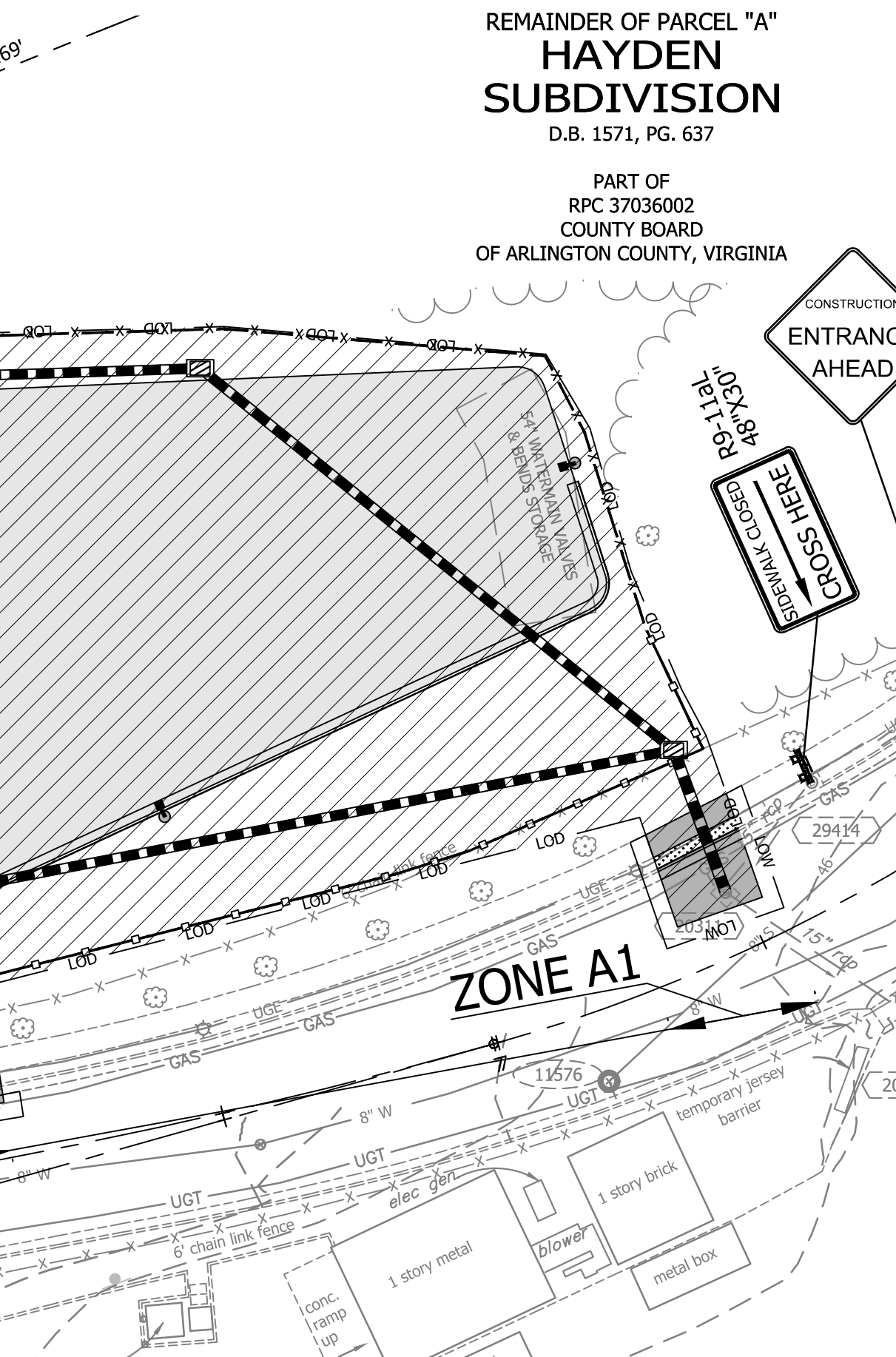


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2: Revision 2 - 9/1/2019

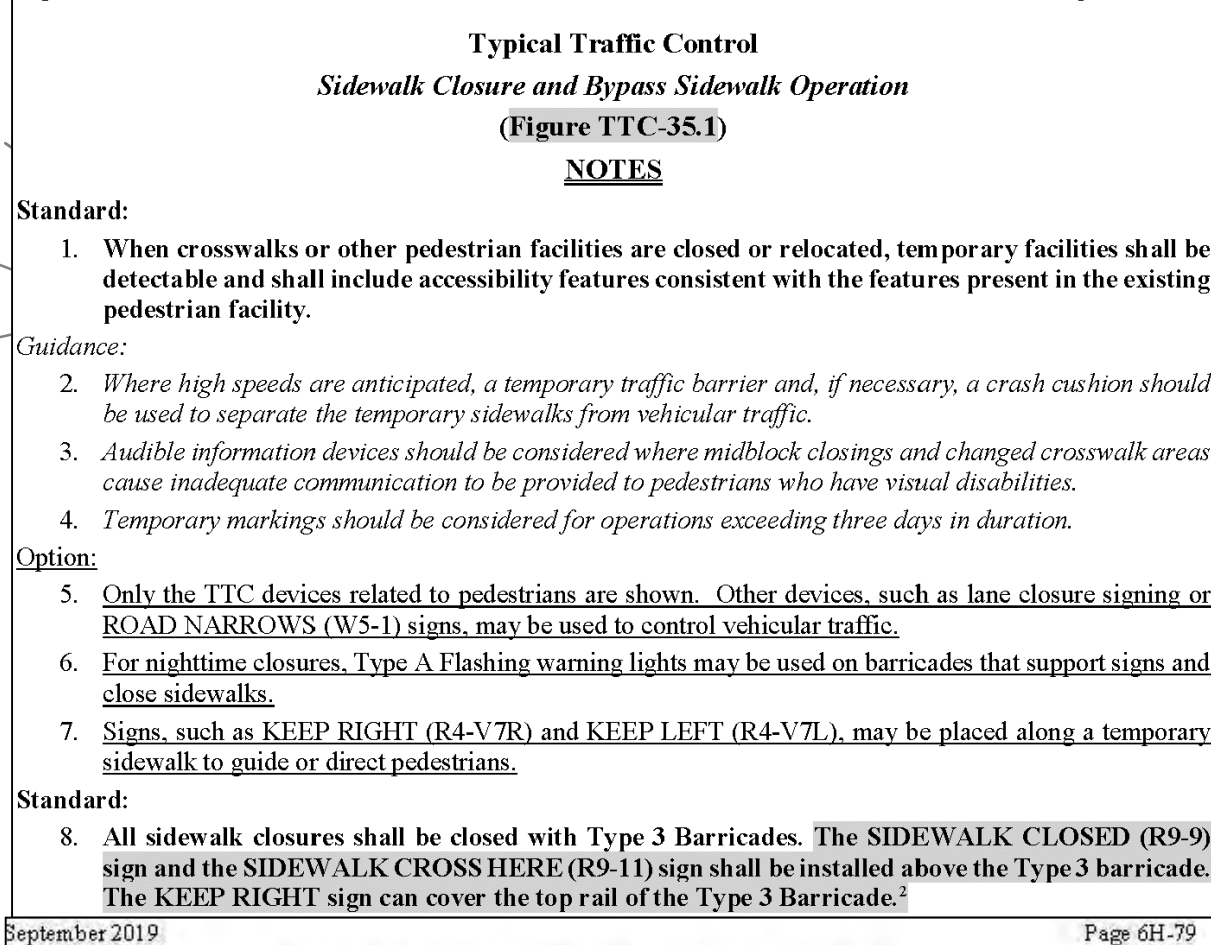
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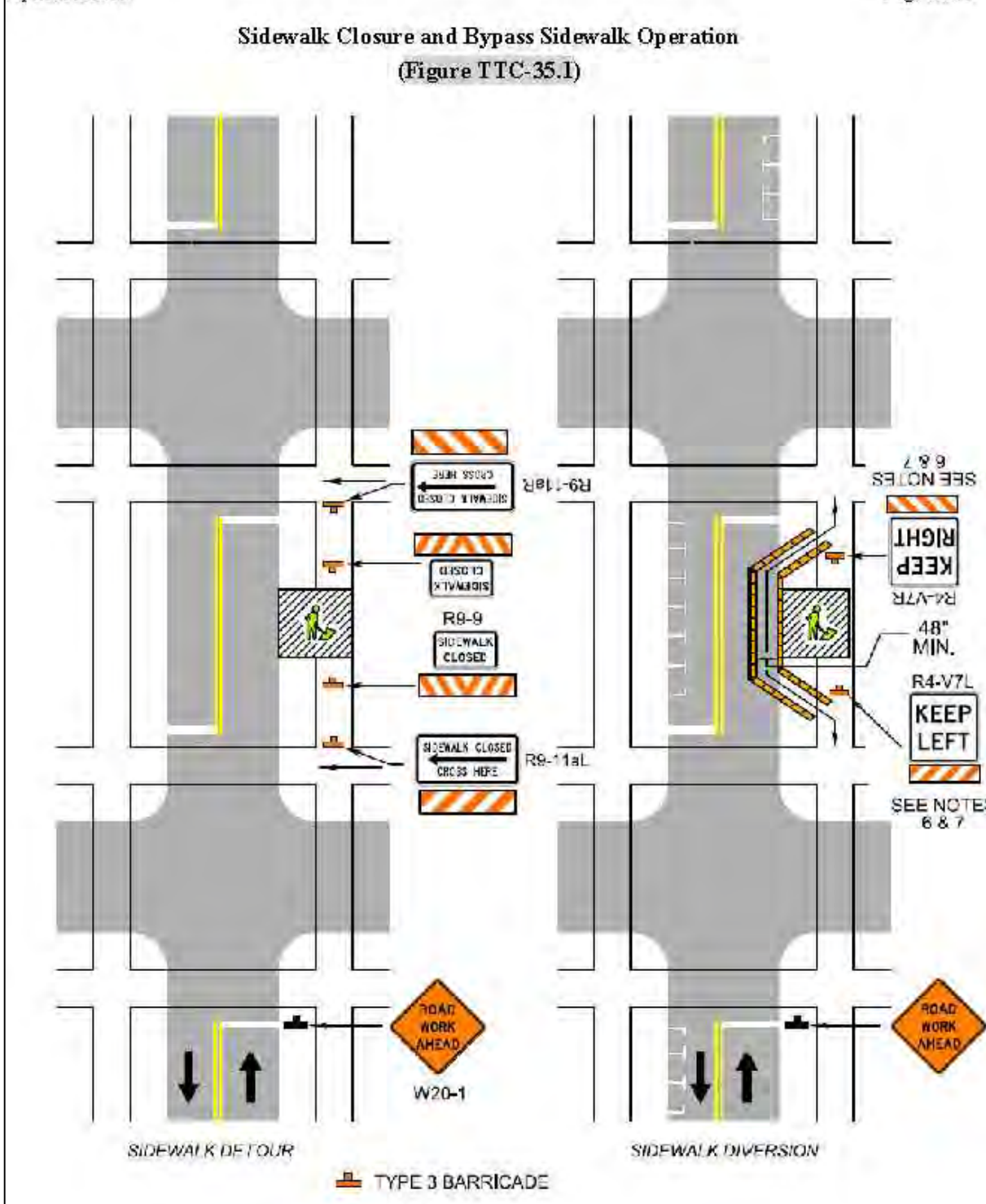
1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019



Page 6H-78



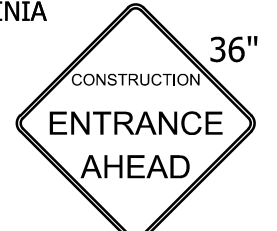
September 2019



TYPE 3 BARRICADE

REMAINDER OF PARCEL "A"  
**HAYDEN  
SUBDIVISION**  
D.B. 1571, PG. 637

PART OF  
RPC 37036002  
COUNTY BOARD  
OF ARLINGTON COUNTY, VIRGINIA

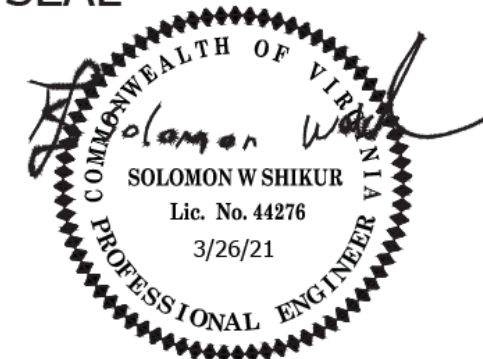


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ARLINGTON, VA 22201  
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APPROVALS DATE

Amy Pflaum 03/26/2021  
QUALITY CONTROL ENGINEER  
Ramal Takab 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
Dennis M. Leach 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
TRANSPORTATION DIRECTOR  
John Min 3/30/2021  
PROJECT MANAGER

REVISIONS DATE

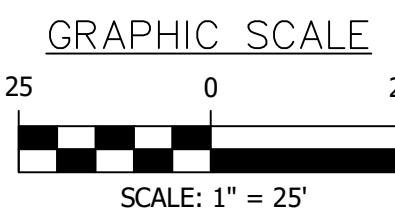
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
MAINTENANCE OF TRAFFIC PLAN

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

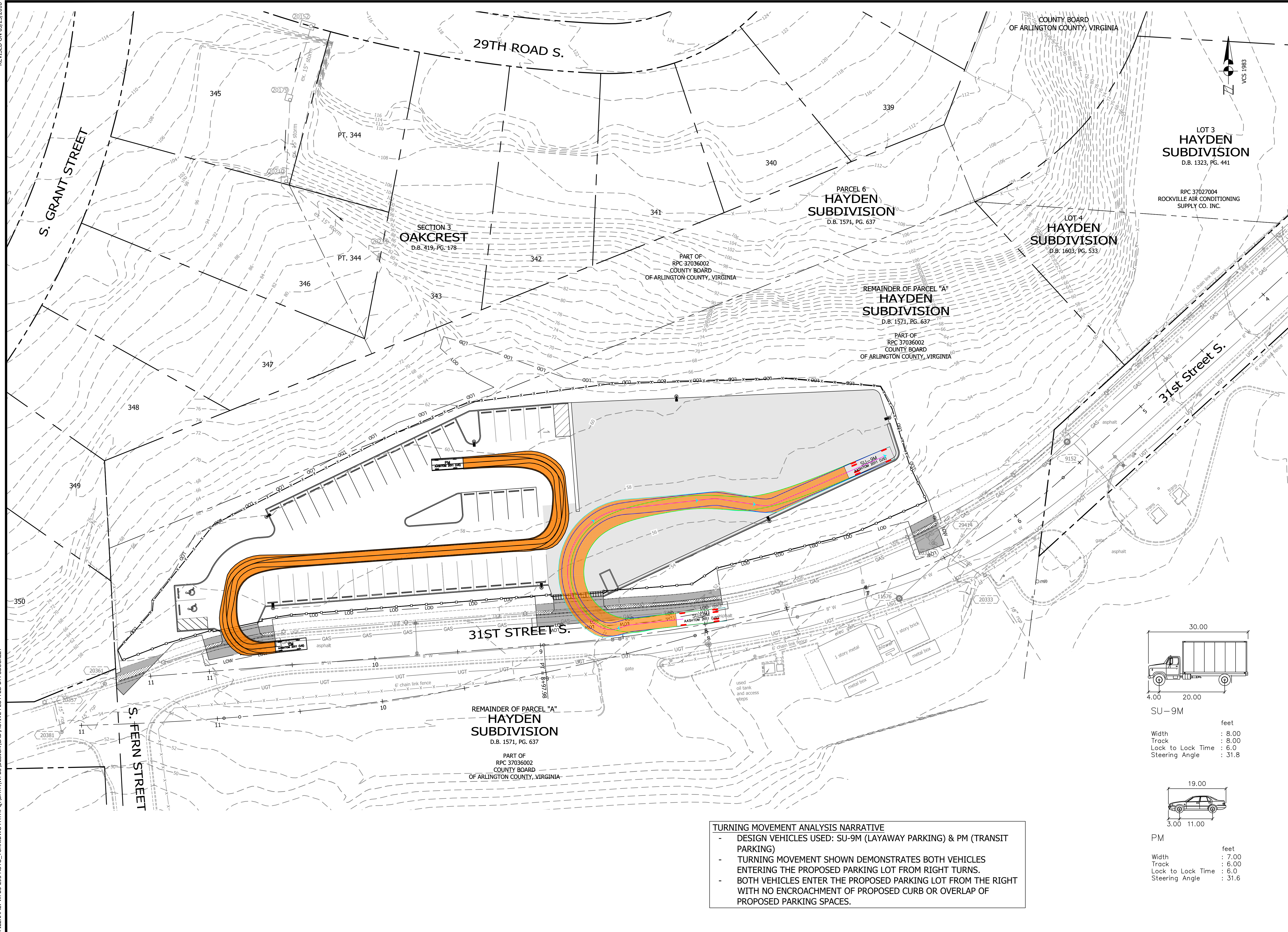
PLOTTED: MARCH 26 2021

SCALE:



SHEET C121.1





TURNING MOVEMENT ANALYSIS NARRATIVE

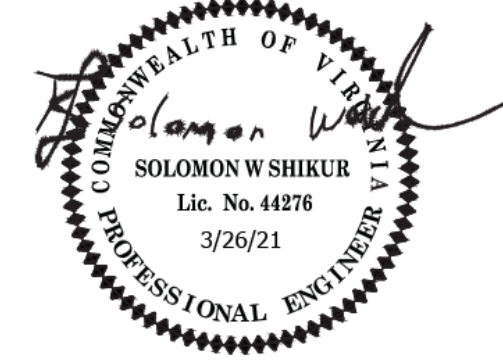
- DESIGN VEHICLES USED: SU-9M (LAYAWAY PARKING) & PM (TRANSIT PARKING)
- TURNING MOVEMENT SHOWN DEMONSTRATES BOTH VEHICLES ENTERING THE PROPOSED PARKING LOT FROM RIGHT TURNS.
- BOTH VEHICLES ENTER THE PROPOSED PARKING LOT FROM THE RIGHT WITH NO ENCROACHMENT OF PROPOSED CURB OR OVERLAP OF PROPOSED PARKING SPACES.

ARLINGTON  
VIRGINIA

DEPARTMENT OF  
ENVIRONMENTAL SERVICES  
FACILITIES & ENGINEERING DIVISION  
ENGINEERING BUREAU  
2100 CLARENDON BOULEVARD, SUITE 813  
ARLINGTON, VA 22201  
PHONE: 703.228.3629  
FAX: 703.228.3606

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SEAL



APPROVALS DATE

<i>Amy Pflaum</i>	03/26/2021
QUALITY CONTROL ENGINEER	
<i>Ramal Taktak</i>	3.30.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
<i>Dennis M. Leach</i>	04.02.2021
WATER, SEWER, STREETS BUREAU CHIEF	
<i>John Min</i>	04/09/21
TRANSPORTATION DIRECTOR	
<i>John Min</i>	3/30/2021
PROJECT MANAGER	

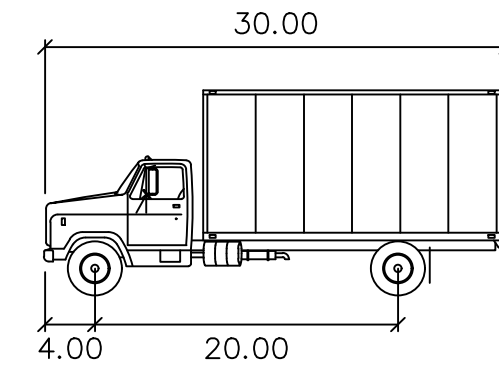
REVISIONS DATE

REVISIONS	DATE

31ST STREET S. PARKING LOT

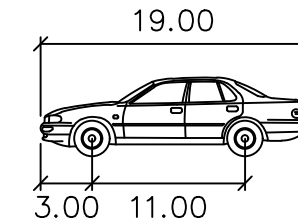
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

AUTO TURN 1 - ENTER RIGHT



SU-9M

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8



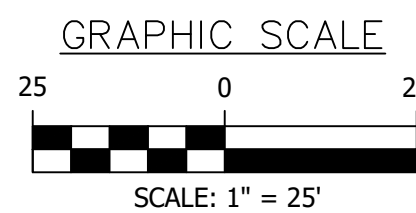
PM

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Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

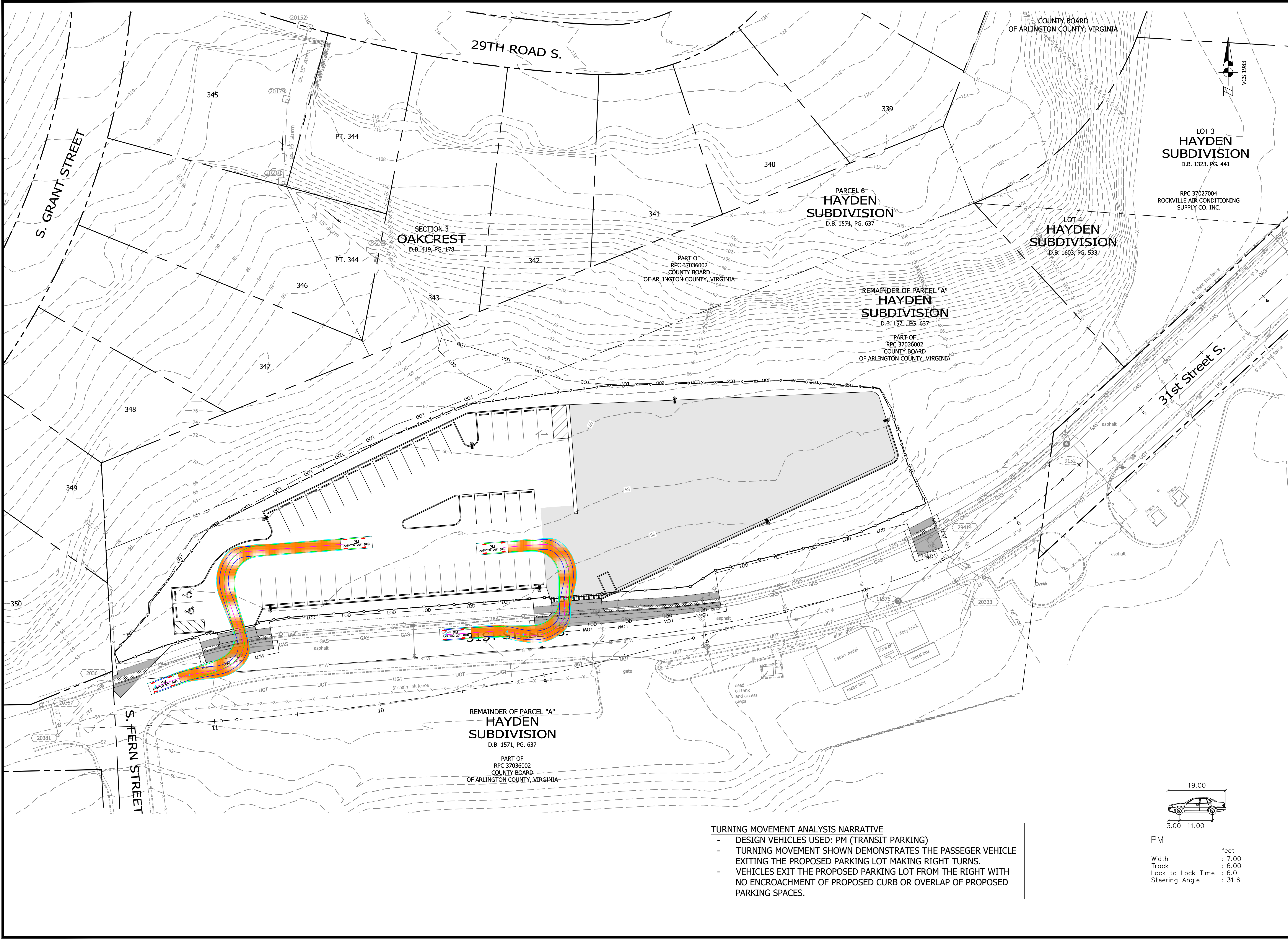
SCALE:



SHEET C200.1

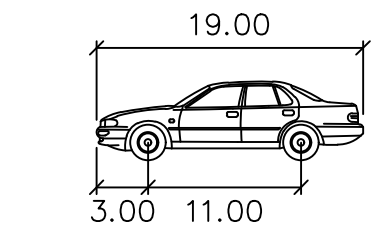


REVISED ON 05/23/2018  
FILENAME: WPB5-295-AUTO\_TURN.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



TURNING MOVEMENT ANALYSIS NARRATIVE

- DESIGN VEHICLES USED: PM (TRANSIT PARKING)
- TURNING MOVEMENT SHOWN DEMONSTRATES THE PASSEGER VEHICLE EXITING THE PROPOSED PARKING LOT MAKING RIGHT TURNS.
- VEHICLES EXIT THE PROPOSED PARKING LOT FROM THE RIGHT WITH NO ENCROACHMENT OF PROPOSED CURB OR OVERLAP OF PROPOSED PARKING SPACES.



PM

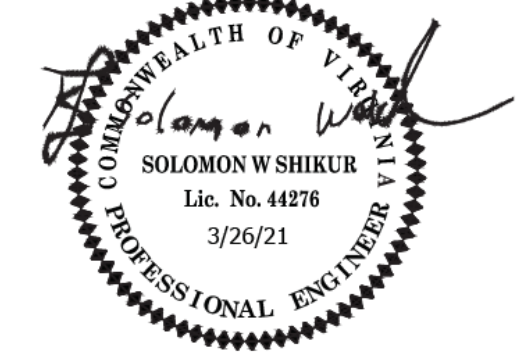
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Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

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APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Ramal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
<i>John Mier</i> PROJECT MANAGER	04.02.2021
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John Mier</i> PROJECT MANAGER	3/30/2021

REVISIONS

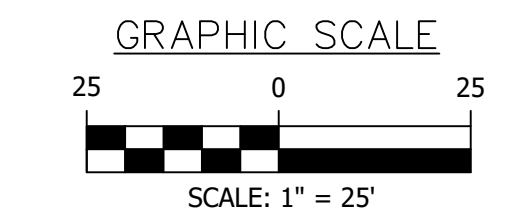
REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET  
AUTO TURN 2 - EXIT RIGHT

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

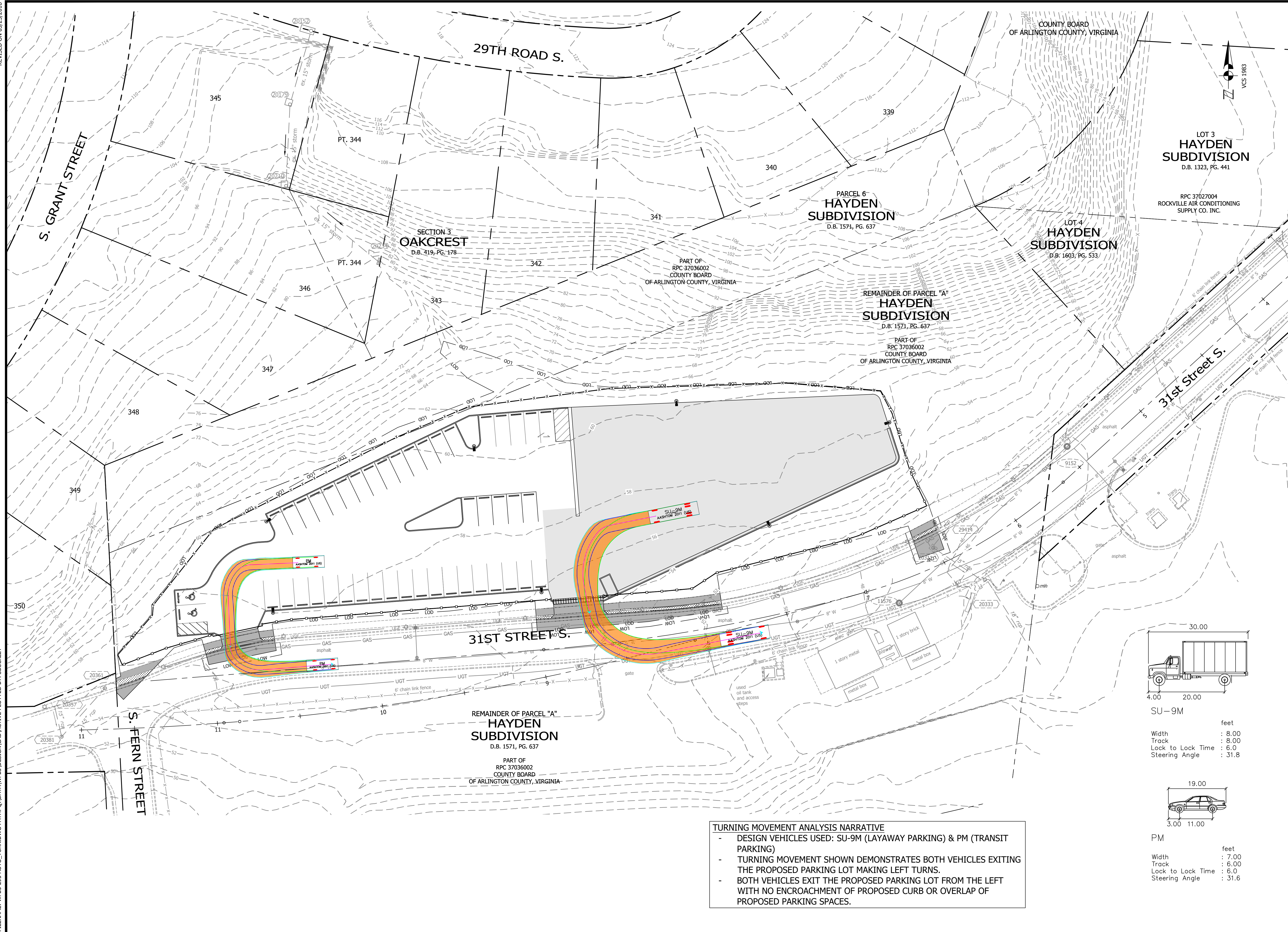


SHEET C200.2



REVISED ON 05/23/2018

FILENAME: WPB5-295-AUTO\_TURN.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



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APPROVALS	DATE
<i>Amy Pflaum</i> QUALITY CONTROL ENGINEER	03/26/2021
<i>Ramal Taktak</i> CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21 04.02.2021
<i>Dennis M. Leach</i> TRANSPORTATION DIRECTOR	04/09/21
<i>John Min</i> PROJECT MANAGER	3/30/2021

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

AUTO TURN 3 - EXIT LEFT

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

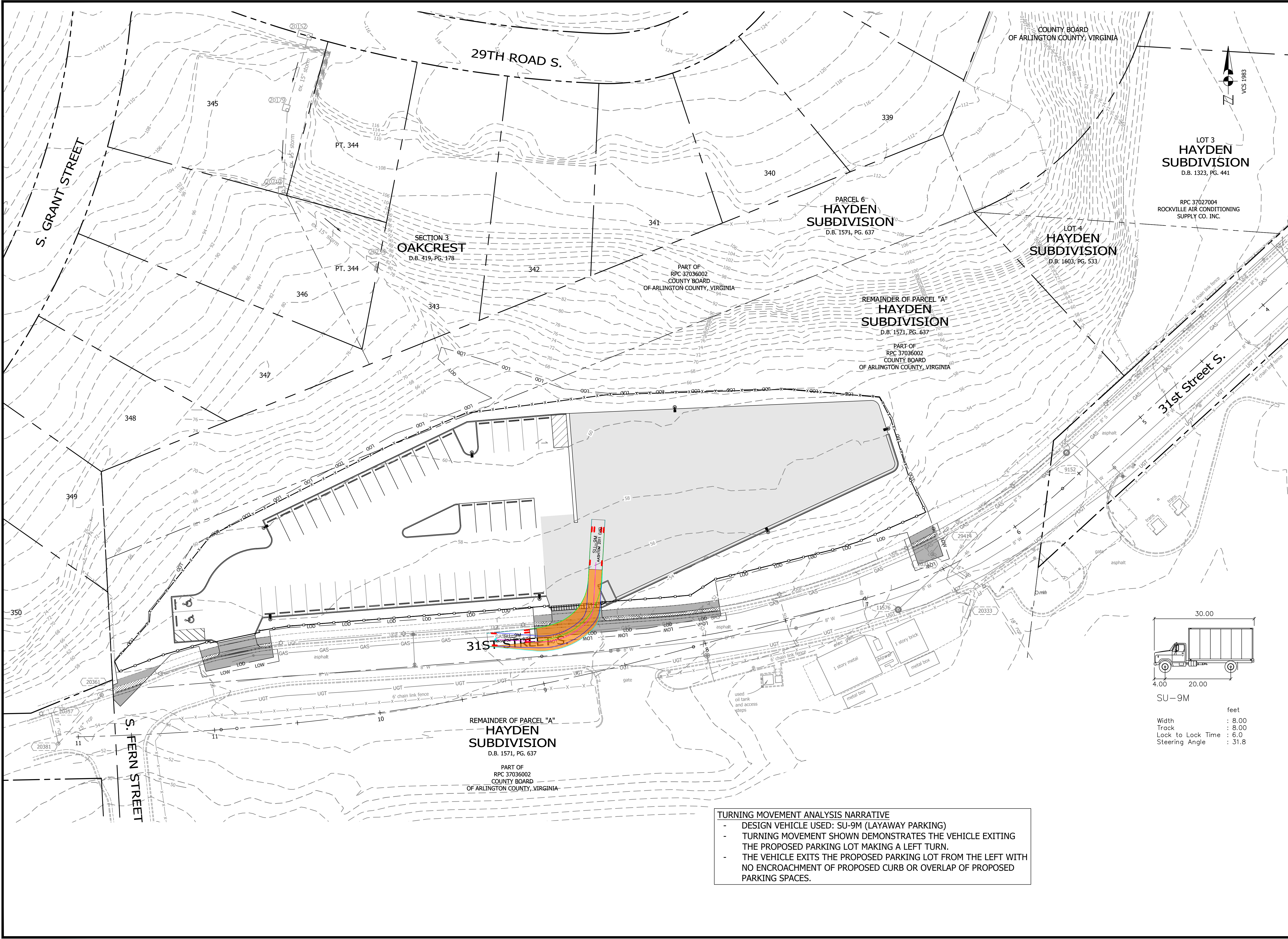
SHEET C200.3

TURNING MOVEMENT ANALYSIS NARRATIVE

- DESIGN VEHICLES USED: SU-9M (LAYAWAY PARKING) & PM (TRANSIT PARKING)
- TURNING MOVEMENT SHOWN DEMONSTRATES BOTH VEHICLES EXITING THE PROPOSED PARKING LOT MAKING LEFT TURNS.
- BOTH VEHICLES EXIT THE PROPOSED PARKING LOT FROM THE LEFT WITH NO ENCROACHMENT OF PROPOSED CURB OR OVERLAP OF PROPOSED PARKING SPACES.



REVISED ON 05/23/2018  
FILENAME: WPB5-295-AUTO\_TURN.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



**TURNING MOVEMENT ANALYSIS NARRATIVE**

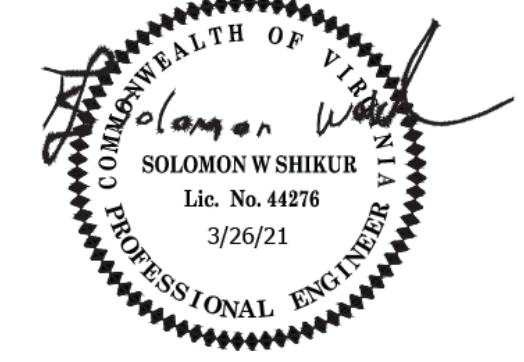
- DESIGN VEHICLE USED: SU-9M (LAYAWAY PARKING)
- TURNING MOVEMENT SHOWN DEMONSTRATES THE VEHICLE EXITING THE PROPOSED PARKING LOT MAKING A LEFT TURN.
- THE VEHICLE EXITS THE PROPOSED PARKING LOT FROM THE LEFT WITH NO ENCROACHMENT OF PROPOSED CURB OR OVERLAP OF PROPOSED PARKING SPACES.

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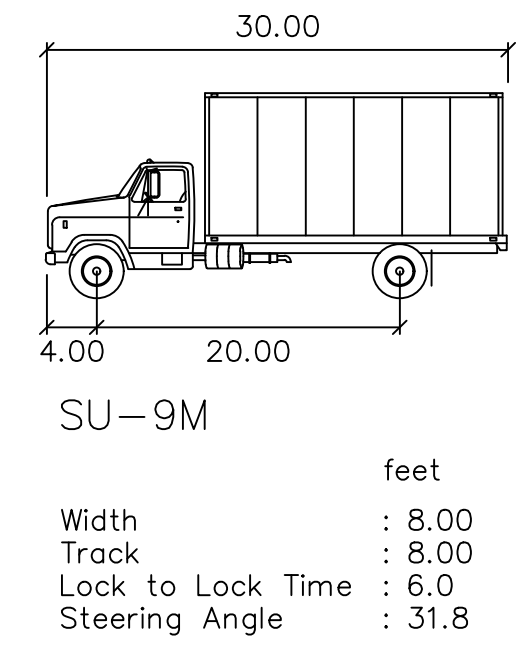
Amy Pflaum	03/26/2021
QUALITY CONTROL ENGINEER	
Ramal Takata	3.30.21
CONSTRUCTION MANAGEMENT SUPERVISOR	
Dennis M. Leach	04.02.2021
WATER, SEWER, STREETS BUREAU CHIEF	
TRANSPORTATION DIRECTOR	
John Min	3/30/2021
PROJECT MANAGER	

REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5

BETWEEN S. FERN STREET AND S. EADS STREET

AUTO TURN 4 - EXIT RIGHT TRUCK



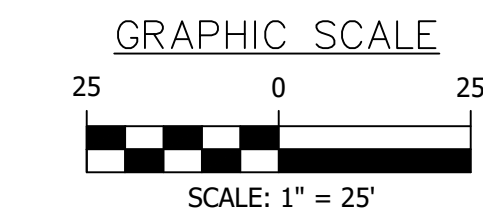
SU-9M

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

SCALE:

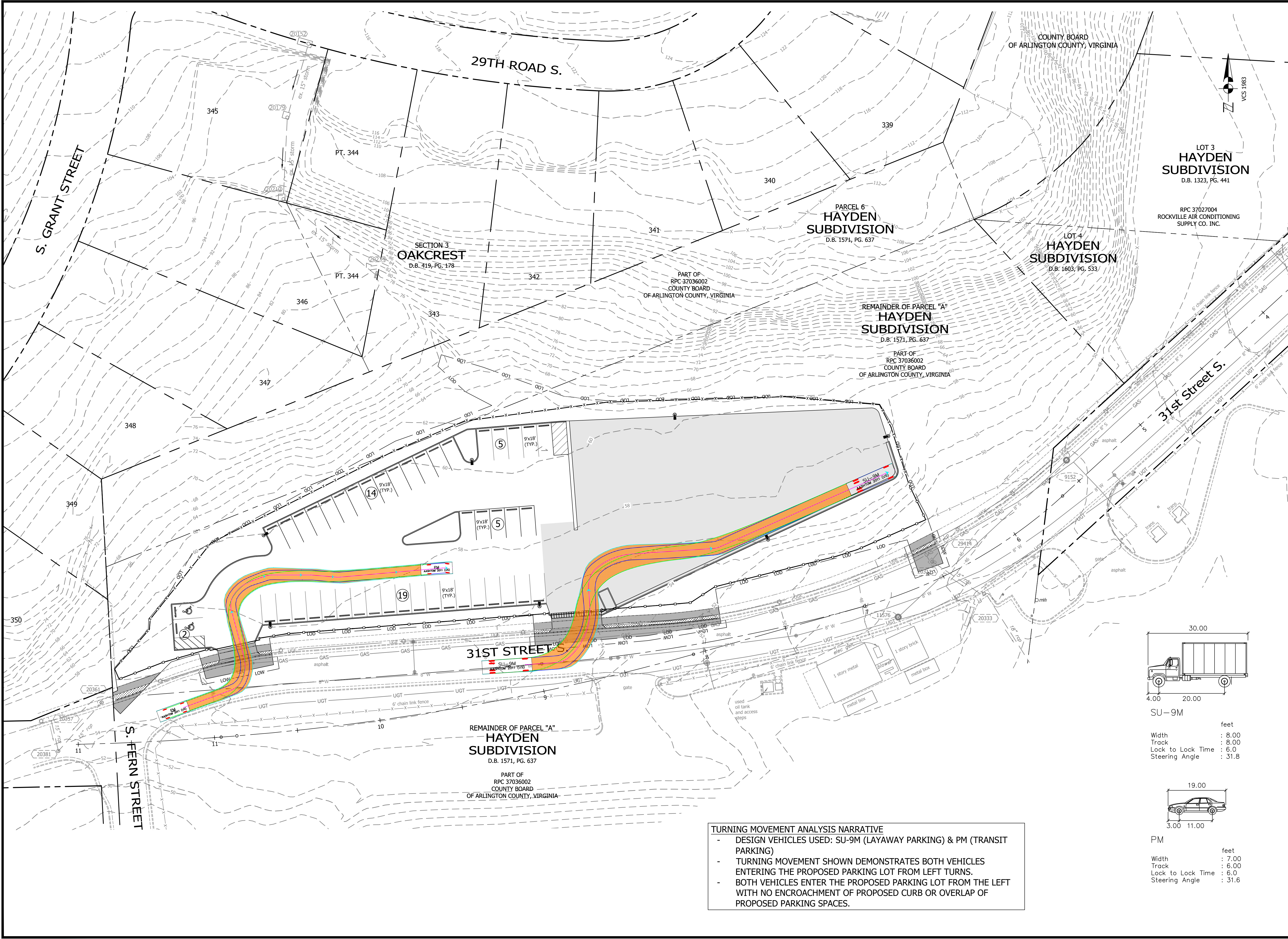


SHEET C200.4

31ST STREET S. PARKING LOT WPB5



REVISED ON 05/23/2018  
FILENAME: WPB5-295-AUTO\_TURN.DWG PATH: Q:\DATA\WPB5\DESIGN\CAD\ACTIVE PLOTTED BY: SBUCKLEY



**TURNING MOVEMENT ANALYSIS NARRATIVE**

- DESIGN VEHICLES USED: SU-9M (LAYAWAY PARKING) & PM (TRANSIT PARKING)
- TURNING MOVEMENT SHOWN DEMONSTRATES BOTH VEHICLES ENTERING THE PROPOSED PARKING LOT FROM LEFT TURNS.
- BOTH VEHICLES ENTER THE PROPOSED PARKING LOT FROM THE LEFT WITH NO ENCROACHMENT OF PROPOSED CURB OR OVERLAP OF PROPOSED PARKING SPACES.

**ARLINGTON**  
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**SEAL**

COMMONWEALTH OF VIRGINIA  
SOLOMON W. SHIKUR  
Lic. No. 44276  
3/26/21  
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy Pflaum QUALITY CONTROL ENGINEER	03/26/2021
Ramal Taktak CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
John W. Leach WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
Dennis M. Leach TRANSPORTATION DIRECTOR	04/09/21
John W. Leach PROJECT MANAGER	3/30/2021

REVISIONS	DATE

31ST STREET S. PARKING LOT  
WPB5  
BETWEEN S. FERN STREET AND S. EADS STREET

AUTO TURN 5 - ENTER LEFT

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS  
PLOTTED: MARCH 25 2021

**SCALE:**

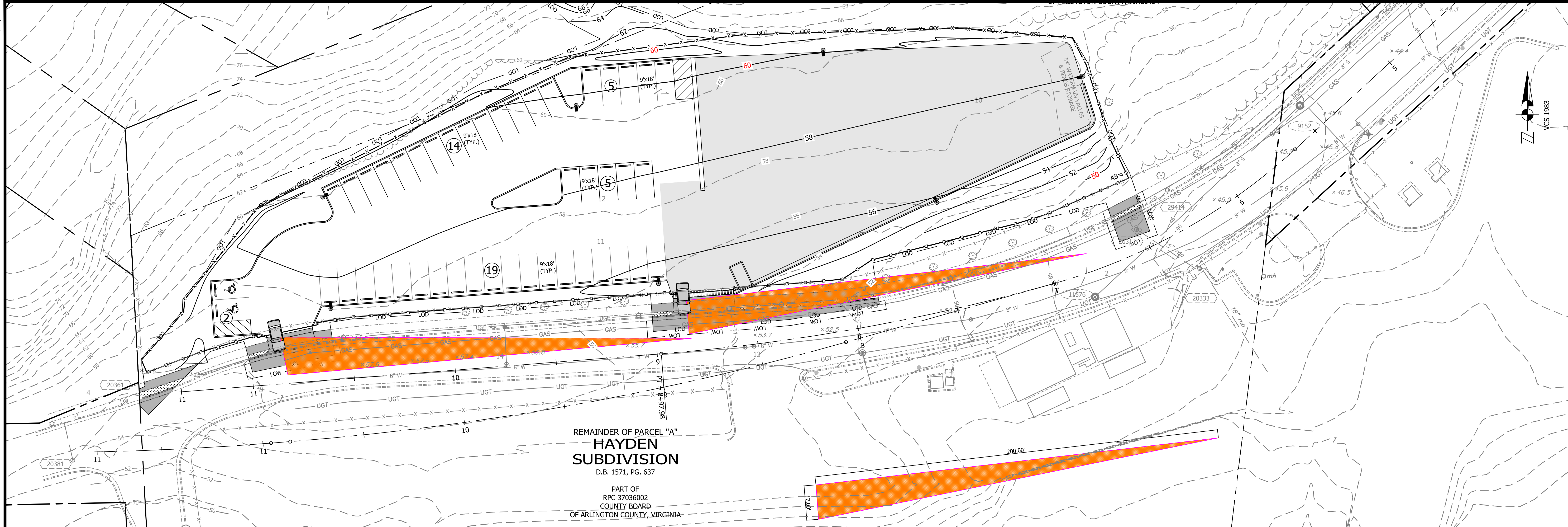
GRAPHIC SCALE  
25 0 25  
SCALE: 1" = 25'

**SHEET** C200.5

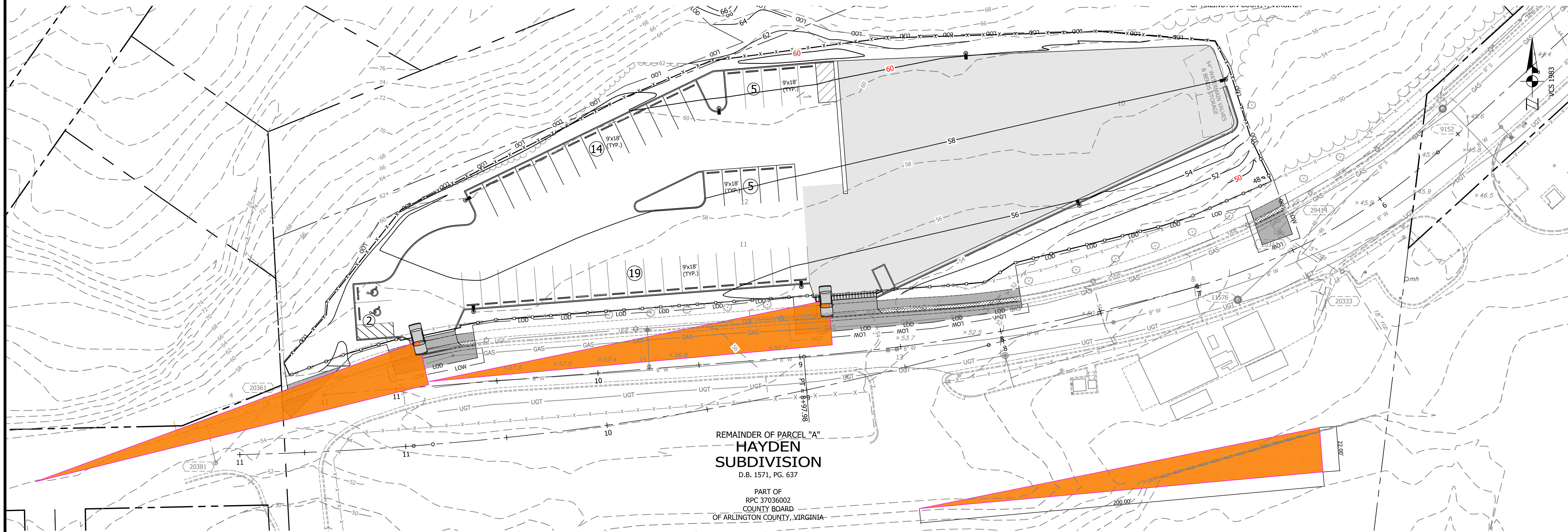


REVISED ON 05/23/2018

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LEFT SIGHT DISTANCE EXHIBIT



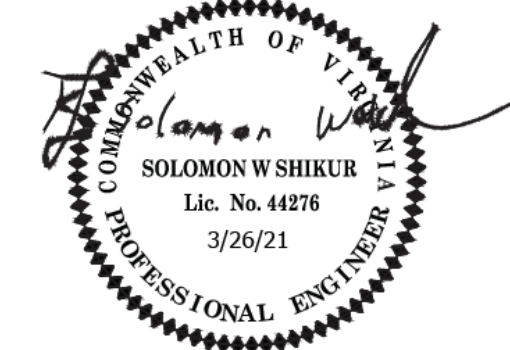
RIGHT SIGHT DISTANCE EXHIBIT

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APPROVALS DATE

*Amy Pflaum* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Ramab Taktae* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*John M. Leach* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis M. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John M. Leach* 3/30/2021  
PROJECT MANAGER

REVISIONS DATE


31ST STREET S. PARKING LOT  
WPB5

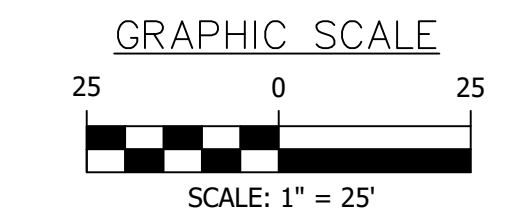
BETWEEN S. FERN STREET AND S. EADS STREET

SIGHT DISTANCE EXHIBIT

DESIGNED: SEB  
DRAWN: SEB  
CHECKED: SWS

PLOTTED: MARCH 25 2021

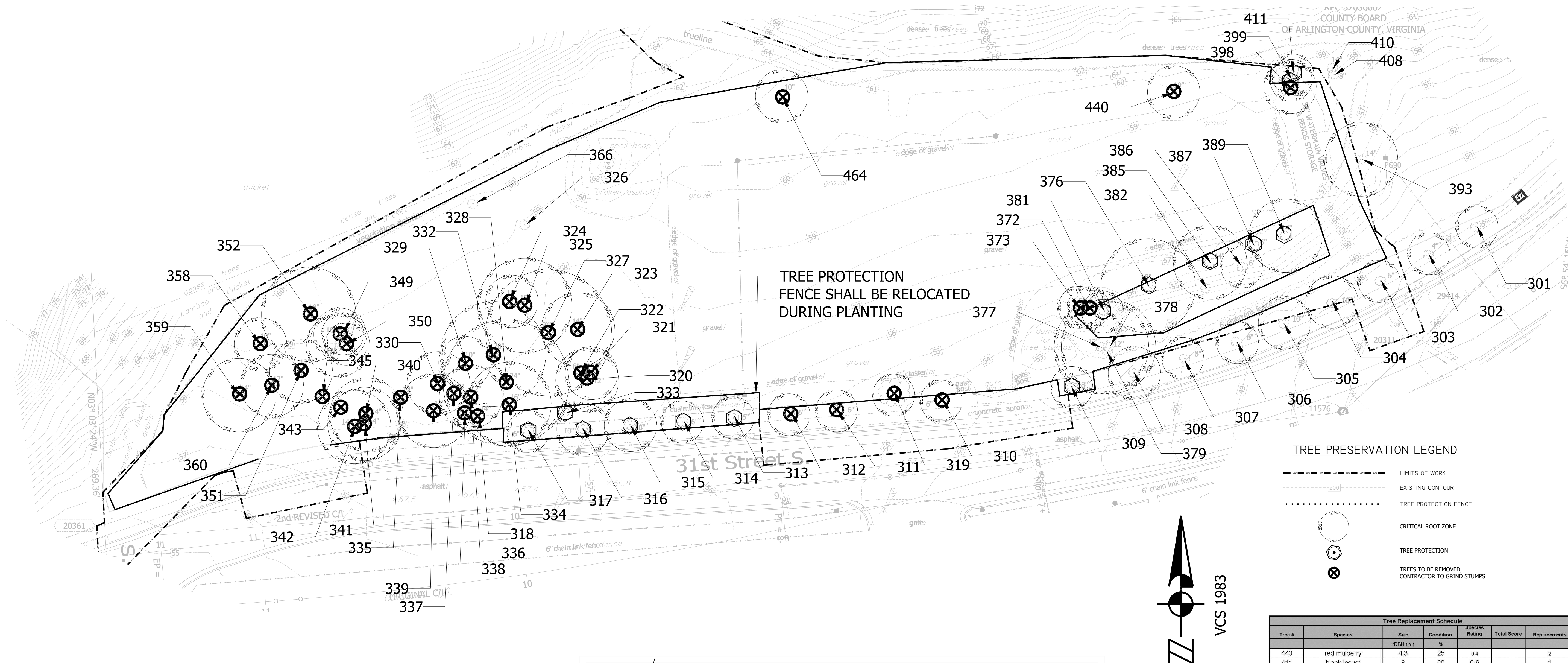
SCALE:



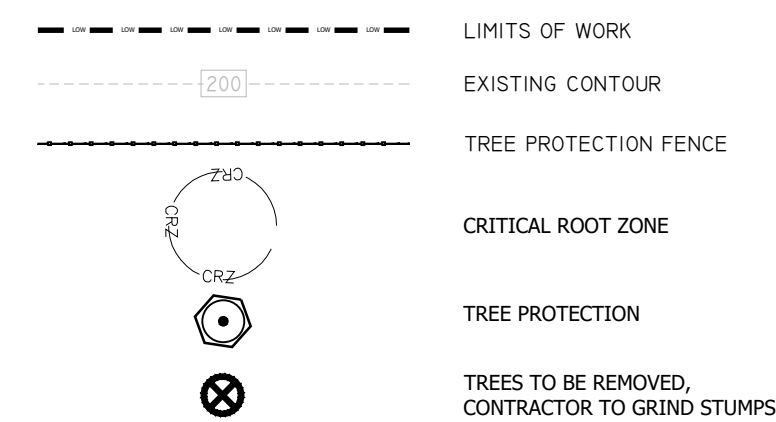
SHEET C201.1

31ST STREET S. PARKING LOT WPB5





## TREE PRESERVATION LEGEND



## NOTES:

1. TREE PROTECTION FENCE (TPF) SHALL BE INSTALLED PRIOR TO ANY SITE WORK CLEARING, OR DEMOLITION. ARLINGTON COUNTY URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION OF ANY OTHER TREE PRESERVATION MEASURE SPECIFIED IN PLANS AND SHALL APPROVE LAYOUT.
2. NO PERSONNEL, VEHICLES, EQUIPMENT, CONSTRUCTION MATERIALS, OR DEBRIS ALLOWED IN TREE PROTECTION AREAS WITHOUT WRITTEN CONSENT OF ARLINGTON COUNTY URBAN FORESTER.
3. REMOVE TPF ONLY WITH APPROVAL FROM ARLINGTON COUNTY URBAN FORESTER AFTER ALL SITE WORK HAS BEEN COMPLETED.
4. SIGN MATERIAL TO BE WEATHER RESISTANT.

## 1 6' CHAIN LINK TREE PROTECTION FENCE

1/2" = 1'-0"

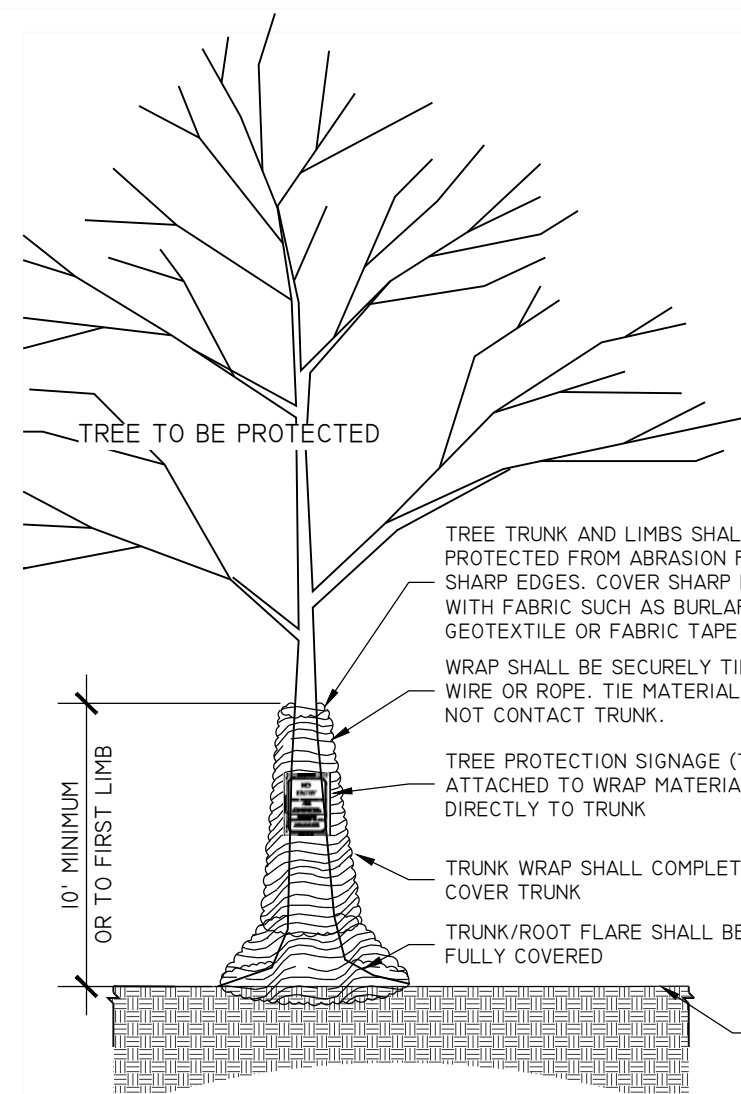
A-TP-01

NOTE:  
GENERALLY, ROOT PRUNING AND TREE PROTECTION AND CONSTRUCTION FENCE ARE LOCATED AT THE LIMIT OF DISTURBANCE. THEREFORE, THE LAYOUT OF LINES DEPICTING TREE PROTECTION FENCE AND ROOT PRUNING IS DIAGRAMMATIC, AND FOR REFERENCE ONLY. PLEASE REFER TO THE STRESS REDUCTION DETAIL FOR MORE INFORMATION.

THIS PLAN IS FOR TREE PROTECTION/  
FOREST CONSERVATION PLAN PURPOSES ONLY

NOTE:  
PER SECTION 61-10.0.C.3 OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE, THE PROPOSED USE OF THIS PROJECT IS EXEMPT FROM THE TREE CANOPY COVERAGE REQUIREMENTS OF THE ORDINANCE.

NOTE:  
BEFORE ANY GRADING, DEMOLITION, OR OTHER DISTURBANCE, ASIDE FROM THE INSTALLATION OF TREE PROTECTION AND EROSION AND SEDIMENT CONTROLS IS PERFORMED, TREE PROTECTION NEEDS TO BE INSTALLED PER PLAN, AND INSPECTED BY AN ARLINGTON COUNTY ARBORIST.



## 2 TREE TRUNK AND LIMB PROTECTION WRAP

311300.15NS (2019)

N.T.S.



## APPROVALS DATE

*Amy Pileum* 03/26/2021  
QUALITY CONTROL ENGINEER  
*Kamal Taktak* 3.30.21  
CONSTRUCTION MANAGEMENT SUPERVISOR  
*John M. Serck* 04.02.2021  
WATER, SEWER, STREETS BUREAU CHIEF  
*Dennis M. Leach* 04/09/21  
TRANSPORTATION DIRECTOR  
*John M. Serck* 3/30/2021  
PROJECT MANAGER

## REVISIONS DATE

REVISIONS	DATE

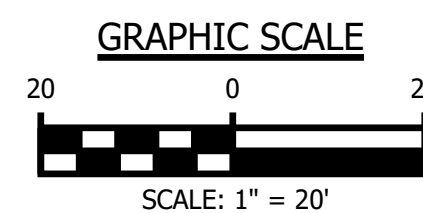
31ST STREET S. PARKING LOT  
WPBS  
BETWEEN S. FERN STREET AND S EADS STREET

TREE PRESERVATION PLAN,  
NOTES & DETAILS

DESIGNED: JBS  
DRAWN: JBS  
CHECKED: KVB

PLOTTED: FEBRUARY 23 2021

## SCALE:



SHEET

L001.0

Tree Replacement Schedule						
Tree #	Species	Size *DBH (in.)	Condition %	Species Rating	Total Score	Replacements
440	red mulberry	4,3	25	0.4		2
411	black locust	8	60	0.6		1
410	northern red oak	10,6	70	0.7		2
408	eastern red cedar	6	45	0.4		1
400	other species	12	50	0.5	3.0	1
399	black locust	12	50	0.6	3.6	1
398	black locust	12	50	0.6	3.6	1
388	black locust	6,3	65	0.6		2
387	black locust	6,3	65	0.6		2
384	eastern cottonwood	16	65	0.4	4.2	1
383	black locust	8,6,6,6	65	0.6		4
376	black locust	6,4	65	0.6		2
375	black locust	8	65	0.6		1
374	black locust	3	65	0.6		1
373	black locust	6	65	0.6		1
372	black locust	6,4	65	0.6		2
366	black locust	18	30	0.6	3.2	1
358	tree of heaven	16	50	0.2	1.6	1
357	black locust	14	50	0.6	4.2	1
354	black locust	16	50	0.6	4.8	1
352	black locust	16,16	50	0.6	9.6	2
351	black cherry	8	25	0.6		1
350	black locust	12	25	0.6	1.8	1
349	black locust	12	25	0.6	1.8	1
348	black locust	12	25	0.6	1.8	1
347	black locust	12	25	0.6	1.8	1
346	black locust	12	25	0.6	1.8	1
344	black cherry	6	25	0.4		1
342	black cherry	10	60	0.4		1
341	black cherry	8	60	0.4		1
339	black locust	8	60	0.6		1
338	black locust	10	60	0.6		1
337	black locust	12	60	0.6	4.3	1
336	black locust	12	25	0.6	1.8	1
333	black locust	12	65	0.6	4.7	1
332	American elm	16	65	0.6	6.2	2
331	black locust	12,8	25	0.6	2.8	1
330	black locust	6	50	0.6		1
329	black locust	6	50	0.6		1
328	black locust	12	50	0.6	3.6	1
327	black locust	12	40	0.6	2.9	1
326	black locust	8	40	0.6		1
325	black locust	16	40	0.6	3.8	1
324	silver maple	24	40	0.6	5.8	2
323	red mulberry	8,6,4	80	0.4		3
319	siberian elm	10,10,10,8,6	80	0.3		5
Tree replacement values were determined using the tree replacement formula provided in the Arlington County Tree Replacement Guidelines Manual.						
Inventory data collected by Donald E. Zimar: Certified Arborist MA-0039, RCA #446						
446	RED MULBERRY	14	70	0.4		2
301-310	RED MAPLE	10-12			TOTAL	66



NOTES

1. THIS IS A DRAFT PLAN, NOT FOR CONSTRUCTION.
2. AN INVASIVE SPECIES REMOVALS PLAN SHALL BE DEVELOPED.
3. TREES AND SHRUBS SHALL BE UNDERPLANTED WITH 'WOODLAND UNDERSTORY SEED MIX.' SEE SPECIFICATIONS FOR PLANTING INSTRUCTIONS.
4. PLANTING AREAS SHALL RECEIVE SOIL AMENDMENTS/SOIL PROFILE REBUILDING AND SHREDDED HARDWOOD MULCH AS PER DETAILS AND SPECIFICATIONS.
5. ALL PLANTINGS SHALL BE IN ACCORDANCE WITH ARLINGTON COUNTY STANDARDS.
6. REFER TO CIVIL PLANS FOR GRASS SWALE INFORMATION.

Woodland Understory Seed Mix			
Botanical Name	Common Name	pounds/acre	percent by weight
Asclepias tuberosa	Butterfly Weed	2.48	11.4%
Aster (Eurybia) divaricatus	White Wood Aster	0.89	4.1%
Aster laevis	Smooth Blue Aster	1.49	6.9%
Baptisia australis	Blue False Indigo, S WV Ecotyp	6.86	31.6%
Chamaecrista fasticulata	Partridge pea	0.55	2.5%
Chelone obliqua	Turtlehead	0.16	0.7%
Coreopsis lanceolata	Lanceleaf Coreopsis	0.25	1.2%
Dalea purpureum	Purple Prairie Clover	0.50	2.3%
Echinacea purpurea	Coneflower	0.54	2.5%
Sporobolus heterolepis	Prairie Dropseed	4.28	19.7%
Festuca rubra	Creeping Red Fescue	0.22	1.0%
Helenium flexuosum	Purplehead Sneezeweed	0.05	0.2%
Lespedeza virginica	Slender Lespedeza	0.05	0.2%
Penstemon hirsutus	Hairy Beardtongue	0.05	0.2%
Pycnanthemum muticum	Bigleaf Mountainmint	0.06	0.3%
Rudbeckia hirta	Black-Eyed Susan	0.13	0.6%
Rudbeckia fulgida var. fulgida	Orange Coneflower	0.15	0.7%
Schizachyrium scoparium	Little Bluestem	0.52	2.4%
Solidago nemoralis	Grey Goldenrod	0.20	0.9%
Tradescantia ohiensis	Ohio Spiderwort	1.26	5.8%
Zizia aurea	Golden Alexander	1.02	4.7%
			100.0%
Nurse Crop (if seeded Jan-Aug)			
Avena sativa	Grain Oat	30	100%
Nurse Crop (if seeded Aug-Dec)		30	100%
Secale cereale	Cereal Rye		
	Seeding Rate of Seed Mix (lbs of Pure Live Seed; mix with inert carrier/bulking agent in order to distribute evenly across site)	21.71 lbs/acre	
	Seeding Rate of Nurse Crop	30 lbs/acre	

PLANT SCHEDULE

DECIDUOUS TREES

CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL
Qc	11	QUERCUS COCCINEA / SCARLET OAK	B & B	2.5" CAL.
Al	11	AMELANCHIER LAEVLIS / ALLEGHENY SERVICEBERRY	B & B	7-8' HT.
Co	8	CELTIS OCCIDENTALIS / COMMON HACKBERRY	B & B	2" CAL.
Cc	6	CERCIS CANADENSIS / EASTERN REDBUD (SINGLE-STEM)	B & B	7-8' HT.

EVERGREEN TREES

CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT
Io	9	ILEX OPACA / AMERICAN HOLLY	B & B 7-8' HT.
Pv	6	PINUS VIRGINIANA / VIRGINIA PINE	B & B 7-8' HT.
PT	5	PINUS TAEDA / LOBLOLLY PINE	B & B 7-8' HT.
Jv	7	JUNIPERUS VIRGINIANA / EASTERN RED CEDAR	B & B 7-8' HT.

SHRUBS, PERENNIALS & GRASSES

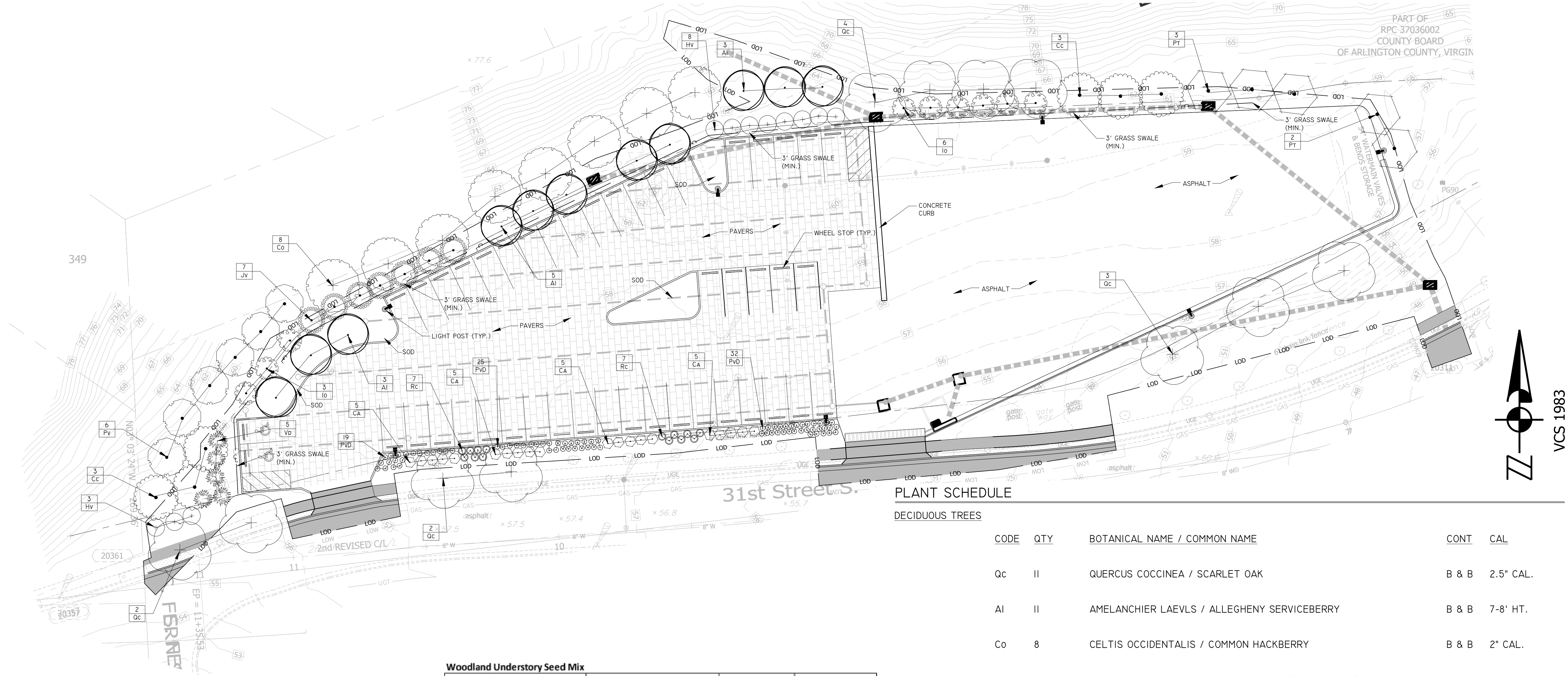
CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT
Hv	11	HAMAMELIS VIRGINIANA / WITCH-HAZEL	POT 3 GAL.
Vd	5	VIBURNUM DENTATUM / ARROWOOD VIBURNUM	POT 3 GAL.
CA	15	CALLICARPA AMERICANA / PURPLE BEAUTYBERRY	POT 3 GAL.
Rc	14	ROSA CAROLINA / CAROLINA ROSE	POT 3 GAL.
Pvd	76	PANICUM VIRGATUM 'DALLAS BLUES' / SWITCHGRASS	POT 3 GAL.

SOD/SEED

CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT
SOD	APPROX. 6,400 SF	SODDED TURF GRASS / DROUGHT TOLERANT FESCUE BLEND	SOD

SHREDDED HARDWOOD MULCH

QTY:  
APPROX. 34 CY



DEPARTMENT OF ENVIRONMENTAL SERVICES  
FACILITIES & ENGINEERING DIVISION  
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APPROVALS	DATE
Amy Pileum QUALITY CONTROL ENGINEER	03/26/2021
Kamal Taklak CONSTRUCTION MANAGEMENT SUPERVISOR	3.30.21
John M. Leach WATER, SEWER, STREETS BUREAU CHIEF	04.02.2021
Dennis M. Leach TRANSPORTATION DIRECTOR	04/09/21
John M. Leach PROJECT MANAGER	3/30/2021

REVISIONS	DATE

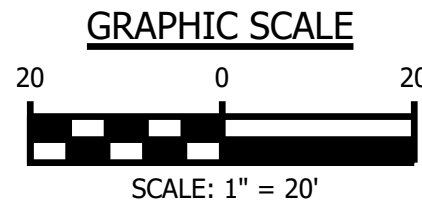
31ST STREET S. PARKING LOT  
WPBS  
BETWEEN S. FERN STREET AND S EADS STREET

PLANTING PLAN

DESIGNED: JBS  
DRAWN: JBS  
CHECKED: KVB

PLOTTED: MARCH 4 2021

SCALE:





NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS per ANSI STANDARD A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.

2. CONTRACTOR SHALL MAXIMIZE EXCAVATED AREA FOR TREE PIT WITHOUT ADVERSELY IMPACTING ADJACENT SITE FEATURES.

3. UNLESS OTHERWISE DIRECTED BY ARLINGTON COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

4. CONTRACTOR SHALL LEGALLY REMOVE EXCESS SOIL & DEBRIS FROM SITE.

5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.

6. TREES MAY ONLY BE STAKED IF REQUIRED BY THE COUNTY URBAN FORESTER. REFER TO MULCH; MULCH MUST BE 6 IN. AWAY FROM TREE TRUNK

THIS DETAIL SUPERSEDES ALL OTHER TREE PLANTING DETAILS IN ARLINGTON COUNTY.

CENTER TREE IN PIT AND SET TOP OF ROOT BALL 2 IN. ABOVE ADJACENT GRADE. THE TRUNK FLARE SHALL BE VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

4 IN. HIGH EARTH SAUCER BEYOND EDGE OF ROOT BALL

REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP 2/3 OF ROOT BALL

TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT

UNDISTURBED SUBGRADE

ROUGHEN SIDES OF PLANTING HOLE

BACKFILL SOIL MIXTURE FOR ENTIRE TREE PIT AREA X ROOTBALL DEPTH SOIL SHALL BE FIRMED IN 8" LIFTS

MULCH RING (6 FT.) DIAM. MIN.

3'-0"

MIN WIDTH OF TREE PIT 2 TIMES ROOTBALL DIAMETER OR 5'-0", WHICHEVER IS GREATER

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.

THIS DETAIL SUPERSEDES ALL OTHER TREE PLANTING DETAILS IN ARLINGTON COUNTY.

1

TREE PLANTING DETAIL

FOR OPEN PLANTING AREAS FREE OF PAVING OR GRATES

329300.1 (2019)

ARLINGTON COUNTY DPR

NOT TO SCALE

NOTES

1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS IN THE CENTER OF THE PLANTING PIT. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

4. UNLESS OTHERWISE DIRECTED BY COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE COUNTY URBAN FORESTER. PEAT MOSS MAY NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF SHRUBS

THIS DETAIL SUPERSEDES ALL OTHER SHRUB PLANTING DETAILS IN ARLINGTON COUNTY.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.

2 X WIDTH OF ROOT BALL (TYP.)

FOR B&B: REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP 2/3 OF ROOT BALL

PLACE TOP 1/8 OF ROOT BALL ABOVE FINISHED GRADE (TYP.)

3" SHREDDED HARDWOOD MULCH OVER ENTIRE SHRUB BED FINISHED GRADE

BACKFILL SOIL MIXTURE (TYP.) FOR CONTAINER: LOOSEN THE ROOT BALL OF ANY ROOT BOUND PLANTS

UNDISTURBED SUBGRADE OR COMPACTED BACKFILL SOIL MIXTURE

REFER TO PLANTING PLAN & PLANT LIST FOR SPACING

3

SHRUB PLANTING

ELEVATION 329300.8 (2019)

ARLINGTON COUNTY DPR

NOT TO SCALE

NOTES

1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

4. GROUND COVERS AND PERENNIALS SHALL BE INSTALLED WITH TRIANGULAR SPACING. REFER TO CHART.

4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE COUNTY URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF PLANTS.

THIS DETAIL SUPERSEDES ALL OTHER GROUND COVER PLANTING DETAILS IN ARLINGTON COUNTY.

PLACE TOP 1/8 OF ROOT BALL ABOVE FINISHED GRADE (TYP.)

3" SHREDDED HARDWOOD MULCH OVER ENTIRE PLANTING BED

BACKFILL SOIL MIXTURE

LOOSEN THE ROOT BALL OF ANY ROOT BOUND PLANTS (TYP.)

UNDISTURBED SUBGRADE OR COMPACTED BACKFILL SOIL MIXTURE

SEE PLANTING PLAN & SCHEDULE

WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.

3

GROUND COVERS & PERENNIAL PLANTING

ELEVATION 329300.10 (2019)

ARLINGTON COUNTY DPR

NOT TO SCALE

PLANT SPACING "D" O.C.	ROW "A" O.C.	PLANTS PER S.F.
6"	5"	4.00
8"	7"	2.25
9"	8"	1.77
12"	10"	1.00
15"	13"	0.77
18"	16"	0.44

PLANTING GENERAL NOTES

1. THIS PLAN IS FOR PLANTING PURPOSES ONLY, AND ANY OTHER INFORMATION SHOWN IS FOR REFERENCE ONLY. SEE SITE PLAN FOR INFORMATION ABOUT ALL LAYOUT, GRADING AND OTHER SITE IMPROVEMENTS.

2. CALL MISS UTILITY AT 811 OR 1-800-257-7777 TO MARK UTILITIES AT LEAST 48 HOURS BEFORE DIGGING.

3. ALL MATERIALS AND PLANTING PROCEDURES EXCEPT AS OTHERWISE NOTED SHALL CONFORM TO THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" BY THE LANDSCAPE CONTRACTORS ASSOCIATION MD-DC-VA.

4. PLANTS SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK. (ANSI Z60.1)

5. PLANT NAMES SHALL BE THOSE GIVEN IN THE LATEST EDITION OF STANDARD PLANT NAMES, AMERICAN COMMITTEE ON HORTICULTURAL NOMENCLATURE.

6. TOPSOIL SHALL MEET SPECIFICATIONS AS PER THE 2011 MD STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION AND SEDIMENT CONTROL.

7. THE CONTRACTOR SHALL SUBMIT REPRESENTATIVE SOIL SAMPLES FROM BOTH IN-SITU SOILS AND SOILS BROUGHT IN FROM OFF-SITE TO A STATE LICENSED TESTING LABORATORY. THE CONTRACTOR SHALL INCORPORATE OR APPLY SOIL AMENDMENTS AND FERTILIZATION BASED UPON RESULTS OF THE SOIL TESTS AND RECOMMENDATIONS BY THE TEST LAB.

8. THE CONTRACTOR SHALL APPLY GRASS ACCORDING TO THE 2011 MD STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. DO NOT USE KENTUCKY 31 TALL FESCUE.

9. THE CONTRACTOR SHALL STAKE OUT ALL PLANTING BEDS AND TREE LOCATIONS AND THESE MUST BE APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER BEFORE DIGGING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND COORDINATE PLANTINGS WITH ALL EXISTING UTILITIES. IF DISCREPANCIES OCCUR BECAUSE OF UTILITY LOCATIONS OR OTHER EXISTING CONDITIONS THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY TO COORDINATE ANY NECESSARY ADJUSTMENTS.

10. ALL PLANT MATERIAL SHALL BE LABELED BY THE NURSERY AND DELIVERED WITH LABELS IN PLACE FOR INSPECTION. SUBSTITUTIONS IN PLANT SPECIES OR SIZE WILL NOT BE PERMITTED EXCEPT WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER. PRUNING IS NOT TO OCCUR UNTIL MATERIAL HAS BEEN PLANTED. CONTRACTOR SHALL PRUNE PLANT MATERIAL AS SOON THEREAFTER AS IS ADVISABLE UNDER STANDARD HORTICULTURAL PRACTICES.

11. IT IS OF UTMOST IMPORTANCE THAT ALL PLANT MATERIAL BE SET SLIGHTLY HIGHER IN RELATION TO GRADE THAN IT WAS GROWN IN THE NURSERY AND WITH GOOD EARTH TO ROOT CONTACT. ANY MATERIALS OR WORK MAY BE REJECTED BY THE LANDSCAPE ARCHITECT IF IT DOES NOT MEET THIS OR ANY OTHER REQUIREMENT OF THE SPECIFICATIONS, AND REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

12. THE CONTRACTOR SHALL MULCH AND WATER ALL PLANTS WELL ON THE DAY THEY ARE PLANTED. THE SURFACE MULCH LAYER SHALL CONSIST OF STANDARD FINE SHREDDED AGED HARDWOOD MULCH. THE CONTRACTOR SHALL APPLY THE MULCH UNIFORMLY TO A 2 TO 3 INCH DEPTH. BARK SHALL BE KEPT 3 TO 4 INCHES AWAY FROM ALL TRUNKS AND WOODY STEMS.

13. IN CASE OF DISCREPANCIES BETWEEN QUANTITIES ON THE PLANT LIST AND THE PLAN, THE PLAN SHALL GOVERN.

14. SEED OR SOD BARE AREAS AS DIRECTED BY OWNER FOR ALL DISTURBED AREAS TO BE STABILIZED THAT ARE NOT LANDSCAPED OR COVERED.

15. ANY PLANTING WITHIN A FOREST RETENTION AREA, AS DESIGNATED ON THE FOREST CONSERVATION PLAN AND SHOWN ON THIS PLAN, MUST BE DONE TO AVOID ANY ADVERSE IMPACT TO THE ROOTS OF EXISTING TREES. THE CONTRACTORS PERFORMING WORK ON THE SITE ARE RESPONSIBLE FOR PROTECTING EXISTING NATIVE AND NON-INVASIVE PLANTINGS DURING CONSTRUCTION.

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

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LANDSCAPE ARCHITECT

JOSHUA B. SERCK

Lic. No. 1394

02-23-2021

APPROVALS

DATE

Amy Pileum

QUALITY CONTROL ENGINEER

03/26/2021

Kamal Taktak

CONSTRUCTION MANAGEMENT SUPERVISOR

3.30.21

04.02.2021

WATER, SEWER, STREETS BUREAU CHIEF

Dennis M. Leach

TRANSPORTATION DIRECTOR

04/09/21

John Mier

PROJECT MANAGER

3/30/2021

REVISIONS

DATE

31ST STREET S. PARKING LOT

WPBS

BETWEEN S. FERN STREET AND S EADS STREET

PLANTING DETAILS

DESIGNED: JBS

DRAWN: JBS

CHECKED: KVB

PLOTTED: FEBRUARY 23 2021

SCALE:

SHEET

L001.2