

ISSUED FOR BID
WILEY|WILSON COMM. NO.: 240197.01
OCTOBER 6, 2025



SHEET NUMBER	SHEET TITLE
GENERAL	
G-001	COVER SHEET
B-001	GEOTECHNICAL RESULTS
B-002	GEOTECHNICAL RESULTS
CIVIL	
C-001	CIVIL GENERAL NOTES, LEGEND AND ABBREVIATIONS
C-002	OVERALL PLAN AND EXISTING UTILITIES MAP
C-110	JOHNSON ST EXISTING CONDITIONS AND TUNNEL DEMOLITION
C-111	JOHNSON ST UTILITY DEMOLITION
C-112	JOHNSON ST SURFACE DEMO
C-113	JOHNSON ST TUNNEL LAYOUT
C-114	JOHNSON ST UTILITY PLAN
C-115	JOHNSON ST SURFACE IMPROVEMENTS
C-116	JOHNSON ST UTILITY PROFILES
C-120	BYERS ST EXISTING CONDITIONS AND DEMOLITION PLAN
C-121	BYERS ST TUNNEL IMPROVEMENTS
C-122	BYERS ST SURFACE IMPROVEMENTS
C-130	NEW ST EXISTING CONDITIONS AND DEMOLITION PLAN
C-131	NEW ST TUNNEL IMPROVEMENTS
C-401	EROSION & SEDIMENT CONTROL NARRATIVE
C-402	EROSION & SEDIMENT CONTROL NARRATIVE
C-403	EROSION & SEDIMENT CONTROL DETAILS
C-501	CIVIL DETAILS
C-502	CIVIL DETAILS
C-503	CIVIL DETAILS
C-601	TRAFFIC CONTROL - JOHNSON ST
C-602	TRAFFIC CONTROL - BYERS ST & NEW ST
C-603	TRAFFIC CONTROL DETAILS
STRUCTURAL	
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S-002	STRUCTURAL GENERAL NOTES
S-003	SPECIAL INSPECTIONS, SYMBOLS, AND ABBREVIATIONS
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S-502	TYPICAL GUARDRAIL DETAILS
S-503	TYPICAL CONCRETE REPAIR DETAILS
S-510	TYPICAL PRECAST CONCRETE DETAILS
S-601	JOHNSON STREET LOAD DIAGRAM
S-610	BYERS STREET LOAD DIAGRAM

EMERGENCY - CITY OF STAUNTON
540-332-3896

STRUCTURAL ENGINEER - WILEY|WILSON
KYLE TENNANT, PE
434-455-3249
KTENNANT@WILEYWILSON.COM
127 NATIONWIDE DR.
LYNCHBURG, VA 24502



CITY OF STAUNTON

[illegible]

SHEET TITLE

COVER SHEET

SHT. NO.	REV. N
G-001	0

E

D

C

B

A

Schnabel ENGINEERING		TEST BORING LOG	Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia			Boring Number: B-01 Contract Number: 25430015.000 Sheet: 1 of 1		
Contractor: Total Depth Drilling, Inc. Knoxville, Tennessee Contractor Foreman: D. Hamilton Schnabel Representative: C. Irizarry Equipment: CME-75 Method: 3-1/4" I.D. Hollow Stem Auger Hammer Type: Auto Hammer (140 lb) Dates Started: 4/29/25 Finished: 4/29/25 Ground Surface Elevation: 1376± (ft) Total Depth: 1.0 ft			Groundwater Observations					
				Date	Time	Depth	Casing	Caved
			Encountered	4/29	---	Dry	---	---
			Completion	4/29	---	Dry	---	---
			Casing Pulled	4/29	---	Dry	---	---
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH	DATA	TESTS	REMARKS
1.0	Asphalt; 12 inches		1375.0			AUGER		Auger probe to 1 ft.
Bottom of Boring at 1.0 ft. Auger refusal at 1.0 ft. Boring terminated at auger refusal. Refusal on probable rock fill. Boring backfilled with cuttings and asphalt patch upon completion.								

TEST BORING LOG: 25430015.GPJ, SCHNABEL DATA TEMPLATE 2008_07_26.GDT 6/13/25

 TEST BORING LOG		Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia		Boring Number: B-01A Contract Number: 25430015.000 Sheet: 1 of 1					
Contractor: Total Depth Drilling, Inc. Knoxville, Tennessee Contractor Foreman: D. Hamilton Schnabel Representative: C. Irizarry Equipment: CME-75 Method: 3-1/4" I.D. Hollow Stem Auger Hammer Type: Auto Hammer (140 lb) Dates Started: 4/29/25 Finished: 4/29/25 Ground Surface Elevation: 1376± (ft) Total Depth: 1.0 ft				Groundwater Observations					
				Date	Time	Depth	Casing	Caved	
				Encountered	4/29	---	Dry	---	---
				Completion	4/29	---	Dry	---	---
				Casing Pulled	4/29	---	Dry	---	---
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	TESTS	REMARKS		
1.0	See Stratigraphy Details from Boring B-01.		1375.0		AUGER		Auger probe to 1 ft.		
Bottom of Boring at 1.0 ft. Auger refusal at 1.0 ft. Boring terminated at auger refusal. Refusal on probable rock fill. Boring backfilled with cuttings and asphalt patch upon completion.									

TEST BORING LOG: 25430015.GPJ, SCHNABEL DATA TEMPLATE 2008_07_26.GDT 6/13/25

 Schnabel ENGINEERING		TEST BORING LOG		Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia			Boring Number: B-01B Contract Number: 25430015.000 Sheet: 1 of 1		
Contractor: Total Depth Drilling, Inc. Knoxville, Tennessee Contractor Foreman: D. Hamilton Schnabel Representative: C. Irizarry Equipment: CME-75 Method: 3-1/4" I.D. Hollow Stem Auger Hammer Type: Auto Hammer (140 lb) Dates Started: 4/29/25 Finished: 4/29/25 Ground Surface Elevation: 1376± (ft) Total Depth: 1.0 ft				Groundwater Observations					
					Date	Time	Depth	Casing	Caved
				Encountered	4/29	---	Dry	---	---
				Completion	4/29	---	Dry	---	---
				Casing Pulled	4/29	---	Dry	---	---
					</				

TEST BORING LOG: 25430015.GPJ, SCHNABEL DATA TEMPLATE 2008_07_26.GDT 6/13/25

Schnabel ENGINEERING		TEST BORING LOG	Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia	Boring Number: B-02 Contract Number: 25430015.000 Sheet: 1 of 2				
Contractor: Total Depth Drilling, Inc. Knoxville, Tennessee Contractor Foreman: D. Hamilton Schnabel Representative: C. Irizarry Equipment: CME-75 Method: 3-1/4" I.D. Hollow Stem Auger			Groundwater Observations					
			Date	Time	Depth	Casing	Caved	
			Encountered	4/29	---	7.0'	---	---
			Completion	4/29	---	7.5'	---	---
			Casing Pulled	4/29	---	7.0'	---	17.0'
Hammer Type: Auto Hammer (140 lb) Dates Started: 4/29/25 Finished: 4/29/25								
Ground Surface Elevation: 1376± (ft) Total Depth: 20.0 ft								
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	TESTS	REMARKS	
	Asphalt; 16 inches						FILL	
1.3	Dense graded aggregate; 5 inches		1374.2			S-01. SPT 13+12+6+11 REC="12", 50%		
1.8	FILL, sampled as clayey sand with gravel, fine to coarse grained sand; moist, brown, contains crushed stone		1373.7			S-02. SPT 8+7+3+4 REC="0", 0%	No recovery due to rock in bottom of spoon.	
	Change: contains rock fragments			5		S-03. SPT 2+5+6+9 REC="16", 75%	MC = 14.0%	
7.0	CLAYEY SAND WITH GRAVEL, fine to coarse grained sand; wet, gray and brown, contains subrounded rock fragments		1368.5			S-04. SPT 1+7+3+3 REC="12", 50%	ALLUVIUM	
	Change: contains wood fragments			10		S-05. SPT 2+1+3+2 REC="24", 100%	LL = 30 PL = 19 MC = 55.0% % Passing #200 = 25.1	
				B		S-06. SPT 4+1+3+2 REC="0", 0%	No recovery due to saturated sample falling out of sampler. Hole deviated from vertical.	

TEST BORING LOG: 25430015.GPJ, SCHNABEL DATA TEMPLATE 2008_07_26.GDT 6/13/25

 TEST BORING LOG		Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia			Boring Number: B-02 Contract Number: 25430015.000 Sheet: 2 of 2		
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	TESTS	REMARKS
	CLAYEY SAND WITH GRAVEL, fine to coarse grained sand; wet, gray and brown, contains subrounded rock fragments <i>(continued)</i>	SC		B			ALLUVIUM
19.5			1356.0				
20.0	SANDY LEAN CLAY WITH GRAVEL; wet, yellowish brown and gray, contains rock fragments	CL	1355.5	C		S-07, SPT 6-3+2-2 REC=24", 100%	RESIDIUM

Bottom of Boring at 20.0 ft.
Boring terminated due to hole deviating from vertical.
Boring backfilled with grout, borehole plug, and asphalt patch upon completion.

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 TEST BORING LOG		Project: Lewis & Peyton Creek Tunnel Evaluation West Johnson Street Staunton, Virginia		Boring Number: B-02A Contract Number: 25430015.000 Sheet: 1 of 2			
Contractor: Total Depth Drilling, Inc. Knoxville, Tennessee Contractor Foreman: D. Hamilton Schnabel Representative: C. Irizarry Equipment: CME-75 Method: 3-1/4" I.D. Hollow Stem Auger, NQ2 Double Barrel Hammer Type: Auto Hammer (140 lb) Dates Started: 4/29/25 Finished: 4/29/25 Ground Surface Elevation: 1376± (ft) Total Depth: 31.3 ft		Groundwater Observations					
		Date	Time	Depth	Casing	Caved	
		Encountered 	4/29	---	7.0'	---	---
		Completion 	4/29	---	7.0'	---	---
		Casing Pulled 	4/29	---	6.5'	---	8.0'
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH	TESTS	REMARKS
	See Stratigraphy Details from Boring B-02.				AUGER		Auger probe to 5 ft.
					5		Water added. NQ core used from 5 to 20.1 ft to keep hole vertical. Brown return water.
					10		

TEST BORING LOG: 25430015.GPJ, SCHNABEL DATA TEMPLATE 2008_07_26.GDT 6/13/25

CITY OF STAUNTON

JOHNSON, BYERS, AND NEW
STREET TUNNEL REPAIRS

REVISION DESCRIPTION



Wiley|Wilson
Constant Progress

STAUNTON, VIRGINIA

127 Nationwide Drive | Lynchburg, VA 24502
434.947.1501 | wileywilson.com | 100% Employee-Owned

COMM NO:	240197
DATE:	10/06/2025
DRAWN: FAH	DESIGN: FAH
CHECK: WRM	
SHEET TITLE	
GEOTECHNICAL RESULTS	
SHT. NO.	REV. NO.
B-001	0

TEST BORING LOG 25430015.GPJ SCHNABEL DATA TEMPLATE 2008_07_08.GDT 8/13/25TEST BORING LOG 25430015.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 6/13/25TEST BORING LOG 25430015.GPJ SCHNABEL DATA TEMPLATE 2008 07 08 GDT 8/13/25

TEST BORING LOG 25430015.GPJ SCHNABEL DATA TEMPLATE 2008_07_08.GDT 6/13/25

TEST BORING LOG 25430015.GPJ SCHNABEL DATA TEMPLATE 2008_07_08.GDT 6/13/25

A

1. THIS TOPOGRAPHIC WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, BRIAN S HARVEY, LS FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON MAY 5-29, 2025; AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. SURVEY CONDUCTED BY WILEY|WILSON, MAY 2025. VERTICAL CONTROL: NAVD 88; HORIZONTAL CONTROL: NAD 83 VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH ZONE, U.S. SURVEY FOOT.
3. ALL EXISTING UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THESE PLANS ARE APPROXIMATE AND MAY NOT REPRESENT ALL UNDERGROUND UTILITIES OR SERVICE LINES.
4. SOURCE OF EXISTING UTILITY MAPPING: UTILITY LOCATIONS ARE BASED ON QUALITY LEVEL "B" AS DEFINED BY ASCE STANDARD 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION, DEPTH, SIZE, AND TYPE OF UTILITIES SHOWN AND NOTIFYING ENGINEER OF DISCREPANCIES. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE TO PROPERTY, UTILITIES, OR PHYSICAL IMPROVEMENTS.
6. MISS UTILITY WAS CONTACTED PRIOR TO TOPOGRAPHIC SURVEY. MISS UTILITY DESIGN TICKET NUMBER B427401367, DATED APRIL 5, 2025.
7. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-552-7001 PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION IN ACCORDANCE WITH THE VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT.
8. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS NOT INTENDED TO SHOW ALL EASEMENTS THAT MAY AFFECT THE PROPERTY.
9. ALL PROPERTY PINS DISTURBED BY CONTRACTOR ACTIVITIES SHALL BE REPLACED BY A VIRGINIA LICENSED LAND SURVEYOR.
10. THE EXISTENCE OF HAZARDOUS WASTE, VEGETATED WETLANDS, OR TIDAL WETLANDS WAS NEITHER INVESTIGATED NOR CONFIRMED DURING THE PERFORMANCE OF THIS SURVEY.

3. ALL WORK MUST BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).
2. PROVIDE NECESSARY PROTECTION TO AREAS NOT IDENTIFIED FOR REMOVAL AND REPLACEMENT.
3. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CONFINED SPACE ENTRY REGULATIONS.
4. WHEN DURING THE COURSE OF CONSTRUCTION, ANY OBJECT OF AN UNUSUAL NATURE IS ENCOUNTERED, CEASE WORK IN THAT AREA AND IMMEDIATELY NOTIFY THE OWNER OR OWNERS REP.
5. A SMOOTH GRADE MUST BE MAINTAINED FROM EDGE OF EXISTING PAVEMENT TO CURB AND GUTTER AND/OR PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER ON THE PAVEMENT. REMOVE AND RECONSTRUCT EXISTING PAVEMENT AND/OR CURB AS DICTATED BY FIELD CONDITIONS TO PROVIDE POSITIVE DRAINAGE AT TIE-IN-POINTS.
6. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO AS NEAR AS POSSIBLE TO ORIGINAL CONDITION. CURBS, SIDEWALKS, CONCRETE DRIVEWAYS, AND CONCRETE ROADWAYS MUST BE REPLACED TO THE FIRST EXPANSION JOINT BEYOND THE TRENCH EXCAVATION LIMITS AND MUST MATCH EXISTING.
7. NO TREES SHALL BE REMOVED, TRIMMED, OR DAMAGED DURING ANY CONSTRUCTION ACTIVITIES, EXCEPT WHERE NOTED.
8. ALL SOLID WASTE, HAZARDOUS WASTE, AND HAZARDOUS MATERIALS MUST BE MANAGED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.
9. ALL EXISTING UTILITIES MAY OR MAY NOT BE SHOWN IN THEIR EXACT LOCATION. CONTRACTOR TO VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR MUST HAVE INDEPENDENT UTILITY LOCATOR TO PERFORM SUE LEVEL B LOCATING SERVICES PRIOR TO CONSTRUCTION.
10. VERIFY ALL DIMENSIONS AT THE PROJECT SITE BEFORE STARTING CONSTRUCTION, ORDERING OR FABRICATING ANY EQUIPMENT.
11. LENGTHS OF LINES INDICATED ON THE DRAWINGS FOR UTILITY SYSTEMS ARE APPROXIMATE ONLY. DETERMINE THE EXACT AMOUNT OF PIPING REQUIRED TO FURNISH A COMPLETE WORKING SYSTEM IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS.
12. PROVIDE ALL CONNECTING PIECES AND TRANSITION PIECES REQUIRED TO MAKE FINAL PIPING CONNECTIONS.
13. REPAIR ANY ACTIVE UTILITIES DAMAGED DURING CONSTRUCTION AND NOTIFY THE OWNER OF THE DAMAGE.
14. SUBMIT A UTILITY OUTAGE REQUEST A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF ANY UTILITY OUTAGE.
15. PHASE CONSTRUCTION IN ORDER TO MINIMIZE DISRUPTION TO UTILITIES DURING INSTALLATION, DEMOLITION, AND REMOVAL.
16. ALL NEW ASPHALT PAVEMENT WILL INCLUDE RESTRIPIING PARKING/ROAD TO MATCH EXISTING LINES.
17. INSTALL ALL MANUFACTURED ITEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
18. DO NOT SCALE THE DRAWINGS. ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS, OR ANY AMBIGUITIES OR INCONSISTENCIES CONTAINED THEREIN, SHALL BE REPORTED TO ENGINEER AT THE EARLIEST OPPORTUNITY, AND A SUITABLE RESOLUTION ESTABLISHED PRIOR TO THE SUBMITTAL OF BIDS OR THE BEGINNING OF THE AFFECTED WORK. WORK THAT PROCEEDS IN VIOLATION OF THIS PRINCIPLE IS AT THE CONTRACTOR'S OWN RISK, AND THE COST OF ANY CHANGES REQUIRED TO SUITABLY MODIFY SUCH WORK SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
19. SEE STRUCTURAL DRAWINGS FOR TUNNEL REPAIR PLAN.
20. VERIFY DEPTH, DIMENSIONS, AND PIPE MATERIAL OF EX WATER LINE PRIOR TO CONSTRUCTION.
21. COORDINATE WATER LINE ISOLATION WITH CITY OF STAUNTON PUBLIC WORKS.
22. SUBMIT SANITARY SEWER BYPASS PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
23. THICKNESS OF EXISTING TUNNEL WALLS ARE UNKNOWN. THICKNESS IS SHOWN FOR VISUALIZATION ONLY. REFER TO STRUCTURAL DRAWINGS FOR DESIGN TUNNEL WIDTH.
24. PROVIDE CITY OF STAUNTON WITH 7 DAY NOTICE FOR ROAD CLOSURES NOT INCLUDED IN THE TRAFFIC CONTROL PLAN SHEETS C-601 AND C-602.
25. CONTRACTOR SHALL BE INFORMED AND SHALL COMPLY WITH THE VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT. ANY CONTRACTOR SHALL RETAIN FULL LIABILITY FOR COMPLIANCE WITH OSHA REGULATIONS AND THE SAFETY ACT. COSTS TO COVER LINES OR DISCONNECT SERVICE TO NEARBY POWER LINES SHALL BE AT THE CONTRACTOR'S EXPENSE.

APPROX	APPROXIMATELY	L	LENGTH
		LF	LINEAR FEET
BLDG	BUILDING	LT	LEFT TURN
CI	CAST IRON	MH	MANHOLE
CIP	CAST IN PLACE/CAST IRON PIPE	MIN	MINIMUM
CMP	CORRUGATED METAL PIPE	MJ	MECHANICAL JOINT
COMM	COMMUNICATION		
CONC	CONCRETE	N	NORTHING
CY	CUBIC YARD	NGAS	NATURAL GAS
DEMO	DEMOLITION		
DI	DUCTILE IRON	PVC	POLYVINYL CHLORIDE.
DIA	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	RT	RIGHT TURN
E	EASTING	SAN	SANITARY
EA	EACH	SD	STORM DRAIN
EL	ELEVATION	SS	SANITARY SEWER
ELEV	ELEVATION	STA	STATION
EX	EXISTING	SY	SQUARE YARD
FFE	FINISHED FLOOR ELEVATION	T.O.P.	TOP OF PIPE
FT	FOOT/FEET	TYP	TYPICAL
FTG	FOOTING		
		UNK	UNKNOWN
GV	GATE VALVE		
		VC	VITRIFIED CLAY
HORIZ	HORIZONTAL	VERT	VERTICAL
HP	HIGH POINT		
HWL	HIGH WATER LEVEL	WL	WATERLINE
		WV	WATER VALVE
IN	INCHES		
INT	INTERIOR		
INV	INVERT		

NEW

- BENCHMARK
- CONTROL POINT
- CONTROL POINT - NAIL SET
- DROP INLET
- CURB INLET
- SORM MANHOLE
- SANITARY MANHOLE
- SANITARY CLEANOUT
- POWER POLE
- GUY WIRE
- FIRE HYDRANT
- ⊗ WATER VALVE
- HOSE BIB
- SIGN
- BOLLARD

○

TREE

TUNNEL WALL

SOIL DELINEATION

EDGE OF PAVEMENT

GUARD RAIL

FENCELINE

BRUSH LINE

MAJOR CONTOURS

MINOR CONTOURS

OVERHEAD TELEPHONE.

UNDERGROUND TELECOM

UNDERGROUND NATURAL GAS

OVERHEAD ELECTRIC

UNDERGROUND ELECTRIC

GUY WIRE

SANITARY LINE

STORM LINE

WATER LINE

DITCH

NEW TUNNEL

ASPHALT MILL AND OVERLAY

FULL DEPTH ASPHALT REPLACEMENT

CONCRETE SIDEWALK

BRICK SIDEWALK

RIP RAP

CITY OF STAUNTON

JOHNSON, BYERS, AND NEW
STREET TUNNEL REPAIRS

STANTON VIRGINIA



127 Nationwide Drive | Lynchburg, VA 24502
434.947.1901 | wileywilson.com | 100% Employee-Owned

[illegible]

COMM NO: 240197

DATE: 10/06/2025

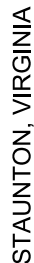
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CHECK: WRM

CIVIL GENERAL NOTES, LEGEND AND ABBREVIATIONS

SHT. NO. C-001

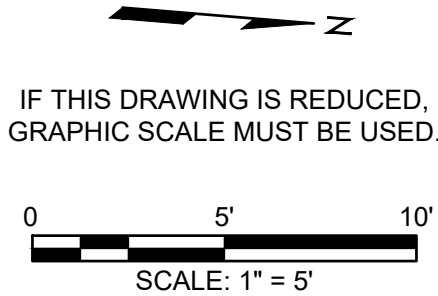
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CITY OF STAUNTON
JOHNSON, BYERS, AND NEW
STREET TUNNEL REPAIRS

[illegible]

1. DEMOLITION OF THE JOHNSON ST TUNNEL WILL REQUIRE TWO PHASES. PHASE 1 IS THE MINIMUM TUNNEL DEMOLITION REQUIRED TO RELOCATE THE MEDIUM PRESSURE GAS LINE. PHASE 2 IS THE COMPLETE TUNNEL DEMOLITION REQUIRED TO REMOVE AND REPLACE THE TUNNEL AND IMPACTED UTILITIES PER SHEETS C-110 THROUGH C-112. SEE SHEET C-114 FOR THE GAS LINE RELOCATION PLAN.
2. PHASE 1 TUNNEL DEMO SHALL INCLUDE NO MORE THAN THE OUTLINED AREA ON THIS SHEET AND CAN BE AS LITTLE AS NECESSARY TO INSTALL THE GAS LINE.
3. PHASE 2 TUNNEL DEMO WILL OCCUR AFTER THE GAS LINE OFFSET IS COMPLETED, TESTED, AND IS USE. CONFIRM WITH COLUMBIA GAS PRIOR TO REMOVING THE EXISTING GAS LINES.





STALINSON VIRGINIA

STALINSON VIRGINIA

STALINSON VIRGINIA



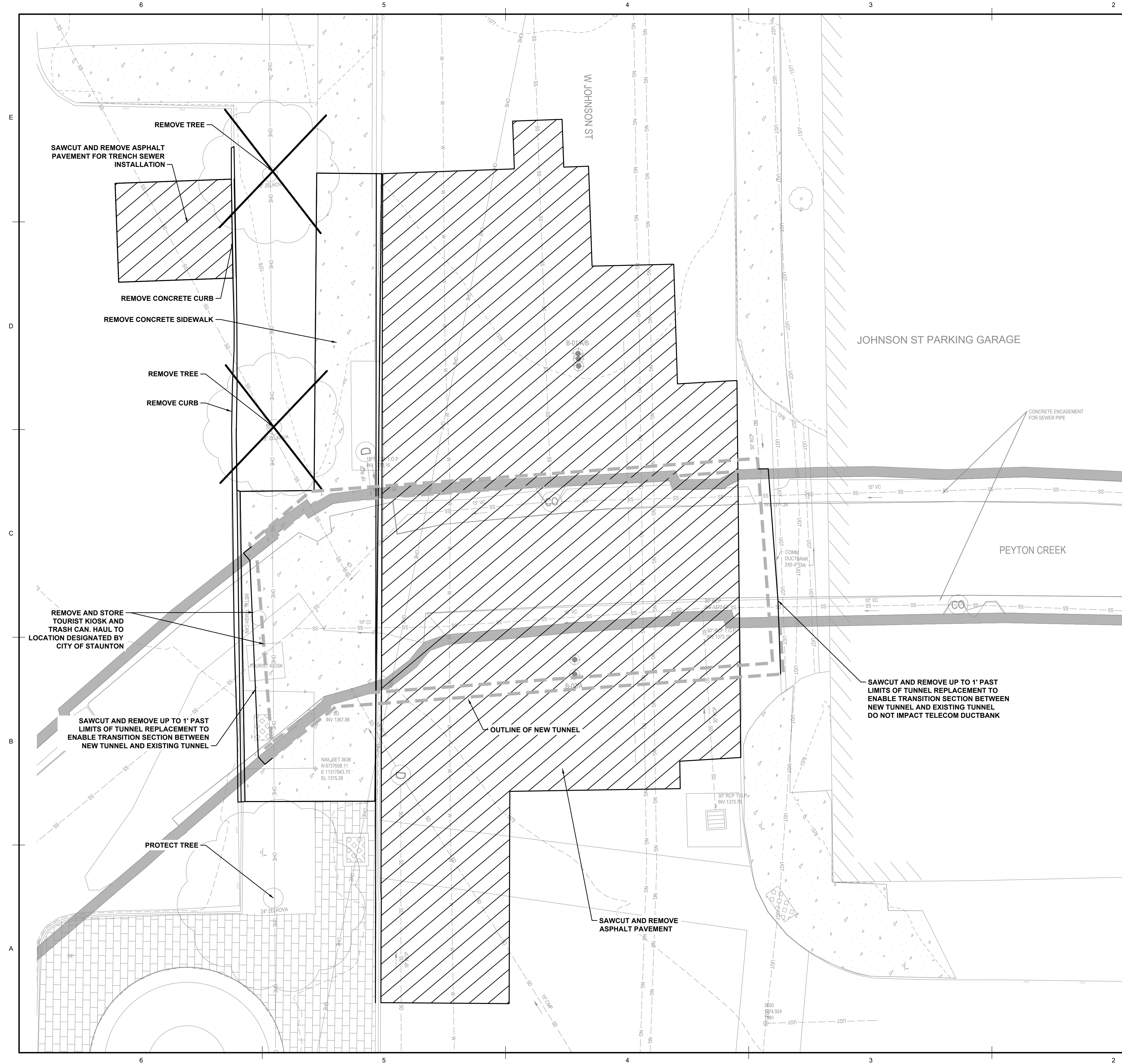
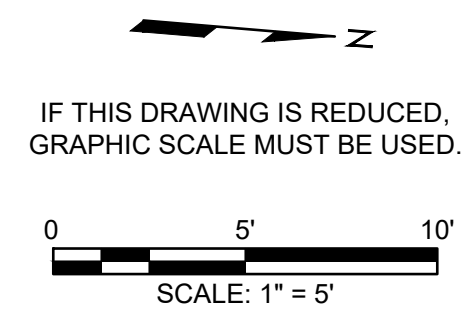


CITY OF STAUNTON

[illegible]

COMM NO:		240197	
DATE:		10/06/2025	
DRAWN: FAH		DESIGN: FAH	
CHECK: WRM			
SHEET TITLE			

SHT. NO. C-112	REV. NO. 0
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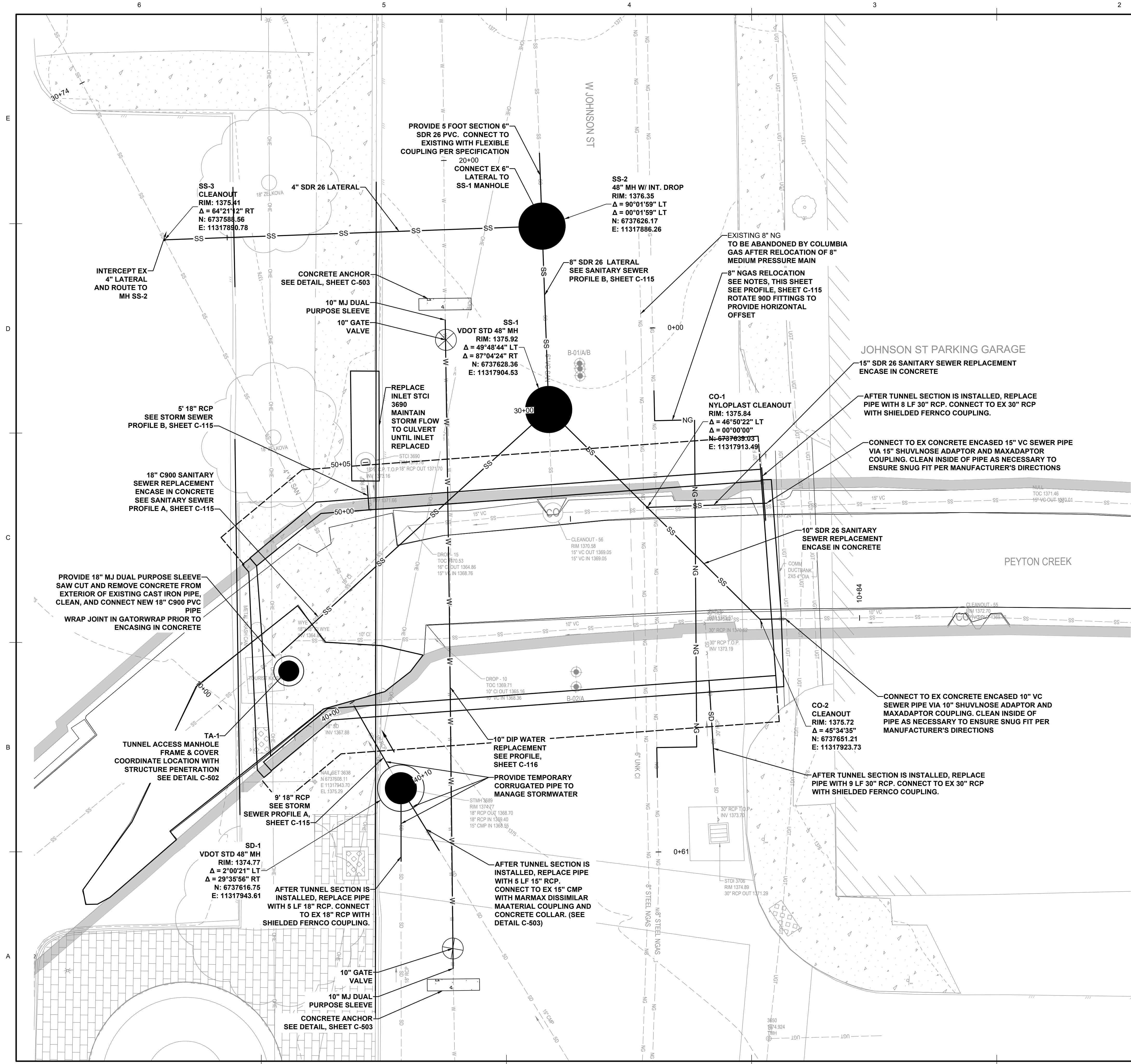




SURFACE STABILIZATION MEASURES		
C-SSM-01 TREE PRESERVATION AND PROTECTION	TP	← TP →
C-SSM-02 TOPSOILING	TO	← TO →
C-SSM-09 TEMPORARY SEEDING	TS	← TS →
C-SSM-10 PERMANENT SEEDING	PS	← PS →
C-SSM-11 MULCHING	MU	← MU →

1. INSTALL INLET PROTECTION AT ALL INLETS THAT COULD RECEIVE SEDIMENT LADEN RUNOFF
2. ONLY ONE COFFERDAM CAN IMPEDE FLOW AT A TIME
3. SEE ADDITIONAL NOTES ON SHEET C-401 AND C-402, AND ESC DETAILS ON C-403
4. DIRECT RUNOFF FROM THE STREET TOWARDS AN EXISTING INLET OR A STABILIZED OUTFALL INTO THE STREAM TO PREVENT UNCONTROLLED FLOW INTO THE WORK ZONE.







CITY OF STAUNTON

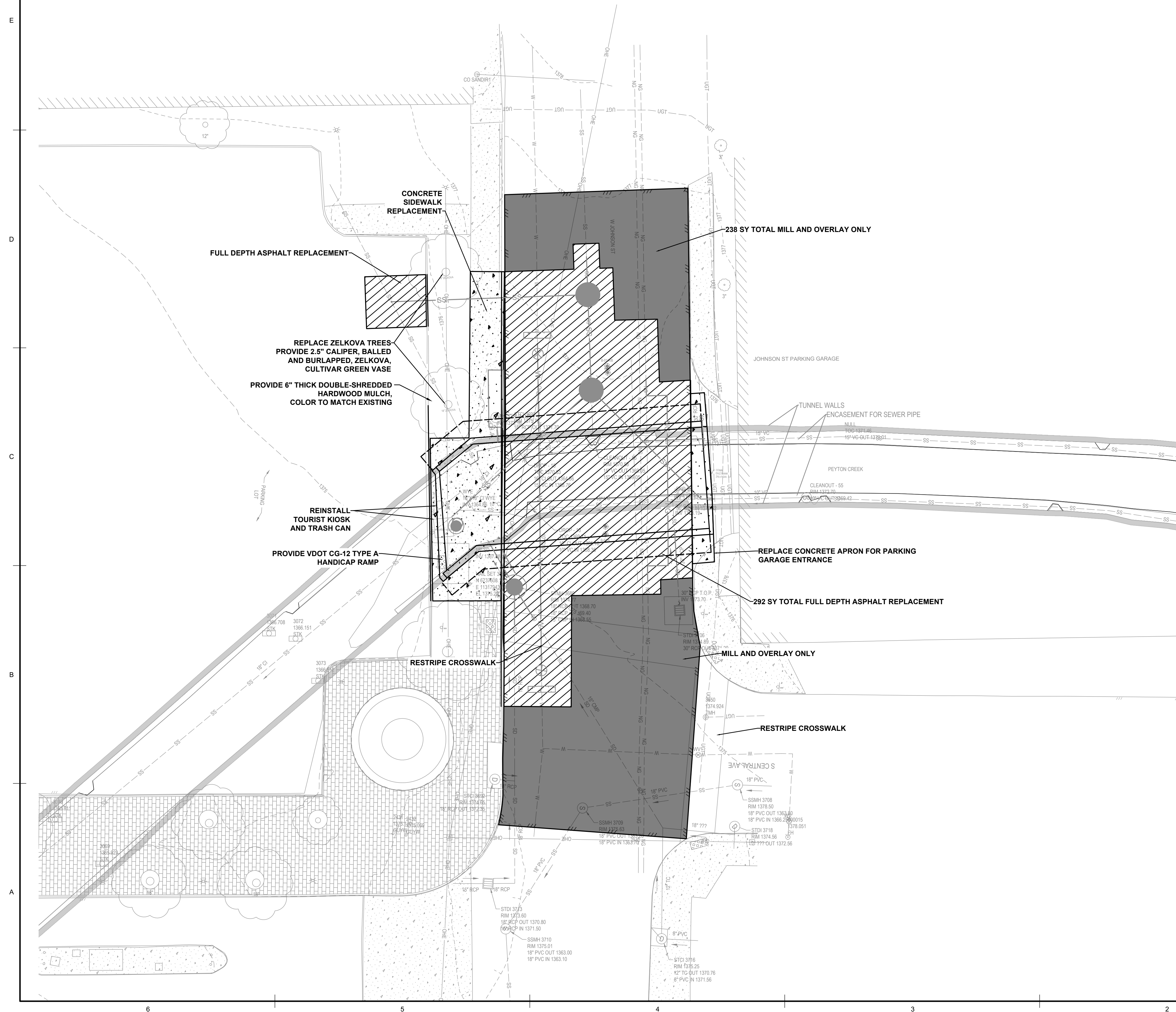
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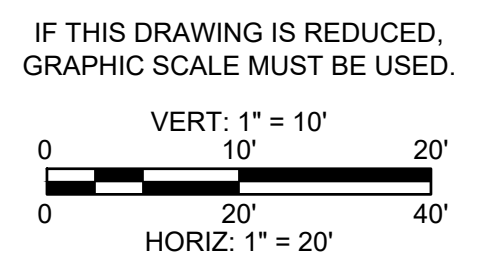
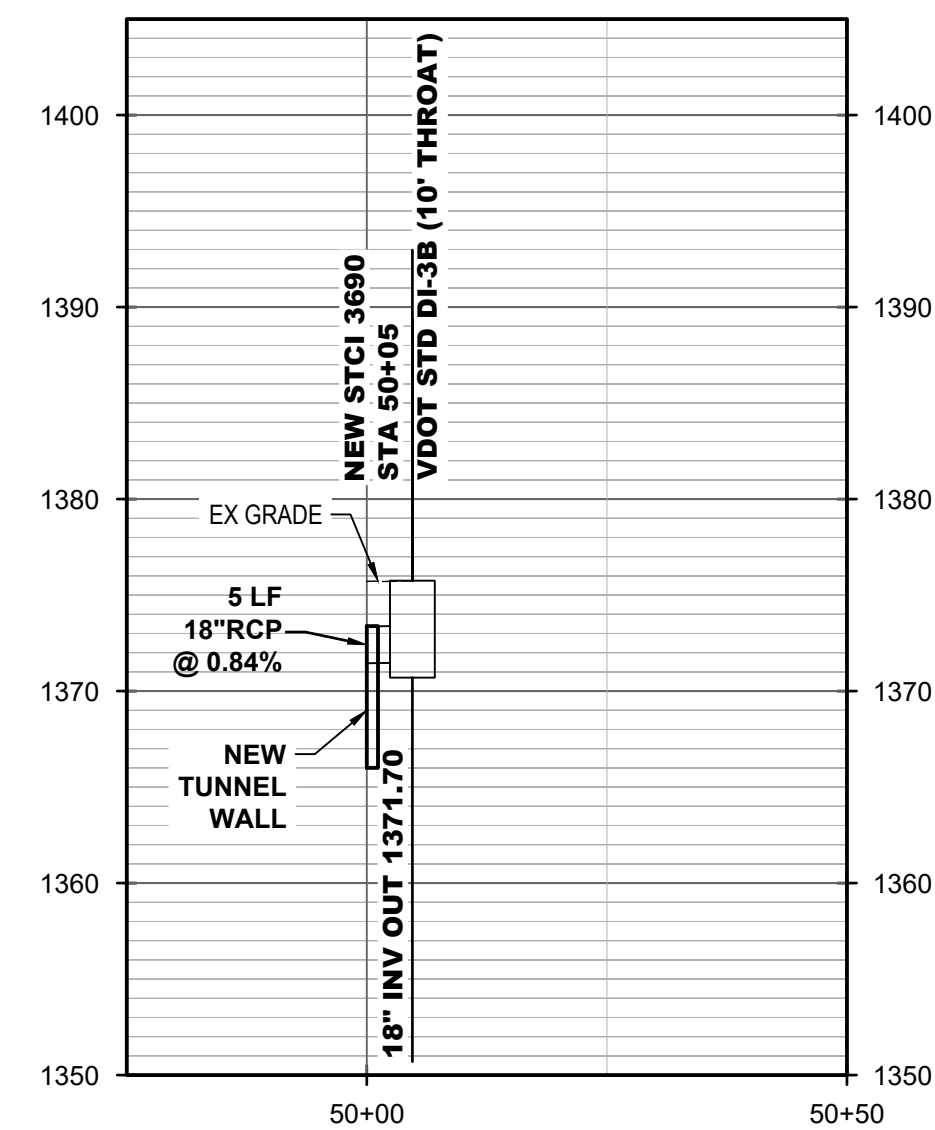
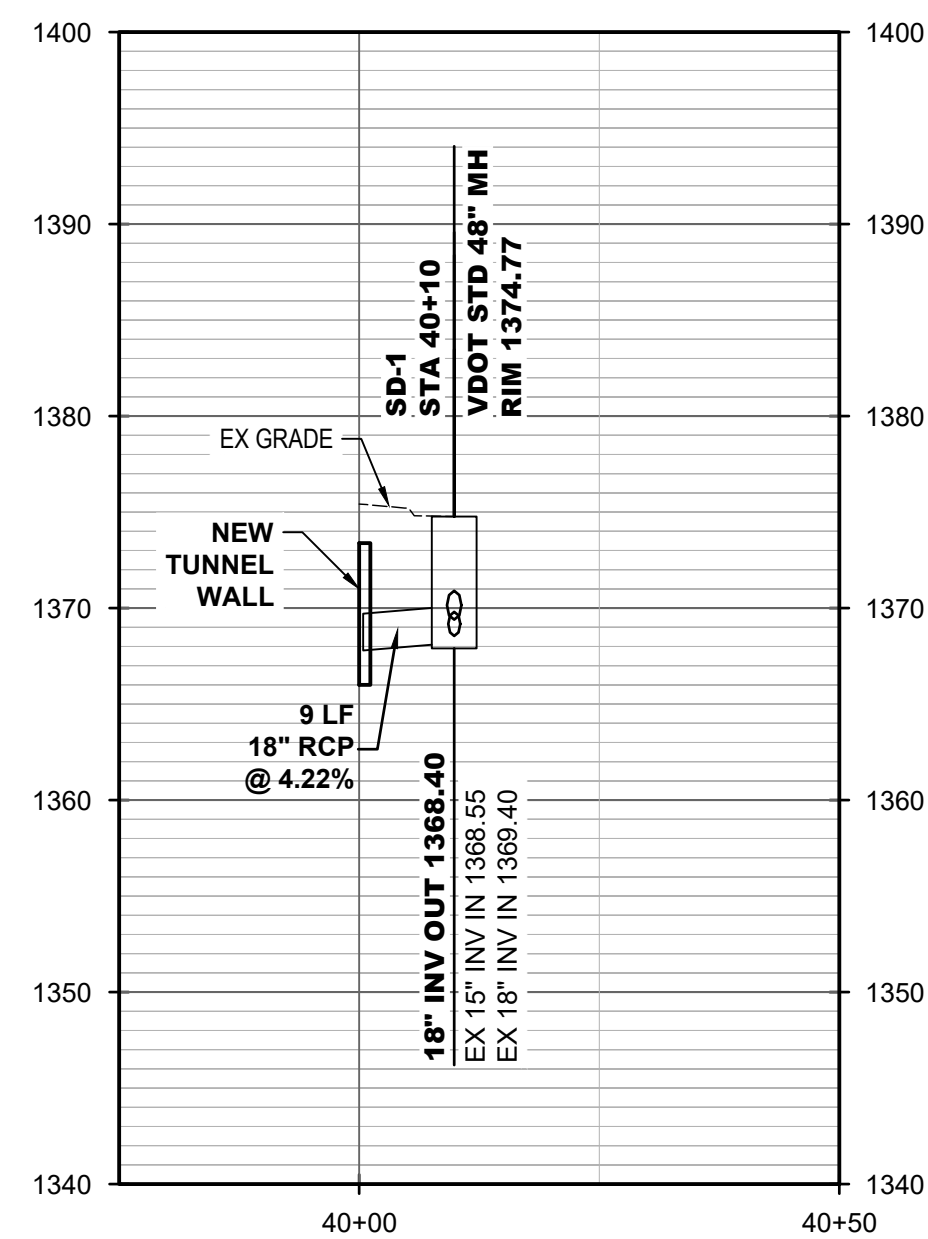
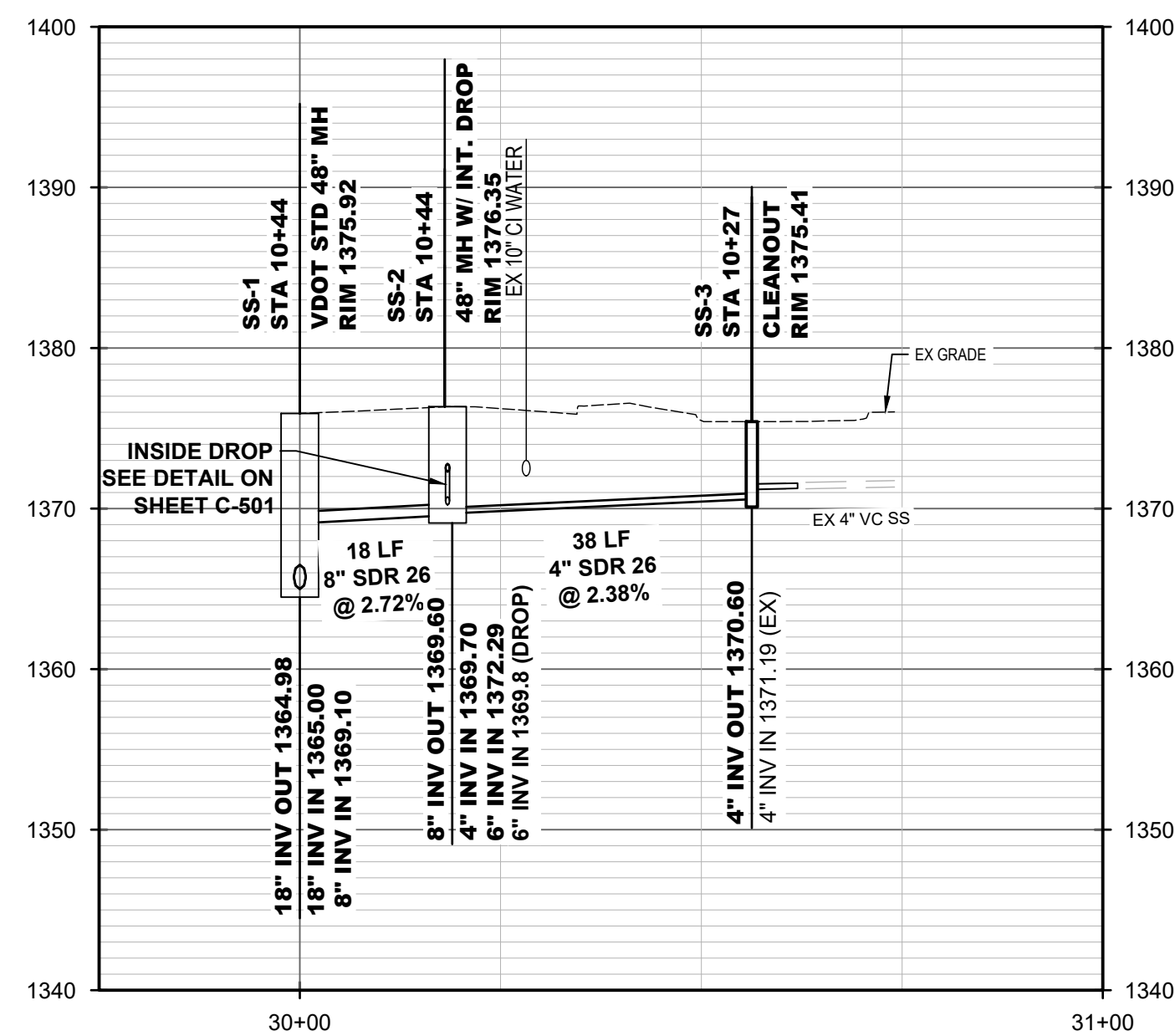
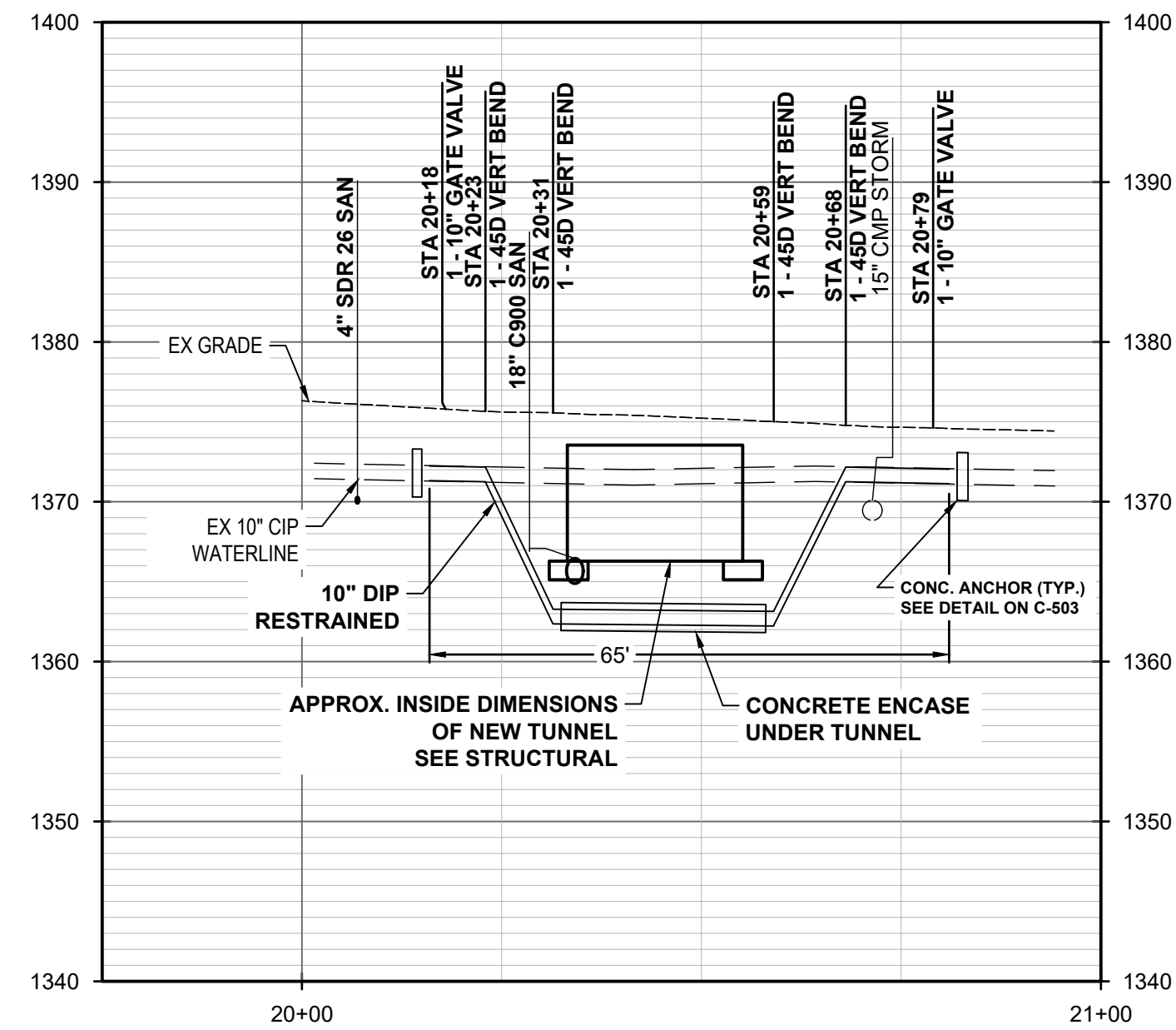
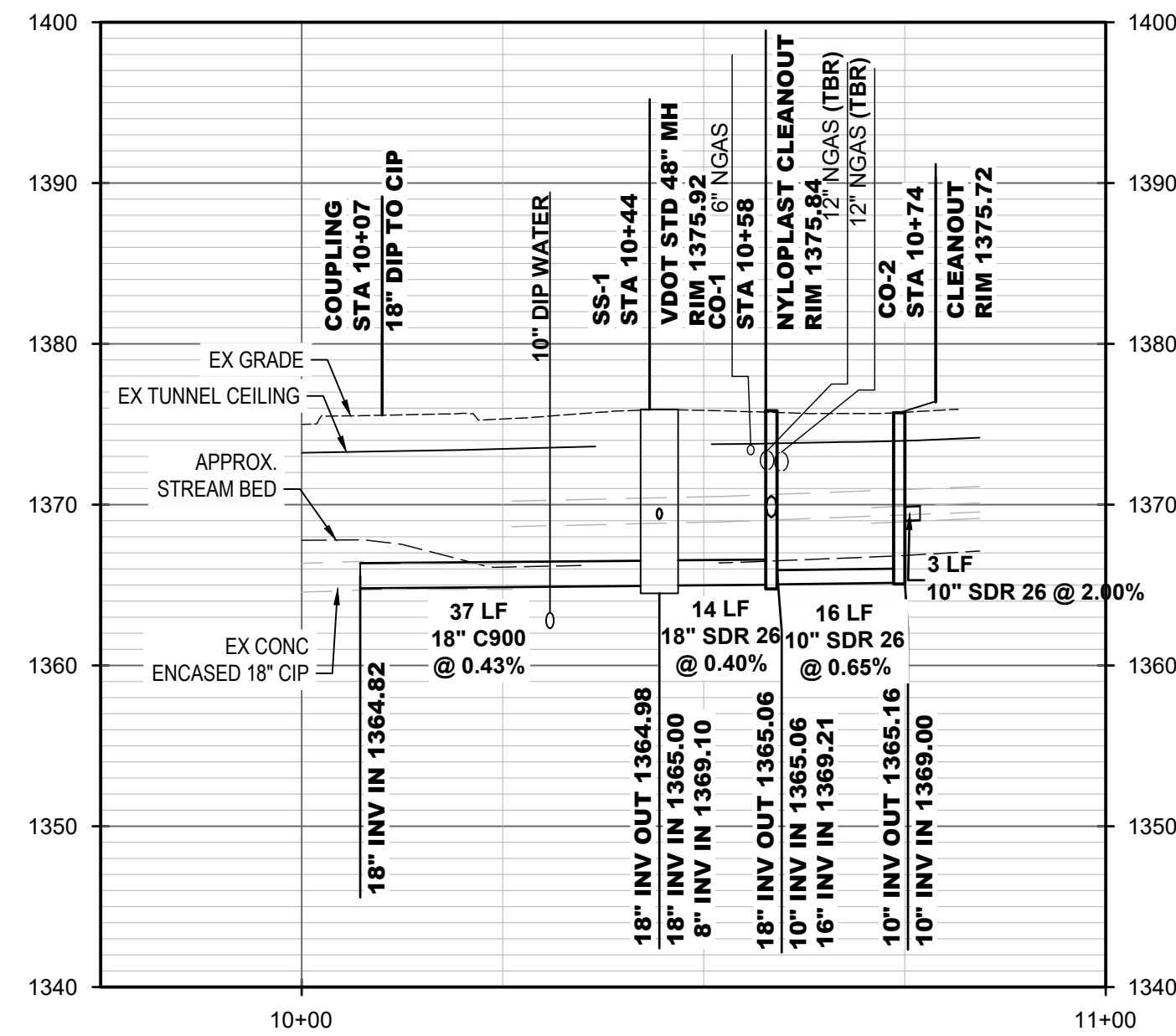
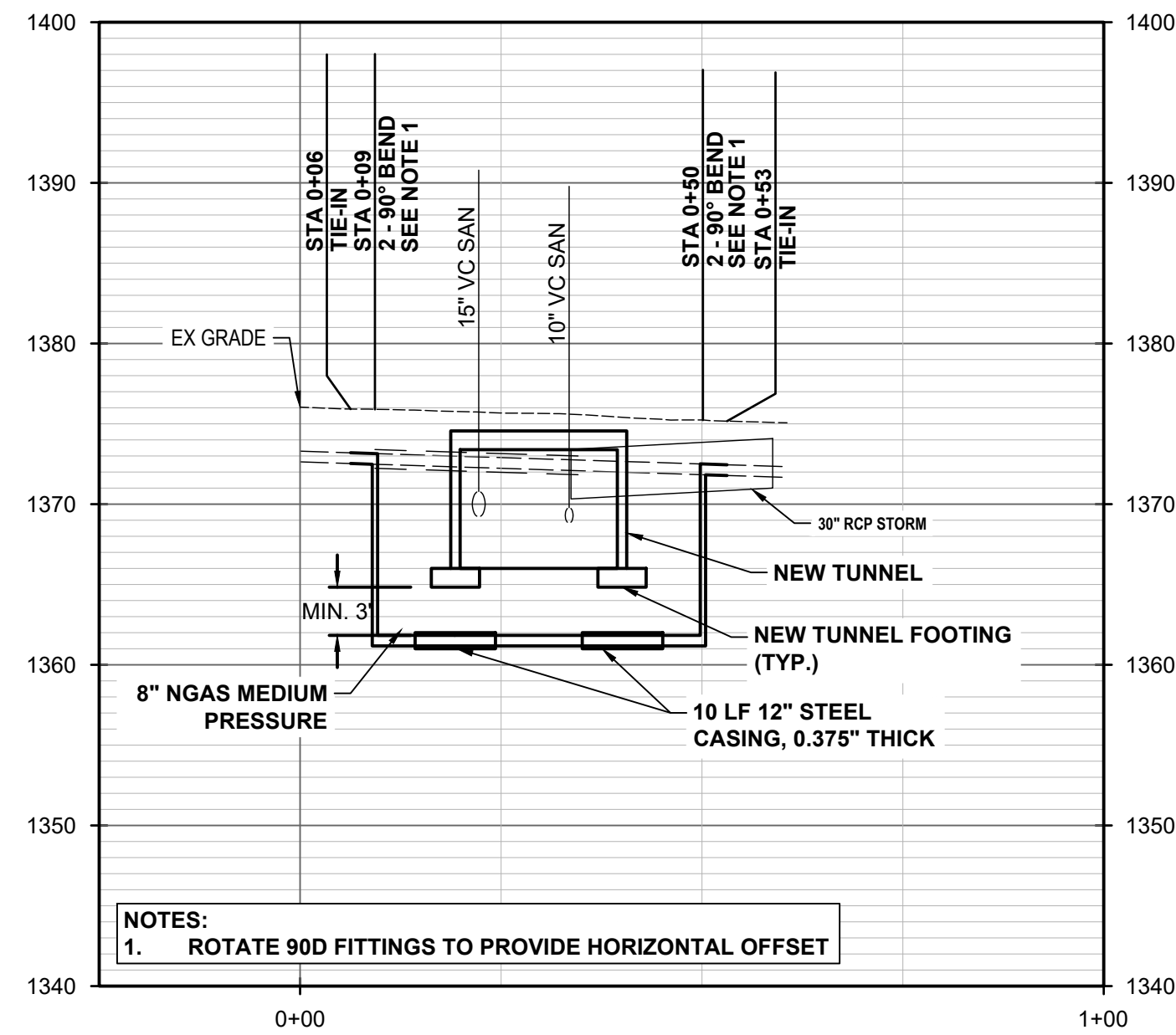
SHEET TITLE

JOHNSON ST SURFACE
IMPROVEMENTS

C

1. PROVIDE 510 SY MILL AND OVERLAY.
2. PROVIDE 272 SY FULL DEPTH ASPHALT REPLACEMENT.
3. PROVIDE 71 SY CONCRETE SIDEWALK REPLACEMENT AND 13 SY CONCRETE APRON REPLACEMENT.
4. REPLACE CURB DISTURBED BY FULL DEPTH EXCAVATION.



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CITY OF STAUNTON

INTERVIEW

SHEET TITLE

BYERS ST EXISTING
CONDITIONS AND
DEMOLITION PLAN

SHT. NO. C-120

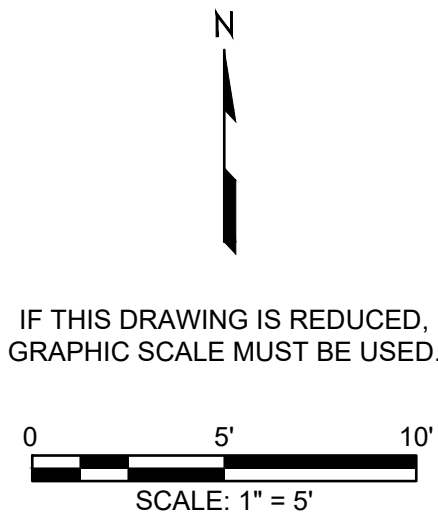
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0 5' 10'

SCALE: 1" = 5'

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1. REPLACE CURB DISTURBED BY EXCAVATION.
2. PROVIDE MIN. 1.5" THICKNESS OF PAVEMENT OVER TUNNEL SECTION
3. RESTORE PAVEMENT STRIPING IN AREA OF DISTURBANCE. CONFORM TO VDOT MATERIALS AND INSTALLATION REQUIREMENTS.

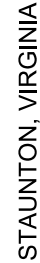


STAUNTON, VIRGINIA

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1. DOMINION ENERGY WILL PROVIDE TEMPORARY SUPPORT FOR POWER CONDUIT BANK.
2. THE TWO CONDUITS WITH ACTIVE CONDUCTORS CONVEY LOW PRIMARY VOLTAGE (4KV).
THE CONDUCTORS INSIDE ARE INSULATED AND DO NOT PROVIDE A SHOCK HAZARD
3. CONTRACTOR IS RESPONSIBLE FOR DEMOLISHING EXISTING SUPPORT FOR POWER
CONDUIT BANK. DOMINION POWER WILL PROVIDE A CREW ON STANDBY DURING THE
DEMO. COORDINATE WITH WAYNE BARTLEY (WAYNE.A.BARTLEY@DOMINIONENERGY.COM)
4. PROTECT POWER CONDUITS FROM DAMAGE.
5. PROTECT GAS FROM DAMAGE



CITY OF STAUNTON

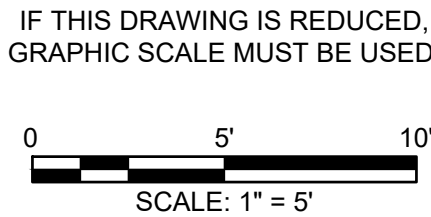
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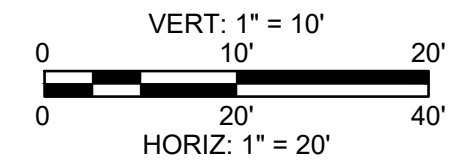
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NEW ST EXISTING
CONDITIONS AND
DEMOLITION PLAN

SHT. NO. C-130

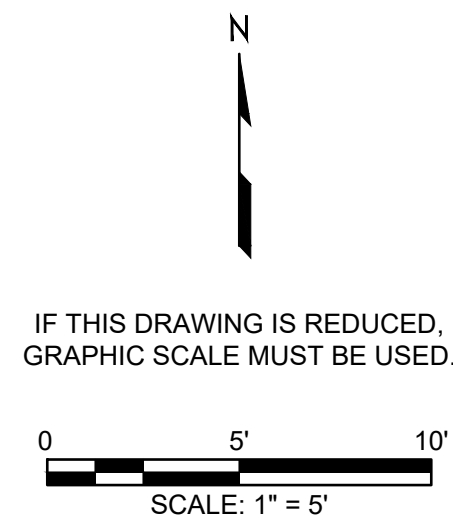
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 BRICK SIDEWALK REPLACEMENT
 MILL AND OVERLAY ONLY
 FULL DEPTH ASPHALT REPLACEMENT
AND MILL AND OVERLAY

1. INSTALL CONCRETE ANCHORS AS INDICATED AND PER THE DETAIL ON C-502. VALVE INSTALLATION IS NOT REQUIRED FOR THIS WATER LINE.
2. A TEMPORARY SHUTDOWN OF A PORTION OF THE NEW ST WATER LINE WILL BE REQUIRED TO CUT AND PLUG THE 6" CIP WATER LINE ON EITHER SIDE OF THE TUNNEL TO ISOLATE THE WORKING AREA. SEE SHEET C-002 FOR THE LOCATIONS OF THE INLINE WATER VALVES FOR THIS LINE. COORDINATE SHUT DOWN WITH THE CITY OF STAUNTON AND RESIDENTS.
3. ON THE NORTH SIDE OF THE TUNNEL, CUT THE WATER LINE ON THE TUNNEL SIDE OF THE SERVICE LATERAL. INSTALL A 6" DUAL PURPOSE SLEEVE WITH A PLUG.
4. ON THE SOUTH SIDE OF THE TUNNEL, CUT THE WATER LINE 10 FT BEYOND THE SERVICE LATERAL. INSTALL A 6" DUAL PURPOSE SLEEVE WITH A FLOW THROUGH PLUG TAPPED TO PROVIDE TEMPORARY WATER SERVICE TO THE SERVICE LATERAL. MAINTAIN THE TEMPORARY SERVICE CONNECTION THROUGHOUT THE WATER LINE CONSTRUCTION.
5. INSTALL RESTRAINED WATER LINE PER PLAN AND SPECIFICATIONS. THE SPAN OF THE TUNNEL IS APPROX 24 FT. ENSURE THAT THE EXPOSED JOINTS IN THE TUNNEL ARE SYMMETRICALLY SPACED FROM THE WALL AND MAX 4 FT HORIZONTAL FROM THE WALL PENETRATION.
6. TEST AND DISINFECT WATER LINE PER SPECIFICATIONS.
7. ON ONE SIDE AT A TIME, SHUT DOWN THE NEW ST WATER LINE TO CONNECT THE NEW WATER LINE TO THE PREVIOUSLY INSTALLED SLEEVES.
8. REINSTATE THE DISCONNECTED WATER SERVICE LATERAL PER DETAIL W-8B, SHEET C-502



CITY OF STAUNTON

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EROSION & SEDIMENT CONTROL NARRATIVE

I. PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE DEMOLITION AND REPLACEMENT OF APPROXIMATELY 54 LF OF PEYTON CREEK TUNNEL (UNDER JOHNSON ST) AND APPROXIMATELY 56 LF OF LEWIS CREEK TUNNEL (UNDER BYERS ST). IT ALSO INCLUDES THE REPAIR AND PARTIAL REPLACEMENT OF SECTION OF TUNNEL UNDER NEW ST. THE PROJECT INVOLVES APPROXIMATELY 0.16 ACRES OF LAND DISTURBANCE.

II. EXISTING SITE CONDITIONS

THIS SITES ARE LOCATED IN ROADS OR PARKING LOTS BORDERED BY SMALL AREAS OF URBAN VEGETATION.

III. ADJACENT PROPERTIES

THE PROJECT SITES ARE BOUNDED THE PUBLIC RIGHT-OF-WAY OF JOHNSON STREET, BYERS STREET AND NEW STREET.

IV. OFF-SITE AREAS

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF EXCAVATION CONTAINED WITHIN THE SITE. ALL STOCKPILES SHALL BE LOCATED ON SITE AND PROTECTED WITH SURROUNDING SILT FENCING AND STABILIZED WITH A VEGETATIVE COVER UNLESS STORED ON IMPERVIOUS SURFACE. UNSUITABLE MATERIAL WILL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE EROSION AND SEDIMENT CONTROL REGULATOR PERTAINING TO OFFSITE DISTURBED AREAS FOR ALL SOILS INTENTIONALLY TRANSPORTED OFFSITE IF THE TRANSPORTED MATERIAL DISTURBS MORE THAN 10,000 SQUARE FEET IN AREA (IF ANY SUCH AREAS ARE REQUIRED) SUCH AS STOCKPILES, STAGING AREAS, AND SPOIL AREAS THAT ARE USED FOR THIS PROJECT.

V. SOILS

ACCORDING TO USDA SCS SOIL MAPPING, THE PROJECT SITE LIES ON SOIL TYPE URBAN LAND (95). THIS MAP UNIT CONSISTS OF AREAS WHERE MORE THAN 80 PERCENT OF THE SURFACE IS COVERED BY ASPHALT, CONCRETE, BUILDINGS, OR OTHER IMPERVIOUS SURFACES. THESE AREAS ARE PARKING LOTS, SHOPPING CENTERS, BUSINESS CENTERS, INDUSTRIAL PARKS, SCHOOL COMPLEXES, AND AIRPORTS. URBAN LAND DOES NOT RECEIVE ANY RATINGS.

VI. CRITICAL AREAS

EACH TUNNEL REPAIR OR REPLACEMENT SITE IS A CRITICAL AREA BECAUSE OF THE STREAM FLOWING THROUGH THE TUNNEL. CARE SHOULD BE TAKEN TO MINIMIZE SEDIMENT ENTERING THE STREAM.

VII. LIST OF BEST MANAGEMENT PRACTICES (BMPs)

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA STORMWATER HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS.

A. EROSION CONTROL MEASURES

B. SEDIMENT CONTROL MEASURES

- C-SCM-04 INLET PROTECTION: INLET PROTECTION IS A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.
- C-SCM-10 DEWATERING STRUCTURE: A DEWATERING STRUCTURE IS A TEMPORARY SETTLING AND FILTERING DEVICE USED TO PROCESS WATER DISCHARGED FROM DEWATERING ACTIVITIES.
- C-SCM-13 CONCRETE WASHOUT PIT: A CONCRETE WASHOUT PIT IS A TEMPORARY EXCAVATED OR ABOVE-GROUND LINED CONSTRUCTED PIT OR A PREFABRICATED OR FABRICATED CONTAINER IN WHICH CONCRETE TRUCK MIXERS AND EQUIPMENT CAN BE WASHED AFTER THEIR LOADS HAVE BEEN DISCHARGED TO PREVENT HIGHLY ALKALINE RUNOFF FROM ENTERING STORM DRAINAGE SYSTEMS OR LEACHING INTO SOIL.

C. SURFACE STABILIZATION MEASURES

- C-SSM-01 TREE PRESERVATION AND PROTECTION: TREE PRESERVATION AND PROTECTION IS THE PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER TYPES OF INJURY DURING LAND DISTURBANCE AND CONSTRUCTION.
- C-SSM-09 TEMPORARY SEEDING: THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.
- C-SSM-10 PERMANENT SEEDING: PERMANENT SEEDING IS THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.
- C-SSM-11 MULCHING: MULCHING IS THE APPLICATION OF A PROTECTIVE BLANKET OF STRAW OR OTHER PLANT RESIDUES/MATERIALS TO THE SOIL SURFACE DURING THE ESTABLISHMENT OF TEMPORARY AND PERMANENT SEEDING.

D. PERIMETER CONTROL MEASURE

- C-PCM-01 SAFETY FENCE: SAFETY FENCE IS A PROTECTIVE BARRIER INSTALLED TO PREVENT ACCESS TO A LAND-DISTURBING ACTIVITY OR EROSION CONTROL MEASURE.

E. ENVIRONMENTALLY SENSITIVE AREA PROTECTION

- C-ENV-04 UTILITY STREAM CROSSING: UTILITY STREAM CROSSING IS A STRATEGY FOR CROSSING SMALL WATERWAYS WHEN IN-STREAM UTILITY CONSTRUCTION IS INVOLVED.
- C-ENV-05 COFFERDAM CROSSING: A COFFERDAM IS A TEMPORARY STRUCTURE WITHIN A WATERWAY OR BODY OF WATER DESIGNED TO PROVIDE A DRY WORK AREA FOR TEMPORARY CONSTRUCTION AND TO CONTAIN DISTURBED SOIL AND/OR SUSPENDED SEDIMENTS.
- C-ENV-08 PUMP AROUND DIVERSION: THE PUMP-AROUND DIVERSION IS A DEWATERING PRACTICE USED FOR TEMPORARILY PUMPING FLOW AROUND SEGMENTS OF A STREAM CHANNEL DURING CONSTRUCTION; THE PRACTICE INVOLVES INSTALLING A TEMPORARY PUMP-AROUND SYSTEM AND INSTREAM BARRIERS TO DIVERT FLOW AROUND SECTIONS OR REACHES OF THE STREAM.

VIII. 9VAC25-875-560 MINIMUM STANDARDS

- MS-1** STABILIZATION OF DENUDED AREAS:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- MS-2** STABILIZATION OF SOIL STOCKPILES:
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- MS-3** PERMANENT VEGETATIVE COVER:
A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- MS-4** TIMING AND STABILIZATION OF SILT TRAPPING MEASURES:
SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
- MS-5** CONCENTRATED RUNOFF DOWN CUT OR FILLED SLOPES:
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- MS-6** SEDIMENT BASINS AND TRAPS:
SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- MS-7** CUT AND FILL SLOPES:
CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL

- BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- MS-8** CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES:
CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- MS-9** WATER SEEPAGE FROM A SLOPE FACE:
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- MS-10** STORM SEWER INLET PROTECTION:
ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- MS-11** STABILIZATION OF OUTFALLS:
BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTFALL PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- MS-12** WORK IN LIVE WATERCOURSES:
WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- MS-13** CROSSING A LIVE WATERCOURSE:
WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- MS-14** APPLICABLE REGULATIONS:
ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- MS-15** STABILIZATION OF BED AND BANKS:
THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- MS-16** UNDERGROUND UTILITIES:
UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. 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.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
- MS-17** CONSTRUCTION ACCESS ROUTES:
WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- MS-18** TEMPORARY E&S CONTROL MEASURE REMOVAL:
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, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- MS-19** ADEQUACY OF RECEIVING CHANNELS:
PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS.
A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
(2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
(1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR
(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTFALL, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND

- OTHER WATERS OF THE STATE.
- L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:28 OF THE CODE OF VIRGINIA (VESMA) OR 62.1-44.15:65 OF THE CODE OF VIRGINIA (ESCL).
- M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE CODE OF VIRGINIA (ESCL) AND THIS SUBDIVISION 19 SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE VESMA AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR THE TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-875-480 OR GRANDFATHERING IN 9VAC25-875-490, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE CODE OF VIRGINIA (ESCL) SHALL APPLY; OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 G 2 OF THE CODE OF VIRGINIA (VESMA).
- N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-600 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSM) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

IX. OPERATIONS AND MAINTENANCE CONSIDERATIONS:

ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT.

A. EROSION CONTROL MEASURES

B. SEDIMENT CONTROL MEASURES

- C-SCM-04 INLET PROTECTION: ROUTINE INSPECTION AND MAINTENANCE ARE CRITICAL TO ENSURING THE ADEQUATE PERFORMANCE OF INLET PROTECTION. INCLUDE THE FOLLOWING ACTIVITIES AS PART OF ANY MAINTENANCE PROGRAM (MINNESOTA POLLUTION CONTROL AGENCY 2023): INSPECT ALL INLET PROTECTION DEVICES AT LEAST TWICE WEEKLY (72 HOURS OR MORE BETWEEN EACH INSPECTION) AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (0.25 INCH OR MORE). DURING EXTENDED RAINFALL EVENTS, INSPECT INLET PROTECTION DEVICES AT LEAST ONCE EVERY 24 HOURS. REPLACE CLOGGED AGGREGATE OR FILTER FABRIC IMMEDIATELY. LOOK FOR DAMAGE OR TEARS TO FABRIC CAUSED BY LARGE FLOWS. INSPECT DOWNSTREAM INLETS, PIPES, AND OTHER INFRASTRUCTURE AFTER SEVERE STORMS TO CHECK FOR BYPASSED MATERIAL. REMOVE SEDIMENT FROM TEMPORARY INLET PROTECTION METHODS WHEN SEDIMENT REACHES DEPTHS OF 2 OR 3 INCHES. MORE FREQUENT SEDIMENT REMOVAL IS REQUIRED FROM PAVED AREAS SUCH AS STREETS OR PARKING LOTS. REMOVE ALL INLET PROTECTION DEVICES WITHIN 30 DAYS AFTER THE SITE IS STABILIZED, OR WHEN THE INLET PROTECTION IS NO LONGER NEEDED. BRING THE DISTURBED AREA TO FINAL GRADE AND APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET WITH VEGETATION. CLEAN STORM DRAINAGE SYSTEM OF SEDIMENT AND DEBRIS BEFORE FINAL INSPECTION. IN KARST AREAS, INSPECT EXCAVATED DROP INLET SEDIMENT TRAPS REGULARLY AND AFTER EACH PRECIPITATION EVENT FOR SUBSIDENCE. SUBSIDENCE IS A CRITERION OF FAILURE. AS SUCH, MITIGATE SUBSIDENCE IMMEDIATELY USING THE APPROPRIATE ENGINEERING PRACTICE.
- C-SCM-10 DEWATERING STRUCTURE: INSPECT THE FILTERING DEVICES DAILY AND REPAIR OR REPLACE ONCE THE SEDIMENT BUILDUP PREVENTS THE STRUCTURE FROM FUNCTIONING AS DESIGNED. REMOVE THE ACCUMULATED SEDIMENT FROM THE DEWATERING DEVICE, SPREAD ON SITE, AND STABILIZE OR DISPOSE OF AT AN APPROVED DISPOSAL SITE AS PER APPROVED PLAN. MONITOR THE DEWATERING STRUCTURE DURING OPERATION TO ENSURE THAT THE DISCHARGE IS NOT CAUSING EROSION. PROVIDE SOIL STABILIZATION BLANKETS AND MATTING (BMP C-SSM-05) OR COMPOST FILTER SOCKS (BMP C-PCM-05) AS NEEDED TO MAINTAIN STABILIZED AREAS DOWNSTREAM OF STRUCTURE.
- C-SCM-13 CONCRETE WASHOUT PIT: INSPECT ALL CONCRETE WASHOUT FACILITIES DAILY. DEACTIVATE AND REPAIR OR REPLACE DAMAGED OR LEAKING FACILITIES IMMEDIATELY. PUMP EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE TO A STABILIZED AREA SUCH AS A GRASS FILTER STRIP. REMOVE ACCUMULATED HARDENED MATERIAL WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. PUMP ANY EXCESS WASH WATER INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF-SITE. DISPOSE OF THE HARDENED MATERIAL OFF SITE IN A CONSTRUCTION/DEMOLITION LANDFILL. THE HARDENED CONCRETE MAY BE RECYCLED BY CRUSHING AND REUSING THE CRUSHED CONCRETE AS CONSTRUCTION MATERIAL. THE CRUSHED CONCRETE MATERIAL MAKES AN EXCELLENT AGGREGATE FOR ROAD BASE AND CAN BE USED AS FILL AT THE CONSTRUCTION SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS OR DELIVERED TO A RECYCLER. CONCRETE RECYCLERS CAN BE FOUND AT MUNICIPAL SOLID WASTE DISPOSAL FACILITIES, PRIVATE RECYCLING PLANTS, OR LARGE CONSTRUCTION SITES. REPLACE THE PLASTIC LINER WITH EACH CLEANING OF THE WASHOUT FACILITY. INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT CONCRETE IS NOT BEING DISCHARGED IN NON-DESIGNATED AREAS. BEFORE FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER THE STRUCTURE TO PREVENT OVERFLOWS.

C. SURFACE STABILIZATION MEASURES

- C-SSM-01 TREE PRESERVATION AND PROTECTION: DESPITE PRECAUTIONS, SOME PROTECTED TREES MAY SUFFER DAMAGE. IN SUCH CASES, THE MAINTENANCE GUIDELINES IDENTIFIED IN TABLE C-SSM-01-5 SHOULD BE IMPLEMENTED: SOIL AERATION: IF THE SOIL HAS BECOME COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHOULD BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. THE BAR SHOULD BE DRIVEN 1 FOOT DEEP AND THEN MOVED BACK AND FORTH UNTIL THE SOIL IS LOOSENEED. THIS PROCEDURE SHOULD BE REPEATED EVERY 18 INCHES UNTIL ALL THE COMPACTED SOIL BENEATH THE CROWN OF THE TREE HAS BEEN LOOSENEED. REPAIR OF DAMAGE: A. ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE RETAINED ON THE SITE SHOULD BE REPAIRED IMMEDIATELY. B. WHEN MAJOR ROOT OR BARK DAMAGE OCCURS, REMOVE SOME FOLIAGE TO REDUCE THE DEMAND FOR WATER AND NUTRIENTS. C. DAMAGED ROOTS SHOULD IMMEDIATELY BE CUT OFF CLEANLY INSIDE THE EXPOSED OR DAMAGED AREA. PAINT CUT SURFACES WITH APPROVED TREE PAINT AND SPREAD MOIST PEAT MOSS, BURLAP, OR TOPSOIL OVER THE EXPOSED AREA. D. 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 (FIGURE C-SSM-01-8). E. ALL TREE LIMBS DAMAGED DURING CONSTRUCTION OR REMOVED FOR ANY OTHER REASON SHOULD BE CUT OFF ABOVE THE COLLAR AT THE PRECEDING BRANCH JUNCTION (FIGURE C-SSM-01-8). F. CARE FOR SERIOUS INJURIES SHOULD BE PRESCRIBED BY A FORESTER OR A TREE SPECIALIST. FERTILIZATION: BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHOULD RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY. A. TREES SHOULD 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. B. FERTILIZER SHOULD BE APPLIED TO THE SOIL OVER THE FEEDER ROOTS (SEE FIGURE C-SSM-01-9). IN NO CASE SHOULD IT BE APPLIED CLOSER THAN 3 FEET FROM THE TRUNK. THE ROOT SYSTEMS OF CONIFERS EXTEND SOME DISTANCE BEYOND THE DRIP LINE. INCREASE THE AREA TO BE FERTILIZED BY ONE FOURTH THE AREA OF THE CROWN. C. FERTILIZER SHOULD BE APPLIED USING APPROVED FERTILIZATION METHODS AND EQUIPMENT. D. FORMULATIONS AND APPLICATION RATES SHOULD CONFORM TO THE GUIDELINES PROVIDED IN TABLE C-SSM-01-4. MAINTAIN A GROUND COVER OF ORGANIC MULCH AROUND TREES SUFFICIENT TO PREVENT EROSION, PROTECT ROOTS, AND HOLD WATER.
- C-SSM-09 TEMPORARY SEEDING: INSPECT SEEDDED AREAS EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 0.5 INCH OR MORE OF PRECIPITATION. RESEED ANY BARE AREAS > 500 SQUARE FEET. COVER SEEDDED AREA WITH STRAW OR MULCH TO MODERATE SOIL MOISTURE AND TEMPERATURE DURING THE INITIAL GERMINATION PERIOD. SUPPLY TEMPORARY SEEDING WITH ADEQUATE MOISTURE. SUPPLY WATER AS NEEDED, ESPECIALLY IN ABNORMALLY HOT OR DRY WEATHER OR ON ADVERSE SITES. CONTROL WATER APPLICATION RATES TO PREVENT RUNOFF.
- C-SSM-10 PERMANENT SEEDING: EVEN WITH CAREFUL, WELL-PLANNED SEEDING OPERATIONS, FAILURES CAN OCCUR. WHEN PLANTS HAVE NOT GERMINATED ON AN AREA OR HAVE DIED, RESEED THESE AREAS IMMEDIATELY TO PREVENT EROSION DAMAGE. HOWEVER, IT IS EXTREMELY IMPORTANT TO DETERMINE WHY GERMINATION FAILED AND TAKE ANY CORRECTIVE ACTION NECESSARY BEFORE RESEEDING THE AREA. HEALTHY VEGETATION IS THE MOST EFFECTIVE EROSION CONTROL AVAILABLE.
- C-SSM-11 MULCHING: INSPECT ALL MULCHES AND SOIL COVERINGS PERIODICALLY AND AFTER RAINSTORM EVENTS TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, APPLY ADDITIONAL MULCH. INSPECT NETS AND MATS AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECT MULCHES UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR (APPROXIMATELY EVERY 3 MONTHS) TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.

D. PERIMETER CONTROL MEASURE

- C-PCM-01 SAFETY FENCE: SAFETY FENCE SHOULD BE CHECKED REGULARLY FOR WEATHER-RELATED OR OTHER DAMAGE. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY. ALL LOCKING DEVICES MUST BE REPAIRED OR REPLACED AS NECESSARY.



CITY OF STAUNTON

JOHNSON, BYERS, AND NEW
STREET TUNNEL REPAIRS

STAUNTON, VIRGINIA

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E. ENVIRONMENTALLY SENSITIVE AREA PROTECTION

- ## K. PERMANENT STABILIZATION

XI. WATER QUANTITY COMPLIANCE

XII. WATER QUALITY COMPLIANCE

XIII. SEQUENCE(S) OF CONSTRUCTION

XIV. PERMITS

STATE

FEDERAL: NATIONWIDE PERMIT #3 (MAINTENANCE ACTIVITIES) APPLIED FOR THROUGH A JOINT PERMIT APPLICATION TO USACE

XV. RESPONSIBLE PARTIES

INSPECTION AND REPAIR OF CONSTRUCTION BMP'S:

(TS) TEMPORARY SEEDING SCHEDULE

(PS) PERMANENT SEEDING SCHEDULE

SITE SPECIFIC SEEDING MIXTURES FOR APPALACHIAN/MOUNTAIN AREA

HIGH MAINTENANCE LAWN CARE

GENERAL SLOPE (3:1 OR LESS)

LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)

PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN FESCUE, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED.

***USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

LIME & FERTILIZER SPECIFICATIONS

A SOILS TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE LIME AND FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.

INCORPORATION: LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF TOPSOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE SURFACE.

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CITY OF STAUNTON

JOHNSON, BYERS, AND NEW STREET TUNNEL REPAIRS

STAUNTON, VIRGINIA

[illegible]

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DATE: 10/06/2025	
DRAWN: FAH	DESIGN: FAH
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SHEET TITLE	
EROSION & SEDIMENT CONTROL NARRATIVE	
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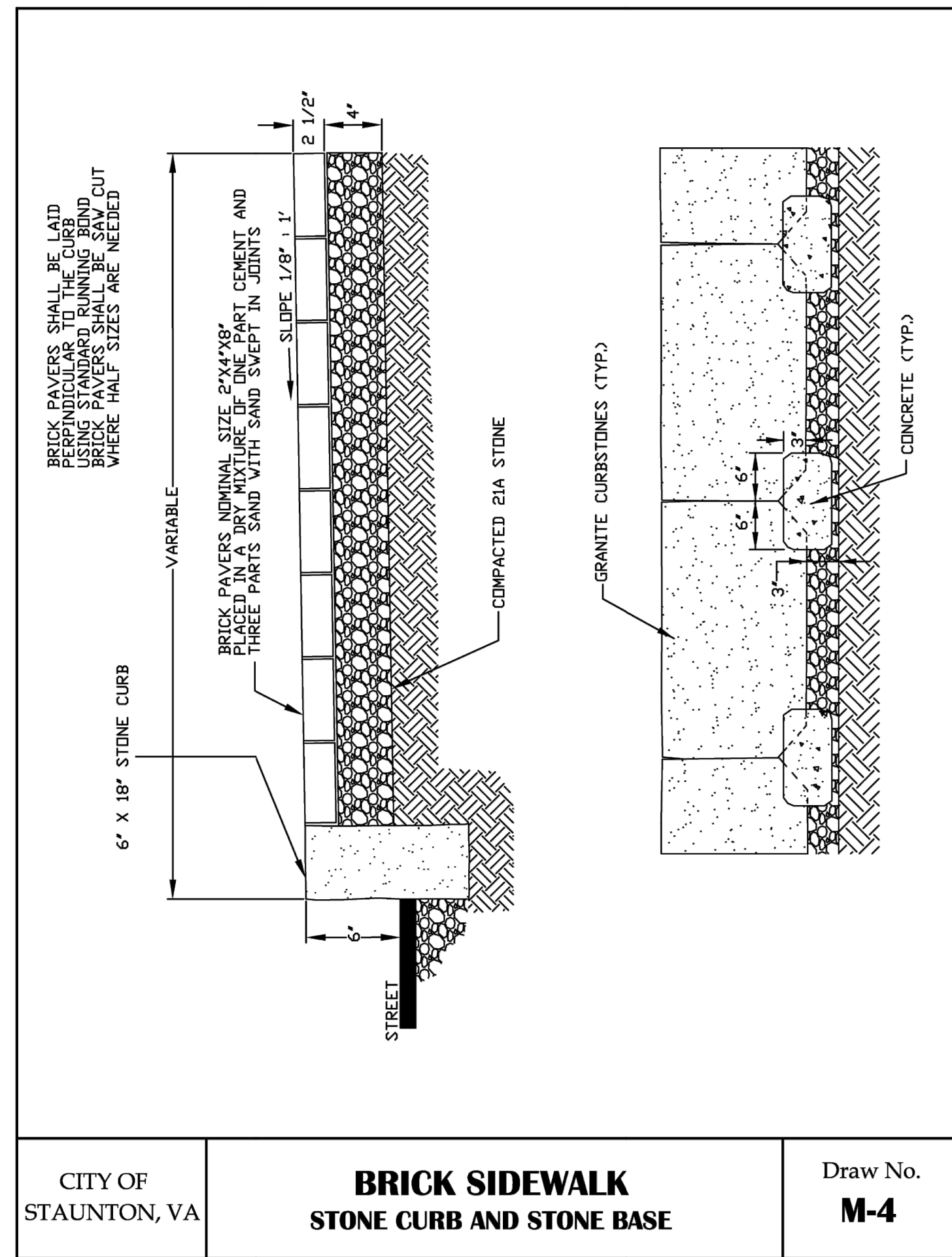
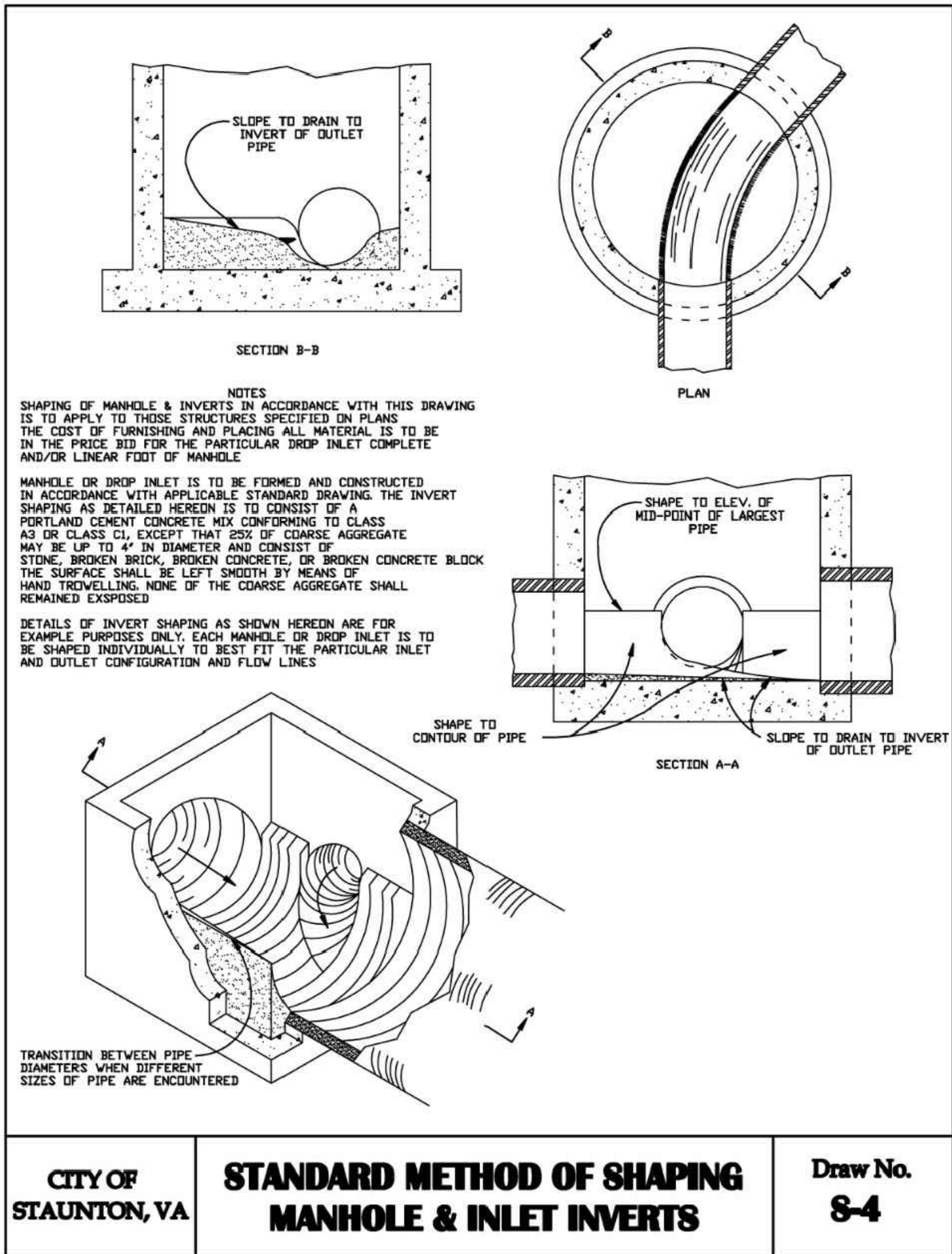
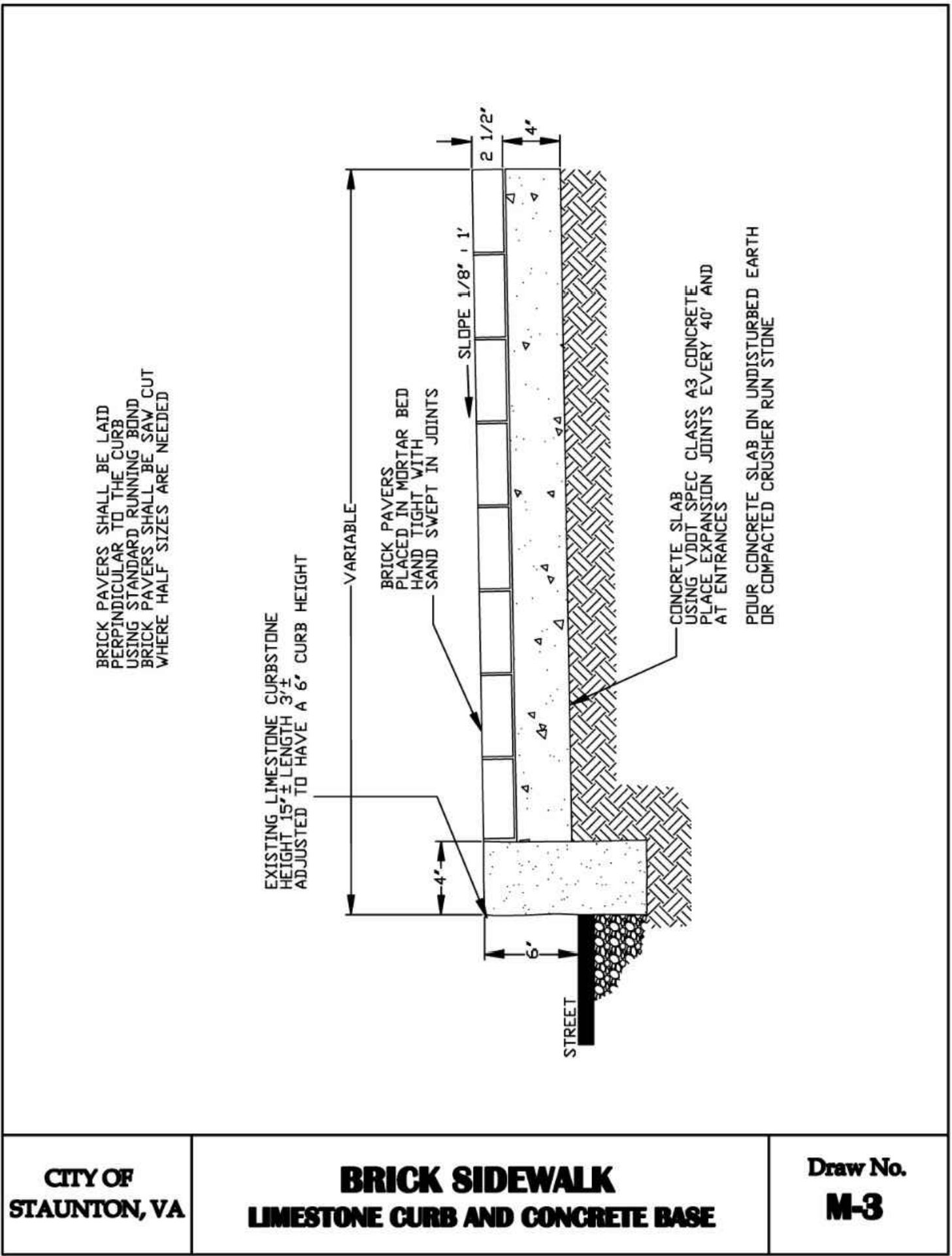
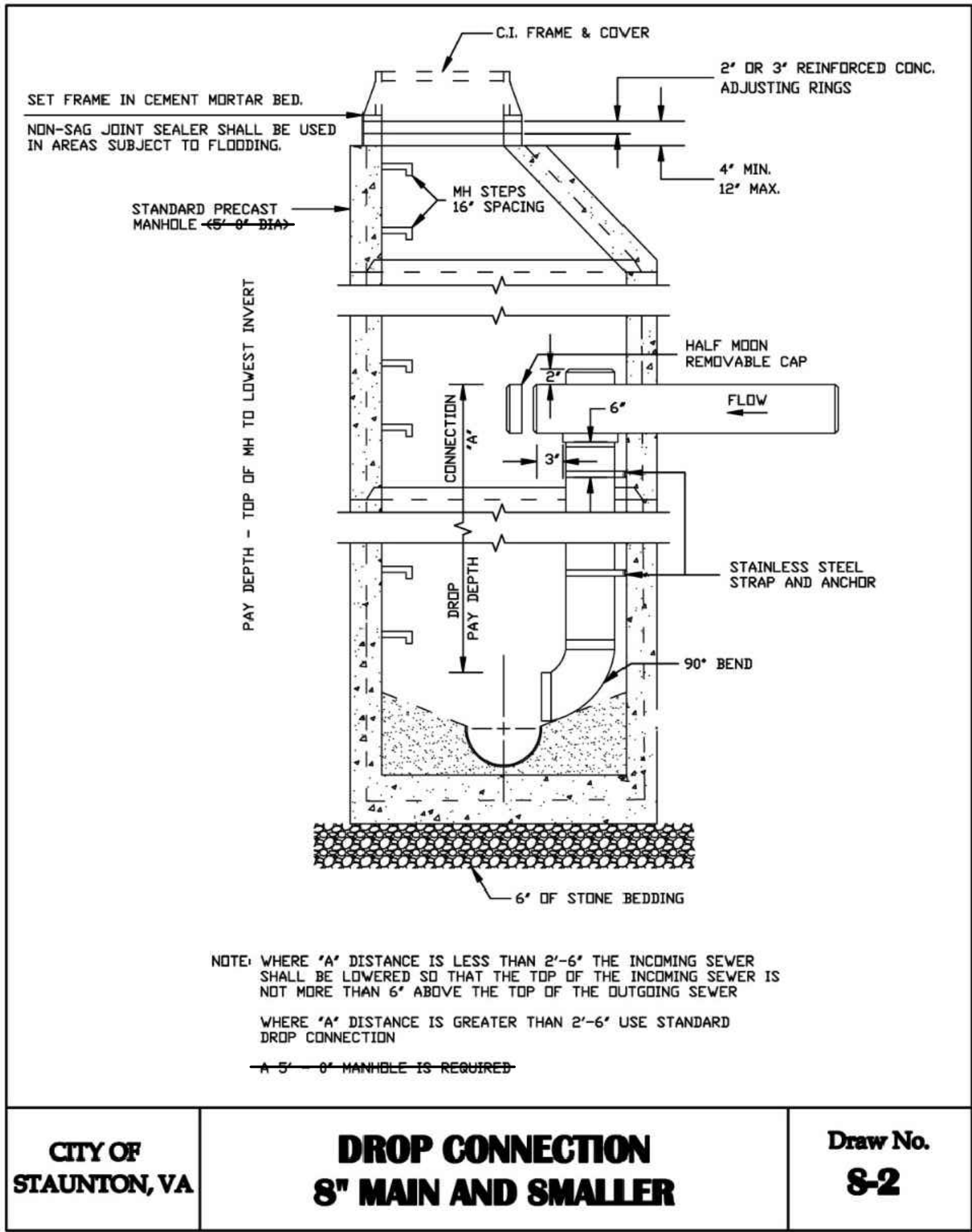
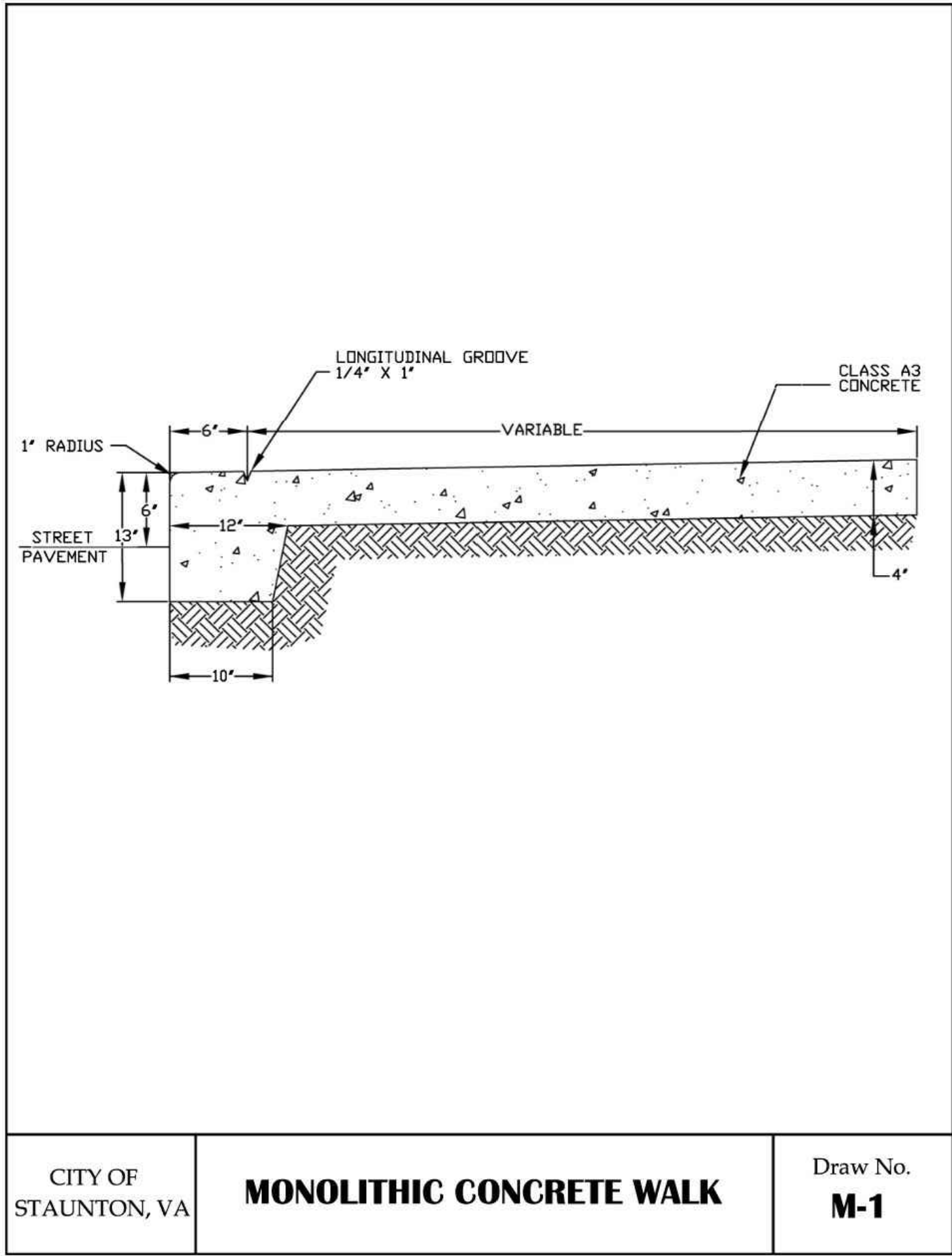
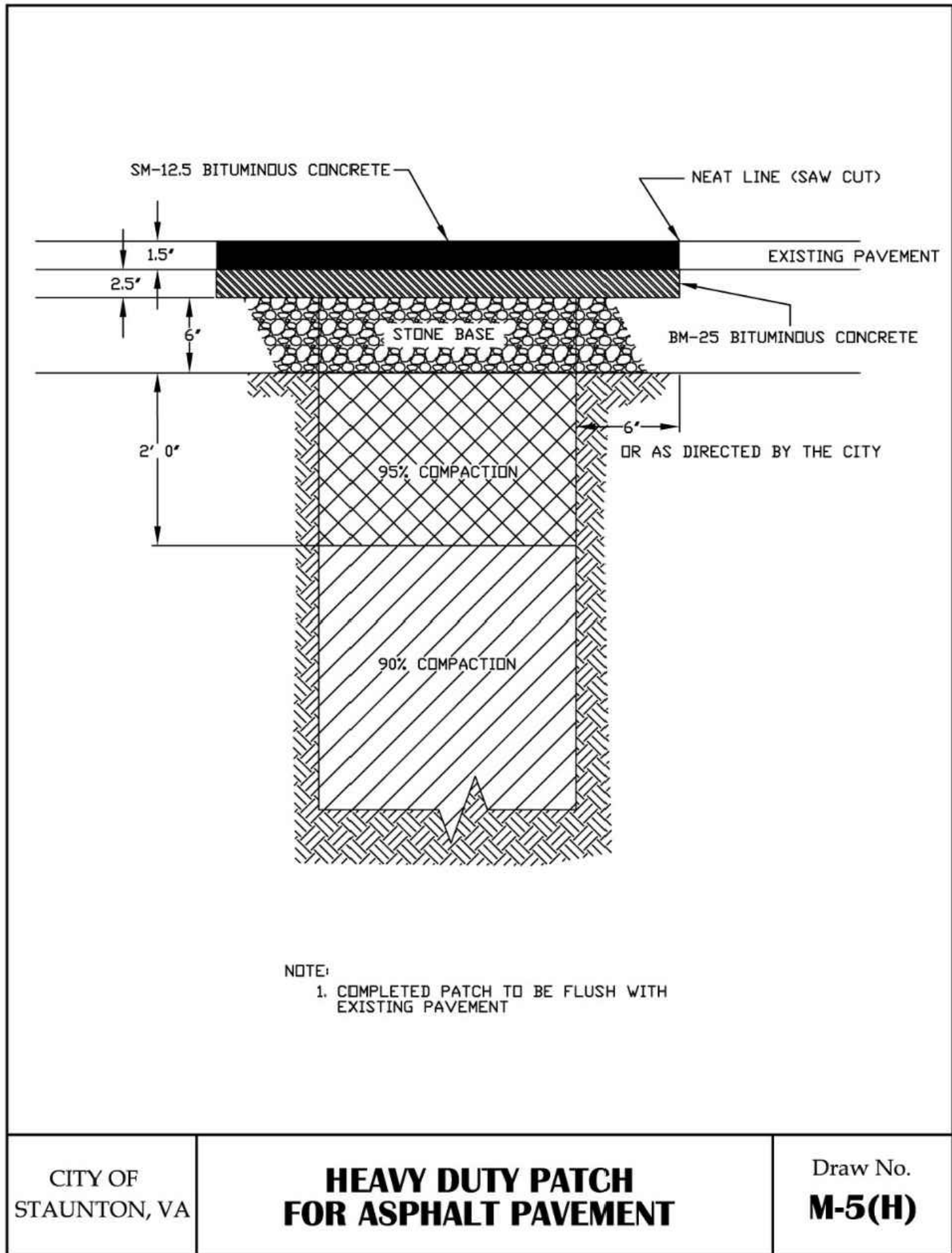
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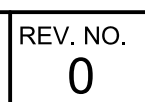
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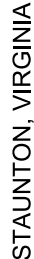
CITY OF STAUNTON

JOHNSON, BYERS, AND NEW
STREET TUNNEL REPAIRS

STAUNTON, VIRGINIA







CITY OF STAUNTON

REVISION DESCRIPTION

COMM NO:	240197
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DATE: 10/06/2025

SHEET TITLE

TRAFFIC CONTROL -
JOHNSON ST

SHT. NO.
C-601



TRAFFIC CONTROL PLAN

BARRIERS ARE CURRENTLY INSTALLED BY THE CITY OF STAUNTON ON NEW ST, BYERS ST, AND JOHNSON ST TO PREVENT TRAFFIC ON SECTIONS OF THE TUNNELS NEEDING REPAIR. AS CONTRACTOR BEGINS WORK AT THESE SITES, THE CITY WILL REMOVE ITS BARRIERS TO ENABLE THE CONTRACTOR TO INSTALL THEIR BARRIERS.

THIS PLAN SHOWS THE BARRIERS GENERALLY NEEDED AT EACH SITE. THE CONTRACTOR IS ONLY RESPONSIBLE FOR BARRIERS AND TRAFFIC MANAGEMENT AT THE SITE WHERE THEY ARE CURRENTLY WORKING AND ANY RELATED DETOURS FOR THAT SITE. PROVIDE "DANGER CONSTRUCTION SITE NO TRESPASSING" SIGNS AT ALL BARRICADE AND AT 50 FT INTERVALS ALONG SAFETY FENCE. REFER TO SPECIFICATIONS SECTION 015000 FOR ADDITIONAL REQUIREMENTS. THIS PLAN IS INTENDED TO SHOW DETOUR ROUTES AND CLOSURES, BUT THE CONTRACTOR IS REQUIRED TO SUBMIT THEIR OWN MOT PLAN FOR APPROVAL. ADDITIONAL SIGNS MAY BE NEEDED.

THE BYERS ST WORK MUST BE COMPLETED PRIOR TO BEGINNING WORK AT JOHNSON ST TO USE DETOUR ROUTE A FOR EASTBOUND JOHNSON ST TRAFFIC.

COORDINATE BARRIER LOCATIONS WITH LOCAL BUSINESSES WHERE BARRIERS WOULD BLOCK STREET PARKING OR SIDEWALK ACCESS.

JOHNSON ST

1. PLACE VEHICULAR TRAFFIC BARRIERS ON JOHNSON ST BETWEEN THE JOHNSON ST PARKING GARAGE UPPER AND LOWER ENTRANCES, AT THE CENTRAL AVE INTERSECTION (AS SHOWN), AND AT THE AUGUSTA ST INTERSECTION.
2. PROVIDE A PEDESTRIAN ROUTE AT THE JOHNSON ST/CENTRAL AVE INTERSECTION THAT UTILIZES THE EXISTING SIDEWALK RAMPS AT THE WHARF PARKING LOT ENTRANCE. PROVIDE TEMPORARY RAMPS AS NECESSARY.
3. PROVIDE SIGNAGE AS INDICATED ON PLAN.
4. PRESERVE AT LEAST SIX STREET PARKING SPOTS ON CENTRAL AVENUE FOR POLICE USE. TEMPORARY CLOSURES OF ALL CENTRAL AVE STREET PARKING IS ANTICIPATED TO MAKE SPACE FOR BYPASS PUMPING OPERATIONS AT PEYTON CREEK BEHIND CITY HALL.
5. ROUTE A (CAR ONLY) DIVERTS EASTBOUND JOHNSON ST TRAFFIC ONTO LEWIS ST AND THROUGH BYERS ST BACK TO JOHNSON ST. BYERS ST WILL BE ONE WAY FOR THE DURATION.
6. ROUTE B (CAR ONLY) DIVERTS WESTBOUND JOHNSON ST TRAFFIC ONTO AUGUSTA ST AND THROUGH FREDERICK ST BACK TO JOHNSON ST WHERE THEY CAN CONTINUE THROUGH OR FIND PARKING IN THE JOHNSON ST PARKING LOT OR THE WHARF PARKING LOT.
7. ROUTE C (CAR ONLY) RESTRICTS SOUTHBOUND CENTRAL AVE TRAFFIC TO LEFT TURN ONLY ONTO JOHNSON ST. THIS PORTION OF JOHNSON ST WILL BE ONE-WAY (EASTBOUND) ONLY FOR THE DURATION.
8. TRUCKS (3 AXLE BOX TRUCKS AND TRUCKS WITH TRAILERS) MUST USE INDICATED TRUCK DETOURS THAT UTILIZE CHURCHVILLE AVE OR HAMPTON ST.
9. THE EAST AND WEST WHARF PARKING LOTS WILL BE ACCESSIBLE FROM BYERS ST. HALF OF THE WEST WHARF PARKING LOT WILL BE USED FOR CONTRACTOR LAYDOWN.

SIGN LEGEND

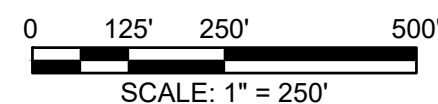
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- 2 TRUCK DETOUR
- 3 NON TRUCK DETOUR
- 4 PUBLIC PARKING ACCESS
- 5 WHARF PUBLIC PARKING LOT
- 6 JOHNSON ST PARKING GARAGE
- 7 BUSINESSES OPEN
- 8 DO NOT ENTER. ONE-WAY ONLY.
- 9 LEFT TURN ONLY ONTO JOHNSON ST
- 10 RIGHT TURN ONLY ONTO JOHNSON ST
- 11 DANGER CONSTRUCTION SITE NO TRESPASSING

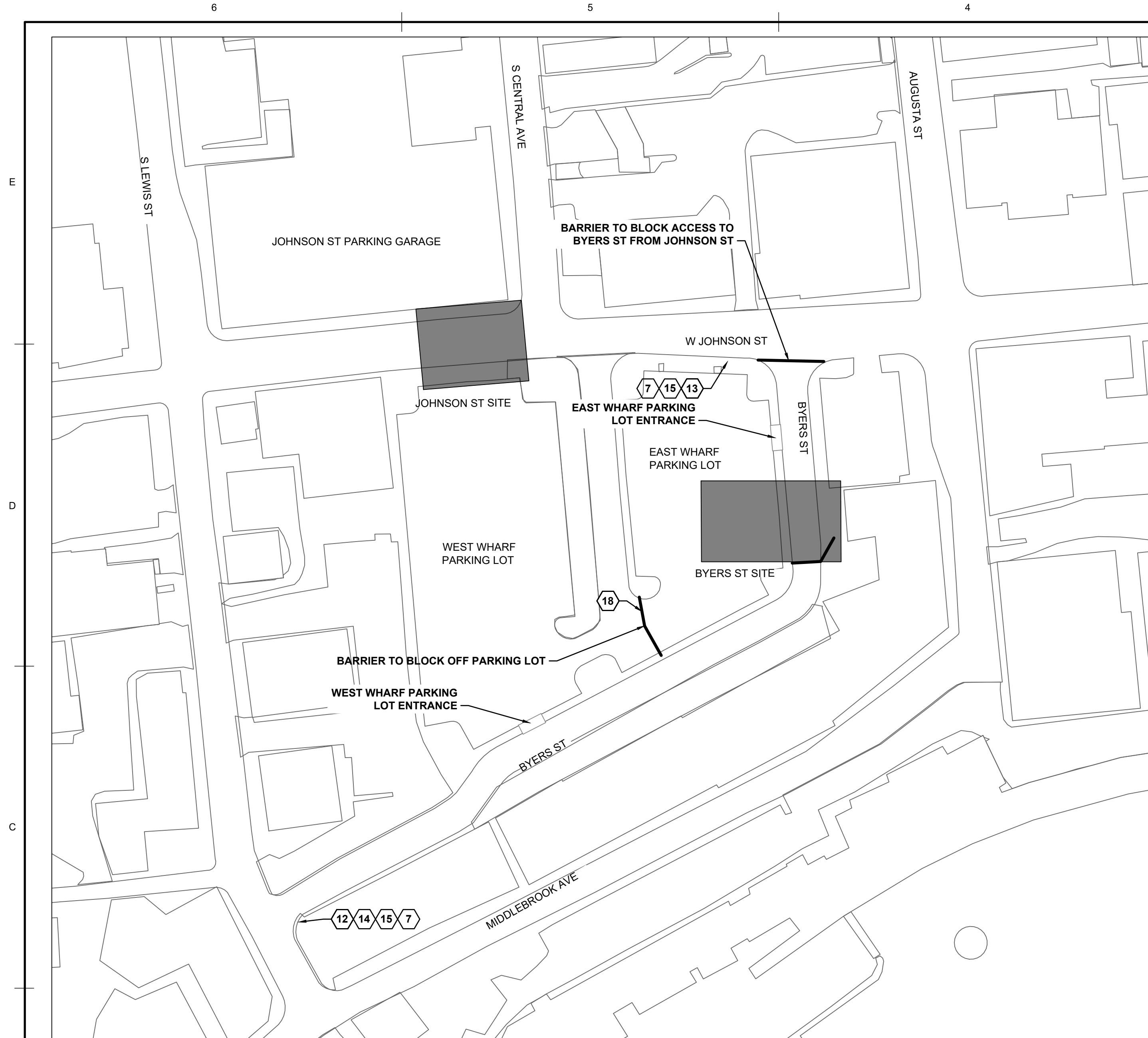
LEGEND

-  VEHICLE BARRIER
 CAR DETOUR ROUTE
 TRUCK DETOUR ROUTE
 PEDESTRIAN PATH
 WORK SITE



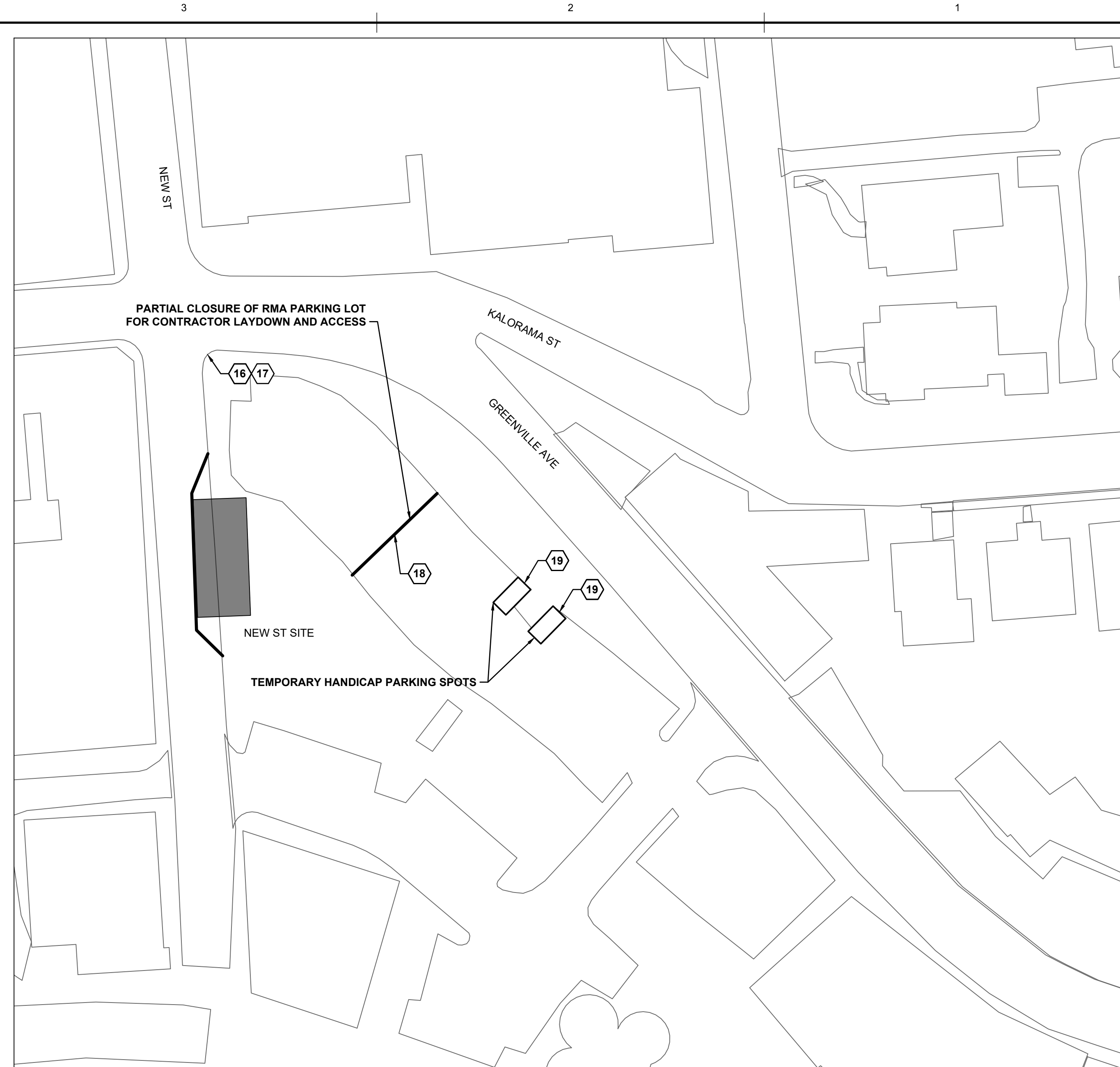
IF THIS DRAWING IS REDUCED,
GRAPHIC SCALE MUST BE USED





BYERS ST TRAFFIC CONTROL

SCALE: 1" = 60'



NEW ST TRAFFIC CONTROL

SCALE: 1" = 40'

TRAFFIC CONTROL PLAN

BARRIERS ARE CURRENTLY INSTALLED BY THE CITY OF STAUNTON ON NEW ST, BYERS ST, AND JOHNSON ST TO PREVENT TRAFFIC ON SECTIONS OF THE TUNNELS NEEDING REPAIR. AS CONTRACTOR BEGINS WORK AT THESE SITES, THE CITY WILL REMOVE ITS BARRIERS TO ENABLE THE CONTRACTOR TO INSTALL THEIR BARRIERS.

THIS PLAN SHOWS THE BARRIERS GENERALLY NEEDED AT EACH SITE. CONTRACTOR IS ONLY RESPONSIBLE FOR BARRIERS AND TRAFFIC MANAGEMENT AT THE SITE WHERE THEY ARE CURRENTLY WORKING. PROVIDE "DANGER CONSTRUCTION SITE NO TRESPASSING" SIGNS AT ALL BARRICADES AND AT 50 FT INTERVALS ALONG SAFETY FENCE. REFER TO SPECIFICATIONS SECTION 015000 FOR ADDITIONAL REQUIREMENTS.

THE BYERS ST WORK MUST BE COMPLETED PRIOR TO BEGINNING WORK AT JOHNSON ST TO USE
DETOUR ROUTE A FOR EASTBOUND JOHNSON ST TRAFFIC.

COORDINATE BARRIER LOCATIONS WITH LOCAL BUSINESSES WHERE BARRIERS WOULD BLOCK STREET PARKING OR SIDEWALK ACCESS.

BYERS ST

1. PLACE VEHICULAR TRAFFIC BARRIERS AT THE INTERSECTION OF BYERS ST AND JOHNSON ST AND ON BYERS ST AT APPROX 10 BYERS ST
2. THE EAST WHARF PARKING LOT WILL BE INACCESSIBLE TO THE PUBLIC FOR THE DURATION OF WORK AT THIS SITE.

NEW ST

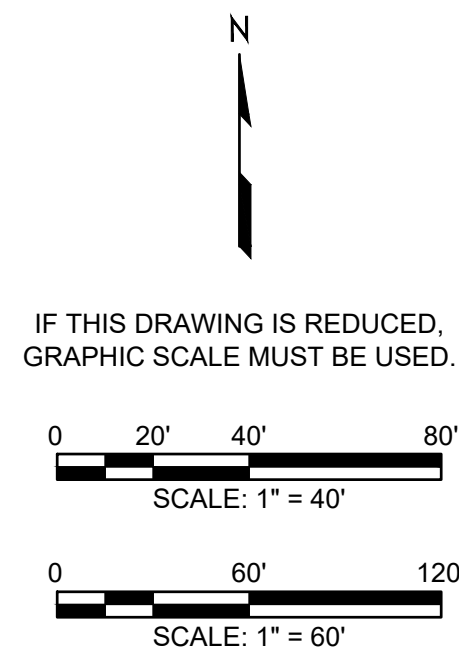
1. PLACE VEHICULAR TRAFFIC BARRIERS AROUND THE LIMITS OF WORK IN NEW ST. PRESERVE MIN 10' WIDE TRAFFIC LANE FOR THROUGH TRAFFIC
2. WORK ZONE AND DETOUR WILL UTILIZE STREET PARKING SPACES ON BOTH SIDES OF NEW ST.
3. APPROX ONE-THIRD OF THE RMA PARKING LOT WILL BE USED FOR CONTRACTOR LAYDOWN. CONTRACTOR MUST PROVIDE SUBSTITUTE TEMPORARY HANDICAP PARKING.

LEGEND

- VEHICLE BARRIER
 WORK SITE

SIGN LEGEND

7. BUSINESSSES OPEN
11. DANGER CONSTRUCTION SITE NO TRESPASSING
12. NO THRU TRAFFIC ON BYERS ST
13. PUBLIC PARKING ACCESSIBLE FROM LEWIS ST
14. EAST WHARF PARKING LOT CLOSED FOR CONSTRUCTION
15. WEST WHARF PARKING LOT OPEN
16. ONE LANE ROAD
17. NO STREET PARKING
18. ADDITIONAL PARKING AVAILABLE IN JOHNSON ST PARKING GARAGE & NEW ST PARKING GARAGE
19. HANDICAP PARKING



CITY OF STAUNTON

JOHNSON, BYERS, AND NEW STREET TUNNEL REPAIRS

STAUNTON, VIRGINIA

[illegible]

COMM NO: 240197

DATE: 10/06/2025

DRAWN: FAH	DESIGN: FAH
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CHECK: WR

SHEET TITLE

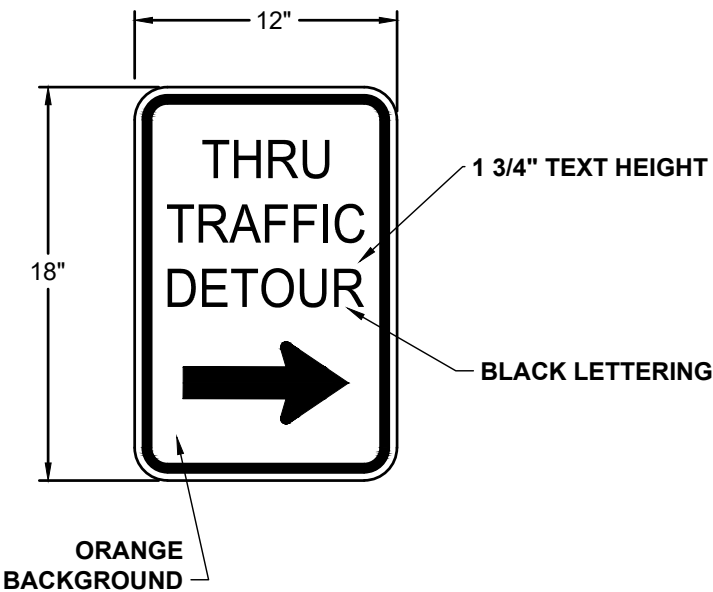
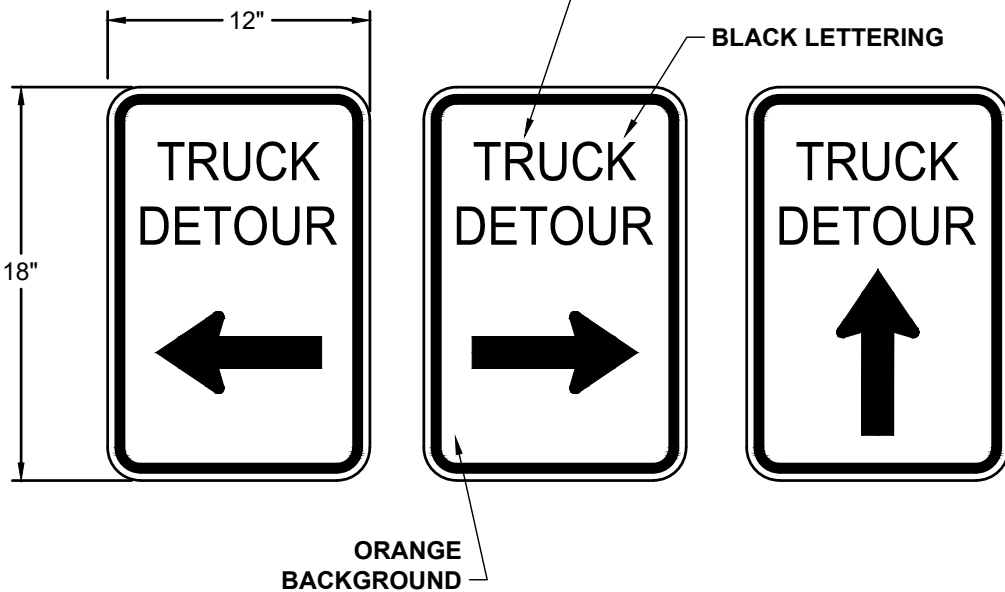
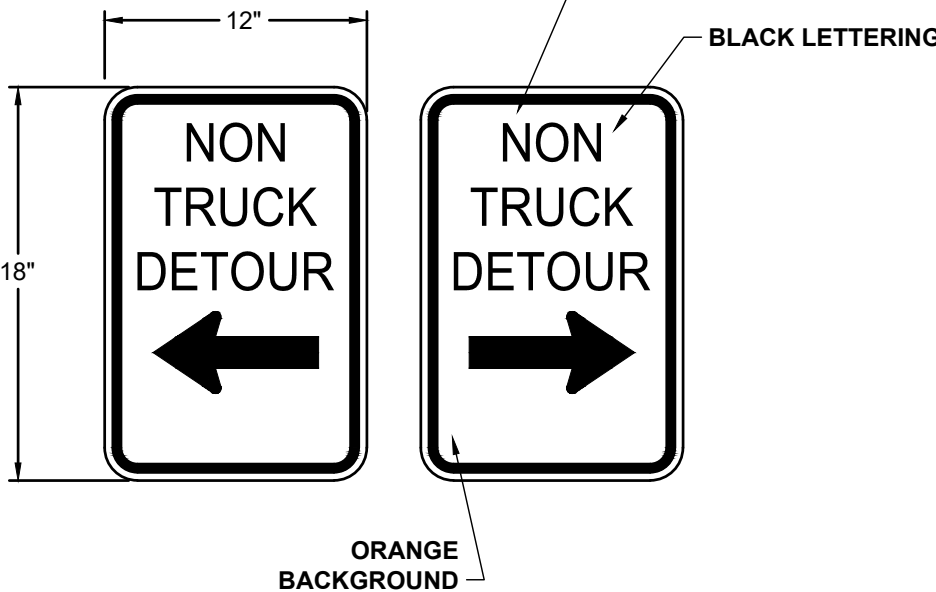
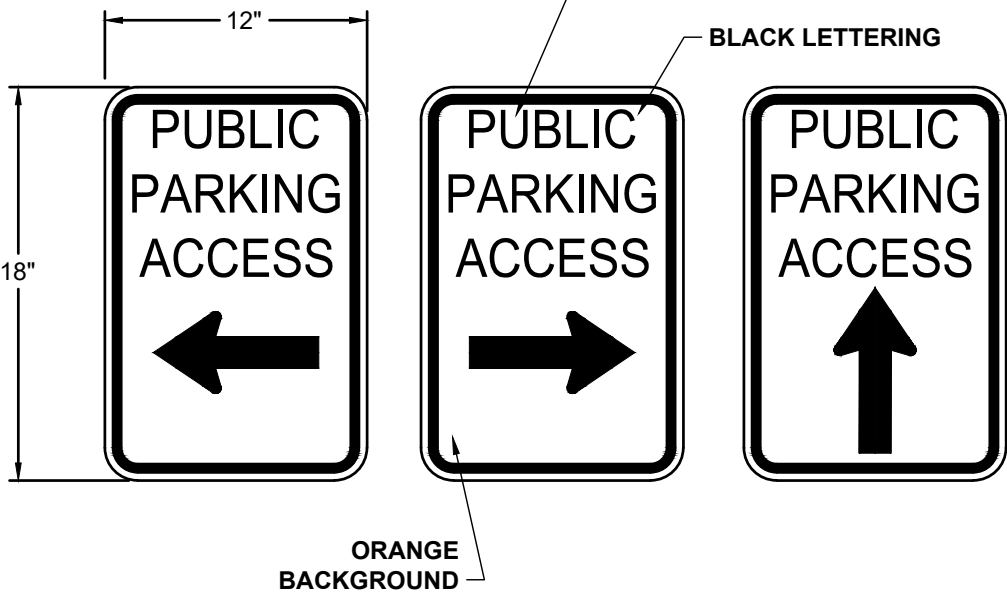
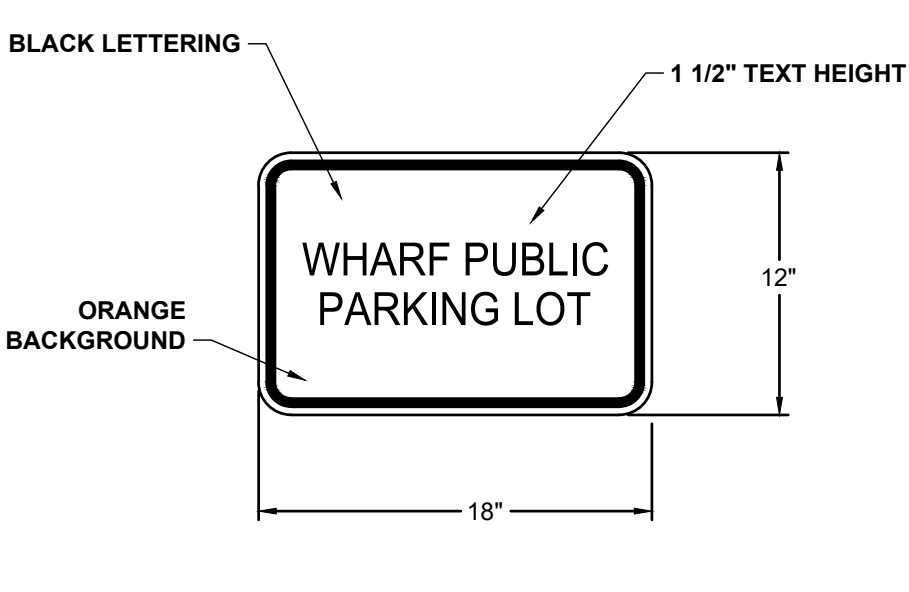
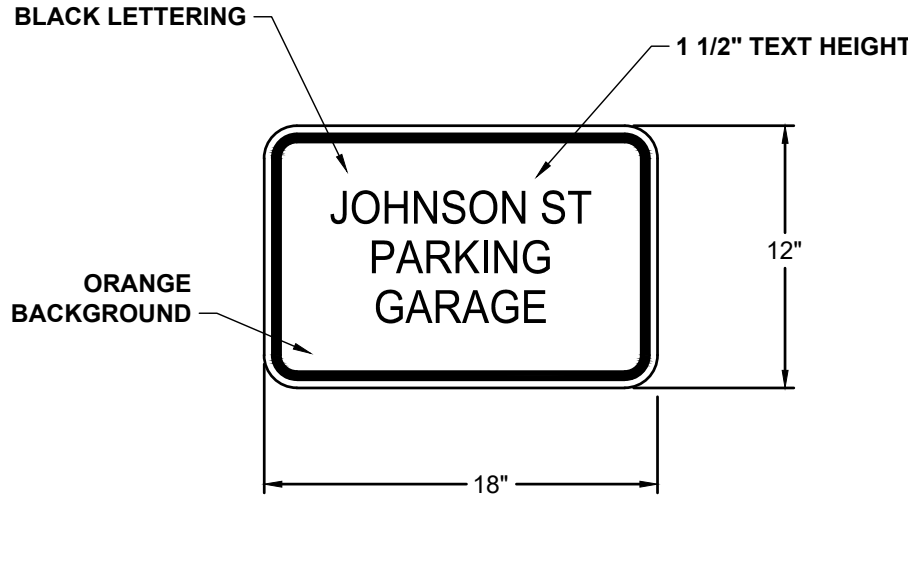
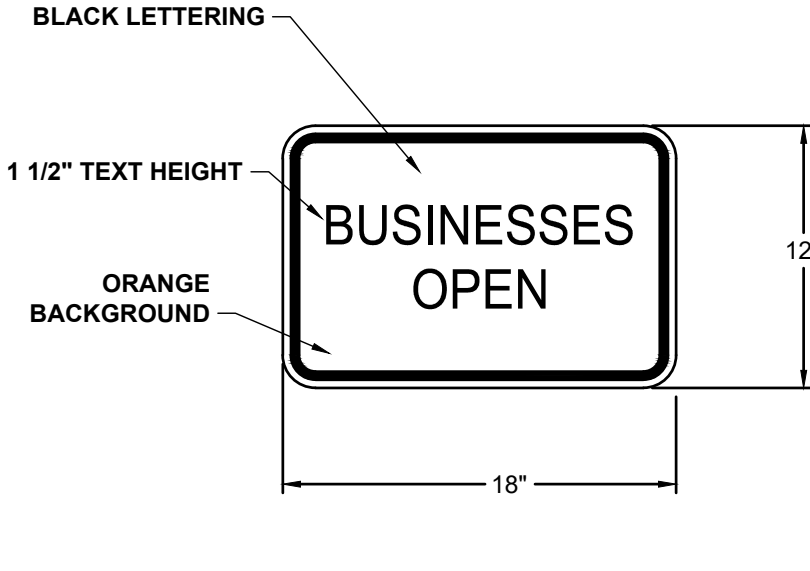
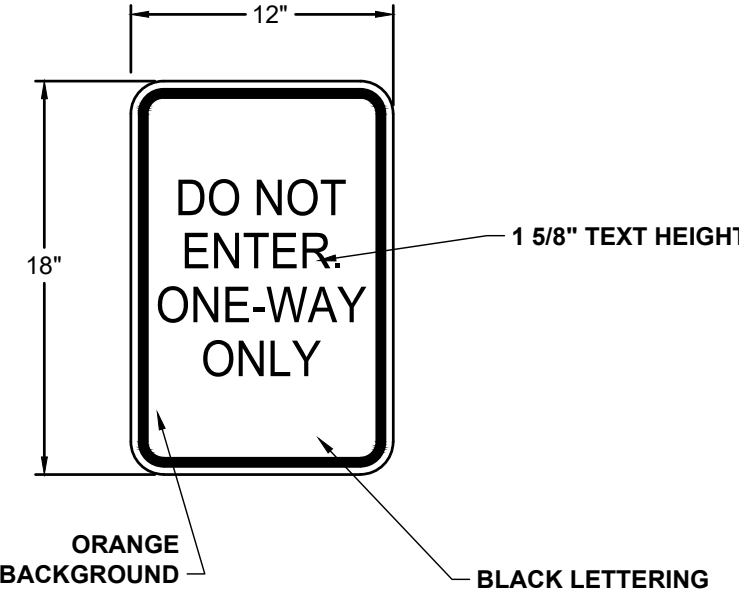
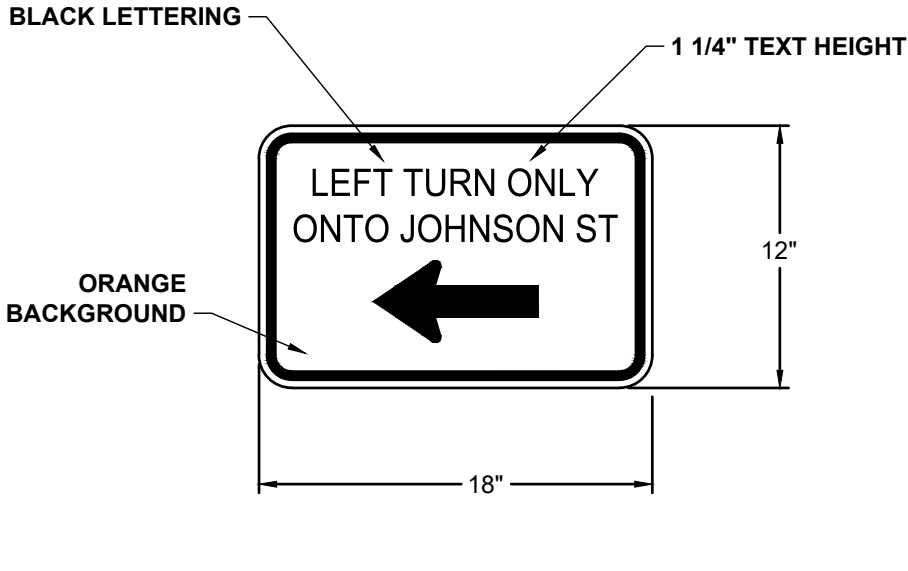
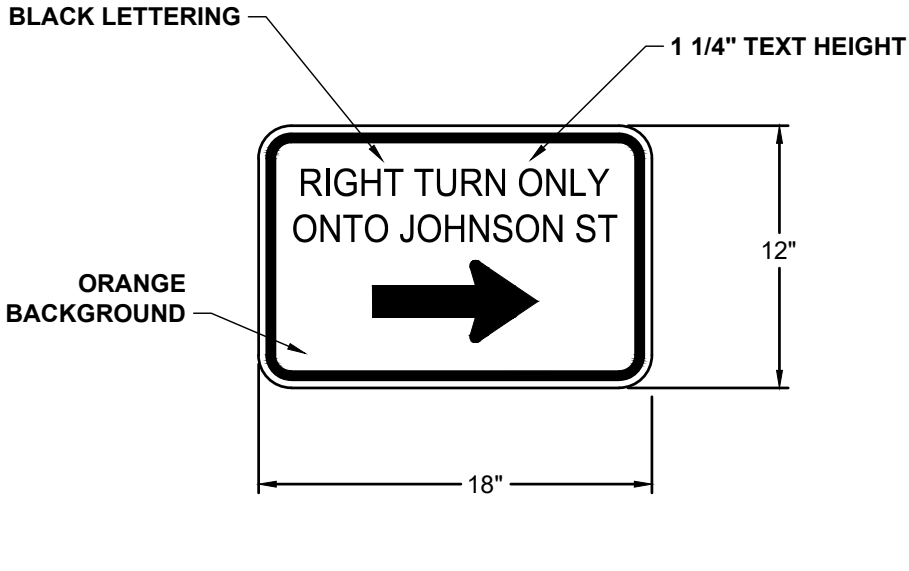
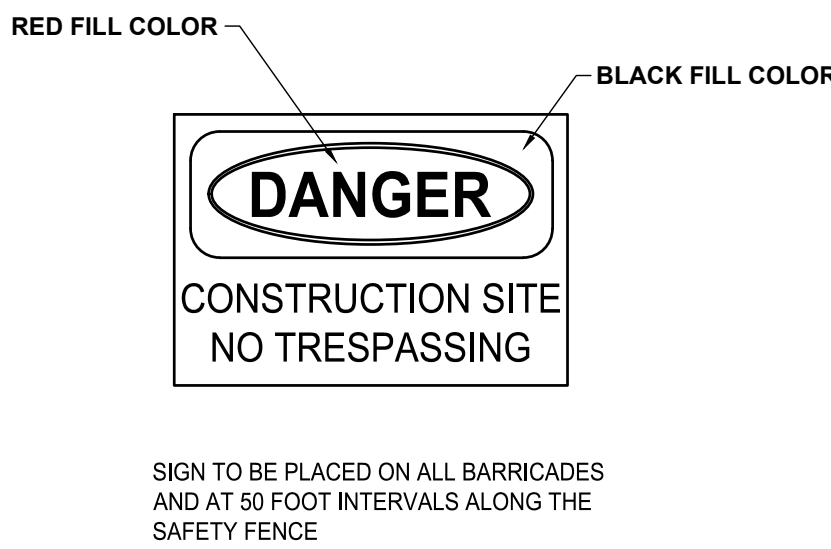
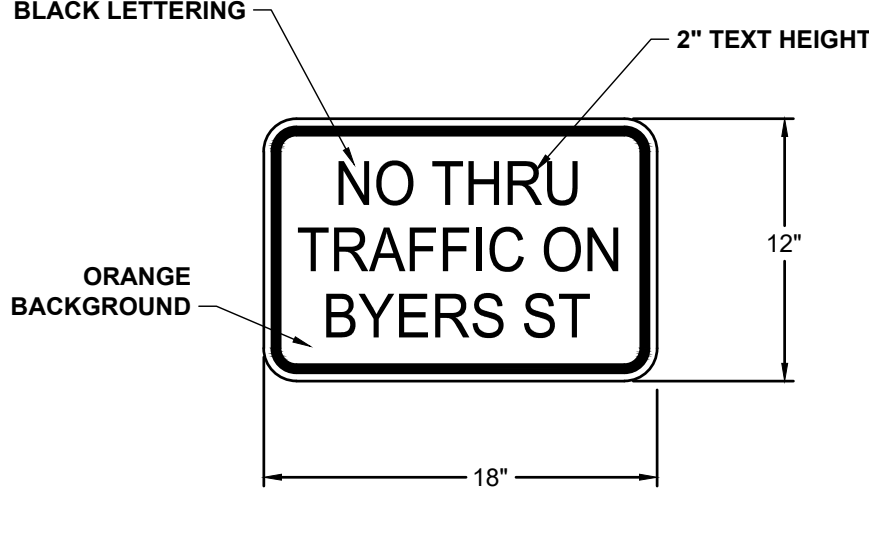
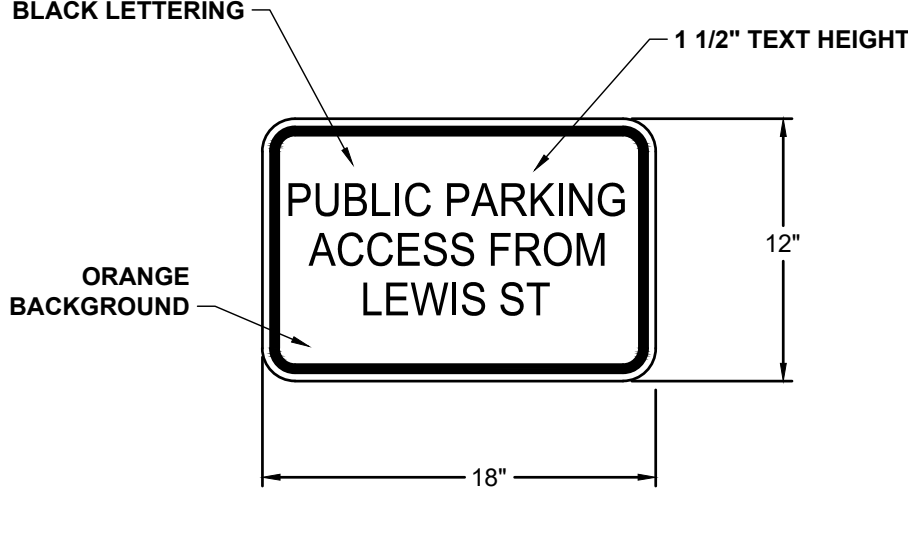
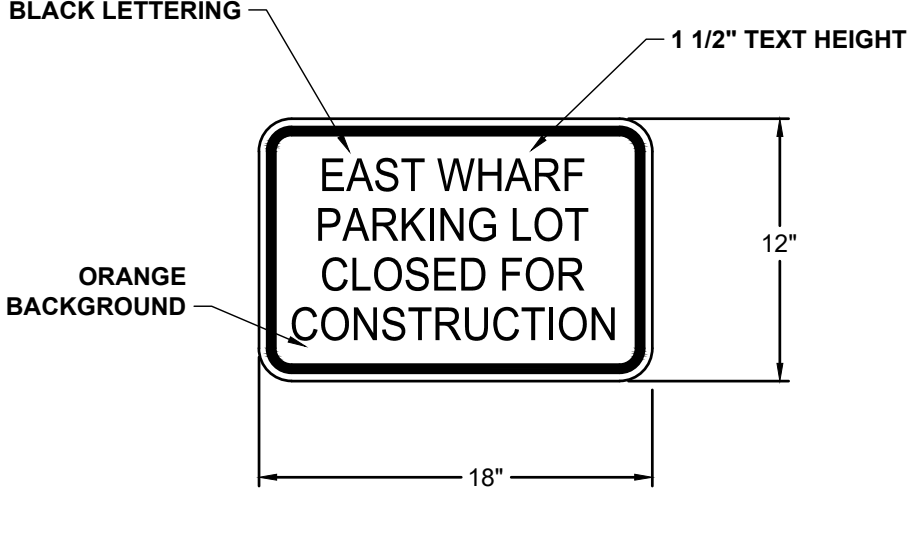
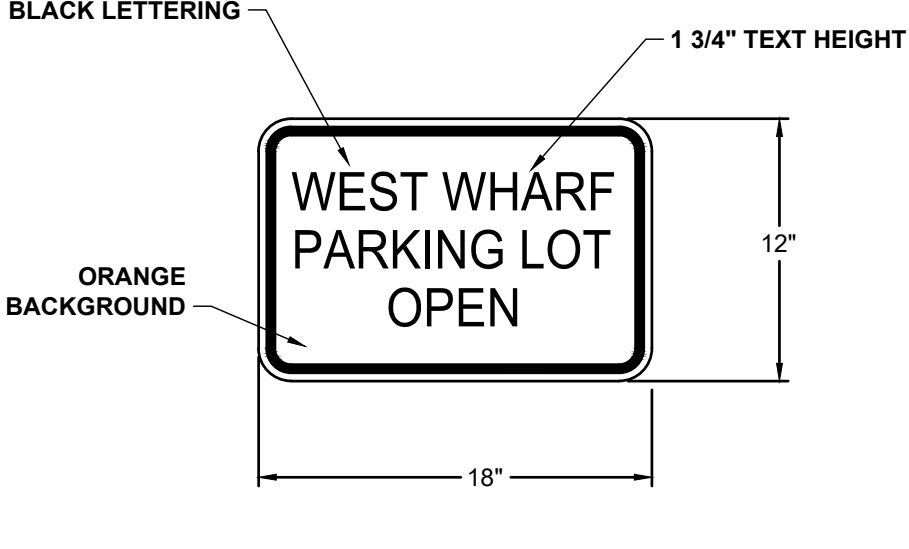
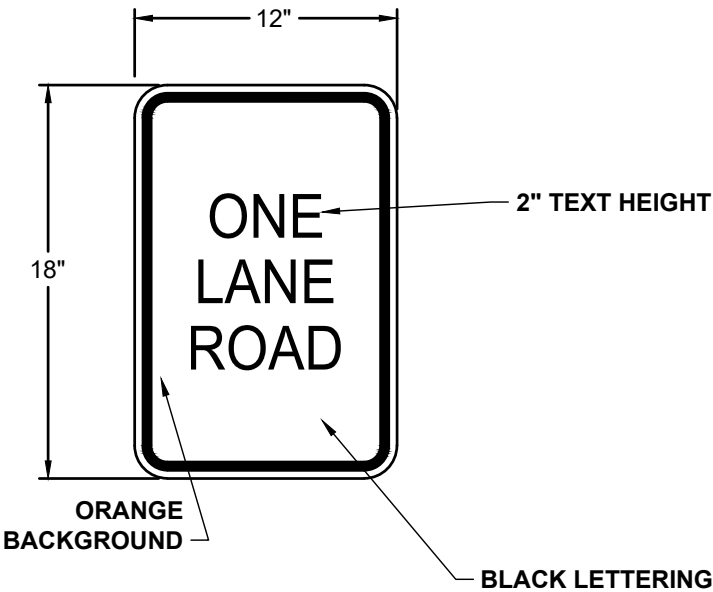
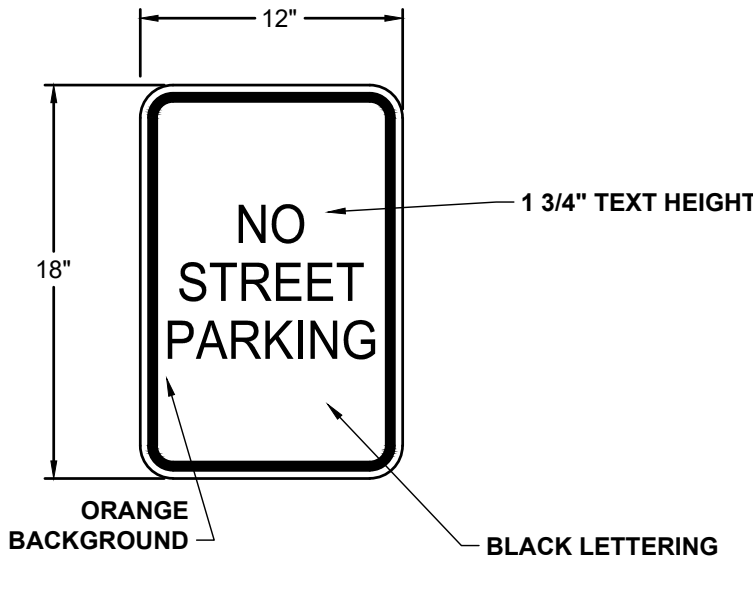
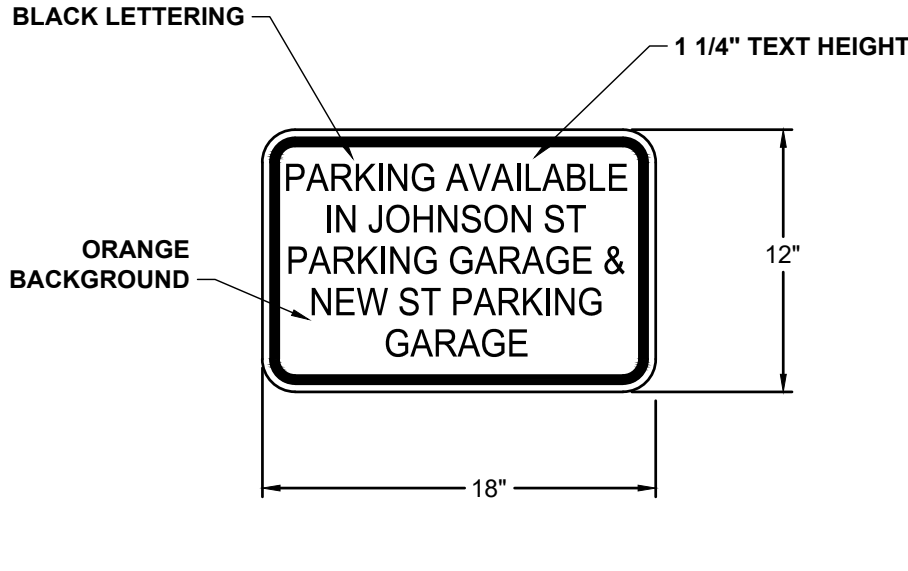
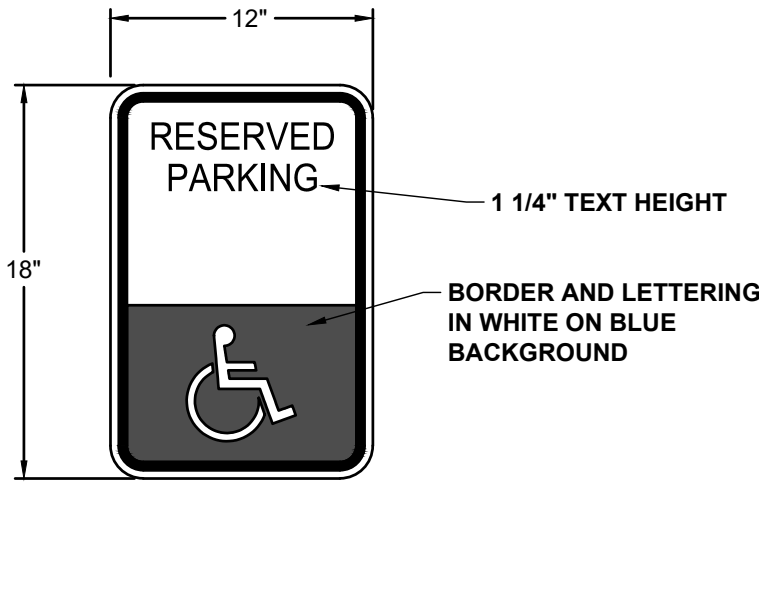
TRAFFIC CONTROL - BYERS
ST & NEW ST

SHT. NO.
C-602

REV. NO.	0
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12/26/2013 6:33 AM

X:\2024\240197 Staunton Tunnel Study\700 Drawings\702 Civil\Sheets\240197A23_C-601.dwg

 1 THRU TRAFFIC DETOUR	 2 TRUCK DETOUR (DIRECTION AS APPROPRIATE)	 3 NON TRUCK DETOUR (DIRECTION AS APPROPRIATE)	 4 PUBLIC PARKING ACCESS (DIRECTION AS APPROPRIATE)	 5 WHARF PUBLIC PARKING LOT
 6 JOHNSON ST PARKING GARAGE	 7 BUSINESSES OPEN	 8 DO NOT ENTER. ONE-WAY ONLY	 9 LEFT TURN ONLY ONTO JOHNSON ST	 10 RIGHT TURN ONLY ONTO JOHNSON ST
 11 DANGER CONSTRUCTION SITE NO TRESPASSING	 12 NO THRU TRAFFIC ON BYERS ST	 13 PUBLIC PARKING ACCESS FROM LEWIS ST	 14 EAST WHARF PARKING LOT CLOSED FOR CONSTRUCTION	 15 WEST WHARF PARKING LOT OPEN
 16 ONE LANE ROAD	 17 NO STREET PARKING	 18 PARKING AVAILABLE IN JOHNSON ST PARKING GARAGE & NEW ST PARKING GARAGE	 17 HANDICAP PARKING	

 Wiley Wilson Constant Progress			
CITY OF STAUNTON			
JOHNSON, BYERS, AND NEW STREET TUNNEL REPAIRS			
STAUNTON, VIRGINIA			
COMM NO: 240197		DATE: 10/06/2025	
DRAWN: FAH		DESIGN: FAH	
CHECK: WRM			
SHEET TITLE			
TRAFFIC CONTROL DETAILS			
SHT. NO. C-603		REV. NO. 0	

A. GENERAL

1. THE STRUCTURAL GENERAL NOTES ARE INTENDED TO HIGHLIGHT OR IN SOME CASES SUPPLEMENT PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR COMPLETE WORK COVERAGE.
2. THE DESIGN OF THE STRUCTURE COMPLIES WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION), 2017, VDOT ROAD AND BRIDGE SPECIFICATIONS LATEST EDITION, AND VDOT STRUCTURE AND BRIDGE DIVISION INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM.
3. THE STRUCTURE IS DESIGNED FOR THE LOADS SHOWN ON S-601 AND S-610.
4. HANDRAILS AND GUARDRAILS MUST BE DESIGNED FOR A LINEAR LOAD PER VDOT STANDARDS FOR HIGHWAY RATING.
5. THE DESIGN OF THE NEW STRUCTURAL COMPONENTS TO RESIST WIND PRESSURES IS IN ACCORDANCE WITH AASHTO BRIDGE DESIGN SPECIFICATIONS, EDITION 8, SECTION 3.8 FOR WIND PRESSURES. THE DESIGN PARAMETERS ARE AS FOLLOWS:
- | | |
|------------------------------|-------------|
| DESIGN WIND SPEED (ULTIMATE) | V = 115 MPH |
| GROUND ROUGHNESS | B |
| WIND EXPOSURE CATEGORY | B |
| GUST FACTOR (G) | 1.0 |
| PRESSURE EXPOSURE (KZ) | 0.71 |
| DRAQ COEFFICIENT (CD) | 1.3 |
| WIND PRESSURE (Pz) | 31 PSF |
| VERTICAL WIND LOAD | |
| PRESSURE (STRENGTH III) | 20 PSF |
6. THE DESIGN OF THE NEW STRUCTURAL COMPONENTS TO RESIST SEISMIC FORCES IS IN ACCORDANCE WITH AASHTO BRIDGE DESIGN SPECIFICATIONS, EDITION 8, SECTION 3.10. THE DESIGN PARAMETERS ARE AS FOLLOWS:
- | | |
|--|--------------------------|
| MAPPED SPECTRAL RESPONSE ACCELERATIONS | |
| SHORT PERIODS (T=0.2 s) | S _s = 0.12g |
| LONG PERIODS (T=1.0 s) | S ₁ = 0.04g |
| SITE CLASS | |
| D | |
| DESIGN SPECTRAL RESPONSE ACCELERATIONS | |
| SHORT PERIODS (T=0.2s) | S _{DS} = 0.192g |
| LONG PERIODS (T=1.0s) | S ₀₁ = 0.096g |
| SEISMIC ZONE | 1 |
7. STRUCTURE HAS BEEN DESIGN FOR SERVICE LOADS ONLY. IMPOSED CONSTRUCTION LOADS ON THE STRUCTURE, INCLUDING CRANE LOADS, IN EXCESS OF STATED DESIGN LOADS MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO THE IMPOSITION OF SUCH LOADS. THE CONTRACTOR IS RESPONSIBLE FOR ANY BRACING, SHORING, OR STRENGTHENING REQUIRED DUE TO CONSTRUCTION LOADS IMPOSED AS PART OF THEIR MEANS AND METHODS.
8. THE REPRODUCTION OF THE STRUCTURAL CONTRACT DOCUMENTS IN ANY FASHION AS STRUCTURAL SHOP DRAWING DOCUMENTS IS PROHIBITED.
9. SCALES NOTED IN THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. NO DIMENSIONAL INFORMATION MUST BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.
10. DETAILS, SECTIONS AND NOTES SHOWN ON THESE DRAWINGS ARE INTENDED TO BE TYPICAL AND MUST APPLY TO SIMILAR CONDITIONS ELSEWHERE UNLESS OTHERWISE SHOWN OR NOTED.
11. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS MUST DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. THE STRUCTURAL DRAWINGS MUST NOT BE CONSIDERED SEPARATELY FOR THE PURPOSES OF BIDDING THE STRUCTURAL WORK. NO CONSIDERATION MUST BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE OTHER DISCIPLINES DRAWINGS, INCLUDING, BUT NOT LIMITED TO, THE CIVIL DRAWINGS.
12. PRINCIPAL OPENINGS IN THE STRUCTURE ARE INDICATED ON THE CONTRACT DOCUMENTS. REFER TO CIVIL DRAWINGS FOR SLEEVES, CURBS, INSERTS, ETC. NOT HERIN INDICATED. OPENINGS IN SLABS WITH A MAXIMUM SIDE DIMENSION OR DIAMETER OF 12 INCHES OR LESS MUST NOT REQUIRE ADDITIONAL FRAMING OR REINFORCEMENT, UNLESS NOTED OTHERWISE. LOCATION OF SLEEVES OR OPENINGS IN STRUCTURAL MEMBERS MUST BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL.
13. THE GENERAL CONTRACTOR (OR CONSTRUCTION MANAGER) MUST SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS FOR APPROVAL. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT IF THE GENERAL CONTRACTOR FAILS TO OBTAIN APPROVAL OF THE SHOP DRAWINGS. SHOP DRAWINGS ARE REVIEWED AS A CONVENIENCE TO THE GENERAL CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT. THE GENERAL CONTRACTOR MUST STATE ON THE SHOP DRAWINGS THAT THE CONTRACT DOCUMENT REQUIREMENTS HAVE BEEN MET AND THAT ALL DIMENSIONS, CONDITIONS, AND QUANTITIES HAVE BEEN REVIEWED AND VERIFIED AS SHOWN AND/OR CORRECTED ON THE SHOP DRAWINGS.
14. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.
15. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY PRECAUTIONS, SUCH AS, BUT NOT LIMITED TO, PROVIDING TEMPORARY BRACING AND SHORING, AS REQUIRED, TO ENSURE VERTICAL AND LATERAL STABILITY AND INTEGRITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF DURING ALL STAGES OF CONSTRUCTION.
16. TEMPORARY BRACING MUST BE PROVIDED FOR ALL WALLS SUBJECT TO UNBALANCED BACKFILL. BRACE WALL PLUMB UNTIL STABILIZING ELEMENT ABOVE IS IN PLACE. BACKFILL OF WALLS NOT DESIGN FOR UNBALANCED FILL MUST BE DONE IN LIFTS TO ENSURE BALANCED LOADING IS PROVIDED ON EACH SIDE OF THE WALL DURING THE BACKFILL OPERATIONS.
17. ALL WALLS ARE DESIGNED AS Laterally Braced BY THE FLOOR SYSTEMS. CONTRACTOR MUST ENSURE THAT WALLS ARE ADEQUATELY BRACED DURING CONSTRUCTION.
18. ALL COLUMNS AND FOOTINGS MUST BE CENTERED ON GRIDLINES IN EACH DIRECTION, UNLESS NOTED OTHERWISE.
19. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FITTING NEW WORK WITH EXISTING CONSTRUCTION. INFORMATION SHOWN REGARDING EXISTING CONDITIONS HAS BEEN OBTAINED BY LIMITED OBSERVATIONS OR RECORD DRAWING INFORMATION, IF AVAILABLE. THIS INFORMATION IS NOT AS-BUILT DATA AND THE ACTUAL AS-BUILT CONSTRUCTION MAY DIFFER FROM THAT REPRESENTED IN THE CONSTRUCTION DOCUMENTS. AREAS NOT VISIBLE HAVE BEEN ASSUMED TYPICAL WITH OBSERVED EXISTING CONDITIONS AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
20. THE CONTRACTOR MUST MEASURE AND PROVIDE ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS AT THE JOB SITE PRIOR TO CONSTRUCTION AND THE SUBMISSION OF SHOP DRAWINGS. CONTRACTOR MUST NOTIFY THE ARCHITECT AND/OR THE STRUCTURAL ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
21. DELEGATED DESIGN ITEMS IDENTIFIED IN THE CONSTRUCTION DRAWINGS MUST BE ENGINEERED BY A REGISTERED ENGINEER TO MEET THE REQUIREMENTS OF THE LOCAL GOVERNING JURISDICTION. SUBMIT CALCULATIONS AND SHOP DRAWINGS WITH THE RESPONSIBLE ENGINEER'S SEAL AND SIGNATURE FOR THE STATE WHERE THE CONSTRUCTION TAKES PLACE. SEE NOTES ON S-002 AND PROJECT SPECIFICATIONS.

B. SPECIAL INSPECTIONS

1. AN INDEPENDENT AGENCY MUST PERFORM SPECIAL INSPECTIONS PER THE VUSBC SECTION 111.2 AND IBC CHAPTER 17. IN ACCORDANCE WITH IBC SECTION 1704.2.1, THE RESPONSIBLE INSPECTOR MUST MEET THE COMPETENCY AND RELEVANT EXPERIENCE OR TRAINING REQUIREMENTS OF THE COMMONWEALTH OF VIRGINIA. WHEN THE CONSTRUCTION INSPECTOR/CONTRACTOR IS REQUIRED BY THE GOVERNMENT TO PROVIDE SPECIAL INSPECTIONS AS PART OF THEIR WORK, THE CONTRACTOR MUST RETAIN THIRD-PARTY ASSURANCE AGENCIES TO CONDUCT THE SPECIAL INSPECTIONS REQUIRED BY THE INTERNATIONAL BUILDING CODE. THE INSPECTING AGENCY MUST PROVIDE REPORTS OF THE SPECIAL INSPECTIONS DIRECTLY TO THE GOVERNMENT.
2. WRITTEN REPORTS MUST BE SUBMITTED TO THE [BUILDING OFFICIAL] (AND) REGISTERED DESIGN PROFESSIONAL STATING COMPLIANCE OR NON-COMPLIANCE WITH DESIGN DOCUMENTS AND SPECIFICATIONS. ALL REPORTS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE CONSTRUCTION TAKES PLACE.
3. REFER TO THE SCHEDULE OF SPECIAL INSPECTIONS FOR APPLICABLE SPECIAL INSPECTIONS. REFER TO THE IBC CHAPTER 17 OR STATE AMENDMENTS FOR ADDITIONAL INSPECTION INFORMATION.
4. FAILURE TO RETAIN AN INDEPENDENT TESTING AGENCY TO PERFORM THE REQUIRED SERVICES SPECIFIED ABOVE, OR FAILURE TO SUBMIT SIGNED AND SEALED REPORTS, INDICATES NON-COMPLIANCE WITH THE CONTRACT DOCUMENTS.

C. SELECTIVE CONCRETE DEMOLITION

1. THE CONTRACTOR MUST VERIFY EXISTING CONDITIONS, INCLUDING EMBEDDED UTILITY CONDUITS AT THE JOB SITE PRIOR TO CONSTRUCTION AND THE SUBMISSION OF SHOP DRAWINGS AND SHALL NOTIFY THE CIVIL AND/OR STRUCTURAL ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. VERIFICATIONS AND NOTIFICATION MUST PROCEED 2 WEEKS PRIOR TO THE START OF WORK SO THAT ANY NECESSARY CHANGES CAN BE MADE WITHOUT DELAYING THE PROJECT SCHEDULE.
2. CONTRACTOR MUST SAW-CUT EXISTING ROOF SLAB AND WALL FOR NEW TUNNEL OPENING. CONTRACTOR MUST MINIMIZE DAMAGE TO THE EXISTING STRUCTURE. NO OVER-CUTTING AT CORNERS IS PERMITTED.
3. CONTRACTOR MUST CORE DRILL CORNERS OF SLAB AND WALL OPENING WITH 4-INCH DIAMETER (MIN.) CORE BIT AND DETAIL CORNER WITH CHIPPING HAMMER TO PREVENT OVER CUTTING OF SLAB AND WALL OPENING.
4. CONCRETE DEMOLITION OBJECTIVES ARE PROVIDED IN THESE DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SELECT THE MEANS AND METHODS APPROPRIATE TO ACHIEVE THESE OBJECTIVES. FURTHER, THE CONTRACTOR MUST PROVIDE ANY REQUIRED BRACING, SHORING, OR STRENGTHENING REQUIRED TO SUPPORT THE SELECTED MEANS AND METHODS.
5. COORDINATE EXTENT OF DEMO WITH CIVIL EXTENT OF NEW PRECAST AND S-501 REQUIRED CIP TIES TO EXISTING.

D. FOUNDATIONS AND EARTHWORK

1. GEOTECHNICAL INFORMATION IS CONTAINED IN A REPORT PREPARED BY SCHABEL ENGINEERING, LLC, REPORT NUMBER 25430015, DATED JUNE 17, 2025. BORING LOGS AND LABORATORY TEST RESULTS ARE INCLUDED FOR REFERENCE IN THE PROJECT MANUAL.
2. THE CONTRACTOR MUST COMPLY WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT AND THE PROJECT SPECIFICATIONS WHEN PERFORMING EXCAVATIONS, FOOTING CONSTRUCTION, AND PREPARING THE SUBGRADE UNDER THE SLAB ON GRADE.
3. IF CONSTRUCTION FOUNDATION CONDITIONS VARY FROM THE GEOTECHNICAL REPORT, BEFORE CONTINUING CONSTRUCTION, NOTIFY THE GEOTECHNICAL ENGINEER, STRUCTURAL ENGINEER AND ARCHITECT.
4. THE FOUNDATION DESIGN FOR THE STRUCTURE IS FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF. FOOTINGS SHOULD BE FOUND ON SUITABLE SOILS OF STRATUM B OR COMPACTED STRUCTURAL FILL.
5. WHERE SOFT AND LOOSE SUBGRADE MATERIAL IS ENCOUNTERED AND CONSIDERED UNSUITABLE FOR FOOTING SUPPORT, THE SOILS SHOULD BE REMOVED AND REPLACED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. RECOMMENDATIONS MAY INCLUDE UNDERCUTTING THE SUBGRADE MATERIAL AND STABILIZING THE SUBGRADES WITH A WORKING PLATFORM. THE WORKING PLATFORM SHOULD CONSIST OF VDOT NO. 1 OR VDOT NO. 57 STONE WRAPPED WITH A NON-WOVEN GEOSYNTHETIC FABRIC CONSISTING OF MIRAFI 160N, OR EQUIVALENT.
6. FOUNDATIONS EXPOSED TO FROST MUST BEAR A MINIMUM OF 30 INCHES BELOW FINISHED GRADE.
7. WHERE LATERAL EARTH PRESSURES ARE SUPERIMPOSED ON THE FOUNDATION OR AGAINST WALLS, THE STRUCTURE IS DESIGNED FOR THE FOLLOWING LATERAL EARTH PRESSURES:

SOIL PRESSURE	BACKFILL MATERIALS	EQUIVALENT FLUID PRESSURE FACTOR	SURCHARGE PRESSURE FACTOR	PASSIVE EQUIVALENT FLUID PRESSURE FACTOR
AT REST	ON-SITE	69	0.53	-
AT REST	ON-SITE	42	0.38	
ACTIVE	ON-SITE	47	0.36	330
ACTIVE	ON-SITE	26	0.24	

8. VALUES ABOVE MUST BE ASSUMED TO HAVE SATURATED SOILS AND ADD FLUID PRESSURE TO VALUES ABOVE BASED ON WATER TABLE DEPTH DISPLAYED ON S-300 SHEETS.
9. RETAINING WALL DESIGNS ARE FOR IN SERVICE LOADS ONLY. TEMPORARILY SHORE THE WALL PLUMB UNTIL OBTAINING THE SPECIFIED 28-DAY CONCRETE COMPRESSIVE STRENGTH (f'_c) AND ALL SUPPORTING ELEMENTS ARE IN PLACE WITH COMPACTED BACKFILL.
10. DO NOT OVER EXCAVATE THE FOOTPRINT OF SPREAD FOOTINGS, STRIP FOOTINGS, OR OTHER SOIL FORMED FOUNDATION ELEMENTS. IF OVER EXCAVATION IS REQUIRED BEYOND THE 4 INCH CONSTRUCTION TOLERANCE, FORM THE SIDES OF THE FOOTING.
11. CLEAN AND TAMP SHALLOW FOUNDATION EXCAVATIONS TO A UNIFORM SURFACE. IF PLACEMENT OF CONCRETE IS NOT WITHIN 24 HOURS OF FOUNDATION EXCAVATION, TEMPORARILY PROTECT SIDES AND BOTTOMS OF FOUNDATION EXCAVATIONS WITH A POLYETHYLENE MEMBRANE.
12. PLACE CONCRETE FOR WALL FOOTINGS MONOLITHICALLY WITH COLUMN FOOTINGS. CONSTRUCTION JOINTS IN WALL FOOTINGS MUST BE MADE ONLY MIDWAY BETWEEN COLUMN FOOTINGS.
13. ALWAYS PROVIDE POSITIVE SURFACE WATER DRAINAGE AWAY FROM THE STRUCTURE.

E. CONCRETE

1. ALL CONCRETE WORK MUST BE IN ACCORDANCE WITH ACI 301, ACI 318 AND ACI 302, AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION), 2017 AND VDOT ROAD AND BRIDGE SPECIFICATIONS LATEST EDITION.
2. FLY ASH CONFORMING TO ASTM C618, TYPE C OR F MAY BE USED AS TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX. THE AMOUNT OF PORTLAND CEMENT CONTENT MUST NOT BE LESS THAN 70 PERCENT OF THE TOTAL AMOUNT OF CEMENTITIOUS MATERIAL IN THE MIX.
3. GROUND GRANULATED BLAST-FURNACE SLAG CONFORMING TO ASTM C989, MAY BE USED AS TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX. THE AMOUNT OF PORTLAND CEMENT CONTENT MUST NOT BE LESS THAN 70 PERCENT OF THE TOTAL AMOUNT OF CEMENTITIOUS MATERIAL IN THE MIX.
4. CONCRETE REINFORCEMENT BARS MUST CONFORM TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE. REINFORCEMENT BARS MUST NOT BE TACK WELDED, WELDED, HEATED OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER.
5. MUST USE STAINLESS STEEL REBAR, AASHTO M334 FOR ALL PRECAST CONCRETE STRUCTURES AND CAST IN PLACE CONCRETE ROOF AND BEAMS DUE TO PROXIMITY TO ROAD WEAR SURFACE.
6. PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A1064 IN FLAT SHEETS. LAP FABRIC TWO MESHES AT SPLICES.
7. GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES WITH NON-SHRINK, NON-METALLIC GROUT WHICH CONFORMS TO CORPS OF ENGINEERS SPECIFICATION CRD-C 621-82 OR ASTM C1107.
8. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES MUST CONFORM TO THE RECOMMENDATIONS OF ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP-66 "DETAILING MANUAL". PLACING OF REINFORCING BARS MUST CONFORM TO THE RECOMMENDATIONS OF ACI 318R "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI "MANUAL OF STANDARD PRACTICE".
9. MIX, TRANSPORT, AND PLACE CONCRETE PER THE RECOMMENDATIONS OF ACI 301.
10. PROVIDE CONCRETE COVER PROTECTION OF REINFORCEMENT PER ACI 318 SECTION 20.5.1.3 WITH STANDARD BAR CHAIRS AND SPACERS REQUIRED TO MAINTAIN MINIMUM CONCRETE PROTECTION. TYPICAL COMMON MINIMUM CONCRETE COVER APPLYING TO THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO, THOSE INDICATED IN MINIMUM CONCRETE COVER FOR REINFORCEMENT TABLE.
11. REINFORCEMENT DESIGNATED AS "CONTINUOUS" MUST LAP 48 BAR DIAMETERS AT SPLICES UNLESS NOTED OTHERWISE. REINFORCEMENT BAR SPLICES IN GRADE BEAMS MUST BE LOCATED AT THE CENTERLINE OF SUPPORTS FOR BOTTOM BARS AND AT MIDSPAN FOR TOP BARS. PROVIDE STANDARD ACI HOOKS FOR TOP AND BOTTOM BARS AT DISCONTINUOUS ENDS OF ALL GRADE BEAMS. WHERE LAPS INCLUDE BARS OF DIFFERENT YIELD STRENGTH, CALCULATE LAP BASED ON HIGHER REINFORCEMENT STRENGTH.
12. HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT MUST BE CONTINUOUS AND MUST HAVE 90-DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED 48 BAR DIAMETERS, AT CORNERS AND INTERSECTIONS UNLESS NOTED OTHERWISE. WHERE LAPS INCLUDE BARS OF DIFFERENT YIELD STRENGTH, CALCULATE LAP BASED ON HIGHER REINFORCEMENT STRENGTH.
13. TIE DOWELS IN PLACE BEFORE PLACING CONCRETE. DO NOT STAB OR "WET-SET" DOWELS.
14. HORIZONTAL JOINTS WILL NOT BE PERMITTED IN CONCRETE CONSTRUCTION EXCEPT AS SHOWN ON THE CONTRACT DOCUMENTS. VERTICAL JOINTS MUST OCCUR AT CENTER OF SPANS AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.
15. CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
16. SHORING UNDER FORMS MUST NOT BE REMOVED UNTIL THE CONCRETE IT SUPPORTS IS CAPABLE OF SUPPORTING ITSELF AND ALL SUPERIMPOSED LOADS.
17. PROTECT AND CURE ALL CONCRETE SURFACES. BEGIN CURING SLABS IMMEDIATELY AFTER STRIPPING FORMS AND FLATWORK IMMEDIATELY AFTER FINISHING.
18. INSTALL AND SECURE EMBEDMENTS SUCH AS ANCHOR BOLTS AND EMBEDMENT PLATES WITHIN SPECIFIED TOLERANCES BEFORE CONCRETE PLACEMENT.
19. DO NOT SLEEVE BEAMS OR COLUMNS WHERE NOT SHOWN ON THE STRUCTURAL DRAWINGS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
20. DO NOT PLACE CONDUIT OR PIPES IN ANY CONCRETE ELEMENTS INCLUDING SLABS, BEAMS, WALLS OR COLUMNS UNLESS INDICATED IN THE STRUCTURAL DOCUMENTS.
21. CONDUITS MUST NOT BE RUN IN THE SLAB UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE ELECTRICAL DRAWINGS. CONDUITS THAT ARE TO BE RUN IN THE SLAB MUST COLLECT ONLY AT A PANEL OR SIMILAR POINT. THE CONTRACTOR MUST SUBMIT A CONDUIT LAYOUT FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
22. CONDUITS IN CONCRETE SLAB MUST BE SPACED SUCH THAT THE DISTANCE BETWEEN CONDUIT CENTERLINE TO CENTERLINE IS A MINIMUM OF THREE TIMES THE DIAMETER OF THE LARGEST CONDUIT.
23. NO CONDUIT MAY BE PLACED IN THE CONCRETE SLAB WHICH HAS AN OUTSIDE DIAMETER LARGER THAN ONE-THIRD THE TOTAL THICKNESS OF THE SLAB.
24. CONDUITS WHICH CROSS ONE ANOTHER IN THE CONCRETE SLAB MUST NOT CONSUME A TOTAL SPACE AT THE POINT OF CROSSOVER THAT IS GREATER THAN ONE-THIRD THE TOTAL THICKNESS OF THE SLAB.
25. UNLESS OTHERWISE INDICATED, ALL CONDUITS MUST BE HUNG UNDER THE SLAB ON CONDUIT SUPPORTS OR TRAPEZES.

MINIMUM CONCRETE COVER FOR REINFORCEMENT				
LOCATION/ELEMENT				COVER
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH				3"
CONCRETE EXPOSED TO EARTH OR WEATHER	ALL	#6 BARS THRU #18 BARS		2"
		#5 BAR, W31, D31 OR SMALLER		2"
NOTES: 1. COVERS ARE FOR NON-PRESTRESSED CAST-IN-PLACE CONCRETE MEMBERS 2. COVER IN BEAMS AND COLUMNS IS MEASURED TO EACH REINFORCEMENT COMPONENT AS LISTED ABOVE 3. EXTERIOR COVER IN WALL IS MEASURED TO THE EXTERIOR MAT OF REINFORCEMENT, INCLUDING WALL TIES, WHERE PRESENT				
CONCRETE PROPERTIES				
ELEMENT	COMPRESSIVE STRENGTH	MAXIMUM W/C RATIO	ENTRAINED AIR	NOTES
NORMAL WEIGHT CONCRETE				
FOOTINGS	4,000 PSI	0.45	4-1/2% +/- 1.5%	VDOT A4
WALLS AND SLABS	5,000 PSI	0.40	6.0% +/- 1.5%	VDOT A5
PRECAST CONCRETE	5,000 PSI	0.40	6.5% +/- 1.5%	VDOT A5
NOTE: SEE VDOT ROAD AND BRIDGE SPECIFICATIONS, LATEST EDITION, TABLE II-17 FOR FULL CONCRETE SPECIFICATIONS.				



CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

STAUNTON, VIRGINIA

[illegible]

COMM NO:		240197	
DATE:		10/06/2025	
DRAWN:	CWR	DESIGN:	NKT
CHECK:		DA	

STRUCTURAL GENERAL NOTES

SHT. NO.	REV. NO.
S-001	

F. DELEGATED PRECAST CONCRETE

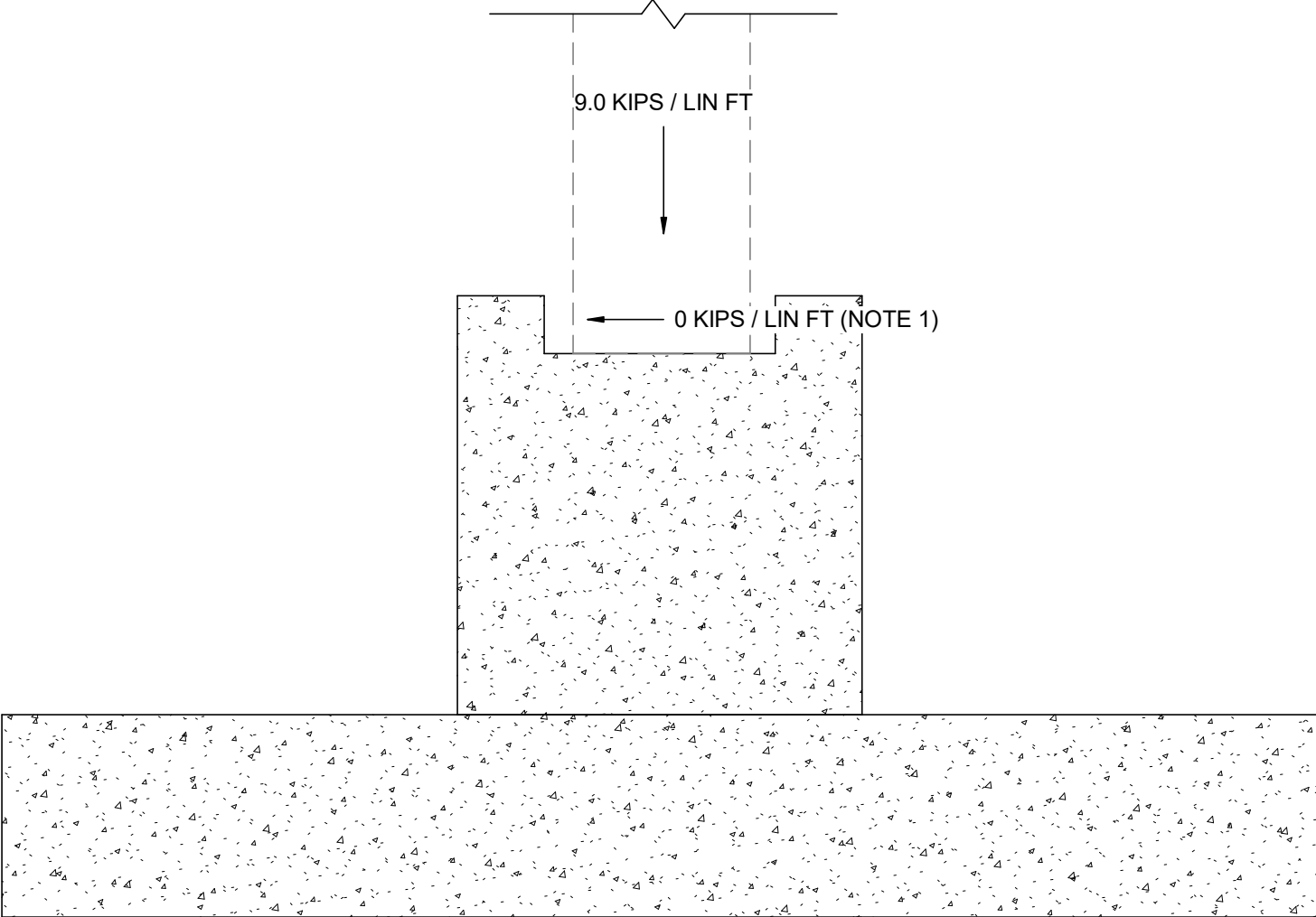
1. THE PRECAST CONCRETE MANUFACTURER IS RESPONSIBLE FOR THE DESIGN AND DETAILING OF THE PRECAST ELEMENTS AND THEIR CONNECTIONS. THE PANEL REINFORCEMENT AND CONNECTION DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL AND FOR REFERENCE ONLY. THE PRECAST MANUFACTURER MUST SUBMIT SIGNED AND SEALED COMPLETE DESIGN CALCULATIONS AND SHOP DRAWINGS FOR PRECAST ELEMENTS, CONNECTIONS, AND CONNECTION SUPPORTS TO THE STRUCTURAL ENGINEER FOR REVIEW PER THE SPECIFICATIONS. THE SHOP DRAWINGS MUST INCLUDE DRAWINGS CLEARLY SHOWING LOCATIONS AND DETAILS OF ALL CONNECTIONS TO THE STRUCTURE AND REACTIONS.
2. PRECAST CONCRETE MUST BE DESIGNED BY AN ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA. THE PRECAST CONCRETE ENGINEER MUST SERVE AS SPECIALTY STRUCTURAL ENGINEER IN ACCORDANCE WITH THE NATIONAL PRACTICE GUIDELINES FOR SPECIALTY STRUCTURAL ENGINEERS, BY THE COUNCIL OF AMERICAN STRUCTURAL ENGINEERS.
3. SEE S-001 & S-600s FOR REQUIRED LOADING ON PRECAST ELEMENTS.
4. FOLLOW ALL REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION), 2017 AND VDOT MODIFICATIONS. THIS INCLUDE ALL LOADING AND LOAD DISTRIBUTION FACTORS.
5. PRECAST CONCRETE MUST BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PCI DESIGN HANDBOOK, AS WELL AS THE ACI MANUAL OF STANDARD PRACTICE. ALL SUPPORTS FOR PRECAST MUST BE DESIGNED SO THAT THERE IS NO TORSION ON THE SUPPORT MEMBER.
6. THE PRECAST CONCRETE MANUFACTURER MUST COORDINATE AND LOCATE PANEL SUPPORT AND CONNECTION LOCATIONS AND POCKETS IN THE STRUCTURE AND SUBMIT SUCH LOCATIONS TO THE STRUCTURAL ENGINEER FOR REVIEW. THE ERECTION DRAWINGS MUST CLEARLY INDICATE THE FINAL CONFIGURATION AND LOCATION OF ALL POCKETS, BRACES, SEATS, BRACKETS, EMBEDDED ITEMS, ETC. WHICH ARE INSTALLED IN THE STRUCTURE TO SUPPORT THE PRECAST ELEMENTS. WHERE POSSIBLE, BRACES, SEATS AND BRACKETS MUST BE SHOP WELDED TO THE SUPPORTING MEMBERS, STEEL MEMBERS AND ASSEMBLIES MUST BE FIREPROOFED, WHERE REQUIRED. THE PRECAST MANUFACTURER MUST PROVIDE ALL ASSEMBLIES TO BE EMBEDDED IN THE STRUCTURE. THE GENERAL CONTRACTOR MUST COORDINATE THE RESPONSIBILITIES OF THE PRECAST MANUFACTURER AND THE STRUCTURAL STEEL FABRICATOR.
7. REINFORCEMENT FOR PRECAST CONCRETE ELEMENTS MUST CONSIST OF CRP REBAR MEETING AASHTO M334 AND/OR WELDED WIRE FABRIC. SINGLE OR MULTIPLE LAYERS MAY BE REQUIRED AS DETERMINED BY THE ELEMENT DESIGNS. ADDITIONAL REINFORCEMENT MUST BE PROVIDED AT CORNERS OF OPENINGS, AND EDGES, RE-ENTRANT CORNERS AND OTHER LOCATIONS OF ELEMENTS APPROPRIATE FOR CRACK CONTROL AND SERVICEABILITY.
8. THE ERECTION DRAWINGS MUST CLEARLY INDICATE THE ERECTION SEQUENCE THAT IS TO BE USED FOR THE PROJECT. SUCH SEQUENCE MUST CONFIRM THAT ACCESS TO REQUIRED CONNECTIONS IS NOT PREMATURELY BLOCKED.
9. REFER TO CIVIL DRAWINGS FOR COORDINATES, PRECAST TO ALIGN WITH UNDERSIDE OR ROOF AND INSIDE OF WALLS AT EITHER CONNECTION POINT. MAINTAIN AS MUCH CONSISTENCY IN GEOMETRY FROM BAY TO BAY.
10. AS REQUIRED, THE PRECAST MANUFACTURER MUST OBTAIN FIELD MEASUREMENTS OF THE AS-BUILT STRUCTURE AND MUST ADJUST THE DIMENSIONS OF ADJOINING PRECAST ELEMENTS SO AS TO ALLOW FOR ERECTION WITH ACCEPTABLE TOLERANCES.
11. THE PRECAST MANUFACTURER MUST DESIGN AND PROVIDE SLEEVES OR BLOCKOUTS IN THE PRECAST ELEMENTS AS NEEDED TO ACCOMMODATE THE REQUIREMENTS OF OTHER TRADES.

G. DELEGATED TRAFFIC RATED GUARDRAIL

- THE DESIGN OF THE STRUCTURE COMPLIES WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION), 2011 AND VDOT MODIFICATIONS, CHAPTER 13. SEE CODE FOR FULL REQUIREMENTS
- | | |
|--------------------------------------|-------------------|
| A. HIGHWAY DESIGN TRANSVERSE LOADING | 27 KIPS |
| B. PEDESTRIAN RAIL LOADING | 50 PLF OR 200 LBS |
| C. NCHRP 350 CRASH TESTED | TL-2 |
2. DELEGATED DESIGNER IS RESPONSIBLE FOR SIGNED AND SEALED DRAWINGS CALCULATIONS FOR ALL COMPONENTS OF THE METAL RAILING SYSTEM.
3. SEE S-502 FOR GEOMETRY GUIDELINES, INTENT TO MATCH OTHER SIMILAR RAIL SYSTEMS IN CITY OF STAUNTON.
4. MATERIALS: HOT DIPPED GALVANIZED STEEL
- | | |
|-----------------------|---|
| A. ANCHOR BOLTS | ASTM F1554, GRADE 36 |
| B. WIDE FLANGE SHAPES | ASTM A992, 50 KSI |
| C. ANGLES | ASTM A36 |
| D. ANGLES | ASTM A572, GRADE 50 |
| E. CHANNELS | ASTM A36 |
| F. CHANNELS | ASTM A572, GRADE 50 |
| G. PLATES | A36 |
| H. PLATES | A572, GRADE 50 |
| I. HSS RECTANGULAR | ASTM A500, GRADE C ($F_y = 50$ KSI) |
| J. HSS ROUND | ASTM A500, GRADE C ($F_y = 50$ KSI) |
| K. STEEL PIPE | ASTM A53, GRADE B ($F_y = 35$ KSI) |
| L. ROUND BAR | ASTM A36 |
| M. ROUND BAR | ASTM A572, GRADE 50 |
| N. ROUND BAR | ASTM A576, GRADE 1045 ($F_y = 70$ KSI) |
5. GENERAL CONTRACTOR TO COORDINATE ANCHORAGE AND LOADING AND LOCATION WITH THE PRECAST CONCRETE DESIGNER.
6. BOLTS FOR STRUCTURAL STEEL CONNECTIONS MUST BE HIGH STRENGTH BOLTS PER THE REQUIREMENTS OF ASTM A325 TYPE N, UNLESS NOTED OTHERWISE, PROVIDE BOLTS DESIGNED AS BEARING TYPE BOLTS AND INSTALL PER THE "SNUG TIGHT" CONDITION. INSTALL A HARDENED WASHER UNDER THE ELEMENT TO BE TIGHTENED.
7. ANCHOR BOLTS MUST BE HOT DIPPED GALVANIZED PER ASTM F2329 UNLESS OTHERWISE NOTED.
8. DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL PER THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS," THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AND THE SAFETY REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND THE LOCAL JURISDICTION. PROVIDE TEMPORARY SEATS TO FACILITATE SAFE ERECTION.
9. PERFORM WELDING IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARD D1.1. PROVIDE ELECTRODES FOR SHOP AND FIELD WELDS IN ACCORDANCE WITH AWS A5.1 OR AWS A5.5, CLASS E70XX, LOW HYDROGEN. ALL WELDS MUST USE FILLER METAL WITH A MINIMUM CVN VALUE OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT.
10. ALL SHOP AND FIELD WELDING MUST BE EXECUTED BY WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST AS PRESCRIBED IN AWS D1.1 OF THE AMERICAN WELDING SOCIETY TO PERFORM THE TYPES OF WELD REQUIRED ON THE PROJECT.
11. GROUT MUST MEET ASTM C1107 REQUIREMENTS, BE A NON-SHRINK NON-METALLIC GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 7,250 PSI.
12. NO FABRICATION MUST PROCEED PRIOR TO SHOP DRAWING APPROVAL.
13. EXPOSED BOLTS MUST BE HOT DIPPED GALVANIZED. STEEL SHAPES, PLATES AND BARS MUST BE GALVANIZED PER ASTM A123. STEEL BOLTS, NUTS AND WASHERS MUST BE GALVANIZED PER ASTM A153, CLASS C. DAMAGED AND UNCOATED AREAS MUST BE REPAIRED PER ASTM A780.
14. PAINT SYSTEM TO BE SUBMITTED AND REVIEWED FOR APPROVAL BASED ON THE FOLLOWING CRITERIA AND COMPATIBILITY WITH GALVANIZED SUBSTRATE.
- | | |
|------------------|--|
| A. LATEX SYSTEM: | |
| a. | PRIME COAT: PRIMER, GALVANIZED, WATER BASED, MPI #134 |
| b. | INTERMEDIATE COAT: LATEX, EXTERIOR, MATCHING TOPCOAT |
| c. | TOPCOAT: LATEX, EXTERIOR, SEMI-GLOSS (MPI GLOSS LEVEL 5) MPI #1 |
| b. | PER CITY REQUIREMENTS, THE GUARDRAIL IS TO BE PAINTED "ESSEX GREEN" TO MATCH EXISTING CITY GUARDRAIL |

H. POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS MUST ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS.
2. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
3. ANCHORAGE TO CONCRETE:
 - A. MECHANICAL ANCHORS MUST HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION.
 - B. ADHESIVE ANCHORS MUST HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACE 355.4 AND ICC-ES AC308 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION. DESIGN BOND STRENGTH HAS BEEN BASED ON CRACKED CONCRETE, ACI 35.4 TEMPERATURE CATEGORY B, AND INSTALLATING INTO DRY HOLES DRILLED USING A HAMMER DRILL AND DRY CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS MUST ONLY BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318 CHAPTER 26.7.2 (d) OR 26.7.2 (e).
 - C. BASIS OF DESIGN PRODUCT IS HITL HIT-HY 200 EPOXY SAFE SET SYSTEM, OR APPROVED EQUAL.
4. ANCHORAGE TO STONE
 - A. BASIS OF DESIGN MATERIAL HITL HIT-HY 500, OR EQUAL.
 - B. LOCATE ANCHORS A MINIMUM OF 4" FROM EDGE OF STONE.
 - C. DO NOT LOCATE ANCHORS ALONG OR NEAR FRACTURES IN ROCK.
 - D. USE CORE DRILL BIT TO LIMIT DESTRUCTIVE VIBRATION OF EXISTING STONE AND MORTAR WALL.
5. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
6. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
7. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR MUST REVIEW THE EXISTING STRUCTURAL DRAWINGS AND MUST UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS.
8. THE CONTRACTOR MUST TAKE MEASURES TO COORDINATE THE CONSTRUCTION SUCH THAT INTERFERENCE OF EXISTING REINFORCING STEEL WITH PLACEMENT OF NEW ANCHORS (DOWELS, EXPANSION BOLTS, ADHESIVE ANCHORS) DOES NOT OCCUR. IF EXISTING REINFORCING STEEL IS ENCOUNTERED DURING DRILLING, ADJUST THE ANCHOR LOCATION IF POSSIBLE AND IF NOT, THE STRUCTURAL ENGINEER, APPROVED HOLES MUST BE FILLED WITH GROUT. ANCHORS MUST BE SET WITHIN 3 INCHES OF THEIR SPECIFIED LOCATION, BUT AT LEAST 1 INCH FROM ANY ABANDONED HOLE. CARE MUST BE TAKEN NOT TO BREAK OR DAMAGE REINFORCING STEEL DURING DRILLING, UNLESS OTHERWISE DIRECTED BY THE STRUCTURAL ENGINEER.



NOTES:

1. BASIS OF DESIGN VENDOR INDICATED ZERO LATERAL FORCE AT BOTTOM OF PRECAST, RESOLVED AT RIGID CONNECTION.
2. DELEGATED PRECAST DESIGNER TO PROVIDE REACTIONS ABOVE TO CONFIRM WITH FOUNDATION DESIGN.

B4

STEM WALL LOADING DIAGRAM

NOT TO SCALE:



CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

STANTON VIRGINIA

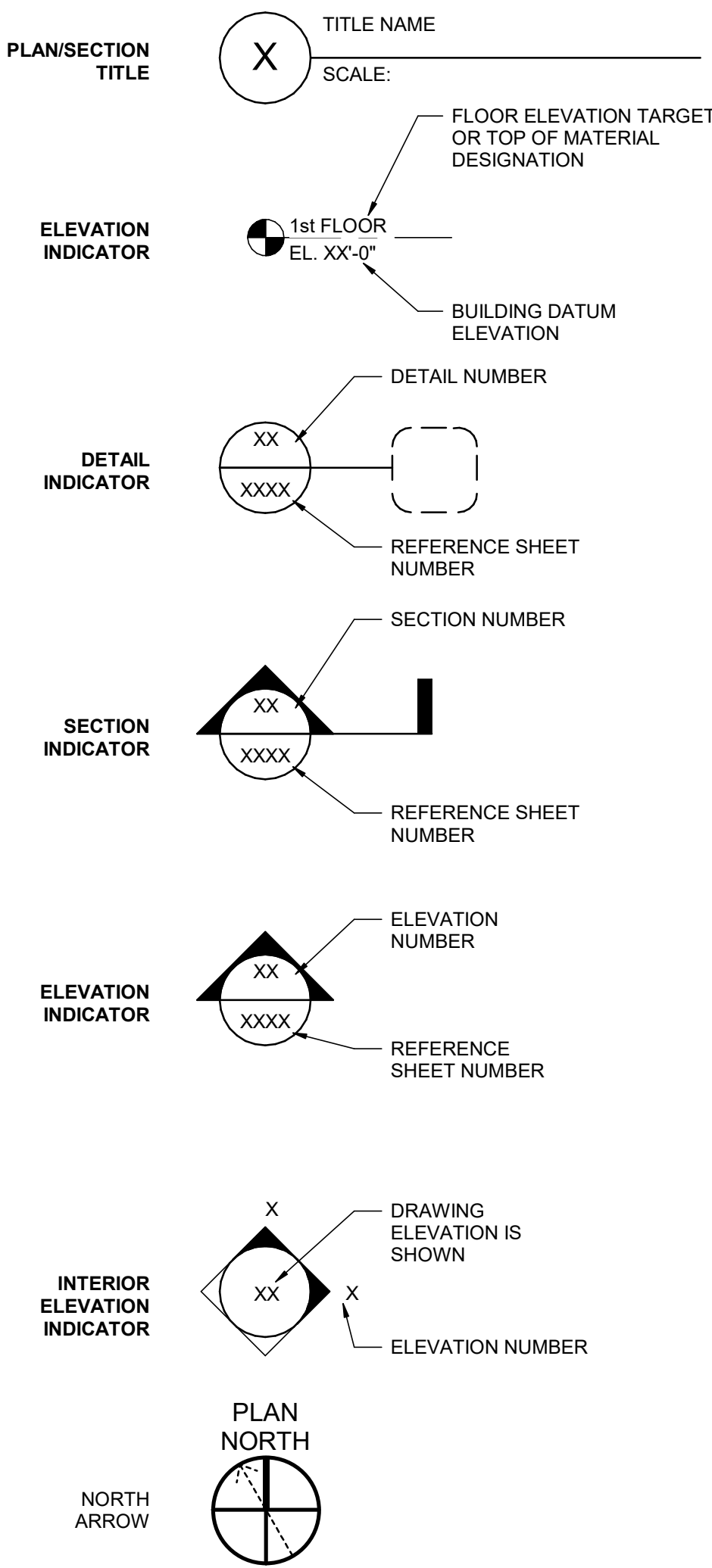
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COMM NO:		240197	
DATE:		10/06/2025	
DRAWN:	CWR	DESIGN:	NKT
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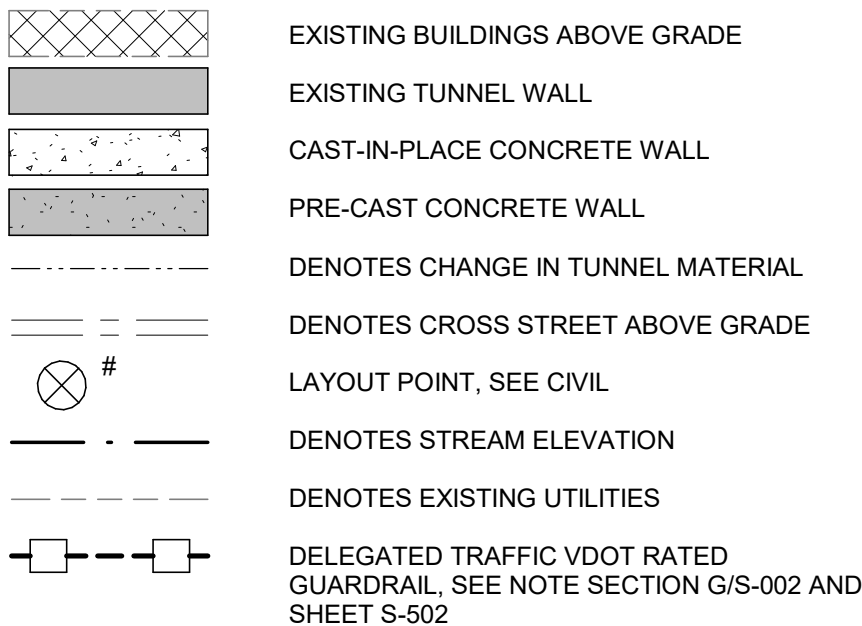
STRUCTURAL GENERAL NOTES

SHT. NO.	REV. NO.
S-002	

DRAWING SYMBOLS



MATERIAL LEGEND - NEW WORK



DISTRESS KEYNOTE LEGEND

DE	DELAMINATIONS (C4 / S-503)	I	MOMENT OF INERTIA
SR	SPALL W/ EXPOSED REBAR (C2 / S-503)	IBC	INTERNATIONAL BUILDING CODE
SC	SPALL W. REBAR CORRODED - SPECIALIZED REPAIR	ICF	INSULATED CONCRETE FORM
RF	REBAR FAILED - SPECIALIZED REPAIR	ID	INSIDE DIAMETER
		IN, "	INCH
		INCL	INCLUDE
		INFO	INFORMATION
		INS	INSULATED, INSULATION

ABBREVIATIONS

&	NUMBER	JUST	JOIST
AND	AND	K, KIPS	THOUSAND POUNDS
=	EQUAL, EQUALS	L	LENGTH, ANGLE
@	AT	LB	POUND
AB	ANCHOR BOLT	LG	LONG
ACI	AMERICAN CONCRETE INSTITUTE	LL	LIVE LOAD
ADD'L	ADDITIONAL	LLH	LONG LEG HORIZONTAL
ADJ	ADJACENT	LLV	LONG LEG VERTICAL
AFF	ABOVE FINISEHD FLOOR	LOC	LOCATE, LOCATION
AH, AHU	AIR HANDLING UNIT	LONG	LONGITUDINAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LP	LOW POINT
ALT	ALTERNATE	LW	LIGHT WEIGHT
APA	AMERICAN PLYWOOD ASSOCIATION	MAS	MASONRY
APPROX	APPROXIMATELY	MB	MACHINE BOLT
ARCH	ARCHITECTURAL	MBR	MEMBER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MECH	MECHANICAL
		MED	MEDIUM
		MEZZ	MEZZANINE
AT/FP	ANTI-TERRORISM/ FORCE PROTECTION	MF	MOMENT FRAM
AWS	AMERICAN WELDING SOCIETY	MFG, MANUF	MANUFACTURING
BET	BETWEEN	MIN	MINIMUM
BLW	BELOW	MO	MASONRY OPENING
BM	BEAM	MOD	MODIFY, MODIFIED
BOF	BOTTOM OF FOOTING	MRF	MANUFACTURER
BOT, B/	BOTTOM	NF	NEAR FACE
BRG	BEARING	NOM	NOMINAL
C	CHANNEL	NS	NEAR SIDE
CENT	CENTERED	OC	ON CENTER
CFMF	COLD-FORMED METAL FRAMING	OD	OUTSIDE DIAMETER
CFS	COLD-FORMED STEEL	OH	OPPOSITE HAND, OVERHEAD
CIP	CAST IN PLACE	OWSJ	OPEN WEB STEEL JOIST
CJ	CONTROL JOINT/CEILING JOIST	P/C	PIN CONNECTED
CJP	COMPLETE JOINT PENETRATION	PAR	PARALLEL
CL	CENTERLINE	PCC	PRECAST CONCRETE
CLR	CLEAR	PCF	POUNDS PER CUBIC FOOT
CMU	CONCRETE MASONRY UNIT	PEN	PENETRATION
COL	COLUMN	PFJ	PERIMETER FELT JOINT
CONC	CONCRETE	PL	PLATE
COND	CONDITION	PLUMB	PLUMBING
CONN	CONNECT, CONNECTION	PLYWD	PLYWOOD
CONST	CONSTRUCTION	PNL	PANEL
CONT	CONTINUOUS	PSF	POUNDS PER SQUARE FOOT
CONTR	CONTRACTOR	PSI	POUNDS PER SQUARE INCH
COORD	COORDINATE	PT	PRESSURE TREATED, POINT, PRETENSIONED
D	DEEP, DEPTH		
D.B.A.	DEFORMED BAR ANCHOR	RAP	AGGREGATE PIERS
DEG	DEGREE	REINF	REINFORCING, REINFORCED
DEM	DEMOLISH, DEMOLITION	REQ	REQUIRED
DEP	DEPRESSED	RET	RETURN, RETAINING
DET	DETAIL	REV	REVISION, REVISED
DIA	DIAMETER	RF	ROOF
DIAG	DIAGONAL	RFT	RAFTERS
DL	DEADLOAD	RPM	REVOLUTIONS PR MINUTE
DO	DITTO	RS	ROUGH SAWN
DT	DRAG TRUSS	RT	ROOF TRUSS
DWG(S)	DRAWINGS	S	SECTION MODULUS
DWL	DOWEL	SC	SLIP CRITICAL
EA	EACH	SCBRW	SEGMENTAL CONCRETE BLOCK RETAINING WALL
EF	EACH FACE		
ELEC	ELECTRICAL	SCHED	SCHEDULE
ELEV	ELEVATION	SDI	STEEL DECK INSTITUTE
EQ	EQUAL	SECT	SECTION
EQUIP	EQUIPMENT	SEIS	SEISMIC
ES	EACH SIDE	SEP	SEPARATION
EW	EACH WAY	SHT	SHEET
EXIST	EXISTING	SIM	SIMILAR
EXT	EXTERNAL, EXTERIOR	SJI	STEEL JOIST INSTITUTE
FF	FAR FACE	SMS	SHEET METAL SCREW
FFE	FINISH FLOOR ELEVATION	SPEC(S)	SPECIFICATION(S)
FG	FINISH GRADE	SPRT	SUPPORT
FJ	FLOOR JOIST	SQ	SQUARE
FMG	FRAMING	SS	STAINLESS STEEL
FN	FIELD NAIL	ST	SNUG TIGHT
FND	FOUNDATION	STD	STANDARD
FOC	FACE OF CONCRETE	STIF/STIFF	STIFFENER
FOM	FACE OF MASONRY	STL	STEEL
FOS	FACE OF STUD	STRUCT	STRUCTURAL, STRUCTURE
FS	FAR SIDE	SUSP	SUSPENDED
FT, '	FOOT	SYM	SYMMETRICAL
FTG	FOOTING	T&B	TOP AND BOTTOM
Fy	YIELD STRESS	T&G	TONGUE AND GROOVE
GA	GAUGE	T/	TOP OF
GLB	GLUED LAMINATED BEAM	TGB	TOP OF GRADE BEAM
GT	GIRDER TRUSS	THK	THICK, THICKNESS
GUSS	GUSSET	TL	TOTAL LOAD
GYP BD	GYPSUM BOARD	TN	TOE NAIL
HD	HOLD DOWN	TOB	TOP OF BEAM
HDR	HEADER	TOC	TOP OF CONCRETE
HGR	HANGER	TOF	TOP OF FOOTING
HK	HOOK	TOW	TOP OF WALL
HORIZ	HORIZONTAL	TYP	TYPICAL
HP	HIGH POINT	UFC	UNITED FACILITIES CRITERIA
HSS	HOLLOW STRUCTURAL SECTION	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	UON	UNLESS OTHERWISE NOTED
HVAC	HEATING/ VENTILATING/ AIR CONDITIONING	VB	VAPOR BARRIER
I	MOMENT OF INERTIA	VERT	VERTICAL
IBC	INTERNATIONAL BUILDING CODE	W	WIDTH, WEST, WIDE FLANGE
ICF	INSULATED CONCRETE FORM	w/	WITH
ID	INSIDE DIAMETER	WF	WIDE FLANGE
IN, "	INCH	WPT	WORKING POINT
INCL	INCLUDE	WWF	WELDED WIRE FABRIC
INFO	INFORMATION	WWM	WELDED WIRE MESH
INS	INSULATED, INSULATION	x	BY, TIMES

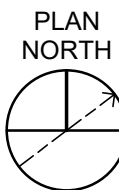


CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

STANTON VIRGINIA

[illegible]

COMM NO: 240197	
DATE: 10/06/2025	
DRAWN: CWR	DESIGN: NKT
CHECK: DA	
SHEET TITLE	
SPECIAL INSPECTIONS, SYMBOLS, AND ABBREVIATIONS	
SHT. NO. S-003	REV. NO.



SCALE: 1/64" = 1'-0"

1. CURRENT PROJECT SCOPE OF WORK LIMITED TO THE (3) THREE AREAS WITH S-400 ENLARGED PLANS.
2. SURROUNDING AREAS OF TUNNEL ARE SHOWN FOR INFORMATION ONLY, DETERIORATION IN THOSE AREAS OUTSIDE CURRENT SCOPE NOT NOTED AS PART OF THIS PACKAGE.
3. ALL EXISTING STRUCTURAL COMPONENTS AND DIMENSIONS MUST BE VERIFIED IN THE FIELD.

C/TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPANS STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A/6-S-301 FOR REINFORCING
W2	14" THICK CIP WALL, SEE SECTION A/4-S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502



CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

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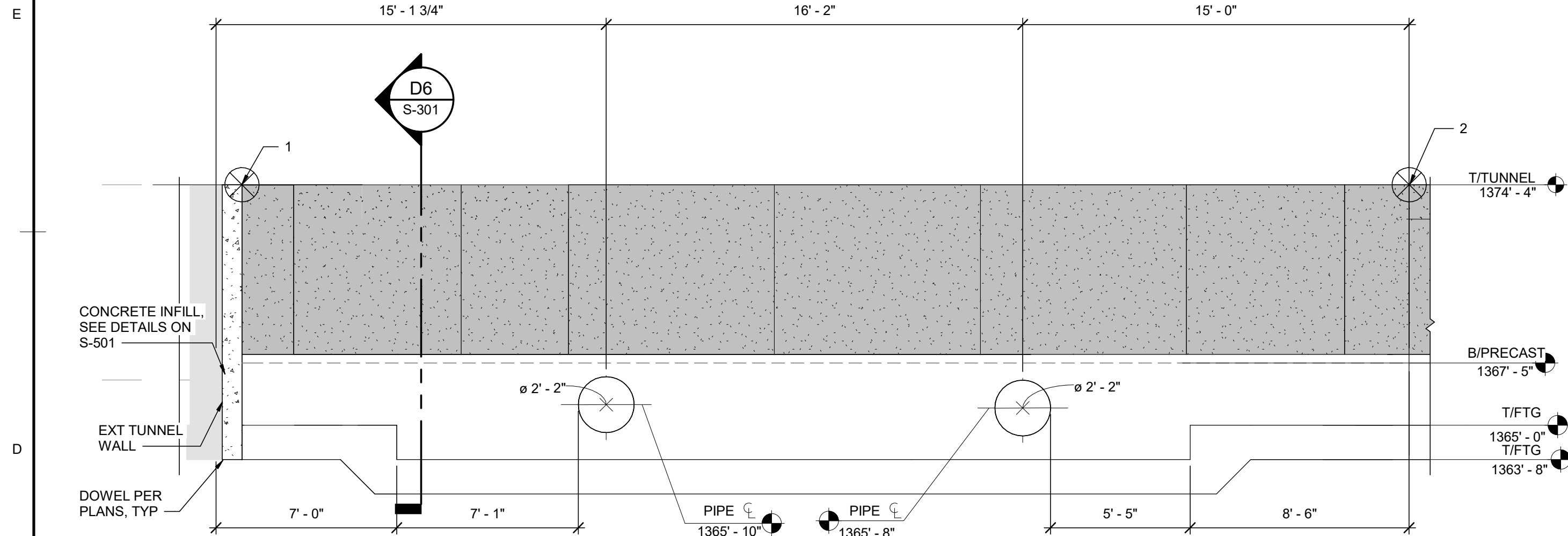
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DATE:		10/06/2025	
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OVERALL PLAN

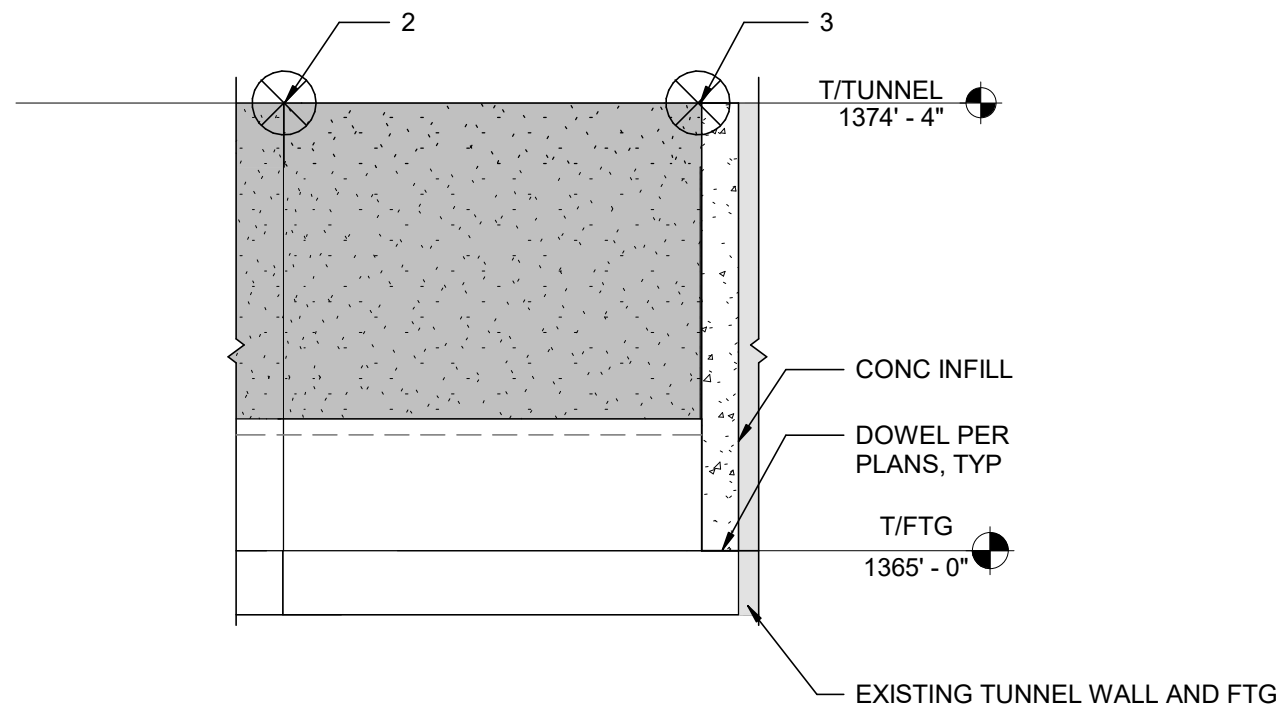
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S-101	

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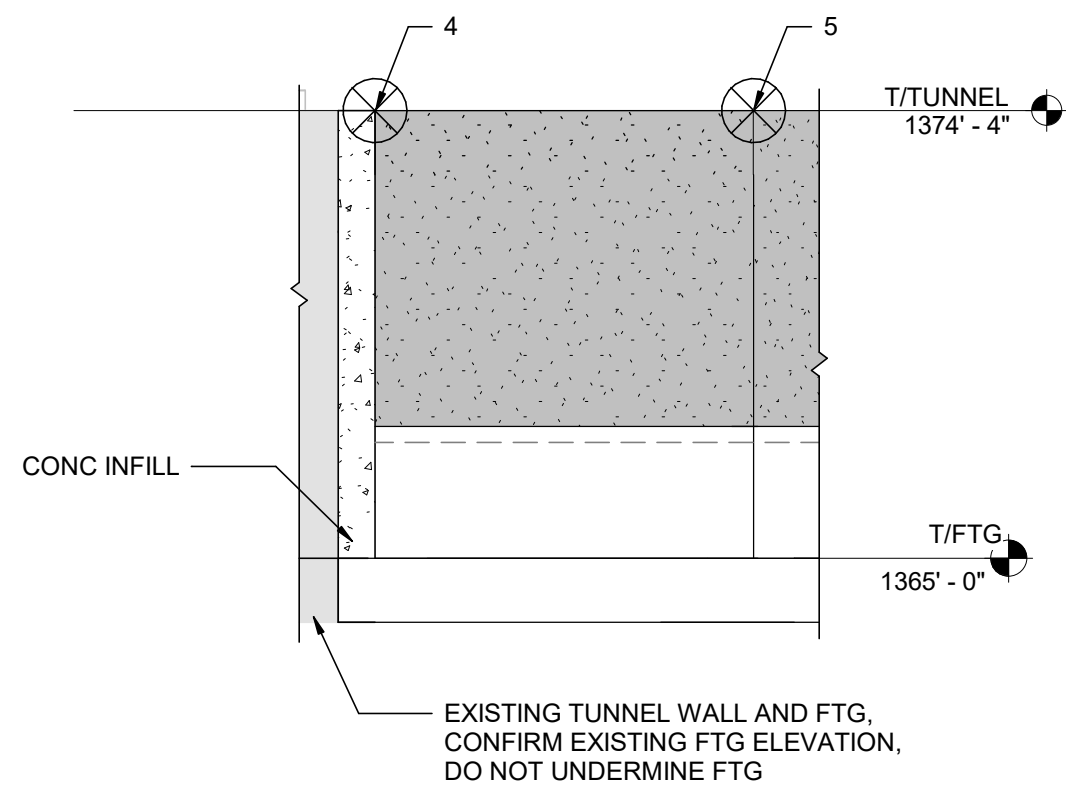
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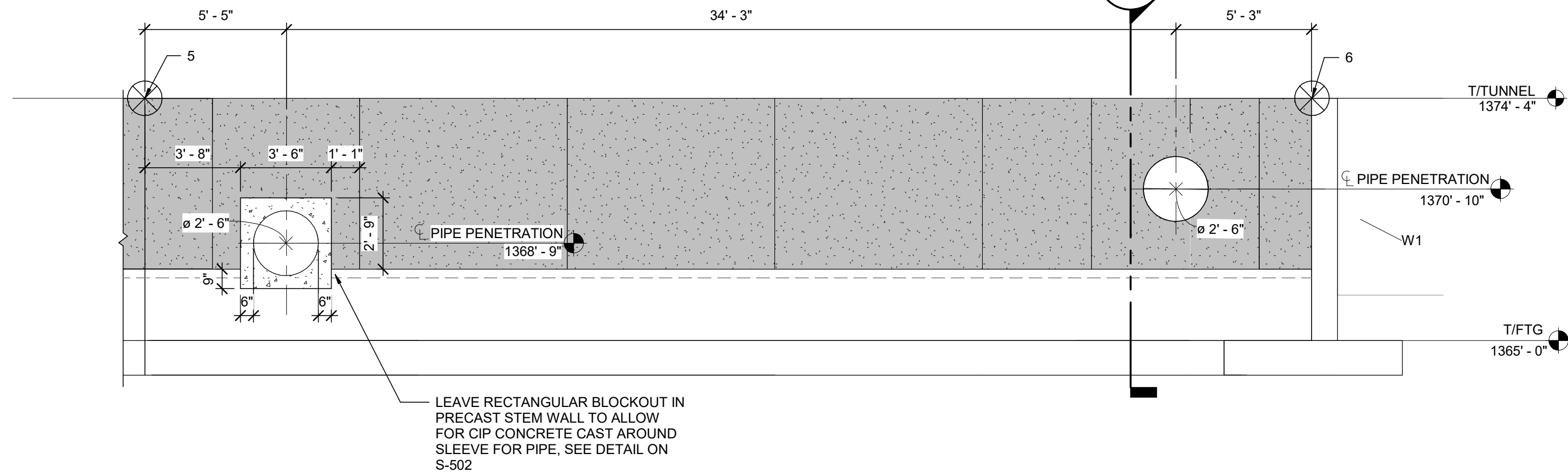
D6 ELEVATION - WEST JOHNSON STREET
S-401 SCALE: 1/4" = 1'-0"



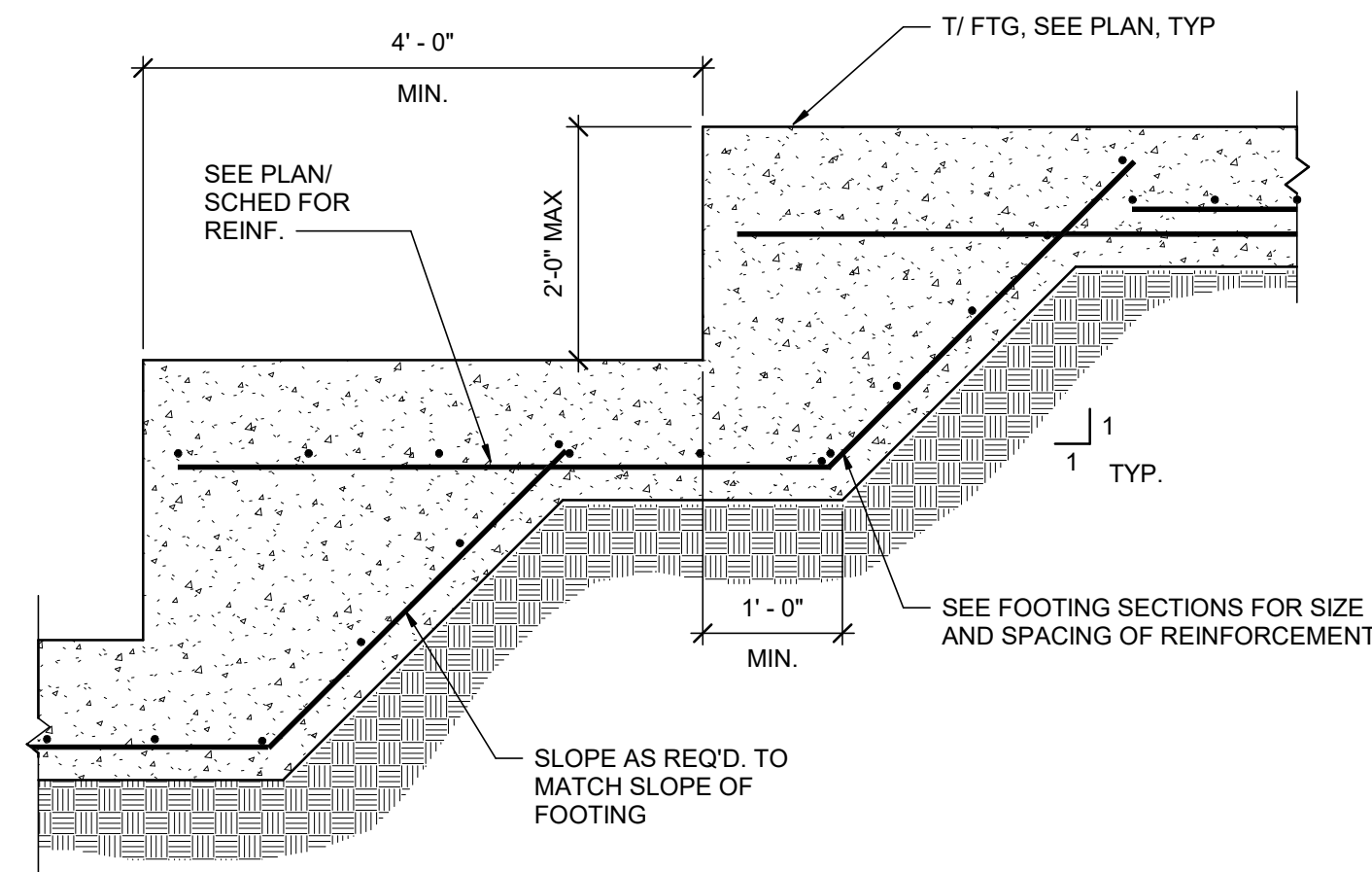
D3 ELEVATION - WEST JOHNSON STREET
S-401 NOT TO SCALE



B6 ELEVATION - EAST JOHNSON STREET
S-401 NOT TO SCALE



B5 ELEVATION - EAST JOHNSON STREET
S-401 SCALE: 1/4" = 1'-0"



NOTE: SEE PLAN FOR LOCATION OF STEPS. DETAILS FOR
SINGLE STEP SIMILAR.

A3 TYPICAL STEP FOOTING DETAIL
NOT TO SCALE:

GENERAL SHEET NOTES

1. LOCATION OF PRECAST PANEL JOINTS IS PRELIMINARY REPRESENTATION OF IT, FINAL LOCATION IS BY PRECAST VENDOR.
2. ELEVATIONS AND LOCATION OF PENETRATIONS IS APPROXIMATE, REFER TO CIVIL FOR SPOT SHOT WITH NORTHING, EASTING, AND ELEVATION FOR EACH UTILITY AND PENETRATION.
3. SEE CIVIL SHEETS C-113 FOR NORTHING AND EASTING LOCATIONS TO COORDINATE DEMOLITION OF EXISTING TUNNEL AND PLACEMENT ACTIVITIES FOR NEW STRUCTURAL ELEMENTS.

MATERIAL LEGEND - NEW WORK

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502

WALL SCHEDULE

TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPANS STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A6/S-301 FOR REINFORCING
W2	14" THICK CIP WALL, SEE SECTION A4/S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502

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CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

STAUNTON, VIRGINIA

REVISION DESCRIPTION

MRK DATE

COMM NO: 240197

DATE: 10/06/2025

DRAWN: CWR DESIGN: NKT

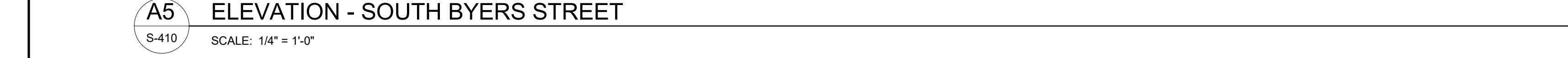
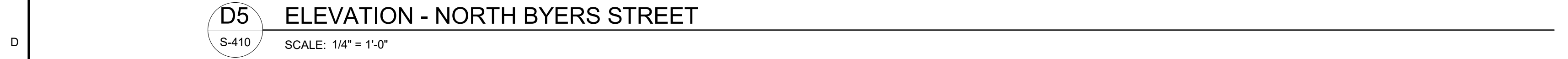
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SHEET TITLE

JOHNSON STREET
ELEVATIONS

SHT. NO.
S-201

REV. NO.



1. LOCATION OF PRECAST PANEL JOINTS IS PRELIMINARY REPRESENTATION OF IT, THE FINAL LOCATION IS BY PRECAST VENDOR
2. ELEVATIONS AND LOCATIONS OF PENETRATIONS ARE APPROXIMATE, REFER TO CIVIL FOR SPOT SHOT WITH NORTHING, EASTING, AND ELEVATION FOR EACH UTILITY AND PENETRATION.
3. SEE CIVIL SHEETS C-121 FOR NORTHING AND EASTING LOCATIONS TO COORDINATE DEMOLITION OF EXISTING TUNNEL AND PLACEMENT ACTIVITIES FOR NEW STRUCTURAL ELEMENTS.

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002

SHEET S-502

TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPA STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A6/S-301 FOR REINFORCING
W2	14" THICK CIP WALL, SEE SECTION A4/S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502



CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

[illegible]

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BYERS STREET ELEVATIONS

SHT. NO. S-210	REV. NO.
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1. ALL ELEVATIONS ARE ACTUAL. REFER TO CIVIL FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH CIVIL SHEETS FOR ADDITIONAL SCOPE OF WORK
3. LOCALIZED DEMOLITION AND REPAIR AT JOHNSON STREET CROSSING.
4. SEE LOADING ON S-601.
5. TUNNEL DESIGN TO ASSUME FULLY SATURATED SOILS BEHIND TUNNEL.

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
#	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502



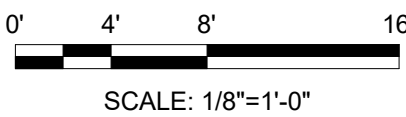
CITY OF STAUNTON
JOHNSON, BYERS, AND NEW STREET
TUNNEL REPAIRS

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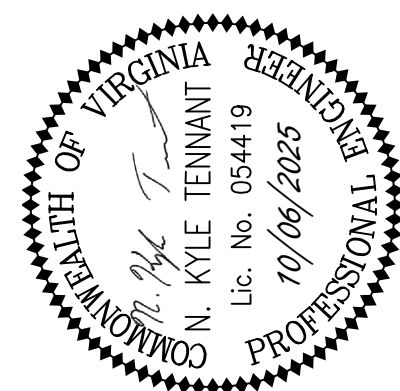
SECTIONS - JOHNSON ST
CROSSING

SHT. NO. S-301	REV. NO.
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	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502



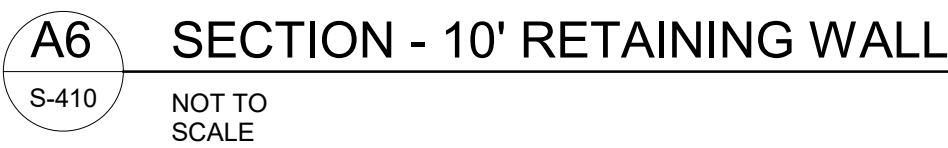
STANTON VIRGINIA

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SHEET TITLE

SECTIONS - BYERS
STREET CROSSING

SHT. NO. S-310	REV. NO.
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1. ALL ELEVATIONS ARE ACTUAL, REFER TO CIVIL FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH CIVIL SHEETS FOR ADDITIONAL SCOPE OF WORK
3. LOCALIZED DEMOLITION AND REPAIR AT BYERS STREET CROSSING.
4. TUNNEL DESIGN TO ASSUME FULLY SATURATED SOILS BEHIND TUNNEL

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502

TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPANS STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A6/S-301 FOR REINFORCING
W2	12" THICK CIP WALL, SEE SECTION A4/S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502



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[illegible]

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CHECK:		DA	

SECTIONS - BYERS STREET CROSSING

SHT. NO.	REV. NO.
S-311	

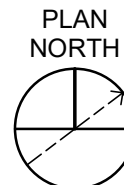
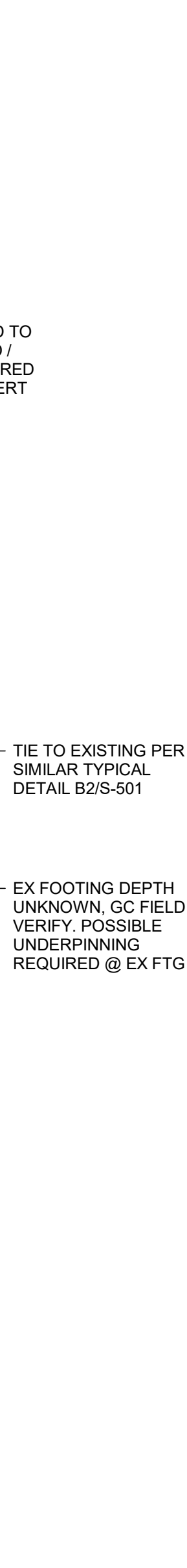


SCALE: 1" = 10'-0"

MATERIAL LEGEND - NEW WORK

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
 #	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502

[illegible]



ENLARGED ROOFING PLAN - BYERS STREET CROSSING

SCALE: 1" = 10'-0"

GENERAL SHEET NOTES

1. COORDINATE WITH CIVIL SHEETS FOR ADDITIONAL SCOPE OF WORK AS WELL AS COORDINATES FOR EXTENTS AND LOCATION OF CONSTRUCTION.
2. SEE S-610 FOR LOADING INFORMATION
3. SEE CIVIL SHEETS C-121 FOR NORTHING AND EASTING LOCATIONS TO COORDINATE DEMOLITION AND CONCRETE PLACEMENT ACTIVITIES.

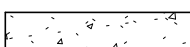
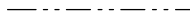
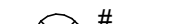
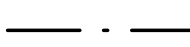
FOUNDATION PLAN NOTES

1. PROVIDE OPENING IN PRECAST TO SET AND GROUT AROUND PIPE, COORD W/ CIVIL.
2. PROVIDE KNOCKOUT IN PRECAST FOR EXISTING UTILITY. COORDINATE LOCATION IN THE FIELD. INSTALL UTILITY AFTER PLACEMENT OF PRECAST.
3. COORDINATE TUNNEL START AND STOP POINTS AS WELL AS SLOPE WITH CIVIL TO MAINTAIN OR EXCEED EXISTING CONDITIONS OPENING.
4. THE WALL FTG TO EXISTING USING (3) #7 x 2'-8" REBAR EXTENDING OUT OF CIP FOOTING AND EMBED 8" INTO EX FOOTING W/ HILTI HIT-
HY 200

WALL SCHEDULE

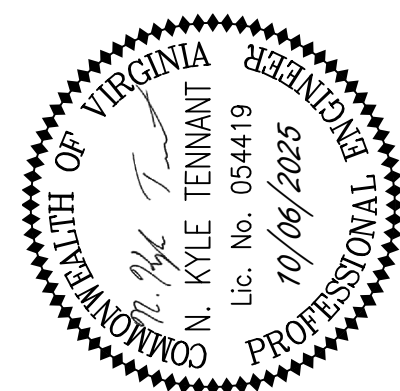
TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPANS STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A6/S-301 FOR REINFORCING
W2	14" THICK CIP WALL, SEE SECTION A4/S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502

MATERIAL LEGEND - NEW WORK

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL WALL
	CAST-IN-PLACE CONCRETE WALL
	PRE-CAST CONCRETE WALL
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	LAYOUT POINT, SEE CIVIL
	DENOTES STREAM ELEVATION
	DENOTES EXISTING UTILITIES
	DELEGATED TRAFFIC VDOT RATED GUARDRAIL, SEE NOTE SECTION G/S-002 AND SHEET S-502



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STANTON VIRGINIA

[illegible]

COMM NO: 240197

DATE: 10/06/2025

DRAWN:	CWR	DESIGN:	NK
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CHECK: ☐

SHEET TITLE

ENLARGED PLAN - BYERS
STREET CROSSING

SHT. NO. S-410

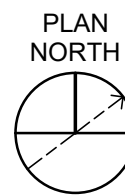
REV. NC



A6

ENLARGED DEMO PLAN - NEW STREET CROSSING

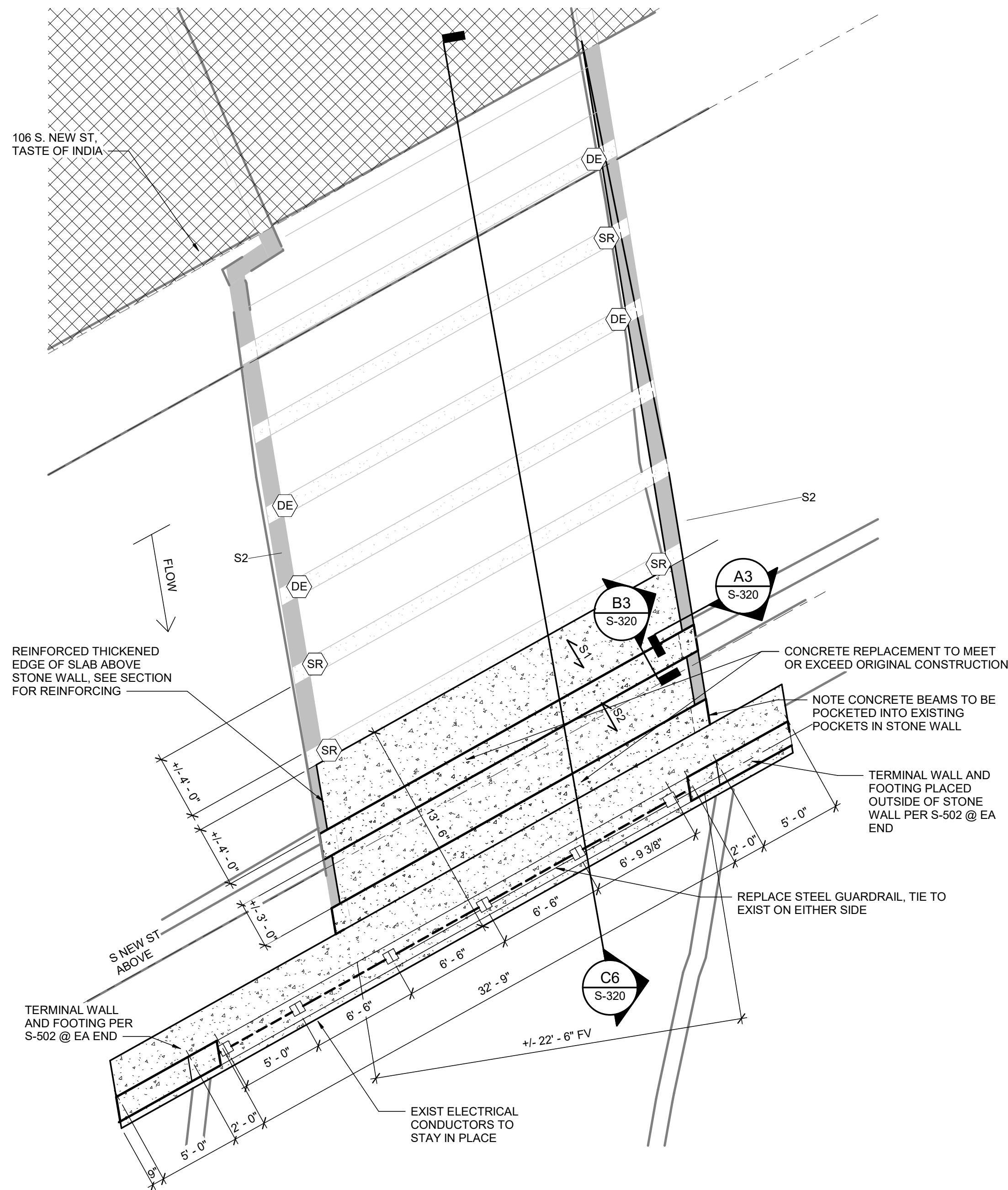
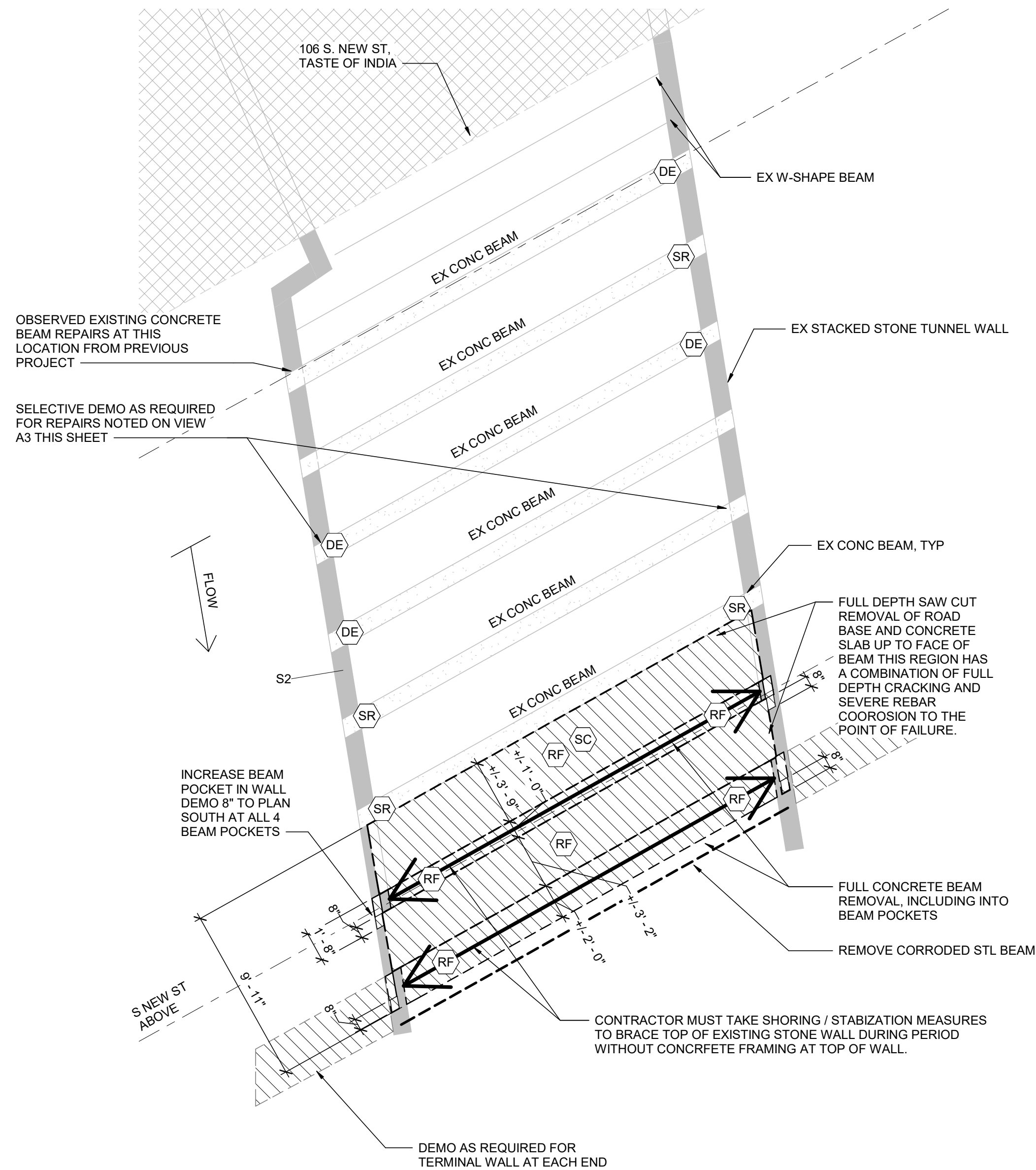
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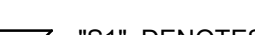
A3

ENLARGED PLAN - NEW STREET CROSSING

SCALE: 3/16" = 1'-0"



GENERAL SHEET NOTES

1. COORDINATE WITH CIVIL SHEETS FOR ADDITIONAL SCOPE OF WORK
2. LOCALIZED DEMOLITION AND REPAIR AT NEW STREET CROSSING.
3.  "S1" DENOTES REPLACEMENT 8" THICK CONCRETE SLAB W/ #6 @ 6" SHORT WAY #4 @ 12" LONG WAY
4.  "S2" DENOTES REPLACEMENT 14-1/2" THICK CONCRETE SLAB W/ #6 @ 6" SHORT WAY #4 @ 12" LONG WAY
5. SALVAGE (6) SIX SECTIONS OF 28" LONG EXISTING REBAR CUT OUT OF CONCRETE BEAMS FOR LOAD TESTING.
6. NOTE THAT THE BRIDGE IS REPAIR / REPLACED TO MEET OR EXCEED EXISTING CONDITIONS, NOT BRING UP TO CURRENT CODE. AFTER REBAR TESTING THE SPAN WILL HAVE A LOAD RATING COMPLETED.

WALL SCHEDULE

TYPE	DESCRIPTION
C1	EXISTING CIP WALL, 1-WAY ROOF SPANS WALLS
C2	EXISTING CIP WALL, 1-WAY ROOF SPANS CONC BEAMS
C3	EXISTING CIP WALL, 1-WAY ROOF SPANS STL BEAMS
C4	EXISTING CIP WALL, CONCRETE TRUSS SYSTEM
C5	EXISTING CIP WALL, OPEN CHANNEL
S1	EXISTING STACK STONE ARCH
S2	EXISTING STACK STONE WALLS, 1-WAY ROOF TO CONC BEAMS
S3	EXISTING STACK STONE WALLS, 1-WAY ROOF TO STL BEAMS
S4	EXISTING STACK STONE WALLS, 1-WAY BRICK ARCH ROOF SPANS STL
S5	EXISTING STACK STONE WALLS, OPEN CHANNEL
W1	12" THICK CIP WALL, SEE SECTION A6/S-310 FOR REINFORCING
W2	14" THICK CIP WALL, SEE SECTION A4/S-310 FOR REINFORCING
W3	14" THICK CIP ABOVE GRADE TERMINAL WALL, SEE DETAILS ON S-502

MATERIAL LEGEND

	EXISTING BUILDINGS ABOVE GRADE
	EXISTING TUNNEL ROOF AND WALLS
	DENOTES CHANGE IN TUNNEL MATERIAL
	DENOTES CROSS STREET ABOVE GRADE
	DENOTES FULL DEPTH SAW CUT REMOVAL
	DENOTES LOCALIZED REMOVAL OF DELAMINATED OR SOFT CONCRETE

DISTRESS KEYNOTE LEGEND

DE	DELAMINATIONS (C4 / S-503)
SR	SPALL W/ EXPOSED REBAR (C2 / S-503)
SC	SPALL W. REBAR CORRODED - SPECIALIZED REPAIR
RF	REBAR FAILED - SPECIALIZED REPAIR



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STANTON VIRGINIA

[illegible]

COMM NO: 240197

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DRAWN:	CWR	DESIGN:	NKT
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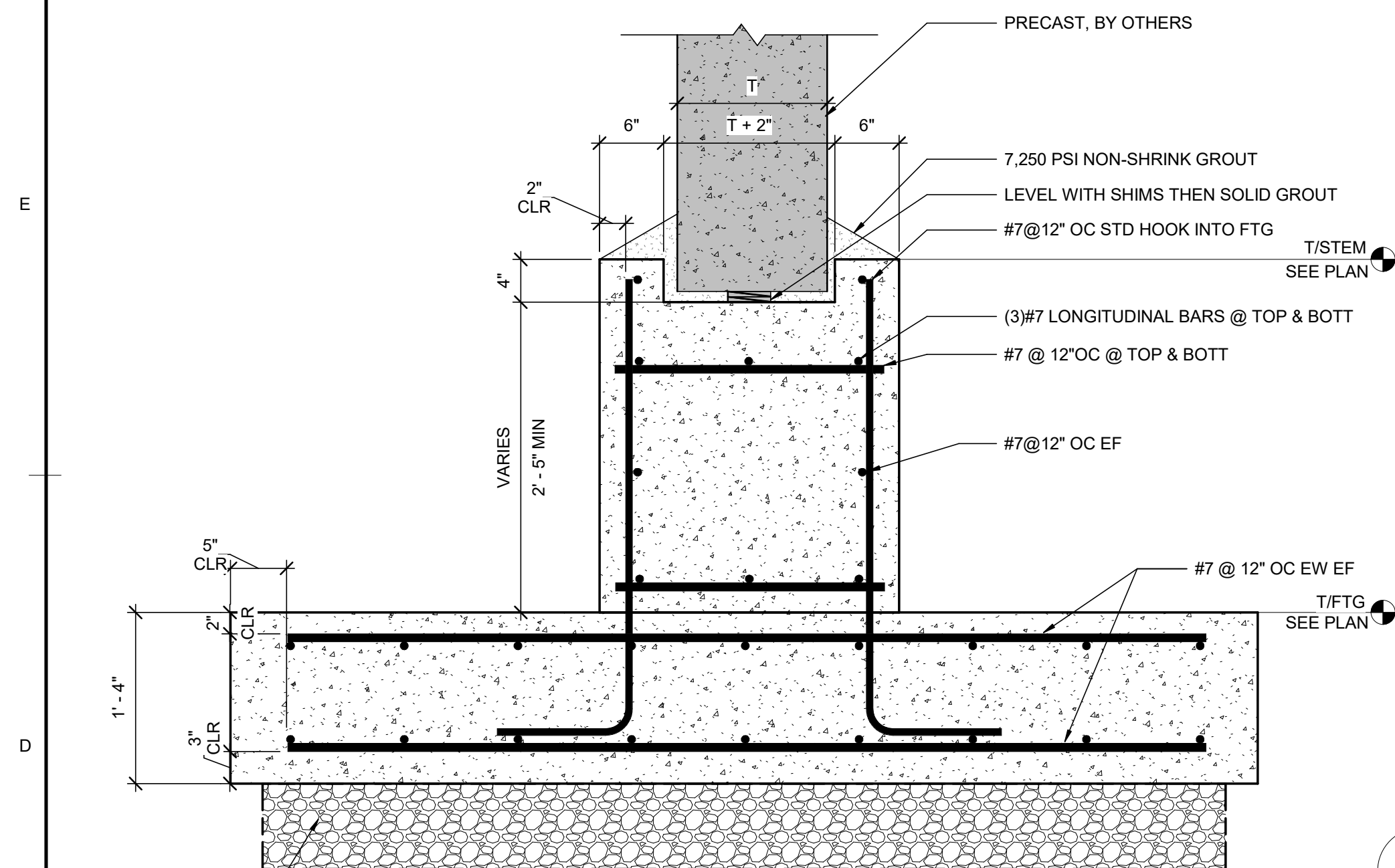
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SHEET TITLE

ENLARGED PLAN - NEW
STREET CROSSING

SHT. NO.
S-420

REV. NO.



SUBGRADE
STABILIZATION
SEE NOTE 1

NOTES

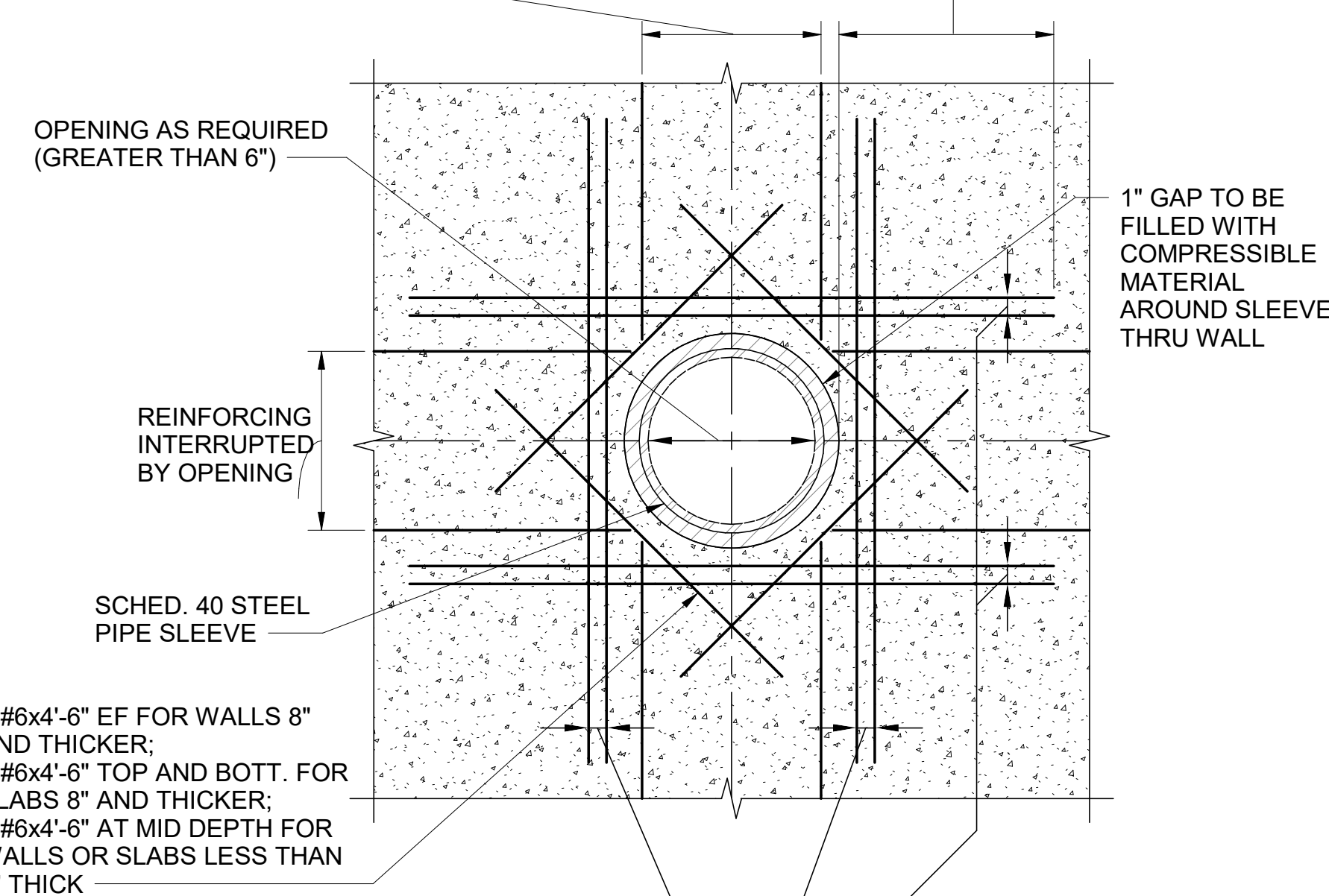
1. REMOVE UNSUITABLE SOFT AND LOOSE SUBGRADE MATERIAL ENCOUNTERED BELOW FOOTING AND .
REPLACE WITH STRUCTURAL FILL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. UNDERCUT
THE SUBGRADE MATERIAL AND STABILIZE THE SUBGRADES WITH A WORKING PLATFORM CONSISTING OF
VDOT NO. 1 OR VDOT NO. 57 STONE WRAPPED WITH NON-WOVEN GEOSYNTHETIC FABRIC CONSISTING
OF MIRAFI 160N, OR APPROVED EQUIVALENT.

D6 DETAIL - FOOTING AND STEM

NOT TO SCALE:

REINFORCING INTERRUPTED BY OPENING
CUT REINFORCING TO MAINTAIN 1-1/2"
CLEAR AT OPENING, TYP.

— SPLICE LENGTH
(TYP)



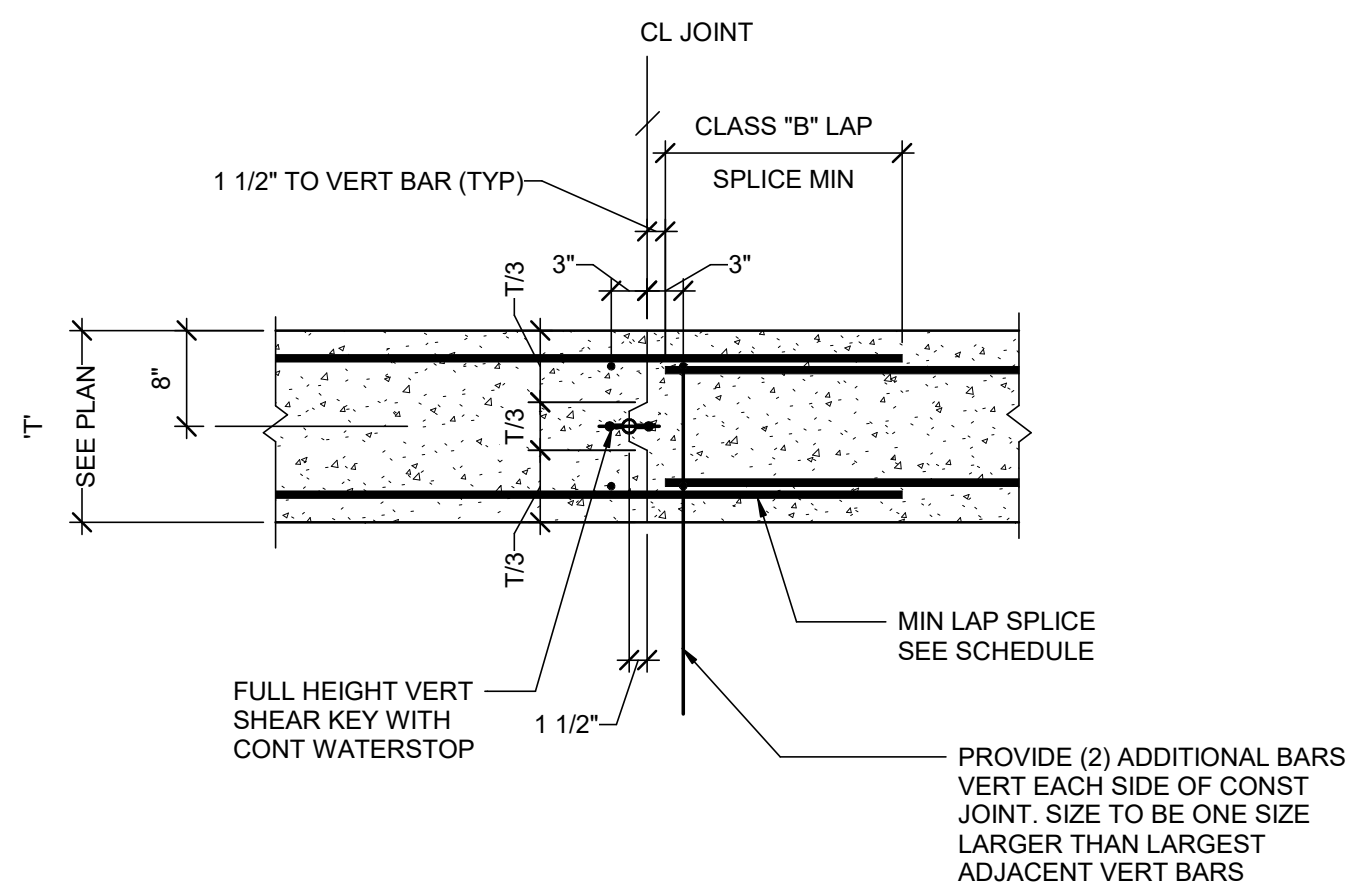
PROVIDE BARS WITH AREA EQUAL
TO INTERRUPTED REINFORCING.
PLACE 1/2 ON EACH SIDE OF
OPENING AT 3" SPACING MAX.
PROVIDE 2-#5 BARS MIN. _____

NOTES:

- NOTES:**
1. SEE GENERAL NOTES AND/OR TYPICAL SCHEDULES FOR SPLICE LENGTH.
 2. MINIMUM CLEAR SPACING BETWEEN MULTIPLE OPENINGS TO BE 1'-6".
 3. SEE DRAWINGS OF OTHER DISCIPLINES FOR WALL AND SLAB PENETRATION LOCATIONS AND SIZES.
 4. HOLES UP TO 6" IN DIAMETER MAY BE CORED AFTER CASTING CONCRETE.
 5. REINFORCEMENT SHOWN IS IN ADDITION TO TYPICAL WALL OR SLAB REINFORCEMENT.

DETAIL - TYPICAL REINFORCEMENT FOR OPENINGS IN CONCRETE WALLS OR SLABS

NOT TO SCALE:

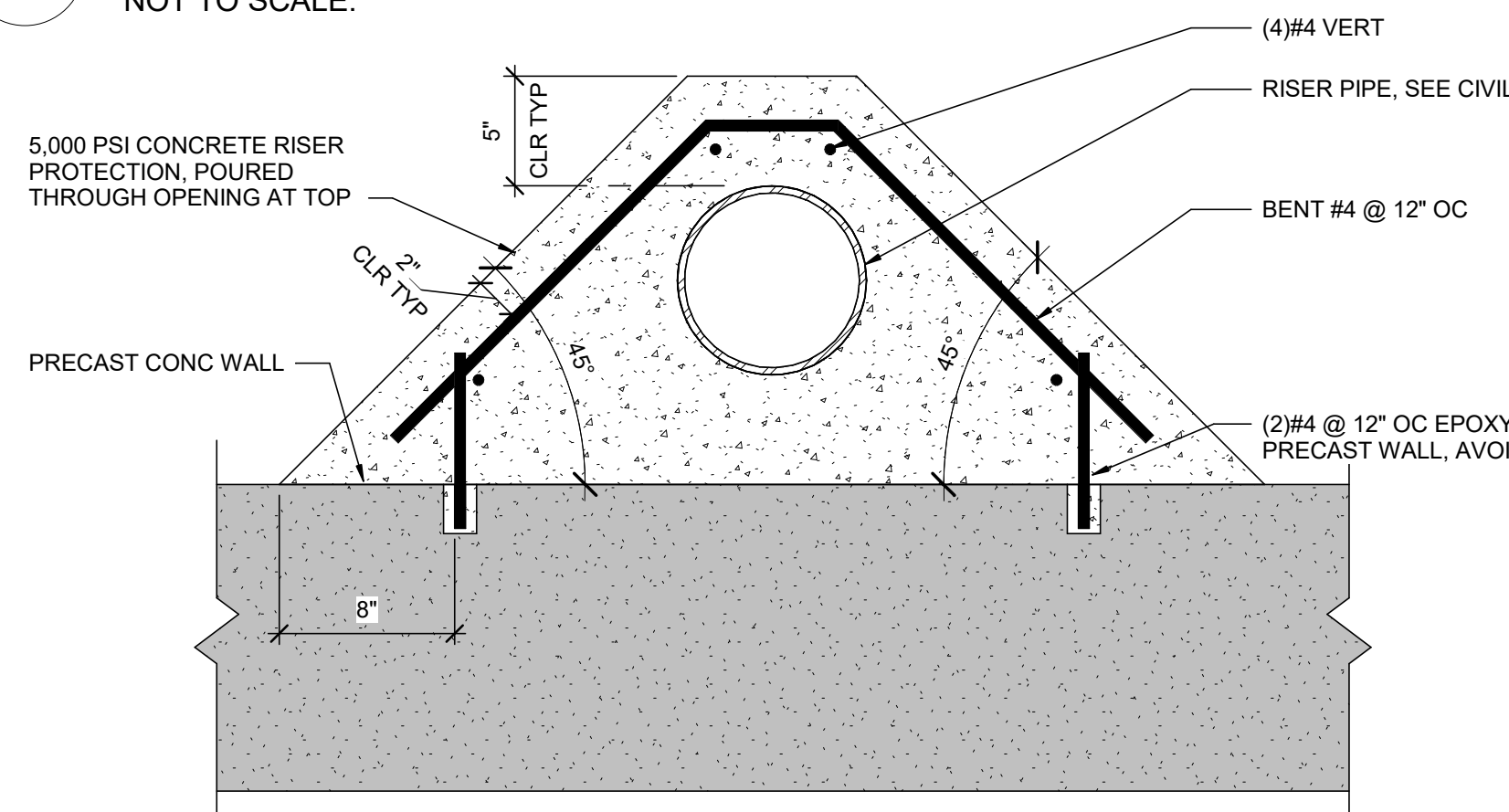


NOTES

1. PROVIDE VERTICAL WALL CONSTRUCTION JOINTS AT 40'-0" OC MAX UNO ON DWGS.
2. SUBMIT PROPOSED WALL JOINT LOCATIONS PRIOR TO POURING WALL.
3. WHERE WALL SPANS HORZ JOINTS SHALL BE LOCATED IN MIDDLE THIRD OF WALL SPANS UNO
4. SEE ARCH DWGS FOR TREATMENT OF EXPOSED CONST JOINTS (RUB OUT REVEAL OR OTHERS).
5. SEE ARCH DWGS FOR ADDITIONAL CONSTRUCTION JOINT REQS.

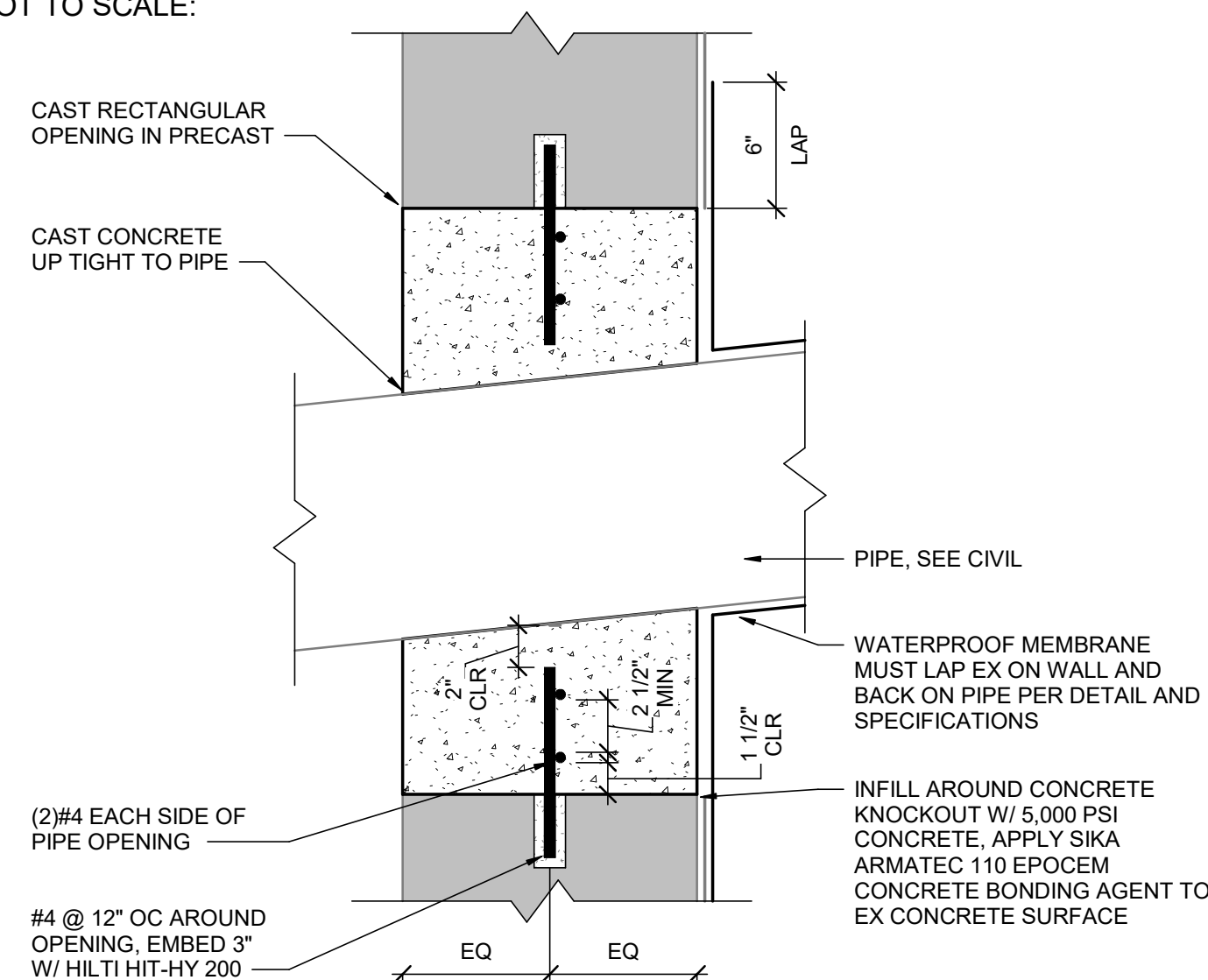
D4 DETAIL - WALL CONSTRUCTION JOINT

NOT TO SCALE:



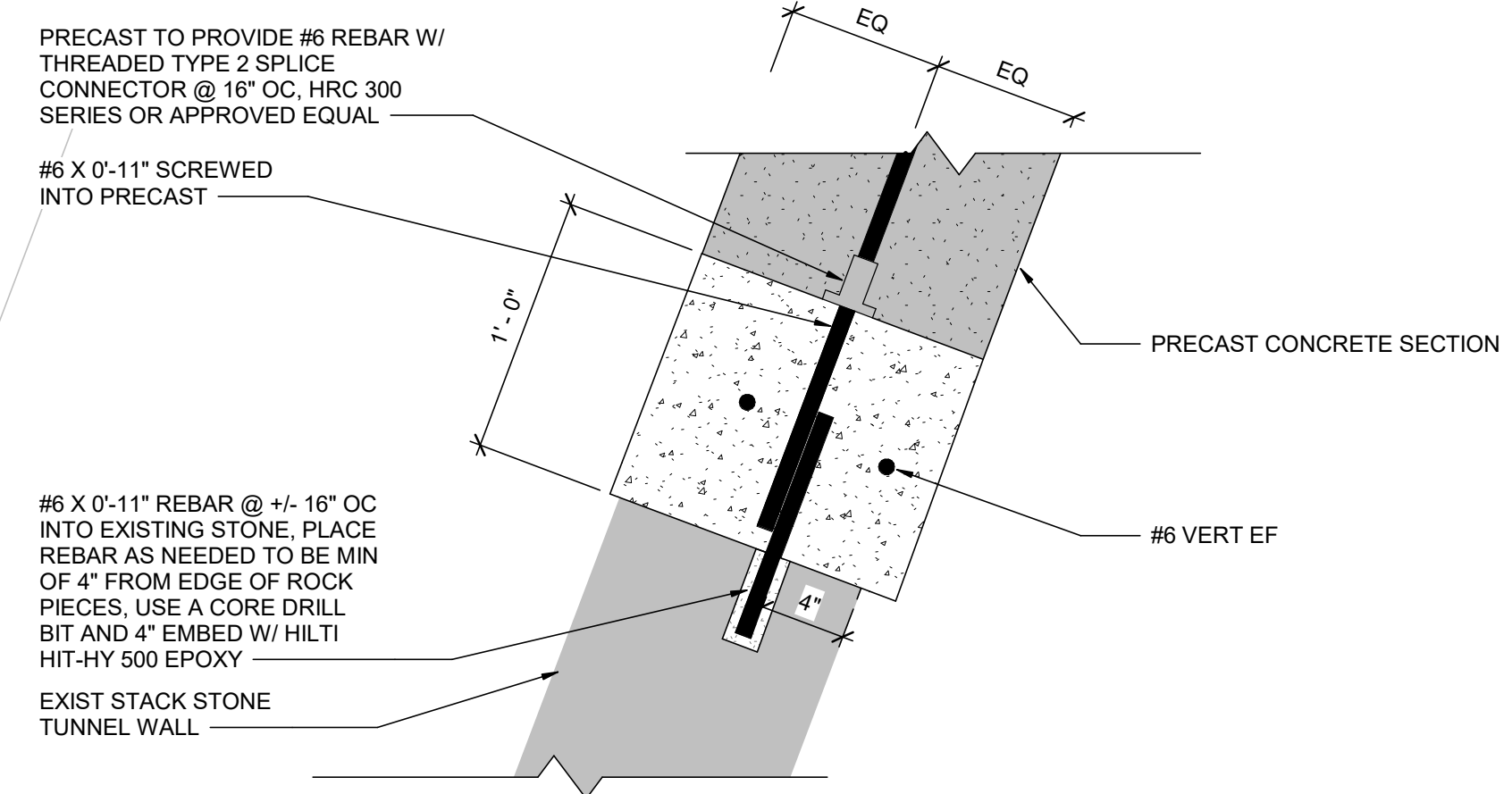
C4 DETAIL - RISER PROTECTION

NOT TO SCALE:



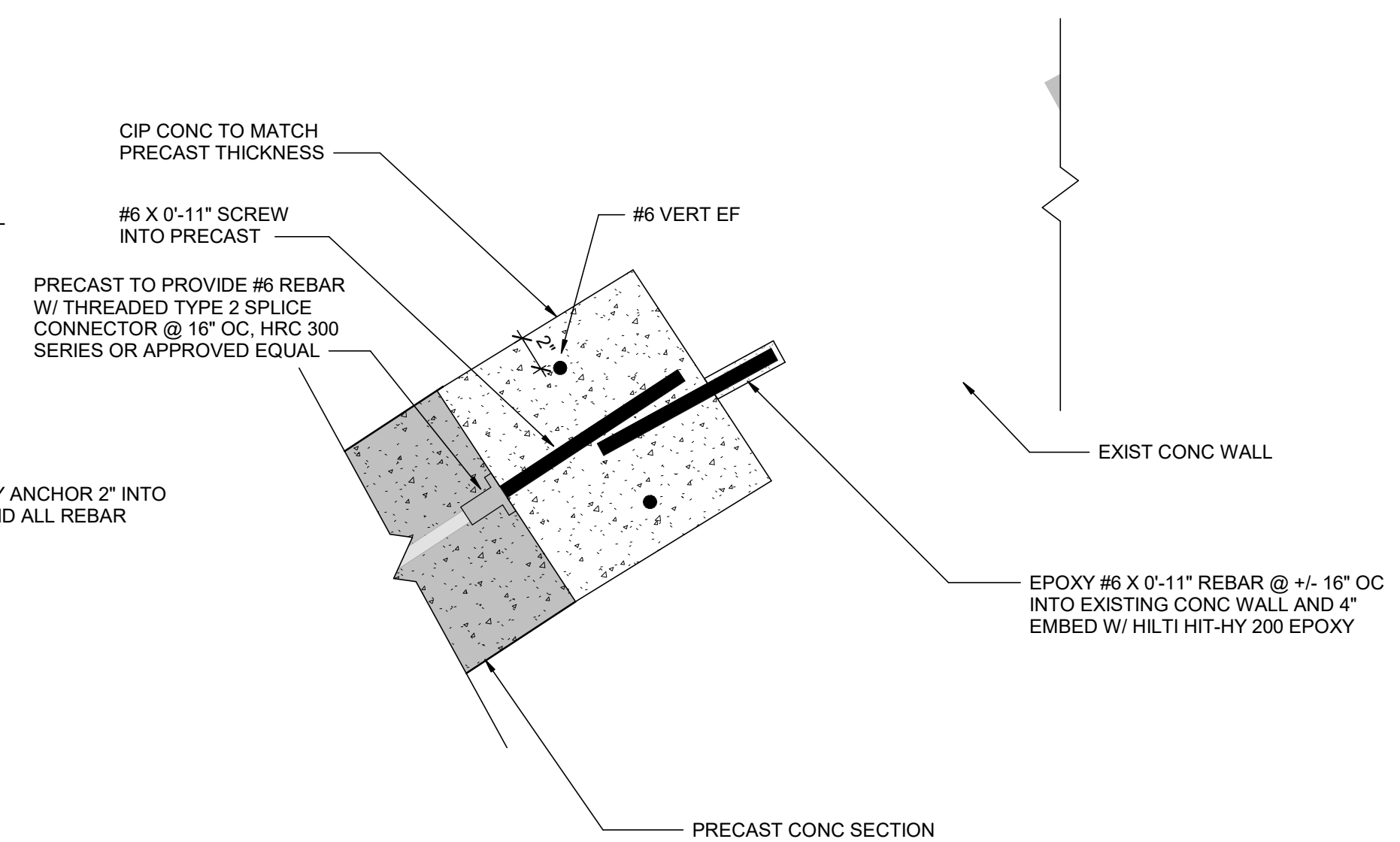
DETAIL - CIP CONC BLOCK @ PIPE

NOT TO SCALE:



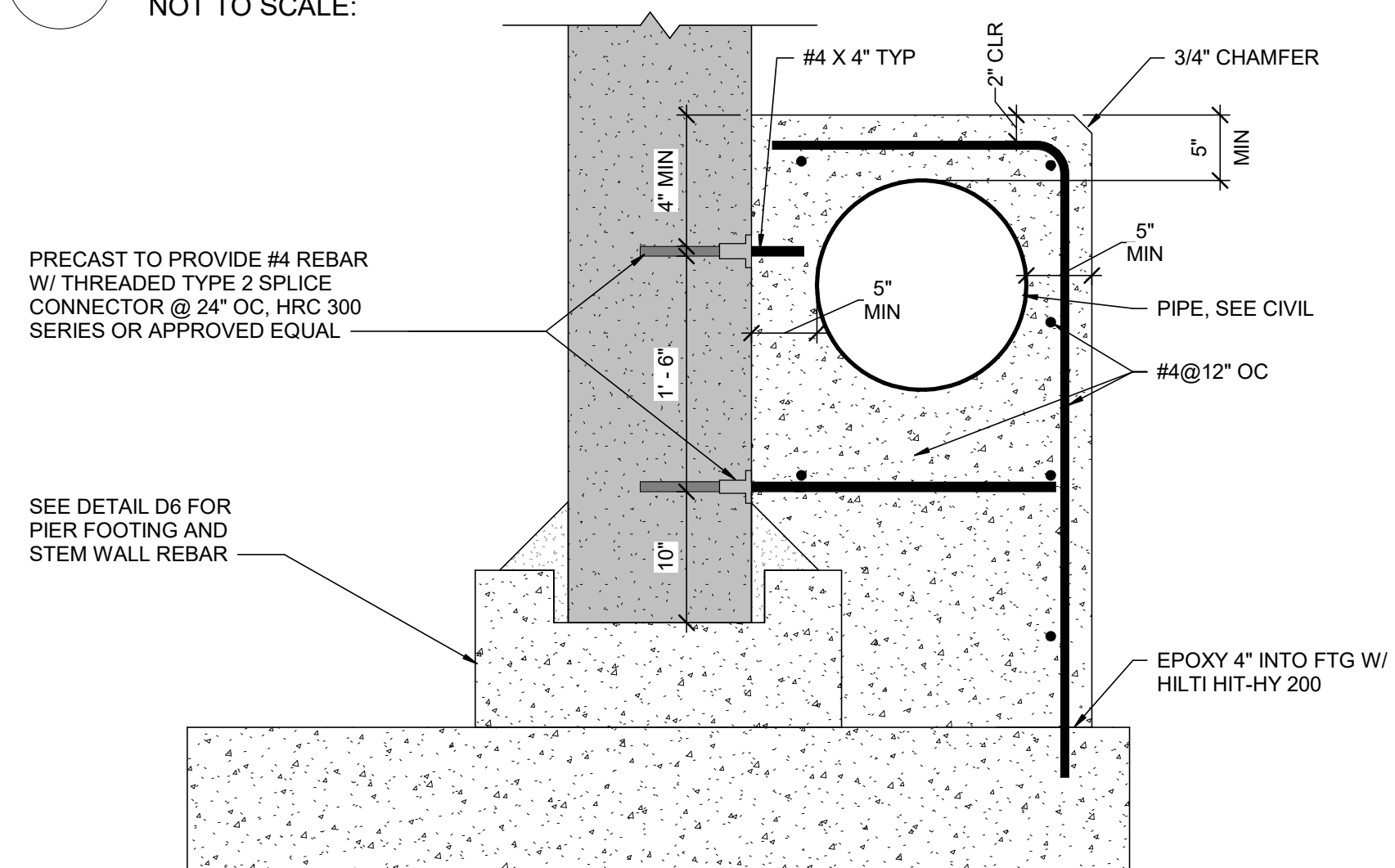
D2 DETAIL - PRE-CAST TIE-IN TO EXIST STONE

SCALE: 1 1/2" = 1'-0"



R2 DETAIL - PRE-CAST TIE IN TO EXISTING CONC WALL

NOT TO SCALE:



A2 DETAIL - CONC PIPE ENCASEMENT

NOT TO SCALE:

[illegible]

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SHEET TITLE			

TYPICAL CAST-IN-PLACE CONCRETE DETAILS

SHT. NO. S-501	REV. NO.
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REVISION DESCRIPTION

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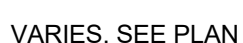
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CHECK:	DA
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SHEET TITLE

TYPICAL GUARDRAIL DETAILS

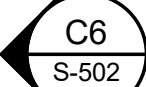
SHT. NO. S-502	REV. NO.
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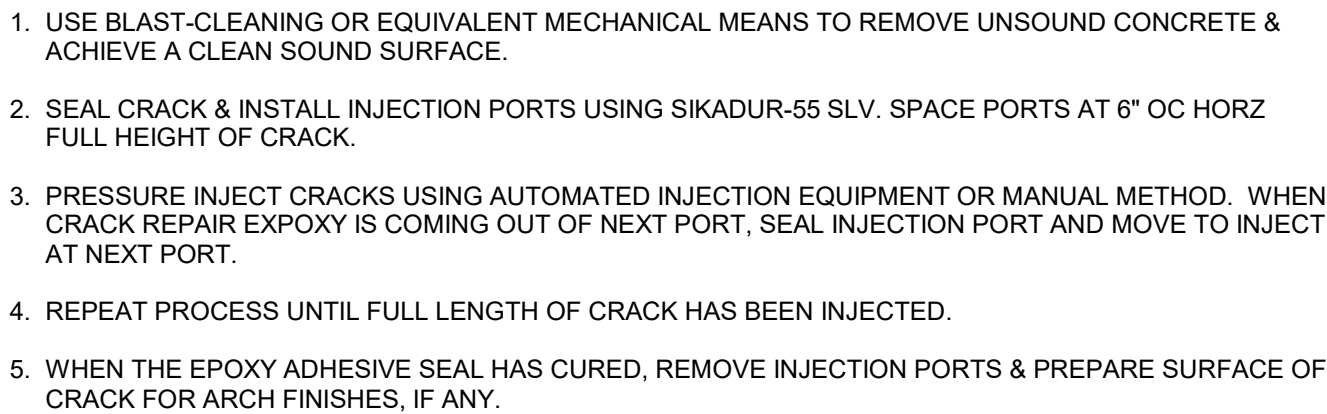


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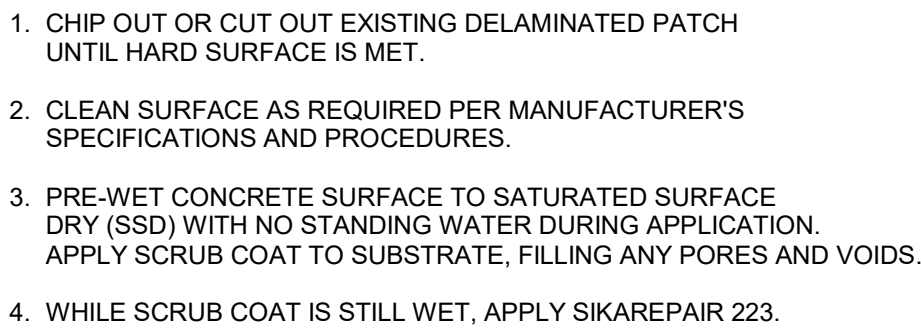


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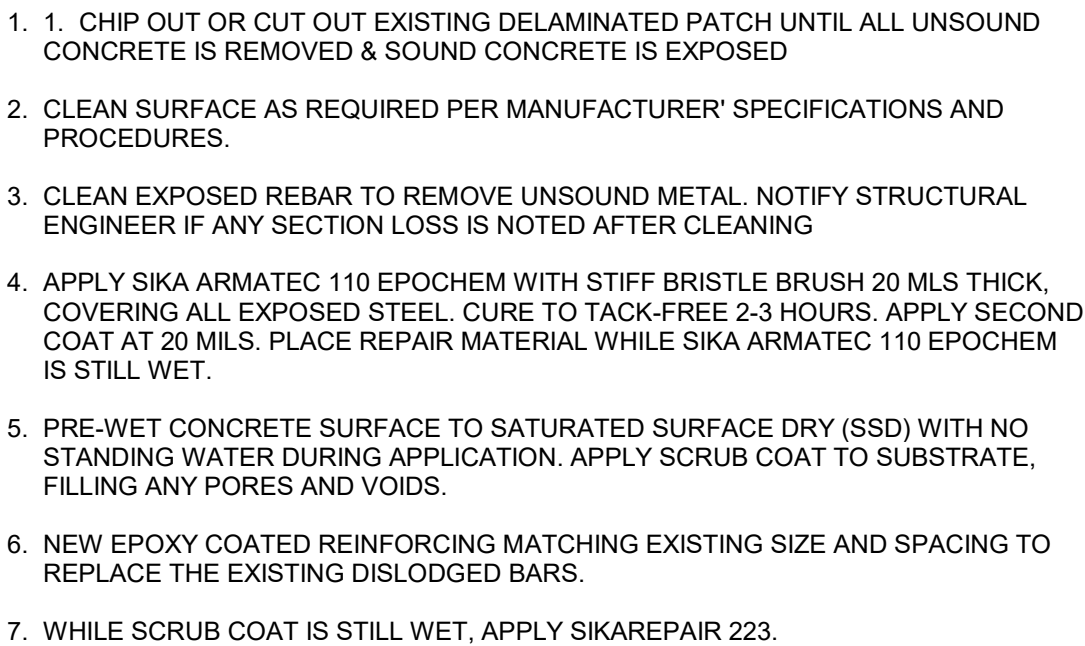
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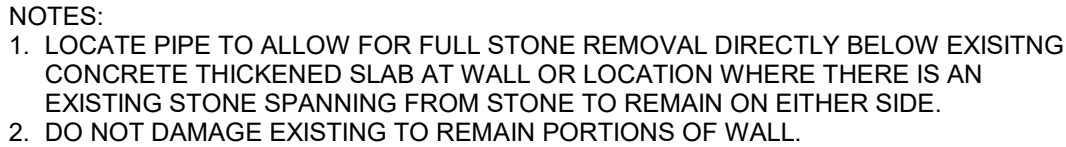
SCALE: 3/4" = 1'-0"



SCALE: 3/4" = 1'-0"



SCALE: 3/4" = 1'-0"



NOT TO SCALE:



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STAUNTON, VIRGINIA

[illegible]

COMM NO:		240197	
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DRAWN:	CWR	DESIGN:	NKT
CHECK:		DA	

SHEET TITLE

TYPICAL CONCRETE
REPAIR DETAILS

SHT. NO. S-503	REV. NO.
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COMM NO:		240197	
DATE:		10/06/2025	
DRAWN:	CWR	DESIGN:	NKT
CHECK:		DA	
SHEET TITLE			
TYPICAL PRECAST CONCRETE DETAILS			
SHT. NO.		REV. NO.	
S-510			



JOHNSON STREET LOAD DIAGRAM

SCALE: 1/4" = 1'-0"



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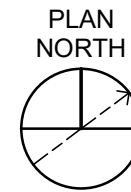
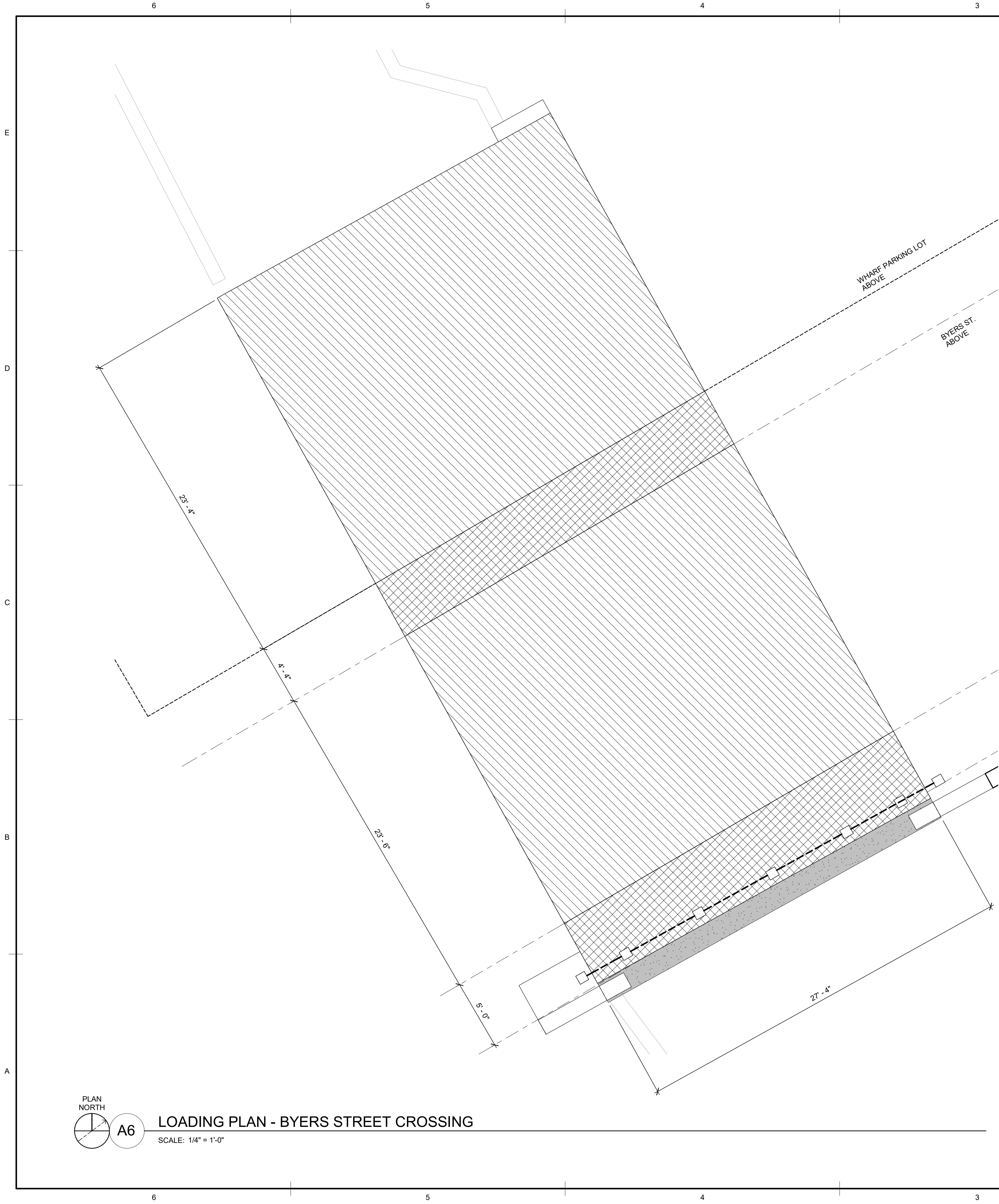
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A6

LOADING PLAN - BYERS STREET CROSSING

SCALE: 1/4" = 1'-0"

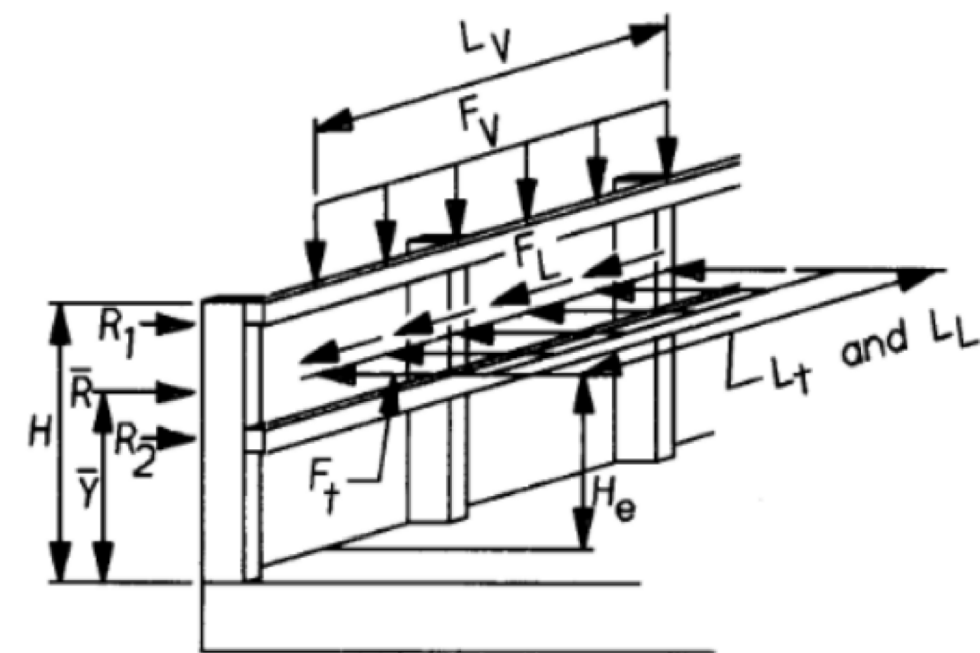
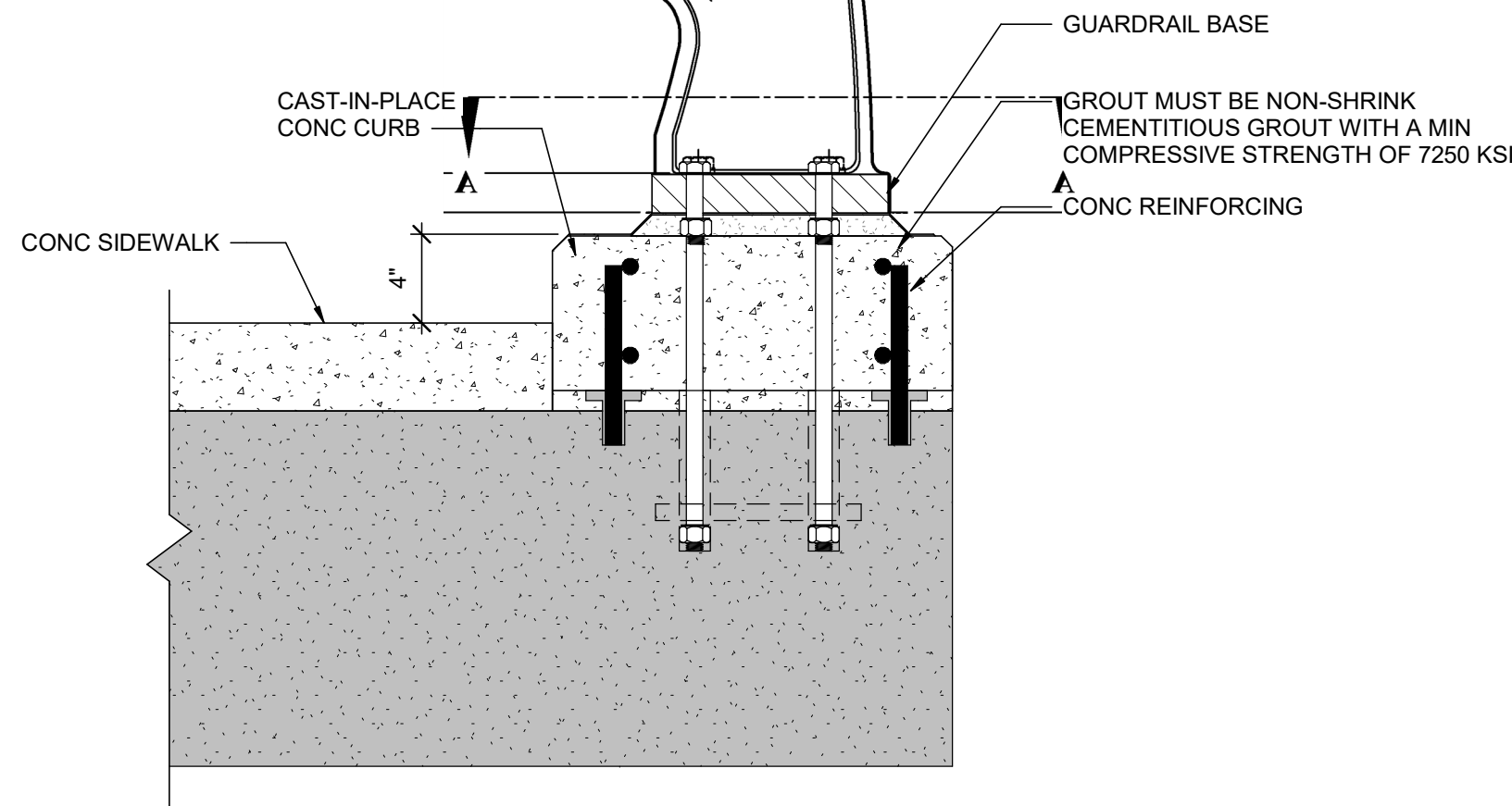


Figure A13.2-1—Metal Bridge Railing Design Forces, Vertical Location, and Horizontal Distribution Length

RAIL ANCHORAGE BASED ON AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (8TH EDITION) 2017 LOADING

TRAFFIC FACE



B2

GUARDRAIL LOADING

NOT TO SCALE:

BYERS STREET DESIGN SUPERIMPOSED LOADS			
AREA	DEAD LOAD	LIVE LOAD	ASSUMPTIONS
	135 PSF	AXLE LOCATION CHECKED AT ALL LOCATIONS ALONG SPAN TO IDENTIFY WORST CASE LOADING	8" TOTAL ROAD BASE
	190 PSF	250 PSF OR 8,000 LBS, SUBJECT TO PED AND OCCASIONAL VEHICLE	8" TOTAL ROAD BASE + 6" CONC SIDEWALK

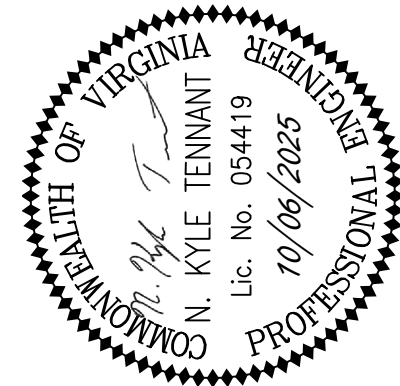
--- □ --- DENOTES STEEL GUARDRAIL

Table A13.2-1—Design Forces for Traffic Railings

Design Forces and Designations	TL-1	TL-2
F_t Transverse (kips)	13.5	27.0
F_t Longitudinal (kips)	4.5	9.0
F_v Vertical (kips) Down	4.5	4.5
L_t and L_{tL} (ft)	4.0	4.0
L_v (ft)	18.0	18.0
H_v (min) (in.)	18.0	20.0
Minimum H Height of Rail (in.)	27.0	27.0



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CITY OF STAUNTON JOHNSON, BYERS, AND NEW STREET TUNNEL REPAIRS

STAUNTON, VIRGINIA

REVISION DESCRIPTION

MRK DATE

COMM NO: 240197

DATE: 10/06/2025

DRAWN: CWR DESIGN: NKT

CHECK: DA

SHEET TITLE

BYERS STREET LOAD
DIAGRAM

SHT. NO.
S-610

REV. NO.