

CITY OF RICHMOND, VIRGINIA

DEPARTMENT OF PUBLIC WORKS

ENGINEERING & TECHNICAL SERVICES



PROPOSED BRIDGE REPLACEMENT RTE. 360 OVER MANCHESTER CANAL

VDOT PROJECT NUMBER: 0360-127-035, P101, C501, B613 UPC NO. 113290

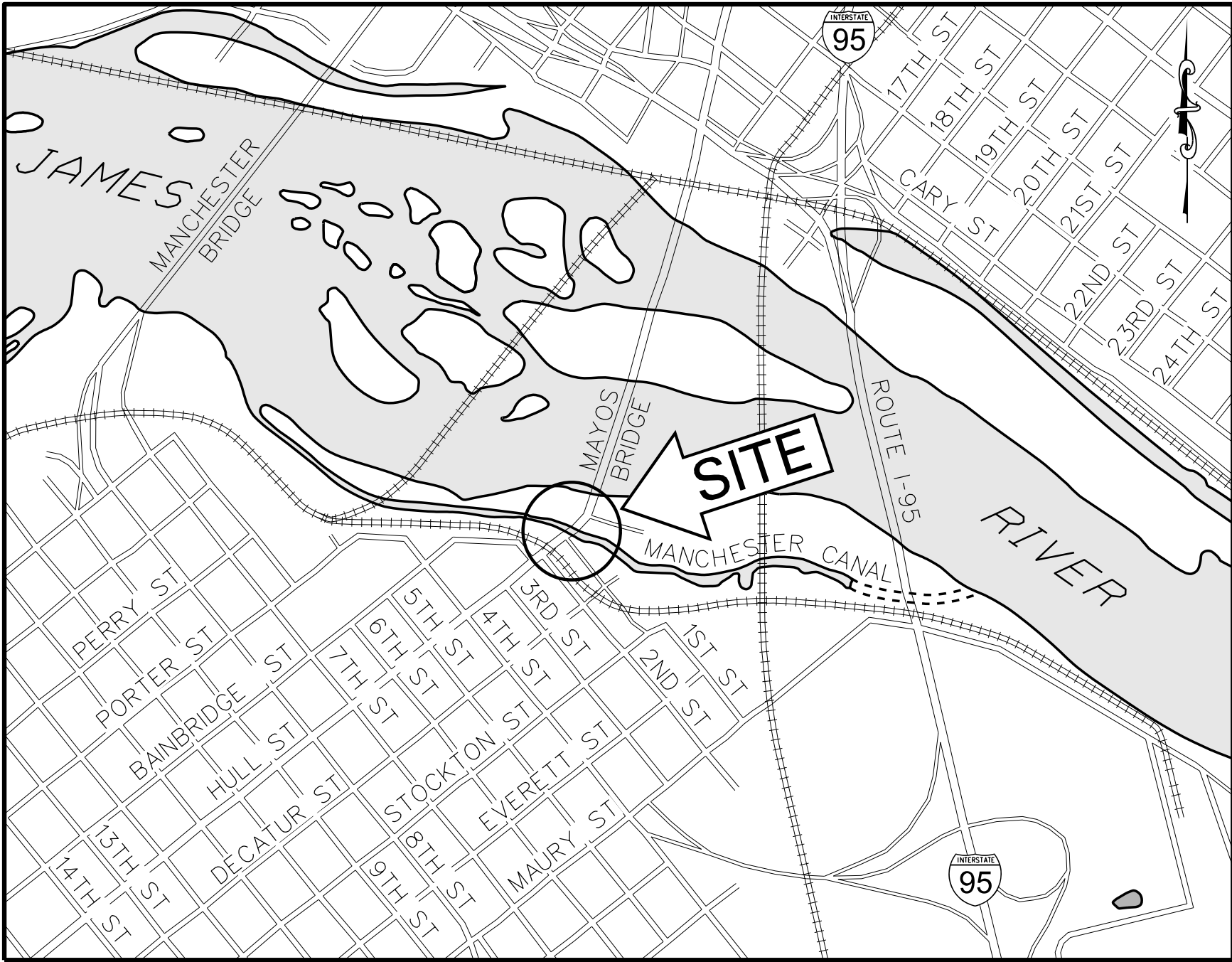
CITY OF RICHMOND

APPROVED FOR CONSTRUCTION	
DATE	SURVEYS SUPERINTENDENT
DATE	PROJECT MANAGER
DATE	MAINTENANCE ENGINEER
DATE	CITY TRAFFIC ENGINEER
DATE	CAPITAL PROJECTS ADMINISTRATOR
DATE	CITY ENGINEER
DATE	DIRECTOR OF PUBLIC WORKS

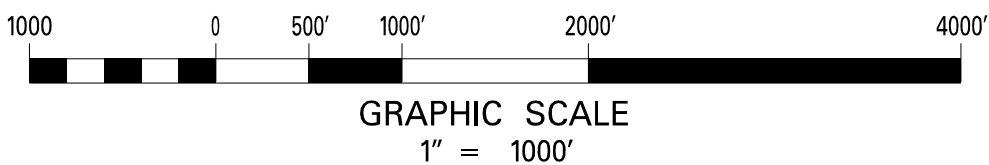
MAY 2021

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TRANSVERSE SECTION	S4
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CONCRETE BARRIER	S6



LOCATION MAP



REVISIONS

NO.	DATE	COMMENTS

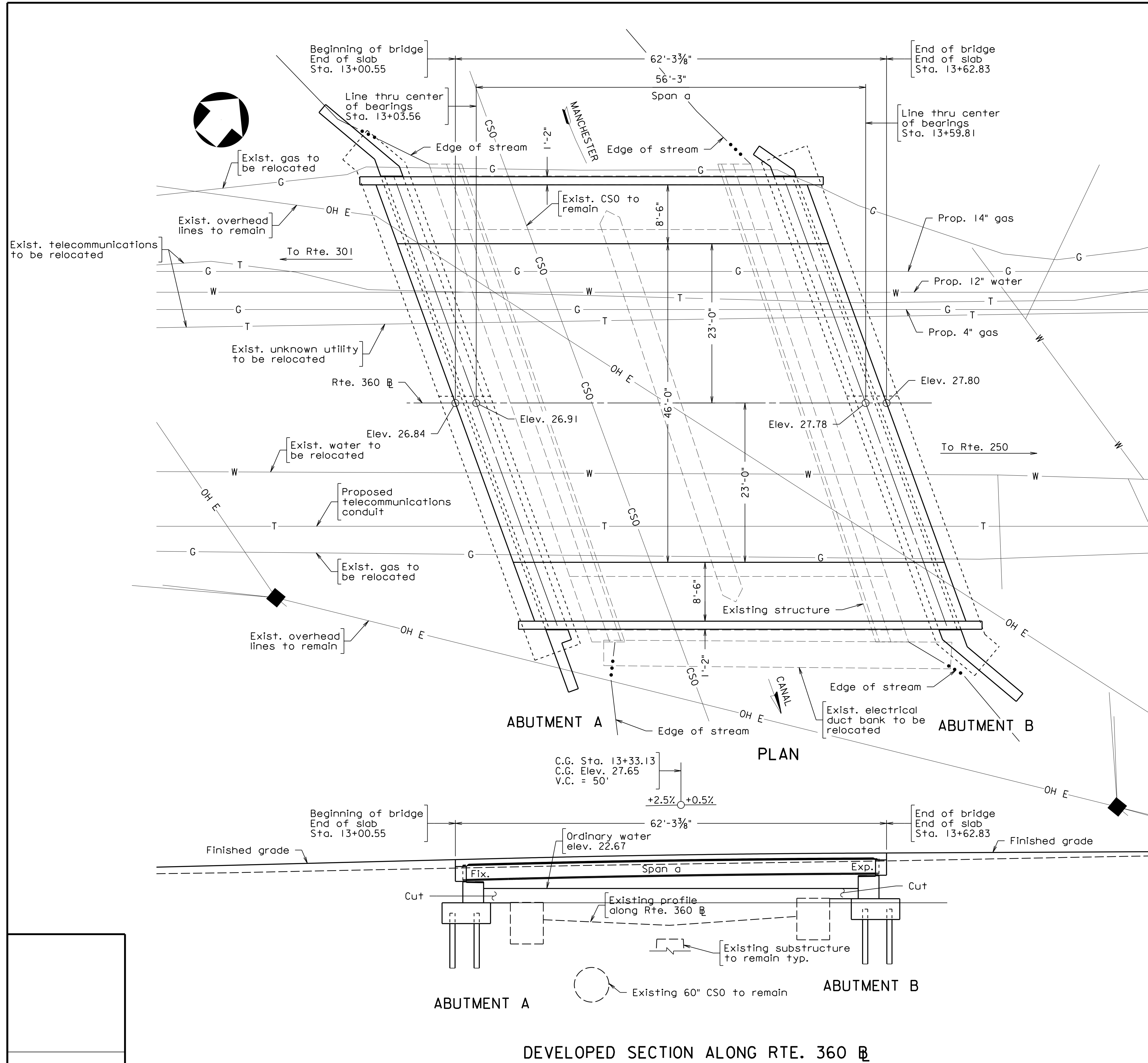


Whitman, Requardt & Associates, LLP
9030 Stony Point Parkway, Suite 220, Richmond, Virginia 23235

CITY of RICHMOND
DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

DRAWING NO: X-XXXXX

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION



GENERAL NOTES:

Width: 8'-6" sidewalk, 46'-0" face-to-face of curbs, 8'-6" sidewalk.
 Overall width 63'-0" face-to-face of rails.
 Span layout: 62'-3" single steel plate girder span.
 Capacity: HL-93 loading (superstructure)
 Drainage area: x.x sq. mi.
 Specifications:
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.

All construction and materials shall conform with the latest standards and specifications of the Virginia Department of Transportation (VDOT), except as noted on the plans.

The Contractor shall be responsible for obtaining all necessary permits and or agreements from the City of Richmond before beginning construction.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.

The Contractor shall be thoroughly familiar with the plans and the existing structure, including the verification of all the existing dimensions before proceeding with the repairs. Dimensions of existing structure were taken from field measurements and the Bridge Safety Inspection Report. Discrepancies between field conditions and these plans shall be brought to the attention of the Engineer before proceeding with affected work.

All structural steel, including bearings, shall be ASTM A709 Grade 50CR and shall be unpainted.

ASTM A709 Grade 50CR shall conform to the requirements specified in the Special Provision for Corrosion Resistant Steel Plate Girders.

Concrete in superstructure, barrier and integral backwalls shall be Low Shrinkage Class A4 Modified Lightweight in accordance with Section 217.12(a); in substructure shall be Class A3.

Deformed reinforcing bars shall conform to ASTM A615, Grade 60. All reinforcing bar dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Bridge No. of existing bridge is 1858. No plans available.

All welding shall be executed in accordance with Section 407.04 and 426.03 of the VDOT Specifications.

The Contractor shall be responsible for protecting existing utilities and shall repair them at no additional cost to the City, if damaged.

Any deviations from the approved plans and/or standards and specifications must be approved by the Engineer in writing, prior to the start of affected work.

The existing structure is designated a Type B structure in accordance with Sec. 411.

B.M.:

NOTES
 Contractor shall field verify all dimensions prior to purchasing materials or proceeding with affected work. Any discrepancies found shall be brought to the attention of the Engineer.

PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

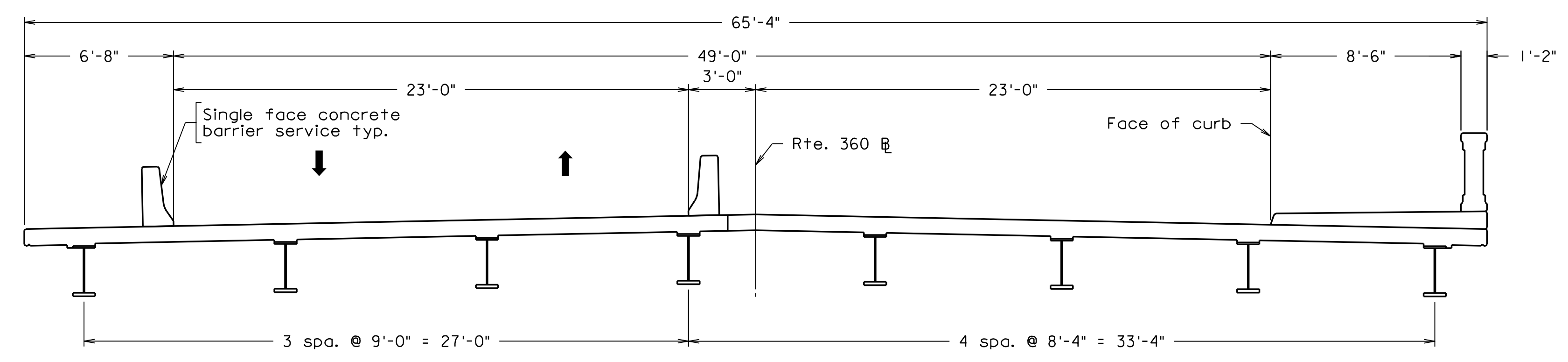
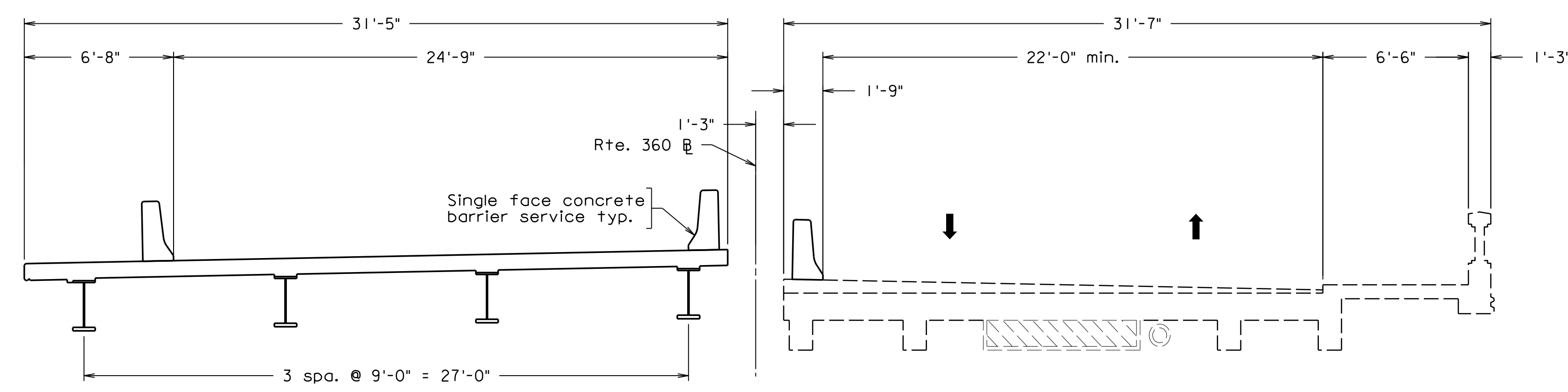
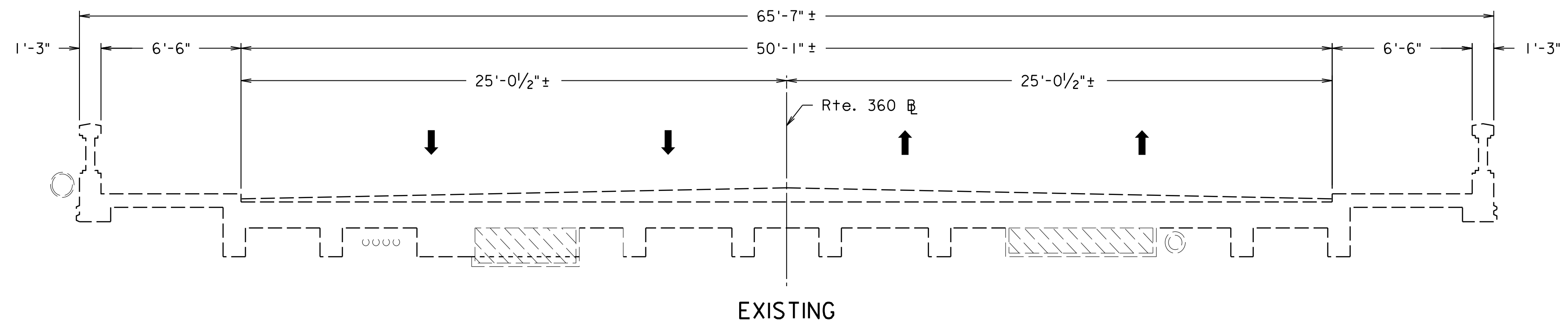


Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

RTE. 360 OVER MANCHESTER CANAL					
PLAN AND DEVELOPED SECTION					
DESIGN BY: WRA	REVIEWED BY:	FIELD NOTES	SCALE AS NOTED	DATE MAY 2021	SHEET S1
DRAWN BY: WRA					DRAWING NO. X-XXXXX
CHECKED BY: WRA					

© 2021 Whitman Requardt & Associates



SEQUENCE OF CONSTRUCTION
Scale: 1/4" = 1'

WHITMAN REQUARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

NOTES
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PRELIMINARY PLANS
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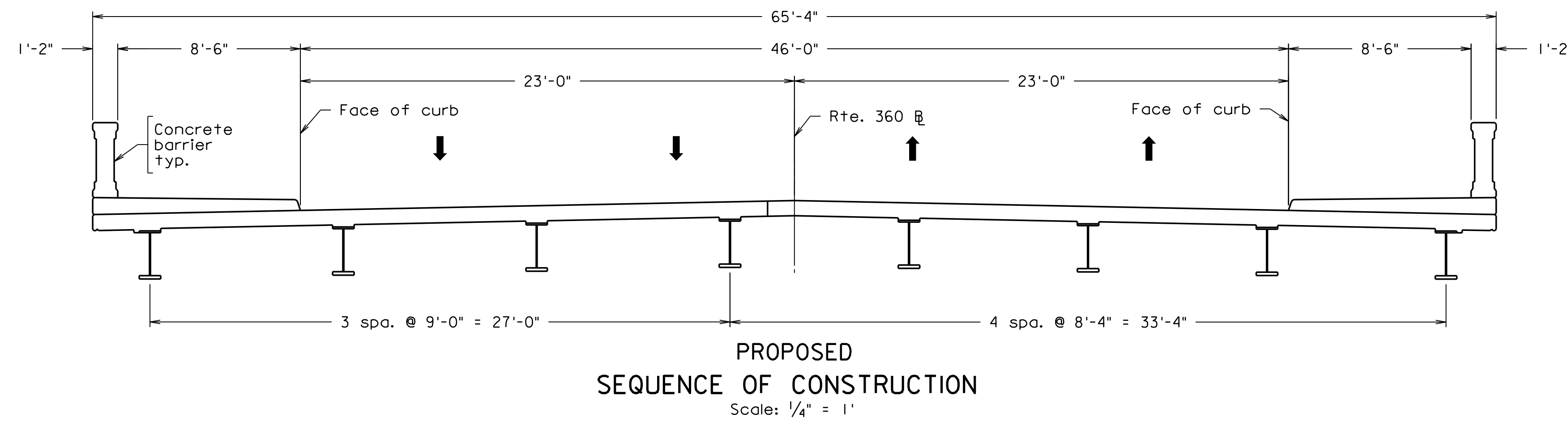
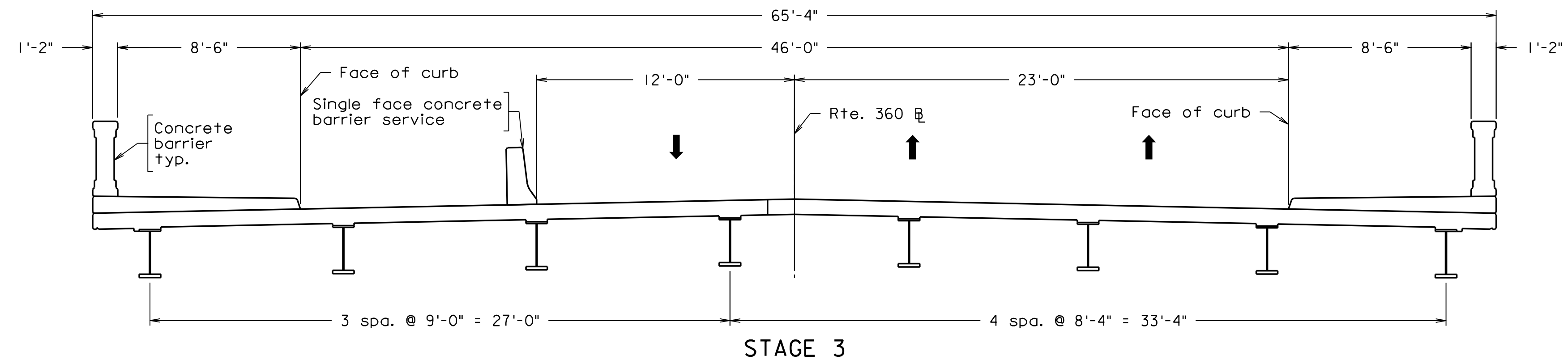
Technical	Administrative
Surveys Superintendent	
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DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

RTE. 360 OVER MANCHESTER CANAL
SEQUENCE OF CONSTRUCTION
1 OF 2

DESIGN BY: WRA	REVIEWED BY:	FIELD NOTES	SCALE AS NOTED	DATE MAY 2021	SHEET S2	DRAWING NO. X-XXXXX
DRAWN BY: WRA						
CHECKED BY: WRA						

02: Sequence of Construction - Sheet.dwg



PROPOSED
SEQUENCE OF CONSTRUCTION
Scale: 1/4" = 1'

WHITMAN REQUARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

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PRELIMINARY PLANS
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Technical

Surveys Superintendent
Project Engineer
Maintenance Engineer
City Traffic Engineer

Administrative

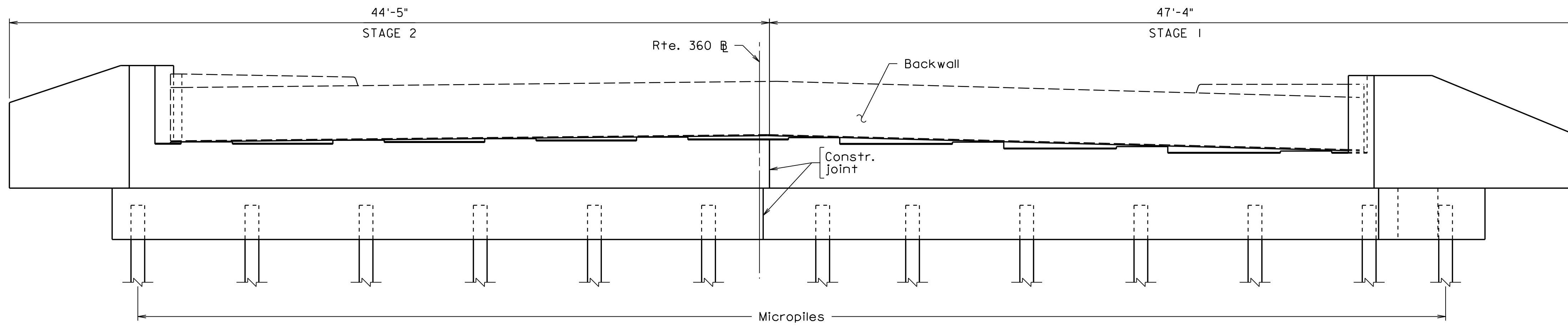
Capital Project Administrator
Deputy Director for Transportation / Public Works
Director of Public Works

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

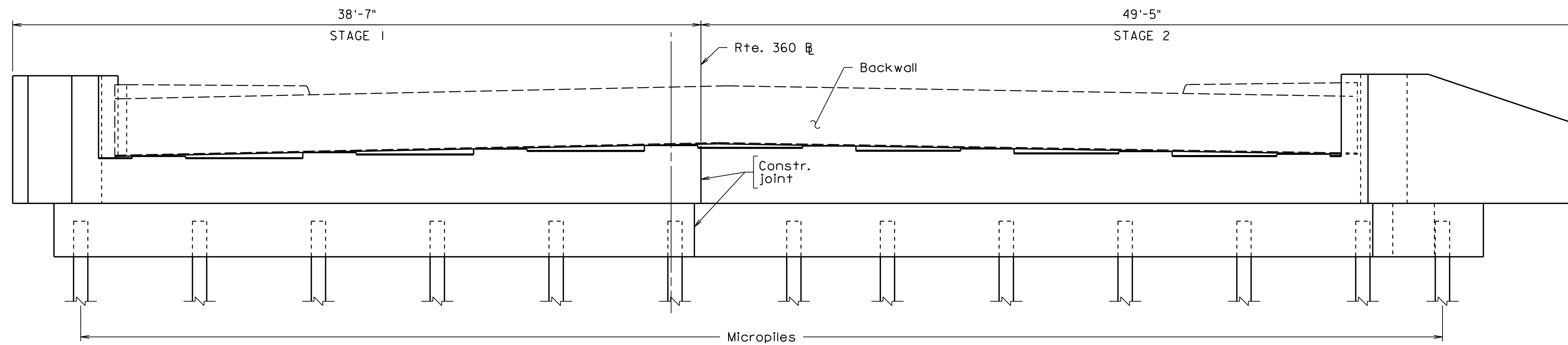
RTE. 360 OVER MANCHESTER CANAL
SEQUENCE OF CONSTRUCTION
2 OF 2

REFERENCES	REVISIONS
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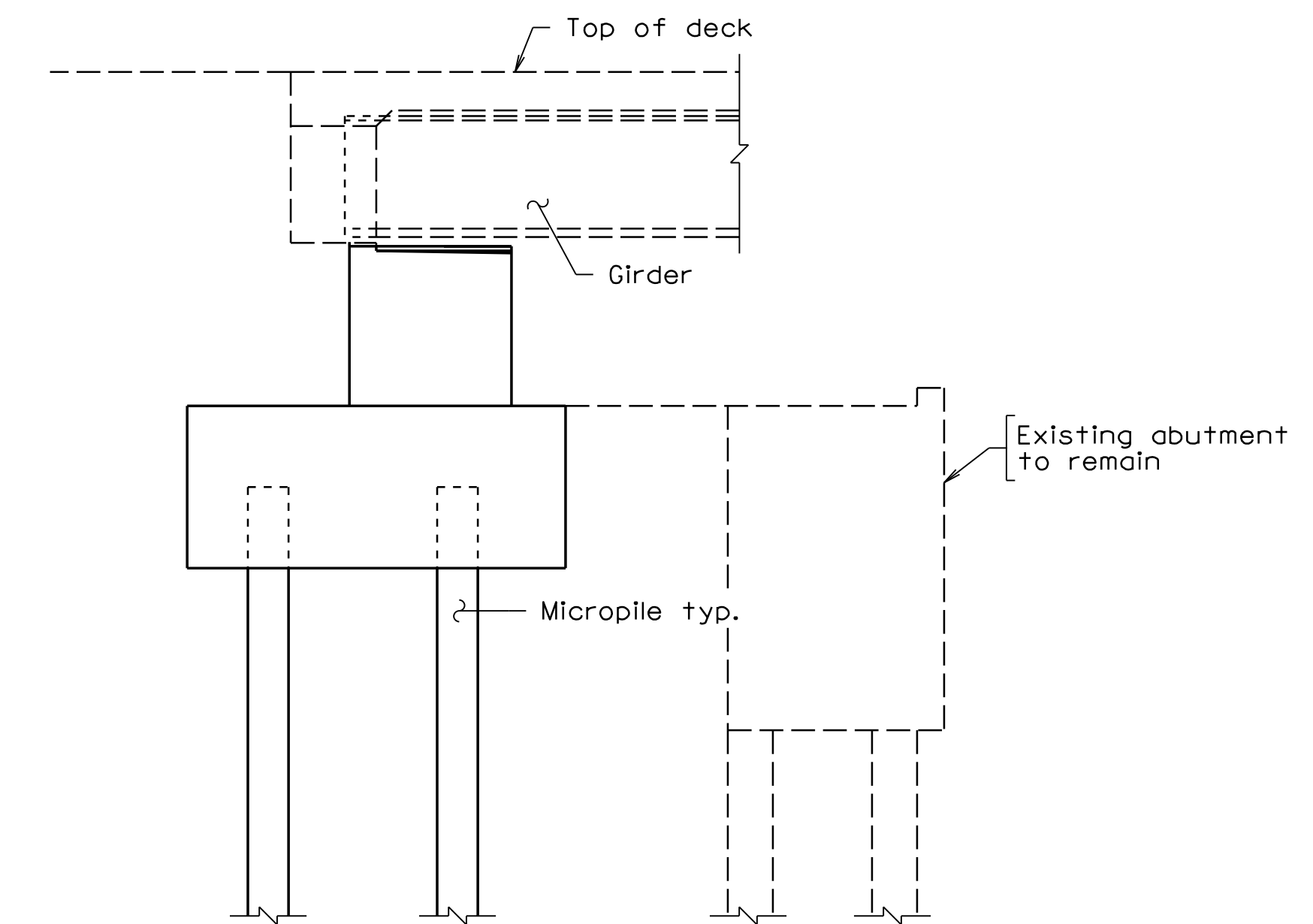
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DRAWN BY: WRA						
CHECKED BY: WRA						



ABUTMENT A ELEVATION
Scale: 1/4" = 1'



ABUTMENT B ELEVATION
Scale: 1/4" = 1'



TYPICAL SECTION

WHITMAN REQUARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

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PRELIMINARY PLANS
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Technical	Administrative
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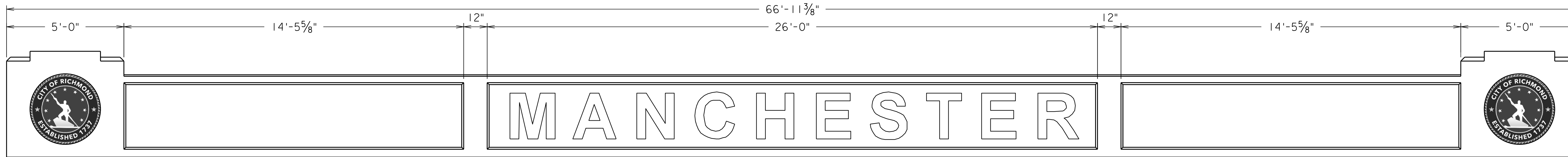
DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

RTE. 360 OVER MANCHESTER CANAL

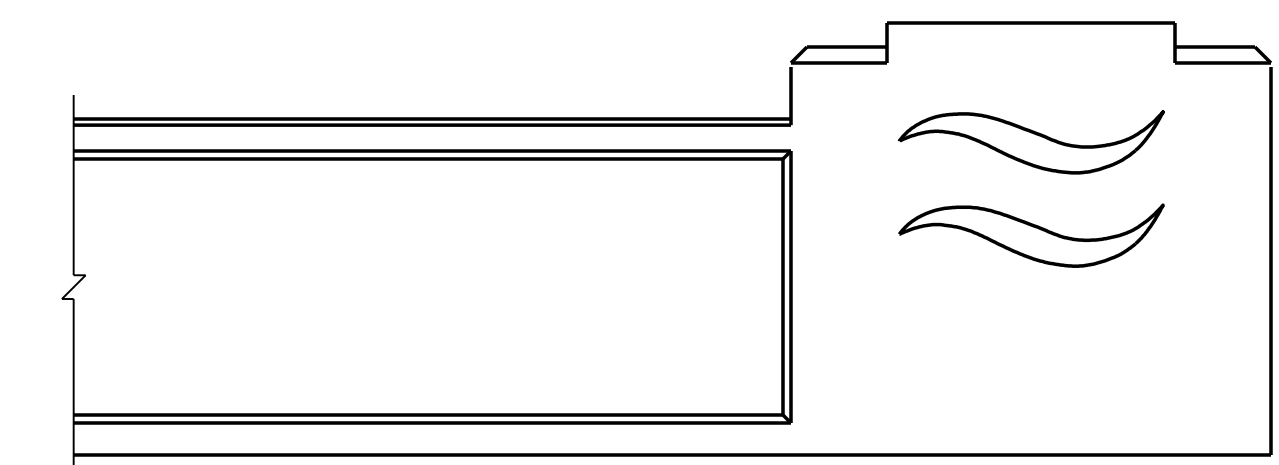
ABUTMENTS

REFERENCES	REVISIONS

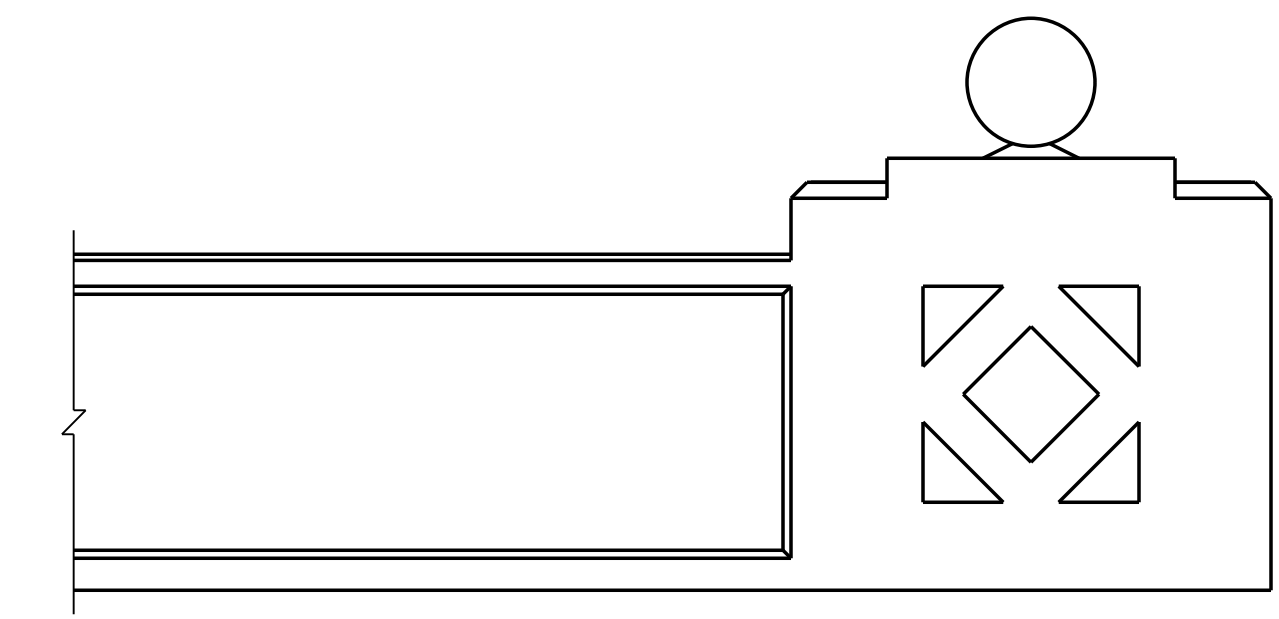
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WRA			AS NOTED	MAY 2021	S5	X-XXXXX
DRAWN BY:						
CHECKED BY:						



ELEVATION
Scale: 1/2" = 1'



END ALTERNATIVE #1
Scale: 1/2" = 1'



END ALTERNATIVE #2
Scale: 1/2" = 1'

WHITMAN REQUARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

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PRELIMINARY PLANS
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DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

DESIGN BY: WRA
DRAWN BY: WRA
CHECKED BY: WRA

REVIEWED BY

FIELD NOTES

SCALE AS NOTED

DATE MAY 2021

SHEET

S6

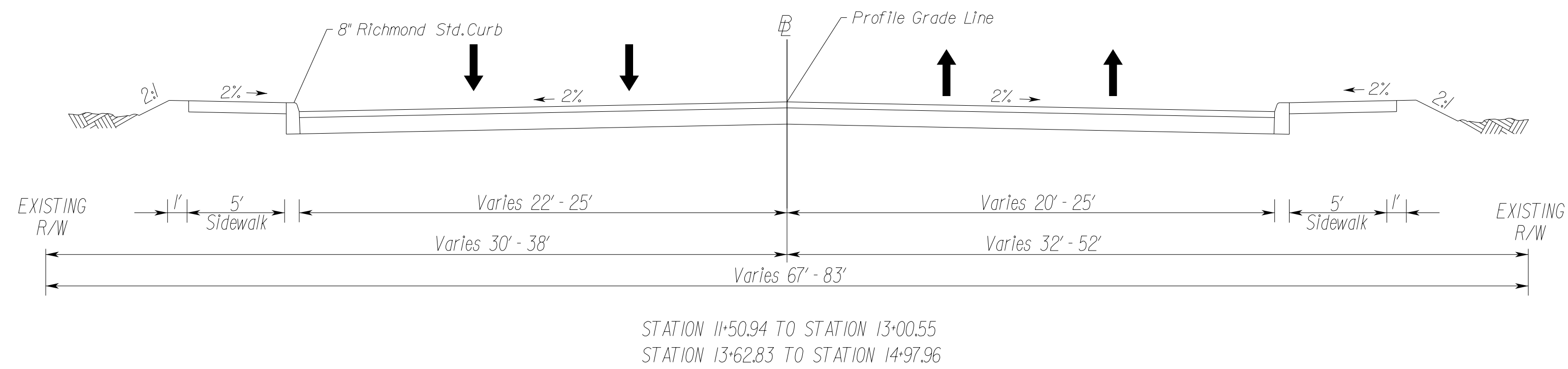
DRAWING NO. X-XXXXX

RTE. 360 OVER MANCHESTER CANAL
CONCRETE BARRIER

TYPICAL SECTIONS

Whitman, Requardt & Associates
Richmond, Virginia
ROADWAY ENGINEER

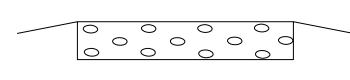
HULL STREET (ROUTE 360)



FINAL TYPICAL SECTION TO BE COORDINATED WITH UPC 111703 AND POWER PLANT DEVELOPMENT

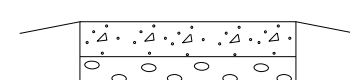
PRIVATE AND COMMERCIAL ENTRANCES

TYPE I
Crusher Run Aggr.



6" Crusher Run Aggr. 25 or 26

TYPE II
Concrete



Concrete Entrance Pavement
7" HES
4" Aggr. Base Mat'l. Ty. I
No. 21B

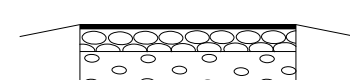
TYPE III
Asphalt



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

NOT TO SCALE

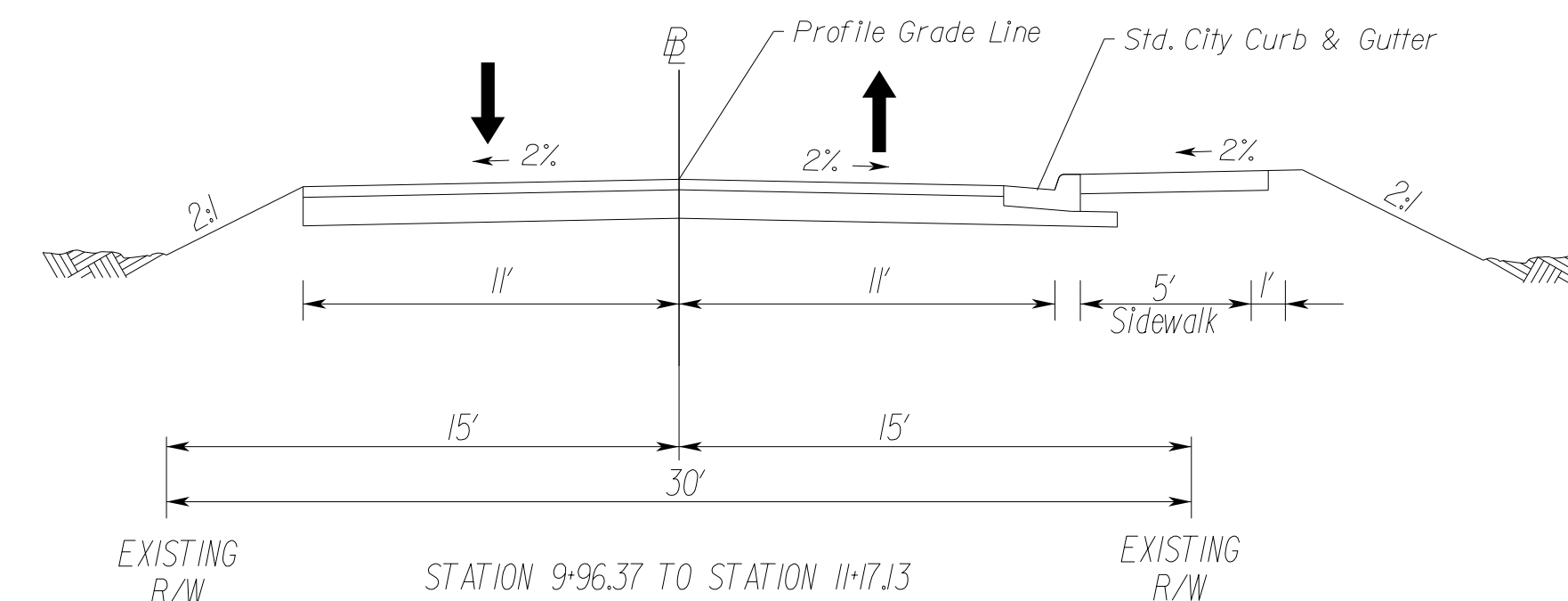
TYPE IV
Asphalt Commercial



Asphalt Conc. Type
SM-9.5A @ 165 Lbs. per S.Y.
4" Asphalt Conc. Base Course
BM-25.0A
6" Aggr. Base Mat'l. Ty. I
No. 21B

The type of entrance (I, II, III, IV) to be constructed will be determined by the existing condition at the time of construction.

MANCHESTER ROAD



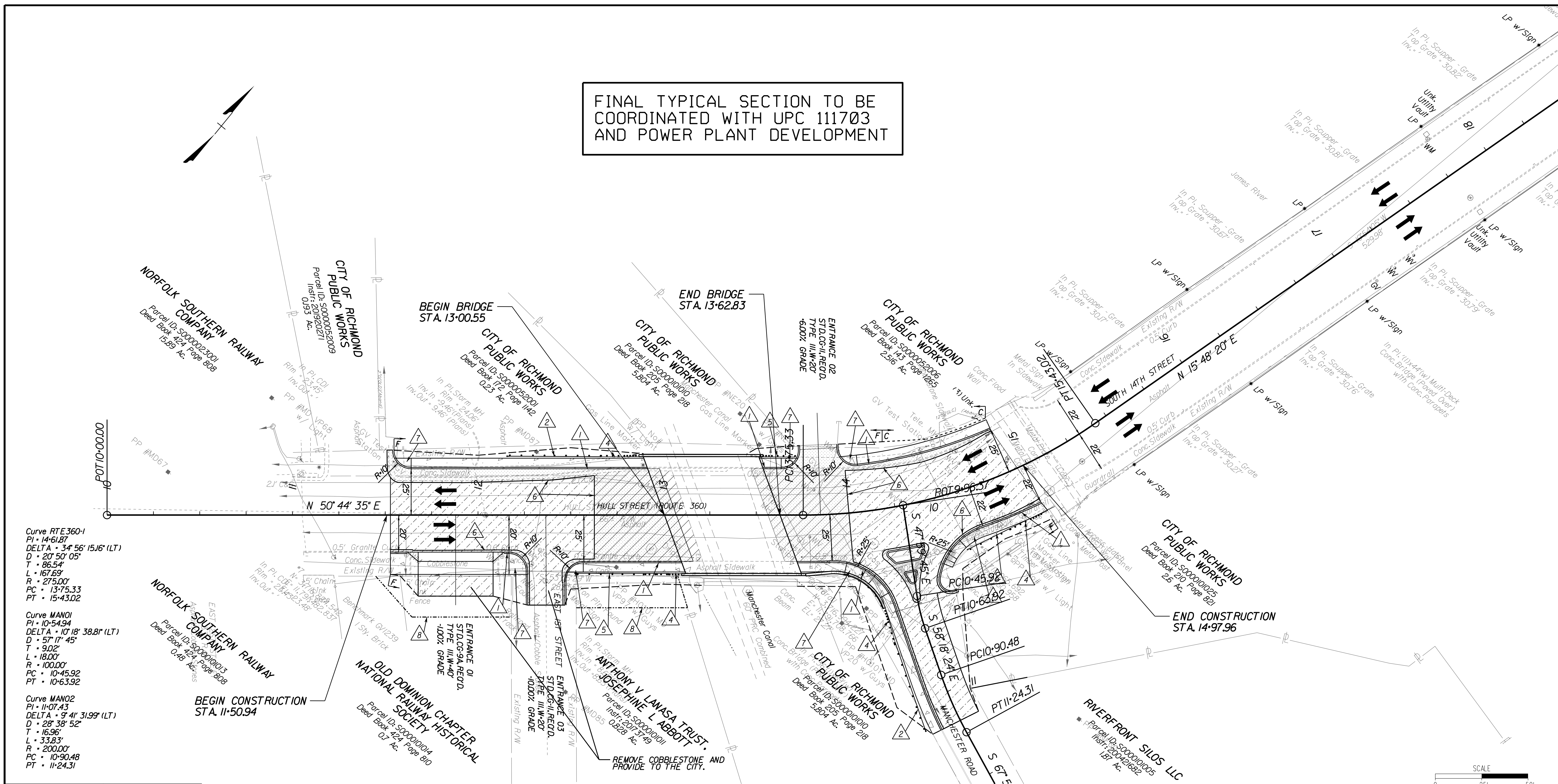
30% PLANS

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

NOTES 1. Lot dimensions in parentheses are from deed. 2. Property owners correct as of . 20 3. Ordinance Number 4. Adopted 5. Accepted		LEGEND- Existing Curb & Gutter Existing Sidewalk Existing Basin Existing Storm Sewer Existing Sewer Manhole Existing Sanitary Sewer Manhole Existing Gas Line Existing Electric Line Existing Telephone/Telegraph Existing TV Cable Existing Water Line Existing Tree / Exist. Tree To Be Removed / Stump Existing Property Line		LEGEND- Existing Curb Cut Ramp Existing Coping Existing Alley Crossing/Driveway Existing Fire Hydrant Existing Edge of Pavement Existing Fence Existing Cornerstone Existing Property Pin Existing Utility Pole Proposed Sewer Proposed Manhole Proposed Basin Proposed Curb & Gutter Proposed Asphalt		LEGEND- Proposed Conc. Sidewalk Proposed Brick Sidewalk Proposed Castings/Water Valve Proposed Water Meter Proposed Gas Drip Proposed Gas Valve Proposed Telephone Manhole Proposed Electric Manhole Proposed Curb Cut Ramp Proposed Decorative Light Proposed Conduit Proposed Conduit (Conc. Encased) Proposed Retaining Wall				<table border="1"> <tr> <th colspan="2">Technical</th> <th colspan="2">Administrative</th> </tr> <tr> <td>Surveys Superintendent</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Project Engineer</td> <td></td> <td>Capital Project Administrator</td> <td></td> </tr> <tr> <td>Maintenance Engineer</td> <td></td> <td>Deputy Director for Transportation / Public Works</td> <td></td> </tr> <tr> <td>City Traffic Engineer</td> <td></td> <td>Director of Public Works</td> <td></td> </tr> </table>		Technical		Administrative		Surveys Superintendent				Project Engineer		Capital Project Administrator		Maintenance Engineer		Deputy Director for Transportation / Public Works		City Traffic Engineer		Director of Public Works		RTE. 360 OVER MANCHESTER CANAL <h2>TYPICAL SECTIONS</h2>		CIP:XXX-XXX-XXXX DESIGN BY: GJK DRAWN BY: AD CHECKED BY: MSV		REVISIONS BL: XX NW, NE, SW, SE		DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA		REVIEWED BY FIELD NOTES SCALE DATE SHEET DRAWING NO.	
Technical		Administrative																																							
Surveys Superintendent																																									
Project Engineer		Capital Project Administrator																																							
Maintenance Engineer		Deputy Director for Transportation / Public Works																																							
City Traffic Engineer		Director of Public Works																																							
										1"=25' MAY 2021 2A X-XXXXX																															

SURVEYED BY: CITY OF RICHMOND
 SUPERVISED BY: MSV
 DESIGNED BY: GJK

FINAL TYPICAL SECTION TO BE COORDINATED WITH UPC 111703 AND POWER PLANT DEVELOPMENT



Curve RTE360-1
 PI • 14+61.87
 DELTA • 34° 56' 15.6" (LT)
 D • 20' 50' 05"
 T • 86.54'
 L • 167.69'
 R • 275.00'
 PC • 13+75.33
 PT • 15+43.02

Curve MAN01
 PI • 10+54.94
 DELTA • 10° 18' 38.8" (LT)
 D • 57' 17' 45"
 T • 9.02'
 L • 18.00'
 R • 100.00'
 PC • 10+45.92
 PT • 10+63.92

Curve MAN02
 PI • 11+07.43
 DELTA • 9° 41' 31.99" (LT)
 D • 28' 38' 52"
 T • 16.96'
 L • 33.83'
 R • 200.00'
 PC • 10+90.48
 PT • 11+24.31

LEGEND

	DENOTES ROADWAY PAVEMENT
	DENOTES MILL/OVERLAY
	DENOTES PAVEMENT DEMOLITION
	DENOTES CONCRETE SIDEWALK
	DENOTES CONSTRUCTION LIMITS IN CUTS
	DENOTES CONSTRUCTION LIMITS IN FILLS

- | | | | |
|--|----------------------------------|--|---------------------------------|
| | 8" RICHMOND ST'D CURB REQ'D | | VDOT ST'D. CG-12, TYPE A REQ'D. |
| | VDOT ST'D GR-MGS2 REQ'D | | TEMPORARY CONSTRUCTION ESMT |
| | VDOT ST'D GR-MGS1A, RADIAL REQ'D | | |
| | VDOT ST'D GR-FOA-5 REQ'D | | |
| | SPECIAL DESIGN GUARDRAIL REQ'D | | |
| | SAW/CUT REQ'D | | |

30% PLANS

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REFERENCES

SHEET	DESCRIPTION
	ALIGN. & SUR. DATA
	DRAIN. DESCRIPTIONS
	DRAINAGE PROFILES
3A	ROADWAY PROFILE
	SIGNING/MARKING

NOTES

- Lot dimensions in parentheses are from deed.
- Property owners correct as of . 20
- Ordinance Number
- Adopted
- Accepted

REFERENCES

BL: XX NW, NE, SW, SE

Existing Curb	Existing Sidewalk	Existing Curb Cut Ramp	Proposed Conc. Sidewalk
• Curb & Gutter	• Sidewalk	• Copping	• Brick Sidewalk
• Basin	• Storm Sewer	• Alley Crossing/Driveway	• Castings/Water Valve
• Sewer Manhole	• Sanitary Sewer Manhole	• Fire Hydrant	• Water Meter
• Sanitary Sewer Manhole	• Gas Line	• Edge of Pavement	• Gas Drip
• Gas Line	• Electric Line	• Fence	• Gas Valve
• Electric Line	• Telephone/Telegraph	• Cornerstone	• Telephone Manhole
• Telephone/Telegraph	• TV Cable	• Property Pin	• Electric Manhole
• TV Cable	• Water Line	• Utility Pole	• Electric Manhole
• Water Line	• Tree / Exist. Tree To Be Removed / Stump	• Proposed Sewer	• Proposed Curb Cut Ramp
• Tree / Exist. Tree To Be Removed / Stump	• Property Line	• Manhole	• Decorative Light
• Property Line		• Basin	• Conduit
		• Curb & Gutter	• Conduit (Conc. Encased)
		• Asphalt	• Retaining Wall

DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

RTE. 360 OVER MANCHESTER CANAL

PLAN

DESIGN BY: GKK
 DRAWN BY: AD
 CHECKED BY: MSV

REVIEWED BY: _____

FIELD NOTES: _____

SCALE: 1"=25'

DATE: MAY 2021

SHEET: 3

DRAWING NO.: X-XXXX

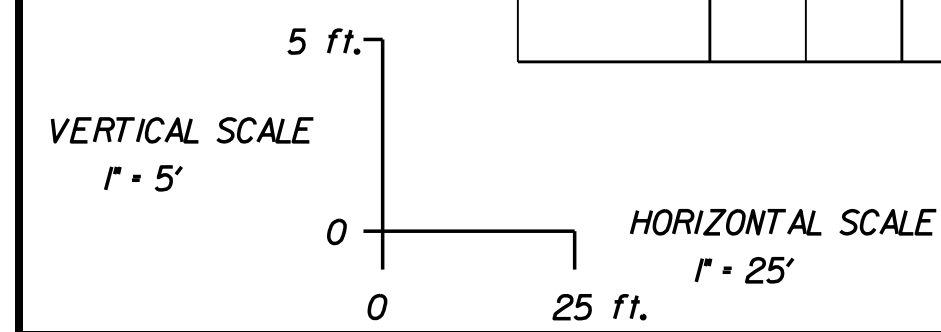
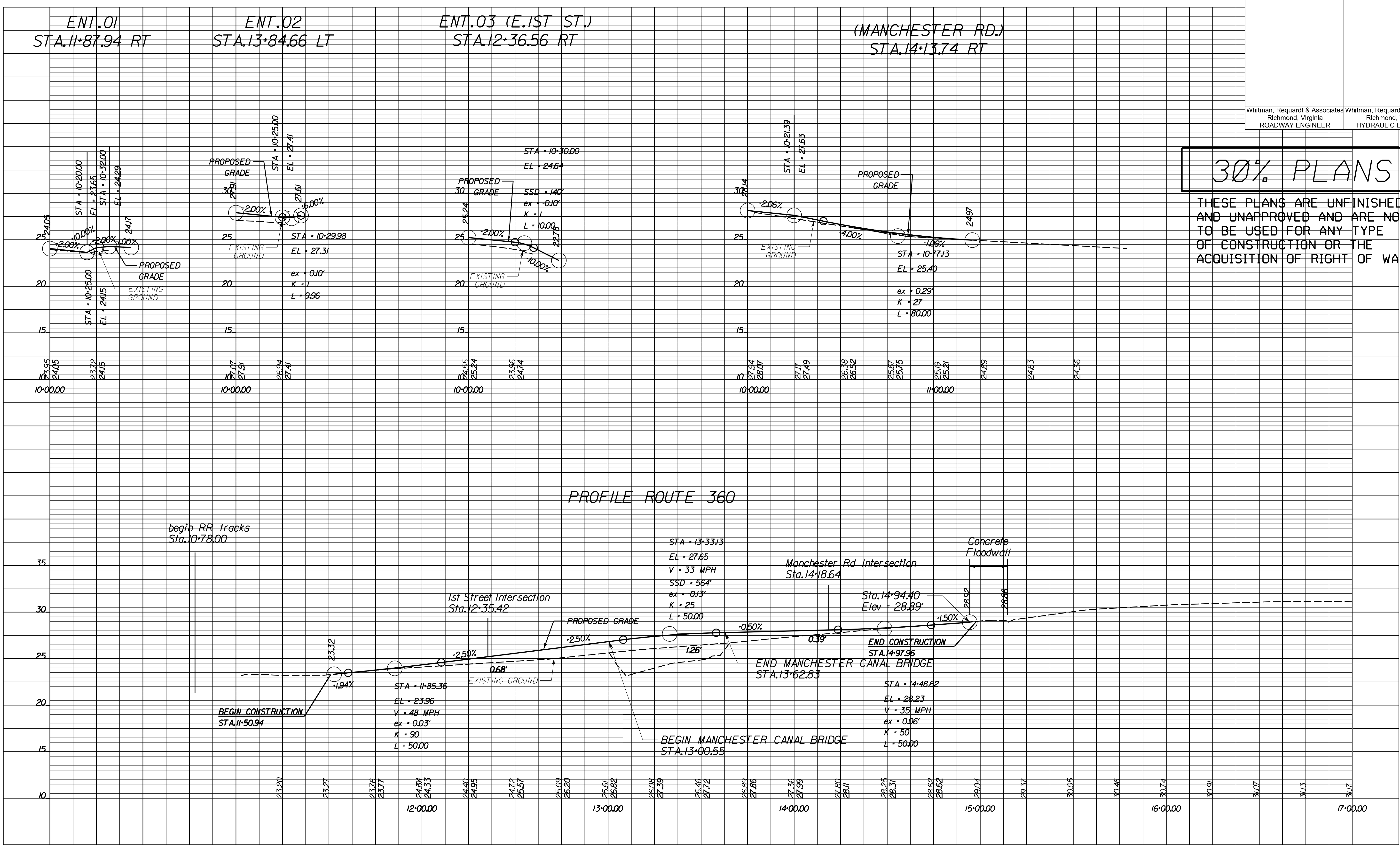
SURVEYED BY: CITY OF RICHMOND
 SUPERVISED BY: MSV
 DESIGNED BY: GGG

Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULIC ENGINEER

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REFERENCES

BL: XX NW, NE, SW, SE

REVISIONS

Existing		Proposed	
Curb & Gutter	Proposed Conc. Sidewalk
Sidewalk	.....	Brick Sidewalk	.....
Basin	.....	Castings/Water Valve	.....
Storm Sewer	.....	Water Meter	.....
Sewer Manhole	.....	Gas Drop	.....
Sanitary Sewer Manhole	.....	Gas Valve	.....
Sanitary Sewer	.....	Telephone Manhole	.....
Gas Line	.....	Electric Manhole	.....
Electric Line	.....	Utility Pole	.....
Telephone/Telegraph	.....	Proposed Sewer	.....
TV Cable	.....	Manhole	.....
Water Line	.....	Basin	.....
Tree / Exist. Tree To Be Removed / Stump	Curb & Gutter
Property Line	Asphalt



Technical	Administrative
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Maintenance Engineer	
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DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

RTE. 360 OVER MANCHESTER CANAL			
PROFILE			
DESIGN BY:	REVIEWED BY:	FIELD NOTES:	SCALE: HORIZONTAL 1"=25'
DRAWN BY:	CHECKED BY:	DATE: MAY 2021	SHEET: 3A
		CIP: XXX-XXX-XXXX	DRAWING NO. X-XXXX