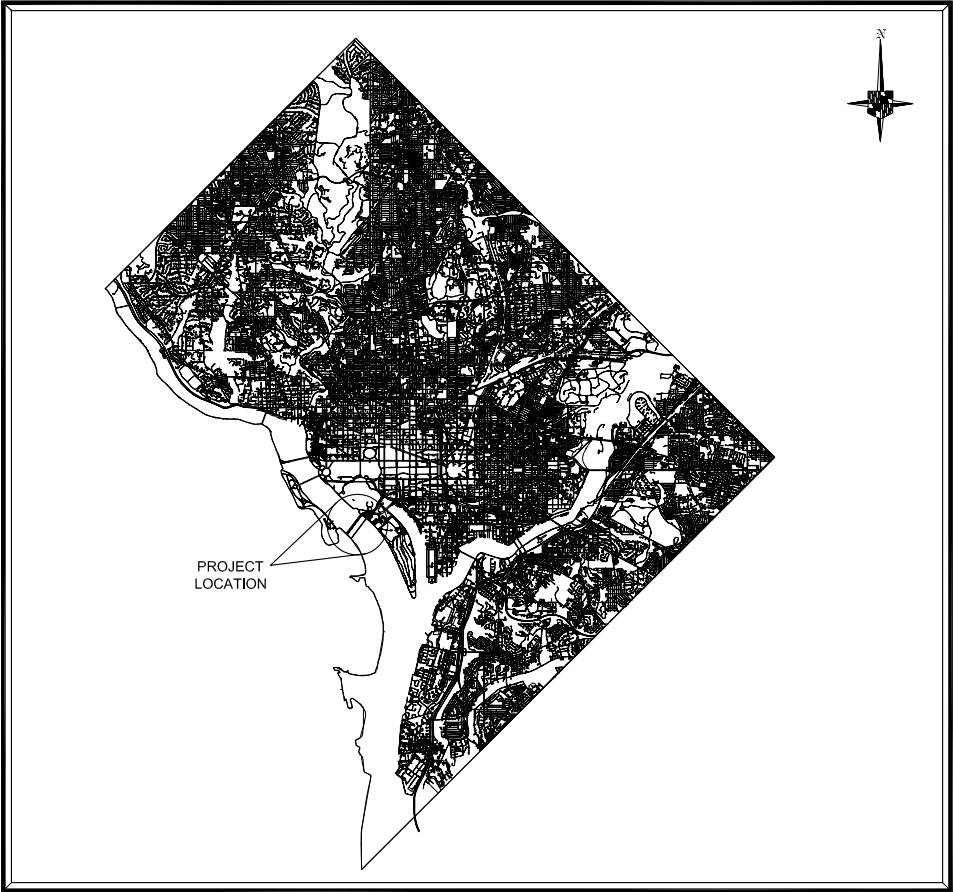


DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION
CONCEPT PLANS OF PROPOSED

LONG BRIDGE STUDY



SITE MAP

SCALE: NTS

INDEX OF DRAWINGS

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G-1

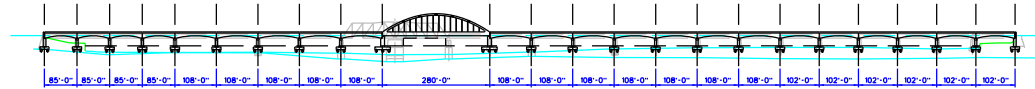


Michael Baker Jr., Inc.

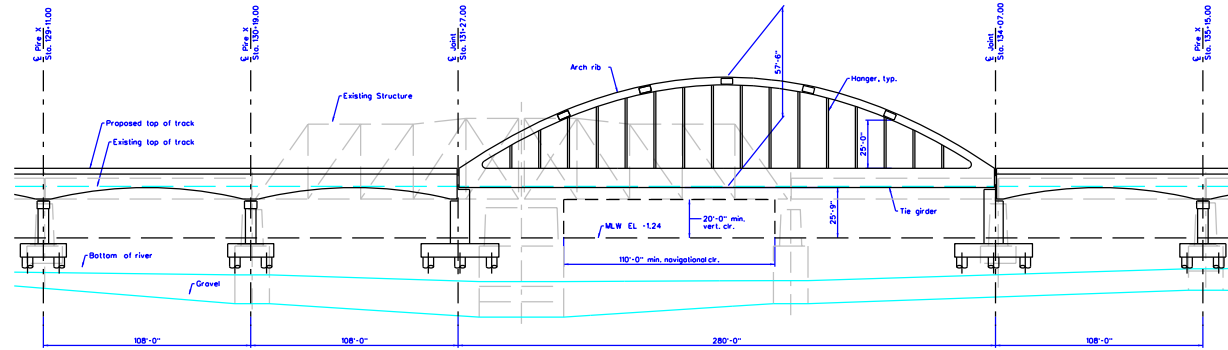
NO.	DESCRIPTION	NAME	DATE
REVISIONS			

DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION		D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
RECOMMENDED FOR APPROVAL:		LONG BRIDGE STUDY	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____
APPROVED:		COVER SHEET	DIVISION CHIEF DATE _____ FILE _____ SHEET 1 OF 17
DEPUTY CHIEF ENGINEER -AWI			
CHIEF TRANSPORTATION ENGINEER			

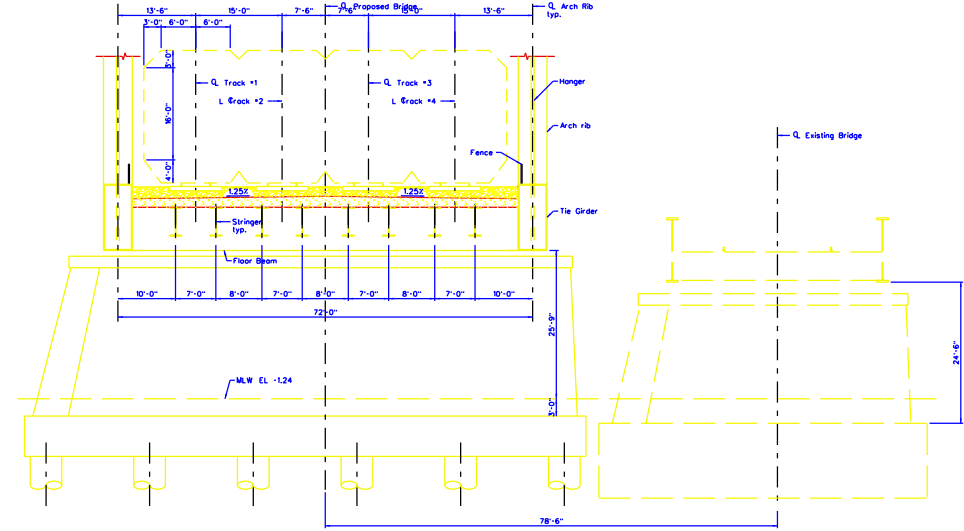
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3/7/2014
SPENTBLS



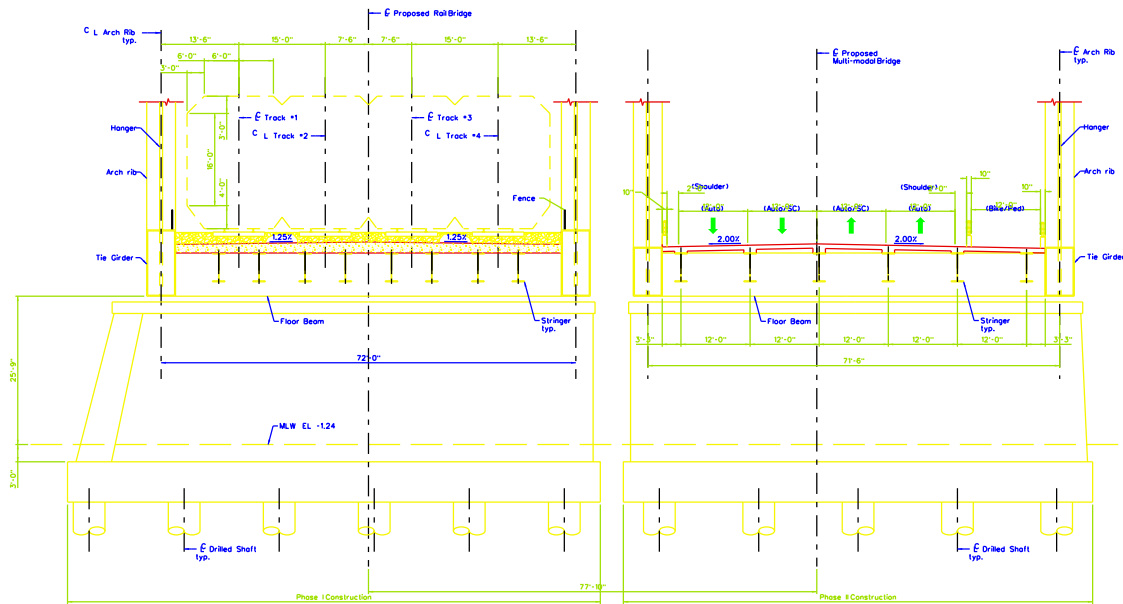
STEEL TIED ARCH ELEVATION



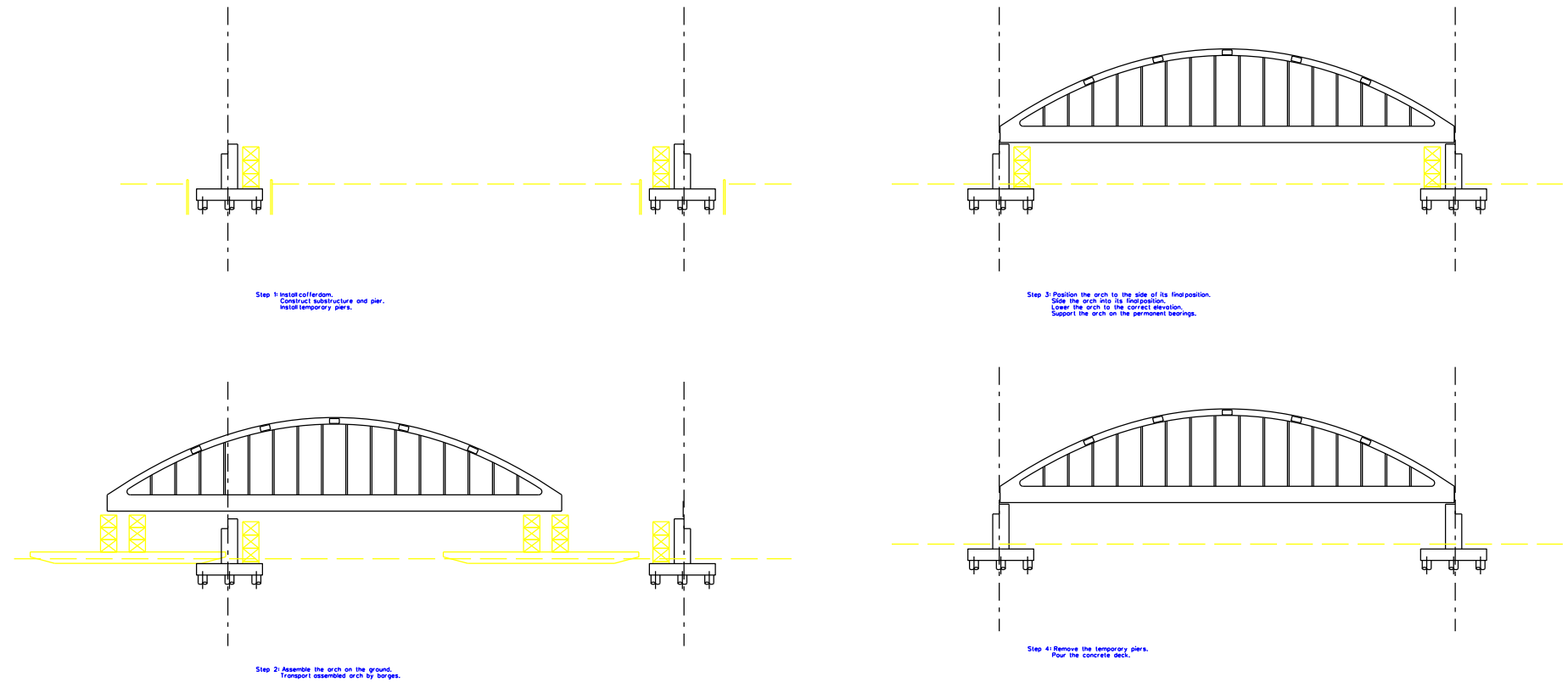
STEEL TIED ARCH ELEVATION - CHANNEL SPAN



STEEL TIED ARCH CROSS SECTION - RAIL



STEEL TIED ARCH CROSS SECTION - FULL



STEEL TIED ARCH CONSTRUCTION SEQUENCE



G-2

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INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

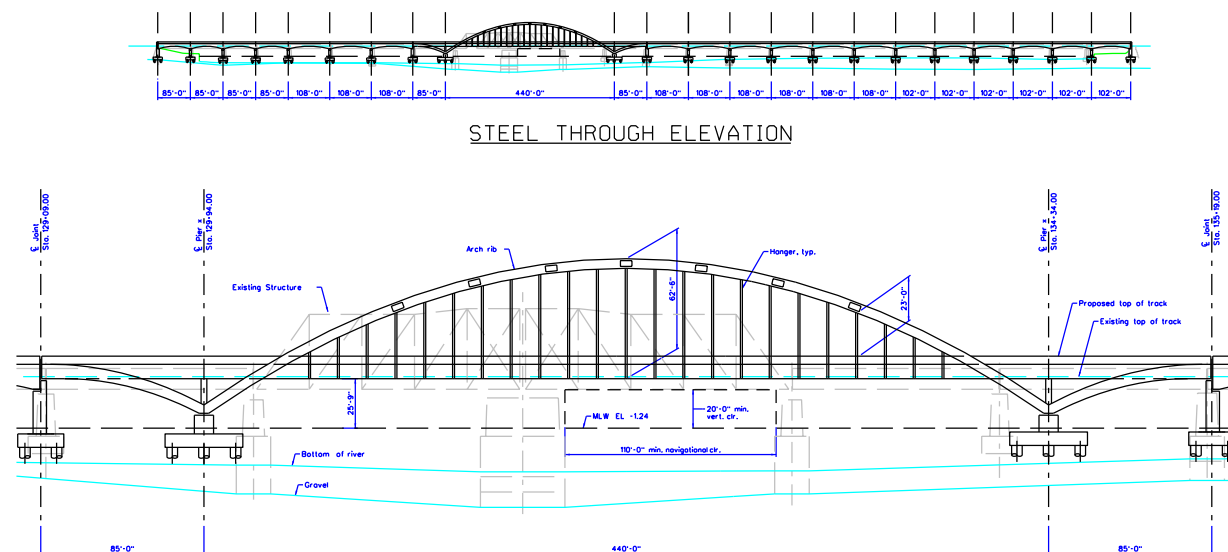
BRIDGE CONCEPT 1
STEEL TIED ARCH

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

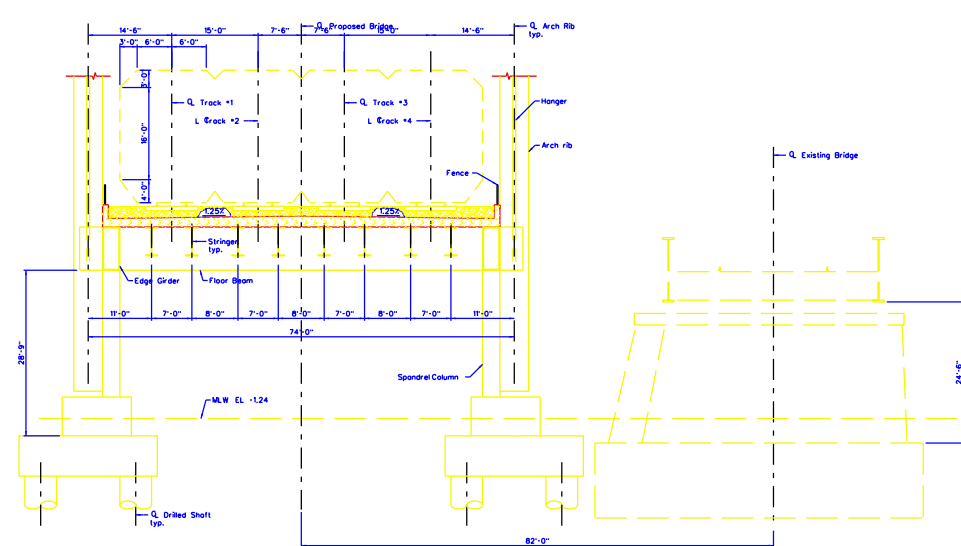
DIVISION CHIEF

DATE _____
FILE _____

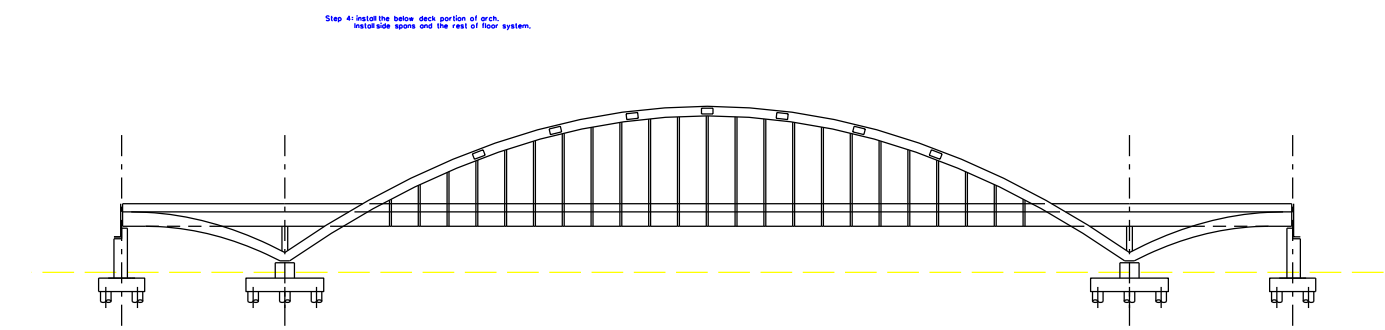
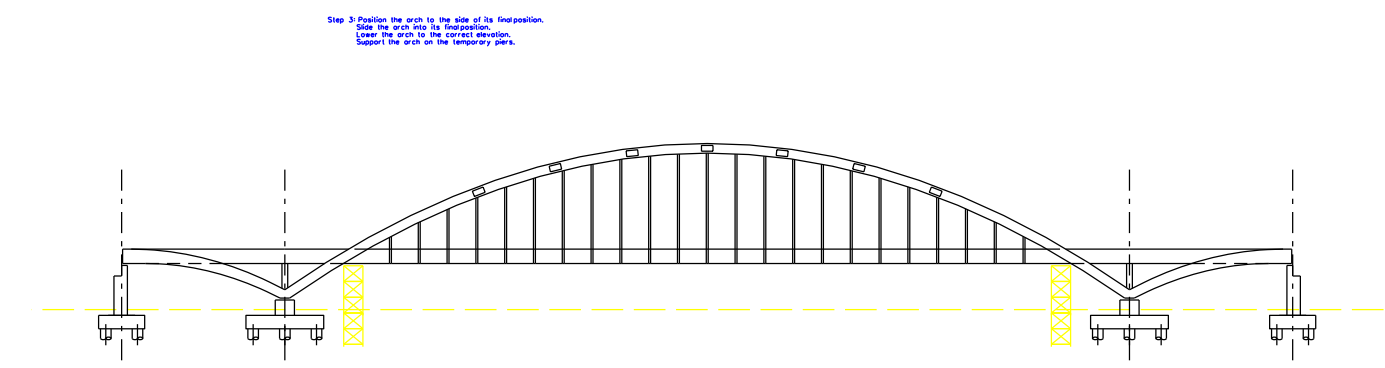
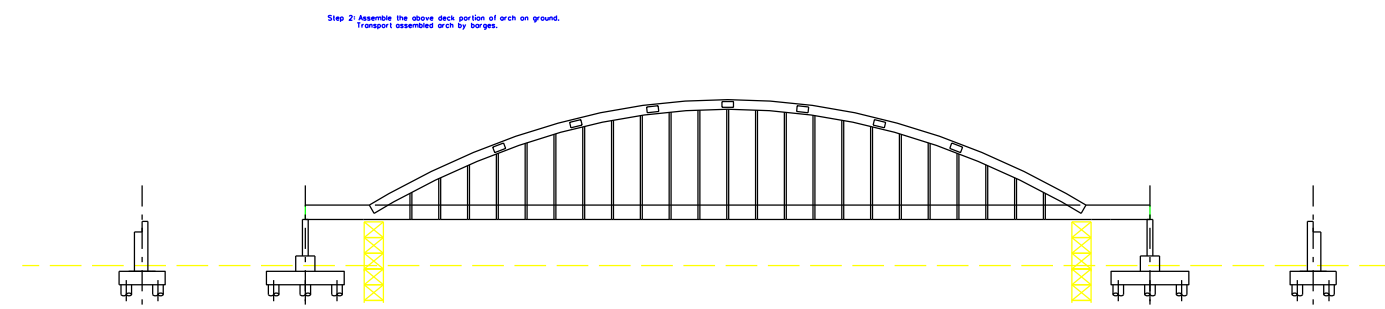
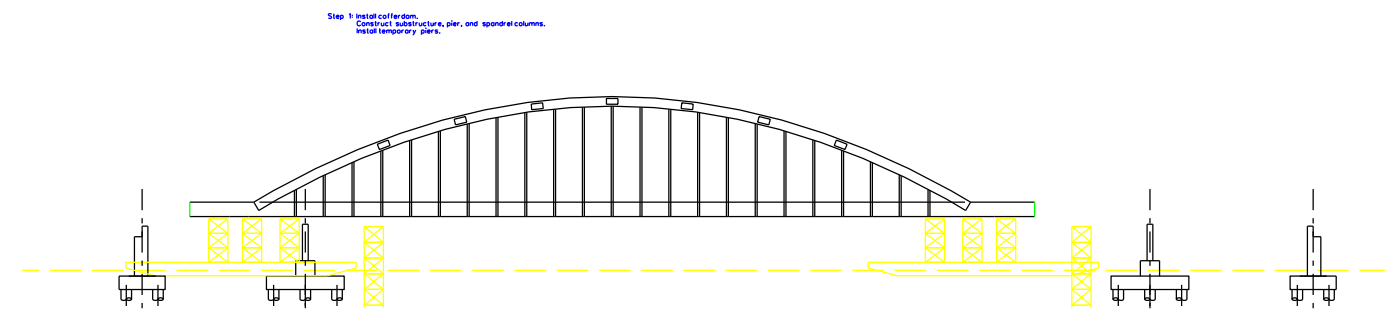
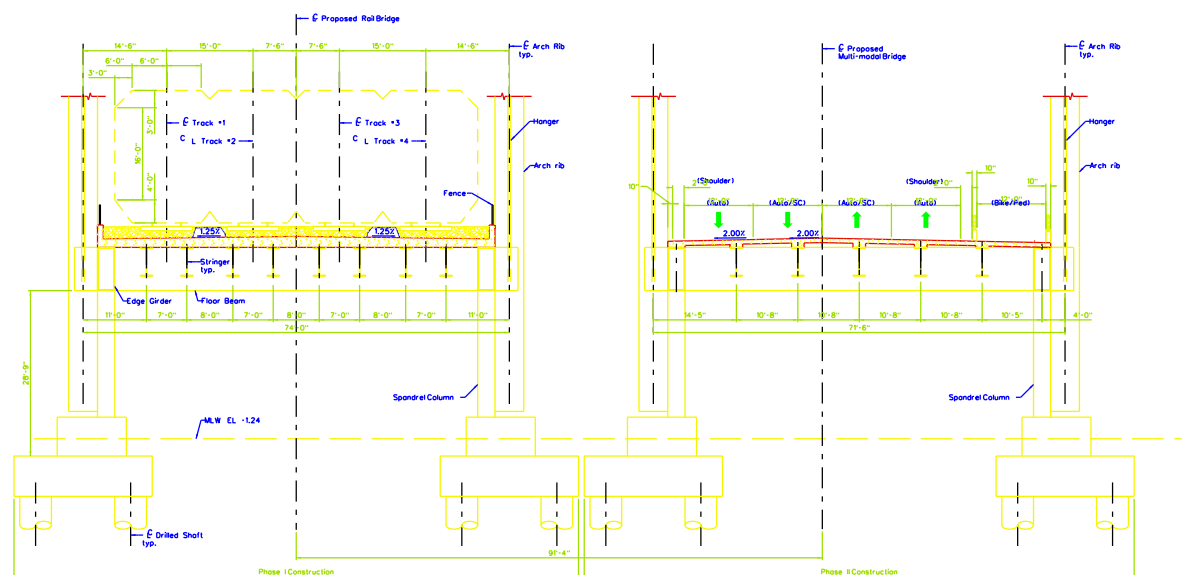
SHEET 2 OF 17



STEEL THROUGH ELEVATION - CHANNEL SPAN



STEEL THROUGH ARCH CROSS SECTION - RAIL



STEEL THROUGH ARCH CONSTRUCTION SEQUENCE

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INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

BRIDGE CONCEPT 2
STEEL THROUGH ARCH

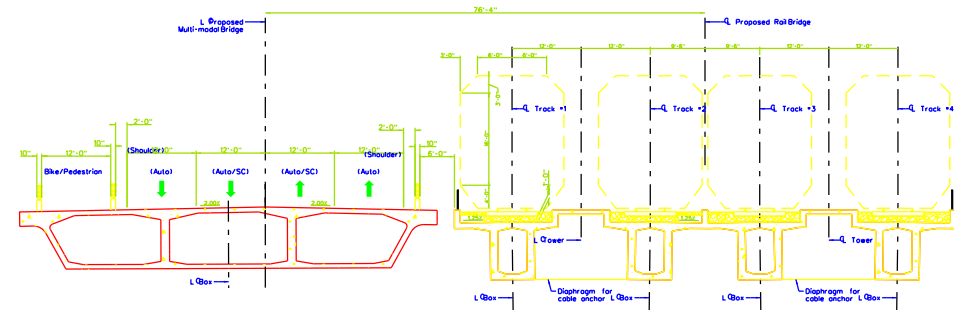
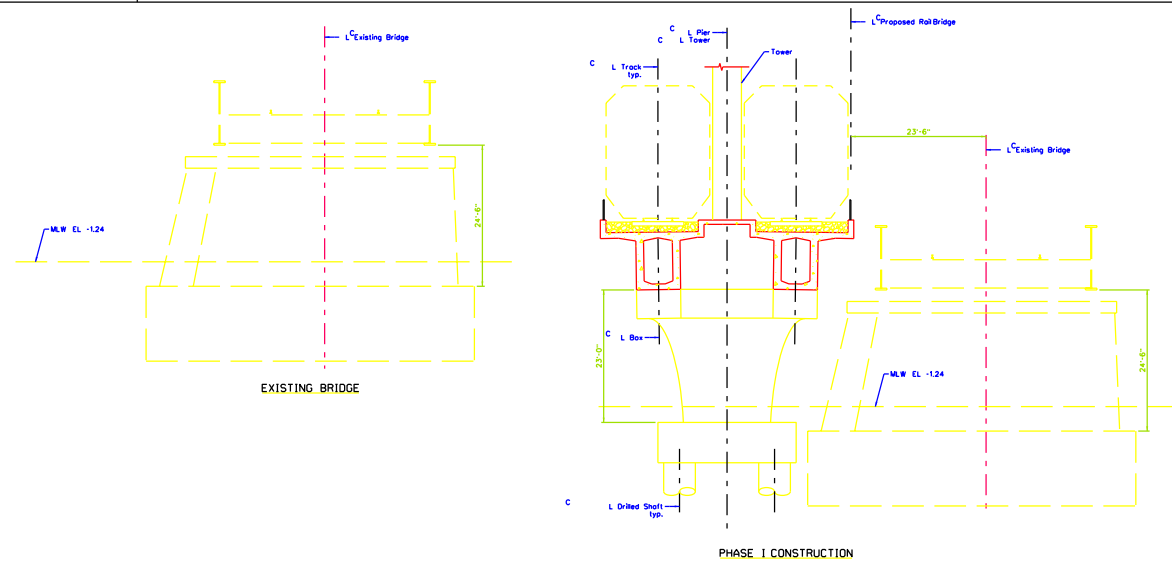
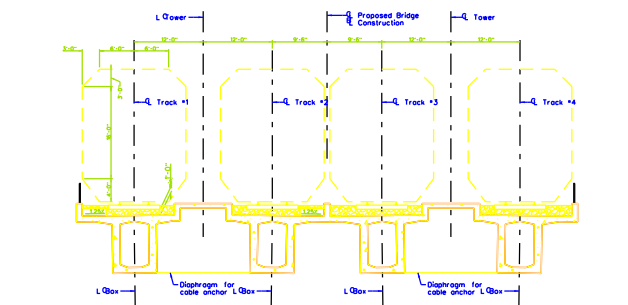
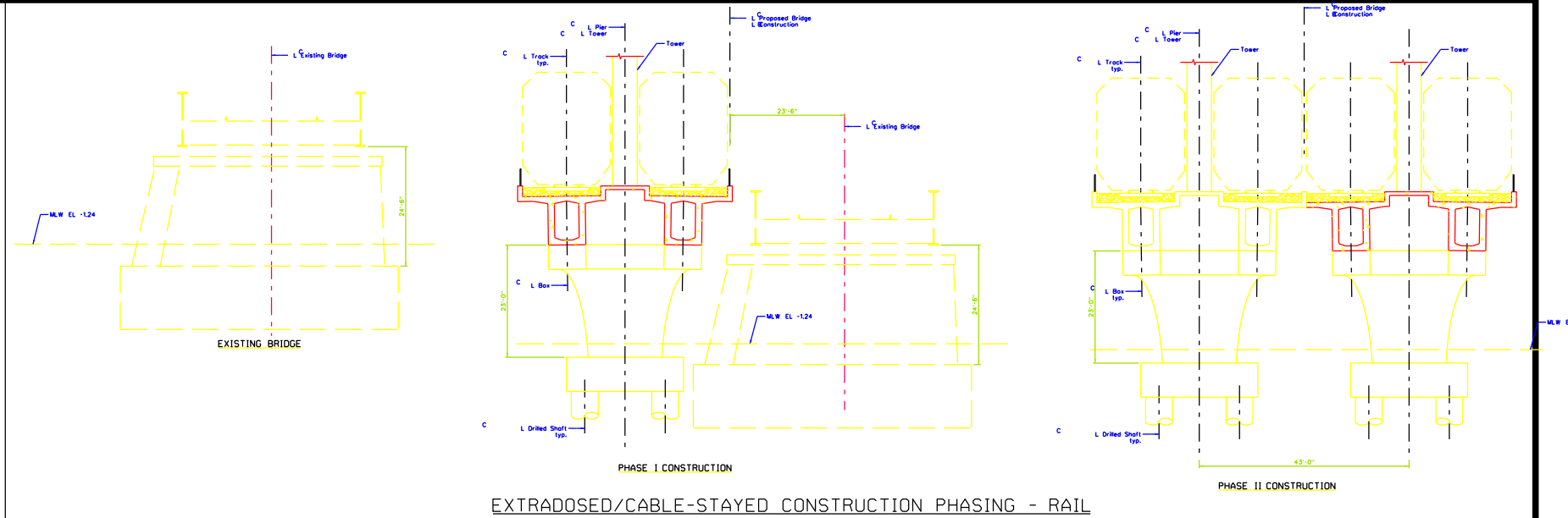
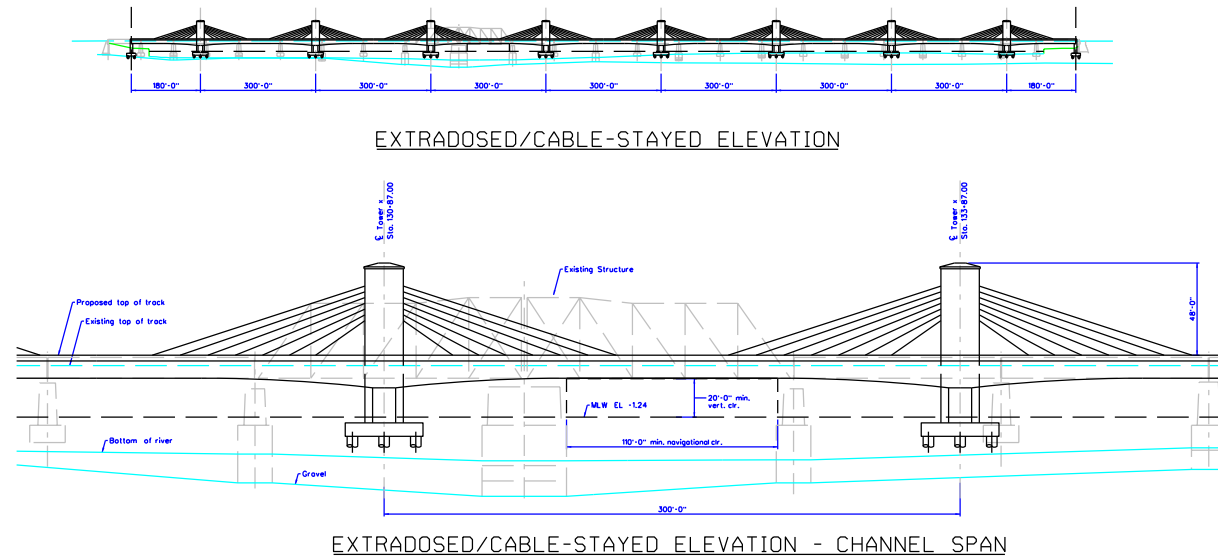
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CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF

DATE _____

FILE _____

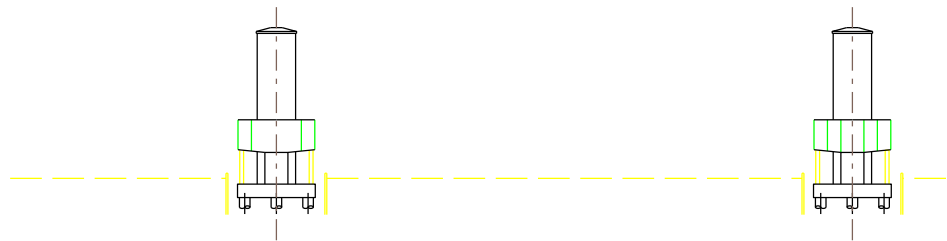
SHEET 3 OF 17



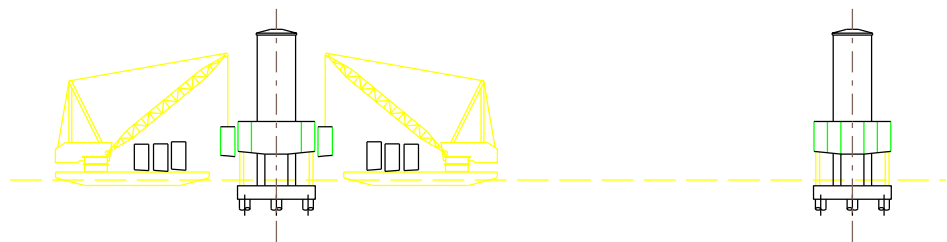
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3/7/2014 3:11:05 PM



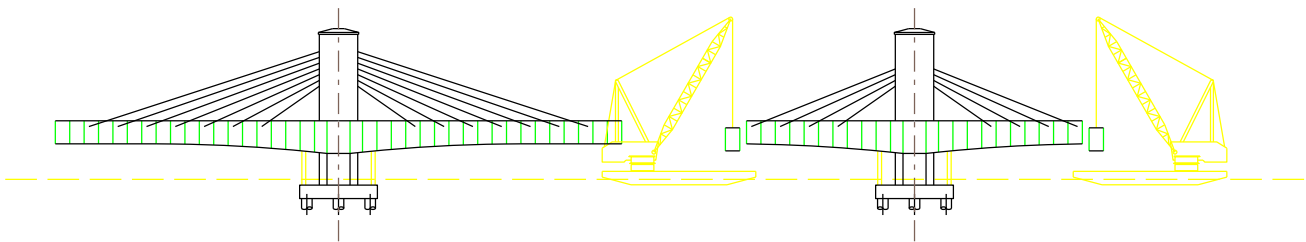
Step 1: Install cofferdam.
Construct substructure, pier, and tower.



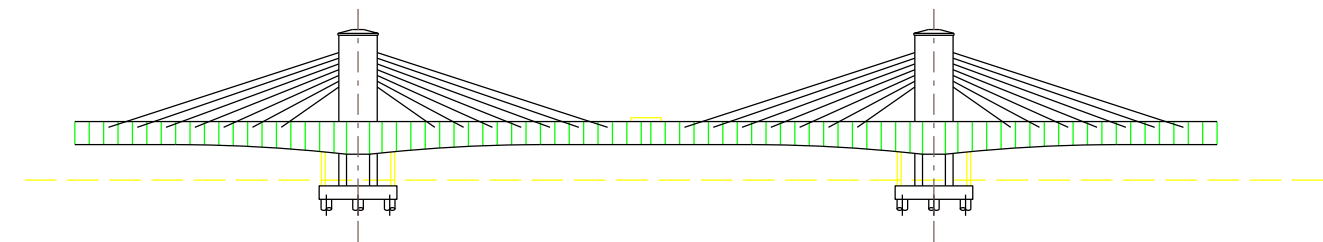
Step 2: Install temporary support at pier.
Construct or erect pier table segments.
Remove cofferdam.



Step 3: Erect segments by balanced cantilever method.
Install stay cables.



Step 4: Repeat Step 3 for the adjacent tower.



Step 5: Install stringback.
Form and cast closure.
Post-tensioning.

Step 6: Install barriers and lighting.
Finish the bridge.

EXTRADOSSED/CABLE-STAYED CONSTRUCTION SEQUENCE



G-5

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INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

BRIDGE CONCEPT 3
EXTRADOSSED/CABLE-STAYED
(2 OF 2)

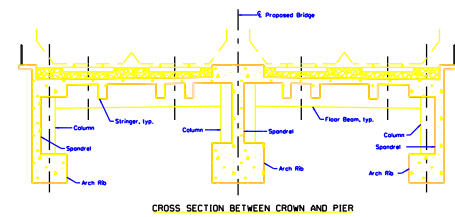
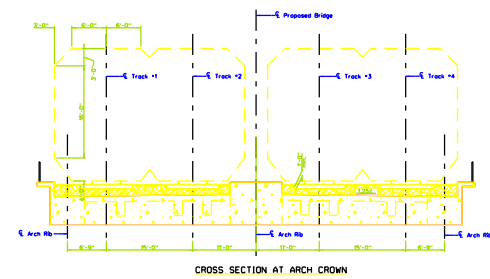
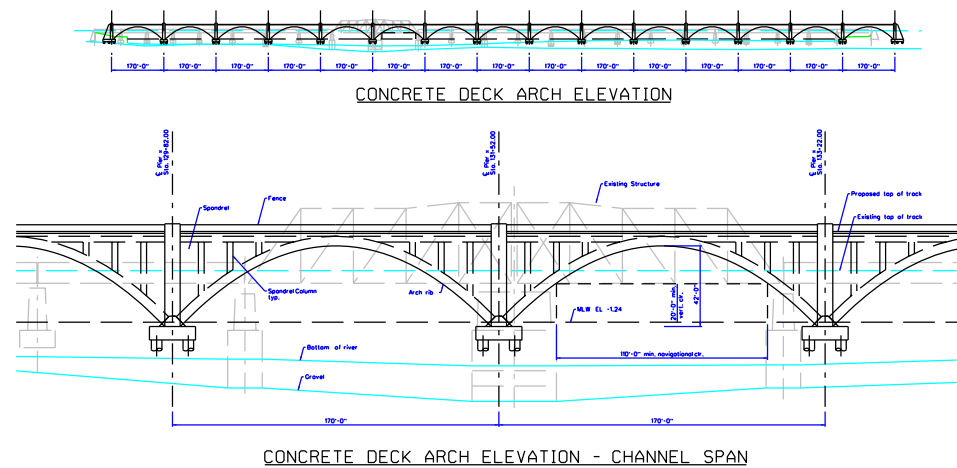
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DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF _____

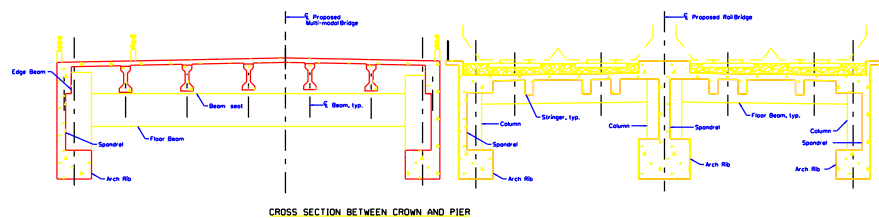
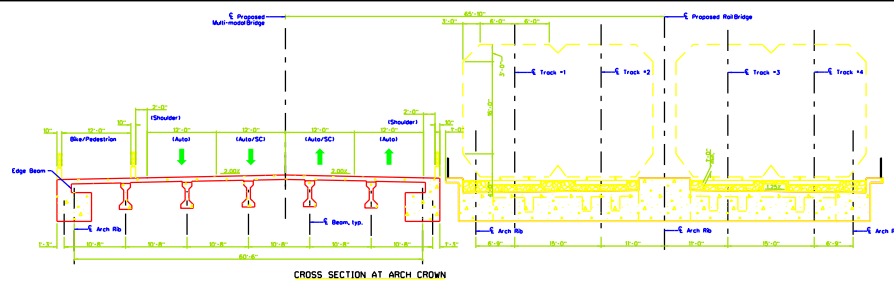
DATE _____

FILE _____

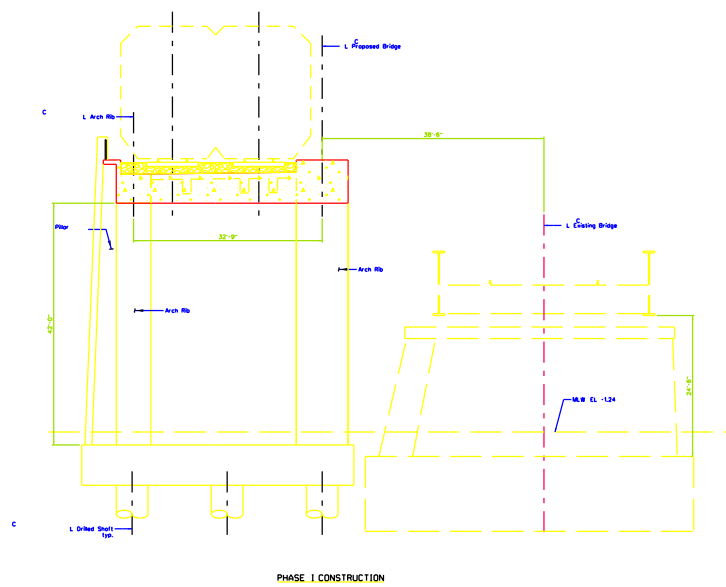
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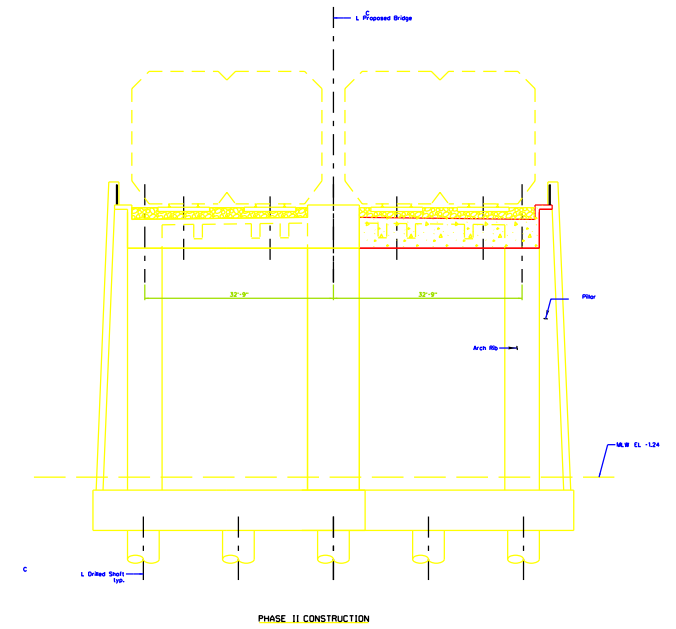
CONCRETE DECK ARCH ELEVATION CROSS SECTION - RAIL



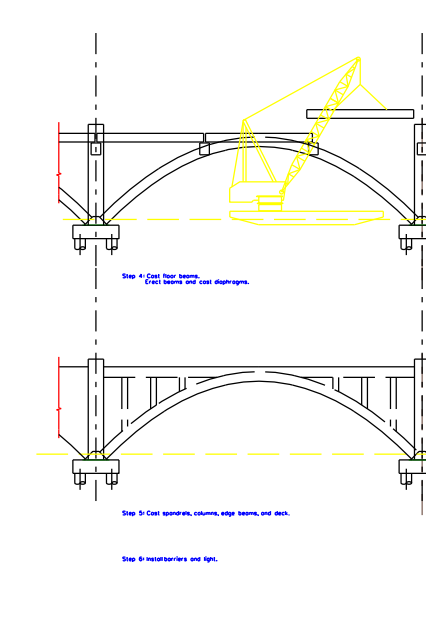
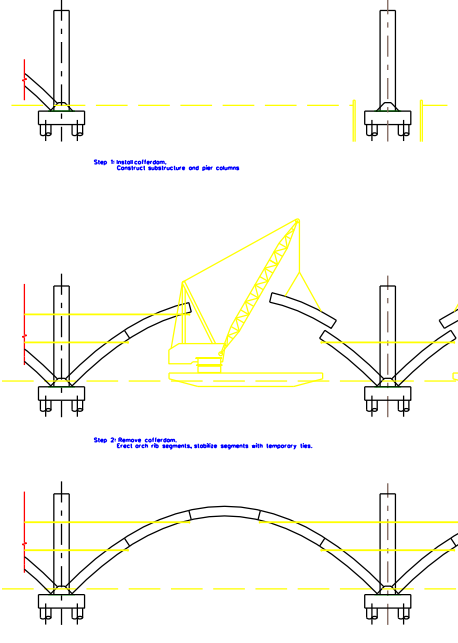
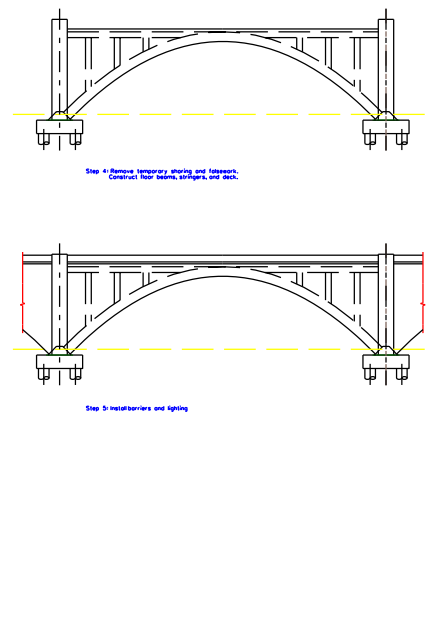
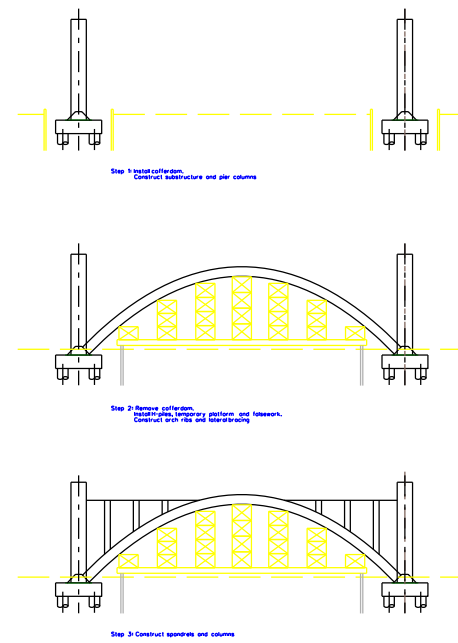
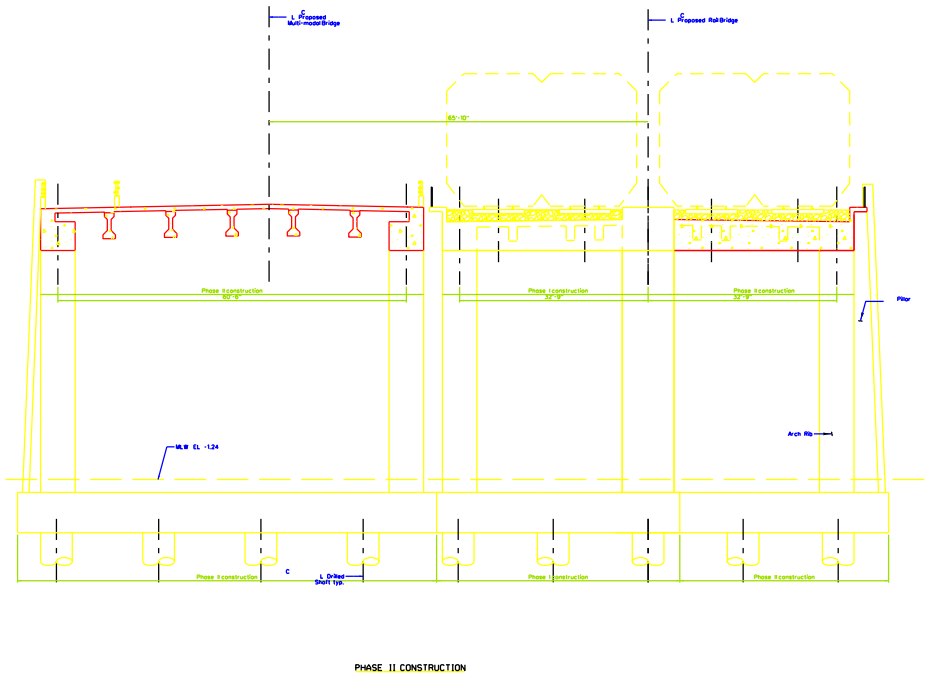
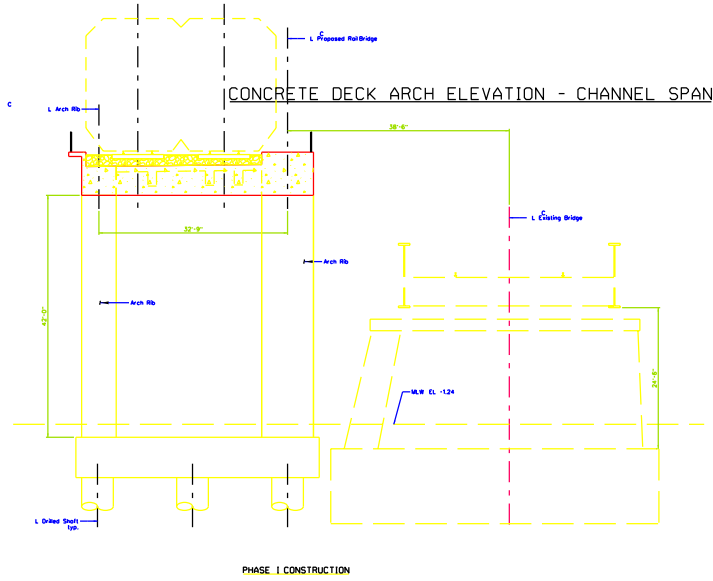
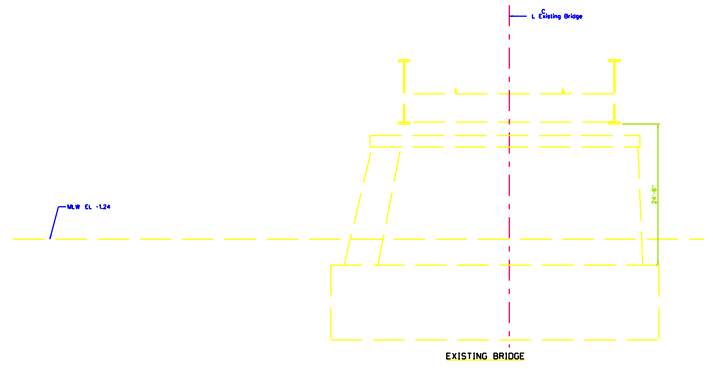
CONCRETE DECK ARCH ELEVATION CROSS SECTION - FULL BUILD



CONCRETE DECK ARCH PHASING - RAIL



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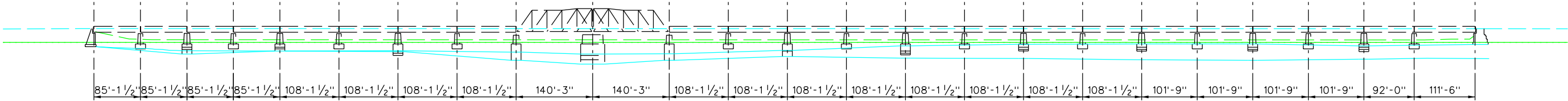


G-7

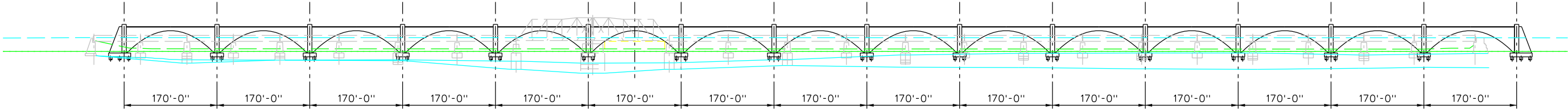
Baker

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
LONG BRIDGE STUDY	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____
BRIDGE CONCEPT 4 CONCRETE DECK ARCH (2 OF 2)	DIVISION CHIEF _____ DATE _____ FILE _____ SHEET 7 OF 17

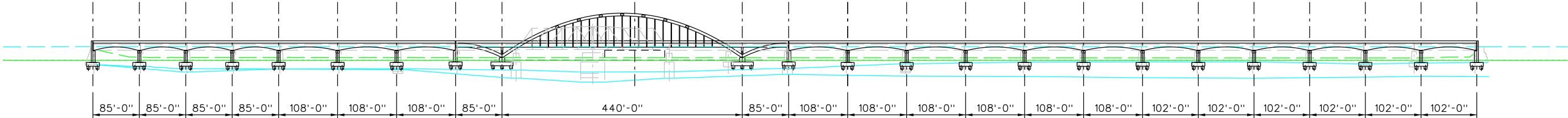
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
XXX	D.C.	DUP - 0000 (000)	XXX	XXX



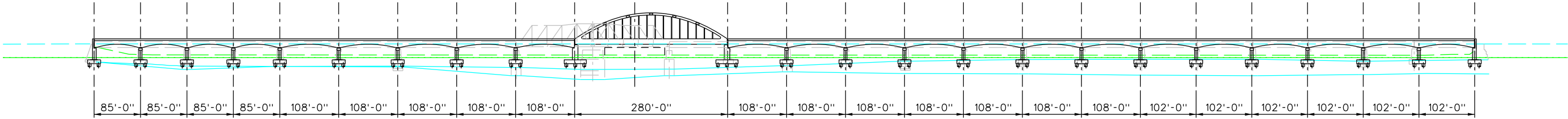
EXISTING BRIDGE



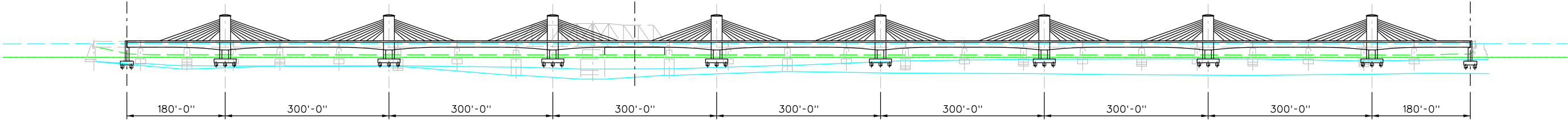
DECK ARCH



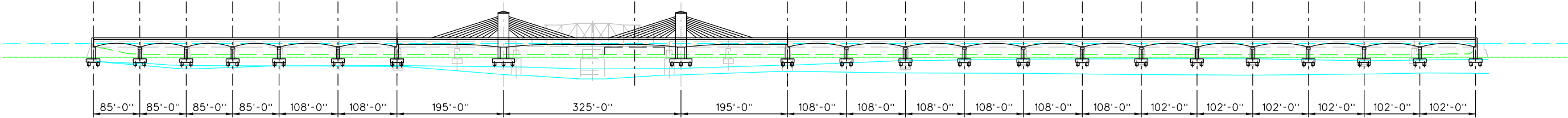
THROUGH ARCH



TIED ARCH



FULL LENGTH EXTRADOSED BRIDGE



EXTRADOSED BRIDGE

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

BRIDGE CONCEPTS 1-4
ELEVATIONS

PROJECT ENG. _____
DESIGNED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF

DATE _____

FILE _____

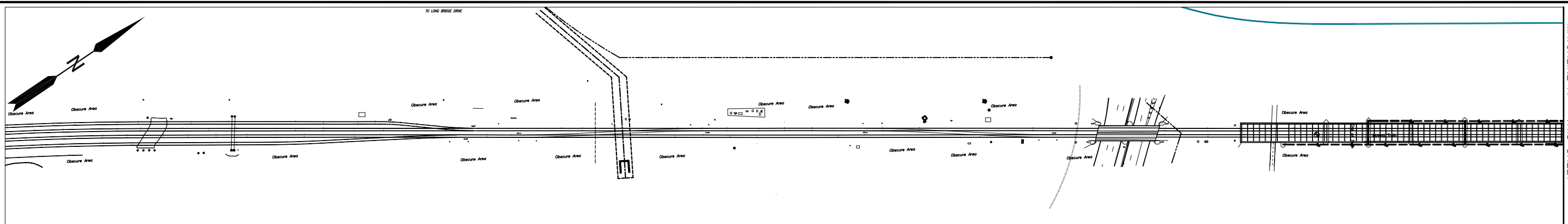
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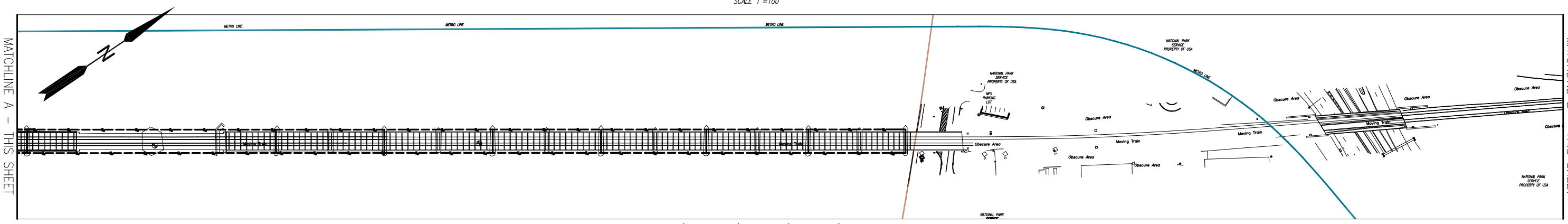
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Baker

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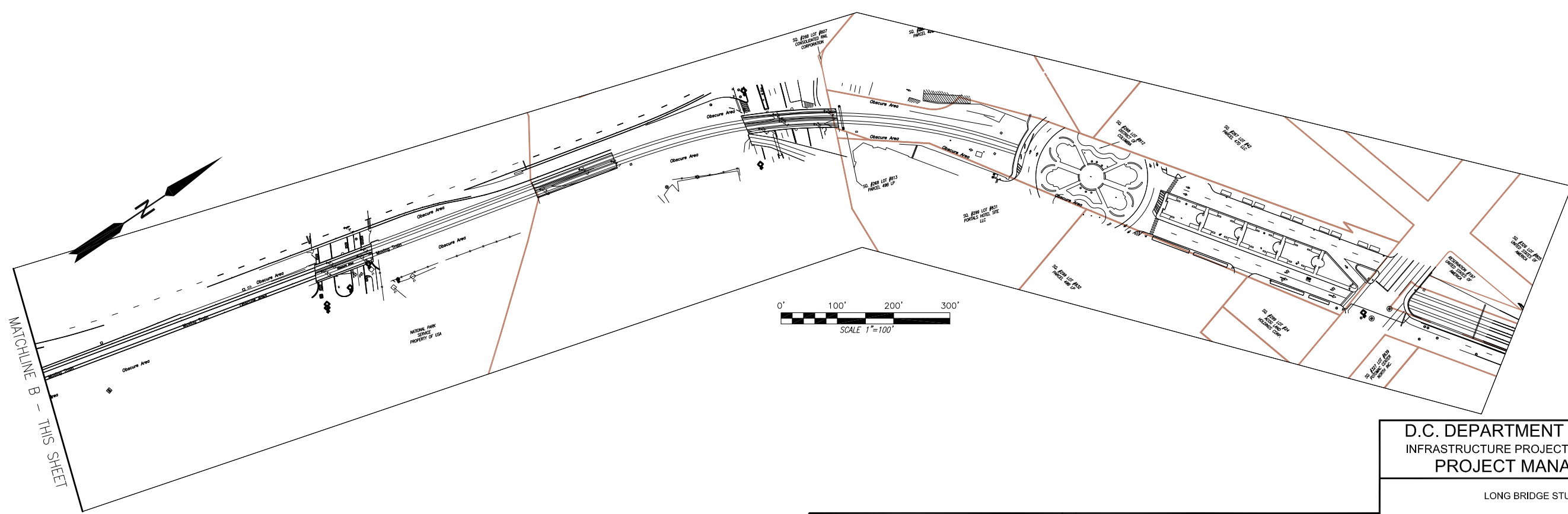


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MATCHLINE A - THIS SHEET

MATCHLINE B - THIS SHEET



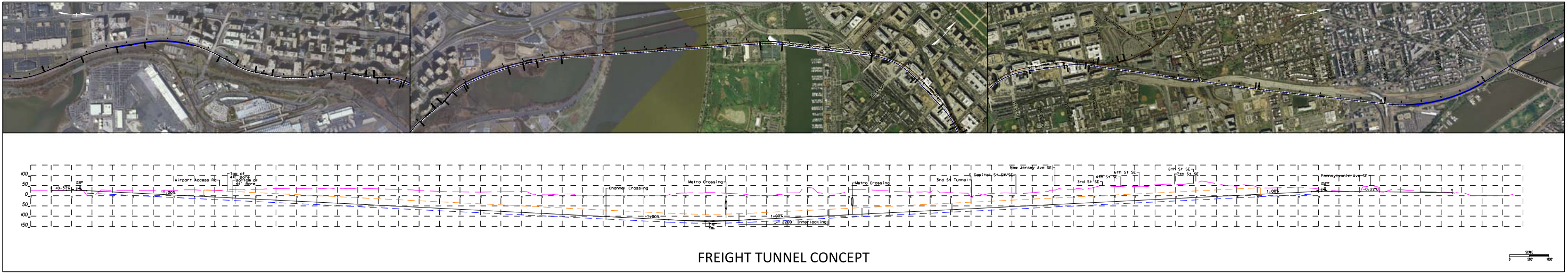
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G-9

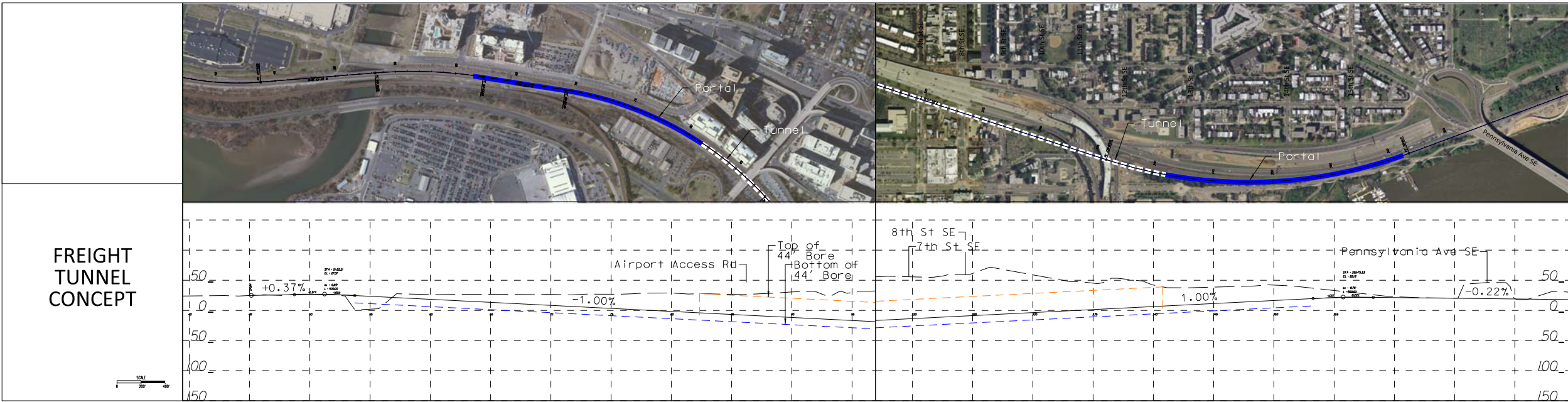


REVISIONS			
NO.	DESCRIPTION	NAME	DATE

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
LONG BRIDGE STUDY	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____
ALTERNATIVES 1 (NO BUILD) & 2 (REHABILITATION OR RECONSTRUCTION) 2 TRACKS	DIVISION CHIEF _____ DATE _____ FILE _____ SHEET 9 OF 17



FREIGHT TUNNEL CONCEPT



FREIGHT
TUNNEL
CONCEPT



G-11

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

ALTERNATIVE 4
FREIGHT TUNNEL
(1 OF 3)

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

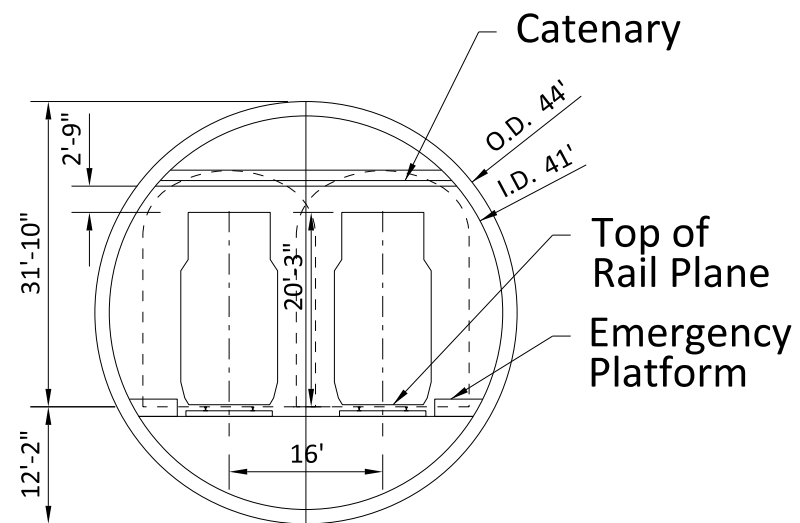
DIVISION CHIEF

DATE _____

FILE _____

SHEET 11 OF 17

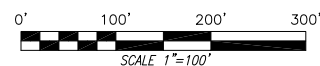
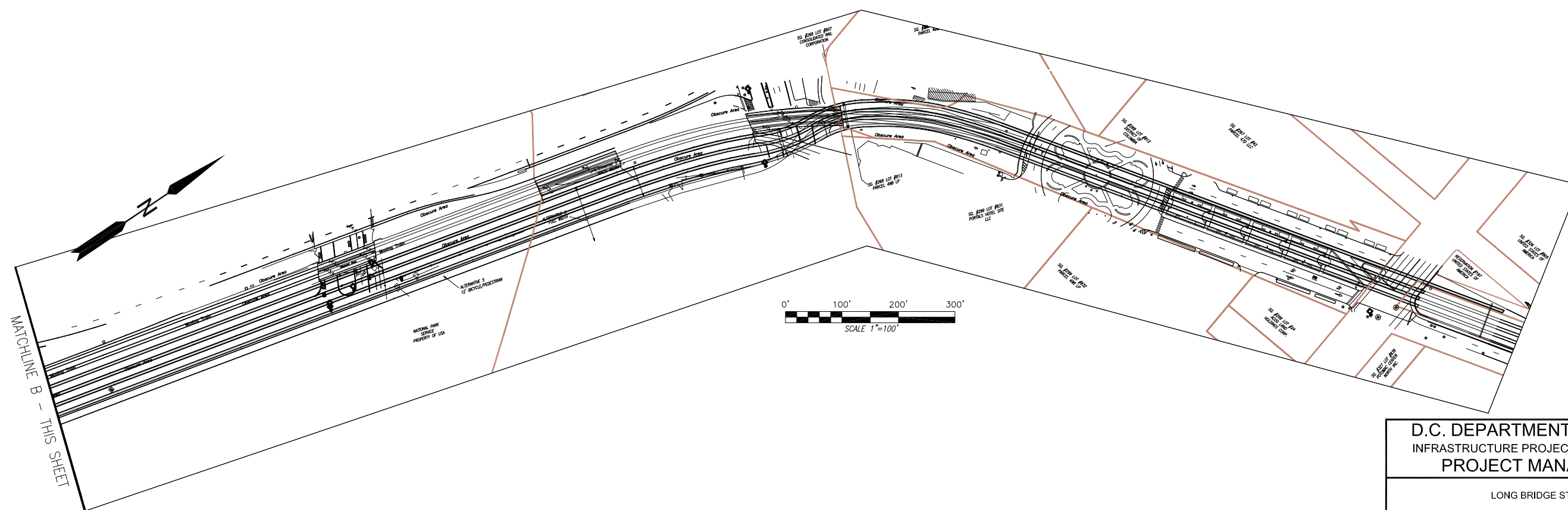
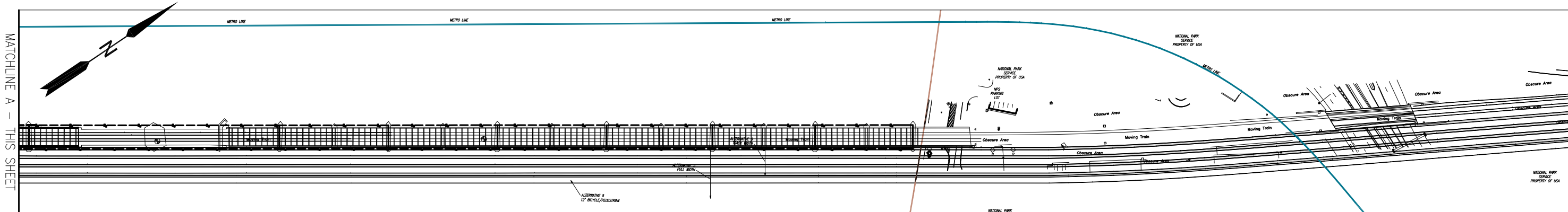
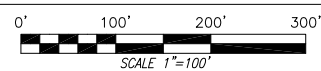
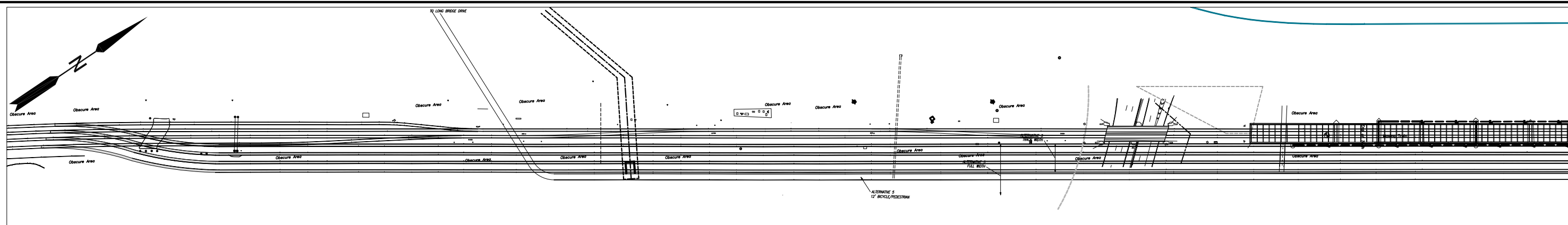
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DATES
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\$PENTBL\$



Proposed Tunnel Section

Criteria for Tunnel Design

Tunnel Element	Specification
Height for double stack freight train	20' -3" maximum
Spacing from top of train to catenary guide wire	1' - 6"
Outside diameter of tunnel	44'
Distance between track centers	16'
Spacing between tunnels or other underground infrastructure	10' to 20'
Maximum grade for freight train operations	1%
Maximum grade for passenger train operations	3%
Length of vertical curve minimum operations speed	40 mph (V)
Maximum vertical acceleration	0.10 feet/sec (freight)
Minimum length of vertical curve	3 x V
Passenger platforms	800' minimum
Spiral transition at each end of platform	100' to 150'
Rail interlockings	1,200' to 2,500'



LONG BRIDGE STUDY

ALTERNATIVE 5
4 TRACKS + PEDESTRIAN/BICYCLE

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF

DATE _____

FILE _____

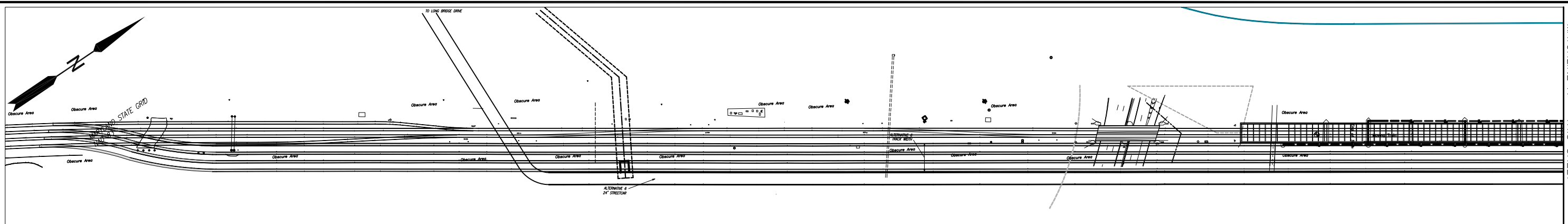
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G-14

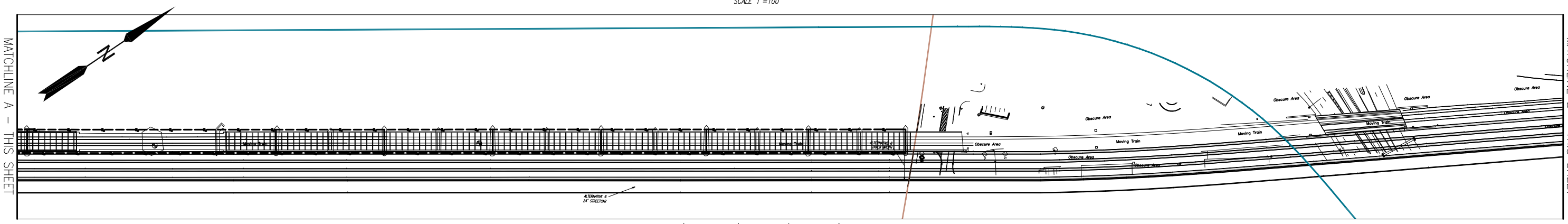
Baker

Michael Baker Jr., Inc.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

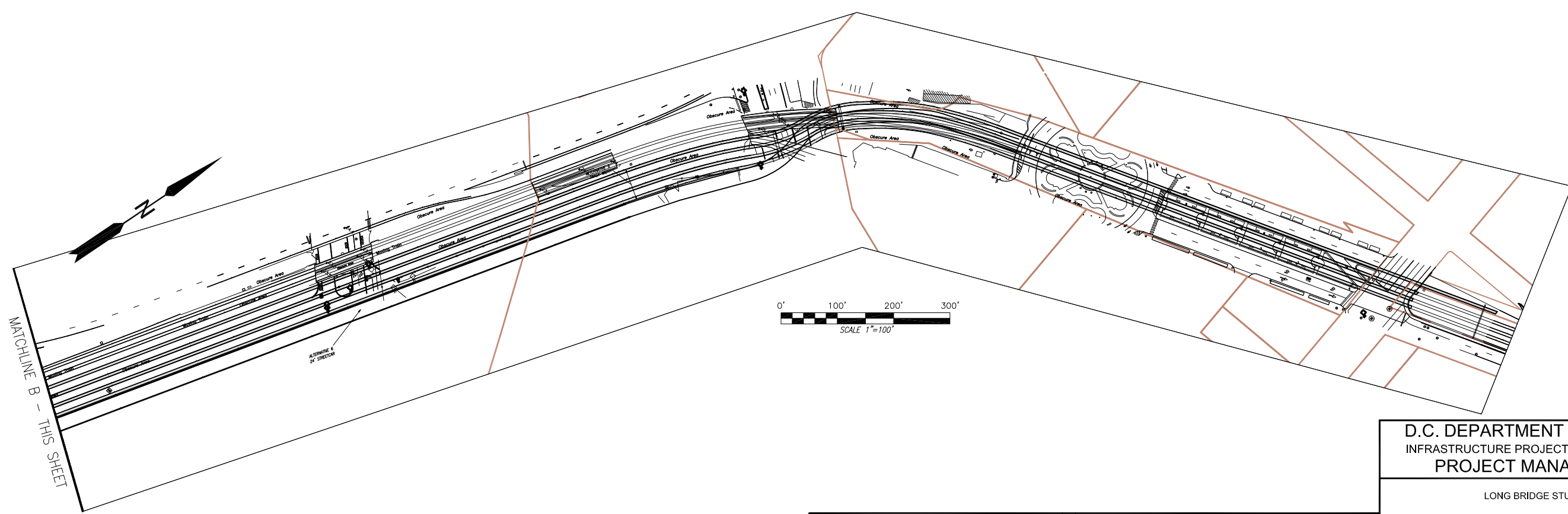


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MATCHLINE A - THIS SHEET

MATCHLINE B - THIS SHEET



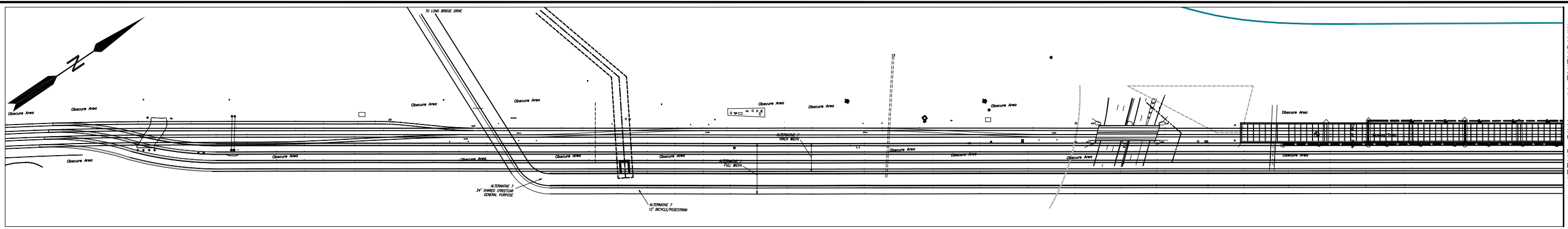
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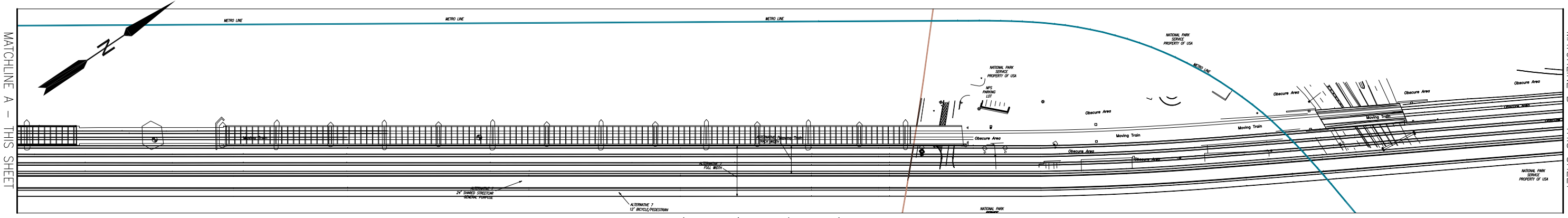


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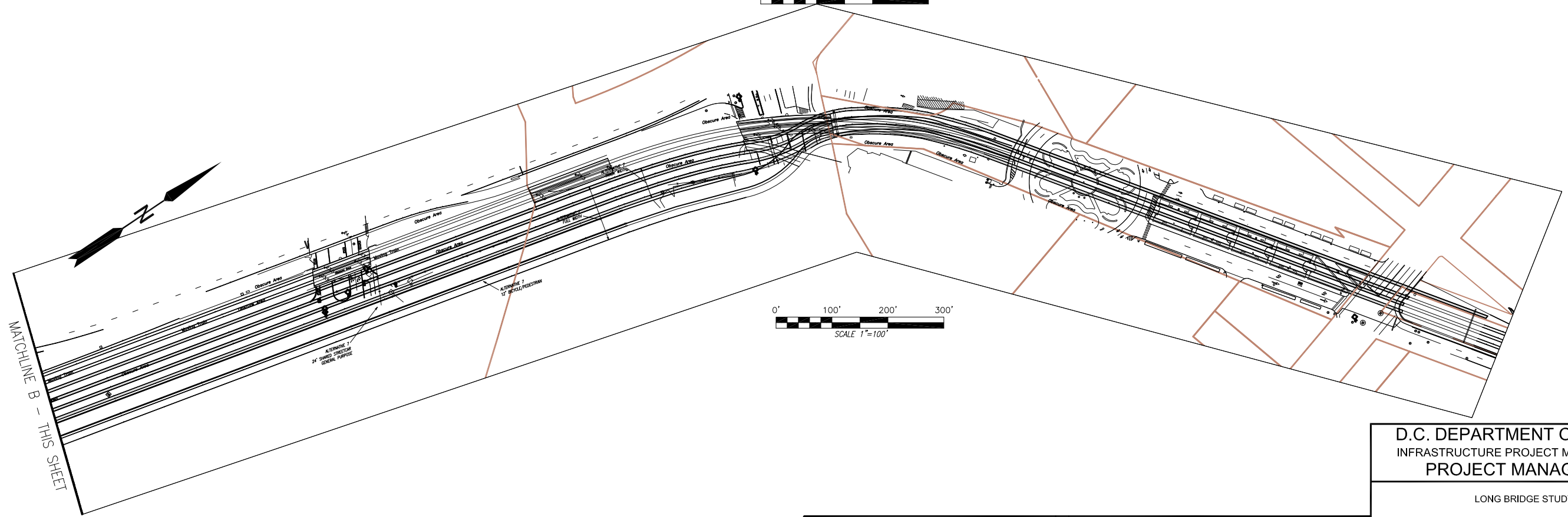
D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
LONG BRIDGE STUDY	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____
ALTERNATIVE 6 4 TRACKS + 2 STREETCAR + PEDESTRIAN/BICYCLE	DIVISION CHIEF _____ DATE _____ FILE _____ SHEET 15 OF 17



MATCHLINE A - THIS SHEET



MATCHLINE B - THIS SHEET



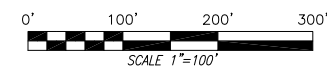
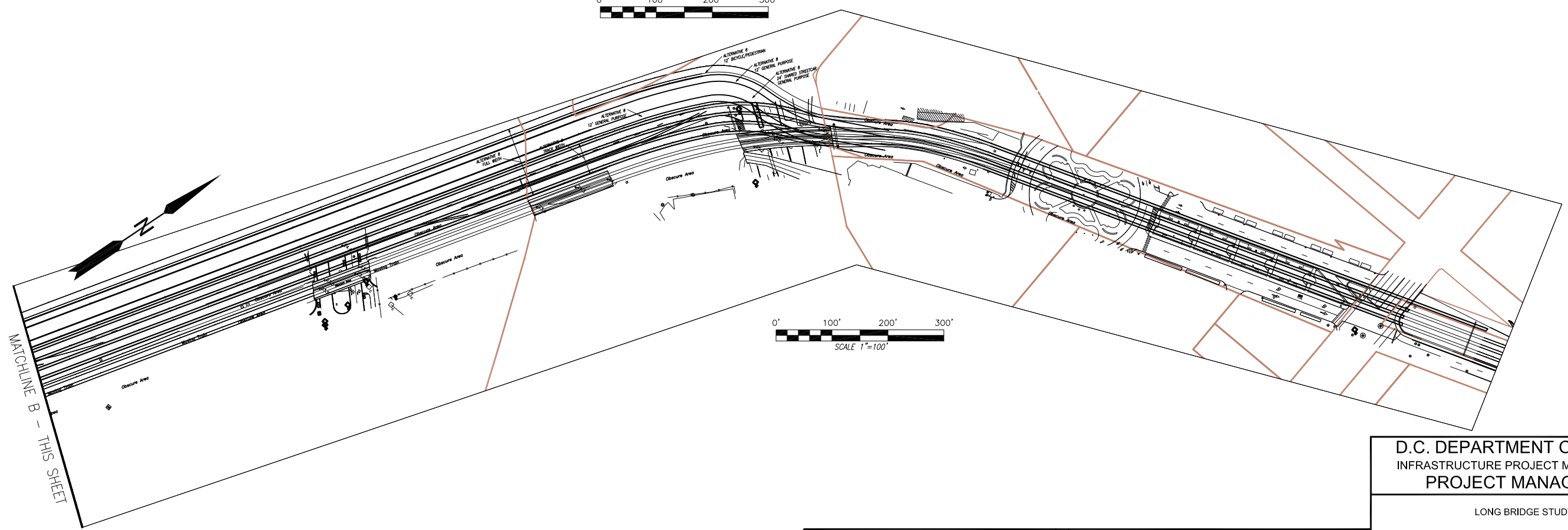
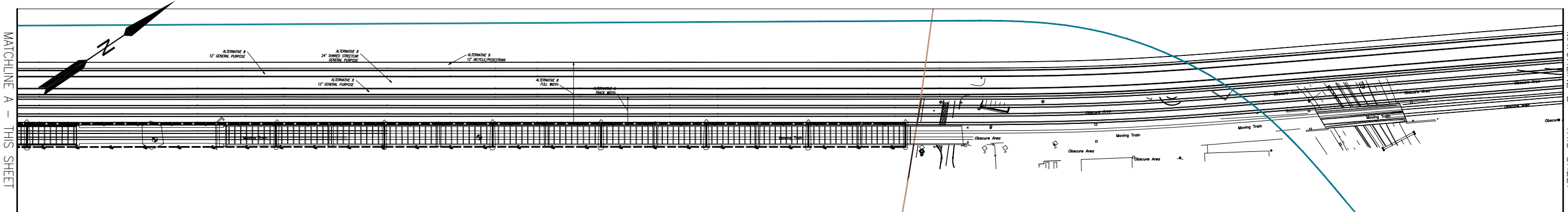
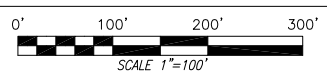
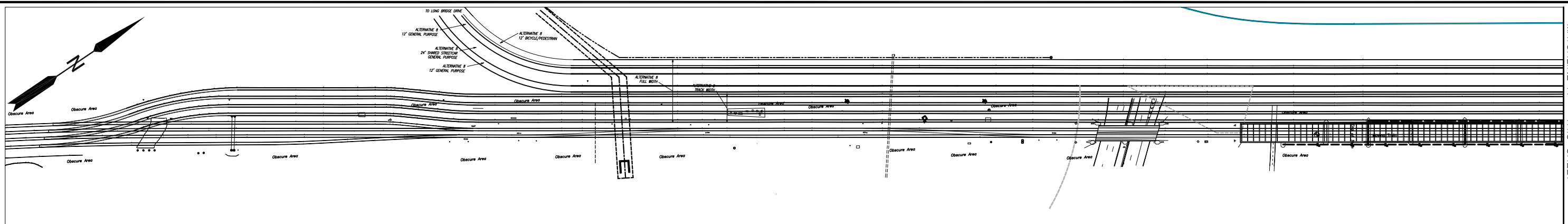
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G-16



REVISIONS			
NO.	DESCRIPTION	NAME	DATE

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
LONG BRIDGE STUDY	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____
ALTERNATIVE 7 4 TRACKS + 2 SHARED STREETCAR/ GENERAL PURPOSE + PEDESTRIAN/BICYCLE	DIVISION CHIEF _____ DATE _____ FILE _____ SHEET 16 OF 17



D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

LONG BRIDGE STUDY

ALTERNATIVE 8
4 TRACKS + 2 SHARED STREETCAR/
GENERAL PURPOSE + 2 GENERAL PURPOSE +
PEDESTRIAN/BICYCLE

PROJECT ENG.	_____
DESIGNED BY	_____
CHECKED BY	_____
DRAWN BY	_____
PROJECT MGR.	_____
DIVISION CHIEF	_____
DATE	_____
FILE	_____
SHEET	17 OF 17

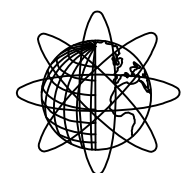
G-17



REVISIONS			
NO.	DESCRIPTION	NAME	DATE

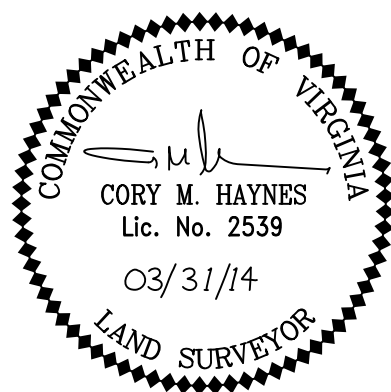
SURVEY NOTES:

2. This is a Planning Level Property Information Survey. Property information shown herein is compiled from the Arlington County and City of Alexandria, Virginia Real Estate Assessments database and is depicted hereon for informational purposes only. The properties delineated are compiled strictly from record information as indicated and have not been surveyed in the field. The location of parcel outlines as shown is approximate only. Many of the parcels outlines do not mathematically close (do not create a closed geometric figure based on the metes and bounds provided). The survey was prepared without benefit of a title report. The survey does not include easements.
3. This is not a boundary survey or subdivision.
4. CSX Transportation, Inc. is successor by merger to The Richmond, Fredericksburg and Potomac Railroad Company, The Baltimore and Ohio Railway Company and The Chesapeake and Ohio Railway Company
5. Basis of Meridian: Maryland State Plane NAD 83. Basis of Vertical Datum: NAVD 88. Both establish by field run RTK GPS processed via Leica GeoSystems CORS stations.
6. Primary Staff: Senior Project Manager – Mark McGoniagle, LS (Virginia) Operations Project Manager – Gary Haynes, LS (Virginia), Technology Supervisor – Mike Templeton.
7. Vertical accuracy for spot elevations $\pm 0.30'$, horizontal positional accuracy is $\pm 1.9'$; relative accuracy of $\pm 0.5'$.
8. Railroad tracks are derived from a photogrammetric survey flown in 2008, compiled by Quantum Spatial of Dulles, Virginia. Additional tracks were added from Google Earth.
9. Prepared for Michael Baker Jr., Inc.

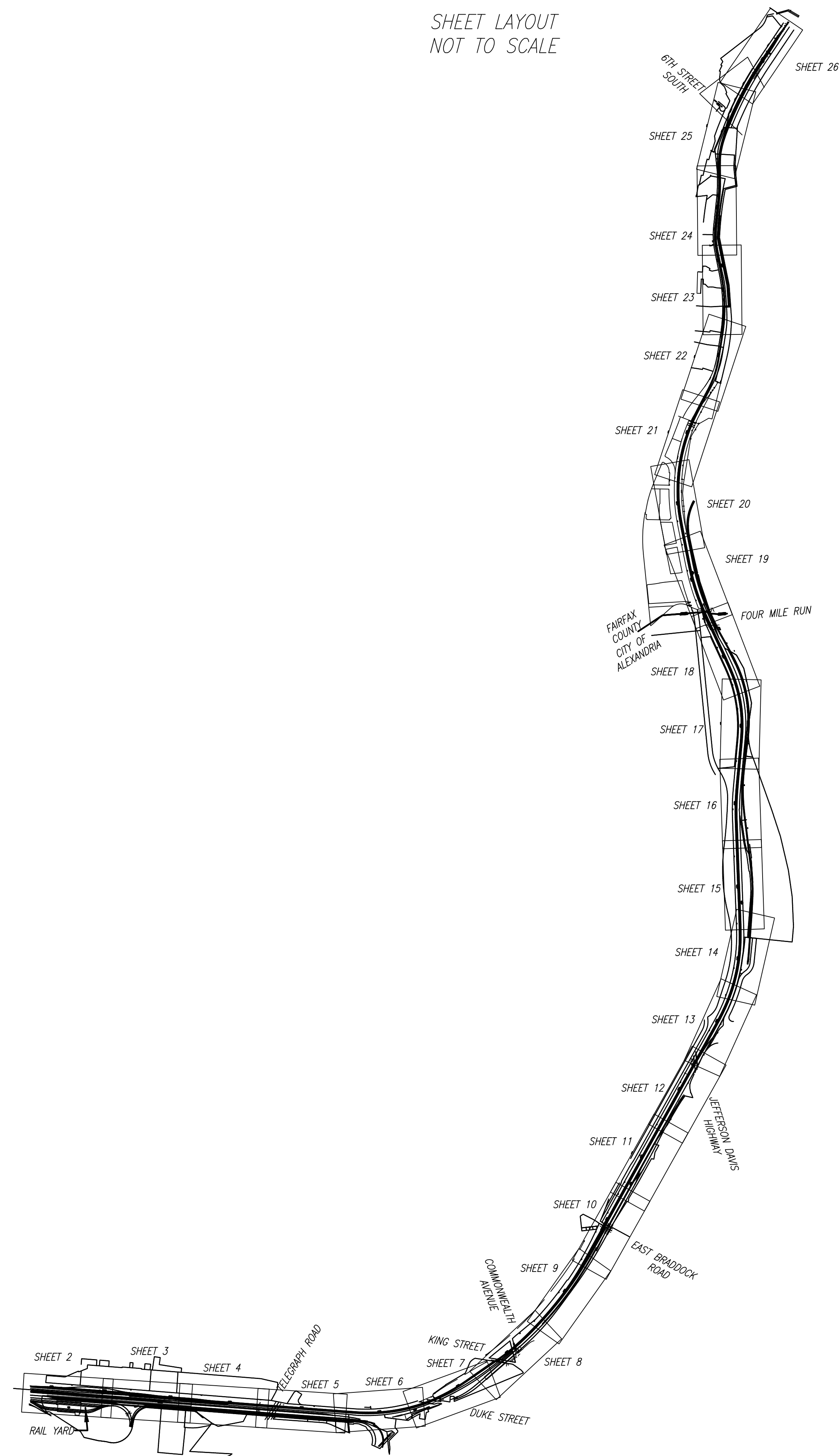


SHEET INDEX

SHEET 1 - COVER SHEET/SURVEY NOTES AND SHEET LAYOUT.
SHEETS 2 - 26 PROPERTY COMPOSITES & PROFILES



SHEET LAYOUT
NOT TO SCALE



Planning Level Property Information Survey

District Department of Transportation

Project: DCKA-2010-T-0063-2, CSX Long Bridge Study

Generally along the CSX Railroad alignment

From

Mile Marker 104, West of Telegraph Road in

ALEXANDRIA, VIRGINIA

Across Four Mile Run to the Pentagon Outfall in

ARLINGTON COUNTY, VIRGINIA

[illegible]

COVER SHEET	OWN BY:	CKD BY:	
	MDT	CWH	
	SUBMITTED BY:		
	PMM		
	PLOT SCALE:	PLOT DATE:	DATE:
			3/31/14
	SHEET NO.:	FILE NAME:	PMM PROJECT NUMBER:
	ANSI D:		12-107-02

CSA
LONG BRIDGE STUDY
COVER SHEET

SHEET

1 of 26

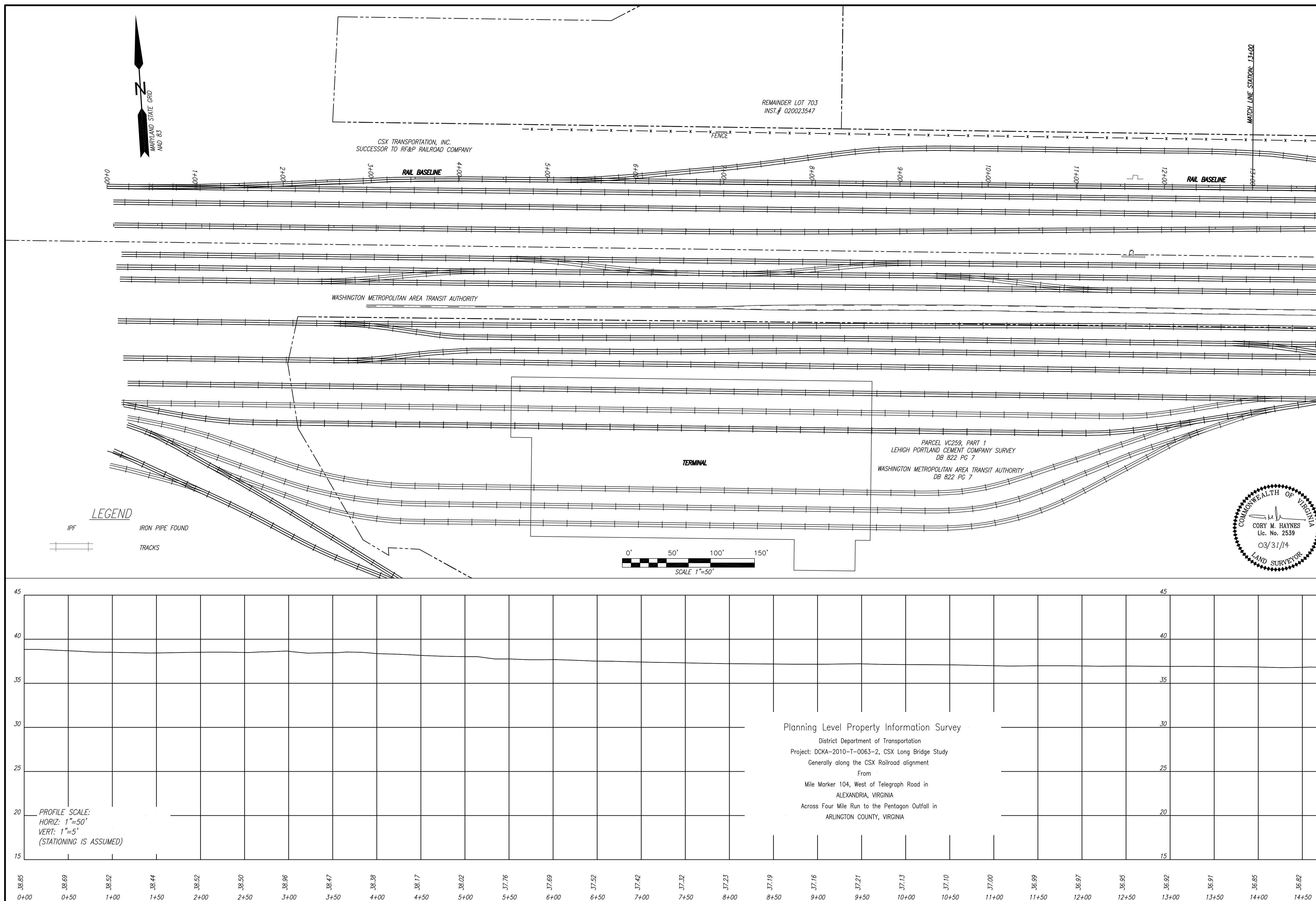
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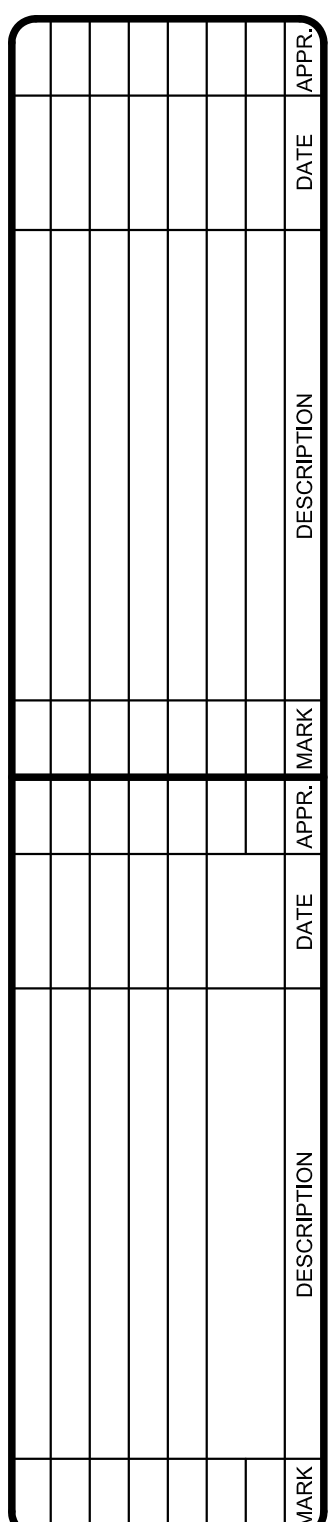
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PMI		
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SIZE:	FILE NAME:	PMI PROJECT NUMBER:

CSX
LONG BRIDGE STUDY
PROPERTY INFORMATION

SHEET

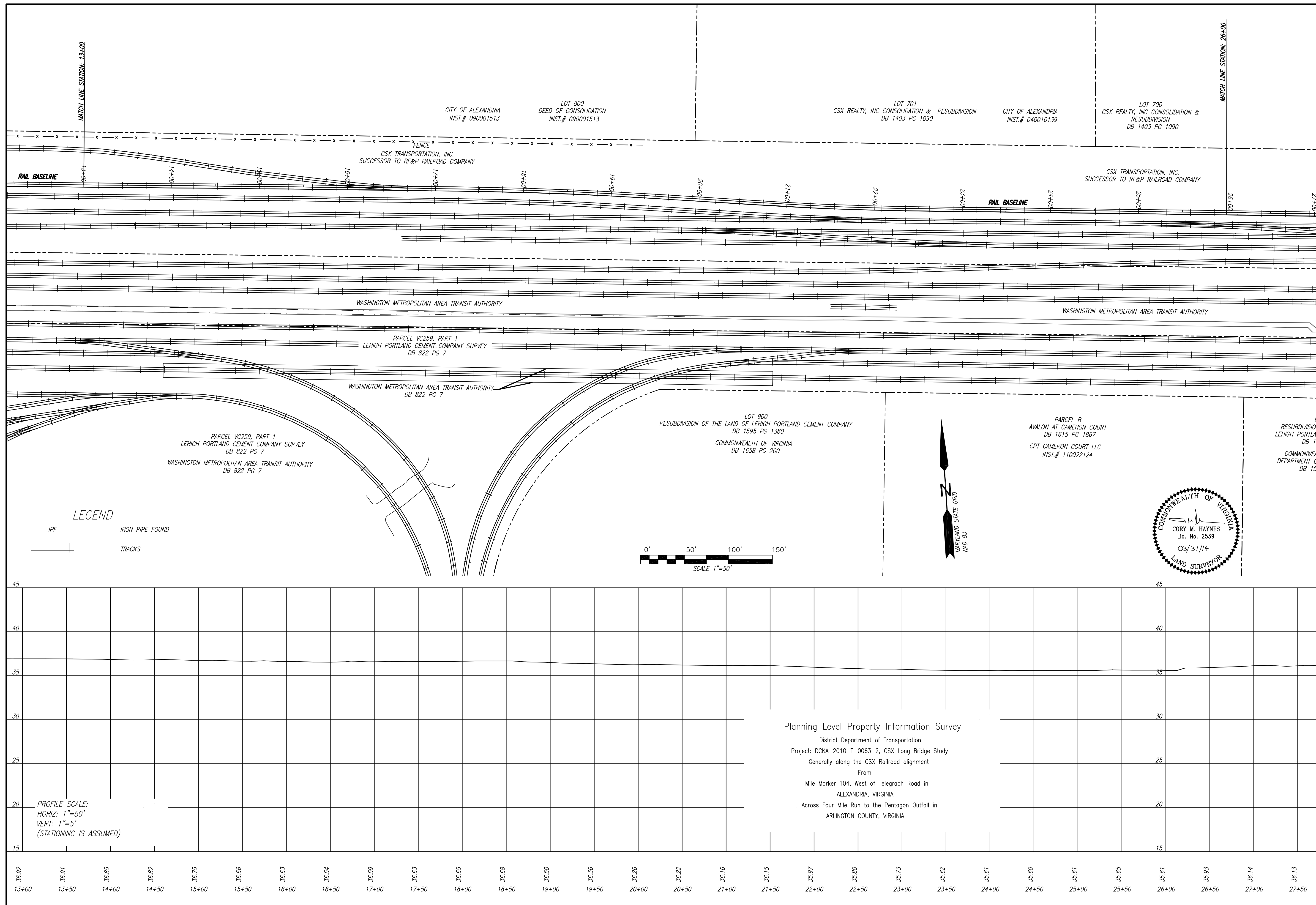
2 of 26





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SUBMITTED BY:		
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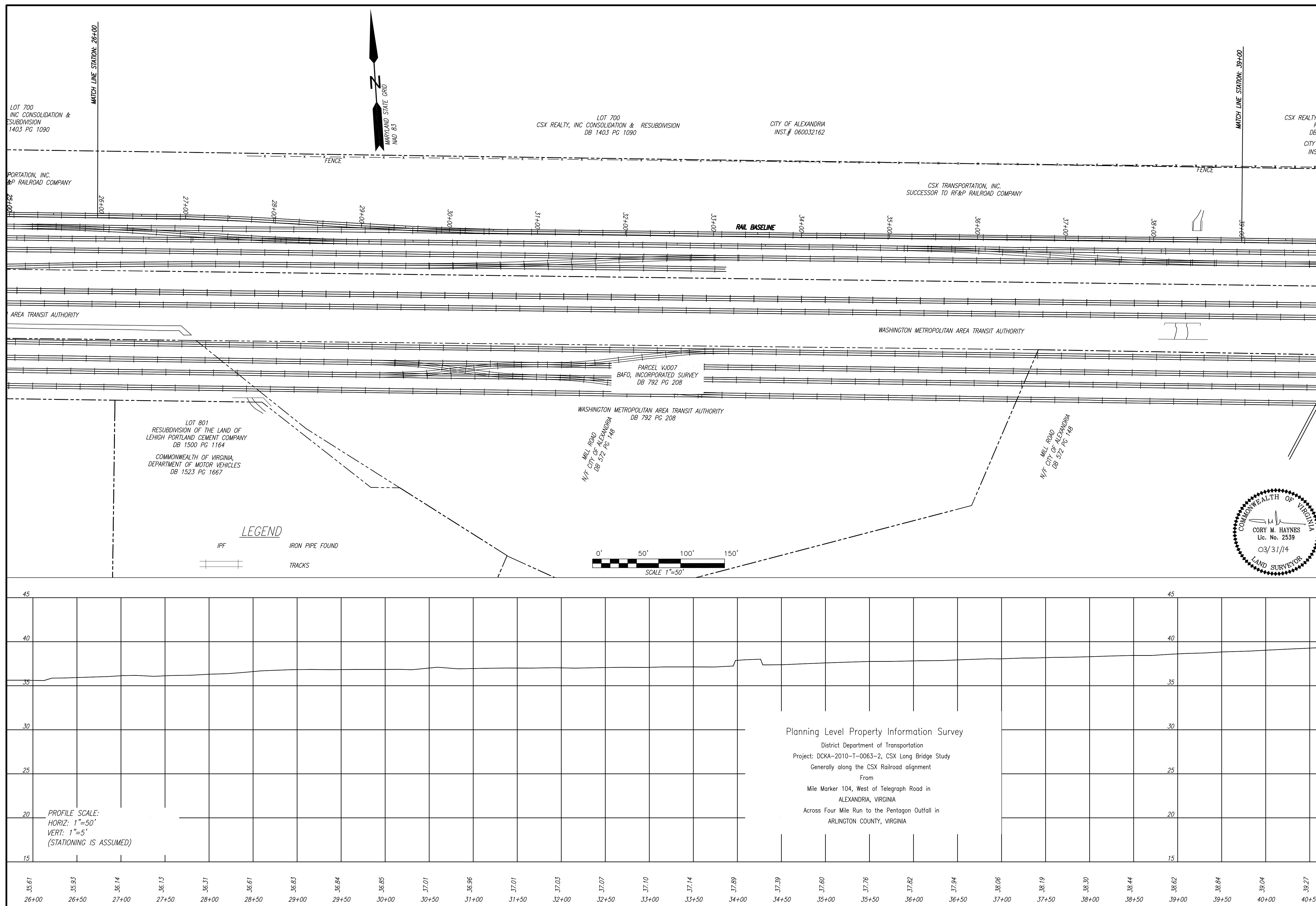
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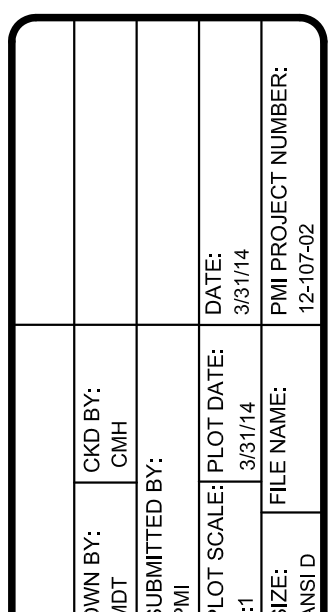
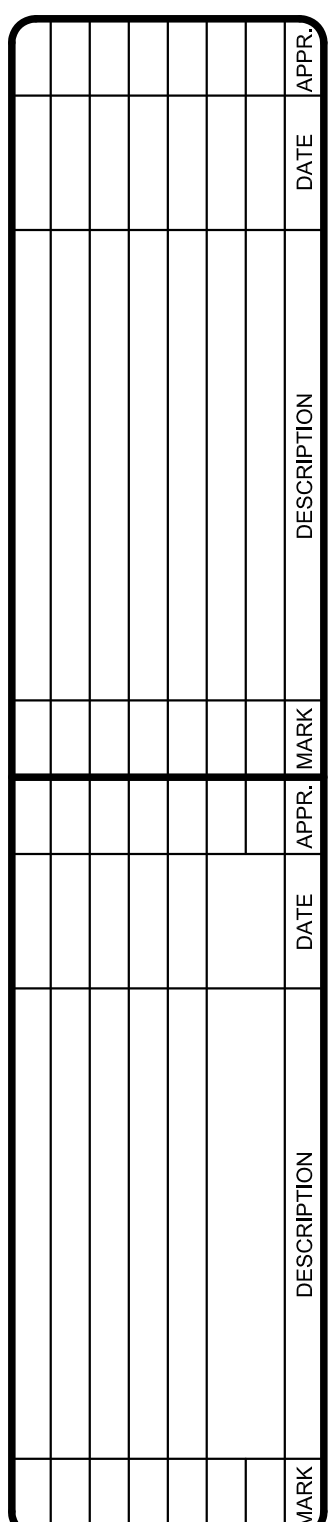


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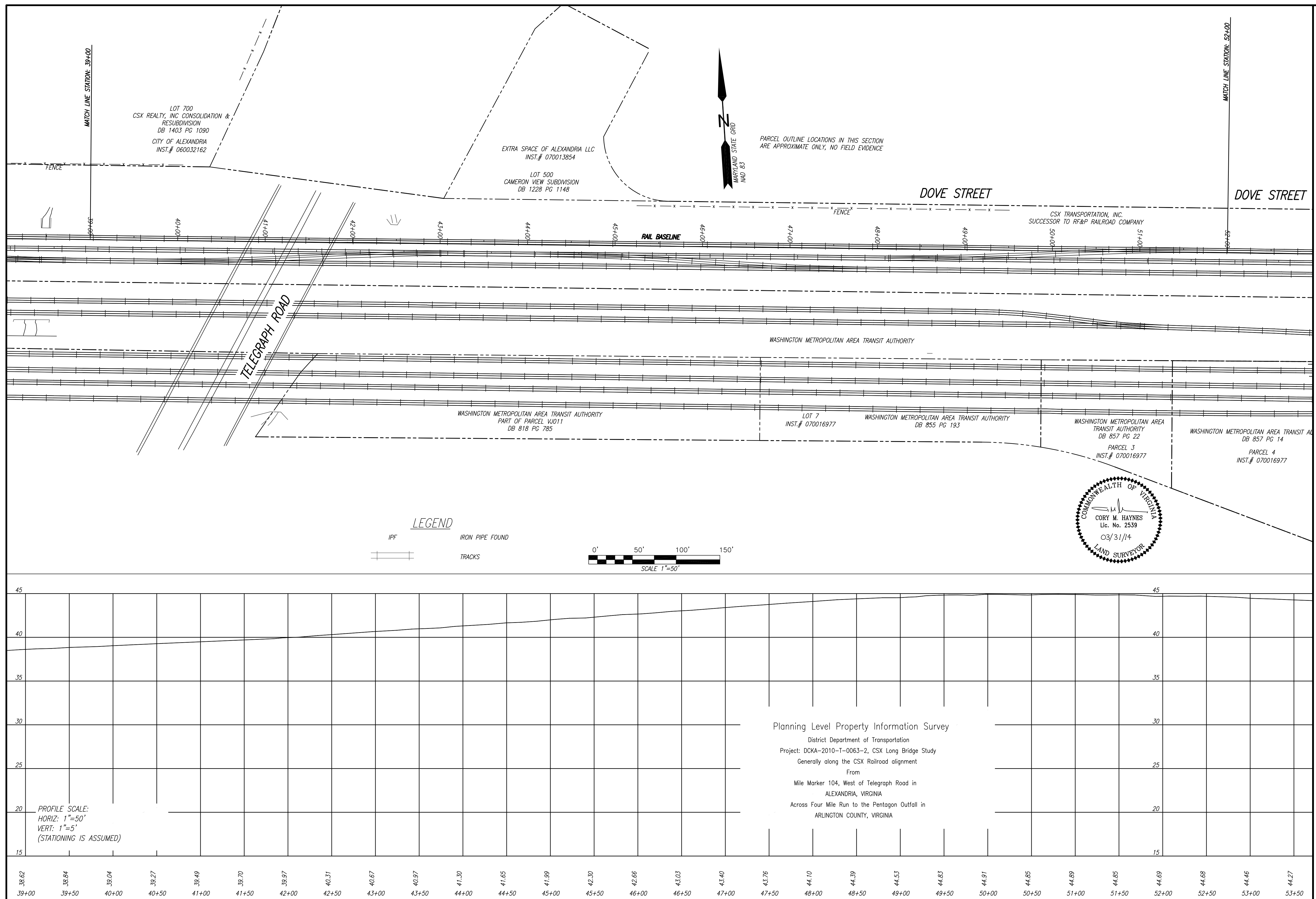
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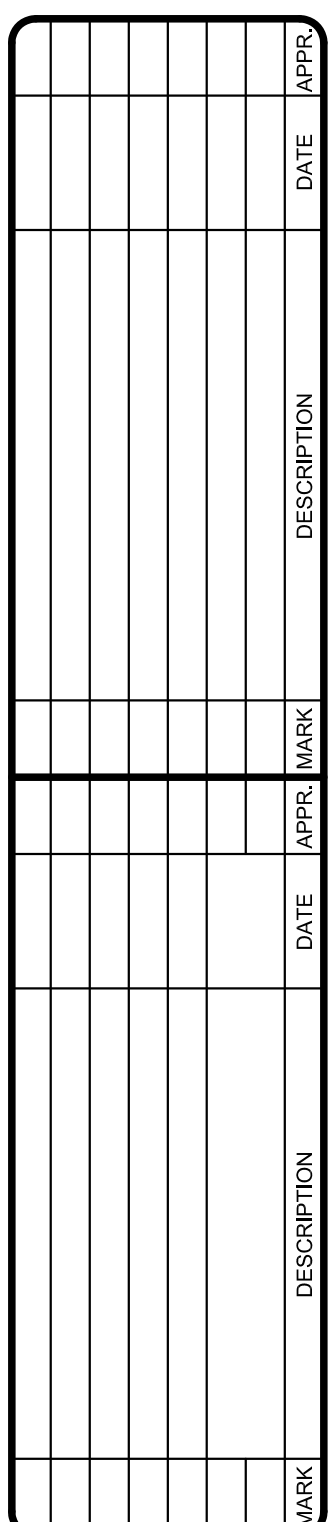
CSX
LONG BRIDGE STUDY
PROPERTY INFORMATION





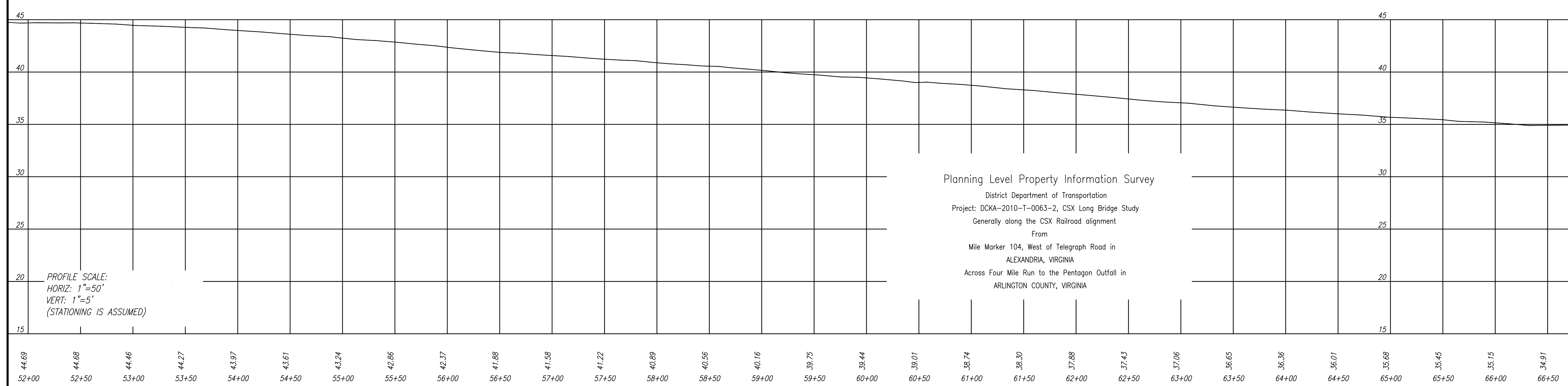
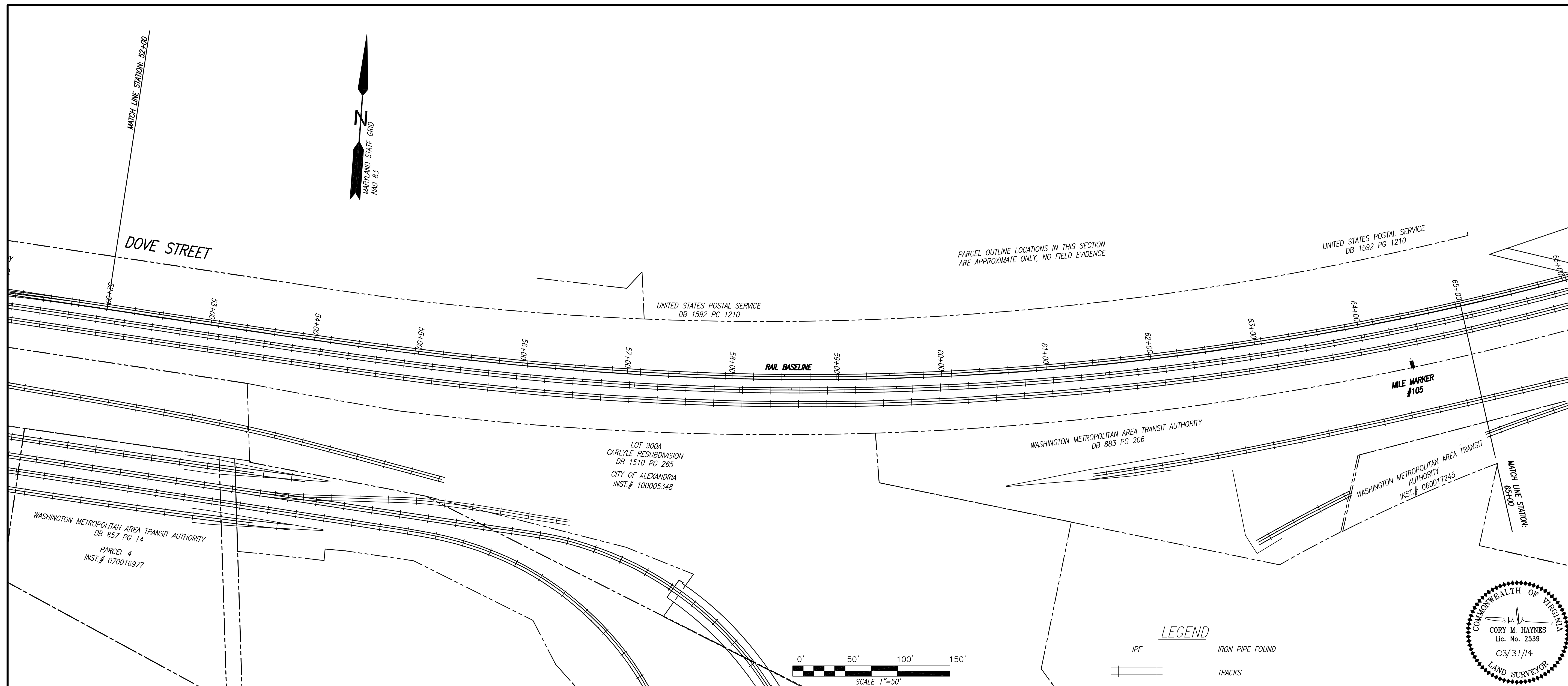
CSX
LONG BRIDGE STUDY
PROPERTY INFORMATION

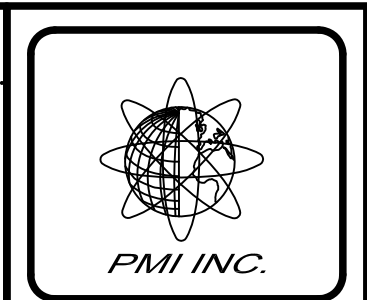
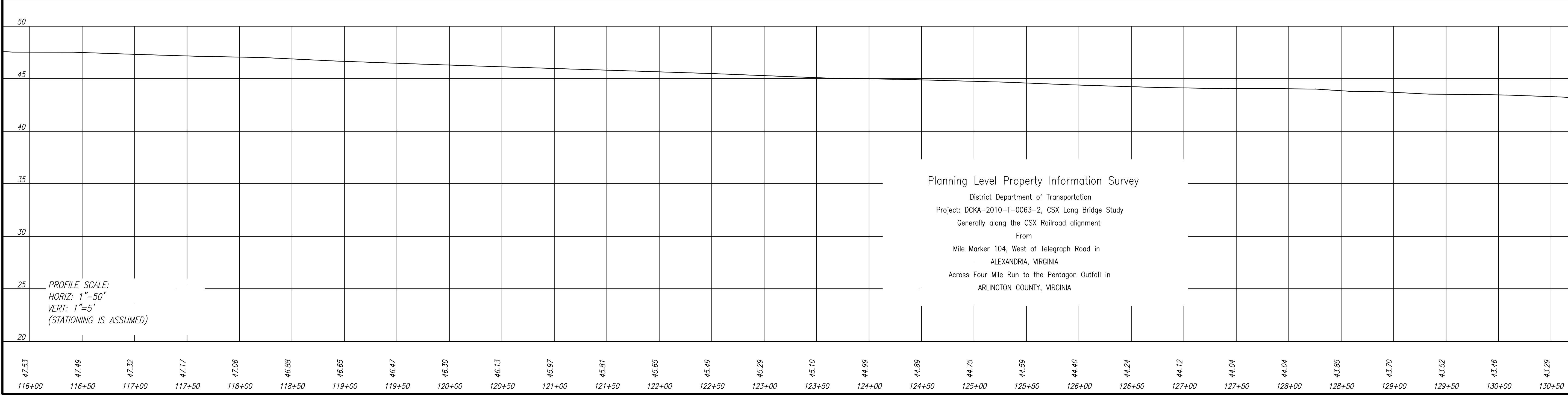
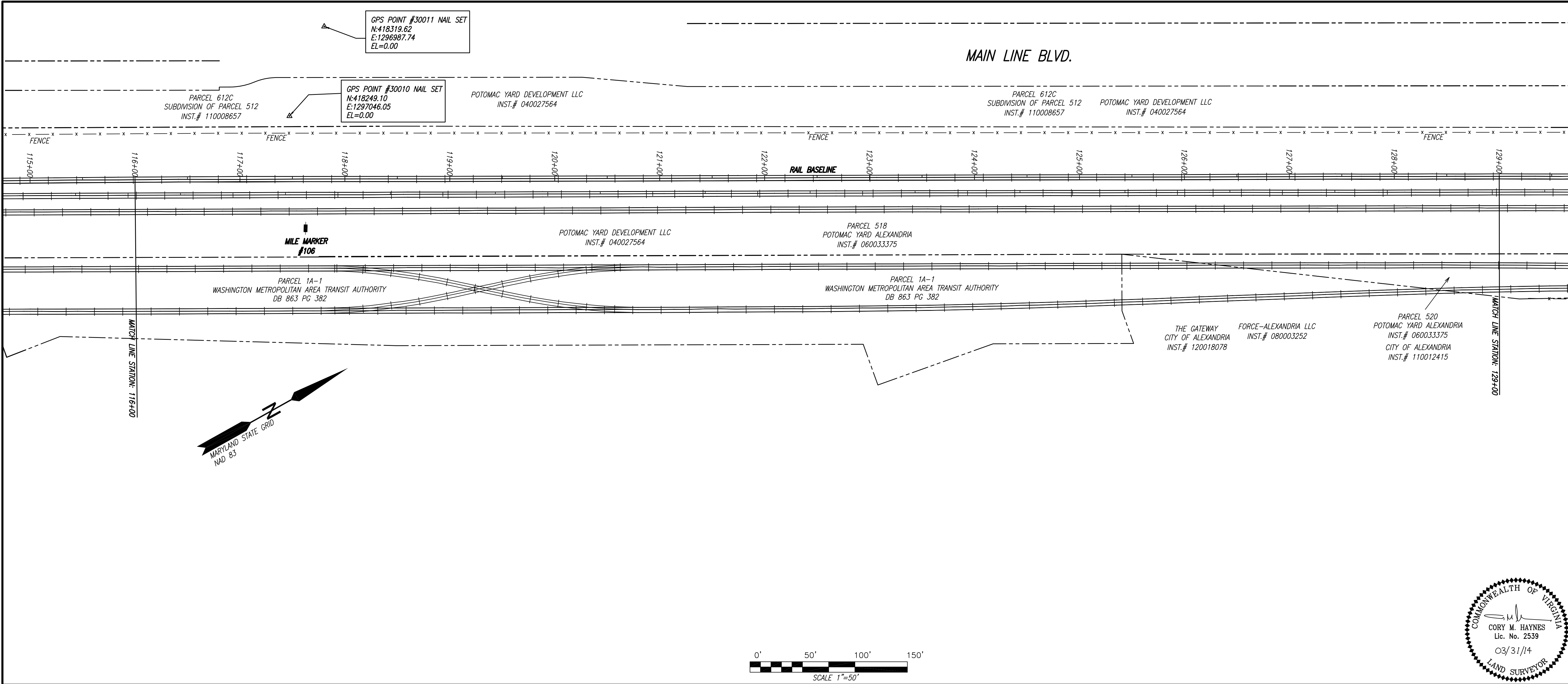




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CSX LONG BRIDGE STUDY PROPERTY INFORMATION

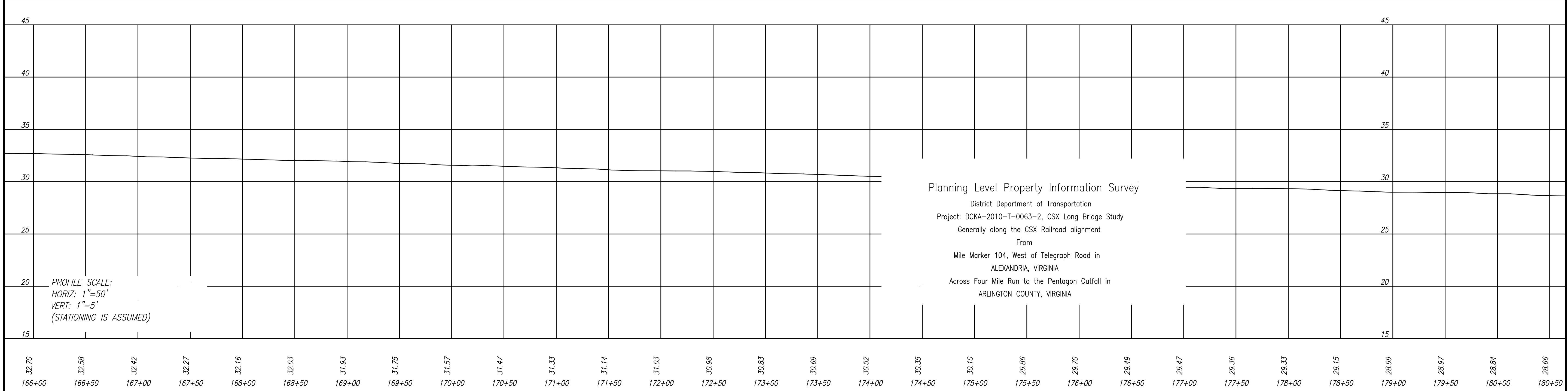
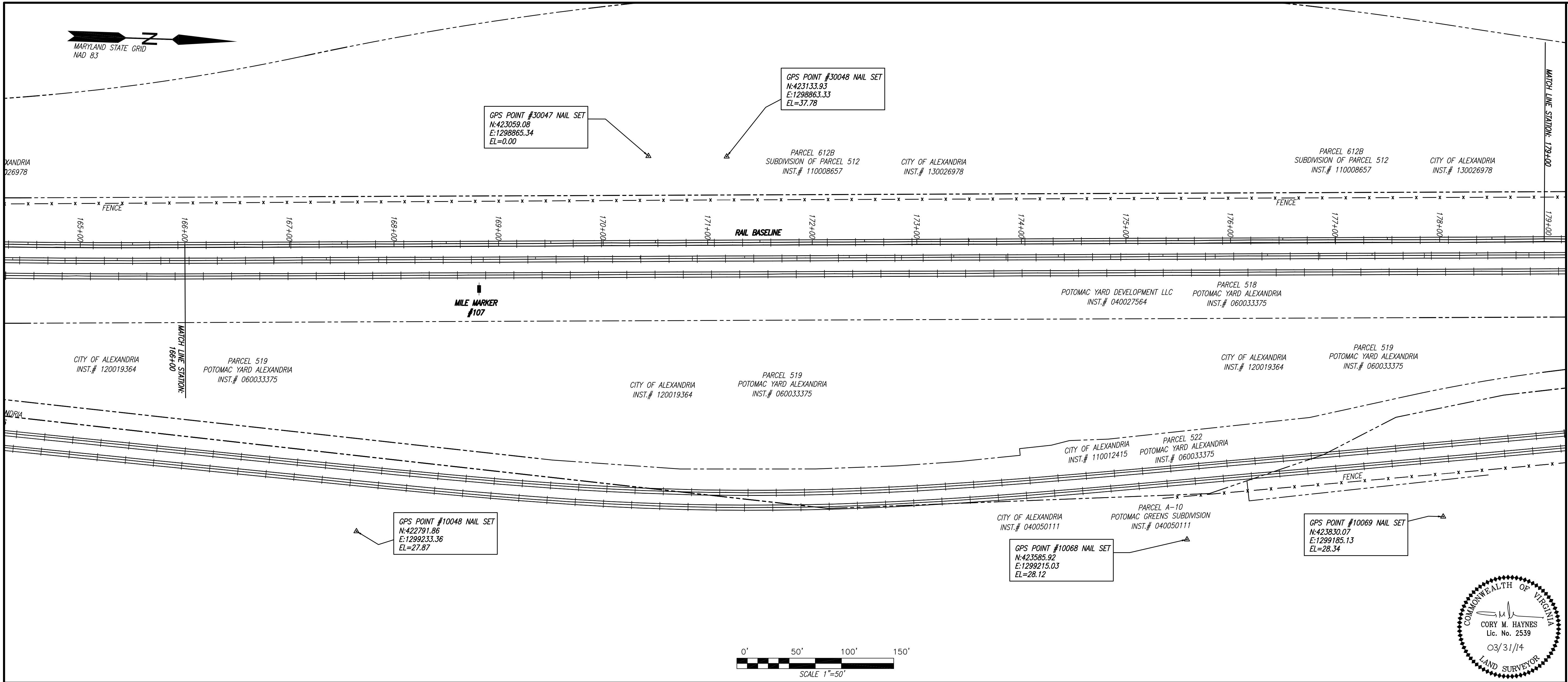


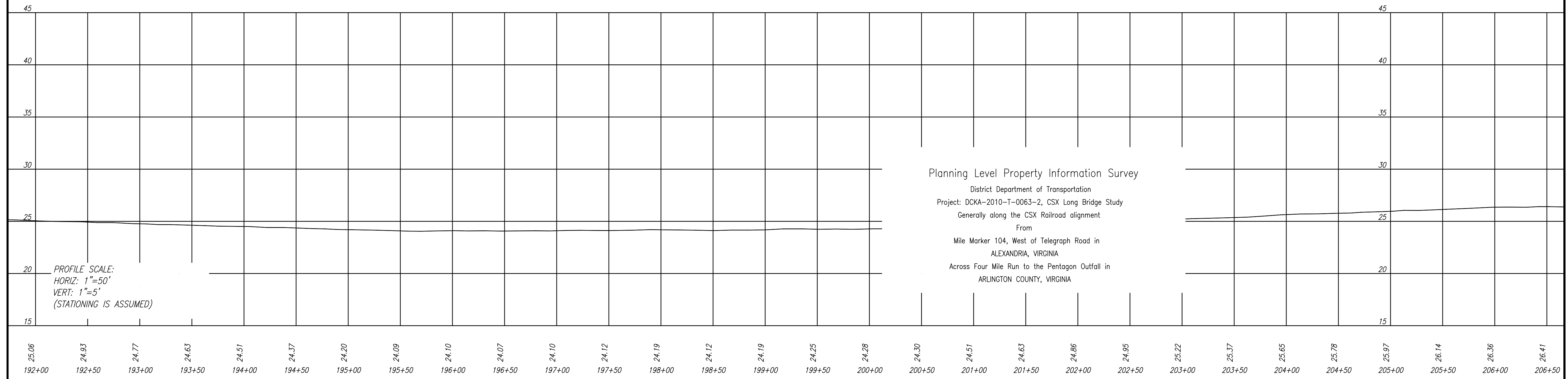
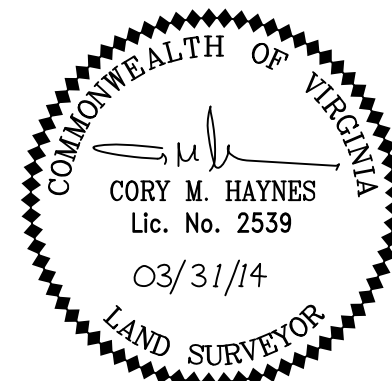
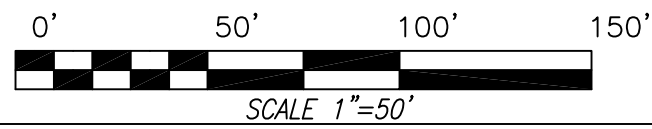


DATE	APPR.	DESCRIPTION	MARK
01/10/2014			
3/30/2013			
9/30/2013			

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ANSID	ANSID	ANSID	ANSID

CSX
LONG BRIDGE STUDY
PROPERTY INFORMATION

[illegible]

[illegible]

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	SUBMITTED BY:		
	PMI		
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CSX LONG BRIDGE STUDY PROPERTY INFORMATION

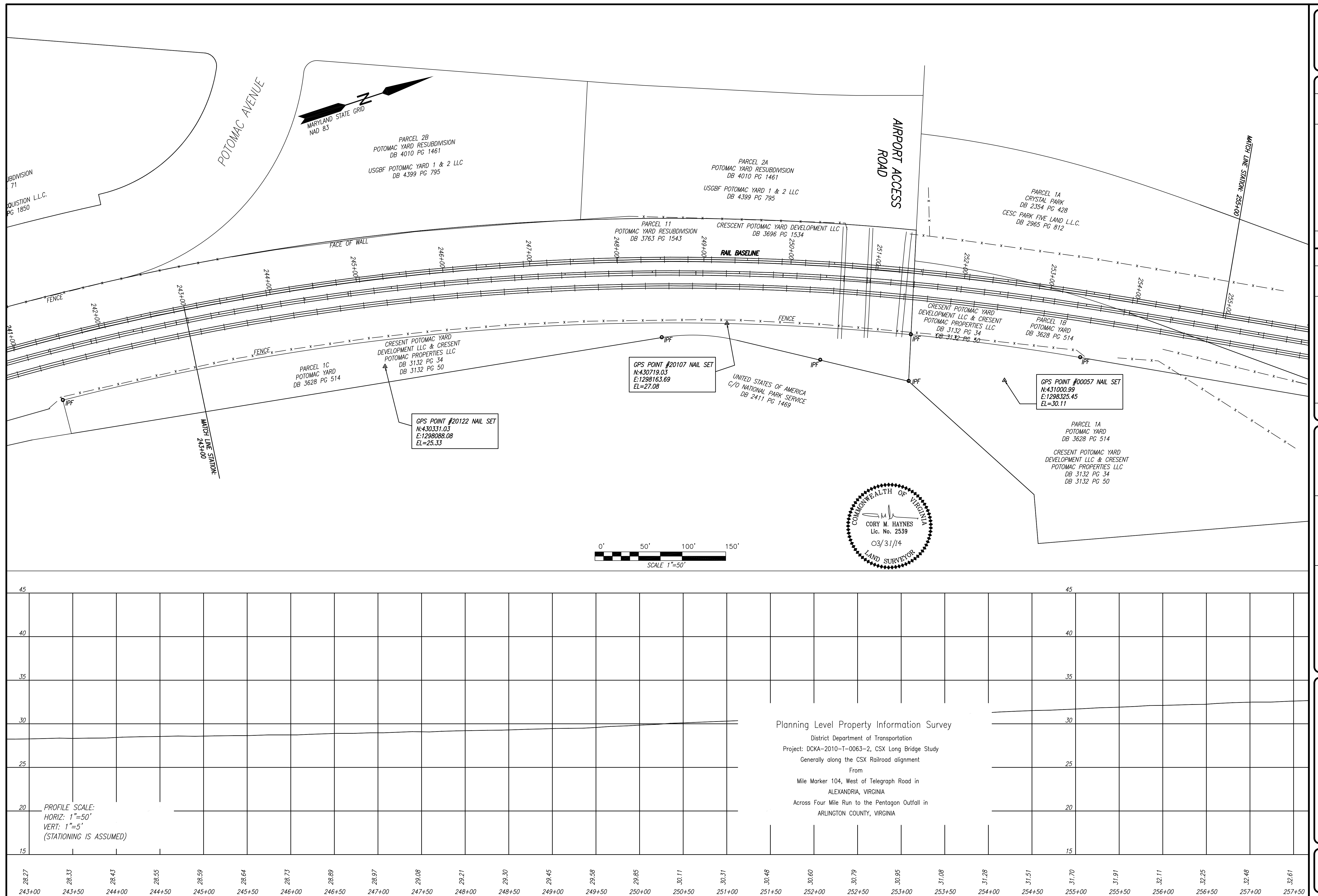
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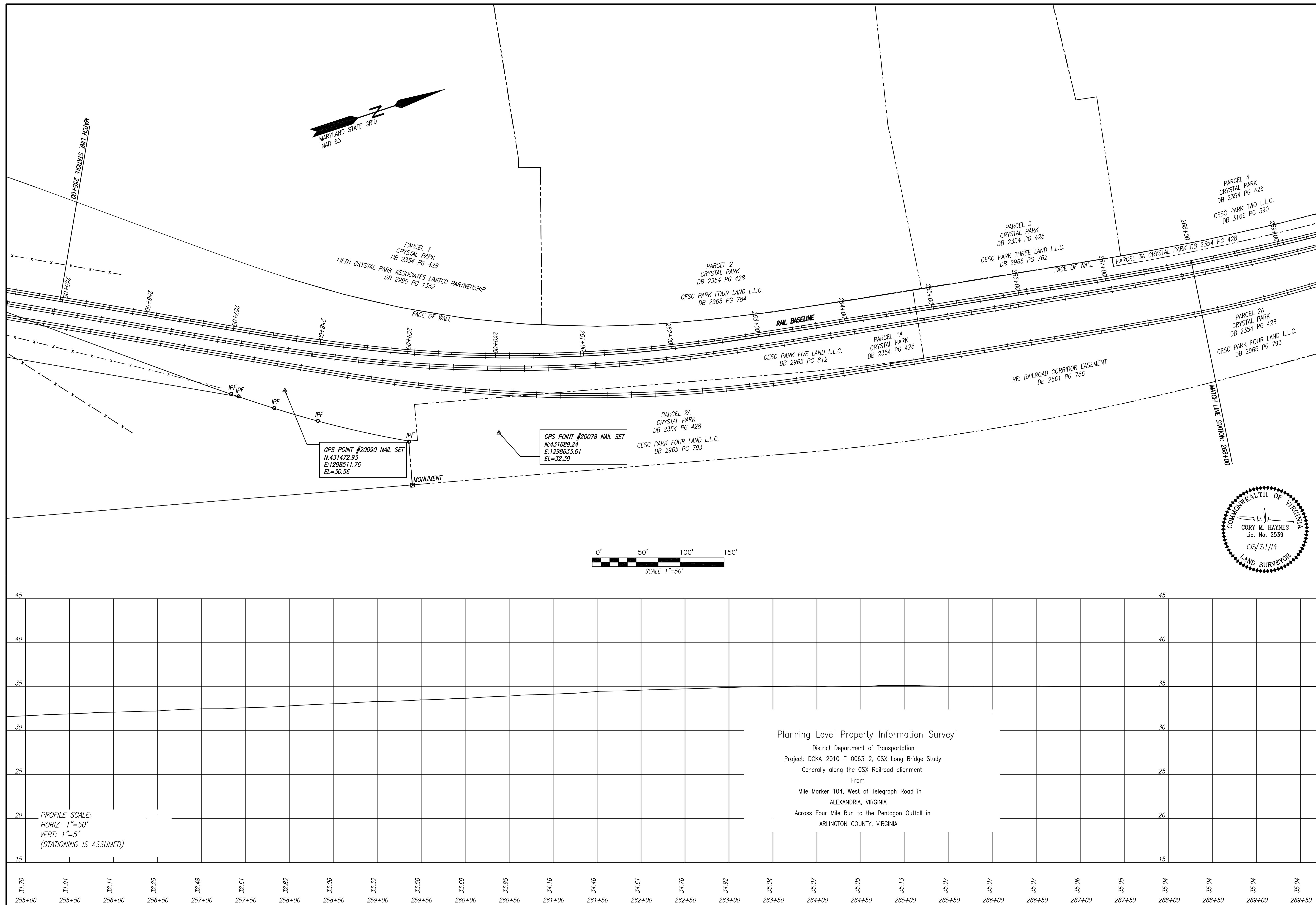
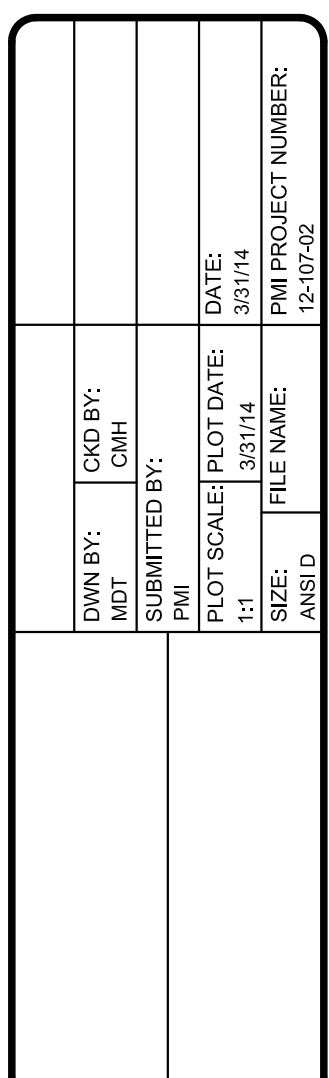
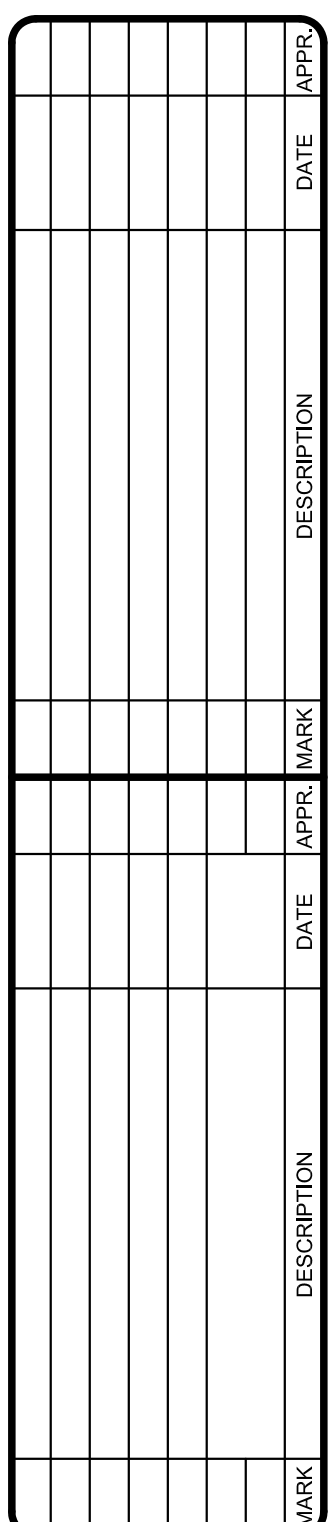
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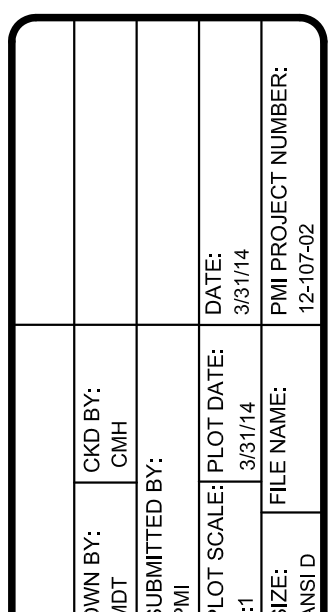
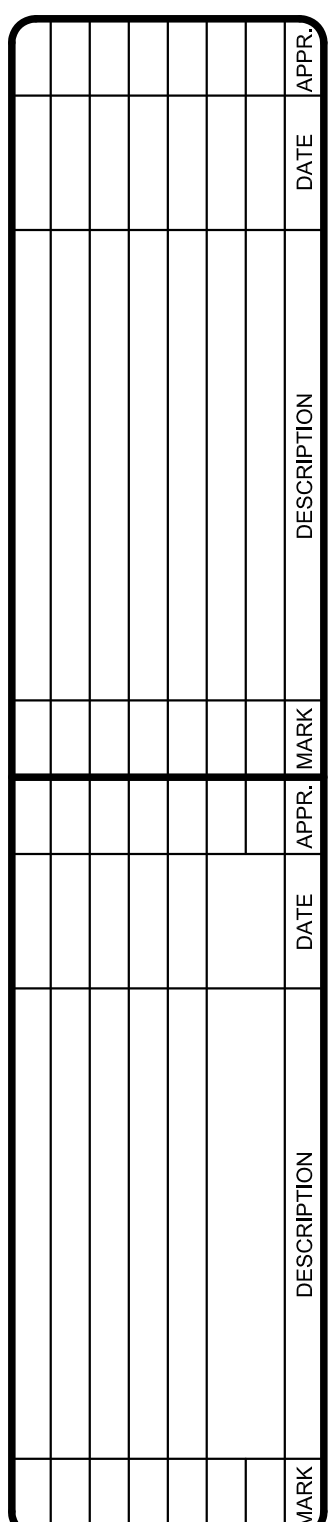
CSA
LONG BRIDGE STUDY
PROPERTY INFORMATION

SHEET

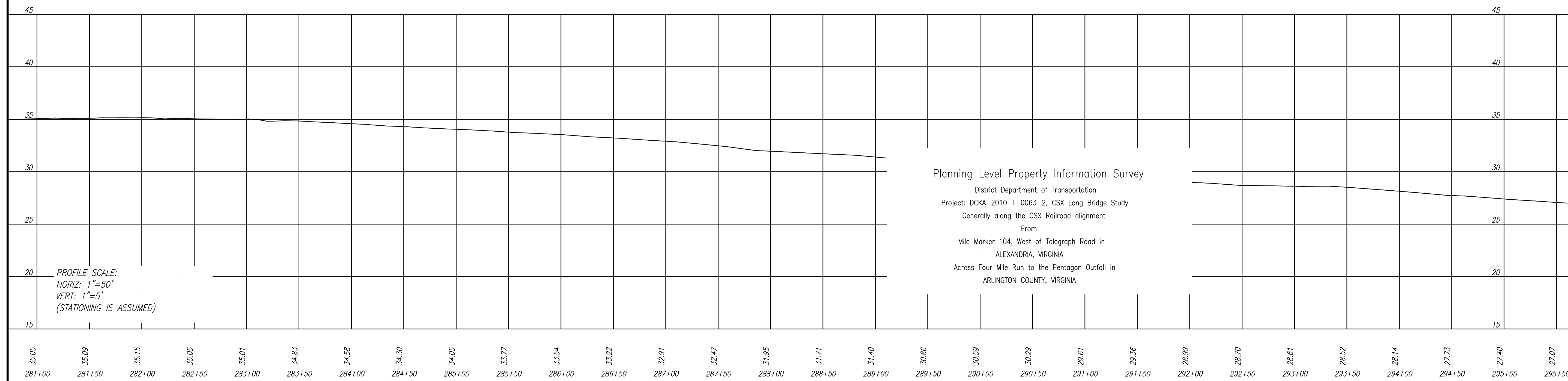
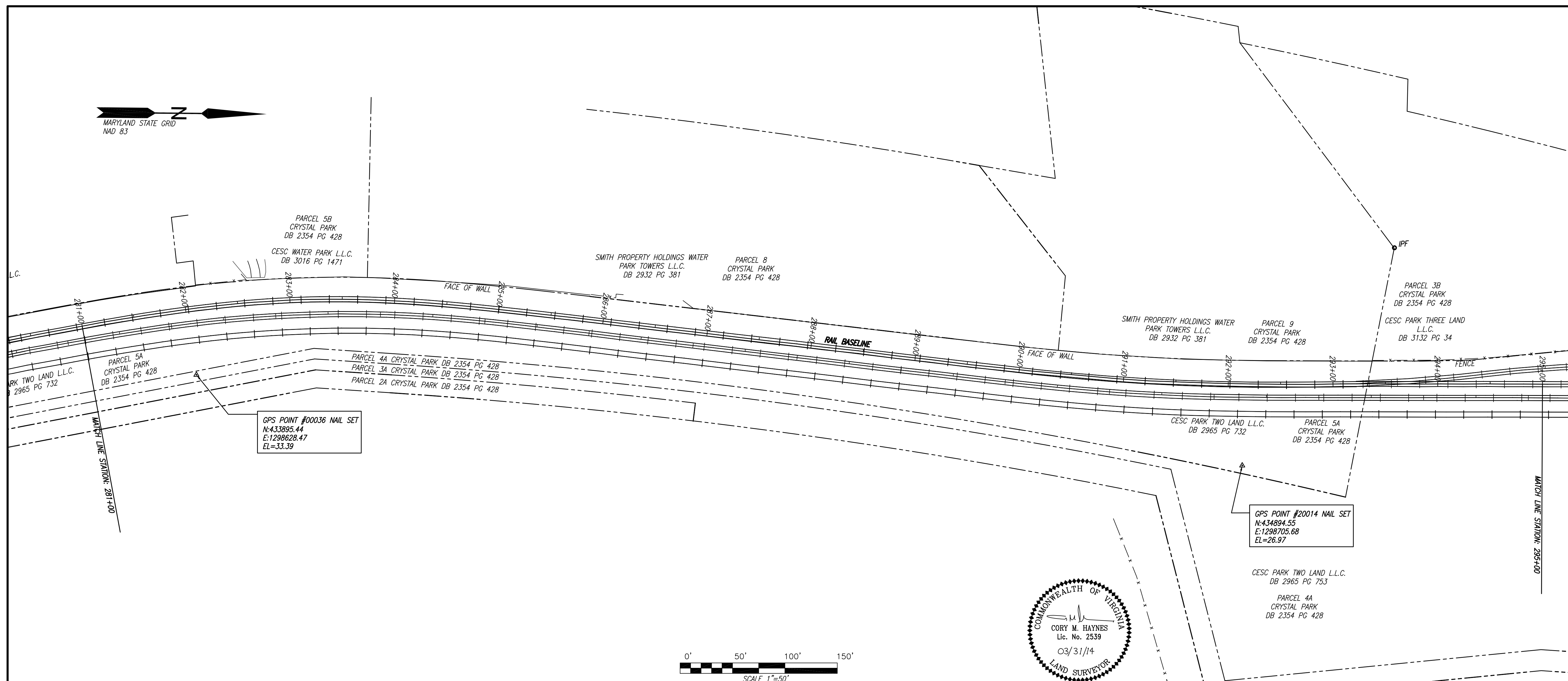
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CSX
LONG BRIDGE STUDY
PROPERTY INFORMATION



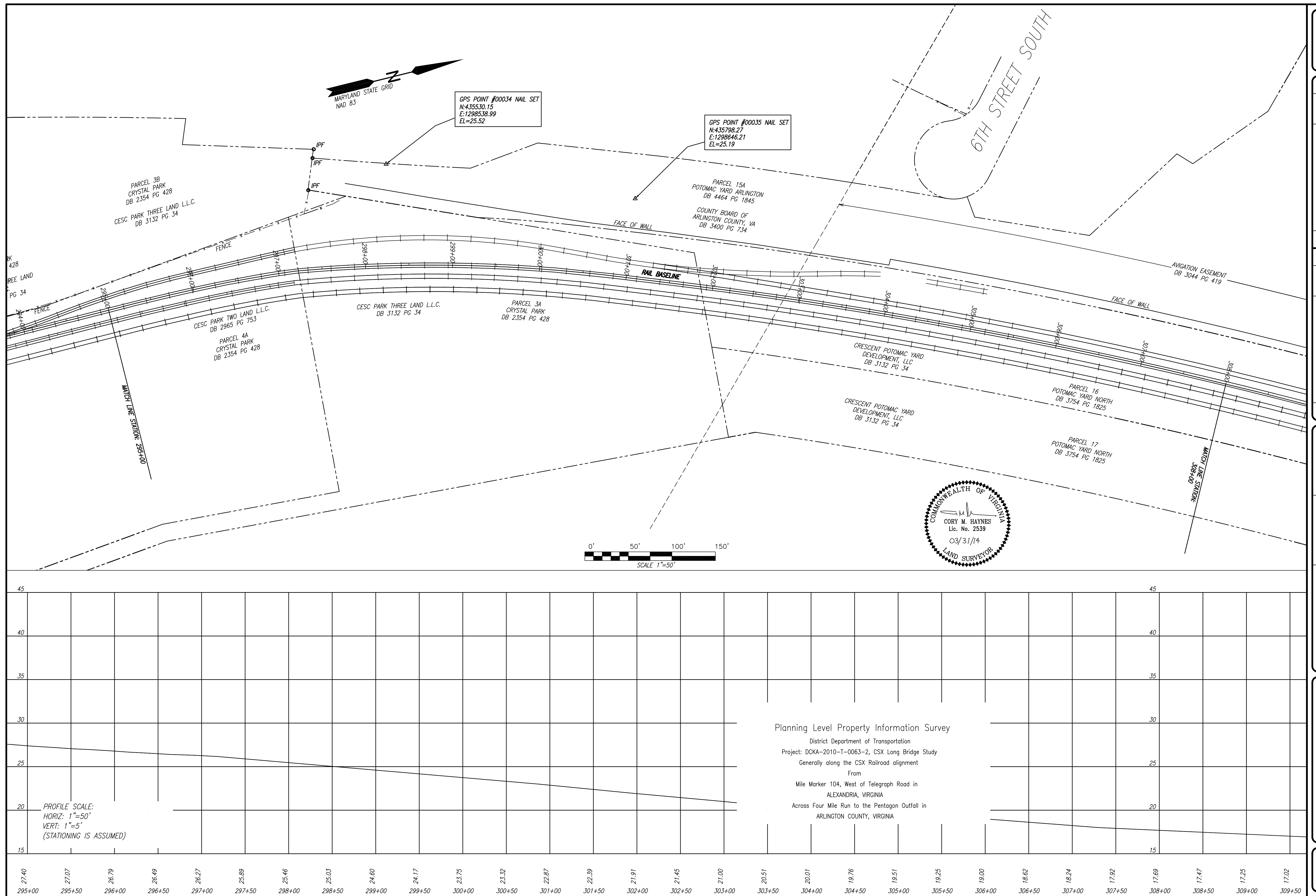
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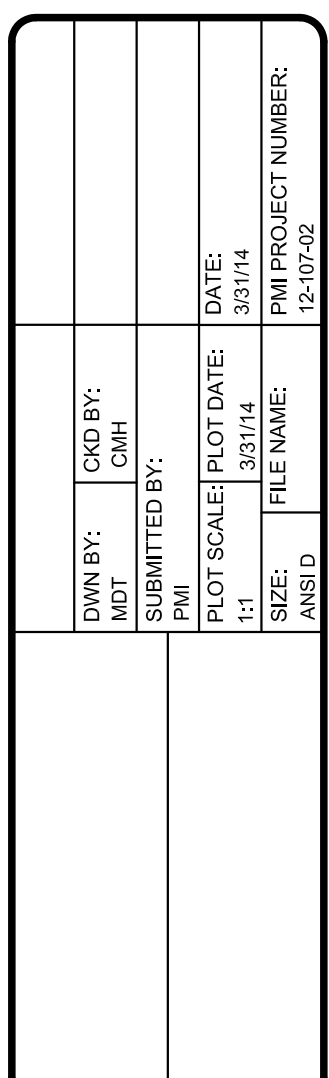
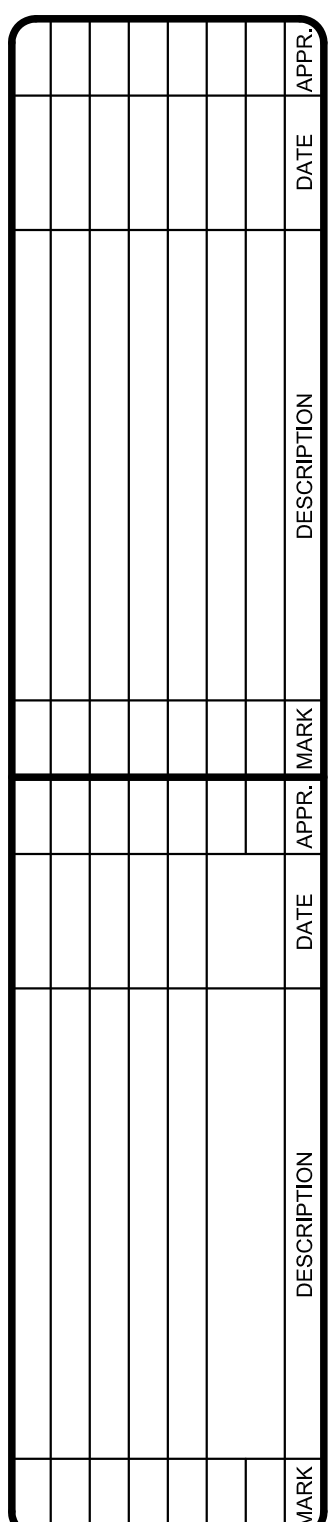
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USA
LONG BRIDGE STUDY
PROPERTY INFORMATION

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CSX LONG BRIDGE STUDY PROPERTY INFORMATION

