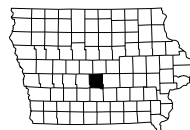


POLK COUNTY

Type
NHSX-069-4(136)--3H-77

LETTING DATE
Dec 16, 2025



INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 6	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 9	S. Ankeny Blvd.
E Sheets	Side Road Plan and Profile Sheets
* E.1	Peterson Drive
* E.2 - 3	3rd Street
* E.4	2nd Street
* E.5	1st Street
F Sheets	Removal Sheets
* F.1 - 7	Removal Sheets
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
J Sheets	Traffic Control and Staging Sheets
* J.1 - 2	Traffic Control & Staging Notes
* J.3	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.4	Staging Typical
* J.5 - 6	Traffic Control & Staging Stage 1
* J.7 - 8A	Traffic Control & Staging Stage 2
* J.9 - 10	Traffic Control & Staging Stage 3
* J.11 - 12	Traffic Control & Staging Stage 4
M Sheets	Storm Sewer Sheets
* M.1	Storm Sewer Tabulations
* M.2	Storm Sewer Legend & Symbol Info. Sheet
* M.3 - 10	Storm Sewer Plan and Profile Sheets N. Ankeny Blvd.
* M.11	Storm Sewer Plan and Profile Sheets 3rd Street
* M.12	Storm Sewer Plan and Profile Sheets 2nd Street
MWM Sheets	Water Main Plan and Profile Sheets
*MNM.1 - 4	N. Ankeny Blvd.
*MNM.5	3rd Street
MSA Sheets	Sanitary Sewer Plan and Profile Sheets
* MSA.1 - 4	N. Ankeny Blvd.
* MSA.5	3rd Street
N Sheets	Traffic Signal Sheets
* N.2 - 10	Traffic Signal Sheets
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1 - 4	Retaining Wall Plan and Profiles
* U.5 - 8	Joint Utility Trench
* U.9 - 10	Joint Utility Trench Crossings
U.11 - 12	Detail Sheets
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 32	Mainline Cross Sections
X Sheets	Side Road Cross Sections
X.1 - 22	Side Road Cross Sections
	* Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
Polk COUNTY
 Type
 U.S. Highway 69 (South Ankeny Boulevard)
 from south of SE Peterson Drive
 to 1st Street
 SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL	140
PROJECT IDENTIFICATION NUMBER	20-77-069-010
PROJECT NUMBER	NHSX-069-4(136)--3H-77
R.O.W. PROJECT NUMBER	

For Project Location Map refer to Sheet A.2

U.S. Hwy 69/ S Ankeny Boulevard DESIGN DATA URBAN			
2022	AADT	22,300	V.P.D.
2050	AADT	35,200	V.P.D.
20 --	DHV	--	V.P.H.
	TRUCKS	1.5	%
	Total		
	Design ESALs	--	

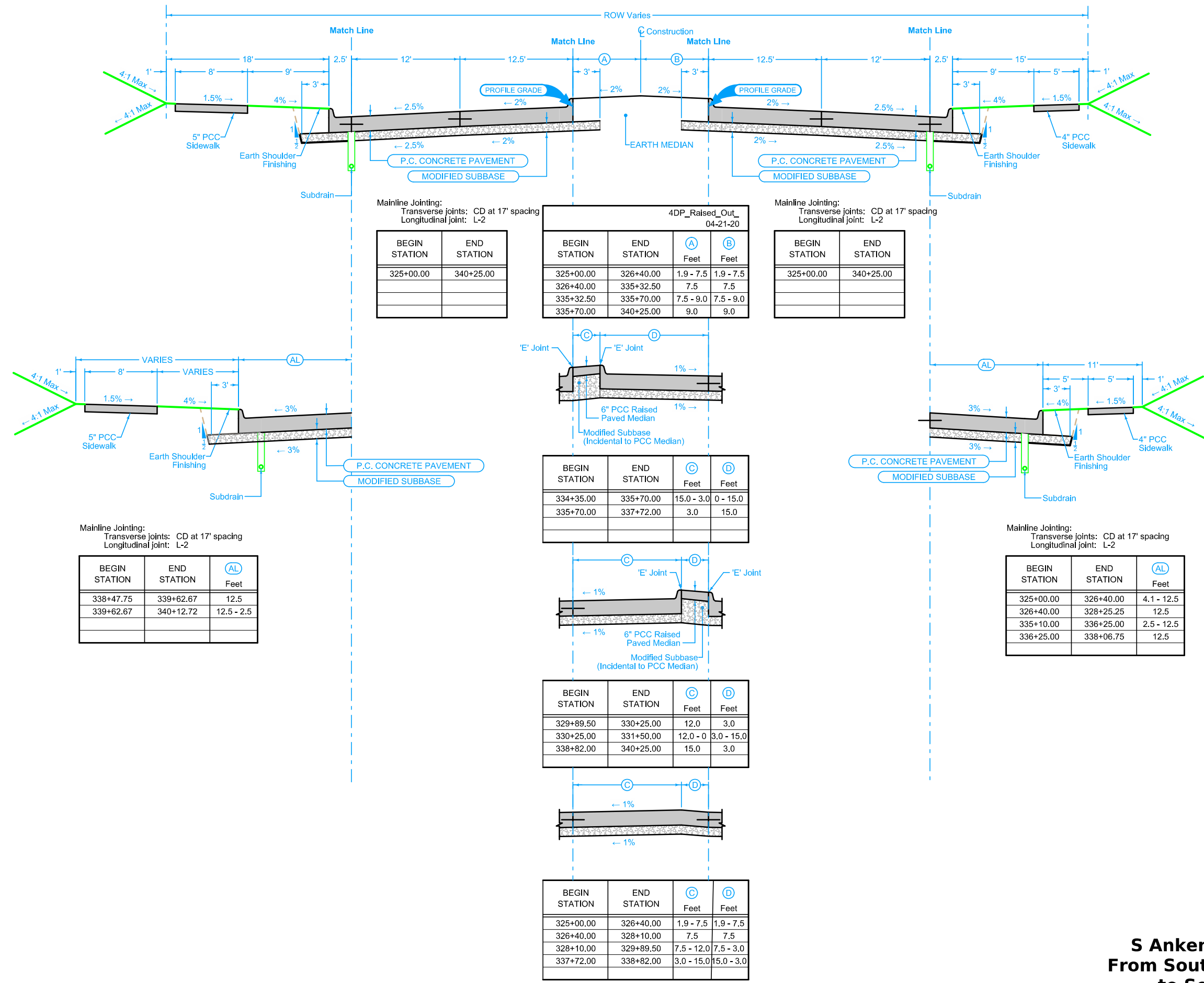
INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Andrew G. Burke	Primary Signature Block	X
N.1	Andrew J. Houchin	Traffic Signalization	X

D5 PLANS

Subject to change by final design.

REVISION April 12, 2024

D5 PLAN - Feb 29, 2024



Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

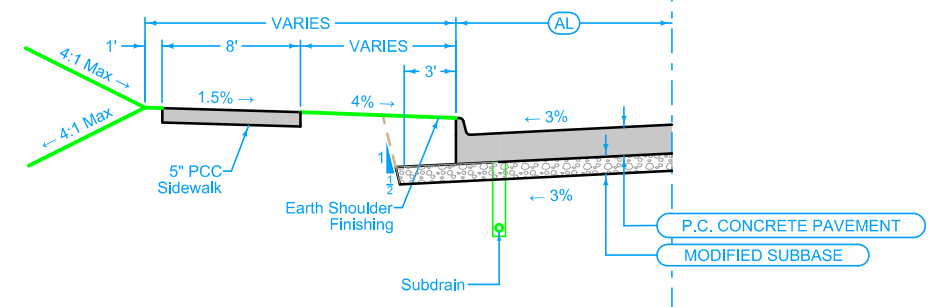
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4DP_Raised_Out_04-21-20

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326+40.00	335+32.50	7.5	7.5
335+32.50	335+70.00	7.5 - 9.0	7.5 - 9.0
335+70.00	340+25.00	9.0	9.0

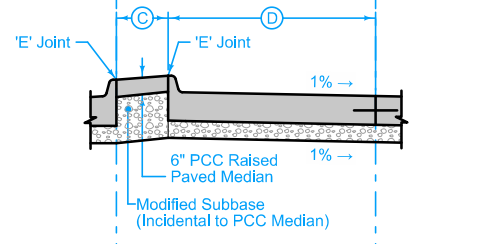
Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

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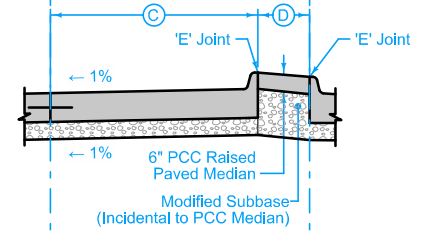


Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

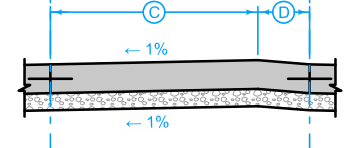
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339+62.67	340+12.72	12.5 - 2.5



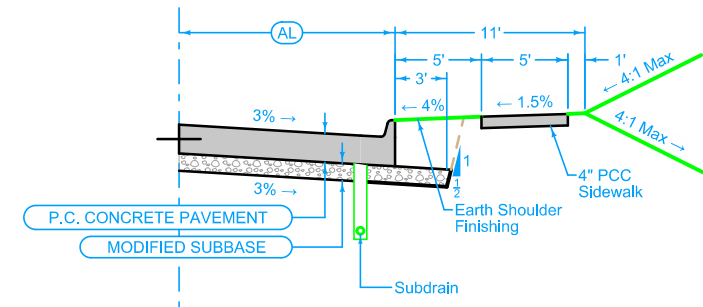
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334+35.00	335+70.00	15.0 - 3.0	0 - 15.0
335+70.00	337+72.00	3.0	15.0



BEGIN STATION	END STATION	(C) Feet	(D) Feet
329+89.50	330+25.00	12.0	3.0
330+25.00	331+50.00	12.0 - 0	3.0 - 15.0
338+82.00	340+25.00	15.0	3.0



BEGIN STATION	END STATION	(C) Feet	(D) Feet
325+00.00	326+40.00	1.9 - 7.5	1.9 - 7.5
326+40.00	328+10.00	7.5	7.5
328+10.00	329+89.50	7.5 - 12.0	7.5 - 3.0
337+72.00	338+82.00	3.0 - 15.0	15.0 - 3.0

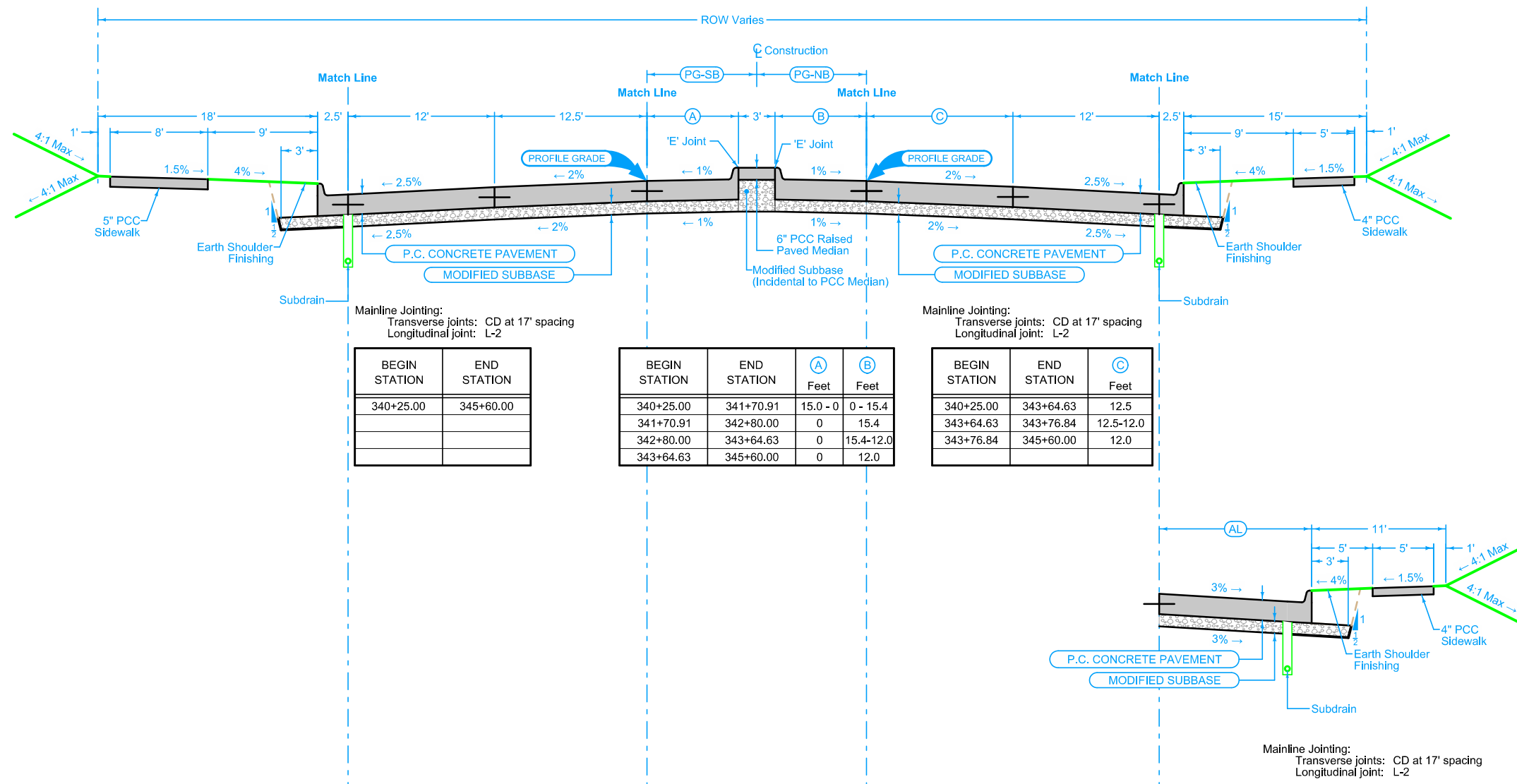


Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

BEGIN STATION	END STATION	(AL) Feet
325+00.00	326+40.00	4.1 - 12.5
326+40.00	328+25.25	12.5
335+10.00	336+25.00	2.5 - 12.5
336+25.00	338+06.75	12.5

**S Ankeny Boulevard (US 69)
 From South of SE Peterson Drive
 to South of 2nd Street**

BEGIN STATION	END STATION	(PG-SB) Feet	(PG-NB) Feet
340+25.00	340+89.38	9.0 Lt	9.0 Rt
340+89.38	340+99.00	9.0 Lt - 9.39 Lt	9.0 Rt
340+99.00	342+80.00	9.39 Lt - 16.63 Lt	9.0 Rt - 1.76 Rt
342+80.00	343+64.63	16.63 Lt	1.76 Rt - 1.63 Lt
343+64.63	345+60.00	16.63 Lt	1.63 Lt



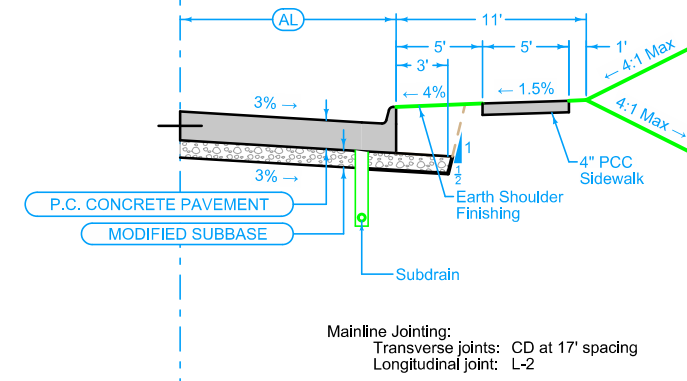
Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION
340+25.00	345+60.00

BEGIN STATION	END STATION	(A) Feet	(B) Feet
340+25.00	341+70.91	15.0 - 0	0 - 15.4
341+70.91	342+80.00	0	15.4
342+80.00	343+64.63	0	15.4-12.0
343+64.63	345+60.00	0	12.0

Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

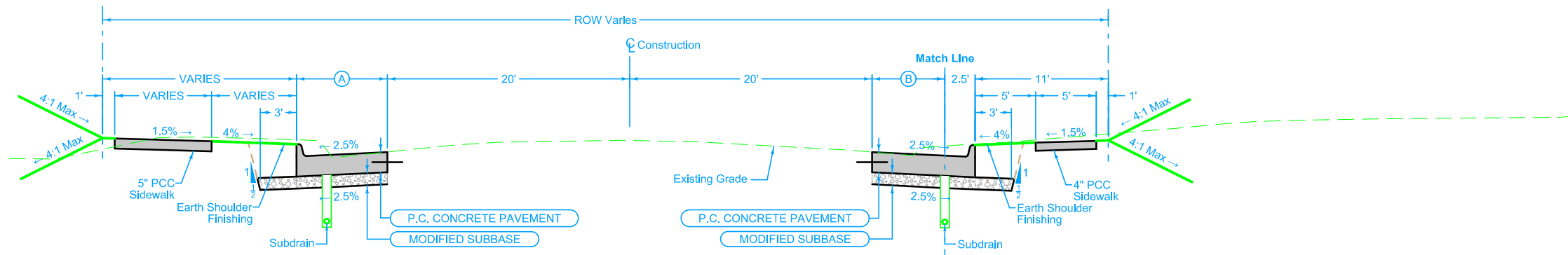
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343+76.84	345+60.00	12.0



Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION	(AL) Feet
340+25.00	343+35.25	2.5
343+35.25	344+18.50	2.5 - 12.5
344+18.50	345+60.00	12.5

**S Ankeny Boulevard (US 69)
From South of SW 2nd Street
to 1st Street Intersection**

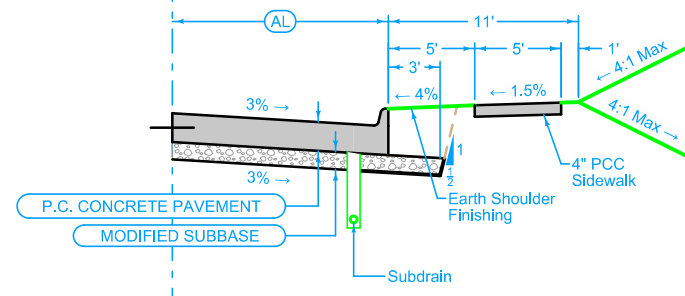


Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

BEGIN STATION	END STATION	(A) Feet
324+10.00	324+15.00	5.5
324+15.00	325+00.00	5.5 - 8.9

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

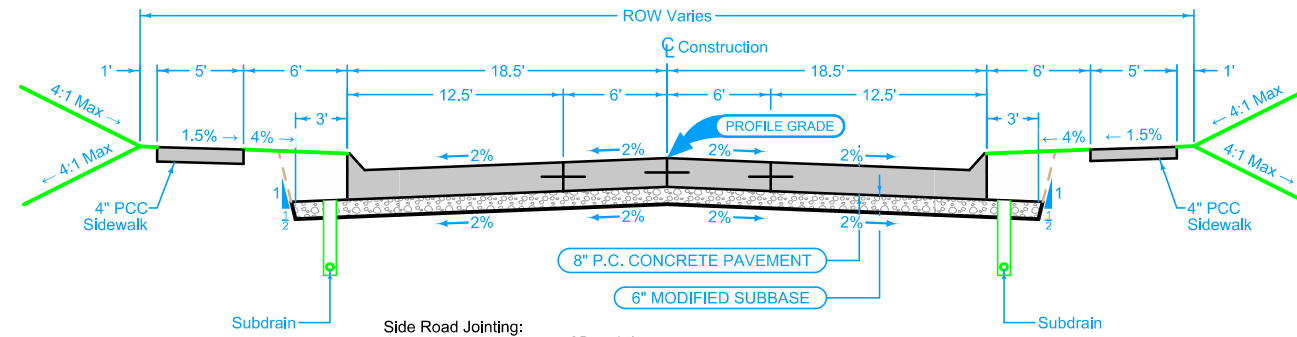
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Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

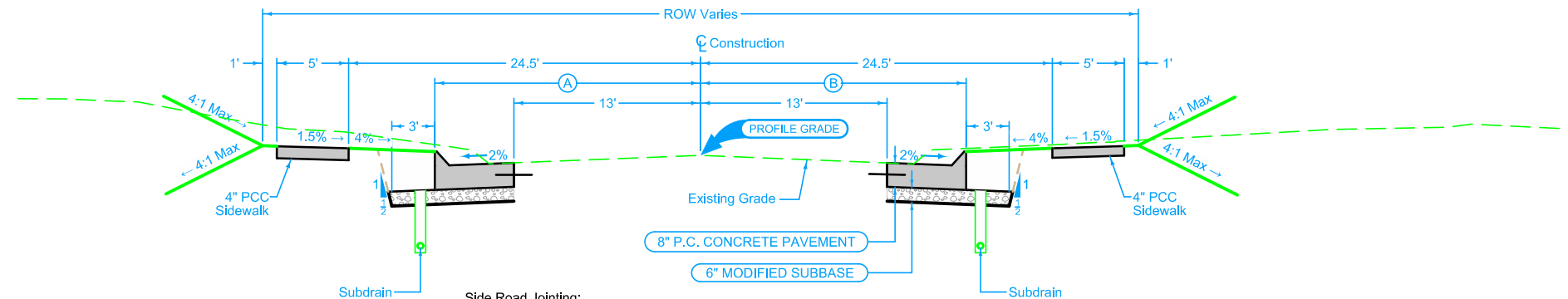
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**S Ankeny Boulevard (US 69)
 Widening
 South of SE Peterson Drive**



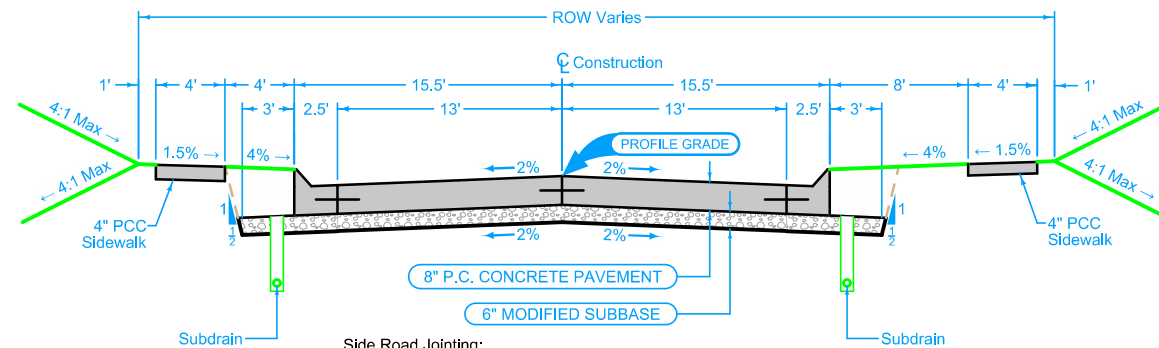
Side Road Jointing:
 Transverse joints: CD at 15' spacing
 Longitudinal joint: L-2

ROAD NAME	BEGIN STATION	END STATION
SE PETERSON DRIVE	32844+34.50	32845+15.00



Side Road Jointing:
 Transverse joints: CD match Existing or 15' Max. spacing
 Longitudinal joint: L-2

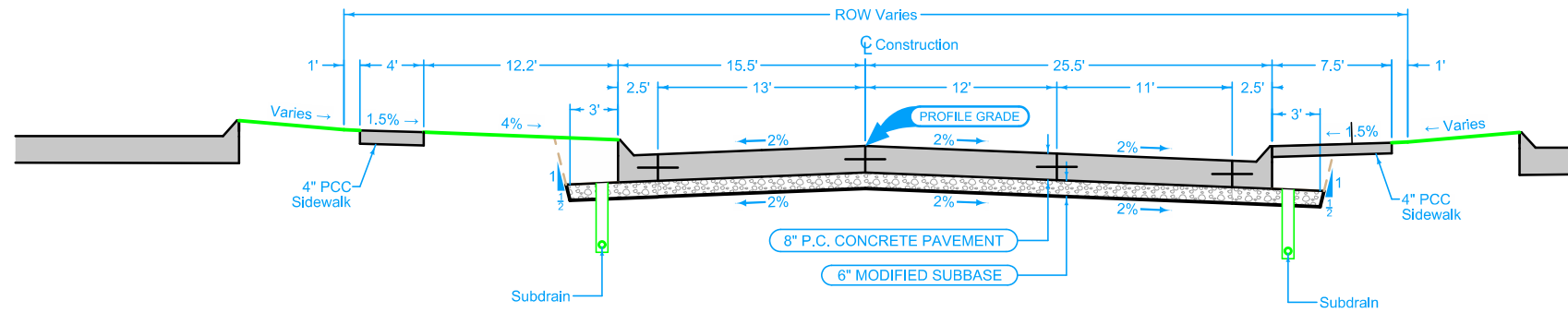
ROAD NAME	BEGIN STATION	END STATION	(A) Feet	(B) Feet
SE PETERSON DRIVE	32845+15.00	32846+64.00	18.5	18.5
SE PETERSON DRIVE	32846+64.00	32846+91.50	18.5 - 15.75	
SE PETERSON DRIVE	32846+91.50	32847+00.00	15.75	
SE PETERSON DRIVE	32846+64.00	32847+00.00	18.5 - 16.1	



Side Road Jointing:
 Transverse joints: CD at 15' spacing
 Longitudinal joint: L-2

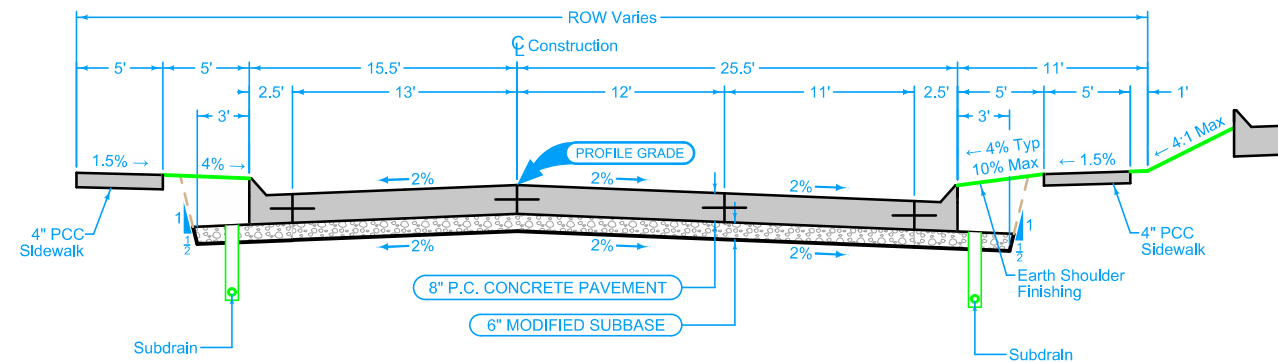
ROAD NAME	BEGIN STATION	END STATION
SW 2nd Street	34226+95.00	34228+05.44

SE Peterson Drive and SW 2nd Street



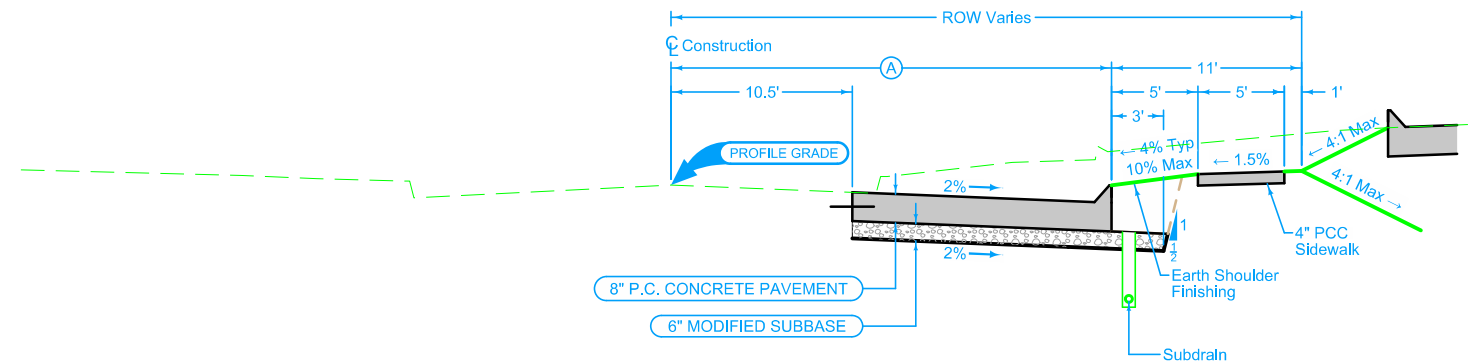
Side Road Jointing:
 Transverse joints: CD at 15' spacing
 Longitudinal joint: L-2

ROAD NAME	BEGIN STATION	END STATION
SW 3rd Street	98+10.00	99+69.00



Side Road Jointing:
 Transverse joints: CD at 15' spacing
 Longitudinal joint: L-2

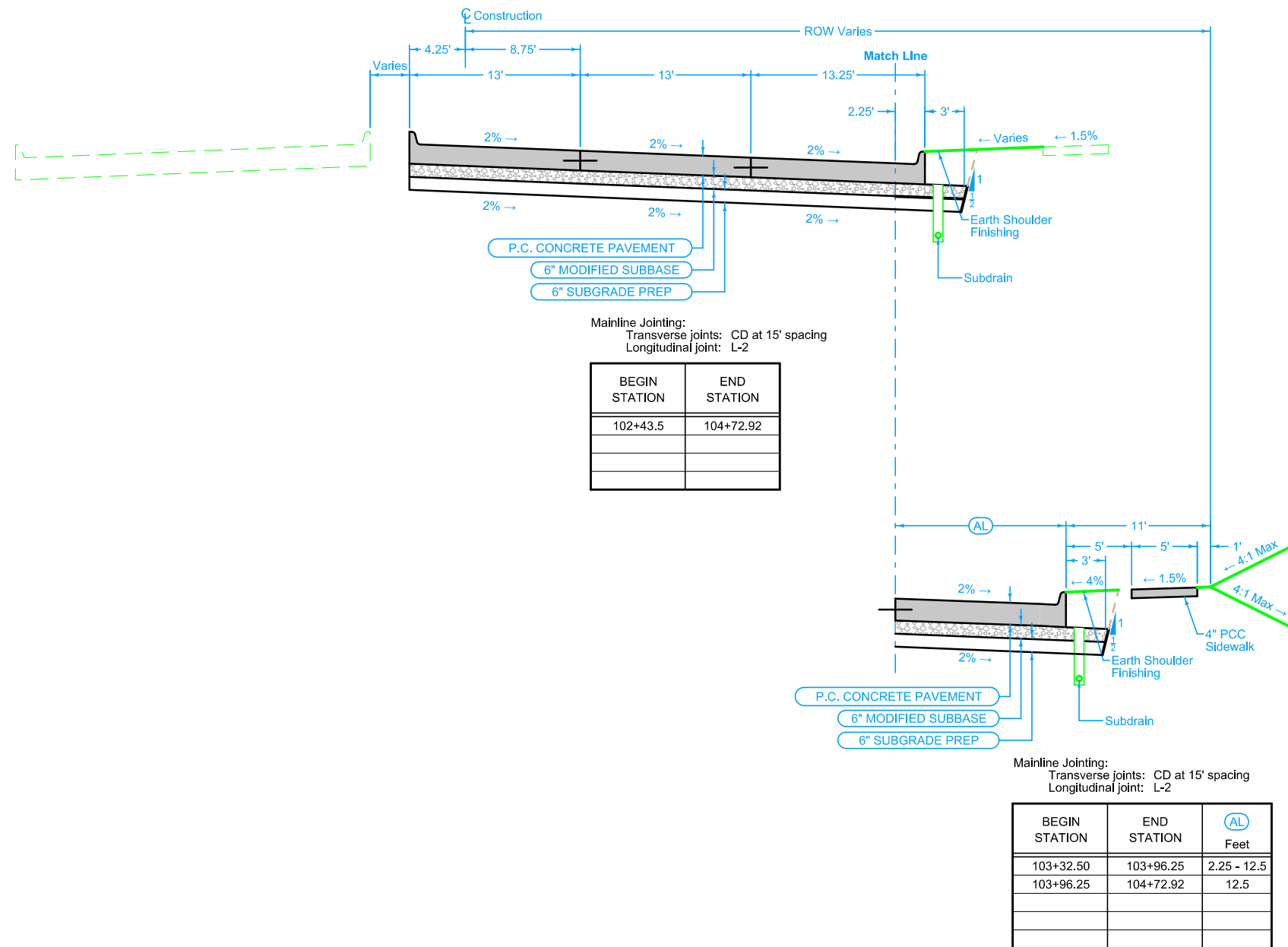
ROAD NAME	BEGIN STATION	END STATION
SE 3rd Street	100+41.00	101+00.00



Side Road Jointing:
 Transverse joints: CD match Existing or 15' Max. spacing
 Longitudinal joint: L-2

ROAD NAME	BEGIN STATION	END STATION	(A) Feet
SE 3rd Street	101+00.00	102+20.92	25.5
SE 3rd Street	101+00.00	103+70.92	25.5 - 15.5
SE 3rd Street	103+70.92	103+75.00	15.5

SW and SE 3rd Street



W 1st Street

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box
- Utility Pole

UTILITY LEGEND

- SAN. City of Ankeny
Roger McFarland
515-460-3747
RMCFARLAND@ANKENYIOWA.GOV
- SAN. 2 City of Ankeny
Shawn Buckner
515-979-6987
SBUCKNER@ANKENYIOWA.GOV
- W City of Ankeny
Shawn Buckner
515-979-6987
SBUCKNER@ANKENYIOWA.GOV
- W2 City of Ankeny
Shawn Buckner
515-979-6987
SBUCKNER@ANKENYIOWA.GOV
- E2 City of Ankeny Traffic
Tom Dozler
515-963-3527
TDOZLER@ANKENYIOWA.GOV
- F04 ACSD Ankeny Fiber
Paul Mahoney
515-965-9604 ext. 52993
PAUL.MAHONEY@ANKENYSCHOOLS.ORG
- F04 ACSD Ankeny Fiber
Paul Mahoney
515-965-9604 ext. 52993
PAUL.MAHONEY@ANKENYSCHOOLS.ORG
- F07 Aureon
Jeff Klocko
515-830-0445
JEFF.KLOCKO@AUREON.COM
- F0 Lumen Technologies
Austin Freese
515-263-7385
AUSTIN.FREESE@LUMEN.COM
- T1 Lumen Technologies
Austin Freese
515-263-7385
AUSTIN.FREESE@LUMEN.COM
- TV Mediacom
Dave Meyers
515-991-7833
DMEYERS2@MEDIACOMCC.COM
- TV5 Mediacom
Dave Meyers
515-991-7833
DMEYERS2@MEDIACOMCC.COM
- F05 Metronet (Metro Fibernet)
Chas Antle
641-841-0384
CHAS.ANTLE@METRONET.COM
- E1 MidAmerican - Electric
Matthew Novy
515-252-6730
MATTHEW.NOVY@MIDAMERICAN.COM
- E5 MidAmerican - Electric
Matthew Novy
515-252-6730
MATTHEW.NOVY@MIDAMERICAN.COM
- G MidAmerican - Gas
Matthew Novy
515-252-6730
MATTHEW.NOVY@MIDAMERICAN.COM
- F02 Unite Private Networks
Dakota Pardekooper
515-371-7104
DAKOTA.PARDEKOOPER@UPNFIBER.COM
- U.S. Cellular
Daryl Morris
603-486-9357
DARYL.MORRIS@USCELLULAR.COM
- F06 Verizon (MCI)
Thanh (TK) Nguyen
515-783-7177
THANH.NGUYEN3@VERIZON.COM
- Verizon Wireless
Ryan Schaffer
515-201-5382
RYAN.SCHAFFER@VERIZONWIRELESS.COM
- No Response Windstream
Kelly Wingfield

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

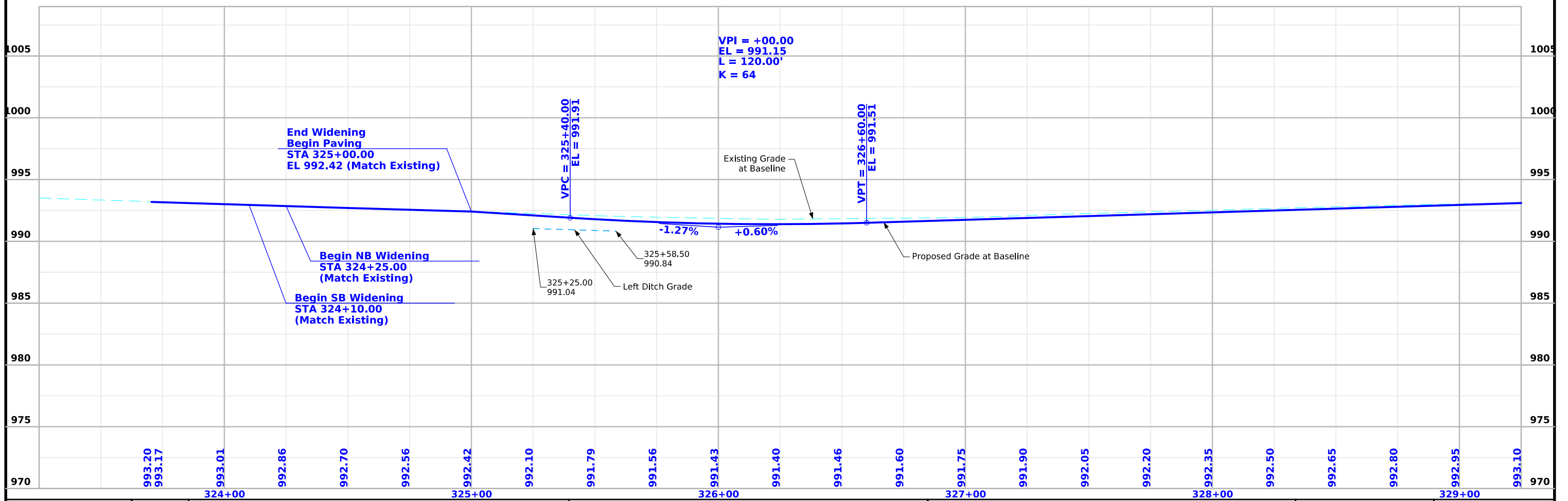
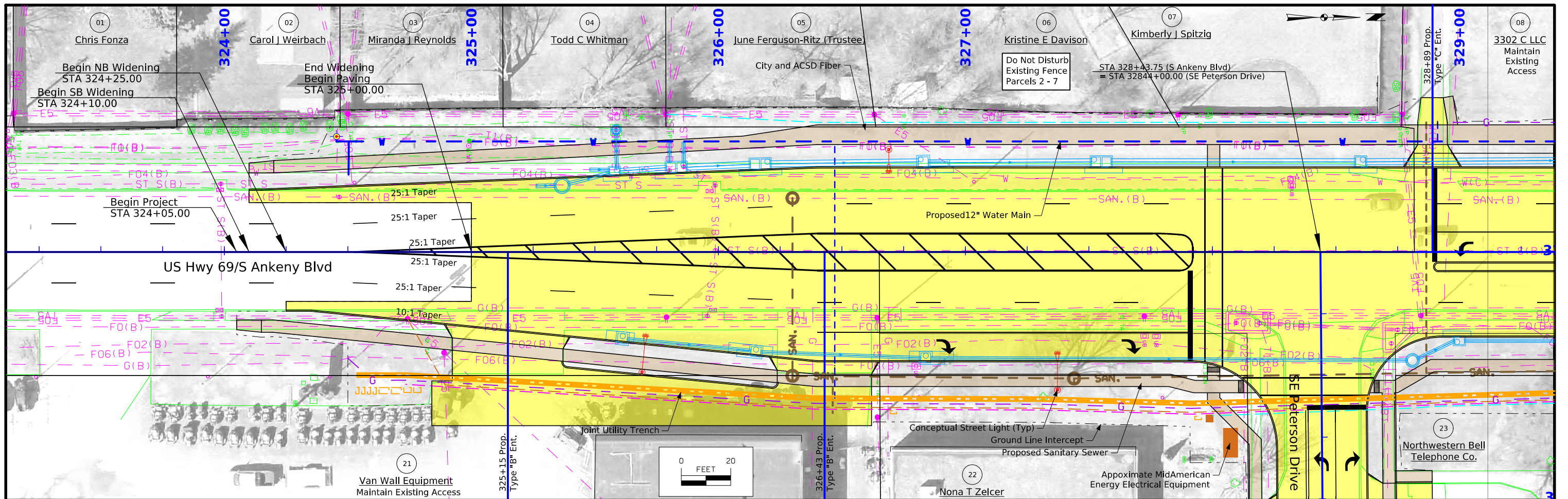
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Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Joint Utility Trench
- 6" Gas
- 6" Underground Electric
- 4" Underground Electric
- 2" Underground Electric
- 2" City Fiber

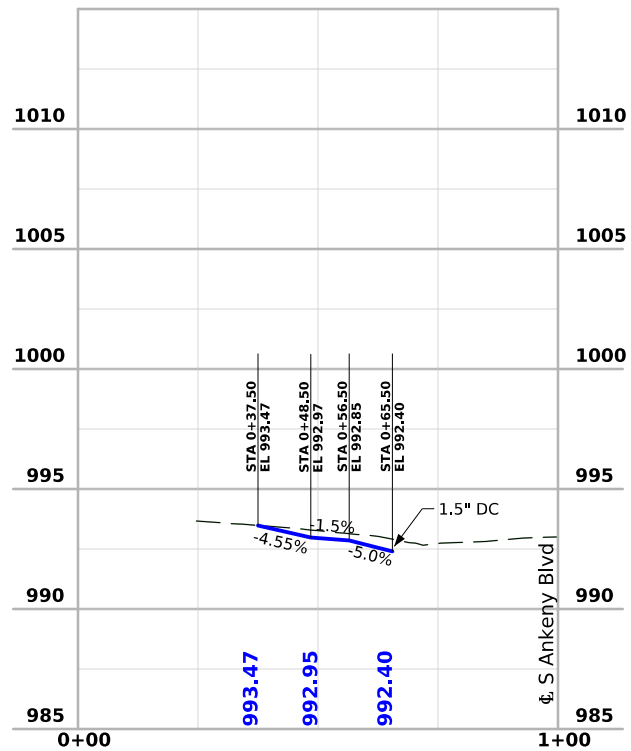
- ### RIGHT-OF-WAY LEGEND
- Proposed Right-of-Way
 - Existing Right of Way
 - Existing and Proposed Right-of-Way
 - Easement and Existing Right-of-Way
 - Easement (Temporary)
 - Easement
 - Access Control
 - Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

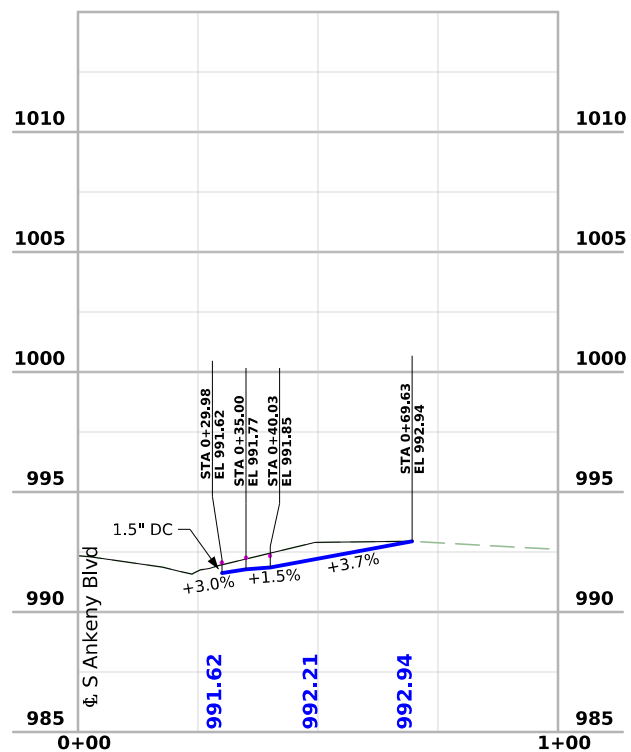
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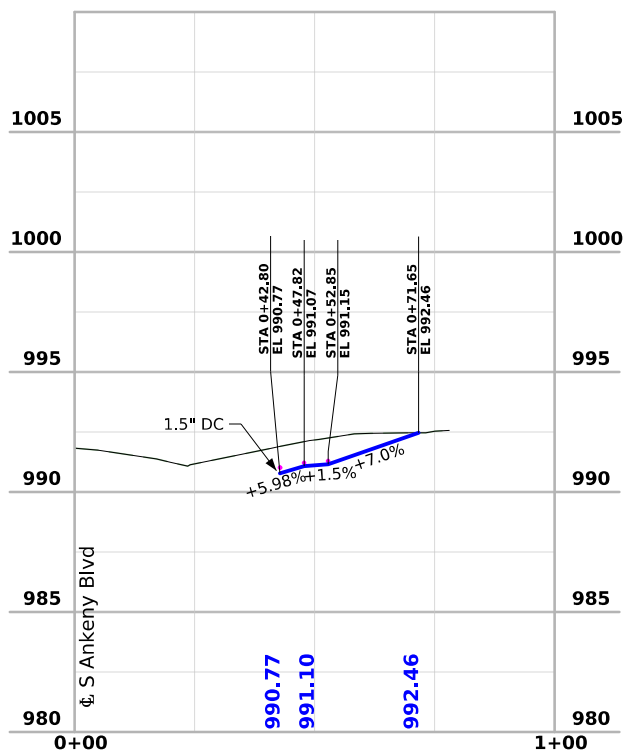
FILE NO.	ENGLISH	DESIGN TEAM	Snyder & Associates	POLK COUNTY	PROJECT NUMBER	NHSX-069-4(136)--3H-77	SHEET NUMBER	D.2
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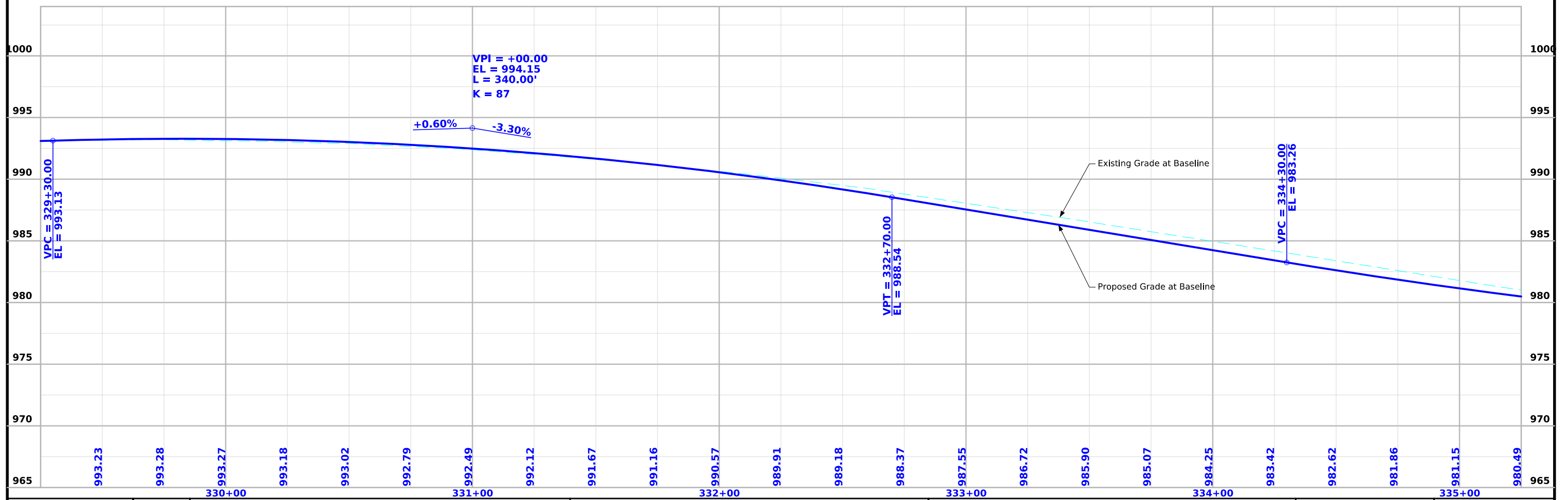
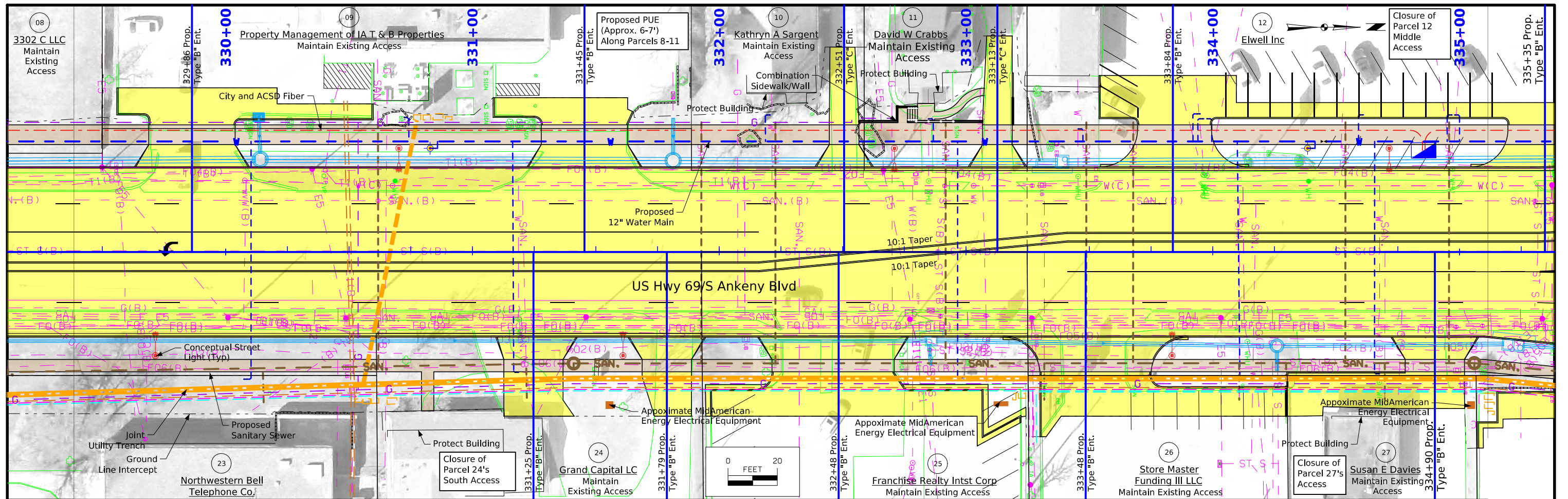
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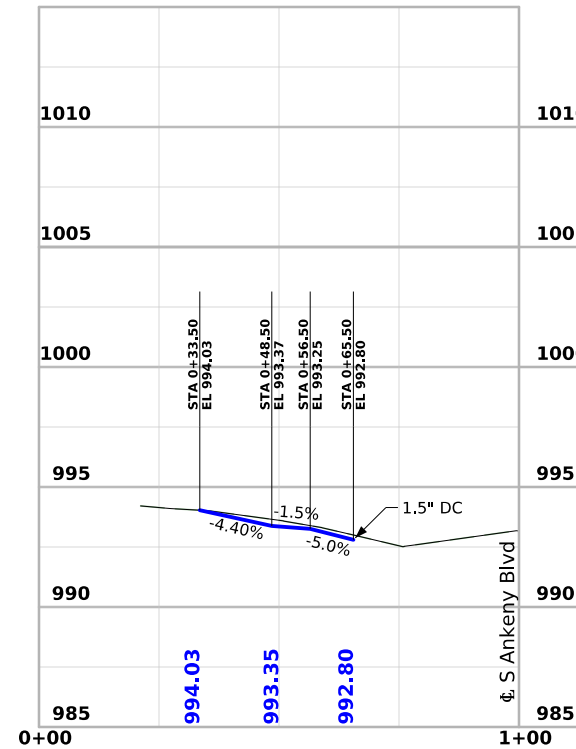


**325+15
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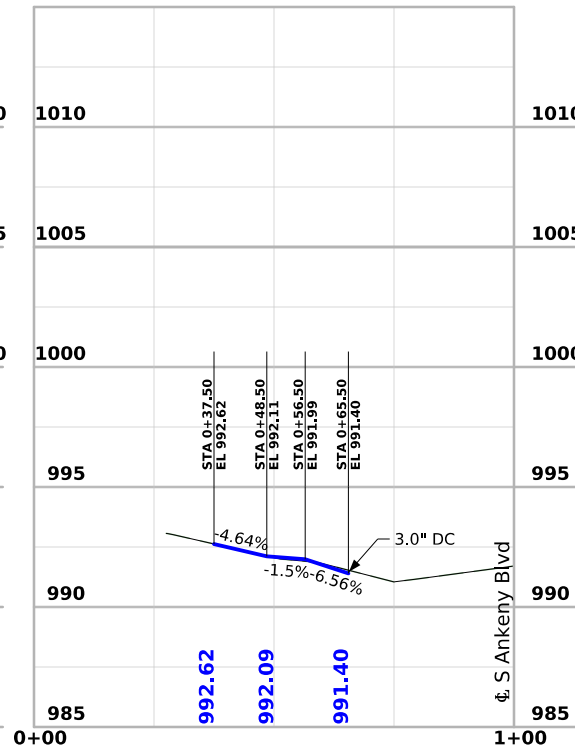


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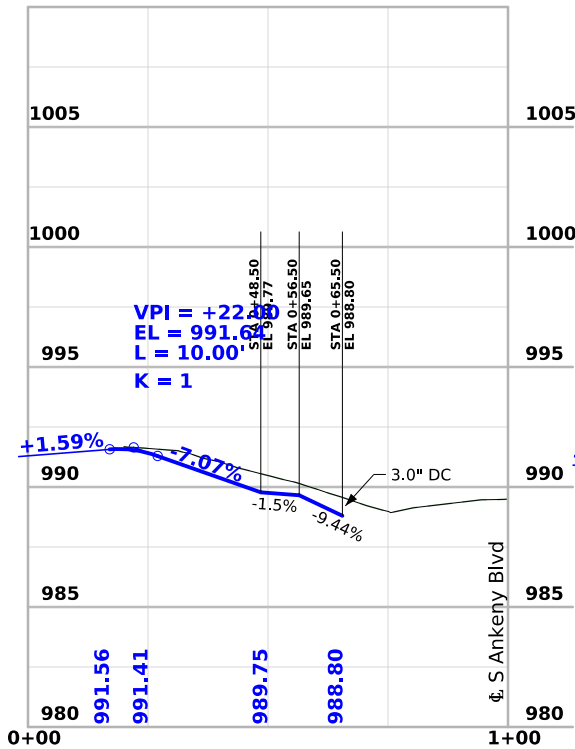




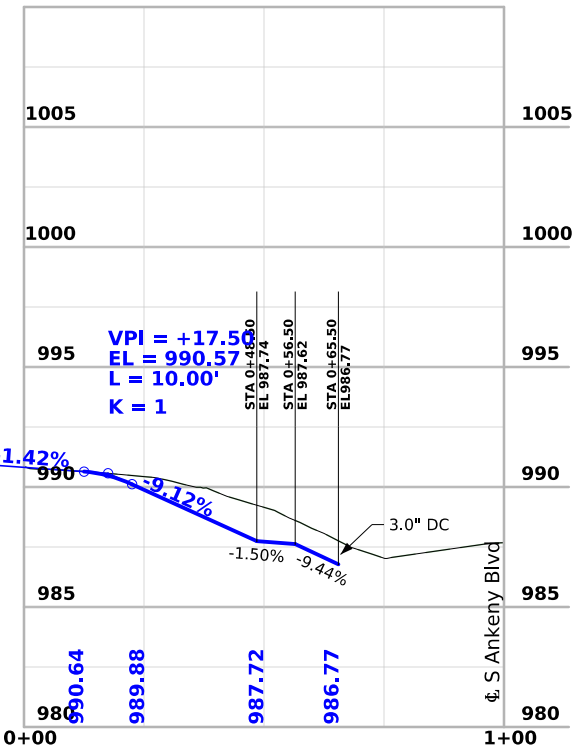
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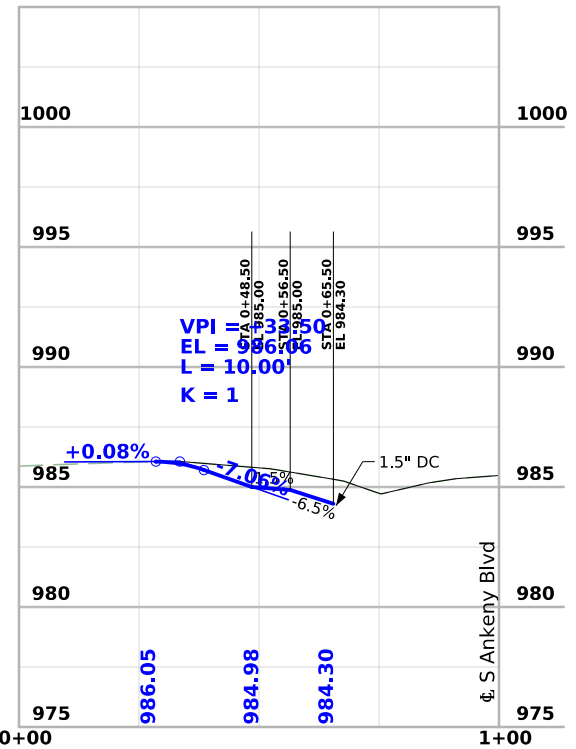
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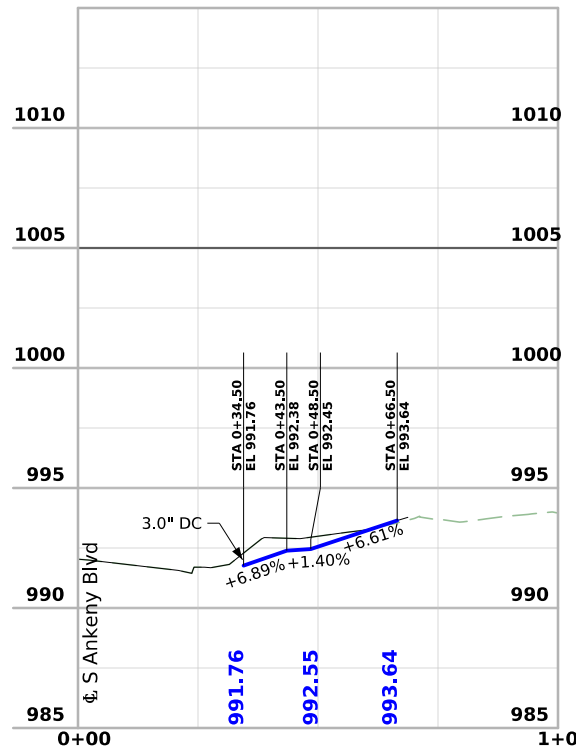
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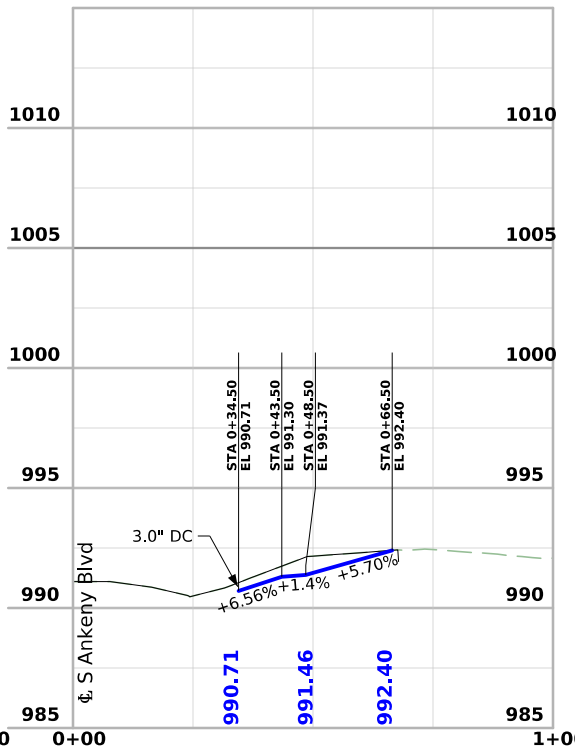
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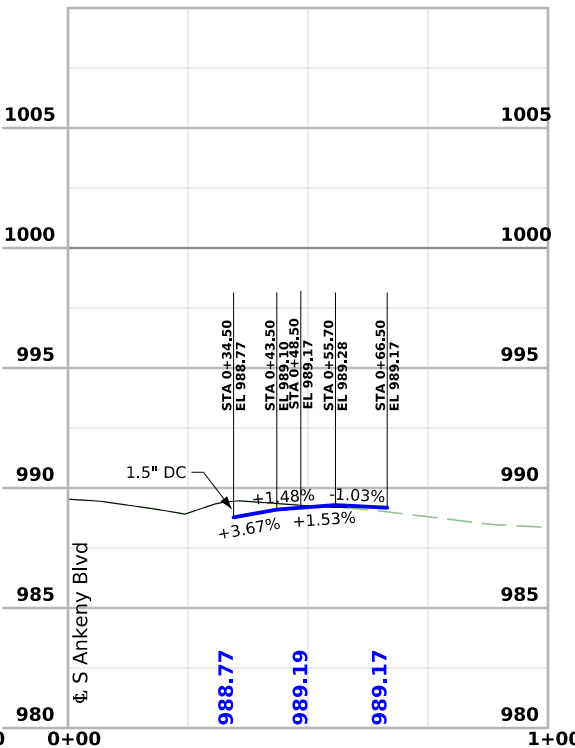
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GeoENT_12S**



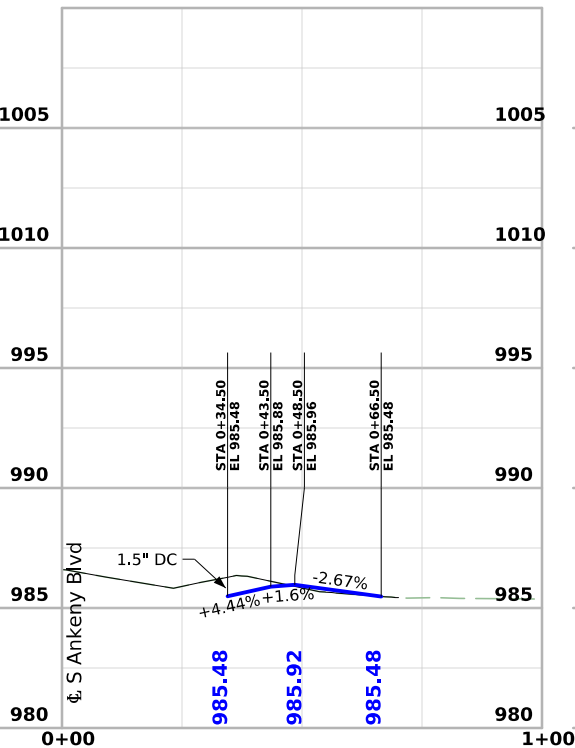
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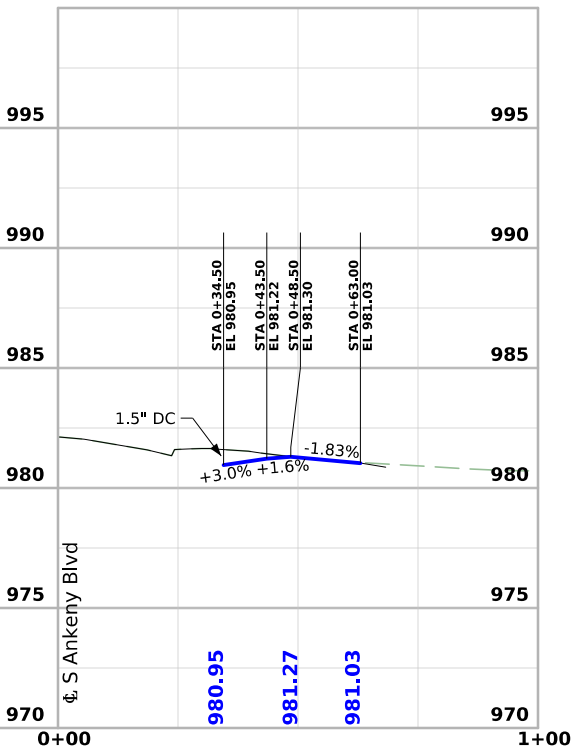
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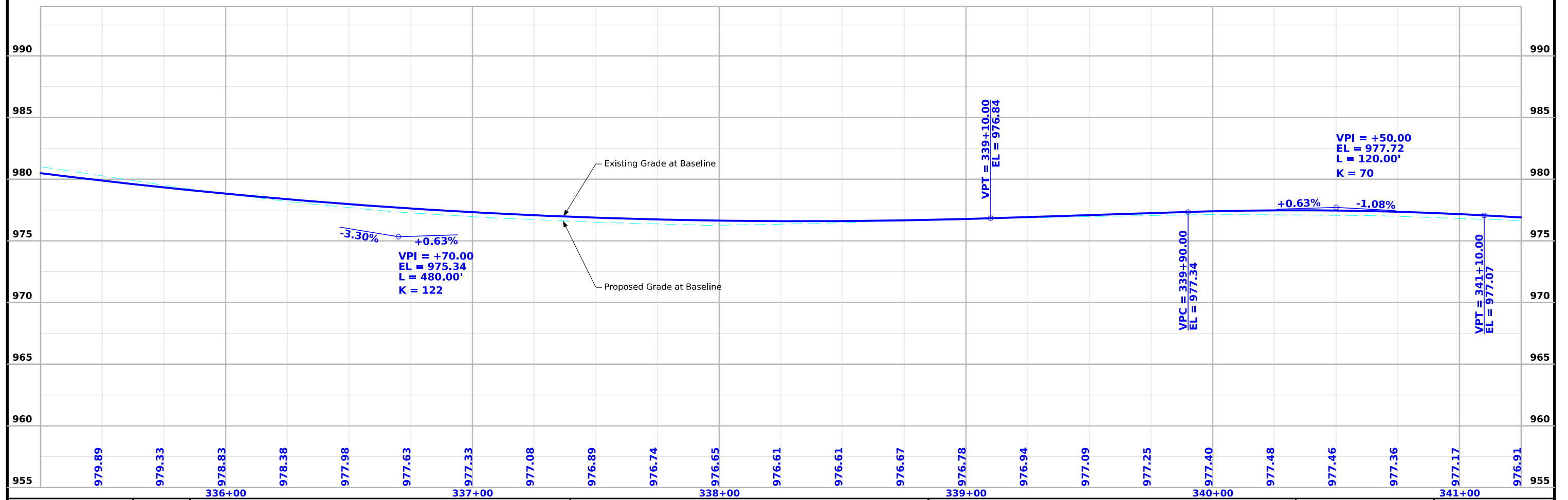
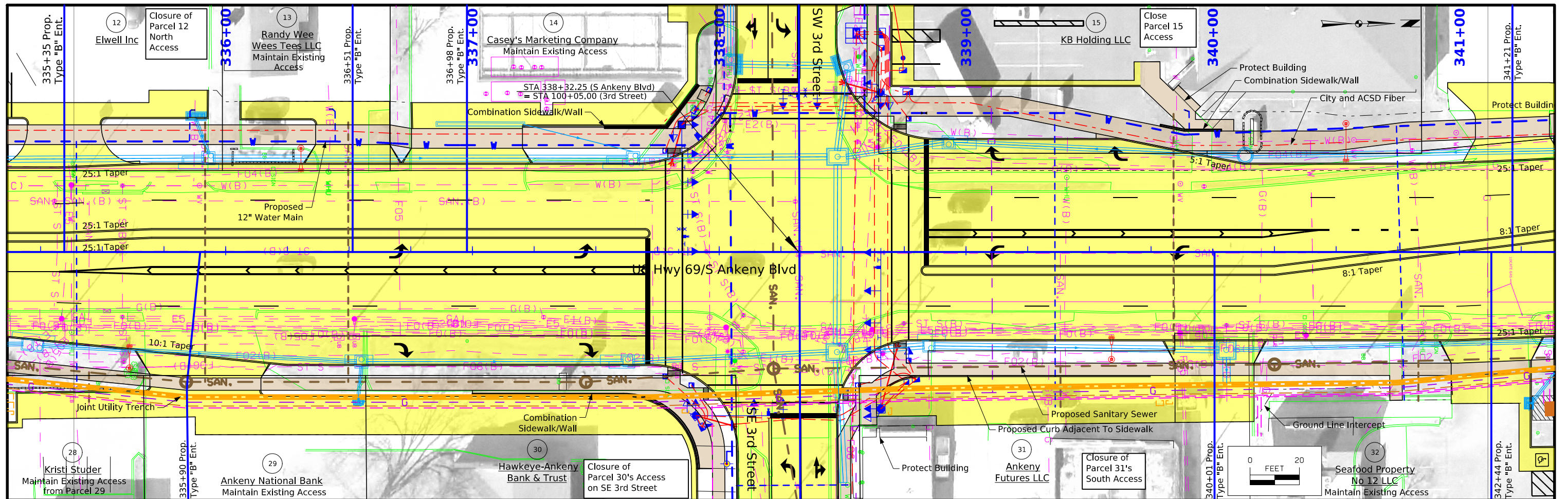
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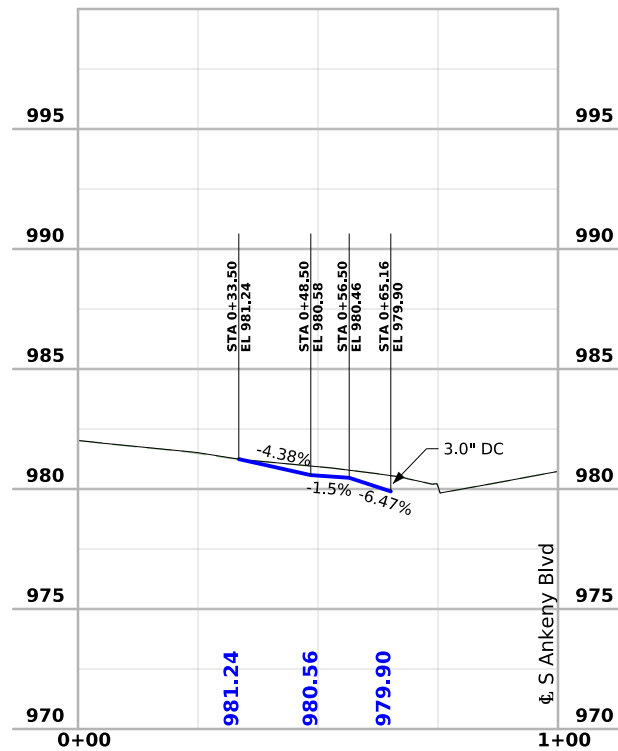


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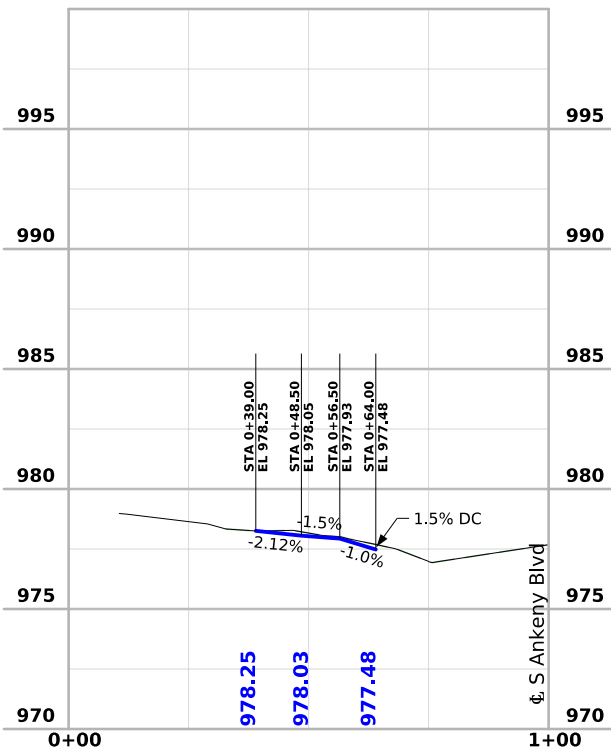


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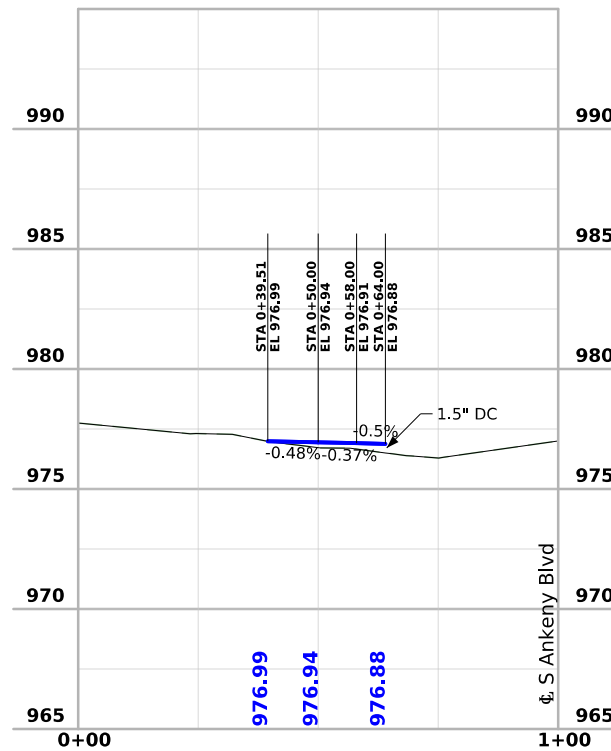




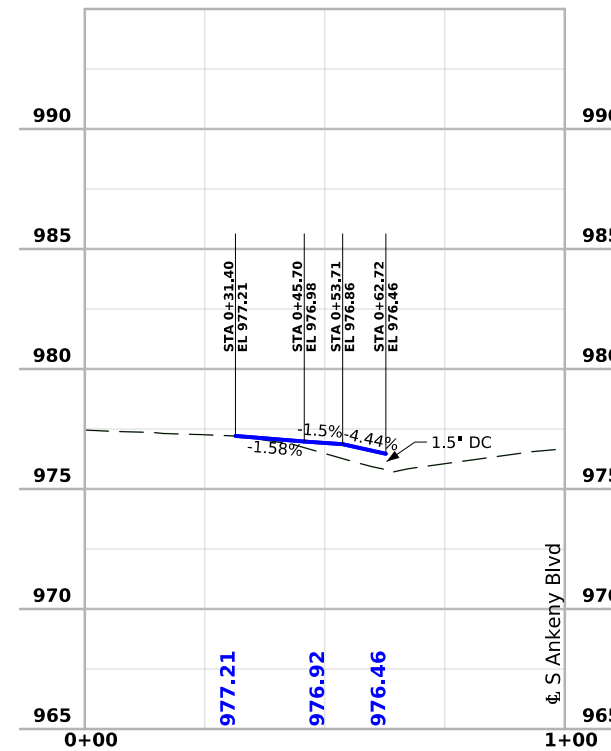
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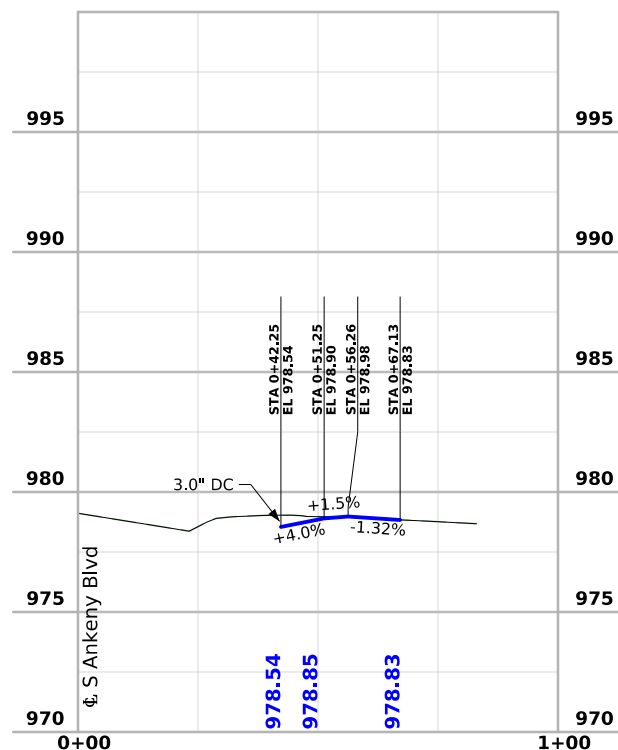
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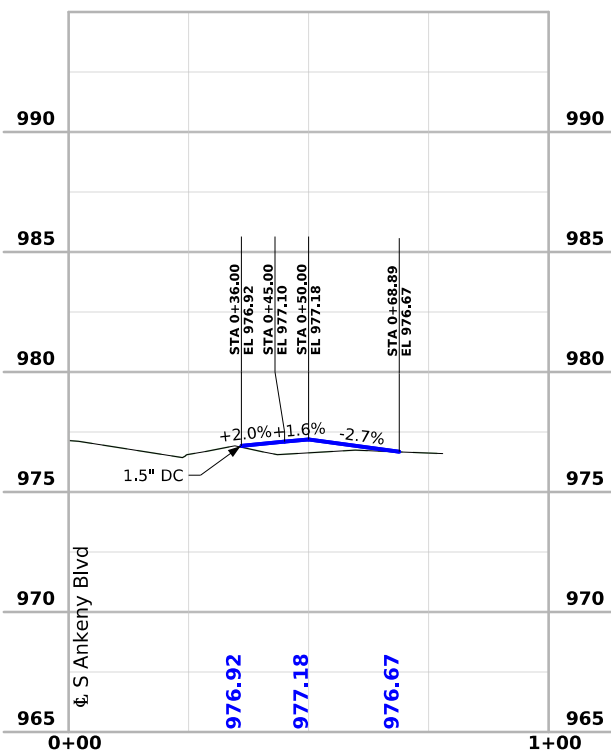
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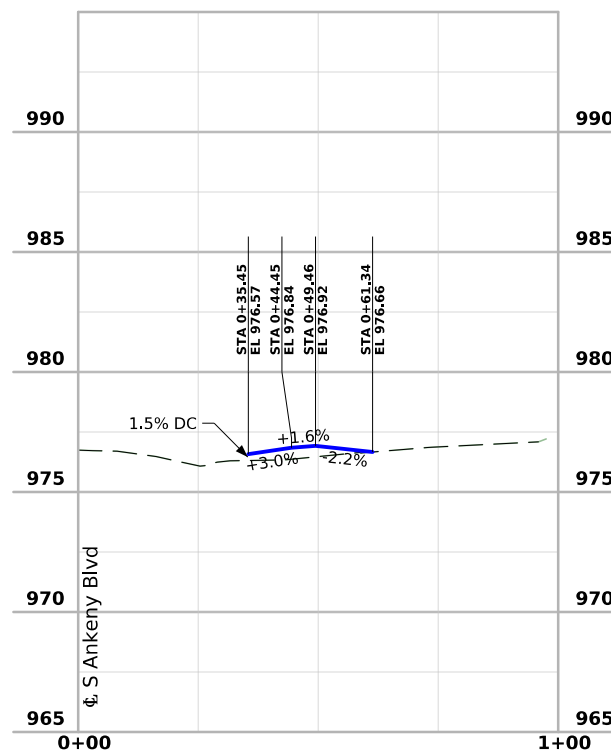
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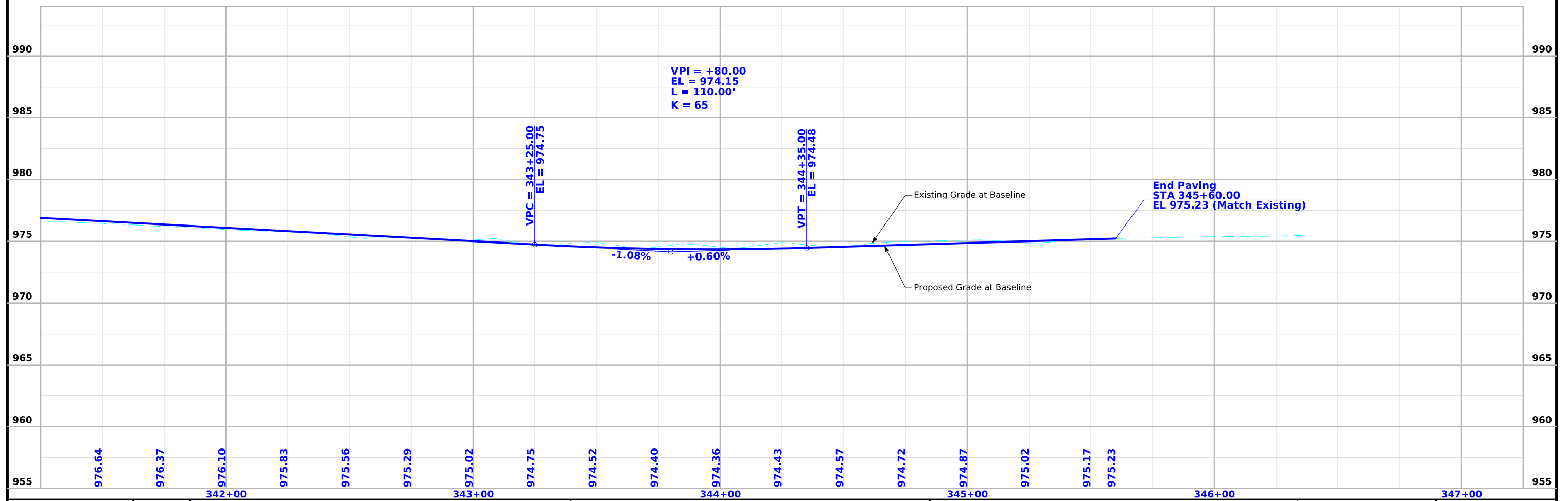
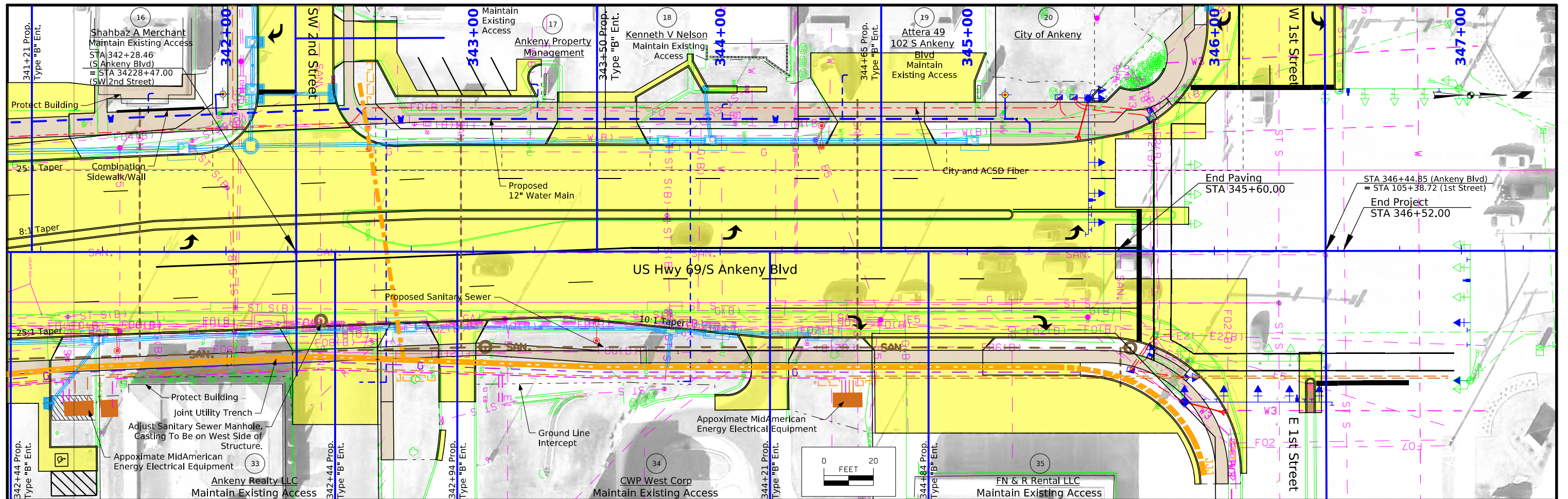
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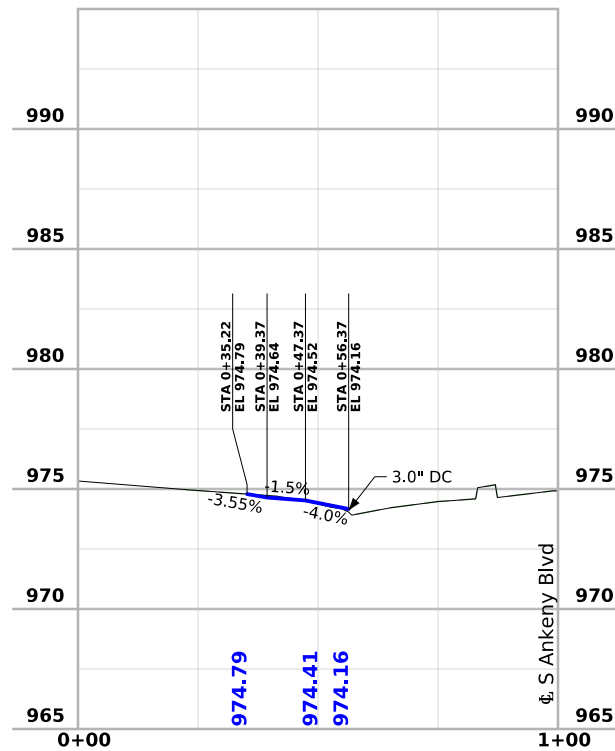


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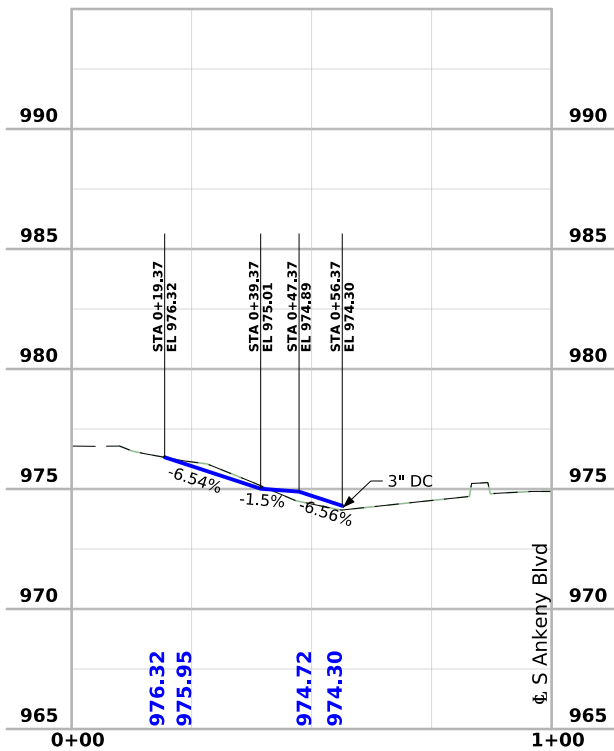


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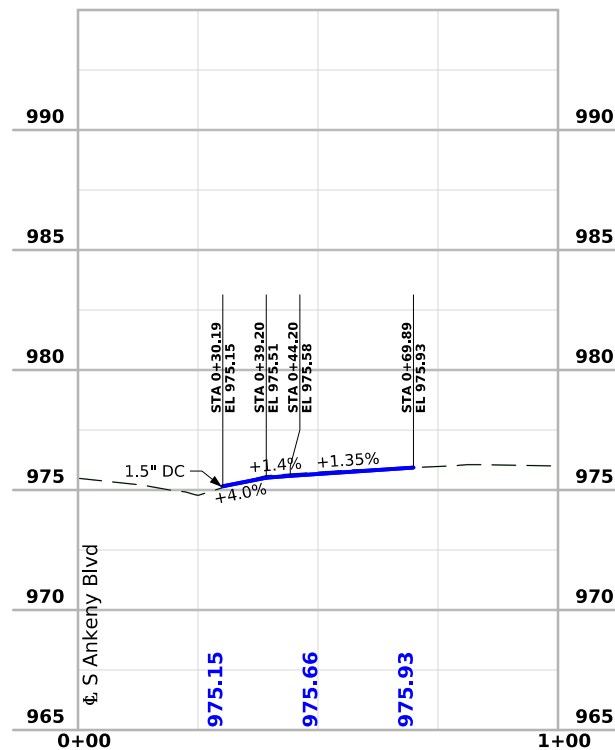




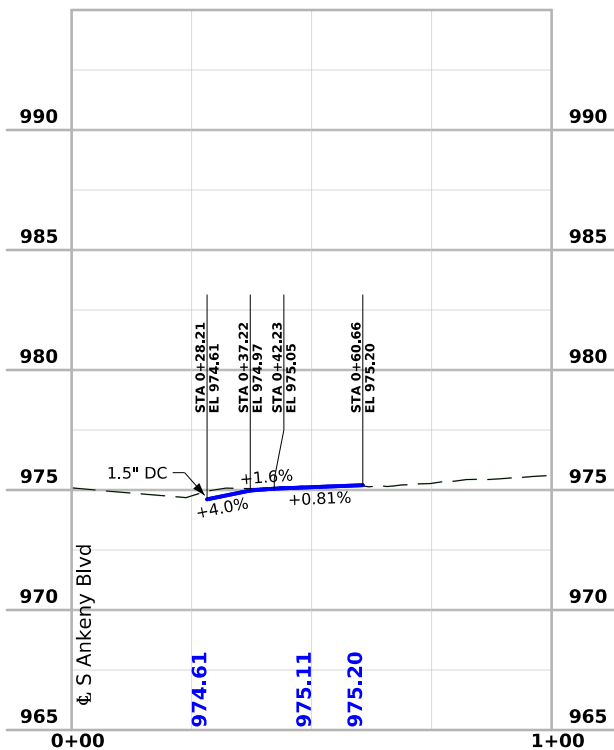
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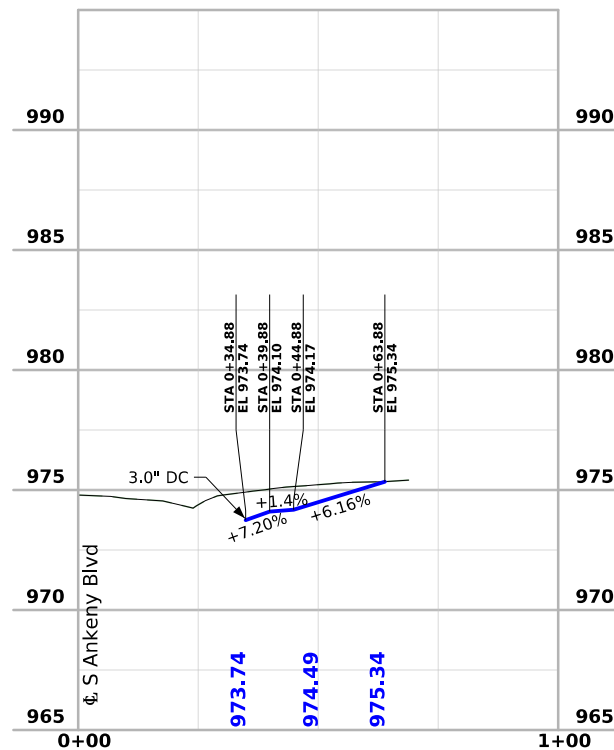
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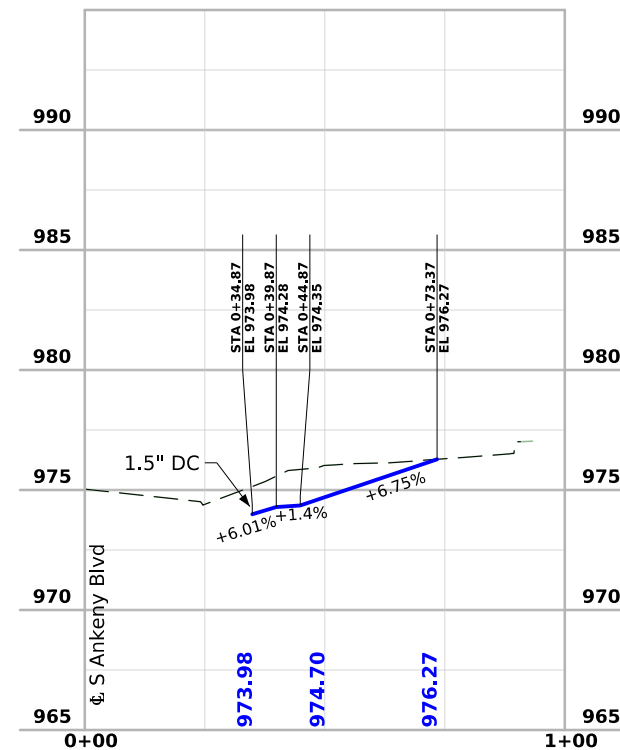
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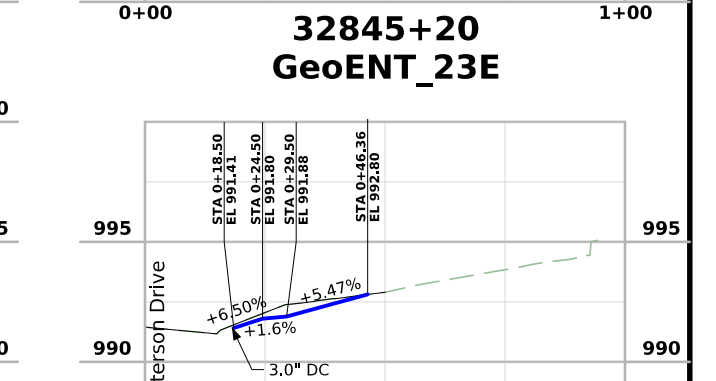
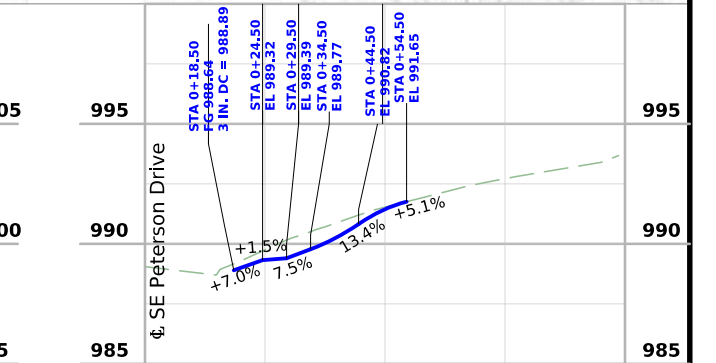
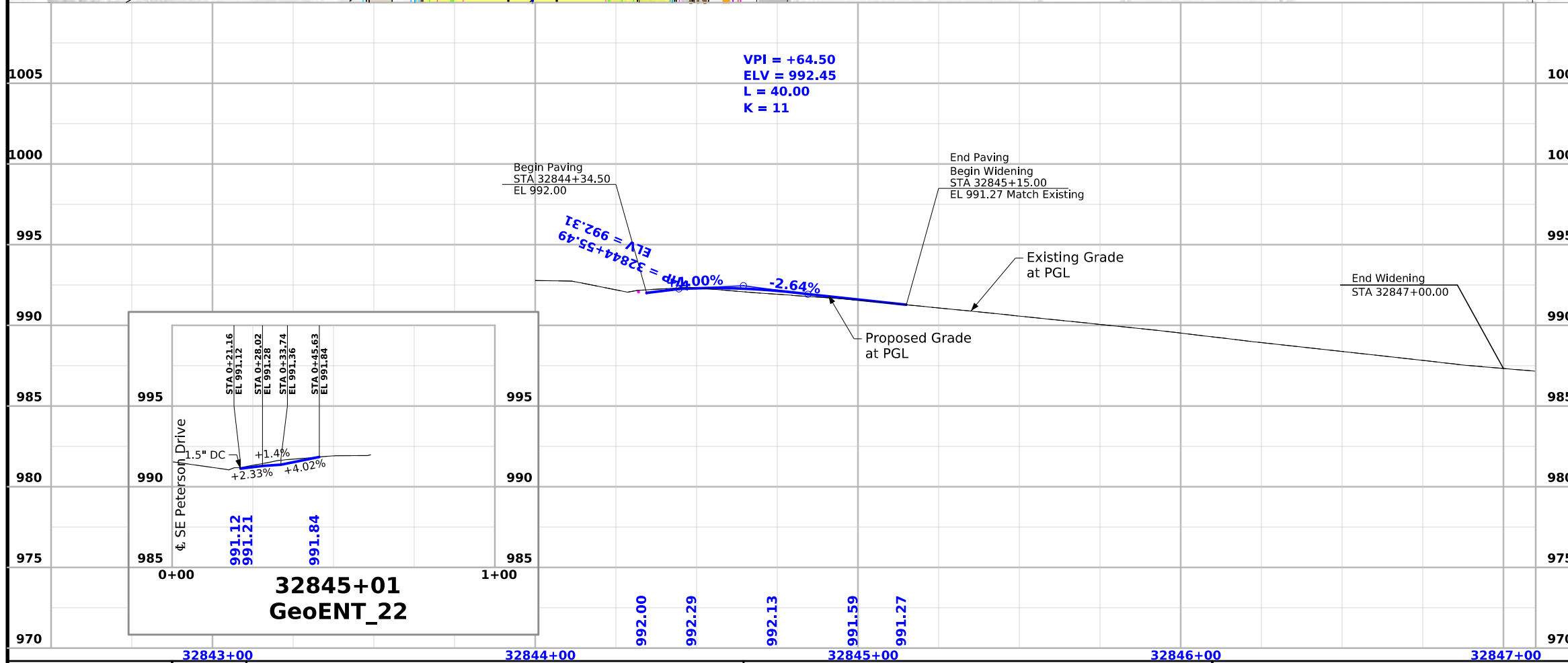
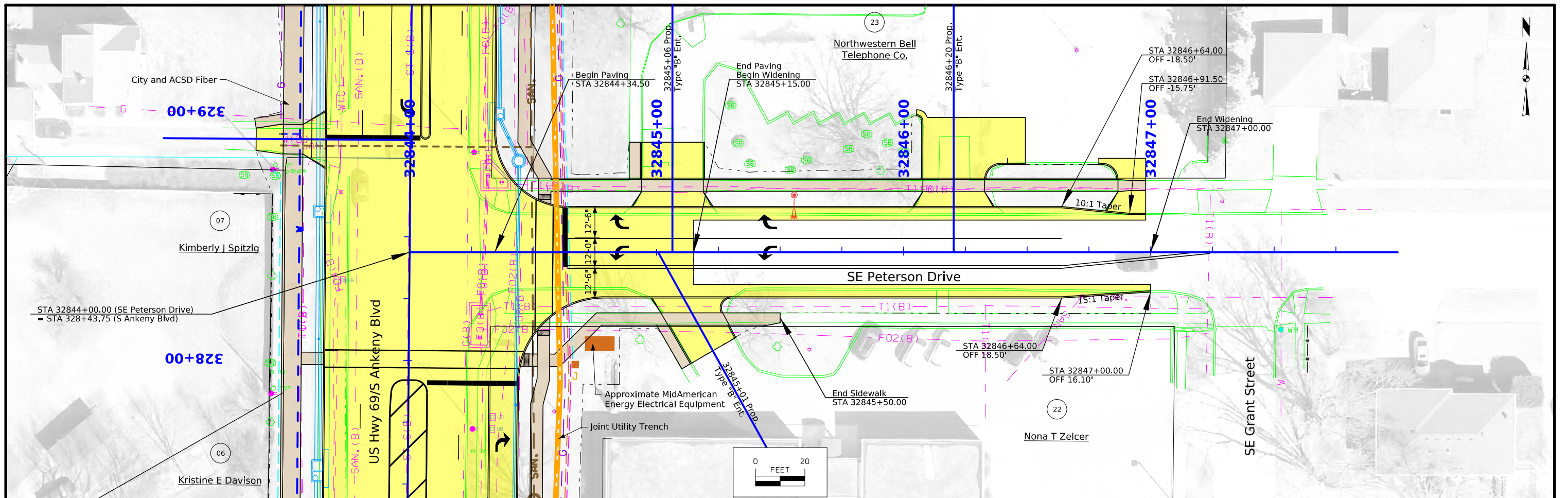
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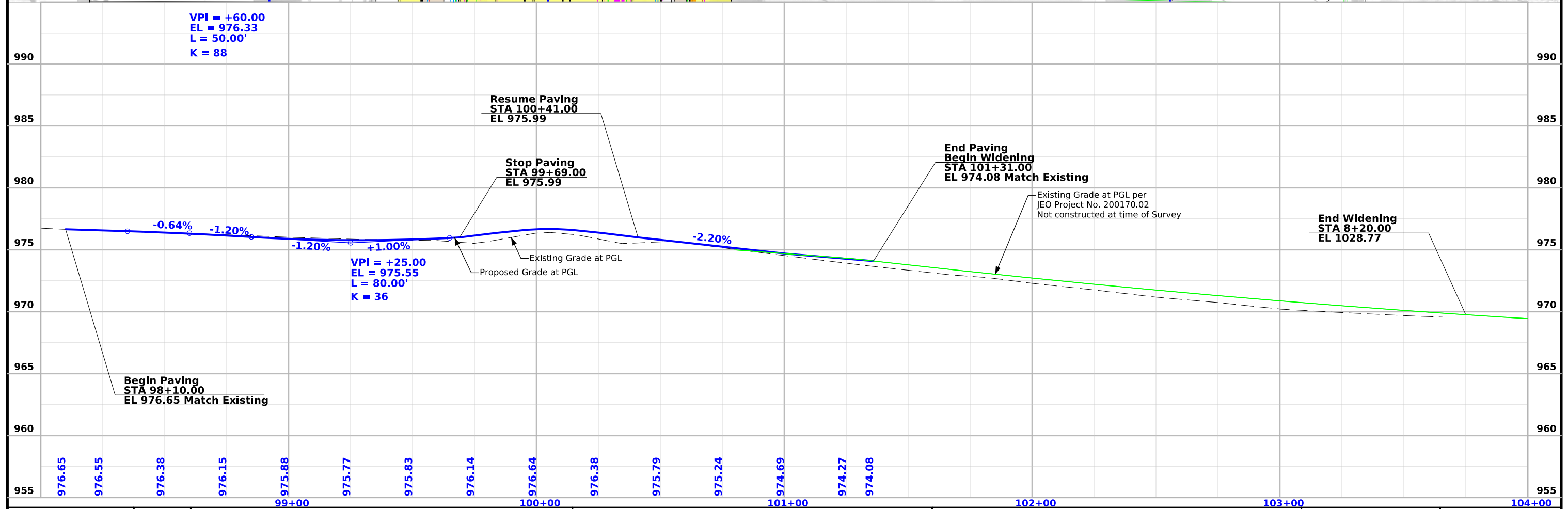
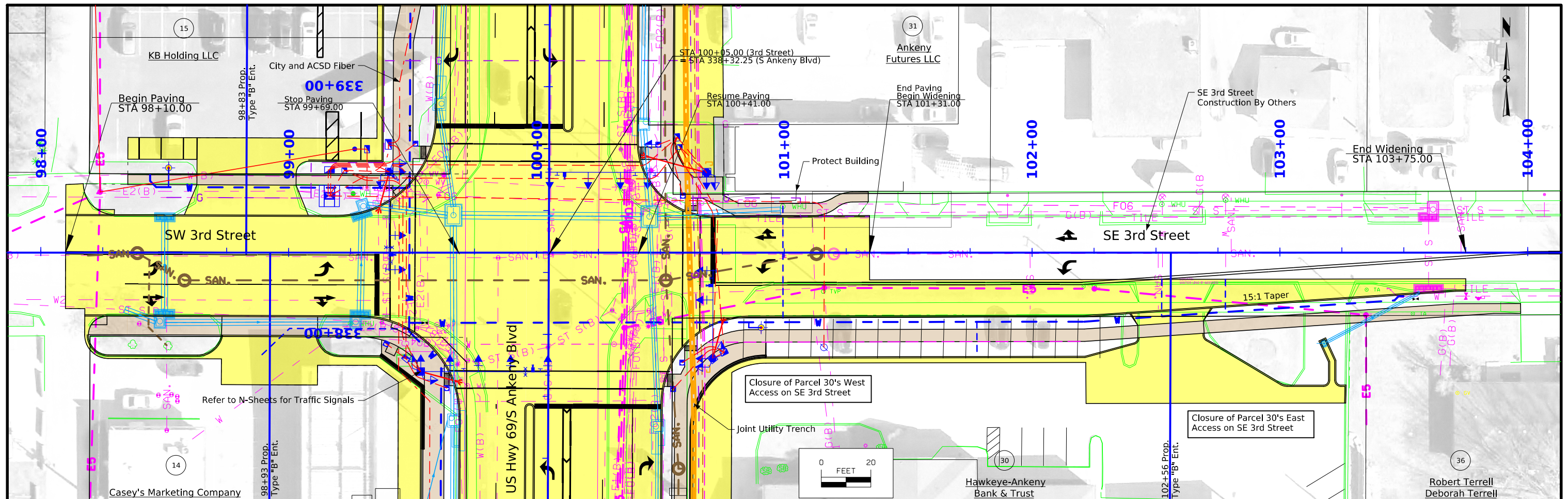
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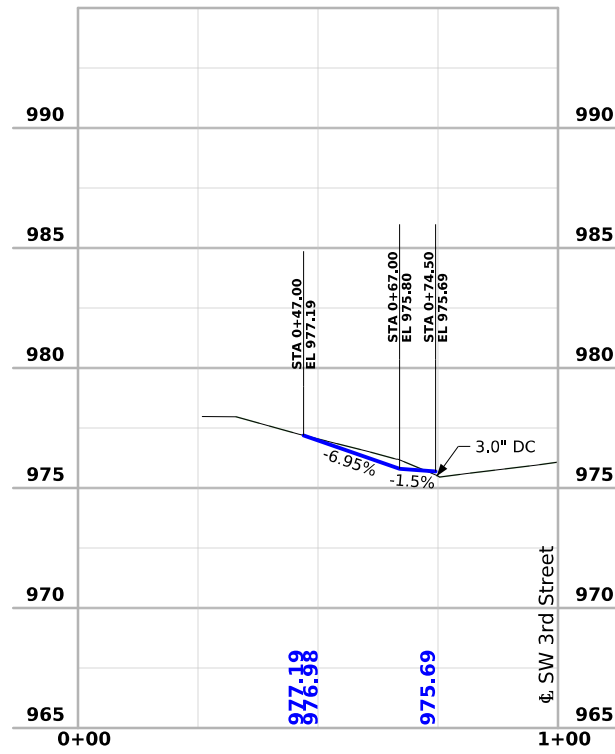
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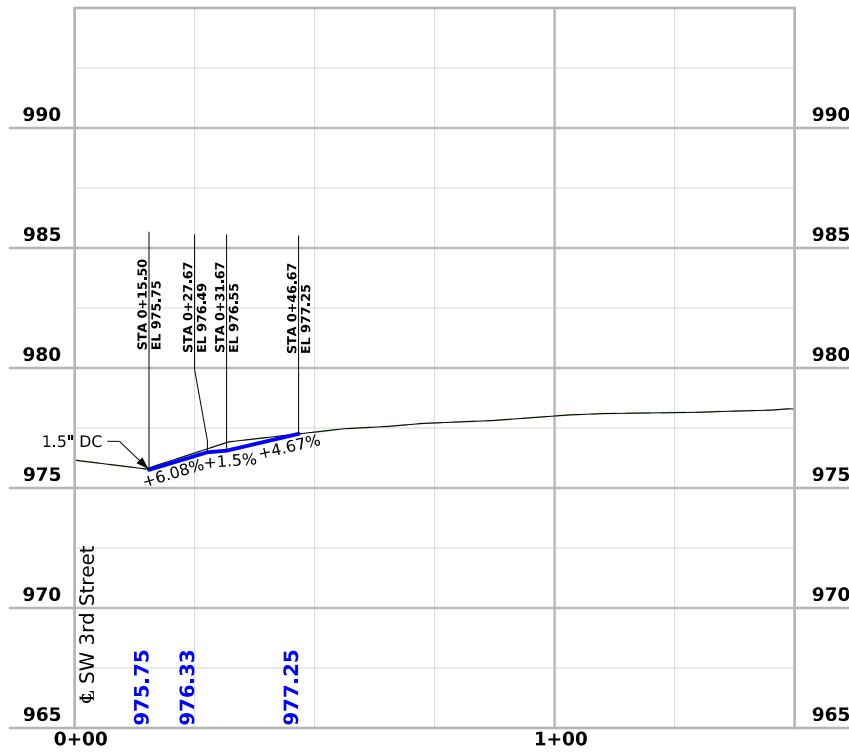
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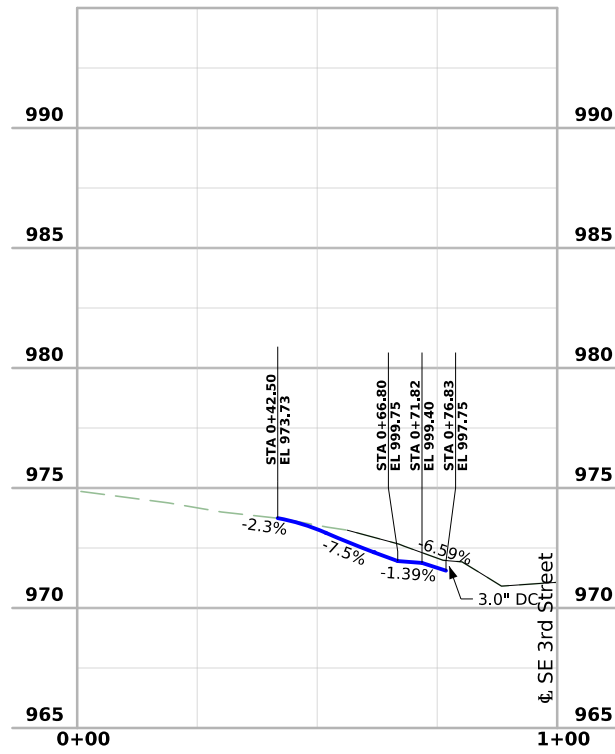
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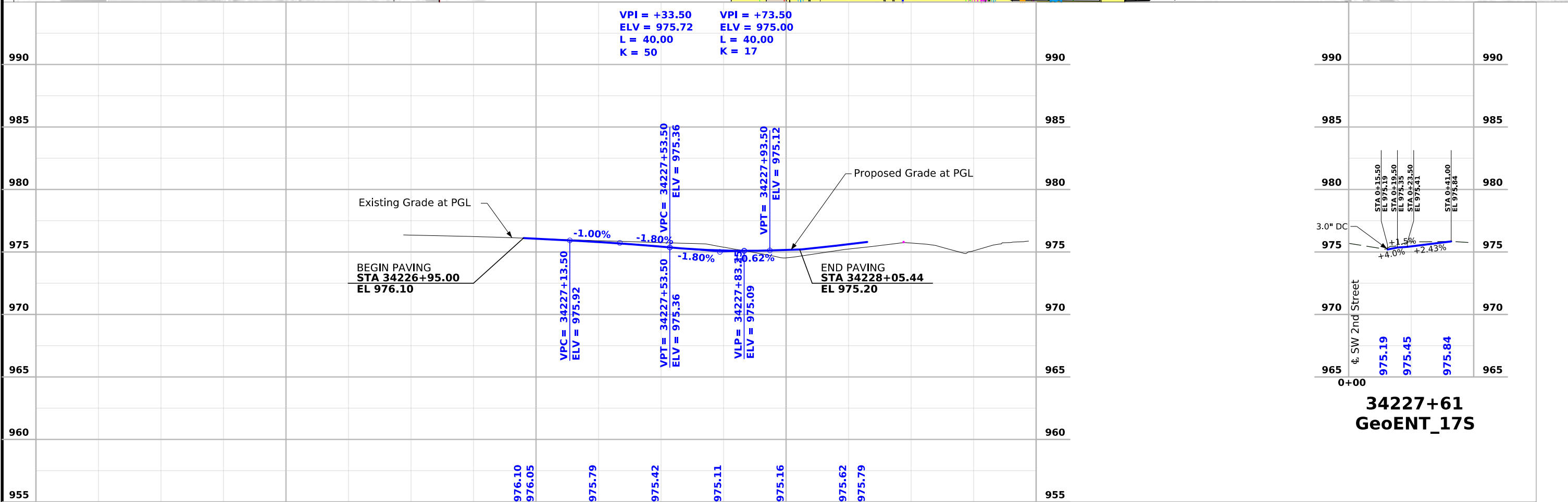
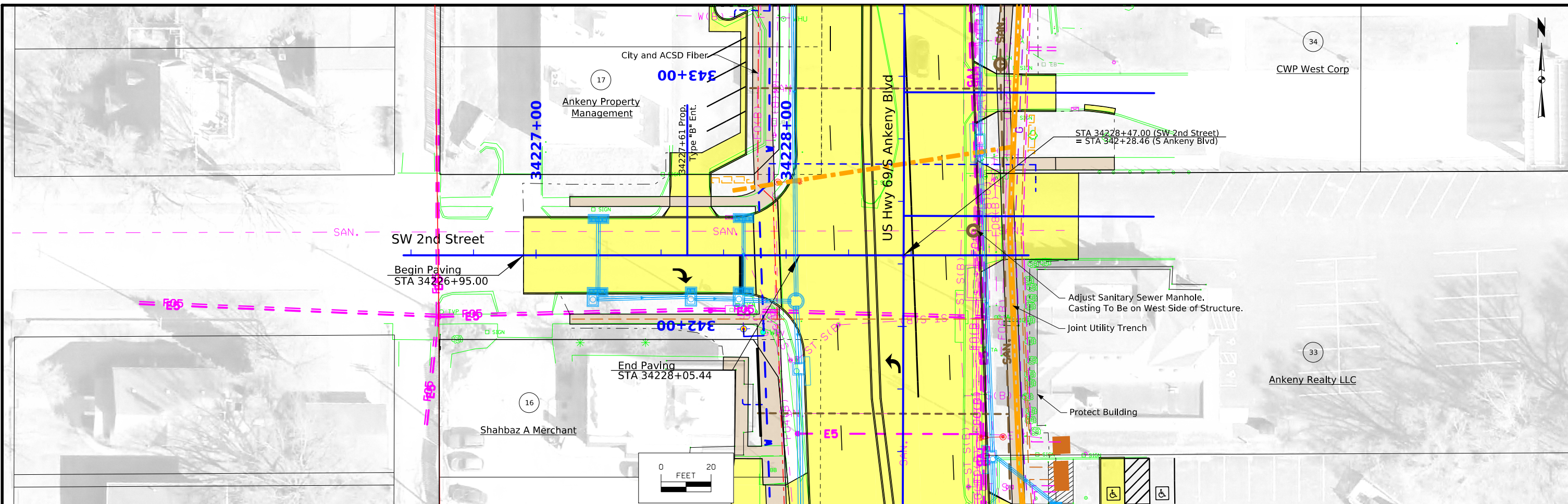
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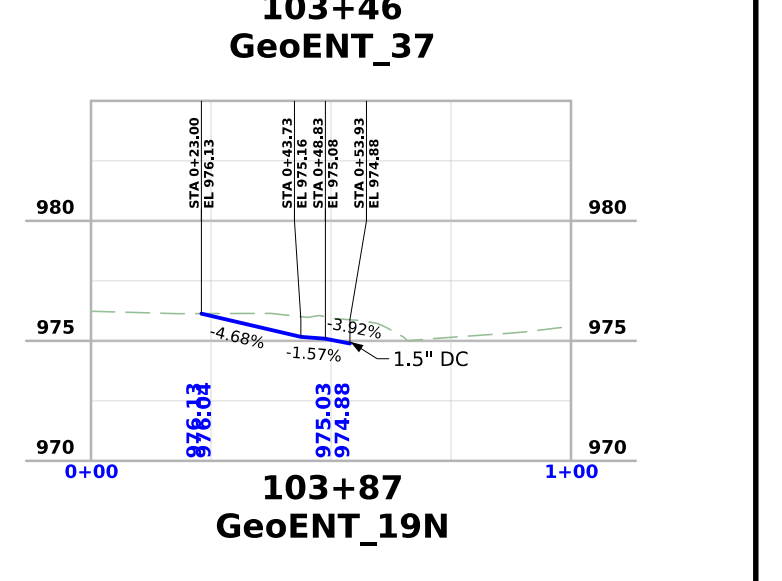
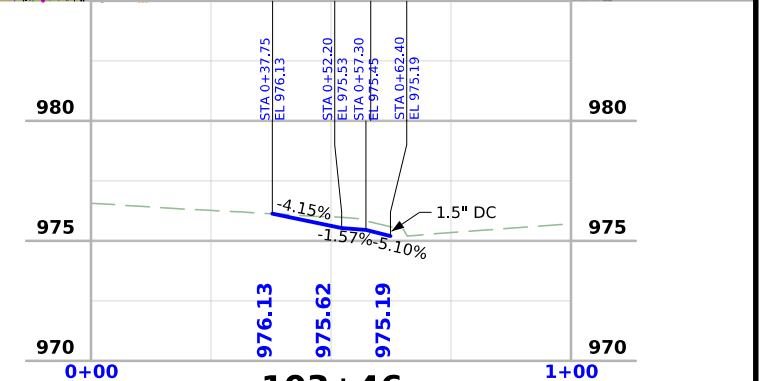
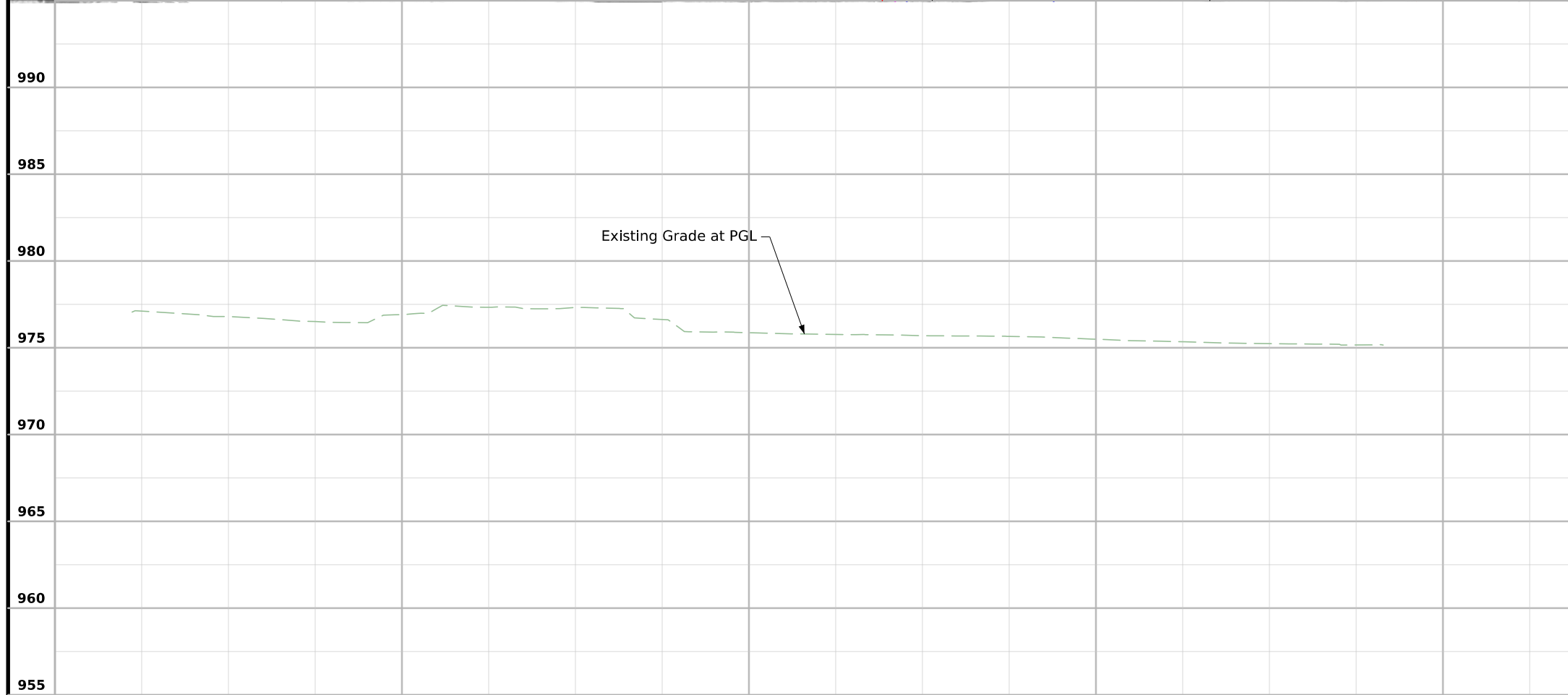
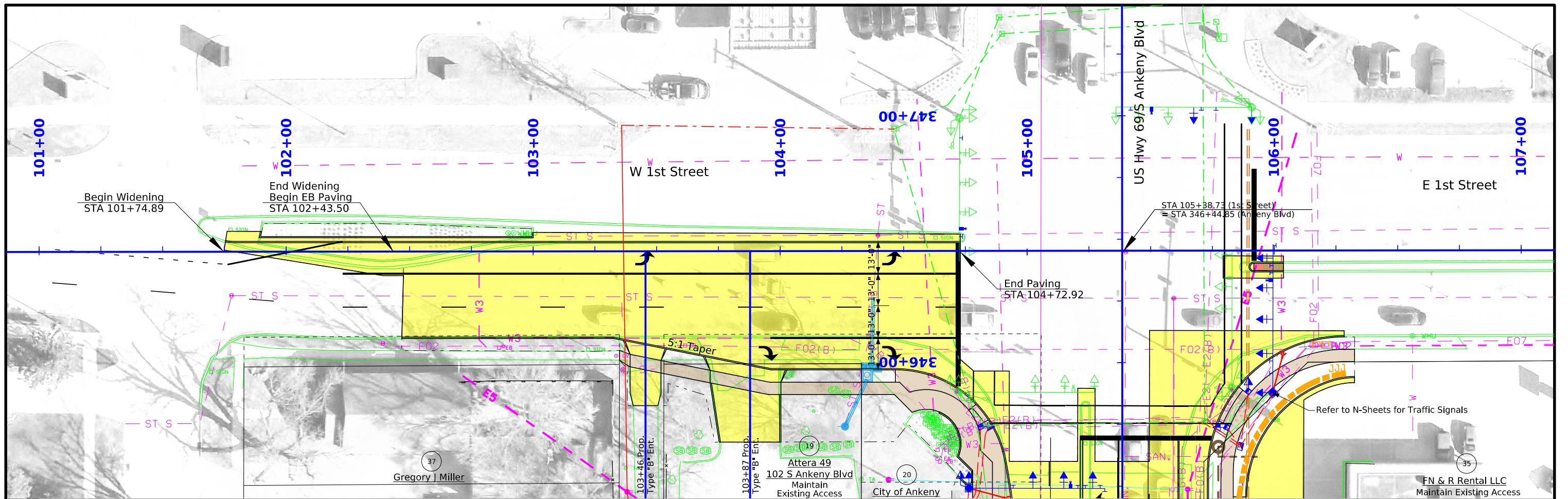
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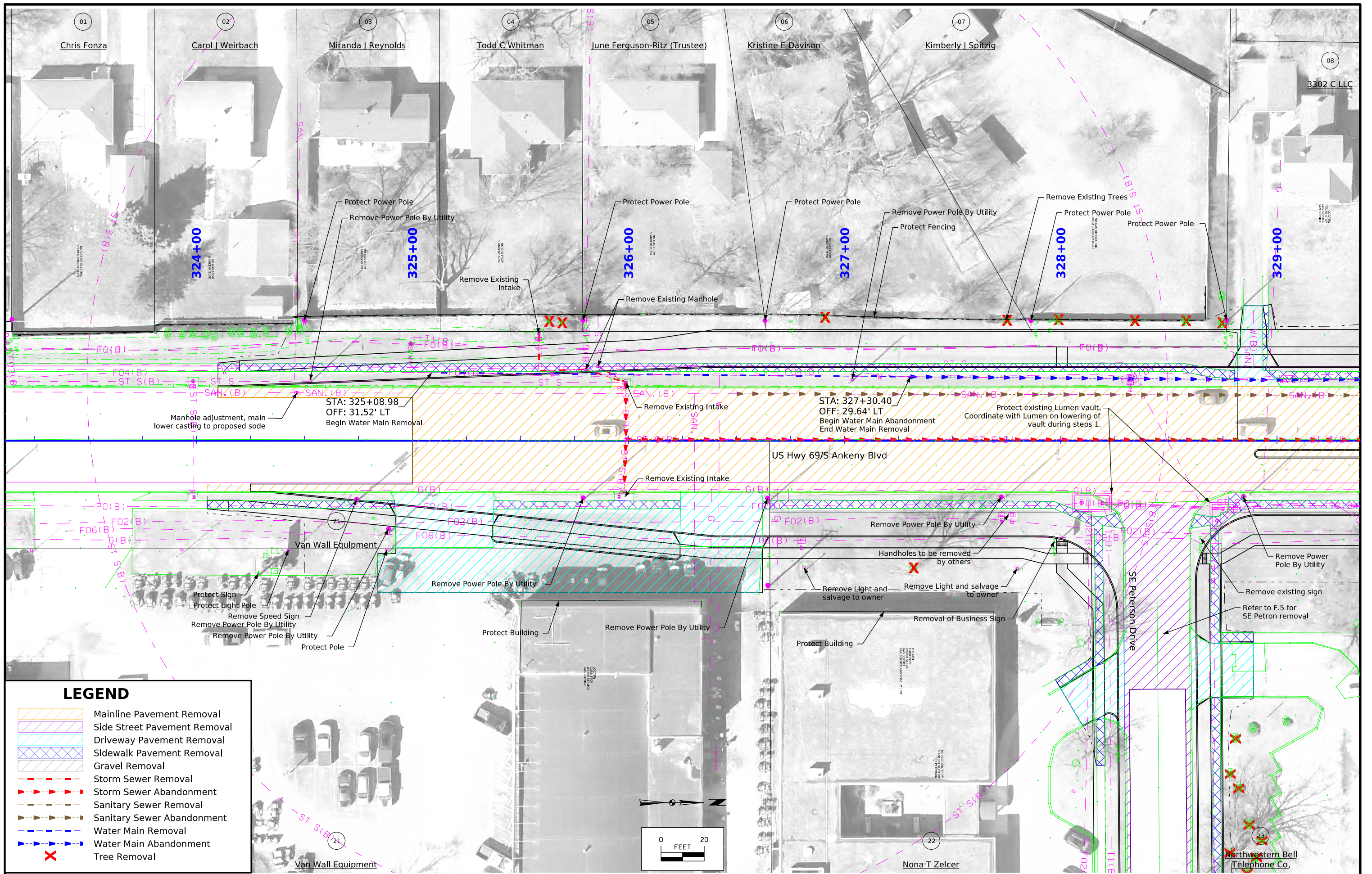


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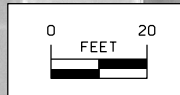
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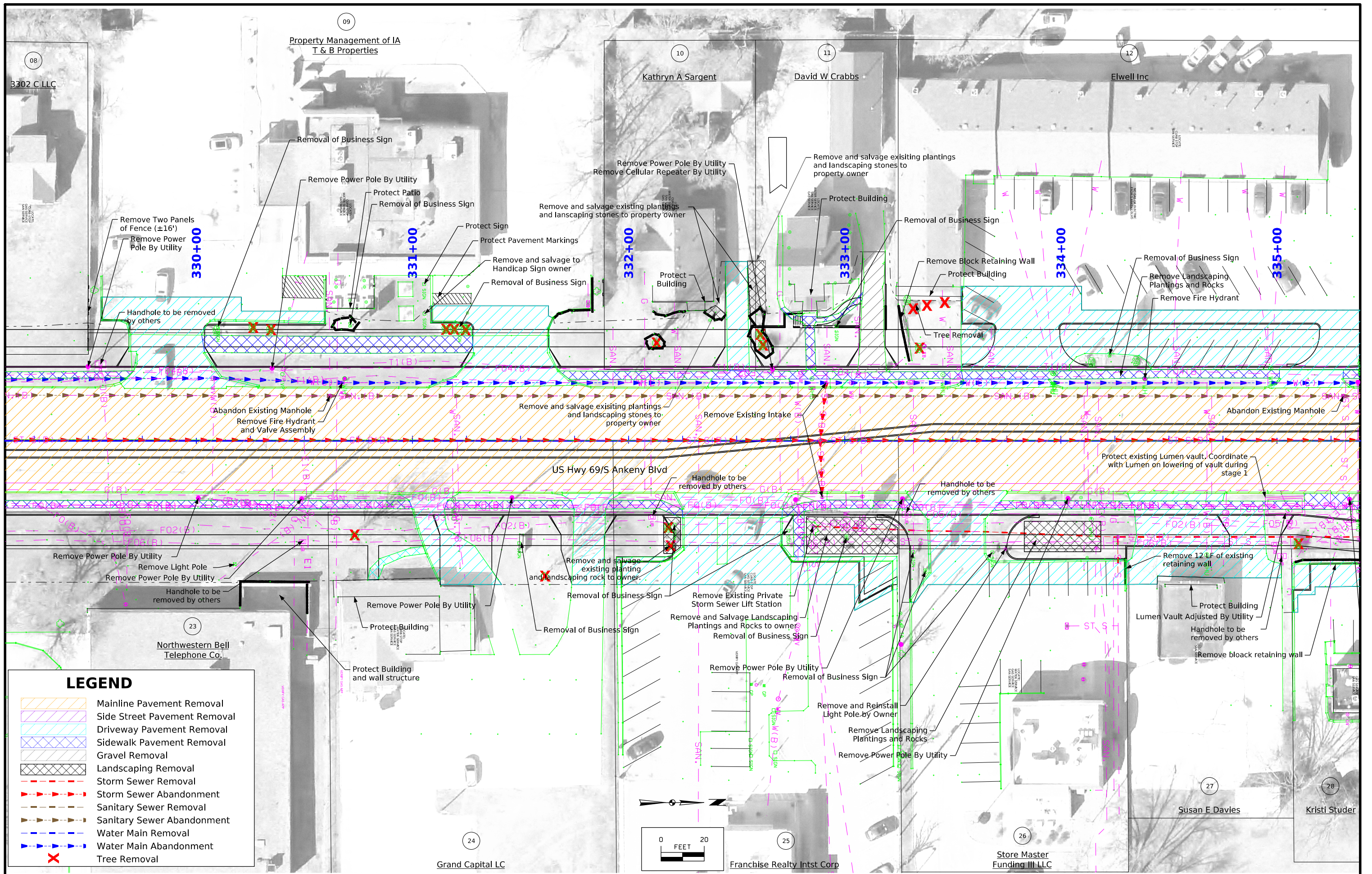


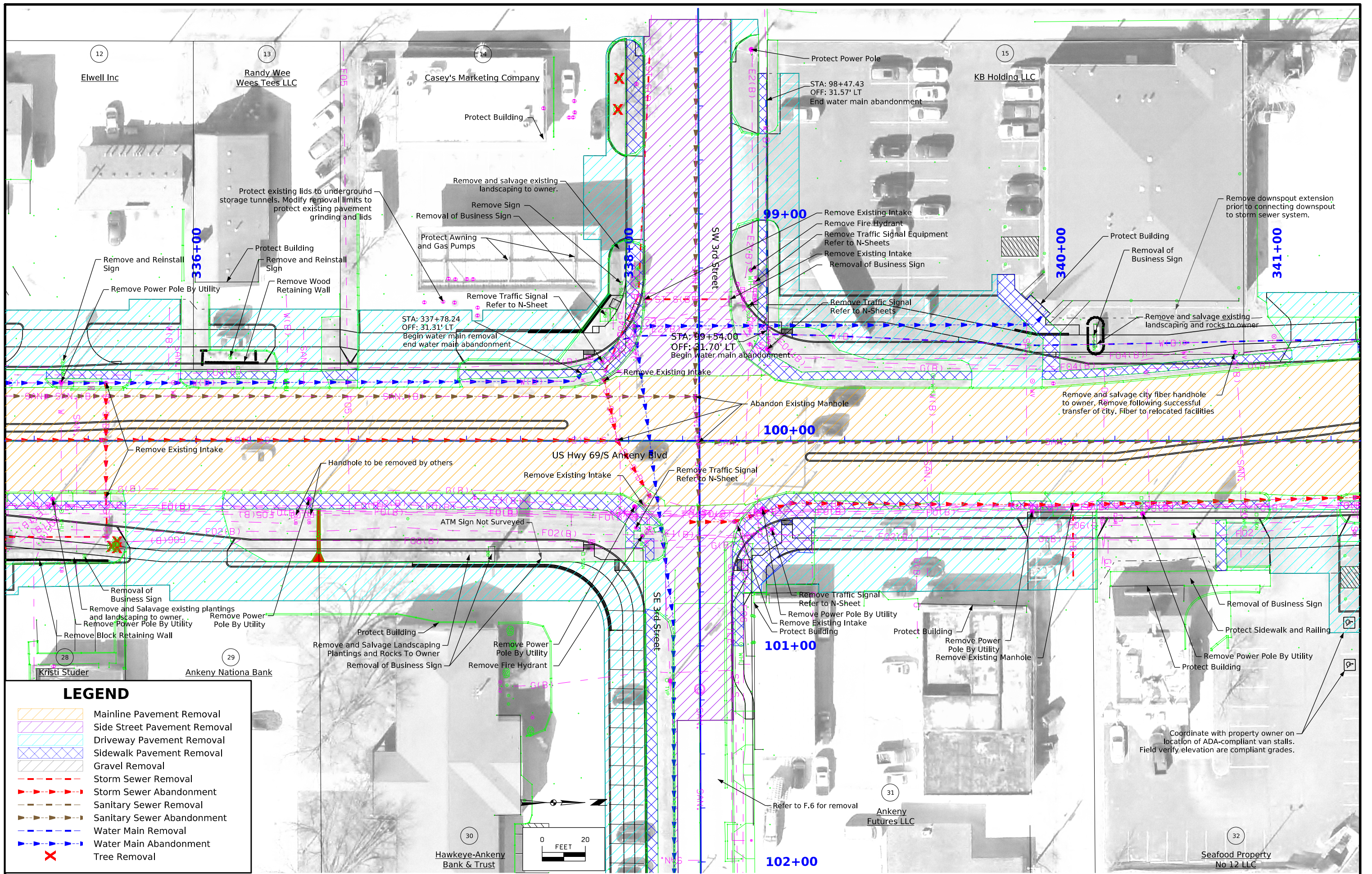


LEGEND

- Mainline Pavement Removal
- Side Street Pavement Removal
- Driveway Pavement Removal
- Sidewalk Pavement Removal
- Gravel Removal
- Storm Sewer Removal
- Storm Sewer Abandonment
- Sanitary Sewer Removal
- Sanitary Sewer Abandonment
- Water Main Removal
- Water Main Abandonment
- X Tree Removal

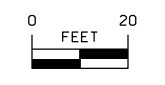


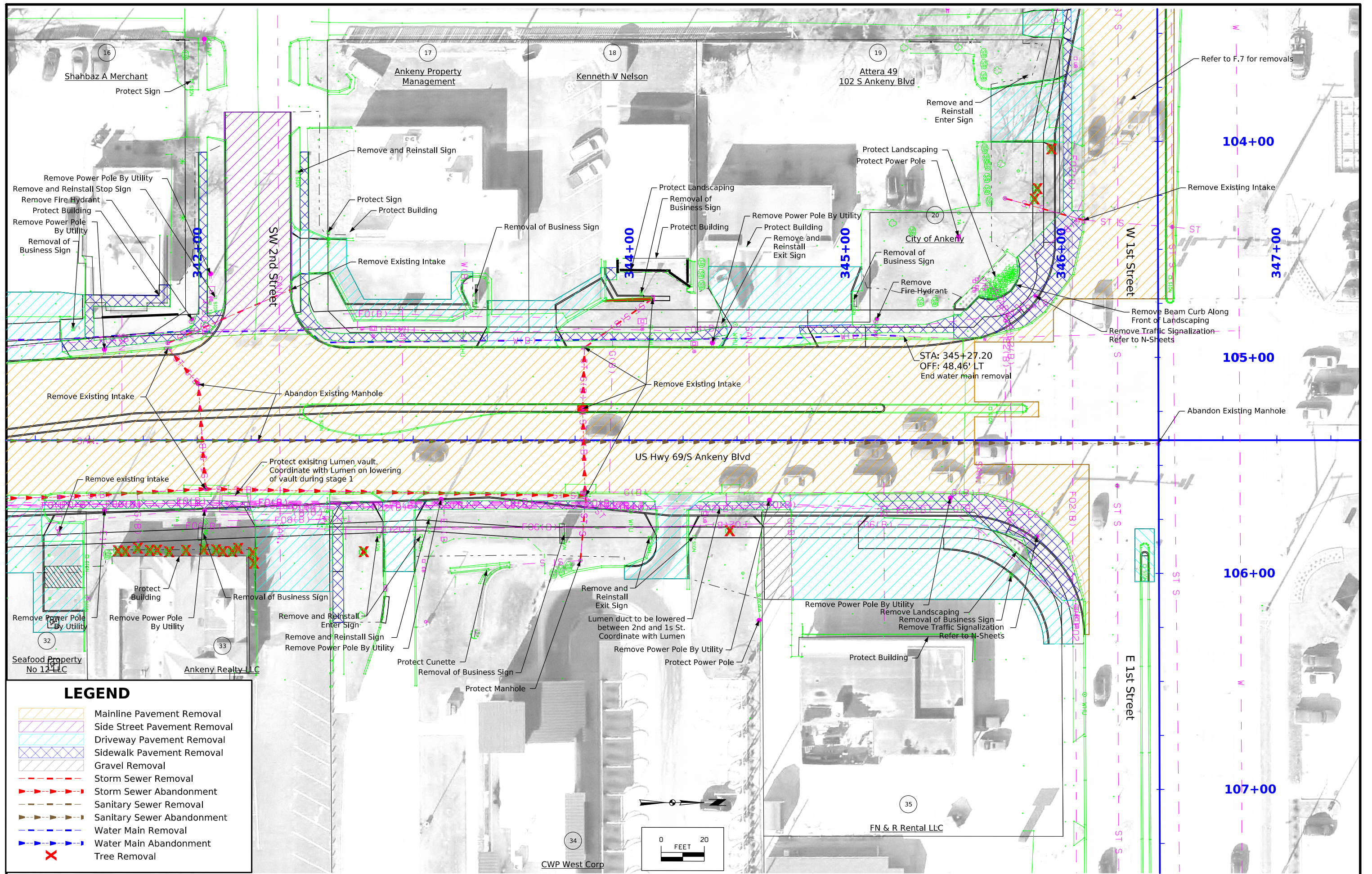




LEGEND

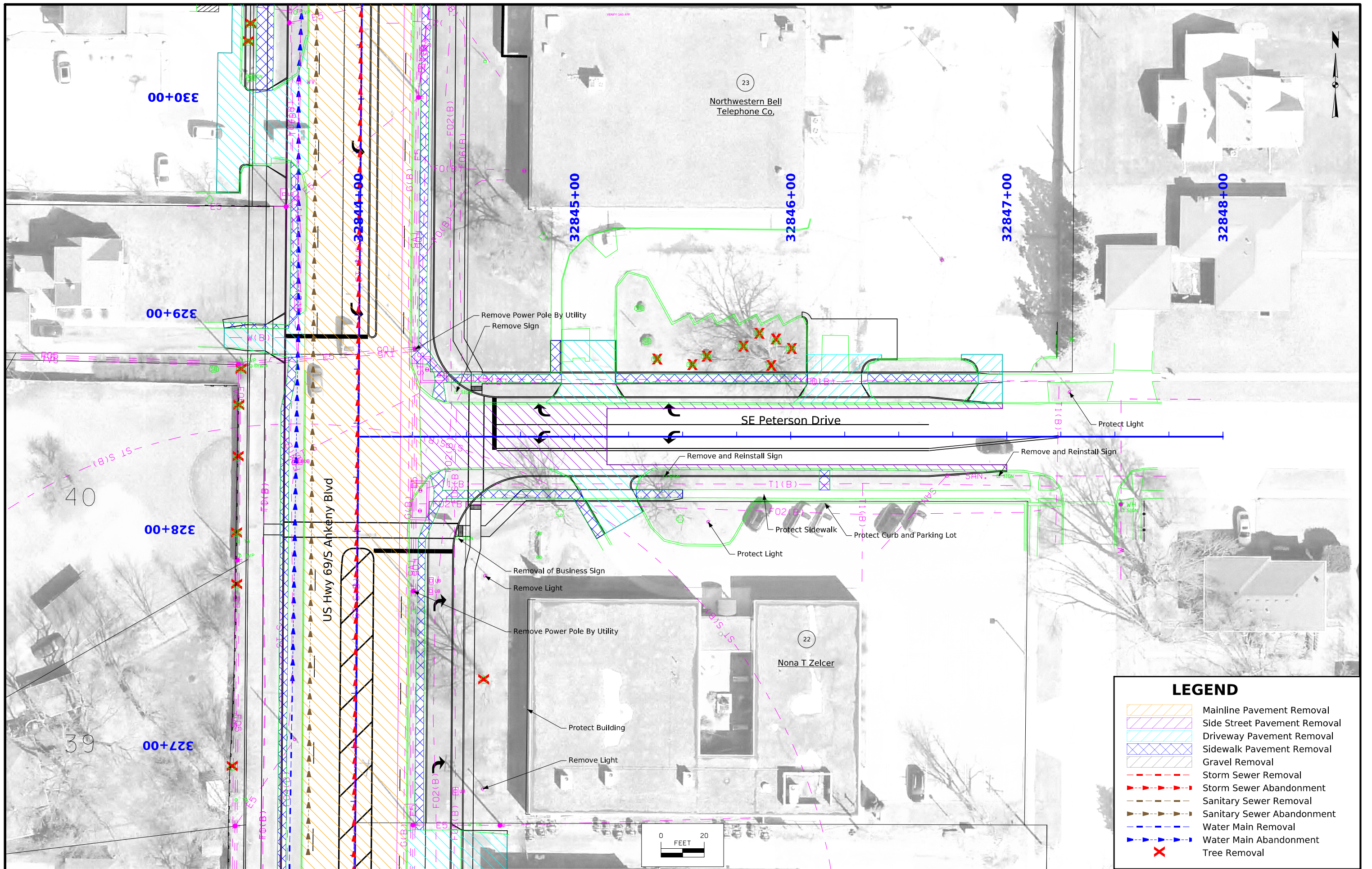
- Mainline Pavement Removal
- Side Street Pavement Removal
- Driveway Pavement Removal
- Sidewalk Pavement Removal
- Gravel Removal
- Storm Sewer Removal
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- Sanitary Sewer Removal
- Sanitary Sewer Abandonment
- Water Main Removal
- Water Main Abandonment
- X Tree Removal



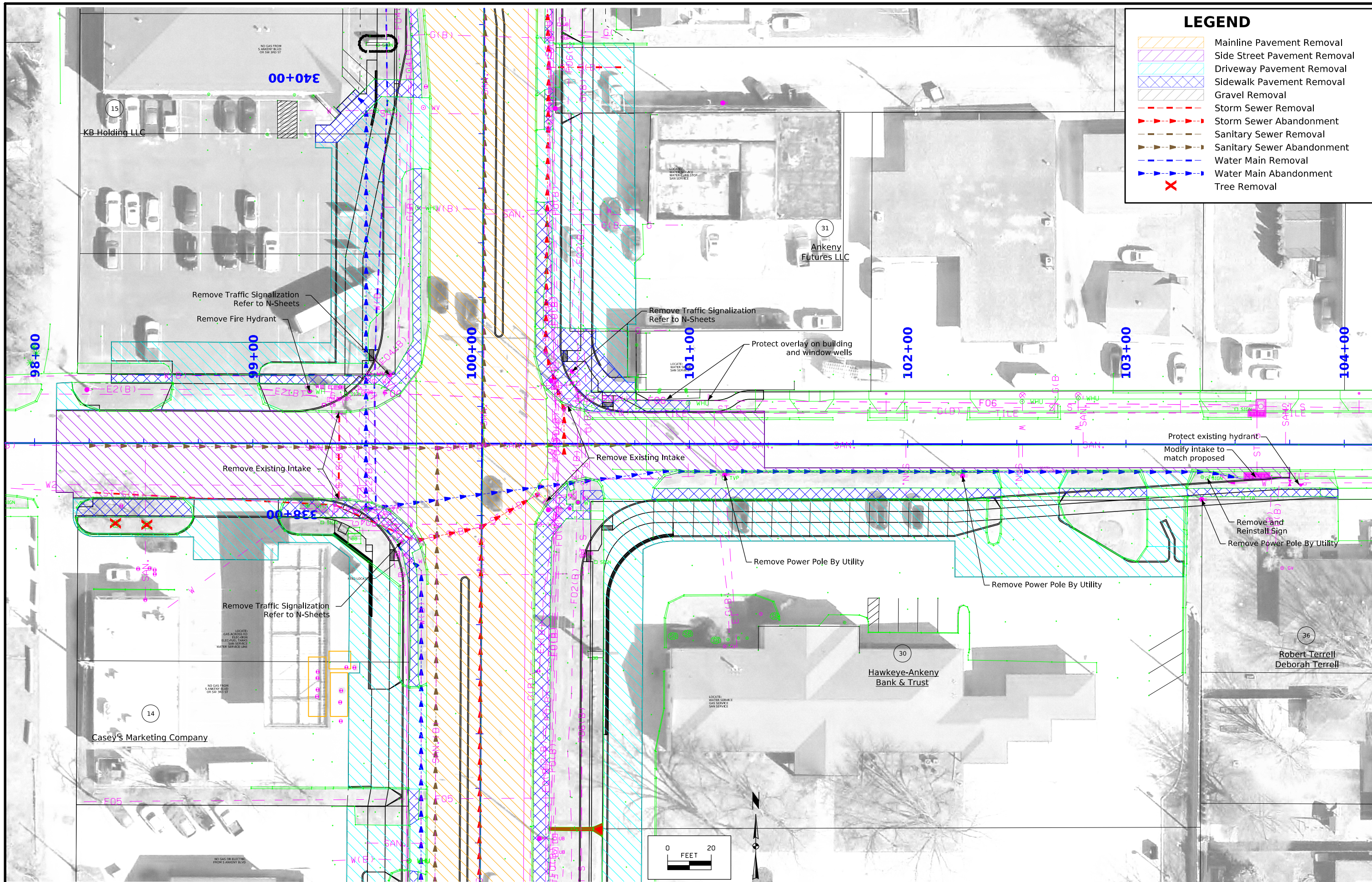


LEGEND

- Mainline Pavement Removal
- Side Street Pavement Removal
- Driveway Pavement Removal
- Sidewalk Pavement Removal
- Gravel Removal
- Storm Sewer Removal
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- Sanitary Sewer Removal
- Sanitary Sewer Abandonment
- Water Main Removal
- Water Main Abandonment
- X Tree Removal

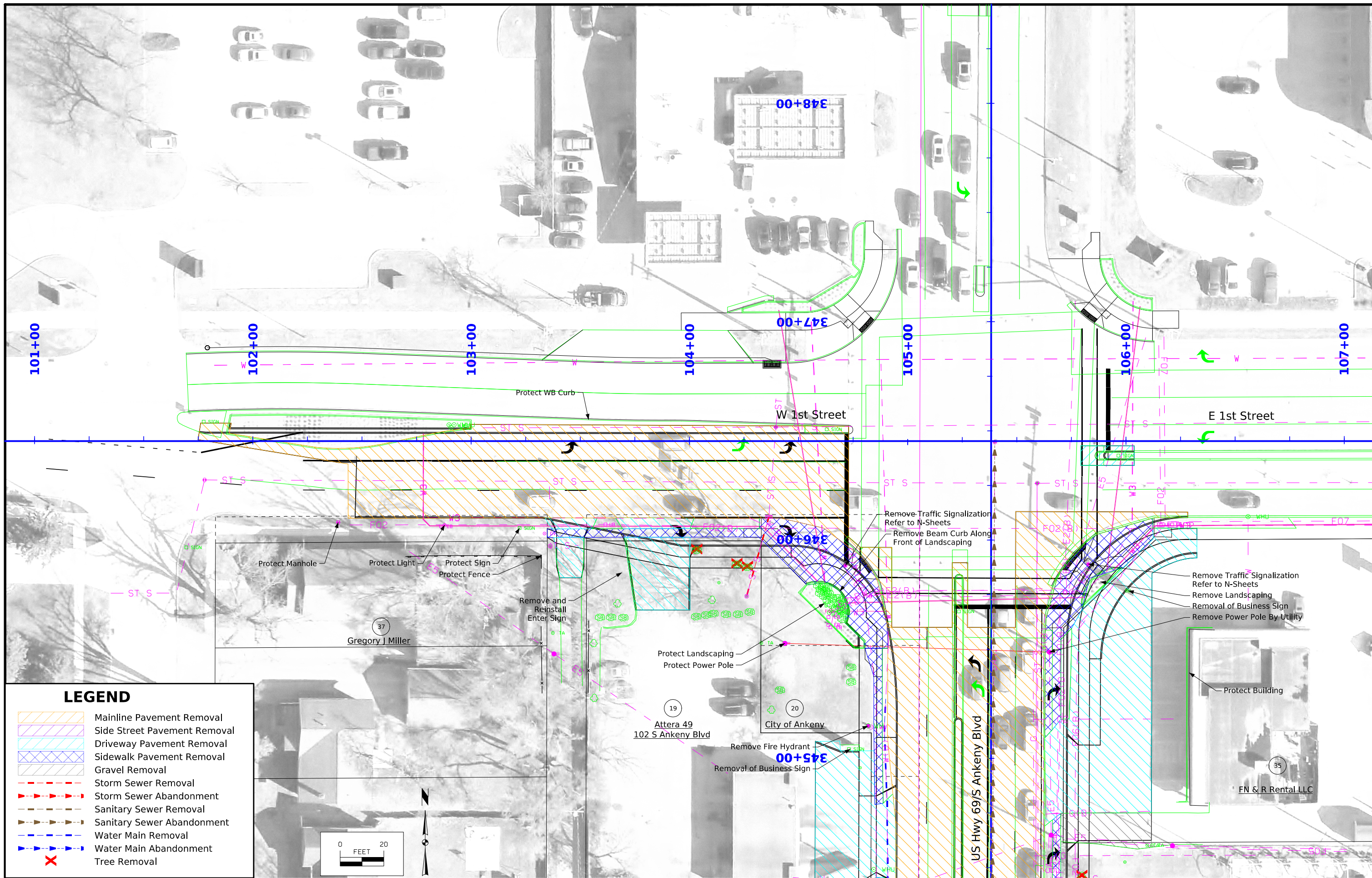


LEGEND	
	Mainline Pavement Removal
	Side Street Pavement Removal
	Driveway Pavement Removal
	Sidewalk Pavement Removal
	Gravel Removal
	Storm Sewer Removal
	Storm Sewer Abandonment
	Sanitary Sewer Removal
	Sanitary Sewer Abandonment
	Water Main Removal
	Water Main Abandonment
	Tree Removal



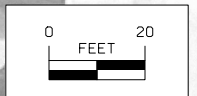
LEGEND

	Mainline Pavement Removal
	Side Street Pavement Removal
	Driveway Pavement Removal
	Sidewalk Pavement Removal
	Gravel Removal
	Storm Sewer Removal
	Storm Sewer Abandonment
	Sanitary Sewer Removal
	Sanitary Sewer Abandonment
	Water Main Removal
	Water Main Abandonment
	Tree Removal



LEGEND

- Mainline Pavement Removal
- Side Street Pavement Removal
- Driveway Pavement Removal
- Sidewalk Pavement Removal
- Gravel Removal
- Storm Sewer Removal
- Storm Sewer Abandonment
- Sanitary Sewer Removal
- Sanitary Sewer Abandonment
- Water Main Removal
- Water Main Abandonment
- Tree Removal



Survey Information

**City of Ankeny - POLK County
NHSX-069-4(136)--3H-77
South Ankeny Blvd Improvements
SE Peterson Dr. To 1st Street
PIN 20-77-069-010
SAP# _____**

Party Personnel

Terry Coady- Survey Manager/PLS
Adam Catrenich- Survey Party Chief
Jason Poole- Survey Office Technician

Date(s) of Survey

Begin Date 5/10/2023
End Date 9/21/2023

General Information

Measurement units for this survey are US survey feet. This survey is for Preliminary Engineering Survey for the proposed improvements to South Ankeny Boulevard (Hwy 69) in Ankeny, Iowa.

Vertical Control

Vertical datum for this survey is relative to NAVD88 Geoid 12b. Vertical datum originated from project F-69-4(1)20-77 no longer exists. Additional primary control points elevations were added. Each primary control was acquired by one 20 minute observation in the AM and one 20 minute observation in the PM and then averaged.

Horizontal Control

Measurement units for this survey are US Survey Feet.

The project coordinate system is the Iowa Regional Coordinate System, Zone 8 Ames – Des Moines. The datum for the IaRTN is currently NAD83(2011)(Epoch 2010.000). Originally the IaRTN was on NAD83(CORS96)(Epoch 2002.0000), but switched over to NAD83(2011)(Epoch 2010.000) on January 7, 2013.

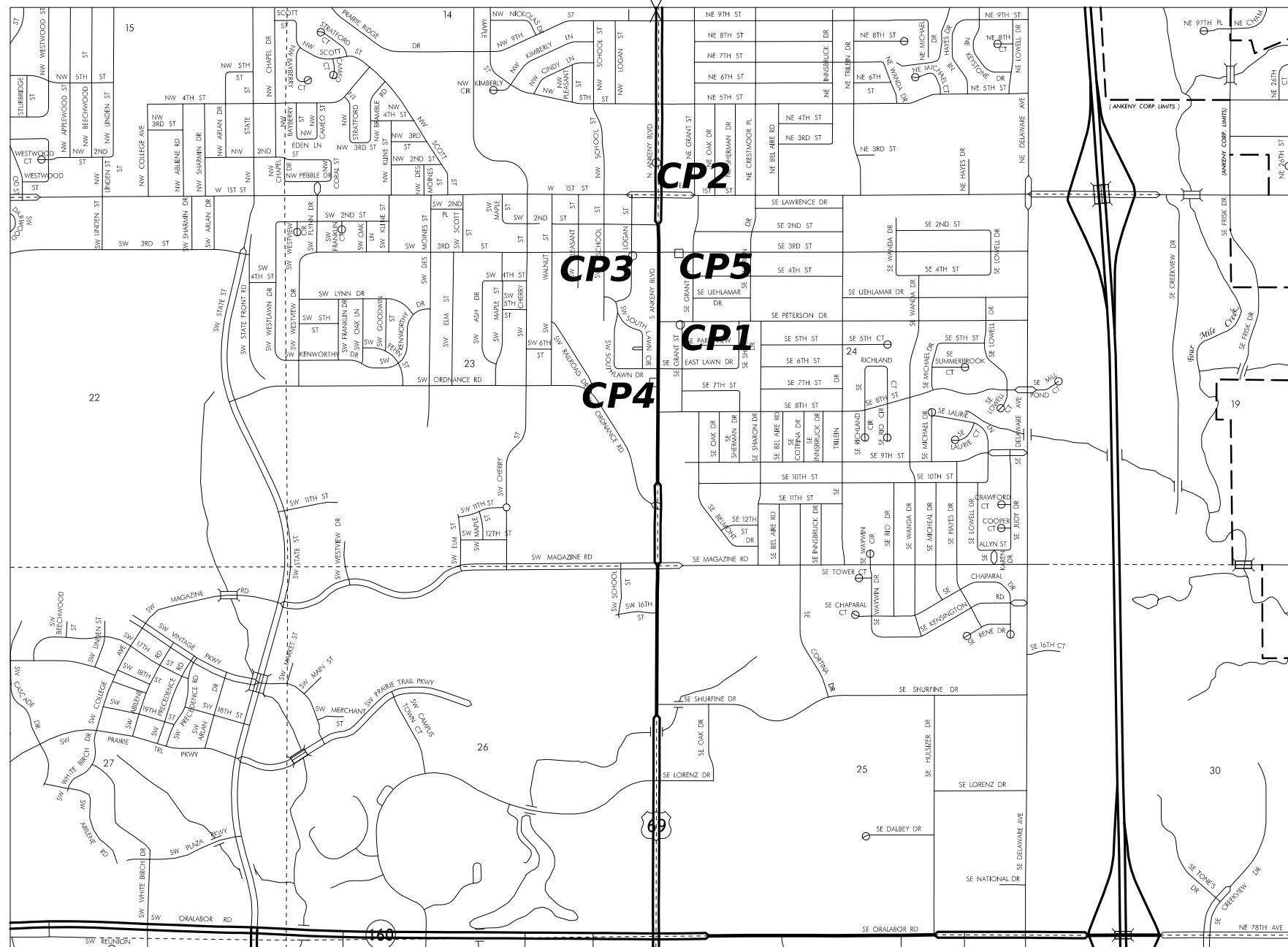
Alignment Information

This horizontal alignment was provided by IDOT.

Utility Information

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 08 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u2 or 2018u3

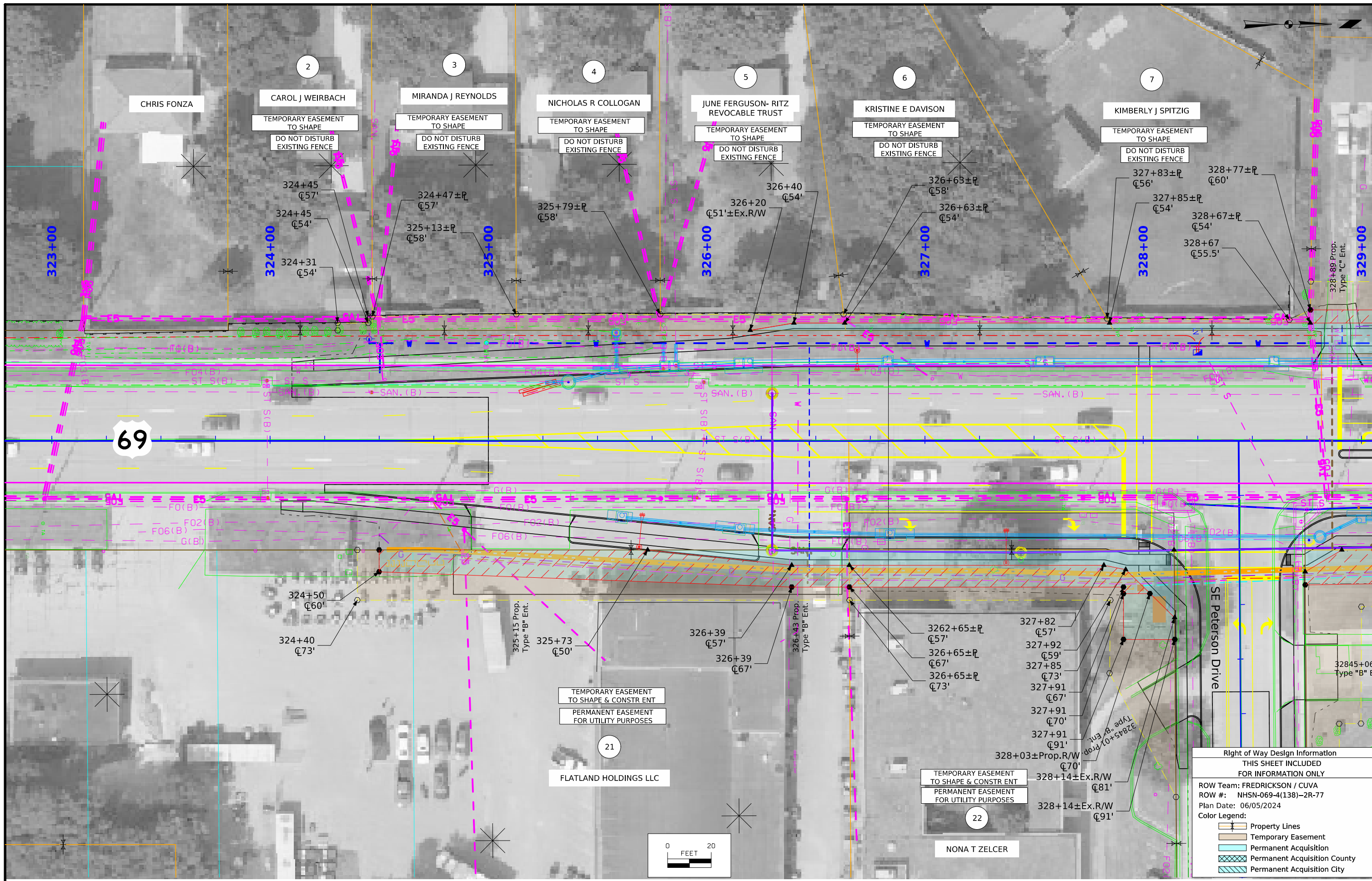
Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

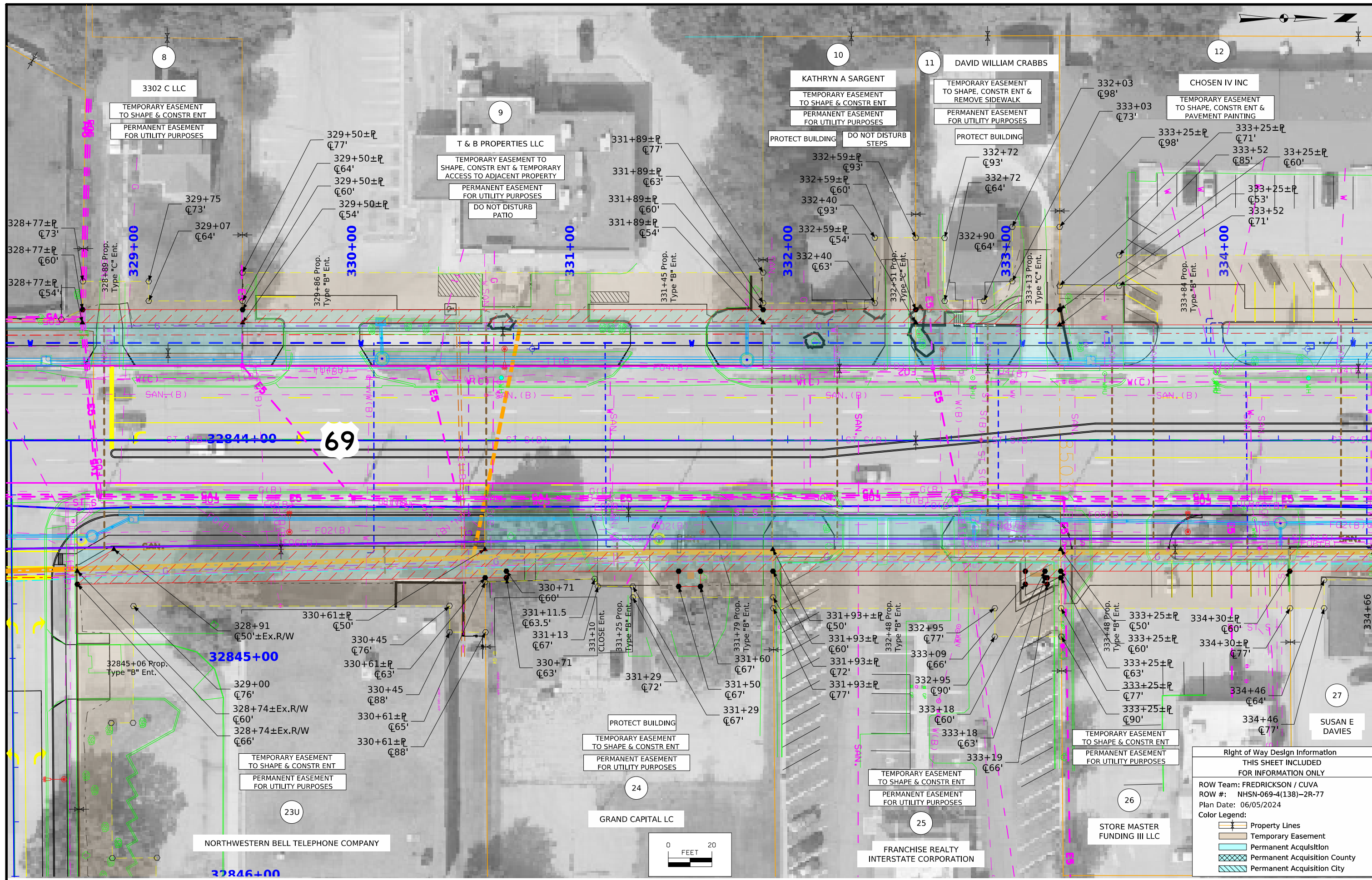
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
 Ia. Regional Coordinate System Zone 08 (U.S. Survey Foot)

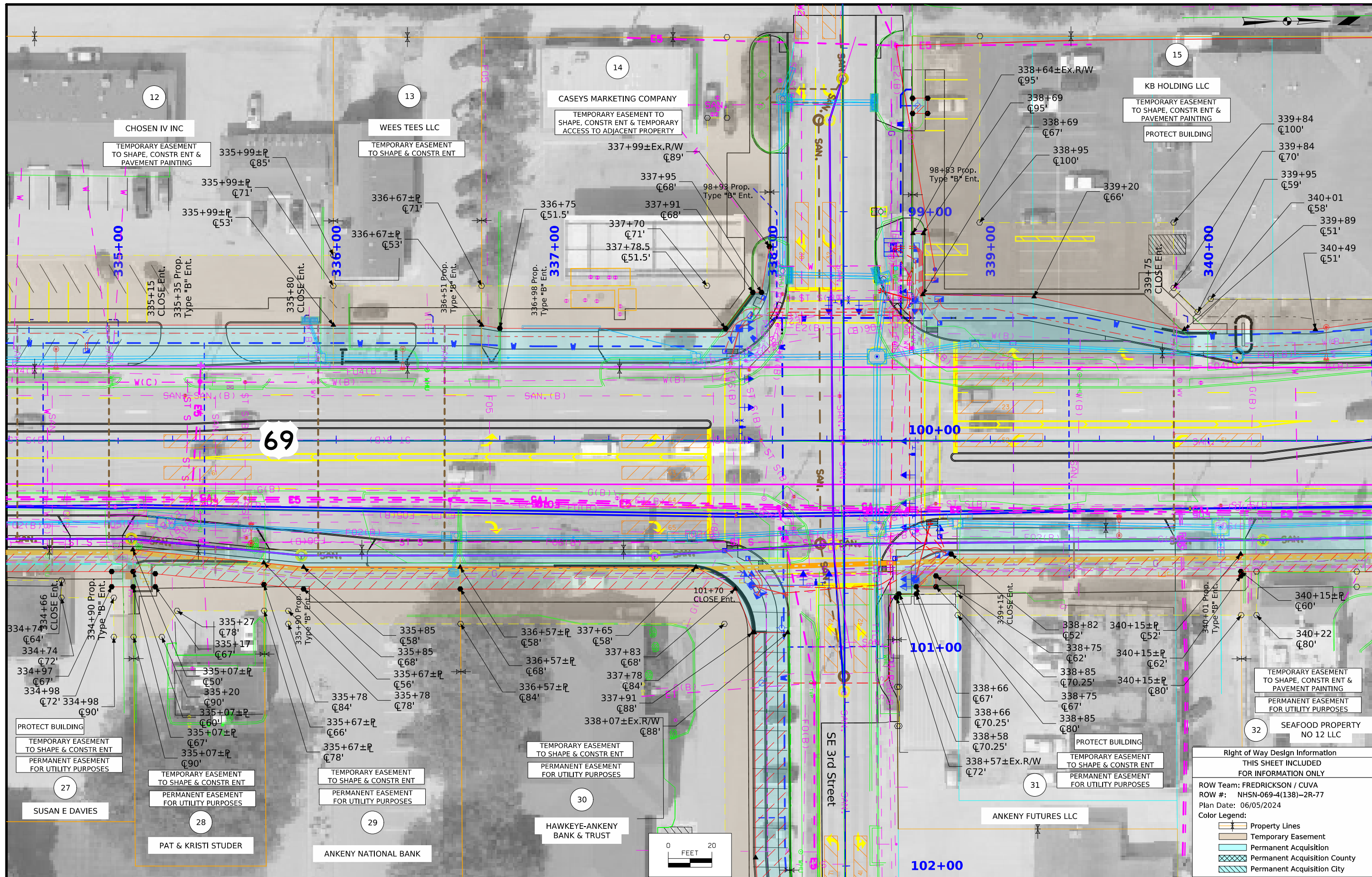
VERT. DATUM: NAVD88
 Geoid Model: 2018u3 or 2018u2

Point Name	Northing	Easting	Elevation	Feature Definition	Description
CP1	7538104.29	18532050.52	988.02	CP	SET CUT "X" IN EAST BACK OF CURB PARKING LOT, 20 FT (+/-) WEST OF SE GRANT STREET, 20 FT (+/-) SOUTH OF SE PETERSON DRIVE, 10 FT (+/-) S OF NORTHEAST CORNER OF PARKING LOT, 75 FT (+/-) EAST OF BUILDING.
CP2	7540413.87	18531708.22	971.38	CP	SET MAG NAIL IN SOUTHWEST CORNER OF STORM SEWER STRUCTURE, WEST SIDE OF N. ANKENY BLVD., 30 FT (+/-) NORTH OF COMMERCIAL ENTRANCE, 425 FT (+/-) NORTH OF W. 1ST STREET, 225 FT (+/-) EAST OF MASSAGE ENVY COMMERCIAL BUILDING.
CP3	7539087.32	18531371.58	979.30	CP	SET CUT "X" IN EAST BACK OF CURB INTAKE AT SW LOGAN STREET, 40 FT (+/-) SOUTH OF SW 3RD STREET, 15 FT (+/-) SOUTH OF SIDEWALK, 350 FT (+/-) WEST OF S. ANKENY BLVD (HWY 69), 50 FT (+/-) WEST OF DYAMOND MEMORIAL.
CP4	7537281.85	18531672.76	996.69	FENO	SET FENO MONUMENT IN EXISTING RIGHT OF WAY JUST EAST OF 710 S. ANKENY BLVD MEADOW SPRINGS APPARTMENTS, 40 FT (+/-) WEST OF S. ANKENY BLVD (HWY 69), 25 FT (+/-) WEST OF SIDEWALK, 50 FT (+/-) NORTH OF APPARTMENTS ENTRANCE.
CP5	7539121.40	18532030.58	971.16	FENO	SET FENO MONUMENT IN EXISTING RIGHT OF WAY IN THE NORTHEAST PORTION OF 305 S. ANKENY BLVD BETWEEN THE TWO ENTRANCES TO THE PROPERTY, 5 FT (+/-) NORTH OF SIDEWALK, 15 FT (+/-) WEST OF FAR NORTHEAST ENTRANCE.



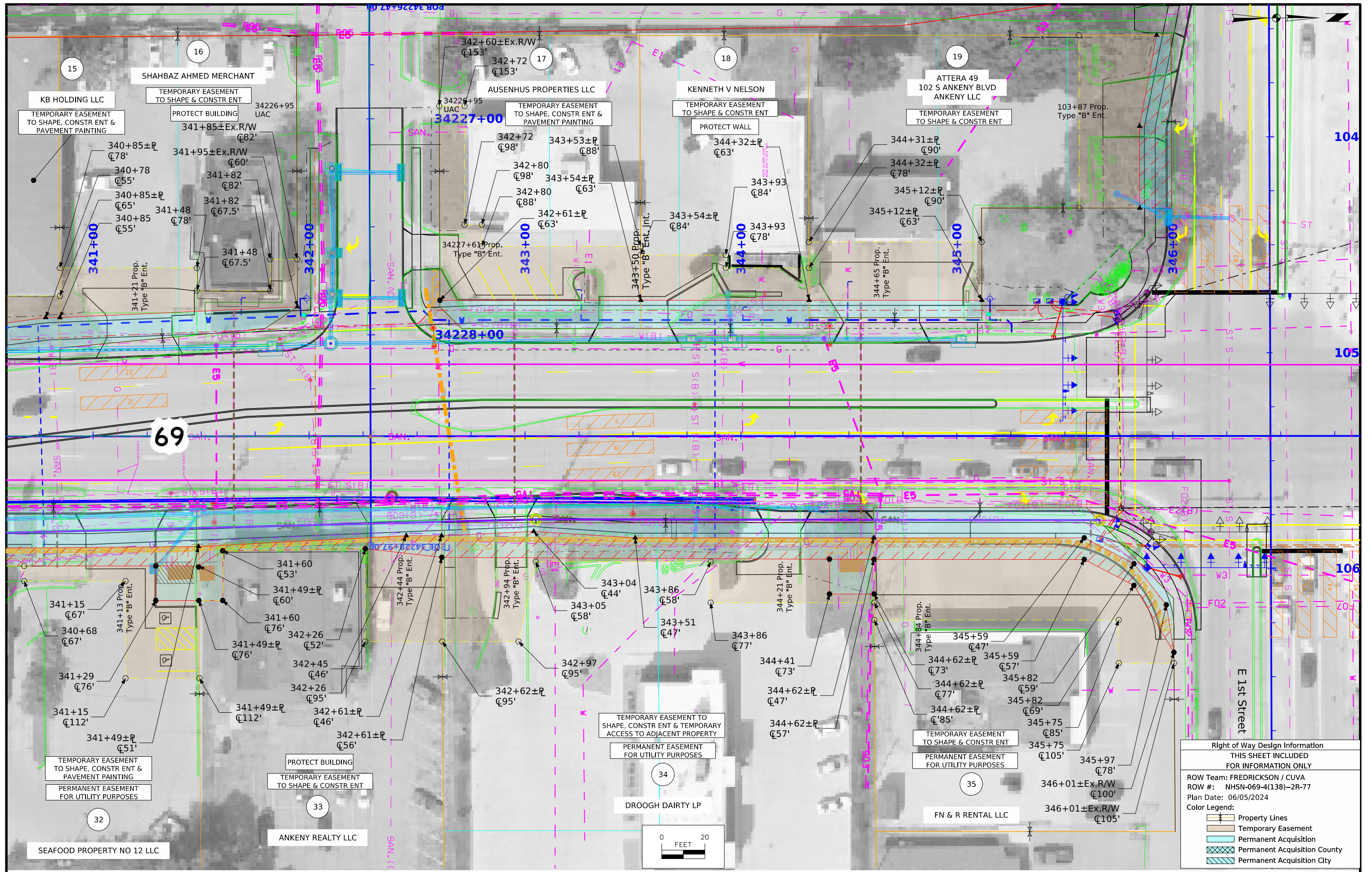


Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: FREDRICKSON / CUVA	
ROW #: NHSN-069-4(138)-2R-77	
Plan Date: 06/05/2024	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



FILE NO.	ENGLISH	DESIGN TEAM	Polk COUNTY	PROJECT NUMBER	SHEET NUMBER
6/14/2024	afredri	Snyder & Associates		NHSX-069-4(136)--3H-77	H.3

2:09:59 PM 6/14/2024 afredri pw:\NTP\wint1.dot.int.lan:PWMMain\Documents\Projects\7706901020\ROW\NHSN-069-4(138)--2R-77\ROW_77069138.dgn



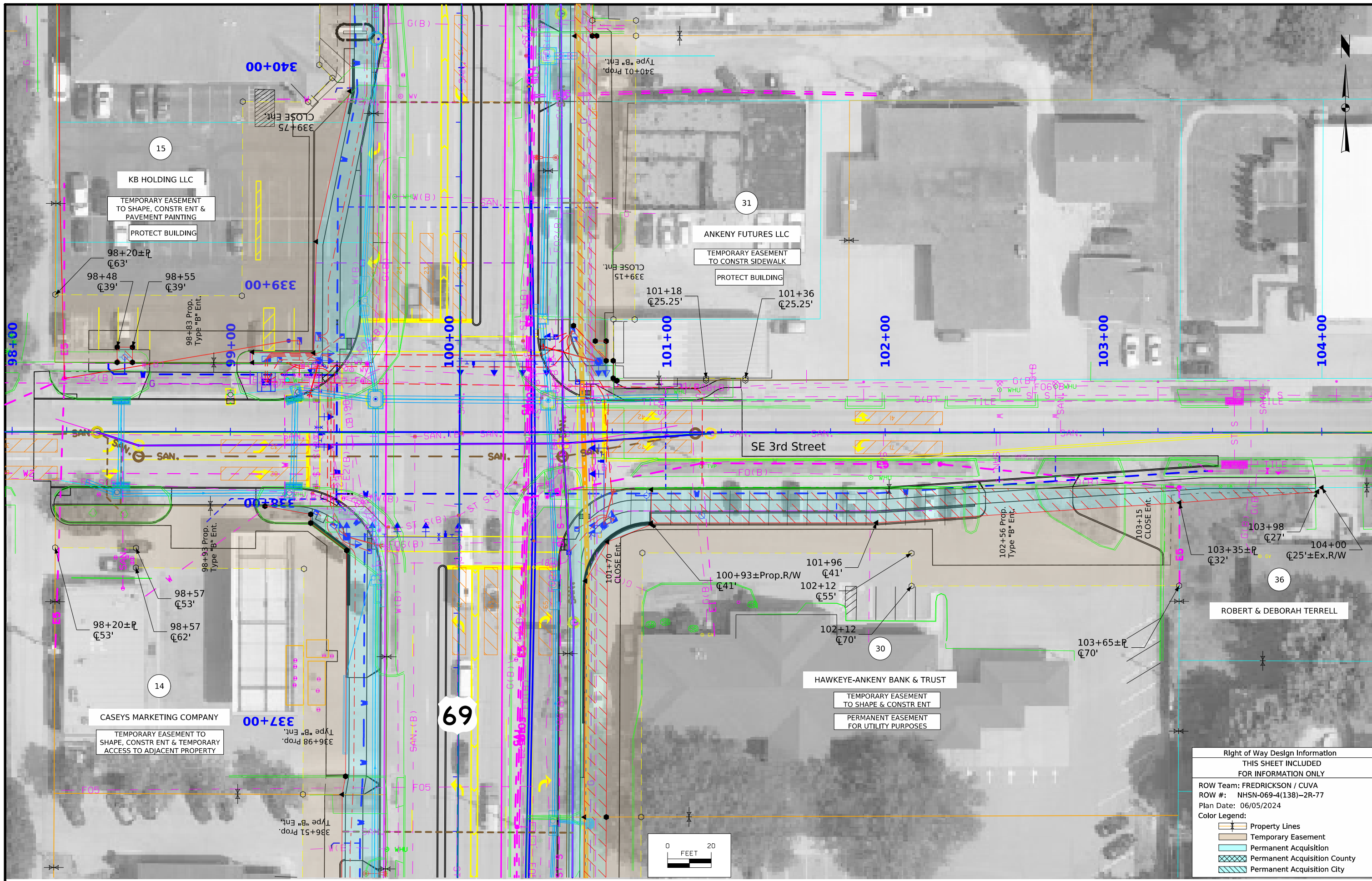
Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: FREDRICKSON / CUVA	
ROW #: NHSN-069-4(138)-2R-77	
Plan Date: 06/05/2024	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



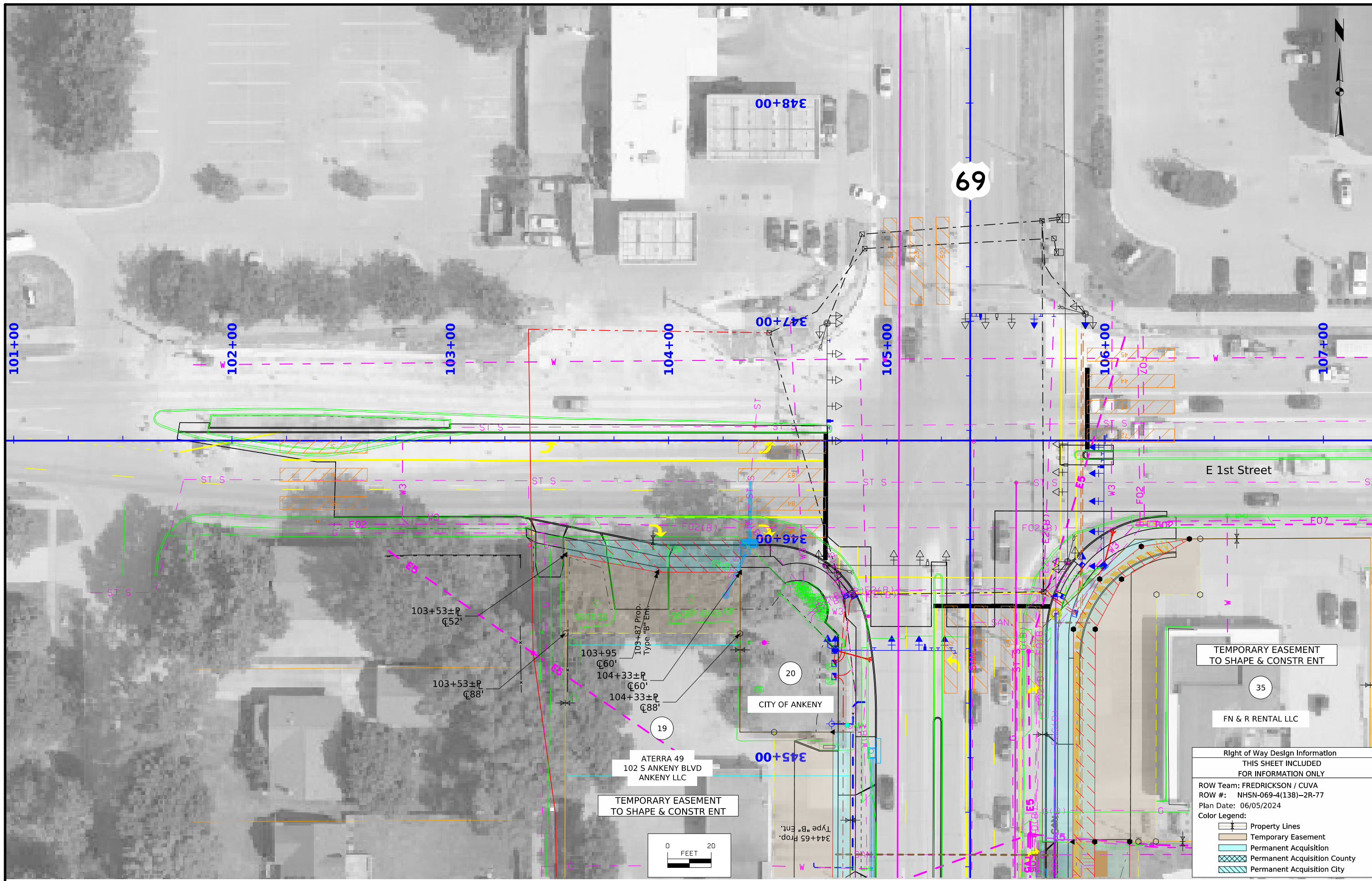
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Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: FREDRICKSON / CUVA	
ROW #: NHSN-069-4(138)--2R-77	
Plan Date: 06/05/2024	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: FREDRICKSON / CUVA	
ROW #: NHSN-069-4(138)-2R-77	
Plan Date: 06/05/2024	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



TRAFFIC CONTROL PLAN

1. Refer to following J-sheets for layouts of construction.
2. The Contractor shall coordinate traffic control with other projects in the area and special events.
3. Traffic control on this project shall be found in accordance with the current edition Manual of Uniform Traffic Control Devices (MUTCD) for the streets and highways as adopted by the Iowa Department of Transportation per 761 of the Iowa Administrative Code (IAC) Chapter 130.
4. Ingress and egress from the work area will be allowed only at locations specified in the contract documents or as approved by the Engineer. All truck hauling material to and from the work area shall display a 16-inch x 48-inch retro reflective sign with the legend "DO NOT FOLLOW INTO THE WORK AREA". The sign shall be orange with black lettering (4-inch height) and be comprised of Type VII sheeting.
5. All traffic control devices shall be furnished, erected, maintained, cleaned, and removed by the Contractor. All traffic control will remain the sole responsibility of the Contractor. The Contractor shall check traffic control devices daily and repair or replace damaged or misaligned devices promptly.
6. All post mounted signs shall be placed to provide a minimum of 2-feet clearance beyond the curb or edge of shoulder. All signs must be post mounted.
7. The location for storage of equipment by the Contractor during non-working hours shall be as approved by the Department. The Contractor will be responsible for securing a safe storage area for equipment and materials to be used on the project.
8. Proposed sign spacing may be modified as approved by the Department to meet existing field conditions or to prevent obstruction of the motorist's view of permanent signing.
9. The Contractor shall provide, prior to the start of construction, the name and 24-hour phone number of the Contractor's representative in charge of traffic control. Prompt response to traffic control related items is required.
10. Proposed changes in the traffic control plan shall be reviewed with the Department at least 48-hours before changes are made in the field.
11. Access for garbage, recycling, and postal service must be maintained at all times unless arranged otherwise by an agreement between the Contractor and property owner/business owner.
12. The Contractor shall communicate traffic control changes detailed in these plans with property owners/business owners along the project corridor at least two (2) weeks prior to changes.
13. The Contractor shall maintain access to all private residences and businesses at all times.
14. All temporary traffic WORK ZONE speed limit signage for US 69 (S Ankeny Blvd) shall be 25 MPH.

TEMPORARY TRAFFIC DETOUR ROUTES

Refer to J-sheets for Staging Notes. Project staging shall have concurrent and alternating closures of SW Southlawn Drive, SE East Lawn Drive, SE Peterson Drive, SW 3rd Street, SE 3rd Street, and SW 2nd Street depending on the current stage. Following submittals shall include detailed mapping information for detour routes. The anticipated detour routes are described below.

SW Southlawn Drive / SW 3rd Street / SW 2nd Street

- Local traffic using side streets west of the project will be detoured to W 1st Street via SW School Street.
- Directional wayfinding signage shall be posted at the intersections of SW School Street and SW Logan Street, SW 3rd Street, and SW 2nd Street. Wayfinding signage shall direct traffic to the intersection of W 1st Street and SW School Street.
- Directional wayfinding signage shall be posted at the intersections of SW Logan Street and SW Southlawn Drive, SW 3rd Street, and SW 2nd Street to direct traffic to SW School Street.
- Traffic will be detoured along SW School Street to the intersection of W 1st Street.
- Traffic will be detoured along W 1st Street to S Ankeny Boulevard / U.S. 69. Local traffic may proceed north from the detour or proceed south through the construction area along S Ankeny Boulevard / U.S. 69.
- Traffic traveling northbound and southbound on S Ankeny Boulevard will be detoured in the reverse order as described above with directional wayfinding signage posted at the intersection of S Ankeny Boulevard / U.S. 69 and 1st Street.
- Traffic traveling westbound on E 1st Street will be detoured in the reverse order as described above with directional wayfinding signage posted at the intersection of S Ankeny Boulevard / U.S. 69 and 1st Street and at the intersection of W 1st Street and SW School Street.
- Traffic traveling eastbound on W 1st Street will be detoured in the reverse order as described above with directional wayfinding signage posted at the intersection of SW School Street and W 1st Street.

SE East Lawn Drive / SE Peterson Drive / SE 3rd Street

- Local traffic using side streets east of the project will be detoured to SE Trilein Drive via SE Grant Street, SE Peterson Drive, and SE 3rd Street.
- Traffic traveling northbound S Ankeny Boulevard will be detoured to east side roads via SE 8th Street and E 1st Street.
- SE East Lawn Drive and SE Peterson Drive will be detoured via SE Grant Street with directional wayfinding signage at the intersection of SE 8th Street and SE Grant Street.
- SE 3rd Street will be detoured via S Ankeny Boulevard to E 1st Street, to SE Grant Street.
- Traffic traveling southbound N Ankeny Boulevard will be detoured to east side roads via SE 8th Street and E 1st Street with similar wayfinding signage configurations as noted above.

Restricted Width and Truck Detour Routes

During Stages 2 and 3, restrictive lane widths will be in place with the proposed temporary traffic control. Additionally, during Stage 2, truck detour routes will be proposed for westbound and eastbound traffic on 1st Street.

- Northbound truck traffic on S Ankeny Boulevard will be detoured via SE Magazine Road to SE Delaware Ave to E 1st Street and return to the north limits of the project.
- Southbound truck traffic on S Ankeny Boulevard will be detoured via E 1st Street to SE Delaware Ave to SE Magazine Road and return to the south limits of the project.
- Eastbound truck traffic on SW Ordance Road will be detoured via S Ankeny Boulevard to SE Magazine Road to SE Delaware Ave to E 1st Street and return to the north limits of the project.

STAGING NOTES

The Contractor shall not start any work until after traffic control is in place and approved by the Department.

The Contractor is allowed to submit for review and approval a revised staging plan to the Department to meet the Contractor's construction schedule for specific items.

Utility companies will be relocating existing facilities with this project. The Contractor shall coordinate all construction with utility companies and their relocations and services. Contractor to protect and support existing utilities during construction.

Safety fence, signs, temporary delineators, drums, and barricades are considered incidental to the Traffic Control bid item.

Contractor to contact City of Ankeny a minimum of 10 days prior to implementing any traffic disruptions along US 69 or side streets

Contractor to contact the Department a minimum of 10 days prior to implementing any traffic disruptions along US 69.

Temporary material laydown and staging area shall be within the work area. No special staging area is available as a part of this Project. Contractor shall coordinate with adjacent property owners for any staging areas outside of established easements.

Contractor to provide all business directional / wayfinding signage during construction. Not all business directional / wayfinding signage is shown on the plans and additional signage may be required. Each business impacted by the construction shall have wayfinding sign for each stage of construction.

Contractor to provide submittal of non-standard temporary traffic control signage for review and approval prior to fabrication.

Traffic control plans do not show all required signage. Contractor installation of traffic control to comply with Manual on Uniform Traffic Control Devices for Streets and Highways, as adopted by the Department per 761 of the Iowa Administrative Code (IAC), Chapter 130.

Pedestrian pathways shall be maintained or closed during construction. Type II or Type III closures are required when pathways are closed depending on width of pathway.

Maintain access to local properties and businesses at all times. Contractor shall coordinate with local properties and businesses when work shall impact and cross accesses. Reestablish access to local properties and businesses immediately following completion of activities that impact accesses.

STAGE 1 TRAFFIC CONTROL & STAGING

Public Utilities

Construction of Joint Utility Trench (JUT), public fiber infrastructure relocation, sanitary sewer, water main, storm sewer, and temporary widening.

- Establish temporary traffic control for inside lane closures along US 69 per Iowa DOT TC-419.
- Install Stage 1 temporary lane separator system (TLSS) per plan. Refer to J-sheets for additional information.
- Adjust temporary traffic control devices for outside lane closures per plan. Refer to J-sheets for additional information.
- Close east/west traffic at SW Southlawn Drive and SE East Lawn Drive per plan.
- Close SE Peterson Drive, SW 3rd Street, SE 3rd Street, and SW 2nd Street per plan. Establish detour routes per Traffic Control Plan. Refer to J-sheets for information.
- Construct JUT and city fiber optic communications relocations.
- Construct temporary and permanent city fiber optic communications relocations per plan. Refer to N-sheets for additional information.
- Construct east JUT per plan. Refer to U-sheets for additional information.
- Construct west JUT. (West JUT is under review. If west JUT does not take place, it is anticipated that the easement acquired for this infrastructure would be occupied by private franchise relocations by others.)
- Contractor shall coordinate with Lumen staff regarding lowering work of four (4) fiber optic vaults located throughout the project corridor. Contractor shall coordinate with Lumen regarding lowering of fiber optic duct between 2nd Street and 1st Street.
- Upon completion of east and west JUT. Contractor shall notify Engineer of the facility completion. Engineer shall notify private franchise utilities and provide XX days for franchise utilities to mobilize and establish connection to JUT's. Contractor may begin additional construction work that does not disturb private franchise utilities.
- Contractor will not disturb areas occupied by temporary or permanent city fiber optic communications until permanent relocations are made. Contractor shall ensure temporary city fiber optic communications are operational and in use prior to disturbing existing infrastructure between S 3rd Street and 1st Street, and all permanent fiber optic communications are operational prior to disturbing existing infrastructure between SE Peterson and S 3rd Street.
- Remove existing pavements per plan. Refer to J-sheets for additional information.
- Construct temporary traffic signalization at the intersection of S Ankeny Boulevard and 1st Street. Refer to N-sheets for information.
- Construct sanitary sewer per plan. Refer to MSA-sheets for information. Sanitary sewer construction may occur concurrently with water main work.
- Construct water main per plan. Refer to MWM-sheets for information. Water main construction may occur concurrently with sanitary sewer work.
- Construct temporary water main connection to existing SE 3rd Street 4" water main to be extended during Stage 4.
- Construct storm sewer per plan. Refer to M-sheets and J-sheets for information.
- Construct temporary junction structure at SE 3rd Street on proposed storm sewer P-12. Convey existing storm sewer pipe to proposed storm sewer system outlet along 3rd Street.
- Construct temporary connection to existing storm sewer at ST-15. Convey existing storm sewer system north of ST-15 through new storm sewer system outlet.
- All storm sewer manholes and intakes shall have well sections constructed to top of manhole and throat sections. Structure shall be plated for future connection during later stages.
- End storm sewer runs between SW 3rd Street and SW 2nd Street per plan. Cap end of storm sewer for future connections.
- Construct temporary pavements at SE Peterson Drive and temporary patches along S Ankeny Boulevard / U.S. 69.
- Construct permanent and temporary pavements on SW 3rd Street per the SW 3rd Substaging plan noted below.
- Construct permanent signalization at intersections of SE Peterson Drive and 3rd Street.
- Construct widening for northbound pavement between SW 2nd Street and E 1st Street per plan. Refer to J-sheets for information.

SW 3rd Street Substaging

- Remove existing grass median in northwest corner of Parcel 14. Install temporary pavement per plan. Refer to J-sheets for additional information. Contractor shall coordinate with Parcel 14 on delivery times and facilitate access to the site for deliveries only. SW 3rd Street traffic shall be prevented from using Parcel 14 to bypass SW 3rd Street closure.
- Contractor shall coordinate with Parcel 15 for deliveries being made using existing access pavement or alleyway pavement.
- Remove existing SE 3rd pavement per plan.
- Remove existing SW 3rd pavement from STA 98+75.00 east to S Ankeny Boulevard / U.S. 69 per plan.

STAGING NOTES

- Support existing storm sewer drainage system.
- Construct sanitary sewer and water main bores from SE 3rd Street to SW 3rd Street per plan. Protect existing storm sewer system during boring operations.
- Remove existing storm sewer manhole in NE corner of SE 3rd Street intersection. Bypass flow from existing storm sewer system to existing outlet along SE 3rd Street. Construct storm sewer bore from SE 3rd Street to SW 3rd Street per plan.
- Construct sanitary sewer and storm sewer per plan to an accessible location near STA 98+75.00.
- Construct water main along SW 3rd Street per plan. Open SE 3rd Street to right-in, right-out movements.
- Construct temporary pavements on SE 3rd Street per plan.
- Construct permanent and temporary pavements on SW 3rd Street / STA 98+75.00 to S Ankeny Boulevard.
- Remove temporary pavement for Parcel 14 and remainder of existing pavements on SW 3rd Street west of STA 98+75.00.
- Coordinate with Parcel 14 and 15 property owners on rerouting truck traffic via new SW 3rd Street pavement for deliveries.
- Construct remaining sanitary sewer and storm sewer per plan along SW 3rd Street.

STAGE 1 OVER WINTER CONDITIONS

Reopen roadway corridor to four-lane, two-way traffic during over winter conditions.

- Cover all directional wayfinding signage for detour routes.
- Temporary traffic signalization shall be adjusted to match existing conditions at SE 3rd Street and 1 Street intersections.
- Contractor will remove Stage 1 TLSS.
- Contractor will have all sanitary sewer and water main facilities active and services connected prior to winter shutdown.
- Contractor will have storm sewer temporary connections made prior to winter shut down.

STAGE 2 TRAFFIC CONTROL & STAGING

Construction of remaining southbound storm sewer, S Ankeny Boulevard / U.S. 69, SW 2nd Street, W 1st Street pavements.

- Establish temporary traffic control for outside lane closure of northbound S Ankeny Boulevard / U.S. 69 traffic.
- Install Stage 2 temporary lane separator system (TLSS) per plan. Refer to J-sheets for additional information.
- Adjust temporary traffic control devices and establish temporary traffic control per plan. Refer to J-sheets for additional information.
- Close east/west traffic at SW Southlawn Drive and SE East Lawn Drive per plan.
- Close SW 3rd Street and SW 2nd Street per plan. Establish detour routes per Traffic Control Plan. Refer to J-sheets for additional information.
- Modify traffic signalization at the intersections of S Ankeny Boulevard / U.S. 69 and 3rd Street / 1st Street. Refer to N-sheets for additional information.
- Remove existing pavements per plan. Refer to F-sheets and J-sheets for additional information.
- Install temporary access pavements per plan. Refer to J-sheets for additional information.
- Construct remaining storm sewer network on west side of project corridor.
- Adjust Stage 1 storm sewer to proposed grade on west side of project corridor.
- Construct proposed and temporary pavements per plan. Refer to D-sheets, L-sheets, and J-sheets for information.

1st Street Substaging

- Refer to J.8 and J.8A for temporary traffic control.
- Construct permanent outside through lane and right turn-lane pavement per plan.
- Construct permanent left turn-lane and turn-lane extension per plan. Construct east median nose removal and replacement.
- Construct permanent inside through lane per plan.

STAGE 3 TRAFFIC CONTROL & STAGING

Construction of remaining northbound storm sewer, S Ankeny Boulevard / U.S. 69, SE Peterson Drive, SE 3rd Street pavements.

- Install Stage 3 temporary lane separator system (TLSS) per plan. Refer to J-sheets for additional information.
- Establish temporary traffic control per plan. Refer to J-sheets for additional information.
- Shift traffic to Stage 2 permanent and temporary pavement.
- Maintain closure of east/west traffic at SW Southlawn Drive and SE East Lawn Drive per plan.
- Close SE Peterson Drive and SE 3rd Street per plan. Establish detour routes per Traffic Control Plan. Refer to J-sheets for additional information.
- Modify traffic signalization at the intersections of S Ankeny Boulevard / U.S. 69 and 3rd Street / 1st Street. Refer to N-sheets for additional information.
- Remove existing pavements per plan. Refer to F-sheets and J-sheets for additional information.
- Install temporary access pavements per plan. Refer to J-sheets for additional information.
- Construct remaining storm sewer network on east side of project corridor.
- Remove Stage 1 temporary storm sewer connections.
- Adjust Stage 1 storm sewer to proposed grade on east side of project corridor.
- Construct proposed pavements per plan. Refer to D-sheets, L-sheets, and J-sheets for information.

STAGE 4 TRAFFIC CONTROL & STAGING










Construction of paved median, left turn lanes, and intersection pavements.

- Maintain Stage 3 TLSS.
- Maintain Stage 3 temporary traffic control for west half of corridor.
- Establish temporary traffic control per plan. Refer to J-sheets for additional information.
- Maintain closure of east/west traffic at SW Southlawn Drive and SE East Lawn Drive per plan.
- Remove Stage 2 temporary pavements.
- Construct proposed pavements per plan. Refer to D-sheets, L-sheets, and J-sheets for information.
- Remove Stage 3 TLSS and all temporary traffic control.

**CROSS SECTION VIEW COLOR LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**





















	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

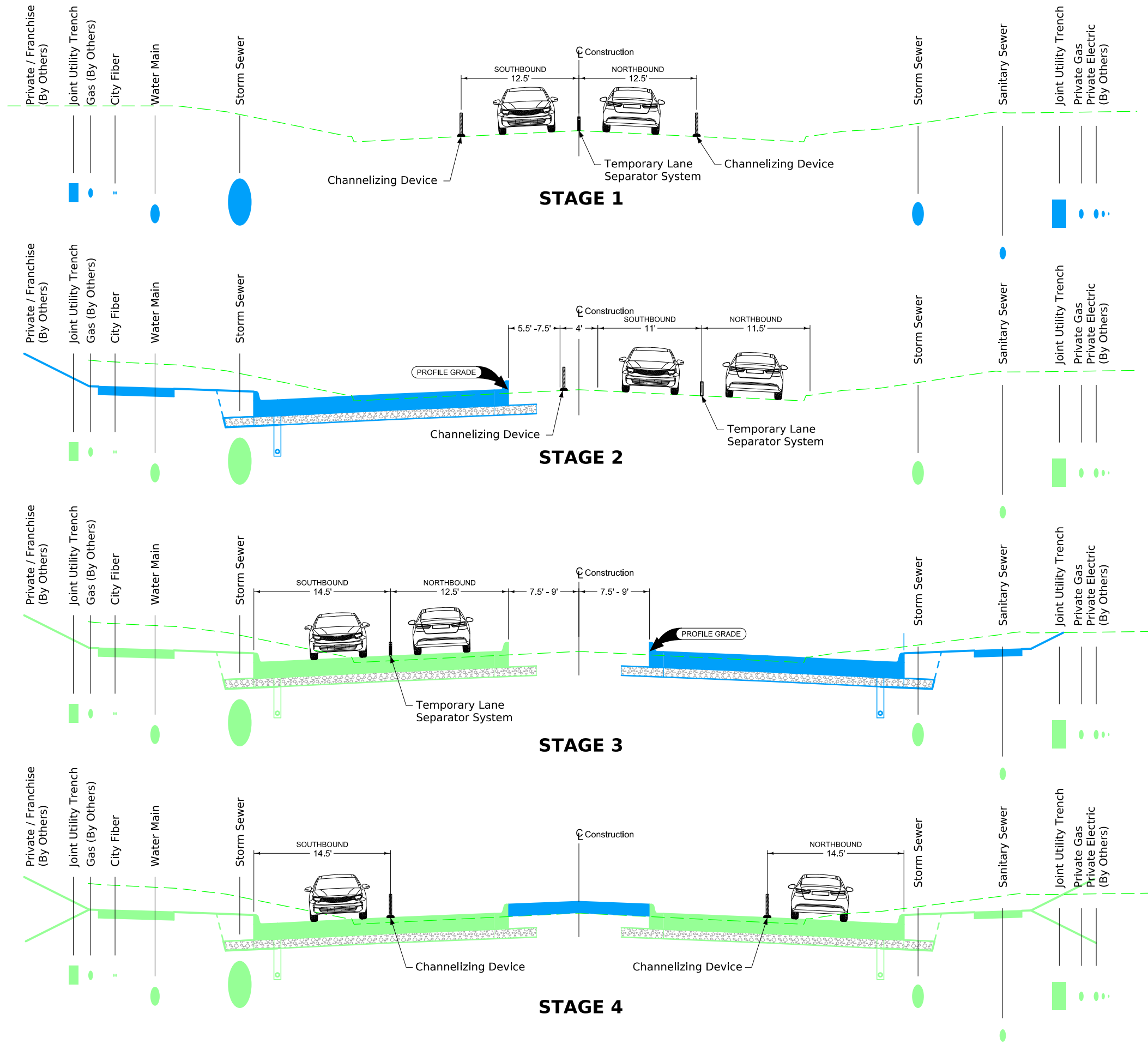
**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

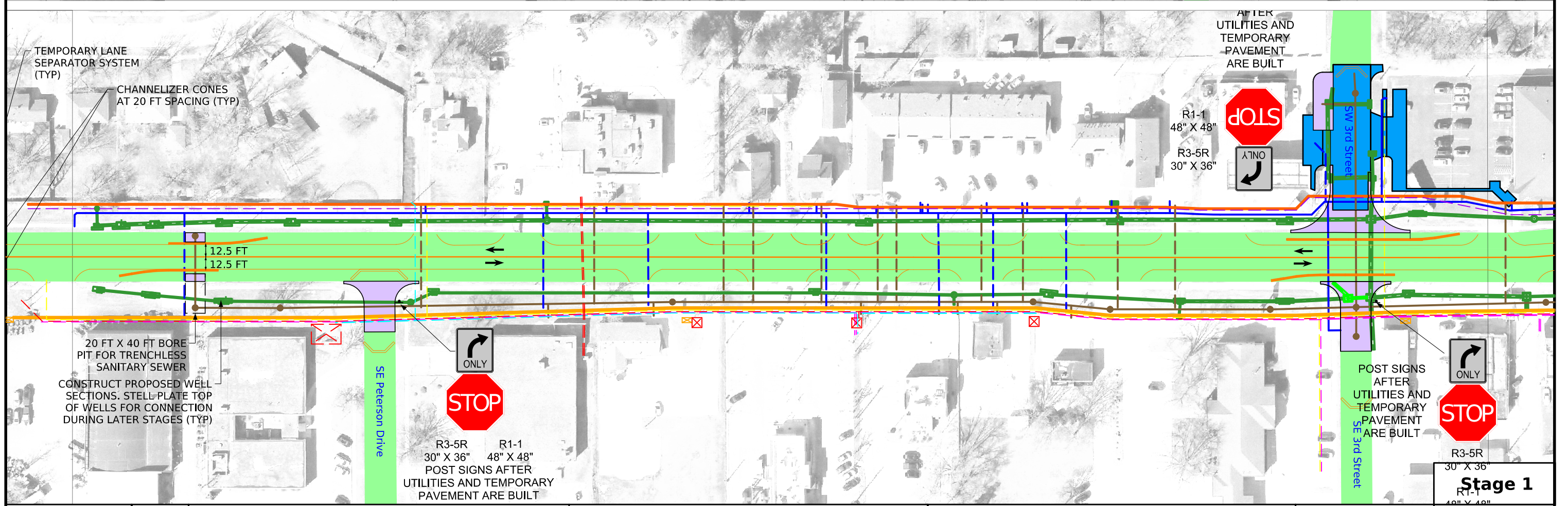
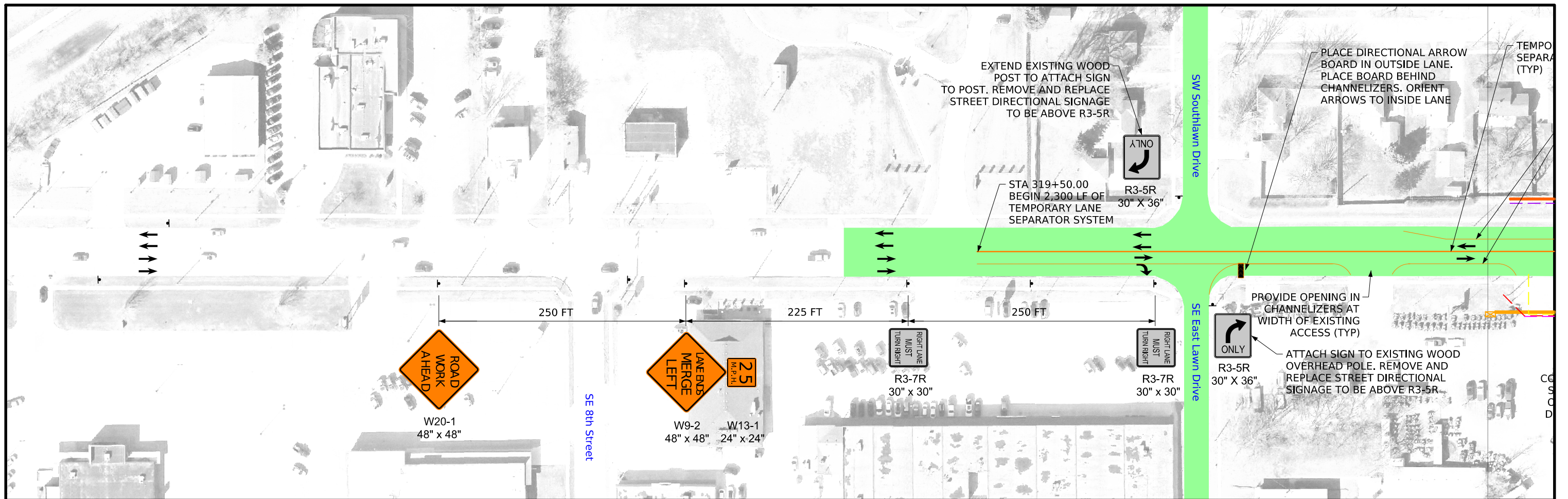
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

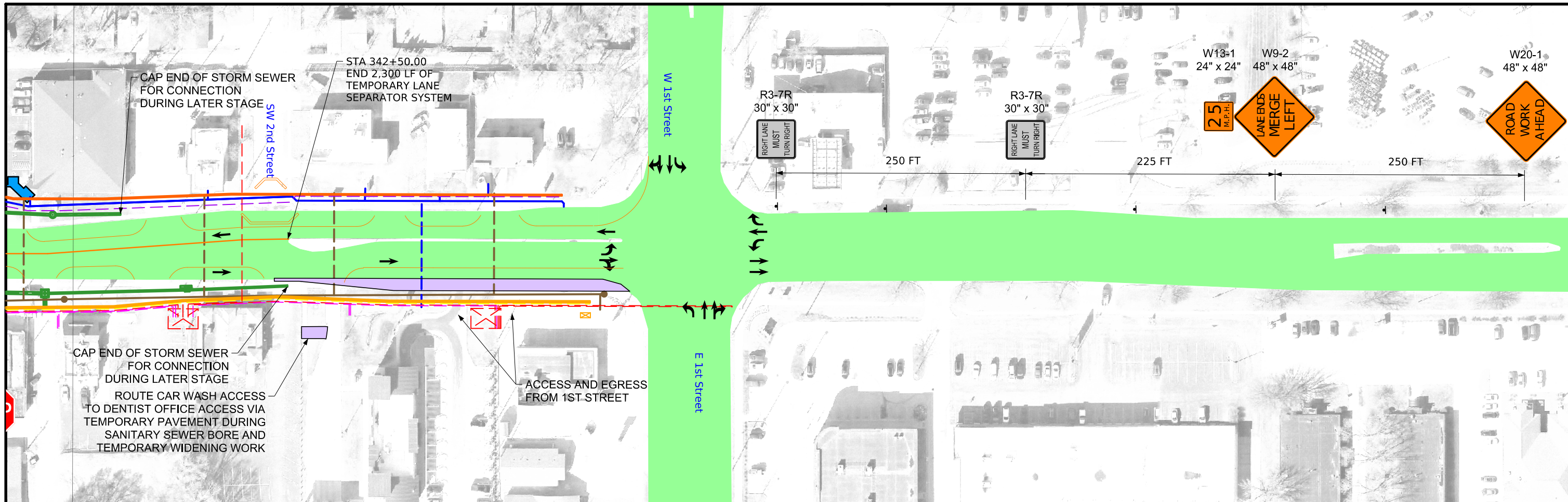
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

**TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET**

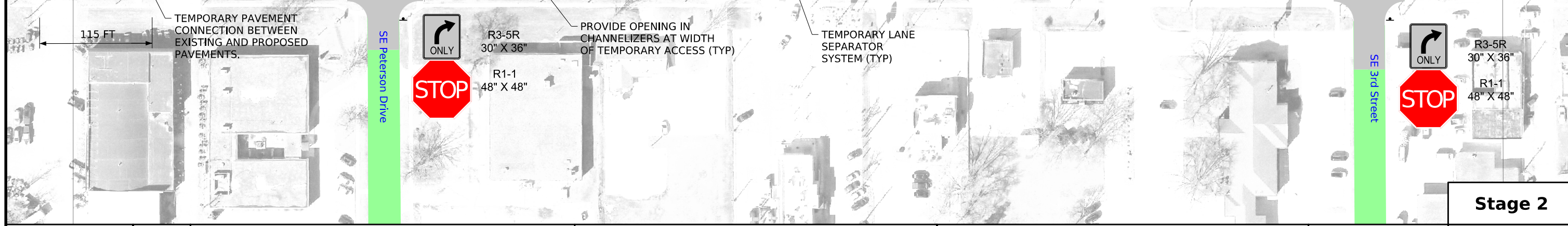
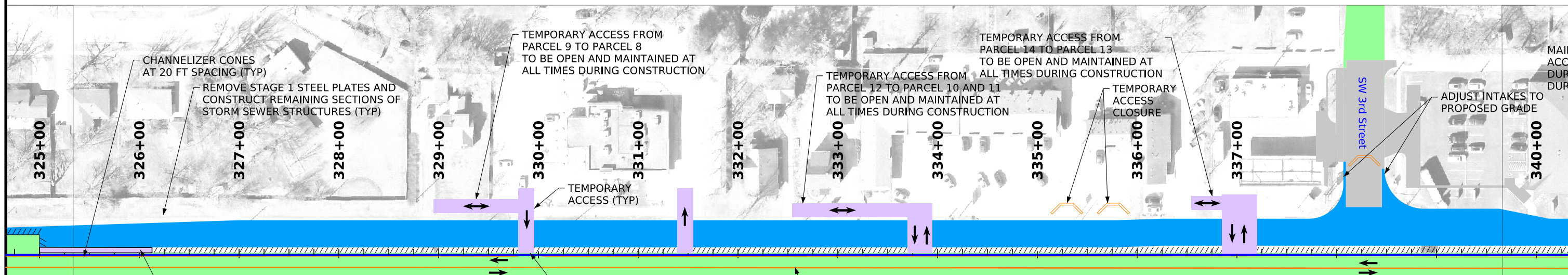
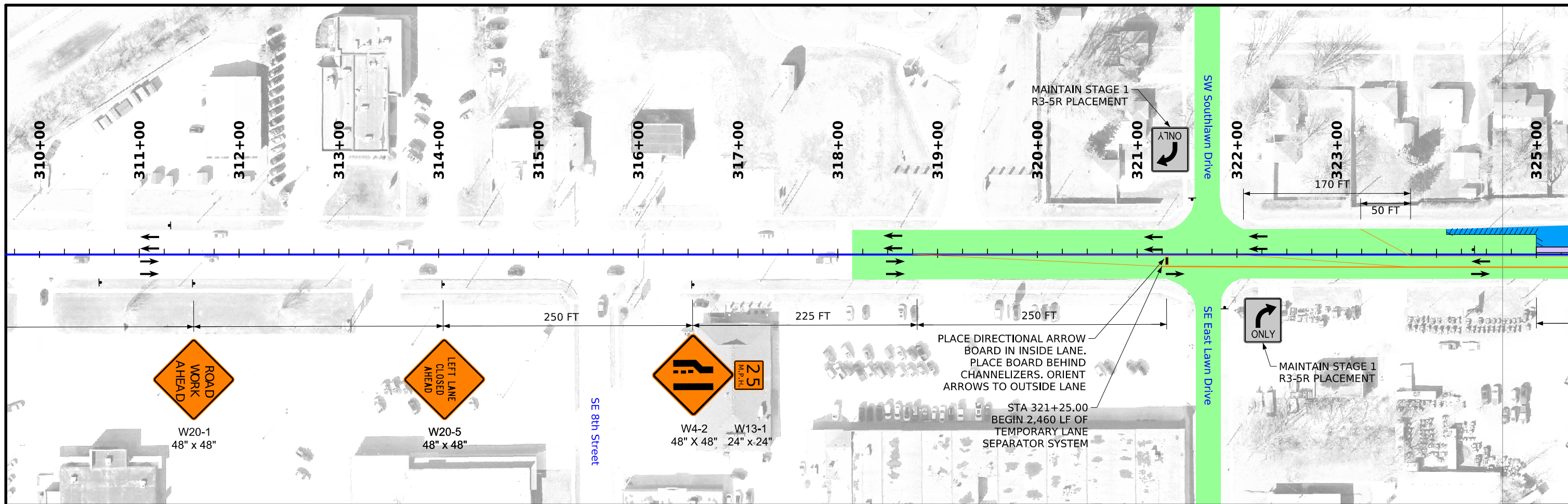
(COVERS SHEET SERIES J)



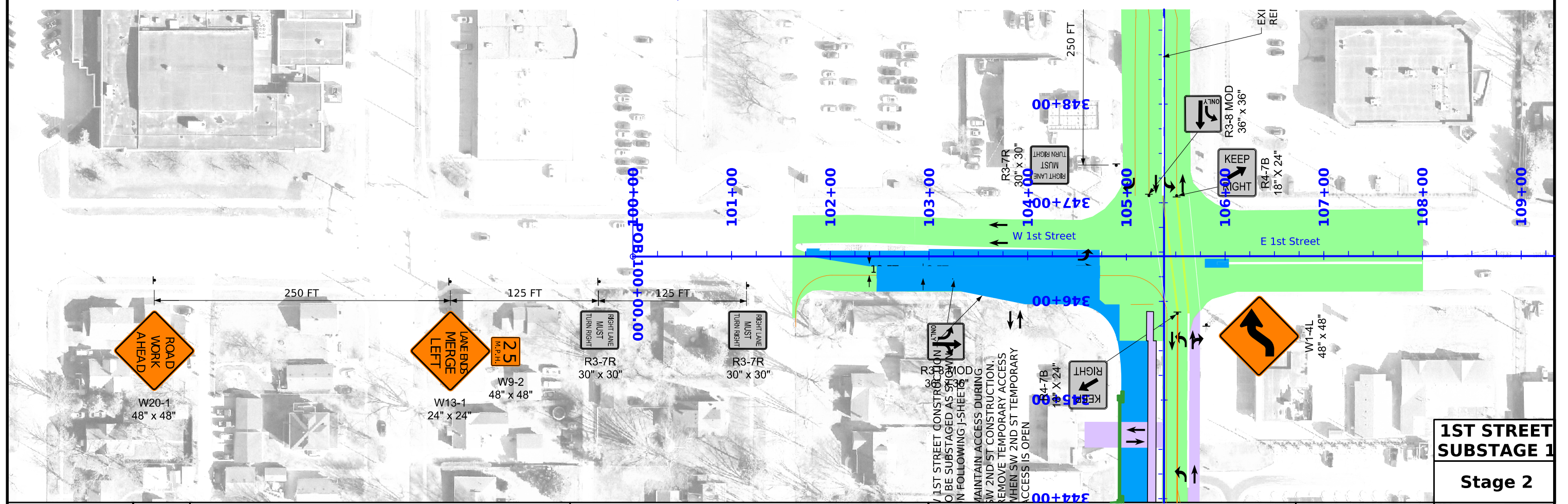
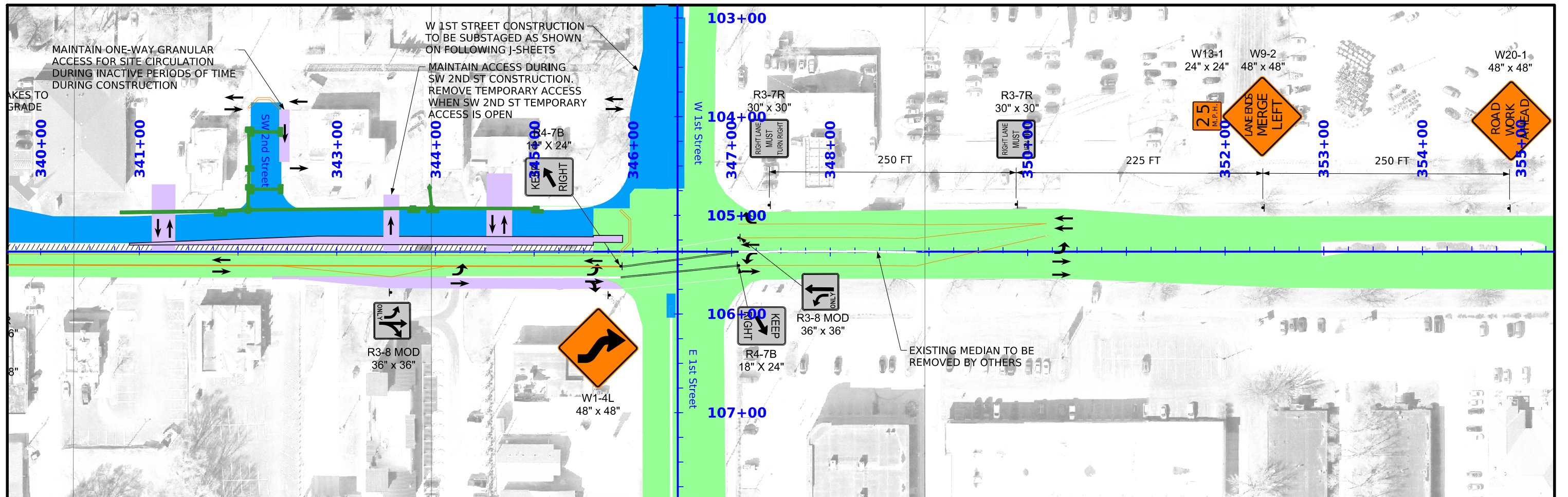




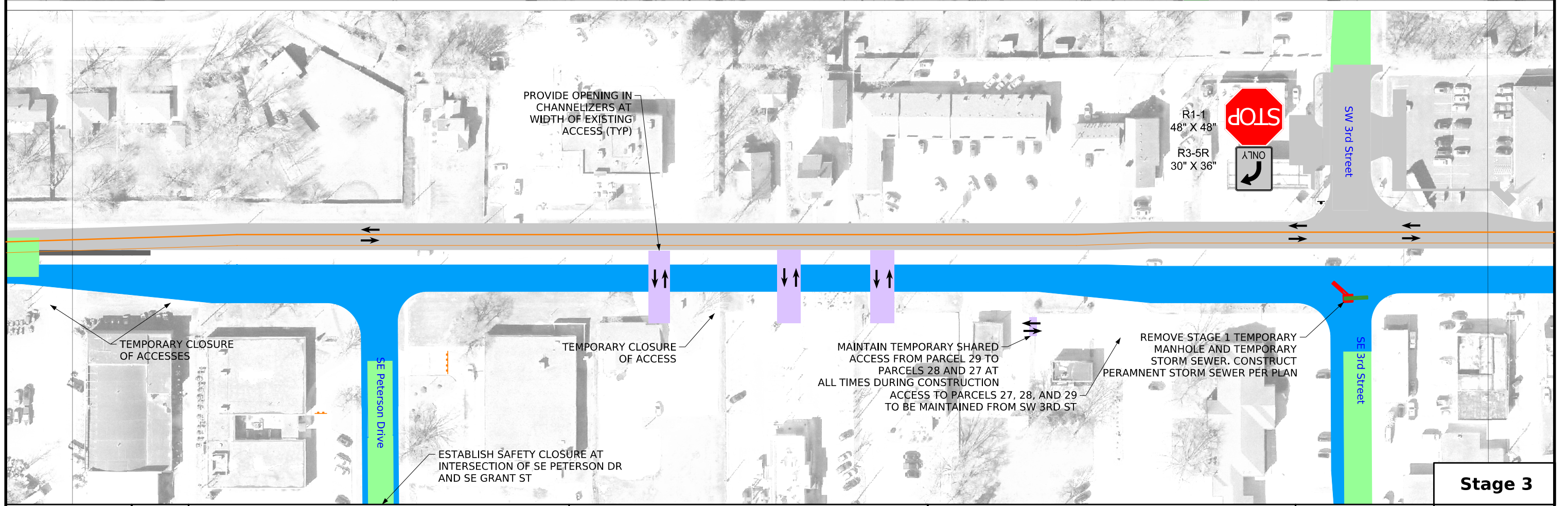
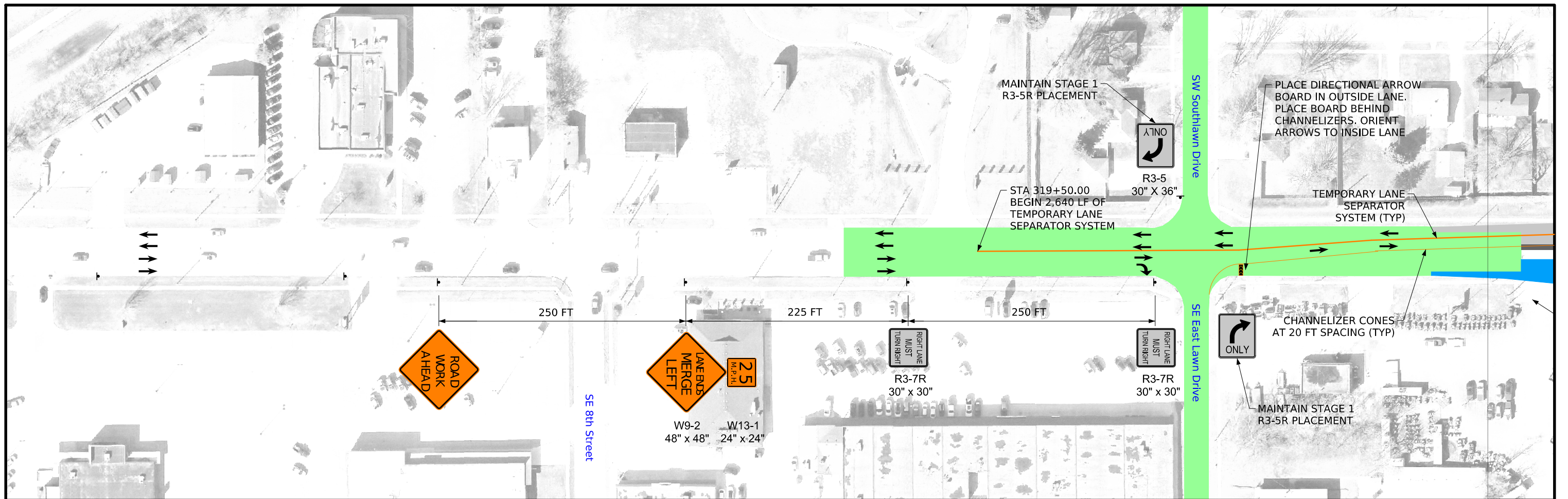
Stage 1



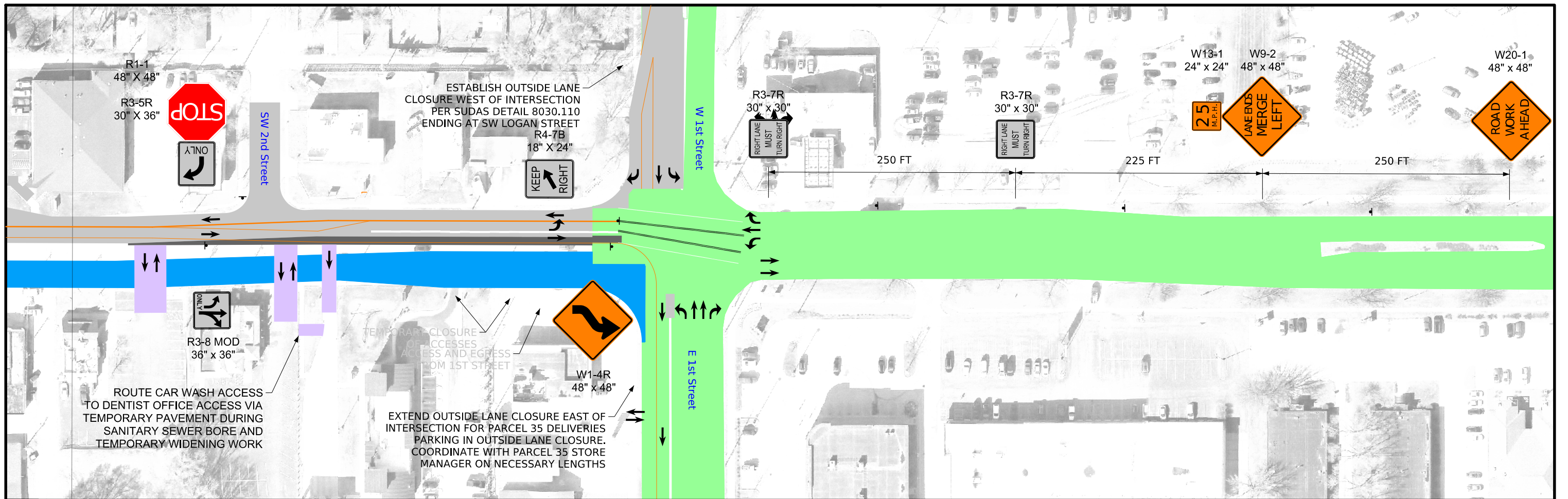
Stage 2



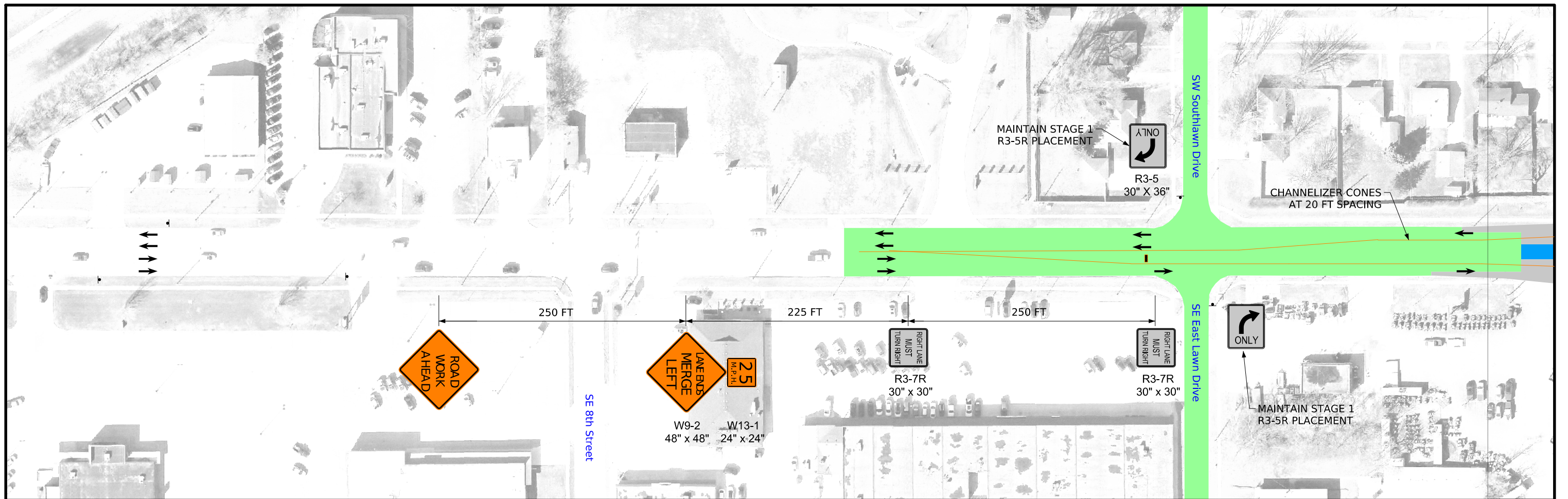
**1ST STREET
SUBSTAGE 1**
Stage 2



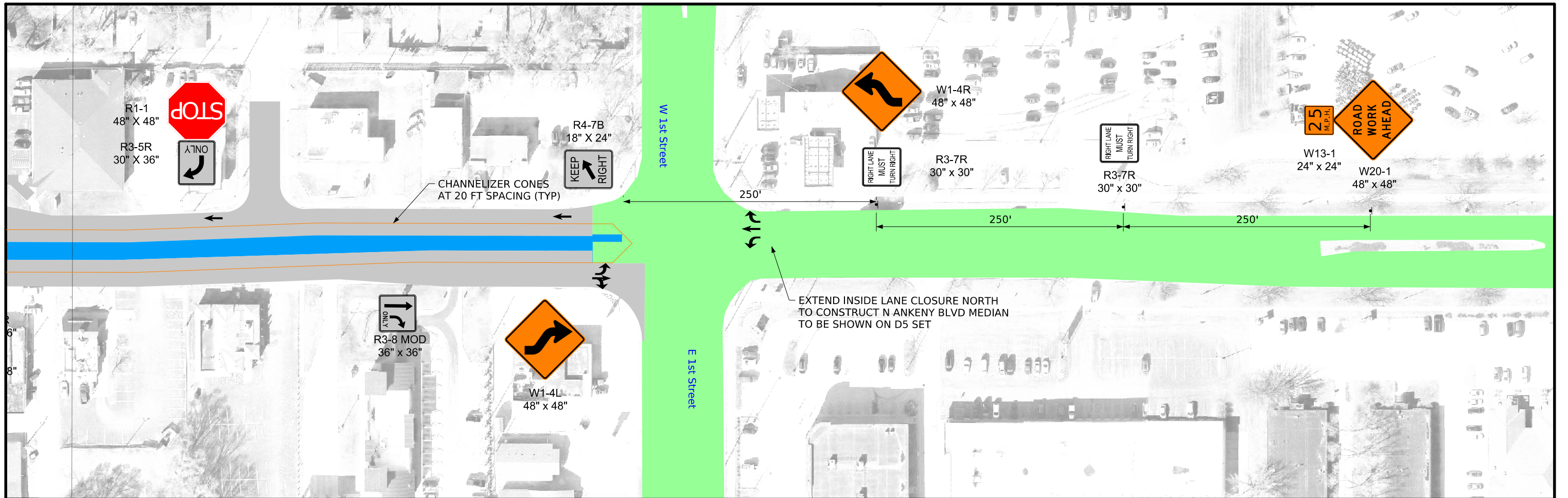
Stage 3



Stage 3



Stage 4



Stage 4

STORM SEWER

① Diameter or equivalent diameter

* Bid Item

** For SW-545

INTAKES AND UTILITY ACCESSES

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

No.	Location Station and Offset	*Type or Standard Road Plan	Form	Bottom	Extension Length**	Notes	Line Number	Intake/ Utility Access No.		Class 'D'	Pipe Size ①	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines			Pipe Profile Sheet No.	Notes			
			Elev.	Elev.				From	To							IN	FT	FT			Inlet Elevation	Outlet Elevation	Other Elevation
			FT	FT																			
ST-01	325+61.00, 34.6' RT	SW-541	990.95	986.64			P-01	ST-01	ST-03	2000	15	55	50.3	0.5		986.64	986.38						
ST-03	326+15.00, 40.0' RT	SW-541	990.55	985.68			P-03	ST-04	ST-04	2000	15	70	65.1	0.6		986.18	985.78						
ST-04	326+84.00, 46.0' RT	SW-541	990.68	985.08			P-04	ST-05	ST-05	2000	15	192	188.0	0.6		985.58	984.47						
ST-05	328+76.00, 45.5' RT	SW-401 (48")	992.63	983.77			P-05	ST-06	ST-06	2000	15	26	22.0	0.6		984.27	984.14						
ST-06	329+00.00, 34.5' RT	SW-507	992.34	983.44			P-06	ST-07	ST-07	2000	15	386	382.0	1		983.94	980.12						
ST-07	332+86.00, 34.5' RT	SW-507	989.84	979.32			P-07	ST-08	ST-08	2000	15	140	136.0	2.5		979.82	976.78						
ST-08	334+25.00, 38.0' RT	SW-401 (48")	983.42	975.98			P-07A	EX	ST-07	2000	15	12	8.0	0.5		979.96	979.92						
ST-09	335+18.00, 35.3' RT	SW-510	980.43	973.97			P-08	ST-09	ST-09	2000	18	92	87.9	1.4		976.48	974.77						
ST-10	336+55.00, 46.0' RT	SW-541	976.98	971.63			P-08A	EX	ST-08	2000	15	12	8.0	1.0		977.87	977.79						
ST-11	336+54.00, 58.5' RT	SW-501	977.35	972.57			P-09	ST-11	ST-10	2000	18	138	133.4	1.5		974.47	972.43						
ST-12	337+63.00, 46.0' RT	SW-541	975.88	970.73			P-10	ST-10	ST-10	2000	15	16	11.8	1		972.57	972.45						
ST-13	338+48.00, 40.6' RT	SW-403 (5'x7')	975.91	967.55			P-11	ST-10	ST-12	2000	24	108	104.0	0.6		972.13	971.53						
ST-14	338+85.00, 36.0' RT	SW-508	976.12	967.52			P-12	ST-12	ST-13	2000	24	87	82.9	0.8		971.23	970.6						
ST-15	340+05.50, 40.6' RT	SW-403 (5'x7')	977.49	966.86			P-13	ST-13	ST-14	2000	48	40	35.4	0.5		968.29	968.12						
ST-16	341+48.00, 34.0' RT	SW-507	976.07	967.96			P-14	ST-14	ST-15	2000	48	123	118.7	0.5		968.02	967.46						
ST-17	341+29.10, 29.1' RT	SW-501	976.54	968.61			P-15	ST-15	EX	2000	48	12	8.0	0.5		967.46	967.39						
ST-18	342+72.50, 29.1' RT	SW-509	974.68	968.47			P-16	ST-16	ST-15	2000	18	145	140.5	0.5		968.25	967.57						
ST-19	343+80.00, 32.9' RT	SW-541	973.53	969.08			P-17	ST-17	ST-16	2000	15	35	30.1	1		968.76	968.46						
ST-20	343+96.00, 33.9' RT	SW-541 W/ SW-542 EXTENSION	973.5	969.24			P-18	ST-18	ST-16	2000	18	128	123.1	0.5		968.97	968.35						
ST-21	344+38.00, 34.8' RT	SW-541 W/ SW-542 EXTENSION	973.6	969.54			P-19	ST-19	ST-18	2000	18	106	101.1	0.5		969.58	969.07						
ST-99	325+36.75, 26.9' LT	SW-401 (48")	991.41	884.97			P-20	ST-20	ST-19	2000	15	17	12.2	0.5		969.74	969.68						
ST-100	325+58.50, 49.5' LT	SW-512 (24")	990.94	984.44			P-22	ST-20	ST-22	2000	15	43	38.0	0.5		969.74	970.04						
ST-101	325+58.00, 30.5' LT	SW-507	991.05	984.04			P-99	EX	99	2000	18	12	8.0	1.5		985.69	985.57						
ST-102	325+83.00, 31.2' LT	SW-510	990.89	983.73			P-100	EX	101	2000	15	12	8.0	1		984.73	984.65						
ST-103	326+17.00, 32.2' LT	SW-510	990.78	983.5			P-100A	ST-99	ST-101	2000	18	22	17.6	2		985.47	985.11						
ST-104	326+83.00, 32.0' LT	SW-545	991.04	983.1	12		P-101	ST-100	ST-101	2000	15	19	15.0	2		985.94	985.64						
ST-105	327+55.00, 34.5' LT	SW-510	991.87	982.66			P-102	ST-101	ST-102	2000	30	24	19.1	0.5		984.54	984.44						
ST-106	328+60.00, 34.5' LT	SW-507	992.1	982.02			P-103	EX	ST-102	2000	15	12	8.0	0.5		984.5	984.45						
ST-107	330+14.00, 37.5' LT	SW-401 (60")	993.23	981.3			P-104	EX	ST-102	2000	15	12	8.0	0.5		984.6	984.55						
ST-108	330+14.00, 54.0' LT	SW-501	993.32	981.32			P-105	ST-102	ST-103	2000	30	30	26.0	0.5		984.24	984.11						
ST-108A	331+80.50, 37.1' LT	SW-401 (60")	991.07	980.3			P-106	ST-103	ST-104	2000	30	64	60.0	0.5		984.01	983.71						
ST-109	333+39.00, 34.5' LT	SW-545	985.65	979.64	12		P-107	ST-104	ST-105	2000	30	71	66.1	0.5		983.61	983.27						
ST-110	325+58.00, 36.0' LT	SW-545	978.36	972.27	12		P-108	ST-105	ST-106	2000	30	103	99.0	0.5		983.17	982.68						
ST-111	325+58.00, 54.0' LT	SW-505	979.5	973.3			P-109	ST-106	ST-107	2000	30	154	150.0	0.5		982.58	981.82						
ST-112	337+20.00, 54.0' LT	SW-521	976.18	970.06			P-110	ST-108	ST-107	2000	15	19	14.5	1		981.82	989.15						
ST-113	337+65.00, 36.0' LT	SW-545	976.18	970.04	12		P-110A	EX	ST-108	2000	15	19	14.6	0.5		988.34	988.27						
ST-114	338+48.00, 38.6' LT	SW-403 (5'x7')	975.77	967.97			P-111	ST-107	ST-108	2000	30	167	162.4	0.5		981.72	980.91						
ST-115	338+93.00, 46.0' LT	SW-541 W/ SW-542 EXTENSION	975.8	968.14			P-111A	ST-108	ST-109	2000	30	159	154.7	0.5		980.8	980.25						
ST-116	340+13.00, 37.9' LT	SW-401 (60")	977.35	968.57			P-112	ST-109	ST-110	2000	30	254	250.0	2.9		980.15	973.86						
ST-117	341+83.00, 39.8' LT	SW-508	975.66	969.7			P-113	ST-114	ST-113	2000	48	83	78.1	0.5		968.58	968.19						
ST-118	342+10.00, 43.0' LT	SW-401 (48")	975.33	969.81			P-114	ST-110	ST-113	2000	30	173	168.1	1.2		972.76	970.75						
ST-119	343+77.00, 43.6' LT	SW-507	974.19	970.57			P-115	ST-111	ST-110	2000	15	21	16.7	2		973.8	973.5						
ST-120	343+96.00, 43.6' LT	SW-507	973.75	969.99			P-116	ST-113	ST-114	2000	30	81	77.0	2		970.56	969.02						
ST-121	343+94.00, 65.9' LT	SW-512 (18")	974	971.1			P-117	ST-115	ST-114	2000	30	44	39.7	0.5		968.75	968.57						
ST-122	345+02.00, 43.6' LT	SW-507	974.33	970.71			P-118	ST-116	ST-115	2000	30	120	115.8	0.5		969.37	968.85						
ST-130	98+50.00, 25.5' RT	SW-506	975.79	970.56			P-119	ST-117	ST-116	2000	30	170	165.5	0.5		970.21	969.47						
ST-131	98+50.00, 16.0' RT	SW-505	975.99	970.63			P-120	ST-118	ST-117	2000	30	27	22.6	0.5		970.41	970.31						
ST-132	99+29.00, 23.5' RT	SW-506	974.86	969.34			P-121	ST-119	ST-118	2000	18 EQ	167	162.5	0.5		971.24	970.51						
ST-133	99+29.00, 16.8' LT	SW-506	975.06	968.69			P-122	ST-120	ST-119	2000	18 EQ	19	15.0	0.5		971.41	971.34						
ST-140	34227+25.00, 15.5' RT	SW-506	975.61	971.28			P-123	ST-121	ST-120	2000	15	23	18.4	0.5		971.6	971.51						
ST-141	34227+25.00, 15.5' LT	SW-505	975.51	971.65			P-124	ST-122	ST-120	2000	18 EQ	106	102.0	0.5		971.97	971.51						
ST-142	34227+62.00, 15.5' RT	SW-503	974.92	971.81			P-130	EX	ST-130	2000	30	28	24.0	0.5		971.36	971.26						
ST-143	34227+83.00, 15.5' RT	SW-506	974.78	970.47			P-131	ST-131	ST-130	2000	15	41	37.0	1		971.63	971.26						
ST-144	34227+83.00, 15.5' LT	SW-505	974.78	971			P-132	ST-130	ST-132	2000	30	27	22.6	1.5		971.06	970.04						
ST-150	104+37.00, 47.8' RT	SW-506	974.26				P-133	ST-132	ST-133	2000	30	41	37.0	1.5		969.84	969.29						
ST-151	104+26.30, 70.7' RT	SW-512 (18")	975.57				P-135	ST-133	ST-114	2000	36	43	38.1	0.7		969.19	968.92						
							P-140	ST-141	ST-140	2000	15	31	27.0	1		972.15	971.88						
							P-141	ST-140	ST-142	2000	15	42	37.6	1		971.78	971.41						
							P-142	ST-142	ST-143	2000	15	21	16.2	1.5		971.31	971.07						
							P-143	ST-144	ST-143	2000	15	31	27.0	1		971.5	971.23						
							P-144	ST-143	ST-118	2000	18	25	20.2	1		970.97	970.77						
							P-150	ST-150	EX	2000	15	32	27.3										
							P-151	ST-151	ST-150	2000	15	24	19.9										

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box
- Utility Pole

UTILITY LEGEND

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- City of Ankeny Traffic
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- Verizon Wireless
Ryan Schaffer
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RYAN.SCHAFFER@VERIZONWIRELESS.COM
- Windstream
Kelly Wingfield

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK		Design Color No.	
Gray, Dark	(112)		Existing Topographic Features, Utilities, and Labels
Black	(17)		Proposed Storm Sewer Details, Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING		Design Color No.	
Gray, Light	(48)		Proposed Pavement Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK		Design Color No.	
Gray, Dark	(112)		Existing Ground Line Profile and Existing Utilities Information
Black	(17)		Proposed Pipes and Intakes

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Previously Constructed Pipe or Structure
- Direction of Pipe Flow

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

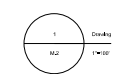
- Existing Ground
- Proposed Ground
- Previously Constructed Pipe or Structure
- Proposed Pipe or Structure

Reference Point

- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

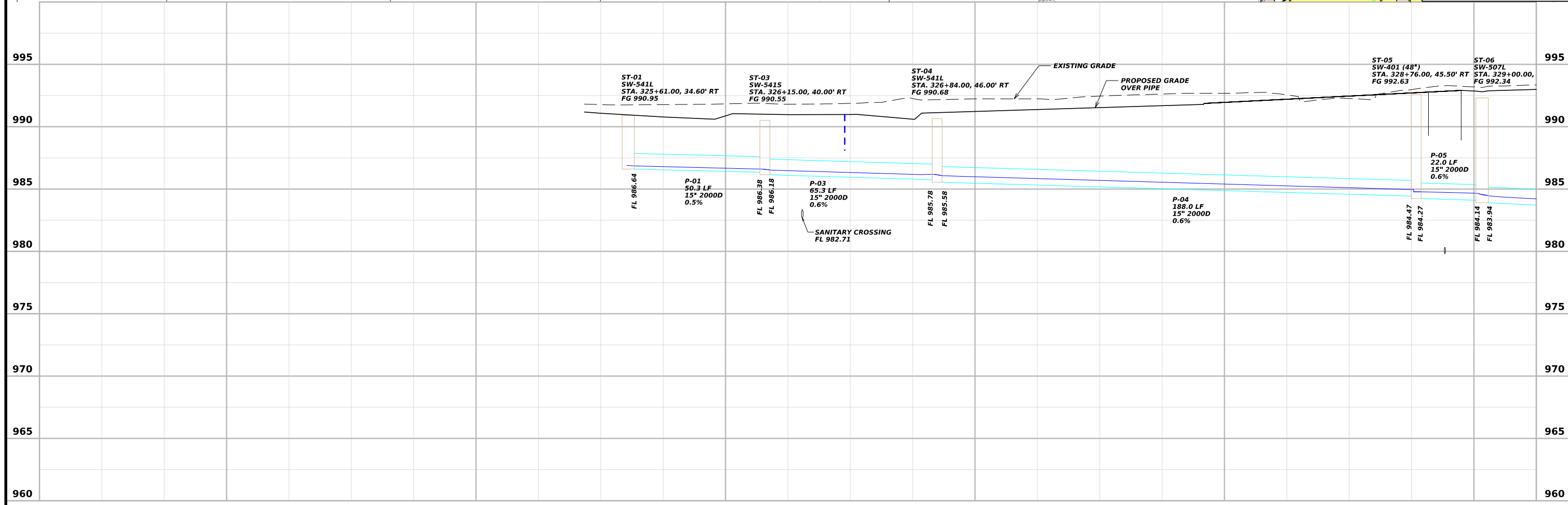
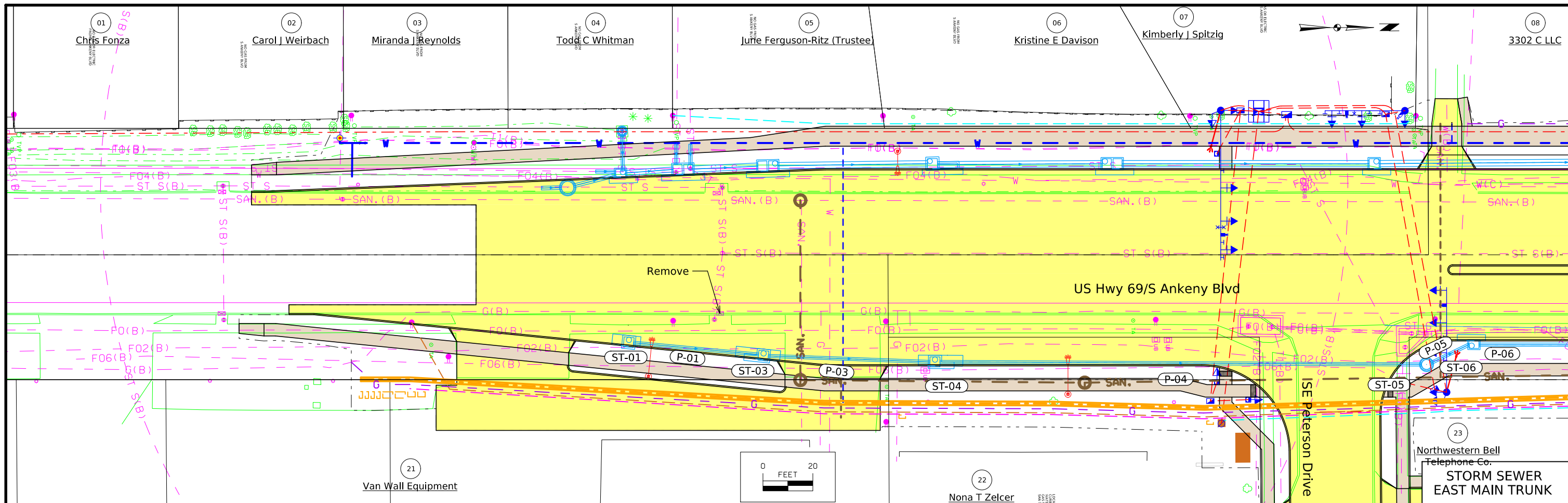
RIGHT-OF-WAY LEGEND

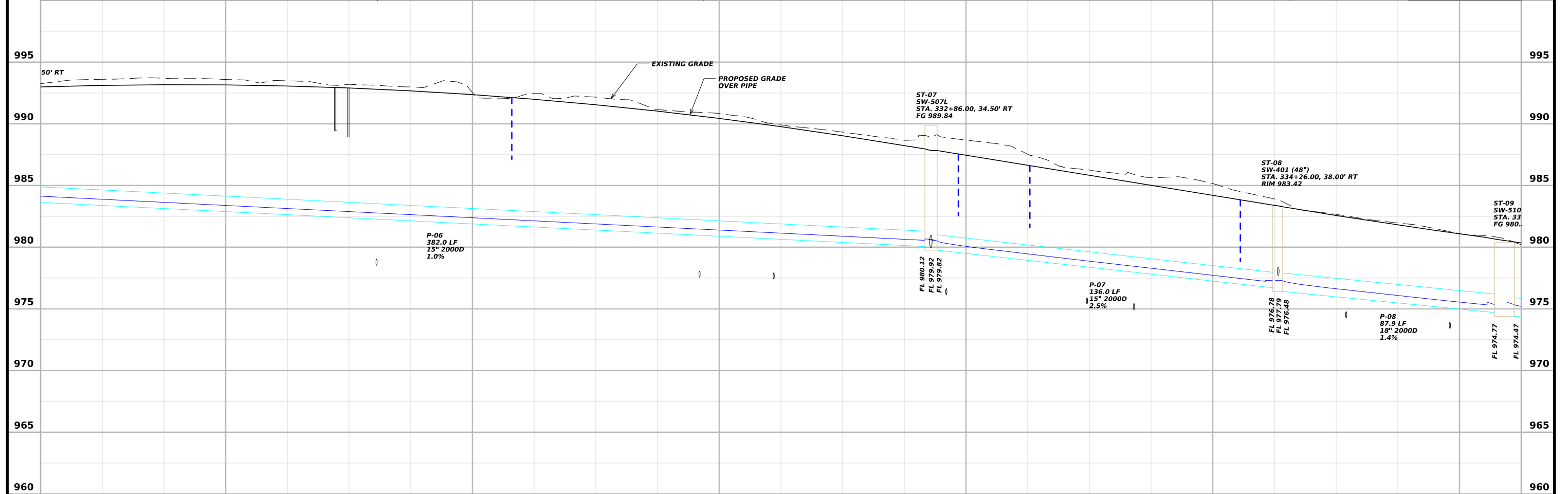
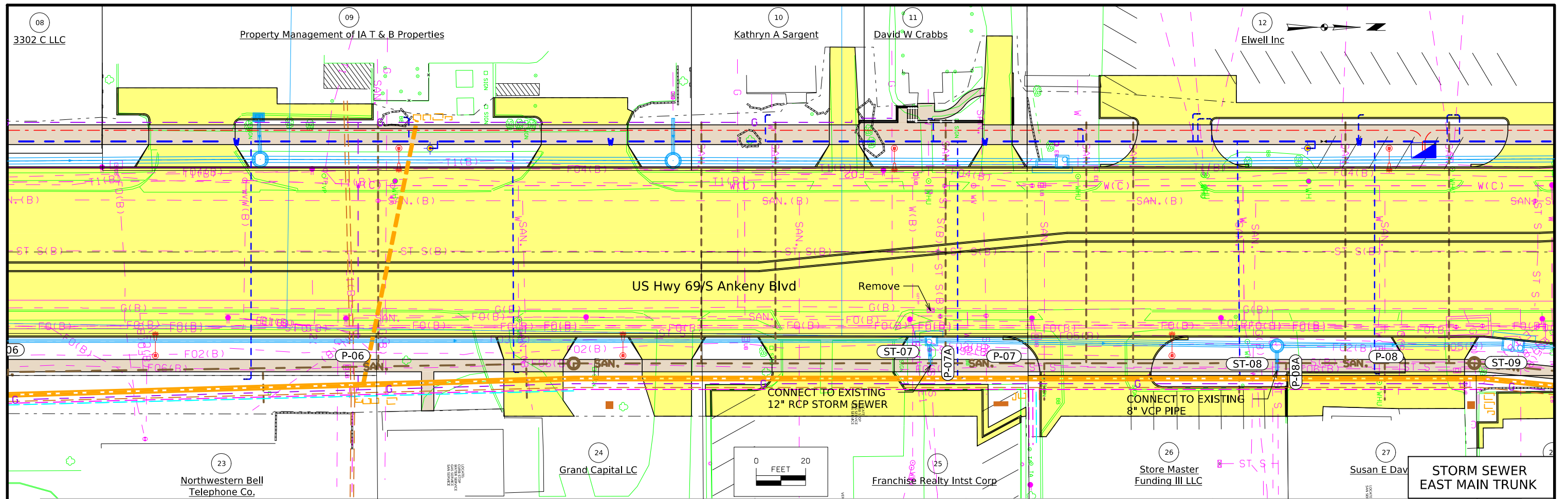
- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- Access Control

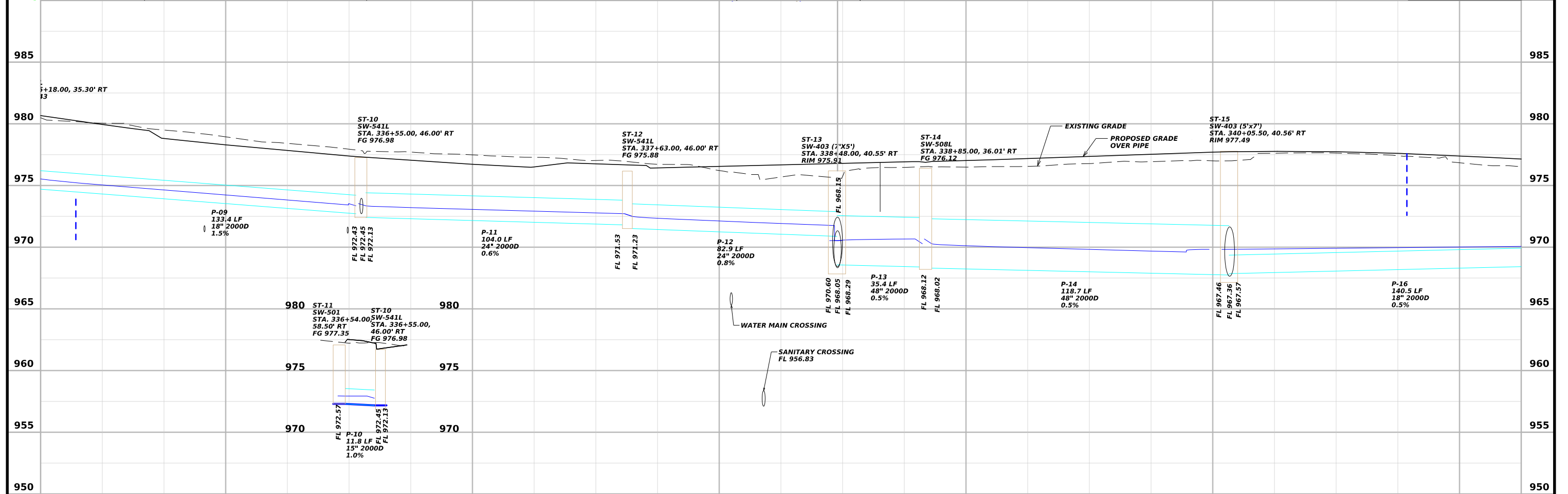
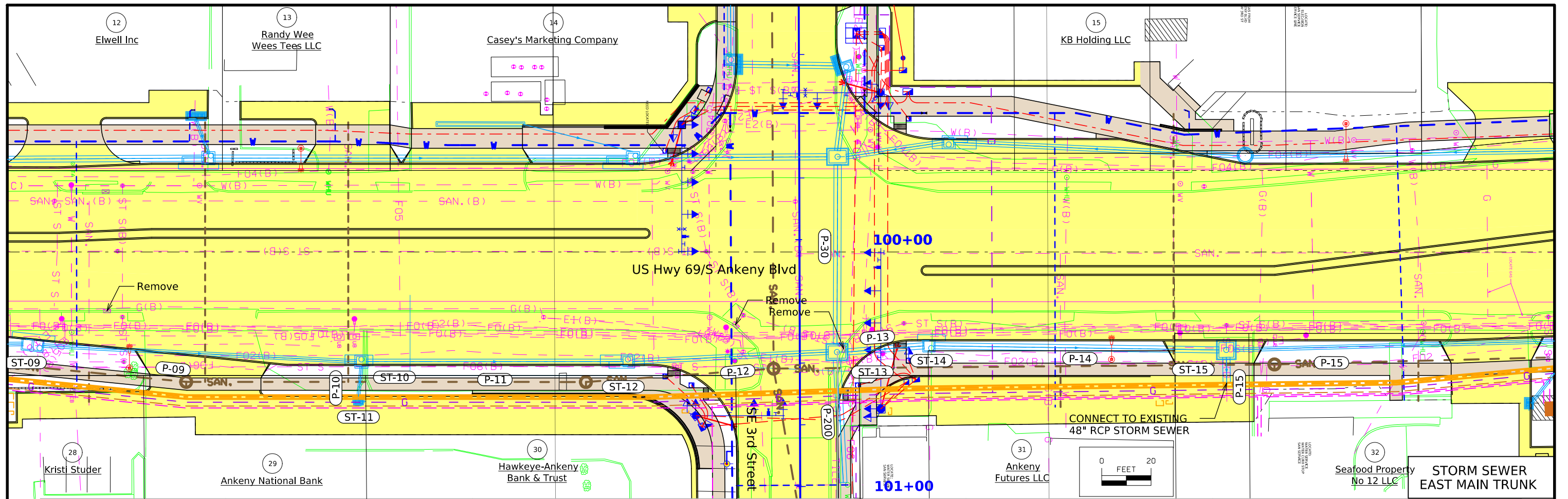


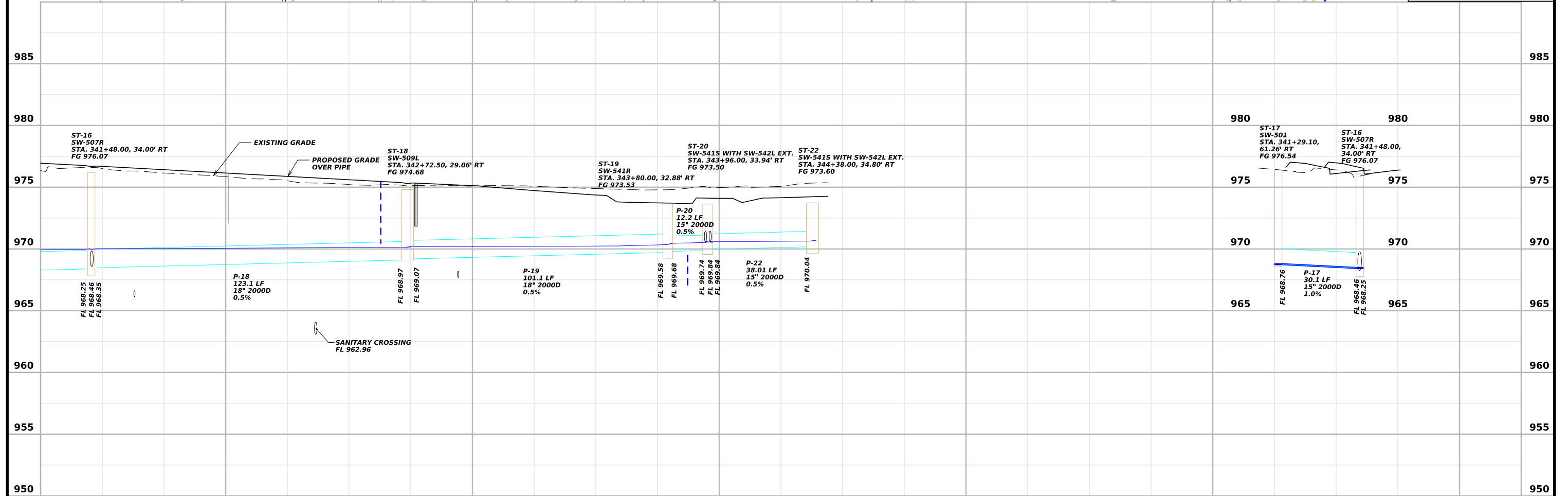
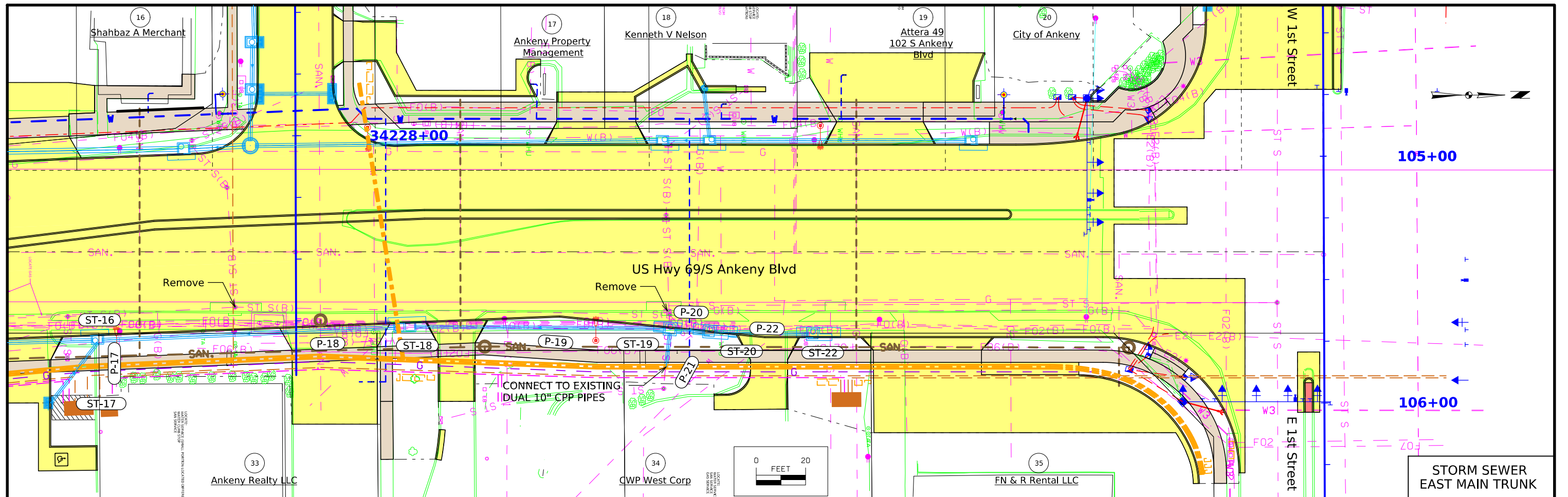
STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

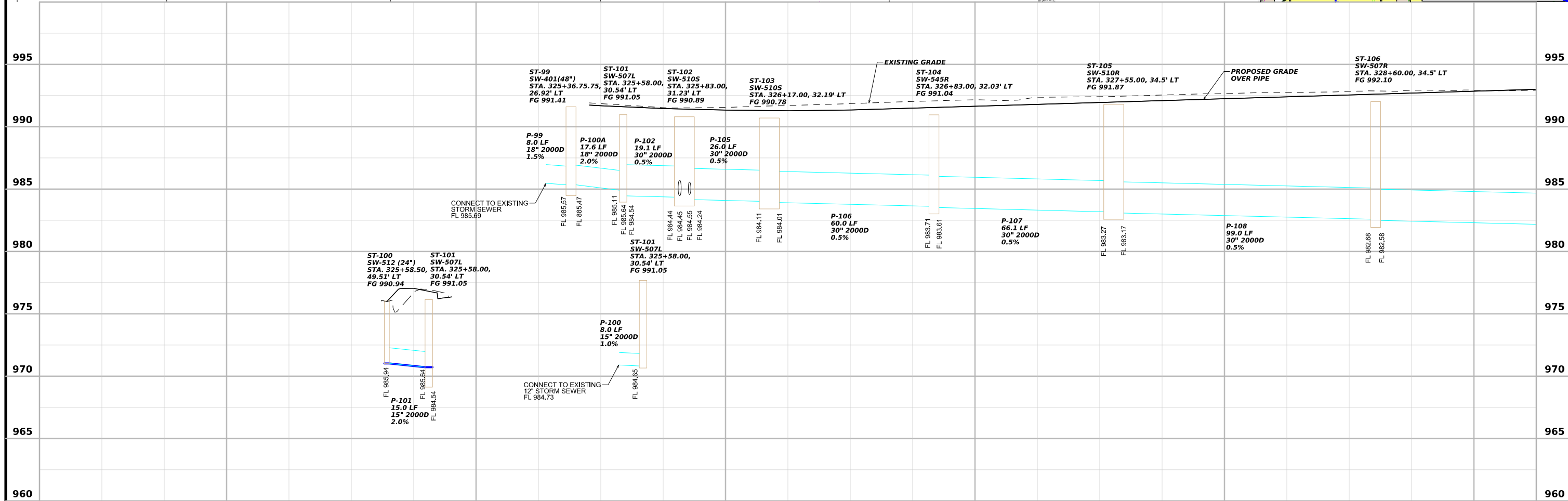
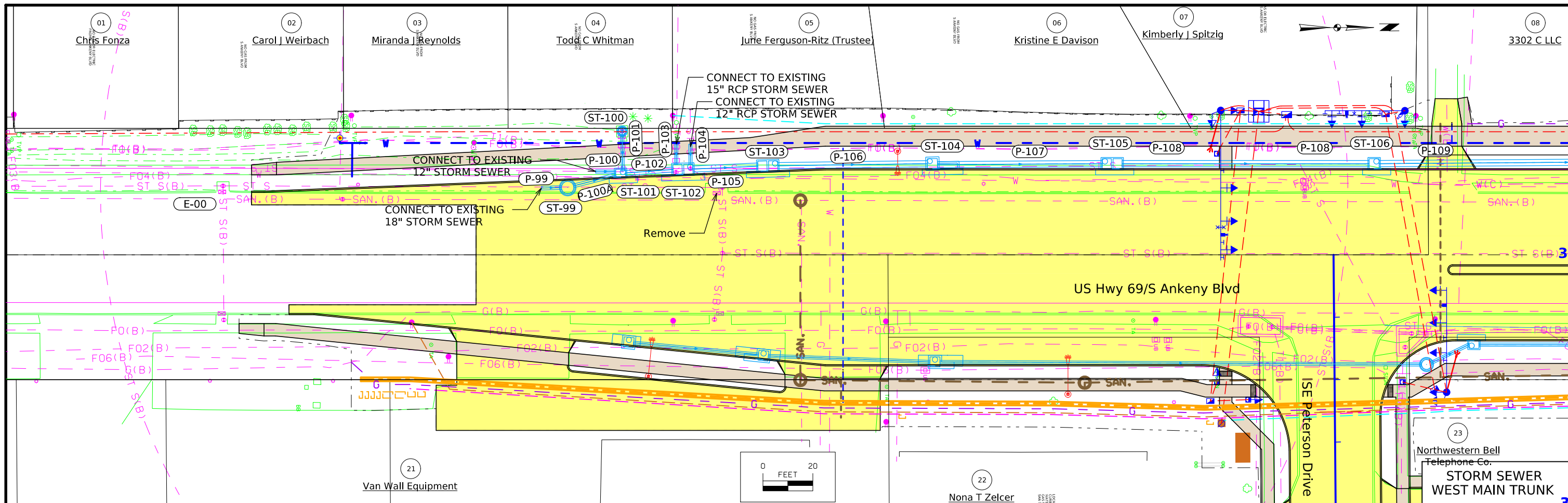
(COVERS SHEET SERIES M)

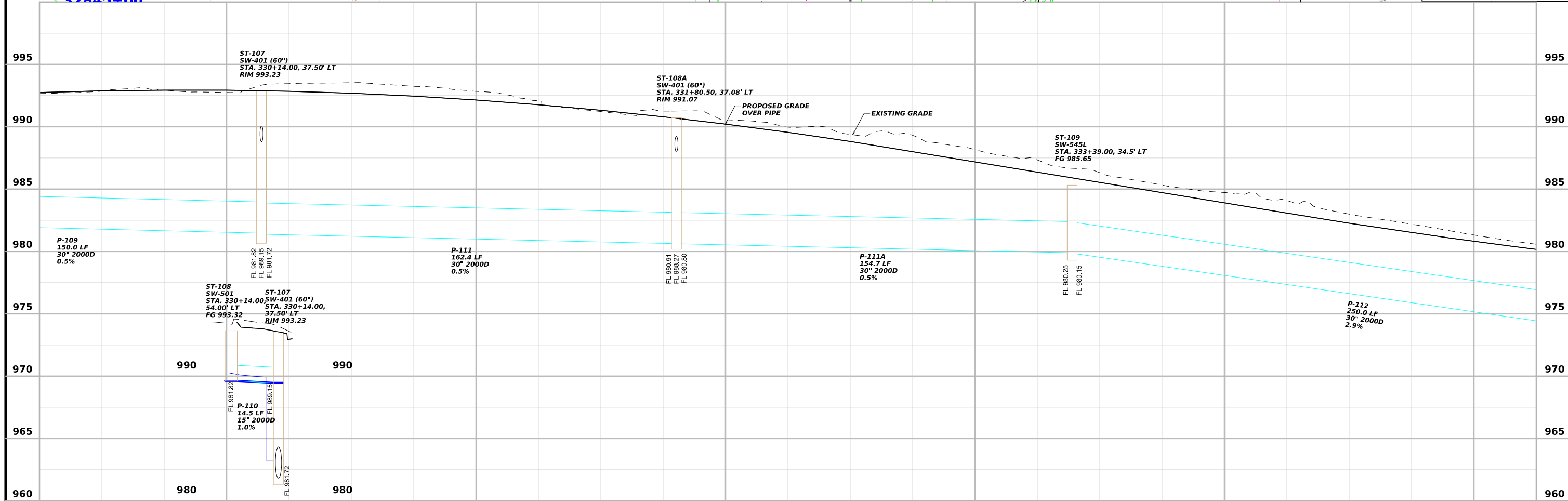
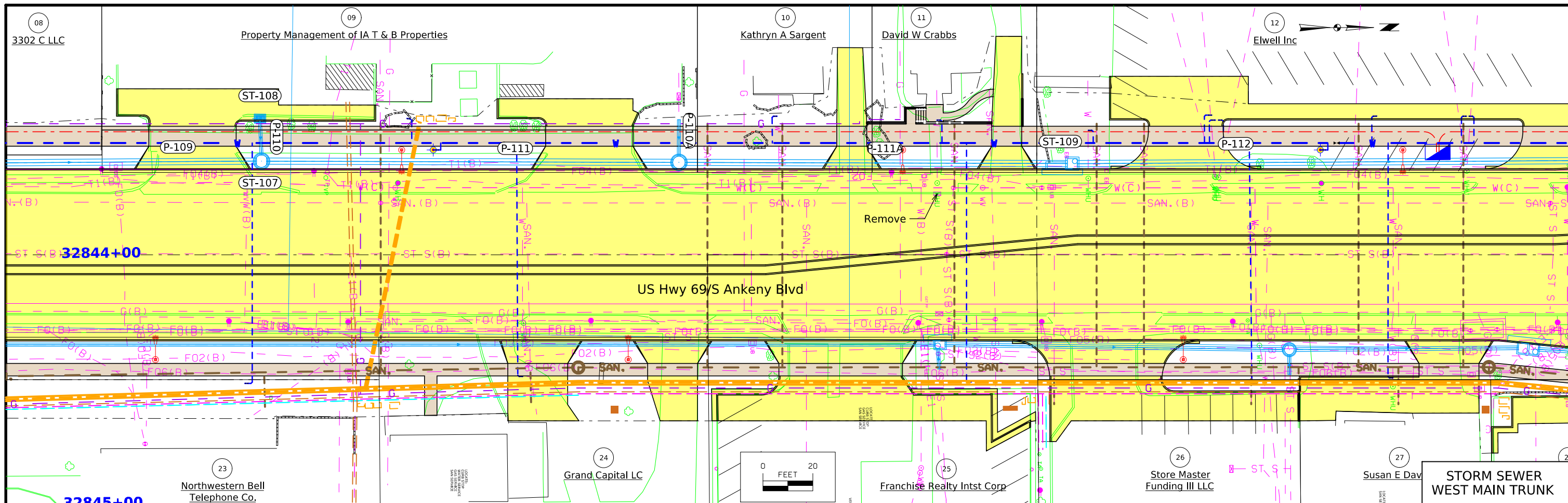


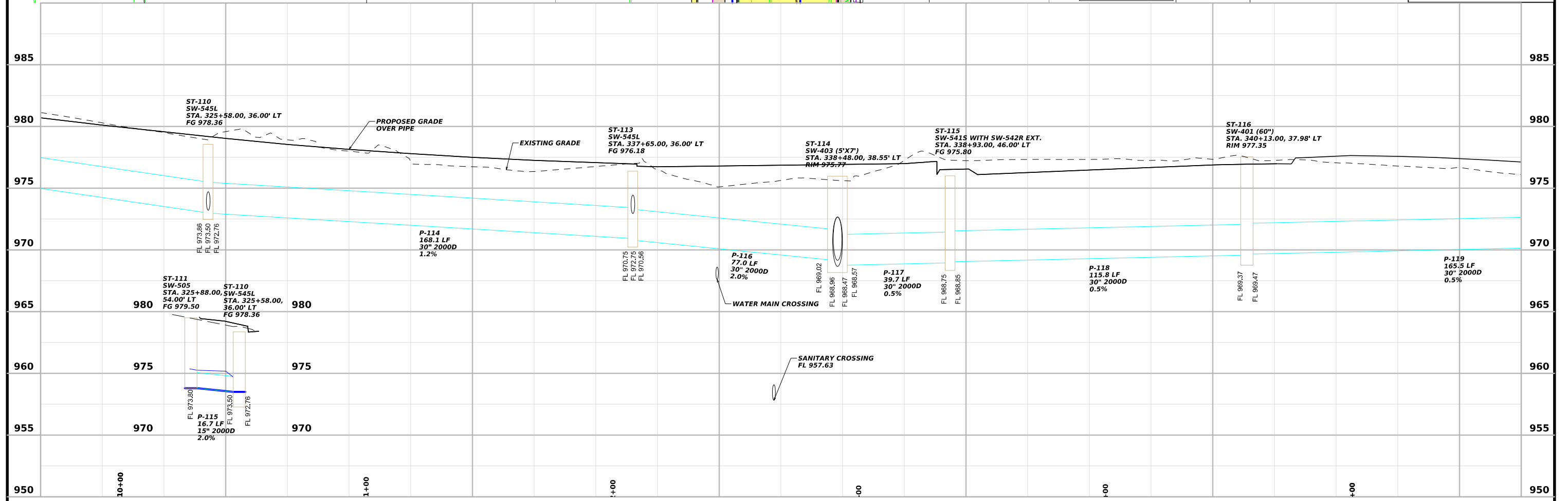
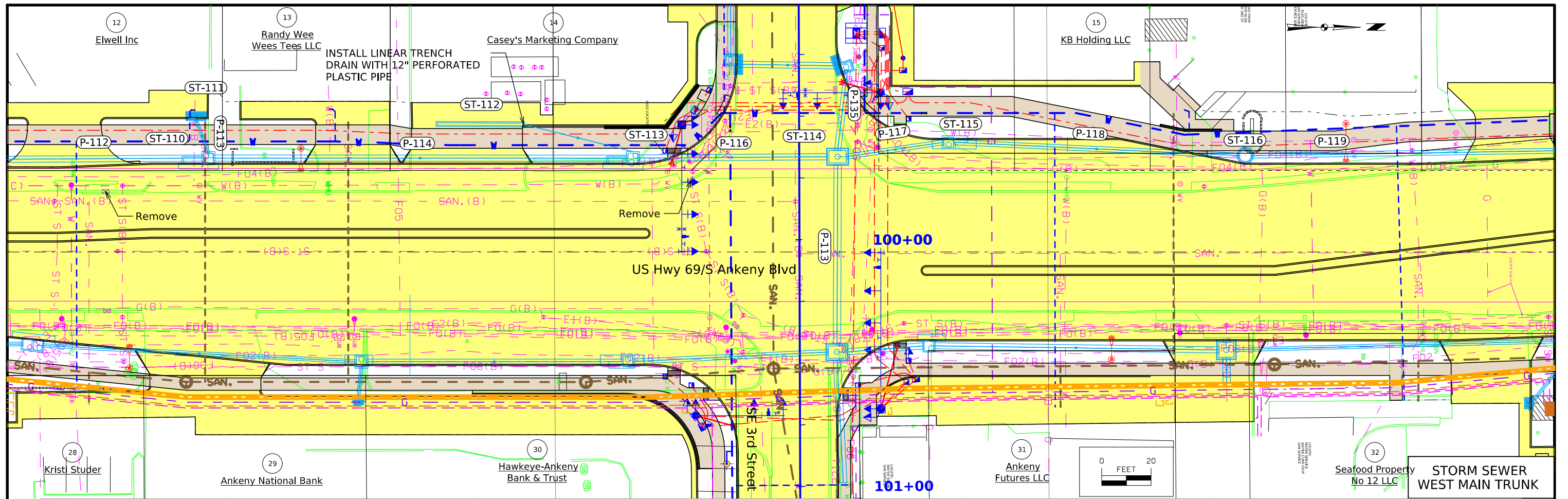


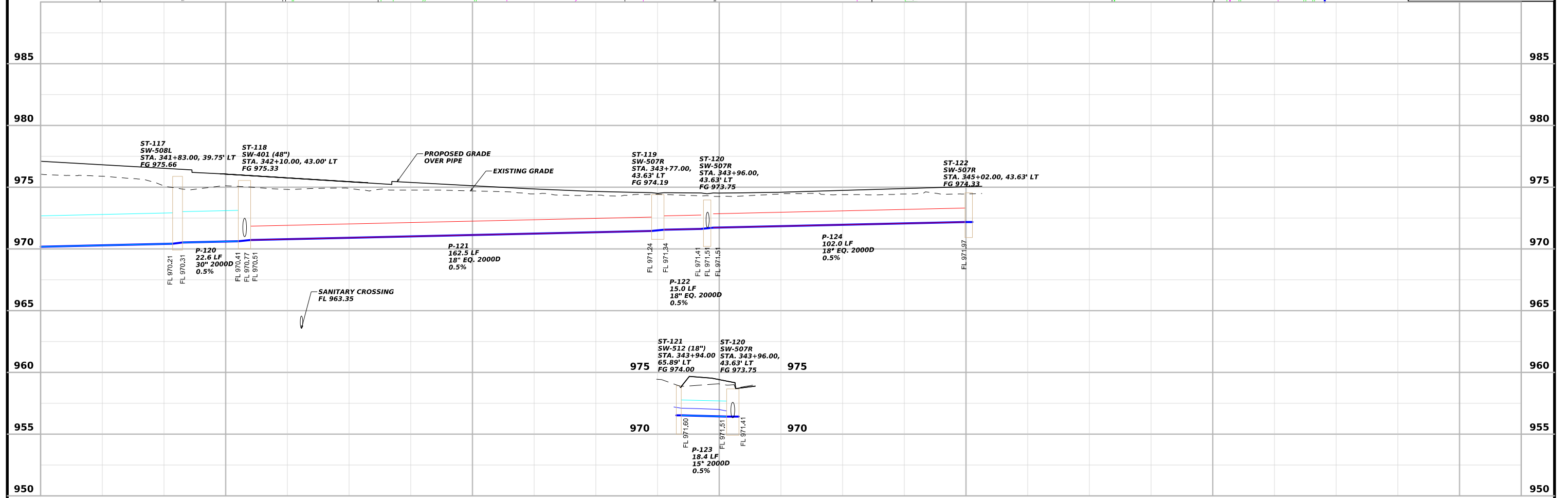
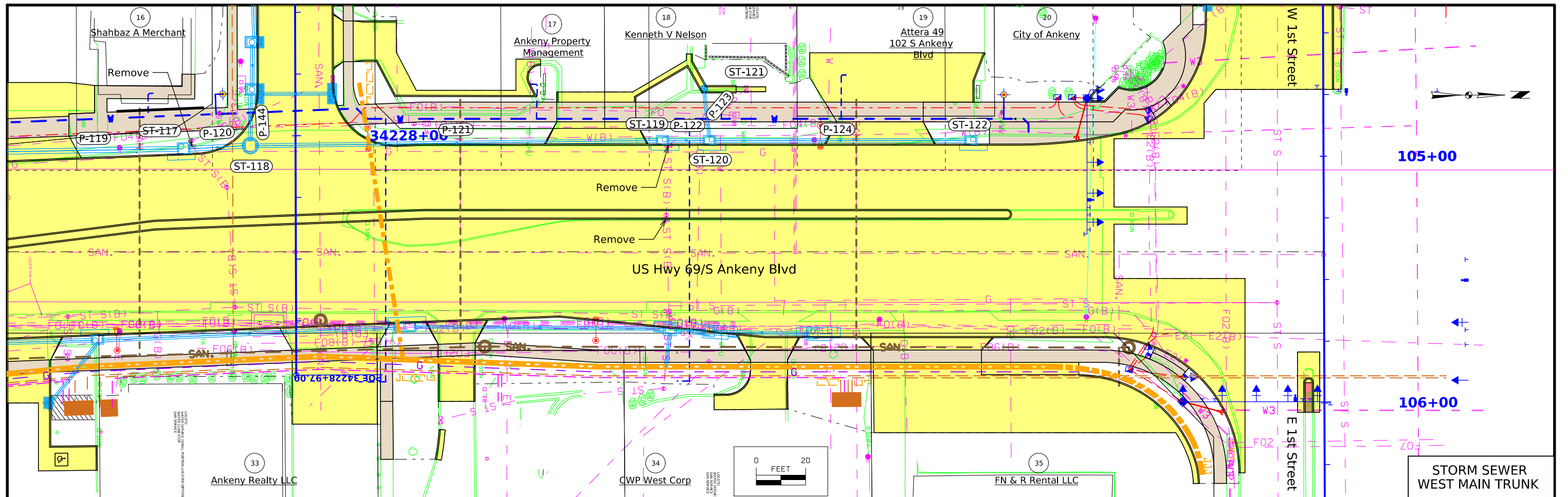


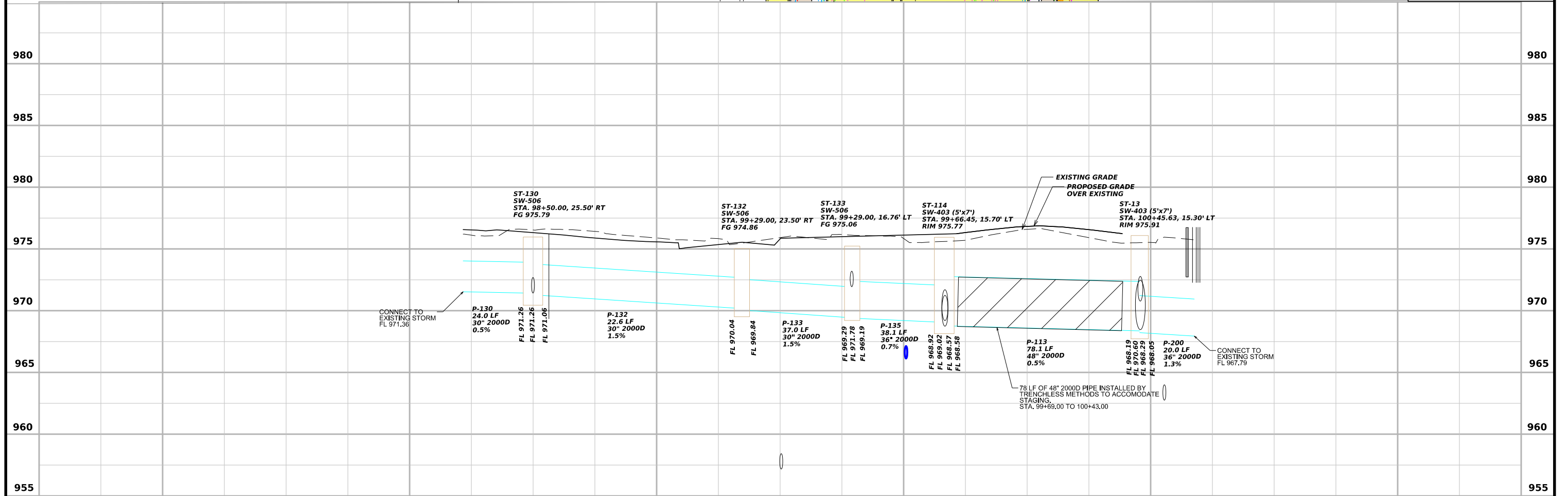
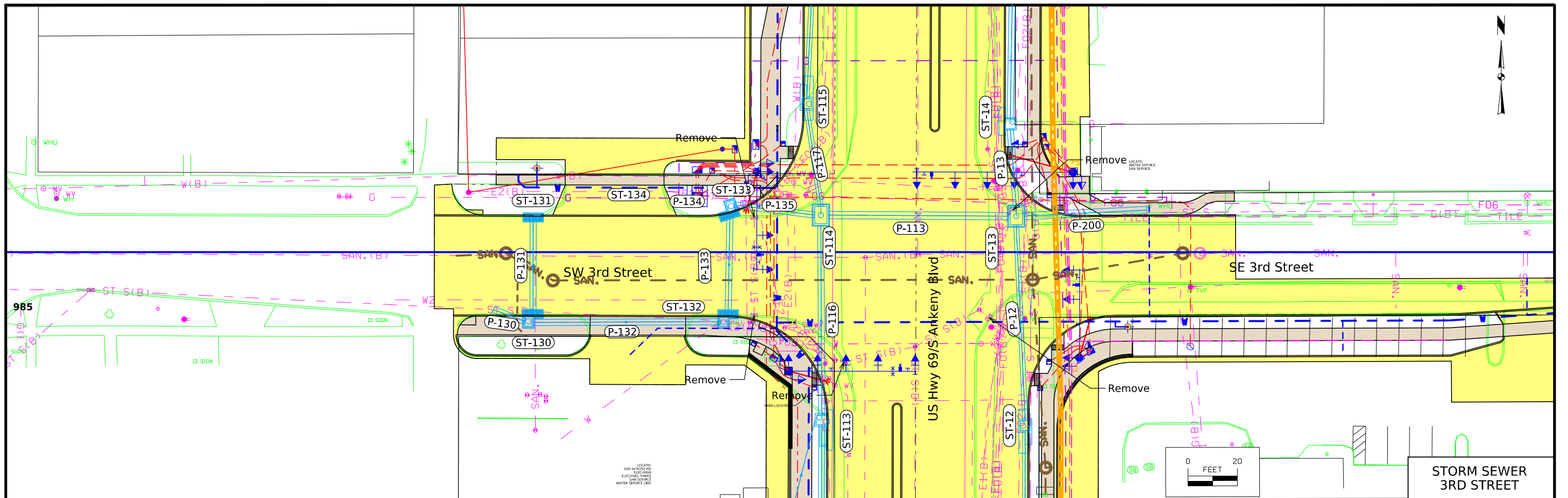


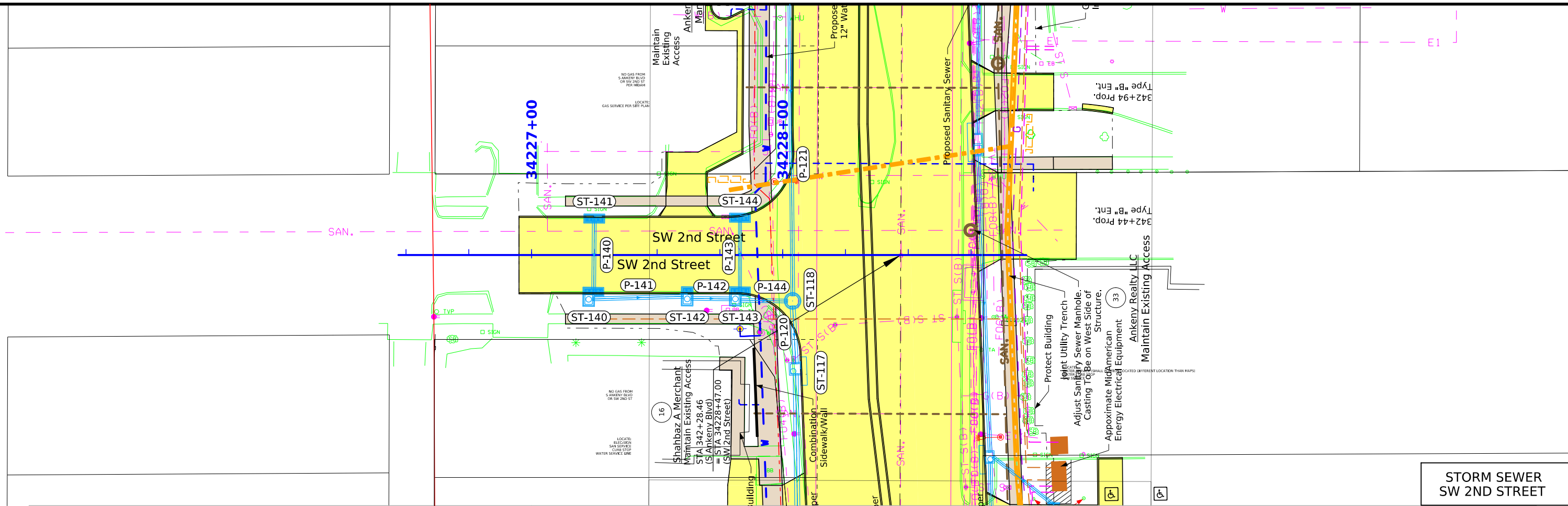




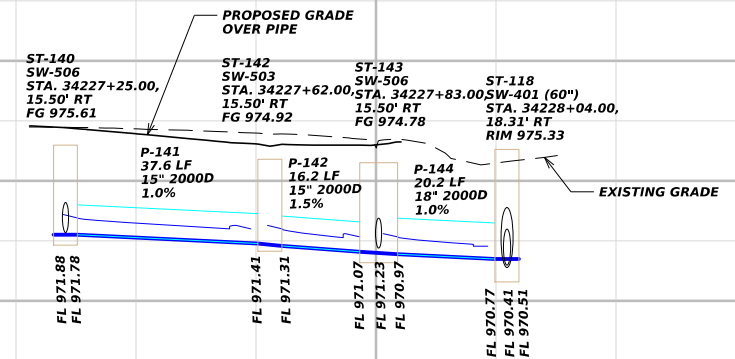


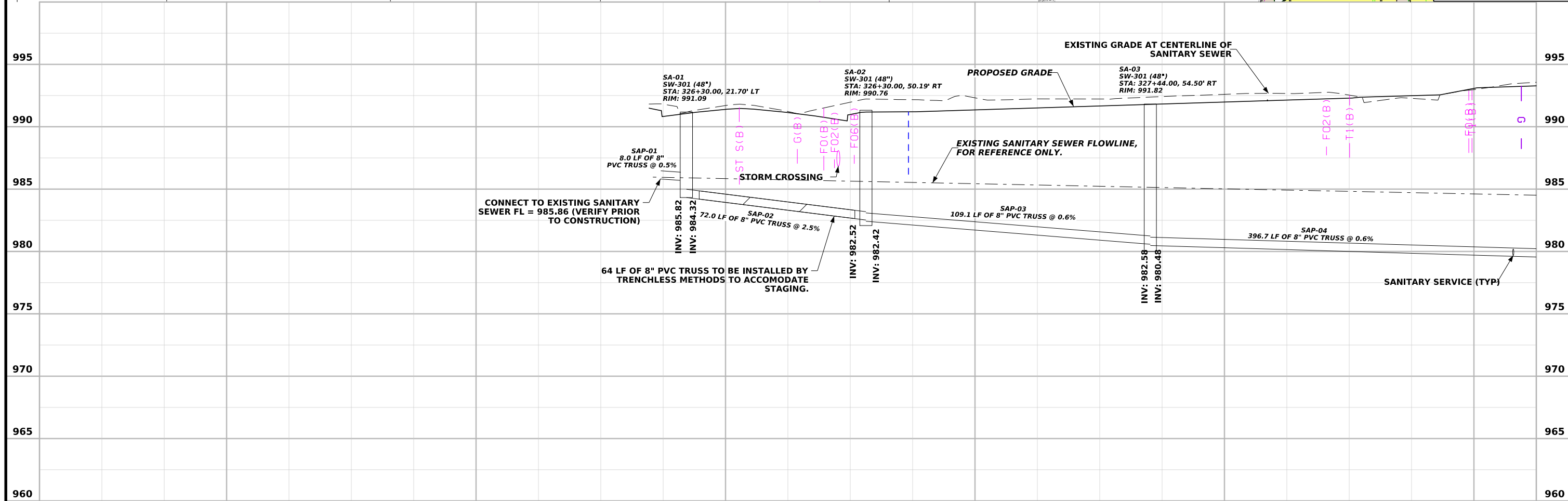
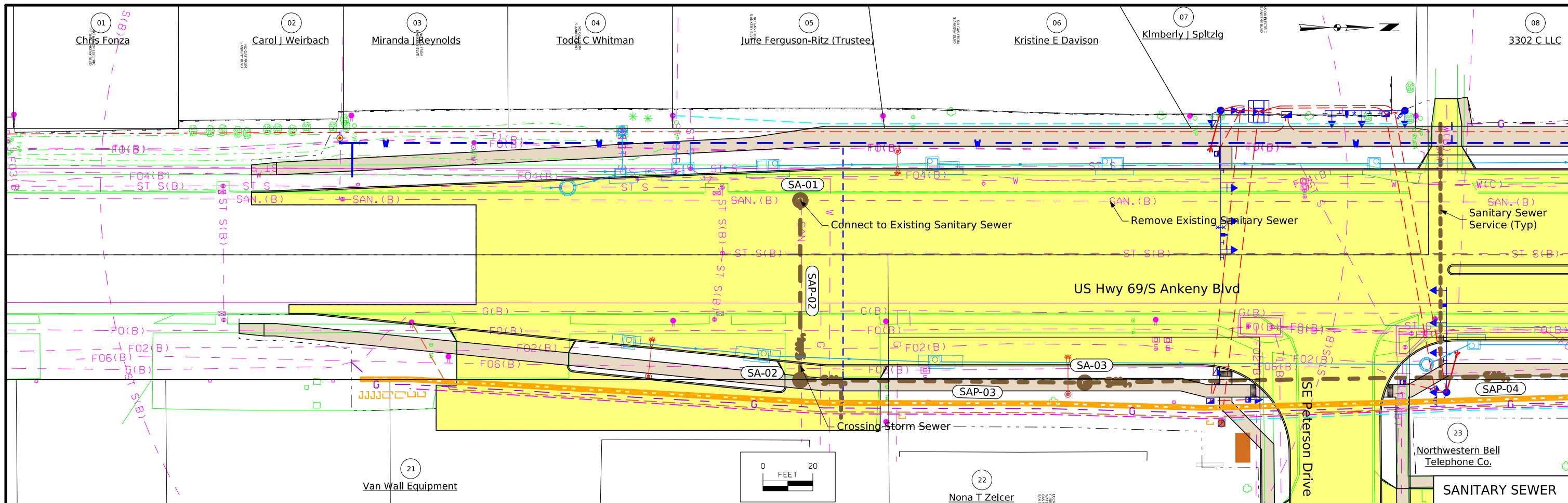


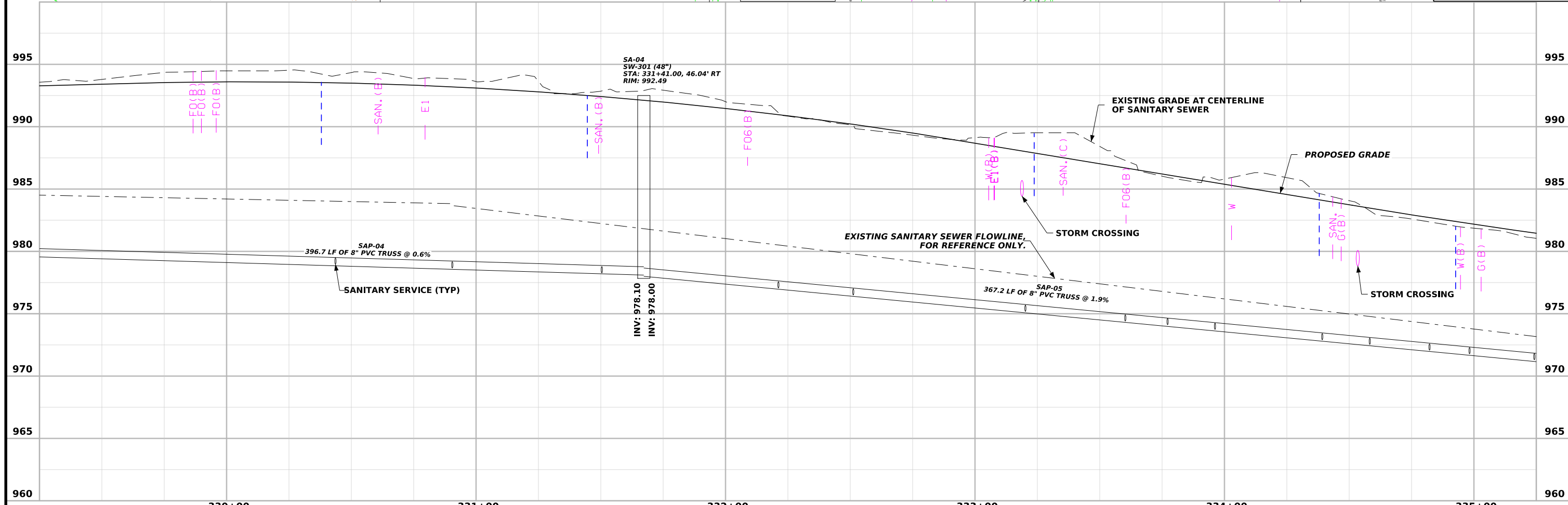
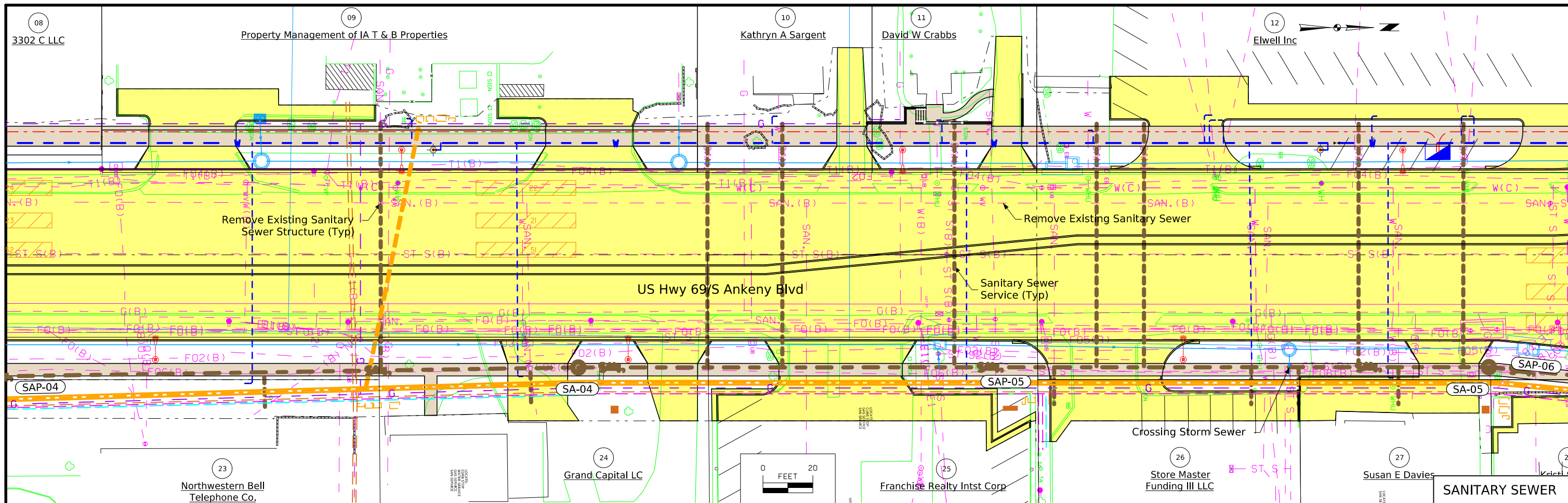




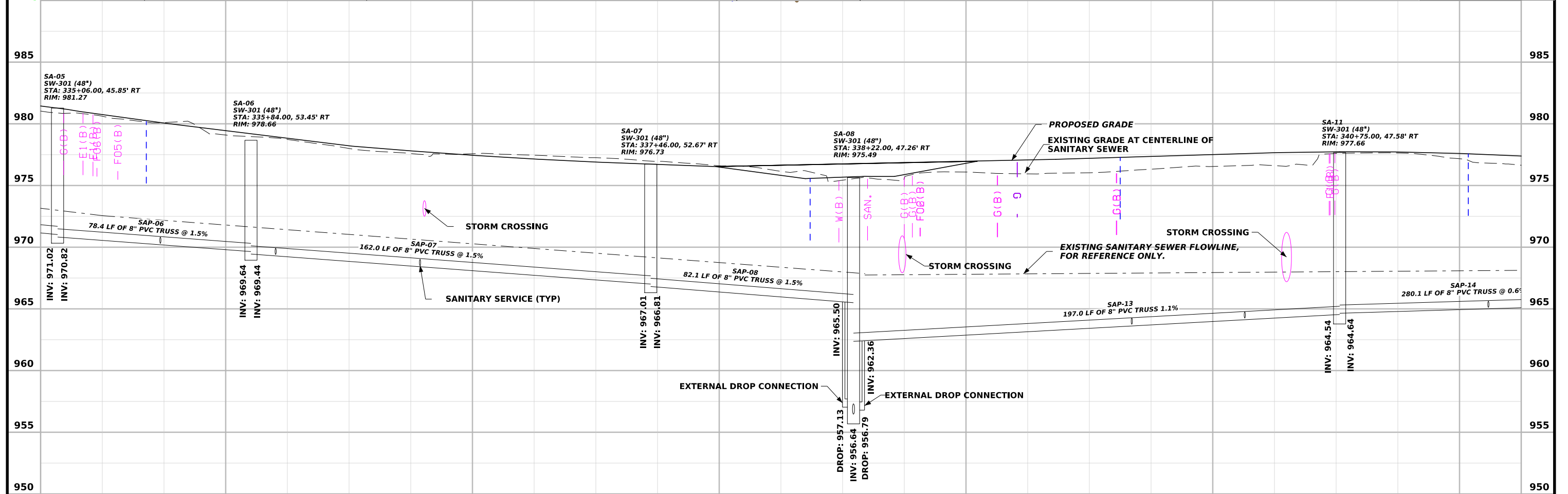
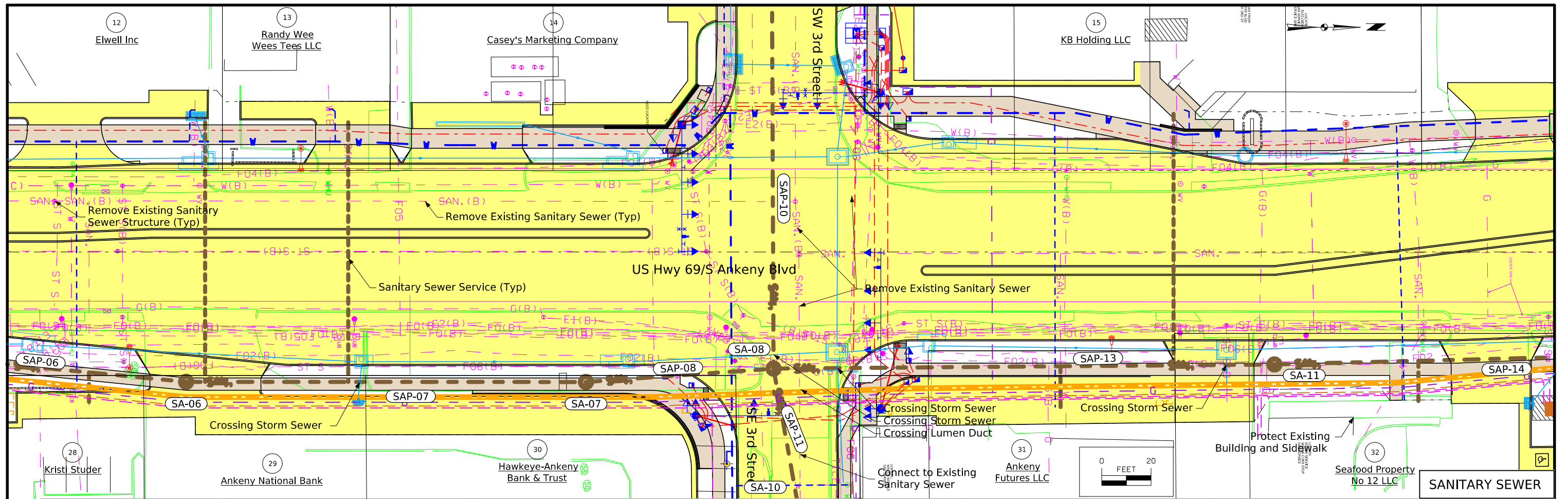
STORM SEWER
SW 2ND STREET



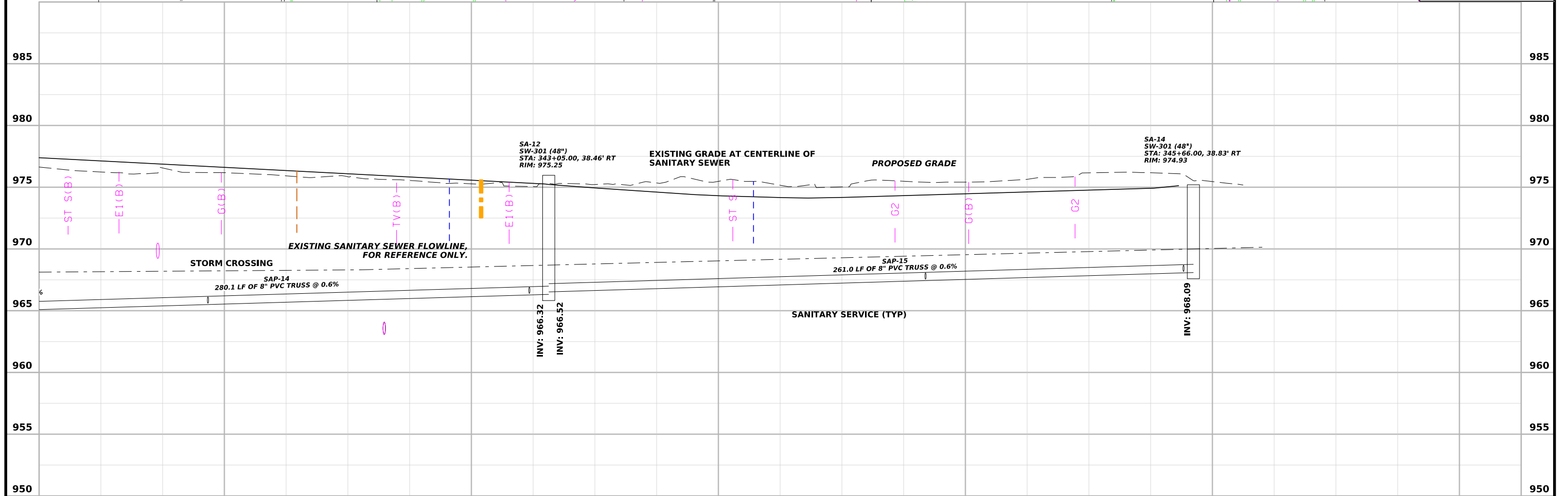
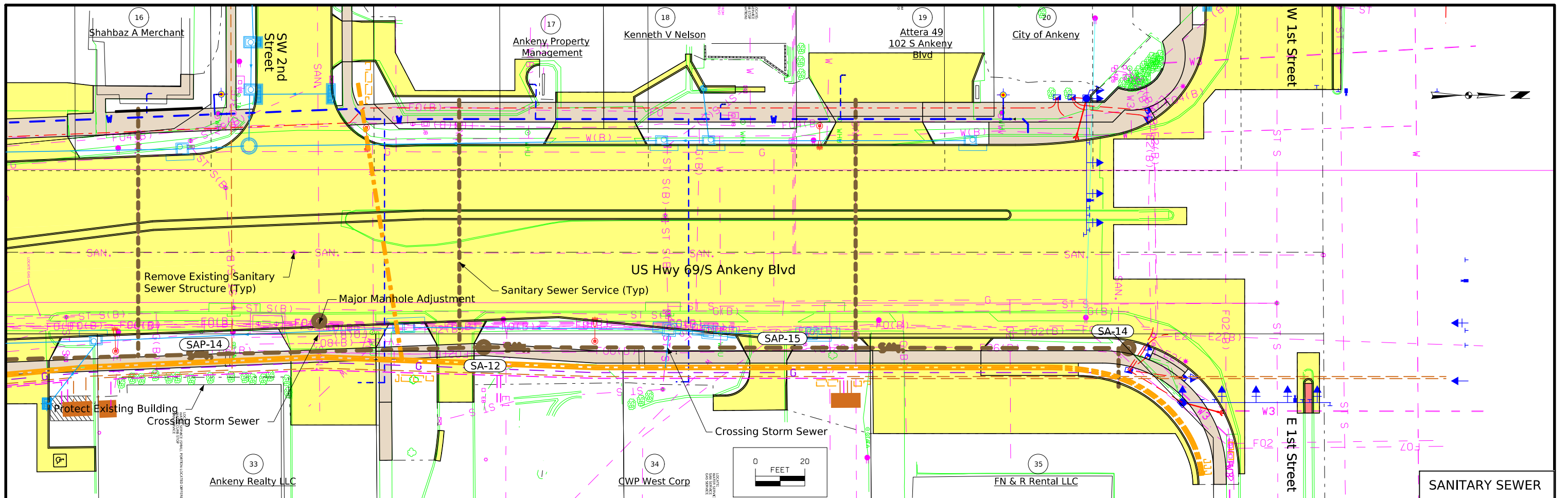




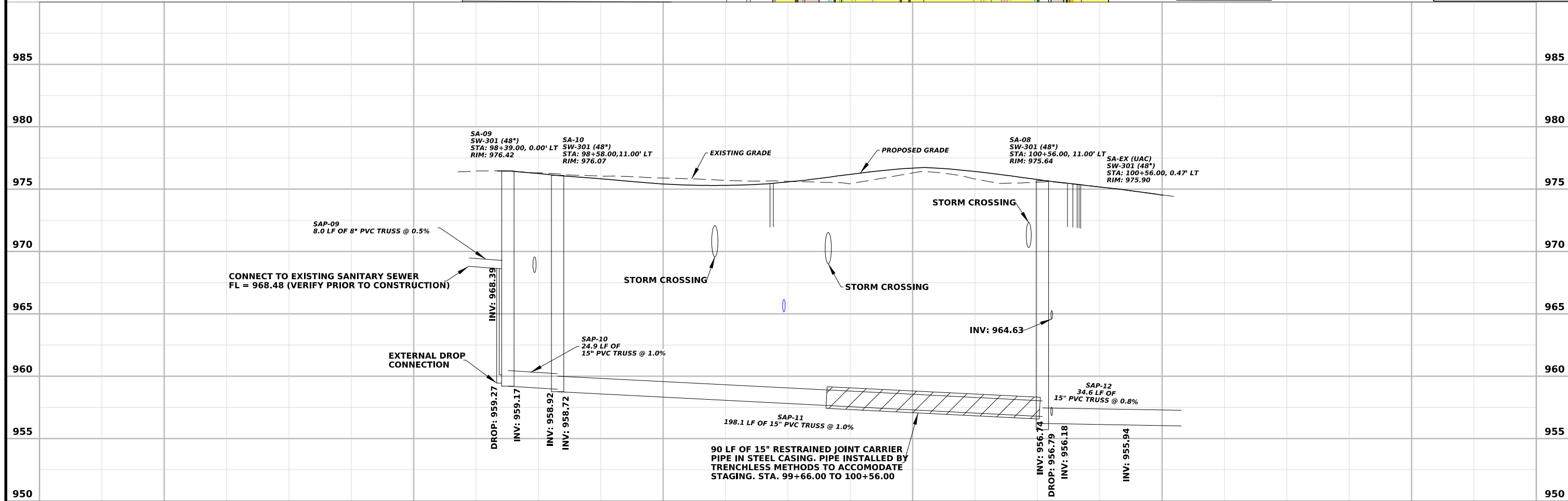
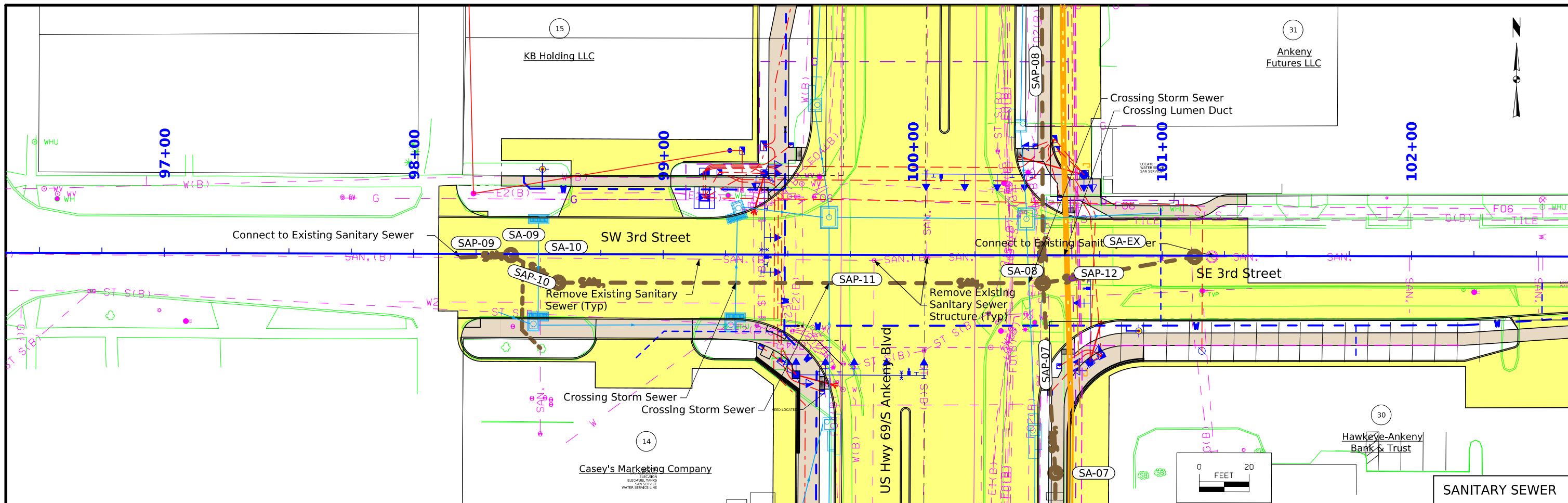
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Snyder & Associates		Polk COUNTY	PROJECT NUMBER		NHSX-069-4(136)--3H-77		SHEET NUMBER	
								MSA.2



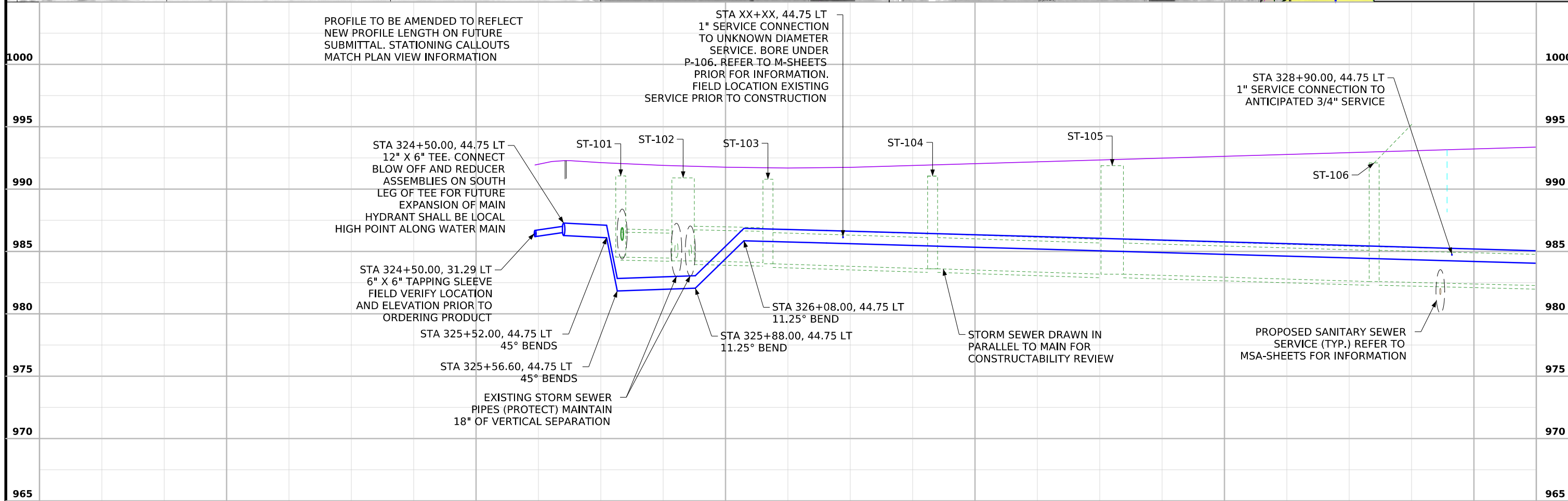
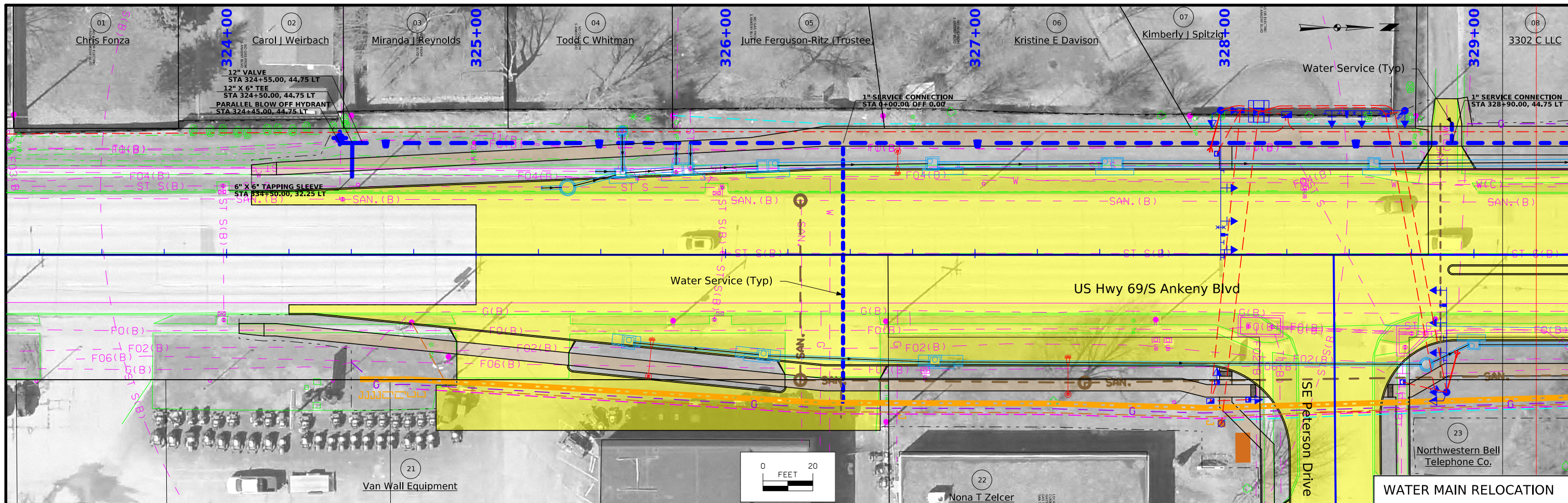
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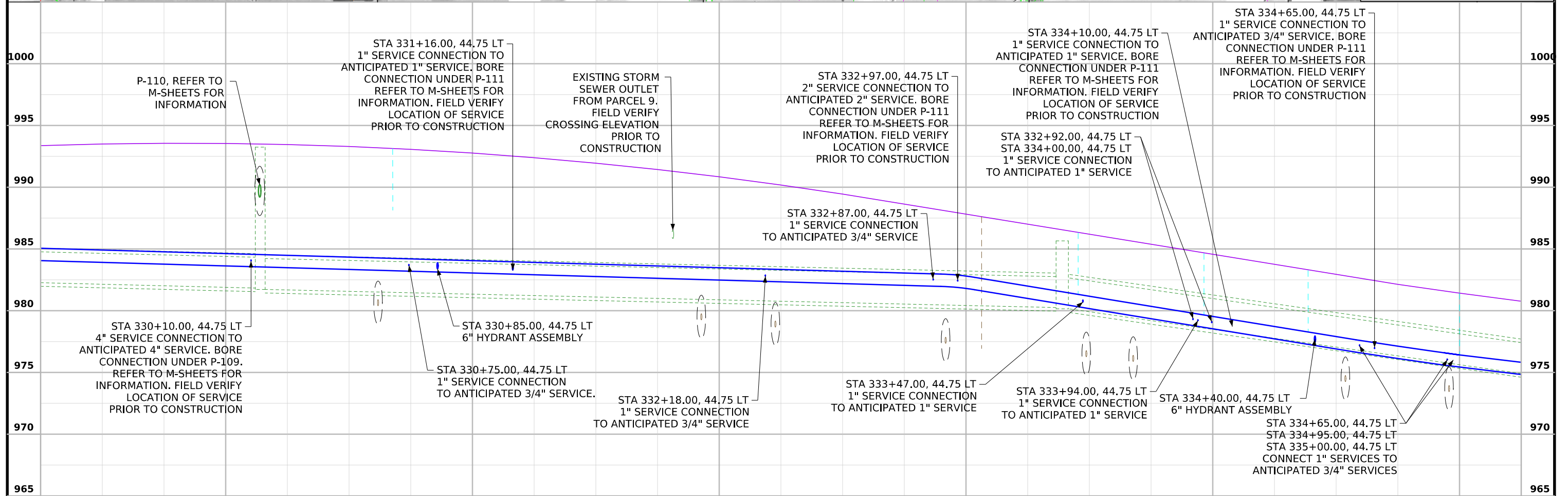
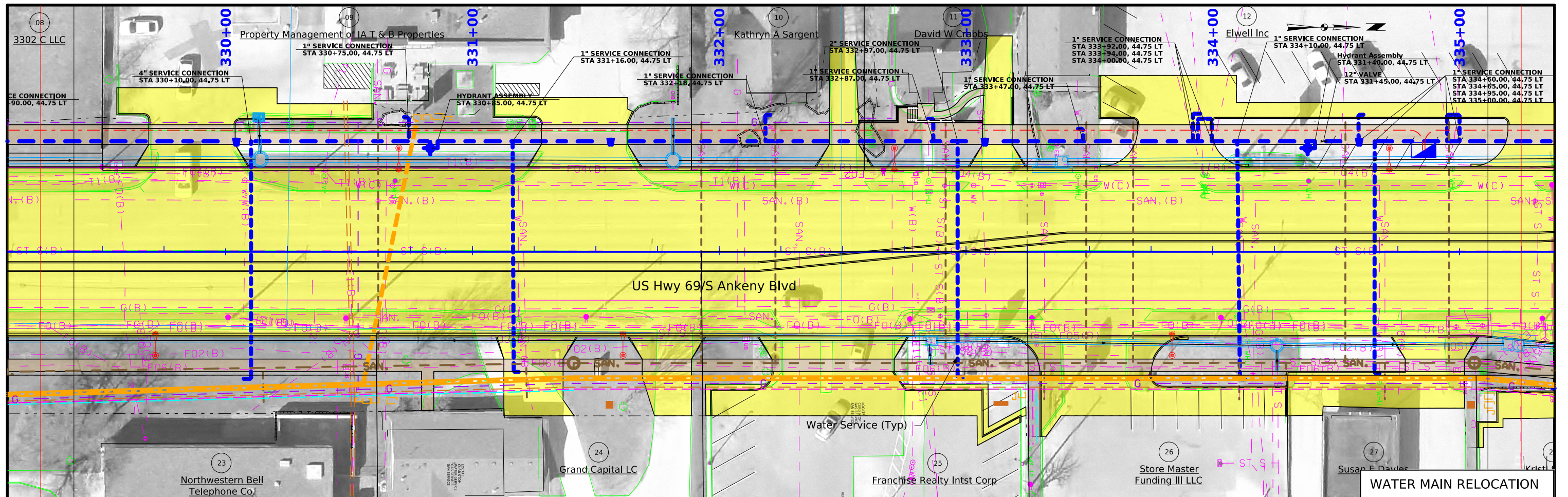


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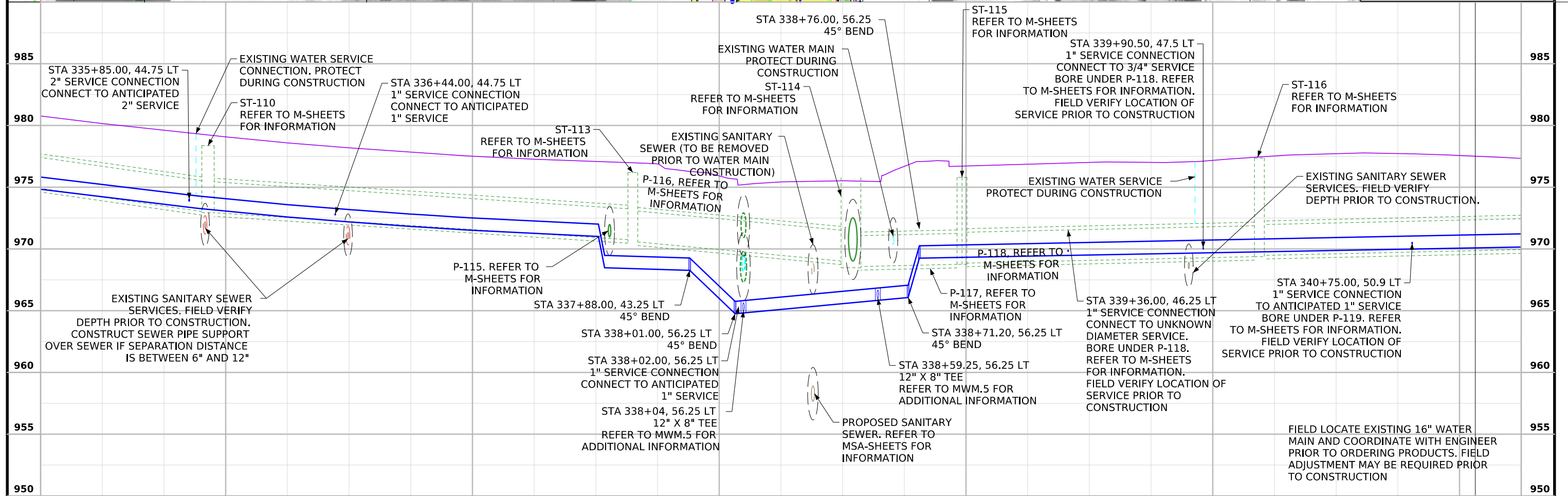
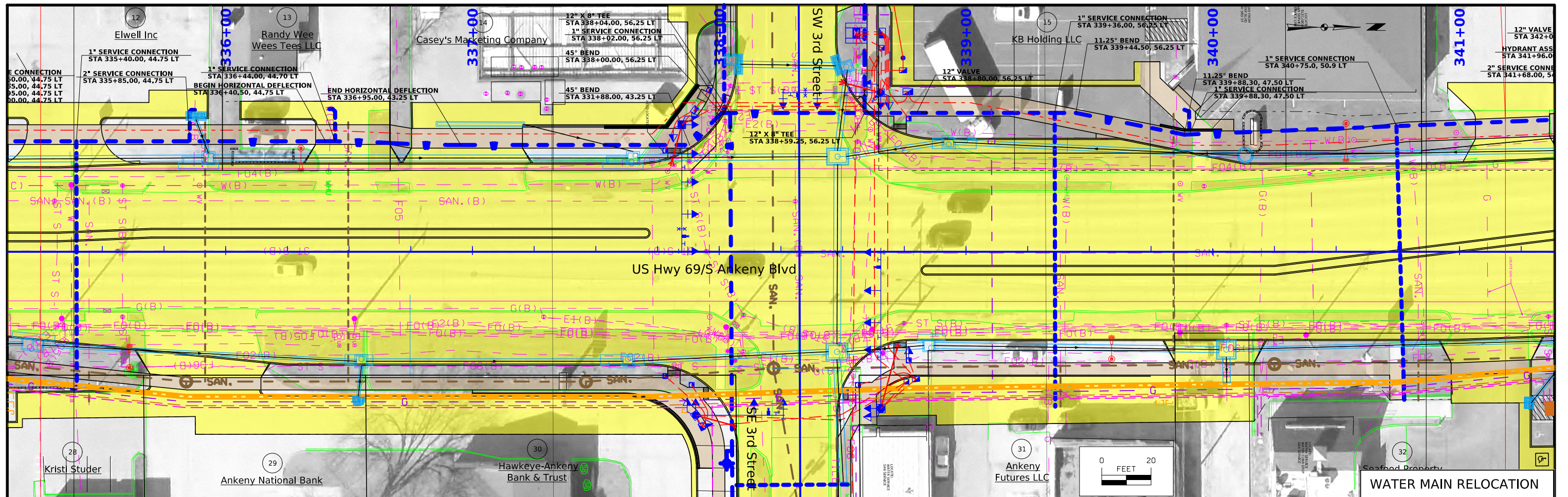


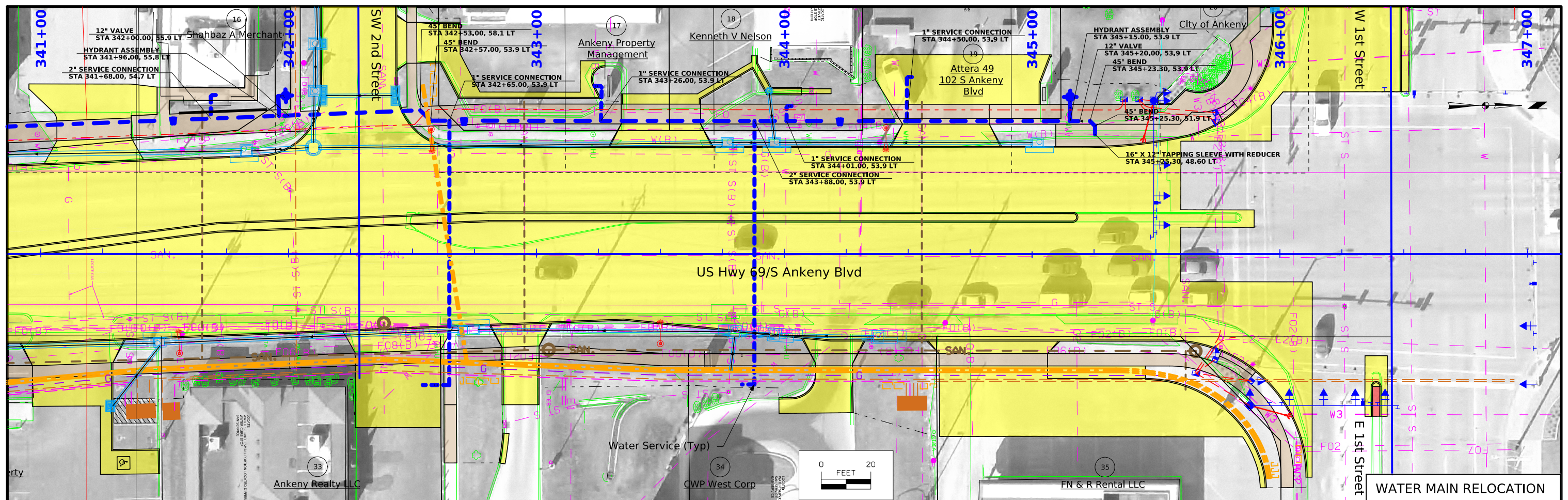
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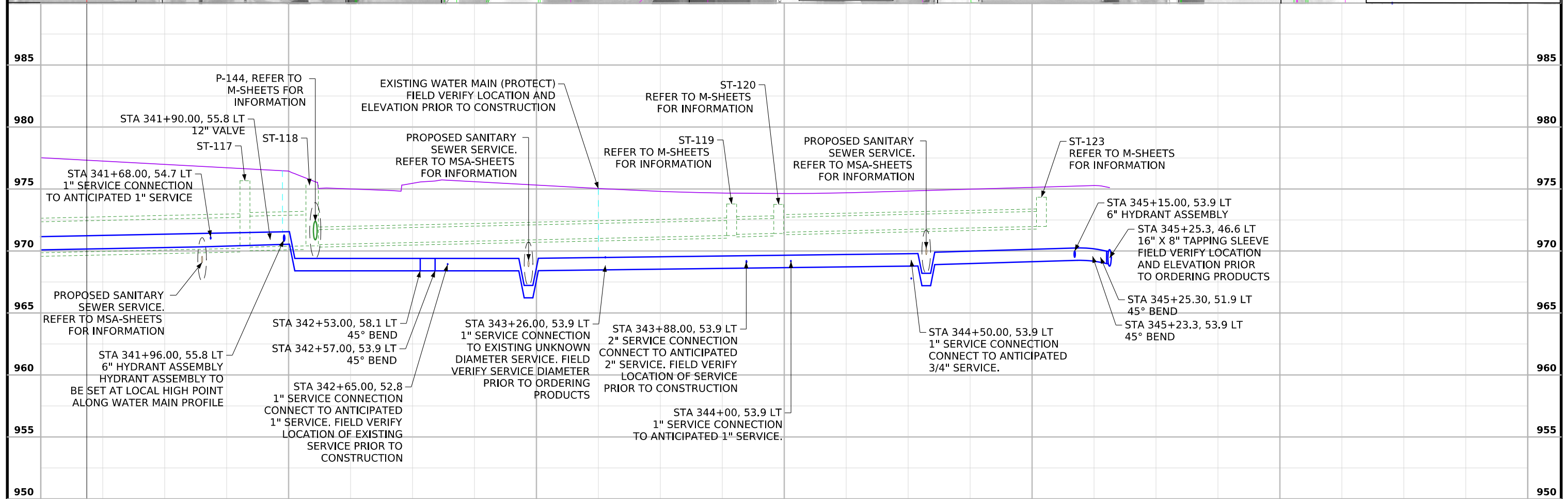


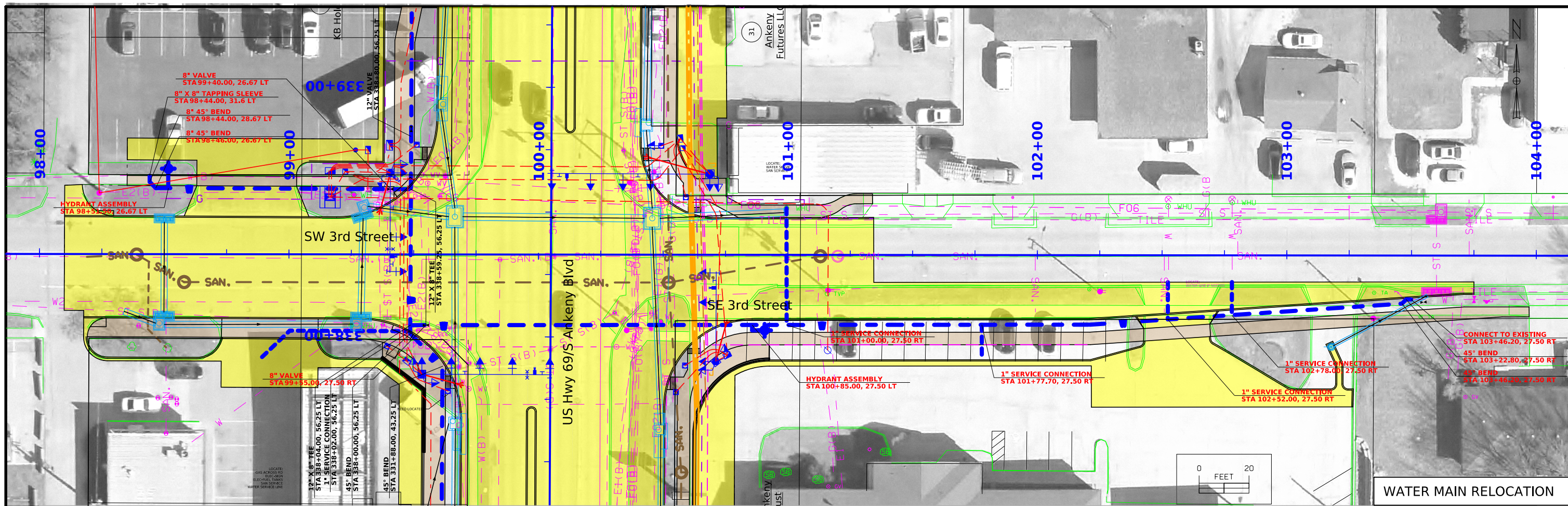
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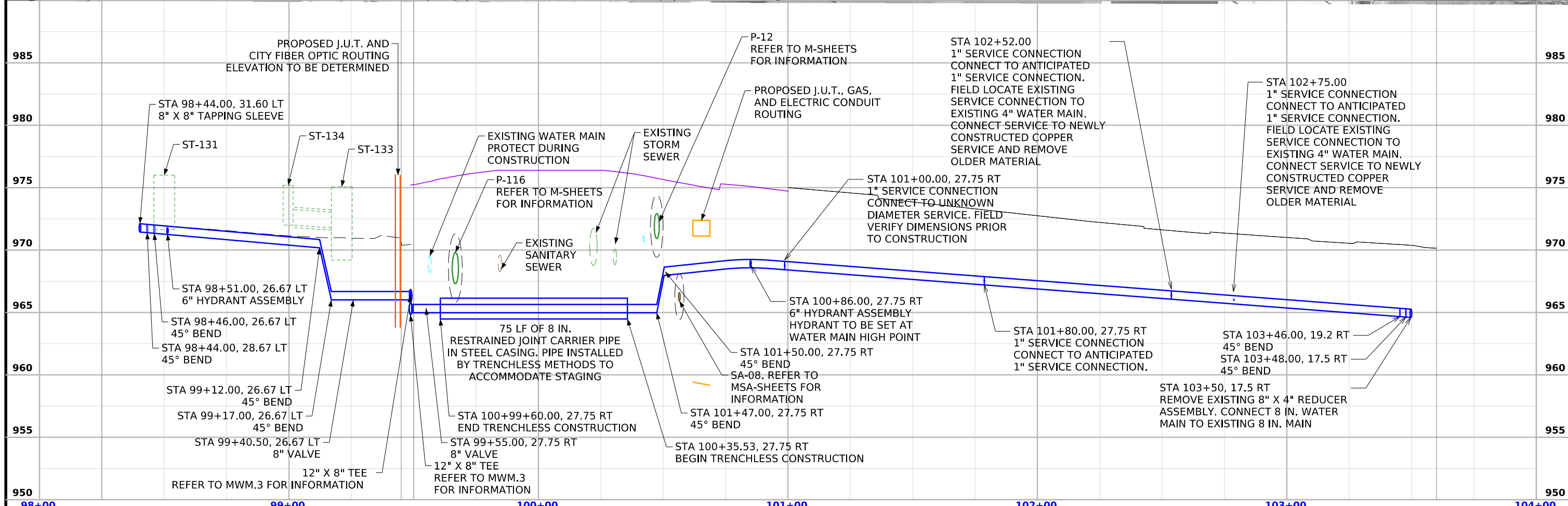


WATER MAIN RELOCATION





WATER MAIN RELOCATION



ESTIMATE OF TRAFFIC SIGNAL QUANTITIES			
ITEM	DESCRIPTION	UNITS	TOTAL
CONTROLLER AND CABINET	ATC CONTROLLER, CABINET, 12" RISER, AND ACCESSORIES (CITY FURNISHED)	LS	
	UNINTERRUPTIBLE POWER SUPPLY (BATTERY BACK-UP)	LS	
	EMERGENCY VEHICLE PREEMPTION INTERFACE CARD AND RACK	LS	
	TRAFFIC MONITORING CAMERA SYSTEM	LS	
DETECTION	VIDEO DETECTION CAMERAS (4) WITH PROCESSOR AND ACCESSORIES	LS	
	APS PEDESTRIAN PUSHBUTTON W/ R10-3E SIGN	EACH	
	EMERGENCY VEHICLE PREEMPTION DETECTORS, BIDIRECTIONAL	EACH	
TRAFFIC SIGNAL HEADS	12" <R,-Y,-FY,<G (48V LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	
	12" R,Y,G (48V LED) W/ BACKPLATE, MAST-ARM MOUNTED	EACH	
	12" R,Y,G (48V LED), SIDE-OF-POLE MOUNTED	EACH	
	16" PEDESTRIAN HEAD (48V LED), HAND/PERSON, COUNTDOWN SIDE-OF-POLE MOUNTED	EACH	
POWER SUPPLY	POWER SUPPLY	EACH	
HANDHOLES	TYPE I - 24" DIAMETER PRE-CAST CONCRETE HANDHOLE	EACH	
	TYPE III - 24" x 36" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	
	TYPE IV - 30" x 48" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	
WIRE AND CABLE	SIGNAL CABLE - 20c #14 AWG	LN FT	
	SIGNAL CABLE - 7c #14 AWG	LN FT	
	SIGNAL CABLE - 5c #14 AWG	LN FT	
	SIGNAL CABLE - 2c #14 AWG	LN FT	
	EMERGENCY VEHICLE PREEMPTION CABLE	LN FT	
	TRAFFIC MONITORING CABLE	LN FT	
	VIDEO DETECTION CABLE	LN FT	
	LUMINAIRE CABLE - 1c #8 AWG	LN FT	
	LUMINAIRE CABLE - 1c #10 AWG	LN FT	
	POWER CABLE - 1c #6 AWG	LN FT	
	GROUND WIRE - 1c #6 BARE	LN FT	
	TRACER WIRE - 1c #10	LN FT	
	PULL TAPE	LN FT	
CONDUIT	2" PVC OR HDPE, TRENCHED/BORED	LN FT	
	3" PVC OR HDPE, TRENCHED/BORED	LN FT	
CONCRETE FOOTING	SIGNAL CONTROLLER CABINET FOOTING	EACH	
	POLE FOOTING, 2' DIA x 4' DEPTH	EACH	
	POLE FOOTING, 3' DIA x 14' DEPTH	EACH	
	POLE FOOTING, 3' DIA x 18' DEPTH	EACH	
TRAFFIC SIGNAL POLES	STEEL COMBINATION SIGNAL/LIGHTING - 42' MAST ARM (CITY FURNISHED)	EACH	
	STEEL COMBINATION SIGNAL/LIGHTING - 60' MAST ARM (CITY FURNISHED)	EACH	
	ALUMINUM PEDESTAL POLE - HEIGHT 5'	EACH	
	ALUMINUM PEDESTAL POLE - HEIGHT 10'	EACH	
LUMINAIRE	LUMINAIRE FIXTURE	EACH	
	CONNECTOR - Y-1, UNFUSED	EACH	
	CONNECTOR - L-1, FUSED	EACH	
MISC	STREET NAME SIGN, MAST-ARM MOUNTED (CITY FURNISHED)	EACH	
	TRAFFIC SIGN - R3-SL, 30" x 36", MAST-ARM MOUNTED	EACH	
	TRAFFIC SIGN - SPECIAL (FYA), 30" x 36", MAST-ARM MOUNTED	EACH	

GENERAL NOTES:


- ALL QUANTITIES SHOWN IN THE TRAFFIC SIGNAL PLANS ARE FOR INFORMATIONAL AND ESTIMATING PURPOSES ONLY. THE CONTRACTOR'S LUMP SUM BID SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PROVIDE COMPLETE AND FUNCTIONAL TRAFFIC SIGNAL INSTALLATIONS IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
- PROVIDE TRAFFIC CONTROL DEVICES (INCLUDING THOSE REQUIRED TO FACILITATE CONSTRUCTION OF TRAFFIC SIGNALS) IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR THE STREETS AND HIGHWAYS, AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130.
- TRAFFIC SIGNALS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS (SUDAS), DIVISION 8, EXCEPT AS MODIFIED BY THE PLANS.
- THE CONTRACTOR SHALL HAVE AN EMPLOYEE ON THE PROJECT SITE WITH A LEVEL II INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) TRAFFIC SIGNAL TECHNICIAN CERTIFICATION.
- THE CONTRACTOR SHALL FURNISH A SCHEDULE OF UNIT PRICES FOR ESTIMATED TRAFFIC SIGNAL QUANTITIES AT PROJECT PRE-CONSTRUCTION MEETING. PAYMENT WILL BE BASED ON PLAN QUANTITIES. QUANTITIES WILL NOT BE FIELD MEASURED.
- ROADWAY GEOMETRICS REPRESENT EXISTING AND PROPOSED FEATURES.
- THE PLAN LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION ON THE PROJECT TO ESTABLISH LOCATIONS.
- THE PLAN LOCATIONS OF ALL HANDHOLES ARE APPROXIMATE ONLY AND ARE SUBJECT TO ADJUSTMENT IN THE FIELD BY THE ENGINEER. OBTAIN ENGINEER'S APPROVAL PRIOR TO PLACING HANDHOLES AND CONSTRUCTING FOOTINGS.
- PROVIDE STRUCTURAL CONCRETE TESTING (2 CYLINDERS, 7-DAY AND 28-DAY, FOR EACH BATCH) IN ACCORDANCE WITH ASTM C39 AS POURED FOR POLE FOOTINGS.
- PROVIDE TWO WEEK NOTICE TO THE CITY OF ANKENY BEFORE PROPOSED TRAFFIC SIGNAL TURN-ON. PROVIDE PORTABLE DYNAMIC MESSAGE SIGNS ON THE SE DELAWARE AVE APPROACHES A MINIMUM OF 5 DAYS PRIOR TO ACTIVATION.
- INSTALL ONE SIGNAL CABLE FROM EACH SIGNAL HEAD TO THE BASE OF THE POLE. A 7-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH VEHICLE SIGNAL HEAD, AND A 5-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH PEDESTRIAN SIGNAL HEAD. ALL SIGNAL CABLE SHALL BE #14 AWG UNLESS OTHERWISE NOTED ON THE PLANS.
- INSTALL A GROUND ROD IN EACH PROPOSED HANDHOLE WITH TRAFFIC SIGNAL CIRCUITS AND GROUND WIRE. INSTALL A #6 AWG BARE COPPER GROUND WIRE BETWEEN THE SIGNAL FOOTING AND HANDHOLE GROUND RODS TO FORM A CONTINUOUSLY GROUNDED SYSTEM. TERMINATE THE GROUNDING CIRCUIT AT THE HANDHOLE NEAREST THE CONTROLLER CABINET. GROUND THE CONTROLLER CABINET SEPARATELY WITH AN ADDITIONAL GROUND ROD IN THE HANDHOLE NEAREST TO THE CONTROLLER CABINET AND A GROUND ROD ADJACENT TO THE CABINET FOOTING.
- VIDEO, TMC, AND EVP CABLES SHALL BE AS PER SUPPLIER SPECIFICATIONS. NO SPLICES ALLOWED IN DETECTION, TMC, OR EVP CABLES.
- ABOVE GROUND RISERS SHALL BE RIGID STEEL CONDUIT. ALL OTHER CONDUIT SHALL BE RIGID PVC CONDUIT OR DIRECTIONAL BORED HDPE CONDUIT.
- UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH OR DEPARTURE LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
- TRAFFIC SIGNAL MOUNTING BRACKETS SHALL UTILIZE STAINLESS STEEL BANDING FOR SIDE OF POLE MOUNTING AND GALVANIZED STEEL CABLE FOR MAST ARM MOUNTING.
- MAST ARMS AND POLES SHALL BE DESIGNED TO SUPPORT TRAFFIC SIGNALS, SIGNS, AND EQUIPMENT AS SHOWN IN THE PLANS OR MAXIMUM LOADING PER SUDAS, WHICHEVER IS GREATER.
- ALL SIGNAL INDICATIONS SHALL BE LED (48V) IN ACCORDANCE WITH MOST RECENT ITE SPECIFICATIONS. SIGNAL HEADS SHALL HAVE BLACK FACES, VISORS, BODIES, AND BACKPLATES (WHERE INDICATED). VISORS SHALL BE CAP STYLE.
- PEDESTRIAN PUSHBUTTON STATIONS SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) COMPLIANT. PROVIDE R10-3E SIGN ABOVE EACH PEDESTRIAN PUSHBUTTON. ALL NECESSARY APPURTENANCES TO OPERATE THE PEDESTRIAN PUSHBUTTON STATION SHALL BE INCLUDED. VOICE MESSAGES TO BE APPROVED BY ANKENY TRAFFIC ENGINEERING DIVISION PRIOR TO INSTALLATION.
- STREET NAME SIGNS (FURNISHED BY CITY) SHALL HAVE HIGHWAY SERIES C 12" FONT.
- INSTALL WIND DAMPENING DEVICE ON ALL MAST ARMS PER MANUFACTURER'S RECOMMENDATIONS.
- LUMINAIRES SHALL BE AUTOBAHN ATB0-304-MVOLT-R3-P7-PCLL-SH.
- INSTALL TWO (2) 1-CONDUCTOR #10 CABLES FROM THE LUMINAIRE HEAD TO THE BASE OF THE POLE. FURNISH AND INSTALL FUSED CONNECTORS AT THE POLE BASE. FURNISH AND INSTALL UNFUSED Y CONNECTORS IN THE ADJACENT HANDHOLE WHERE APPLICABLE.
- ELECTRICAL SERVICE SHALL BE 120 V SINGLE-PHASE. CABINET WILL PROVIDE 48V DC OUTPUT TO SIGNAL HEADS. SIGNALS AND LIGHTING SHALL BE METERED TOGETHER. LIGHTING SHALL BE ON SEPARATE 20 AMPERE BREAKER. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. SIGNAL CABINET ADDRESS SHALL BE 5390 SE DELAWARE AVE.
- SECONDARY SERVICE LOCATION IS APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING POWER SERVICE CONNECTION TO EXISTING SECONDARY SERVICE LOCATION WITH POWER SERVICE PROVIDER PRIOR TO CONDUIT/CIRCUIT INSTALLATION.
- VIDEO DETECTION SYSTEM SHALL BE AUTOSCOPE VISION WITH 4 CAMERAS.
- INSTALL RODENT GUARD (NOT GROUT) BETWEEN MAST ARM POLE BASES AND TOP OF POLE FOUNDATIONS. PROVIDE STIFFENER COLLARS FOR PUSHBUTTON POSTS.
- CITY TO PROVIDE COMBINATION SIGNAL/LIGHTING POLES, STREET NAME SIGNS, ATC CONTROLLER, CONFLICT MONITOR, AND LOW VOLTAGE (48V) ATC CABINET WITH ACCESSORIES. CONTRACTOR TO INSTALL. CONTRACTOR SHALL ACCEPT DELIVERY OF AND PROVIDE STORAGE FOR POLES FROM MANUFACTURER AND PICK UP OTHER EQUIPMENT FROM PUBLIC WORKS-MAINTENANCE (211 SE LORENZ DRIVE, ANKENY).
- ANY WORK INVOLVING CITY OF ANKENY FIBER OPTIC CABLE REQUIRES THE CONTRACTOR TO NOTIFY THE ANKENY TRAFFIC ENGINEERING DIVISION A MINIMUM OF TWO BUSINESS DAYS IN ADVANCE. COORDINATE WITH THE CITY TO CONFIRM WORK ACTIVITIES DO NOT DISRUPT EXISTING COMMUNICATION.
- ALL CONDUIT FOR FIBER OPTIC CABLE SHALL BE BLUE HDPE SDR 13.5.
- COIL 100' OF FIBER OPTIC CABLE IN EACH TYPE III OR IV HANDHOLE AND 30' IN EACH SIGNAL CABINET.
- CONTRACTOR TO VERIFY THE LOCATION AND CONDITION OF EXISTING CONDUIT AND NOTIFY ENGINEER OF ANY VARIANCES FROM THE PROPOSED PLAN PRIOR TO INSTALLATION OF CONDUIT AND FIBER. IN INSTANCES WHERE CONTRACTOR IS UNABLE TO UTILIZE EXISTING CONDUIT, CONTRACTOR SHALL RECEIVE APPROVAL FROM ENGINEER PRIOR TO INSTALLATION OF ADDITIONAL CONDUIT OR REPAIR.
- HANDHOLES FOR FIBER SHALL BE LABELED WITH "CITY FIBER". DO NOT PROVIDE CABLE HOOKS WITHIN FIBER HANDHOLES. FIBER HANDHOLES SHALL BE TIER 15.
- CONTRACTOR SHALL PROVIDE AS-BUILT CABLE FOOTAGE MARKS IN/OUT OF ALL FIBER HANDHOLES. PROVIDE TAGGING SYSTEM THAT SHOWS "TRAFFIC CABLE" OR "NETWORK CABLE".
- CITY TO PROVIDE FIBER OPTIC CABLE. CONTRACTOR TO INSTALL. CONTRACTOR WILL ACCEPT DELIVERY OF FIBER OPTIC CABLE AT PUBLIC WORKS MAINTENANCE, 211 SE LORENZ DRIVE, ANKENY. CONTRACTOR TO PROVIDE STORAGE FOR FIBER OPTIC CABLE UNTIL INSTALLED.
- CONTRACTOR TO PROVIDE BOTH PRE-INSTALLATION AND FINAL FIBER OPTIC CABLE TESTING ACCORDING TO SUDAS 8010.3.01.

SUDAS STANDARD DETAILS		
NUMBER	DATE	IDENTIFICATION
8010.102	04-19-22	Traffic Signal Pole Foundation
8010.103	04-19-22	Conduit and Precast Handholes
8010.105	2023 Ed.	Mast Arm Pole Details
8010.106	2022 Ed.	Pedestal Pole Details

TRAFFIC SIGNAL EQUIPMENT		
EQUIPMENT	MANUFACTURER	MODEL NO.
CONTROLLER	Q-FREE	MAXTIME (CITY FURNISHED)
EMERGENCY VEHICLE PREEMPTION		
DETECTORS	OPTICOM	GTT 721
PHASE SELECTOR	OPTICOM	GTT 764
CARD RACK ASSEMBLY	OPTICOM	GTT 760
CABLE	OPTICOM	GTT 138
VIDEO DETECTION		
FOUR (4) CAMERA SYSTEM	AUTOSCOPE	VISION
UNINTERRUPTIBLE POWER SUPPLY	SIGNAL SENSE	SSDC-1500 (36V)
PEDESTAL POLES	PELCO	PB SERIES, SCHEDULE 80
ACCESSIBLE PEDESTRIAN SIGNALS		
PUSHBUTTON STATION	POLARA	IN23TNO-B
CONTROL UNIT	POLARA	ICCU2-S
TRAFFIC MONITORING CAMERA	PELCO	SPECTRA ENHANCED 360 DEGREES

ABOVE EQUIPMENT IS INCLUDED IN OR INCIDENTAL TO ITEMS SHOWN IN THE ESTIMATE OF TRAFFIC SIGNAL QUANTITIES

TRAFFIC SIGNAL LEGEND					
EXISTING	PROPOSED	FUTURE	EXISTING	PROPOSED	
					TRAFFIC SIGNAL
					TRAFFIC SIGNAL WITH BACKPLATE
					PEDESTRIAN SIGNAL
					MAST ARM SUSPENDED TRAFFIC SIGNAL (XX = LENGTH OF MAST ARM)
					METAL TRAFFIC SIGNAL PEDESTAL
					TRAFFIC SIGNAL HEAD NUMBER
					POLE OR SIGN NUMBER
					STREET LIGHT ON SIGNAL POLE
					CONDUIT TRENCHED, PUSHED, JACKED, OR BORED
					HANDHOLE



ANDREW J. HOUCHIN
P25711

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Andrew J. Houchin, P.E. Date

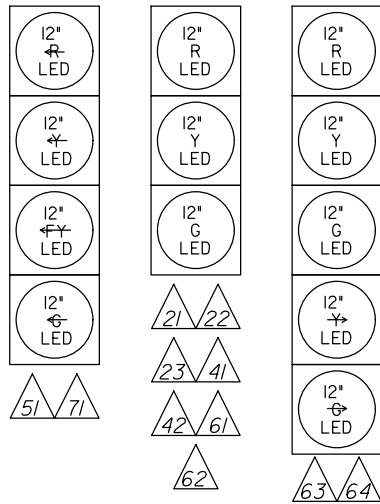
License Number P25711

My License Renewal Date is December 31, 2024

Pages or sheets covered by this seal:

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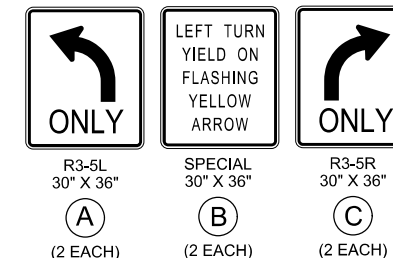
TRAFFIC SIGNAL FACES



LAYOUT NOTES

- 1) SEE N.3 FOR LOCATIONS OF ADVANCE VIDEO DETECTION ZONES.
- 2) POWER SOURCE LOCATION IS EXPECTED TO BE A TRANSFORMER IN THE SE CORNER OF THE INTERSECTION. COORDINATE POWER SOURCE CONNECTION WITH MIDAMERICAN ENERGY (MATT NOVY, 515-252-6730).
- 3) SEE N.6 FOR LOCATION OF FIBER OPTIC HANDHOLE AND FIBER OPTIC CONNECTION NOTES.

TRAFFIC SIGNS

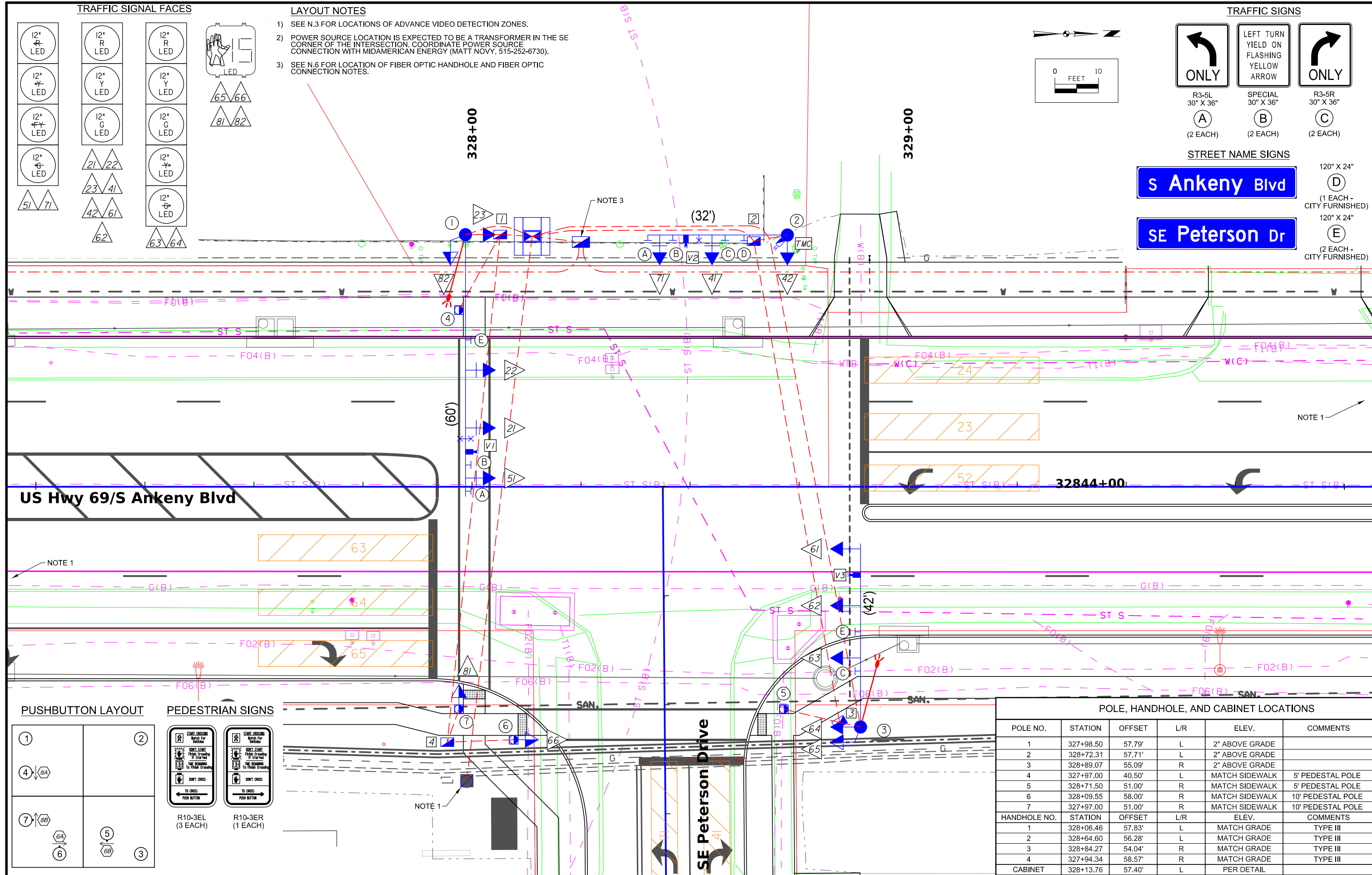
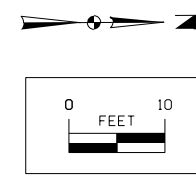


STREET NAME SIGNS

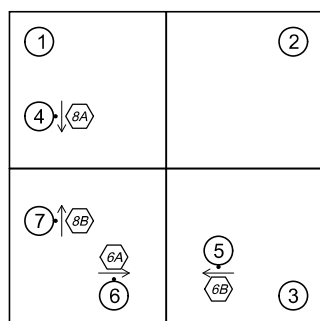
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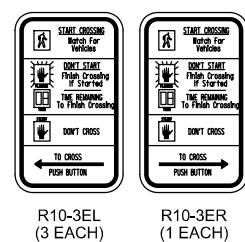
- 120" X 24" (D) (1 EACH - CITY FURNISHED)
- 120" X 24" (E) (2 EACH - CITY FURNISHED)



PUSHBUTTON LAYOUT



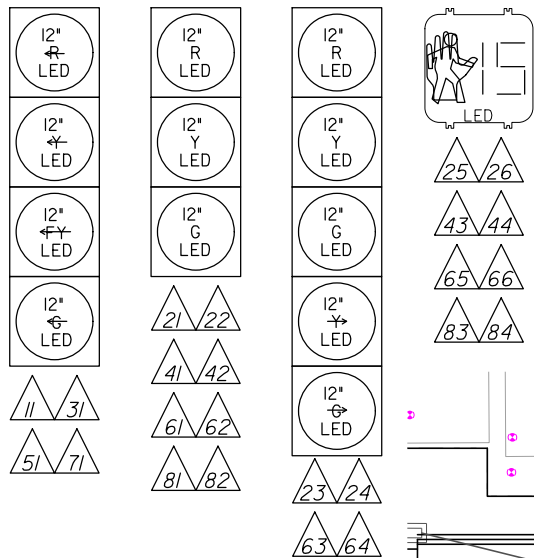
PEDESTRIAN SIGNS



POLE, HANDHOLE, AND CABINET LOCATIONS

POLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
1	327+98.50	57.79'	L	2" ABOVE GRADE	
2	328+72.31	57.71'	L	2" ABOVE GRADE	
3	328+89.07	55.09'	R	2" ABOVE GRADE	
4	327+97.00	40.50'	L	MATCH SIDEWALK	5' PEDESTAL POLE
5	328+71.50	51.00'	R	MATCH SIDEWALK	5' PEDESTAL POLE
6	328+09.55	58.00'	R	MATCH SIDEWALK	10' PEDESTAL POLE
7	327+97.00	51.00'	R	MATCH SIDEWALK	10' PEDESTAL POLE
HANDHOLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
1	328+06.46	57.83'	L	MATCH GRADE	TYPE III
2	328+64.60	56.28'	L	MATCH GRADE	TYPE III
3	328+84.27	54.04'	R	MATCH GRADE	TYPE III
4	327+94.34	58.57'	R	MATCH GRADE	TYPE III
CABINET	328+13.76	57.40'	L	PER DETAIL	

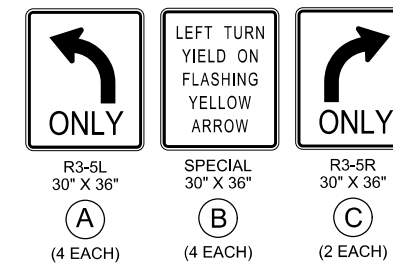
TRAFFIC SIGNAL FACES



LAYOUT NOTES

- SEE N.5 FOR LOCATIONS OF ADVANCE VIDEO DETECTION ZONES.
- POWER SOURCE LOCATION WILL BE UTILITY POLE ON THE SOUTH SIDE OF S 3RD ST. APPROXIMATELY 80 FEET EAST OF S ANKENY BLVD. EXISTING POLE WILL BE RELOCATED TO A SIMILAR LOCATION WITH THIS PROJECT. COORDINATE EXACT LOCATION AND POWER SOURCE CONNECTION WITH MIDAMERICAN ENERGY (MATT NOVY, 515-252-6730)
- SEE N.8 FOR LOCATION OF FIBER OPTIC HANDHOLE, FIBER OPTIC CONNECTION NOTES, AND TEMPORARY FIBER OPTIC CONNECTION NOTES.
- INSTALL POLE FOOTING AND HANDHOLE PRIOR TO SIDEWALK TO ALLOW FOR ADDITIONAL SIDEWALK REINFORCEMENT TO BE INSTALLED SURROUNDING IT FOR THE COMBINATION SIDEWALK/RETAINING WALL.
- UNSTABLE SOIL CONDITIONS MAY BE PRESENT DUE TO PROPOSED UTILITY CONSTRUCTION. IF NECESSARY, SONOTUBES OR OTHER SIMILAR FORMS TO MAINTAIN INTEGRITY OF SIGNAL FOOTING HOLE SHALL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL CHARGE.

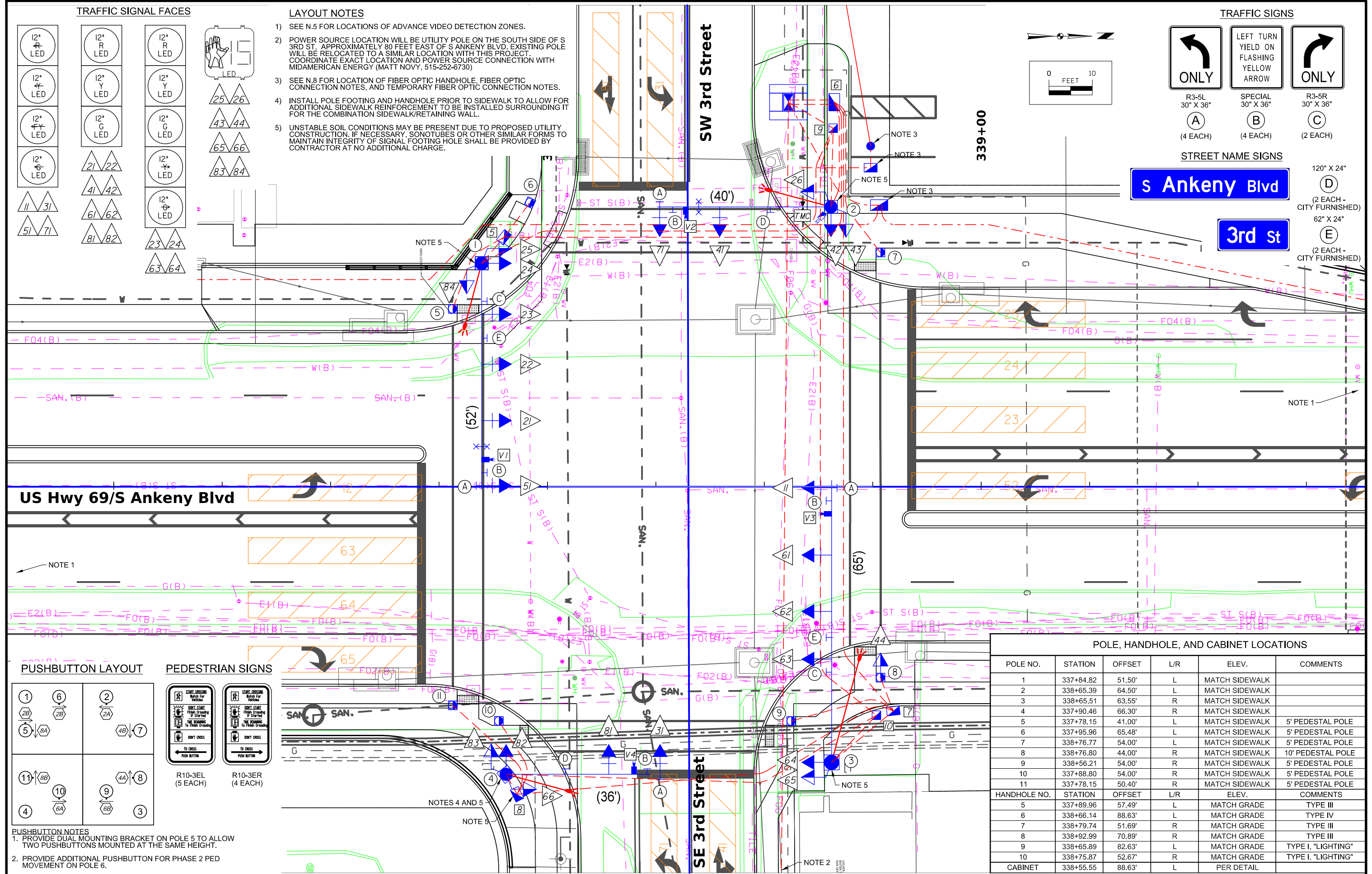
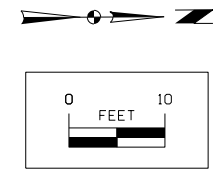
TRAFFIC SIGNS



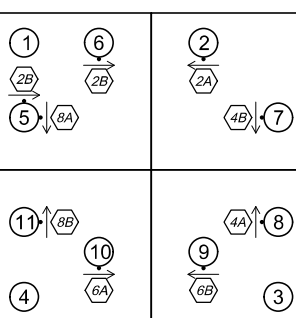
STREET NAME SIGNS



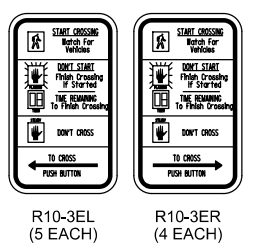
- 120" X 24" (D) (2 EACH - CITY FURNISHED)
- 62" X 24" (E) (2 EACH - CITY FURNISHED)



PUSHBUTTON LAYOUT



PEDESTRIAN SIGNS



- PUSHBUTTON NOTES**
- PROVIDE DUAL MOUNTING BRACKET ON POLE 5 TO ALLOW TWO PUSHBUTTONS MOUNTED AT THE SAME HEIGHT.
 - PROVIDE ADDITIONAL PUSHBUTTON FOR PHASE 2 PED MOVEMENT ON POLE 6.

POLE, HANDHOLE, AND CABINET LOCATIONS

POLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
1	337+84.82	51.50'	L	MATCH SIDEWALK	
2	338+65.39	64.50'	L	MATCH SIDEWALK	
3	338+65.51	63.55'	R	MATCH SIDEWALK	
4	337+90.46	66.30'	R	MATCH SIDEWALK	
5	337+78.15	41.00'	L	MATCH SIDEWALK	5' PEDESTAL POLE
6	337+95.96	65.48'	L	MATCH SIDEWALK	5' PEDESTAL POLE
7	338+76.77	54.00'	L	MATCH SIDEWALK	5' PEDESTAL POLE
8	338+76.80	44.00'	R	MATCH SIDEWALK	10' PEDESTAL POLE
9	338+56.21	54.00'	R	MATCH SIDEWALK	5' PEDESTAL POLE
10	337+88.80	54.00'	R	MATCH SIDEWALK	5' PEDESTAL POLE
11	337+78.15	50.40'	R	MATCH SIDEWALK	5' PEDESTAL POLE
HANDHOLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
5	337+89.96	57.49'	L	MATCH GRADE	TYPE III
6	338+66.14	88.63'	L	MATCH GRADE	TYPE IV
7	338+79.74	51.69'	R	MATCH GRADE	TYPE III
8	338+92.99	70.89'	R	MATCH GRADE	TYPE III
9	338+65.89	82.63'	L	MATCH GRADE	TYPE I, "LIGHTING"
10	338+75.87	52.67'	R	MATCH GRADE	TYPE I, "LIGHTING"
CABINET	STATION	OFFSET	L/R	ELEV.	COMMENTS
	338+55.55	88.63'	L	PER DETAIL	

DETECTOR SUMMARY						
CAMERA NUMBER	DETECTION ZONE	ZONE LIMITS (DISTANCE FROM STOP LINE)	PHASE CALLED	PHASE EXTENDED	DETECTOR INPUT ASSIGNMENT	COMMENTS
V1	21	210' TO 250'	2	2	26	
	22	210' TO 250'	2	2	34	
	23	0' TO 40'	2	2	2	
	24	0' TO 40'	2	2	10	
	51	100' TO 140'	2	2	29	
V2	52	0' TO 40'	2.5	2.5	5	
	41	0' TO 40'	4	4	4	
V3	71	0' TO 40'	4.7	4.7	7	
	11	210' TO 250'	6	6	25	
	12	0' TO 40'	1.6	1.6	1	
	61	210' TO 250'	6	6	30	
	62	210' TO 250'	6	6	38	
V4	63	0' TO 40'	6	6	6	
	64	0' TO 40'	6	6	14	
	31	0' TO 40'	3.8	3.8	3	
	81	0' TO 40'	8	8	8	
2A,2B						PED PB
4A,4B						PED PB
6A,6B						PED PB
8A,8B						PED PB

WIRING LEGEND	
	SIGNAL NUMBER
	POLE NUMBER
	HANDHOLE NUMBER
	EXISTING DETECTOR NUMBER
	PROPOSED DETECTOR NUMBER
	VIDEO DETECTION CAMERA
	PTZ CAMERA
	VIDEO CAMERA NUMBER
	EMERGENCY VEHICLE DETECTOR
	CONDUIT
	POWER CABLE
	LUMINAIRE (1c #8)
	PEDESTRIAN PUSHBUTTON (2c)
	EMERGENCY VEHICLE PREEMPTION
	TRAFFIC MONITOR CAMERA CABLE
	VIDEO OR DETECTION CABLE(S)
	FIBER OPTIC CABLE
	GROUND WIRE (1c #6)
	TRACER WIRE (1c #10)
	PULL TAPE

DETECTION NOTES:

- ZONE LIMITS ARE FOR DETECTION LIMITS ONLY. ACTUAL DETECTION AREAS FOR EACH ZONE WILL BE DETERMINED IN THE FIELD.
- DELAYS SHALL BE ENTERED IN THE SIGNAL CONTROLLER BY THE CITY.

WIRING NOTES:

- SEE N.8 FOR FIBER OPTIC CONNECTION NOTES.

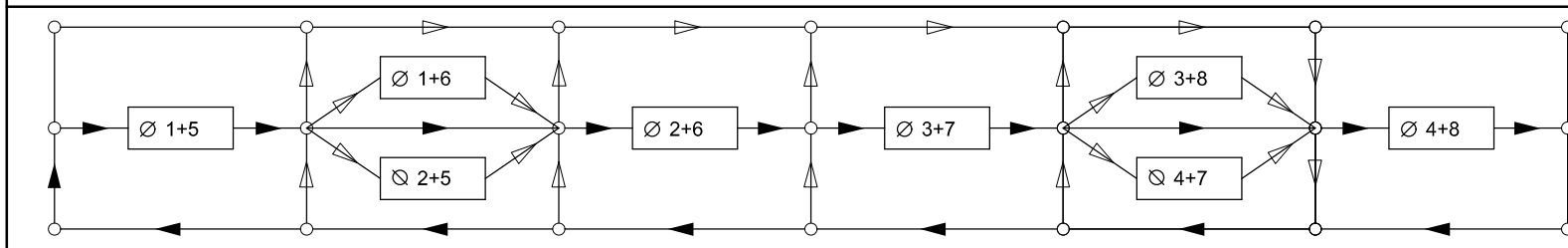
TRAFFIC SIGNAL POLE NOTES:

- LOCATION REPRESENTS APPROXIMATE LINEAR DISTANCE FROM POLE MEASURED OUTWARD TO END OF ARM.
- ORIENTATION OF LUMINAIRE ARM REPRESENTS A CLOCKWISE ANGLE MEASURED FROM THE CENTERLINE OF THE MAST ARM.
- POLES SHALL BE DESIGNED AS PER THE SUDAS SPECIFICATIONS WITH A ONE-PIECE VERTICAL POLE.
- UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LEFT TURN AND DEPARTURE THROUGH LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
- TOP OF FOOTING TO BE FORMED SQUARE AND FLUSH WITH PROPOSED OR EXISTING SIDEWALK.

TRAFFIC SIGNAL POLE DATA

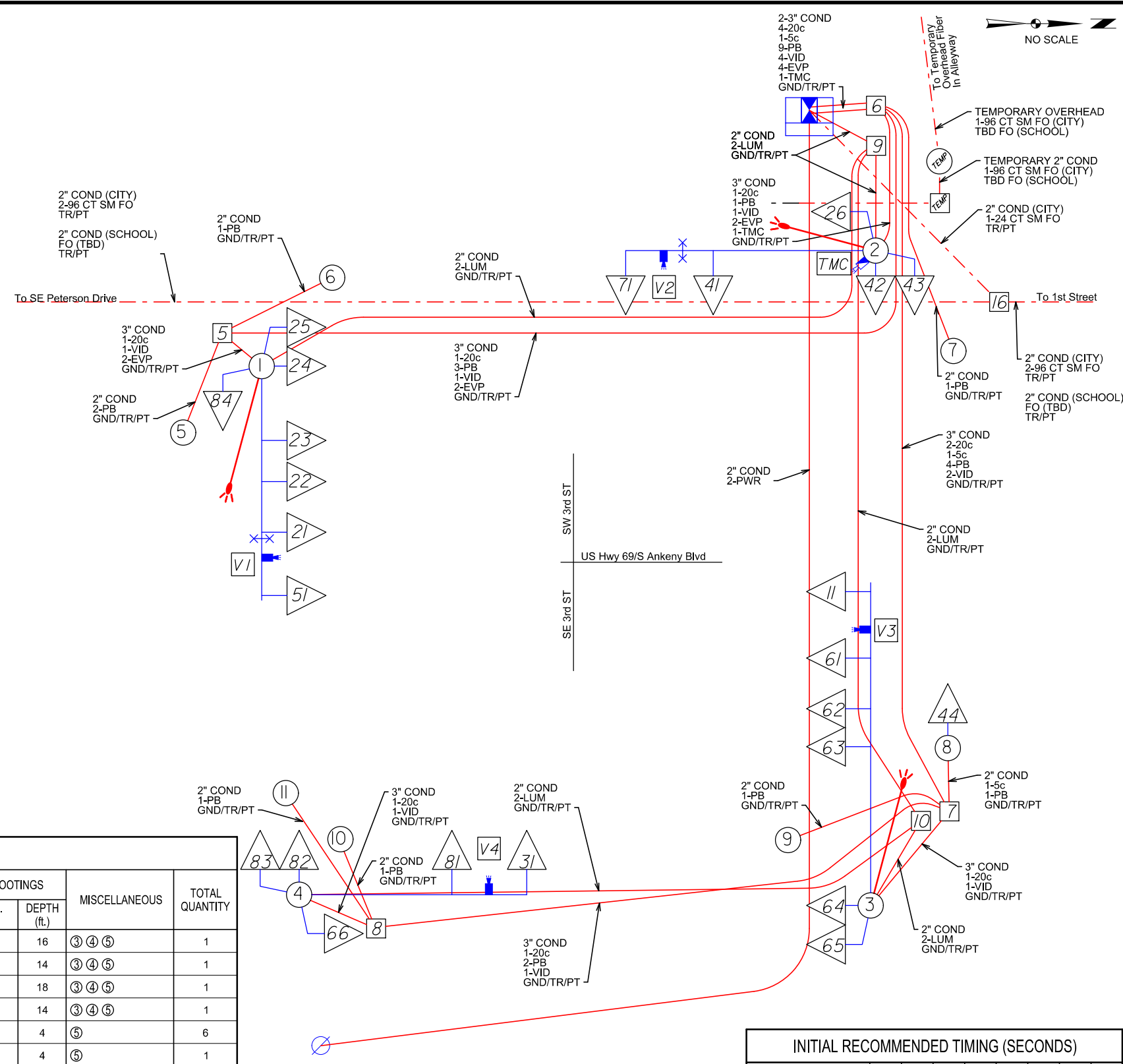
POLE NO.	POLE TYPE	MAST ARM LENGTH/ PEDESTAL HEIGHT (ft.)	TRAFFIC SIGNAL HEADS		TRAFFIC SIGNS		LUMINAIRE ARM			FOOTINGS		MISCELLANEOUS	TOTAL QUANTITY	
			QTY.	LOCATION ON ARM (ft.)	QTY.	LOCATION ON ARM (ft.)	LOCATION ON ARM (ft.)	SPREAD (ft.)	MOUNTING HEIGHT (ft.)	ORIENTATION (degrees)	DIA. (ft.)			DEPTH (ft.)
1	COMBINATION SIGNAL / LIGHTING	52	4	51,36,23,12	4	51,48,17,9	48	15	40	0	3	16	③ ④ ⑤	1
2	COMBINATION SIGNAL / LIGHTING	40	2	39,26	3	39,36,14	33	15	40	0	3	14	③ ④ ⑤	1
3	COMBINATION SIGNAL / LIGHTING	65	4	63,48,35,23	4	63,60,29,20	57	25	40	0	3.5	18	③ ④ ⑤	1
4	COMBINATION SIGNAL / LIGHTING	36	2	35,23	3	35,32,14	29	15	40	0	3	14	③ ④ ⑤	1
5-7, 9-11	PEDESTAL	5										4	⑤	6
8	PEDESTAL	10										4	⑤	1

PHASE FLOW DIAGRAM



PHASE FLOW DIAGRAM NOTES:

- Flow path if all phases are requested
- Flow path when phase is not requested before right-of-way transfer
- THE RED CLEARANCE INTERVAL SHALL BE INCLUDED IN THE COLOR SEQUENCE WHEN CALLED FOR BY CONTROLLER TIMING.

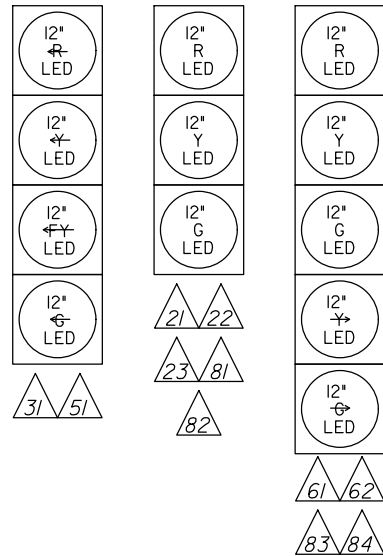


INITIAL RECOMMENDED TIMING (SECONDS)

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN								
PASSAGE								
MAXIMUM I								
MAXIMUM II								
YELLOW CHANGE								
RED CLEARANCE								
WALK								
PEDESTRIAN CLEARANCE								
ADDED INITIAL								
TIME TO REDUCE								
TIME BEFORE REDUCTION								
MINIMUM GAP								

PROVIDED BY CITY

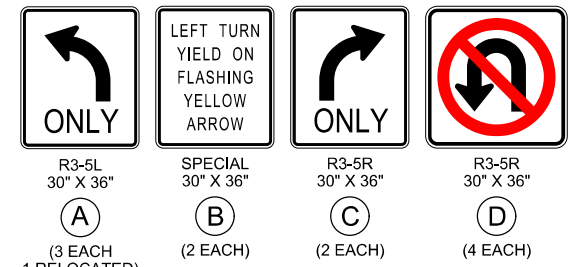
TRAFFIC SIGNAL FACES



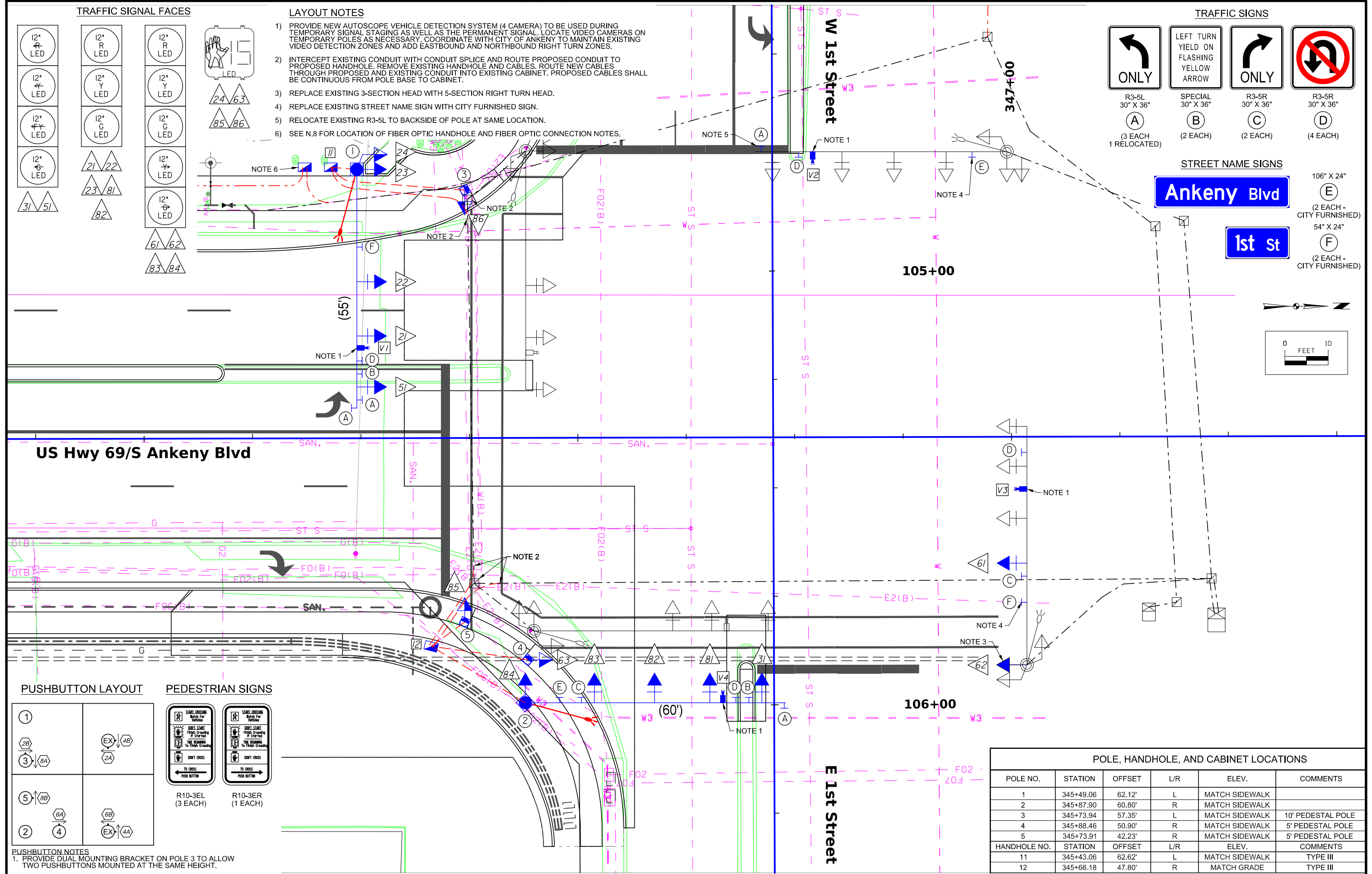
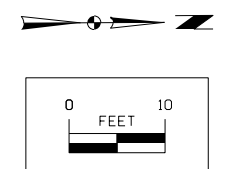
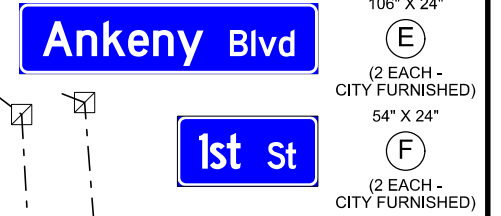
LAYOUT NOTES

- 1) PROVIDE NEW AUTOSCOPE VEHICLE DETECTION SYSTEM (4 CAMERA) TO BE USED DURING TEMPORARY SIGNAL STAGING AS WELL AS THE PERMANENT SIGNAL. LOCATE VIDEO CAMERAS ON TEMPORARY POLES AS NECESSARY. COORDINATE WITH CITY OF ANKENY TO MAINTAIN EXISTING VIDEO DETECTION ZONES AND ADD EASTBOUND AND NORTHBOUND RIGHT TURN ZONES.
- 2) INTERCEPT EXISTING CONDUIT WITH CONDUIT SPLICE AND ROUTE PROPOSED CONDUIT TO PROPOSED HANDHOLE. REMOVE EXISTING HANDHOLE AND CABLES. ROUTE NEW CABLES THROUGH PROPOSED AND EXISTING CONDUIT INTO EXISTING CABINET. PROPOSED CABLES SHALL BE CONTINUOUS FROM POLE BASE TO CABINET.
- 3) REPLACE EXISTING 3-SECTION HEAD WITH 5-SECTION RIGHT TURN HEAD.
- 4) REPLACE EXISTING STREET NAME SIGN WITH CITY FURNISHED SIGN.
- 5) RELOCATE EXISTING R3-5L TO BACKSIDE OF POLE AT SAME LOCATION.
- 6) SEE N.8 FOR LOCATION OF FIBER OPTIC HANDHOLE AND FIBER OPTIC CONNECTION NOTES.

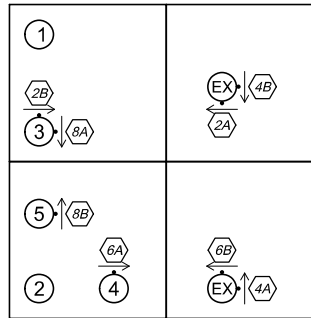
TRAFFIC SIGNS



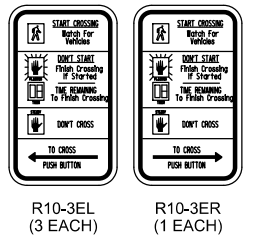
STREET NAME SIGNS



PUSHBUTTON LAYOUT



PEDESTRIAN SIGNS

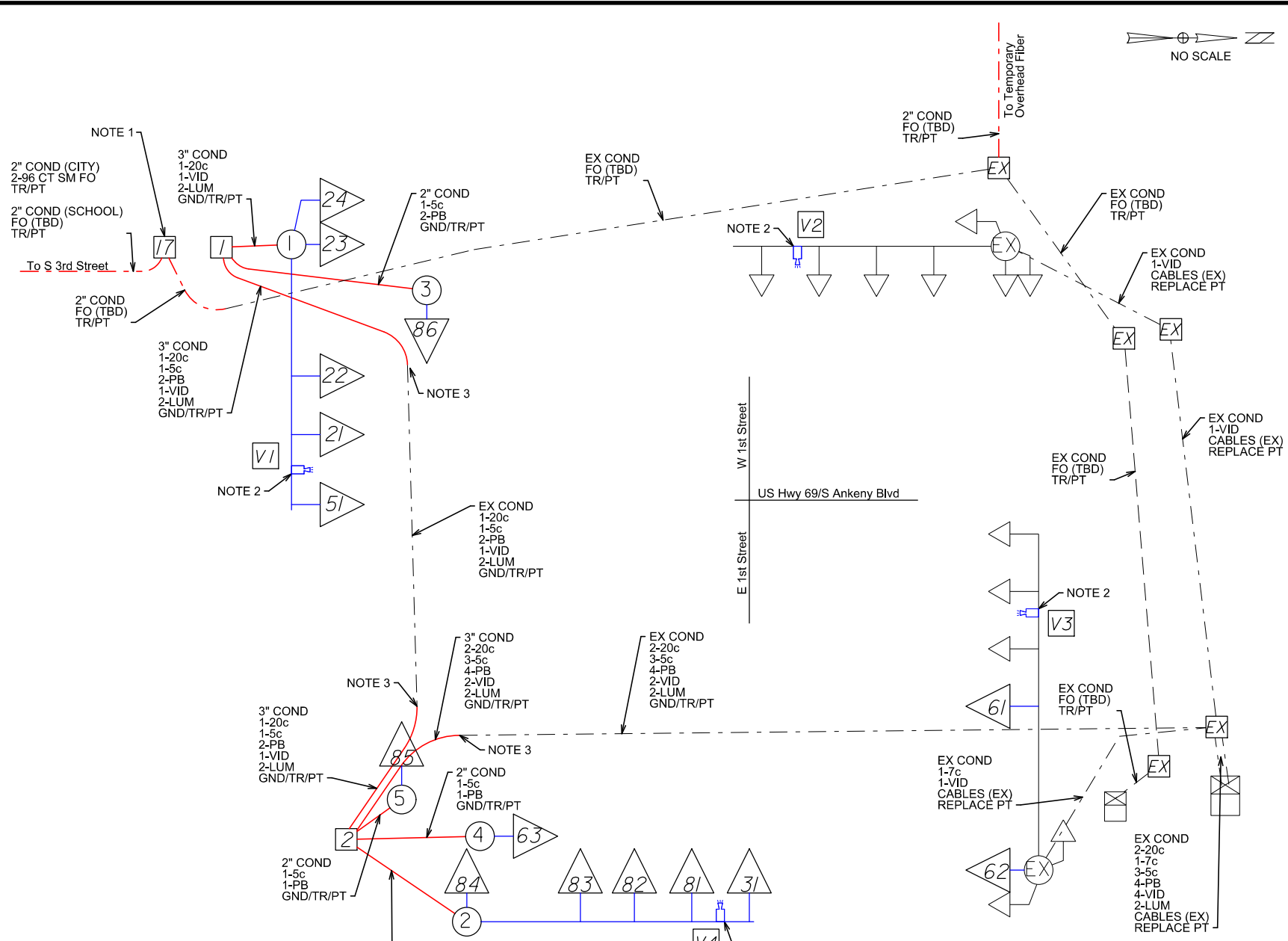


PUSHBUTTON NOTES
 1. PROVIDE DUAL MOUNTING BRACKET ON POLE 3 TO ALLOW TWO PUSHBUTTONS MOUNTED AT THE SAME HEIGHT.

POLE, HANDHOLE, AND CABINET LOCATIONS					
POLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
1	345+49.06	62.12'	L	MATCH SIDEWALK	
2	345+87.90	60.80'	R	MATCH SIDEWALK	
3	345+73.94	57.35'	L	MATCH SIDEWALK	10' PEDESTAL POLE
4	345+88.46	50.90'	R	MATCH SIDEWALK	5' PEDESTAL POLE
5	345+73.91	42.23'	R	MATCH SIDEWALK	5' PEDESTAL POLE
HANDHOLE NO.	STATION	OFFSET	L/R	ELEV.	COMMENTS
11	345+43.06	62.62'	L	MATCH SIDEWALK	TYPE III
12	345+66.18	47.80'	R	MATCH GRADE	TYPE III

DETECTOR SUMMARY						
CAMERA NUMBER	DETECTION ZONE	ZONE LIMITS (DISTANCE FROM STOP LINE)	PHASE CALLED	PHASE EXTENDED	DETECTOR INPUT ASSIGNMENT	COMMENTS
V1						
V2						
V3						
V4						
2A,2B						PED PB
4A,4B						PED PB
6A,6B						PED PB
8A,8B						PED PB

WIRING LEGEND	
	SIGNAL NUMBER
	POLE NUMBER
	HANDHOLE NUMBER
	EXISTING DETECTOR NUMBER
	PROPOSED DETECTOR NUMBER
	VIDEO DETECTION CAMERA
	PTZ CAMERA
	VIDEO CAMERA NUMBER
	EMERGENCY VEHICLE DETECTOR
COND	CONDUIT
PWR	POWER CABLE
LUM	LUMINAIRE (1c #8)
PB	PEDESTRIAN PUSHBUTTON (2c)
EVP	EMERGENCY VEHICLE PREEMPTION
TMC	TRAFFIC MONITOR CAMERA CABLE
VID	VIDEO OR DETECTION CABLE(S)
FO	FIBER OPTIC CABLE
GND	GROUND WIRE (1c #6)
TR	TRACER WIRE (1c #10)
PT	PULL TAPE



DETECTION NOTES:

- COORDINATE WITH CITY OF ANKENY TO RECREATE EXISTING VEHICLE DETECTION ZONES WITH PROPOSED VIDEO DETECTION SYSTEM.
- DELAYS SHALL BE ENTERED IN THE SIGNAL CONTROLLER BY THE CITY.

WIRING NOTES:

- SEE N.8 FOR FIBER OPTIC CONNECTION NOTES.
- PROVIDE NEW AUTOSCOPE VEHICLE DETECTION SYSTEM (4 CAMERA) TO BE USED DURING TEMPORARY SIGNAL STAGING AS WELL AS THE PERMANENT SIGNAL. LOCATE VIDEO CAMERAS ON TEMPORARY POLES AS NECESSARY. COORDINATE WITH CITY OF ANKENY TO MAINTAIN EXISTING VIDEO DETECTION ZONES AND ADD EASTBOUND AND NORTHBOUND RIGHT TURN ZONES.
- INTERCEPT EXISTING CONDUIT WITH CONDUIT SPLICE AND ROUTE PROPOSED CONDUIT TO PROPOSED HANDHOLE. REMOVE EXISTING HANDHOLE AND CABLES. ROUTE NEW CABLES THROUGH PROPOSED AND EXISTING CONDUIT INTO EXISTING CABINET. PROPOSED CABLES SHALL BE CONTINUOUS FROM POLE BASE TO CABINET.

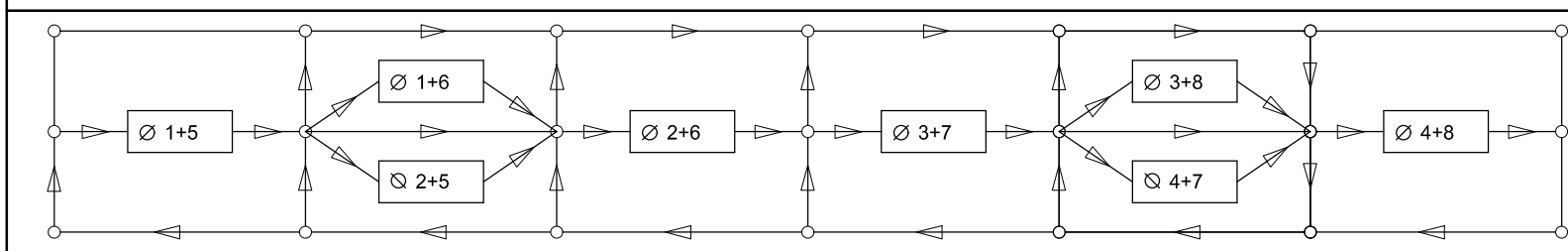
TRAFFIC SIGNAL POLE NOTES:

- LOCATION REPRESENTS APPROXIMATE LINEAR DISTANCE FROM POLE MEASURED OUTWARD TO END OF ARM.
- ORIENTATION OF LUMINAIRE ARM REPRESENTS A CLOCKWISE ANGLE MEASURED FROM THE CENTERLINE OF THE MAST ARM.
- POLES SHALL BE DESIGNED AS PER THE SUDAS SPECIFICATIONS WITH A ONE-PIECE VERTICAL POLE.
- UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LEFT TURN AND DEPARTURE THROUGH LANES. APPROXIMATE LOCATIONS ARE AS SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
- TOP OF FOOTING TO BE FORMED SQUARE AND FLUSH WITH PROPOSED OR EXISTING SIDEWALK.
- SIGNAL HEAD AND SIGN LOCATIONS ON EXISTING POLES ARE APPROXIMATE. FIELD VERIFY LOCATIONS RELATIVE TO EXISTING SIGNAL HEADS AND SIGNS.

TRAFFIC SIGNAL POLE DATA

POLE NO.	POLE TYPE	MAST ARM LENGTH/ PEDESTAL HEIGHT (ft.)	TRAFFIC SIGNAL HEADS		TRAFFIC SIGNS		VIDEO CAMERAS		LUMINAIRE ARM			FOOTINGS		MISCELLANEOUS	TOTAL QUANTITY
			QTY.	LOCATION ON ARM (ft.)	QTY.	LOCATION ON ARM (ft.)	LOCATION ON ARM (ft.)	LOCATION ON ARM (ft.)	SPREAD (ft.)	MOUNTING HEIGHT (ft.)	ORIENTATION (degrees)	DIA. (ft.)	DEPTH (ft.)		
1	COMBINATION SIGNAL / LIGHTING	55	3	50,38,26	5	55,53,47, 44,18	41	15	40	0	3	16	③ ④ ⑤	1	
2	COMBINATION SIGNAL / LIGHTING	60	4	54,42,30,16	5	60,51,48, 13,8	45	15	40	0	3	18	③ ④ ⑤	1	
EX-NW	COMBINATION SIGNAL / LIGHTING				3	57,48,8	45						⑥		
EX-NE	COMBINATION SIGNAL / LIGHTING		1	23	3	49,20,14	40						⑥		
3-5	PEDESTAL	10									2	4	⑤	3	

PHASE FLOW DIAGRAM



PHASE FLOW DIAGRAM NOTES:

- FLOW PATH IF ALL PHASES ARE REQUESTED
- FLOW PATH WHEN PHASE IS NOT REQUESTED BEFORE RIGHT-OF-WAY TRANSFER
- THE RED CLEARANCE INTERVAL SHALL BE INCLUDED IN THE COLOR SEQUENCE WHEN CALLED FOR BY CONTROLLER TIMING.

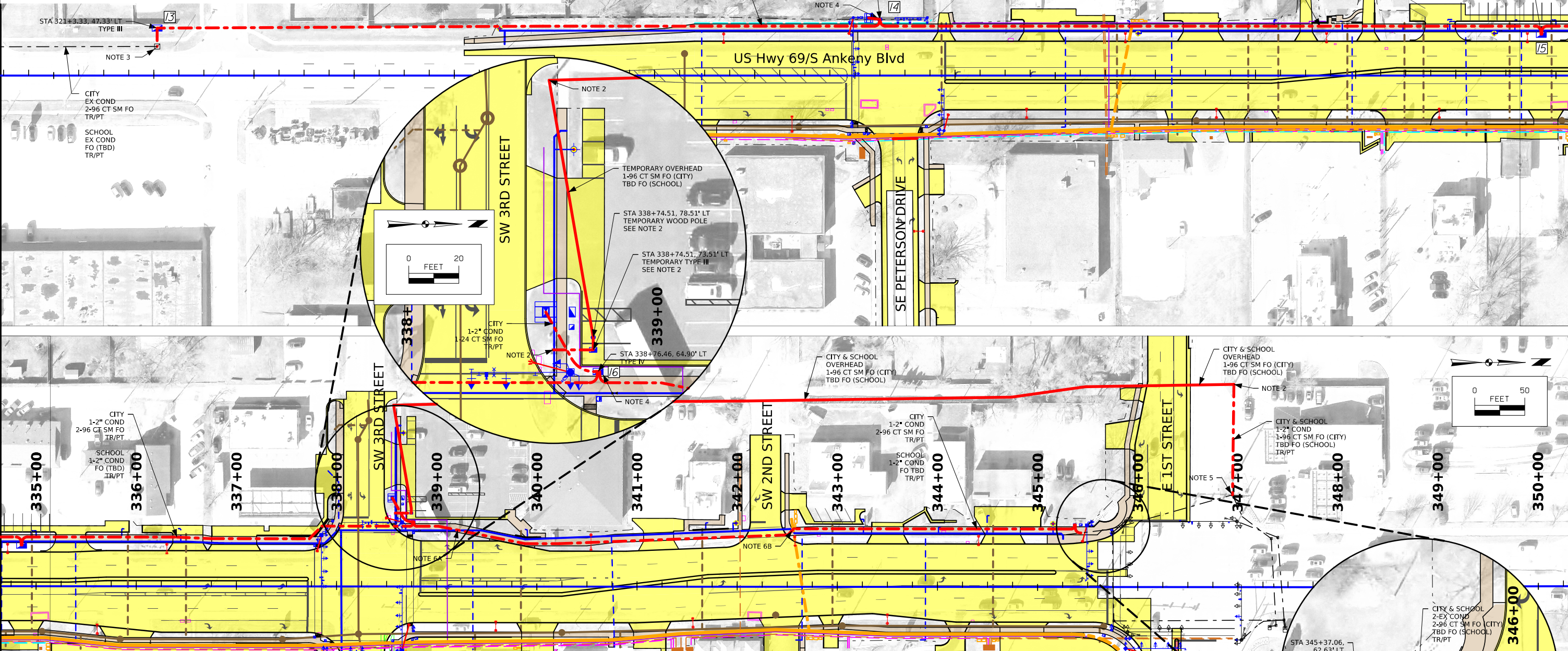
INITIAL RECOMMENDED TIMING (SECONDS)

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN								
PASSAGE								
MAXIMUM I								
MAXIMUM II								
YELLOW CHANGE								
RED CLEARANCE								
WALK								
PEDESTRIAN CLEARANCE								
ADDED INITIAL								
TIME TO REDUCE								
TIME BEFORE REDUCTION								
MINIMUM GAP								

PROVIDED BY CITY

FIBER OPTIC NOTES:

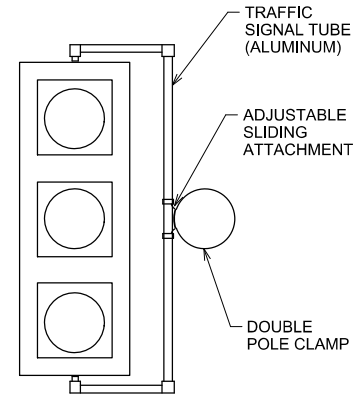
- 1) GENERAL LOCATION OF PROPOSED FIBER CONDUITS SHALL BE 2.5 FEET EAST OF THE WEST EDGE OF PROPOSED SIDEWALK WHEN NOT IN CONFLICT WITH OTHER PROPOSED UTILITIES. MINIMUM DEPTH OF PROPOSED FIBER OPTIC CONDUIT IS 48". IT IS EXPECTED THAT THERE WILL BE A CONFLICT WITH PROPOSED AND EXISTING WATER MAIN BETWEEN S 3RD ST AND 1ST ST. FIBER OPTIC CONDUIT INSTALLATION FROM S 3RD ST TO 1ST ST WILL BE REQUIRED TO OCCUR AFTER PROPOSED WATER MAIN INSTALLATION. ALIGNMENT OF THE PROPOSED FIBER CONDUITS SHOULD FOLLOW THE APPROXIMATE ALIGNMENT OF THE EXISTING WATER MAIN FROM S 3RD ST TO S 2ND ST, CROSS THE PROPOSED WATER MAIN IMMEDIATELY NORTH OF S 2ND ST, THEN SHALL BE 2.5 FEET EAST OF THE WEST EDGE OF PROPOSED SIDEWALK FROM S 2ND ST TO 1ST ST.
- 2) CITY FIBER OPTIC COMMUNICATION MUST REMAIN OPERATIONAL THROUGHOUT THE DURATION OF THE PROJECT. TO FACILITATE THIS, PRIOR TO PROPOSED WATER MAIN INSTALLATION FROM S 3RD ST TO 1ST ST, SET A TEMPORARY TYPE III HANDHOLE AND WOOD POLE WITHIN CONSTRUCTION LIMITS AT APPROXIMATE LOCATIONS SHOWN IN THE NW CORNER OF THE US 69 & S 3RD ST INTERSECTION. INTERCEPT EXISTING CITY FIBER CONDUIT FROM THE SOUTH WITH CONDUIT SPLICE AND REROUTE EXISTING FIBER CABLES TO TEMPORARY HANDHOLE. SPLICE 48 FIBERS FROM EXISTING "TRAFFIC" CABLE AND 48 FIBERS FROM EXISTING "NETWORK" CABLE INTO ONE 96 COUNT SINGLE MODE FIBER CABLE. COORDINATE WITH THE CITY OF ANKENY AND MIDAMERICAN ENERGY TO ROUTE TEMPORARY FIBER CABLE OVERHEAD FROM S 3RD ST TO 1ST ST VIA THE ALLEY IMMEDIATELY WEST OF S ANKENY BLVD.



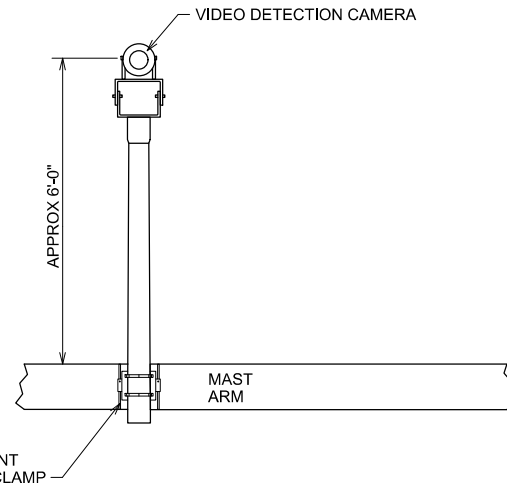
FIBER OPTIC NOTES (CONTINUED):

- 3) CONNECT PROPOSED CONDUIT TO EXISTING HANDHOLE. INSTALL PROPOSED FIBER OPTIC CONDUIT AND CABLE FROM EXISTING HANDHOLE TO S 3RD ST AS SHOWN. PULL PROPOSED CABLES THROUGH EXISTING CONDUITS TO THE SIGNAL CABINET AT SE 8TH ST. AFTER INSTALLATION OF ALL PROPOSED CITY FIBER FROM SE 8TH ST TO 1ST ST, SWITCH CONNECTION IN SIGNAL CABINETS AT US 69 & SE 8TH AND US 69 & 1ST ST FROM EXISTING FIBER TO PROPOSED FIBER. AFTER SWITCHOVER PROPOSED FIBER, REMOVE EXISTING FIBER OPTIC CABLE BETWEEN SE 8TH ST AND 1ST ST AND ABANDON CONDUITS IN PLACE. ALSO AFTER SWITCHOVER TO PROPOSED FIBER, COORDINATE WITH THE CITY OF ANKENY AND MIDAMERICAN ENERGY TO REMOVE TEMPORARY OVERHEAD FIBER, TEMPORARY WOOD POLE, AND TEMPORARY HANDHOLE.
- 4) SPLICING DETAILS AND QUANTITIES HAVE YET TO BE DETERMINED. SPLICE DIAGRAMS WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING.
- 5) 1ST ST FIBER OPTIC CONNECTION DETAILS HAVE YET TO BE DETERMINED. AFTER FO CABLE HAS BEEN INSTALLED FROM THE SOUTHLAWN DR HANDHOLE TO 1ST ST, SPLICE CABLES PER DETAILS TO BE DETERMINED.
- 6) CRITICAL UTILITY CROSSING.
A - PROPOSED WATER MAIN DEPTH IS APPROXIMATELY 5.4'.
B - PROPOSED WATER MAIN DEPTH IS APPROXIMATELY 6.1'.
- 7) FIBER CONDUIT AND CABLES FOR THE ANKENY COMMUNITY SCHOOL DISTRICT HAVE YET TO BE DETERMINED AND MAY NOT BE INSTALLED WITH THIS PROJECT. THEY ARE INCLUDED FOR ILLUSTRATIVE PURPOSES.

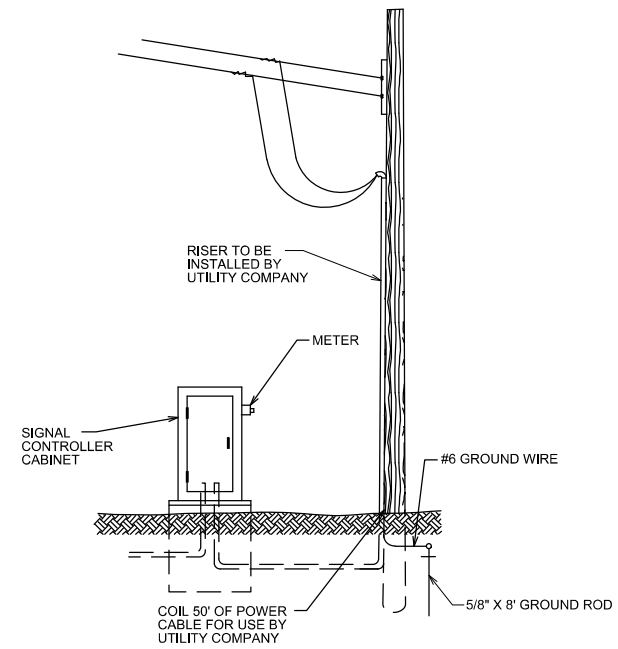
NOTE:
BRACKET SHALL PROVIDE
FOR COMPLETELY CONCEALED
WIRING OF SIGNAL HEADS.



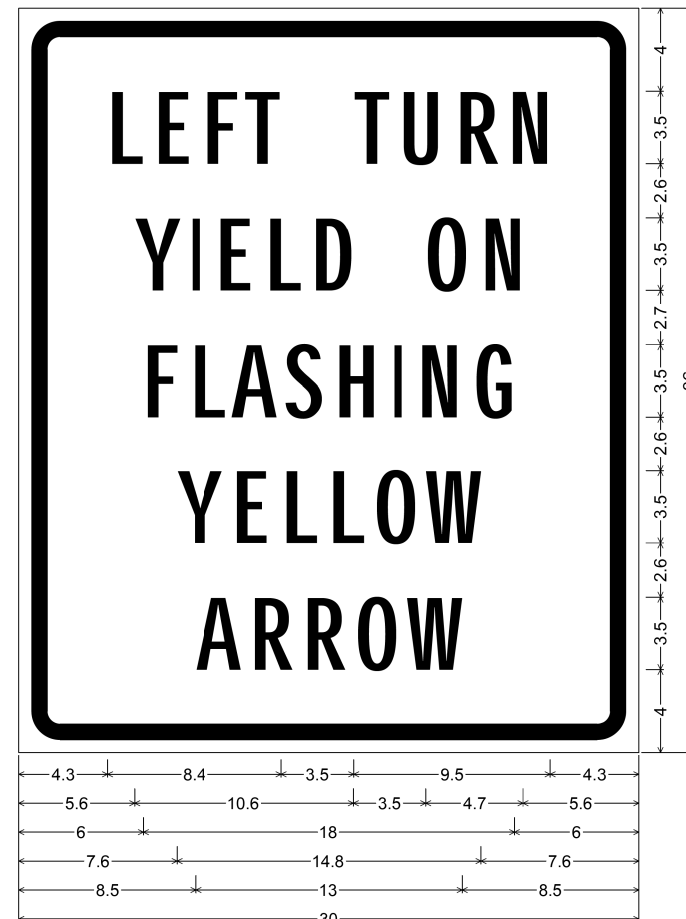
1 MAST ARM SIGNAL BRACKET
N.9 NO SCALE



2 VIDEO DETECTION CAMERA
N.9 NO SCALE

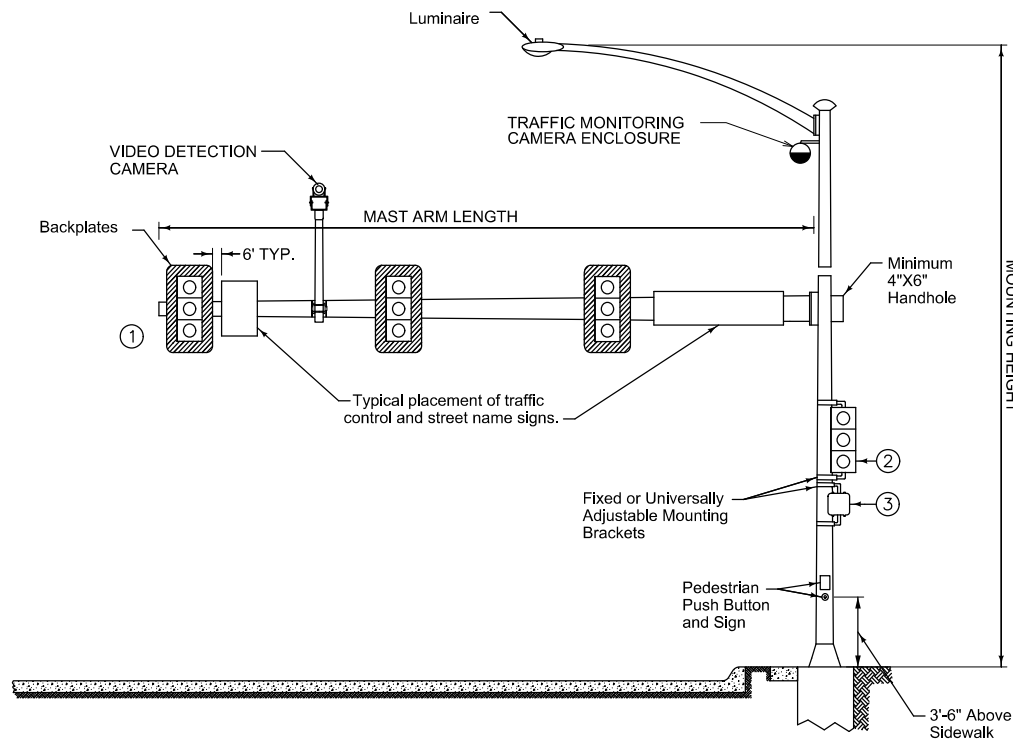


3 POWER SERVICE (FROM POLE)
N.9 NO SCALE



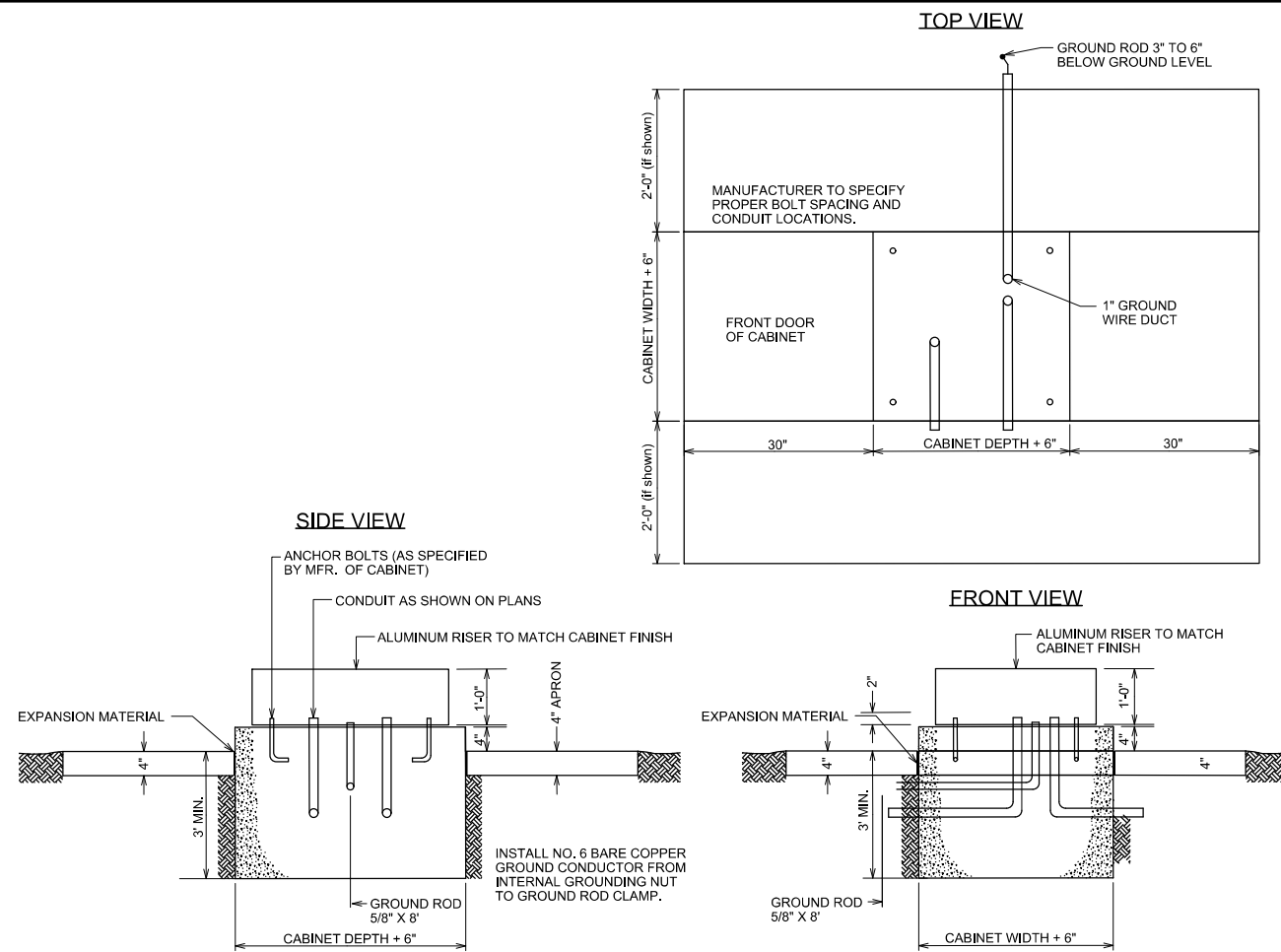
2.0" Radius, 0.8" Border, 0.6" Indent, Black on White;
"LEFT TURN" C 2K; "YIELD ON" C 2K; "FLASHING" C 2K; "YELLOW" C 2K;
"ARROW" C 2K;

5 FLASHING YELLOW ARROW SIGN
N.9 NO SCALE

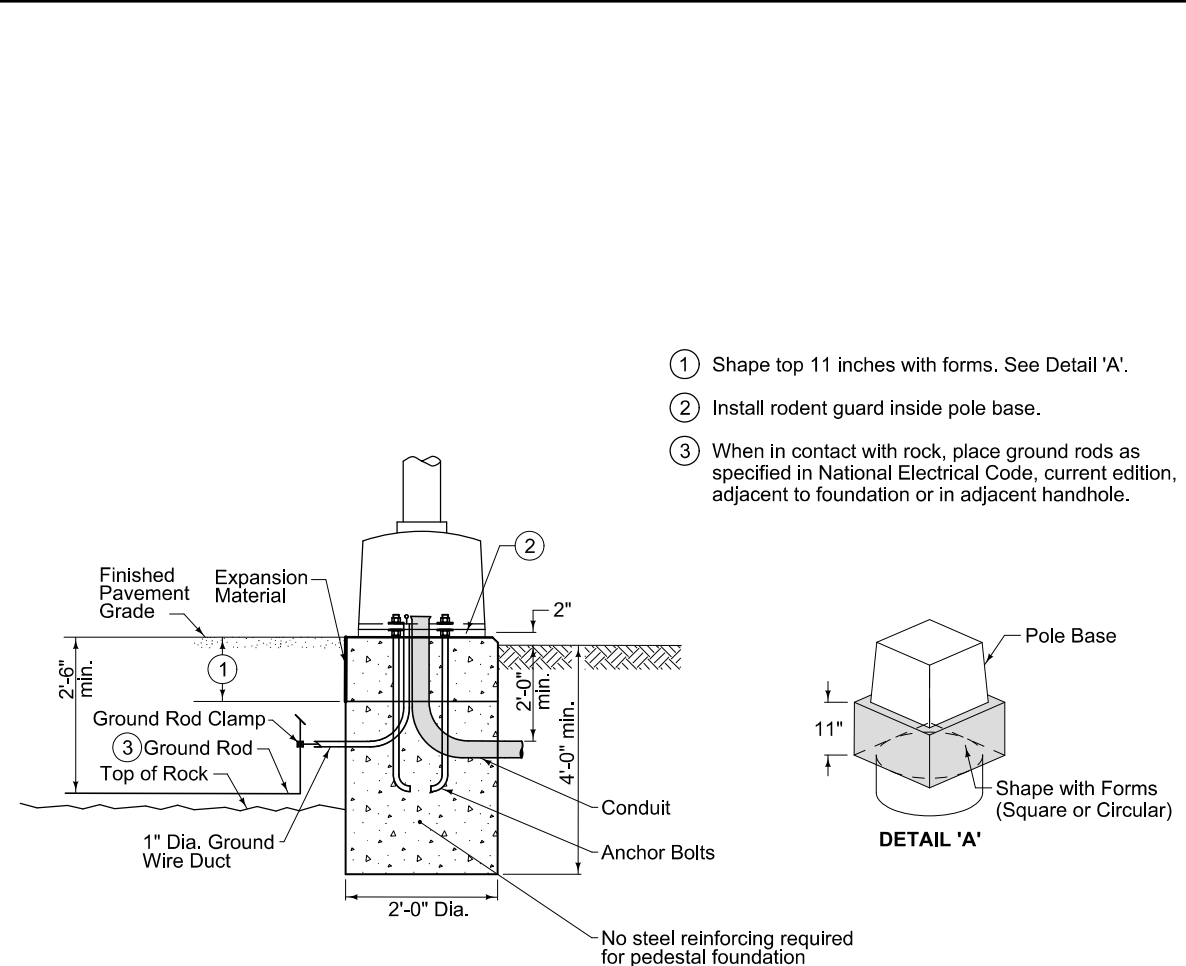


- 1 Ensure the top of the signal housing is no more than 25.6 feet above the pavement. Ensure the bottom of the signal housing and related attachments are at least 16 feet above the pavement.
- 2 Ensure the bottom of the signal housing (including brackets) that is not located over a roadway is a minimum of 8 feet and a maximum of 19 feet above the sidewalk or, if there is no sidewalk, above the pavement grade at the center of the roadway.
- 3 Mount pedestrian signal heads with the bottom of the signal housing (including brackets) no less than 7 feet or more than 10 feet above the sidewalk level. Position and adjust heads to provide maximum visibility at the beginning of the controlled crosswalk.

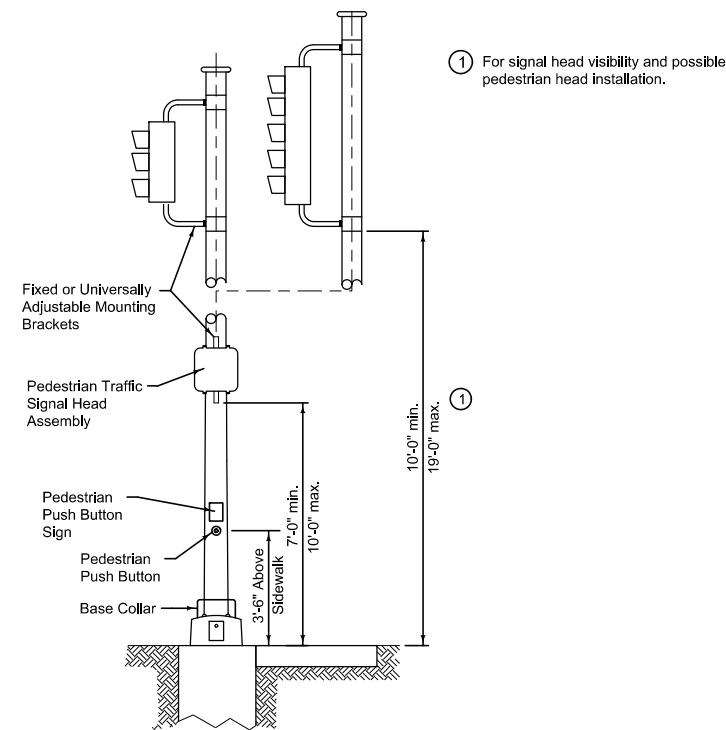
4 STEEL MAST ARM POLE
N.9 NO SCALE



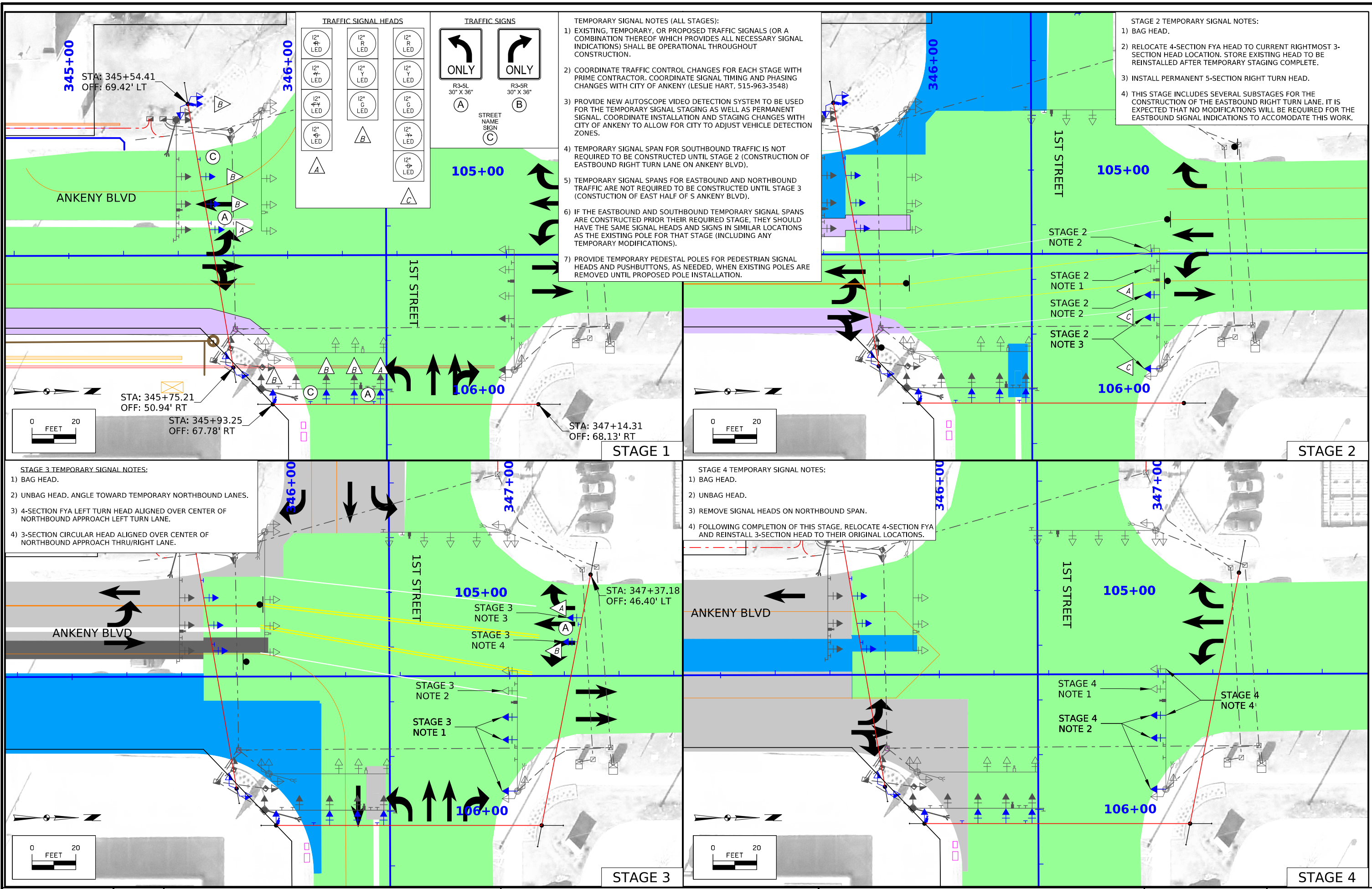
1 SIGNAL CABINET FOOTING
N.10 NO SCALE



2 PEDESTAL POLE FOUNDATION
N.10 NO SCALE



3 PEDESTAL POLE
N.10 NO SCALE



TRAFFIC SIGNAL HEADS

TRAFFIC SIGNS

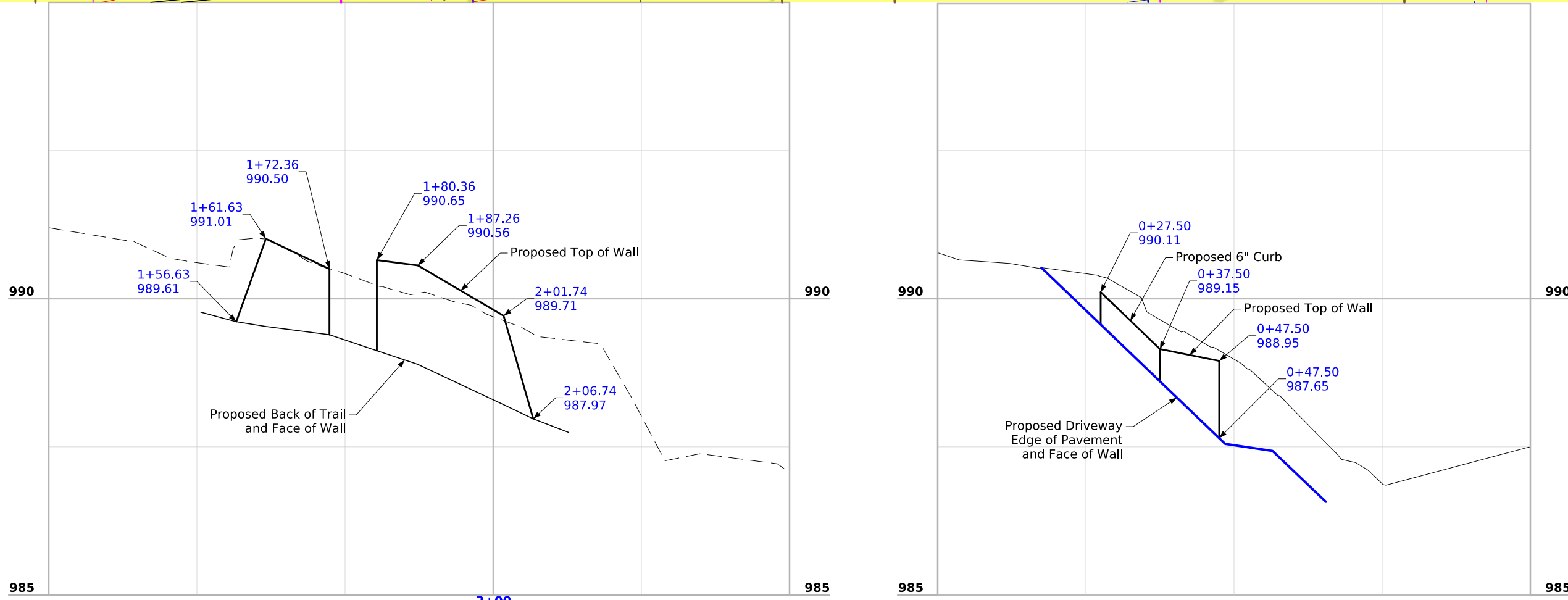
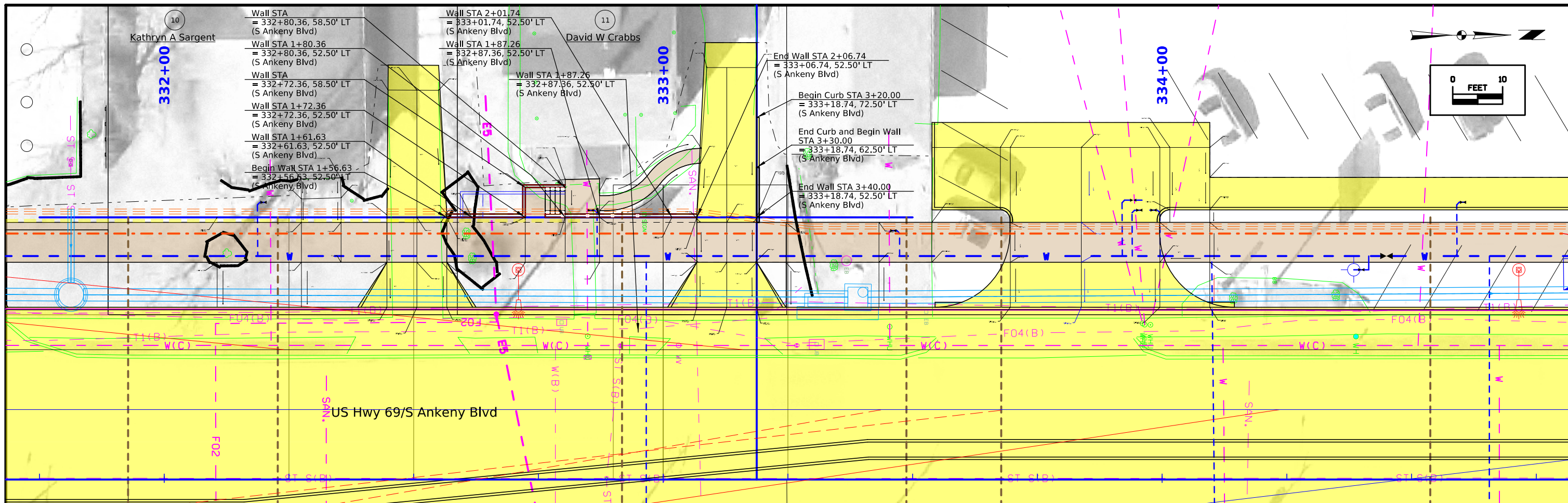
R3-5L 30" X 36"	R3-5R 30" X 36"
(A)	(B)
STREET NAME SIGN (C)	

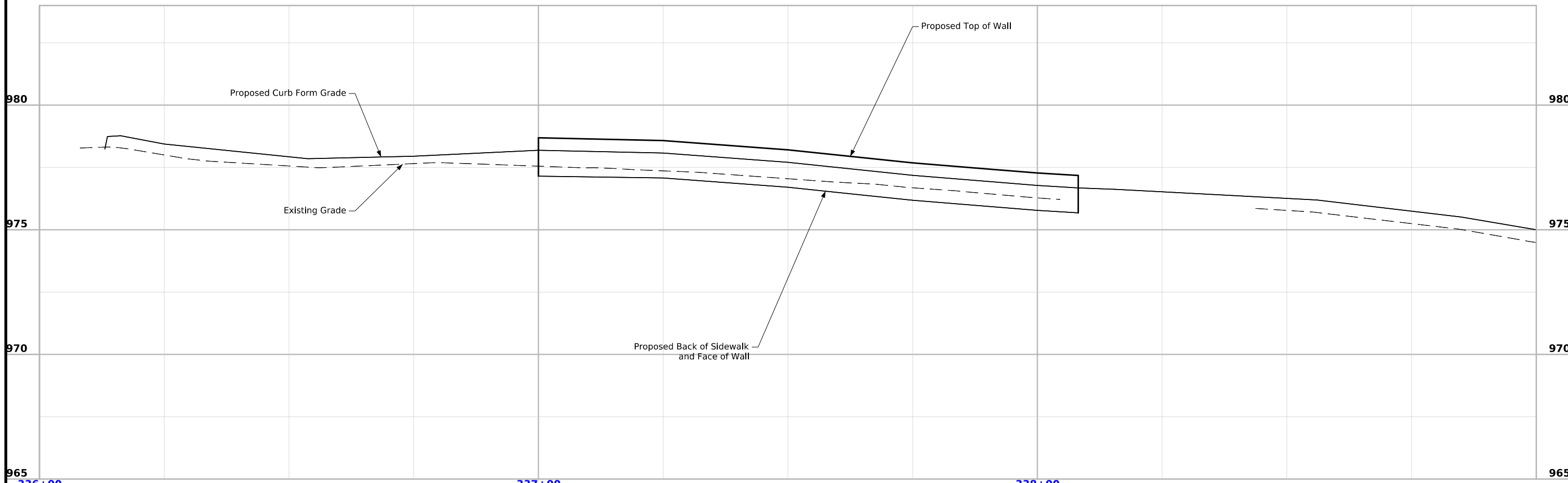
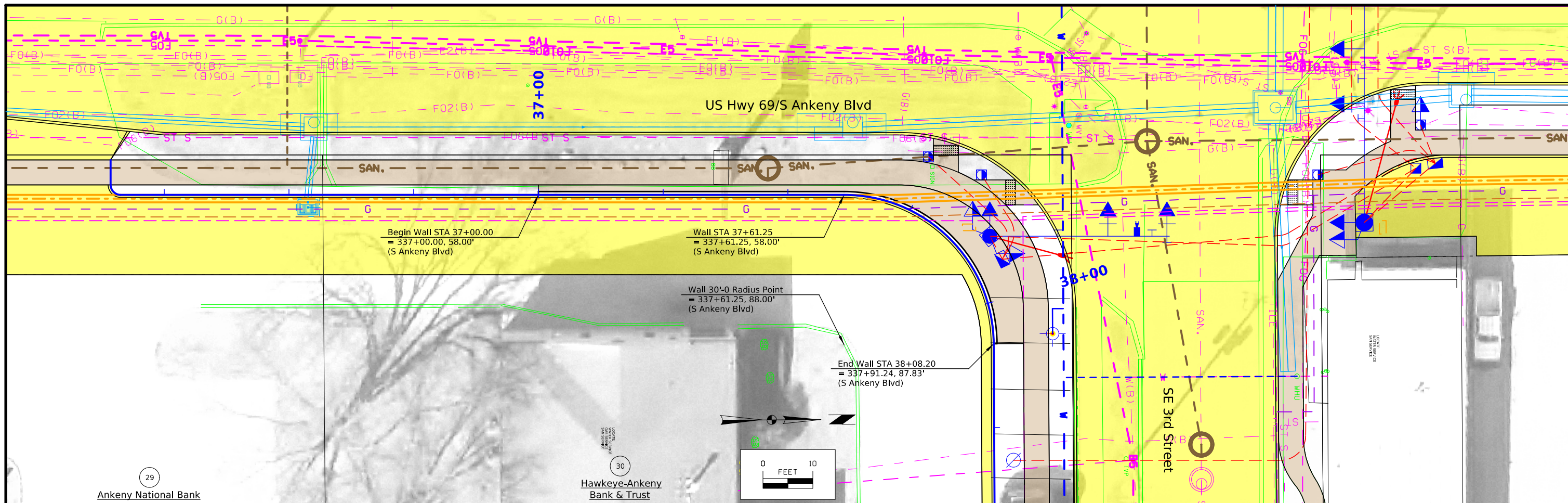
- TEMPORARY SIGNAL NOTES (ALL STAGES):**
- EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNALS (OR A COMBINATION THEREOF WHICH PROVIDES ALL NECESSARY SIGNAL INDICATIONS) SHALL BE OPERATIONAL THROUGHOUT CONSTRUCTION.
 - COORDINATE TRAFFIC CONTROL CHANGES FOR EACH STAGE WITH PRIME CONTRACTOR. COORDINATE SIGNAL TIMING AND PHASING CHANGES WITH CITY OF ANKENY (LESLIE HART, 515-963-3548).
 - PROVIDE NEW AUTOSCOPE VIDEO DETECTION SYSTEM TO BE USED FOR THE TEMPORARY SIGNAL STAGING AS WELL AS PERMANENT SIGNAL. COORDINATE INSTALLATION AND STAGING CHANGES WITH CITY OF ANKENY TO ALLOW FOR CITY TO ADJUST VEHICLE DETECTION ZONES.
 - TEMPORARY SIGNAL SPAN FOR SOUTHBOUND TRAFFIC IS NOT REQUIRED TO BE CONSTRUCTED UNTIL STAGE 2 (CONSTRUCTION OF EASTBOUND RIGHT TURN LANE ON ANKENY BLVD).
 - TEMPORARY SIGNAL SPANS FOR EASTBOUND AND NORTHBOUND TRAFFIC ARE NOT REQUIRED TO BE CONSTRUCTED UNTIL STAGE 3 (CONSTRUCTION OF EAST HALF OF S ANKENY BLVD).
 - IF THE EASTBOUND AND SOUTHBOUND TEMPORARY SIGNAL SPANS ARE CONSTRUCTED PRIOR THEIR REQUIRED STAGE, THEY SHOULD HAVE THE SAME SIGNAL HEADS AND SIGNS IN SIMILAR LOCATIONS AS THE EXISTING POLE FOR THAT STAGE (INCLUDING ANY TEMPORARY MODIFICATIONS).
 - PROVIDE TEMPORARY PEDESTAL POLES FOR PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS, AS NEEDED, WHEN EXISTING POLES ARE REMOVED UNTIL PROPOSED POLE INSTALLATION.

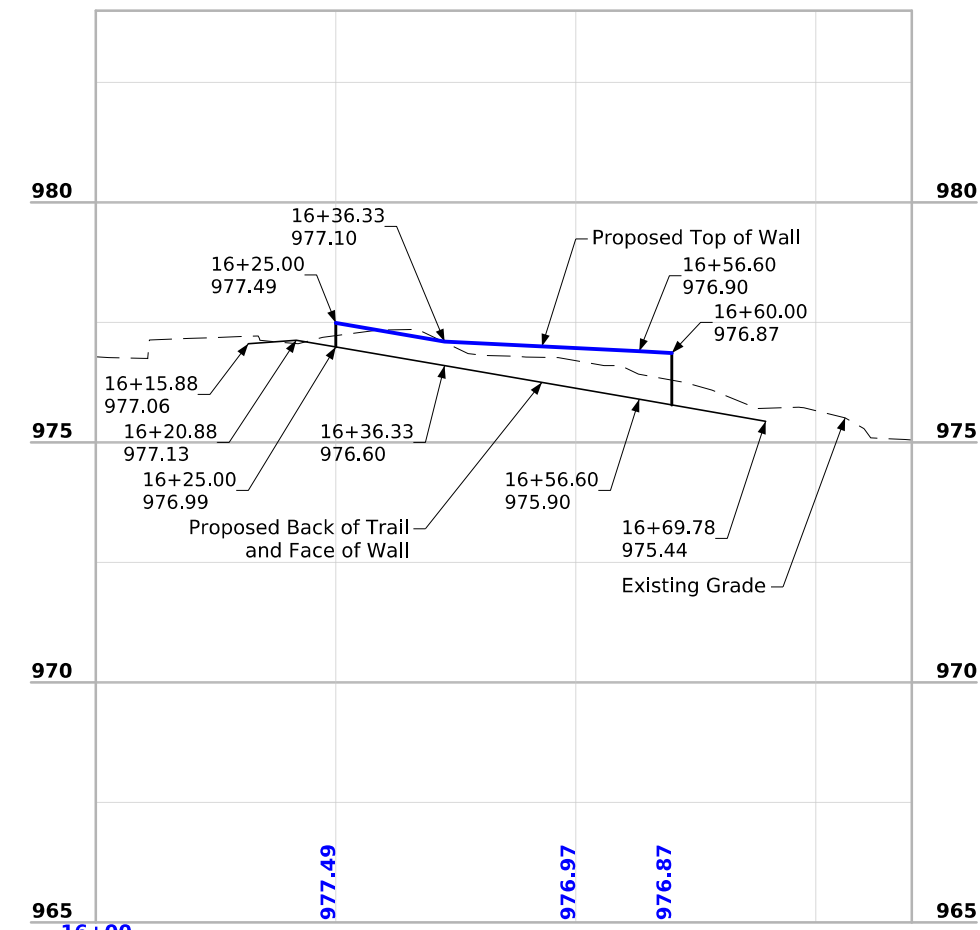
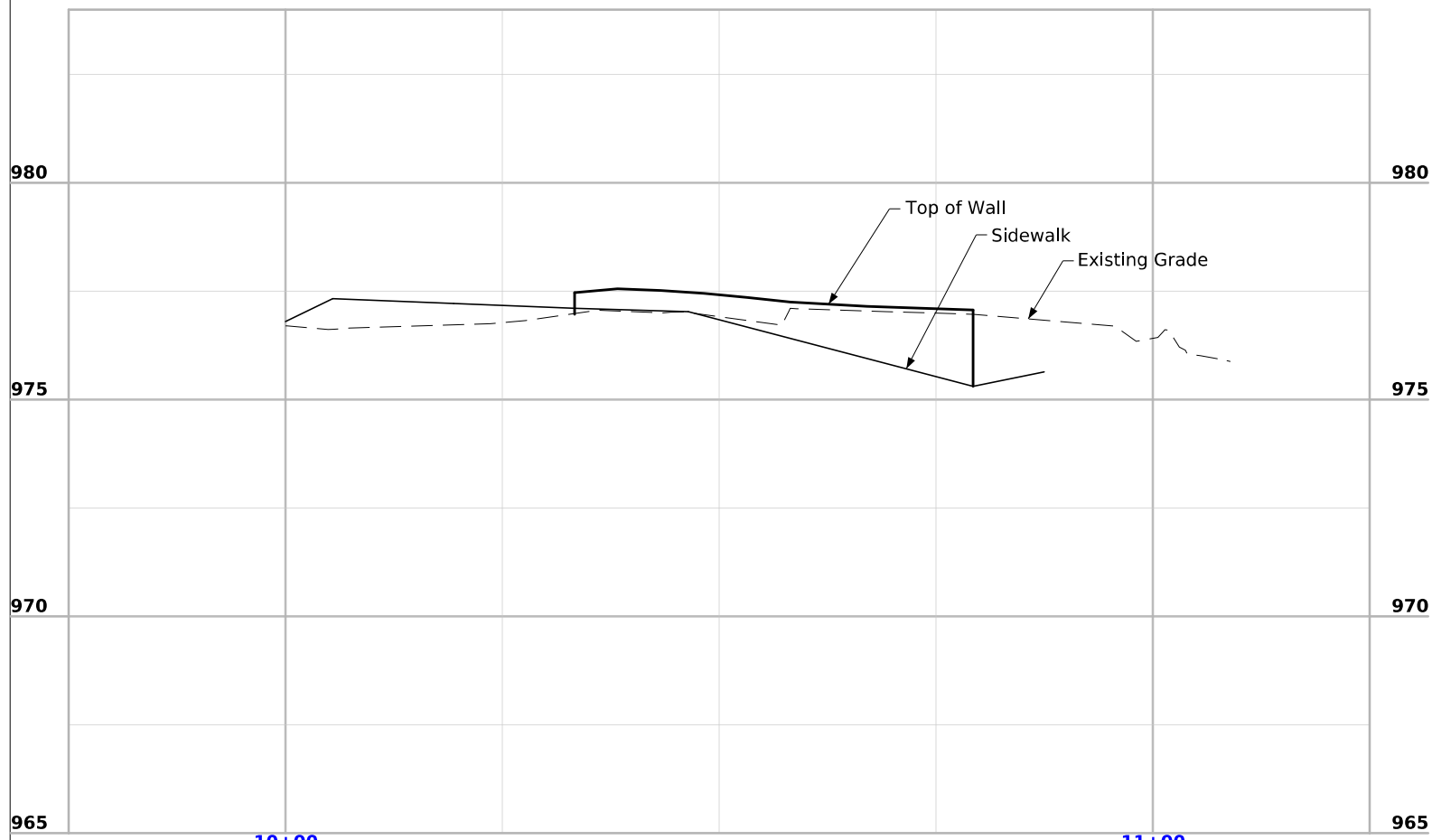
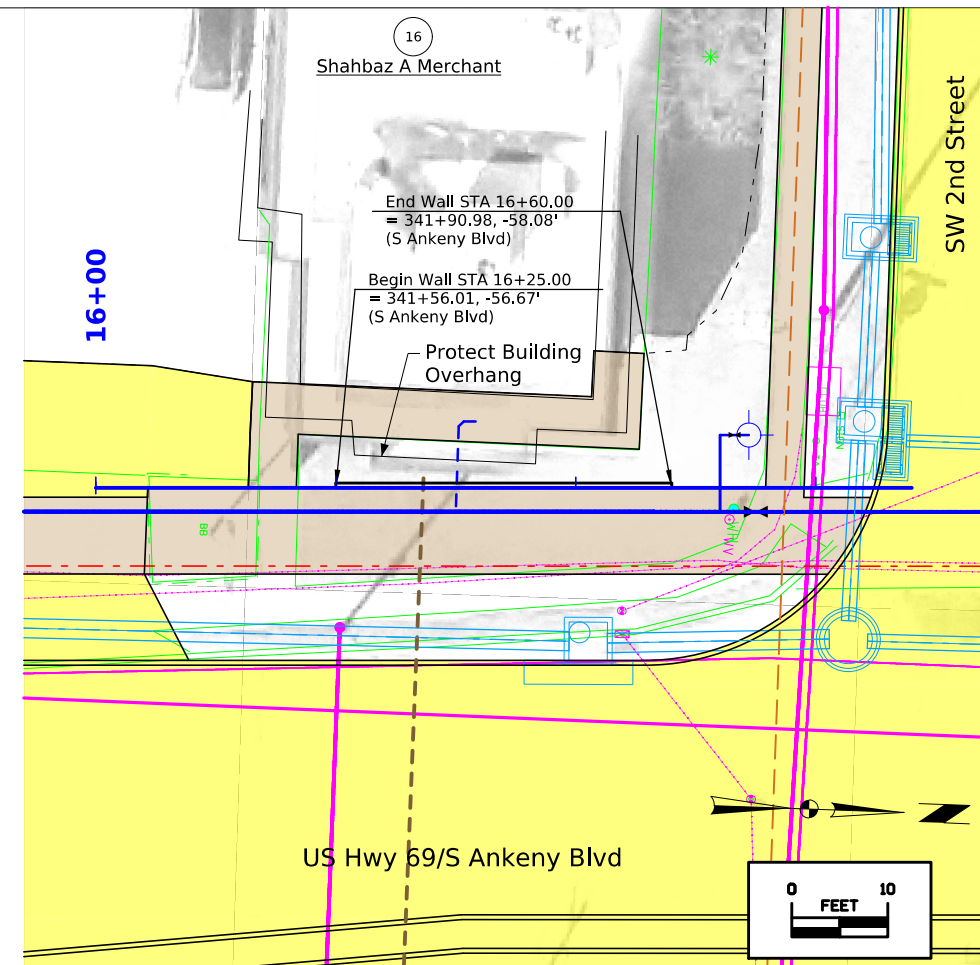
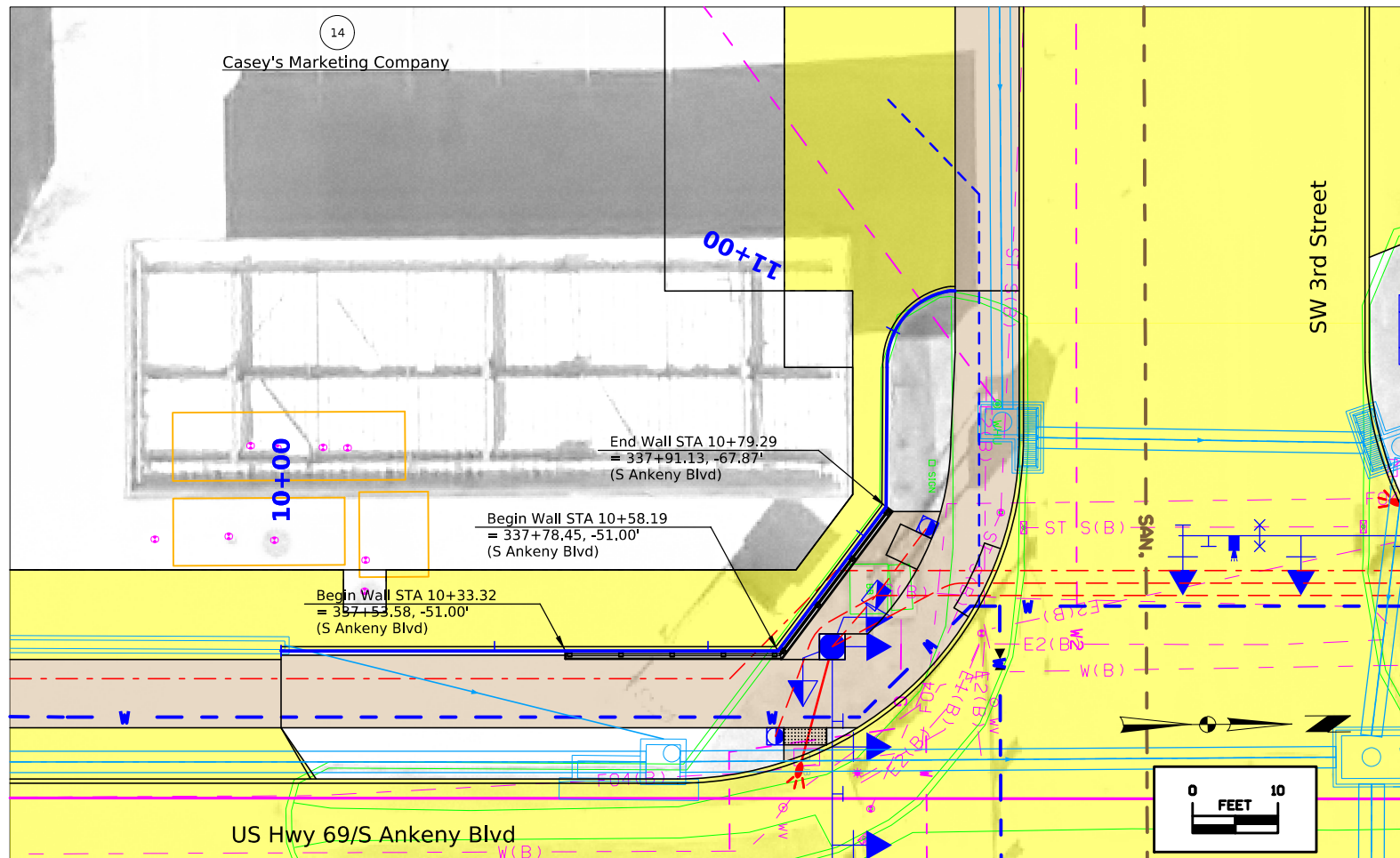
- STAGE 2 TEMPORARY SIGNAL NOTES:**
- BAG HEAD.
 - RELOCATE 4-SECTION FYA HEAD TO CURRENT RIGHTMOST 3-SECTION HEAD LOCATION. STORE EXISTING HEAD TO BE REINSTALLED AFTER TEMPORARY STAGING COMPLETE.
 - INSTALL PERMANENT 5-SECTION RIGHT TURN HEAD.
 - THIS STAGE INCLUDES SEVERAL SUBSTAGES FOR THE CONSTRUCTION OF THE EASTBOUND RIGHT TURN LANE. IT IS EXPECTED THAT NO MODIFICATIONS WILL BE REQUIRED FOR THE EASTBOUND SIGNAL INDICATIONS TO ACCOMMODATE THIS WORK.

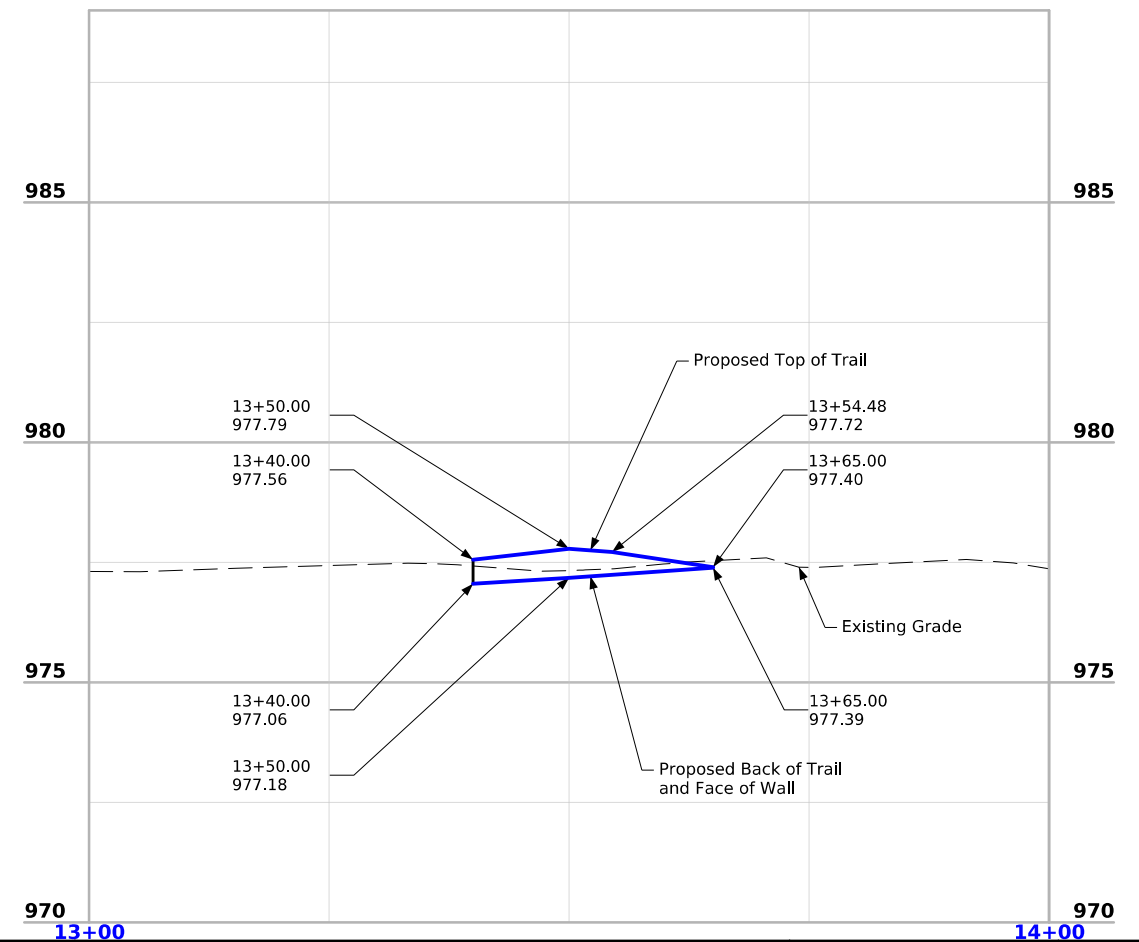
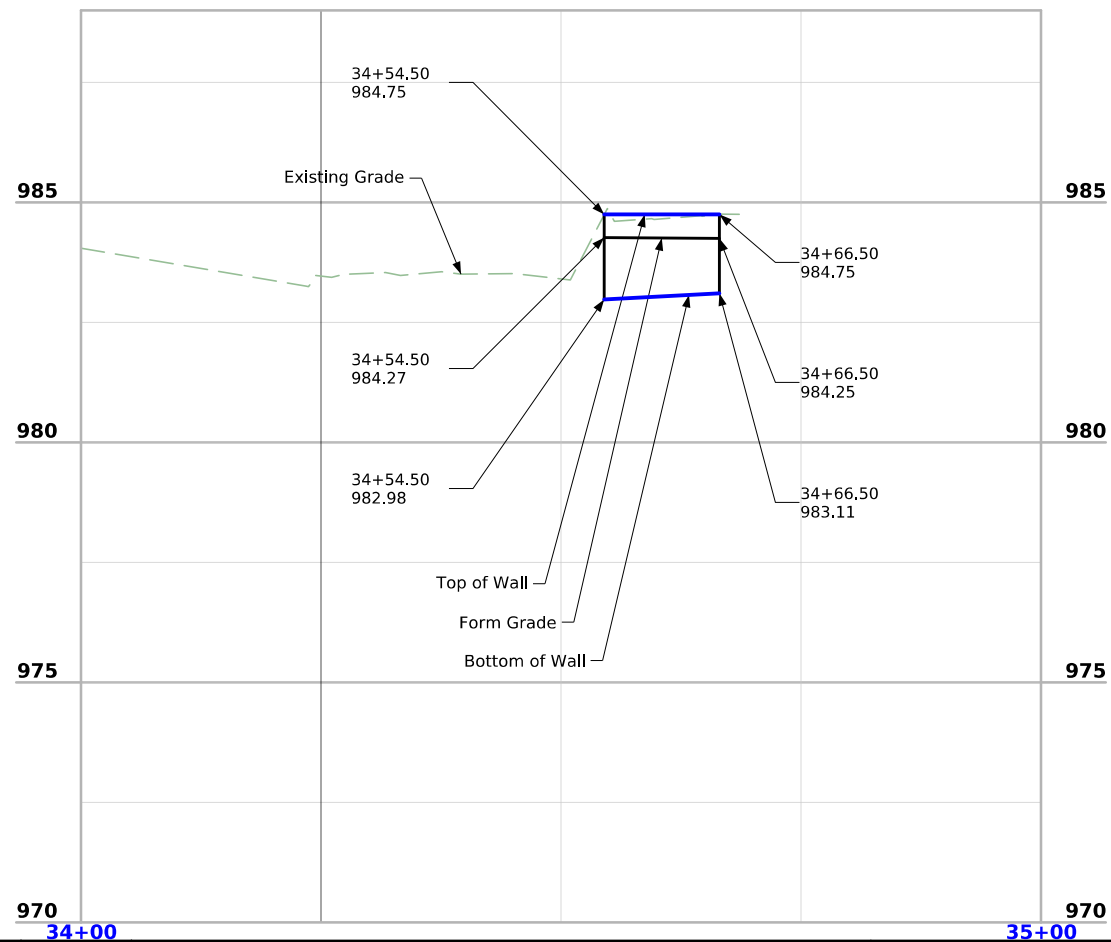
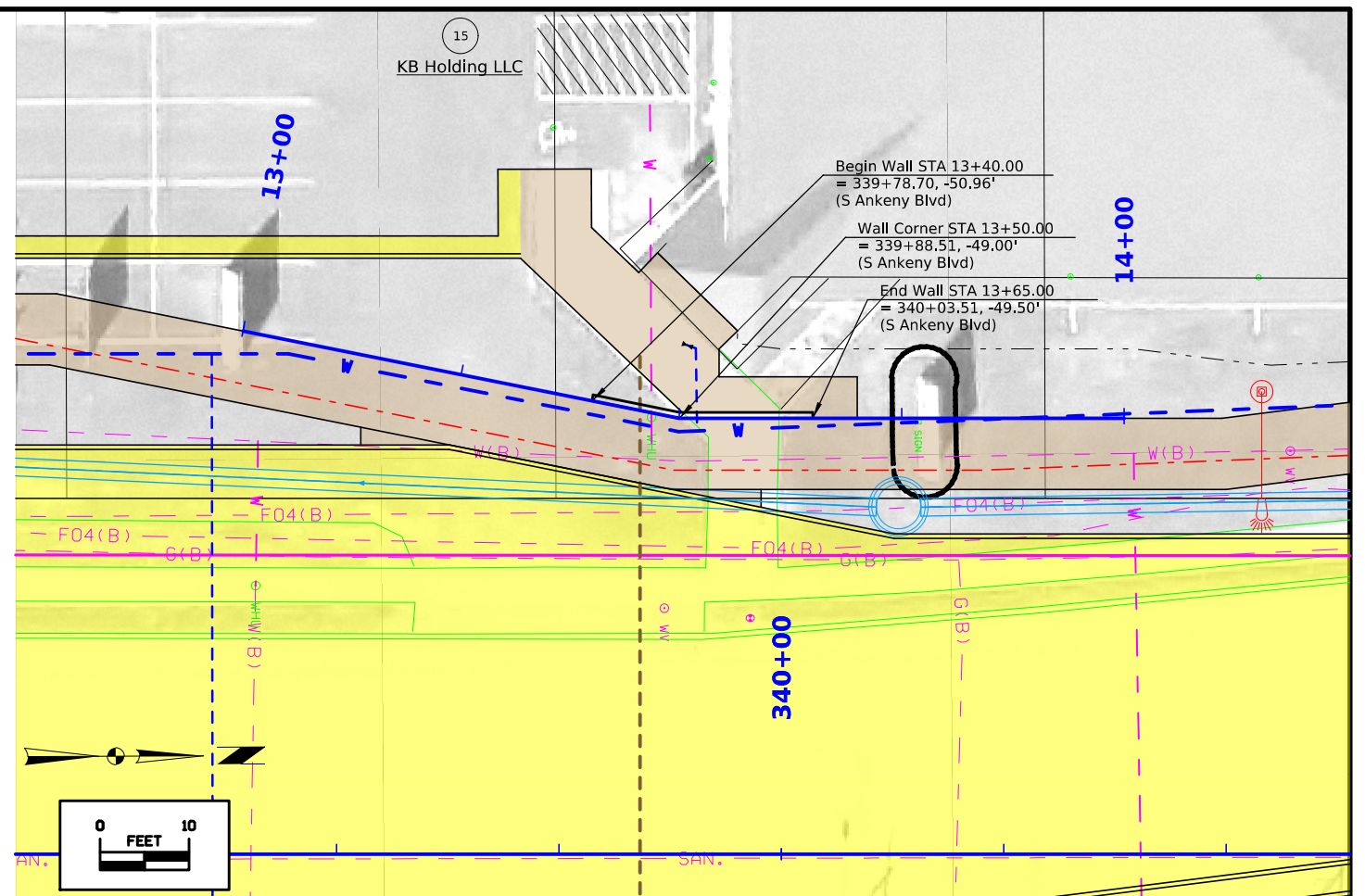
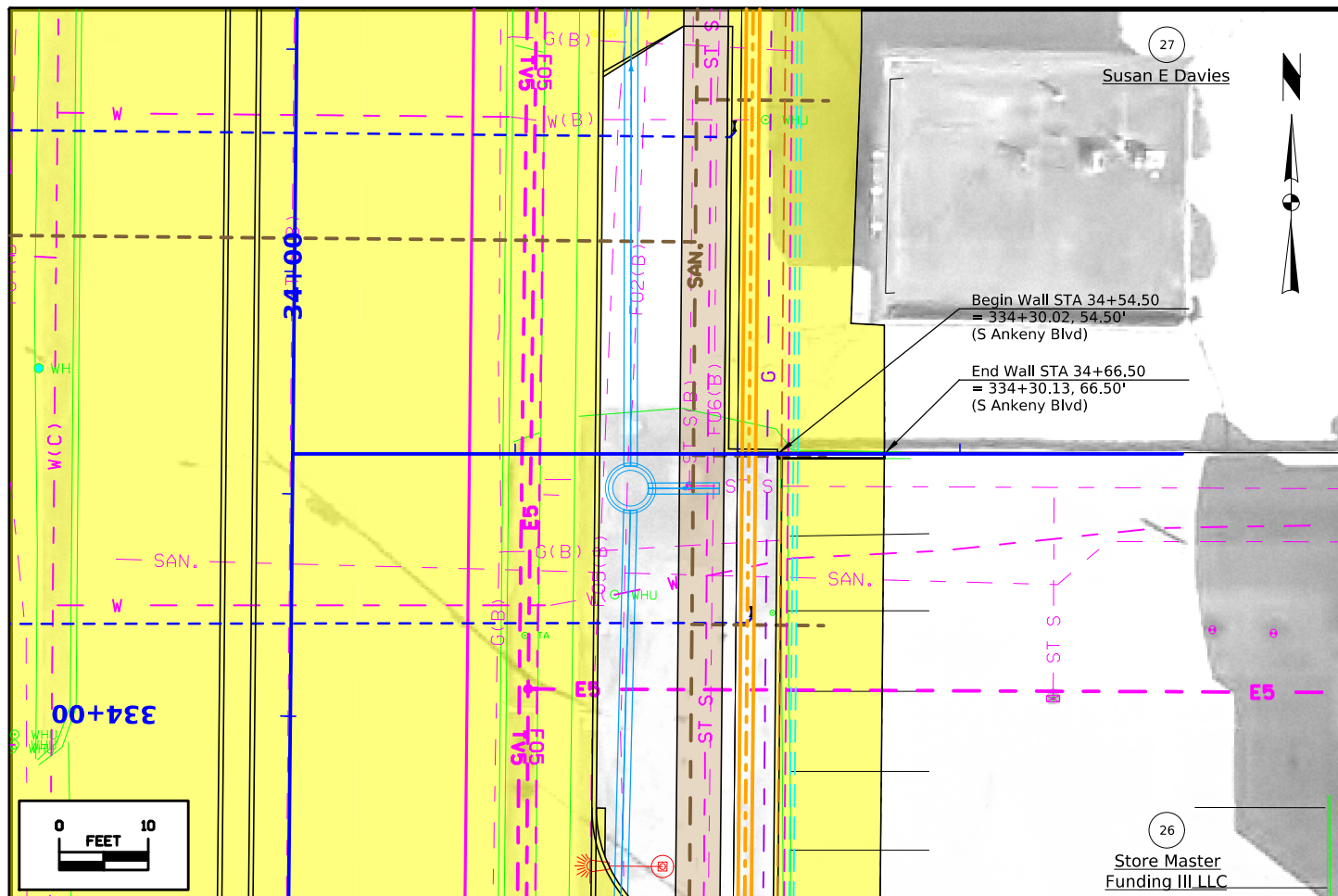
- STAGE 3 TEMPORARY SIGNAL NOTES:**
- BAG HEAD.
 - UNBAG HEAD. ANGLE TOWARD TEMPORARY NORTHBOUND LANES.
 - 4-SECTION FYA LEFT TURN HEAD ALIGNED OVER CENTER OF NORTHBOUND APPROACH LEFT TURN LANE.
 - 3-SECTION CIRCULAR HEAD ALIGNED OVER CENTER OF NORTHBOUND APPROACH THRU/RIGHT LANE.

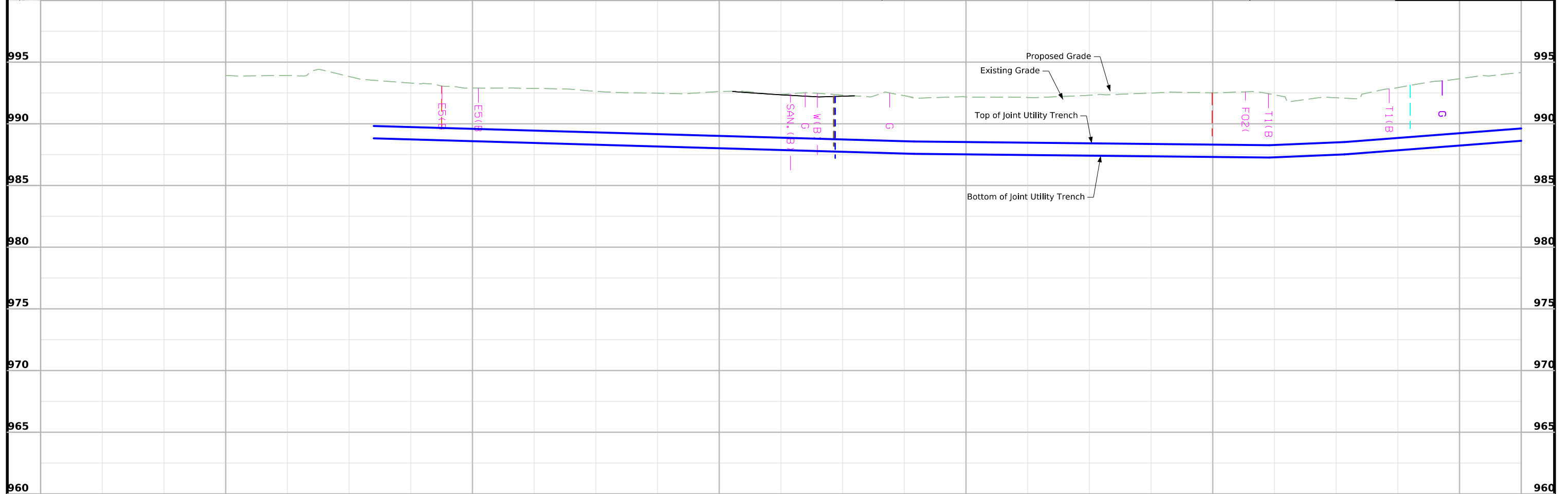
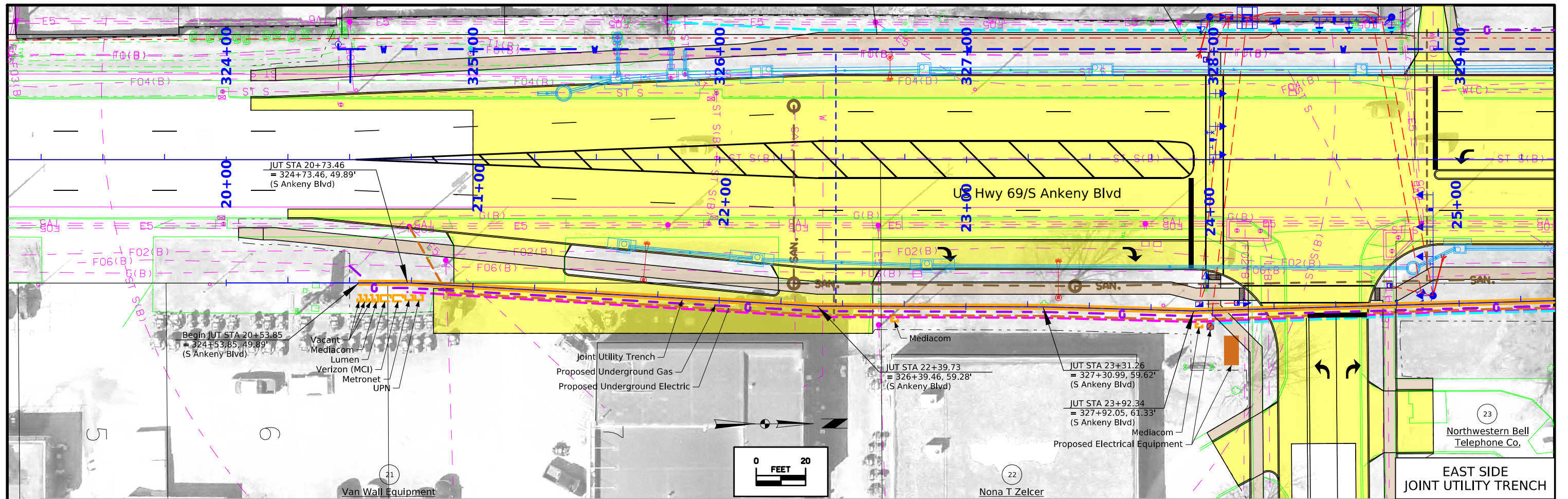
- STAGE 4 TEMPORARY SIGNAL NOTES:**
- BAG HEAD.
 - UNBAG HEAD.
 - REMOVE SIGNAL HEADS ON NORTHBOUND SPAN.
 - FOLLOWING COMPLETION OF THIS STAGE, RELOCATE 4-SECTION FYA AND REINSTALL 3-SECTION HEAD TO THEIR ORIGINAL LOCATIONS.

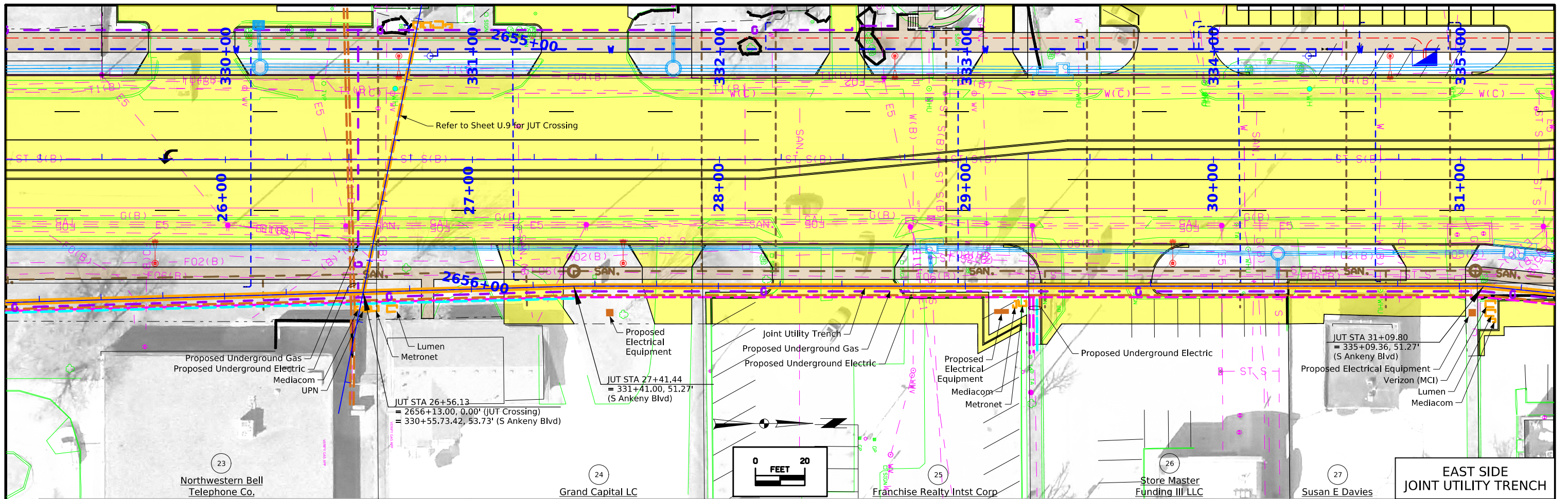




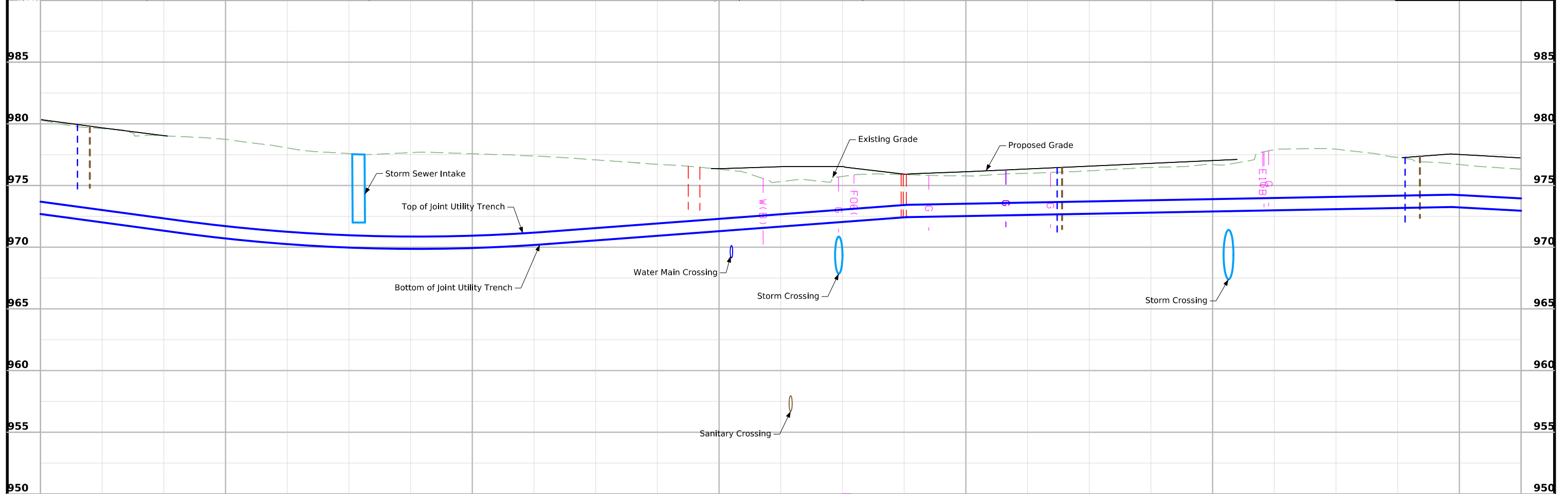
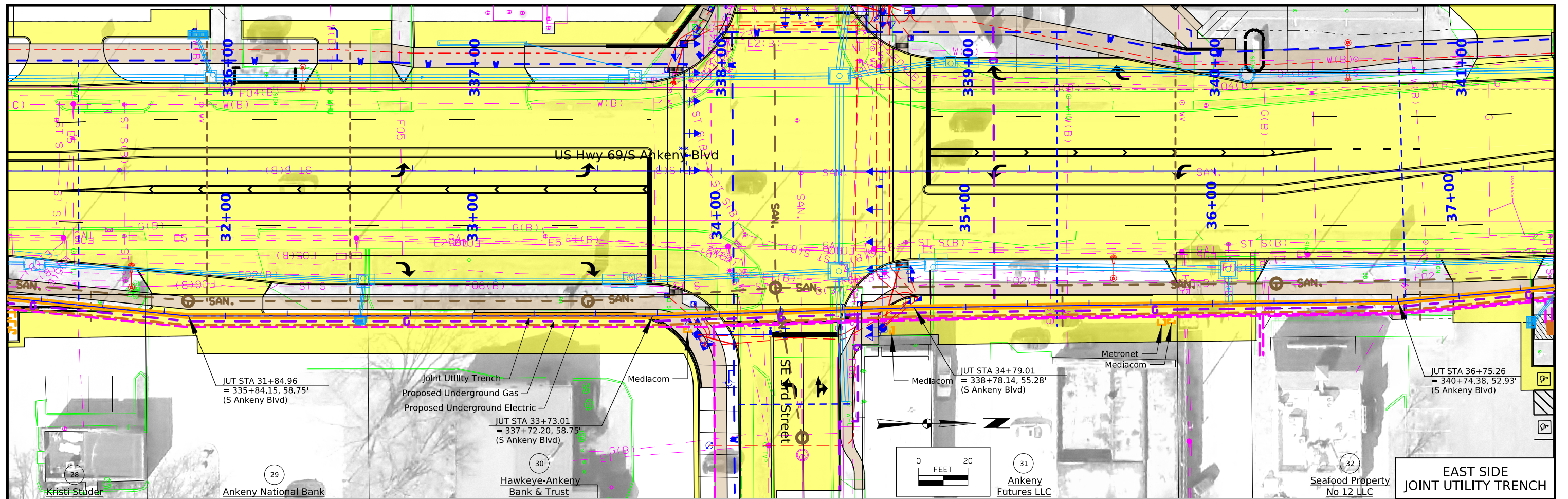




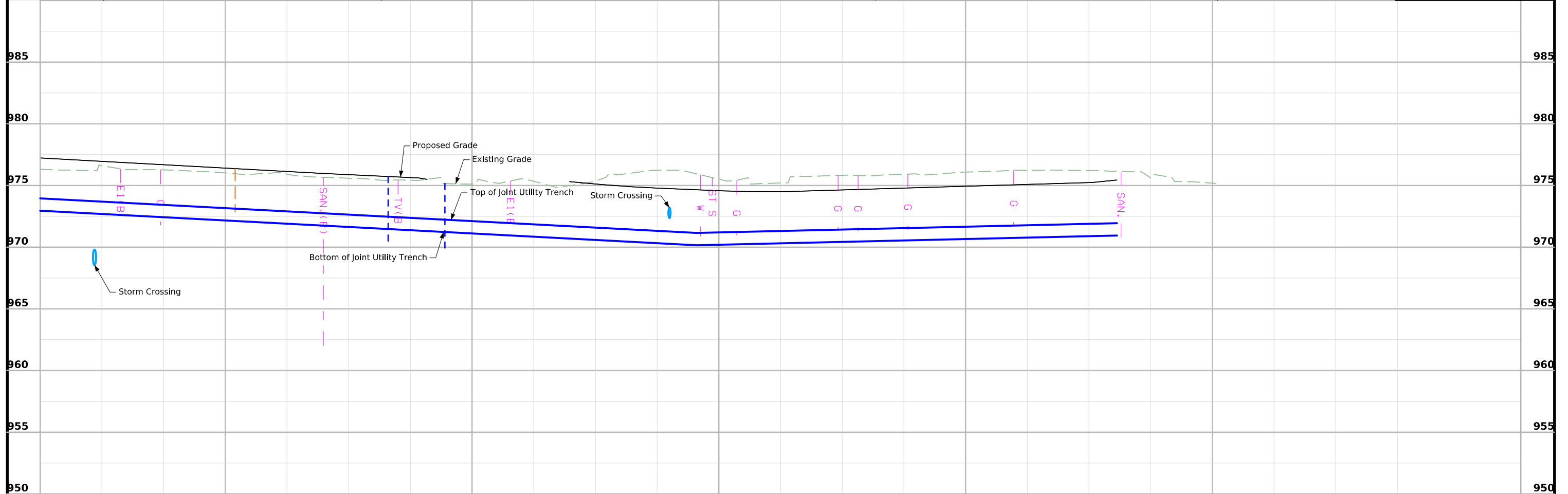
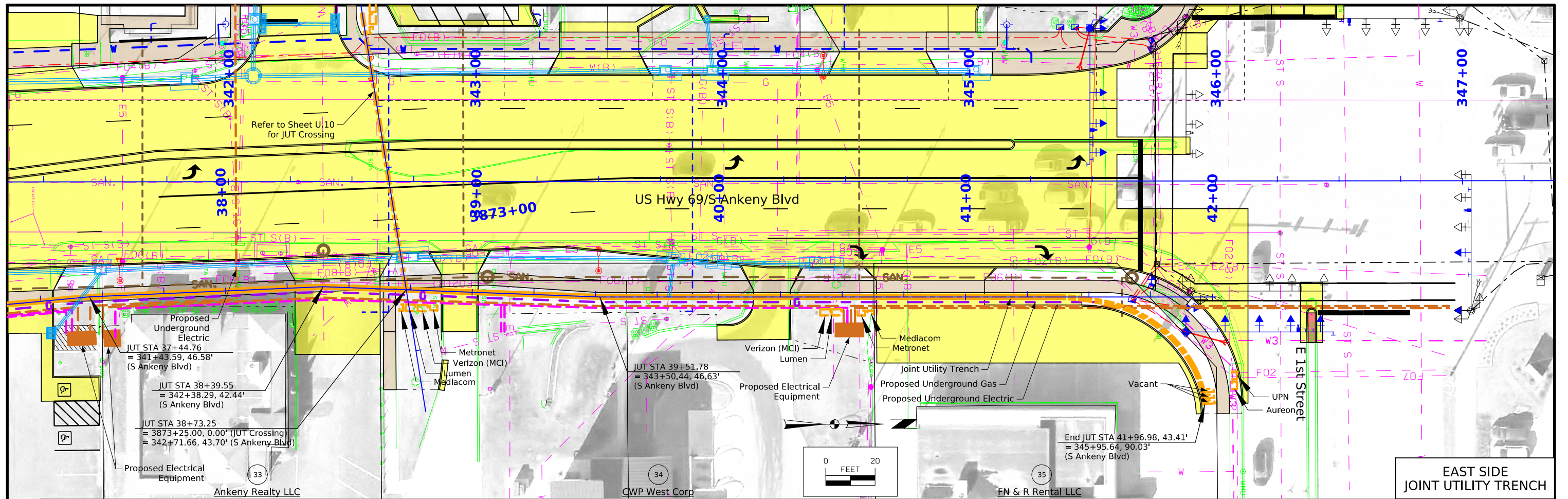


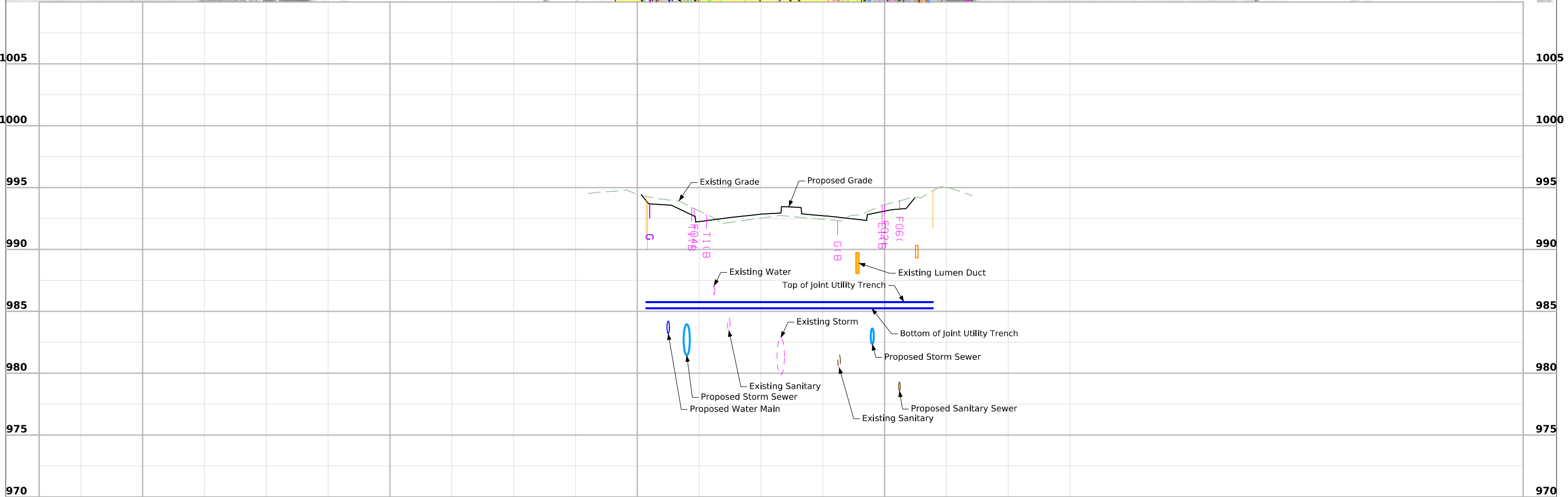
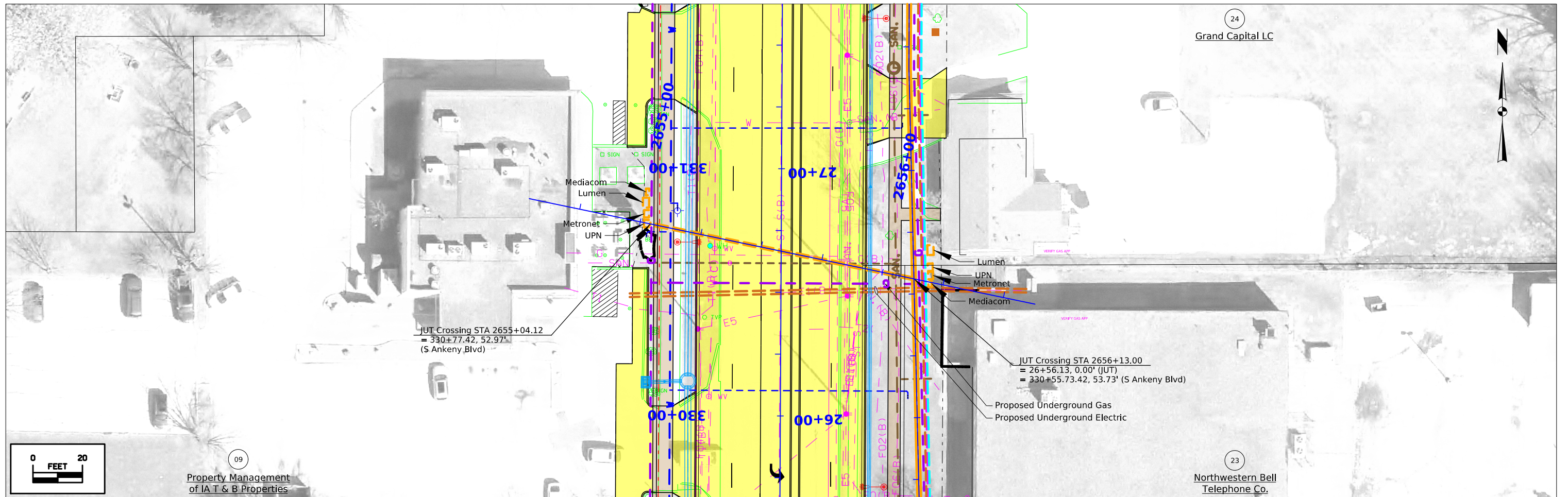


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		Snyder & Associates			NHSX-069-4(136)--3H-77	U.6

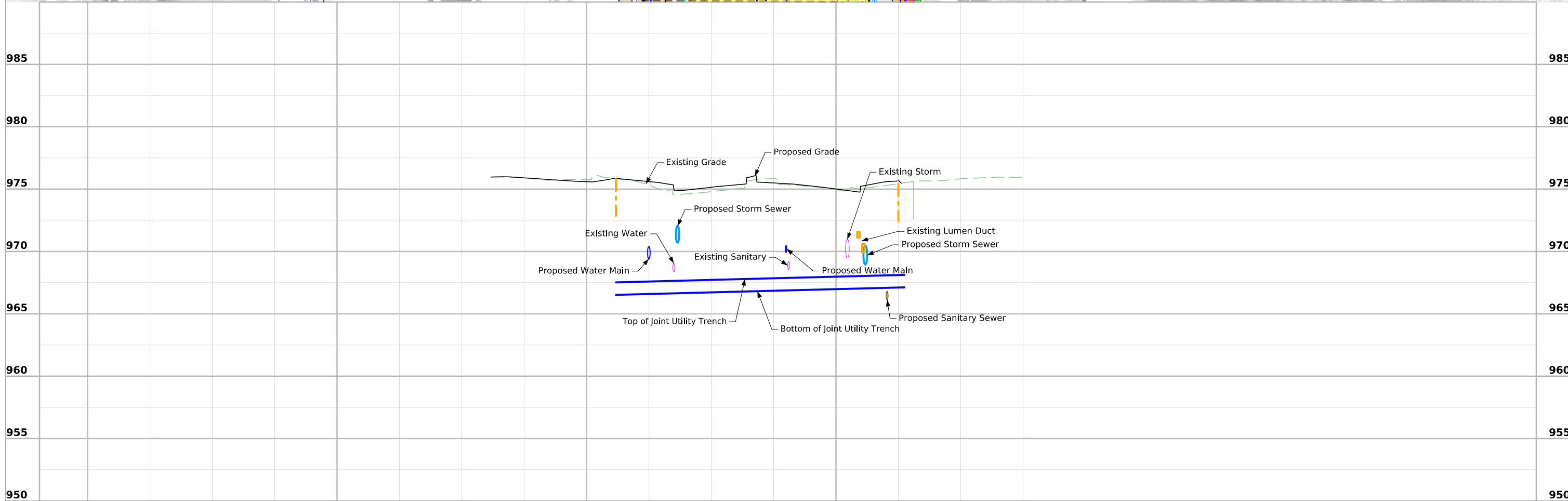
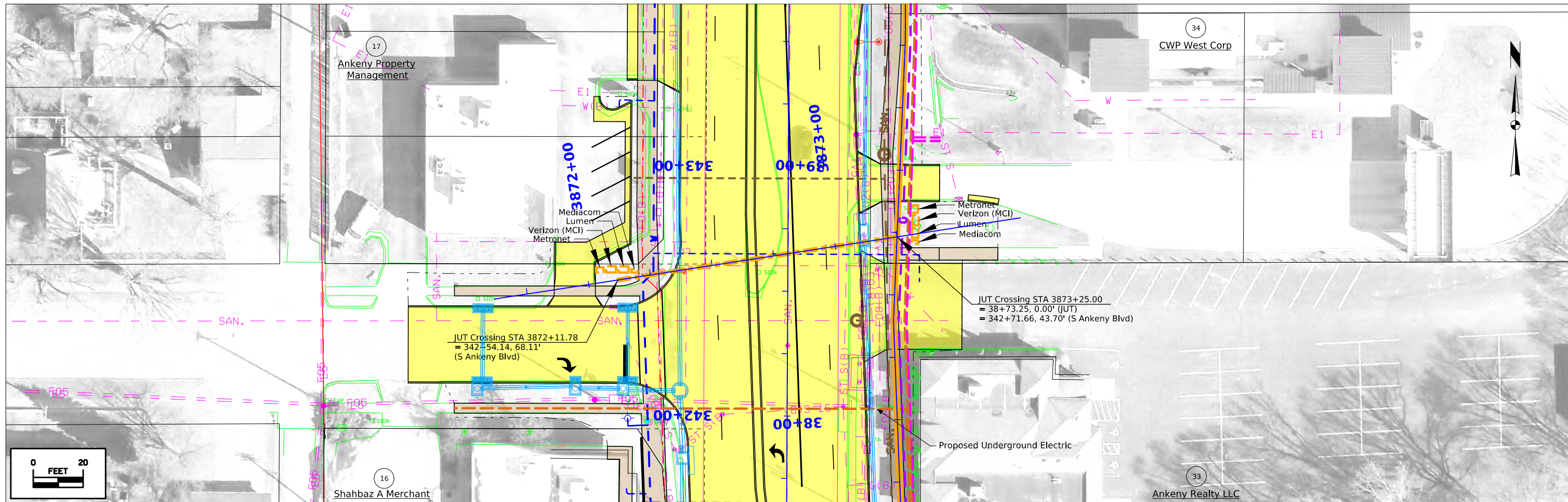


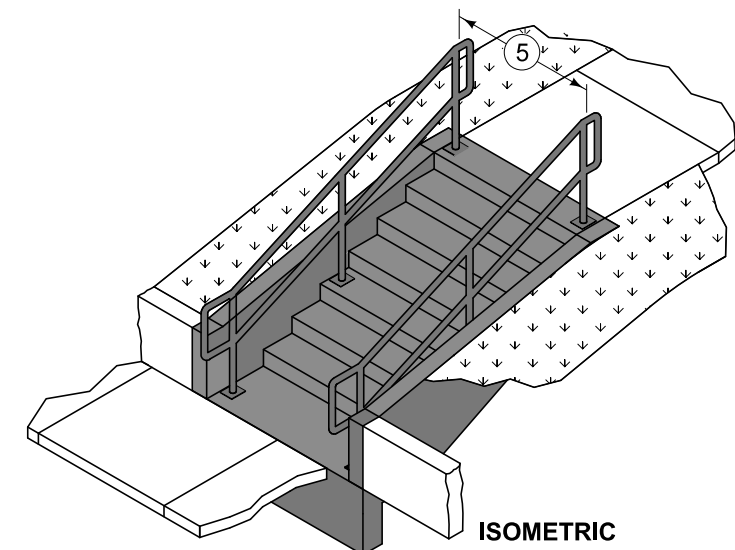
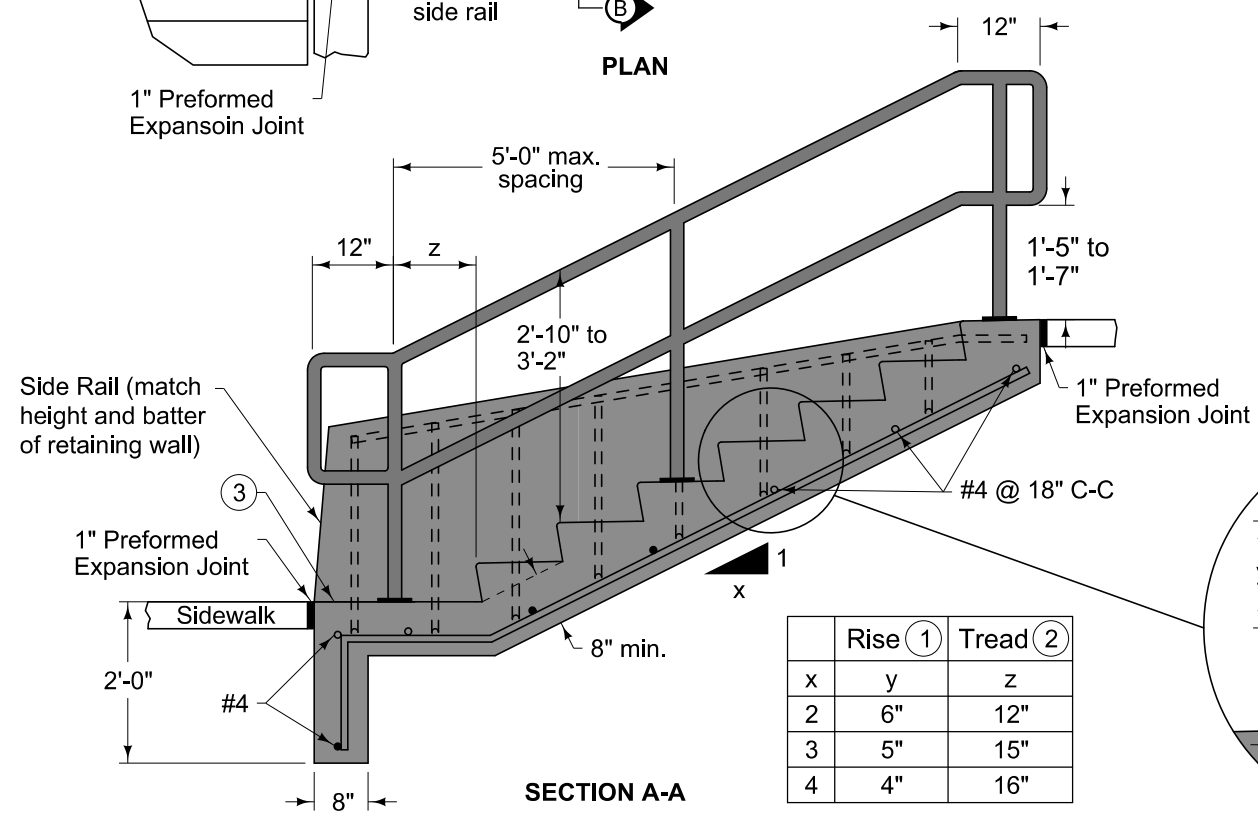
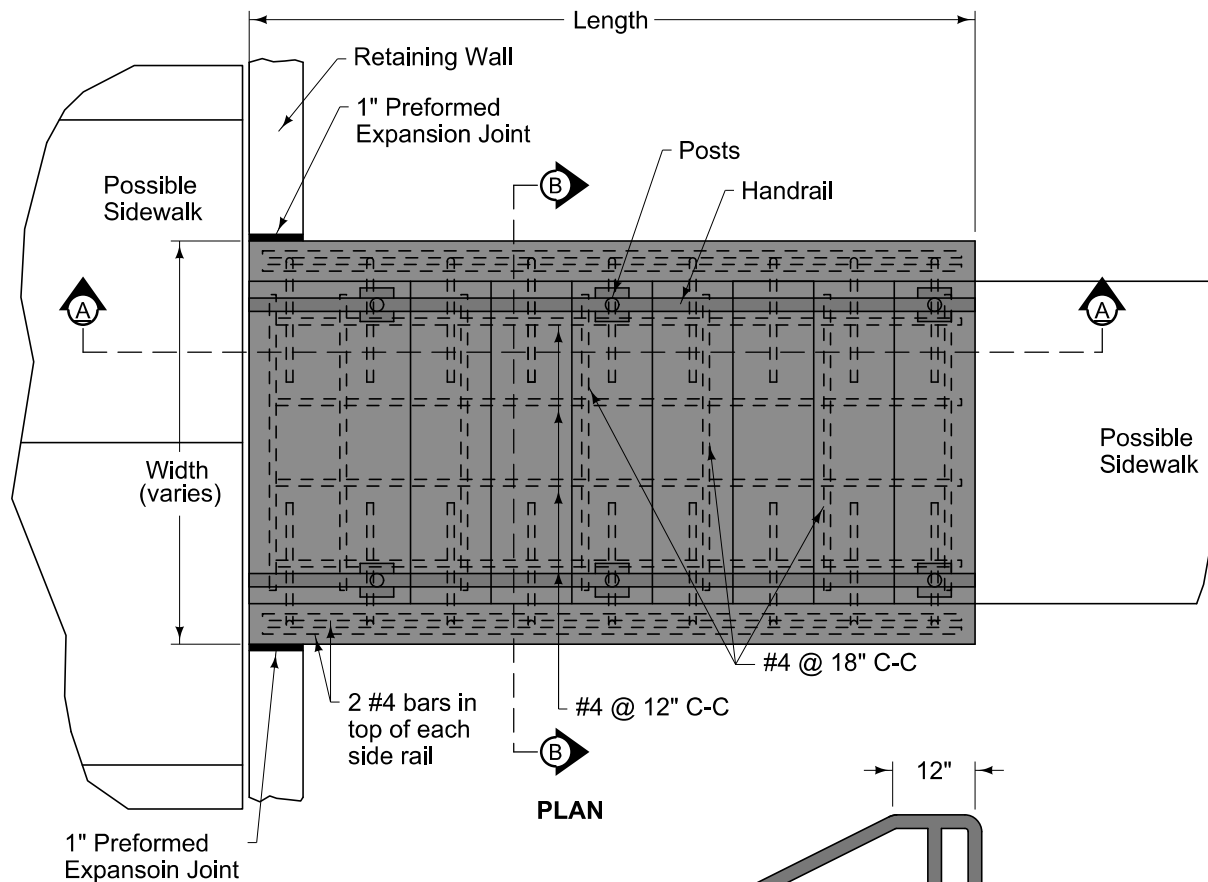
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FILE NO.	ENGLISH	DESIGN TEAM	Snyder & Associates	Polk	COUNTY	PROJECT NUMBER	NHSX-069-4(136)--3H-77	SHEET NUMBER	U.9
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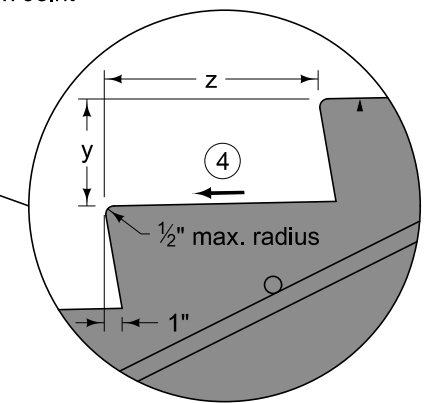




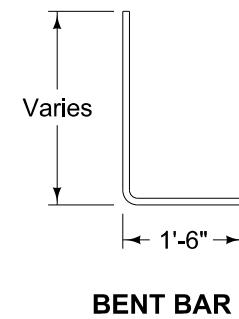
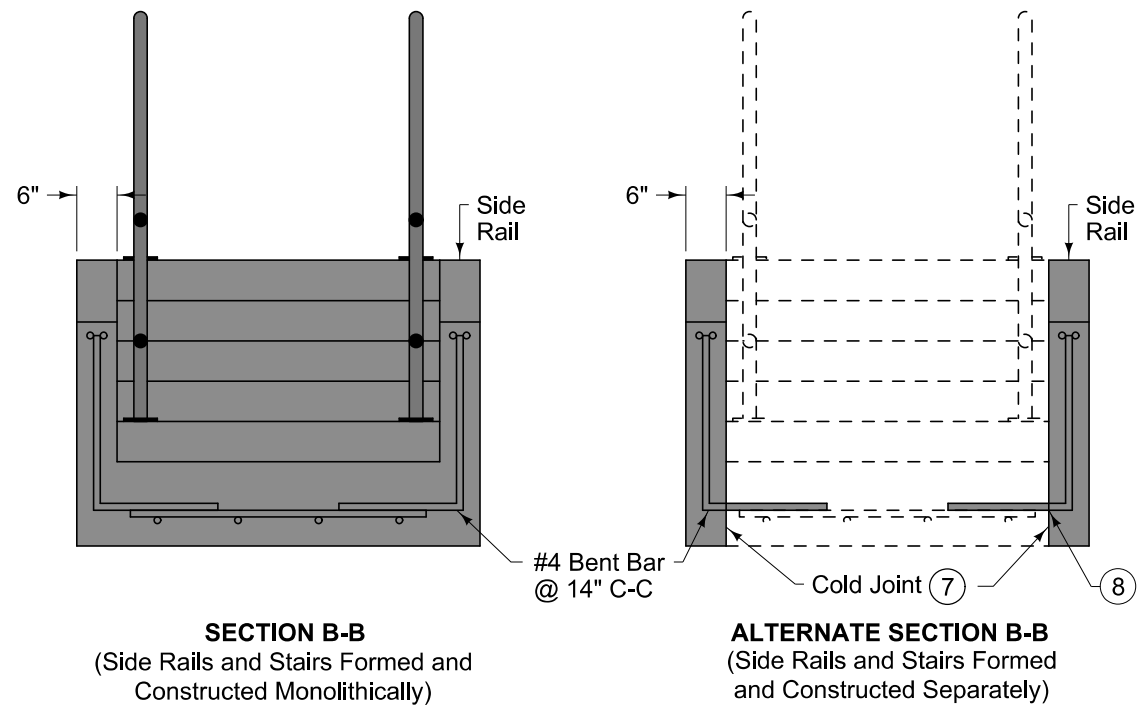
Provide a minimum of 2 inches of cover for all reinforcing.

Ensure all risers are an equal height and all treads are an equal depth within a flight of stairs.

- ① Minimum riser height is 4 inches. Maximum riser height is 7 inches.
- ② Minimum tread depth is 11 inches.
- ③ Construct cross slope of landing to match adjacent sidewalk.
- ④ Slope tread 1% minimum to 2% maximum in any direction.
- ⑤ Match existing sidewalk width.



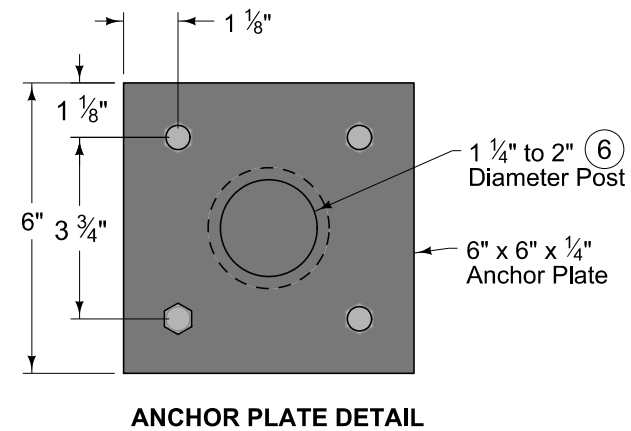
**TYPE B CONCRETE STEPS
WITH HANDRAIL
9080.102**



Provide a minimum of 2 inches of cover for all reinforcing.

Ensure all risers are an equal height and all treads are an equal depth within a flight of stairs.

- ⑥ Weld post to anchor plate with 1/4 inch weld. Grind weld to provide smooth surface, free of burrs.
- ⑦ Upon approval of Engineer, side rails may be formed and constructed separately from the stairs. Seal the cold joint between the side rail and stairs according to Section 7010.
- ⑧ If side rails and stairs are constructed separately, dowel bar substitutes may be used for the bent bars connections between the side rails and the stairs.



**TYPE B CONCRETE STEPS
WITH HANDRAIL
9080.102**

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified	(112)	Retaining Wall Face
(12)	Plowing Shaping	(112)	Retaining Wall Front Excavate
(14)	Porous Backfill	(112)	Retaining Wall Front Footing
(8)	Revetment Class A	(112)	Retaining Wall MSE Gutter
(6)	Revetment Class B	(112)	Retaining Wall Reinforced Earth
(62)	Revetment Class C		
(188)	Revetment Class D	Grading	
(28)	Revetment Class E	(8)	Behind Curb Cut
(12)	Shoulder Special Backfill	(6)	Granular
(12)	Special Backfill	(13)	Granular Back Fill
(20)	Subbase	(48)	Rock Undercut
(20)	Subbase Lower	(8)	Shoulder Earth Fill
(20)	Subbase Upper	(2)	Side Slopes
(118)	Subgrade Treatment	(226)	Side Slopes Dressing
Asphalt			
(207)	HMA Base Course	Substrata	
(207)	HMA Interim Course	(128)	Boulder Substrata
(207)	HMA Surface Course	(48)	Broken Weathered Substrata
Concrete			
(0)	Barrier Concrete	(3)	Core Out Substrata
(0)	Barrier Concrete Footing	(203)	Existing Pavement Substrata
(0)	Curb Gutter	(6)	Loam Substrata
(48)	Flowable Mortar	(80)	Rock Substrata
(0)	Median Concrete	(4)	Select Sand Substrata
(0)	PCC Pavement	(3)	Shale Substrata
(0)	Sidewalk	(10)	Topsoil Substrata
Shoulder			
(209)	Shoulder HMA	Unsuitable / Waste	
(0)	Shoulder PCC	(3)	Unsuitable Type A
(6)	Shoulder Granular	(13)	Unsuitable Type B
		(11)	Unsuitable Type C
		(3)	Waste
Existing			
(0)	Existing Pavement	Special Utility Consideration	
		(3)	Existing Lumen Duct Bank

NOTES:

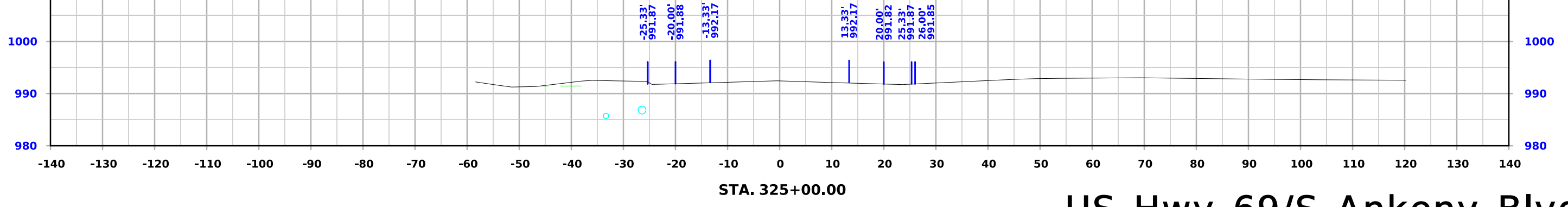
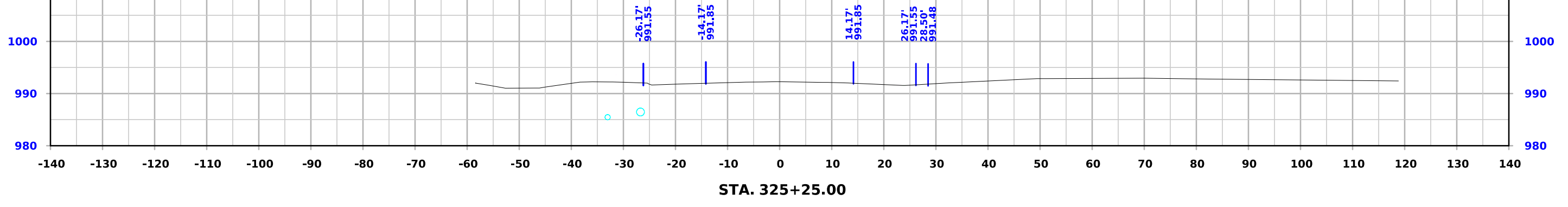
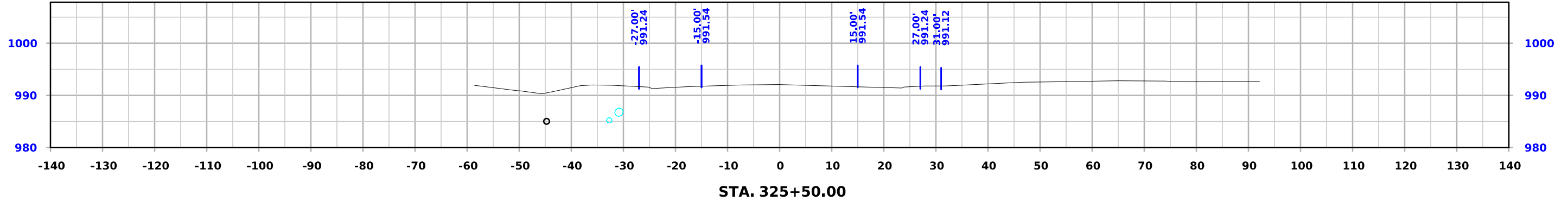
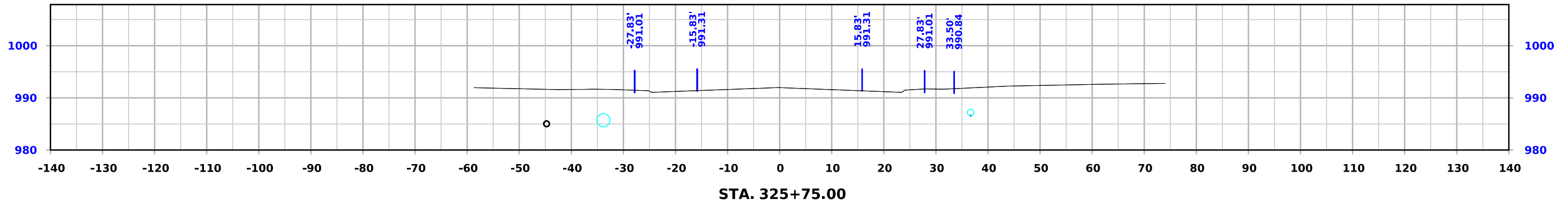
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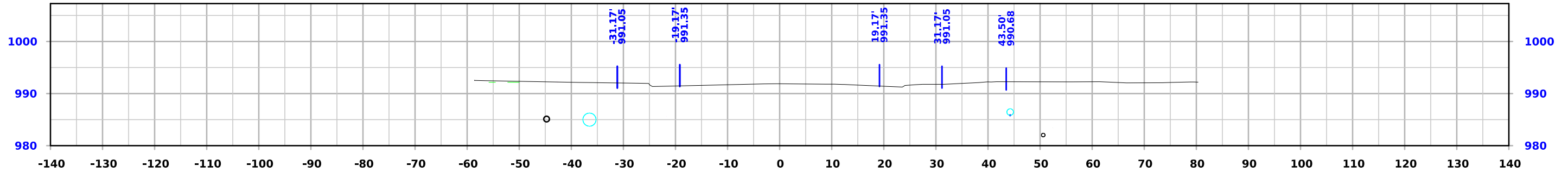
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CROSS SECTIONS LEGEND AND INFORMATION SHEET

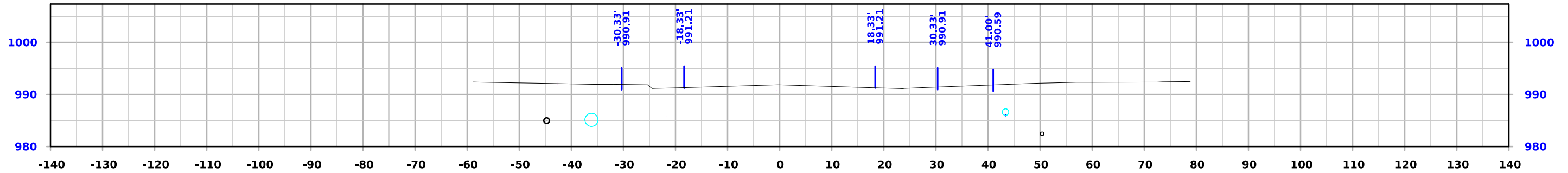
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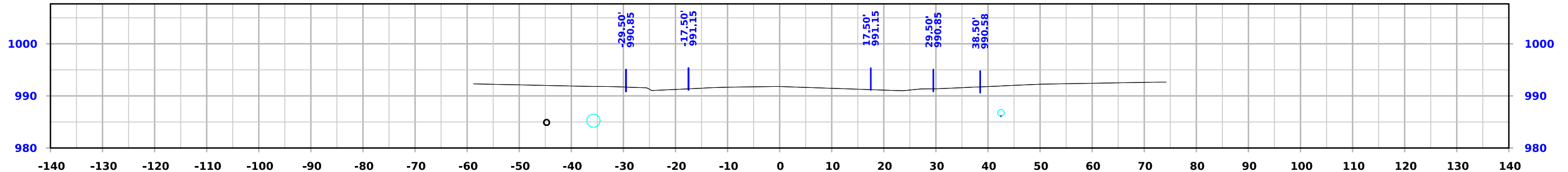
US Hwy 69/S Ankeny Blvd



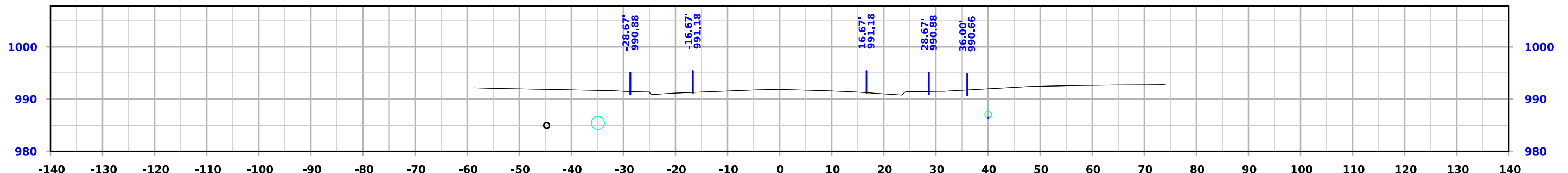
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STA. 326+50.00

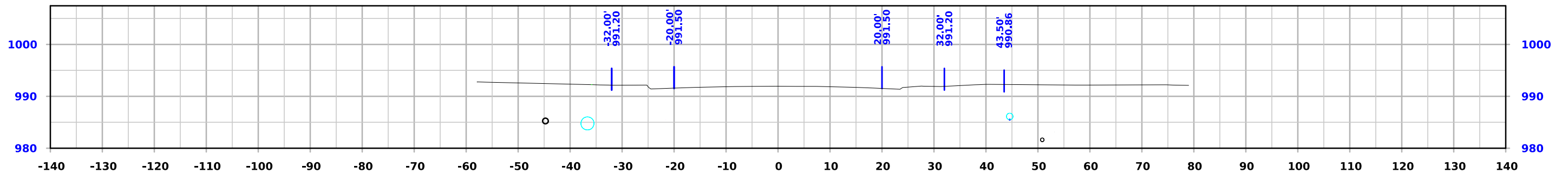
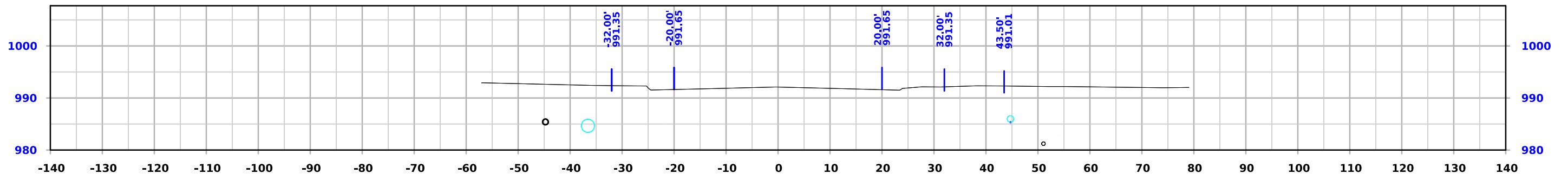
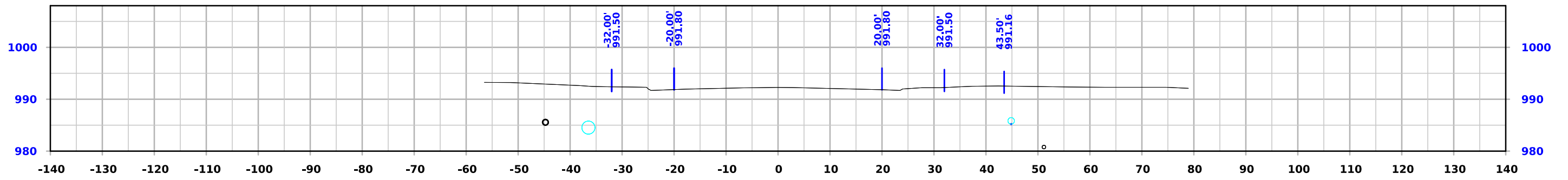
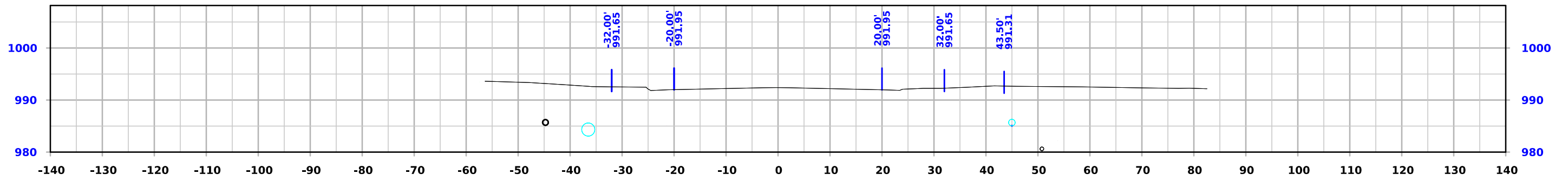


STA. 326+25.00



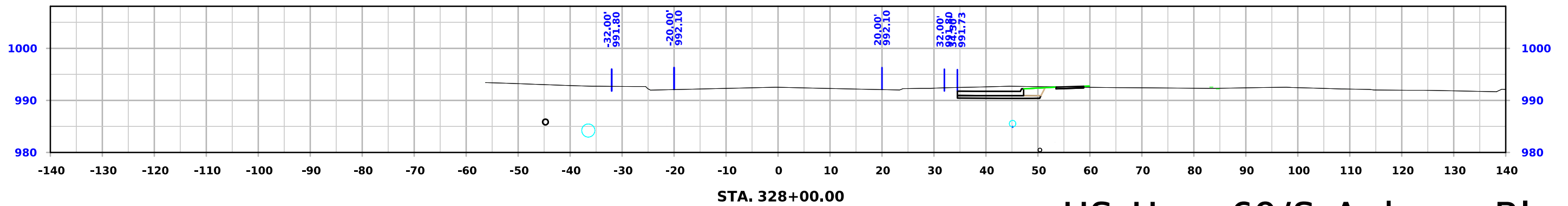
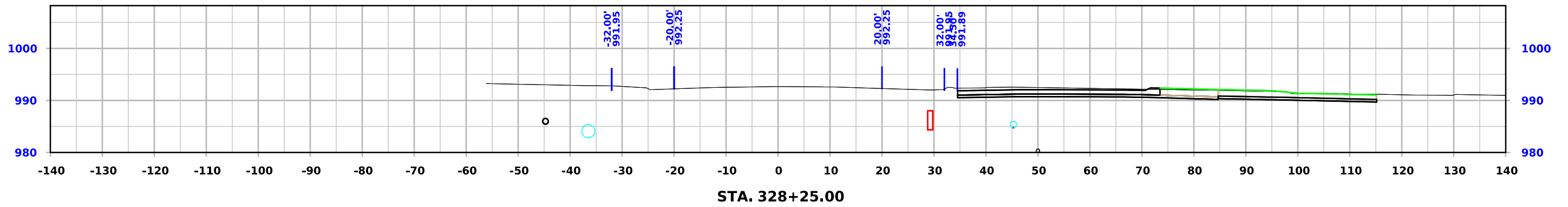
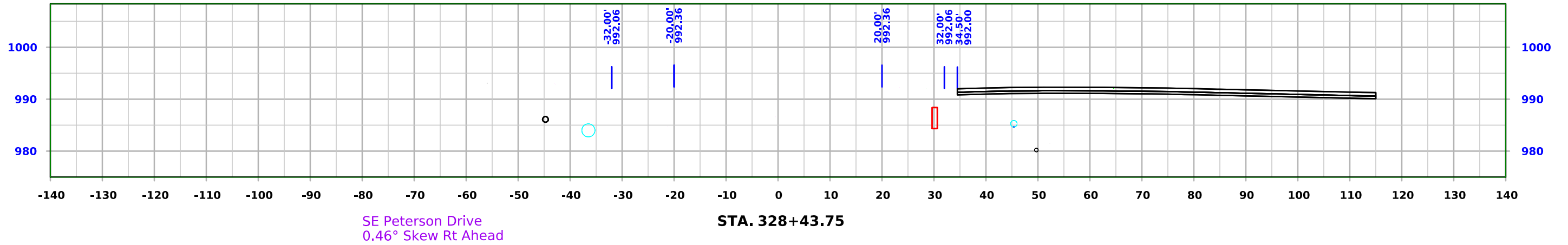
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US Hwy 69/S Ankeny Blvd



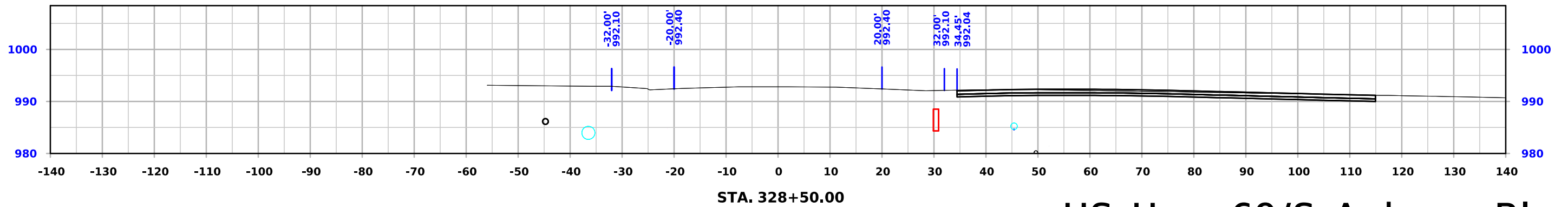
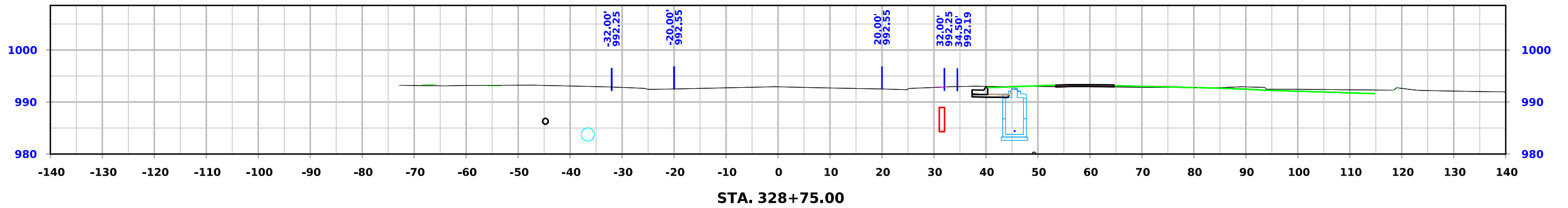
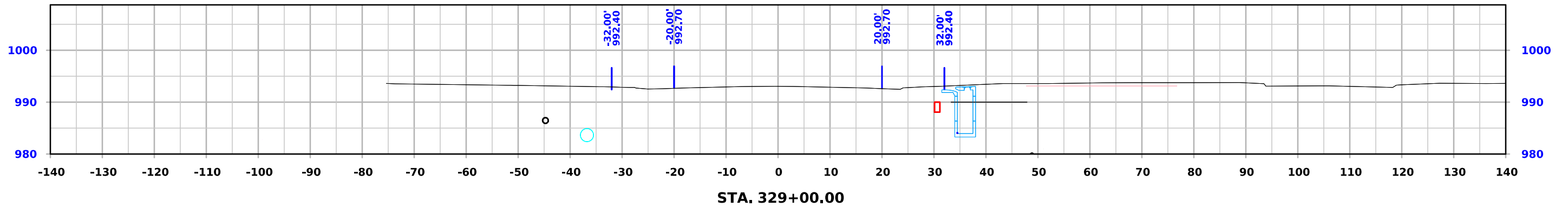
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NOTE:
LUMEN DUCT BANK. LOCATION, DIMENSION, AND ELEVATION APPROXIMATE ONLY.



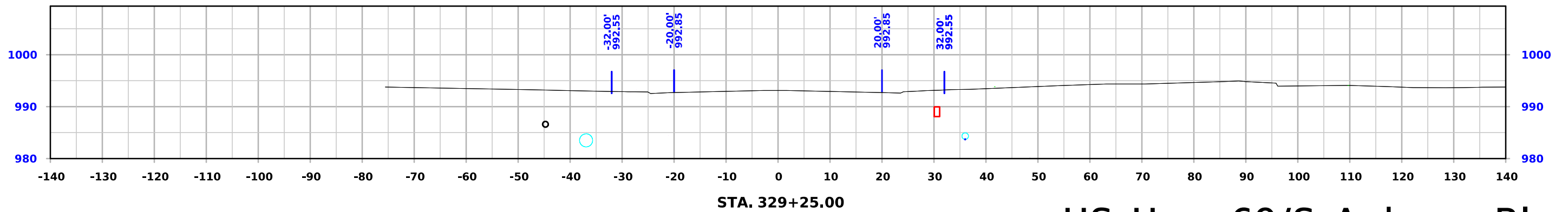
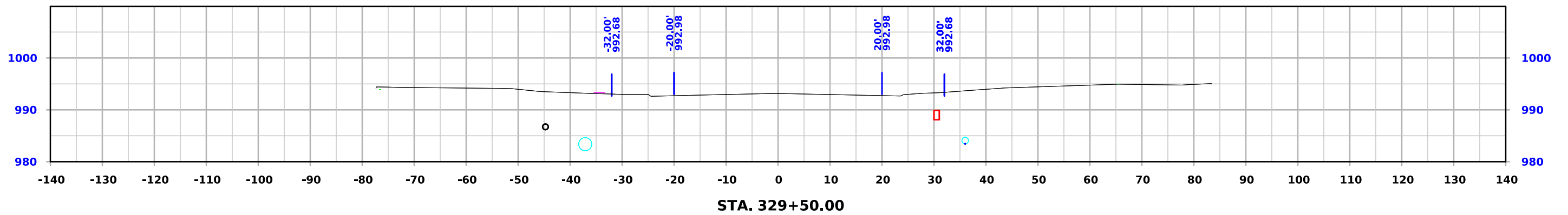
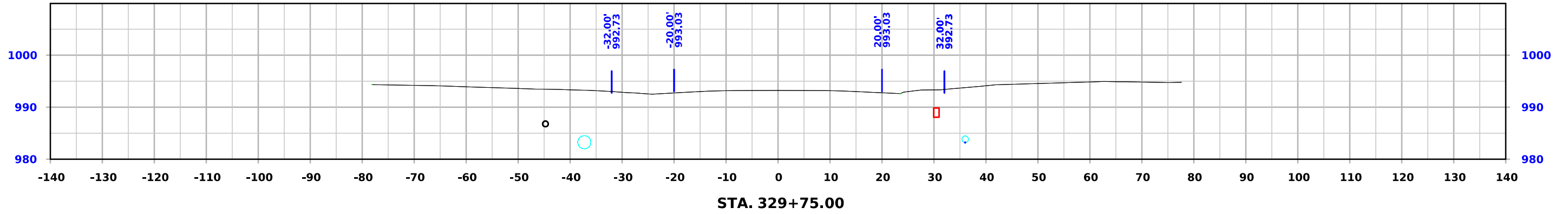
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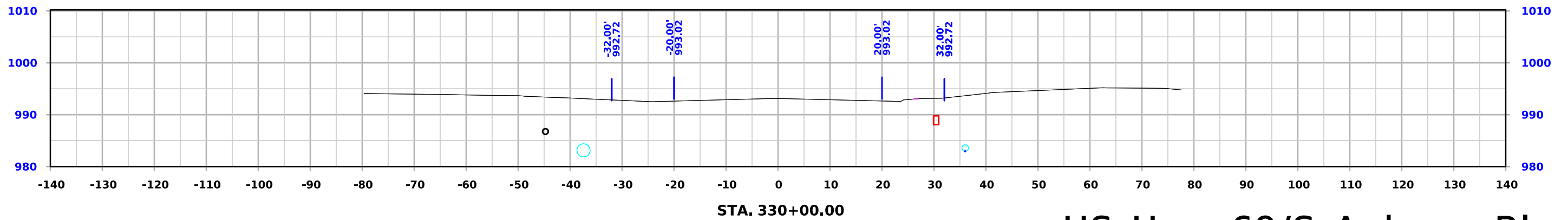
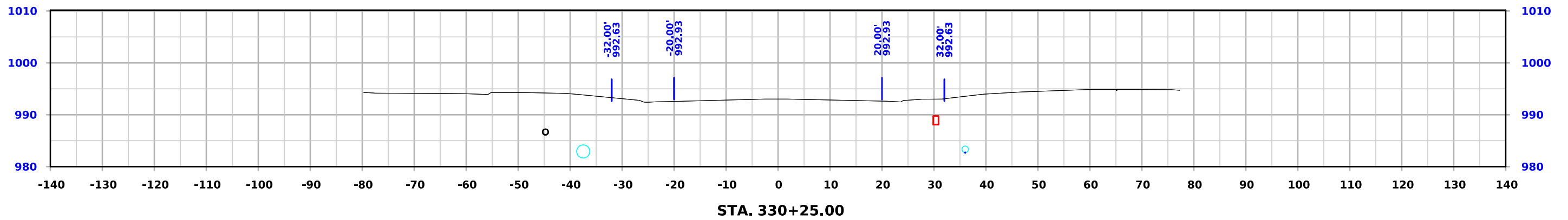
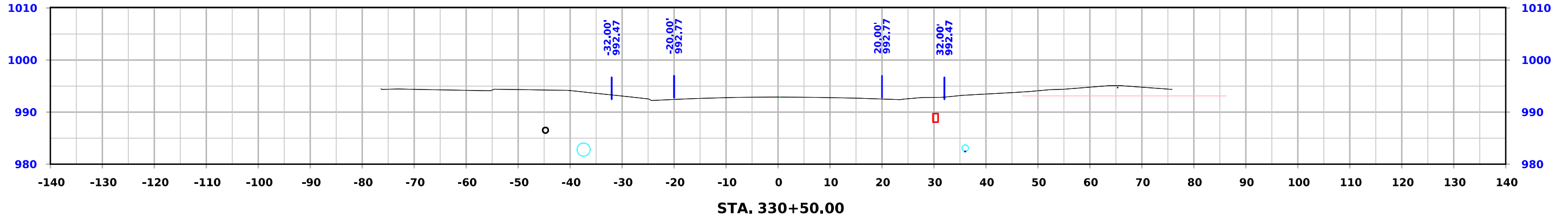
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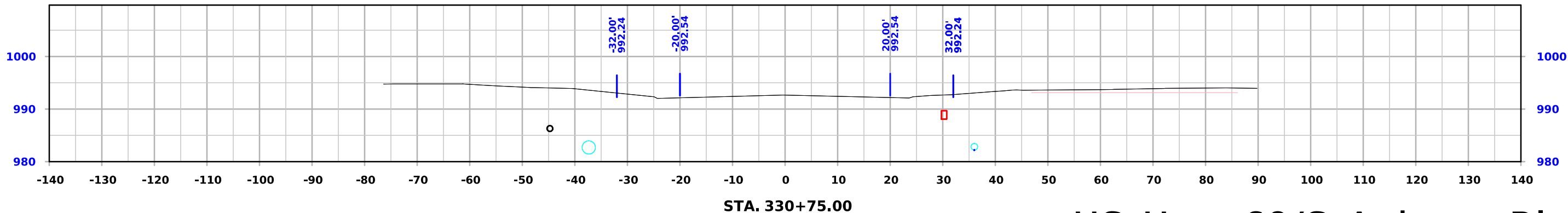
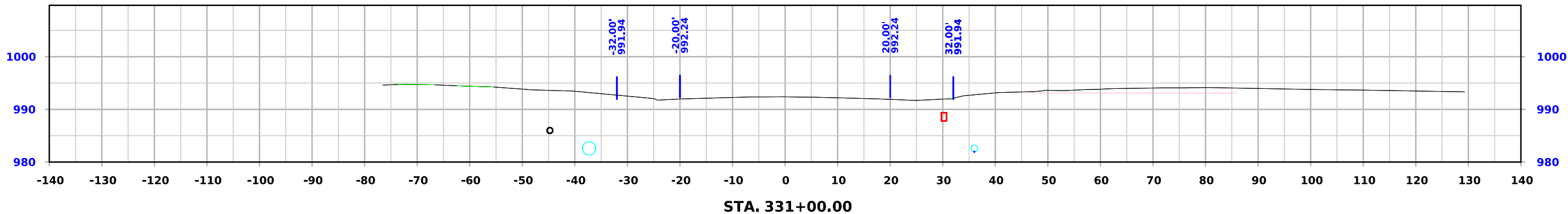
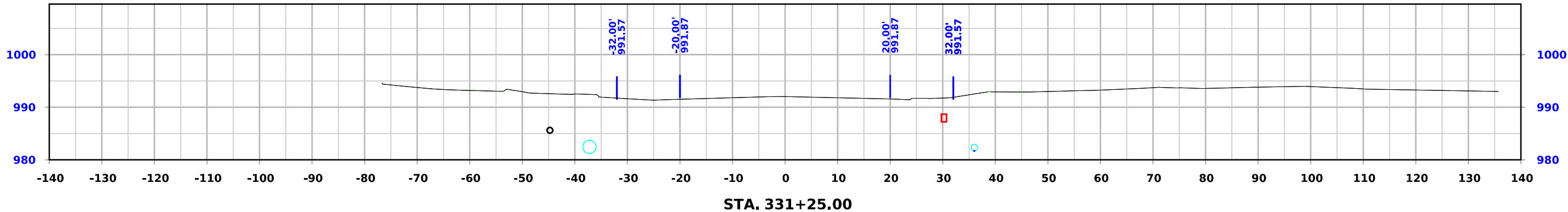
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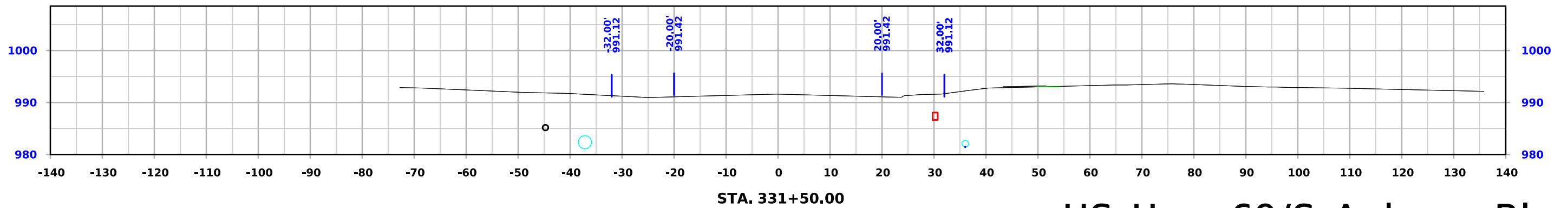
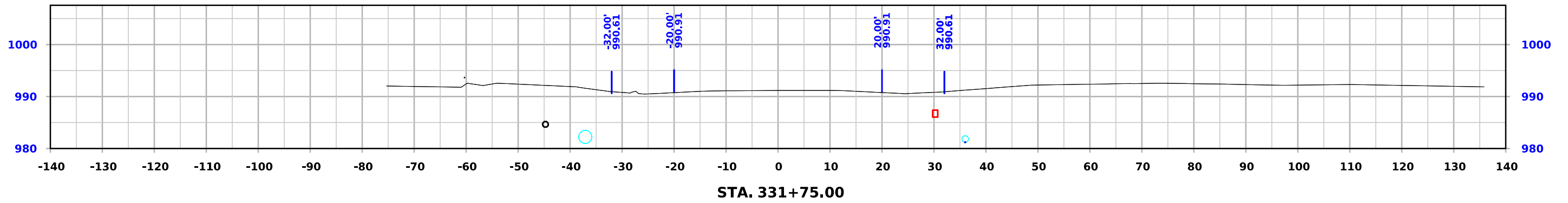
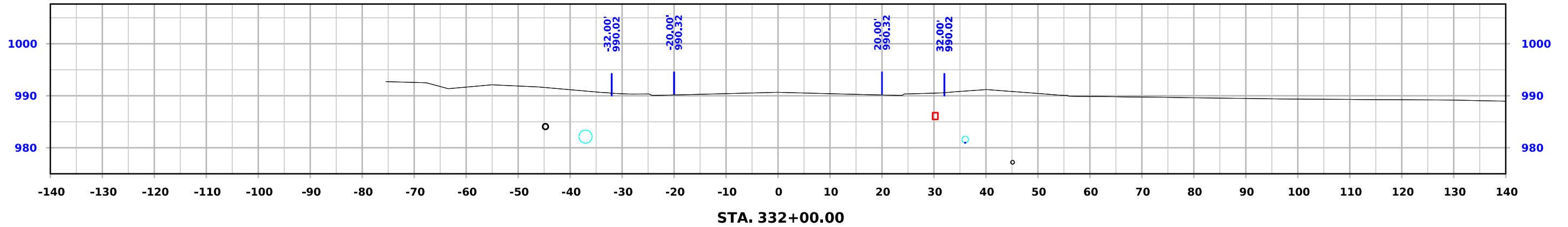
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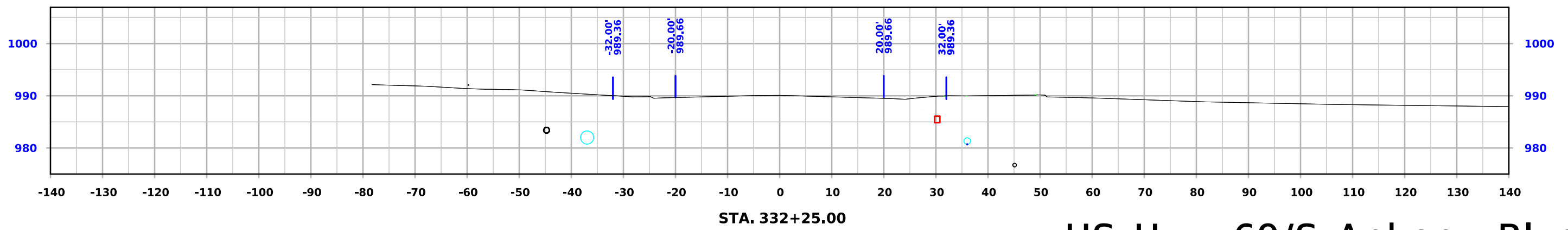
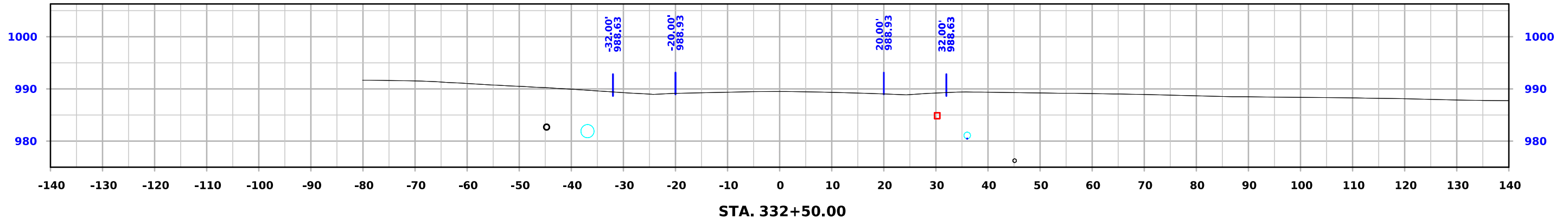
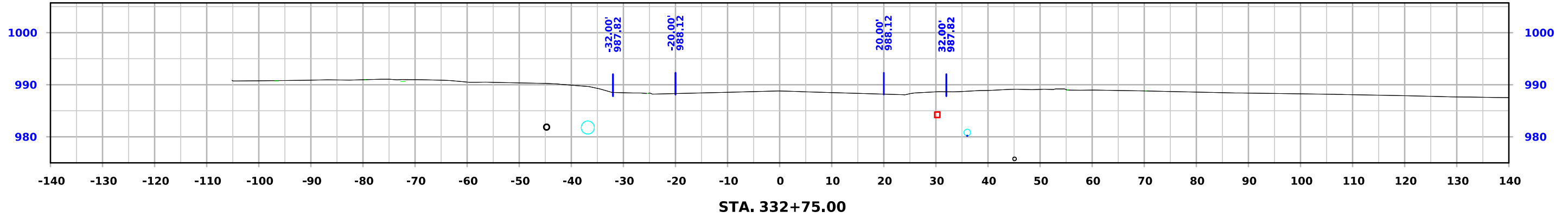
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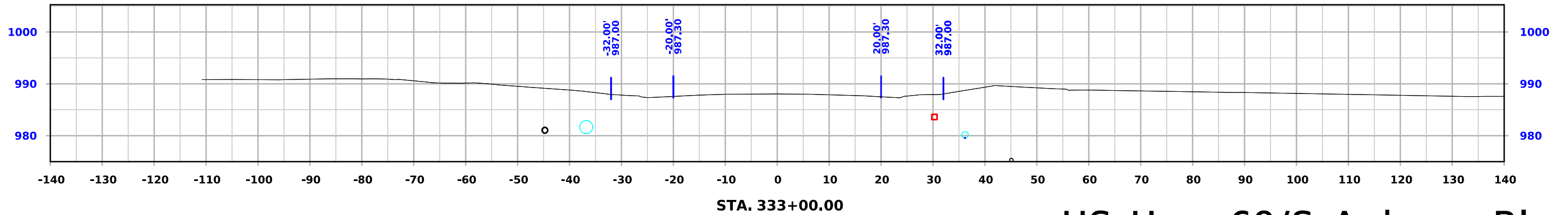
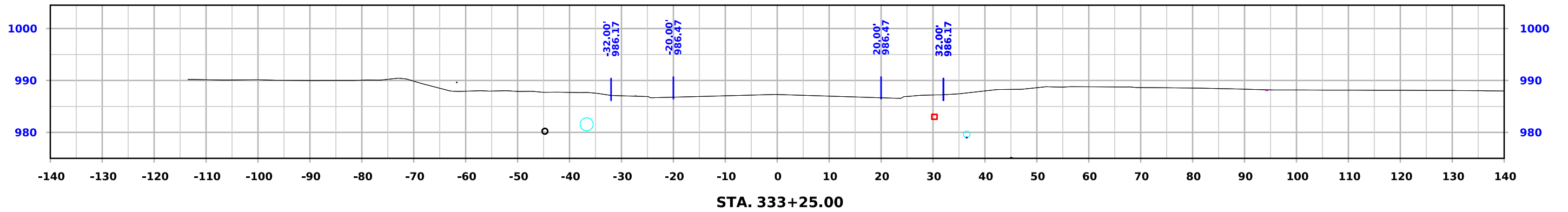
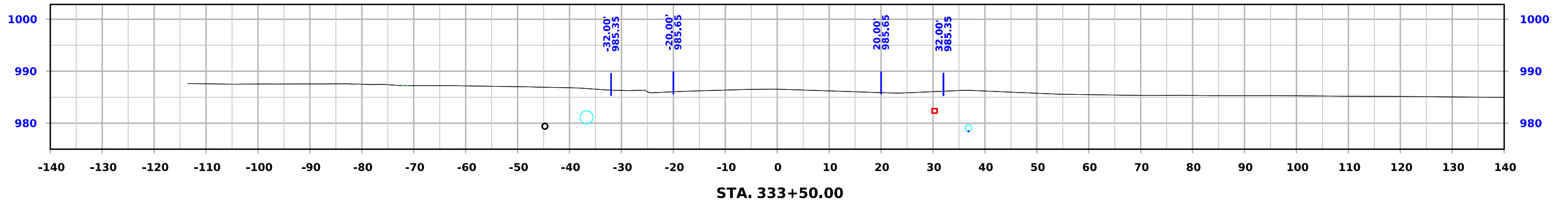
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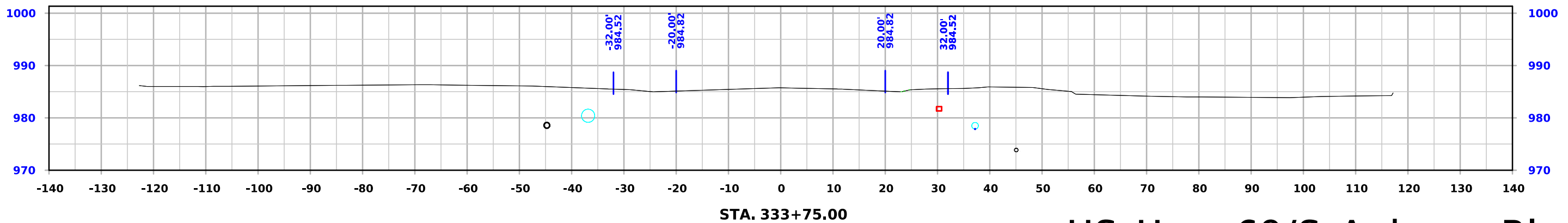
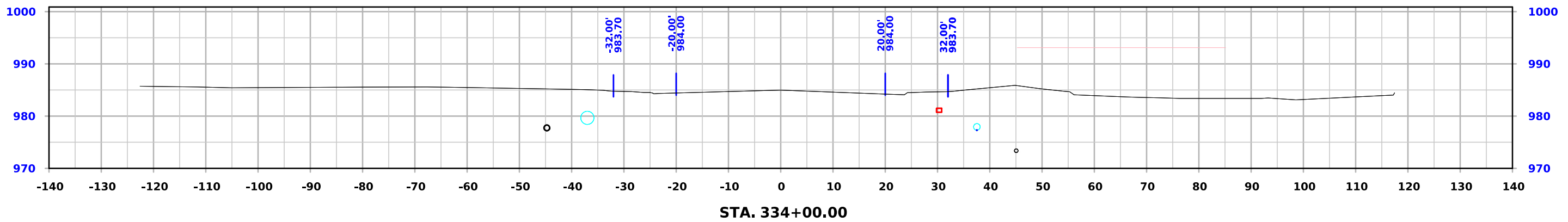
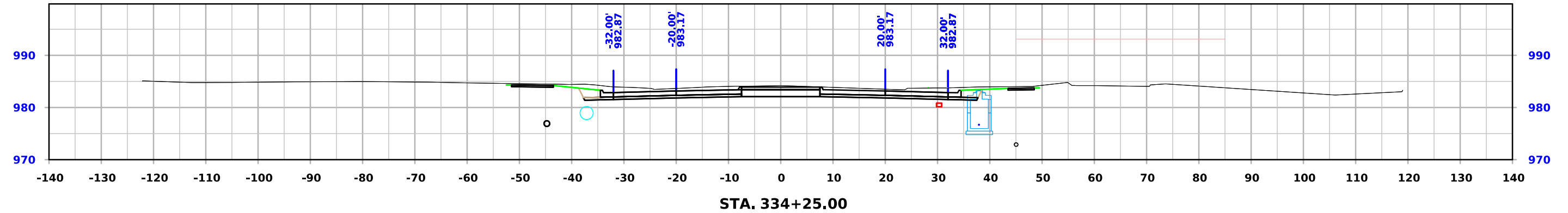
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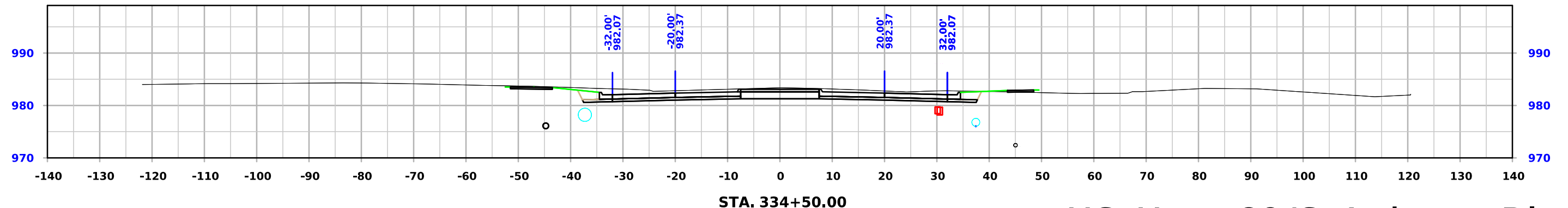
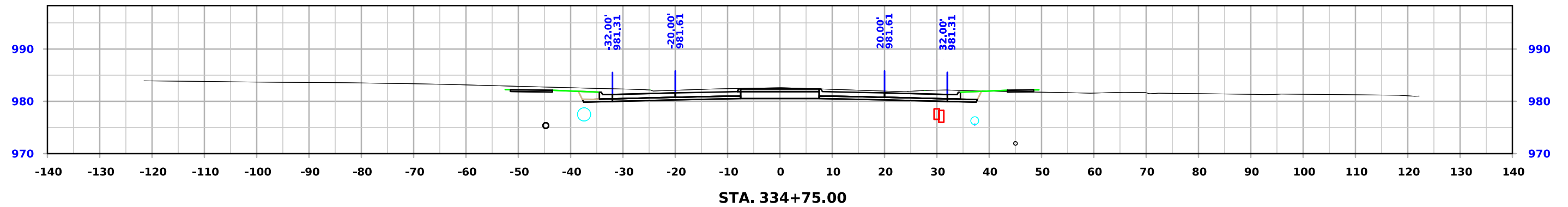
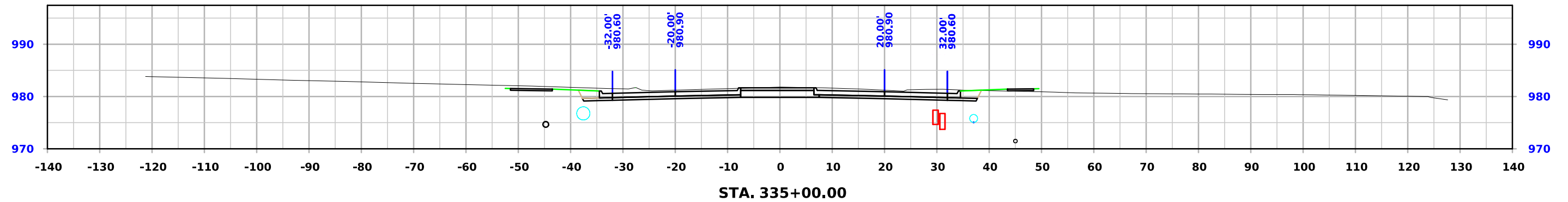
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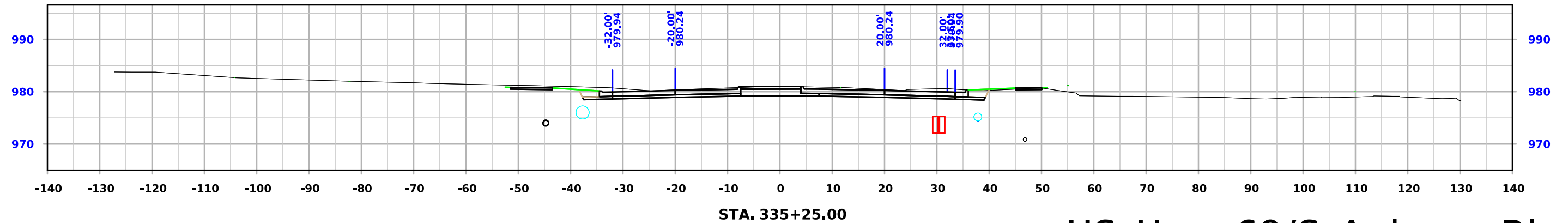
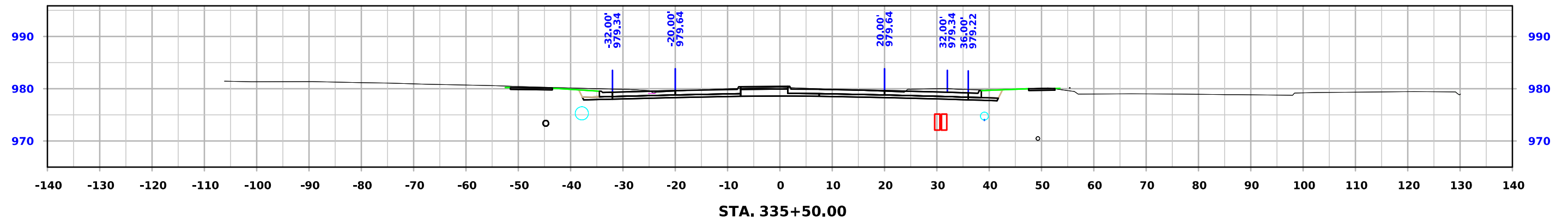
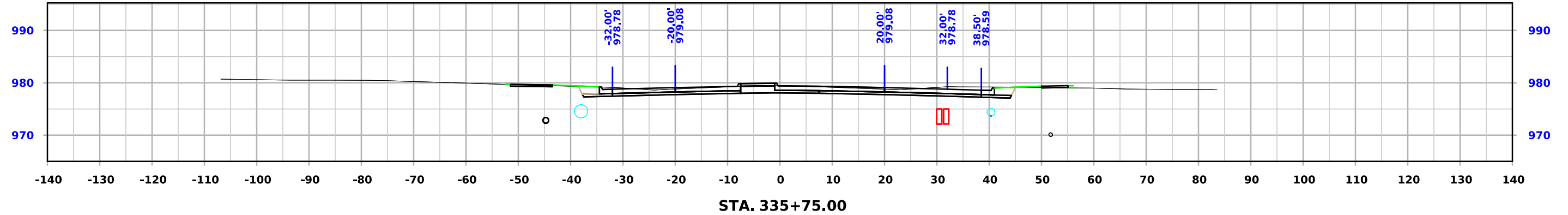
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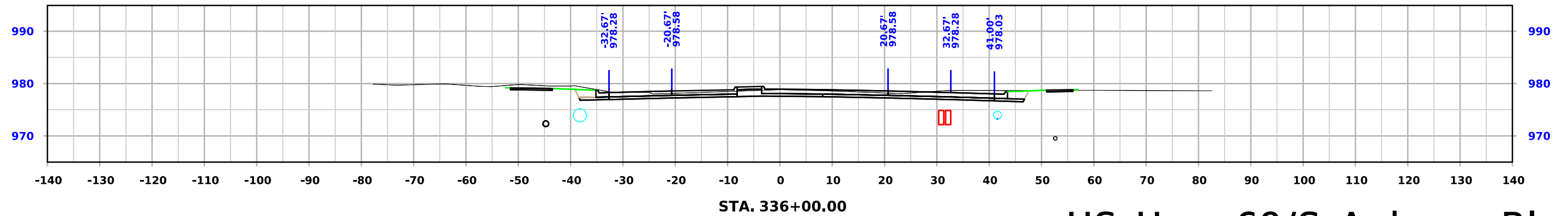
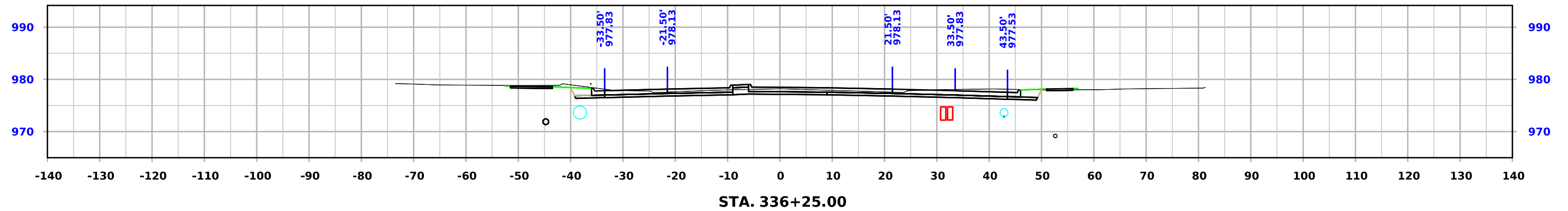
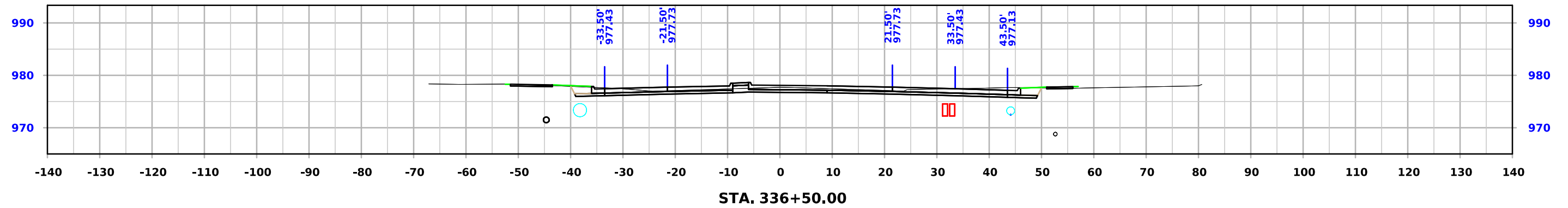
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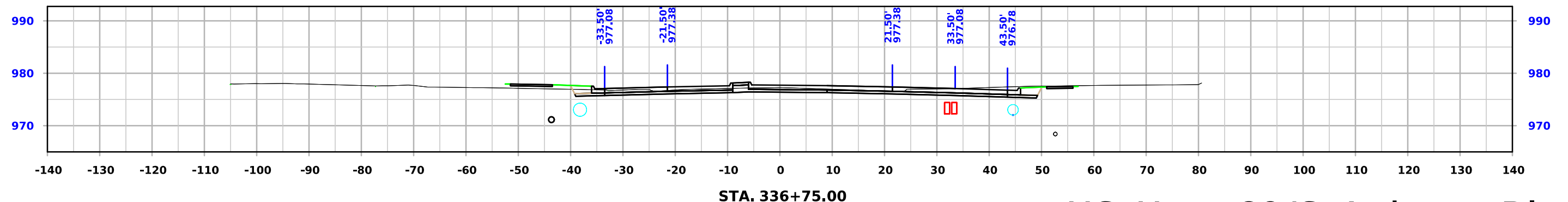
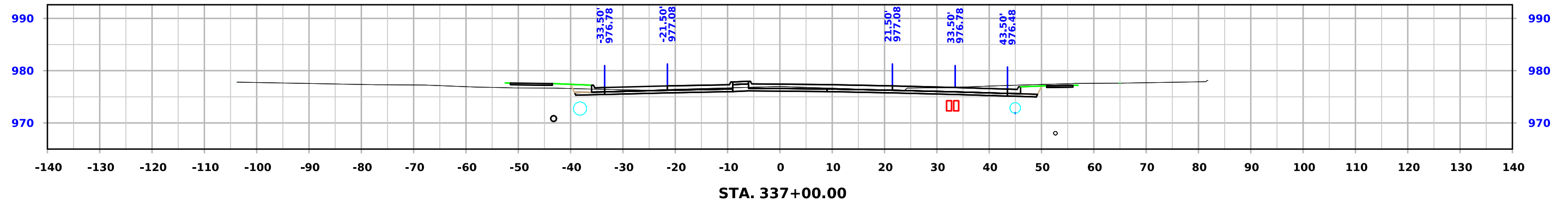
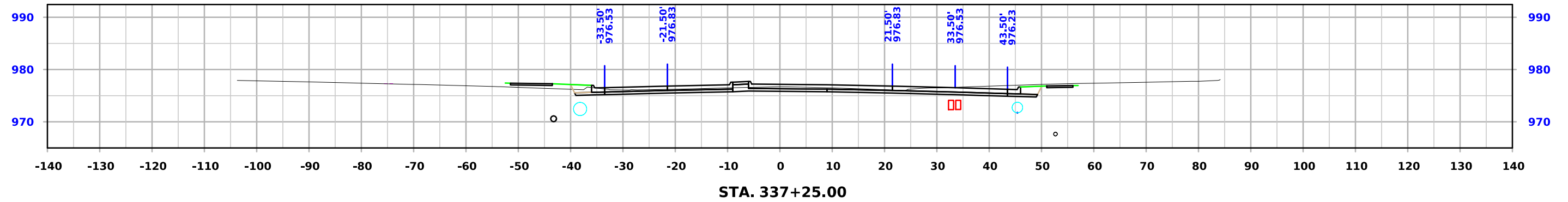
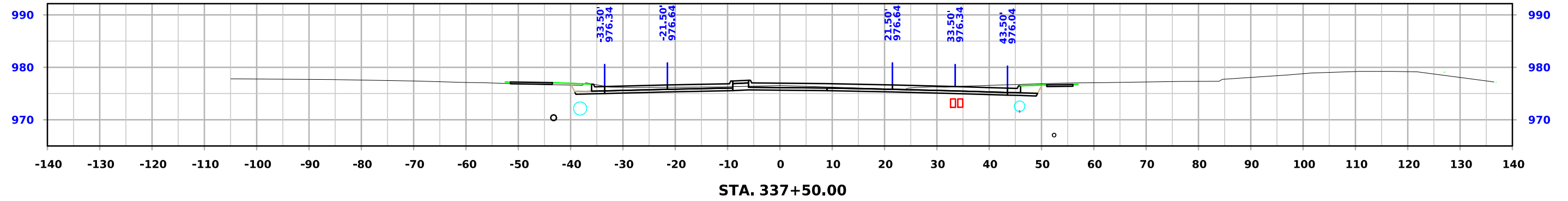
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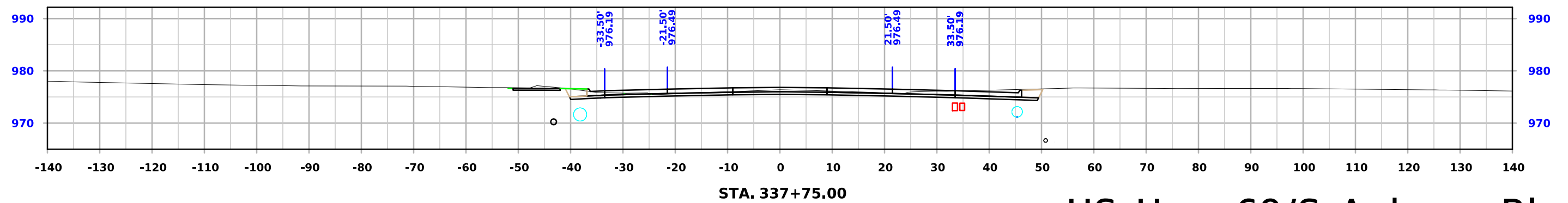
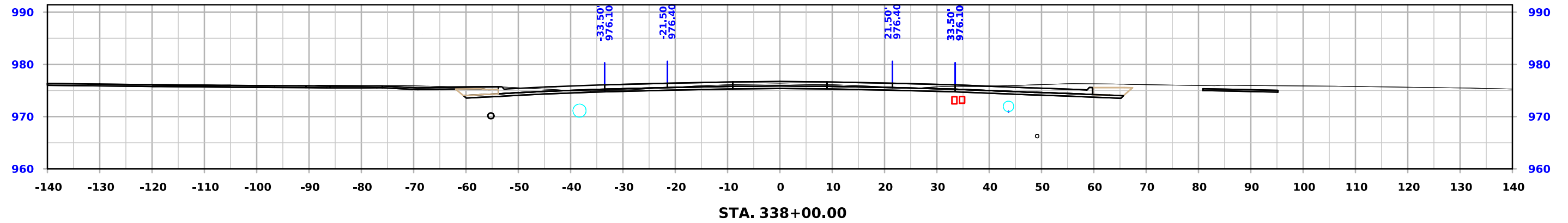
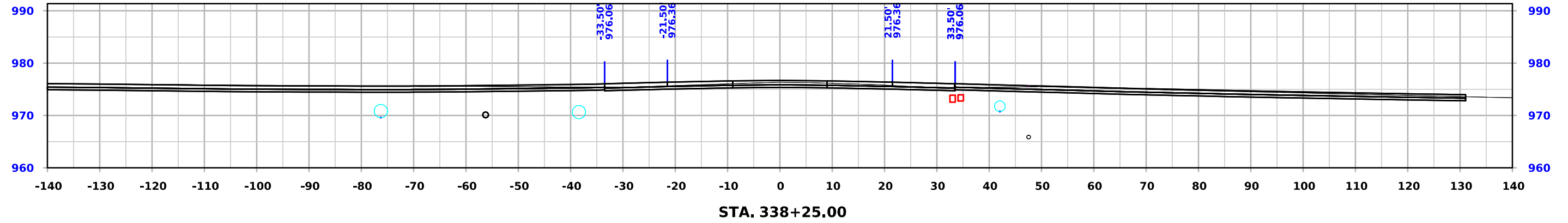
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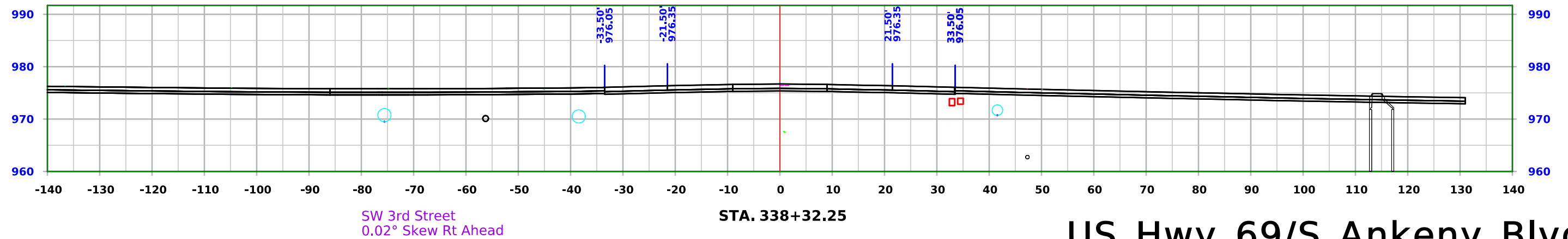
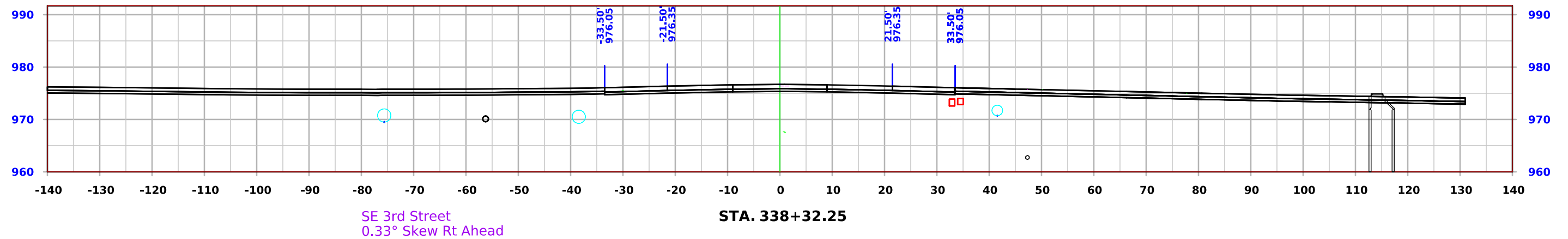
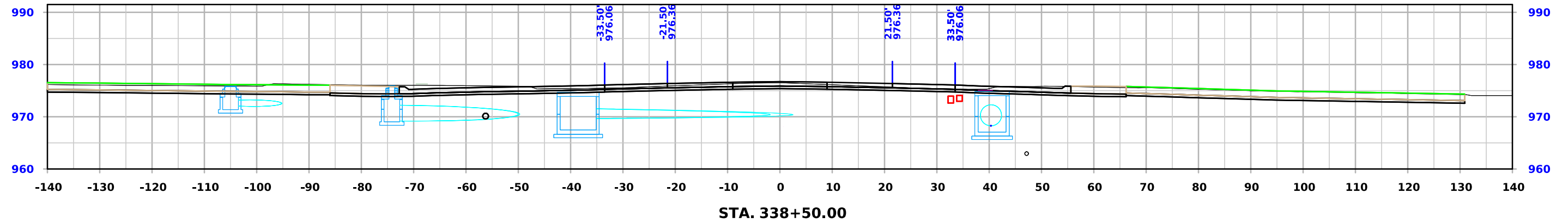
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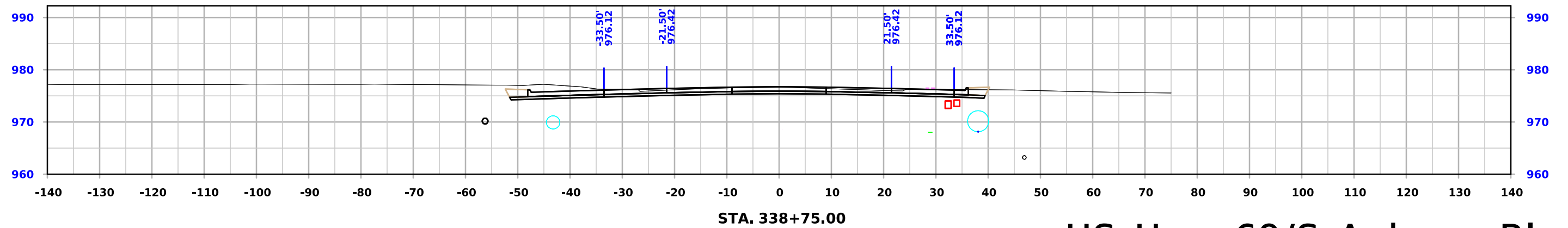
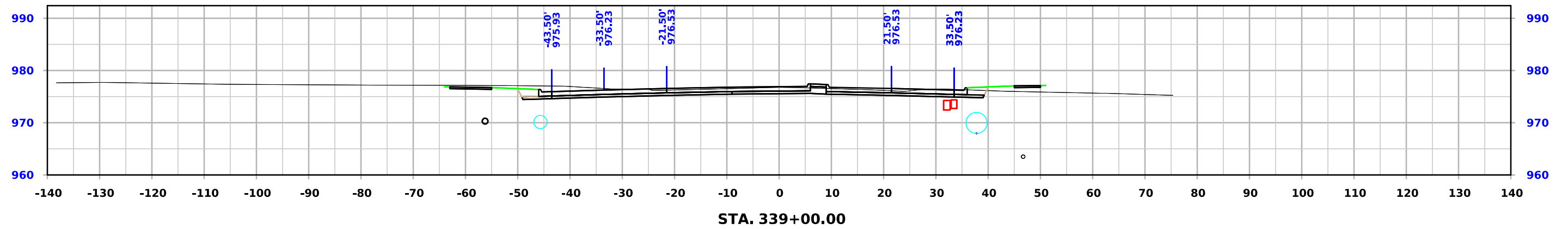
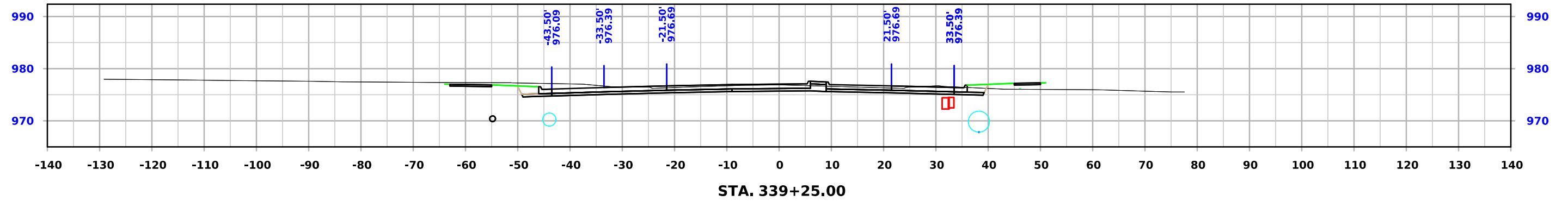
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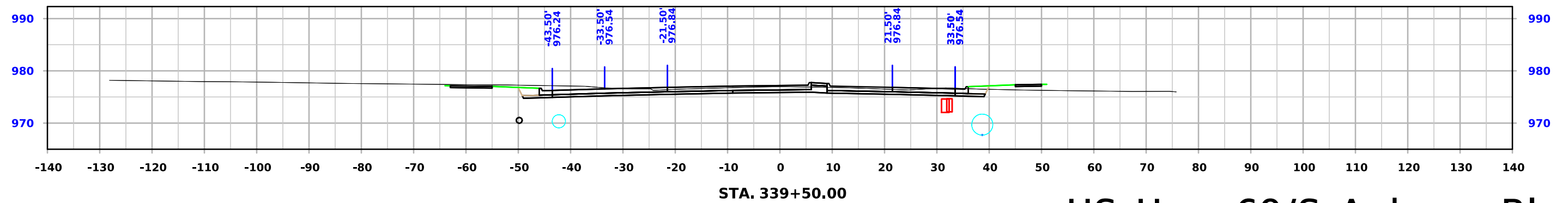
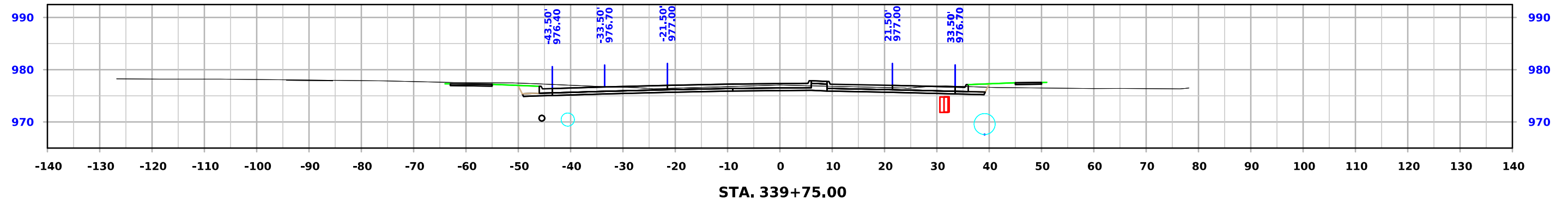
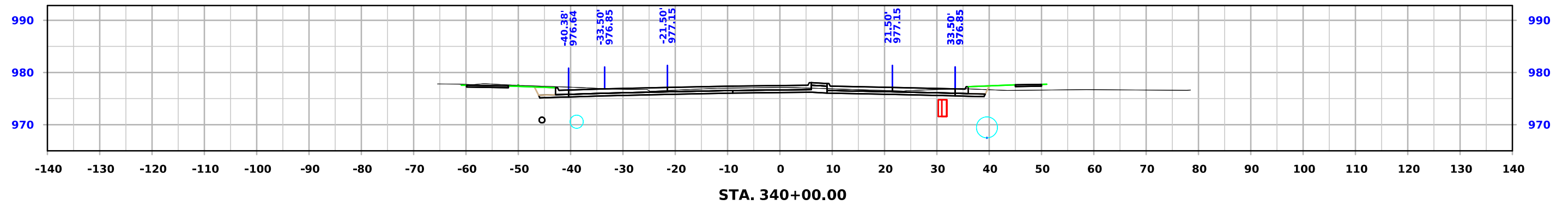
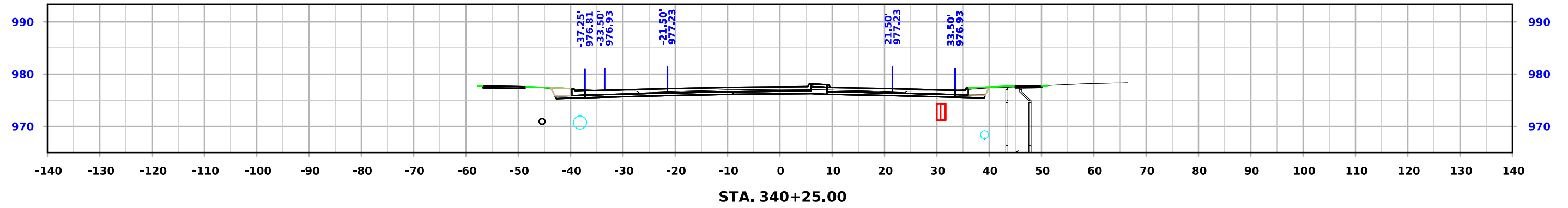
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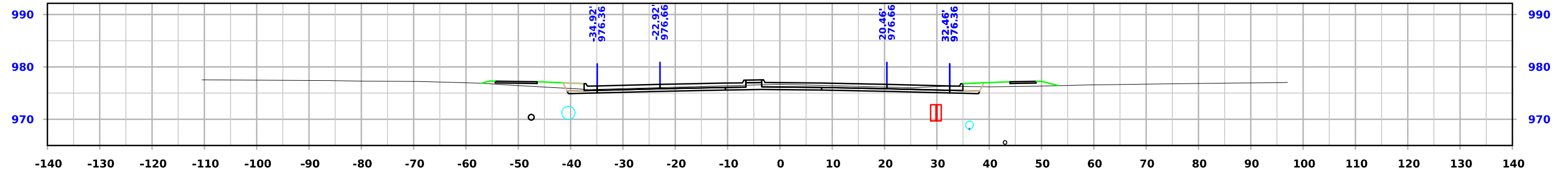
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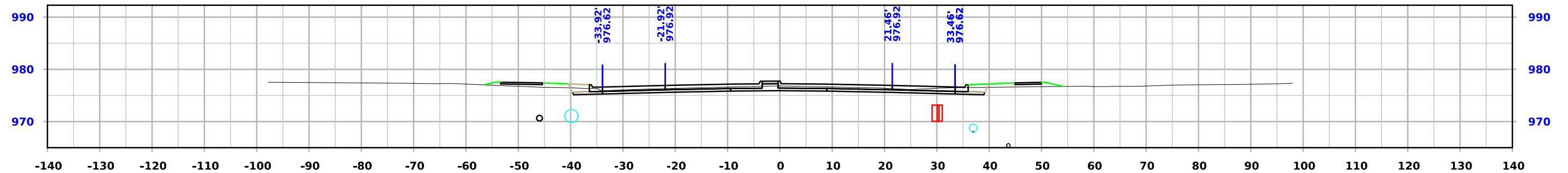


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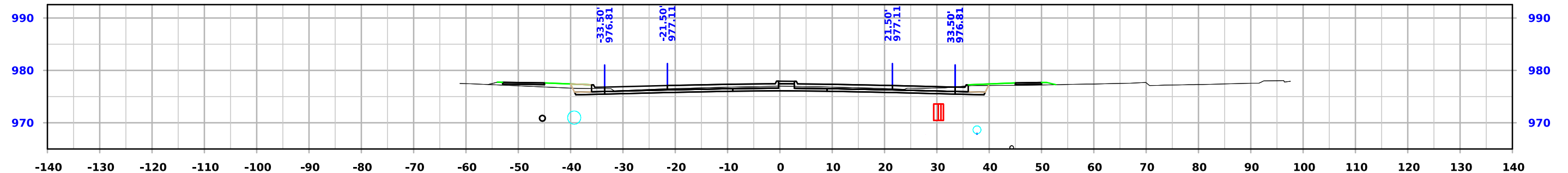
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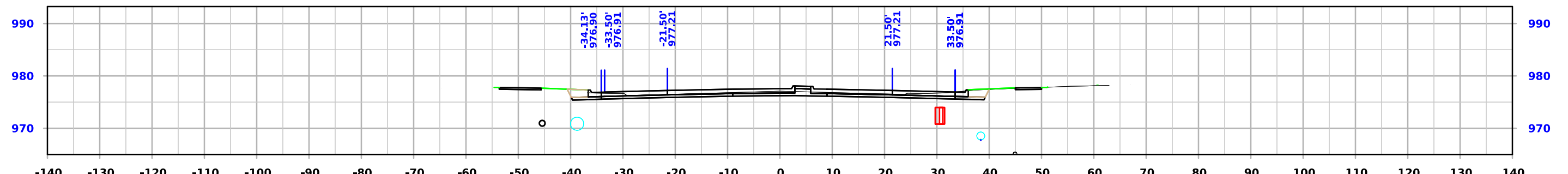
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STA. 341+00.00



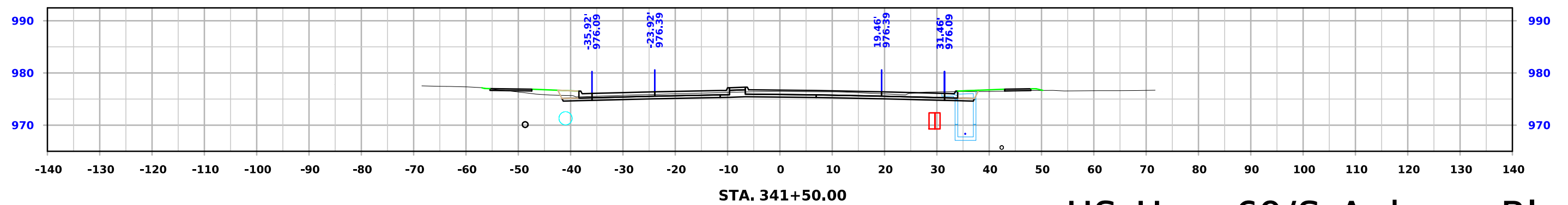
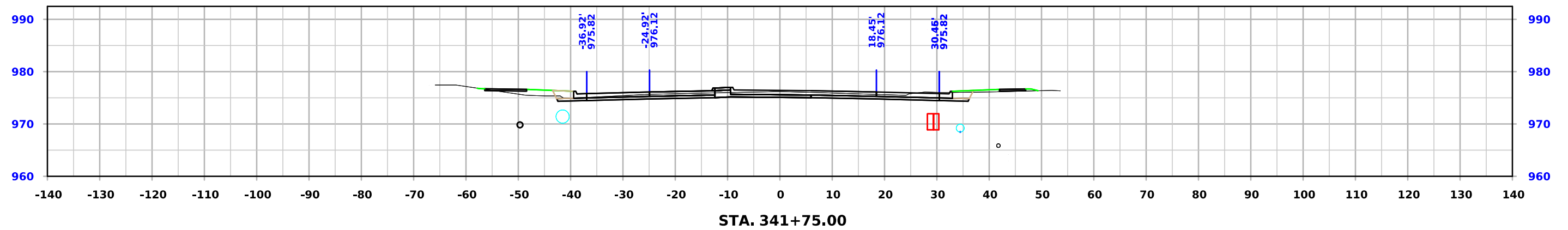
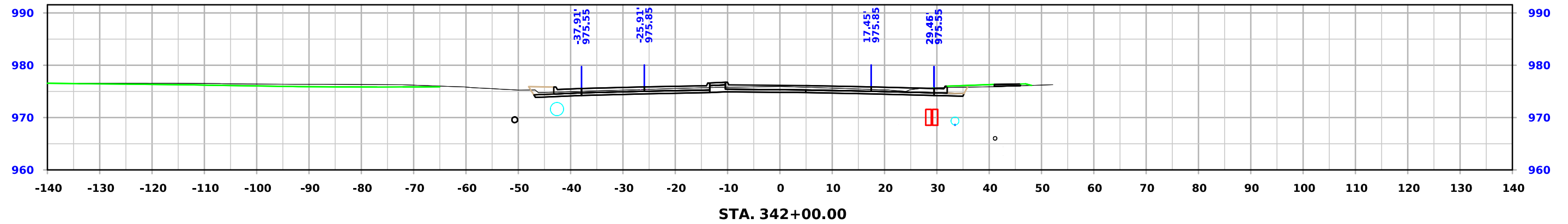
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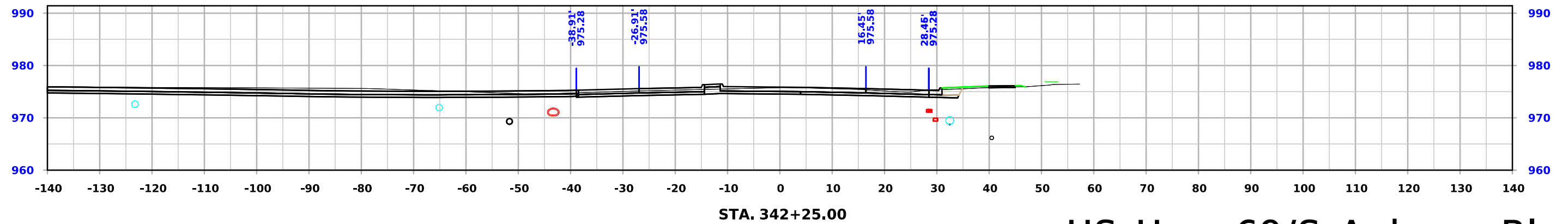
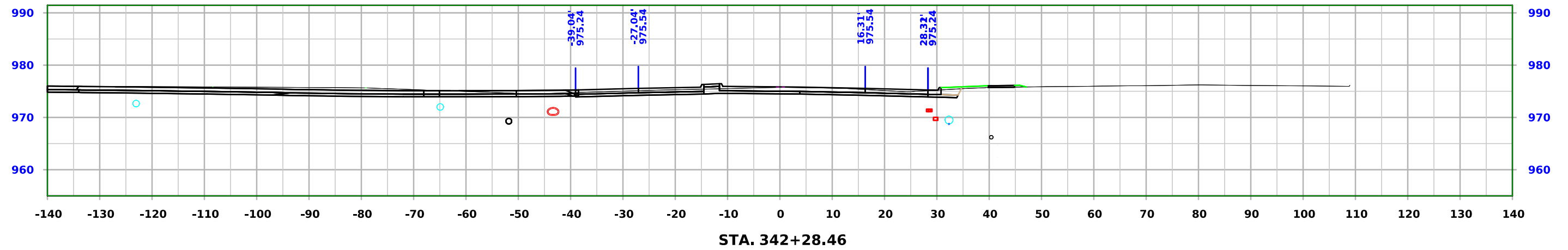
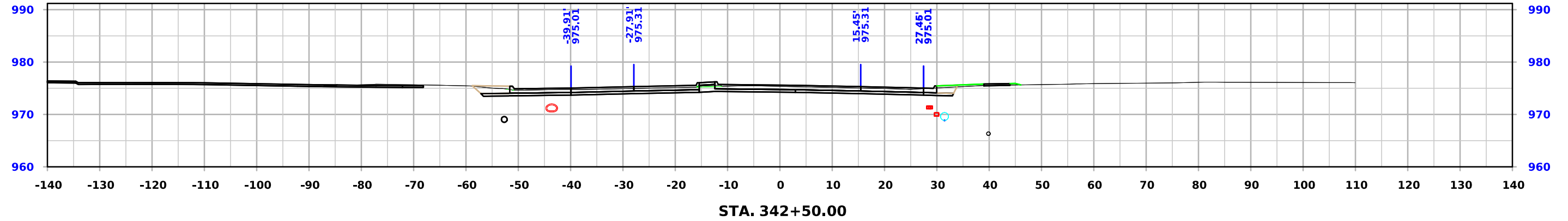
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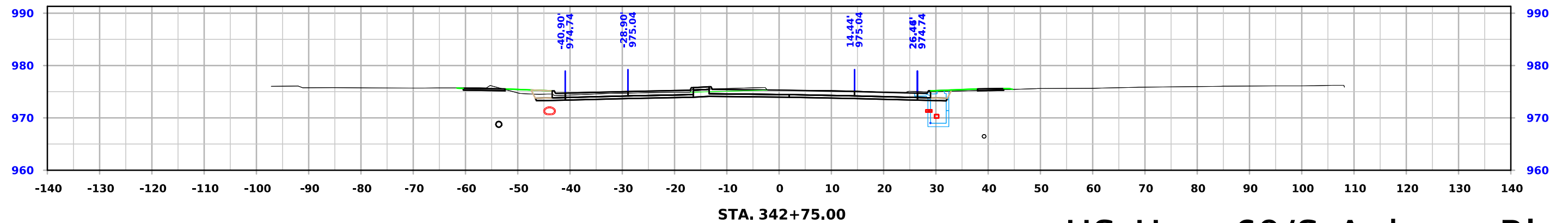
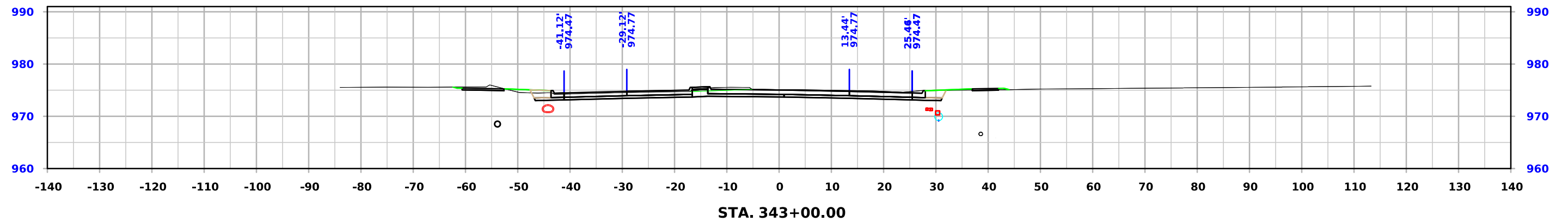
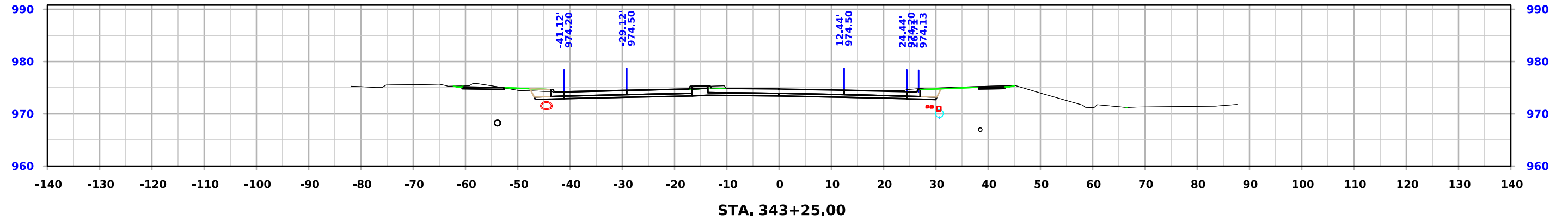
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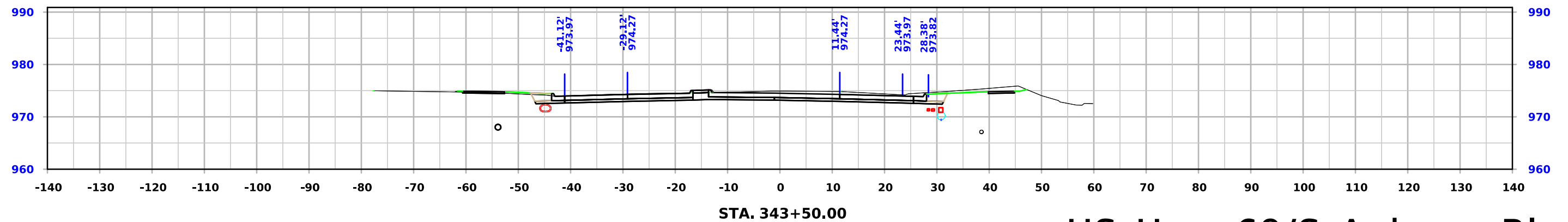
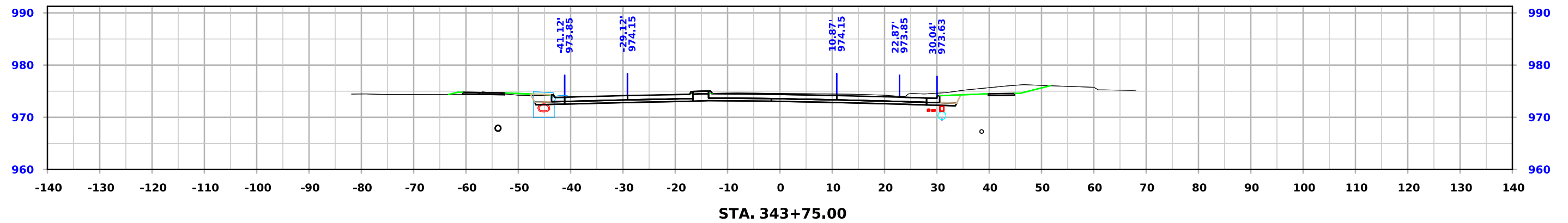
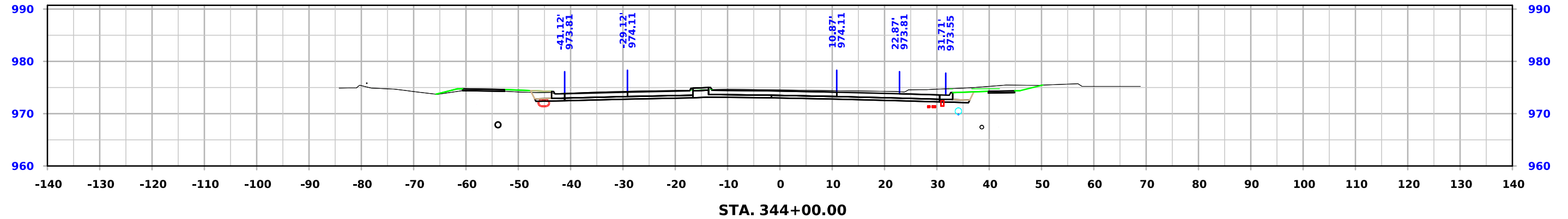
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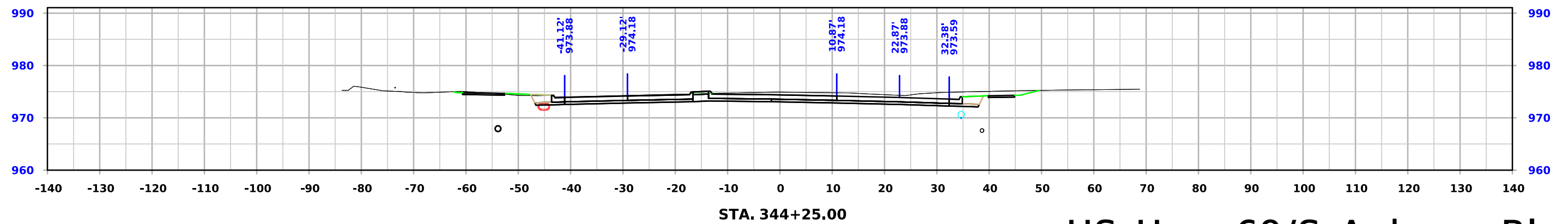
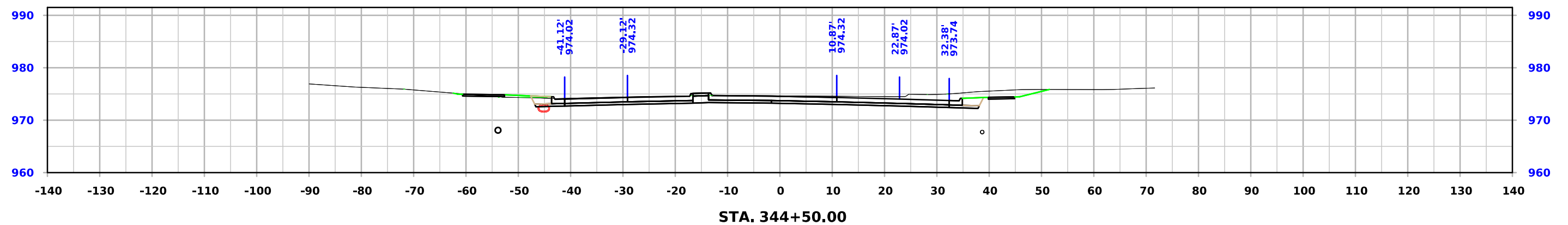
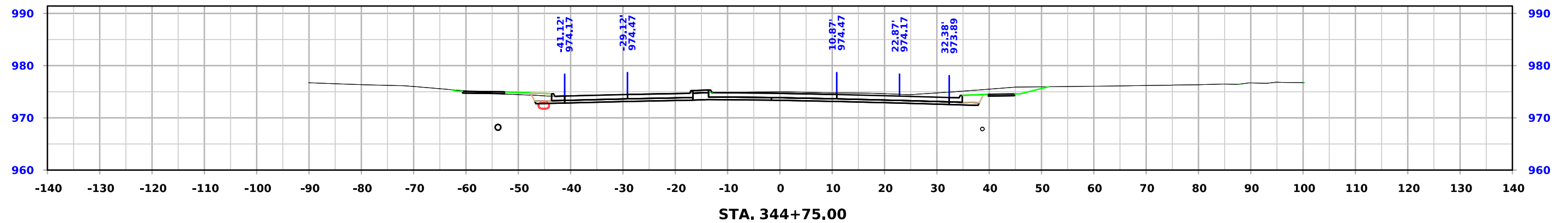


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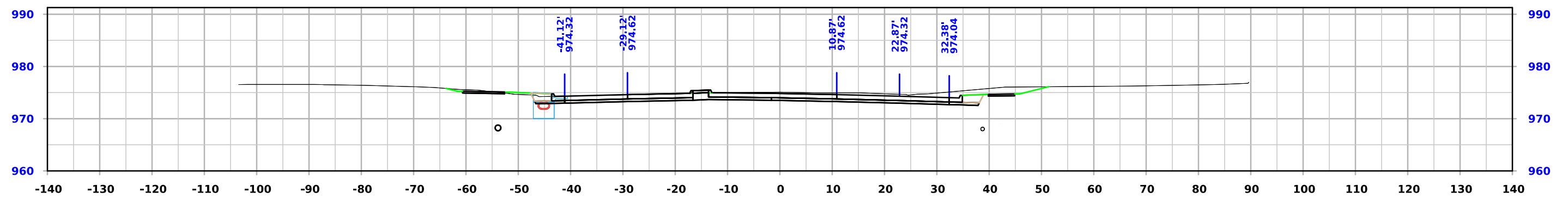
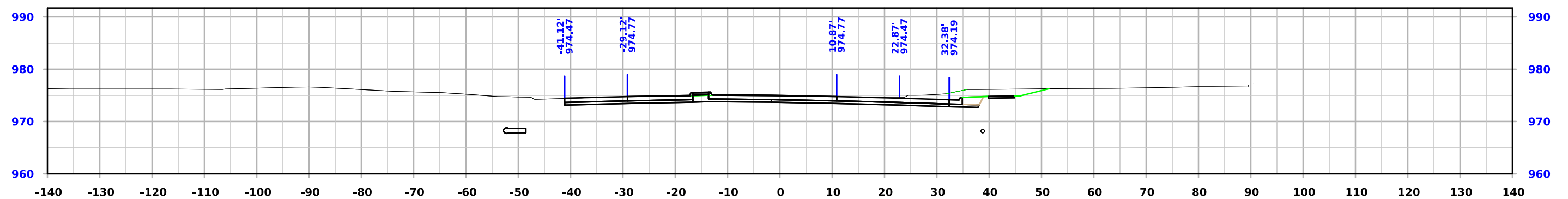
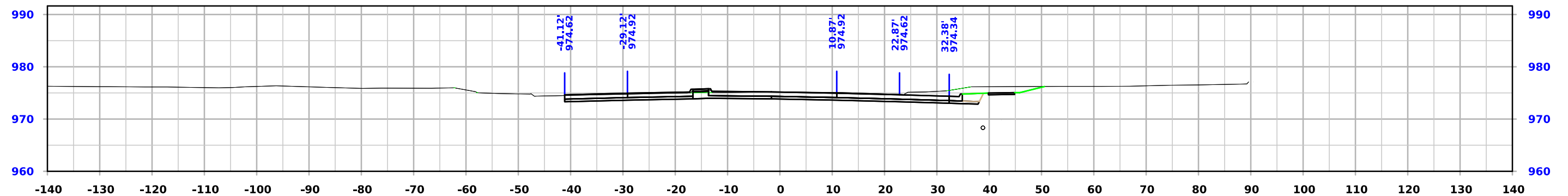
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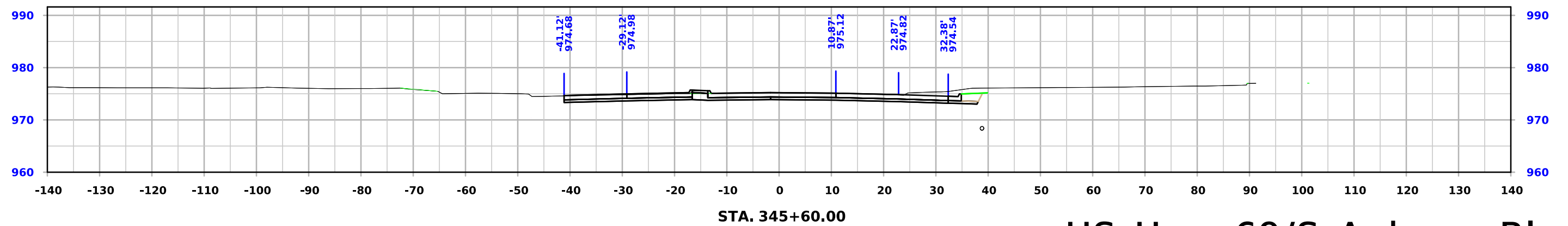
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