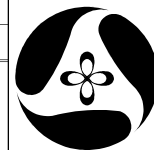
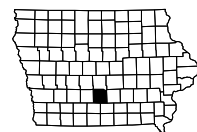


**WARREN CO.** UNKNOWN PVMNT-GRADE AND REPLACE  
STP-092-5(51)--2C-91

LETTING DATE  
1-15-2014

INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 7	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 29	IA 92
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	Kennedy St
* E.2	R-57
* E.3	90th Ave
* E.4	R-63
* E.5	110th Ave
<b>F Sheets</b>	<b>Detour or Temporary Pavement Sheets</b>
* F.1	R-57
* F.2	R-63
* F.3 - 5	Y St
* F.6 - 7	IA 92 North side East end
* F.8	IA 92 South side East end
* F.9	Spruce St
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 5	Reference Ties and Bench Marks
G.6 - 9	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.1	Staging Notes Stage
* J.1	Tabulation of Special Events
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 4	Staging Typical
* J.5 - 8	Y St
* J.9 - 10	IA 92 East end
* J.11	Spruce St
<b>M Sheets</b>	<b>Storm Sewer Sheets</b>
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.2 - 14	Storm Sewer Plan and Profile Sheets IA 92
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 159	IA 92 Cross Sections - Rural Section
W.160 - 206	IA 92 Cross Sections - Urban Section
W.207 - 220	IA 92 Cross Sections - Widening Section
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 3	Kennedy St
X.4 - 11	R-57
X.12 - 21	90th
X.22 - 26	R-63
X.27 - 34	Y St
X.35 - 47	Detour R-57
X.48 - 60	Entrance 259
X.61 - 72	Detour R-63
X.73 - 90	Detour Y St
X.91 - 100	Detour IA 92 North side East end
X.101 - 104	Detour IA 92 South side East end
X.105	Detour Spruce St



# Iowa Department of Transportation

## Highway Division

### PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM

# WARREN COUNTY

## UNKNOWN PVMNT-GRADE AND REPLACE

Ia. 92 From Just W. Of Co. Rd. R-57  
E. To S. Kenwood Blvd. In Indianola

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



MILEAGE SUMMARY			
			105-1 09-27-94
Div.	Location	Lin. Ft.	Miles
1	RURAL: STA 255+00.00 to STA 390+50.00	13,550	2.566
2	URBAN: STA 390+50.00 to STA 467+00.00	7,650	1.449
Total Net Project Length		21,200	4.015

For Project Location Map  
Refer to Sheet A.2

DESIGN DATA RURAL			
2014	AADT	6500	V.P.D.
2034	AADT	11000	V.P.D.
2034	DHV	1130	V.P.H.
TRUCKS		8	%
Total			
Design ESALs		--	

DESIGN DATA URBAN			
2014	AADT	9500	V.P.D.
2034	AADT	16000	V.P.D.
2034	DHV	1650	V.P.H.
TRUCKS		8	%
Total			
Design ESALs		--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	James R. Schoenrock	Primary Signature Block

# PRELIMINARY PLANS

Subject to change by final design.

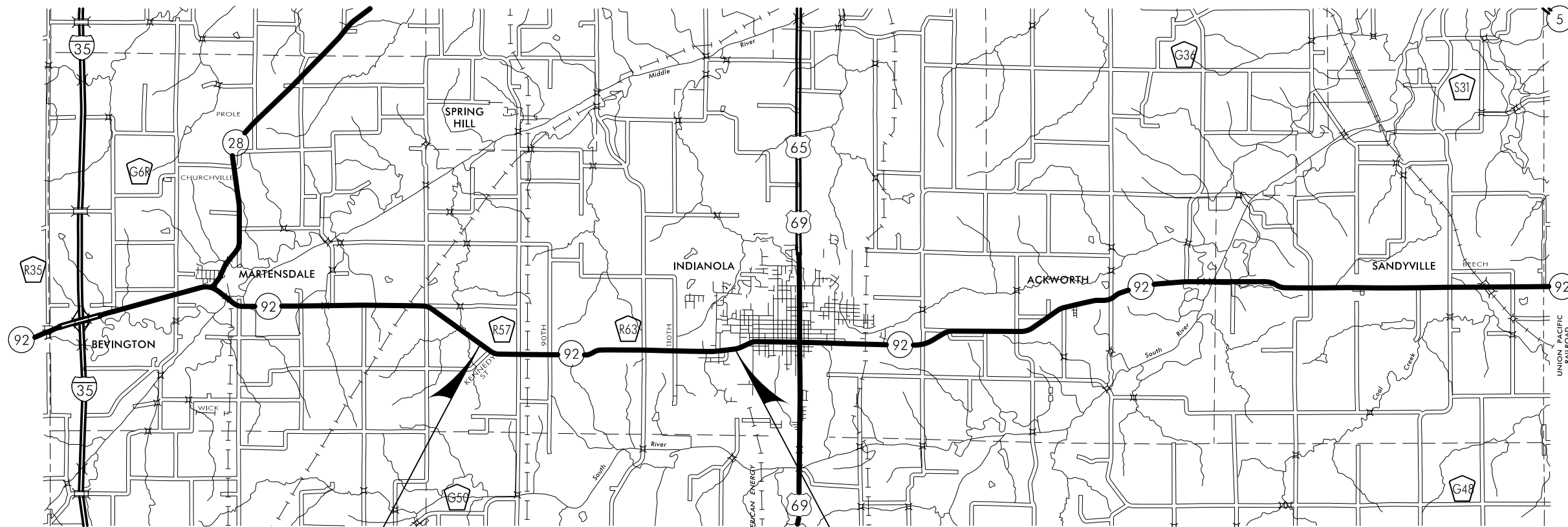
## Preliminary D5 PLAN

REVISIONS

TOTAL
PROJECT IDENTIFICATION NUMBER
04-91-092-010-01
PROJECT NUMBER
STP-092-5(51)--2C-91
R.O.W. PROJECT NUMBER
STPN-092-5(50)--2J-91



T-76N



R-25W

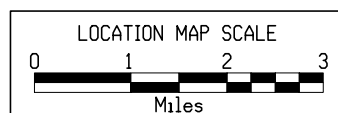
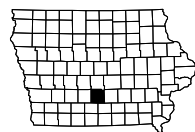
R-24W

R-23W

R-22W

STA. 255+00.00  
BEGIN PROJECT  
M.P. 125.94

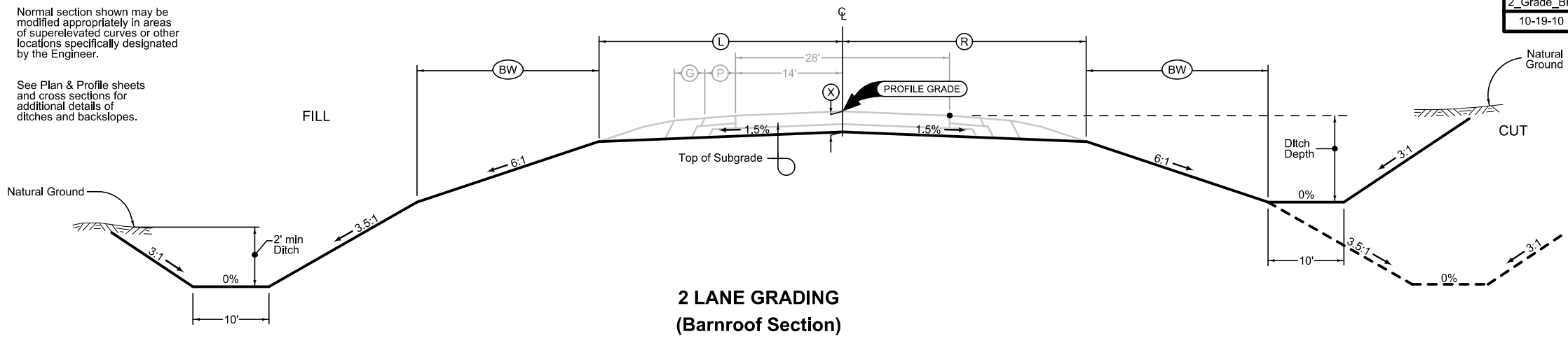
STA. 467+00.00  
END PROJECT  
M.P. 129.95



LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓐ	Ⓑ	ⓧ	Ⓑ
		Feet	Feet	Inches	Feet
IA 92	256+50.00 391+00.00	35.2	35.2	16	16.4

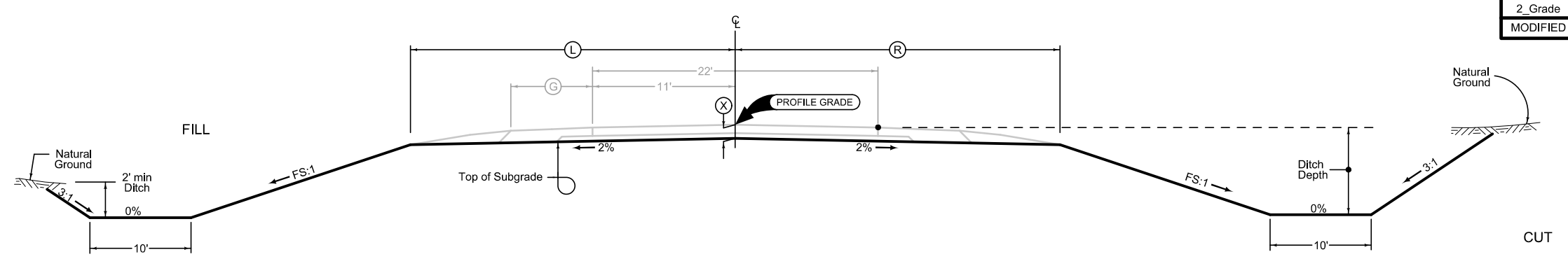
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



**2 LANE GRADING  
(Barnroof Section)**

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓐ	Ⓑ	ⓧ	FS
		Feet	Feet	Inches	
R-57	1280+60.00 1283+61.24	27.0	27.0	16	4
R-57	1383+96.17 1386+06.00	27.0	27.0	16	4
R-63	3389+30.00 3390+23.00	27	27	16	4
R-63	3392+23.00 3392+70.00	27	27	16	4

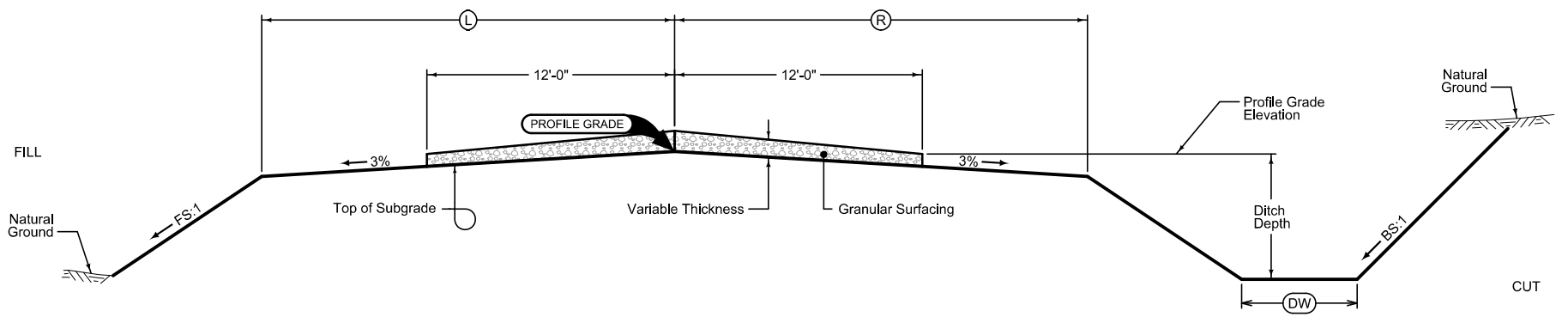


**2 LANE GRADING**

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	FS	BS	(DW) Feet
KENNEDY ST	1257+45.00 - 1258+68.00	15	15	3	3	5
90TH AVE	2305+85.00 - 2307+00.00	12-13	12-13	2.5	2.5	0
90TH AVE	2307+00.00 - 2308+00.00	13	13	3	3	0-5
90TH AVE	2308+00.00 - 2310+06.21	13	13	3	3	5
90TH AVE	2310+50.21 - 2313+85.00	13	13	3	3	5
Accessway ENT259	103+05.00 - 104+27.00	12	12	3	3	5



**GRADING AND GRANULAR SURFACING**

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

Place Granular Surfacing as follows:  
Grading design application rate is \_\_\_ tons per mile.  
Paving design application rate is \_\_\_ tons per mile.

**Paved Shoulder Alternates**

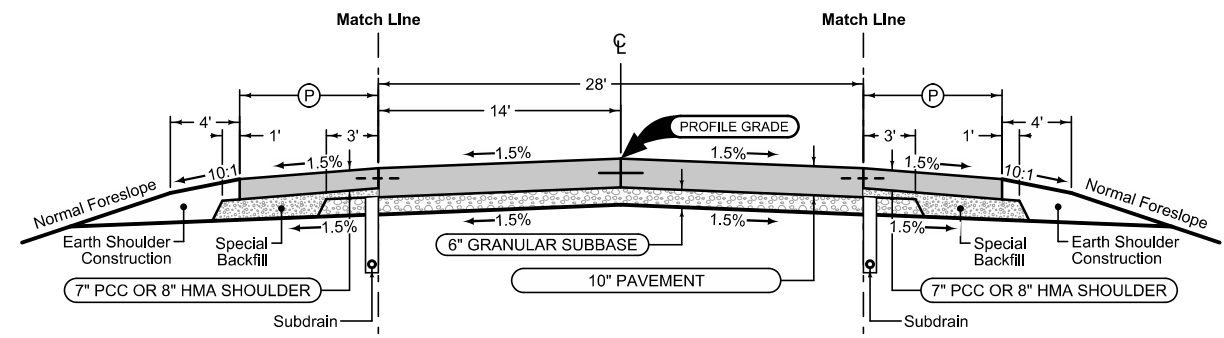
PCC Shoulder Jointing:  
Longitudinal joint: BT-1 or BT-3  
Transverse joints: C at 20' spacing  
HMA Shoulder Jointing:  
Longitudinal joint: B

2_P_ALT_ 10-19-10		
STATION TO STATION	(P)	Feet
256+50.00 - 282+86.00	8	
291+18.00 - 390+19.00	8	

**Paved Shoulder Alternates**

PCC Shoulder Jointing:  
Longitudinal joint: BT-1 or BT-3  
Transverse joints: C at 20' spacing  
HMA Shoulder Jointing:  
Longitudinal joint: B

2_P_ALT_ 10-19-10		
STATION TO STATION	(P)	Feet
256+50.00 - 280+44.00	8	
284+56.00 - 387+75.00	8	



Mainline Jointing:  
Transverse joints: CD at 20' spacing  
Longitudinal joint: L-2

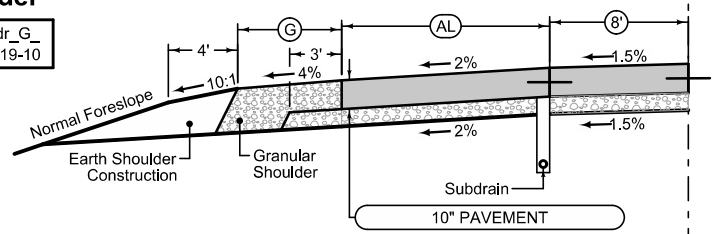
2P_ 10-19-10		
STATION TO STATION	(P)	Feet
256+50.00 - 391+00.00		

**Auxiliary Lane**

**Auxiliary Lane Granular Shoulder**

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_ 10-19-10				2_AL_Shldr_G_ 10-19-10	
STATION TO STATION	(AL)	(G)	Feet	Feet	Feet
284+48.00 - 289+38.00	10	6			
289+38.00 - 292+08.00	0-10	6			

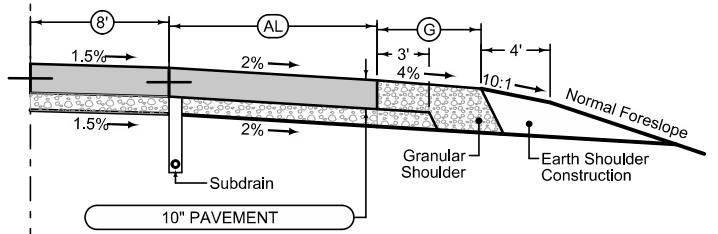


**Auxiliary Lane**

**Auxiliary Lane Granular Shoulder**

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_ 10-19-10				2_AL_Shldr_G_ 10-19-10	
STATION TO STATION	(AL)	(G)	Feet	Feet	Feet
279+39.00 - 281+19.00	0-10	6			
281+19.00 - 282+94.00	10	6			
386+70.00 - 388+50.00	0-10	6			
388+50.00 - 390+25.00	10	6			



See Tab 100-24 for pavement quantities.  
See Tab 112-9 for shoulder quantities.

**IOWA 92 - RURAL**

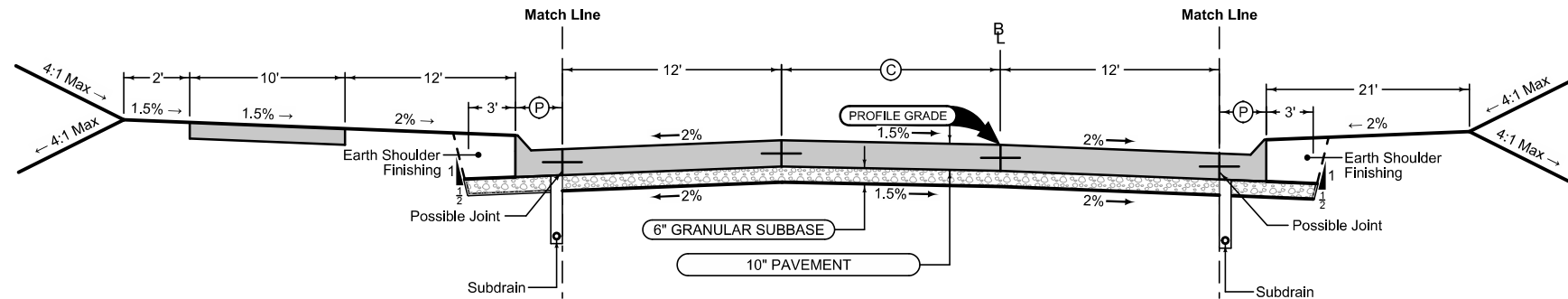


### Curbed Shoulder

Shoulder Jointing:  
 Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

Single pour: L-2  
 Staged: KT-2  
 Transverse: C at 20' spacing

2_Curb_MODIFIED			
STATION TO STATION	(P) Feet	Curb Type See PV-102	
391+00.00	443+18.01	3	6" Standard



Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

2P_TWLTL_10-19-10		
STATION TO STATION	(C) Feet	
391+00.00	441+27.50	16
441+27.50	443+18.01	16-12

### Curbed Shoulder

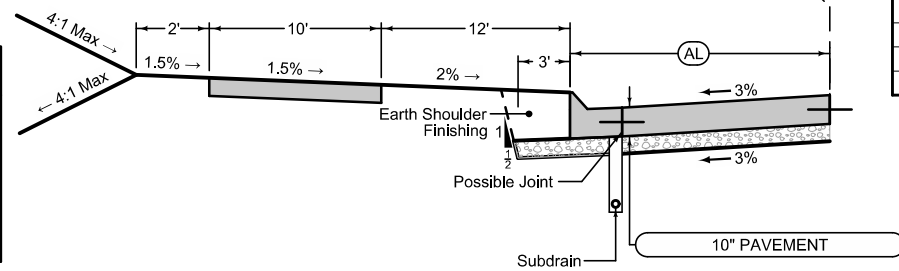
Shoulder Jointing:  
 Longitudinal joint: L-2  
 Staged: KT-2  
 Transverse: C at 20' spacing

2_Curb_MODIFIED			
STATION TO STATION	(P) Feet	Curb Type See PV-102	
391+00.00	443+18.01	3	6" Standard

### Auxiliary Lane

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

4_AuxLane_PCC_MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
WEST	391+92.00	396+82.00	13

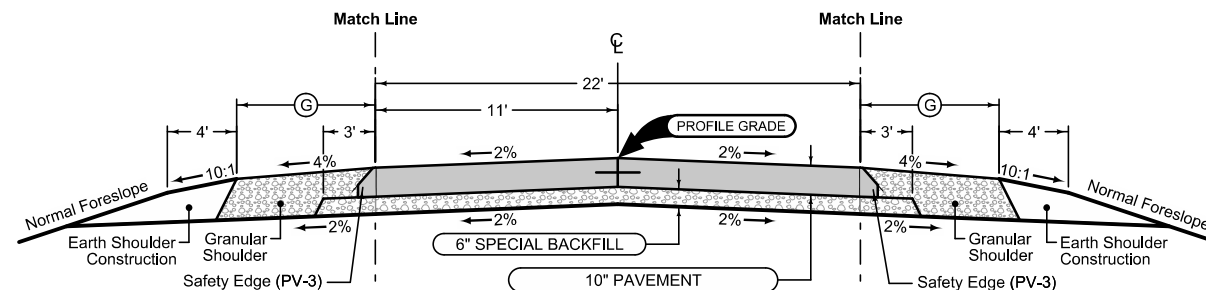


See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

## IOWA 92 - URBAN

### Granular Shoulder

2_G_10-19-10		
STATION TO STATION	(G) Feet	
1280+60.00	1282+80.74	6
1384+68.89	1386+06.00	6



Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

2P_10-19-10		
STATION TO STATION		
1280+60.00	1283+61.24	
1383+96.17	1386+06.00	

### Granular Shoulder

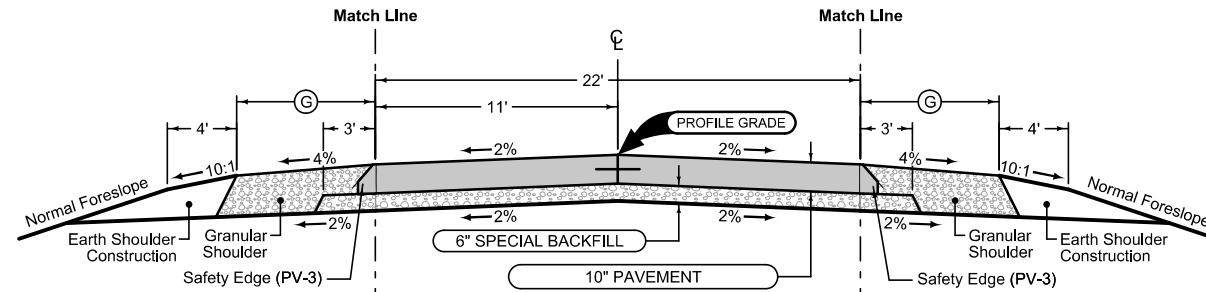
2_G_10-19-10		
STATION TO STATION	(G) Feet	
1280+60.00	1282+87.71	6
1384+77.46	1386+06.00	6

See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

## R-57

**Granular Shoulder**

STATION TO STATION		2_G_	Ⓞ
		10-19-10	Feet
3389+00.00	3390+91.42		6
3391+31.95	3393+05.00		6



Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

STATION TO STATION		2P_	10-19-10
3389+00.00	3390+91.42		
3391+31.95	3393+05.00		

**Granular Shoulder**

STATION TO STATION		2_G_	Ⓞ
		10-19-10	Feet
3389+00.00	3390+91.42		6
3391+31.95	3393+05.00		6

See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

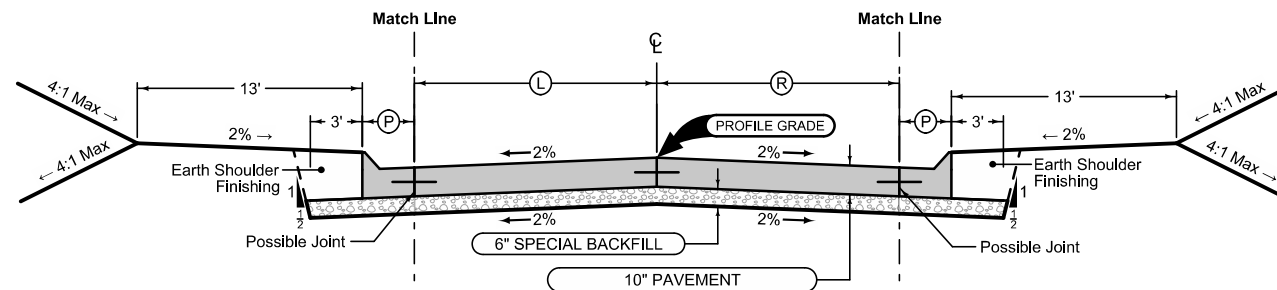
**R-63**

**Curbed Shoulder**

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15'

Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 20' spacing

STATION TO STATION		2_Curb_	MODIFIED	Ⓟ	Curb Type
				Feet	See PV-102
4414+15.00	4417+25.32			1.5	6" Standard
4417+64.40	4422+60.00			1.5	6" Standard



Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

STATION TO STATION		2P_	Ⓟ	Ⓡ
		10-19-10	Feet	Feet
4414+15.00	4417+25.32		11	11
4417+64.40	4422+60.00		14	14

**Curbed Shoulder**

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15'

Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 20' spacing

STATION TO STATION		2_Curb_	MODIFIED	Ⓟ	Curb Type
				Feet	See PV-102
4414+15.00	4417+25.32			1.5	6" Standard
4417+64.40	4422+60.00			1.5	6" Standard

See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

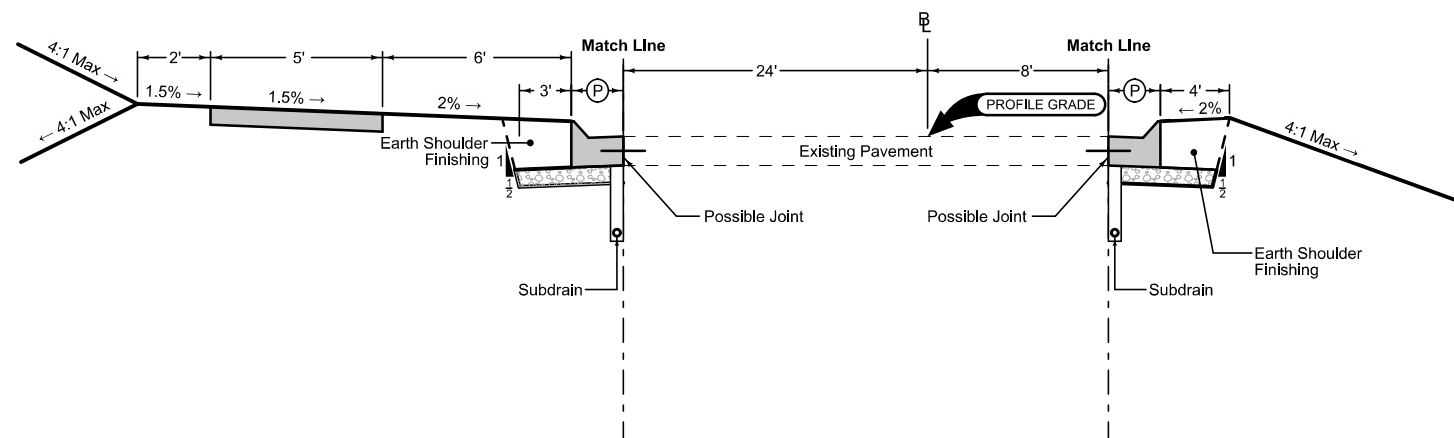
**110TH ST**

**Curbed Shoulder**

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 20' spacing

2_Curb_ MODIFIED			
STATION TO STATION	(P) Feet	Curb Type See PV-102	
443+18.01	464+92.00	2.5	6" Standard



**Curbed Shoulder**

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

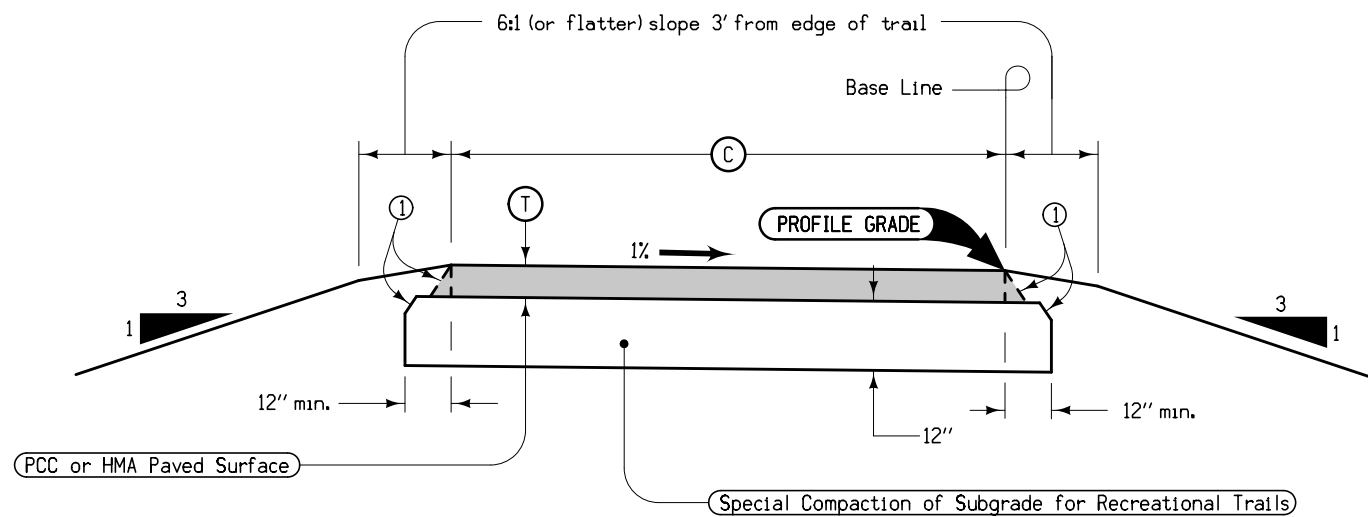
Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 20' spacing

2_Curb_ MODIFIED			
STATION TO STATION	(P) Feet	Curb Type See PV-102	
443+18.01	464+92.00	2.5	6" Standard

See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

**IOWA 92 - URBAN WIDENING**

7402  
 MODIFIED



Pavement Type	PAVEMENT THICKNESS	
	Trail Width (C)	(T)
PCC	8'	4"
	10' or greater	5"
HMA	8'	5"
	10' or greater	6"

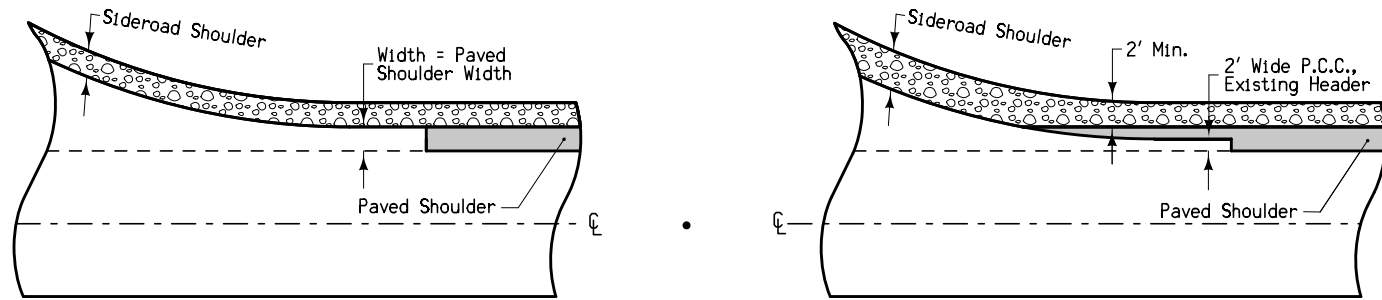
Notes:  
 Bid item is "Recreational Trail".  
 (C) Nominal 1:1 slope (HMA only)

STATION TO STATION	PAVEMENT TYPE PCC, HMA, or option	(C) Feet
391+20.00	441+21.07	x

**TYPICAL CROSS SECTION  
 RECREATIONAL TRAIL  
 PAVED SURFACE**



7154B  
10-20-09

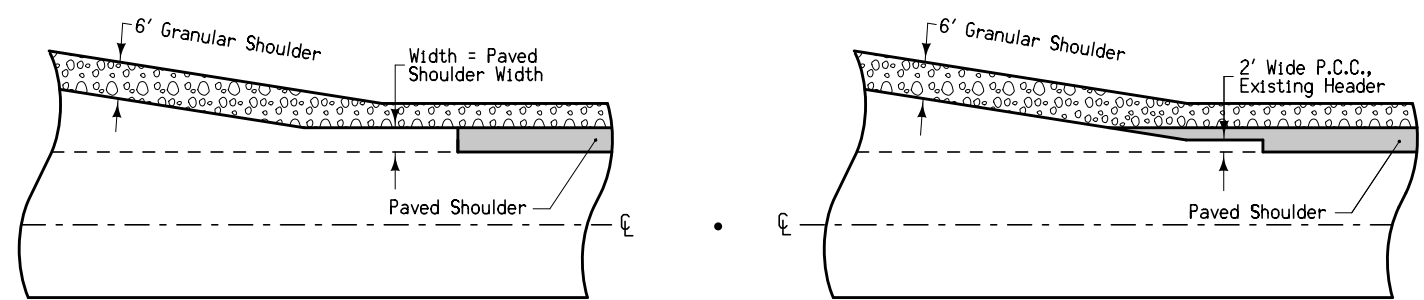


With Newly Constructed Returns

At UAC Returns

**PAVED SHOULDER  
DETAIL AT RETURNS**

7154A  
10-20-09

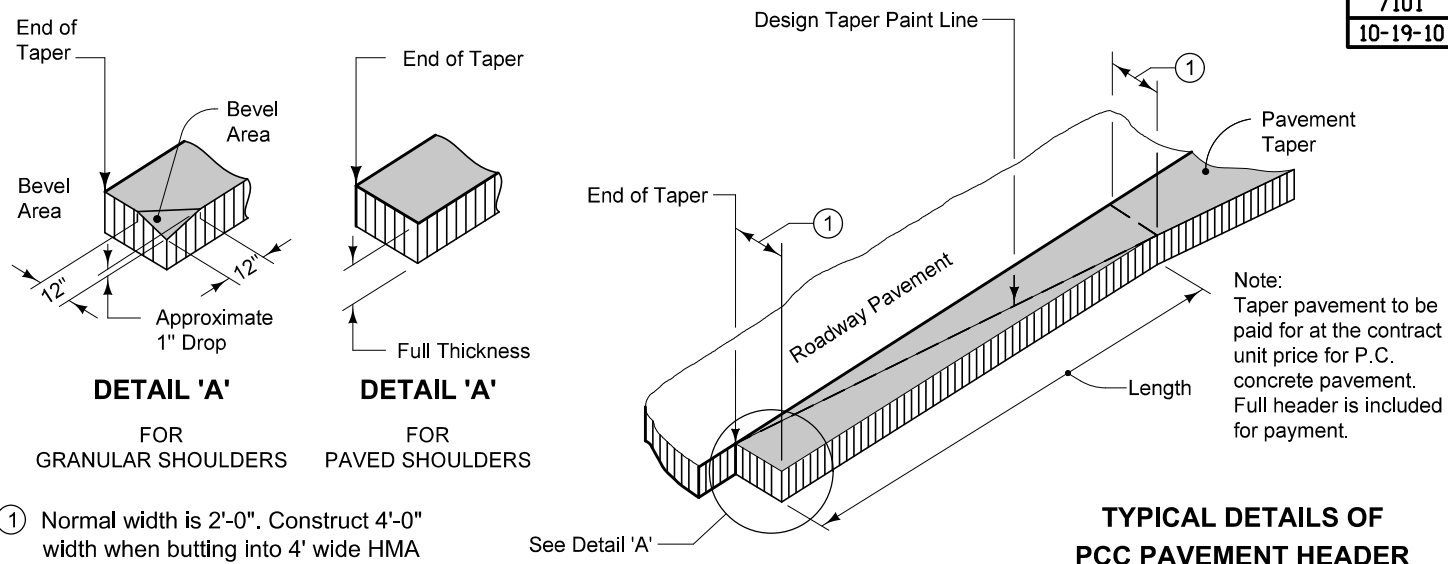


With Newly Constructed Turn Lanes

At UAC Turn Lanes

**PAVED SHOULDER  
DETAIL AT  
TURN LANES**

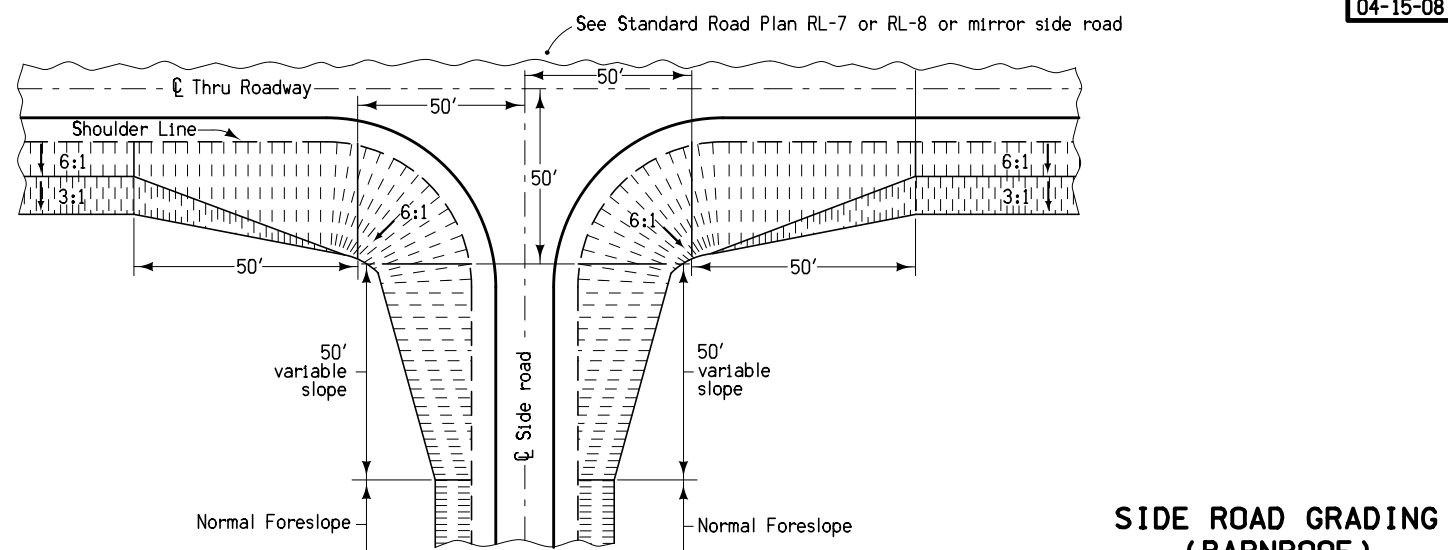
7101  
10-19-10



① Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

**TYPICAL DETAILS OF  
PCC PAVEMENT HEADER**

2117  
04-15-08



**SIDE ROAD GRADING  
(BARNROOF)**

### SURVEY SYMBOLS

- TDC Tree Deciduous
- PPA Power Pole Co. 1
- FWD Wood Fence
- LUM Luminaire
- TEV Evergreen Tree
- LP L.P. Tank
- D Centerline Draw or Stream (Down)
- RET Retaining Walls
- SI Sign
- SHR Shrub
- SI Sign
- EW Edge of Water
- DIK Centerline of Dike or Dam
- FLG Flag Poles
- WM Wind Mill
- FCL Chain Link and Security Fence
- HDG Hedge Row
- TV Satellite TV Dish
- RT Radio Tower
- INB Storm Sewer Beehive Intake
- WV Water Valve
- FHD Fire Hydrants
- WEL Well
- MH Utility Access (Manhole)
- LUM Luminaire
- MIS Miscellaneous
- TPD Telephone Pedestal
- EB Electrical Box
- UB Utility Box
- PR Electric Riser Pole
- FW Wire Fence
- GP Guard Post (Less Than 4 Posts)
- IN Storm Sewer Intake
- TLN Treeline
- TVP TV Pedestal
- SEP Septic Tank
- OUT Tile Outlet
- TIL Tile Line
- UST Underground Tank
- GV Gas Valve
- DU Centerline Draw or Stream (Up)
- BNK Stream Bank
- BL Topo Breakline
- RIP Rip-Rap

- St.S. STA Storm Sewer Line Co. 1
- F03 FOC Underground Fiber Optic Co. 3
- F05 FOE Underground Fiber Optic Co. 5
- F02 FOB Underground Fiber Optic Co. 2
- San. SAA Sanitary Sewer Line Co. 1
- T1 TLA Underground Telephone Line Co. 1
- E1 ELA Underground Electric Line Co. 1
- G GLA Underground Gas Line Co. 1
- TV TVA Underground TV Cable Co. 1
- W WLA Underground Water Line Co. 1
- F0 FOA Underground Fiber Optic Co. 1
- E2 ELB Underground Electric Line Co. 2
- San.2 SAB Sanitary Sewer Line Co. 2
- G2 GLB Underground Gas Line Co. 2
- F04 FOD Underground Fiber Optic Co. 4
- W2 WLB Underground Water Line Co. 2

### UTILITY LEGEND

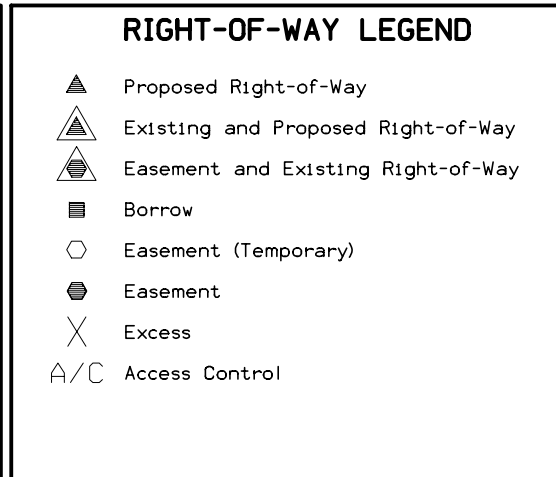
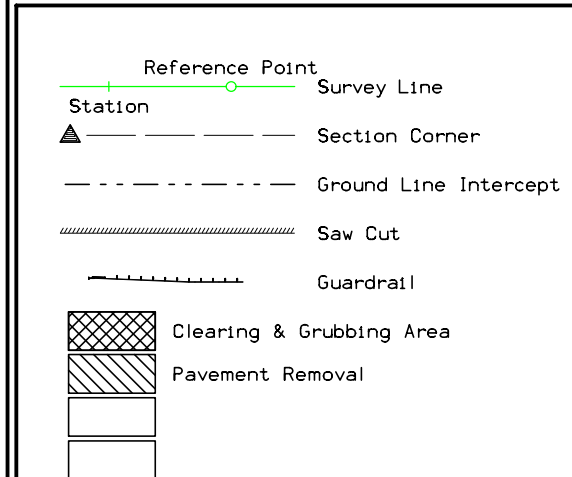
- F0 FOA Paetac Iowa Communications Network
- F02 FOB Lightcore (Digital Teleport)
- F03 FOC Iowa Network Service
- F04 FOD Indianola Municipal Utilities
- F05 FOE MCI
- T1 TLA Qwest
- E1 ELA Mid-American
- E2 ELB Indianola Municipal Utilities
- TV TVA Mediacom
- W WLA Indianola Municipal Utilities
- W2 WLB Warren Rural Water
- San. SAA City of Indianola
- San.2 SAB Private
- G GLA Mid-American
- G2 GLB Kinder Morgan
- St.S. STA City of Indianola
- PPA Mid-American

### 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.	
Yellow	(4)		Highlight for Critical Notes or Features
Red	(3)		Delineates Restricted Areas
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		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



## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

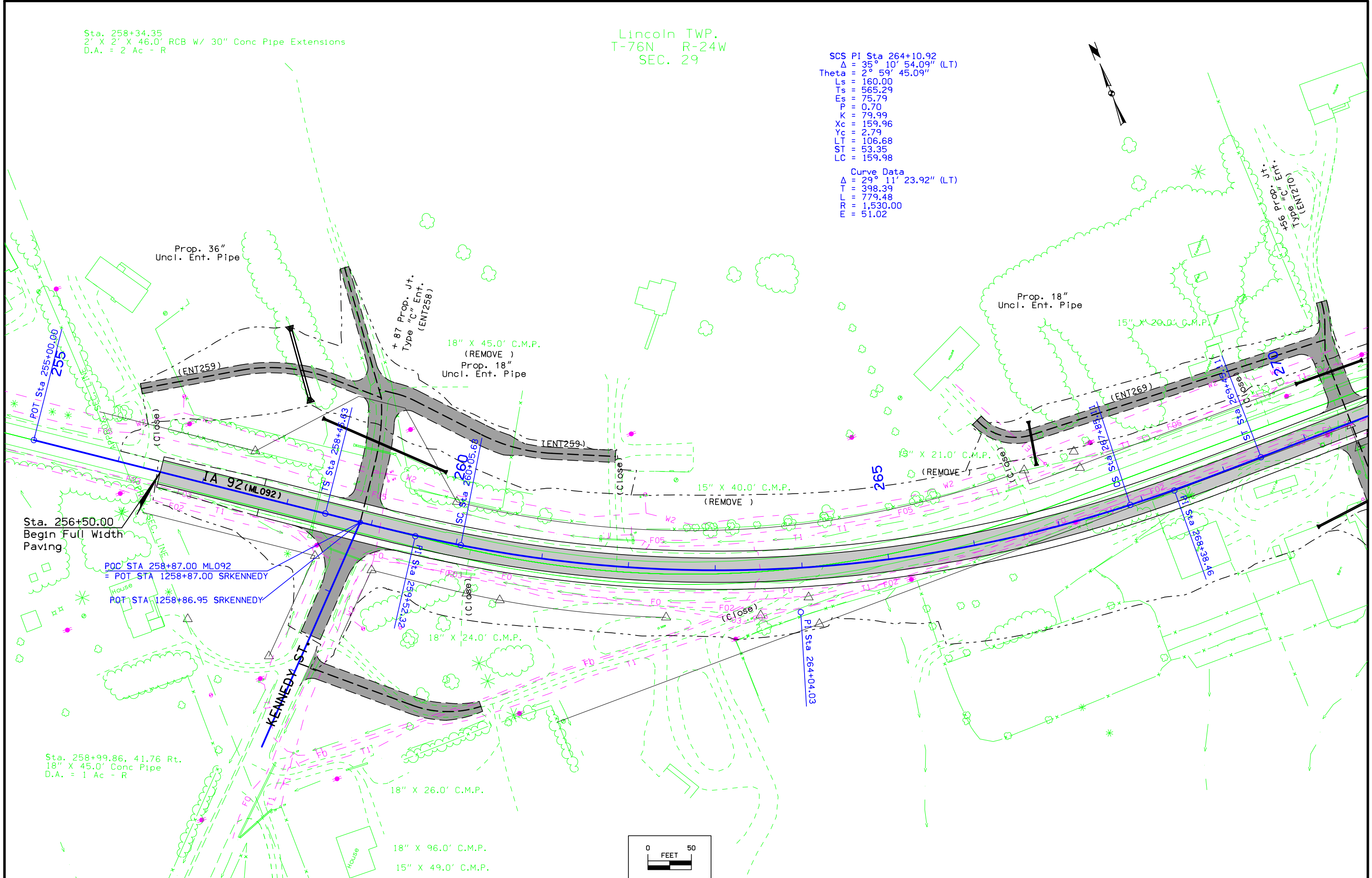
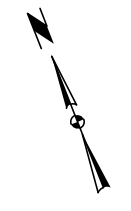
(COVERS SHEET SERIES D, E, F, & K)

Sta. 258+34.35  
2' X 2' X 46.0' RCB W/ 30" Conc Pipe Extensions  
D.A. = 2 Ac - R

Lincoln TWP.  
T-76N R-24W  
SEC. 29

SCS PI Sta 264+10.92  
 $\Delta = 35^\circ 10' 54.09''$  (LT)  
Theta =  $2^\circ 59' 45.09''$   
Ls = 160.00  
Ts = 565.29  
Es = 75.79  
P = 0.70  
K = 79.99  
Xc = 159.96  
Yc = 2.79  
LT = 106.68  
ST = 53.35  
LC = 159.98

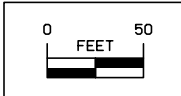
Curve Data  
 $\Delta = 29^\circ 11' 23.92''$  (LT)  
T = 398.39  
L = 779.48  
R = 1,530.00  
E = 51.02

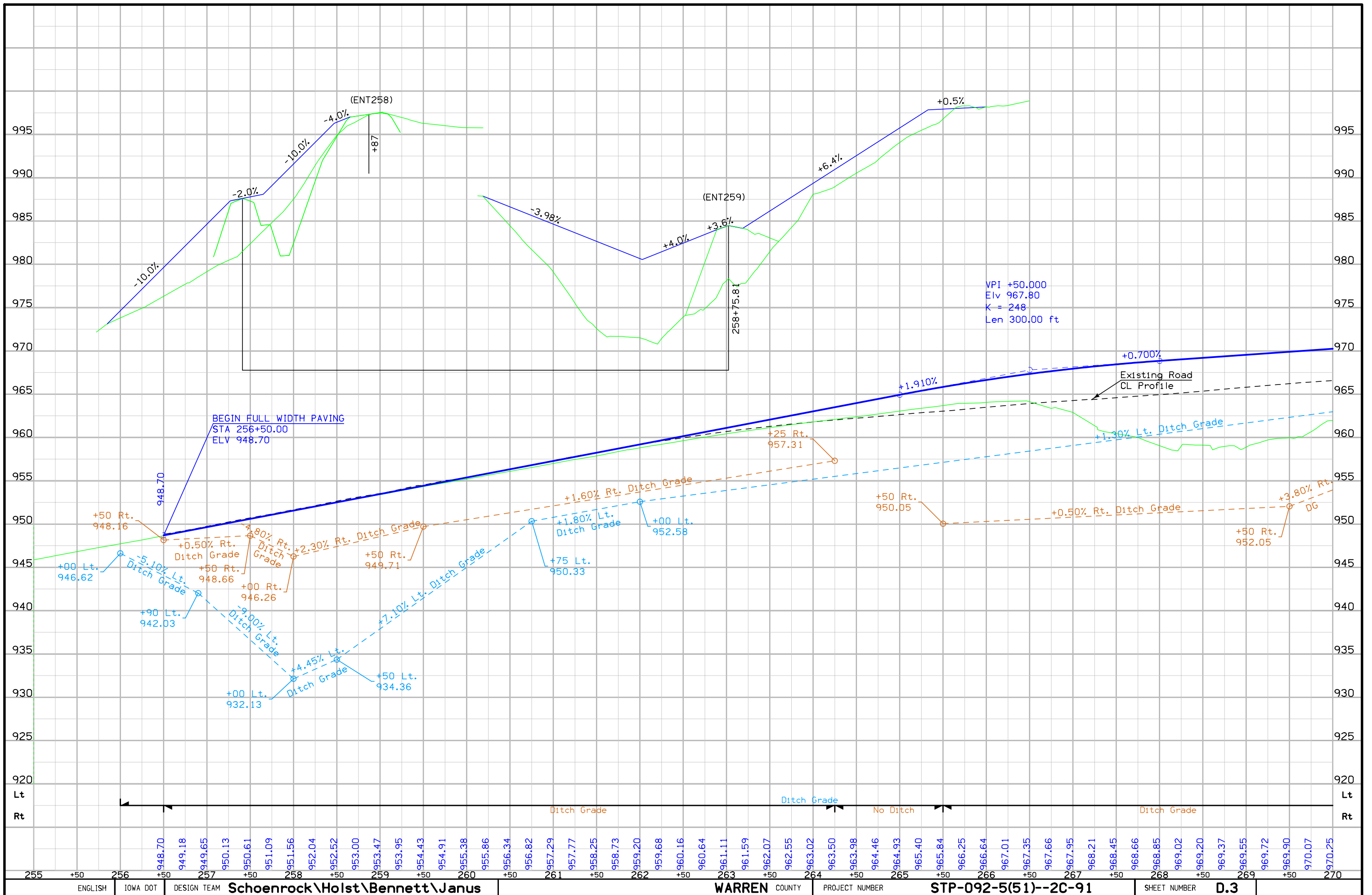


Sta. 256+50.00  
Begin Full Width  
Paving

POC STA 258+87.00 ML092  
= POT STA 1258+87.00 SRKENNEDY  
POT STA 1258+86.95 SRKENNEDY

Sta. 258+99.86, 41.76 Rt.  
18" X 45.0' Conc Pipe  
D.A. = 1 Ac - R







Lincoln TWP.  
T-76N R-24W  
SEC. 29

18" X 62.0' C.M.P.  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

15" X 30.0' C.M.P.  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

18" X 24.0'  
C.M.P.  
(REMOVE)

POT STA 283+68.17 ML092  
= PI STA 1383+68.17 SR57N  
15" X 28.0'  
C.M.P.

15" X 36.0' C.M.P.  
15" X 37.0'  
Conc. Pipe

18" X 35.0' C.M.P.  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

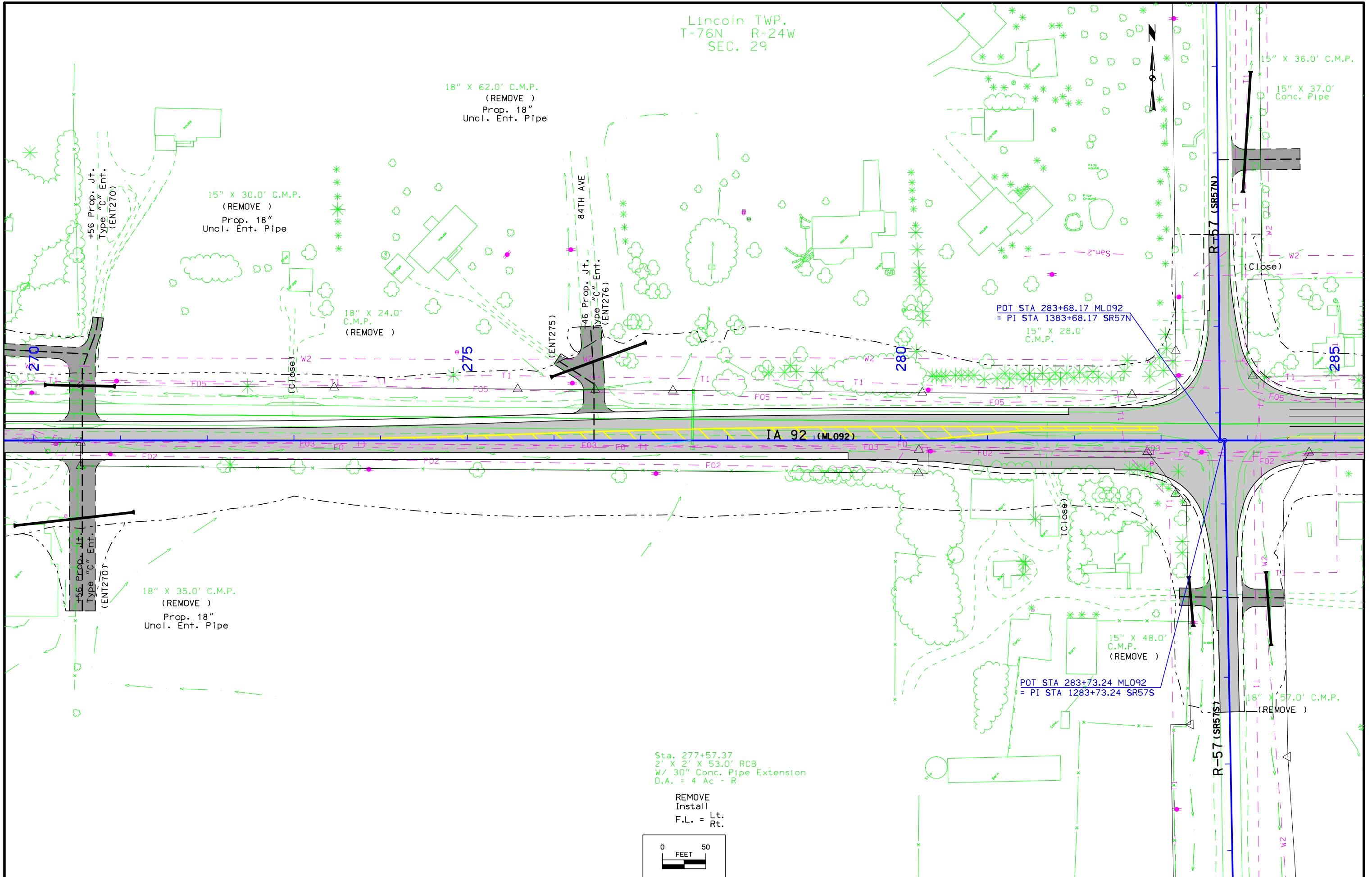
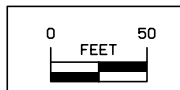
15" X 48.0'  
C.M.P.  
(REMOVE)

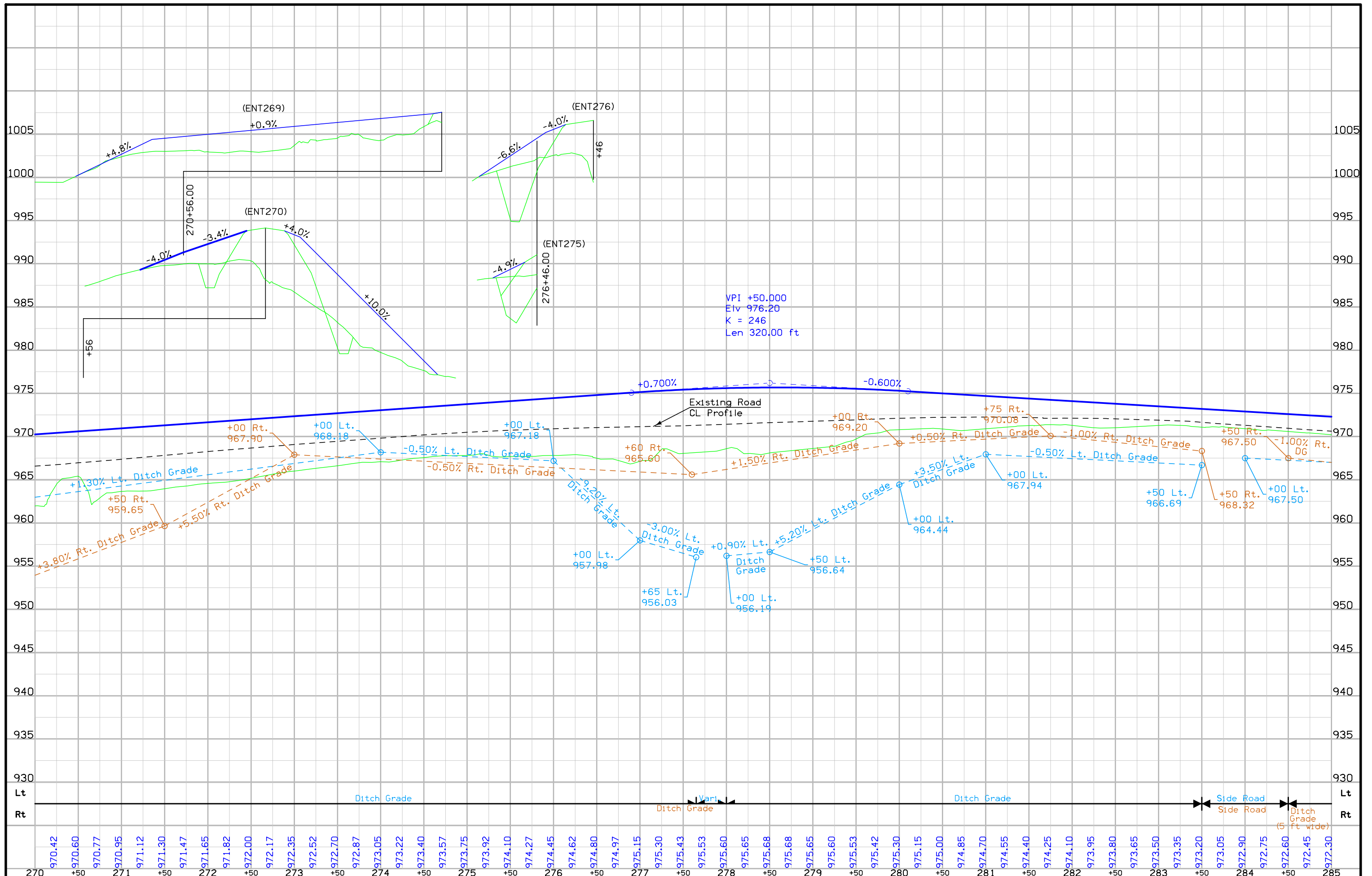
POT STA 283+73.24 ML092  
= PI STA 1283+73.24 SR57S

18" X 57.0' C.M.P.  
(REMOVE)

Sta. 277+57.37  
2' X 2' X 53.0' RCB  
W/ 30" Conc. Pipe Extension  
D.A. = 4 Ac - R

REMOVE  
Install  
F.L. = Lt.  
Rt.





Lincoln TWP.  
T-76N R-24W  
SEC. 29



10' C.M.P.

37.0'  
Pipe

15" X 20.0' C.M.P.  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

18" X 40.0' C.M.P.  
(REMOVE)

18" X 40.0' C.M.P.  
(REMOVE)

18" X 50.0' C.M.P.  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

+08 Prop. Jt.  
Type "C" Ent.  
(ENT297)

290

295

300

IA 92 (ML092)

30" X 50.0' C.M.P.  
(REMOVE)  
Prop. 30"  
Uncl. Ent. Pipe

+80 Prop.  
Type "C" Ent.  
(ENT291)

6" X 32.0' PVC Pipe  
(REMOVE)  
Prop. 18"  
Uncl. Ent. Pipe

Prop. 18"  
Uncl. Ent. Pipe

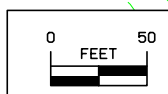
+08 Prop. Jt.  
Type "C" Ent.  
(ENT297)

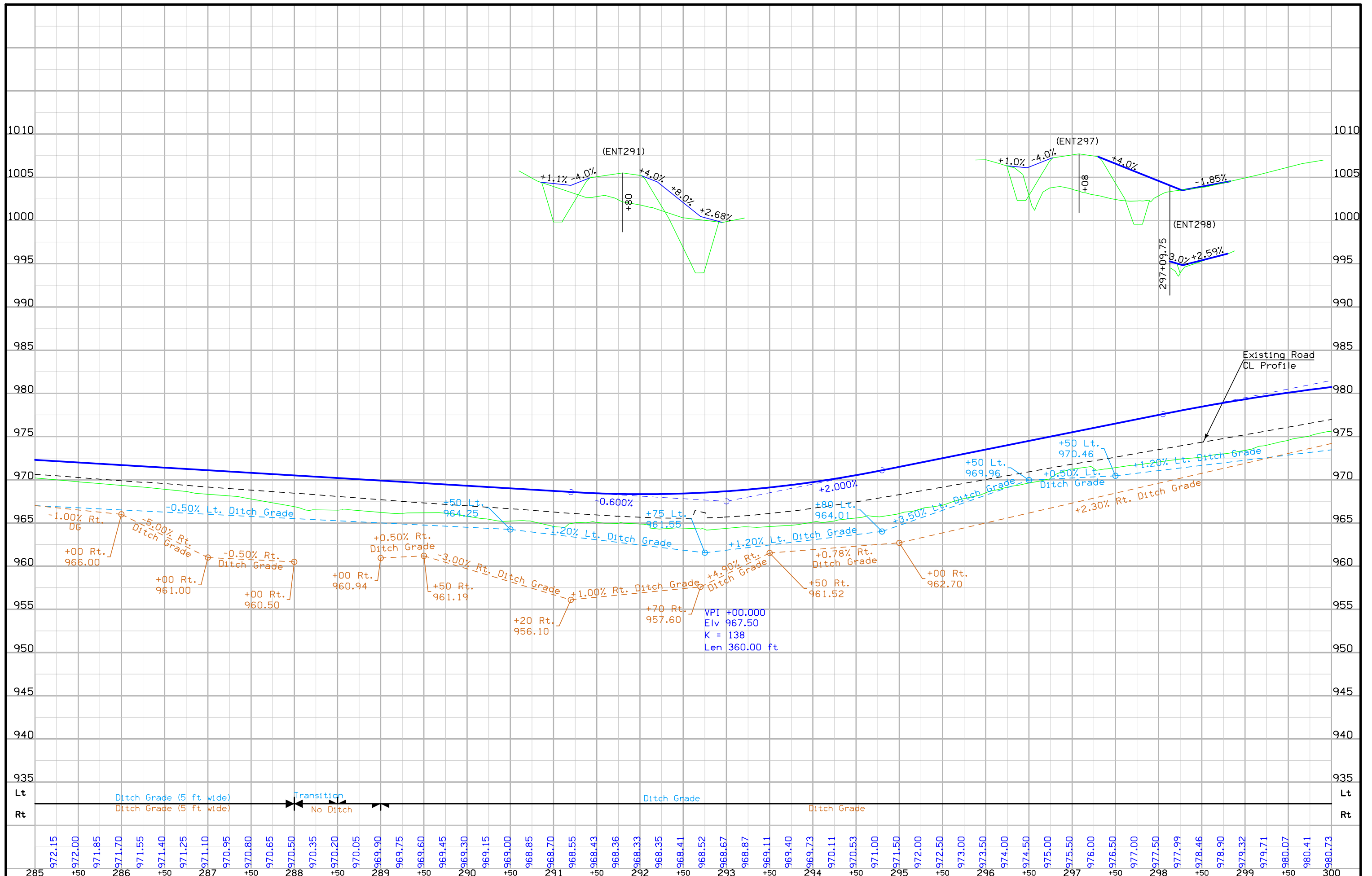
C.M.P.

Sta. 292+63.66  
3' X 2' X 43.0' RCB  
W/ 36" RCP Extensions  
D.A. = 21 Ac - R

REMOVE  
Install  
F.L. = Lt.  
Rt.

Sta. 292+61.18, 38.00 RT  
6 Tile Riser Intake  
D.A. = Part of 21A - R

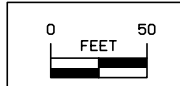
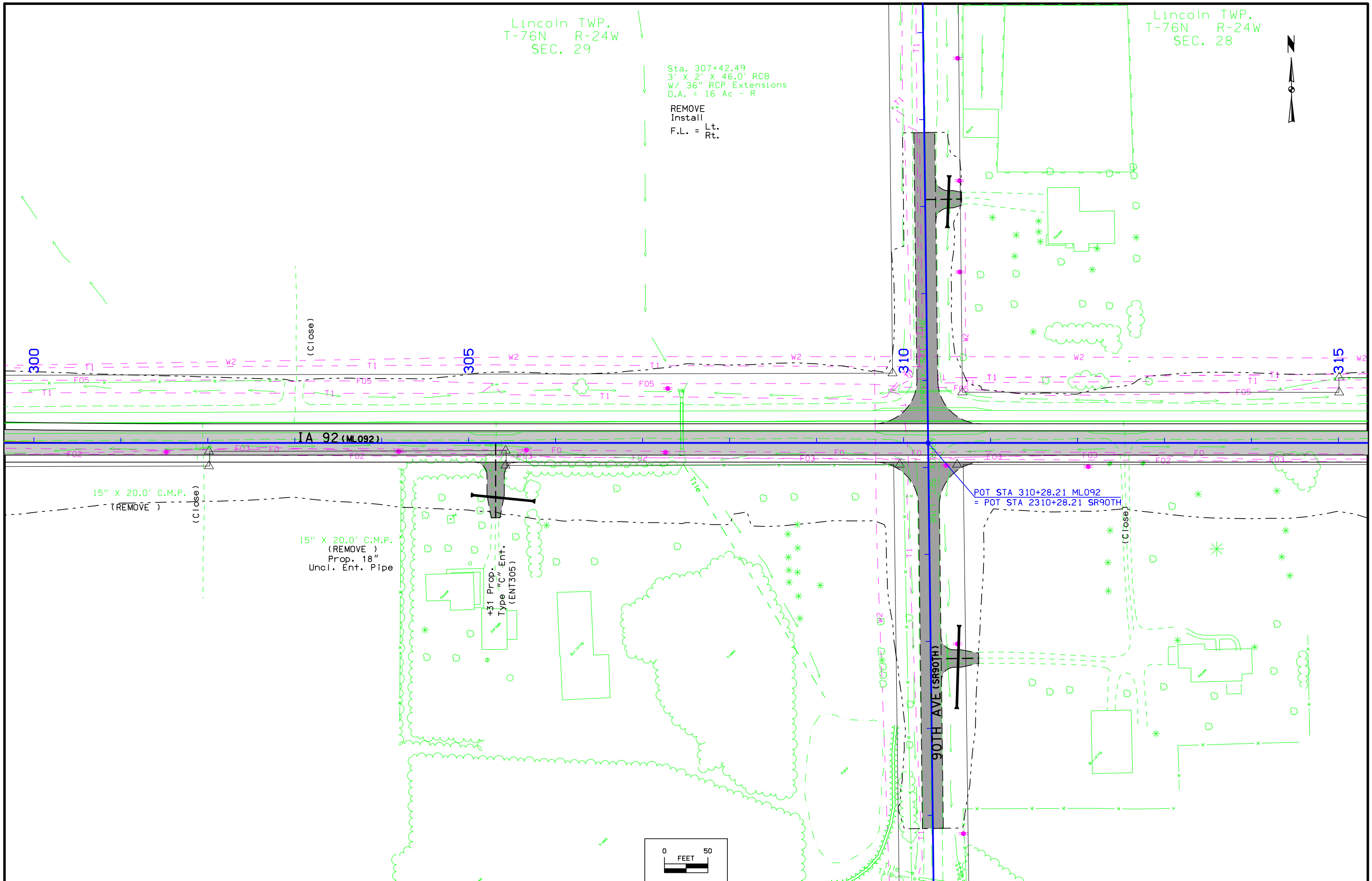


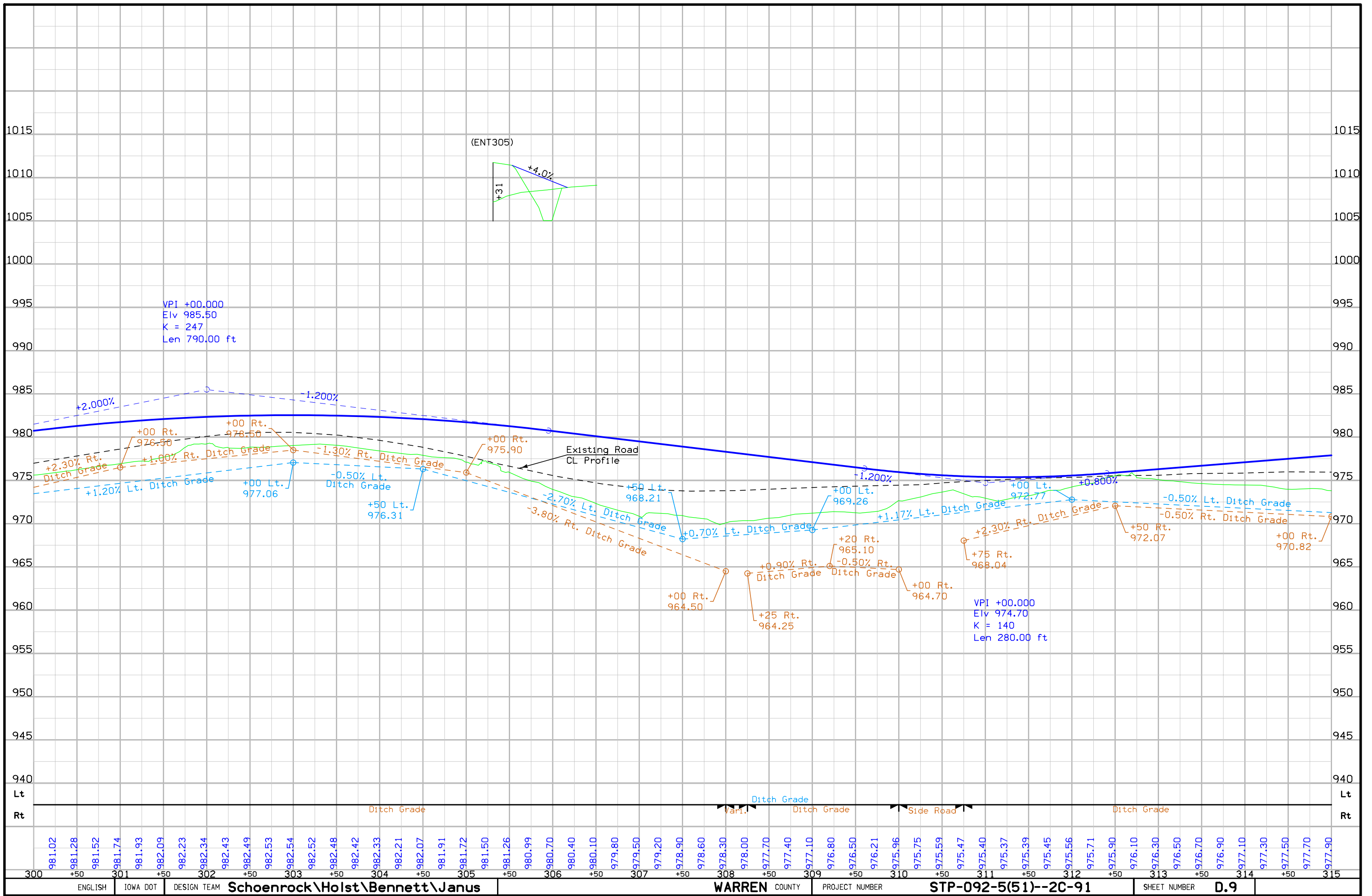


Lincoln TWP.  
T-76N R-24W  
SEC. 29

Lincoln TWP.  
T-76N R-24W  
SEC. 28

Sta. 307+42.49  
3' X 2' X 46.0' RCB  
W/ 36" RCP Extensions  
D.A. = 16' Ac - R  
REMOVE  
Install  
F.L. = Lt.  
Rt.





Lincoln TWP.  
T-76N R-24W  
SEC. 28

Sta. 315+86.80  
2' X 2' X 46.0' RCB  
W/ 30" RCP Extensions  
D.A. = 6' Ac - R

REMOVE  
Install  
F.L. = Lt.  
Rt.

Sta. 329+73.63  
2' X 2' X 47.0' RCB  
W/ 30" Conc. Pipe Extension  
D.A. = 8' Ac - F

REMOVE  
Install  
F.L. = Lt.  
Rt.

12" X 20.0' C.M.P.  
(REMOVE )  
Prop. 18"  
Uncl. Ent. Pipe

+55 Prop.  
Type "C" Ent.  
(ENT323)

+55 Prop. Jt.  
Type "C" Ent.  
(ENT323)

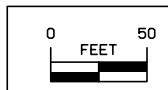
IA 92 (ML092)

15" X 20.0' C.M.P.  
(REMOVE )

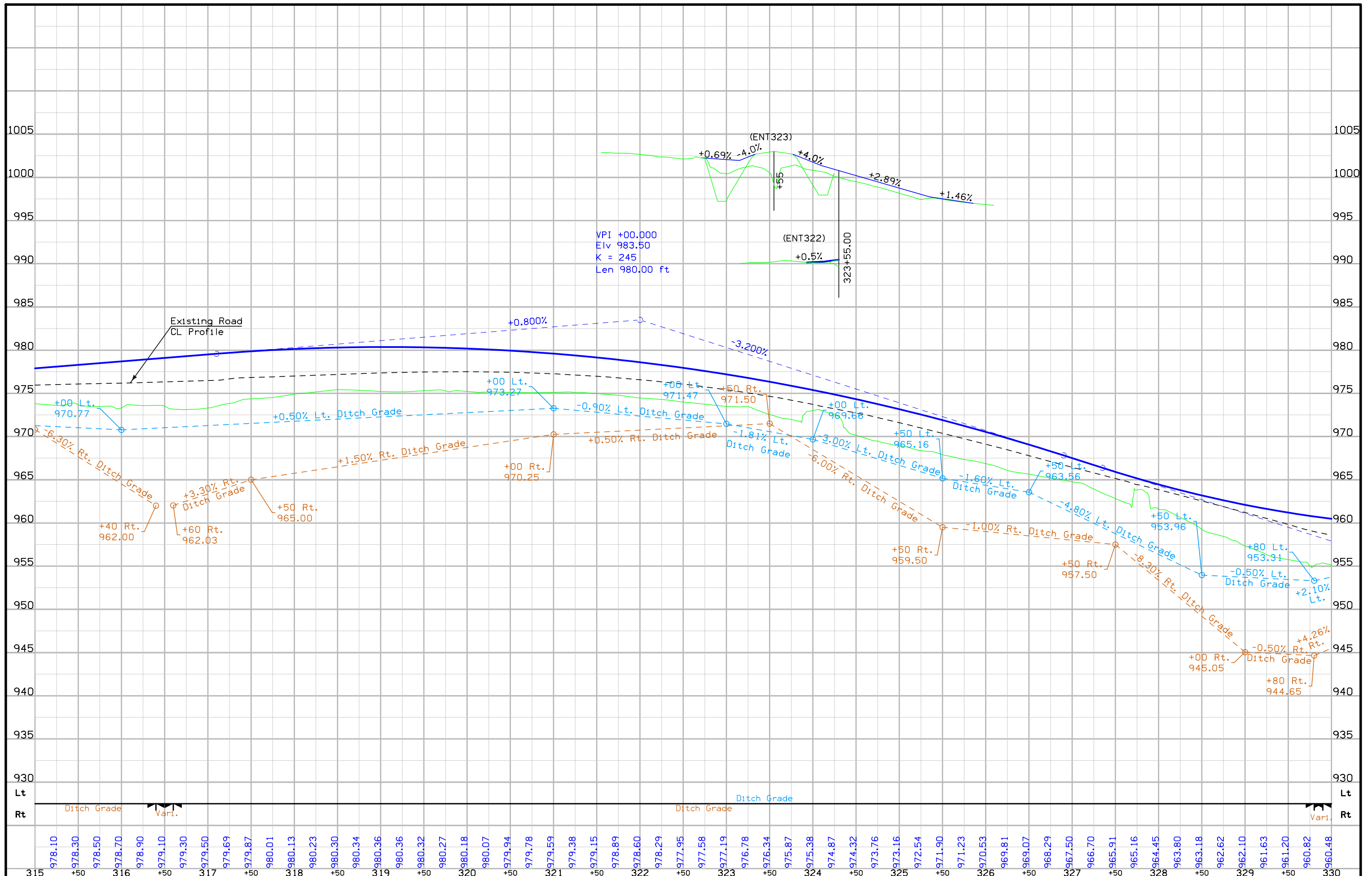
18" X 48.0' C.M.P.  
(REMOVE )

15" X 16.0'  
Conc. Pipe  
(U.A.C.)

18" X 15.0' C.M.P.  
(REMOVE )







315	778.10	+50	778.30	778.50	778.70	778.90	779.10	779.30	779.50	779.69	779.87	780.01	780.13	780.23	780.30	780.34	780.36	780.36	780.32	780.27	780.18	780.07	779.94	779.78	779.59	779.38	779.15	778.89	778.60	778.29	777.95	777.58	777.19	776.78	776.34	775.87	775.38	774.87	774.32	773.76	773.16	772.54	771.90	771.23	770.53	769.81	769.07	768.29	767.50	766.70	765.91	765.16	764.45	763.80	763.18	762.62	762.10	761.63	761.20	760.82	760.48	330
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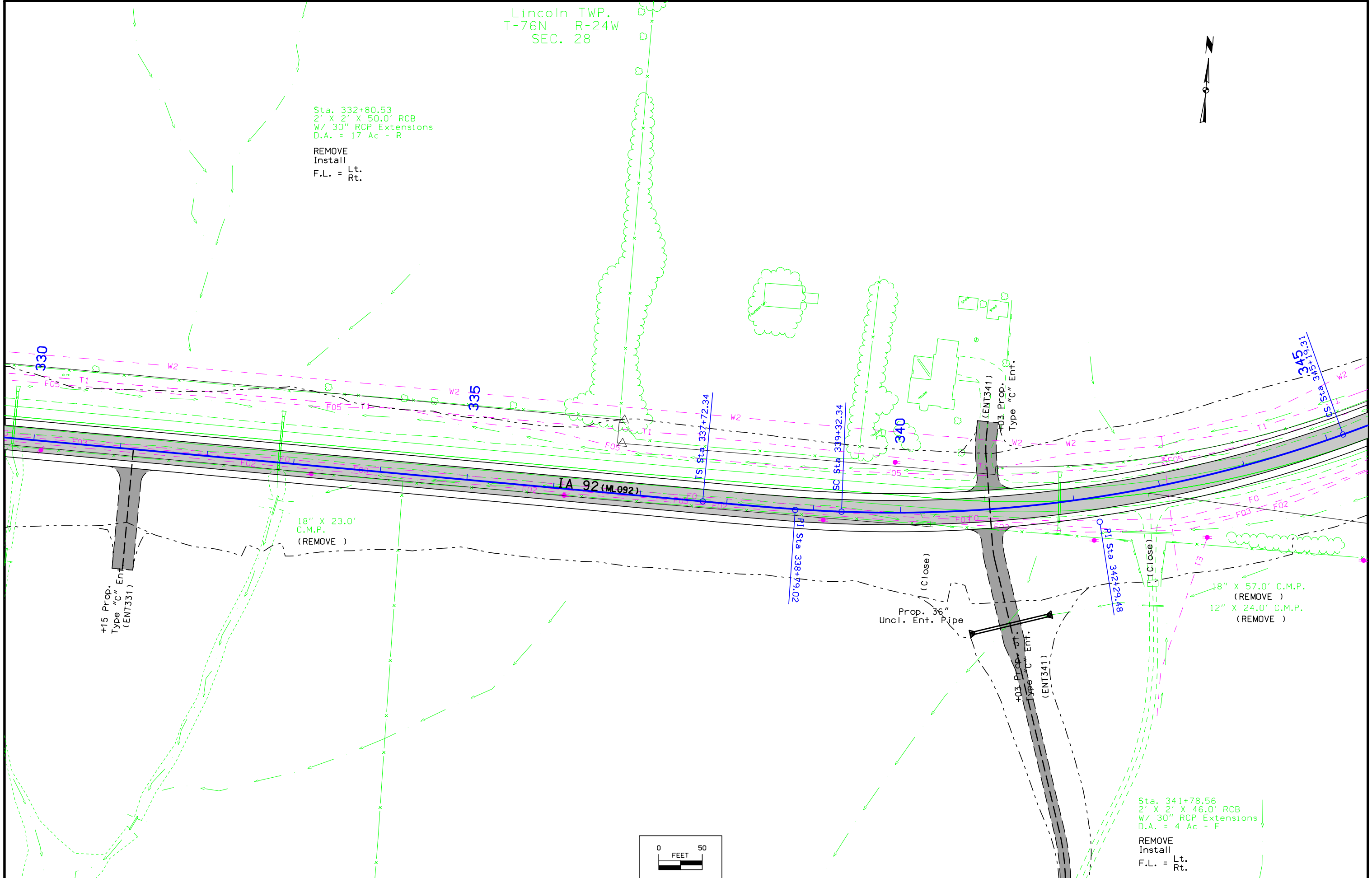


Lincoln TWP.  
T-76N R-24W  
SEC. 28



Sta. 332+80.53  
2' X 2' X 50.0' RCB  
W/ 30" RCP Extensions  
D.A. = 17 Ac - R

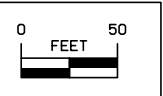
REMOVE  
Install  
F.L. = Lt.  
Rt.



18" X 23.0'  
C.M.P.  
(REMOVE)

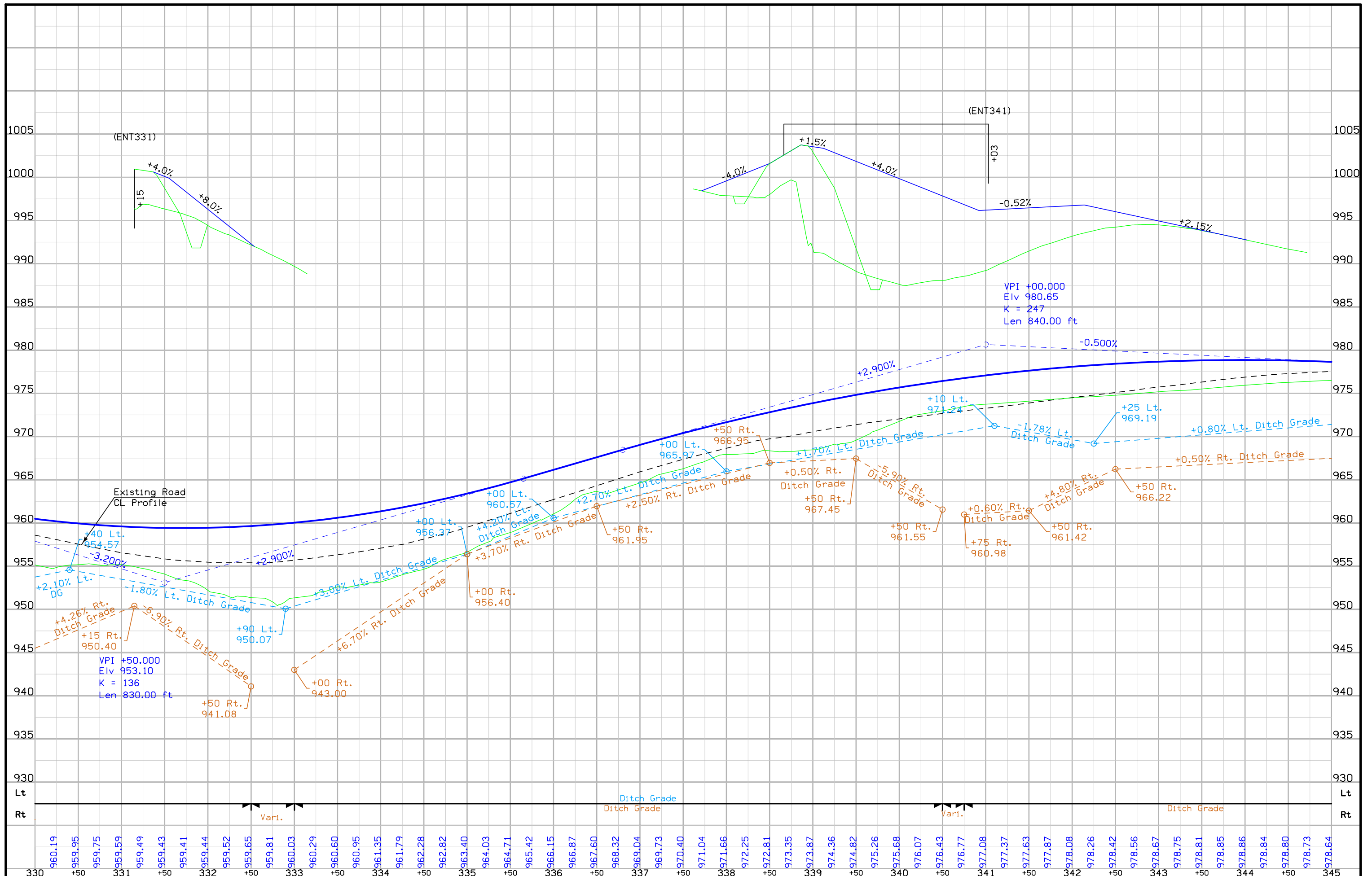
18" X 57.0' C.M.P.  
(REMOVE)  
12" X 24.0' C.M.P.  
(REMOVE)

Prop. 36"  
Uncl. Ent. Pipe  
(Close)

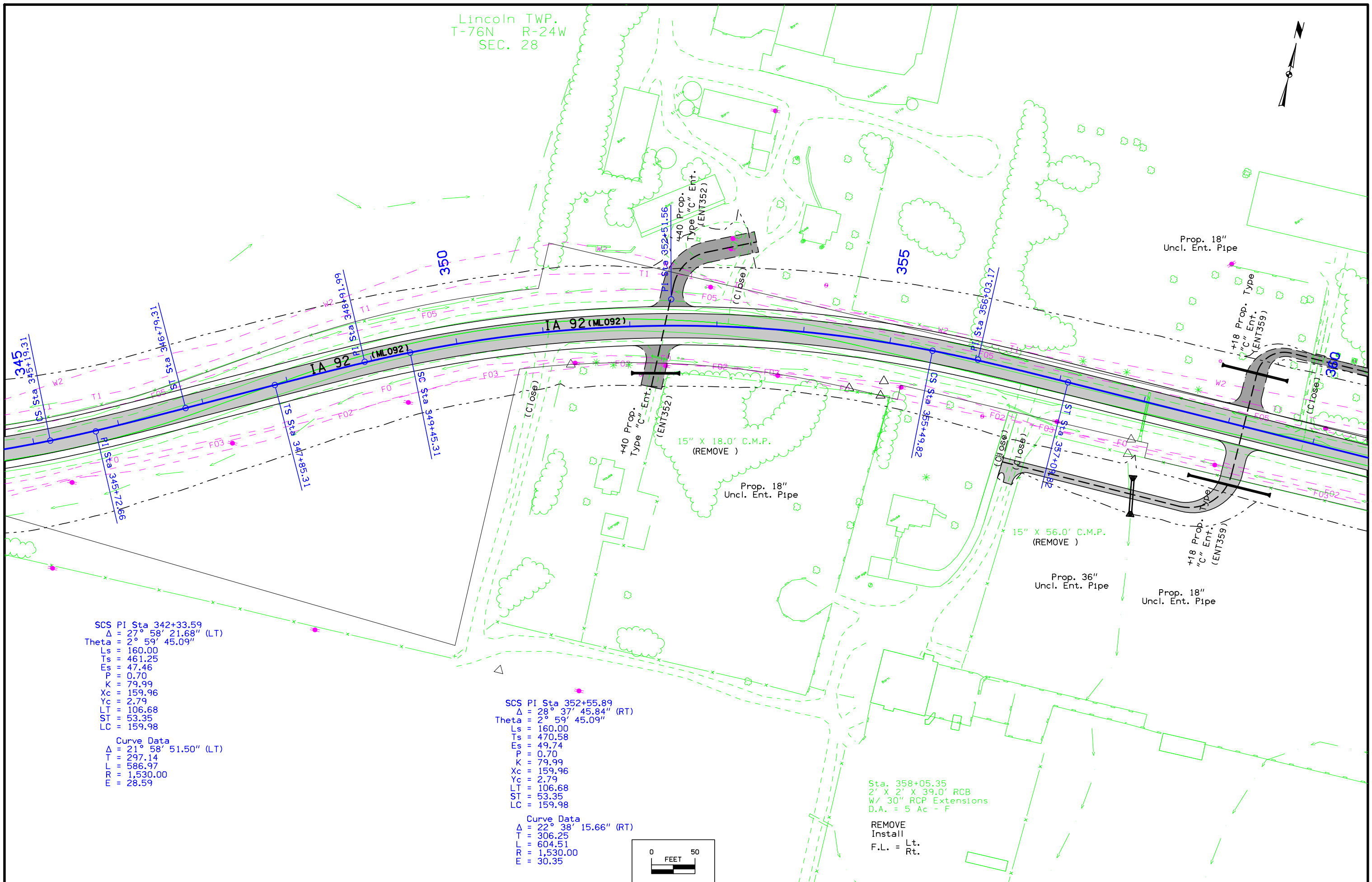


Sta. 341+78.56  
2' X 2' X 46.0' RCB  
W/ 30" RCP Extensions  
D.A. = 4 Ac - F

REMOVE  
Install  
F.L. = Lt.  
Rt.



Lincoln TWP.  
T-76N R-24W  
SEC. 28



SCS PI Sta 342+33.59  
 $\Delta = 27^\circ 58' 21.68''$  (LT)  
 Theta =  $2^\circ 59' 45.09''$   
 Ls = 160.00  
 Ts = 461.25  
 Es = 47.46  
 P = 0.70  
 K = 79.99  
 Xc = 159.96  
 Yc = 2.79  
 LT = 106.68  
 ST = 53.35  
 LC = 159.98

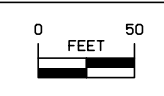
Curve Data  
 $\Delta = 21^\circ 58' 51.50''$  (LT)  
 T = 297.14  
 L = 586.97  
 R = 1,530.00  
 E = 28.59

SCS PI Sta 352+55.89  
 $\Delta = 28^\circ 37' 45.84''$  (RT)  
 Theta =  $2^\circ 59' 45.09''$   
 Ls = 160.00  
 Ts = 470.58  
 Es = 49.74  
 P = 0.70  
 K = 79.99  
 Xc = 159.96  
 Yc = 2.79  
 LT = 106.68  
 ST = 53.35  
 LC = 159.98

Curve Data  
 $\Delta = 22^\circ 38' 15.66''$  (RT)  
 T = 306.25  
 L = 604.51  
 R = 1,530.00  
 E = 30.35

Sta. 358+05.35  
 2' X 2' X 39.0' RCB  
 W/ 30" RCP Extensions  
 D.A. = 5 Ac - F

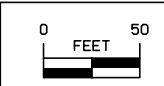
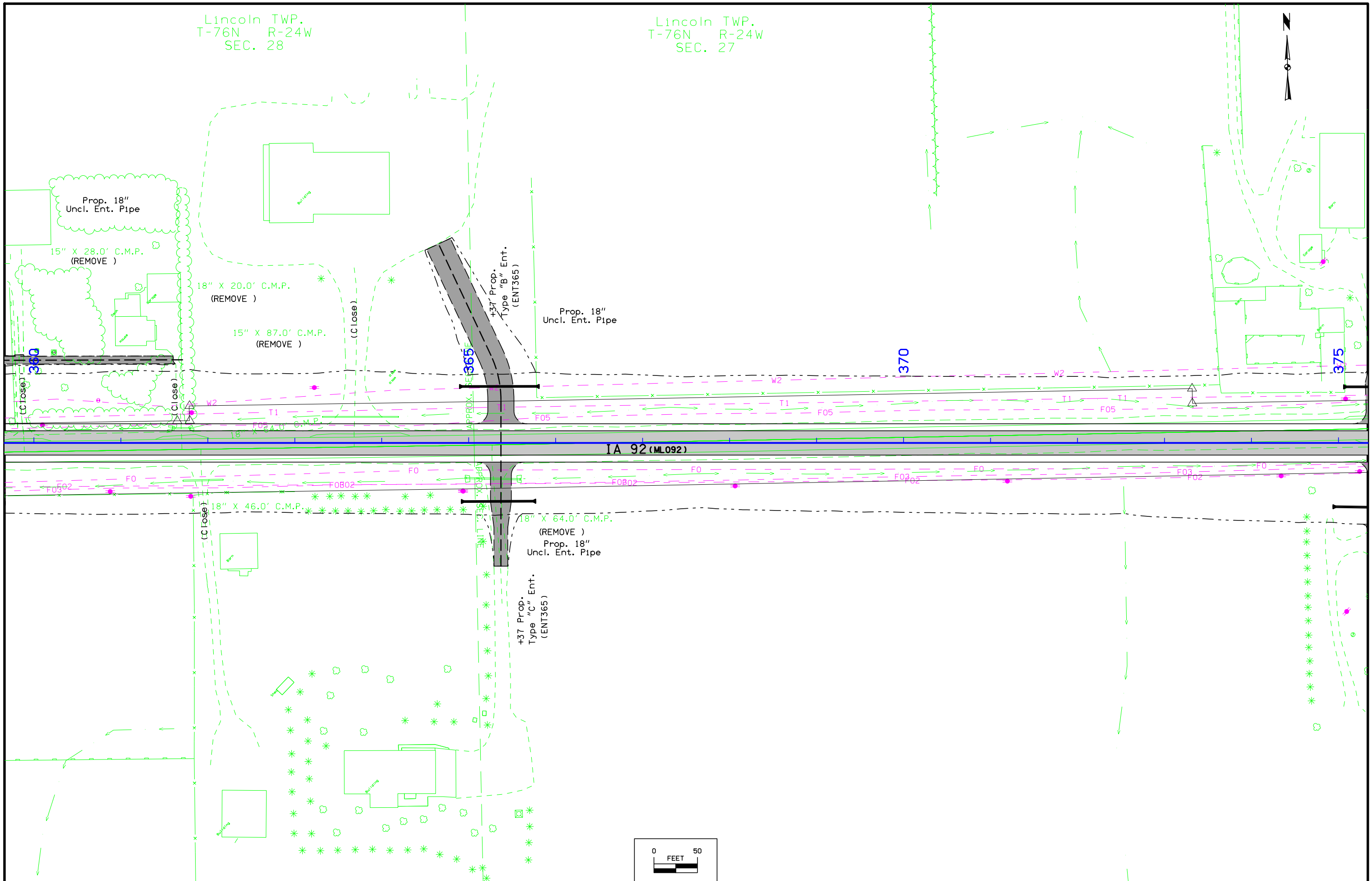
REMOVE  
 Install  
 F.L. = Lt.  
 Rt.

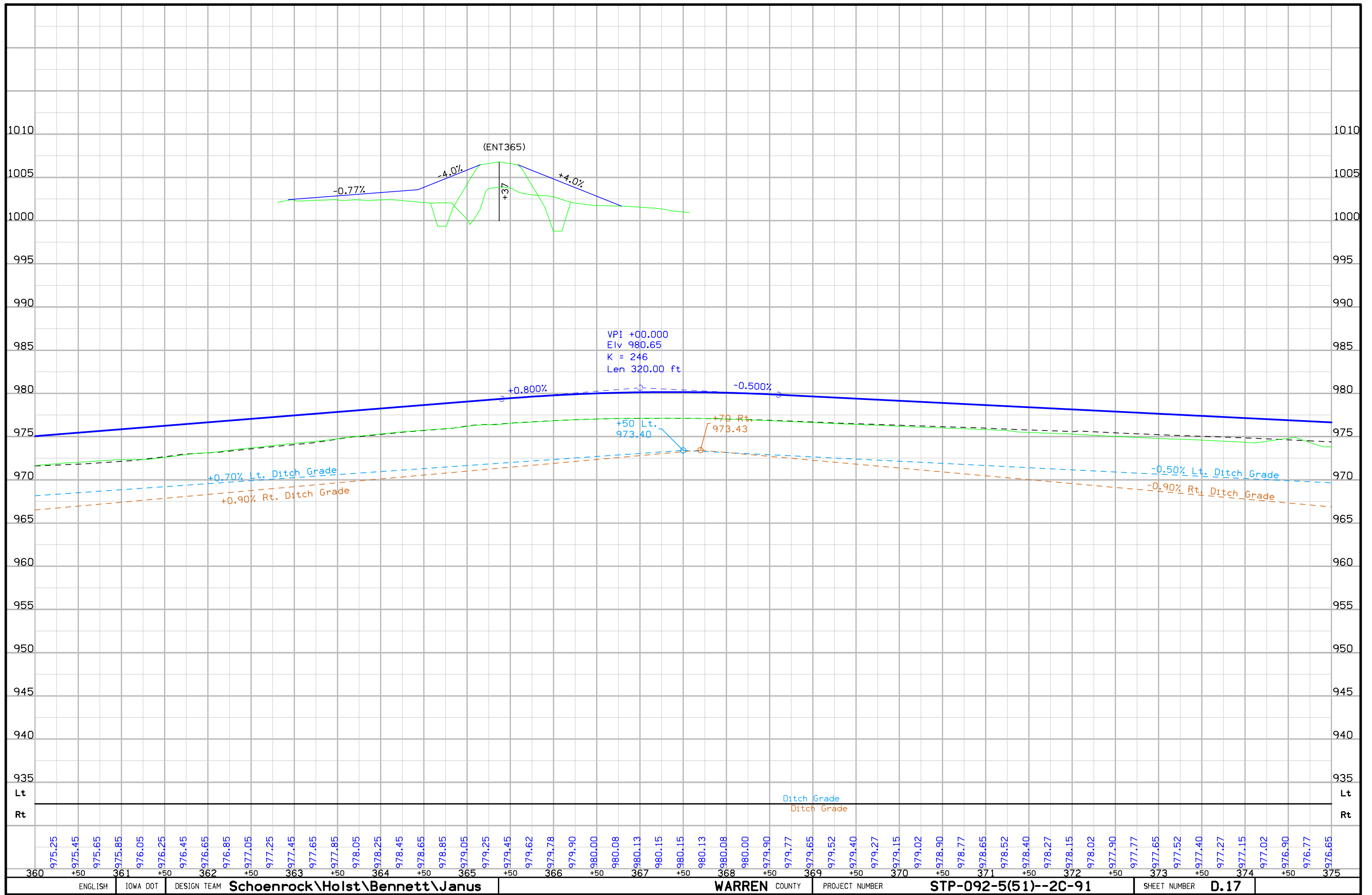




Lincoln TWP.  
T-76N R-24W  
SEC. 28

Lincoln TWP.  
T-76N R-24W  
SEC. 27







Lincoln TWP.  
T-76N R-24W  
SEC. 27



15" X 60.0' Conc. Pipe

18" X 32.0' Conc. Pipe/C.M.P.  
(REMOVE )  
Prop. 18"  
Uncl. Ent. Pipe

15" X 37.0' C.M.P.  
(REMOVE )

18" X 56.0' Conc. Pipe  
(REMOVE )

IA 92 (ML092)

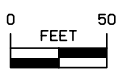
18" X 41.0' C.M.P.  
(REMOVE )

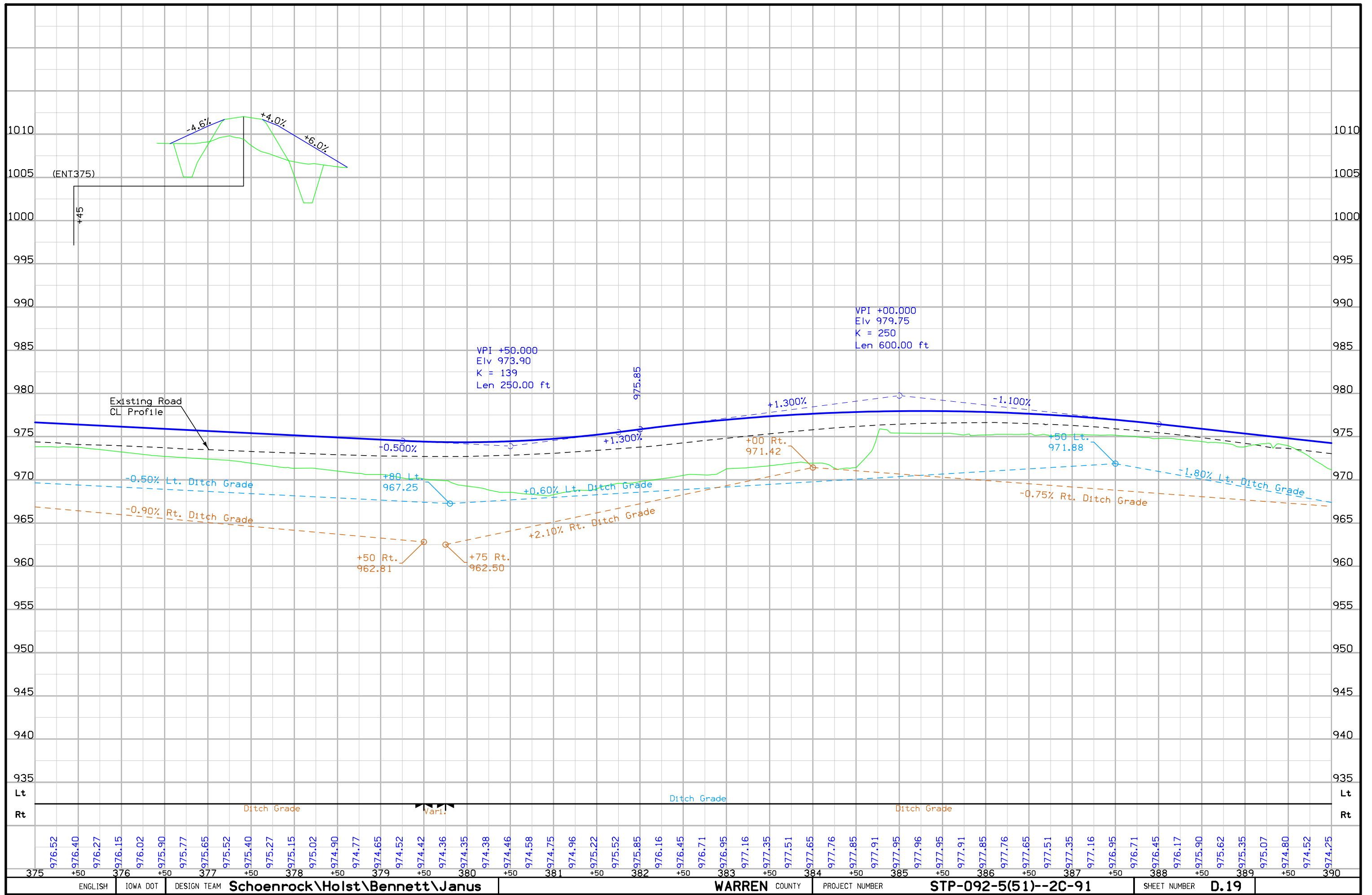
18" X 32.0' Conc. Pipe  
(REMOVE )  
Prop. 18"  
Uncl. Ent. Pipe

15" X 24.0'  
C.M.P.  
(REMOVE )  
15" X 12.0'  
C.M.P.  
(REMOVE )

Sta. 379+69.09  
2' X 2' X 42.0' RCB  
W/ 30" RCP Extensions  
D.A. = 4 Ac - R

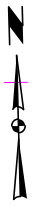
REMOVE  
Install  
F.L. = Lt.  
Rt.







Lincoln TWP.  
T-76N R-24W  
SEC. 27



Curve Data  
Δ = 0° 19' 35.74" (RT)  
R = 34.20  
PI = 68.40  
L = 12,000.00  
e = 0.05

15" X 43.0' C.M.P.

15" X 30.0' Conc. Pipe

+16.98 Prop. Type "B" Ent.

390

395

400

405

R-63 (SR63N)

R-63 (SR63S)

IA 92 (ML092)

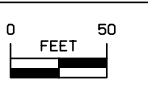
15" X 28.0' C.M.P. (REMOVE)

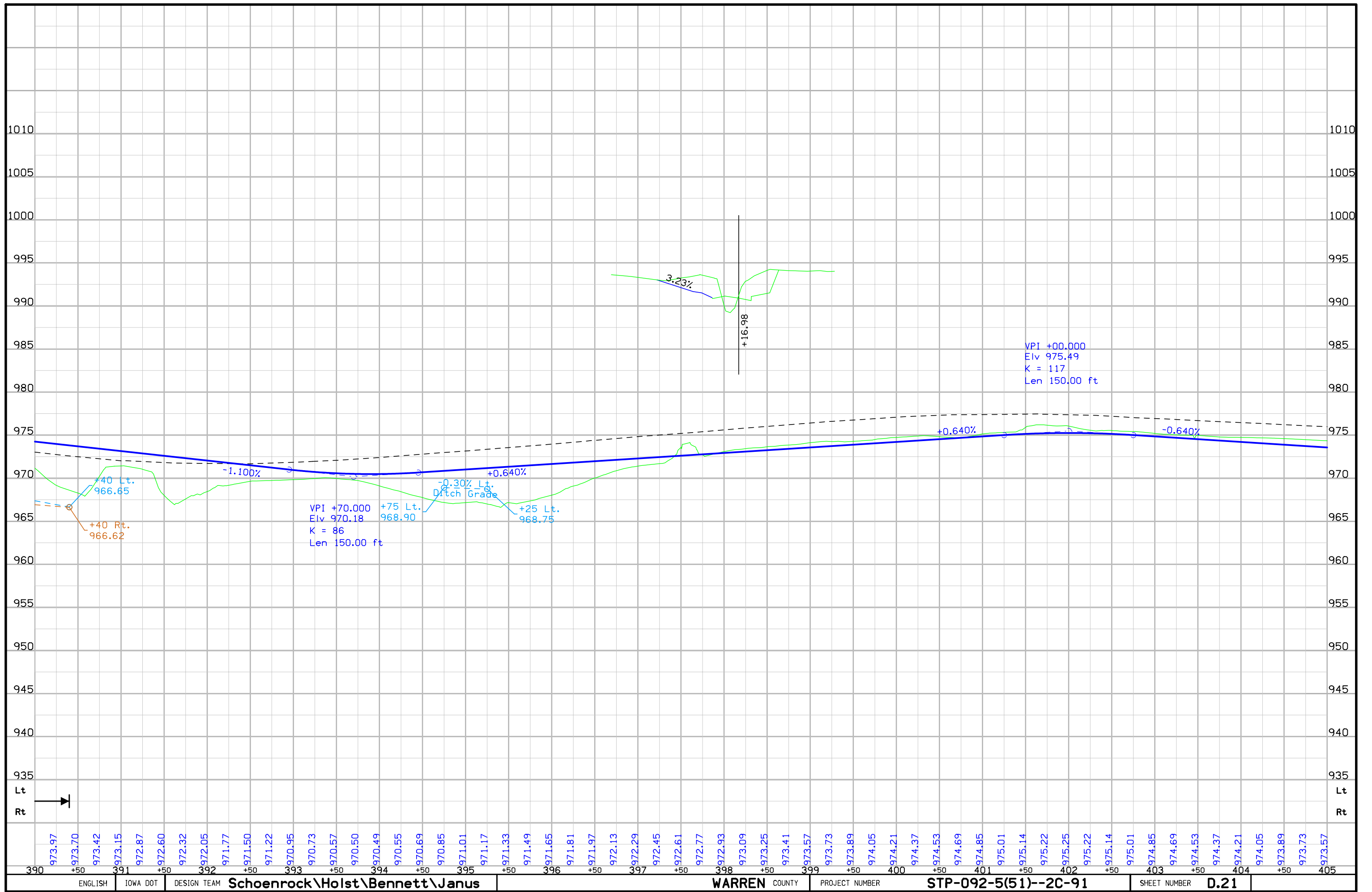
15" X 56.0' C.M.P. (REMOVE)

Sta. 390+78.55  
2' X 2' X 132.0' RCB W/ 30" RCP Extensions  
D.A. = 7 Ac - R

Sta. 391+29.59, 61.89 Lt.  
24" X 60.0' Conc Pipe  
D.A. = 3 Ac - R

Sta. 395+43.91  
2' X 2' X 43.0' RCB W/ 30" RCP Extensions  
D.A. = 9 Ac - R





Lincoln TWP.  
T-76N R-24W  
SEC. 27

Sta. 417+03.73, 37.07 Lt.  
22" X 14" X 60.0' Arch Conc Pipe  
D.A. = 4 Ac - R

(Remove)

Curve Data  
Δ = 0° 25' 37.45" (LT)  
= 44.72  
= 89.45  
= 12,000.00  
= 0.08

15" X 24.0' C.M.P.  
(Remove)

15" X 48.0' C.M.P.  
(Remove)

IA 92 (ML092)

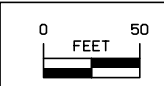
Y ST (SR110N)

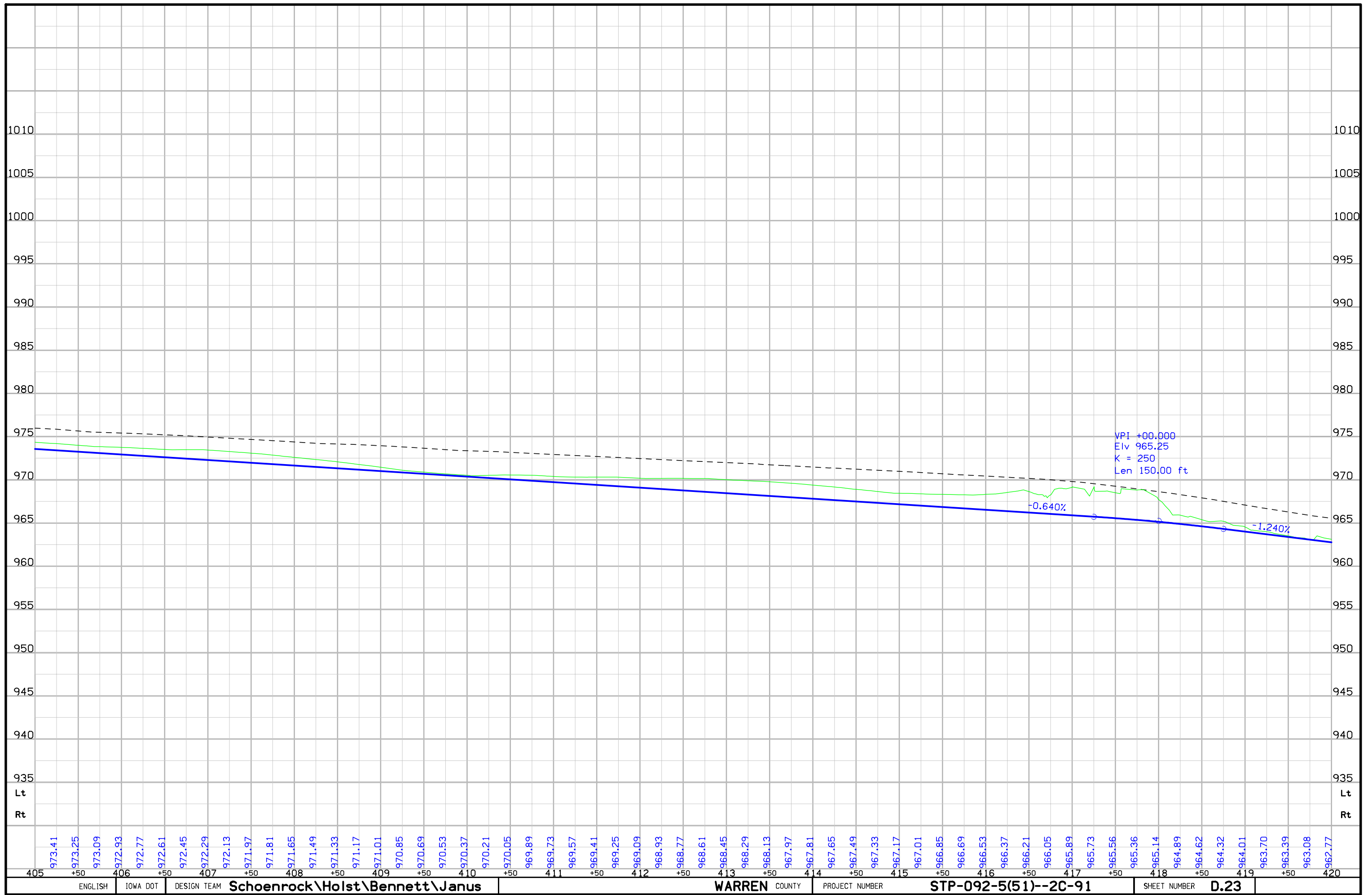
Y ST (SR110S)

Sta. 412+66.92, 247.41 RT  
6 Tile Riser Intake  
D.A. = 5A - R  
(U.A.C.)

Sta. 417+30.31, 350.36 Rt  
30" X 44.0' CMP  
D.A. = 16 Ac - R  
(Remove)

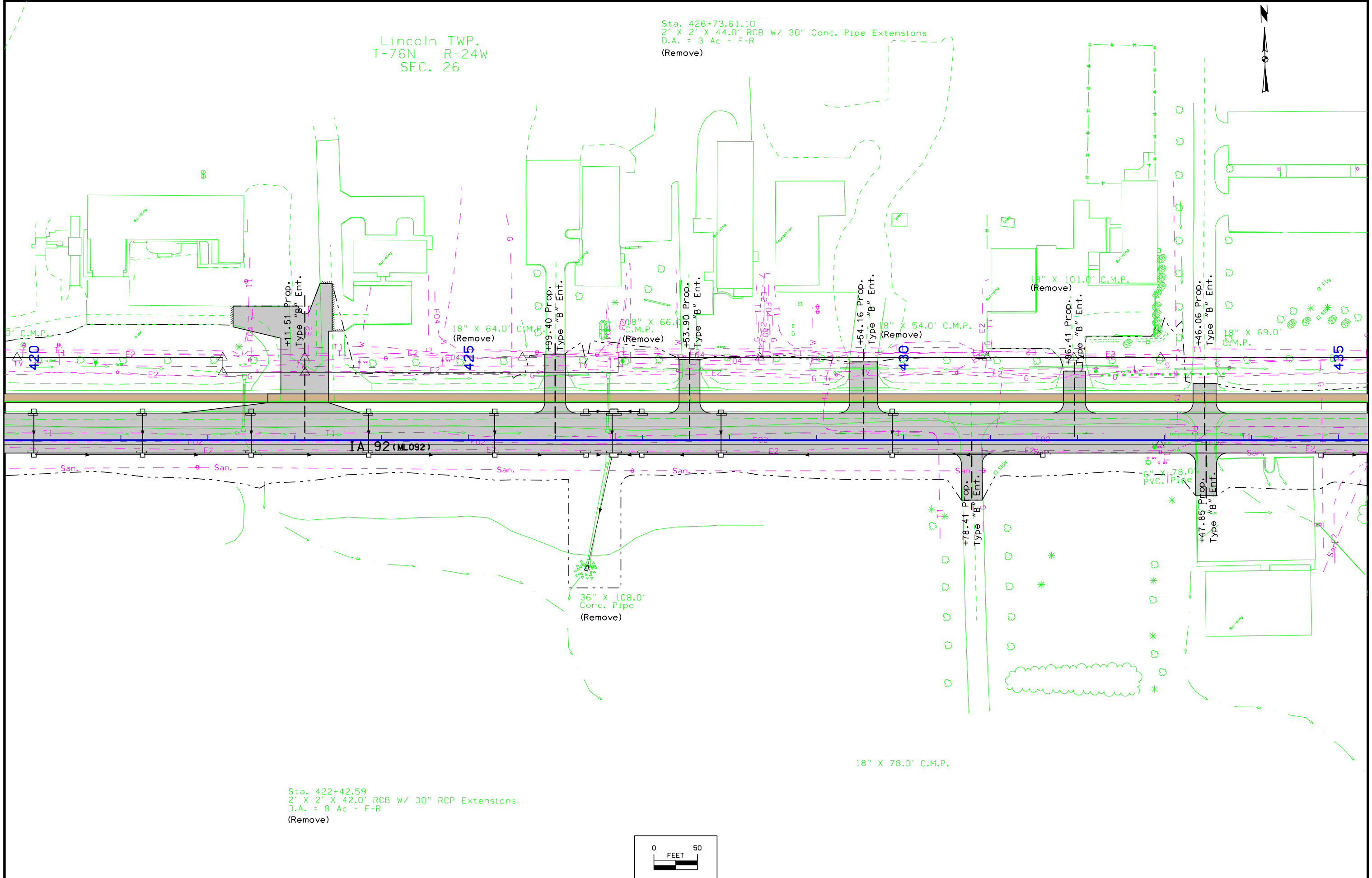
Sta. 414+54.06, 307.09 RT  
6 Tile Riser Intake  
D.A. = 2A - R  
(U.A.C.)



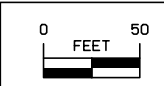


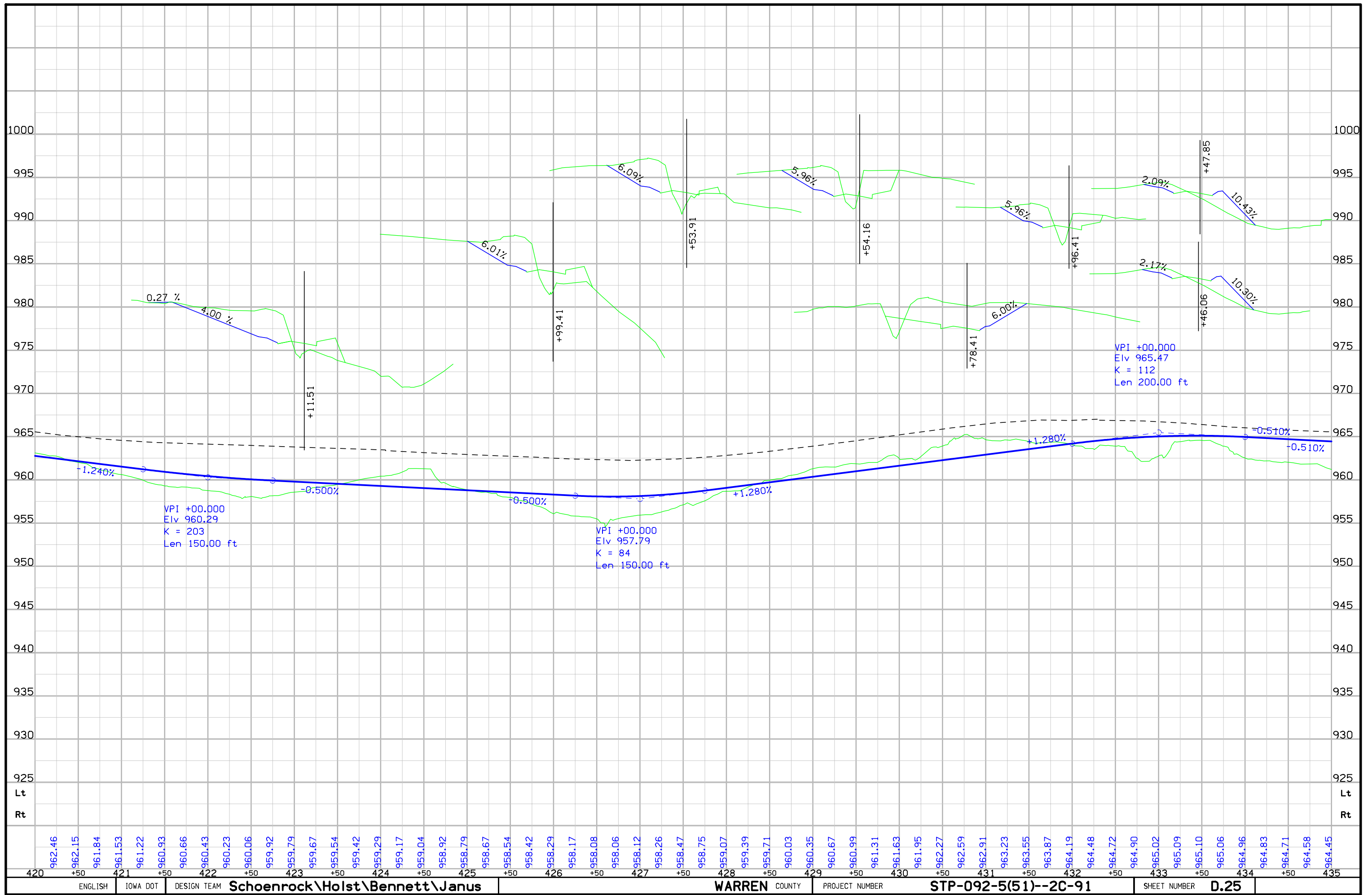
Lincoln TWP.  
T-76N R-24W  
SEC. 26

Sta. 426+73.61.10  
2' X 2' X 44.0' RCB W/ 30" Conc. Pipe Extensions  
D.A. = 3 Ac - F-R  
(Remove)

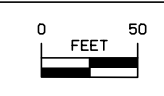
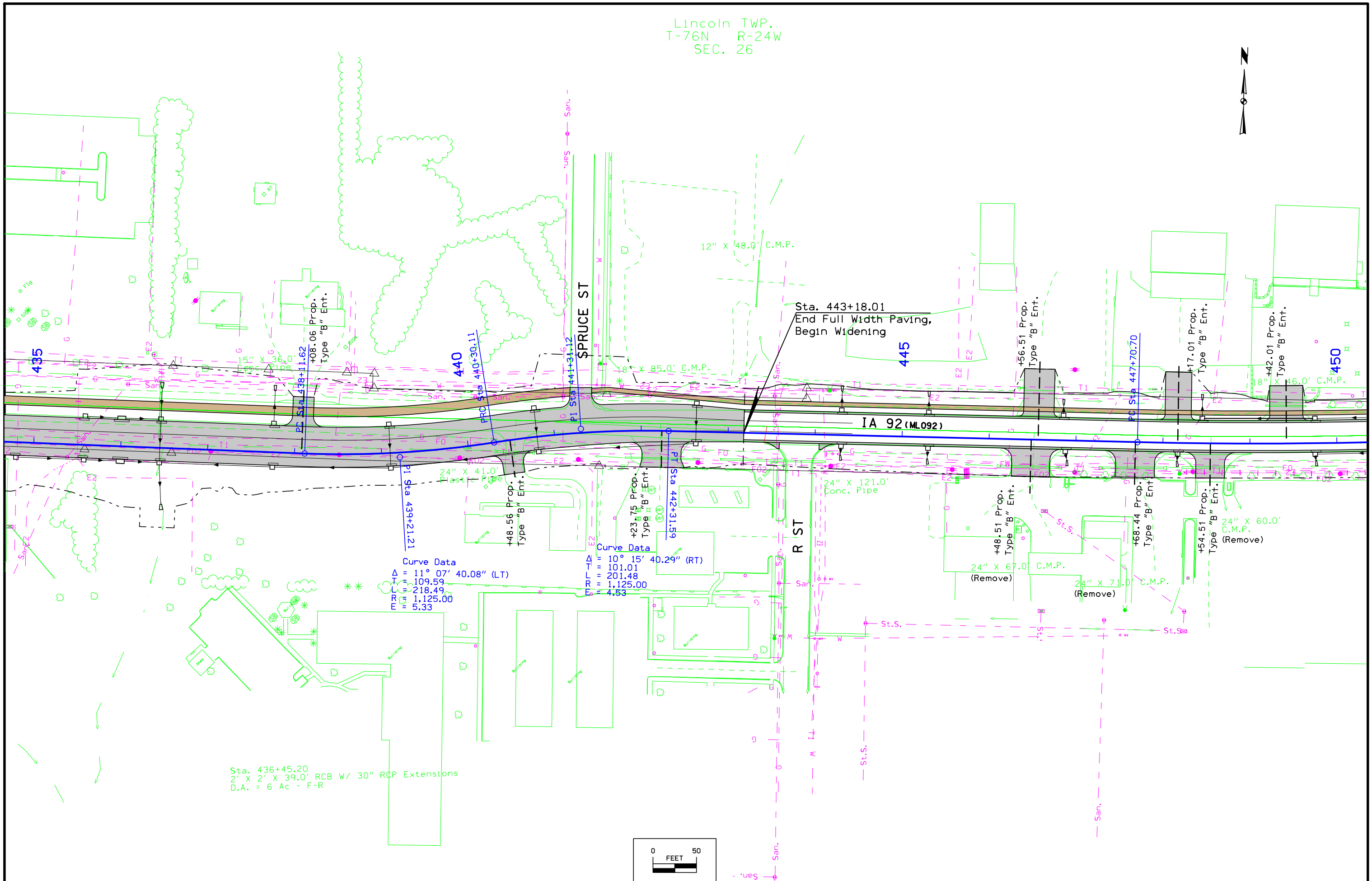


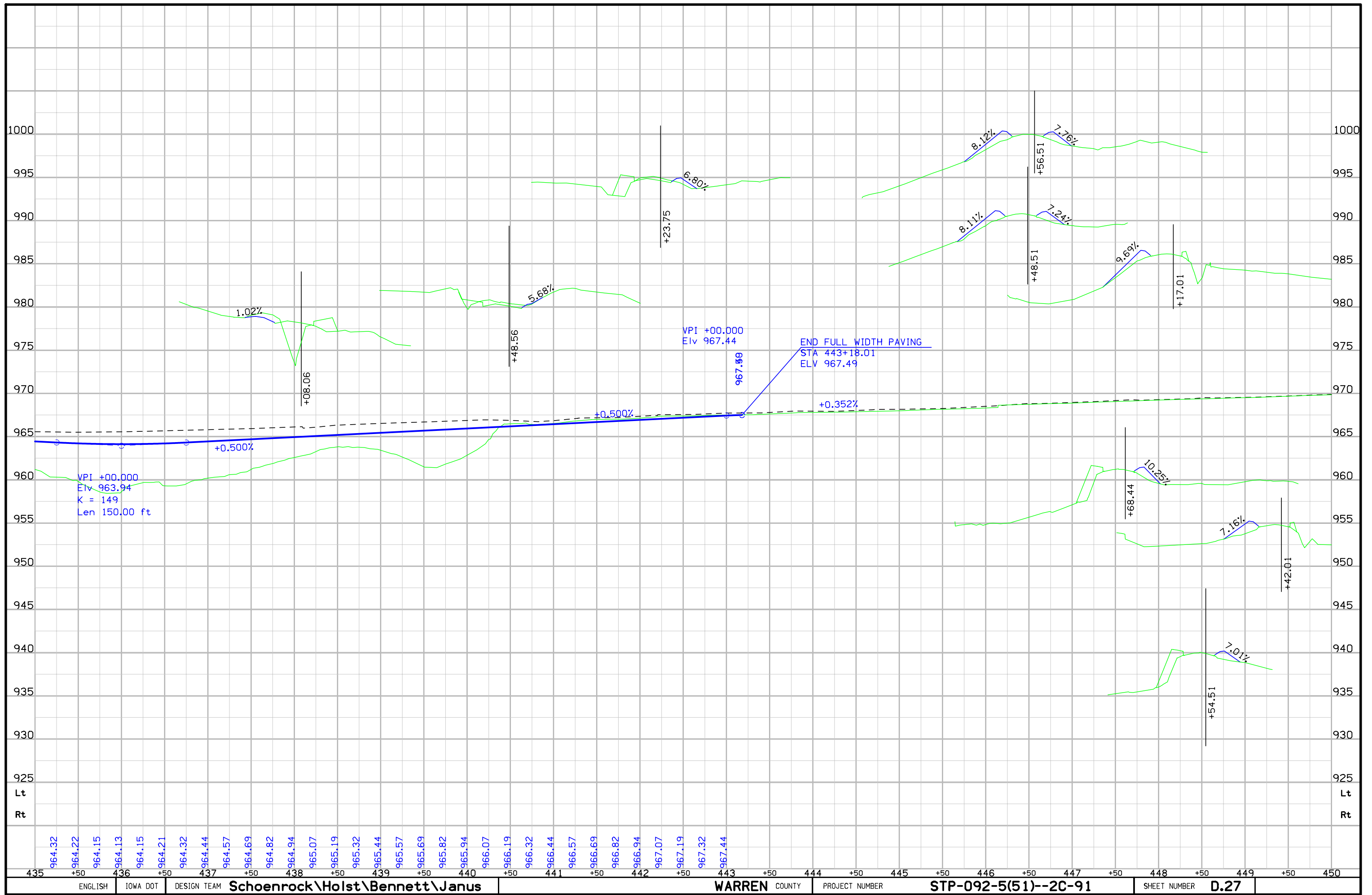
Sta. 422+42.59  
2' X 2' X 42.0' RCB W/ 30" RCP Extensions  
D.A. = 8 Ac - F-R  
(Remove)



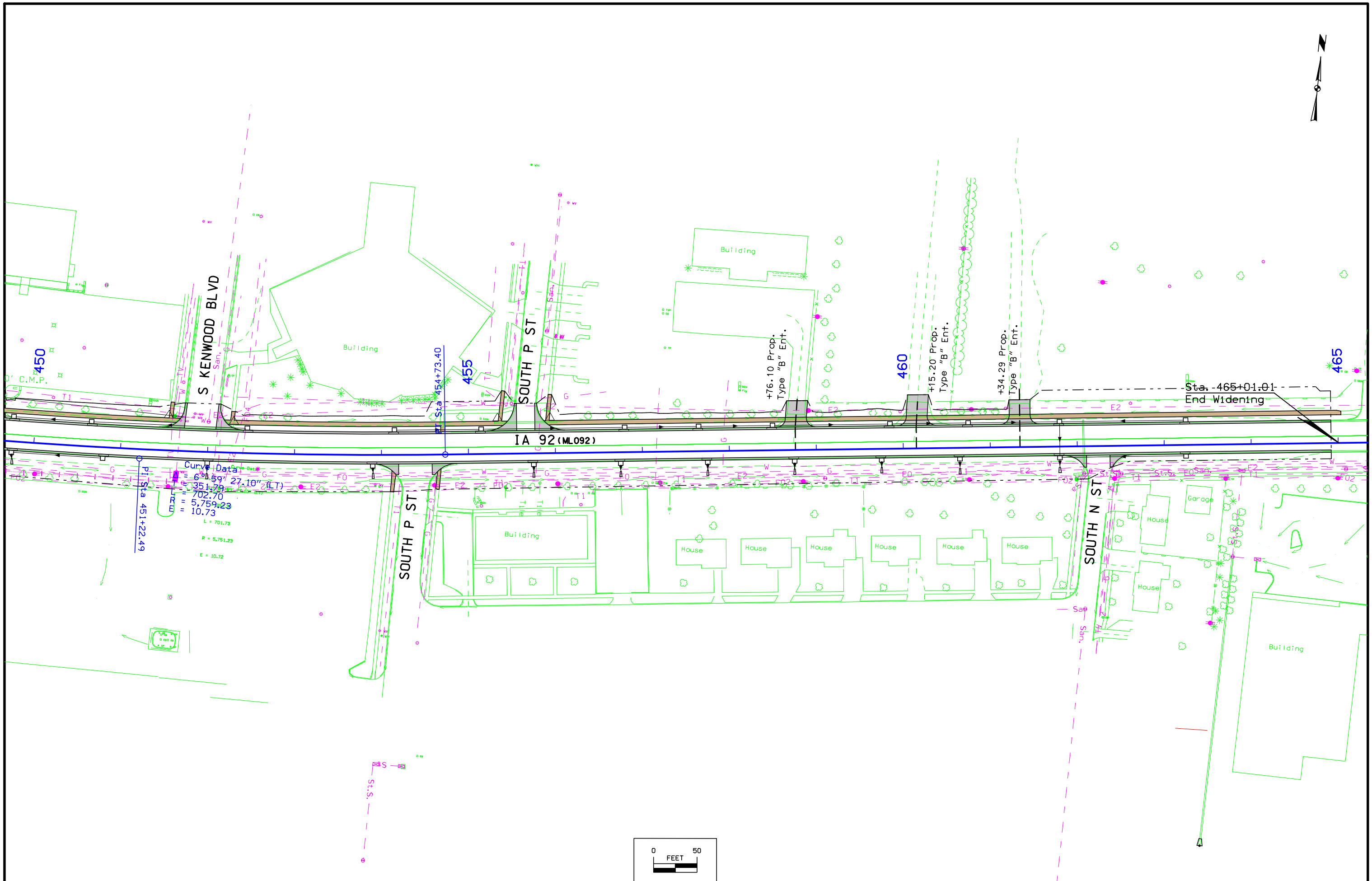


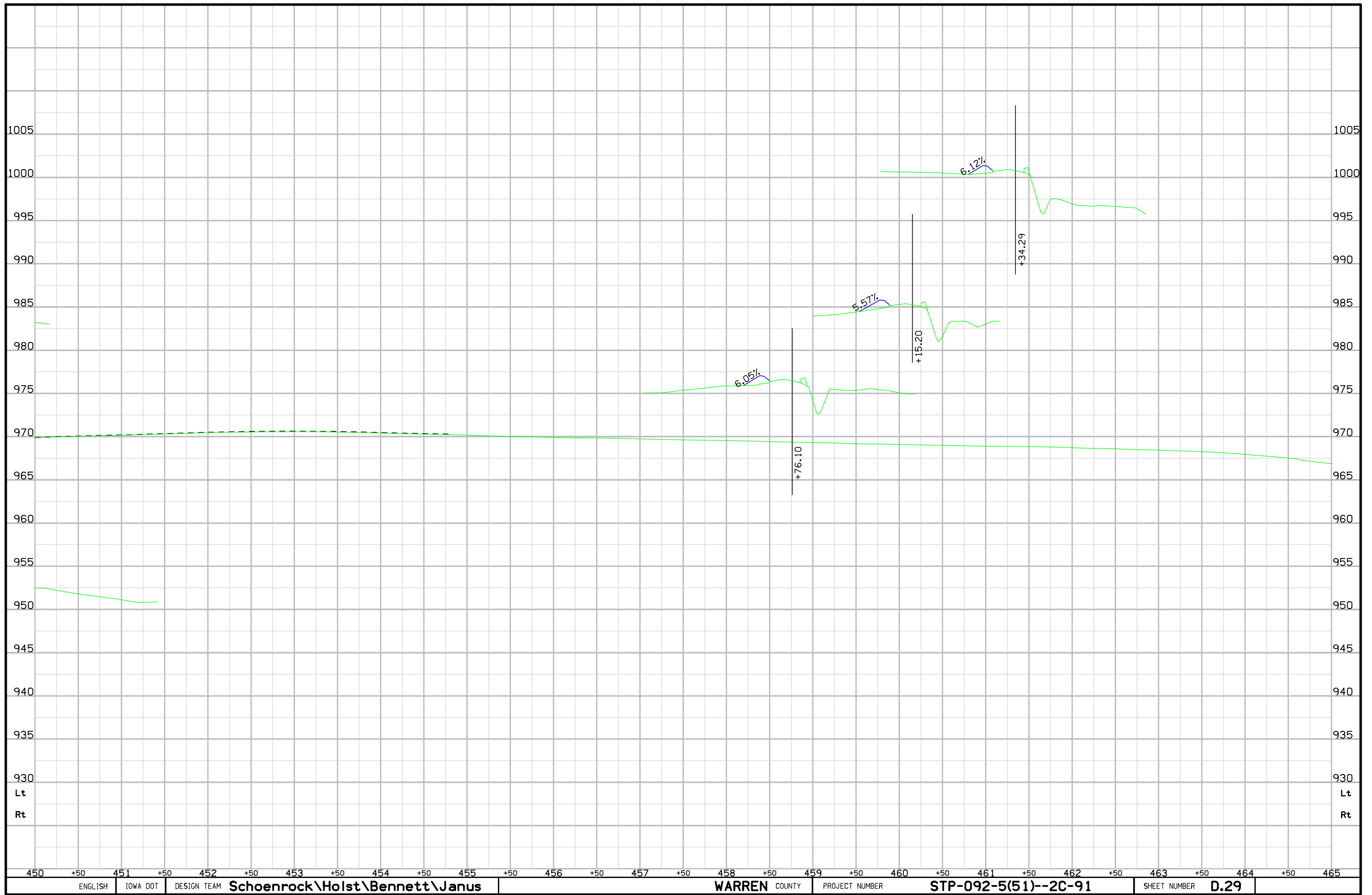
Lincoln TWP.  
T-76N R-24W  
SEC. 26





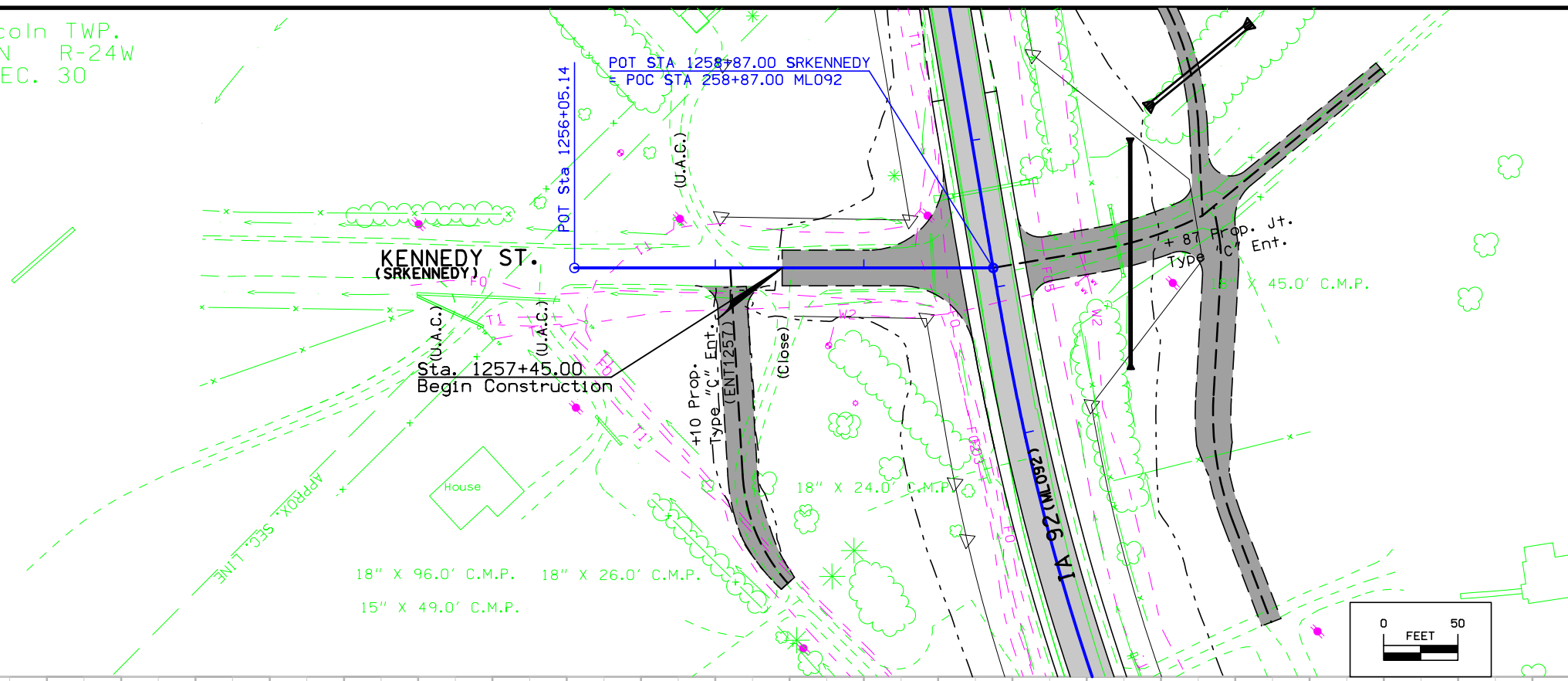




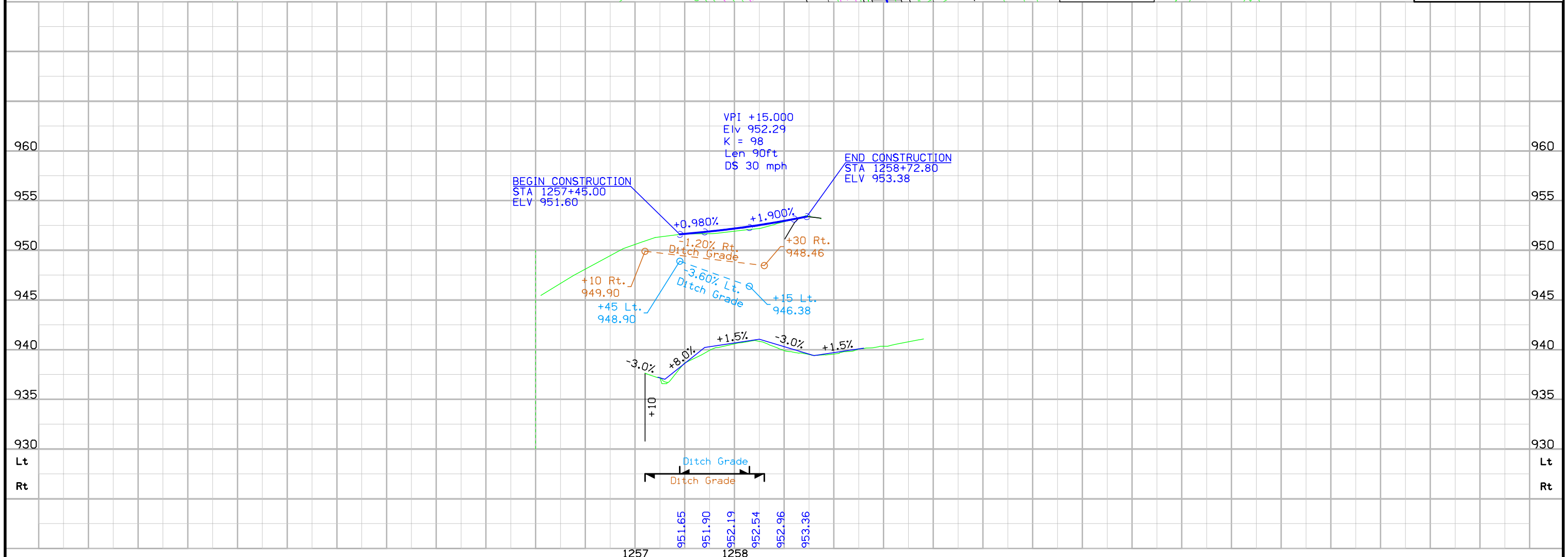


Lincoln TWP.  
T-76N R-24W  
SEC. 30

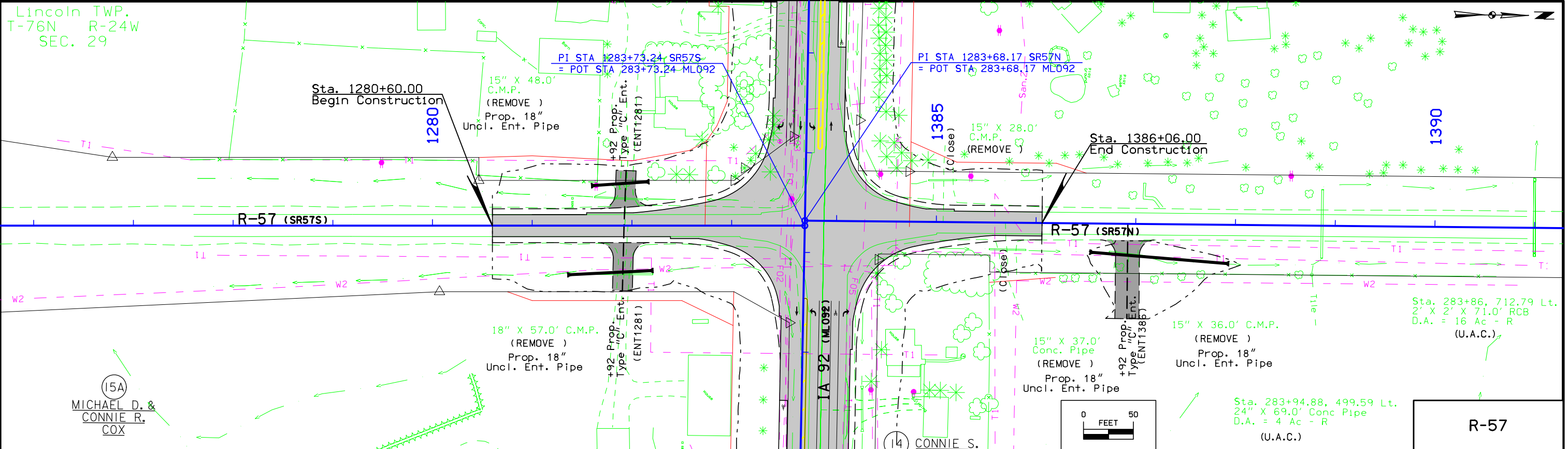
Lincoln TWP.  
T-76N R-24W  
SEC. 29



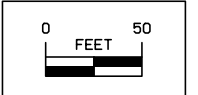
KENNEDY ST



Lincoln TWP.  
T-76N R-24W  
SEC. 29



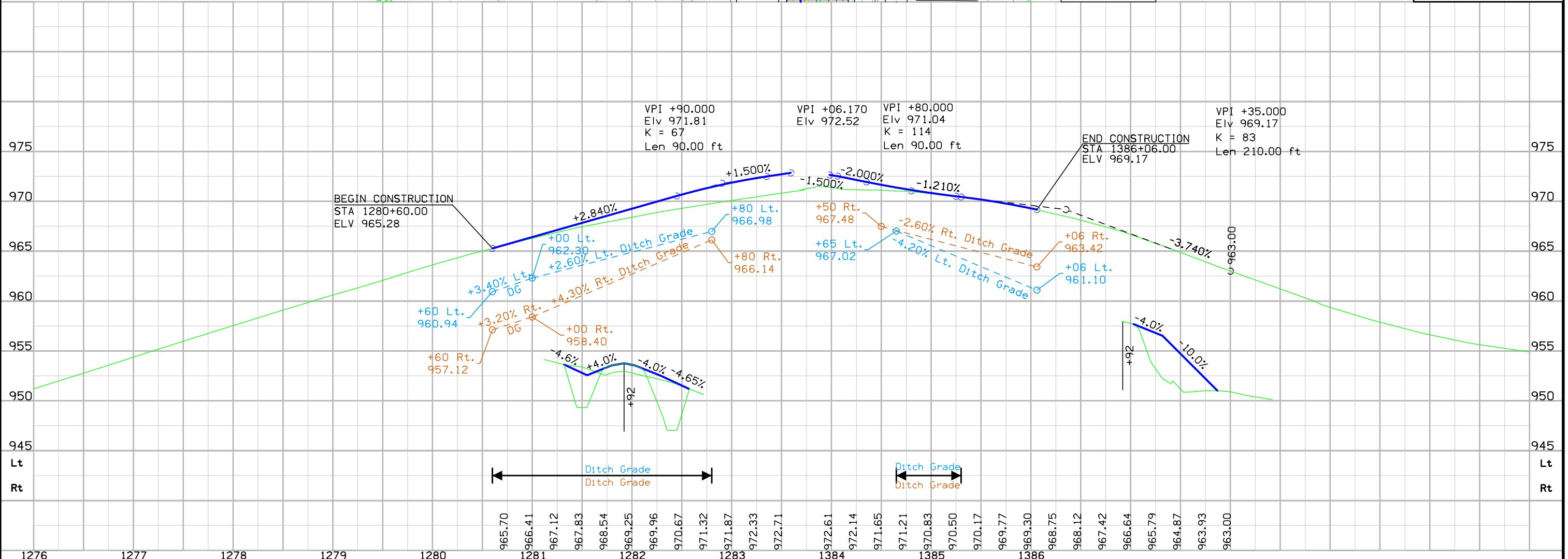
(15A)  
MICHAEL D. &  
CONNIE R.  
COX

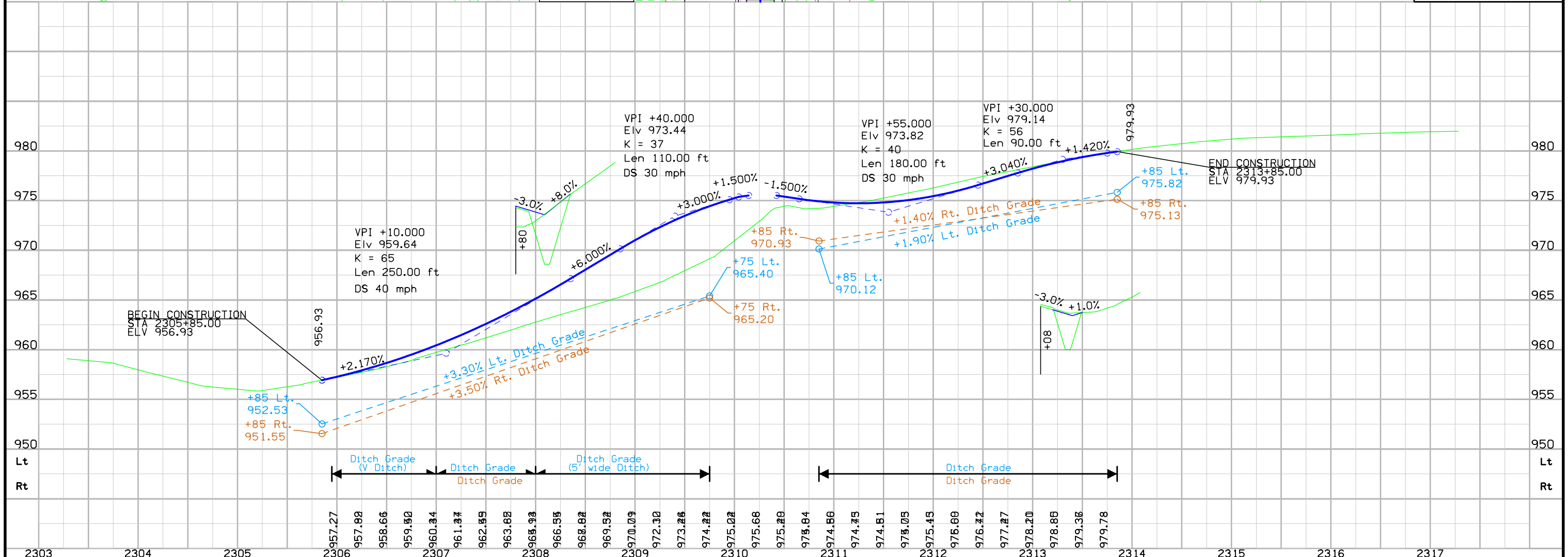
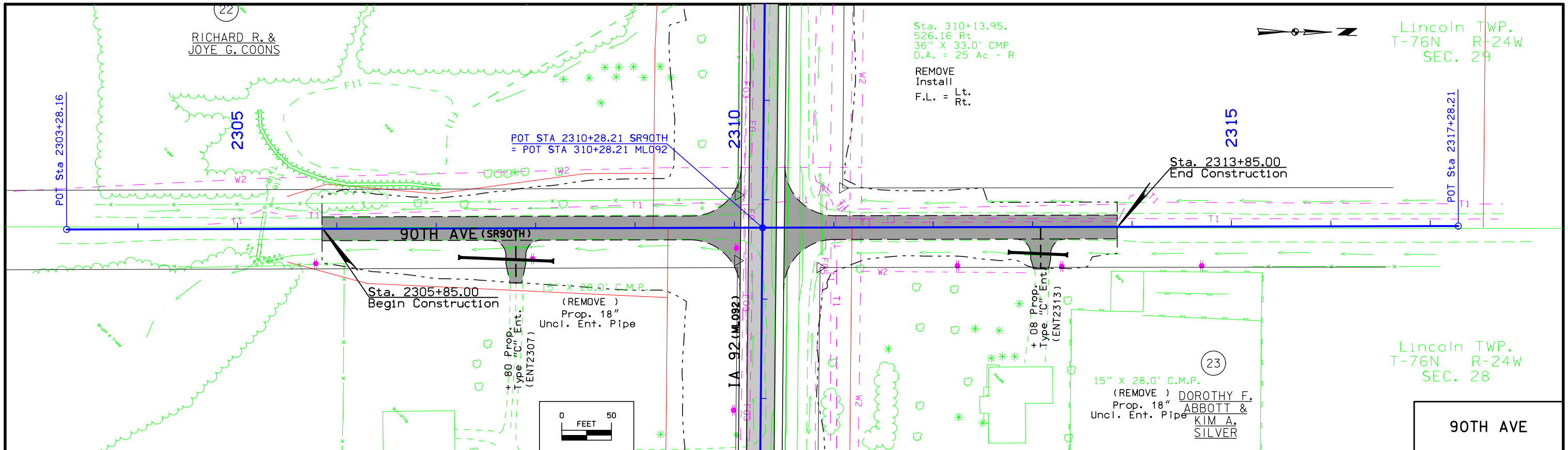


Sta. 283+86, 712.79 Lt.  
2' X 2' X 71.0' RCB  
D.A. = 16 Ac - R  
(U.A.C.)

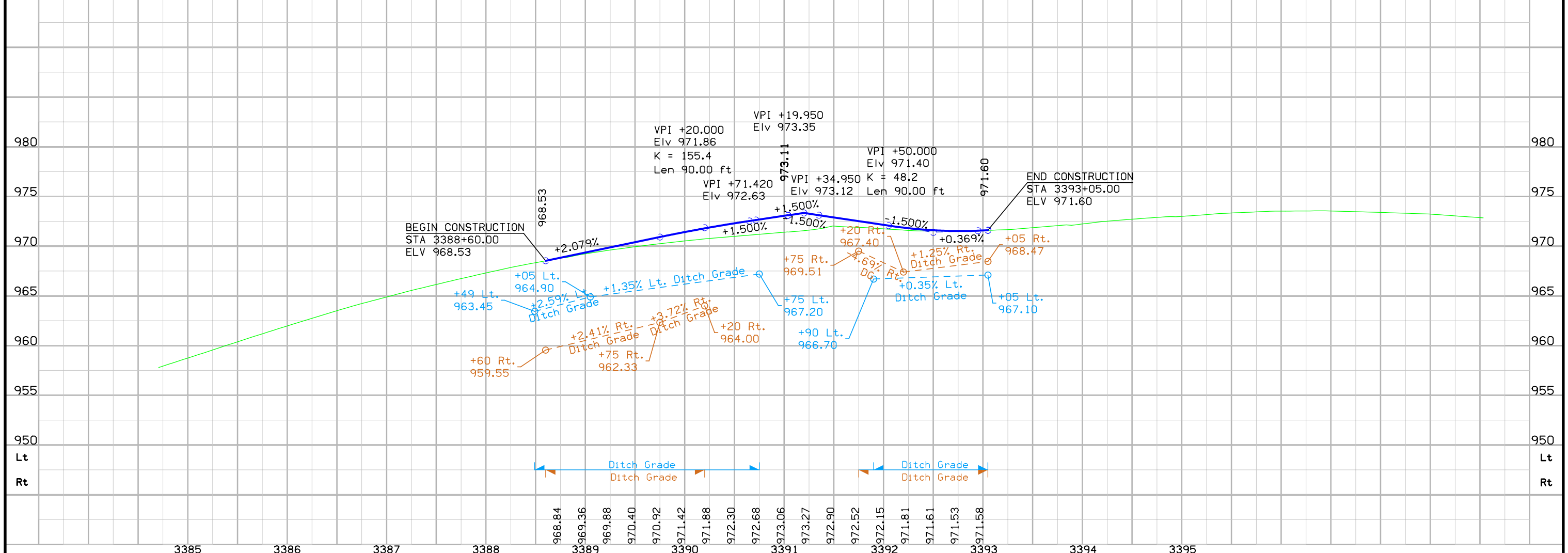
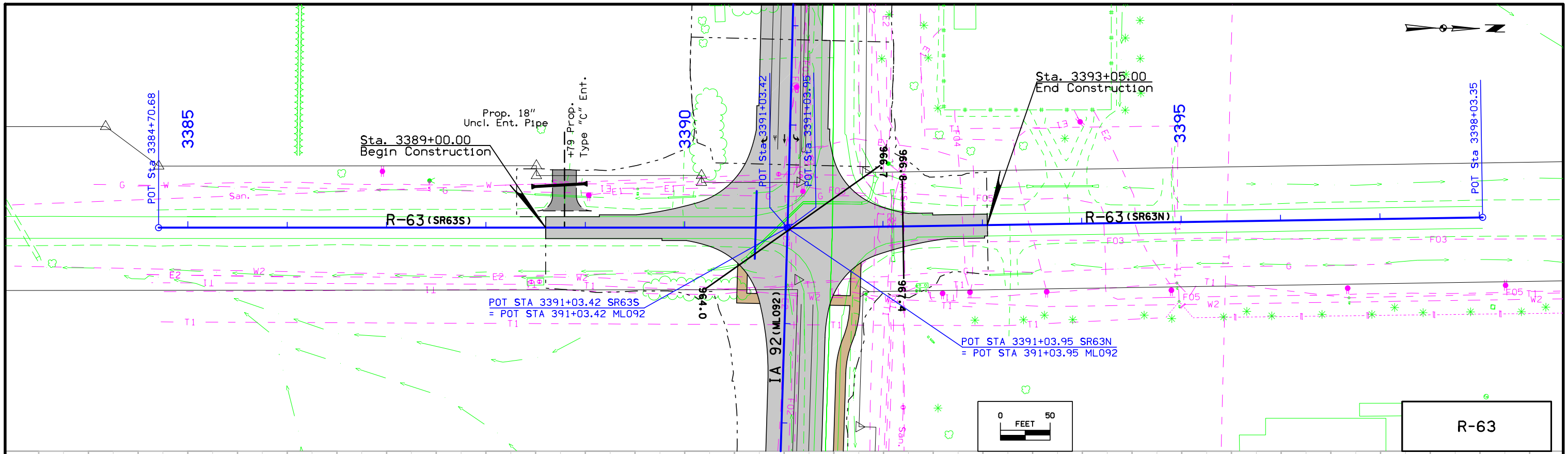
Sta. 283+94.88, 499.59 Lt.  
24\"/>

R-57

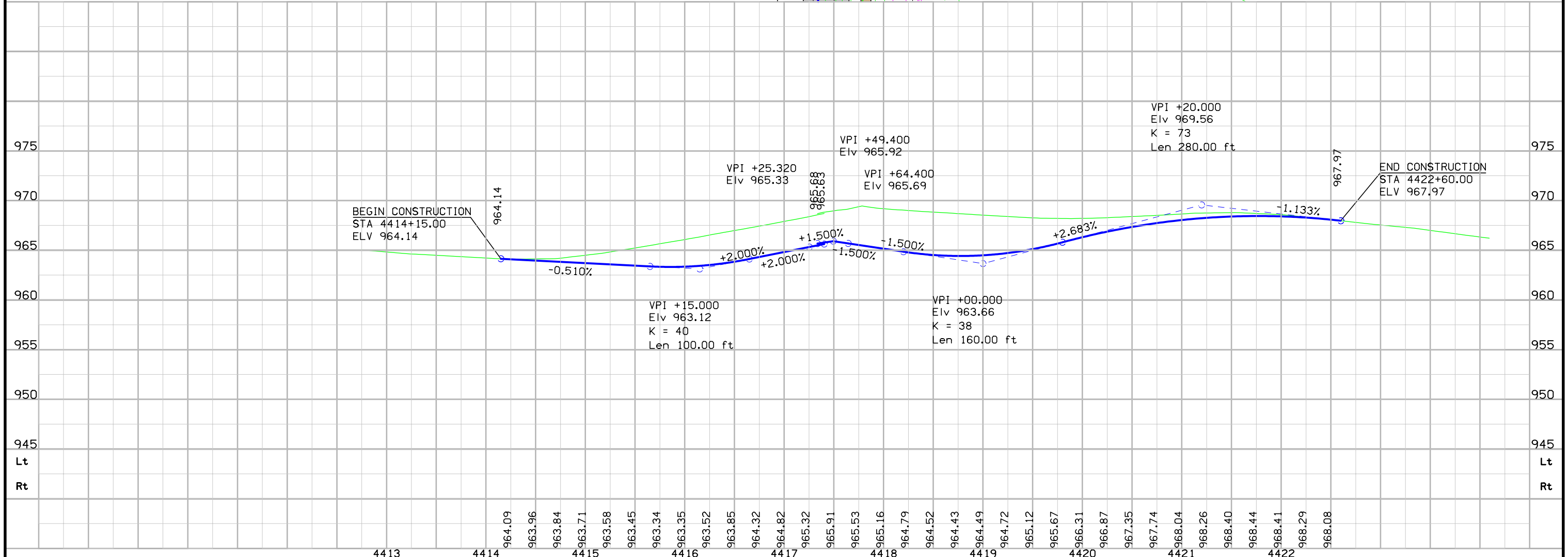
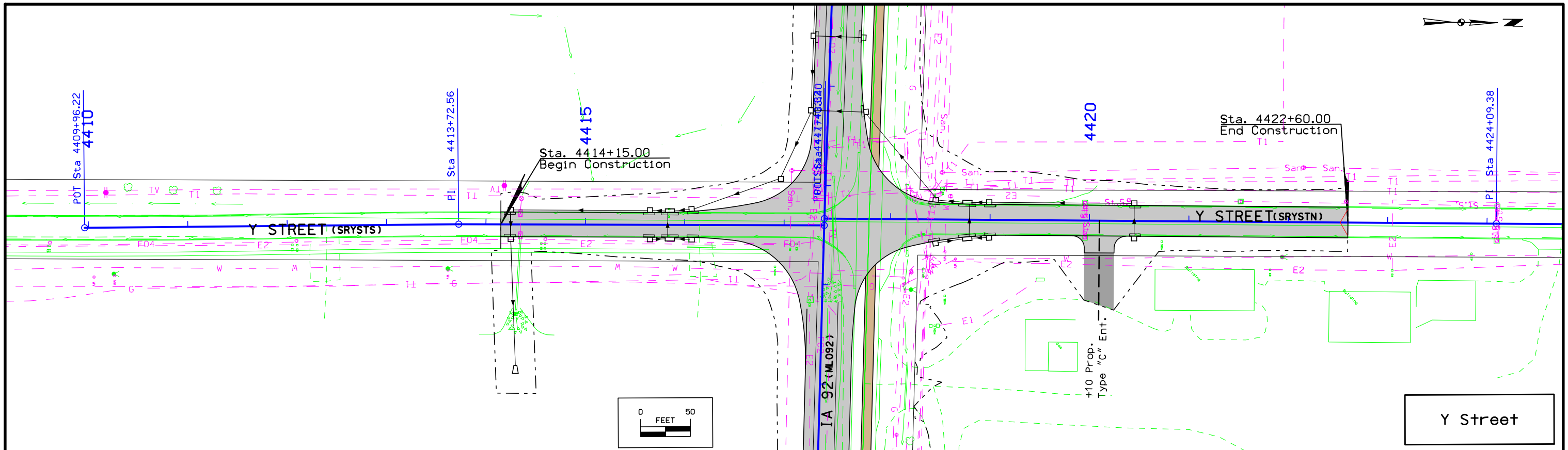




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Schoenrock\Holst\Bennett\Janus							WARREN COUNTY			PROJECT NUMBER			STP-092-5(51)--2C-91	
												SHEET NUMBER		E.3

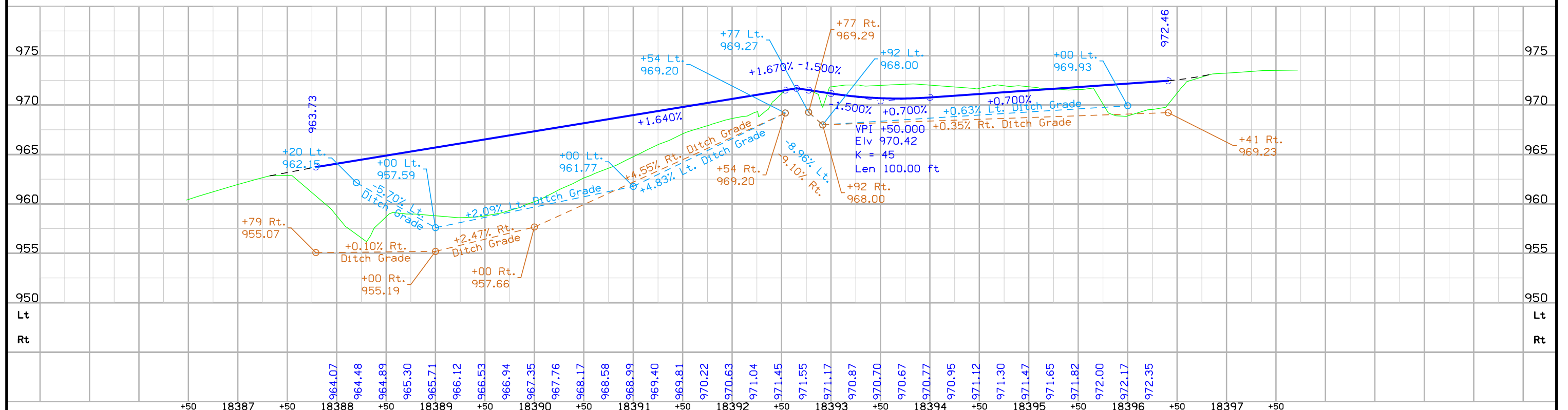
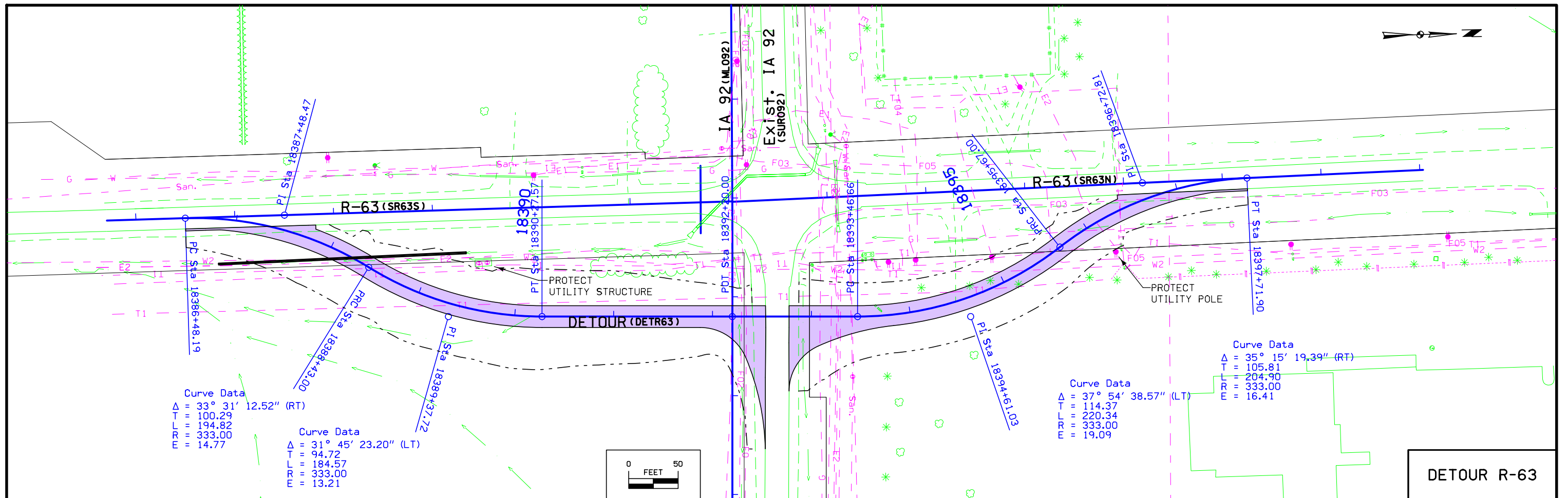


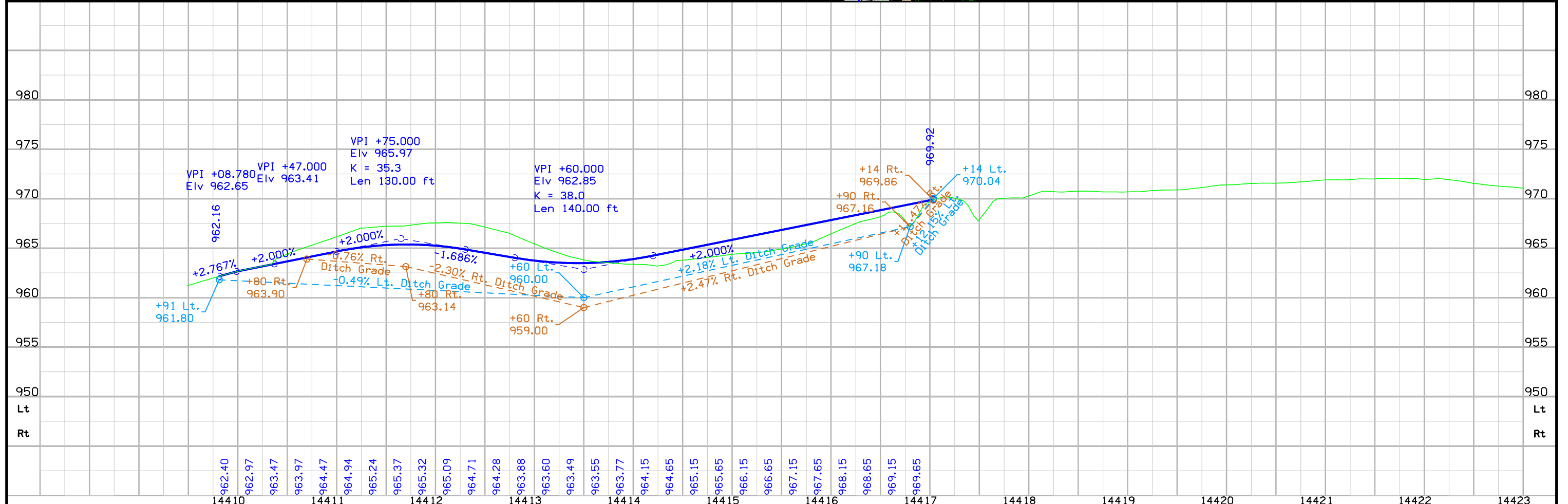
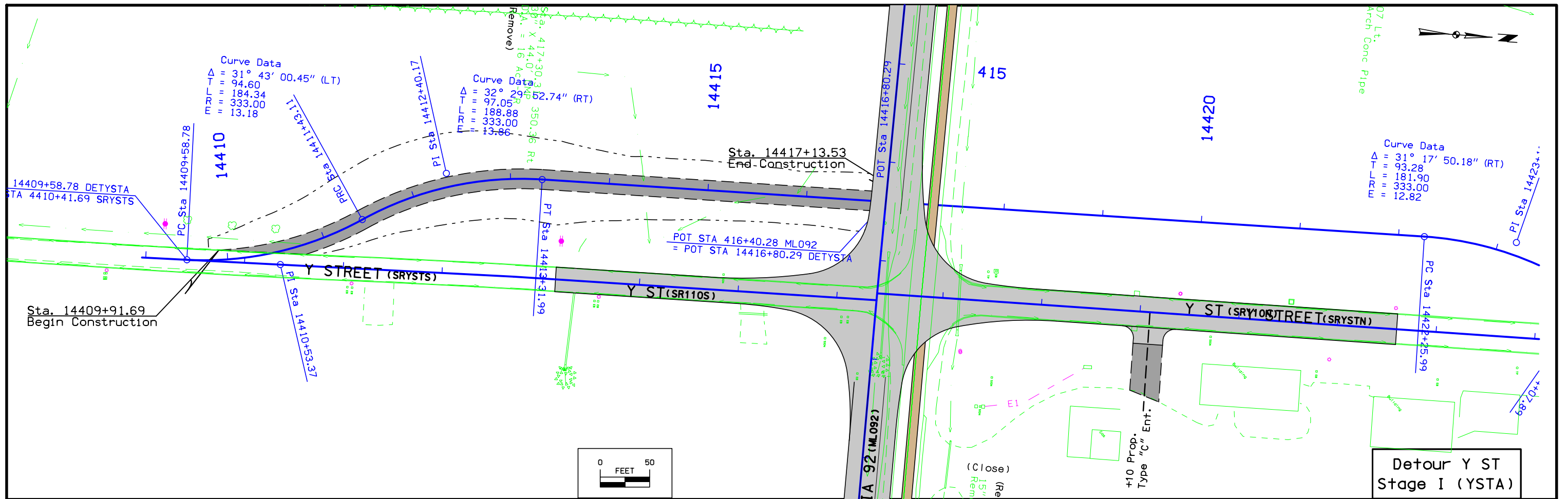


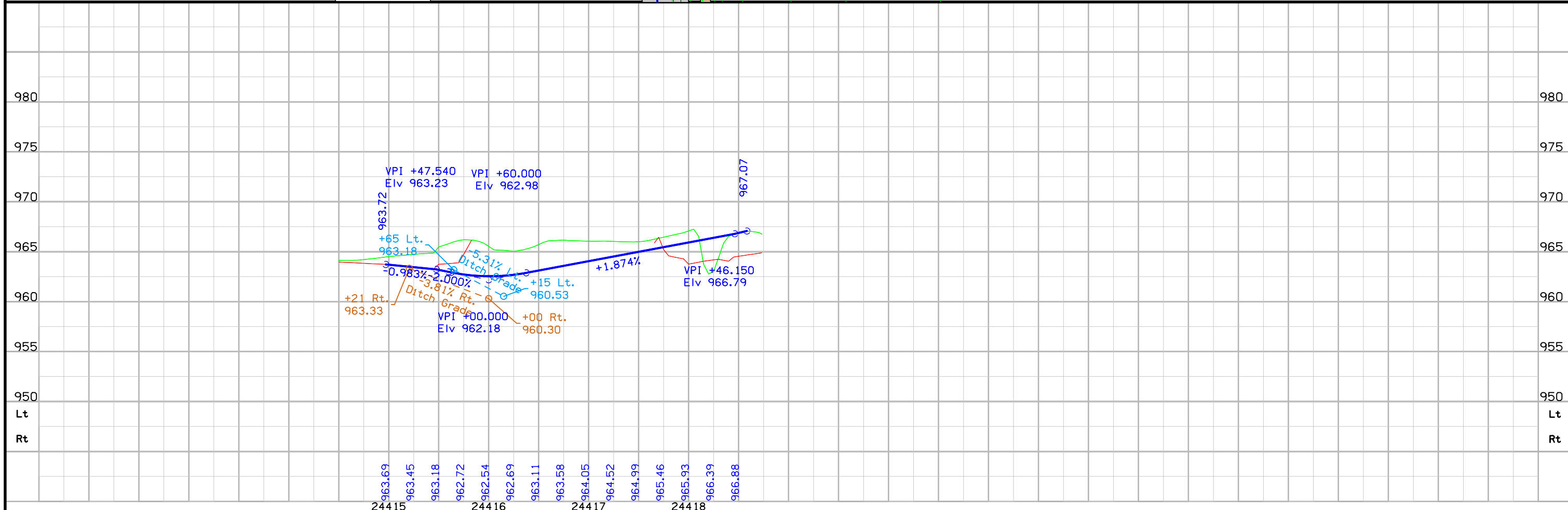
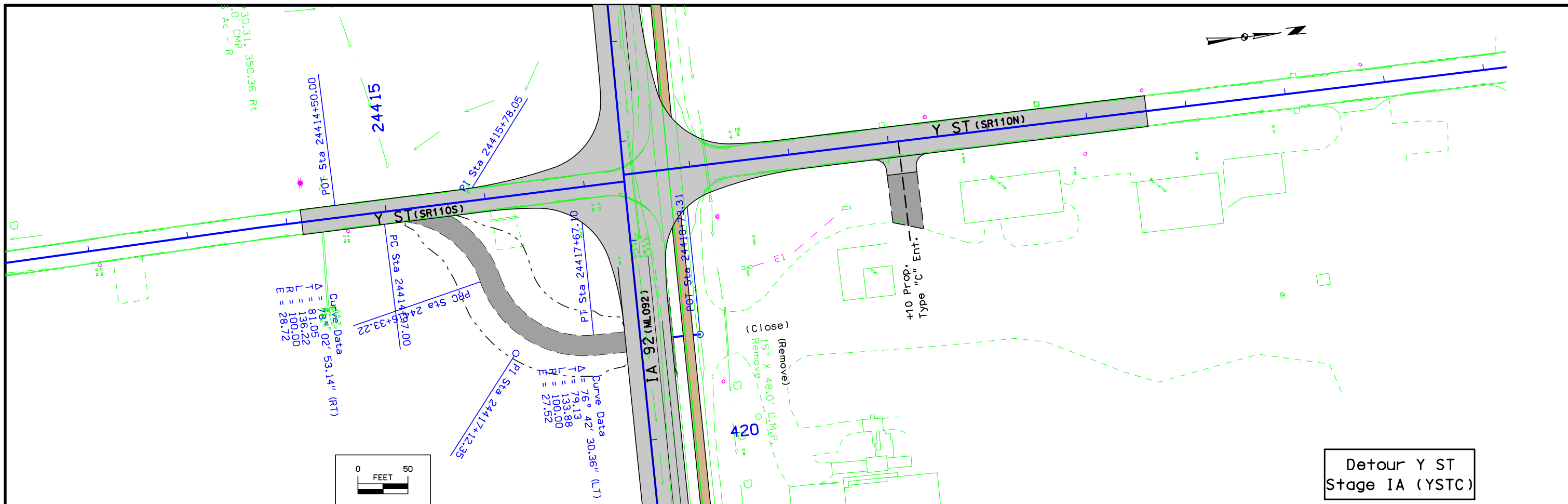


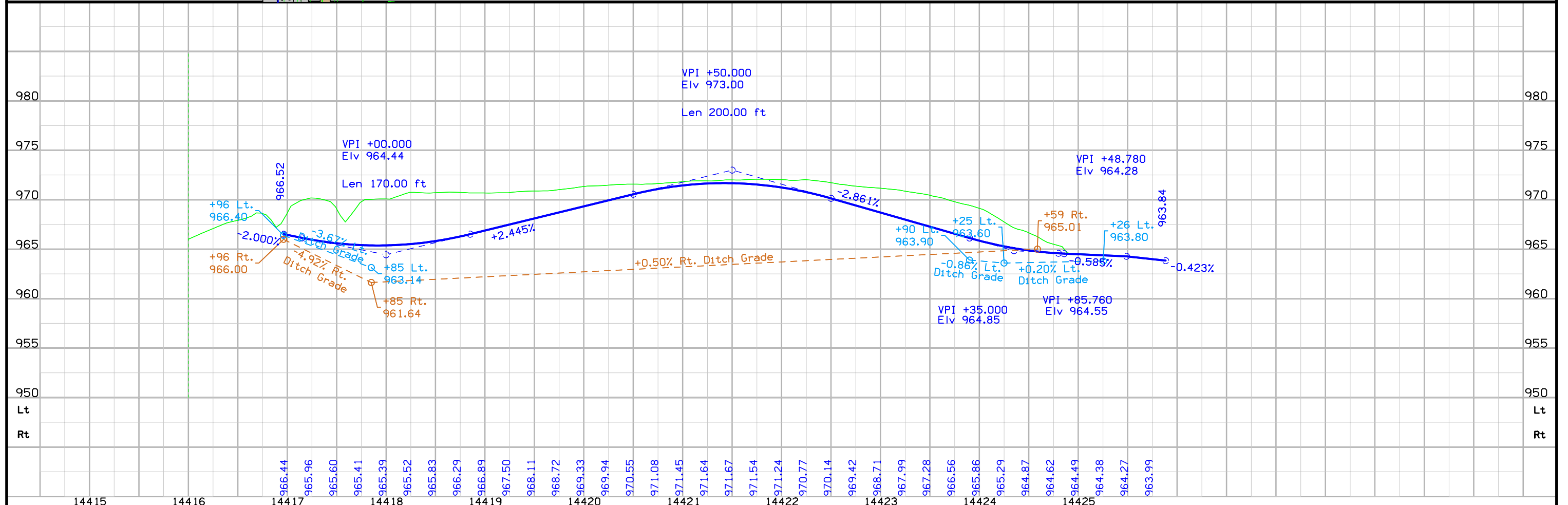
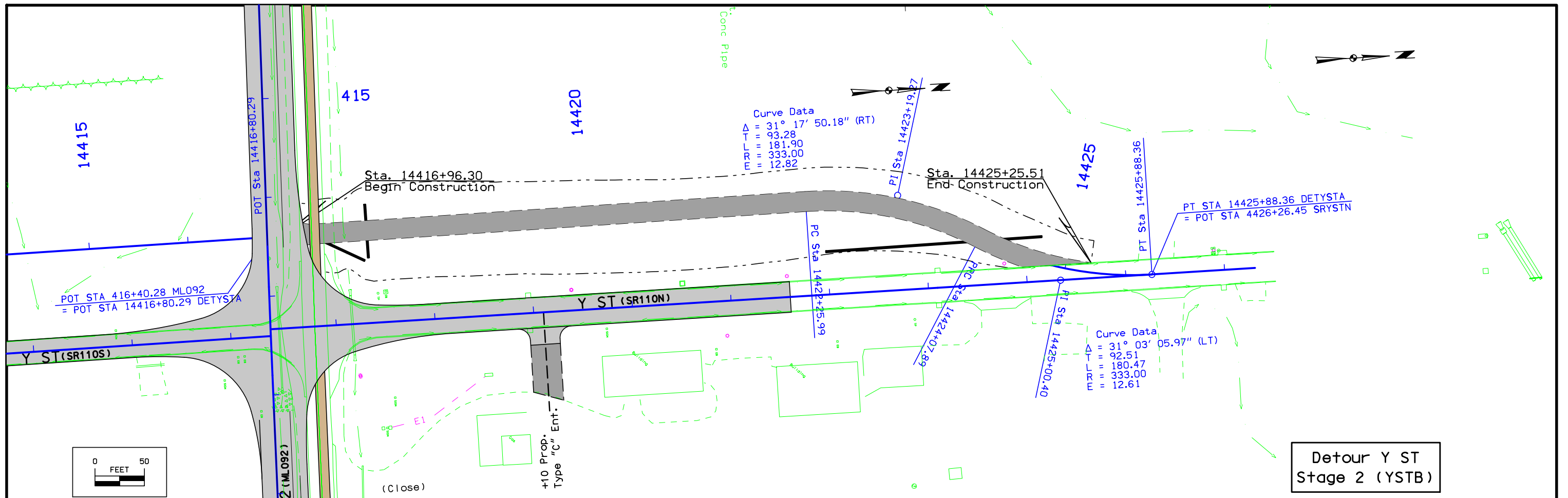


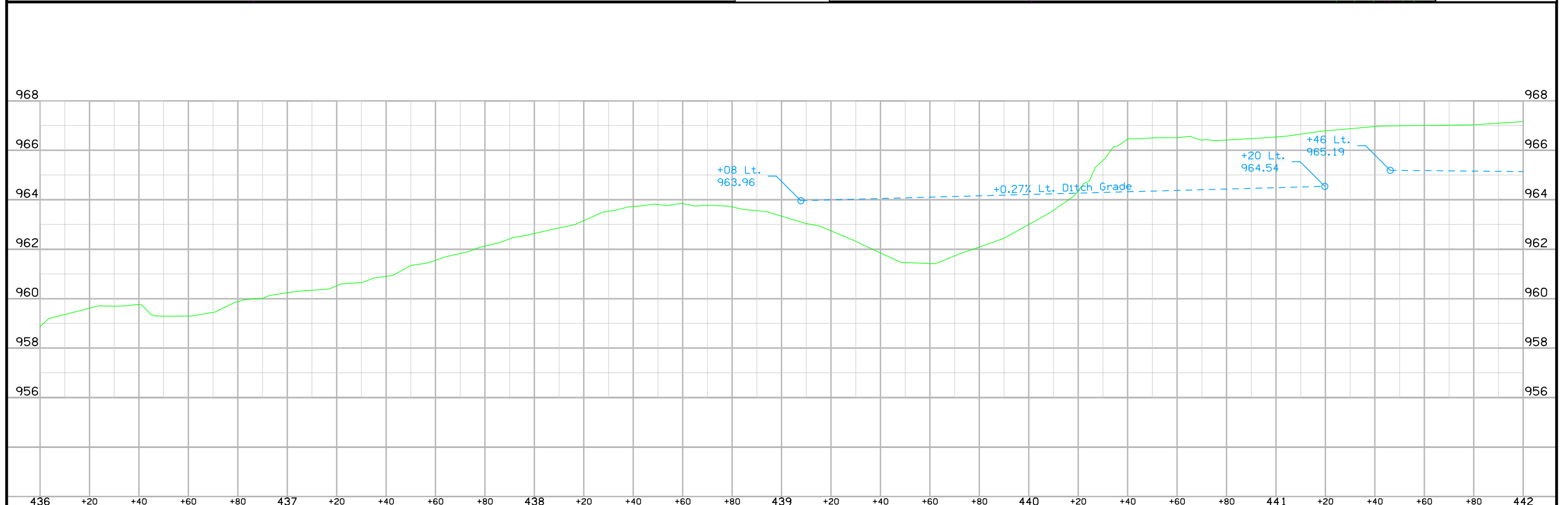
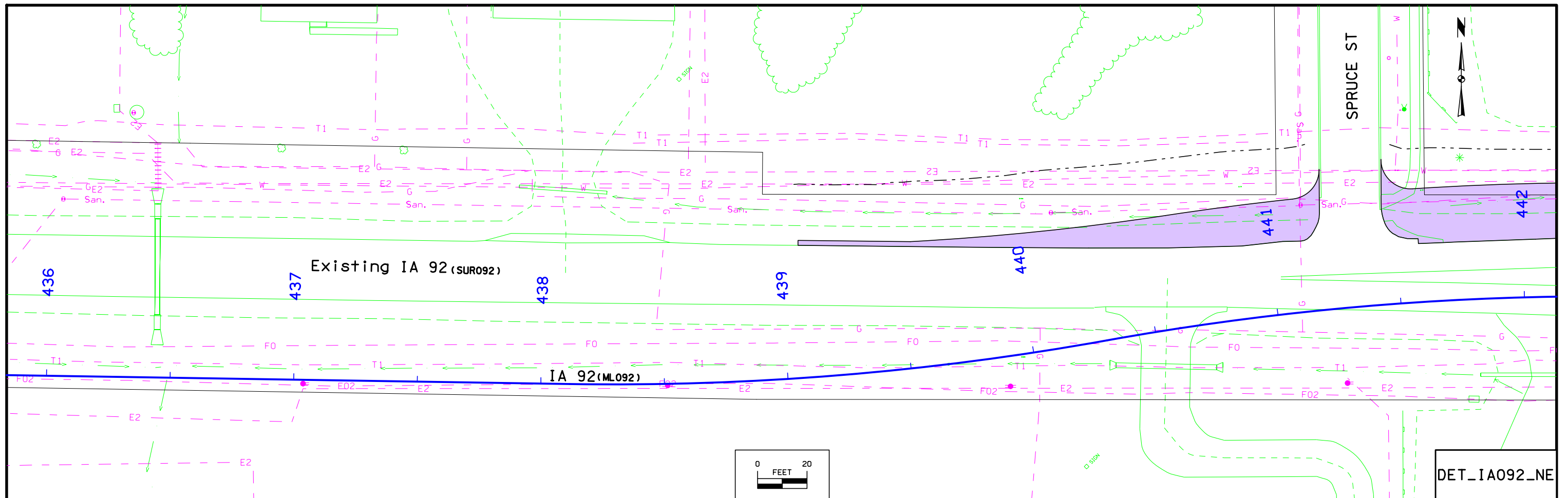


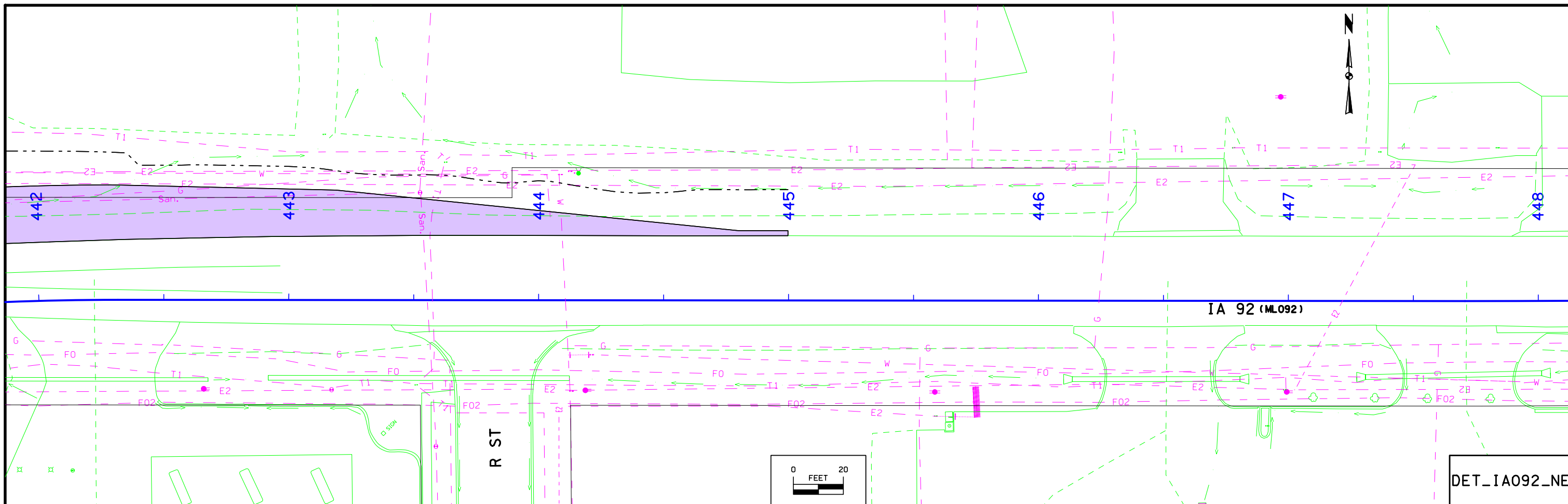




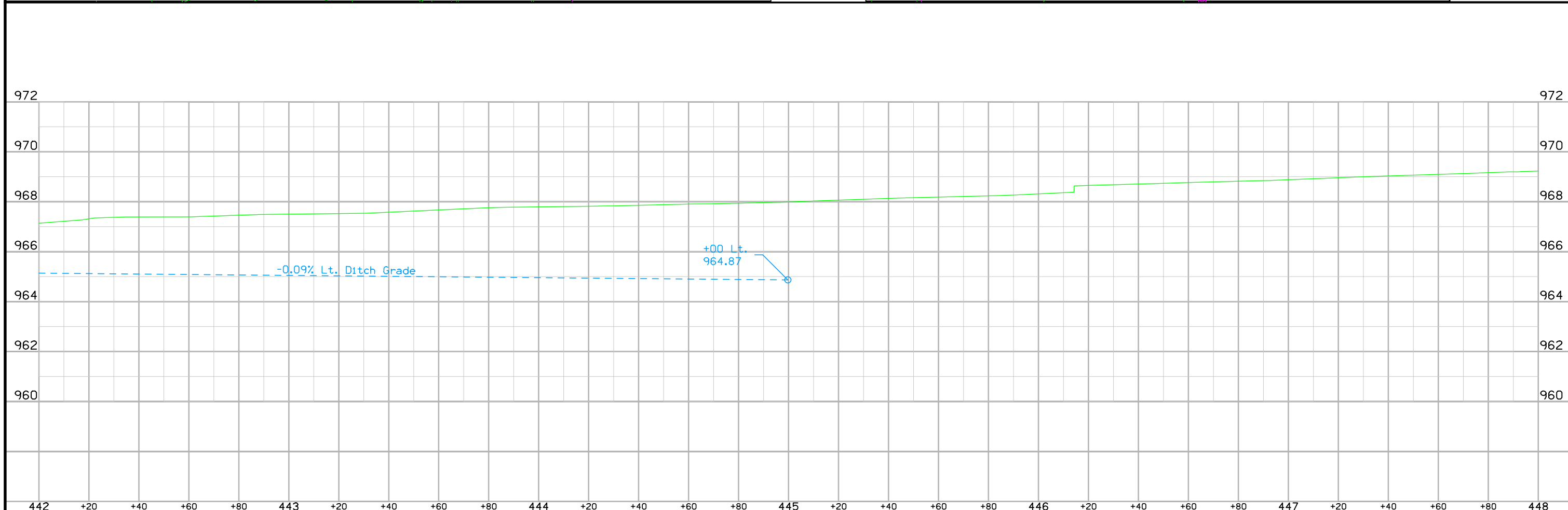


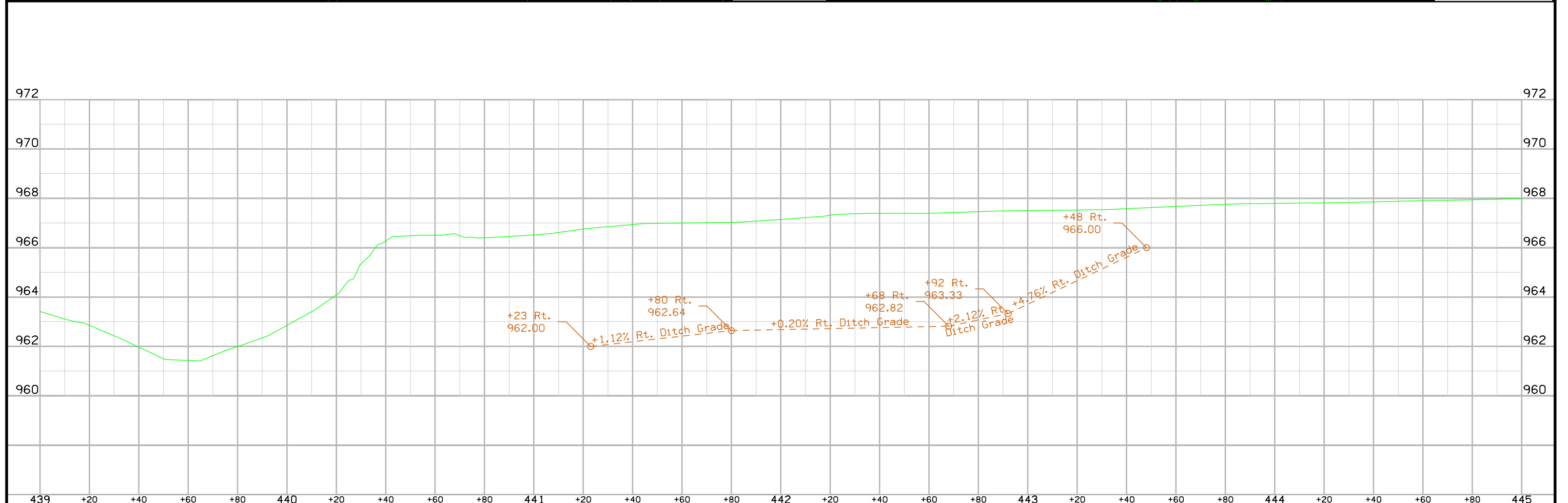
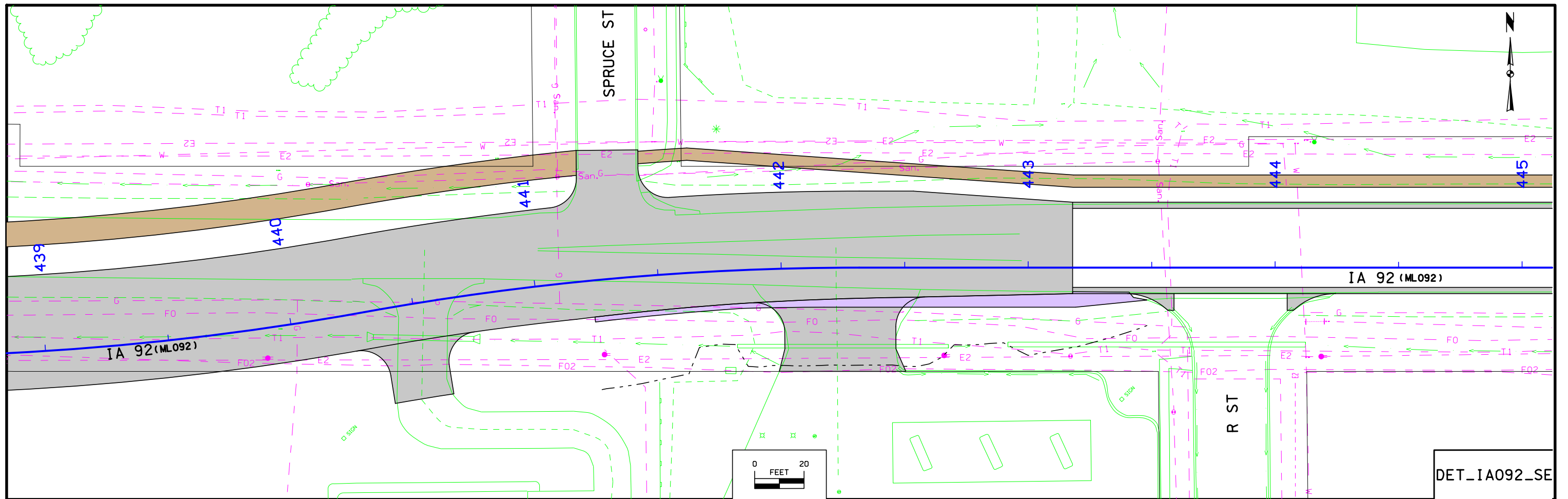




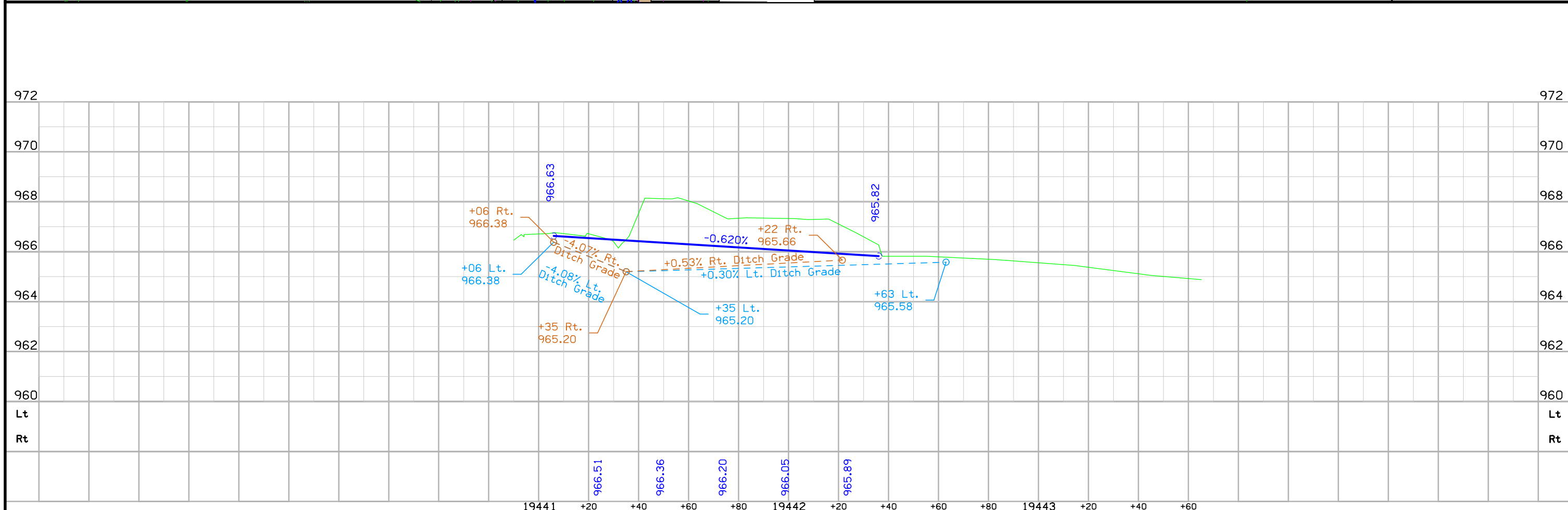
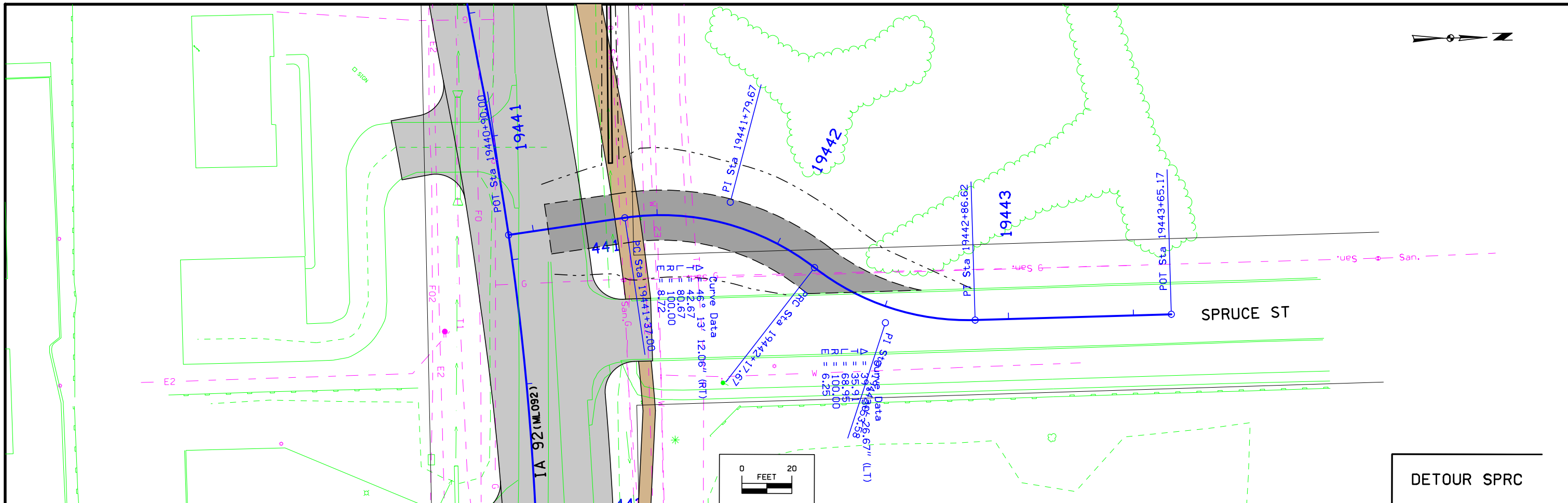


DET\_IA092\_NE











## Survey Information

Warren County  
 STP-092-5(46)--2C-91  
 IA 92 From Just W. of Co. Rd. R-57  
 To S. Kenwood Blvd. in Indianola  
 04-91-092-010-01  
 Sap-0482.2

### General Information

Measurement units for this survey are US survey feet. This survey is for improvements on IA 2 in Warren County. This field survey was to obtain roadway and drainage features and break lines. The entire digital terrain model and topography in the corridor will be completed by supplemental aerial photography..

### Vertical Control

This survey control is relative to NAVD88 Datum in accordance with 3rd. order vertical accuracy. NAVD88 height was transferred to the project at CP # 25 & CP # 35 using averaging redundant IARTN observations applying Geoid 2009. Iowa RTN reference stations are relative vertically to highly accurate National Geodetic Survey (NGS) Reference Stations that are used by NGS for reporting heights relative to NAVD88 datum. A 3-wire level loop was run from CP # 25 through the project benchmarks and ended at CP # 35. The loop error was allowable and the error was distributed proportionately among the project marks

Vertical equations are as follows:

### Datum Benchmarks

CP # 25 this survey, elevation 958.76=  
 G025 Project # STP-092-5(46)--2C-91, elevation 958.86

CP # 35 this survey, elevation 967.18=  
 G035 Project # STP-092-5(46)--2C-91, elevation 967.14

### Horizontal Control

The GPS Network along this project was collected by IDOT Preliminary Survey Crews. Information about that network can be found in the 0482gpspoints.rep file included with this survey in NAD83(1996) Datum.. Iowa State Plane Coordinates were transformed to project coordinates using the following information.

General Information for GPS Project : STP-092-5(46)--2C-91 SAP 482  
 State Plane Coordinate Zone 1402 ( Iowa South Lambert )

Average Project Latitude = 41 21 46.06621  
 Resulting Radius = 6363322.382 (Meters)  
 Mean Project Elevation = 279.990 (Meters)  
 Sea Level Factor = 0.999956001  
 Average Project Scale Factor = 0.999953270  
 Combined Factor (Grid) = 0.999909273  
 1 / Grid = 1.000090735  
 Vertical Datum = NAVD 88 <> Horizontal Datum = NAD 83 (1996)

### Local Project Plane Coordinate Conversion Equation:

a. Local Project Coord y = [(State Plane y - hold point y) 1/grid factor] + hold point y  
 b. Local Project Coord x = [(State Plane x - hold point x) 1/grid factor] + hold point x

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. P-569 Survey stationing was equated to the plans at PI Sta. 263+46.7 and carried back and ahead with no equation throughout the survey.

Equations are as follows:

PI Sta. 263+46.7 This Survey  
 = PI Sta. 263+46.7 As-built Plans Project No. P-569

PI Sta. 283+72.3 This Survey  
 = PI Sta. 283+70.97 As-built Plans Project No. P-569

PI Sta. 310+27.4 This Survey  
 = PI Sta. 310+25.39 As-built Plans Project No. P-569

PI Sta. 336+75.5 This Survey  
 = PI Sta. 336+71.87 As-built Plans Project No. P-569

PI Sta. 343+76.9 This Survey  
 = PI Sta. 343+73.27 As-built Plans Project No. P-569

PI Sta. 351+50.8 This Survey  
 = PI Sta. 351+45.19As-built Plans Project No. P-569

PI Sta. 365+11.5 This Survey  
 = PI Sta. 365+06.91 As-built Plans Project No. P-569

PI Sta. 391+06.4 This Survey  
 = PI Sta. 391+01.81 As-built Plans Project No. P-569

PI Sta. 417+43.4 This Survey  
 = PI Sta. 417+36.67 As-built Plans Project No. P-569

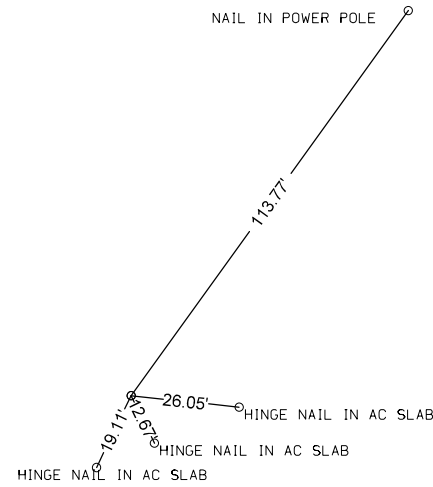
PI Sta. 438+94.7 This Survey  
 = PI Sta. 438+87.96 As-built Plans Project No. P-569

PI Sta. 451+26.0 This Survey  
 = PI Sta. 451+20.20 As-built Plans Project No. P-569

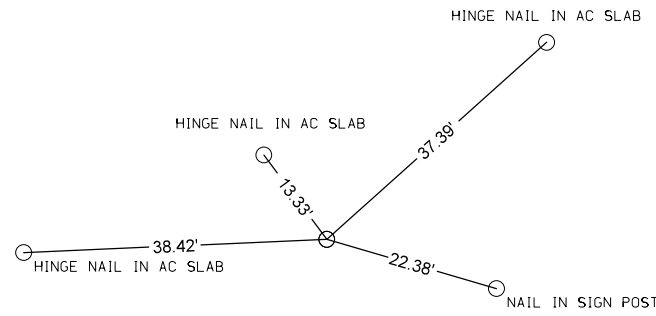
## VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Description
659	494848.786	1597094.294	932.179	246+17.65	45.909	SETRRR SPK E SIDE 1ST POWER POLE
660	494140.746	1598099.141	950.571	258+46.84	34.474	SETRRR SPK E SIDE POWER POLE
661	493843.985	1598916.852	962.955	267+16.92	26.062	SETRRR SPK N SIDE POWER POLE
662	493790.182	1599914.401	969.535	277+15.27	62.083	SETRRR SPK N SIDE POWER POLE
663	493809.495	1600544.970	971.893	283+45.39	31.540	SETRRR SPK N SIDE POWER POLE
664	493801.002	1601735.334	967.621	295+35.44	31.666	SETRRR SPK N SIDE POWER POLE
665	493793.570	1602616.804	980.958	304+16.94	33.113	SETRRR SPK N SIDE POWER POLE
666	493774.151	1603186.184	970.300	309+86.44	48.666	CONC MONUMENT
667	493761.377	1604526.042	975.070	323+26.48	49.186	CONC MONUMENT
668	493764.357	1605810.055	968.332	336+10.41	34.374	SETRRR SPK S SIDE POWER POLE
669	493952.361	1606901.909	974.072	347+14.74	48.102	SETRRR SPK W SIDE POWER POLE
670	494182.094	1608008.803	966.556	358+97.50	39.449	SETRRR SPK N SIDE POWER POLE
671	494163.385	1609230.603	974.025	371+19.20	53.216	SETRRR SPK S SIDE POWER POLE
672	494181.064	1610588.817	975.829	384+77.37	32.550	CUT X ON R.O.W. RAIL
673	494255.767	1611520.232	974.200	394+07.47	-51.566	CUT X NW BOLT 1ST FIRE HYDRANT
674	494225.721	1612685.096	976.154	405+72.72	-52.100	CUT X ON NW BOLT FIRE HYDRANT
675	494186.822	1613914.713	967.557	418+03.27	-44.989	CUT X ON NW BOLT FIRE HYDRANT
676	494060.801	1615399.101	965.440	432+89.77	53.111	CUT X ON NE BOLT FIRE HYDRANT
677	494169.002	1616259.880	969.058	441+49.41	-67.303	CUT X ON SW BOLT FIRE HYDRANT
678	494142.697	1617266.587	971.521	451+58.64	-31.568	CUT X ON S BOLT FIRE HYDRANT
679	494179.247	1618305.076	967.642	461+96.05	46.333	CUT X ON SE BOLT FIRE HYDRANT
680	494489.398	1619450.029	968.177	Off Chain	Off Chain	NE BOLT FIRE HYDRANT

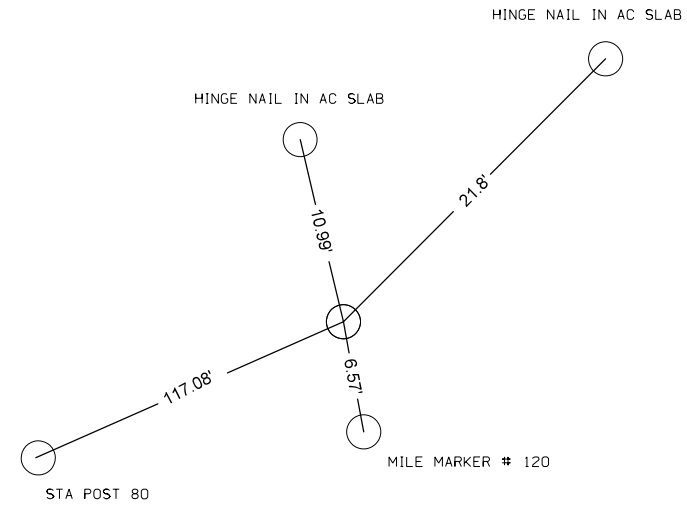
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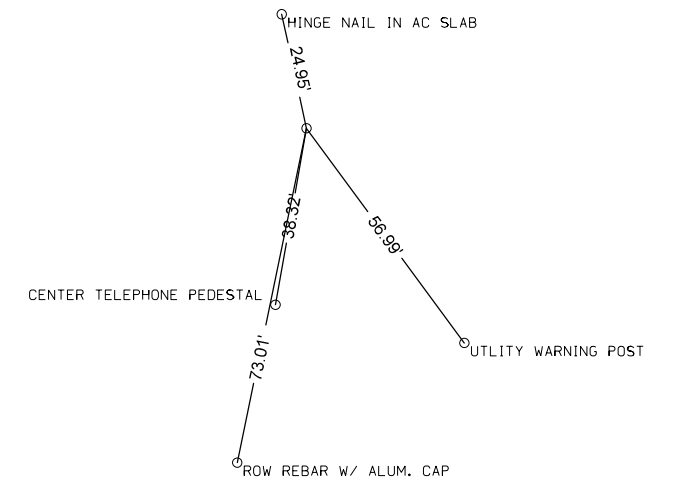
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 CP No. 12, Fd. Feno Monument  
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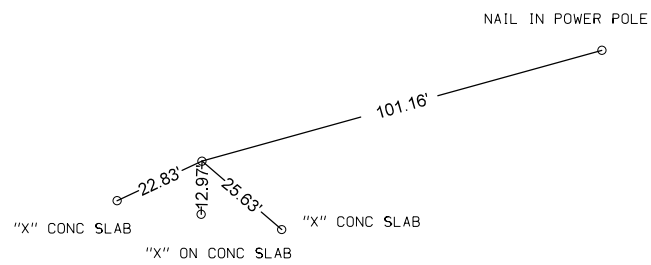
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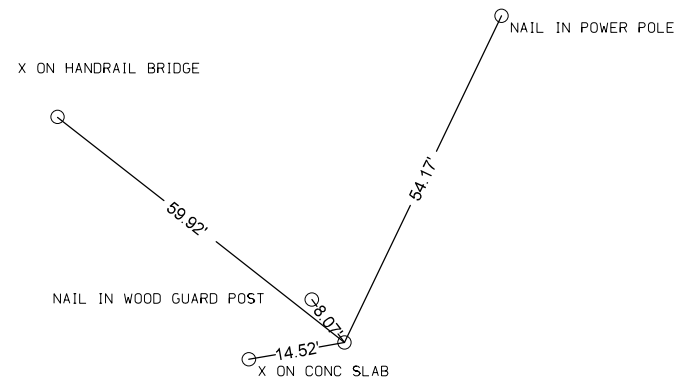
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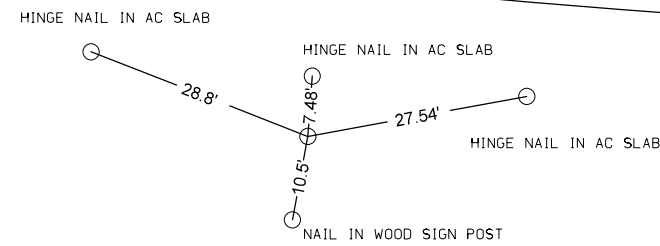
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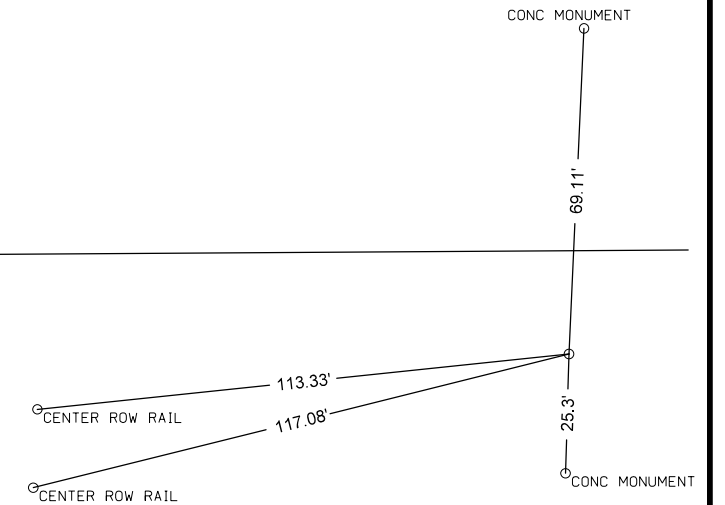
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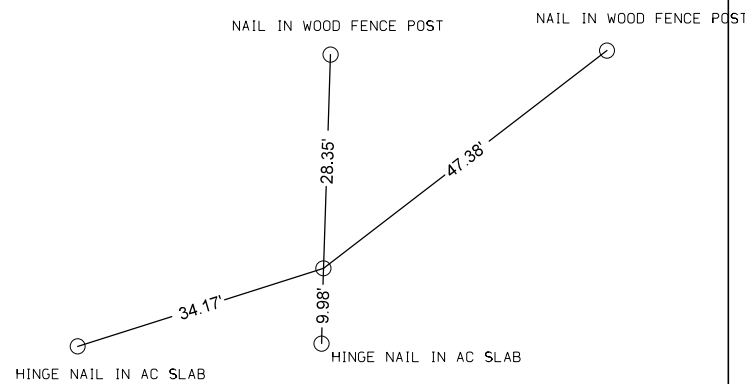
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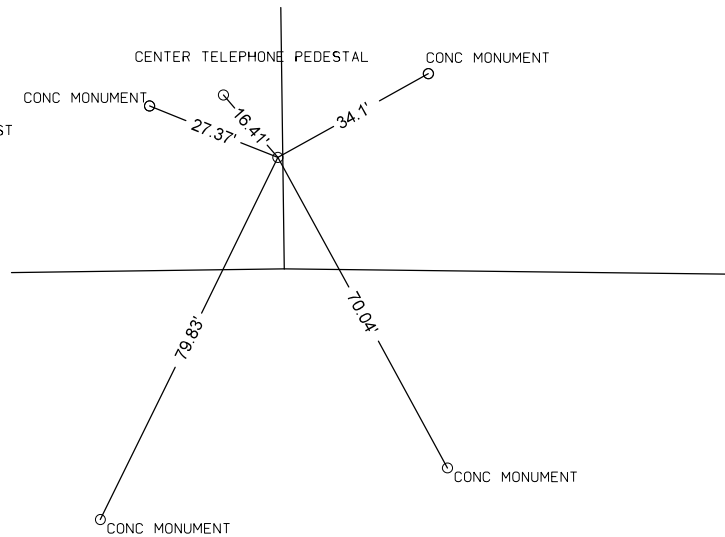
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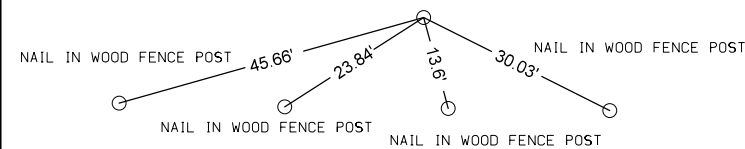
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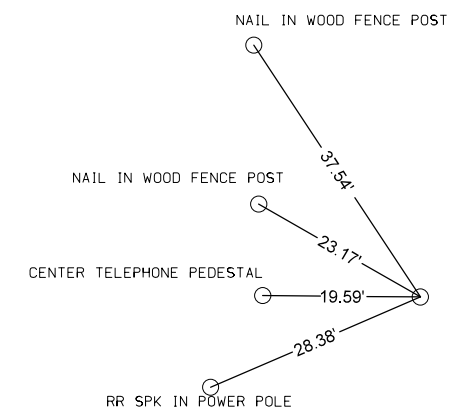
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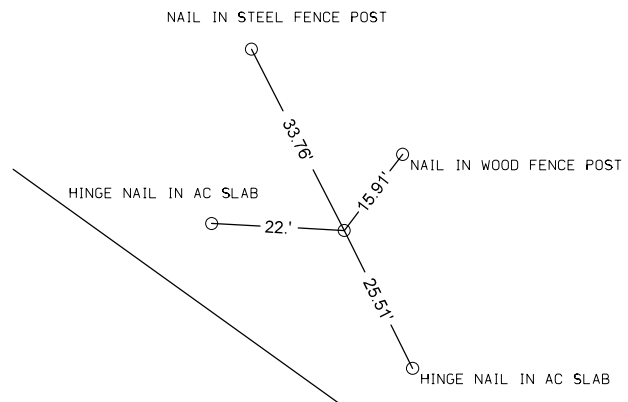
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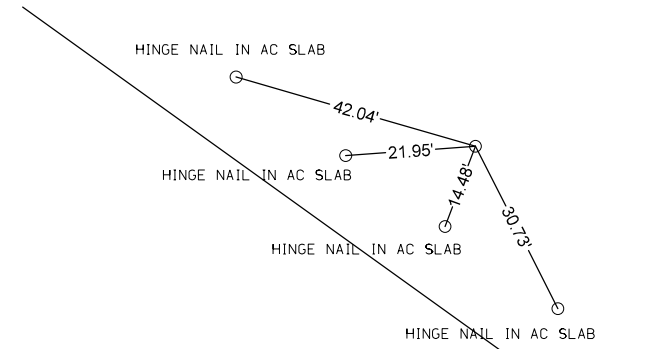
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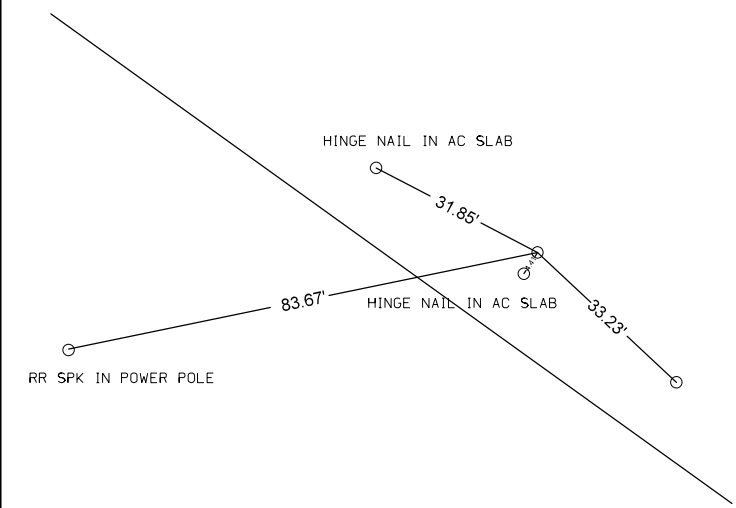
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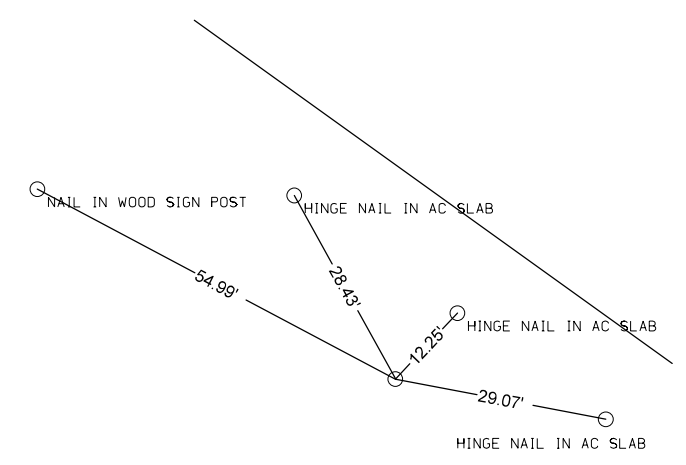
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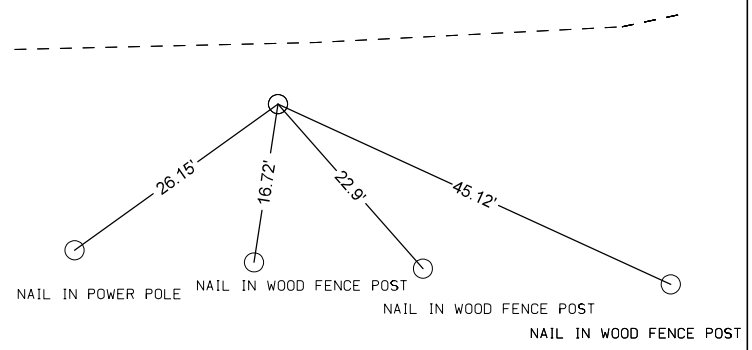
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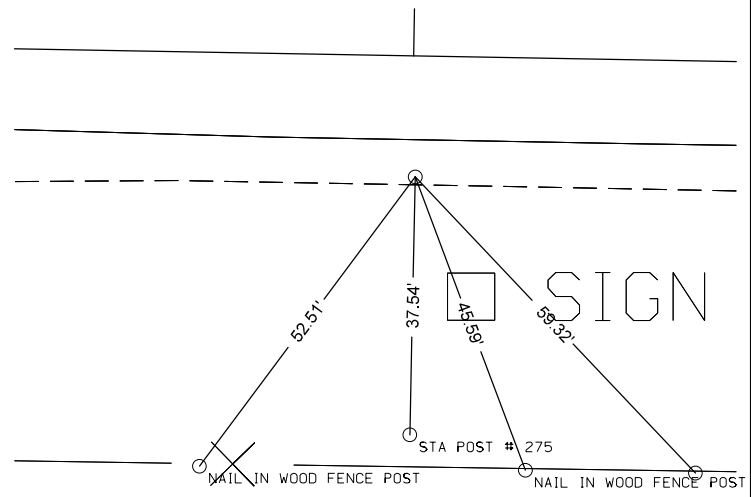
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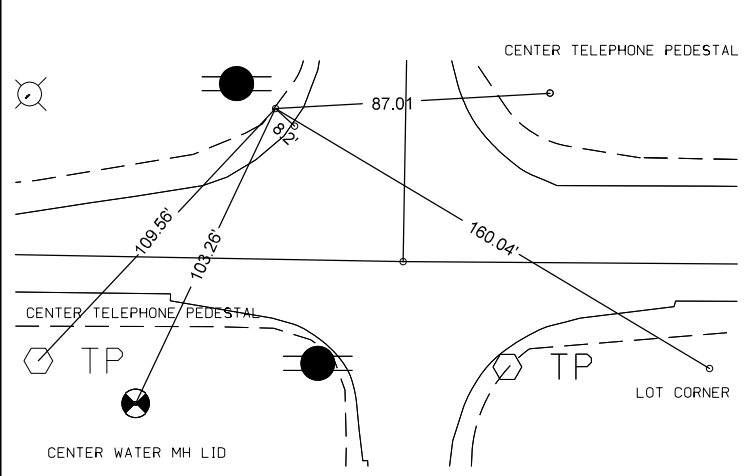
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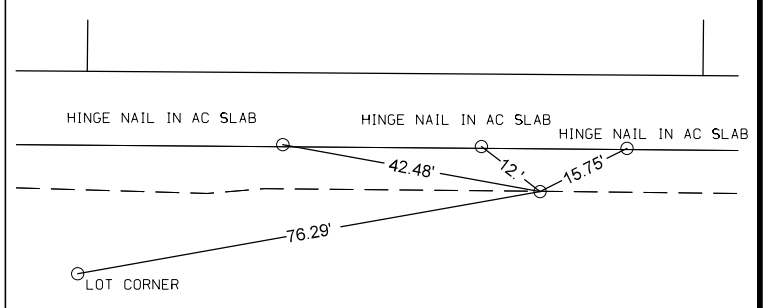
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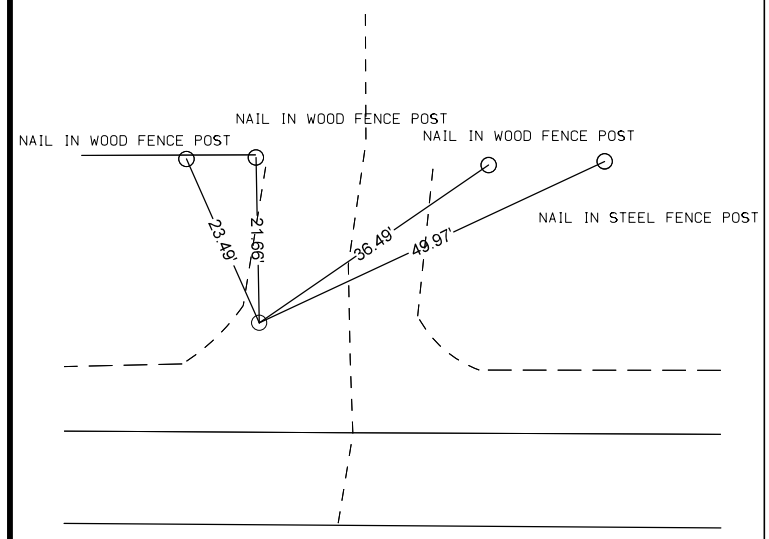
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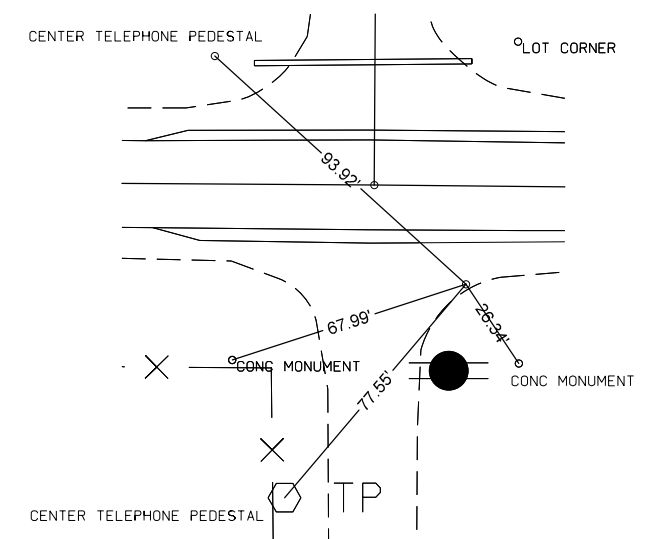
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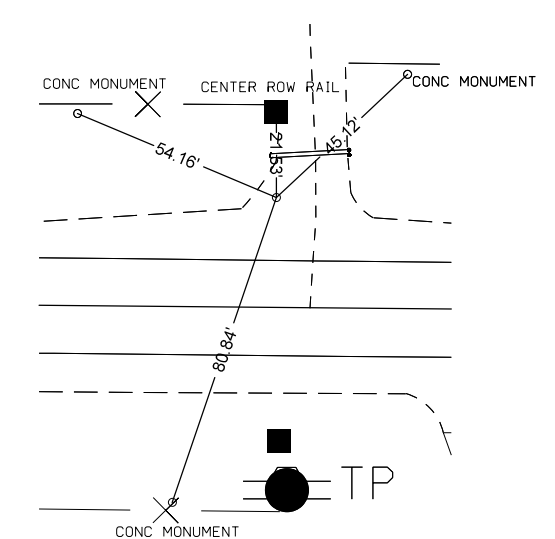
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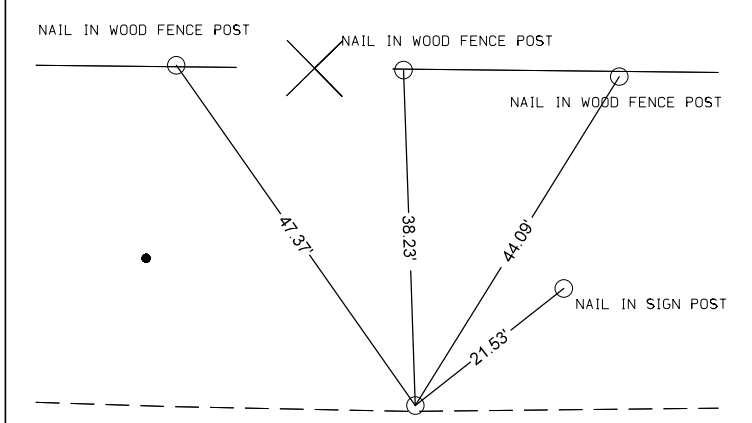
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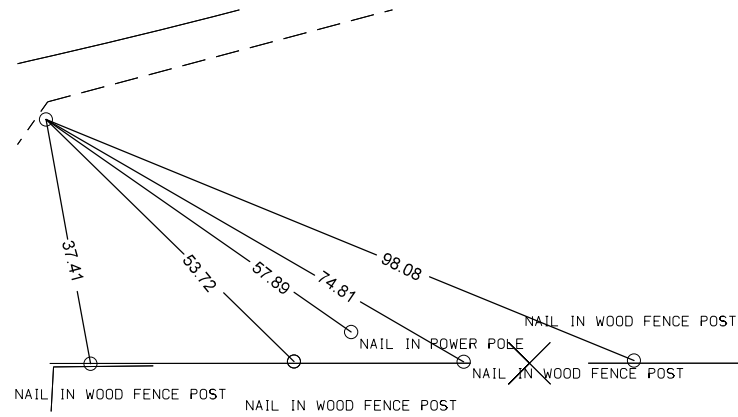
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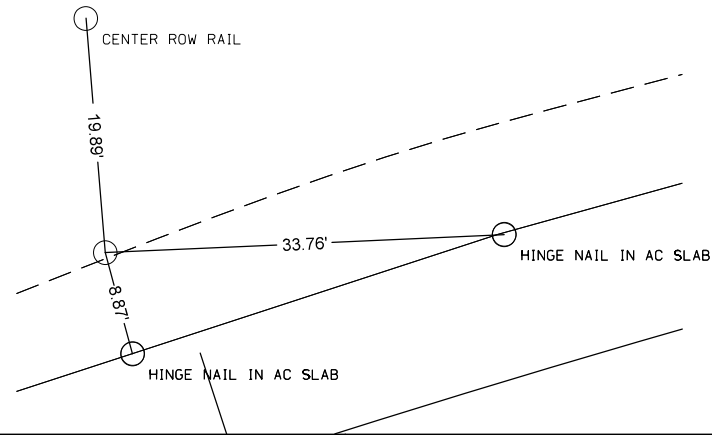
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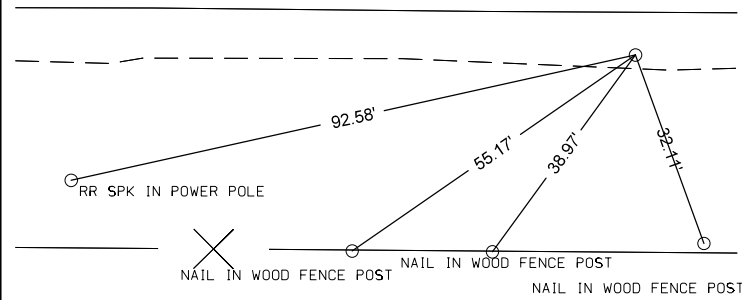
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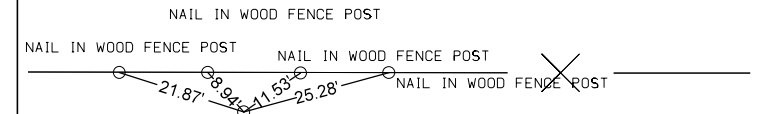
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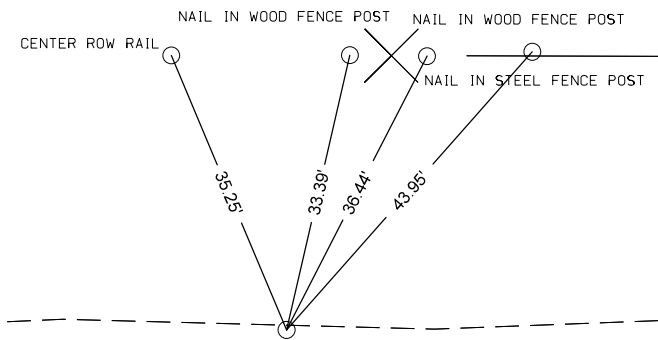
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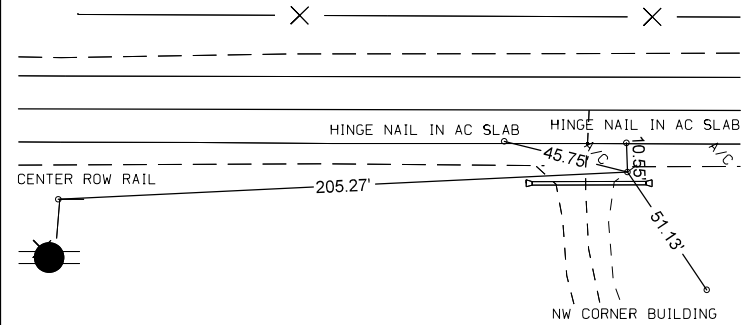
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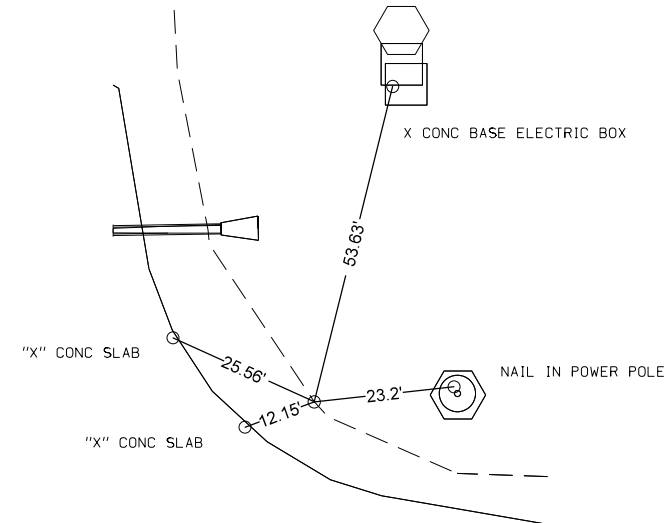
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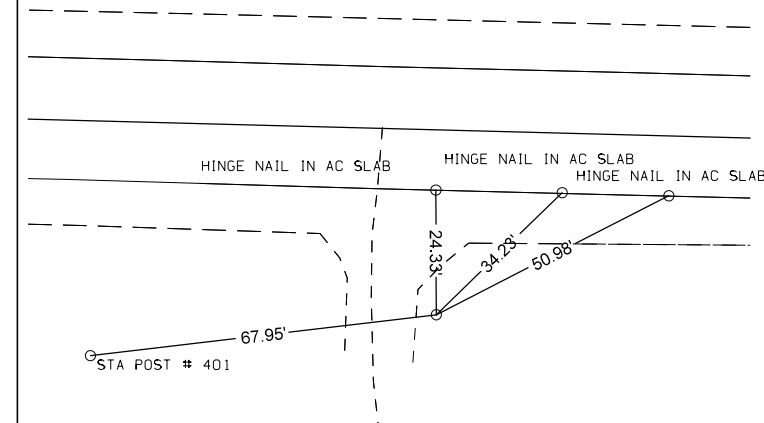
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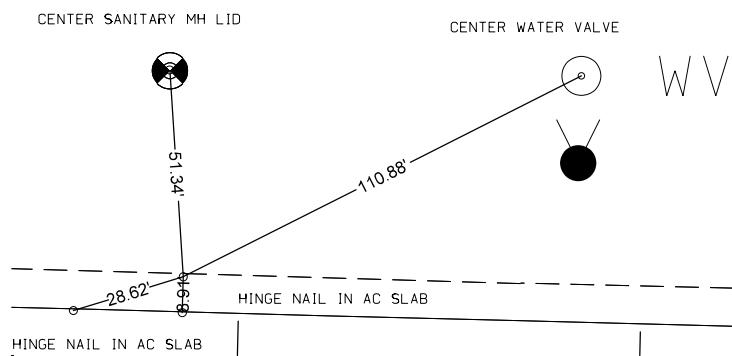
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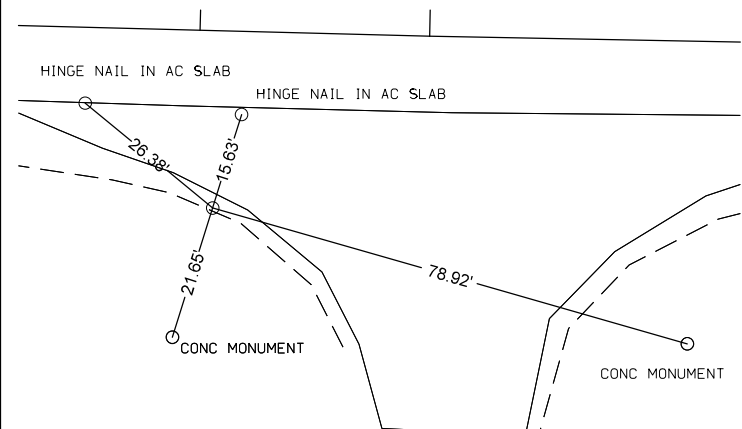
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 CP No. 33, Fd. Rebar  
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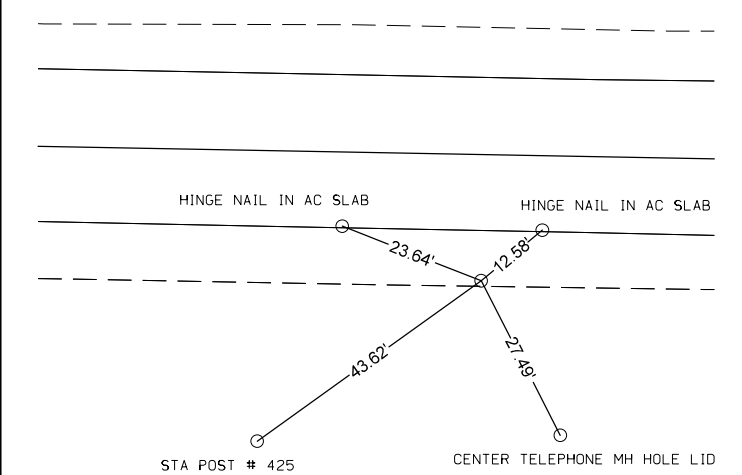
CP STA 408+86.04, 20.70 Lt.  
 CP No. 333, Fd. Iron Pin  
 N=494186.113, E=1612997.486,



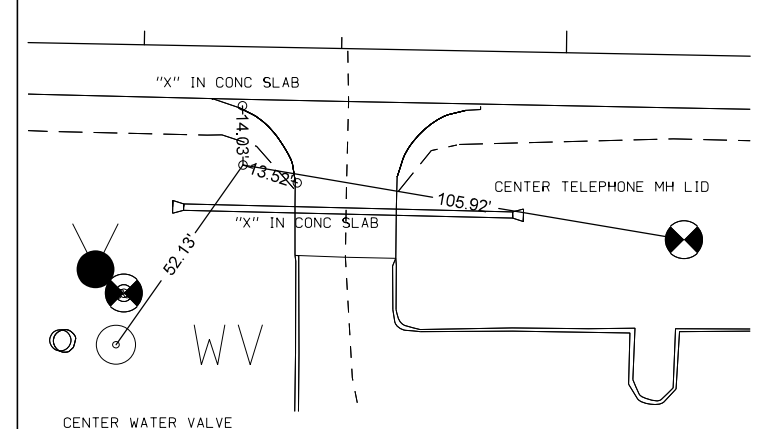
CP STA 417+02.74, 28.34 Rt.  
 CP No. 334, Fd. Iron Pin  
 N=494115.651, E=1613812.612,



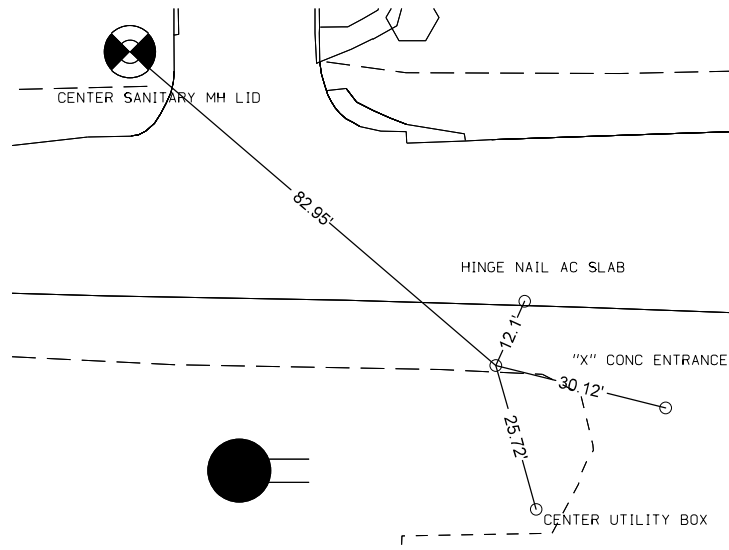
CP STA 425+26.32, 19.97 Rt.  
 CP No. 335, Fd. Iron Pin  
 N=494108.283, E=1614636.408,



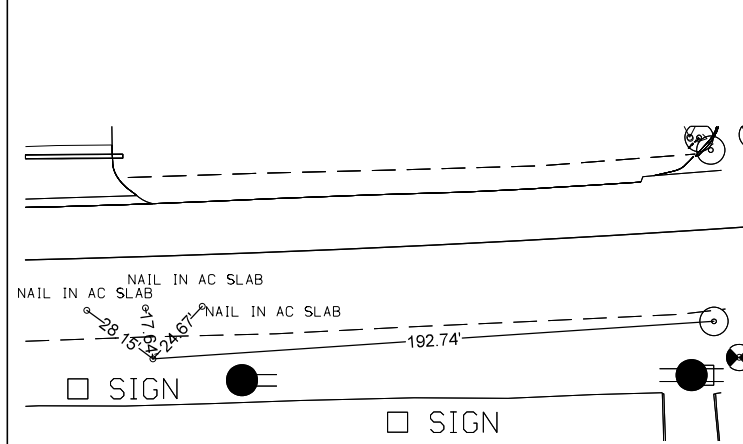
CP STA 433+23.93, 28.04 Rt.  
 CP No. 34, Fd. Rebar  
 N=494085.230, E=1615433.730,



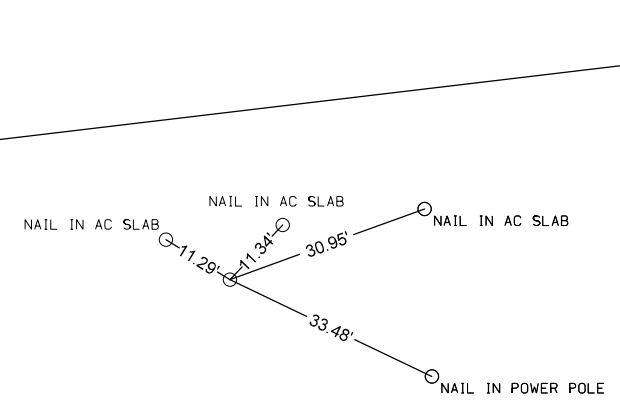
CP STA 441+70.77, 24.95, 24.95 Rt.  
 CP No. 336, Fd. Iron Pin  
 N=494076.672, E=1616280.908,



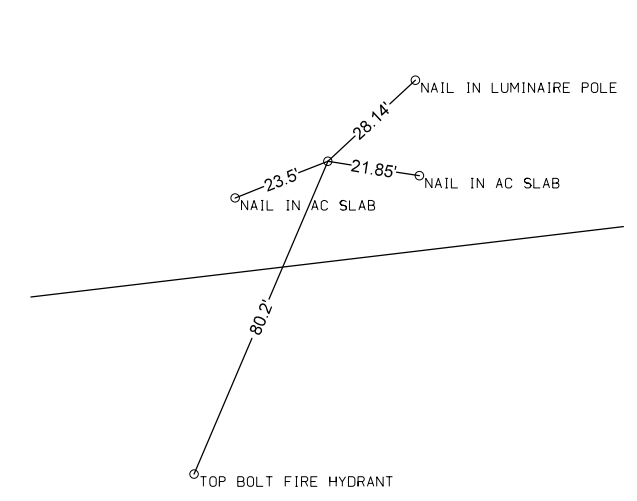
CP STA 449+71.11, 35.09 Rt.  
 CP No. 35, Fd. Feno Monument  
 N=494067.160, E=1617082.410,



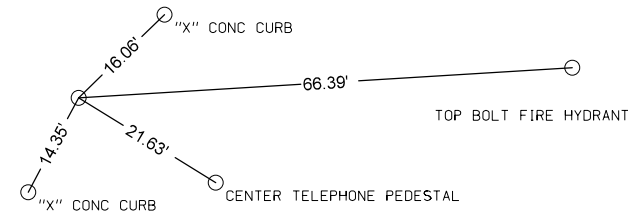
CP STA 455+71.13, 24.86 Rt.  
 CP No. 337, Fd. Iron Pin  
 N=494126.788, E=1617681.998,



CP STA 462+35.77, 23.50 Lt.  
 CP No. 338, Fd. Iron Pin  
 N=494253.285, E=1618336.278,



CP STA Off Chain  
 CP No. 339, Fd. Iron Pin



**ALIGNMENT COORDINATES**

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
20001	ML092	255+00.00	494,371.15	1,597,837.61															
20006	ML092				258+45.63	494,169.44	1,598,118.28	260+05.63	494,078.36	1,598,249.80	264+10.92	493,839.55	1,598,577.33	267+85.11	493,838.66	1,598,982.67	269+45.11	493,834.41	1,599,142.60
20015	ML092				337+72.34	493,772.36	1,605,969.55	339+32.34	493,773.69	1,606,129.52	342+33.59	493,768.17	1,606,430.78	345+19.31	493,909.54	1,606,696.86	346+79.31	493,980.80	1,606,840.09
20022	ML092				347+85.31	494,029.67	1,606,934.15	349+45.31	494,100.94	1,607,077.39	352+55.89	494,246.61	1,607,351.75	355+49.82	494,237.44	1,607,662.25	357+09.82	494,236.94	1,607,822.23
20028	ML092							390+67.33	494,167.94	1,611,179.03	391+01.53	494,167.24	1,611,213.23	391+35.73	494,166.34	1,611,247.42			
20032	ML092							416+90.59	494,099.28	1,613,801.39	417+35.31	494,098.11	1,613,846.10	417+80.03	494,097.27	1,613,890.81			
20036	ML092							438+11.62	494,059.08	1,615,922.04	439+21.21	494,057.02	1,616,031.61	440+30.11	494,076.15	1,616,139.52			
20038	ML092							440+30.11	494,076.15	1,616,139.52	441+31.12	494,093.78	1,616,238.98	442+31.59	494,093.40	1,616,339.99			
20043	ML092							447+70.70	494,091.42	1,616,879.10	451+22.49	494,090.13	1,617,230.88	454+73.40	494,131.67	1,617,580.21			
20046	ML092	466+80.72	494,274.21	1,618,779.08															
31000	SRKENNEDY	1256+05.14	493,946.86	1,597,951.77															
31002	SRKENNEDY	1258+87.00	494,145.34	1,598,151.90															
30000	SR57S	1273+87.78	492,836.02	1,600,580.14															
30003	SR57S	1283+73.24	493,821.43	1,600,570.67															
30010	SR57N	1383+68.17	493,821.48	1,600,565.60															
30013	SR57N	1394+41.91	494,895.22	1,600,565.83															
40000	SR90TH	2303+28.16	493,097.25	1,603,227.88															
40002	SR90TH	2310+28.21	493,797.30	1,603,225.53															
40004	SR90TH	2317+28.21	494,497.30	1,603,223.17															
50000	SR63S	3384+70.68	493,534.41	1,611,217.98															
50001	SR63S	3391+03.42	494,167.15	1,611,215.11															
50010	SR63N	3391+03.95	494,167.14	1,611,215.64															
50011	SR63N	3398+03.35	494,866.40	1,611,201.59															
60011	SRYSTS	4412+74.33	493,632.11	1,613,854.33															
60012	SRYSTS	4413+22.77	493,680.54	1,613,853.53															
60013	SRYSTS	4413+72.56	493,730.32	1,613,852.79															
60015	SRYSTS	4417+40.32	494,098.08	1,613,851.11															
60000	SRYSTN	4417+33.40	494,098.23	1,613,844.19															
60001	SRYSTN	4424+09.38	494,774.21	1,613,843.99															

ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
90000	ENT258	98+68.14	494,052.48	1,598,058.28															
90001		100+00.00	494,145.34	1,598,151.90															
90002							100+71.65	494,203.67	1,598,193.51	101+46.98	494,265.00	1,598,237.26	102+17.98	494,340.28	1,598,239.84				
90004		103+14.58	494,436.82	1,598,243.15															
90005	ENT259	100+00.00	494,381.81	1,597,968.42															
90005							101+20.00	494,358.92	1,598,086.21	101+76.66	494,348.11	1,598,141.83	102+30.43	494,309.73	1,598,183.52				
90007							104+30.43	494,174.26	1,598,330.65	104+62.64	494,152.44	1,598,354.35	104+94.30	494,139.17	1,598,383.70				
90009		105+70.41	494,107.81	1,598,453.04															
90014	ENT269	95+33.10	494,037.37	1,598,836.03															
90015							95+80.40	493,993.49	1,598,853.66	96+24.58	493,952.49	1,598,870.14	96+59.22	493,949.72	1,598,914.24				
90017		100+00.00	493,928.40	1,599,254.34															
90010	ENT270	97+80.00	493,613.42	1,599,251.48															
90011		100+00.00	493,833.41	1,599,253.48															
90011							101+06.87	493,940.27	1,599,254.45	101+71.34	494,004.74	1,599,255.04	102+31.60	494,056.73	1,599,293.16				
90013		102+59.60	494,079.31	1,599,309.72															
90025	ENT275	100+00.00	493,893.24	1,599,844.05															
90026		100+69.23	493,931.57	1,599,786.40															
90020	ENT276	100+00.00	493,828.04	1,599,843.46															
90021							100+70.21	493,898.25	1,599,844.10	100+74.35	493,902.39	1,599,844.13	100+78.48	493,906.52	1,599,843.89				
90023		101+40.15	493,968.08	1,599,840.20															
90030	ENT291	98+59.16	493,673.99	1,601,388.99															
90031							99+59.01	493,773.16	1,601,377.36	99+68.08	493,782.16	1,601,376.30	99+77.11	493,791.22	1,601,376.61				
90032		100+00.00	493,814.10	1,601,377.39															
90033		101+20.04	493,934.07	1,601,381.48															
90040	ENT297	97+18.87	493,529.41	1,601,891.83															
90041							97+48.87	493,559.41	1,601,892.10	97+70.37	493,580.92	1,601,892.30	97+91.72	493,601.89	1,601,897.06				
90042							98+11.72	493,621.39	1,601,901.49	98+34.91	493,644.01	1,601,906.62	98+57.89	493,667.20	1,601,906.45				
90043		100+00.00	493,809.30	1,601,905.37															
90044		101+20.00	493,929.31	1,601,905.46															
90047	ENT298	100+00.00	493,704.35	1,601,906.17															
90049		100+62.11	493,688.74	1,601,966.28															
90050	ENT305	98+80.00	493,681.83	1,602,727.25															
90051		100+00.00	493,801.82	1,602,728.34															
90066	ENT322	98+93.56	493,663.11	1,604,456.15															
90067		100+00.00	493,710.24	1,604,551.58															
90060	ENT323	96+84.92	493,484.75	1,604,605.53															
90061							97+64.92	493,564.74	1,604,606.26	97+98.08	493,597.90	1,604,606.56	98+28.46	493,623.33	1,604,585.28				
90063							98+48.46	493,638.66	1,604,572.44	98+81.62	493,664.09	1,604,551.16	99+12.00	493,697.25	1,604,551.46				
90064		100+00.00	493,785.24	1,604,552.26															
90065		102+00.00	493,985.23	1,604,554.08															
90070	ENT331	98+00.00	493,578.34	1,605,310.41															
90071		100+00.00	493,778.33	1,605,312.23															
90080	ENT341	94+00.70	493,209.61	1,606,415.14															
90081							95+27.63	493,336.37	1,606,421.62	95+73.99	493,382.68	1,606,423.99	96+19.31	493,426.75	1,606,409.60				
90083							99+40.16	493,731.74	1,606,310.00	99+49.84	493,740.94	1,606,306.99	99+59.47	493,750.50	1,606,305.50				
90084		100+00.00	493,790.55	1,606,299.26															
90085							100+61.11	493,850.92	1,606,289.84	100+71.04	493,860.74	1,606,288.31	100+80.93	493,870.67	1,606,288.41				
90087		101+10.51	493,900.25	1,606,288.72															
90090	ENT352	98+95.18	494,091.62	1,607,356.71															
90091		100+00.00	494,196.43	1,607,355.69															
90092							100+47.55	494,243.97	1,607,355.23	100+79.97	494,276.40	1,607,354.91	101+05.08	494,289.91	1,607,384.39				
90093		101+62.97	494,314.04	1,607,437.01															
90100	ENT359	96+73.79	494,137.73	1,607,780.69															
90101							98+71.48	494,133.71	1,607,978.33	99+21.46	494,132.70	1,608,028.31	99+50.00	494,182.68	1,608,029.34				
90102		100+00.00	494,232.66	1,608,030.37															
90103							100+90.00	494,322.64	1,608,032.22	101+80.00	494,412.62	1,608,034.07	102+31.37	494,410.77	1,608,124.05				
90105		103+43.37	494,408.47	1,608,236.02															

**ALIGNMENT COORDINATES**

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
90115	ENT364	96+63.00	494,026.91	1,608,308.20															
90116		100+00.00	494,019.98	1,608,645.13															
90110	ENT365	97+80.00	493,999.99	1,608,644.72															
90111		100+00.00	494,219.94	1,608,649.24															
90111								100+49.55	494,269.48	1,608,650.25	100+76.37	494,296.30	1,608,650.81	101+02.33	494,320.80	1,608,639.89			
90113		102+56.34	494,461.47	1,608,577.18															
90120	ENT367	98+79.96	494,079.19	1,609,657.56															
90121		100+00.00	494,199.23	1,609,657.02															
90122		101+00.04	494,299.27	1,609,656.08															
31201	ENT1257 (KENNEDY)	100+00.00	494,020.70	1,598,026.23															
31203								101+39.30	493,927.84	1,598,130.06	101+82.50	493,899.04	1,598,162.26	102+22.23	493,897.37	1,598,205.43			
31204		102+80.29	493,895.13	1,598,263.44															
30201	ENT1281 (R-53)	99+19.94	493,642.43	1,600,492.39															
30202		100+00.00	493,640.20	1,600,572.41															
30203		100+80.02	493,638.97	1,600,652.43															
40201	ENT2307 (90TH)	100+00.00	493,549.09	1,603,226.36															
40202		101+00.00	493,549.43	1,603,326.36															
40205	ENT2313 (90TH)	100+00.00	494,077.09	1,603,224.59															
40206		101+00.00	494,077.43	1,603,324.58															

**SPIRAL OR CIRCULAR CURVE DATA**

101-17  
04-19-11

Name	Location	$\Delta_{scs}$	Horizontal Alignment Data														Remarks
			Spiral Data						Curve Data								
			$\theta_s$	$L_s$	$T_s$	$E_s$	$X_c$	$Y_c$	L.T.	S.T.	$\Delta_c$	T	L	R	E		
20006		35° 10' 54.09" LT	2° 59' 45.09"	-160.00'	TS	53.35'	159.96'	2.79'	106.68'	53.35'	29° 11' 23.92" LT	398.39'	779.48'	1,530.00'	51.02'		
20015		27° 58' 21.68" LT	2° 59' 45.09"	-160.00'	TS	53.35'	159.96'	2.79'	106.68'	53.35'	21° 58' 51.50" LT	297.14'	586.97'	1,530.00'	28.59'		
20022		28° 37' 45.84" RT	2° 59' 45.09"	160.00'	TS	53.35'	159.96'	2.79'	106.68'	53.35'	22° 38' 15.66" RT	306.25'	604.51'	1,530.00'	30.35'		
20028											0° 19' 35.74" RT	34.20'	68.40'	12,000.00'	0.05'		
20032											0° 25' 37.45" LT	44.72'	89.45'	12,000.00'	0.08'		
20036											11° 07' 40.08" LT	109.59'	218.49'	1,125.00'	5.33'		
20038											10° 15' 40.29" RT	101.01'	201.48'	1,125.00'	4.53'		
20043											6° 59' 27.10" LT	351.79'	702.70'	5,759.23'	10.73'		



### SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius FT	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e %	L FT	x FT														
IA 92	20006	1530	6.0	160	53	PV-301	257+92.63	258+45.63	258+98.63	260+05.63			260+05.63			259+52.30	259+52.30		
							269+98.11	269+45.11	268+92.11	267+85.11			267+85.11			268+38.44	268+38.44		
IA 92	20015	1530	6.0	160	53	PV-301	337+19.34	337+72.34	338+25.34	339+32.34			339+32.34			338+79.01	338+79.01		
							347+32.31	346+79.31	346+26.31	345+19.31			345+19.31			345+72.64	345+72.64		
IA 92	20022	1530	6.0	160	53	PV-301	347+32.31	347+85.31	348+38.31	349+45.31			349+45.31			348+91.98	348+91.98		
							357+62.82	357+09.82	356+56.82	355+49.82			355+49.82			356+03.15	356+03.15		

**TRAFFIC CONTROL PLAN**

IA 92 Rural Section - From just west of R-57 east to R-63.  
IA 92 will be closed to through traffic between R-57 and R-63. Traffic will be detoured 6 miles north on R-57, 2 miles east on G-24, and 6 miles south on R-63. Local access will be provided during construction.

IA 92 Urban Section - From R-63 east to Kenwood Boulevard.  
Two-way traffic will be maintained on IA 92 at all times during construction. All entrances will be maintained during construction.

R-57  
Northbound and southbound traffic will be maintained during construction.

90th Avenue.  
90th Avenue will be closed to through traffic at IA 92 during construction.

R-63  
Northbound and southbound traffic will be maintained during construction.

110 Street  
Northbound and southbound traffic will be maintained during construction.

South Spruce Street  
Northbound and southbound traffic will be maintained during construction.

R Street  
Northbound and southbound traffic will be maintained during construction.

South Kenwood Boulevard  
Northbound and southbound traffic will be maintained during construction.

**STAGING NOTES**

2014 Construction Season

Stage 1  
Traffic Control  
IA 92 to be closed to through traffic from R-57 east to R-63. Local access only will be provided on existing IA 92 in this section. Through traffic will be detoured north on R-57, east on G-24, and south on R-63. Through traffic will be maintained on existing IA 92 between R-63 and S. Kenwood Boulevard.

Construction  
Grade and pave EB/WB IA 92 from R-57 to R-63. Grade and pave the south 2 lanes of IA 92 from R-63 to S. Kenwood Boulevard.

Stage 2  
Traffic Control  
IA 92 traffic to be placed on the completed IA 92 pavement.

Construction  
Grade and pave remaining north lane in urban section. Construct recreational trail along both the rural and urban section.










**TABULATION OF SPECIAL EVENTS**

Event	Location	Date
Event Name	Event Location	Event Date

**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

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

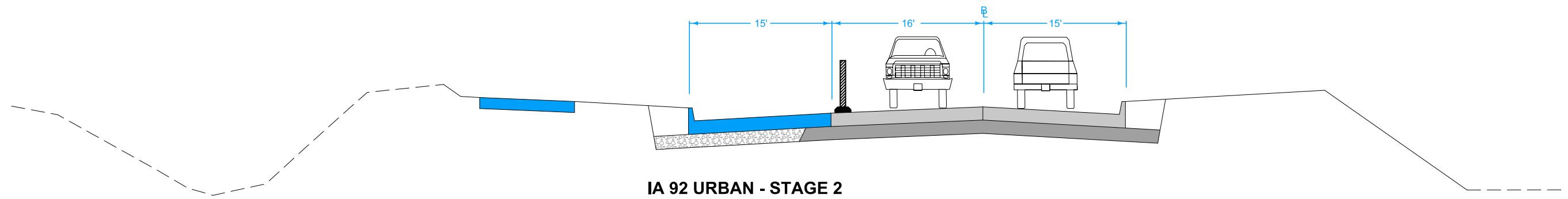
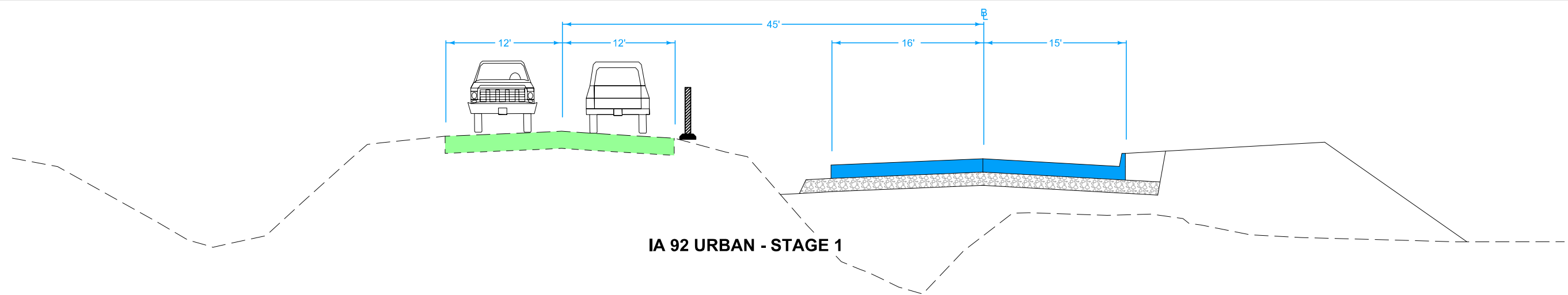
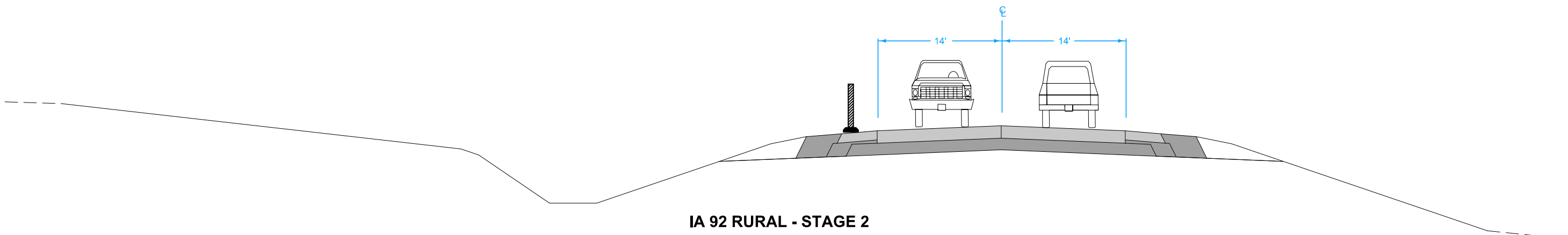
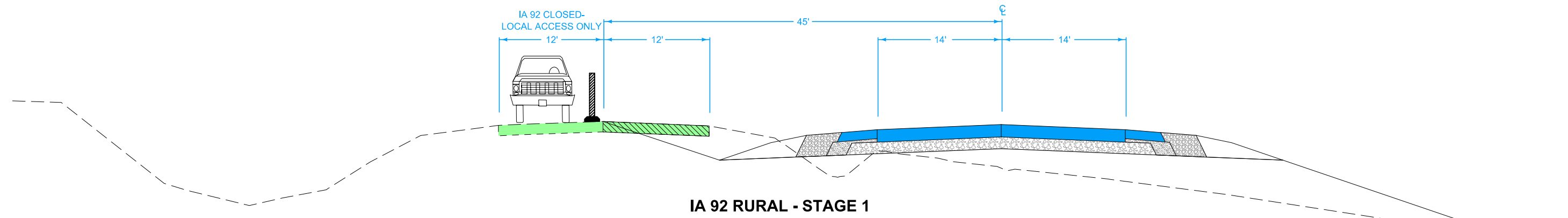
**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

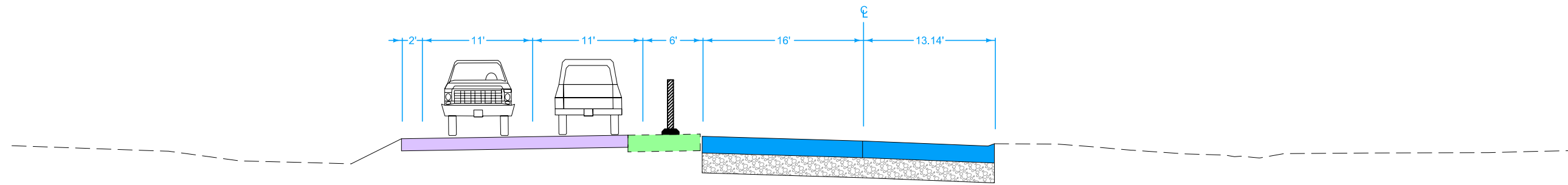
	Channelizing Device		Crash Cushion
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure

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

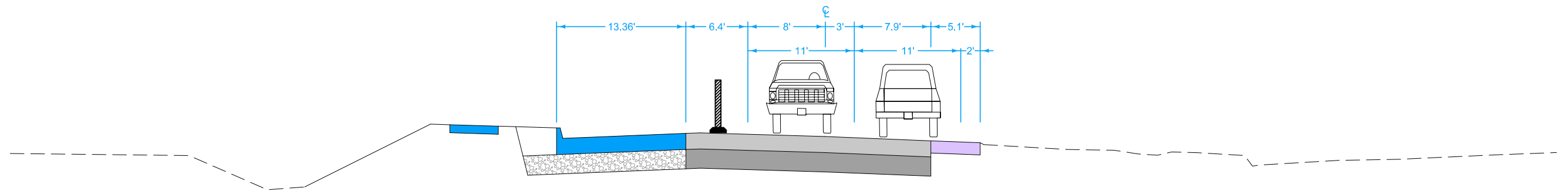
**TRAFFIC CONTROL  
AND  
STAGING  
LEGEND AND SYMBOL  
INFORMATION SHEET**

**(COVERS SHEET SERIES J)**

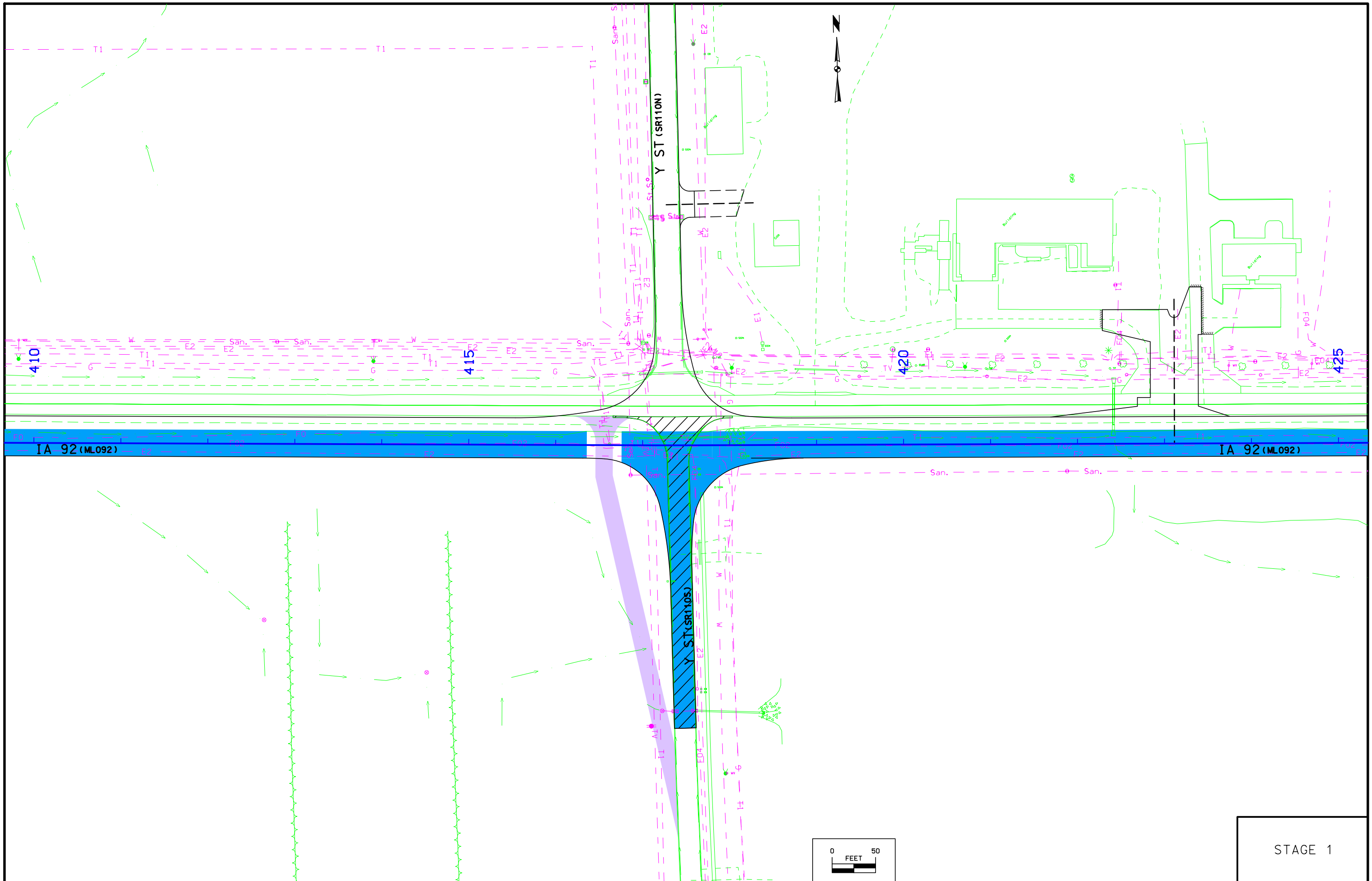




**IA 92 URBAN - STAGE 1**  
**STA 442+00.00**



**IA 92 URBAN - STAGE 2A**  
**STA 443+00.00**

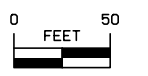


IA 92 (ML092)

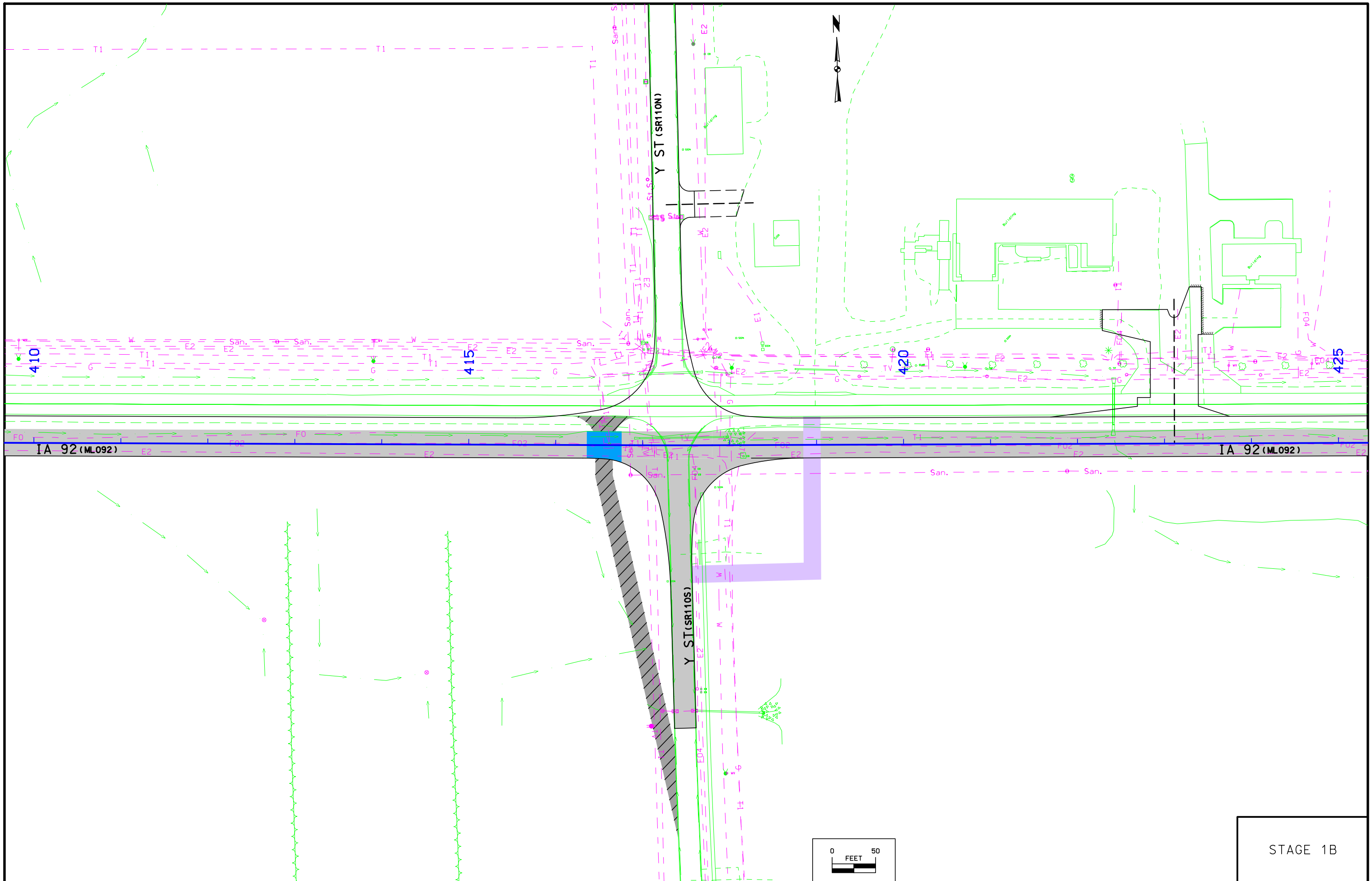
IA 92 (ML092)

Y ST (SR110S)

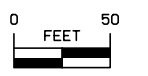
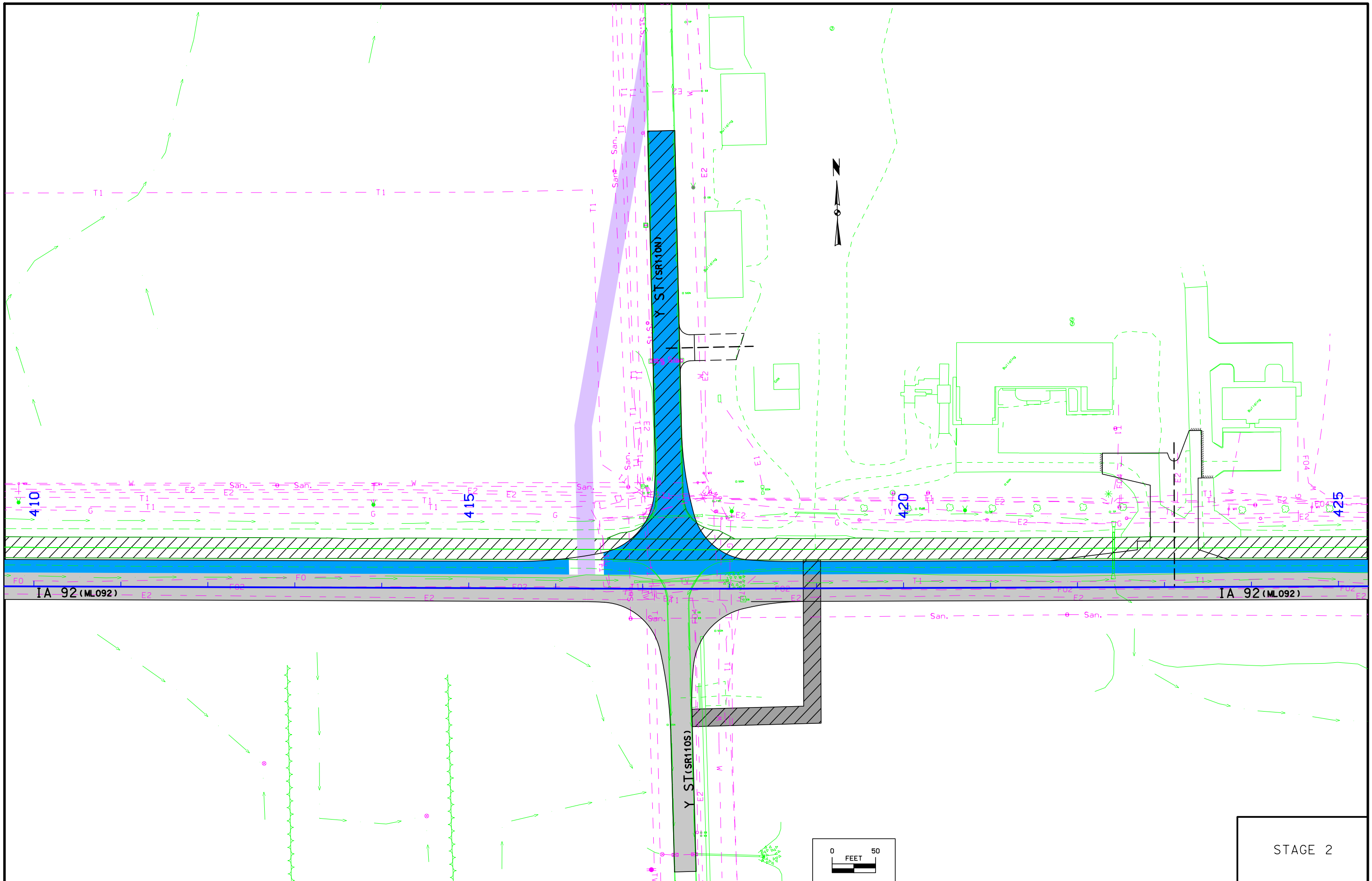
Y ST (SR110N)



STAGE 1

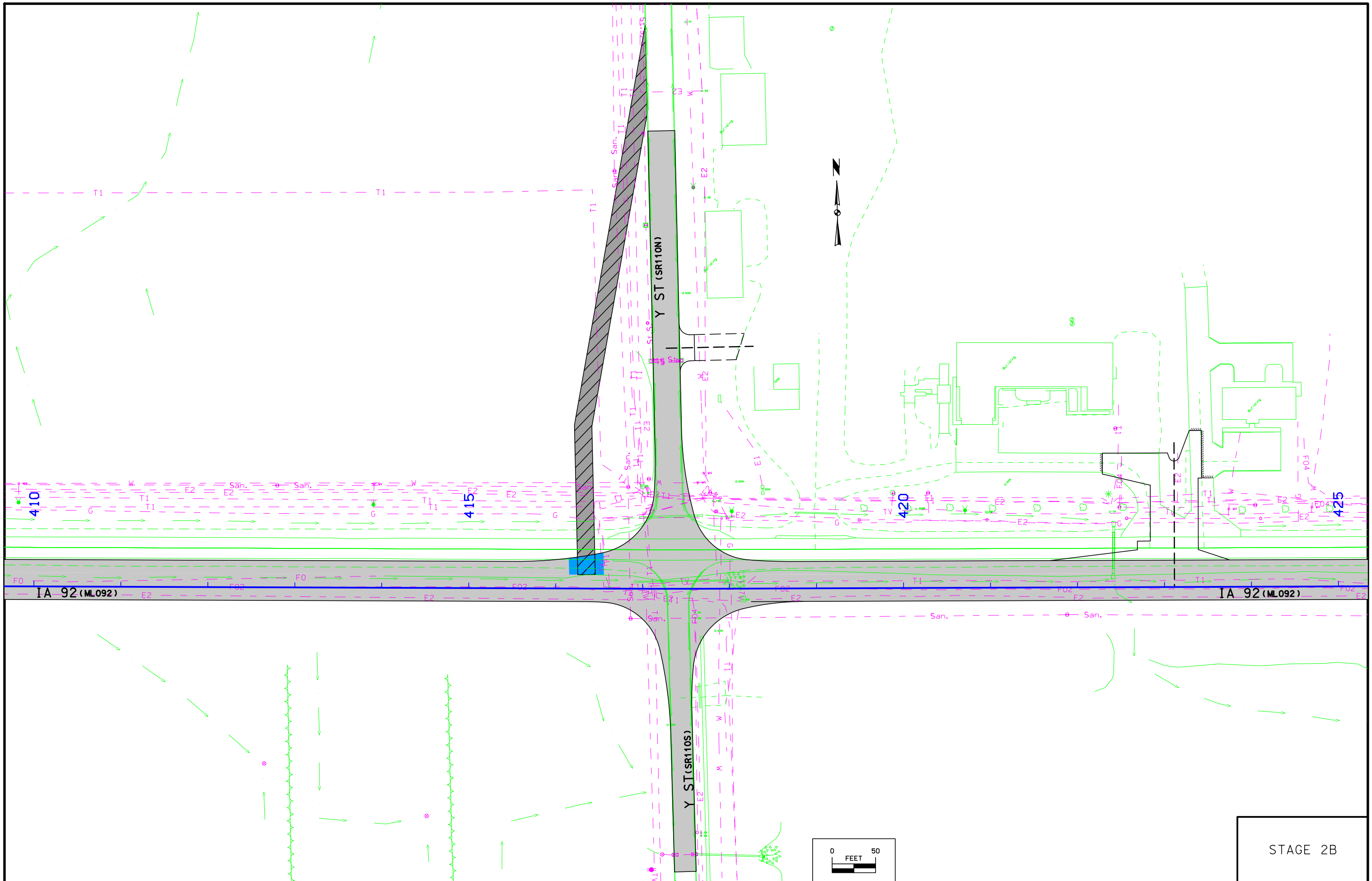


STAGE 1B

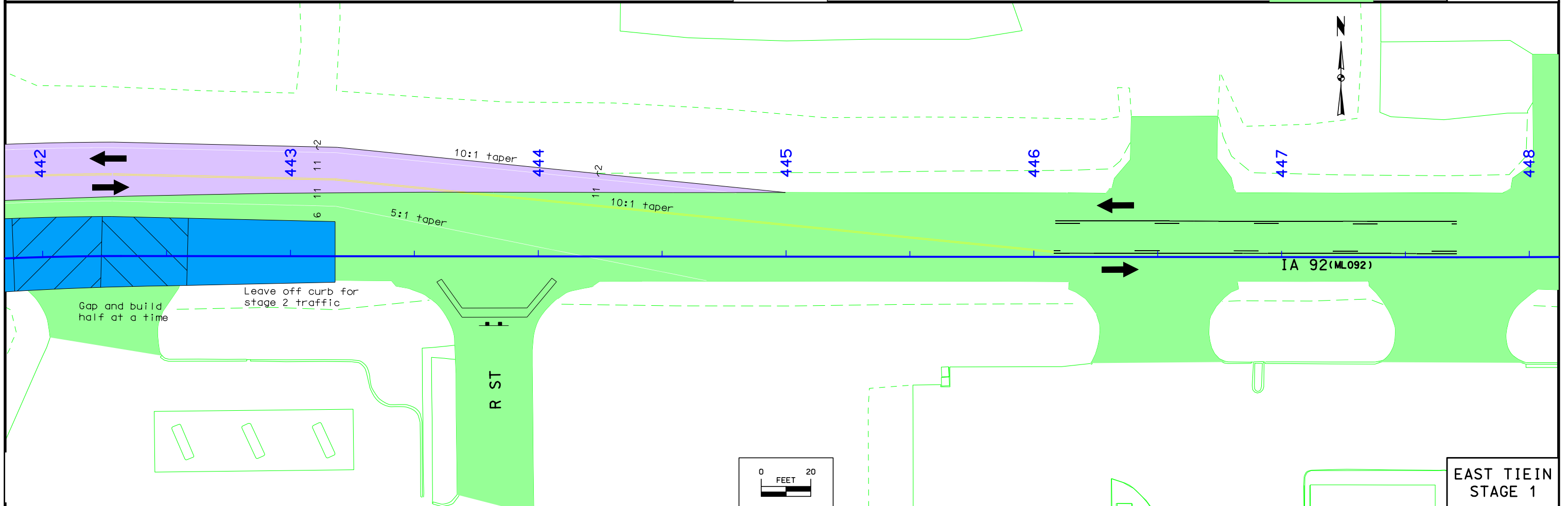
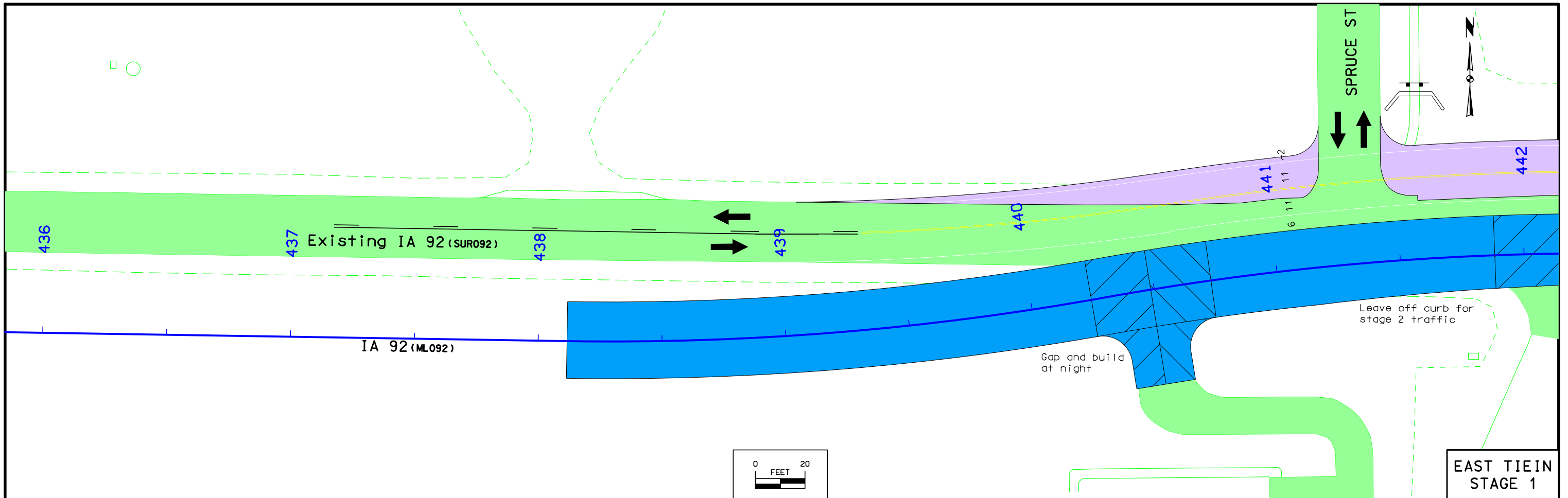


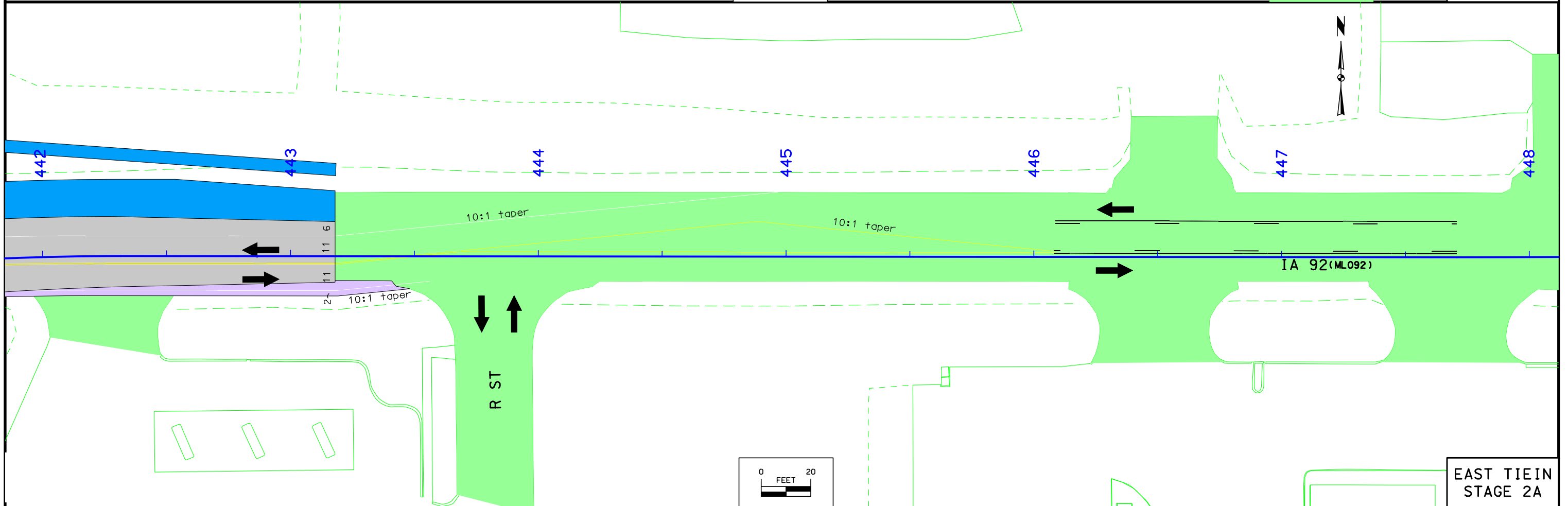
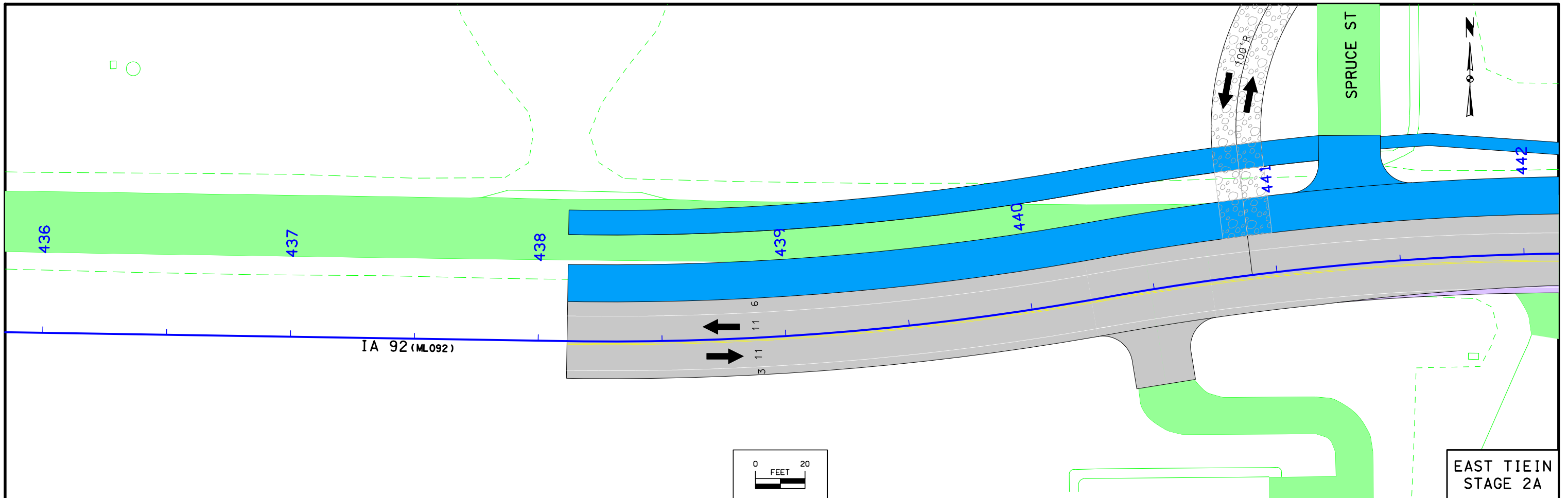
STAGE 2

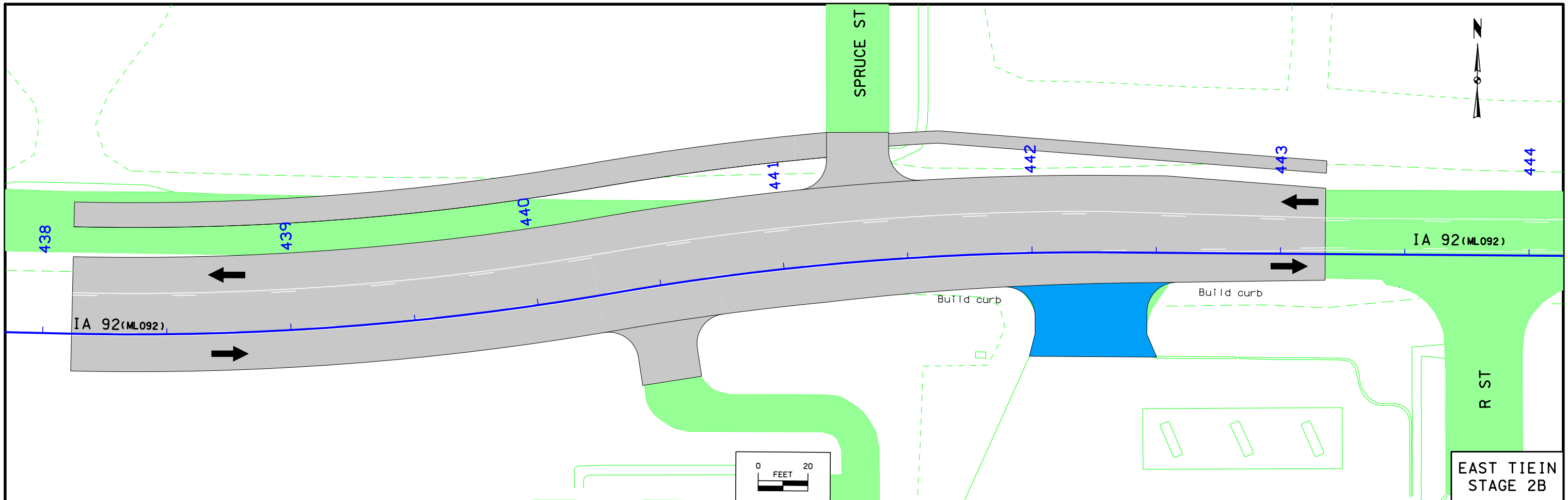




STAGE 2B







### SURVEY SYMBOLS

- TDC Tree Deciduous
- PPA Power Pole Co. 1
- FWD Wood Fence
- LUM Luminaire
- TEV Evergreen Tree
- LP L.P. Tank
- D Centerline Draw or Stream (Down)
- RET Retaining Walls
- SI Sign
- SHR Shrub
- SI Sign
- EW Edge of Water
- DIK Centerline of Dike or Dam
- FLG Flag Poles
- WM Wind Mill
- FCL Chain Link and Security Fence
- HDG Hedge Row
- TV Satellite TV Dish
- RT Radio Tower
- INB Storm Sewer Beehive Intake
- WV Water Valve
- FHD Fire Hydrants
- WEL Well
- MH Utility Access (Manhole)
- LUM Luminaire
- MIS Miscellaneous
- TPD Telephone Pedestal
- EB Electrical Box
- UB Utility Box
- PR Electric Riser Pole
- FW Wire Fence
- GP Guard Post (Less Than 4 Posts)
- IN Storm Sewer Intake
- TLN Treeline
- TVP TV Pedestal
- SEP Septic Tank
- OUT Tile Outlet
- TIL Tile Line
- UST Underground Tank
- GV Gas Valve
- DU Centerline Draw or Stream (Up)
- BNK Stream Bank
- BL Topo Breakline
- RIP Rip-Rap

- St.S. STA Storm Sewer Line Co. 1
- F03 FOC Underground Fiber Optic Co. 3
- F05 F0E Underground Fiber Optic Co. 5
- F02 F0B Underground Fiber Optic Co. 2
- San. SAA Sanitary Sewer Line Co. 1
- T1 TLA Underground Telephone Line Co. 1
- E1 ELA Underground Electric Line Co. 1
- G GLA Underground Gas Line Co. 1
- W WLA Underground Water Line Co. 1
- F0 F0A Underground Fiber Optic Co. 1
- E2 ELB Underground Electric Line Co. 2
- San.2 SAB Sanitary Sewer Line Co. 2
- GLB Underground Gas Line Co. 2
- F04 F0D Underground Fiber Optic Co. 4
- WLB Underground Water Line Co. 2

### UTILITY LEGEND

- F0 F0A Paetac Iowa Communications Network
- F02 FOB Lightcore (Digital Teleport)
- F03 FOC Iowa Network Service
- F04 F0D Indianola Municipal Utilities
- F05 F0E MCI
- T1 TLA Qwest
- E1 ELA Mid-American
- E2 ELB Indianola Municipal Utilities
- W WLA Indianola Municipal Utilities
- WLB Warren Rural Water
- San. SAA City of Indianola
- San.2 SAB Private
- G GLA Mid-American
- GLB Kinder Morgan
- St.S. STA City of Indianola
- PPA Mid-American

### PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	Description
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.	Description
Gray, Light	(48)	Proposed Pavement Shading

### PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	Description
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

### RIGHT-OF-WAY LEGEND

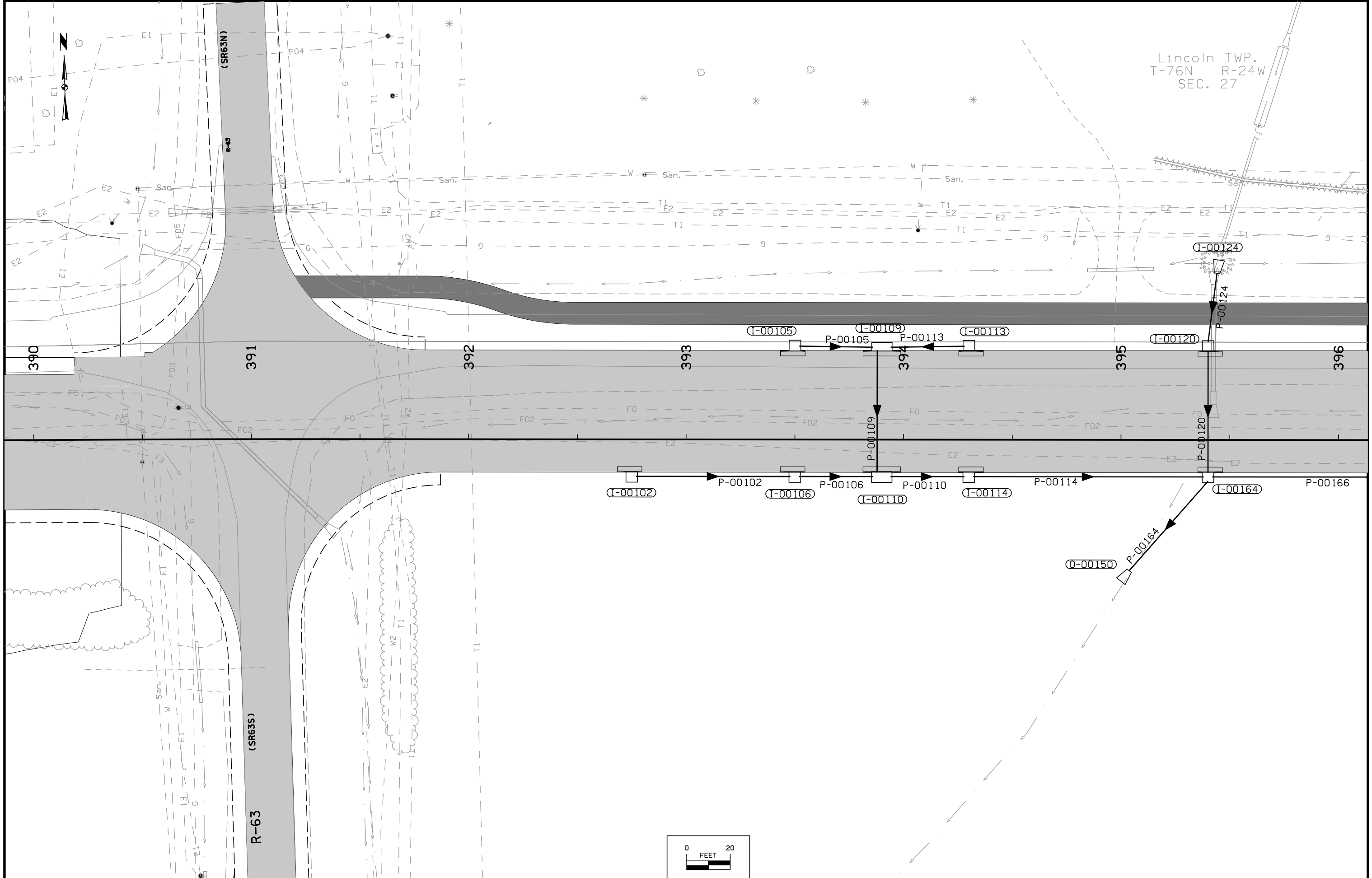
- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- Access Control

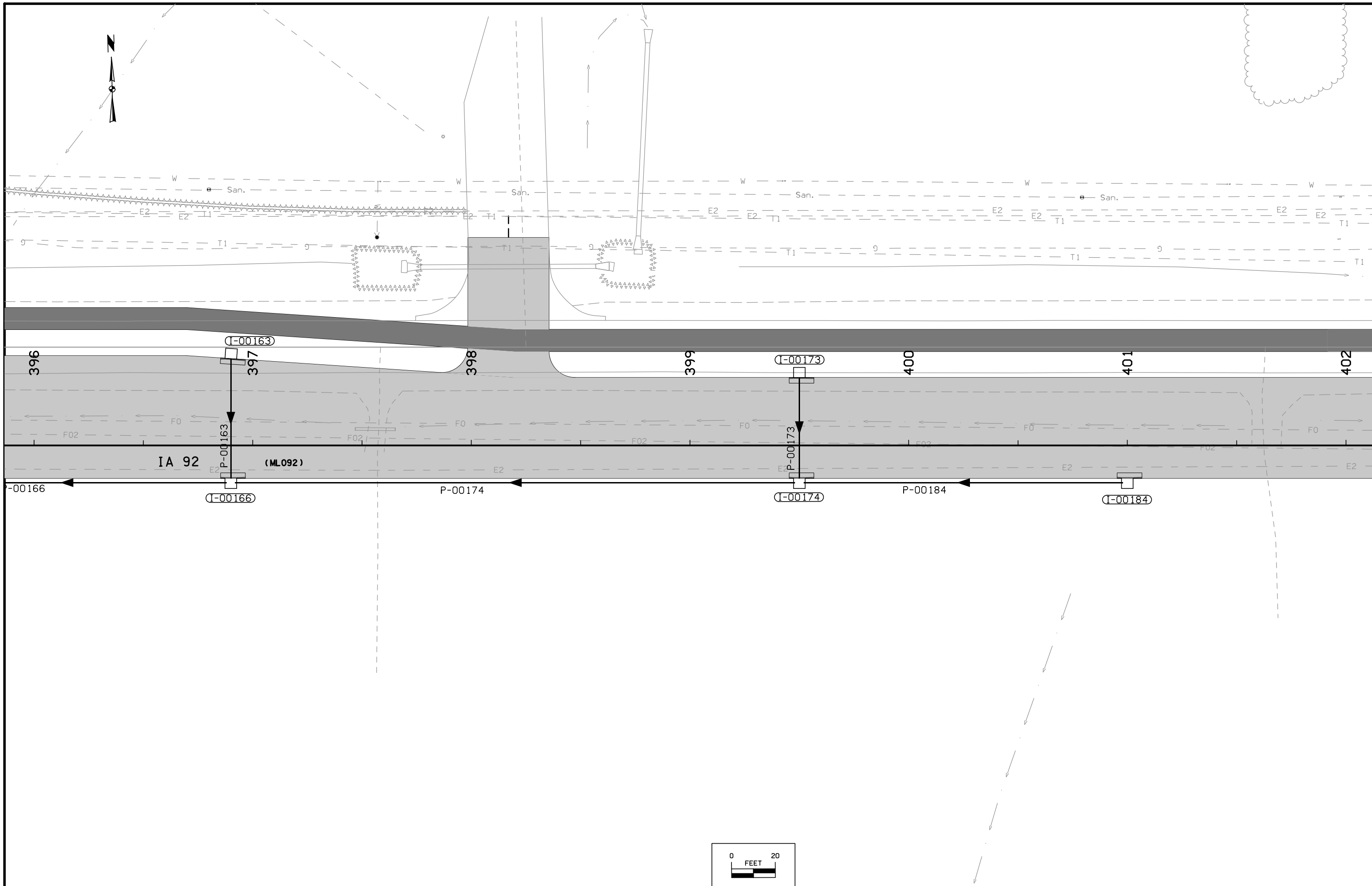
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

# STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

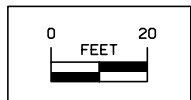
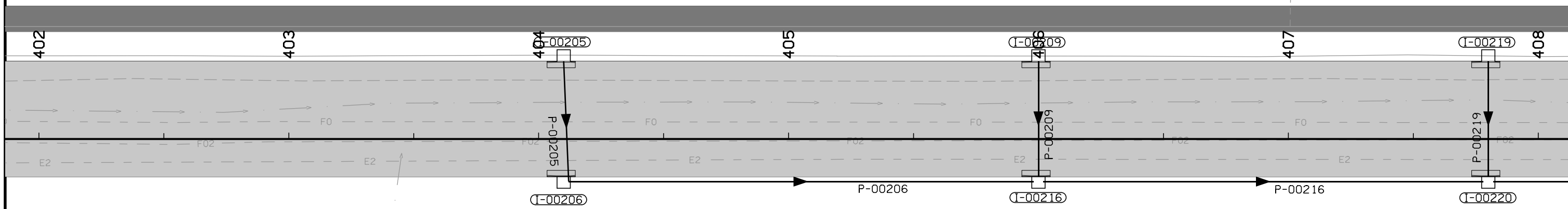
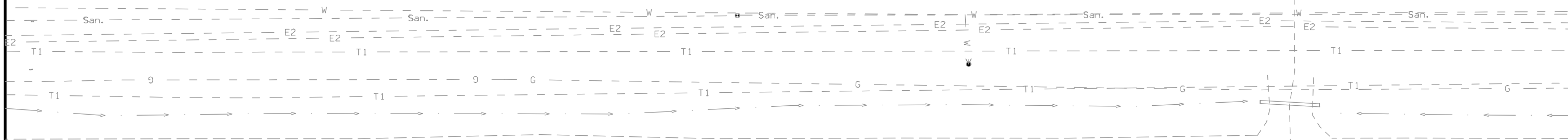
(COVERS SHEET SERIES M)

Lincoln TWP.  
T-76N R-24W  
SEC. 27



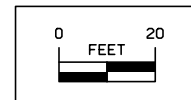
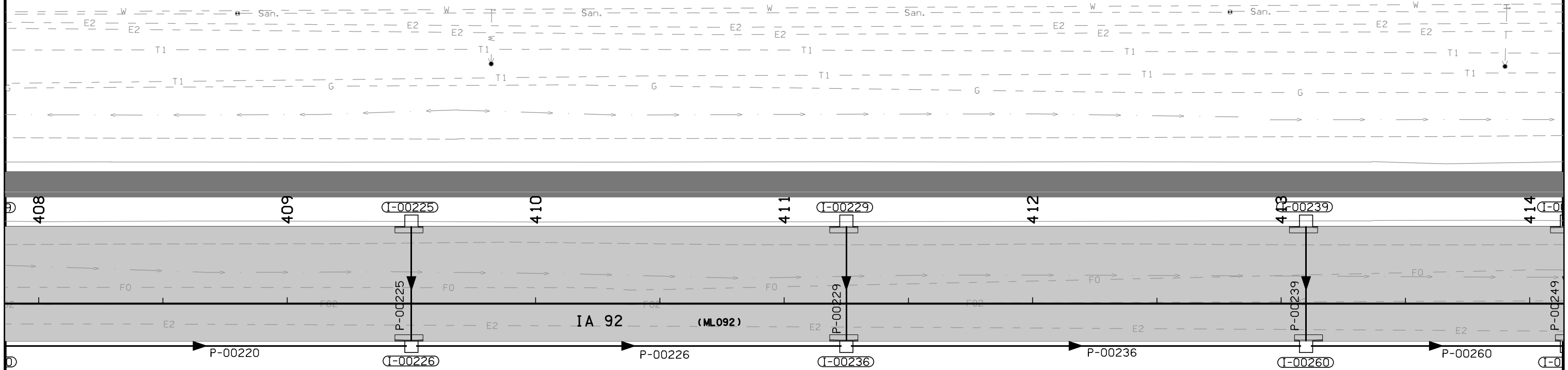


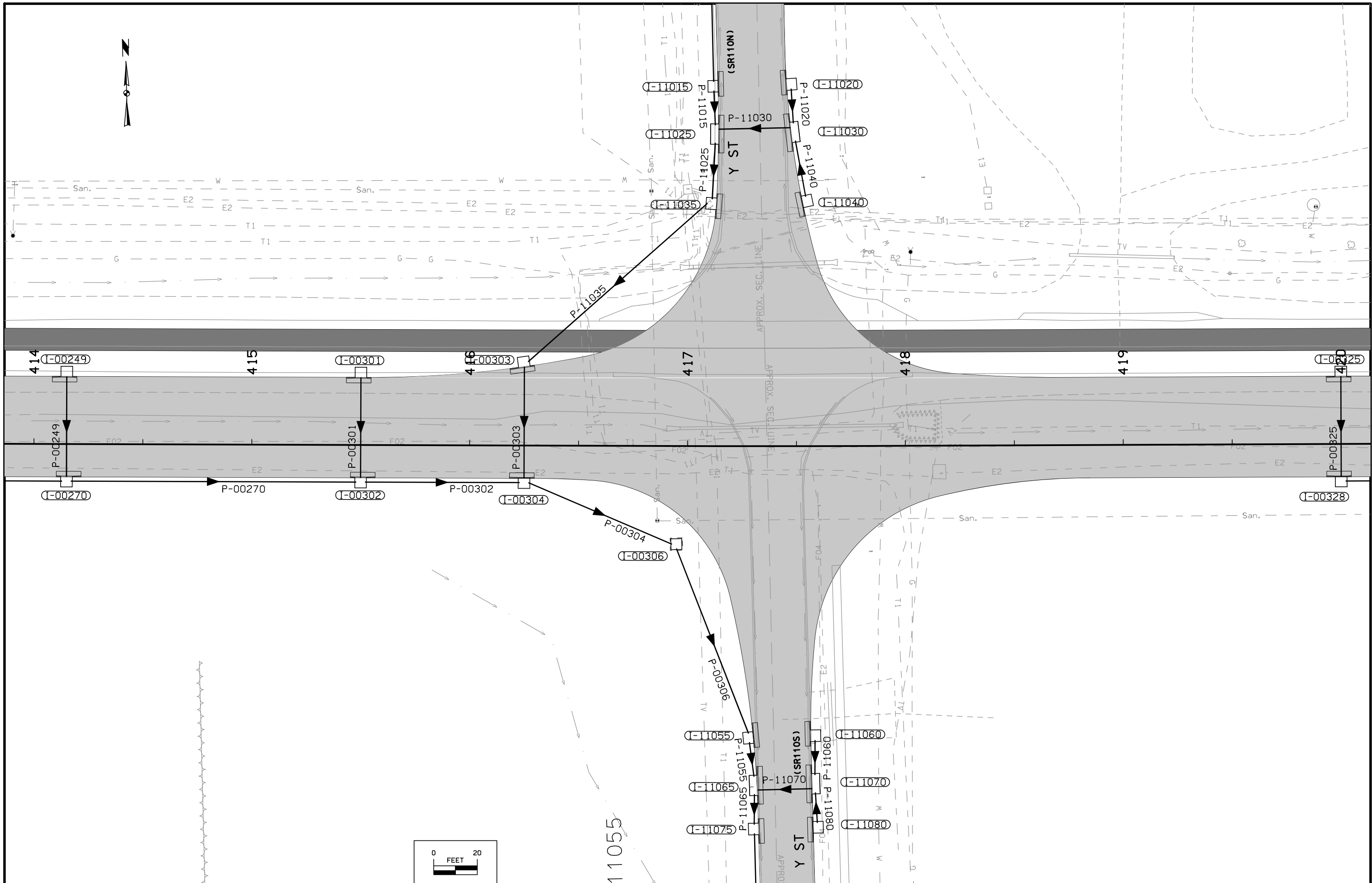
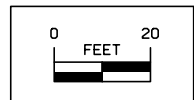


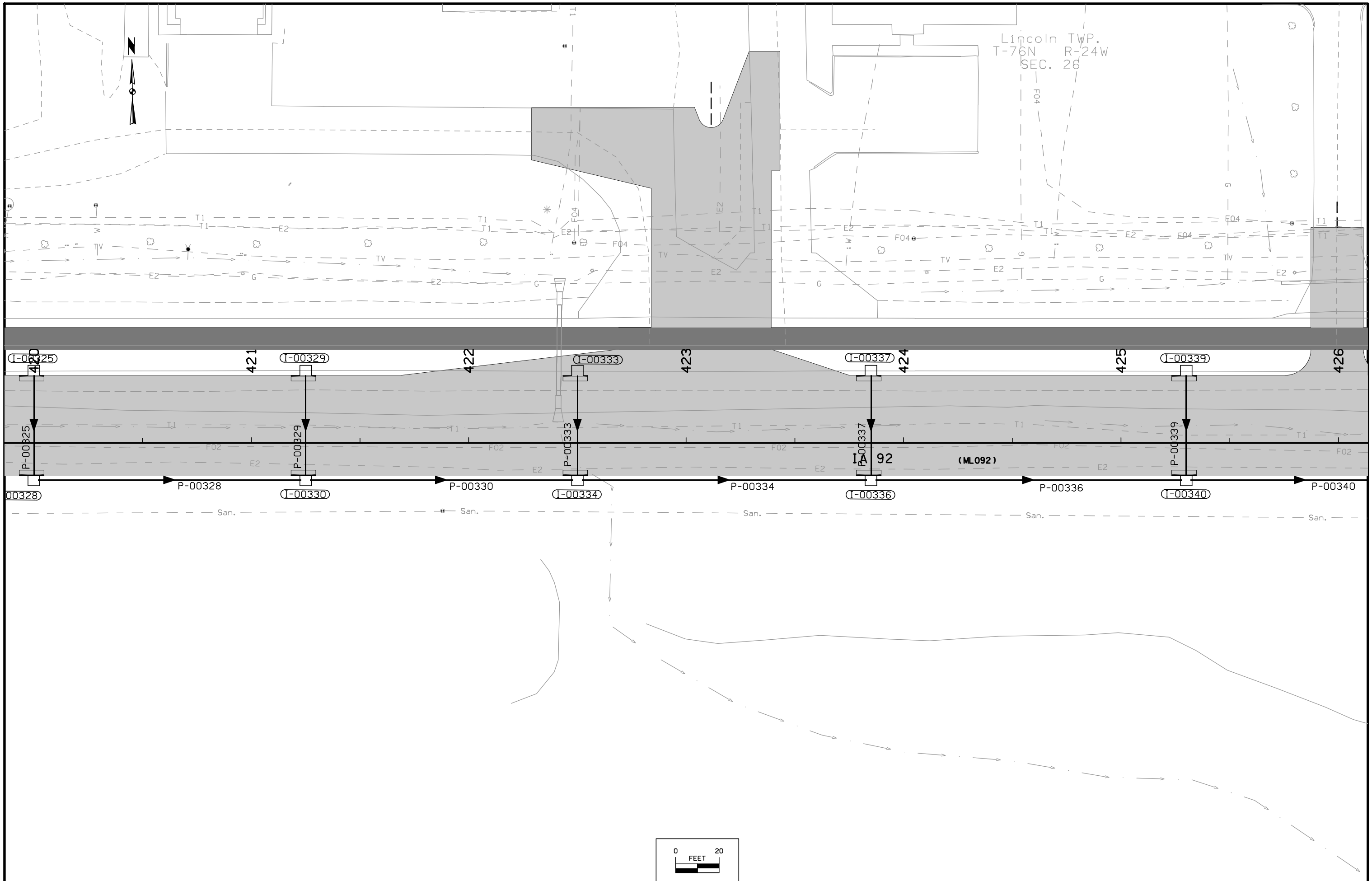




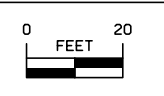
Lincoln TWP.  
T-76N R-24W  
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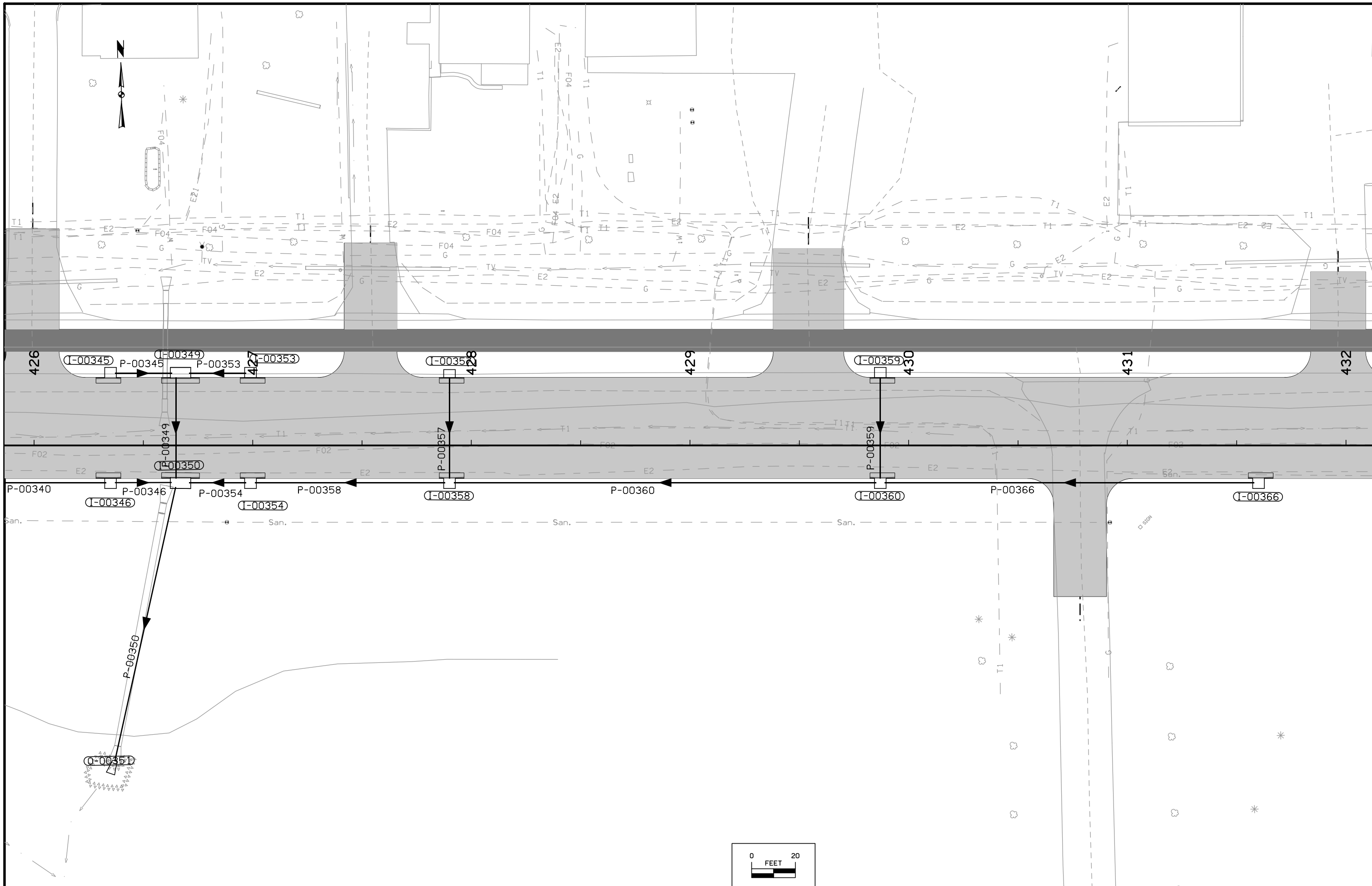


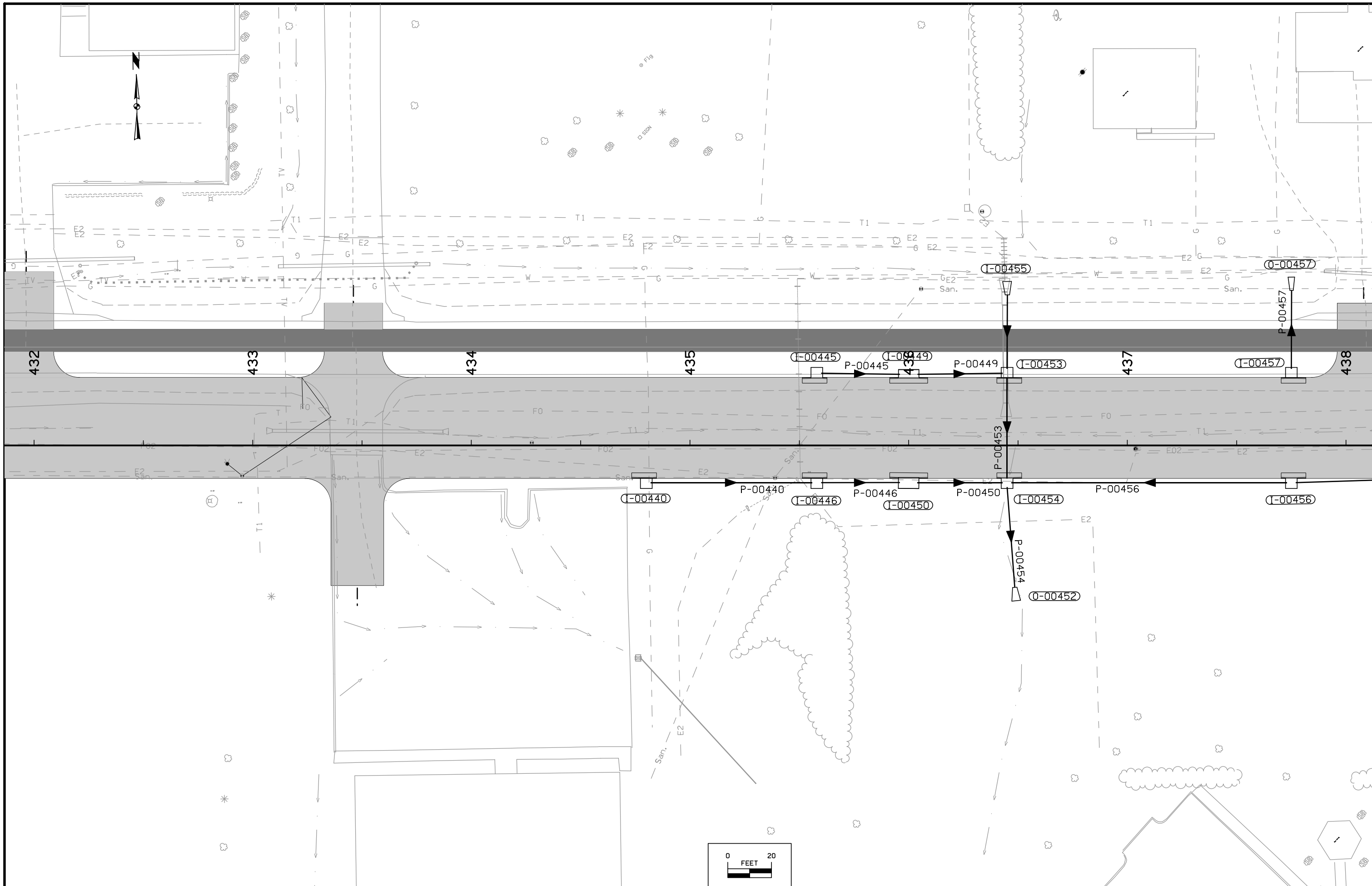


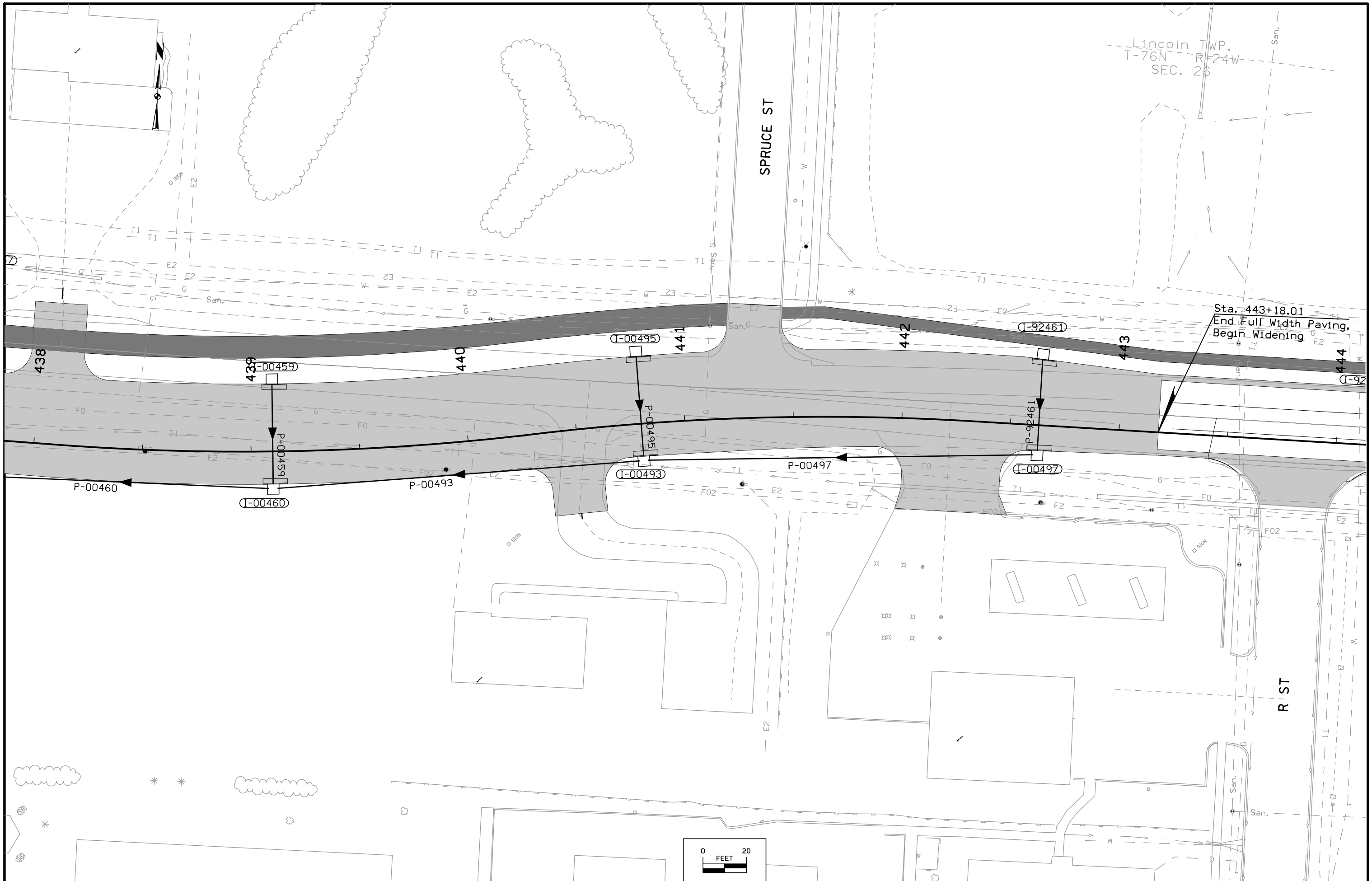


Lincoln Twp.  
T-76N R-24W  
SEC. 26









Lincoln TWP.  
T-76N R-24W  
SEC. 26

Sta. 443+18.01  
End Full Width Paving,  
Begin Widening

SPRUCE ST

R ST

