

aesthetics for the bridges.

A single bridge will be required. An 828' X 44'-5 continuous welded girder bridge over Interstate 35 in the interim condition. The 44'-5 width will accommodate two 10 ft. shoulders and two 12 ft. lanes. In the ultimate condition, the interim bridge will be widened to 65'-0 The 65 ft. width will accommodate four 12 ft. lanes, a 4 ft. raised center turn lane and 4 ft. shy to the face of barrier.

Traffic will be maintained on Interstate 35 at all times with the exception of placing the new bridge beams. During this time, only short term closures will be required. Traffic on NE 54th Avenue will be detoured during construction.

Permanent and temporary right of way will be required.

The preliminary earthwork quantities indicate approximately 13,350 cubic yards of class 10 borrow material will be required for interim construction and 19,280 cubic yards of class 10 borrow material with be required for ultimate construction.

No plans are included in this submittal; however, plan sheets where provided at the field exam and submitted electronically prior to the meeting. A mark up of the D2 plan set, reflecting the agreed upon Field Exam comments, is located at the following Iowa DOT link:

pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703501010\Design\161 NE 22nd.St\Design Events\ D2 Submittal\

This project is currently scheduled for a FY 2017 letting. The current estimated interim construction cost in today's dollars is \$7,519,900 (this includes \$812,600 for roadway items and \$6,707,300 for bridge items). The current estimated ultimate construction cost in today's dollars is \$8,920,500 (this includes \$1,474,700 for roadway items and \$7,445,800 for bridge items).

After the field exam on August 14, 2013, the decision by the Iowa DOT was made to revise the roadway and bridge designs to include a normal crown on the proposed interim bridge and not carry forward ultimate roadway and bridge configurations to the D5 design level due to the projected traffic volumes do not warrant the additional lanes within the design year. The bridge design will accommodate a potential future bridge widening to both sides, accounting for the current concept for the ultimate I-35/ 80/ 235 Northeast Mixmaster system interchange.

CMM/JJS

cc: R. Hyler	J. Clute	J. Narigon
W. Mayberry	W. N. Cameron	T. Gustafson
N. Cuva	C. Quick	J. Jurassic-FHWA
M. J. Sankey	S. J. Gent	L.C. Funnell
M. J. Kennerly	D. A. Widick	W. Sorenson
D. L. Maifield	T. L. Gettings	E.C. Wright
K. K. Patel	J. P. Rost	K. D. Nicholson
R. L. Stanley	S. C. Marler	T. Crouch
D. R. Tebben	M. D. Masteller	D. Matulac
M. A. Swenson	C. B. Brakke	J. W. Smith
N. L. McDonald	D. A. Popp	B. Bradley

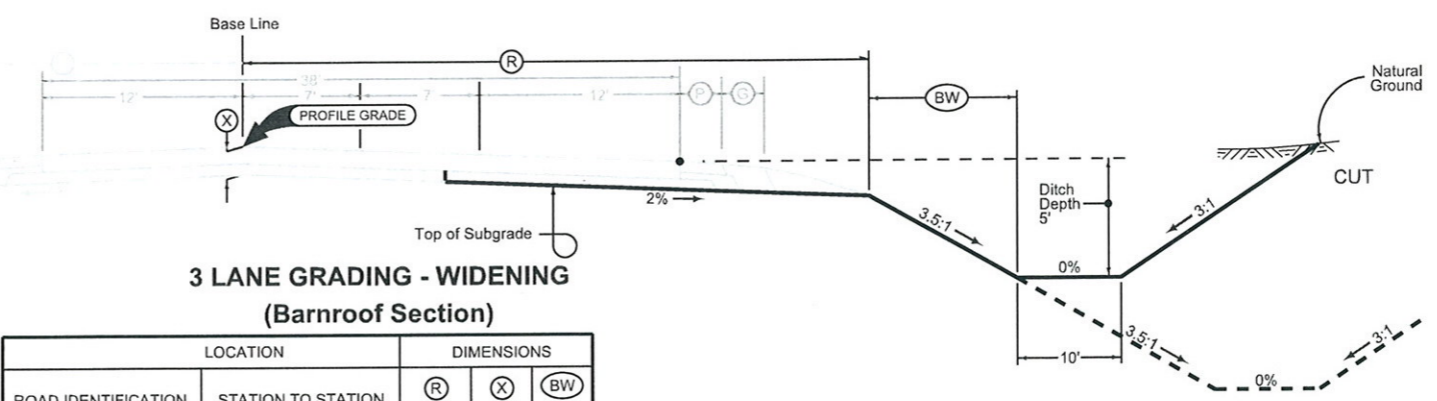
G. A. Novey
J. Vortherms
J. Tibodeau
J. Lavine
M. Mueller-City of Ankeny

D. R. Claman
B. Hofer
Ed Engle (RR)
J. R. Schoenrock
C. Malmberg (HDR)

J. McCollough
Maria Hobbs (RR)
D. Zeiman
K. Bailey-Polk County

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

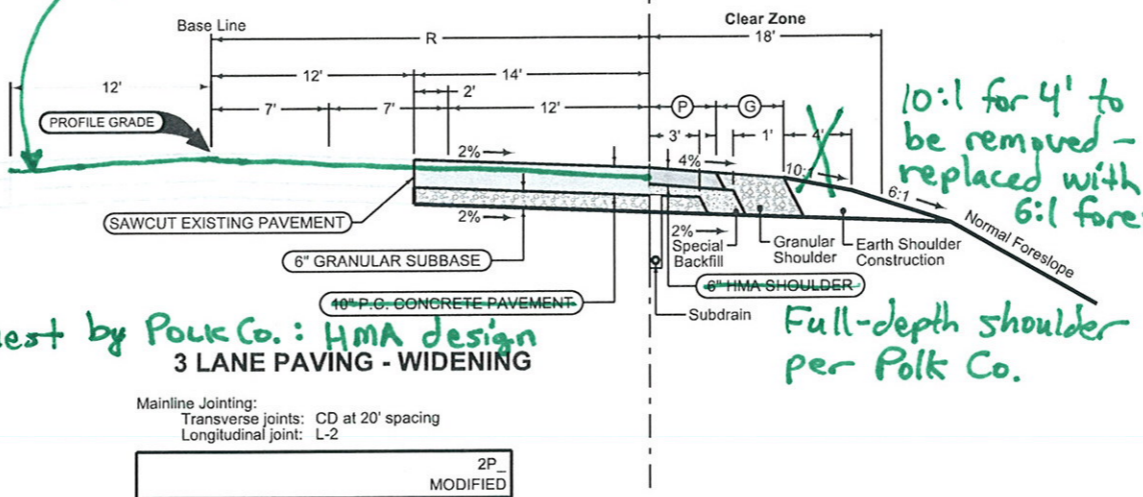
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



**3 LANE GRADING - WIDENING
(Barnroof Section)**

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	(R) Feet	(X) Inches	(BW) Feet
NE 54TH AVENUE	3219+39.47 - 3225+50.00	45.5	16	11.5

*Request by Polk Co.:
Add 2" mill and fill w/HMA surface course. Maintain existing PGL.*



*Request by Polk Co.: HMA design
3 LANE PAVING - WIDENING*

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

STATION TO STATION		2P MODIFIED	R
3219+39.47	3225+50.00		26.0

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4 C. 10-19-10	
			(P) Feet	(G) Feet
EB	3219+39.47	3225+50.00	2.0	8.0

10:1 for 4' to be removed - replaced with 6:1 foreslope.

Full-depth shoulder per Polk Co.

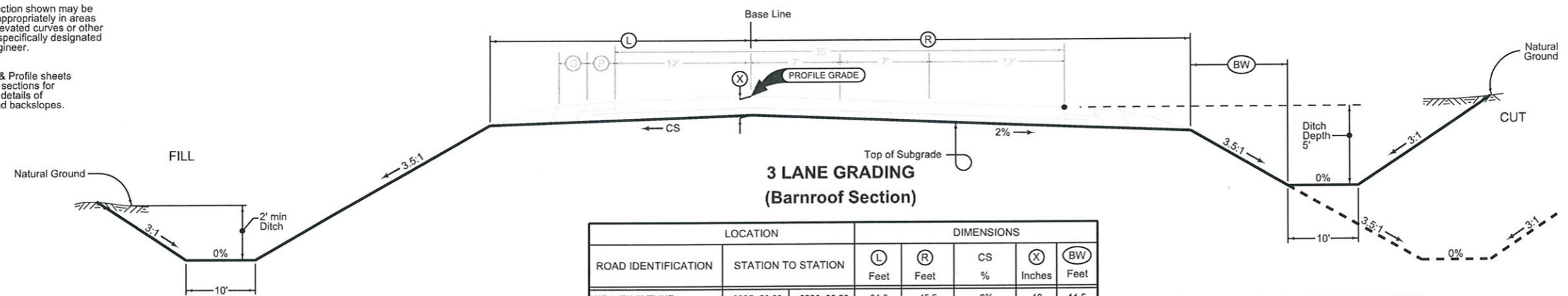
*3.0' 7.0'
Paved shoulder to be revised to match Polk Co. standard.*

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

**NE 54TH AVENUE
INTERIM**

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.



ROAD IDENTIFICATION	LOCATION		DIMENSIONS				
	STATION TO STATION		L Feet	R Feet	CS %	X Inches	BW Feet
NE 54TH AVENUE	3225+50.00	3226+23.20	31.5	45.5	-2%	16	11.5
NE 54TH AVENUE	3226+23.20	3229+30.00	31.5	45.5 - 31.7	-2%	16	11.5
NE 54TH AVENUE	3229+30.00	3230+30.00	31.5	31.7 - 31.5	-2% TO +2%	16	11.5

STATION 3226+23.20 TO STATION 3230+30.00
TRANSITION HORIZONTALLY FROM 3 LANE GRADING TO 2 LANE GRADING THROUGH 14' PAVED MEDIAN.

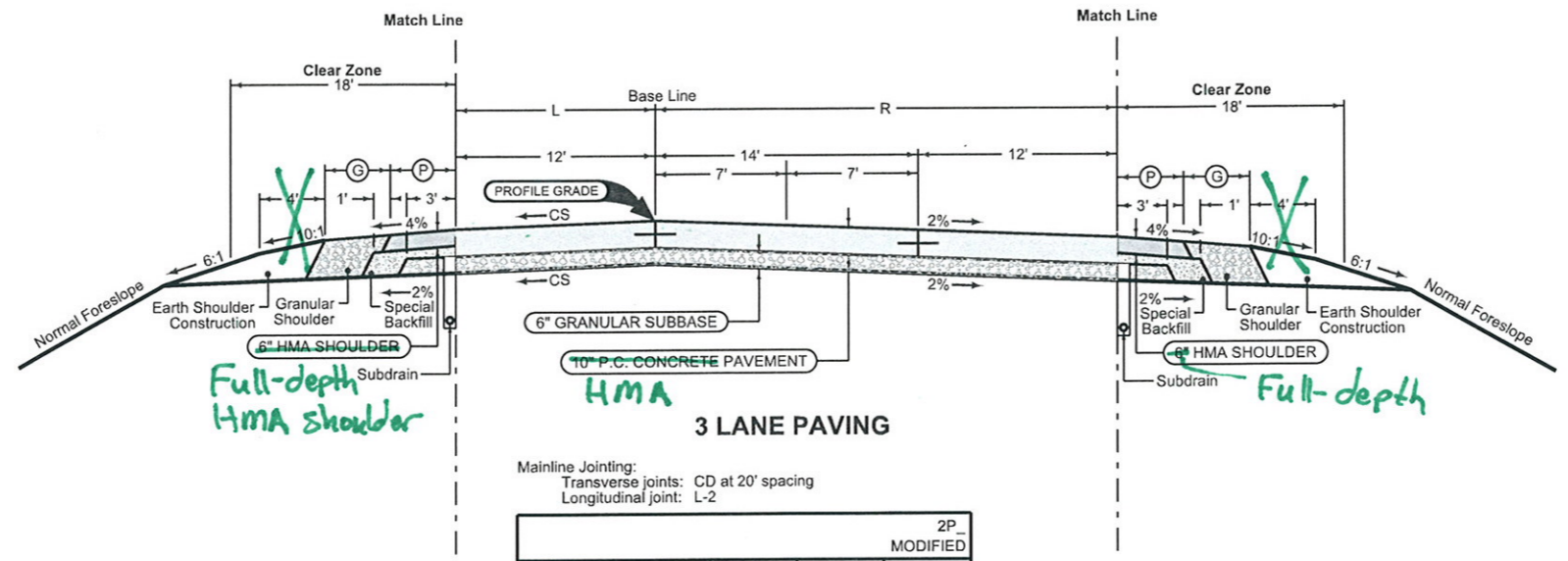
STATION 3229+30.00 TO STATION 3230+30.00
TRANSITION VERTICALLY FROM NORMAL CROWN AT BASE LINE TO SUPERELEVATED RAISE LEFT LANE TO +2%.

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_C_ 10-19-10	
			P Feet	G Feet
WB	3225+50.00	3230+30.00	2.0	8.0

3.0 7.0



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

STATION TO STATION		L	R	CS
3225+50.00	3226+23.20	12.0	26.0	-2%
3226+23.20	3229+30.00	12.0	26.0 - 12.17	-2%
3229+30.00	3230+30.00	12.0	12.17 - 12.00	-2% TO +2%

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_C_ 10-19-10	
			P Feet	G Feet
EB	3225+50.00	3230+30.00	2.0	8.0

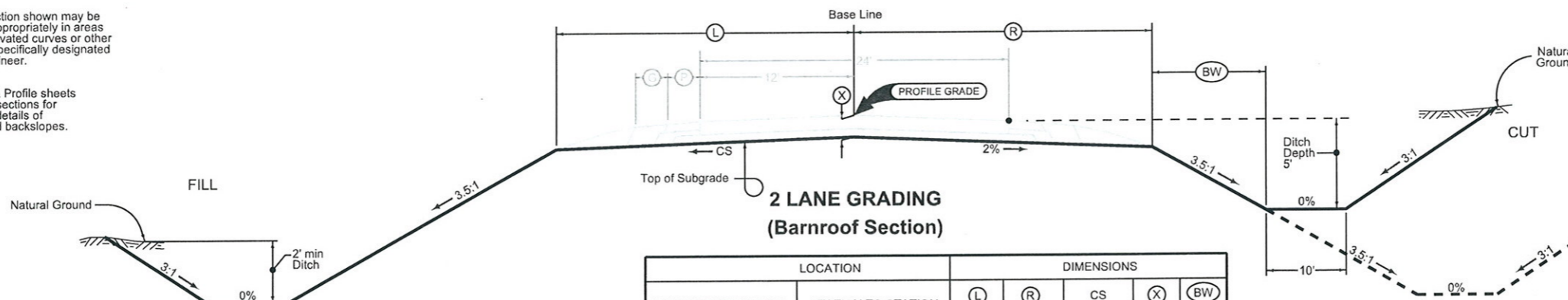
3.0 7.0

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

**NE 54TH AVENUE
INTERIM**

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.



STATION 3230+30.00 TO STATION 3231+13.00 AND, STATION 3239+45.00 TO STATION 3243+00.00 SUPERELEVATED LEFT LANE +2% FROM BASE LINE. STATION 3243+00.00 TO STATION 3245+00.00 TRANSITION VERTICALLY FROM SUPERELEVATED RAISED LEFT LANE +2% TO -2% CROWN AT BASE LINE.

ROAD IDENTIFICATION	LOCATION		DIMENSIONS				
	STATION TO STATION		L Feet	R Feet	CS %	X Inches	BW Feet
NE 54TH AVENUE	3230+30.00	3231+13.00	31.5	31.5	+2%	16	11.5
NE 54TH AVENUE	3239+45.00	3243+00.00	31.5	31.5	+2%	16	11.5
NE 54TH AVENUE	3243+00.00	3245+00.00	31.5	31.5	+2% TO -2%	16	11.5
NE 54TH AVENUE	3245+00.00	3247+40.00	31.5	31.5	-2%	16	11.5

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_C_ 10-19-10	
			P Feet	G Feet
WB	3230+30.00	3230+43.00	2.0	8.0
WB	3240+15.00	3247+40.00	2.0	8.0

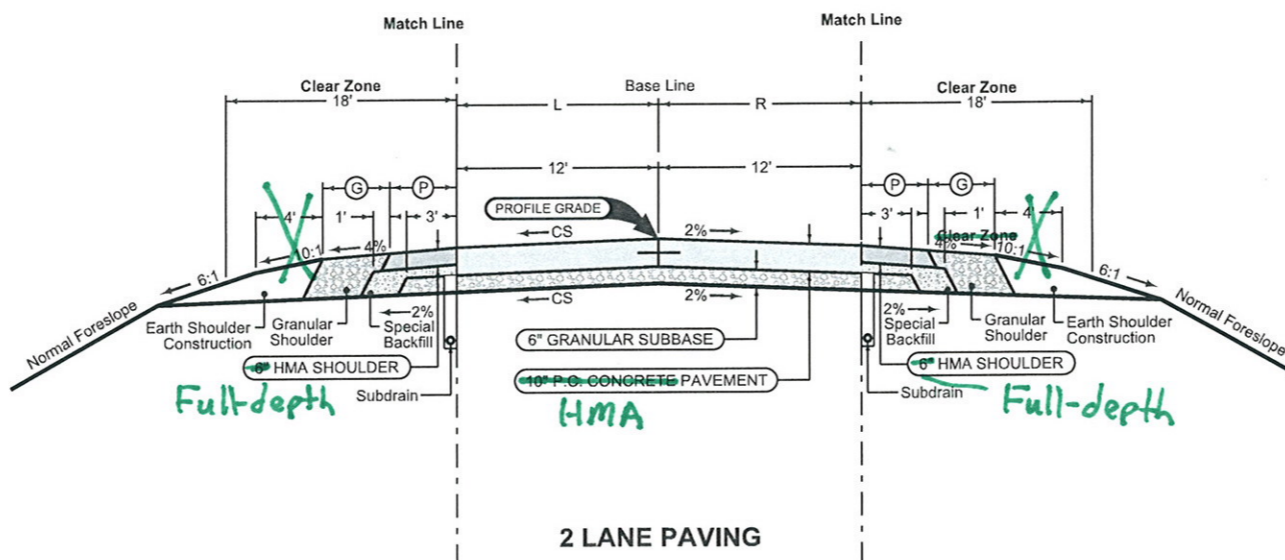
3.0 7.0

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_C_ 10-19-10	
			P Feet	G Feet
EB	3230+30.00	3230+43.00	2.0	8.0
EB	3240+15.00	3247+40.00	2.0	8.0

3.0 7.0



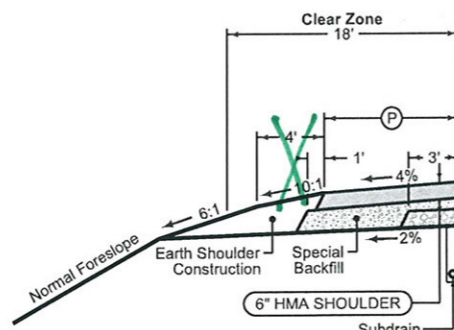
Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

STATION TO STATION	2P_ MODIFIED			
	L	R	CS	
3230+30.00	3231+13.00	12.0	12.0	+2%
3239+45.00	3243+00.00	12.0	12.0	+2%
3243+00.00	3245+00.00	12.0	12.0	+2% TO -2%
3245+00.00	3247+40.00	12.0	12.0	-2%

Paved Shoulder at Guardrail

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_P_Guard_ 04-16-13
			P Feet
WB	3230+43.00	3231+13.00	10.0
WB	3239+45.00	3240+15.00	10.0



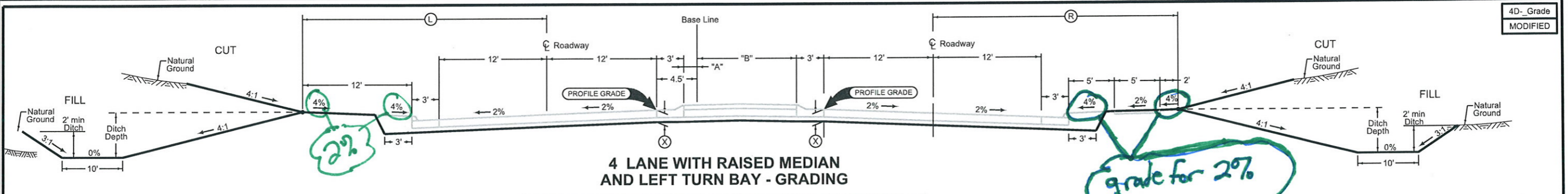
Paved Shoulder at Guardrail

Shoulder Jointing:
Longitudinal joint: B

Direction of Travel	BEGIN STATION	END STATION	4_P_Guard_ 04-16-13
			P Feet
EB	3230+43.00	3231+13.00	10.0
EB	3239+45.00	3240+15.00	10.0

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

NE 54TH AVENUE INTERIM

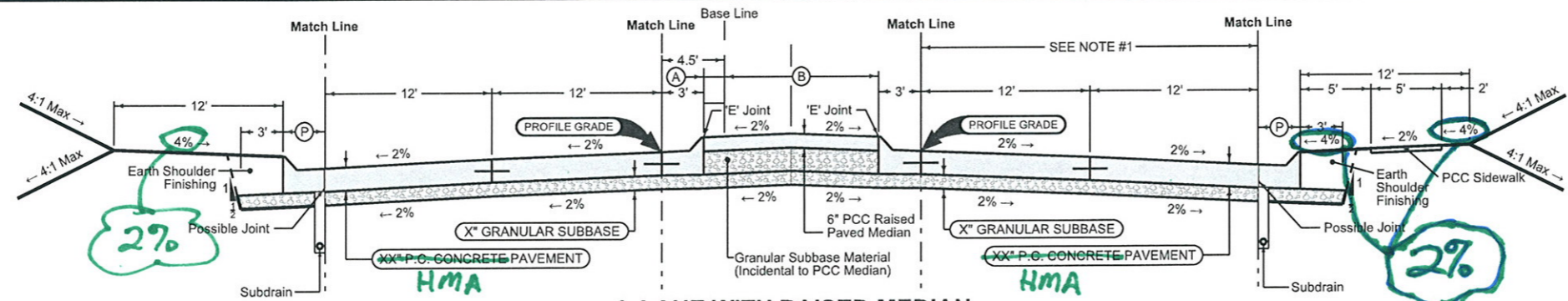


4 LANE WITH RAISED MEDIAN AND LEFT TURN BAY - GRADING

ROAD IDENTIFICATION	STATION TO STATION	DIMENSIONS				
		(A) Feet	(B) Feet	(L) Feet	(R) Feet	(X) Inches
NE 54TH AVENUE	2219+42.65 - 2227+16.93	1.50	11.00	27.0	27.0	16
NE 54TH AVENUE	2227+16.93 - 2230+25.00	1.50	11.00 - 1.50	27.0	27.0	16
NE 54TH AVENUE	2230+25.00 - 2231+13.00	1.50	1.50	27.0	27.0	16
NE 54TH AVENUE	2239+45.00 - 2241+00.75	1.50	1.50	27.0	27.0	16
NE 54TH AVENUE	2241+00.75 - 2244+08.82	1.50	1.50 - 11.00	27.0	27.0	16
NE 54TH AVENUE	2244+08.82 - 2247+40.00	1.50	11.00	27.0	27.0	16

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.



4 LANE WITH RAISED MEDIAN AND LEFT TURN BAY - PAVING

NOTE 1:
24' PAVEMENT CONSTRUCTED IN THE INTERIM PHASE STATION 2230+30.00 TO STATION 2231+13.00 AND, STATION 2239+45.00 TO STATION 2243+00.00.

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
2220+20.65 - 2231+13.00	3.0	6" STANDARD
2239+45.00 - 2247+40.00	3.0	6" STANDARD

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

BEGIN STATION	END STATION
2219+42.65	2231+13.00
2239+45.00	2247+40.00

4DP_Raised_Out_
MODIFIED

BEGIN STATION	END STATION	(A) Feet	(B) Feet
2230+25.00	2231+13.00	1.5	1.5
2239+45.00	2241+00.75	1.5	1.5
2241+00.75	2244+08.82	1.5 - 11.0	1.5
2244+08.82	2247+40.00	11.0	1.5

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

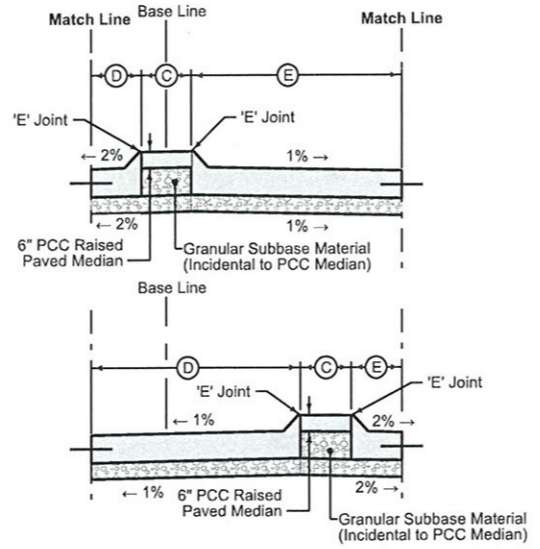
BEGIN STATION	END STATION
2219+42.65	2230+30.00
2243+00.00	2247+40.00

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
2220+28.25 - 2231+13.00	3.0	6" STANDARD
2239+45.00 - 2247+40.00	3.0	6" STANDARD

BEGIN STATION	END STATION	(C) Feet	(D) Feet	(E) Feet
2222+06.00	2222+89.50	3.0	3.0	12.5
2222+89.50	2223+80.00	0	9.25	9.25
2223+80.00	2224+55.00	12.5 - 3.0	3.0	3.0 - 12.5
2224+55.00	2225+80.00	3.0	3.0	12.5
2225+80.00	2226+77.00	0	9.25	9.25



BEGIN STATION	END STATION	(C) Feet	(D) Feet	(E) Feet
2219+81.00	2221+30.00	3.0	12.5	3.0
2221+30.00	2222+06.00	3.0	12.5 - 3.0	3.0 - 12.5
2226+77.00	2227+16.93	3.0	12.5	3.0
2227+16.93	2230+25.00	3.0	12.5 - 3.0	3.0

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

**NE 54TH AVENUE
ULTIMATE**

SURVEY SYMBOLS

○ LUM Luminaire	— UV Underground Utility Vault
□ SIGN SI Sign	----- ELA Underground Electric Line Co. 1
■ ROW Right of Way Rail	----- ELB Underground Electric Line Co. 2
● PPA Power Pole Co. 1	----- ELC Underground Electric Line Co. 3
● PRA Power Riser Co. 1	----- WLA Underground Water Line Co. 1
✱ TEV Evergreen Tree	----- TLA Underground Telephone Line Co. 1
⊗ SHR Shrub	----- TLB Underground Telephone Line Co. 2
⊗ TDC Tree Deciduous	----- TLC Underground Telephone Line Co. 3
⊗ SWAMP	----- GLA Underground Gas Line Co. 1
⊗ LP L.P. Tank	----- FOA Underground Fiber Optic Co. 1
○ OUT Tile Outlet	----- FOB Underground Fiber Optic Co. 2
✱ TSG Traffic Signal	----- STA Storm Sewer Co. 1
∞ IN Storm Sewer Intake	----- STB Storm Sewer Co. 2
⊗ INB Storm Sewer Intake Beehive	
⊗ MH Utility Access (Manhole)	
BB BB Billboard	
○ MIS Miscellaneous	
○ FLG Flagpole	
○ MM Mile Marker Post	
□ SIGN SL Speed Limit Sign	
○ TP Telephone Pedestal	
□ TCB TCB Utilities	
□ EB EB Electrical Box	
○ WV WV Water Valve	
⊗ FHYD Fire Hydrant	
□ UB UB Utility Box	
○ TVP TV Pedestal	
----- TLN Tree Line	
----- TIL Tile Line	
----- FCL Chain Link and Security Fence	
----- FW Wire Fence	
----- FWD Wood Fence	
----- DU Centerline Draw or Stream (Up)	
----- D Centerline Draw or Stream (Down)	
----- DIK Centerline of Dike or Dam	
----- EW Edge of Water	
----- BNK Stream Bank	
----- GDL Guard Rail Steel	
----- RIP Rip-Rap	
----- RR Centerline of Railroad Tracks	

UTILITY LEGEND

----- MidAmerican Utilities
----- Polk County Transportation
----- Iowa DOT Transportation and Lighting
----- Des Moines Water Works
----- CenturyLink
----- CenturyLink
----- Windstream
----- MidAmerican
----- Private
----- Polk County

Increase text size of survey and utility legends.

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 "In conjunction with a paving project"
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

Reference Point

Station	Survey Line
▲ Section Corner	----- Ground Line Intercept
----- Saw Cut	----- Guardrail
----- Trench Drain	----- HighTension Cable Guardrail
----- Sheet Pile	▨ Pavement Removal
▨ Clearing & Grubbing Area	

Proposed Borrow Elements

----- Acquisition Outline
----- Conceptual Outline

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
C/A Access Control
→← Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D & E)

DELAWARE TWP.
T-79N R-23W
SEC. 7

For Bridge Situation Plan
Refer to Sheet No. V.2

STA 2235+29.00
WIDEN TO 65' X 828' CONTINUOUS
WELDED GIRDER BRIDGE

REFER TO SITUATION PLAN FOR
ELEVATIONS AND MINIMUM
VERTICAL CLEARANCES.

*Optimize prop. drainage
under future I-35 and
future ramps*

Sta. 2084+94.32
FUTURE Install RF-1

Sta. 2084+94.32
FUTURE Install RF-1

Sta. 2084+10.77 Interstate 35
Sta. 2234+52.53
NE 54th Avenue Ultimate

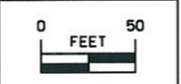
Sta. 2084+98.30
24" X 159.0' Conc Pipe
D.A. = .24 Ac - R
FUTURE (REMOVE)
Sta. 2084+94.32
FUTURE Install RF-1

Sta. 68+05
223'-9 X 24' PRETENSION
PRESTRESSED CONC BEAM BRIDGE
(REMOVE)

Sta. 2083+12.47
24" X 165.0' Conc Pipe
D.A. = .6 Ac - R
FUTURE (REMOVE)
Sta. 2083+15.84
FUTURE Install RF-1

Sta. 2083+15.84
FUTURE Install RF-1

This Sheet
For Information Only



DELAWARE TWP.
T-79N R-23W
SEC. 18

ULTIMATE
INTERSTATE 35

SAYLOR TWP.
T-79N R-24W
SEC. 12

DELAWARE TWP.
T-79N R-23W
SEC. 7

ANIMAL RESCUE LEAGUE

3215

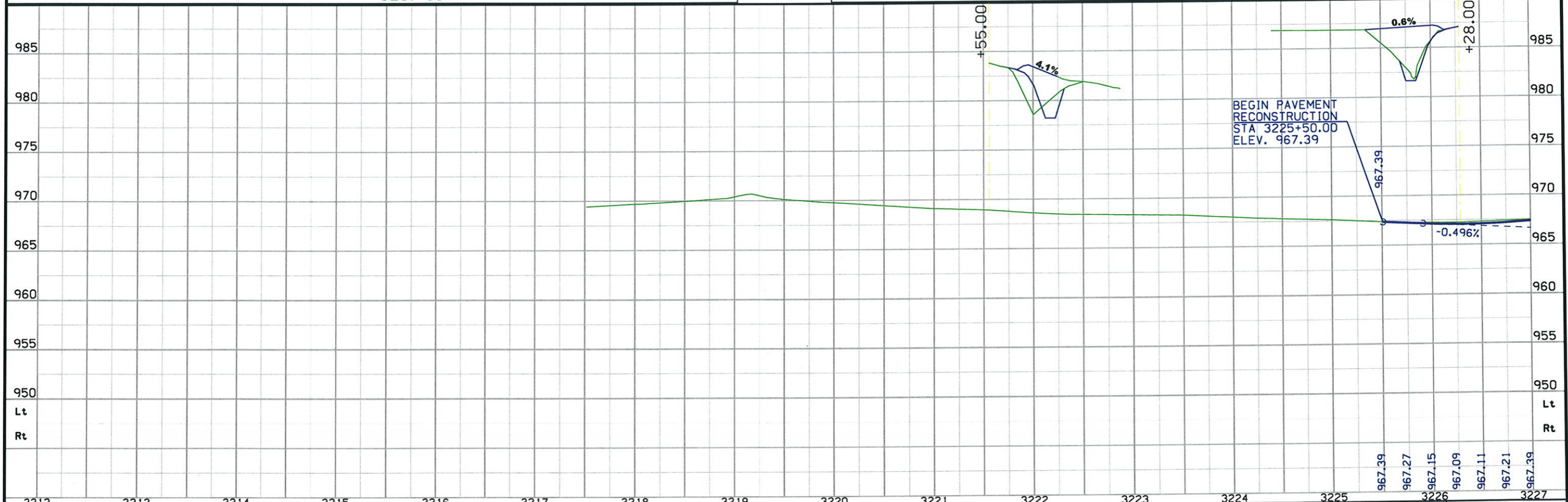
NE 54TH AVENUE

DES MOINES AREA COMM COLLEGE

SAYLOR TWP.
T-79N R-24W
SEC. 13

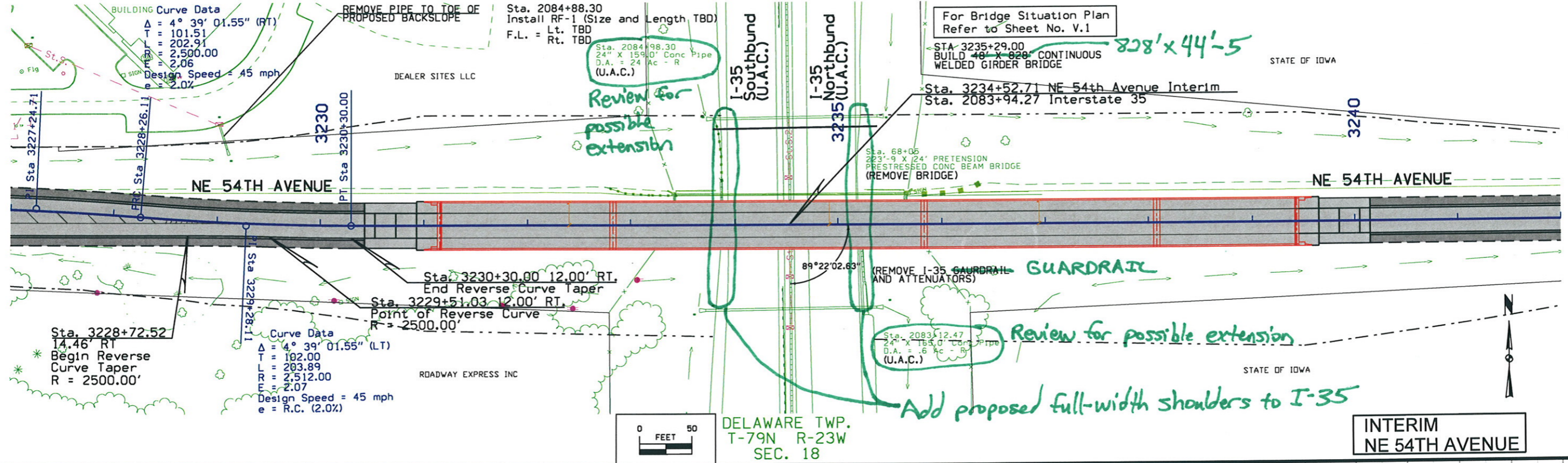
DELAWARE TWP.
T-79N R-23W
SEC. 18

INTERIM
NE 54TH AVENUE

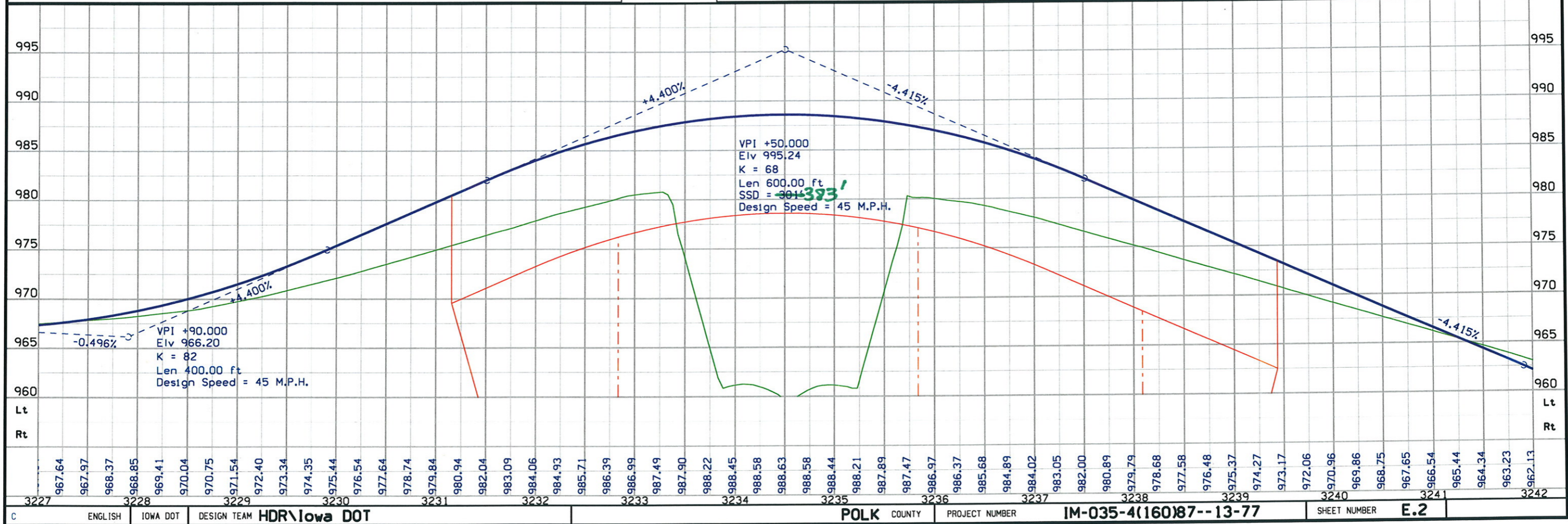


3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227
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DELAWARE TWP.
T-79N R-23W
SEC. 7



DELAWARE TWP.
T-79N R-23W
SEC. 18



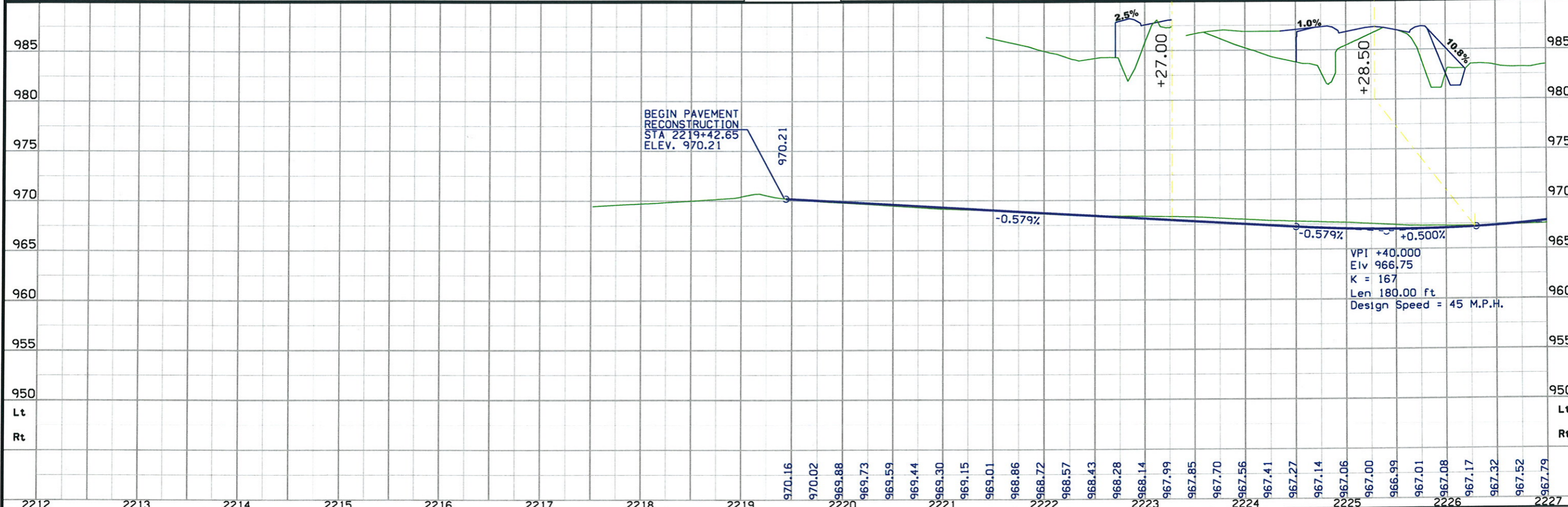
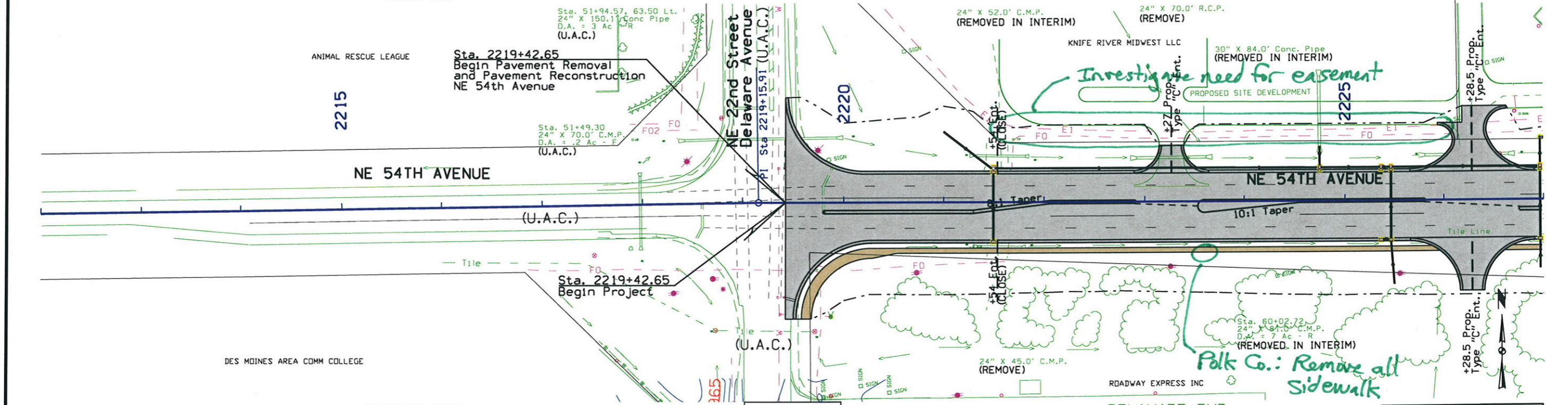
SAYLOR TWP.
T-79N R-24W
SEC. 12

DELAWARE TWP.
T-79N R-23W
SEC. 7

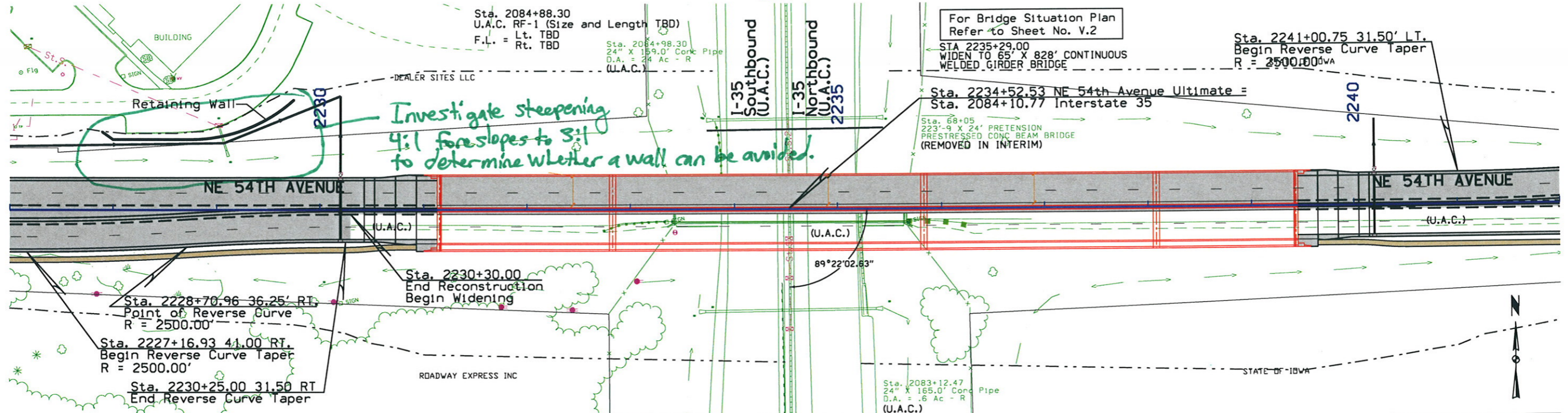
SAYLOR TWP.
T-79N R-24W
SEC. 13

DELAWARE TWP.
T-79N R-23W
SEC. 18

ULTIMATE
NE 54TH AVENUE

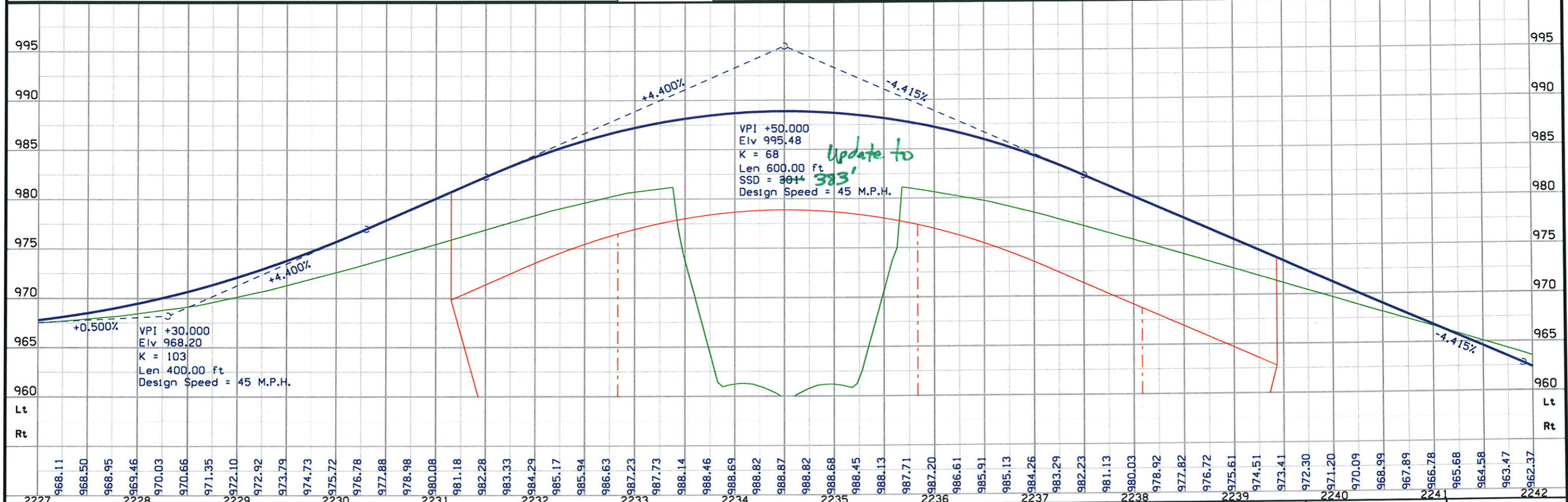


DELAWARE TWP.
T-79N R-23W
SEC. 7



DELAWARE TWP.
T-79N R-23W
SEC. 18

ULTIMATE
NE 54TH AVENUE



2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242
968.11	968.50	968.95	969.46	970.03	970.66	971.35	972.10	972.92	973.79	974.73	975.72	976.78	977.88	978.98	980.08
981.18	982.28	983.33	984.29	985.17	985.94	986.63	987.23	987.73	988.14	988.46	988.69	988.82	988.87	988.82	988.68
988.45	988.13	987.71	987.20	986.61	985.91	985.13	984.26	983.29	982.23	981.13	980.03	978.92	977.82	976.72	975.61
974.51	973.41	972.30	971.20	970.09	968.99	967.89	966.78	965.68	964.58	963.47	962.37				