PAVEMENT AND DRAINAGE IMPROVEMENTS

707047

37TH ST. N. RELOCATION - HILLSIDE TO OLIVER

OCA NO. 707047

CITY OF WICHITA PROJECT NO. 472-85083

WATERLINE IMPROVEMENTS

OCA NO. 707047

CITY OF WICHITA PROJECT NO. 448-90587

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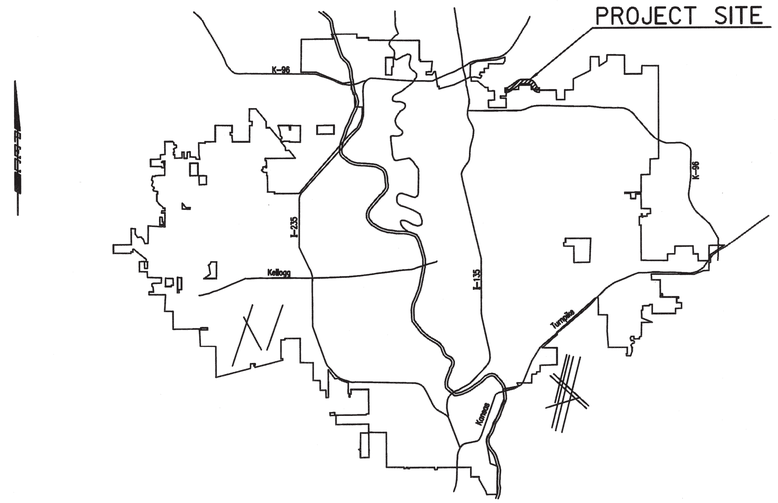

LOCATION MAP

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E. - CITY ENGINEER

MAY 2013

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

GENERAL NOTES

ALL CONSTRUCTION WORK AND MATERIAL IN THIS PROJECT SHALL COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF CITY PROJECTS UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIAL PROVISIONS.

UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS DURING CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.

RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR AND APPROVED AS NOTED BELOW.

EXCESS EXCAVATION FROM THE PROJECT SHALL BE STOCKPILED ON THE PROPERTY IN THE NW ¼ OF THE NW ¼ OF SECTION 35, T26S, R1E AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

CONTRACTOR SHALL SATISFY HIMSELF OF SURFACE AND SUBSURFACE CONDITIONS PRIOR TO BIDDING.

FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY EXCAVATION WORK. CONTACT THE KANSAS ONE-CALL SYSTEM AT 316-687-2470 AT LEAST 48 HOURS IN ADVANCE TO REQUEST FIELD LOCATES. FOR UTILITIES THAT ARE NOT MEMBERS OF THE KANSAS ONE-CALL SYSTEM, CONTACT THOSE COMPANIES DIRECTLY.

CONTRACTOR IS RESPONSIBLE FOR PRESERVING EXISTING PROPERTY IRONS. RE-ESTABLISH ANY EXISTING PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY CONSTRUCTION OPERATIONS, OR WHICH ARE COVERED BY 12" OR MORE OF FILL MATERIAL BY THIS PROJECT. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS AND AT NO ADDITIONAL COST TO THE CITY.

THE WATER DEPARTMENT SHALL FIELD LOCATE WATER VALVES ONE TIME DURING CONSTRUCTION WHEN REQUESTED BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRESERVE SUCH FIELD LOCATIONS DURING THE CONSTRUCTION PROCESS. WATER VALVES, WATER METER BOXES OR FIRE HYDRANTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

WATER VALVES, METERS AND FIRE HYDRANTS SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET FINAL GRADES, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL REMOVE EXISTING ROAD SIGNS THAT INTERFERE WITH CONSTRUCTION. SIGNS DAMAGED THRU NEGLIGENCE OF THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO KREH. THE CONTRACTOR SHALL STOCKPILE THE SIGNS ALONG THE R/W (AT A CENTRAL LOCATION) FOR REMOVAL BY CITY FORCES.

ALL EXISTING PAVEMENT AND CURB AND GUTTER WITHIN THE CONSTRUCTION LIMITS SHALL BE SAW CUT, FULL DEPTH, TO THE NEAT LINES SHOWN ON THE PLANS, OR TO THE NEAREST JOINT, AND REMOVED, UNLESS OTHERWISE NOTED.

ALL RCB, STORM SEWER, DUCT BANK, WATERLINE AND SANITARY SEWER EXCAVATION UNDER PROPOSED PAVEMENT SHALL BE SAND FILLED AND FLUSHED (JETTED AND VIBRATED) WITH WATER PER THE REQUIREMENTS LISTED IN THE STANDARD SPECIFICATIONS FOR THE CITY OF WICHITA, UNLESS FLOWABLE FILL OR OTHER IMPROVED BACKFILL MATERIAL IS OTHERWISE SPECIFIED. THE SAND FILL SHALL START AT THE TOP OF IMPROVED BEDDING (PER STANDARD SPECIFICATIONS) AND BE BROUGHT UP UNIFORMLY TO AN ELEVATION 12 INCHES ABOVE THE TOP OF PIPE OR 2 FEET BELOW THE BOTTOM OF PROPOSED PAVEMENT, WHICHEVER IS HIGHER. HOWEVER, IN NO INSTANCE SHALL THE SAND FILL BE BROUGHT UP TO LESS THAN 6 INCHES BELOW THE PAVEMENT SUB-BASE MATERIAL. STORM SEWER ADJACENT TO THE BACK OF CURB SHALL ALSO BE SAND FILLED PER THIS PROVISION, TO WITHIN 2 FEET OF FINAL GRADE.

ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO MAKE CONNECTIONS TO EXISTING PIPE OR EXISTING SMALL STRUCTURES SHALL NOT BE PAID FOR DIRECTLY.

JOSEPH P. SURMEIER LICENSED 13977 KANSAS PROFESSIONAL ENGINEER 5-3-13

PLANS PREPARED BY

Professional Engineering Consultants, P.A.

303 S. TOPEKA • WICHITA, KANSAS 67202

316-262-2691 • FAX 316-262-3003

APPROVED - DATE

Gary Janzen 05/03/13

GARY JANZEN, P.E. CITY ENGINEER

CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

CITY NO. 472-85083

CITY OF WICHITA PROJECT NO. 472-85083

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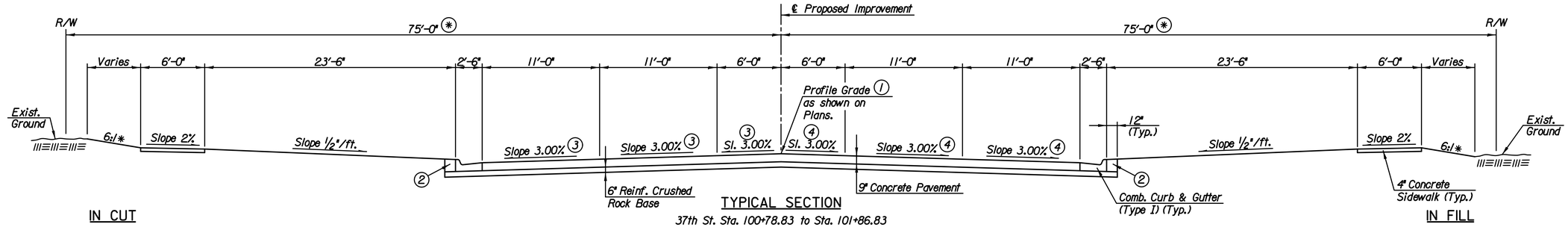
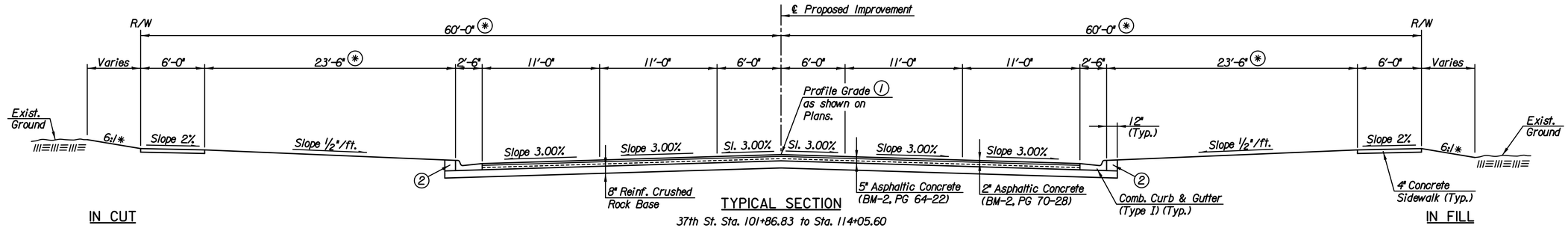


TYPICAL SECTION

37th St. Sta. 100+78.83 to Sta. 101+86.83



TYPICAL SECTION

37th St. Sta. 101+86.83 to Sta. 114+05.60
37th St. Sta. 121+91.89 to Sta. 133+10.68
37th St. Sta. 141+84.77 to Sta. 149+43.31

✳ See Cross Sections for Variations.

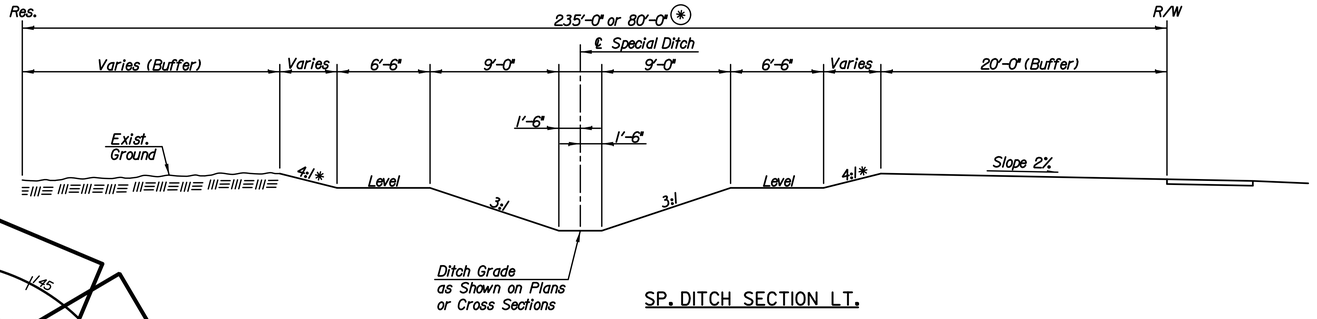
(✳) See Plans for Variations.

(1) Profile Grade is the theoretical top of pavement elevation at ℄.

(2) Backfill behind curb. Quantities for this work are included in the Earthwork Summary Table.

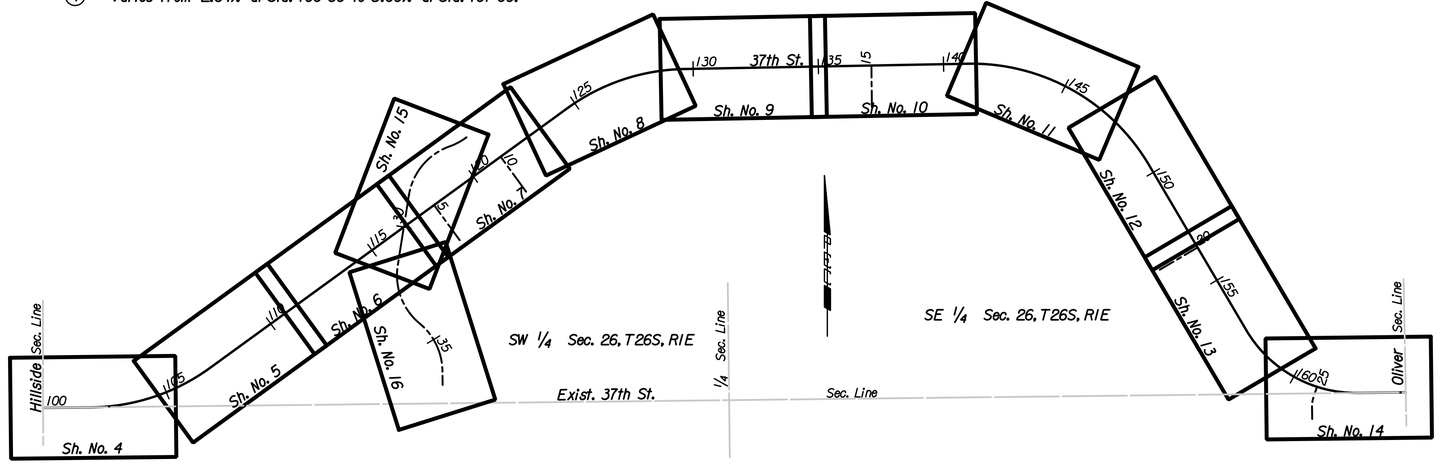
(3) Varies from 2.70% at Sta. 100+80 to 3.00% at Sta. 101+00.

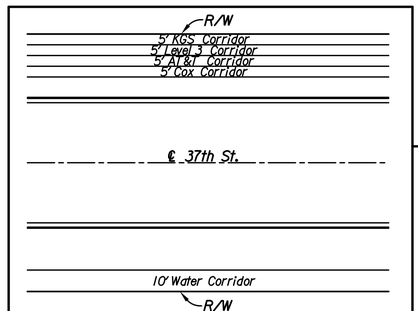
(4) Varies from 2.64% at Sta. 100+80 to 3.00% at Sta. 101+00.



SP. DITCH SECTION LT.

37th St. Sta. 120+70 to Sta. 144+30





PROPOSED UTILITY CORRIDOR TYPICAL LAYOUT

No.	Revision	By	Date

37TH STREET NORTH

TYPICAL SECTIONS

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 2 of 157
Drawn by	SVB	Date	May, 2013	

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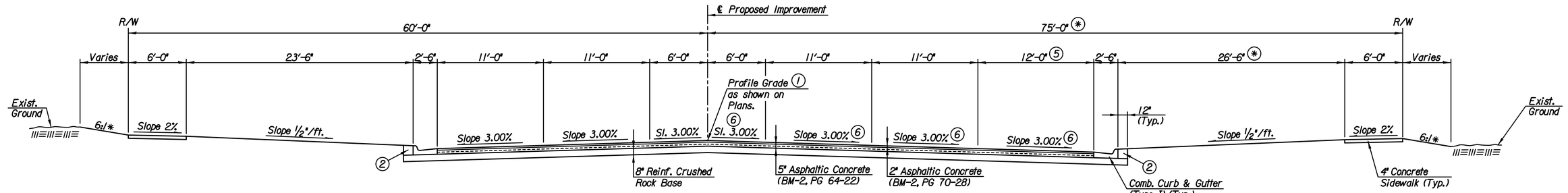
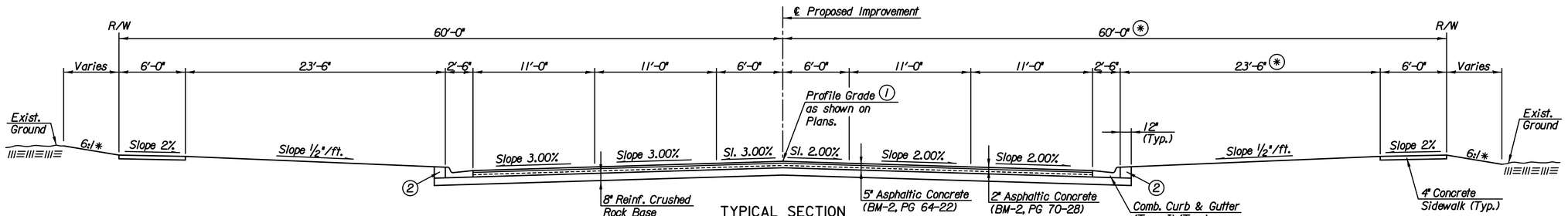


IN CUT

IN FILL

TYPICAL SECTION

37th St. Sta. 114+05.60 to Sta. 121+91.89
37th St. Sta. 133+10.68 to Sta. 141+84.77
37th St. Sta. 149+43.31 to Sta. 157+31.97
37th St. Sta. 161+50.00 to Sta. 162+72.51

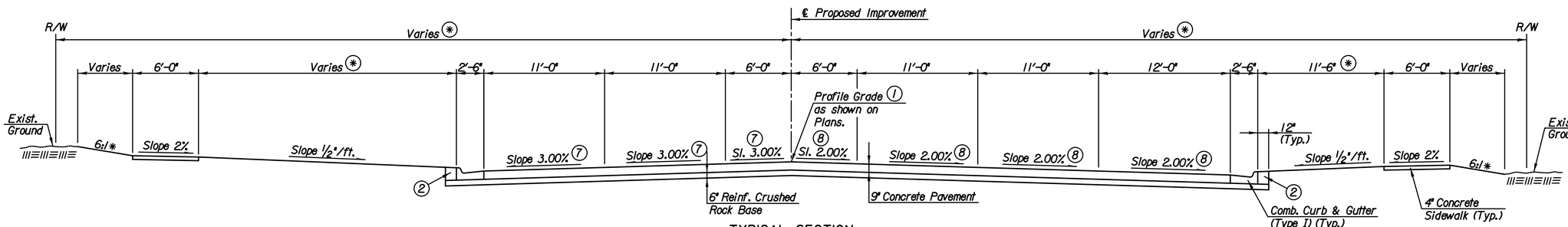


IN CUT

TYPICAL SECTION

37th St. Sta. 157+31.97 to Sta. 161+50.00

IN FILL

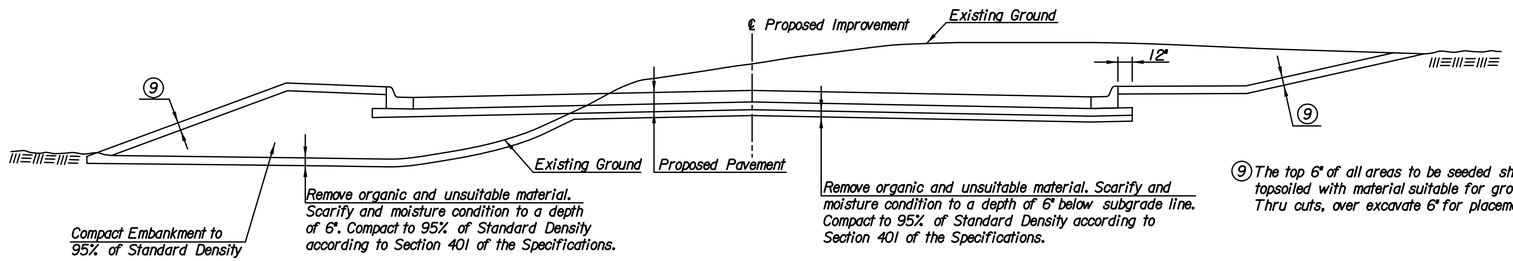


IN CUT

TYPICAL SECTION

37th St. Sta. 162+72.51 to Sta. 163+80.51

IN FILL



⑨ The top 6" of all areas to be seeded shall be topsoiled with material suitable for growth of vegetation. Thru cuts, over excavate 6" for placement of topsoil.

IN FILL

COMPACTION DIAGRAM

Note: All embankment, including sideroads and driveways shall be compacted.

IN CUT

✳ See Cross Sections for Variations.

✳ See Plans for Variations.

① Profile Grade is the theoretical top of pavement elevation at ℄.

② Backfill behind curb. Quantities for this work are included in the Earthwork Summary Table.

⑤ Varies from 0'-0" at Sta. 114+05.60 to 12'-0" at Sta. 114+89.60.
Varies from 12'-0" at Sta. 121+59.40 to 0'-0" at Sta. 121+91.89.
Varies from 0'-0" at Sta. 133+10.68 to 12'-0" at Sta. 133+94.68.
Varies from 12'-0" at Sta. 140+28.18 to 0'-0" at Sta. 141+84.77.
Varies from 0'-0" at Sta. 149+43.31 to 12'-0" at Sta. 150+31.28.
Varies from 12'-0" at Sta. 156+64.78 to 0'-0" at Sta. 157+31.97.
Varies from 0'-0" at Sta. 161+50.00 to 12'-0" at Sta. 162+31.75.

⑥ Varies from 3.00% at Sta. 156+64.78 to 2.00% at Sta. 157+31.97.

⑦ Varies from 3.00% at Sta. 163+25 to 2.73% at Sta. 163+75.
Cross Slope = 2.73% from Sta. 163+75 to Sta. 163+80.51.

⑧ Varies from 2.00% at Sta. 162+75 to 2.96% at Sta. 163+25.
Cross Slope = 2.96% from Sta. 163+25 to Sta. 163+80.51.

No.	Revision	By	Date

37TH STREET NORTH

TYPICAL SECTIONS

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 3 of 157

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UTILITIES

AT&T, Wichita Central Unit
154 N. Broadway, Room 210
Wichita, KS 67202
Jason Edwards (316) 268-2008

Cox Communications
901 George Washington Blvd.
Wichita, KS 67211
Pat Roth (316) 260-7170

Kansas Gas Service
1021 E. 26th St. N.
Wichita, KS 67219
Jim Coe (316) 832-3126

Level 3 Communications, LLC
266 N. Main, Suite 100
Wichita, KS 67202
Mike Stephens (316) 858-6146

Westar Energy
1900 E. Central Ave.
Wichita, KS 67201
Randy Truitt (316) 261-6512

Wichita Water Utilities
8th Floor - City Hall
455 N. Main St.
Wichita, KS 67202
LaDonna Lawrenz (San. Sewer) or
Greg Lolley (Water) (316) 268-4555

P.I. ℄ Sta. 100+00.00=
SW Cor. Sec. 26, T26S, R1E
1. See References below

P.C. ℄ Sta. 101+92.00
1. Not Set

P.I. ℄ Sta. 104+53.75 (Bk.)=
Sta. 104+37.02 (Ahd.)
1. Not Set

Sta. 100+78.83 BEGIN
PROJECT No. 472-85083

Sta. 99+44 Lt.
Install Traffic Signal
Video Detection for
WB 37th St.

Sta. 100+00.00 ℄ 37th St.=
℄ Hillside

℄ Prop. 37th St.
(N 89° 21' 17" E)

37th St.

Hillside

Sec. Line

Line 100

Line 101

Line 102

Line 103

T.C.
P.V.I. 1351.95
+1.00% T.C. Lt.

T.C.
P.V.I. 1352.16
No V.C.

T.C.
P.V.C. 1353.21

T.C.
P.V.I. 1354.26
150' V.C.

T.C.
P.V.T. 1354.50

+0.32% T.C. Lt.

+78.83 P.V.I.
(Match Exist.)

+00 P.V.I.

+1.40% T.C. Lt.

+1.40% T.C. Lt.

+0.32% T.C. Lt.

P.G.
P.V.I. 1352.35

P.G.
P.V.C. 1353.70

P.G.
P.V.I. 1354.75
150' V.C.

P.G.
P.V.T. 1354.99

+0.32% P.G.

+1.40% P.G.

+1.40% P.G.

+0.32% P.G.

+75 P.V.C.

+50 P.V.I.

+25 P.V.T.

+80

Transition X-slope Lt. from
-2.70% to -3.00%

+75.88
95' Lt.

See Sh. No. 38 for
Intersection Details

+95.69
75' Lt.

P.I. +78.83
30' Lt.
(Match Exist.)

P.C. +92
30' Lt.

+55.28
60' Lt.

Const. Limits

R/W

R/W 60' ℄

6' Sidewalk

Combined Curb & Gutter
(Type I)

+79.05
60' Rt.

+78.91
94.98' Rt.

+98.10
75' Rt.

+86.83

+25.06
75.73' Rt.

Concrete

Asphalt

+0.92% T.C. Rt.

+1.40% T.C. Rt.

+1.40% T.C. Rt.

+0.32% T.C. Rt.

T.C.
P.V.I. 1351.97

T.C.
P.V.I. 1352.16
No V.C.

T.C.
P.V.C. 1353.21

T.C.
P.V.I. 1354.26
150' V.C.

T.C.
P.V.T. 1354.50

Transition X-slope Rt. from
-2.64% to -3.00%

+80

Profile Grade Line

Proposed 20" Water

Fiber Optic Line (LEVEL 3 Comm

Undgd Telephone Line (AT&T)

Overhead Electric Line

Gas Line (KGS)

Sewer Line (PVC)

Fiber Optic Marker

Speed Limit Sign

Traffic Signal Vault

Traffic Signal MH

Traffic Signal Pole

Sign Post

Signal Pole

Gas Line Marker

guy pole

Inlet

Curb Inlet

Lot 1
KOCH CAMPUS ADDITION

REMOVAL OF EXISTING STRUCTURES *

STATION	SIDE	ITEM
100+34	Lt.	Curb Inlet, 70 LF 30" RCP (Southeast)
100+45	Lt.	Traffic Signal Pole
100+49	Lt.	Sign
100+88	Rt.	Curb Inlet, 62 LF 14" RCP (North)
100+89	Lt.	Curb Inlet, 203 LF 30" RCP (East)
100+95	Lt.	Traffic Signal Junction Box
100+98	Lt.	Sign
101+55	Lt.	Traffic Signal Junction Box
102+47	Lt.	Traffic Signal Junction Box
102+97	Rt.	Curb Inlet, 59 LF 24"x12" RCPHE (North)
103+05	Lt.	Curb Inlet, 34 LF 24" RCP (East)
103+39	Lt.	Traffic Signal Junction Box
103+42	Rt.	Sign

* For Information Only

SW Cor. Sec. 26, T26S, R1E
1. Found PK Nail in centerline pavement joint
2. N 1,709,854.0133 E 1,659,412.1043
3. "+" cut on concrete traffic signal base 70.48' NW
4. "+" cut on concrete traffic signal base 70.60' NE
5. City of Wichita benchmark disk 76.13' SE

BM #1 (City of Wichita) - Found Brass Disk on NW corner of traffic light concrete base in SE quadrant of Hillside & 37th St.
43' Rt. ℄ Sta. 100+63 Elev.=1353.25

BM #6 - 5/8" Rebar with purple GSS Cap, 18.3' S. to North back of curb of 37th St., 109.8' W. to SE bolt for traffic light pole in NE quadrant of Hillside and 37th St., 130.0' SW to Brass Disk (BM #1)
49' Lt. ℄ Sta. 101+55 Elev.=1354.17

Note: Elevations shown along Curb and Gutter are to High Edge and Top of Curb.

LEGEND
Pavement Removal

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

Utilities	
Gas	Kansas Gas Service
Power	Westar Energy
Sanitary Sewer	Wichita Water Utilities
Telephone	AT&T, Wichita Central Unit
Telephone	Level 3 Communications, LLC
Water	Wichita Water Utilities

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 99+00 TO STA. 105+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 4 of 157

Plotted By: svb Date: 4/24/2013 12:16:12 PM
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P.T. ℄ Sta. 106+98.78
I. Not Set

+0.32% T.C. Lt. | T.C. P.V.C. 1356.50 | +0.32% T.C. Lt. | T.C. P.V.I. 1356.82, 200' V.C. | +1.80% T.C. Lt.

+0.32% P.G. | P.G. P.V.C. 1356.99 | +0.32% P.G. | P.G. P.V.I. 1357.31, 200' V.C. | +1.80% P.G.

+50 P.V.C. | +50 P.V.I.

Combined Curb & Gutter (Type I)

105+00 | 105+50 | 106+00 | 106+50 | 107+00 | 107+50 | 108+00 | 108+50 | 109+00 | 109+50 | 110+00 | 110+50 | 111+00

P.T. +98.78, 30' Lt.

+98.78, 60' Lt.

Const. Limits

R/W 60' ℄

6' Sidewalk

Line 100

Line 103

Line 104

Line 105

℄ Prop. 37th St.

Profile Grade Line

37th St.

Proposed 20" Water

Lot 1
KOCH CAMPUS ADDITION

	105+00	105+50	106+00	106+50	107+00	107+50	108+00	108+50	109+00	109+50	110+00	110+50	111+00
Line 103	55.06	55.22	55.38	55.54	55.70	55.86	56.02	56.18	56.34	56.50	56.76	57.19	57.82
	54.71	54.87	55.03	55.19	55.35	55.51	55.67	55.83	55.99	56.15	56.40	56.84	57.46
	55.55	55.71	55.87	56.03	56.19	56.35	56.51	56.67	56.83	56.99	57.24	57.68	58.30
	54.71	54.87	55.03	55.19	55.35	55.51	55.67	55.83	55.99	56.15	56.40	56.84	57.46
	55.06	55.22	55.38	55.54	55.70	55.86	56.02	56.18	56.34	56.50	56.76	57.19	57.82

Line 100

R/W 60' ℄

6' Sidewalk

Proposed 20" Water

Const. Limits

P.T. +98.78, 30' Rt.

+98.78, 60' Rt.

Combined Curb & Gutter (Type I)

+0.32% T.C. Rt. | +50 P.V.C. | +0.32% T.C. Rt. | +50 P.V.I. | +1.80% T.C. Rt.

T.C. P.V.C. 1356.50

T.C. P.V.I. 1356.82, 200' V.C.

Utilities

Telephone	AT&T, Wichita Central Unit
Television	Cox Communications

BM #5 – ⅝" Rebar with red GSS Cap, 18.1' S. to North back of curb of 37th St., 197.7' WSW to "+" cut in bullnose at West end of West median in 37th St., 391.4' E. to West end of North handrail to RCB. 382' Rt. ℄ Sta. 110+65 Elev.=1364.50

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 105+00 TO STA. 111+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 5 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/24/2013 12:17:25 PM
FILE: i:\2012\12275\002\Plan\12275-002 Plan 105.dgn

T.C.
P.V.T. 1358.62
+1.80% T.C. Lt.
+1.80% T.C. Lt.
P.G.
P.V.T. 1359.11
+1.80% P.G.
+1.80% P.G.
+50 P.V.T.
Combined Curb & Gutter (Type I)
Sta. 116+57 Construct 10'x5'x239' RCB See Sh. No. 55-57
Res. "A"
KOCH CAMPUS ADDITION
RESERVE "A"
℄
+52.17 60' Lt.
Const. Limits
R/W 60' ℄
6' Sidewalk
Line 201
111+00 | 111+50 | 112+00 | 112+50 | 113+00 | 113+50 | 114+00 | 114+50 | 115+00 | 115+50 | 116+00 | 116+50 | 117+00
57.82 | 58.62 | 59.52 | 60.42 | 61.32 | 62.22 | 63.12 | 64.02 | 64.92 | 65.82 | 66.72 | 67.62 | 68.52
57.46 | 58.27 | 59.17 | 60.07 | 60.97 | 61.87 | 62.77 | 63.67 | 64.57 | 65.47 | 66.37 | 67.27 | 68.17
1358.30 | 59.11 | 60.01 | 60.91 | 61.81 ℄ Prop. 37th St. | 62.71 Profile Grade Line | 63.61 | 64.51 | 65.41 | 66.31 | 67.21 | 68.11 | 69.01
50
45°00'00"
37th St.
57.46 | 58.27 | 59.17 | 60.07 | 60.97 | 61.87 | 62.77 | 63.67 | 64.57 | 65.47 | 66.37 | 67.27 | 68.17
57.82 | 58.62 | 59.52 | 60.42 | 61.32 | 62.22 | 63.12 | 63.47 | 64.21 | 65.11 | 66.01 | 66.91 | 67.81
64.56 | 65.46 | 66.36 | 67.26 | 68.16
Line 100
Proposed 20" Water
R/W 60' ℄
Const. Limits
6' Sidewalk
P.C. +05.60 30' Rt.
P.R.C. +47.04 35.92' Rt.
P.T. +89.60 42' Rt.
Line 200
R/W 75' ℄
+56.35 60' Rt.
Lot 1
①
KOCH CAMPUS ADDITION
Combined Curb & Gutter (Type I)
+56.35 75' Rt.
+01.61 75' Rt.
Res. "B"
℄
111+00 | 111+50 | 112+00 | 112+50 | 113+00 | 113+50 | 114+00 | 114+50 | 115+00 | 115+50 | 116+00 | 116+50 | 117+00
+50 P.V.T.
+05.60 P.V.I.
+89.60 P.V.I.
+1.80% T.C. Rt.
+1.80% T.C. Rt.
+1.37% T.C. Rt.
+1.80% T.C. Rt.
T.C.
P.V.T. 1358.62
T.C.
P.V.I. 1363.22
No V.C.
T.C.
P.V.I. 1364.38
No V.C.
℄ Channel "A"
RESERVE "B"
KOCH CAMPUS ADDITION
Sta. 116+57.00 ℄ Proposed 37th St.=
Sta. 30+00.00 ℄ Channel "A"

BM #4 - 5/8" Rebar, 33.4' N. to South back of curb of 37th St., 53.4' NE to West edge of conc. pillar for West end of RCB handrail, 348' NE to cable pedestal.
672' Rt. ℄ Sta. 112+78 Elev.=1363.28

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 111+00 TO STA. 117+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 6 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/23/2013 8:03:35 PM
FILE: I:\2012\12275\002\Plan\12275-002 Plan III.dgn

Sta. 120+70.00, 142.78' Lt. ℄ Proposed 37th St.=
Sta. 25+28.18 ℄ Channel "A"

T.C.
P.V.I. 1375.72
300' V.C.

T.C.
P.V.T. 1375.09

T.C.
P.V.C. 1373.02

Const. Limits

+1.80% T.C. Lt.

+1.80% T.C. Lt.

-0.42% T.C. Lt.

-0.42% T.C. Lt.

P.G.
P.V.I. 1376.21
300' V.C.

P.G.
P.V.C. 1373.51

P.G.
P.V.T. 1375.58

+1.80% P.G.

+1.80% P.G.

-0.42% P.G.

-0.42% P.G.

KOCH CAMPUS ADDITION
RESERVE "A"

+50 P.V.C.

+00 P.V.I.

+50 P.V.T.

See Channel "A" Plan & Profile

+0.50% Sp. Dt. Lt.

+70

℄ Channel "A"

Sta. 117+46, 35' Lt. Install
Traffic Signal Service Box and
87 L.F. 3" RGC Conduit (SE)
See Sh. No. 81

Sta. 118+06.35 ℄ Proposed 37th St.=
Sta. 5+00.00 ℄ W. Entrance

Sta. 118+67, 35' Lt. Install
Traffic Signal Service Box and
121 L.F. 3" RGC Conduit (SW)
See Sh. No. 81

Proposed Utility Crossing
(Approx. Location)

Combined Curb & Gutter
(Type I)

Sta. 121+34.89 ℄ Proposed 37th St.=
Sta. 10+00.00 ℄ Service Entrance

117+00 | 117+50 | 118+00 | 118+50 | 119+00 | 119+50 | 120+00 | 120+50 | 121+00 | 121+50 | 122+00 | 122+50 | 123+00

R/W 60' ℄

6' Sidewalk

3" RGC
(Signal Conduit)

68.52 | 69.42 | 70.32 | 71.22 | 72.12 | 73.02 | 73.83 | 74.45 | 74.89 | 75.14 | 75.21 | 75.09 | 74.88

68.17 | 69.07 | 69.97 | 70.87 | 71.77 | 72.67 | 73.48 | 74.10 | 74.54 | 74.79 | 74.86 | 74.74 | 74.53

Line 202

1369.01 | 69.91 | 70.81 | 71.71 | 72.61 | 73.51 ℄ Prop. 37th St. | 74.32 Profile Grade Line | 74.94 | 75.38 | 75.63 | 75.70 | 75.58 | 75.37

37th St.

3" RGC
(Signal Conduit)

3" RGC
(Signal Conduit)

90°00'00"

90°00'00"

68.17 | 69.07 | 69.97 | 70.87 | 71.77 | 72.67 | 73.48 | 74.10 | 74.54 | 74.79 | 74.86 | 74.74 | 74.53

Line 200

67.81 | 68.71 | 69.61 | 70.51 | 71.41 | 72.31 | 73.12 | 73.74 | 74.18 | 74.43 | 75.21 | 75.09 | 74.88

68.16 | 72.66 | 73.47 | 74.09 | 74.76

3" RGC
(Signal Conduit)

P.C. +39.60
42' Rt.

℄ W. Entrance

P.T. +73.10
42' Rt.

Proposed 20" Water

P.C. +77.89
42' Rt.

℄ Service Entrance

P.T. +91.89
30' Rt.

R/W 75' ℄

6' Sidewalk

Const. Limits

Lot 1
KOCH CAMPUS ADDITION

Res. 15'

+01.61
75' Rt.

+91.89 P.V.C.

+0.01%
T.C. Rt.

+20.95 P.V.I.

-0.42%
T.C. Rt.

-0.42% T.C. Rt.

T.C.
P.V.C. 1375.21

T.C.
P.V.I. 1375.22
58' V.C.

T.C.
P.V.T. 1375.09

Sta. 117+46, 52' Rt. Install
Traffic Signal Service Box and
121 L.F. 3" RGC Conduit (NE)
See Sh. No. 81

See Sh. No. 39 for
Intersection Details

Sta. 118+67, 52' Rt. Install
Traffic Signal Service Box and
87 L.F. 3" RGC Conduit (NW)
See Sh. No. 81

Combined Curb & Gutter
(Type I)

See Sh. No. 39 for
Intersection Details

+39.60 P.V.I.

+73.10 P.V.I.

+50 P.V.C.

+13.95 P.V.I.

+77.89 P.V.T.

+1.80% T.C. Rt.

+1.80% T.C. Rt.

+1.80% T.C. Rt.

+0.85% T.C. Rt.

T.C.
P.V.I. 1368.88

T.C.
P.V.I. 1371.28

T.C.
P.V.C. 1372.66

T.C.
P.V.I. 1373.82
128' V.C.

T.C.
P.V.T. 1374.36

BM #3 - ⅝" Rebar with green GSS Cap. 11.6' SE to EOR in West curb & gutter for Southbound traffic, West Koch building entrance. 12.3' West to NE Corner of concrete sign base. 30.9' NW to top centerline fire hydrant. 28.8' E. to centerline West entrance median. 1087' Rt. ℄ Sta. 118+53 Elev.=1364.97

BM #2 - "+" cut back of curb South side of median East of West Koch building entrance, 3.2' east of bullnose end, 71.3' West of Centerline West entrance median. 1083' Rt. ℄ Sta. 119+79 Elev.=1365.27

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 117+00 TO STA. 123+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht.	7 of 157
Drawn by	SVB	Date	May, 2013		

Plotted By: svb Date: 4/29/2013 11:12:49 AM
FILE: I:\2012\12275\002\Plan\12275-002 Plan 117.dgn

P.C. ℄ Sta. 124+63.98
1. Not Set

P.I. ℄ Sta. 127+22.43 (Bk.)=
Sta. 127+06.30 (Ahd.)
1. Not Set

CP-27

Const. Limits

KOCH CAMPUS
ADDITION
RESERVE "A"

-0.42% T.C. Lt.

-0.42% P.G.

+0.50% Sp. Dt. Lt.

Combined Curb & Gutter
(Type I)

123+00 123+50 124+00 124+50 125+00 125+50 126+00 126+50 127+00 127+50 128+00 128+50 129+00

+63.98
60' Lt.

R/W 60' ℄
6' Sidewalk

Fence

Light to Medium Timber

P.C. +63.98
30' Lt.

74.25 73.90 74.04 73.69 73.83 73.48 73.62 73.27 73.41 73.06 73.20 72.85 72.99 72.64 72.78 72.43

74.46 74.11 ℄ Prop. 37th St. 73.90 Profile Grade Line 73.69

74.67 74.32 Line 203 74.32 73.48 73.27 72.57 72.22

74.88 74.53 74.53 74.74 73.48 73.27 73.06 72.36 72.01

P.C. +63.98

74.95 73.69 73.48 73.27 73.06 72.85

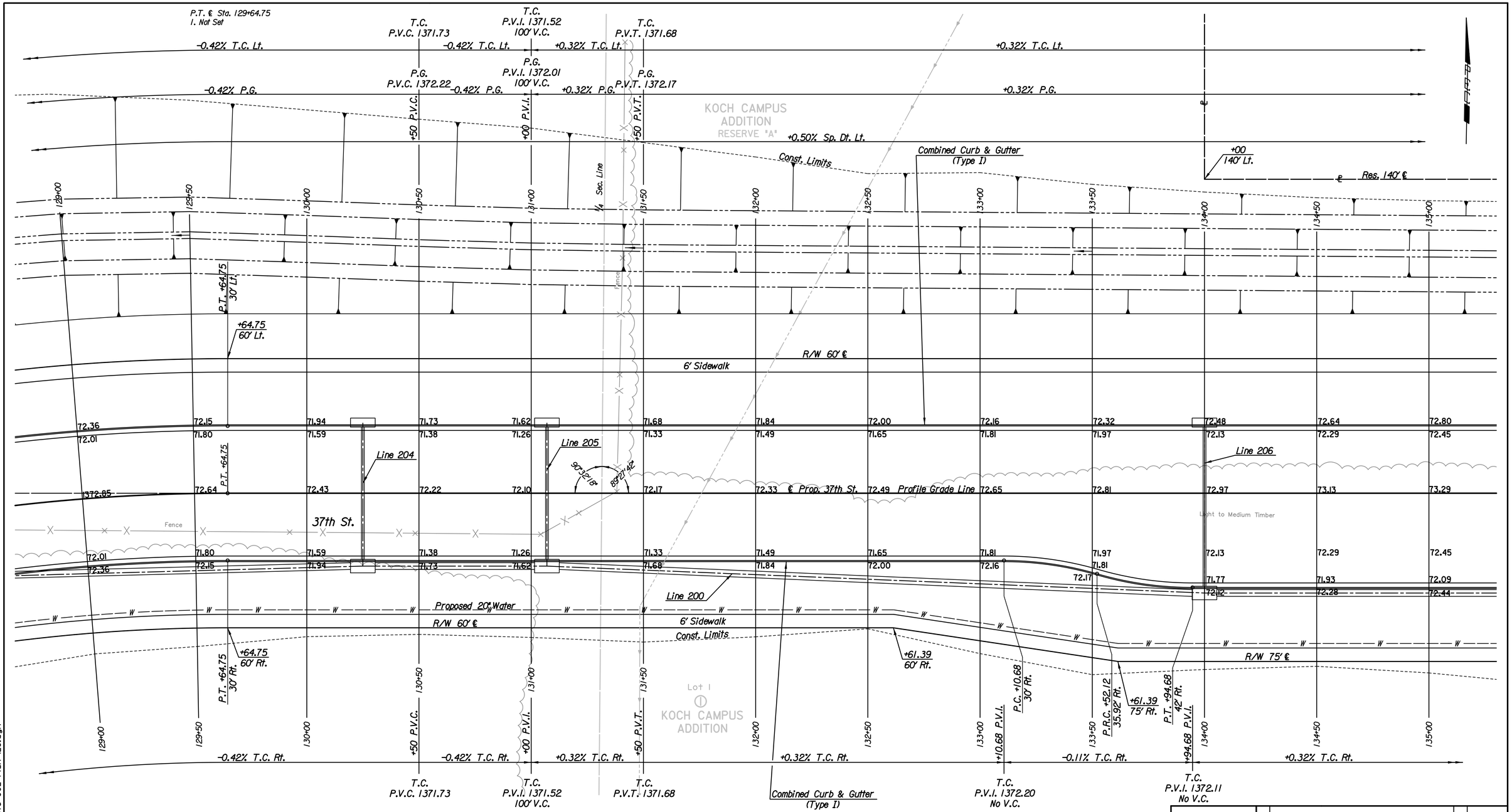
75.16 74.04 73.83 73.62 73.41 73.20 72.99 72.78 72.64 72.43 72.22 72.01

1375.37

37th St.

74.11 73.90 74.25 Line 200

74.46 74.32 74.67 Proposed 20" Water W W W



REMOVAL OF EXISTING STRUCTURES *		
STATION	SIDE	ITEM
131+38	Cln.	200 LF Fence (North)

* For Information Only

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 129+00 TO STA. 135+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht.	9 of 157
Drawn by	SVB	Date	May, 2013		

Plotted By: svb Date: 4/23/2013 9:00:43 PM
FILE: I:\2012\12275\002\Plan\12275-002 Plan 129.dgn

P.C. ℄ Sta. 140+97.43
1. Not Set

+0.32% T.C. Lt.

+0.32% P.G.

+0.50% Sp. Dt. Lt.

Res. 140' ℄ ℄

Const. Limits

Combined Curb & Gutter (Type I)

KOCH CAMPUS ADDITION RESERVE "A"

135+00 | 135+50 | 136+00 | 136+50 | 137+00 | 137+50 | 138+00 | 138+50 | 139+00 | 139+50 | 140+00 | 140+50 | 141+00

+97.43 60' Lt.

R/W 60' ℄

6' Sidewalk

P.C. +97.43 30' Lt.

72.80	72.96	73.12	73.28	73.44	73.60	73.76	73.92	74.08	74.24	74.40	74.56	74.72
72.45	72.61	72.77	72.93	73.09	73.25	73.41	73.57	73.73	73.89	74.05	74.21	74.37
1373.29	73.45	73.61	73.77	73.93	74.09	74.25	74.41	74.57	74.73	74.89	75.05	75.21

Line 207

℄ Prop. 37th St.

Profile Grade Line

P.C. +97.43

37th St.

89°35'45"

15

Light to Medi

72.45	72.61	72.77	72.93	73.09	73.25	73.41	73.57	73.73	73.89	74.05	74.21	74.37
72.09	72.25	72.41	72.57	72.73	72.89	73.05	73.21	73.37	73.53	73.69	73.88	74.12
72.44	72.60	72.76				73.40	73.56	73.72	73.88	74.04	74.24	74.41

Line 200

P.I. +28.18 42' Rt.

W W W

P.C. ℄ Sta. 140+97.43
I. Not Set

P.I. ℄ Sta. 145+76.82 (Bk.)=
Sta. 144+85.84 (Ahd.)
I. Not Set

T.C.
P.V.C. 1375.84

T.C.
P.V.I. 1376.00
100' V.C.

T.C.
P.V.T. 1376.32

+0.32% T.C. Lt.

+0.64% T.C. Lt.

+0.32% T.C. Lt.

+0.32% P.G.

+0.50% Sp. Dt. Lt.

Res. 140' ℄

P.G.
P.V.C. 1376.33

P.G.
P.V.I. 1376.49
100' V.C.

P.G.
P.V.T. 1376.81

+0.32% P.G.

+0.64% P.G.

+0.64% P.G.

+30

+50
140' Lt.

+50 P.V.C.

+00 P.V.I.

+50 P.V.T.

KOCH CAMPUS
ADDITION
RESERVE "A"

141+00

141+50

142+00

142+50

143+00

143+50

144+00

144+50

145+00

145+50

146+00

146+50

147+00

+50
60' Lt.

R/W 60' ℄

Const. Limits

6' Sidewalk

Light to Medium Timber

+97.43
60' Lt.

P.C. 141+43.43

Line 208

Line 209

Line 200

37th St.

℄ Prop. 37th St. Profile Grade Line

Proposed 20" Water

74.88
74.53
74.72
74.37
74.69
75.04
75.20
74.85
75.36
75.01
75.52
75.17
75.68
75.33
75.84
75.49
76.04
75.69
76.32
75.97
76.64
76.29
76.96
76.61
77.28
76.93
75.53
75.37
75.85
76.01
76.17
76.33
76.53
76.81
77.13
77.45
77.77
74.16
74.37
74.12
74.33
74.53
74.15
74.69
75.04
74.85
75.20
75.01
75.36
75.17
75.52
75.33
75.68
75.49
75.84
75.69
76.04
75.97
76.32
76.29
76.64
76.61
76.96
76.93
77.28

P.O.C. +84.77
30' Rt.

+66.52
60' Rt.

+84.77 P.V.I.

T.C.
P.V.I. 1375.00
No V.C.

+0.55% T.C. Rt.

+0.32% T.C. Rt.

+0.32% T.C. Rt.

+0.64% T.C. Rt.

+0.64% T.C. Rt.

Lot 1
KOCH CAMPUS
ADDITION

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 141+00 TO STA. 147+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 11 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/23/2013 9:26:28 PM
FILE: I:\2012\12275\002\Plan\12275-002 Plan 141.dgn

P.T. ℄ Sta. 149+65.23
l. Not Set

+0.64% T.C. Lt.

T.C.
P.V.C. 1380.96
+0.64% T.C. Lt.

P.G.
P.V.C. 1381.45
+0.64% P.G.

+0.64% P.G.

+75 P.V.C.

Sta. 152+88, 35' Lt. Install Traffic Signal Service Box and 87 L.F. 3" RGC Conduit (SW) See Sh. No. 81

Proposed Utility Crossing (Approx. Location)

Combined Curb & Gutter (Type I)

Const. Limits

141+00 141+50 148+00 148+50 149+00 149+50 150+00 150+50 151+00 151+50 152+00 152+50 153+00

+65.23 60' Lt.

R/W 60' ℄

6' Sidewalk

P.T. +65.23 30' Lt.

3" RGC (Signal Conduit)

78.88 79.20 79.52 79.84 80.16 80.48 80.80 81.10

78.53 78.85 79.17 79.49 79.81 80.13 80.45 80.75

78.24 78.56 78.21

77.89 77.92 77.57

77.60 77.25

77.28 76.93

79.37 79.69 ℄ Prop. 37th St. 80.01 Profile Grade Line 80.33 80.65 80.97 81.29 81.59

79.05 78.73

78.41

78.09

77.77

37th St.

Line 210

Line 200

78.53 78.85 79.17 79.49 79.81 80.13 80.45 80.75

78.88 78.59 78.81 79.13 79.45 79.77 80.09 80.39

78.56 78.21

78.24 77.89

77.92 77.57

77.60 77.25

77.28 76.93

78.94 79.16 79.48 79.80 80.12 80.44

P.T. +31.28 42' Rt.

P.C. +81.28 42' Rt.

3" RGC (Signal Conduit)

3" RGC (Signal Conduit)

Proposed 20" Water

R/W 75' ℄

6' Sidewalk

+92.63 60' Rt.

+98.03 75' Rt.

R/W 60' ℄

P.C.C. +43.31 30' Rt.

P.R.C. +89.12 35.67' Rt.

Const. Limits

Combined Curb & Gutter (Type I)

+43.31 P.V.I.

+31.28 P.V.I.

+0.23% T.C. Rt.

+0.64% T.C. Rt.

Sta. 152+88, 52' Rt. Install Traffic Signal Service Box and 121 L.F. 3" RGC Conduit (SE) See Sh. No. 81

+75 P.V.C.

+78.14 P.V.I.

+81.28 P.V.T.

+0.59% T.C. Rt.

+0.64% T.C. Rt.

T.C.
P.V.I. 1378.84
No V.C.

T.C.
P.V.I. 1379.04
No V.C.

T.C.
P.V.C. 1380.60

T.C.
P.V.I. 1380.62
6' V.C.

T.C.
P.V.T. 1380.64

Lot 1
KOCH CAMPUS ADDITION

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 147+00 TO STA. 153+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 12 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/29/2013 11:14:35 AM
FILE: I:\2012\12275\002\Plan\12275-002 Plan 147.dgn

P.C. ℄ Sta. 157+30.82
I. Not Set

T.C.
P.V.I. 1381.76
250' V.C.

T.C.
P.V.T. 1380.26

+0.64% T.C. Lt.

-1.20% T.C. Lt.

-1.20% T.C. Lt.

P.G.
P.V.I. 1382.25
250' V.C.

P.G.
P.V.T. 1380.75

+0.64% P.G.

-1.20% P.G.

-1.20% P.G.

+00 P.V.I.

+25 P.V.T.

Sta. 154+09, 35' Lt. Install Traffic Signal Service Box and 121 L.F. 3" RGC Conduit (NW) See Sh. No. 81

Sta. 153+48.03 ℄ Proposed 37th St.=
Sta. 20+00.00 ℄ E. Entrance

Combined Curb & Gutter (Type I)

153+00 153+50 154+00 154+50 155+00 155+50 156+00 156+50 157+00 157+50 158+00 158+50 159+00

Const. Limits

+30.82
60' Lt.

R/W 60' ℄

6' Sidewalk

P.C. +30.82
30' Lt.

3" RGC
(Signal Conduit)

81.10 81.24 81.19 80.96 80.54 79.96 79.36 78.76 78.16 77.56 76.96 76.36 75.76
80.75 80.88 80.84 80.60 80.19 79.61 79.01 78.41 77.81 77.21 76.61 76.01 75.41

Spoil Pile

Heavy Timber

Line 300

76.85

77.45

P.C. +30.82

381.59 81.72 81.68 81.44 81.03 ℄ Prop. 37th St. 80.45 Profile Grade Line 79.85 79.25 78.65 78.05

90°00'

80

3" RGC
(Signal Conduit)

3" RGC
(Signal Conduit)

Line 300

76.29
76.64

80.75 80.88 80.84 80.60 37th St. 80.19 79.61 79.01 78.41 77.96 77.49 77.24

77.82 77.84

78.17

P.O.C. +32.04
30' Rt.

80.39 80.52 80.47 80.24 79.83 79.25 78.65 78.05

80.60 80.18 79.60 79.00 78.40

3" RGC
(Signal Conduit)

℄ E. Entrance

Proposed 20" Water

R/W 75' ℄

P.I. +64.78
42' Rt.

R/W 60' ℄

6' Sidewalk

+91.09
60' Rt.

+98.03
75' Rt.

P.C. +81.28
42' Rt.

P.T. +14.78
42' Rt.

Lot 1
KOCH CAMPUS ADDITION

153+00 153+50 154+00 154+50 155+00 155+50 156+00 156+50 157+00 157+50 158+00 158+50 159+00

Const. Limits

Combined Curb & Gutter (Type I)

+14.78 P.V.C. +69.89 P.V.I. +25 P.V.T. +64.78 P.V.I. +31.97 P.V.I.

-0.39% T.C. Rt. -1.20% T.C. Rt. -1.20% T.C. Rt. -0.25% T.C. Rt.

-1.20% T.C. Rt.

See Sh. No. 39 for Intersection Details

Sta. 154+09, 52' Rt. Install Traffic Signal Service Box and 87 L.F. 3" RGC Conduit (NE) See Sh. No. 81

T.C.
P.V.C. 1380.78

T.C.
P.V.I. 1380.57
110' V.C.

T.C.
P.V.T. 1379.90

T.C.
P.V.I. 1378.23
No V.C.

T.C.
P.V.I. 1378.06
No V.C.

Transition X-slope Rt. from -3.00% to -2.00%

Utilities

Gas	Kansas Gas Service
Telephone	AT&T, Wichita Central Unit

BM #9 – Square cut on the South back of curb of 37th St., 314'± West from the centerline of median in the East entrance to main Building. East side of an expansion joint. 1007' ℄ Sta. 154+80 Elev.=1376.87

BM #10 – Square cut on South side of median back of curb 79.5' West of the bullnose which is West of the East entrance to the main building. 844' Rt. ℄ Sta. 155+19 Elev.=1380.73

BM #11 – ½" Rebar with Red Cap in island for East entrance for Main Building, 4.0' West of centerline of San. Sewer manhole in island, 8.3' South of South back of curb of 37th St., 254.0' South to Fire Hydrant. 708' Rt. ℄ Sta. 156+52 Elev.=1382.28

BM #12 – ⅝" Rebar with Red Cap, 9.4' N. of North back of curb of 37th St., 161.4' East of 2 telephone pedestals on the North side of 37th St., East of the main Building East entrance, 189.6' East of centerline concrete entrance. 194' Rt. ℄ Sta. 158+26 Elev.=1383.23

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 153+00 TO STA. 159+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 13 of 157

Plotted By: svb Date: 4/24/2013 12:27:29 PM
FILE: I:\2012\12275\002\Plan\12275-002 Plan 153.dgn

P.T. ℄ Sta. 162+66.30
1. Not Set

P.I. ℄ Sta. 164+58.30=
SE Cor. Sec. 26, T26S, R1E
1. See References below

Sta. 163+80.51 END
PROJECT No. 472-85083

Sta. 164+58.30 ℄ 37th St.=
℄ Oliver

Sta. 163+67.92 Construct
6'x4'x24' RCB Ext. Rt.
See Sh. No. 58-60

Sta. 161+01.04 ℄ Proposed 37th St.=
Sta. 25+00.00 ℄ Entrance

37th St.

Oliver

Line 300

Line 400

Combined Curb & Gutter (Type I)

See Sh. No. 38 for Intersection Details

See Sh. No. 39 for Intersection Details

Transition X-slope Lt. from -3.00% to -2.73%

Transition X-slope Rt. from -2.00% to -2.96%

Profile Grade Line

Const. Limits

R/W 60' ℄

Exist. R/W

Proposed 20" Water

6' Sidewalk

Asphalt

Concrete

Lot 1
KOCH CAMPUS ADDITION

Lot 1
ACT PROPERTIES LLC ADDITION

REMOVAL OF EXISTING STRUCTURES *		
STATION	SIDE	ITEM
160+16	Rt.	Sign
160+26	Rt.	Sign
162+83	Rt.	Traffic Signal Junction Box
163+15	Lt.	Curb Inlet, 6 LF 30" RCP (East)
163+18	Rt.	Curb Inlet, 3 LF 30" RCP (East)
163+32	Lt.	Curb Inlet, 66 LF 30" RCP (South)
163+32	Rt.	Curb Inlet, 27 LF 36" RCP (East)
163+68	Lt.	Pedestrian Handrail
163+68	Rt.	RCB Wingwall, Pedestrian Handrail
163+76	Lt.	Sign
163+97	Rt.	Traffic Signal Junction Box
164+11	Rt.	Traffic Signal Pole and Footing

* For Information Only

SE Cor. Sec. 26, T26S, R1E
1. Found No. 4 Bar on Concrete Surface in Center Seam of Roadway
2. N 1,709,916.0066 E 1,664,853.8669

3. Hilti nail and square washer in the West face of power pole	96.07'	SSE	
4. PK nail in the North face of high voltage pole	71.50'	SW	Gas
5. Chiseled cut cross 3' West to the East end of the hubguard of the RCBC	97.94'	WNW	Power
6. Top center of fire hydrant	72.71'	NE	Telephone
			Television
			Water

BM #13 - Square cut on back of curb on the North side of 37th St., 50.0' East of the centerline of the North entrance to Advance Pain Medicine Associates, 17.5' N. to edge of grass, 120.3' W. to base of 40 mph sign. 16.50' Lt. ℄ Sta. 161+29 Elev.=1374.35

BM #14 - Square cut on the East end of the North headwall for RCB, NW quadrant of Oliver St. & 37th St., 15.4' S. to North back of curb of 37th St., 29.2' E. to NW bolt of signal pole in NW quadrant of Oliver St. & 37th St., 35.18' SW to NE Corner of East curb inlet. 46' Lt. ℄ Sta. 163+71 Elev.=1374.09

Utilities
Kansas Gas Service
Westar Energy
AT&T, Wichita Central Unit
Cox Communications
Wichita Water Utilities

No.	Revision	By	Date

37TH STREET NORTH

PLAN
STA. 159+00 TO STA. 164+58.30

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 14 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/24/2013 12:33:46 PM
FILE: i:\2012\12275-002\Plan\12275-002 Plan 159.dgn

P.C. ℄ Channel "A" Sta. 25+28.18
I. Not Set

P.R.C. ℄ Channel "A" Sta. 26+04.56
I. Not Set

P.T. ℄ Channel "A" Sta. 28+71.96
I. Not Set

P.C. ℄ Channel "A" Sta. 31+55.56
I. Not Set

Lot 1
KOCH CAMPUS ADDITION

P.C. +28.18
Begin Channel "A"

P.R.C. +04.56

RESERVE "A"
KOCH CAMPUS ADDITION

℄ W. Entrance

℄ Proposed 37th St.

R/W 60' ℄

6' Sidewalk

R/W 75' ℄

Res. "B" ℄

RESERVE "B"
KOCH CAMPUS ADDITION

P.C. +55.56

Const. Limits

Sta. 25+28.18 ℄ Channel "A"=
Sta. 120+70.00, 142.78' Lt. ℄ Proposed 37th St.

℄ Channel "A"

Proposed 10'x5' RCB

45°00'00"

Proposed 20" Water

Sta. 30+00.00 ℄ Channel "A"=
Sta. 116+57.00 ℄ Proposed 37th St.

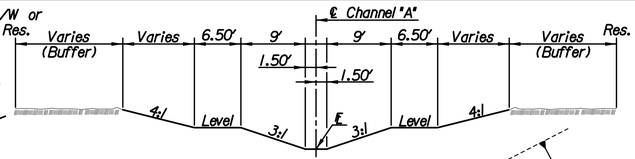
P.T. +71.96

Res. "A"

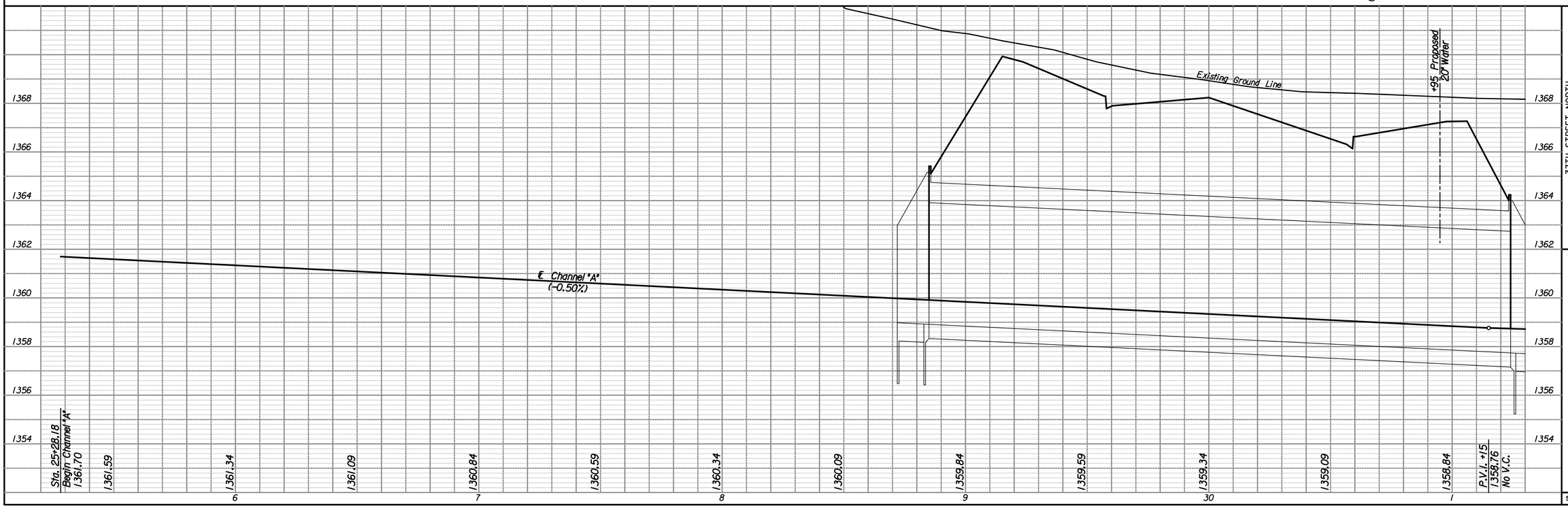
Res. "B"

Utilities
Water Wichita Water Utilities

TYPICAL CHANNEL SECTION



SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert.



37TH STREET NORTH
CHANNEL "A" PLAN
STA. 25+28.18 TO STA. 31+20

C.O.M. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

PEC

Designed by	JPS
Drawn by	SVB
Job No.	12275-002
Date	May, 2013

Sheet 15 of 157

Plotted By: svb Date: 4/23/2013 10:08:44 PM
FILE: I:\2012\12275\002\Plan\12275-002 PlanProfile Channel A 25+28.18.dgn

P.T. ℄ Channel "A" Sta. 35+73.41
1. Not Set

Res. "B"

℄

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

Const. Limits

Prop. 10'x5' RCB

P.C. +55.56

℄ Channel "A"

2 3 4 35 6

P.R.C. +14.88

RESERVE "B"
KOCH CAMPUS
ADDITION

P.T. +32.16

P.I. +87.63
End Channel "A"

Const. Limits

℄ Res. "B"

4'X10'X102' RCB

Existing 37th St.

Fiber Optic Line Fr... AT&T

R/W or Res. | Varies (Buffer) | Varies | 6.50' | 9' | 1.50' | ℄ Channel "A" | 1.50' | 9' | 6.50' | Varies | Varies (Buffer) | Res.
4:1 | Level | 3:1 | ℄ | 3:1 | Level | 4:1

TYPICAL CHANNEL SECTION

BM #5 – ⅝" Rebar with red GSS Cap, 18.1' S. to North back of curb of 37th St., 197.7' WSW to "+" cut in bullnose at West end of West median in 37th St., 391.4' E. to West end of North handrail to RCB.
406' Rt. ℄ Sta. 37+06 Elev.=1364.50

BM #4 – ⅝" Rebar, 33.4' N. to South back of curb of 37th St., 53.4' NE to West edge of conc. pillar for West end of RCB handrail, 348' NE to cable pedestal.
65' Rt. ℄ Sta. 38+19 Elev.=1363.28

Utilities

Gas	Kansas Gas Service
Telephone	AT&T, Wichita Central Unit
Telephone	Level 3 Communications, LLC
Television	Cox Communications
Water	Wichita Water Utilities

1368
1366
1364
1362
1360
1358
1356
1354

Existing Ground Line

℄ Channel "A"
(-0.30%)

+57 TV
+61 Tele.

1358.66 1358.51 1358.36 1358.21 1358.06 1357.91 1357.76 1357.61 1357.46 1357.31 1357.16 Sta. 36+87.63 End Channel "A" 1357.05

2 3 4 35 6 7

37TH STREET NORTH
CHANNEL "A" PLAN
STA. 31+20 TO STA. 36+87.63
C.O.W. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 12275-002
Designed by JPS
Drawn by SVB
Date May, 2013

Sheet 16 of 157

Plotted By: svb Date: 4/23/2013 10:24:16 PM
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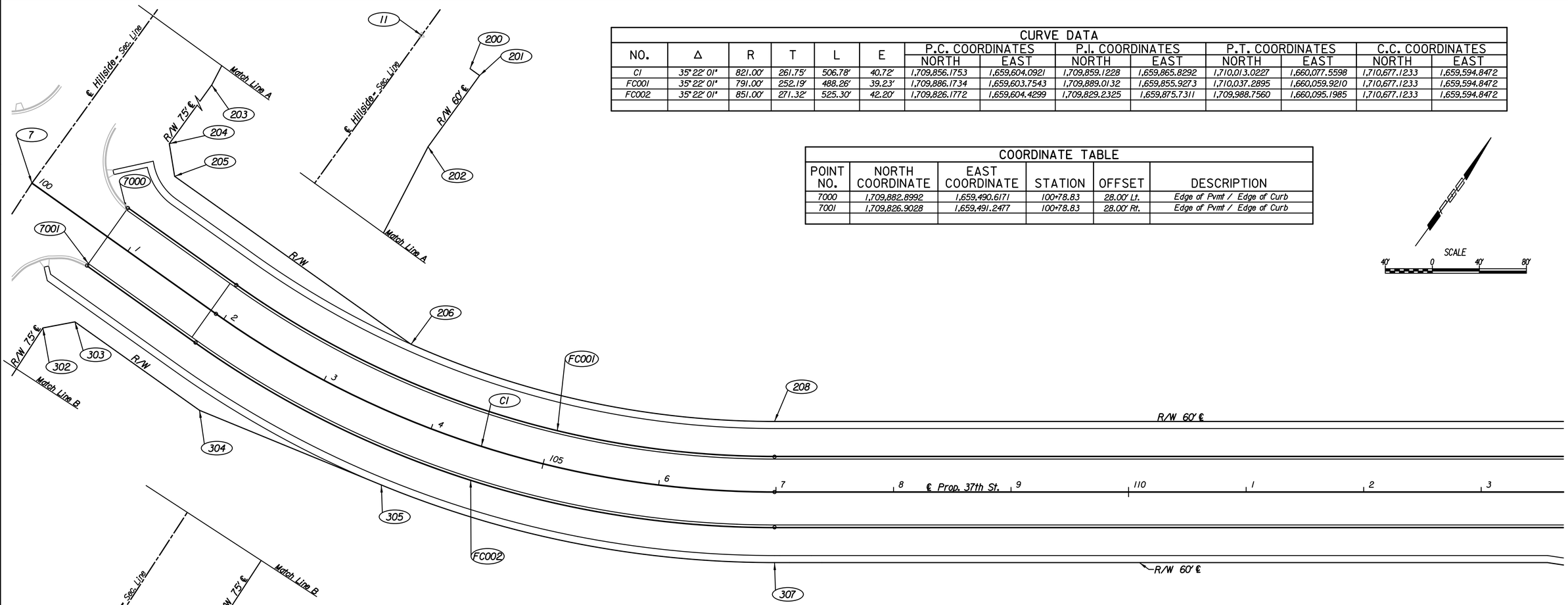

CURVE DATA

NO.	Δ	R	T	L	E	P.C. COORDINATES		P.I. COORDINATES		P.T. COORDINATES		C.C. COORDINATES	
						NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST
C1	35° 22' 01"	821.00'	261.75'	506.78'	40.72'	1,709,856.1753	1,659,604.0921	1,709,859.1228	1,659,865.8292	1,710,013.0227	1,660,077.5598	1,710,677.1233	1,659,594.8472
FC001	35° 22' 01"	791.00'	252.19'	488.26'	39.23'	1,709,886.1734	1,659,603.7543	1,709,889.0132	1,659,855.9273	1,710,037.2895	1,660,059.9210	1,710,677.1233	1,659,594.8472
FC002	35° 22' 01"	851.00'	271.32'	525.30'	42.20'	1,709,826.1772	1,659,604.4299	1,709,829.2325	1,659,875.7311	1,709,988.7560	1,660,095.1985	1,710,677.1233	1,659,594.8472

COORDINATE TABLE

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7000	1,709,882.8992	1,659,490.6171	100+78.83	28.00' Lt.	Edge of Pvmt / Edge of Curb
7001	1,709,826.9028	1,659,491.2477	100+78.83	28.00' Rt.	Edge of Pvmt / Edge of Curb

SCALE
40' 0 40' 80'

CONTROL POINTS

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
5	1,707,175.7631	1,659,550.9262			W 1/4 Corner of Sec. 35-T26S-R1E
7	1,709,854.0133	1,659,412.1043	100+00.00	0.00' Rt.	SW Corner of Sec. 26-T26S-R1E
11	1,712,494.0433	1,659,406.7156			W 1/4 Corner of Sec. 26-T26S-R1E
200	1,710,254.5925	1,659,461.2868	100+53.69	400.00' Lt.	R/W Corner
201	1,710,254.6129	1,659,471.2867	100+63.69	399.91' Lt.	R/W Corner
202	1,710,179.8298	1,659,471.4394	100+63.00	325.13' Lt.	R/W Corner
203	1,710,079.8606	1,659,486.6435	100+77.08	224.99' Lt.	R/W Corner
204	1,709,949.8609	1,659,486.9088	100+75.88	95.00' Lt.	R/W Corner
205	1,709,930.0861	1,659,506.9484	100+95.69	75.00' Lt.	R/W Corner
206	1,709,932.8636	1,659,753.5876	103+55.28	60.00' Lt.	R/W P.C.
208	1,710,061.5563	1,660,042.2823	106+98.78	60.00' Lt.	R/W P.T.
300	1,709,529.4562	1,659,489.0076	100+73.24	325.40' Rt.	R/W Corner
301	1,709,630.0986	1,659,498.8112	100+84.18	224.88' Rt.	R/W Corner
302	1,709,759.9244	1,659,492.0819	100+78.91	94.98' Rt.	R/W Corner
303	1,709,780.1228	1,659,511.0454	100+98.10	75.00' Rt.	R/W Corner
304	1,709,781.5866	1,659,641.0371	102+25.06	75.73' Rt.	R/W Corner
305	1,709,821.1853	1,659,803.4882	103+79.05	60.00' Rt.	R/W P.C.
307	1,709,964.4892	1,660,112.8372	106+98.78	60.00' Rt.	R/W P.T.

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY PLAN
STA. 100+00 TO STA. 113+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 17 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/23/2013 10:24:30 PM
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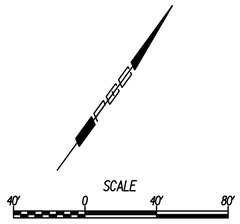

Res. "A" 295' ℄

℄

207

211

CP-27

Res. "A" ℄

℄ Channel "A"

7

8

6

C7

C8

209

210

FC009

500

502

R/W 60' ℄

3

4

115

6

30

7

8

9

℄ Prop. 37th St.

120

1

10

2

3

4

125

FC004

FC003

513

FC005

FC006

FC007

FC008

C2

R/W 60' ℄

308

309

327

7002

R/W 75' ℄

7003

7004

7005

310

311

R/W 60' ℄

312

FC010

℄

2

℄ Channel "A"

℄ W. Entrance

℄ Service Entrance

313

C9

328

7

501

503

Res. "B"

3

4

C10

Res. "B"

35

319

35

Match Line

324

℄

C10

℄ Channel "A"

6

329

Match Line

Res. "B"

512

℄

Res. "B"

330

See Next Sheet for Coordinate Data Tables.

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY PLAN
STA. 113+00 TO STA. 125+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 18 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/23/2013 10:27:39 PM
FILE: I:\2012\12275\002\COGO\12275-002 COGO113.dgn

CURVE DATA

NO.	Δ	R	T	L	E	P.C. COORDINATES		P.I. COORDINATES		P.T. COORDINATES		C.C. COORDINATES	
						NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST
C2	34° 56' 52"	821.00'	258.45'	500.77'	39.72'	1,711,050.8840	1,661,505.4161	1,711,202.8410	1,661,714.4738	1,711,207.6418	1,661,972.8784	1,710,386.7834	1,661,988.1287
C7	17° 30' 19"	250.00'	38.49'	76.38'	2.95'	1,710,934.7357	1,661,102.7839	1,710,911.5398	1,661,072.0682	1,710,898.6572	1,661,035.7978	1,711,134.2386	1,660,952.1234
C8	61° 27' 29"	250.00'	148.61'	268.16'	40.84'	1,710,898.6572	1,661,035.7978	1,710,848.9176	1,660,895.7585	1,710,702.1321	1,660,872.5419	1,710,663.0758	1,661,119.4723
C9	59° 25' 51"	250.00'	142.69'	259.32'	37.85'	1,710,442.7622	1,660,828.3548	1,710,281.8275	1,660,806.0636	1,710,190.9581	1,660,916.0738	1,710,383.7060	1,661,075.2852
C10	49° 47' 52"	250.00'	116.04'	217.28'	25.62'	1,710,190.9581	1,660,916.0738	1,710,117.0584	1,661,005.5399	1,710,001.0254	1,661,006.8466	1,709,998.2103	1,660,756.8624
FC003	16° 15' 37"	148.00'	21.14'	42.00'	1.50'	1,710,404.3355	1,660,666.9395	1,710,416.7666	1,660,684.0418	1,710,423.9118	1,660,703.9407	1,710,284.6195	1,660,753.9572
FC004	16° 15' 37"	152.00'	21.71'	43.14'	1.54'	1,710,423.9118	1,660,703.9407	1,710,431.2501	1,660,724.3775	1,710,444.0172	1,660,741.9420	1,710,566.9688	1,660,652.5725
FC005	90° 00' 00"	28.00'	28.00'	43.98'	11.60'	1,710,591.0064	1,660,944.1650	1,710,607.4692	1,660,966.8140	1,710,584.8202	1,660,983.2768	1,710,568.3574	1,660,960.6278
FC006	90° 00' 00"	28.00'	28.00'	43.98'	11.60'	1,710,630.3869	1,661,045.9660	1,710,653.0359	1,661,029.5032	1,710,669.4986	1,661,052.1522	1,710,646.8497	1,661,068.6150
FC007	90° 00' 00"	48.00'	48.00'	75.40'	19.88'	1,710,789.9085	1,661,217.8082	1,710,818.1305	1,661,256.6351	1,710,779.3036	1,661,284.8570	1,710,751.0817	1,661,246.0302
FC008	90° 00' 00"	48.00'	48.00'	75.40'	19.88'	1,710,799.5936	1,661,292.3616	1,710,838.4204	1,661,264.1396	1,710,866.6423	1,661,302.9665	1,710,827.8155	1,661,331.1884
FC009	34° 56' 52"	851.00'	267.89'	519.07'	41.17'	1,711,075.1508	1,661,487.7774	1,711,232.6604	1,661,704.4742	1,711,237.6366	1,661,972.3212	1,710,386.7834	1,661,988.1287
FC010	34° 56' 52"	791.00'	249.01'	482.47'	38.27'	1,711,026.6172	1,661,523.0548	1,711,173.0216	1,661,724.4733	1,711,177.6470	1,661,973.4357	1,710,386.7834	1,661,988.1287

CONTROL POINTS

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
CP-26	1,710,079.7045	1,661,209.4237	116+53.54	611.55' Rt.	5/8" Rebar with Green GSSCap
CP-27	1,711,177.0152	1,661,281.6819	123+57.16	233.57' Lt.	5/8" Rebar with Green GSSCap
207	1,710,851.4761	1,660,729.3396	117+18.97	295.00' Lt.	Res. "A" Corner
209	1,710,563.3141	1,660,732.5847	115+52.17	60.00' Lt.	Res. "A" Corner
210	1,711,099.4175	1,661,470.1387	124+63.98	60.00' Lt.	R/W P.C.
211	1,711,289.5072	1,661,331.9689	124+63.98	295.00' Lt.	Res. "A" P.C.
308	1,710,351.1119	1,660,644.7403	113+56.35	60.00' Rt.	R/W Corner
309	1,710,397.7742	1,660,734.4489	114+56.35	75.00' Rt.	R/W Corner / Res. "B" Corner
310	1,710,897.5375	1,661,422.0073	123+06.35	75.00' Rt.	R/W Corner
311	1,710,968.4666	1,661,494.0772	124+06.35	60.00' Rt.	R/W Corner
312	1,711,002.3505	1,661,540.6935	124+63.98	60.00' Rt.	R/W P.C.
313	1,710,239.9779	1,660,736.2259	32+95.02	118.26' Rt.	Res. "B" Corner
319	1,710,056.6635	1,660,906.2137	35+41.72	89.62' Rt.	Res. "B" Corner
324	1,709,230.5550	1,660,915.5168	44+01.56	100.00' Rt.	Res. "B" Corner
327	1,710,541.9764	1,660,932.8377	117+01.61	75.00' Rt.	Res. "B" Corner
328	1,710,319.3879	1,660,935.3443	33+02.48	95.99' Lt.	Res. "B" Corner
329	1,710,136.0736	1,661,105.3321	35+40.80	124.75' Lt.	Res. "B" Corner
330	1,709,823.1178	1,661,108.8564	38+11.21	100.00' Lt.	Res. "B" Corner
500	1,710,664.2260	1,660,973.4644	118+06.35	0.00' Rt.	℄ Point of W. Entrance / ℄ 37th St.
501	1,710,478.1808	1,661,108.6945	118+06.35	230.00' Rt.	℄ Point of W. Entrance
502	1,710,857.3956	1,661,239.2209	121+34.89	0.00' Rt.	℄ Point of Service Entrance / ℄ 37th St.
503	1,710,671.3503	1,661,374.4510	121+34.89	230.00' Rt.	℄ Point of Service Entrance
512	1,709,945.5658	1,661,007.4711	36+87.63	0.00' Rt.	℄ Point of Channel "A"
513	1,710,576.4156	1,660,852.6577	116+57.00	0.00' Rt.	℄ Point of Channel "A" / ℄ 37th St.

COORDINATE TABLE

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7002	1,710,581.9517	1,660,987.8344	117+69.60	75.00' Rt.	Edge of Pvmt / Edge of Curb
7003	1,710,625.1665	1,661,047.2880	118+43.10	75.00' Rt.	Edge of Pvmt / Edge of Curb
7004	1,710,780.4795	1,661,286.4748	121+27.89	90.00' Rt.	Edge of Pvmt / Edge of Curb
7005	1,710,788.7109	1,661,297.7993	121+41.89	90.00' Rt.	Edge of Pvmt / Edge of Curb

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY TABLES STA. 113+00 TO STA. 125+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 19 of 157

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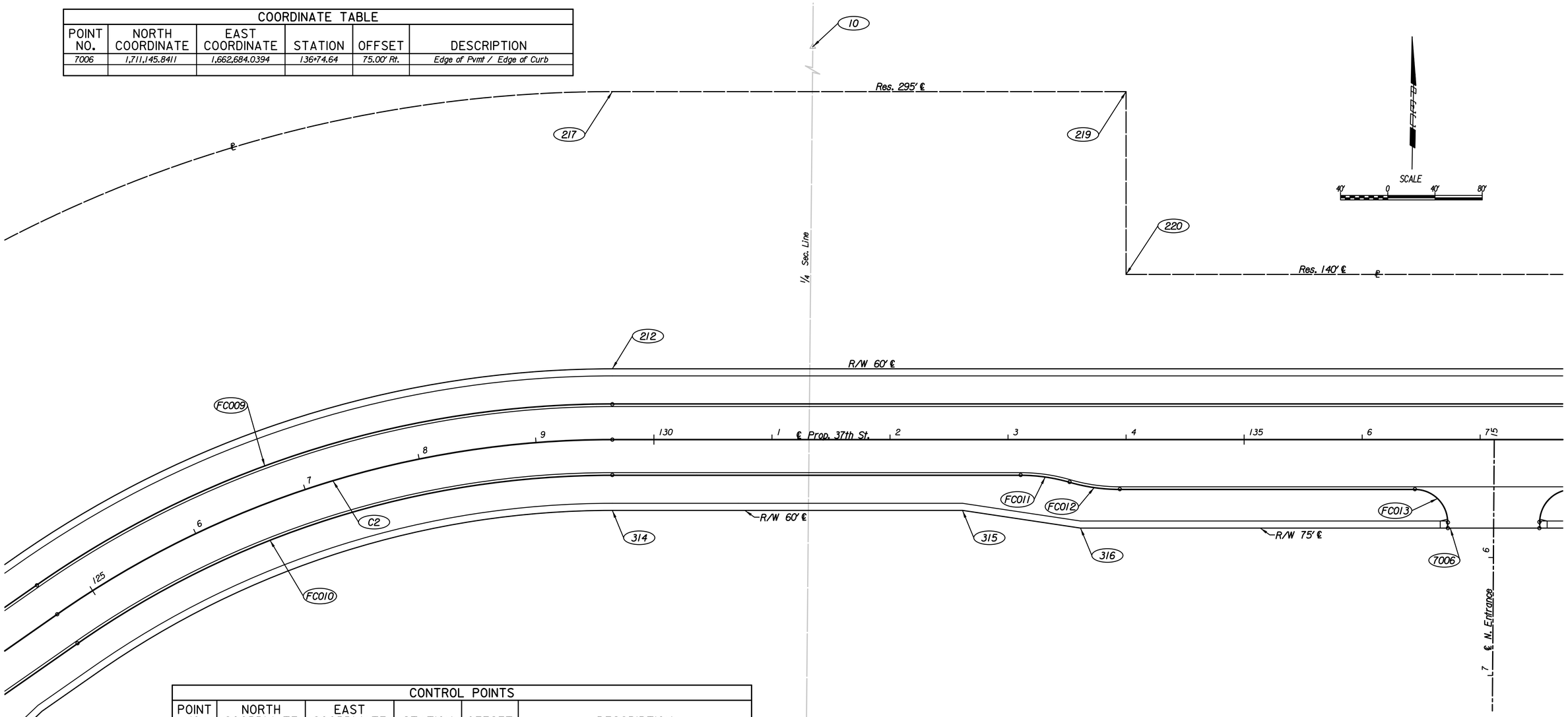
COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7006	1,711,145.8411	1,662,684.0394	136+74.64	75.00' Rt.	Edge of Pvmt / Edge of Curb



CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
4	1,707,215.6429	1,662,215.3712			Center Corner of Sec. 35-T26S-R1E
9	1,709,884.8651	1,662,151.7272			S 1/4 Corner of Sec. 26-T26S-R1E
10	1,712,528.0562	1,662,127.4583			Center Corner of Sec. 26-T26S-R1E
212	1,711,267.6314	1,661,971.7639	129+64.75	60.00' Lt.	R/W P.T.
217	1,711,502.5909	1,661,967.3988	129+64.75	295.00' Lt.	Res. "A" P.T.
219	1,711,510.6758	1,662,402.5729	134+00.00	295.00' Lt.	Res. "A" Corner
220	1,711,355.7025	1,662,405.4521	134+00.00	140.00' Lt.	Res. "A" Corner
314	1,711,147.6521	1,661,973.9930	129+64.75	60.00' Rt.	R/W P.T.
315	1,711,153.1623	1,662,270.5829	132+61.39	60.00' Rt.	R/W Corner
316	1,711,140.0224	1,662,370.8443	133+61.39	75.00' Rt.	R/W Corner

CURVE DATA													
NO.	Δ	R	T	L	E	P.C. COORDINATES		P.I. COORDINATES		P.T. COORDINATES		C.C. COORDINATES	
						NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST
FC011	16°15' 37"	148.00'	21.14'	42.00'	1.50'	1,711,184.0726	1,662,319.3008	1,711,184.4653	1,662,340.4400	1,711,178.9234	1,662,360.8436	1,711,036.0981	1,662,322.0499
FC012	16°15' 37"	152.00'	21.71'	43.14'	1.54'	1,711,178.9234	1,662,360.8436	1,711,173.2317	1,662,381.7986	1,711,173.6350	1,662,403.5092	1,711,325.6088	1,662,400.6857
FC013	90° 24' 15"	28.00'	28.20'	44.18'	11.74'	1,711,178.2788	1,662,653.4661	1,711,178.8026	1,662,681.6593	1,711,150.6063	1,662,681.9843	1,711,150.2836	1,662,653.9862

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY PLAN STA. 125+00 TO STA. 137+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 20 of 157
Drawn by	SVB	Date	May, 2013	

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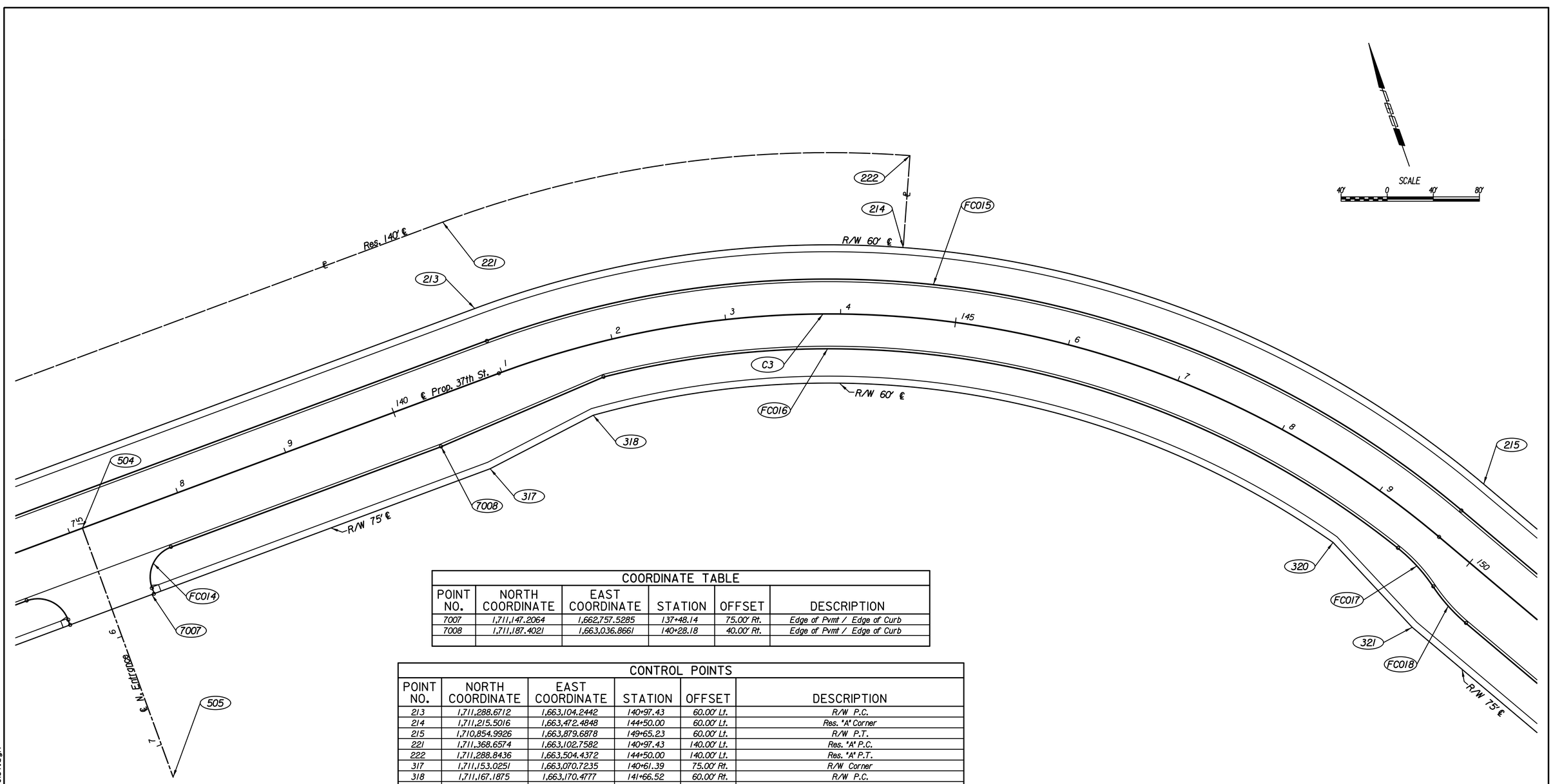

COORDINATE TABLE

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7007	1,711,147.2064	1,662,757.5285	137+48.14	75.00' Rt.	Edge of Pvmt / Edge of Curb
7008	1,711,187.4021	1,663,036.8661	140+28.18	40.00' Rt.	Edge of Pvmt / Edge of Curb

CONTROL POINTS

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
213	1,711,288.6712	1,663,104.2442	140+97.43	60.00' Lt.	R/W P.C.
214	1,711,215.5016	1,663,472.4848	144+50.00	60.00' Lt.	Res. "A" Corner
215	1,710,854.9926	1,663,879.6878	149+65.23	60.00' Lt.	R/W P.T.
221	1,711,368.6574	1,663,102.7582	140+97.43	140.00' Lt.	Res. "A" P.C.
222	1,711,288.8436	1,663,504.4372	144+50.00	140.00' Lt.	Res. "A" P.T.
317	1,711,153.0251	1,663,070.7235	140+61.39	75.00' Rt.	R/W Corner
318	1,711,167.1875	1,663,170.4777	141+66.52	60.00' Rt.	R/W P.C.
320	1,710,850.4801	1,663,739.6210	148+92.63	60.00' Rt.	R/W P.T.
321	1,710,758.2147	1,663,780.0158	149+98.03	75.00' Rt.	R/W Corner
504	1,711,221.5207	1,662,719.9196	137+11.92	0.00' Rt.	℄ Point of N. Entrance / ℄ 37th St.
505	1,710,991.5359	1,662,722.5701	137+10.30	229.99' Rt.	℄ Point of N. Entrance

CURVE DATA

NO.	Δ	R	T	L	E	P.C. COORDINATES		P.I. COORDINATES		P.T. COORDINATES		C.C. COORDINATES	
						NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST
C3	60° 33' 44"	821.00'	479.39'	867.81'	129.71'	1,711,228.6815	1,663,105.3587	1,711,237.5863	1,663,584.6667	1,710,824.5384	1,663,827.9911	1,710,407.8232	1,663,120.6090
FC014	89° 35' 45"	28.00'	27.80'	43.78'	11.46'	1,711,152.4408	1,662,759.4683	1,711,180.2422	1,662,759.1479	1,711,180.7587	1,662,786.9463	1,711,152.7635	1,662,787.4664
FC015	60° 33' 44"	851.00'	496.91'	899.52'	134.45'	1,711,258.6764	1,663,104.8015	1,711,267.9065	1,663,601.6237	1,710,839.7655	1,663,853.8395	1,710,407.8232	1,663,120.6090
FC016	52° 56' 12"	791.00'	393.83'	730.82'	92.62'	1,711,195.7753	1,663,189.9811	1,711,161.2355	1,663,582.2961	1,710,827.3628	1,663,791.1815	1,710,407.8232	1,663,120.6090
FC017	17° 37' 59"	148.00'	22.96'	45.55'	1.77'	1,710,827.3628	1,663,791.1815	1,710,807.9025	1,663,803.3568	1,710,785.6684	1,663,809.0651	1,710,748.8649	1,663,665.7141
FC018	16° 06' 11"	152.00'	21.50'	42.72'	1.51'	1,710,785.6684	1,663,809.0651	1,710,764.8421	1,663,814.4120	1,710,746.3160	1,663,825.3256	1,710,823.4666	1,663,956.2904

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY PLAN
STA. 137+00 TO STA. 150+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 21 of 157

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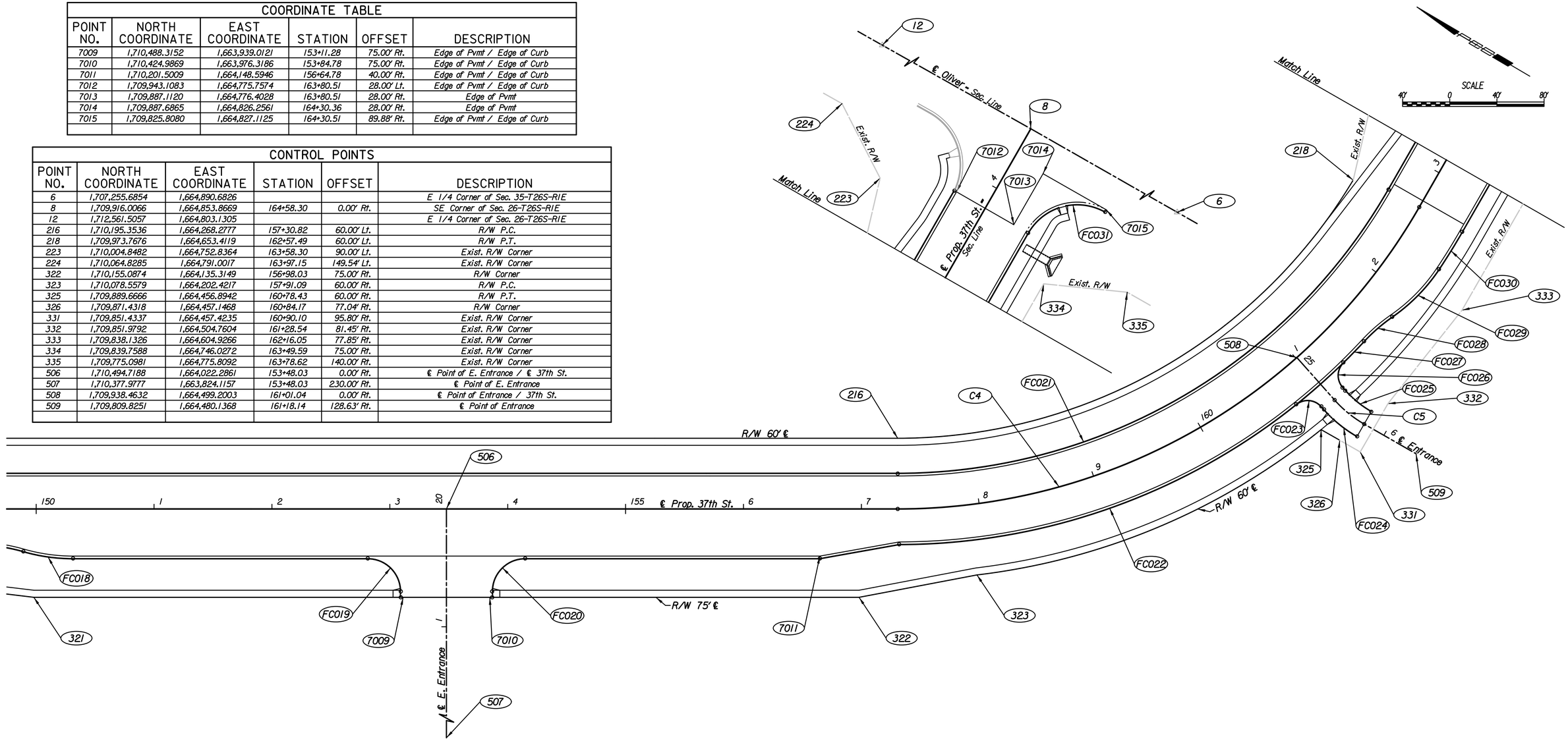
COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7009	1,710,488.3152	1,663,939.0121	153+11.28	75.00' Rt.	Edge of Pvmt / Edge of Curb
7010	1,710,424.9869	1,663,976.3186	153+84.78	75.00' Rt.	Edge of Pvmt / Edge of Curb
7011	1,710,201.5009	1,664,148.5946	156+64.78	40.00' Rt.	Edge of Pvmt / Edge of Curb
7012	1,709,943.1083	1,664,775.7574	163+80.51	28.00' Lt.	Edge of Pvmt / Edge of Curb
7013	1,709,887.1120	1,664,776.4028	163+80.51	28.00' Rt.	Edge of Pvmt
7014	1,709,887.6865	1,664,826.2561	164+30.36	28.00' Rt.	Edge of Pvmt
7015	1,709,825.8080	1,664,827.1125	164+30.51	89.88' Rt.	Edge of Pvmt / Edge of Curb

CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
6	1,707,255.6854	1,664,890.6826			E 1/4 Corner of Sec. 35-T26S-R1E
8	1,709,916.0066	1,664,853.8669	164+58.30	0.00' Rt.	SE Corner of Sec. 26-T26S-R1E
12	1,712,561.5057	1,664,803.1305			E 1/4 Corner of Sec. 26-T26S-R1E
216	1,710,195.3536	1,664,268.2777	157+30.82	60.00' Lt.	R/W P.C.
218	1,709,973.7676	1,664,653.4119	162+57.49	60.00' Lt.	R/W P.T.
223	1,710,004.8482	1,664,752.8364	163+58.30	90.00' Lt.	Exist. R/W Corner
224	1,710,064.8285	1,664,791.0017	163+97.15	149.54' Lt.	Exist. R/W Corner
322	1,710,155.0874	1,664,135.3149	156+98.03	75.00' Rt.	R/W Corner
323	1,710,078.5579	1,664,202.4217	157+91.09	60.00' Rt.	R/W P.C.
325	1,709,889.6666	1,664,456.8942	160+78.43	60.00' Rt.	R/W P.T.
326	1,709,871.4318	1,664,457.1468	160+84.17	77.04' Rt.	R/W Corner
331	1,709,851.4337	1,664,457.4235	160+90.10	95.80' Rt.	Exist. R/W Corner
332	1,709,851.9792	1,664,504.7604	161+28.54	81.45' Rt.	Exist. R/W Corner
333	1,709,838.1326	1,664,604.9266	162+16.05	77.85' Rt.	Exist. R/W Corner
334	1,709,839.7588	1,664,746.0272	163+49.59	75.00' Rt.	Exist. R/W Corner
335	1,709,775.0981	1,664,775.8092	163+78.62	140.00' Rt.	Exist. R/W Corner
506	1,710,494.7188	1,664,022.2861	153+48.03	0.00' Rt.	℄ Point of E. Entrance / ℄ 37th St.
507	1,710,377.9777	1,663,824.1157	153+48.03	230.00' Rt.	℄ Point of E. Entrance
508	1,709,938.4632	1,664,499.2003	161+01.04	0.00' Rt.	℄ Point of Entrance / 37th St.
509	1,709,809.8251	1,664,480.1368	161+18.14	128.63' Rt.	℄ Point of Entrance



CURVE DATA													
NO.	Δ	R	T	L	E	P.C. COORDINATES		P.I. COORDINATES		P.T. COORDINATES		C.C. COORDINATES	
						NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST
C4	60°09'29"	510.00'	295.39'	535.48'	79.37'	1,710,164.8993	1,664,216.5811	1,709,910.3899	1,664,366.5113	1,709,913.7940	1,664,661.8796	1,710,423.7601	1,664,656.0024
C5	18°36'15"	100.00'	16.38'	32.47'	1.33'	1,709,892.5168	1,664,484.3548	1,709,876.9307	1,664,479.3188	1,709,860.5525	1,664,479.5185	1,709,861.7713	1,664,579.5111
FC019	90°00'00"	28.00'	28.00'	43.98'	11.60'	1,710,530.9134	1,663,952.2182	1,710,506.7883	1,663,966.4302	1,710,492.5763	1,663,942.3051	1,710,516.7014	1,663,928.0931
FC020	90°00'00"	28.00'	28.00'	43.98'	11.60'	1,710,425.8015	1,663,981.6418	1,710,440.0135	1,664,005.7668	1,710,415.8884	1,664,019.9788	1,710,401.6764	1,663,995.8537
FC021	60°09'29"	480.00'	278.01'	503.98'	74.70'	1,710,180.1264	1,664,242.4294	1,709,940.5882	1,664,383.5402	1,709,943.7920	1,664,661.5339	1,710,423.7601	1,664,656.0024
FC022	38°37'30"	540.00'	189.24'	364.03'	32.20'	1,710,148.6221	1,664,191.3530	1,709,985.7905	1,664,287.7723	1,709,918.7655	1,664,464.7424	1,710,423.7601	1,664,656.0024
FC023	87°09'45"	15.50'	14.75'	23.58'	5.90'	1,709,918.7655	1,664,464.7424	1,709,913.5410	1,664,478.5370	1,709,899.5047	1,664,474.0018	1,709,904.2702	1,664,459.2526
FC024	18°36'15"	112.00'	18.35'	36.37'	1.49'	1,709,896.2063	1,664,472.9360	1,709,878.7499	1,664,467.2958	1,709,860.4062	1,664,467.5194	1,709,861.7713	1,664,579.5111
FC025	18°36'15"	88.00'	14.41'	28.57'	1.17'	1,709,860.6987	1,664,491.5176	1,709,875.1116	1,664,491.3419	1,709,888.8274	1,664,495.7735	1,709,861.7713	1,664,579.5111
FC026	87°09'45"	15.50'	14.75'	23.58'	5.90'	1,709,892.1258	1,664,496.8393	1,709,906.1620	1,664,501.3745	1,709,902.3273	1,664,515.6180	1,709,887.3602	1,664,511.5885
FC027	02°39'47"	540.00'	12.55'	25.10'	0.15'	1,709,902.3273	1,664,515.6180	1,709,899.0642	1,664,527.7381	1,709,896.3678	1,664,539.9967	1,710,423.7601	1,664,656.0024
FC028	12°17'14"	148.00'	15.93'	31.74'	0.85'	1,709,896.3678	1,664,539.9967	1,709,892.9455	1,664,555.5553	1,709,886.2905	1,664,570.0293	1,709,751.8232	1,664,508.2025
FC029	21°28'17"	152.00'	28.82'	56.96'	2.71'	1,709,886.2905	1,664,570.0293	1,709,874.2515	1,664,596.2130	1,709,872.6322	1,664,624.9864	1,710,024.3921	1,664,633.5270
FC030	03°52'53"	552.00'	18.70'	37.39'	0.32'	1,709,872.6322	1,664,624.9864	1,709,871.5812	1,664,643.6609	1,709,871.7968	1,664,662.3637	1,710,423.7601	1,664,656.0024
FC031	89°52'03"	48.00'	47.89'	75.29'	19.80'	1,709,873.1129	1,664,776.5641	1,709,873.6648	1,664,824.4500	1,709,825.7803	1,664,825.1127	1,709,825.1161	1,664,777.1172

No.	Revision	By	Date

37TH STREET NORTH

COORDINATE GEOMETRY PLAN STA. 150+00 TO STA. 164+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 22 of 157
Drawn by	SVB	Date	May, 2013	

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Curve No. FC001

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9500	101+92.00	30.00' Lt.	1,709,886.1734	1,659,603.7543	1,709,894.1729	1,659,603.6642	P.C.
9501	104+45.39	30.00' Lt.	1,709,926.2521	1,659,843.5910	1,709,933.8463	1,659,841.0753	1/2 Pt.
9502	106+98.78	30.00' Lt.	1,710,037.2895	1,660,059.9210	1,710,043.7606	1,660,055.2174	P.T.

Curve No. FC002

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9503	101+92.00	30.00' Rt.	1,709,826.1772	1,659,604.4299	1,709,818.1777	1,659,604.5200	P.C.
9504	104+45.39	30.00' Rt.	1,709,869.2960	1,659,862.4591	1,709,861.7019	1,659,864.9748	1/2 Pt.
9505	106+98.78	30.00' Rt.	1,709,988.7560	1,660,095.1985	1,709,982.2848	1,660,099.9021	P.T.

Curve No. FC003

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9506	114+05.60	30.00' Rt.	1,710,404.3355	1,660,666.9395	1,710,397.8644	1,660,671.6432	P.C.
9507	114+26.53	31.49' Rt.	1,710,415.4385	1,660,684.7445	1,710,408.3672	1,660,688.4857	1/2 Pt.
9508	114+47.04	35.92' Rt.	1,710,423.9118	1,660,703.9407	1,710,416.3825	1,660,706.6443	P.T.

Curve No. FC004

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9509	114+47.04	35.92' Rt.	1,710,423.9118	1,660,703.9407	1,710,416.3825	1,660,706.6443	P.C.
9510	114+68.10	40.47' Rt.	1,710,432.6142	1,660,723.6558	1,710,425.5429	1,660,727.3970	1/2 Pt.
9511	114+89.60	42.00' Rt.	1,710,444.0172	1,660,741.9420	1,710,437.5460	1,660,746.6456	P.T.

Curve No. FC005

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9512	117+39.60	42.00' Rt.	1,710,591.0064	1,660,944.1650	1,710,584.5353	1,660,948.8687	P.C.
9513	117+59.40	50.20' Rt.	1,710,596.0136	1,660,965.0021	1,710,588.1119	1,660,963.7523	1/2 Pt.
9514	117+67.60	70.00' Rt.	1,710,584.8202	1,660,983.2768	1,710,580.1166	1,660,976.8057	P.T.

Curve No. FC006

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9515	118+45.10	70.00' Rt.	1,710,630.3869	1,661,045.9660	1,710,635.0905	1,661,052.4371	P.C.
9516	118+53.30	50.20' Rt.	1,710,651.2240	1,661,040.9587	1,710,649.9742	1,661,048.8605	1/2 Pt.
9517	118+73.10	42.00' Rt.	1,710,669.4986	1,661,052.1522	1,710,663.0275	1,661,056.8558	P.T.

Curve No. FC007

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9518	120+77.89	42.00' Rt.	1,710,789.9085	1,661,217.8082	1,710,783.4374	1,661,222.5119	P.C.
9519	121+11.83	56.06' Rt.	1,710,798.4923	1,661,253.5290	1,710,790.5906	1,661,252.2792	1/2 Pt.
9520	121+25.89	90.00' Rt.	1,710,779.3036	1,661,284.8570	1,710,774.6000	1,661,278.3859	P.T.

Curve No. FC008

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9521	121+43.89	78.00' Rt.	1,710,799.5936	1,661,292.3616	1,710,804.2972	1,661,298.8327	P.C.
9522	121+57.95	44.06' Rt.	1,710,835.3143	1,661,283.7778	1,710,834.0645	1,661,291.6795	1/2 Pt.
9523	121+91.89	30.00' Rt.	1,710,866.6423	1,661,302.9665	1,710,860.1712	1,661,307.6701	P.T.

Curve No. FC009

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9524	124+63.98	30.00' Lt.	1,711,075.1508	1,661,487.7774	1,711,081.6219	1,661,483.0738	P.C.
9525	127+14.36	30.00' Lt.	1,711,193.6264	1,661,717.5638	1,711,201.2113	1,661,715.0203	1/2 Pt.
9526	129+64.75	30.00' Lt.	1,711,237.6366	1,661,972.3212	1,711,245.6352	1,661,972.1726	P.T.

Curve No. FC010

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9527	124+63.98	30.00' Rt.	1,711,026.6172	1,661,523.0548	1,711,020.1461	1,661,527.7585	P.C.
9528	127+14.36	30.00' Rt.	1,711,136.7397	1,661,736.6400	1,711,129.1548	1,661,739.1835	1/2 Pt.
9529	129+64.75	30.00' Rt.	1,711,177.6470	1,661,973.4357	1,711,169.6484	1,661,973.5843	P.T.

Curve No. FC011

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9530	133+10.68	30.00' Rt.	1,711,184.0726	1,662,319.3008	1,711,176.0740	1,662,319.4494	P.C.
9531	133+31.61	31.49' Rt.	1,711,182.9742	1,662,340.2552	1,711,175.0349	1,662,339.2711	1/2 Pt.
9532	133+52.12	35.92' Rt.	1,711,178.9234	1,662,360.8436	1,711,171.2031	1,662,358.7466	P.T.

Curve No. FC012

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9533	133+52.12	35.92' Rt.	1,711,178.9234	1,662,360.8436	1,711,171.2031	1,662,358.7466	P.C.
9534	133+73.18	40.47' Rt.	1,711,174.7631	1,662,381.9885	1,711,166.8239	1,662,381.0044	1/2 Pt.
9535	133+94.68	42.00' Rt.	1,711,173.6350	1,662,403.5092	1,711,165.6364	1,662,403.6578	P.T.

Curve No. FC013

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9536	136+44.68	42.00' Rt.	1,711,178.2788	1,662,653.4661	1,711,170.2802	1,662,653.6147	P.C.
9537	136+64.54	50.27' Rt.	1,711,170.3784	1,662,673.4849	1,711,164.6370	1,662,667.9139	1/2 Pt.
9538	136+72.67	70.20' Rt.	1,711,150.6063	1,662,681.9843	1,711,150.5141	1,662,673.9848	P.T.

Curve No. FC014

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9539	137+50.18	69.80' Rt.	1,711,152.4408	1,662,759.4683	1,711,152.5330	1,662,767.4678	P.C.
9540	137+58.45	50.13' Rt.	1,711,172.2623	1,662,767.3717	1,711,166.6912	1,662,773.1131	1/2 Pt.
9541	137+78.18	42.00' Rt.	1,711,180.7587	1,662,786.9463	1,711,172.7601	1,662,787.0949	P.T.

Curve No. FC015

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9542	140+97.43	30.00' Lt.	1,711,258.6764	1,663,104.8015	1,711,266.6750	1,663,104.6529	P.C.
9543	145+31.33	30.00' Lt.	1,711,150.5583	1,663,535.9950	1,711,157.5406	1,663,539.8999	1/2 Pt.
9544	149+65.23	30.00' Lt.	1,710,839.7655	1,663,853.8395	1,710,843.8260	1,663,860.7323	P.T.

Curve No. FC016

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9545	141+84.77	30.00' Rt.	1,711,195.7753	1,663,189.9811	1,711,187.8061	1,663,189.2795	P.C.
9546	145+64.04	30.00' Rt.	1,711,082.2634	1,663,533.9024	1,711,075.4422	1,663,529.7225	1/2 Pt.
9547	149+43.31	30.00' Rt.	1,710,827.3628	1,663,791.1815	1,710,823.1197	1,663,784.3995	P.T.

Curve No. FC017

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9548	149+43.31	30.00' Rt.	1,710,827.3628	1,663,791.1815	1,710,823.1197	1,663,784.3995	P.C.
9549	149+66.84	31.42' Rt.	1,710,807.2049	1,663,801.7304	1,710,804.0514	1,663,794.3782	1/2 Pt.
9550	149+89.12	36.04' Rt.	1,710,785.6684	1,663,809.0651	1,710,783.6790	1,663,801.3164	P.T.

Curve No. FC018

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9551	149+89.12	36.04' Rt.	1,710,785.6684	1,663,809.0651	1,710,783.6790	1,663,801.3164	P.C.
9552	150+09.99	40.50' Rt.	1,710,765.4200	1,663,815.8106	1,710,762.3649	1,663,808.4169	1/2 Pt.
9553	150+31.28	42.00' Rt.	1,710,746.3160	1,663,825.3256	1,710,742.2554	1,663,818.4327	P.T.

Curve No. FC019

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9554	152+81.28	42.00' Rt.	1,710,530.9134	1,663,952.2182	1,710,526.8528	1,663,945.3253	P.C.
9555	153+01.08	50.20' Rt.	1,710,509.6918	1,663,955.2015	1,710,511.6945	1,663,947.4562	1/2 Pt.
9556	153+09.28	70.00' Rt.	1,710,492.5763	1,663,942.3051	1,710,499.4692	1,663,938.2445	P.T.

Curve No. FC020

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9557	153+86.78	70.00' Rt.	1,710,425.8015	1,663,981.6418	1,710,418.9086	1,663,985.7023	P.C.
9558	153+94.98	50.20' Rt.	1,710,428.7848	1,664,002.8634	1,710,421.0396	1,664,000.8606	1/2 Pt.
9559	154+14.78	42.00' Rt.	1,710,415.8884	1,664,019.9788	1,710,411.8278	1,664,013.0859	P.T.

Curve No. FC021

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9560	157+30.82	30.00' Lt.	1,710,180.1264	1,664,242.4294	1,710,184.1870	1,664,249.3223	P.C.
9561	159+98.56	30.00' Lt.	1,710,005.6548	1,664,420.2314	1,710,012.6232	1,664,424.1610	1/2 Pt.
9562	162+66.30	30.00' Lt.	1,709,943.7920	1,664,661.5339	1,709,951.7915	1,664,661.4417	P.T.

Curve No. FC022

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9563	157+31.97	30.00' Rt.	1,710,148.6221	1,664,191.3530	1,710,144.5460	1,664,184.4693	P.C.
9564	159+03.88	30.00' Rt.	1,710,010.4356	1,664,308.4930	1,710,004.3122	1,664,303.3447	1/2 Pt.
9565	160+75.78	30.00' Rt.	1,709,918.7655	1,664,464.7424	1,709,911.2841	1,664,461.9089	P.T.

Curve No. FC023

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9566	160+75.78	30.00' Rt.	1,709,918.7655	1,664,464.7424	1,709,911.2841	1,664,461.9089	P.C.
9567	160+85.79	34.38' Rt.	1,709,910.9859	1,664,473.2221	1,709,907.5198	1,664,466.0120	1/2 Pt.
9568	160+90.01	44.95' Rt.	1,709,899.5047	1,664,474.0018	1,709,901.9643	1,664,466.3893	P.T.

Curve No. FC024

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9569	160+90.08	48.41' Rt.	1,709,896.2063	1,664,472.9360	1,709,898.6659	1,664,465.3235	P.C.
9570	160+91.72	66.49' Rt.	1,709,878.5266	1,664,468.7714	1,709,879.7234	1,664,460.8615	1/2 Pt.
9571	160+95.76	84.05' Rt.	1,709,860.4062	1,664,467.5194	1,709,860.3087	1,664,459.5200	P.T.

Curve No. FC025

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9572	161+15.47	76.59' Rt.	1,709,860.6987	1,664,491.5176	1,709,860.7962	1,664,499.5170	P.C.
9573	161+12.76	62.66' Rt.	1,709,874.9362	1,664,492.5014	1,709,873.7394	1,664,500.4113	1/2 Pt.
9574	161+12.00	48.41' Rt.	1,709,888.8274	1,664,495.7735	1,709,886.3677	1,664,503.3860	P.T.

Curve No. FC026

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9575	161+12.07	44.95' Rt.	1,709,892.1258	1,664,496.8393	1,709,889.6661	1,664,504.4518	P.C.
9576	161+16.28	34.38' Rt.	1,709,900.9802	1,664,504.1895	1,709,893.9505	1,664,508.0083	1/2 Pt.
9577	161+26.30	30.00' Rt.	1,709,902.3273	1,664,515.6180	1,709,894.6023	1,664,513.5383	P.T.

Curve No. FC027

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9578	161+26.30	30.00' Rt.	1,709,902.3273	1,664,515.6180	1,709,894.6023	1,664,513.5383	P.C.
9579	161+38.15	30.00' Rt.	1,709,899.2059	1,664,527.7727	1,709,891.4347	1,664,525.8730	1/2 Pt.
9580	161+50.00	30.00' Rt.	1,709,896.3678	1,664,539.9967	1,709,888.5546	1,664,538.2781	P.T.

Curve No. FC028

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9581	161+50.00	30.00' Rt.	1,709,896.3678	1,664,539.9967	1,709,888.5546	1,664,538.2781	P.C.
9582	161+64.93	31.08' Rt.	1,709,892.1350	1,664,555.2834	1,709,884.5506	1,664,552.7384	1/2 Pt.
9583	161+79.53	34.30' Rt.	1,709,886.2905	1,664,570.0293	1,709,879.0220	1,664,566.6873	P.T.

Curve No. FC029

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9584	161+79.53	34.30' Rt.	1,709,886.2905	1,664,570.0293	1,709,879.0220	1,664,566.6873	P.C.
9585	162+05.49	40.07' Rt.	1,709,876.8794	1,664,596.8661	1,709,869.1156	1,664,594.9366	1/2 Pt.
9586	162+31.75	42.00' Rt.	1,709,872.6322	1,664,624.9864	1,709,864.6448	1,664,624.5369	P.T.

Curve No. FC030

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9587	162+31.75	42.00' Rt.	1,709,872.6322	1,664,624.9864	1,709,864.6448	1,664,624.5369	P.C.
9588	162+49.02	42.00' Rt.	1,709,871.8980	1,664,643.6679	1,709,863.8999	1,664,643.4892	1/2 Pt.
9589	162+66.30	42.00' Rt.	1,709,871.7968	1,664,662.3637	1,709,863.7973	1,664,662.4558	P.T.

Curve No. FC031

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
9590	163+80.51	42.00' Rt.	1,709,873.1129	1,664,776.5641	1,709,865.1134	1,664,776.6563	P.C.
9591	164+14.41	56.02' Rt.	1,709,859.4849	1,664,810.6252	1,709,853.7568	1,664,805.0406	1/2 Pt.
9592	164+28.51	89.89' Rt.	1,709,825.7803	1,664,825.1127	1,709,825.6696	1,664,817.1134	P.T.

No.	Revision	By	Date

37TH STREET NORTH

CURVE STAKE-OUT TABLES

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 23 of 157
Drawn by	SVB	Date	May, 2013	

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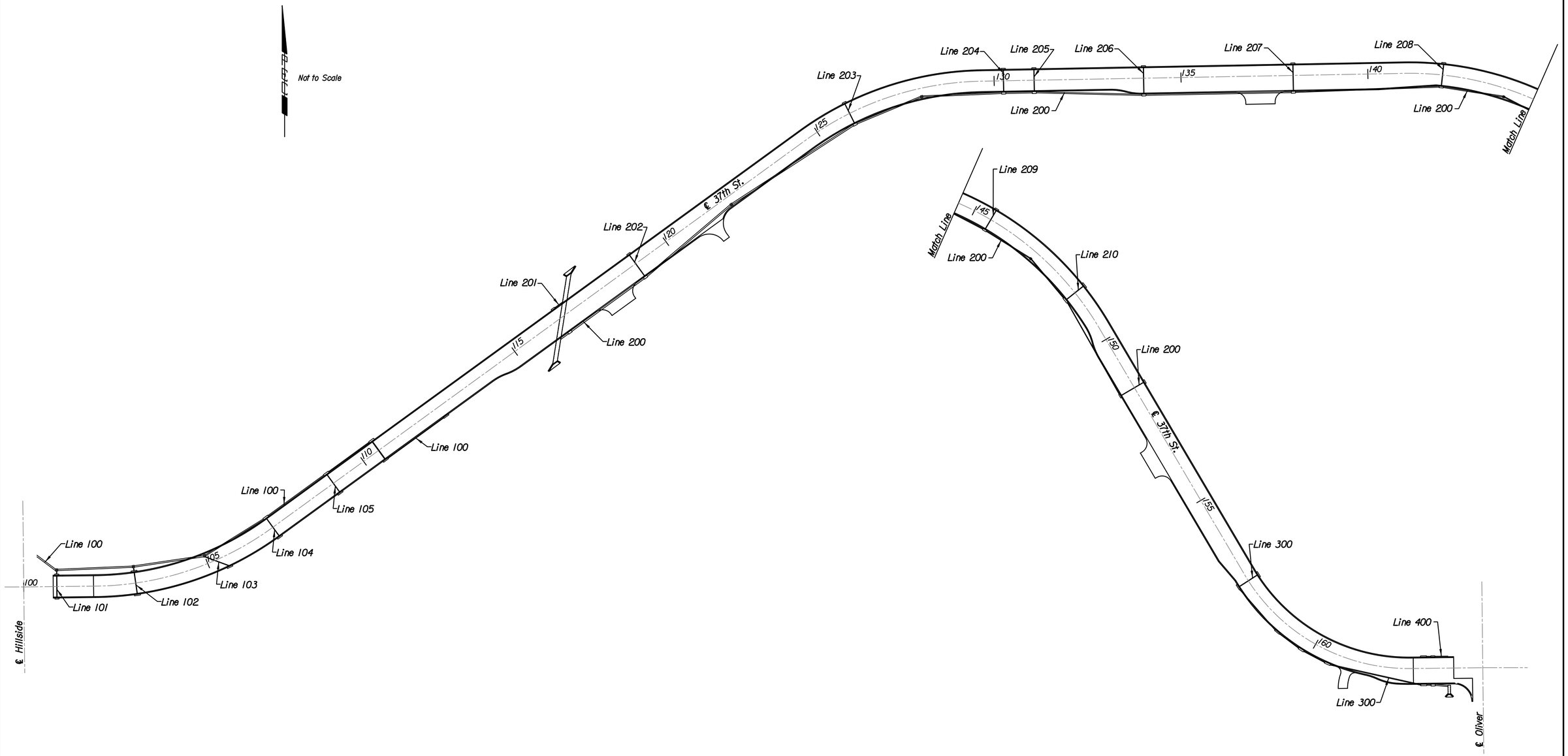
Not to Scale



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No.	Revision	By	Date

37TH STREET NORTH

STORMWATER SEWER KEYMAP

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 24 of 157
Drawn by	SVB	Date	May, 2013	

Sta. 100+66.4 SWS Line No. 100=
Sta. 5+00 SWS Line No. 101=
Sta. 100+88.50, 44.50' Lt. ℄ 37th St.
Construct R.C. Manhole
L=5'-0" W=5'-0" H=6'-2" Stack=1.17'
Install 42"x27"x66.4' SWS (RCPHE) (NW)
Connect to Exist. Curb Inlet (100)
Install 42"x27"x205.5' SWS (RCPHE) (E)
Install 15"x13.0' SWS (RCP) (S)
See Sh. No. 48-50, 52

Sta. 5+13 SWS Line No. 101=
Sta. 100+88.50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
Install 15"x63.0' SWS (RCP) (S)
See Sh. No. 45, 47, 52

Sta. 5+13 SWS Line No. 102=
Sta. 103+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
Install 15"x63.0' SWS (RCP) (S)
See Sh. No. 46, 47, 52

Sta. 102+71.9 SWS Line No. 100=
Sta. 5+00 SWS Line No. 102=
Sta. 103+00, 44.50' Lt. ℄ 37th St.
Construct R.C. Manhole
L=5'-0" W=5'-0" H=7'-4" Stack=1.33'
Install 42"x27"x192.6' SWS (RCPHE) (NE)
Install 15"x13.0' SWS (RCP) (S)
See Sh. No. 48-50, 52

Sta. 104+64.5 SWS Line No. 100=
Sta. 5+00 SWS Line No. 103=
Sta. 105+00, 22.50' Lt. ℄ 37th St.
Construct R.C. Manhole
L=5'-0" W=5'-0" H=6'-6" Stack=1.25'
Install 30"x193.2' SWS (RCP) (NE)
Install 15"x73.8' SWS (RCP) (SE)
See Sh. No. 48-50, 52

Sta. 5+76 SWS Line No. 101=
Sta. 100+88.50, 31.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 52

Sta. 5+76 SWS Line No. 102=
Sta. 103+00, 31.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
See Sh. No. 46, 47, 52

Sta. 5+73.8 SWS Line No. 103=
Sta. 105+50, 31.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
See Sh. No. 46, 47, 52

Line 100
Line 101
Line 102
Line 103
℄ Prop. 37th St.
Hillside
Merge Sign
Tele
Fiber
n=1350.80
(SE)=1347.16
(S)=1346.98
Inlet
24"-36" ENCP
OHE
Sign
Signal Pole
Top=1352.43
FL(NW)=1342.93
FL(E)=1342.93
FL(S)=1342.33
Traffic Signal Vault
BM-6
Traffic Signal Vault
Traffic Signal Vault
Top=1355.25
FL(NE)=1350.45
FL(W)=1349.30
FL(SW)=1349.20
Undgd Telephone Line (AT&T)
30" RCP
24" RCP
Fiber Optic Line (Level 3 Comm)
1" Water Service Line
12"x44" Storm Sewer
Asphalt
Fiber Optic Line (LEVEL 3 Comm)
Fiber Optic Marker
Fiber Optic Vault
Rim=1355.25
FL(N)=1352.25
Speed Limit Sign
Overhead Electric Line
Gas Line (KGS)
24" PCSC Water Line
1" CI Water Line
WV
BM-1
Traffic Signal Pole
Rim=1352.10
FL(N)=1349.25
Sign Post
SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.

100 101 102 103

Sta. 100+00.0
SWS Line No. 100
Exist. Curb Inlet
Top Elev.=1350.80

Sta. 100+66.4
SWS Line No. 100
Const. R.C. Manhole
Top Elev.=1352.63

Sta. 102+71.9
SWS Line No. 100
Const. R.C. Manhole
Top Elev.=1354.94

Sta. 104+64.5
SWS Line No. 100
Const. R.C. Manhole
Top Elev.=1354.88

+08 Tele.
+16 Elec.
+36 Fib. Opt.
+53 San. Sewer
+62 Elec.

SWS Exist. Ground Line
SWS Proposed Ground Line

E=1348.18
15" RCP (S)

E=1349.45
15" RCP (S)

E=1350.29
15" RCP (SE)

66.4 L.F. Sand Fill, Flush & Vibrate
66.4 L.F. 42"x27" RCPHE @ +0.48%

205.5 L.F. Sand Fill, Flush & Vibrate
205.5 L.F. 42"x27" RCPHE @ +0.50%

192.6 L.F. Sand Fill, Flush & Vibrate
192.6 L.F. 42"x27" RCPHE @ +0.40%

193.2 L.F. Sand Fill, Flush & Vibrate
193.2 L.F. 30" RCP @ +0.87%

E Inv=1346.98
E Out=1347.30
E Inv=1347.40
E Out=1348.43
E Inv=1348.50
E Out=1349.27
E Inv=1349.37

1347.22 1347.57 1347.82 1348.07 1348.32 1348.61 1348.81 1349.01 1349.21 1349.68 1350.11

1356 1354 1352 1350 1348 1346 1344

100 1 2 3 4 105

37TH STREET NORTH
STORM SEWER PLAN
LINE NO. 100
STA. 100+00 TO STA. 105+80
C.O.M. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
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Job No. 12275-002
Date May, 2013
Designed by RJS
Drawn by SVB

Sheet 25 of 157

Plotted By: svb Date: 4/24/2013 1:25:38 PM
FILE: I:\2012\12275\002\SWS\12275-002 SWS System 100-1.dgn

Sta. 106+57.6 SWS Line No. 100=
Sta. 5+00 SWS Line No. 104=
Sta. 107+00, 32' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 30"x200.0' SWS (RCP) (NE)
Install 15"x63.5' SWS (RCP) (SE)
See Sh. No. 46, 47, 52

104

Sta. 108+57.6 SWS Line No. 100=
Sta. 5+00 SWS Line No. 105=
Sta. 109+00, 32' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 24"x150.0' SWS (RCP) (NE)
Install 15"x63.5' SWS (RCP) (SE)
See Sh. No. 46, 47, 52

105

Sta. 110+07.6 SWS Line No. 100=
Sta. 110+50, 32' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 24"x63.5' SWS (RCP) (SE)
See Sh. No. 46, 47, 52

106

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.
2
0

Line 100
Line 104
Line 105
Line 100
7
8
9
℄ Prop. 37th St.
110
1
2
Line 100

W W W

Sta. 5+31.4 SWS Line No. 201=
Sta. 116+50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
Install 15"x31.4' SWS (RCP) (NE)
Connect to RCB (217)
See Sh. No. 45, 47, 53

(218)

(217)

Line 201

Sta. 5+76 SWS Line No. 202=
Sta. 119+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

(219)

Line 202

℄ Prop. 37th St.

Line 200

(200)

(201)
Sta. 200+30.4 SWS Line No. 200=
Sta. 116+50, 44.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 42"x30.4' SWS (RCP) (SW)
Connect to RCB (200)
Install 42"x250.0' SWS (RCP) (NE)
See Sh. No. 45, 47, 53

℄ W. Entrance

(202)
Sta. 202+80.4 SWS Line No. 200=
Sta. 5+00 SWS Line No. 202=
Sta. 119+00, 44.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 42"x300.8' SWS (RCP) (NE)
Install 15"x76.0' SWS (RCP) (NW)
See Sh. No. 45, 47, 53

℄ Service Entrance

(203)
Sta. 205+81.2 SWS Line No. 200=
Sta. 122+00, 22.50' Rt. ℄ 37th St.
Construct R.C. Manhole
L=5'-0" W=5'-0" H=15'-0" Stack=1.25'
Install 42"x394.6' SWS (RCP) (NE)
See Sh. No. 48-50, 53

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

(200) (201) (202) (203)

Sta. 200+00
SWS Line No. 200
Connect to RCB

Sta. 200+30.4
SWS Line No. 200
Const. Std. Type I Curb Inlet
Top Elev.=1367.26

Sta. 202+80.4
SWS Line No. 200
Const. Std. Type I Curb Inlet
Top Elev.=1371.76

Sta. 205+81.2
SWS Line No. 200
Const. Std. R.C. Manhole
Top Elev.=1375.03

℄ Proposed 10'x5' RCB

SWS Exist. Ground Line

SWS Proposed Ground Line

℄ 78.50' Ent.

℄ 19' Ent.

℄=1362.55
15" RCP (NW)

30.4 L.F. Sand Fill, Flush & Vibrate

30.4 L.F. 42" RCP @ +1.30%

250.0 L.F. Sand Fill, Flush & Vibrate

250.0 L.F. 42" RCP @ +0.29%

300.8 L.F. Sand Fill, Flush & Vibrate

300.8 L.F. 42" RCP @ +0.25%

| | | |

Sta. 5+64 SWS Line No. 203=
Sta. 126+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

220

Fence

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

Line 203

℄ Prop. 37th St.

2 3 4 125 6 7 8

Light to Medium Timber

Line 200

203

204

205

Sta. 209+75.8 SWS Line No. 200=
Sta. 5+00 SWS Line No. 203=
Sta. 126+00, 32.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 36"x193.1' SWS (RCP) (NE)
Install 15"x64.0' SWS (RCP) (NW)
See Sh. No. 45, 47, 53

Sta. 211+68.9 SWS Line No. 200=
Sta. 128+00, 22.50' Rt. ℄ 37th St.
Construct R.C. Manhole
L=5'-0" W=5'-0" H=9'-0" Stack=1.25'
Install 36"x219.5' SWS (RCP) (E)
See Sh. No. 48-50, 53

203 — Sta. 205+81.2, SWS Line No. 200, Const. Std R.C. Manhole, Top Elev.=1375.03

204 — Sta. 209+75.8, SWS Line No. 200, Const. Std. Type I Curb Inlet, Top Elev.=1373.62

205 — Sta. 211+68.9, SWS Line No. 200, Const. Std. R.C. Manhole, Top Elev.=1372.60

SWS Proposed Ground Line

SWS Exist. Ground Line

1376 1374 1372 1370 1368 1366 1364 1362 1360

℄ Out= 1361.12
℄ In= 1361.22
1361.27 1361.39 1361.52 1361.64 1361.77 1361.89 1362.02 1362.15
℄ Out= 1362.21
℄ In= 1362.70
1362.92 1363.38 1363.83 1364.29
℄ Out= 1364.46
℄ In= 1364.56

394.6 L.F. Sand Fill, Flush & Vibrate
394.6 L.F. 42" RCP @ +0.25%

℄=1364.48
15" RCP (NW)

193.1 L.F. Sand Fill, Flush & Vibrate
193.1 L.F. 36" RCP @ +0.91%

219.5 L.F. Sand Fill, Flush & Vibrate
219.5 L.F. 36" RCP @ +0.51%

6 7 8 9 210 1 2

37TH STREET NORTH

STORM SEWER PLAN

LINE NO. 200
STA. 205+80 TO STA. 211+80
C.O.M. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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PEC

Job No. 12275-002
Date May, 2013
Designed by RJS
Drawn by SVB

Sheet 28 of 157

Plotted By: svb Date: 4/24/2013 11:31:04 PM
FILE: I:\2012\12275\002\SWS\12275-002 SWS System 200-2.dgn

NORTH

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.

PROFILE: Horiz. same as above

Vert. 2 0

Sta. 5+64 SWS Line No. 204=
Sta. 130+25, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

Sta. 5+64 SWS Line No. 205=
Sta. 131+07, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

Sta. 5+76 SWS Line No. 206=
Sta. 134+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

221 222 223

Line 204 Line 205 Line 206 Line 200

℄ Prop. 37th St.

1/4 Sec. Line

Fence

Light to Medium Timber

9 130 1 2 3 4

W

206 207 208

Sta. 213+88.4 SWS Line No. 200=
Sta. 5+00 SWS Line No. 204=
Sta. 130+25, 32.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 36"x82.0' SWS (RCP) (E)
Install 15"x64.0' SWS (RCP) (N)
See Sh. No. 45, 47, 53

Sta. 214+70.4 SWS Line No. 200=
Sta. 5+00 SWS Line No. 205=
Sta. 131+07, 32.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 36"x293.2' SWS (RCP) (E)
Install 15"x64.0' SWS (RCP) (N)
See Sh. No. 45, 47, 53

Sta. 217+63.6 SWS Line No. 200=
Sta. 5+00 SWS Line No. 206=
Sta. 134+00, 44.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 36"x400.0' SWS (RCP) (E)
Install 15"x76.0' SWS (RCP) (N)
See Sh. No. 45, 47, 53

206 Sta. 213+88.4 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=371.84

207 Sta. 214+70.4 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=371.61

208 Sta. 217+63.6 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=372.12

SWS Exist. Ground Line

SWS Proposed Ground Line

E=1367.21 15" RCP (N)

E=1367.85 15" RCP (N)

E=1368.71 15" RCP (N)

1376 1374 1372 1370 1368 1366 1364 1362 1360

219.5 L.F. Sand Fill, Flush & Vibrate

82.0 L.F. Sand Fill, Flush & Vibrate

293.2 L.F. Sand Fill, Flush & Vibrate

400.0 L.F. Sand Fill, Flush & Vibrate

219.5 L.F. 36" RCP @ +0.51%

82.0 L.F. 36" RCP @ +0.37%

293.2 L.F. 36" RCP @ +0.26%

400.0 L.F. 36" RCP @ +0.21%

℄ Out=1365.69
℄ In=1365.79

℄ Out=1366.09
℄ In=1366.19

℄ Out=1366.95
℄ In=1367.05

1364.72 1364.98 1365.24 1365.49 1365.83 1366.02 1366.27 1366.40 1366.53 1366.66 1366.79 1366.91

2 3 4 215 6 7

STORM SEWER PLAN

37TH STREET NORTH

LINE NO. 200

STA. 2I1+80 TO STA. 217+80

C.O.W. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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PEC

Job No. 12275-002
Date May, 2013
Designed by RJS
Drawn by SVB

Sheet 29 of 157

Plotted By: svb Date: 4/22/2013 7:42:59 PM
FILE: I:\2012\12275\002\SWS\12275-002 SWS System 200-3.dgn

Sta. 5+76 SWS Line No. 207=
Sta. 138+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53
(224)

NORTH

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.

135 6 7 ℄ Prop. 37th St. 8 9 140

to Medium Timber

Line 200

Line 207

℄ N. Entrance

(209)
Sta. 221+63.6 SWS Line No. 200=
Sta. 5+00 SWS Line No. 207=
Sta. 138+00, 44.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 30"x395.8' SWS (RCP) (E)
Install 15"x76.0' SWS (RCP) (N)
See Sh. No. 45, 47, 53

(209)

℄ 78.50' Ent.

Sta. 221+63.6
SWS Line No. 200
Const. Std. Type I Curb Inlet
Top Elev.=1373.40

SWS Exist. Ground Line

SWS Proposed Ground Line

℄=1369.57
15" RCP (N)

1374
1372
1370
1368
1366
1364

400.0 L.F. Sand Fill, Flush & Vibrate
400.0 L.F. 36" RCP @ +0.21%

395.8 L.F. Sand Fill, Flush & Vibrate
395.8 L.F. 30" RCP @ +0.30%

℄ OUT=1367.90
℄ IN=1368.40

1367.13 1367.23 1367.34 1367.45 1367.55 1367.66 1367.76 1367.87 1368.51 1368.66 1368.81 1368.96

8 9 220 1 2 3

37TH STREET NORTH
STORM SEWER PLAN
LINE NO. 200
STA. 217+80 TO STA. 223+80
C.O.W. PROJ. NO. 472-85083

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PEC

Job No.	12275-002
Date	May, 2013
Designed by	RJS
Drawn by	SVB

Sheet 30 of 157

Plotted By: svb Date: 4/24/2013 11:35:36 PM
FILE: I:\2012\12275\002\SWS\12275-002 SWS System 200-4.dgn

Sta. 5+63.5 SWS Line No. 208=
Sta. 142+00, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

225

Sta. 5+63.5 SWS Line No. 209=
Sta. 145+50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

226

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

℄ Prop. 37th St.

Line 208

Line 200

Line 209

Light to Medium Timber

Light to Medium Timber

210

Sta. 225+59.4 SWS Line No. 200=
Sta. 5+00 SWS Line No. 208=
Sta. 142+00, 32' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=4'-0"
Install 30"x169.1' SWS (RCP) (E)
Install 15"x63.5' SWS (RCP) (N)
See Sh. No. 45, 47, 53

211

Sta. 227+28.6 SWS Line No. 200=
Sta. 143+75, 22.50' Rt. ℄ 37th St.
Construct R.C. Manhole
L=4'-0" W=4'-0" H=6'-6" Stack=1.25'
Install 24"x169.1' SWS (RCP) (SE)
See Sh. No. 48-50, 53

212

Sta. 228+97.7 SWS Line No. 200=
Sta. 5+00 SWS Line No. 209=
Sta. 145+50, 32' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=4'-0"
Install 24"x145.1' SWS (RCP) (SE)
Install 15"x63.5' SWS (RCP) (NE)
See Sh. No. 45, 47, 53

210 Sta. 225+59.4 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=1375.04

211 Sta. 227+28.6 SWS Line No. 200 Const. Std. R.C. Manhole Top Elev.=1375.42

212 Sta. 228+97.7 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=1376.32

SWS Exist. Ground Line

SWS Proposed Ground Line

℄=1370.84
15" RCP (N)

℄=1372.28
15" RCP (NE)

395.8 L.F. Sand Fill, Flush & Vibrate
395.8 L.F. 30" RCP @ +0.30%

169.1 L.F. Sand Fill, Flush & Vibrate
169.1 L.F. 30" RCP @ +0.16%

169.1 L.F. Sand Fill, Flush & Vibrate
169.1 L.F. 24" RCP @ +0.64%

145.1 L.F. Sand Fill, Flush & Vibrate
145.1 L.F. 24" RCP @ +0.30%

1376	1374	1372	1370	1368

4	225	6	7	8	9
1369.11	1369.26	1369.41	1369.56	1369.75	1369.83	1369.91	1370.59	1370.91	1371.22	1371.79
			℄ Out=1369.59	℄ In=1369.69			℄ Out=1369.96	℄ In=1370.45			℄ Out=1371.53	℄ In=1371.63		

37TH STREET NORTH
STORM SEWER PLAN
LINE NO. 200
STA. 223+80 TO STA. 229+80
C.O.W. PROJ. NO. 472-85063

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
333 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

PEC

Designed by	RJS
Drawn by	SVB
Job No.	12275-002
Date	May, 2013

Plotted By: svb Date: 4/24/2013 11:37:34 PM
FILE: I:\2012\12275\002\SWS\12275-002 SWS System 200-5.dgn

Sta. 5+63.5 SWS Line No. 210=
Sta. 148+50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
See Sh. No. 46, 47, 53

227

Sta. 235+58.1 SWS Line No. 200=
Sta. 151+50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
See Sh. No. 45, 47, 53

216

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.
2
0

Line 210

Line 200

℄ Prop. 37th St.

Line 200

213

Sta. 230+42.8 SWS Line No. 200=
Sta. 147+00, 22.50' Rt. ℄ 37th St.
Construct R.C. Manhole
L=4'-0" W=4'-0" H=6'-0" Stack=1.25'
Install 24"x145.1' SWS (RCP) (SE)
See Sh. No. 48-50, 53

214

Sta. 231+87.9 SWS Line No. 200=
Sta. 5+00 SWS Line No. 210=
Sta. 148+50, 32' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 15"x295.2' SWS (RCP) (SE)
Install 15"x63.5' SWS (RCP) (NE)
See Sh. No. 46, 47, 53

215

Sta. 234+83.1 SWS Line No. 200=
Sta. 151+50, 43.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=3'-0"
Install 15"x75.0' SWS (RCP) (NE)
See Sh. No. 45, 47, 53

Stacy Timber

213 Sta. 230+42.8 SWS Line No. 200 Const. Std. R.C. Manhole Top Elev.=1377.10

214 Sta. 231+87.9 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=1378.24

215 Sta. 234+83.1 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=1379.80

216 Sta. 235+58.1 SWS Line No. 200 Const. Std. Type I Curb Inlet Top Elev.=1380.16

SWS Exist. Ground Line

SWS Proposed Ground Line

℄ 37th St.

℄-1374.36
15" RCP (NE)

1382 1380 1378 1376 1374 1372 1370

145.1 L.F. Sand Fill, Flush & Vibrate
145.1 L.F. 24" RCP @ +0.30%

145.1 L.F. Sand Fill, Flush & Vibrate
145.1 L.F. 24" RCP @ +1.00%

295.2 L.F. Sand Fill, Flush & Vibrate
295.2 L.F. 15" RCP @ +0.74%

75.0 L.F. Sand Fill, Flush & Vibrate
75.0 L.F. 15" RCP @ +0.48%

| | | |

Sta. 300+40.1 SWS Line No. 300=
Sta. 163+25, 44.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=10'-0" W=5'-0"
Install 36"x40.1' SWS (RCP) (E)
Connect to RCB (300)
Install 30"x25.0' SWS (RCP) (W)
See Sh. No. 45, 47, 54

Sta. 300+65.1 SWS Line No. 300=
Sta. 163+00, 44' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 24"x263.7' SWS (RCP) (NW)
See Sh. No. 46, 47, 54

Sta. 303+28.8 SWS Line No. 300=
Sta. 160+50, 32' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 24"x79.6' SWS (RCP) (NW)
See Sh. No. 46, 47, 54

Sta. 304+08.4 SWS Line No. 300=
Sta. 159+75, 32' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=4'-0"
Install 18"x79.6' SWS (RCP) (NW)
See Sh. No. 46, 47, 54

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.

℄ Proposed 6'x4' RCB Extension
Sta. 300+00
SWS Line No. 300
Connect to RCB
℄ In=1366.16

Sta. 300+40.1
SWS Line No. 300
Const. Std. Type I Curb Inlet
Top Elev.=1372.42
℄ Out=1366.76
℄ In=1367.26

Sta. 300+65.1
SWS Line No. 300
Const. Std. Type I Curb Inlet
Top Elev.=1372.64
℄ Out=1367.34
℄ In=1368.50

Sta. 303+28.8
SWS Line No. 300
Const. Std. Type I Curb Inlet
Top Elev.=1374.33
℄ Out=1370.08
℄ In=1370.17

Sta. 304+08.4
SWS Line No. 300
Const. Std. Type I Curb Inlet
Top Elev.=1375.14
℄ Out=1370.89
℄ In=1371.37

SWS Exist. Ground Line
SWS Proposed Ground Line
+48 20" Water (Record Info.)
+62 TV Fib. Opt.
℄ 25' Ent.
+04 Gas
+81 Tele.
+00 Gas
+06 Gas
+20 Tele.

40.1 L.F. Sand Fill, Flush & Vibrate
40.1 L.F. 36" RCP @ +1.50%
25.0 L.F. 30" RCP @ +2.70%
25.0 L.F. Sand Fill, Flush & Vibrate
263.7 L.F. Sand Fill, Flush & Vibrate
263.7 L.F. 24" RCP @ +0.60%
79.6 L.F. Sand Fill, Flush & Vibrate
79.6 L.F. 24" RCP @ +0.90%
79.6 L.F. Sand Fill, Flush & Vibrate
79.6 L.F. 18" RCP @ +1.10%

1368.71 1369.01 1369.31 1369.61 1369.91 1370.36 1370.81 1371.83

37TH STREET NORTH
STORM SEWER PLAN
LINE NO. 300
STA. 300+00 TO STA. 304+60
C.O.M. PROJ. NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 12275-002
Date May, 2013
Designed by RJS
Drawn by SVB
Sheet 33 of 157

Plotted By: svb Date: 4/29/2013 2:28:27 PM
FILE: I:\2012\12275.002\SWS\12275-002 SWS System 300-1.dgn

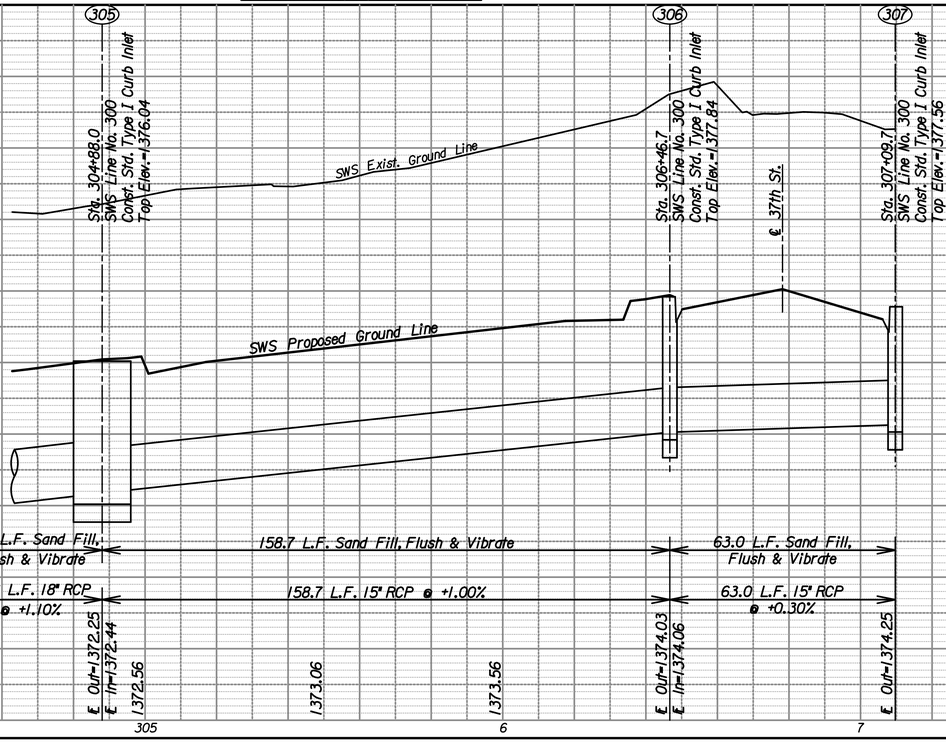
Sta. 304+88.0 SWS Line No. 300=
Sta. 159+00, 31.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
Install 15"x158.7' SWS (RCP) (NW)
See Sh. No. 46, 47, 54

Sta. 306+46.7 SWS Line No. 300=
Sta. 157+50, 31.50' Rt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
Install 15"x63.0' SWS (RCP) (NE)
See Sh. No. 46, 47, 54

Sta. 307+09.7 SWS Line No. 300=
Sta. 157+50, 31.50' Lt. ℄ 37th St.
Construct Std. Type I Curb Inlet
L=15'-0" W=3'-0"
See Sh. No. 46, 47, 54

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 2 0

Line 300
Line 300
℄ Prop. 37th St.
℄ E. Entrance
Spoil Pile
Heavy Timber
6
8
7
9
155
4
20



37TH STREET NORTH
STORM SEWER PLAN
LINE NO. 300
STA. 304+60 TO STA. 307+09.7
C.O.M. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No.	12275-002
Date	May, 2013
Designed by	RJS
Drawn by	SVB

Sheet 34 of 157

Plotted By: svb Date: 4/24/2013 1:46:19 PM
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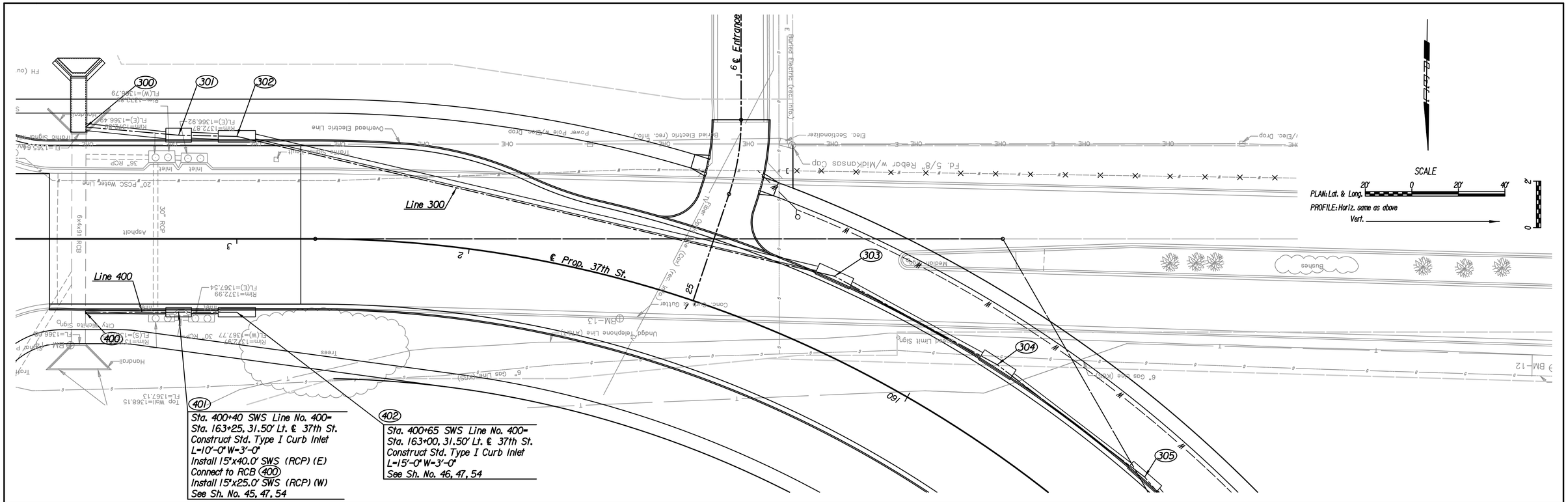

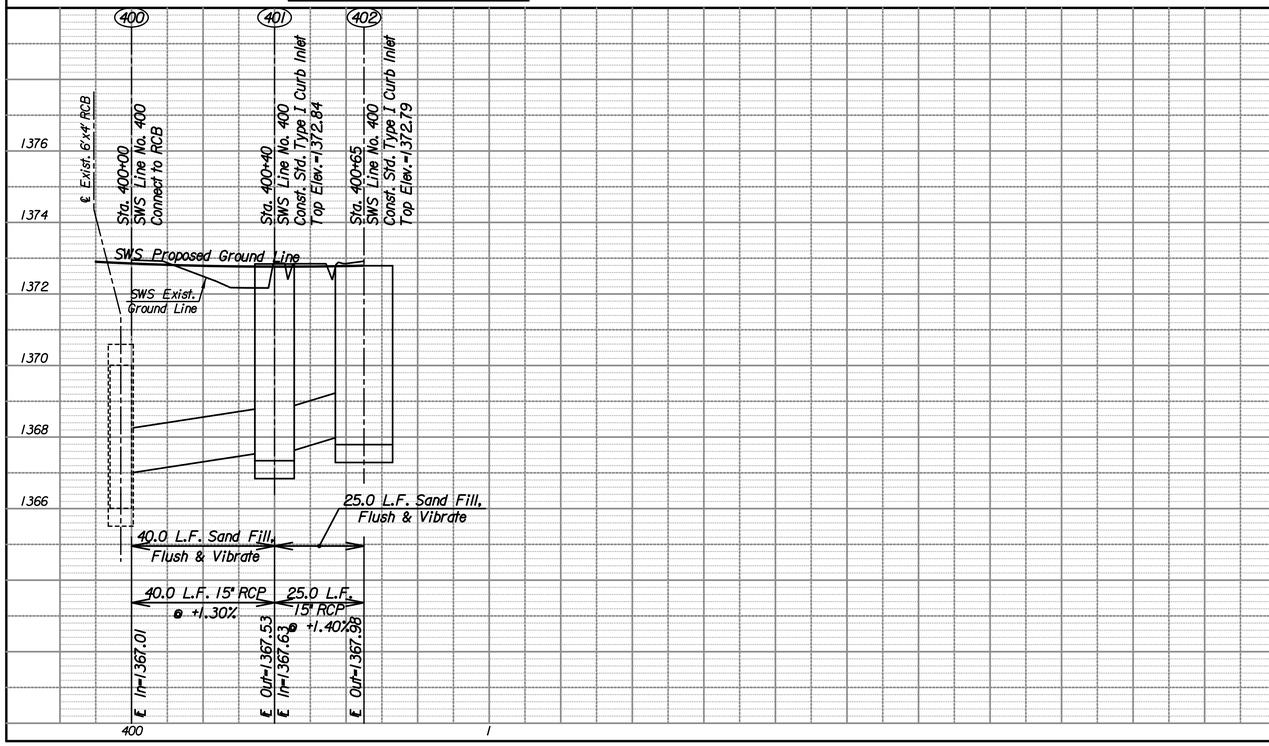

37TH STREET NORTH

STORM SEWER PLAN

LINE NO. 400

STA. 400+00 TO STA. 400+65

C.O.M. PROJ. NO. 472-85083

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No.	12275-002
Date	May, 2013
Designed by	RJS
Drawn by	SVB

Plotted By: svb Date: 4/29/2013 2:36:11 PM
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Plotted By: svb Date: 4/23/2013 3:10:44 PM
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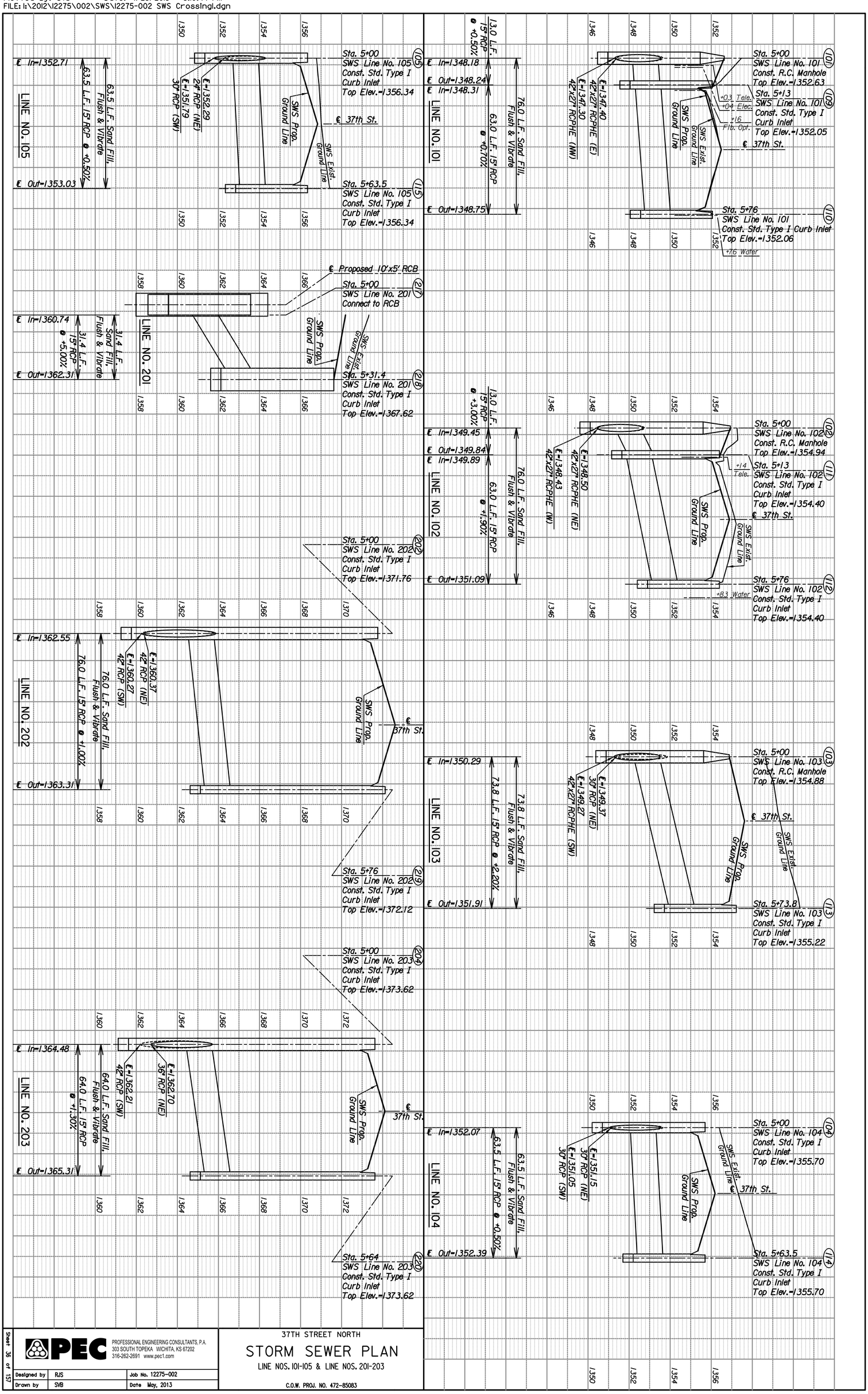

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Designed by	RJS	Job No. 12275-002
Drawn by	SVB	Date May, 2013

37TH STREET NORTH

STORM SEWER PLAN

LINE NOS. 101-105 & LINE NOS. 201-203

C.O.W. PROJ. NO. 472-85083

Sheet 36 of 157

Plotted By: svb Date: 4/23/2013 3:25:55 PM
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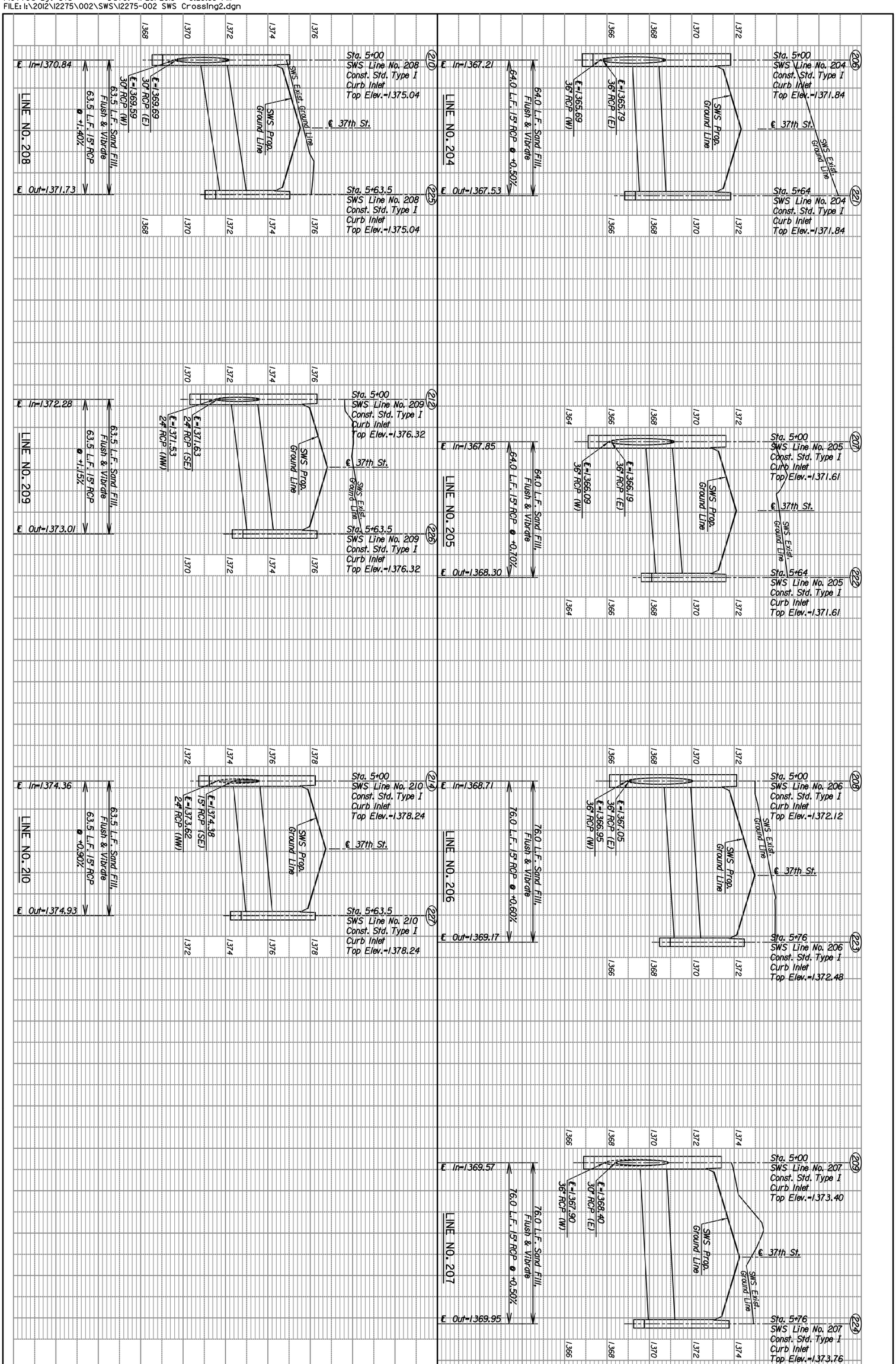

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Designed by	RJS	Job No. 12275-002
Drawn by	SVB	Date May, 2013

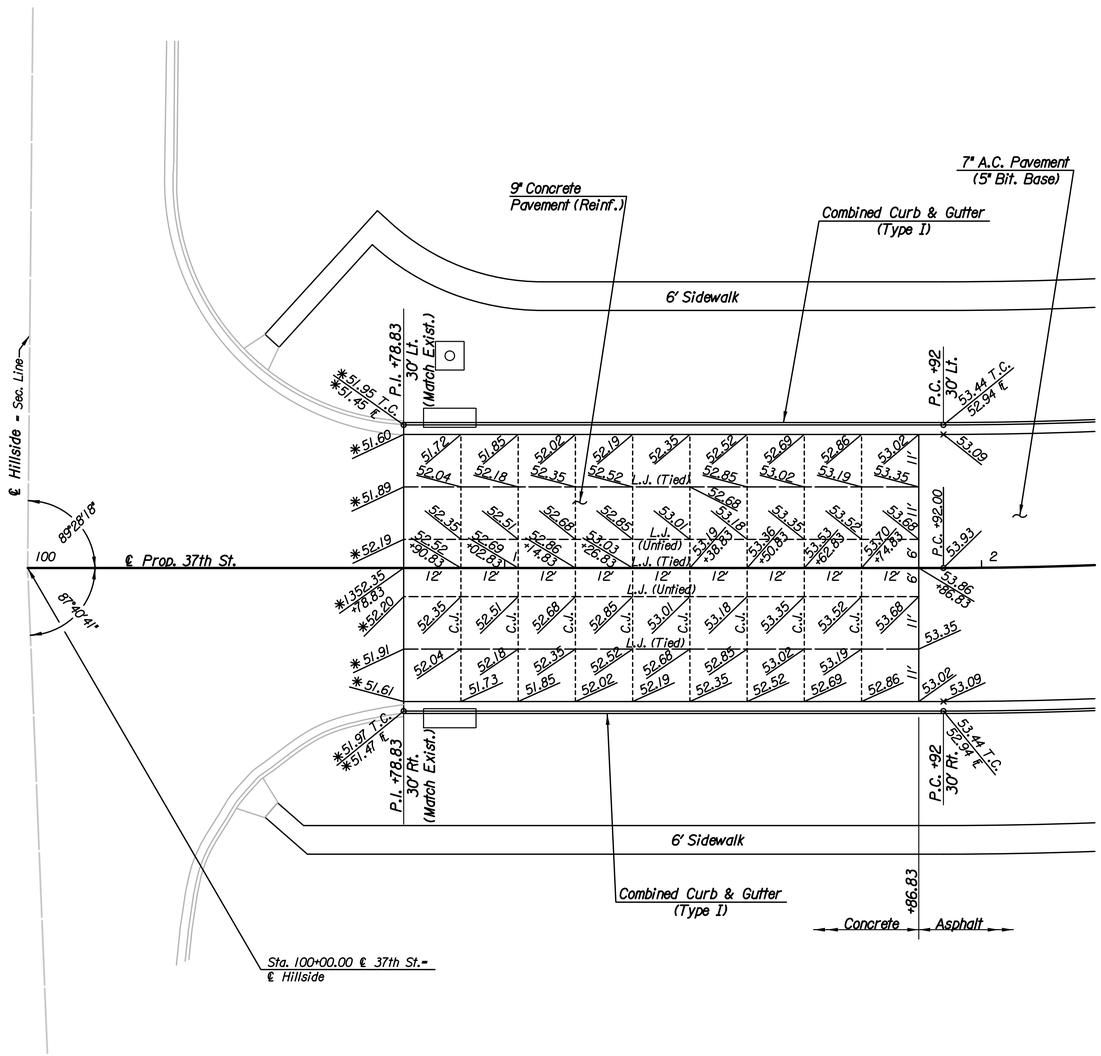
37TH STREET NORTH

STORM SEWER PLAN

LINE NOS. 204-210

C.O.W. PROJ. NO. 472-85083

Sheet 37 of 157



LEGEND

- ✱ Match Existing
- † Place Pavement integral with Curb & Gutter
- ——— Longitudinal Joint (L.J.) (Tied)
- – – – – Longitudinal Joint (L.J.) (Untied)
- ------- Transverse Joint (C.J.)
- ø Omit Dowels or Tie Bars

No.	Revision	By	Date

37TH STREET NORTH

INTERSECTION DETAILS 37TH ST. & HILLSIDE 37TH ST. & OLIVER

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 38 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/29/2013 2:41:45 PM
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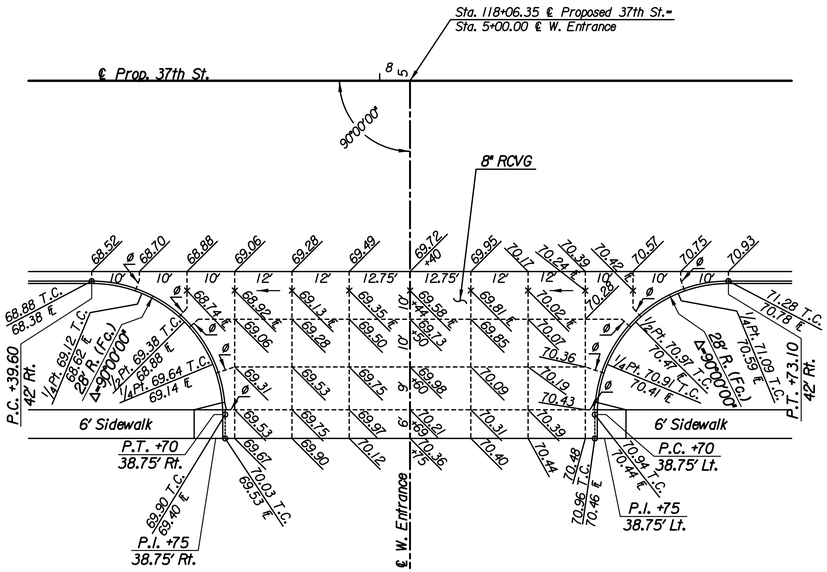
Sta. 118+06.35 ℄ Proposed 37th St.=
Sta. 5+00.00 ℄ W. Entrance
℄ Prop. 37th St.
90°00'00"
8" RCVG
68.52
68.70
68.88
69.06
69.28
69.49
69.72 +40
69.95
70.17
70.39
70.57
70.75
70.93
68.88 T.C.
68.38 ℄
P.C. +39.60
42' Rt.
1/4 Pt. 69.12 T.C.
69.62 ℄
28' R. (Fc.)
Δ=90°00'00"
1/4 Pt. 69.38 T.C.
68.88 ℄
1/4 Pt. 69.64 T.C.
69.14 ℄
69.14 ℄
69.31
69.53
69.75
69.97
70.19
70.43
69.48
69.70
69.92
70.14
70.36
70.40
6' Sidewalk
P.T. +70
38.75' Rt.
69.90 T.C.
69.40 ℄
69.67
70.03 T.C.
69.53 ℄
P.I. +75
38.75' Rt.
℄ W. Entrance
1/4 Pt. 70.97 T.C.
70.47 ℄
1/4 Pt. 70.91 T.C.
70.41 ℄
28' R. (Fc.)
Δ=90°00'00"
1/4 Pt. 71.09 T.C.
70.59 ℄
71.28 T.C.
70.78 ℄
P.T. +73.10
42' Rt.
70.48
70.98 T.C.
70.46 ℄
70.94 T.C.
70.44 ℄
P.C. +70
38.75' Lt.
P.I. +75
38.75' Lt.
Sta. 121+34.89 ℄ Proposed 37th St.=
Sta. 10+00.00 ℄ Service Entrance
℄ Prop. 37th St.
90°00'00"
8" RCVG
74.01
74.09
74.16
74.23
74.29
74.34
74.37
74.40
74.44
74.46
74.64
74.86
74.36 T.C.
73.86 ℄
P.C. +77.89
42' Rt.
1/4 Pt. 74.52 T.C.
74.02 ℄
48' R. (Fc.)
Δ=90°00'00"
1/4 Pt. 74.73 T.C.
74.23 ℄
74.23
74.30
74.38
74.45
74.53
74.60
74.68
74.75
74.83
74.91
74.99
75.06
75.14
75.21 T.C.
74.71 ℄
1/4 Pt. 74.99 T.C.
74.49 ℄
P.T. +91.89
30' Rt.
6' Sidewalk
1/4 Pt. 75.03 T.C.
74.53 ℄
P.T. +90
9' Rt.
75.36 T.C.
74.86 ℄
℄ Service Entrance
1/4 Pt. 74.78 T.C.
74.28 ℄
1/4 Pt. 74.86 T.C.
74.36 ℄
P.C. +78
9' Lt.
P.I. +90
9' Lt.
Sta. 137+11.92 ℄ Proposed 37th St.=
Sta. 15+00.00 ℄ N. Entrance
89°35'45"
8" RCVG
72.55
72.59
72.62
72.65
72.69
72.73
72.77 +40
72.81
72.85
72.88
72.92
72.95
72.98
73.33 T.C.
72.83 ℄
72.91 T.C.
72.41 ℄
P.C. +44.68
42' Rt.
1/4 Pt. 72.94 T.C.
72.44 ℄
28' R. (Fc.)
Δ=90°24'15"
1/4 Pt. 72.99 T.C.
72.49 ℄
72.49 ℄
72.58
72.63
72.68
72.74 +44
72.78
72.81
72.86
72.91
72.96
73.01
73.07
73.12
73.17
73.22
73.24 +69
73.27
73.30
73.34
73.39
73.44
73.49
73.54
73.59
73.64
73.69
73.74
73.79
73.84
73.89
73.94
73.99
74.04
74.09
74.14
74.19
74.24
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74.34
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74.59
74.64
74.69
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74.79
74.84
74.89
74.94
74.99
75.04
75.09
75.14
75.19
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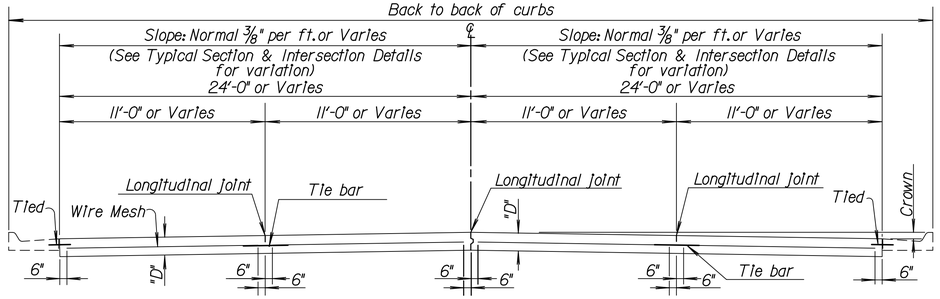
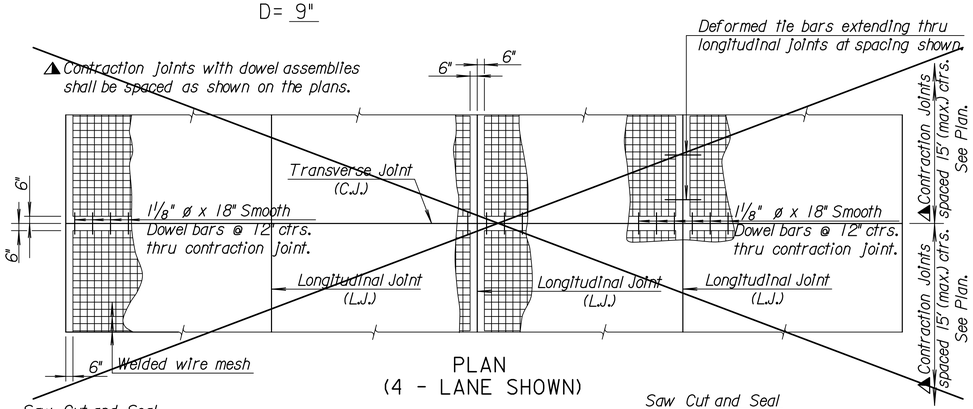
75.29

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	40	157

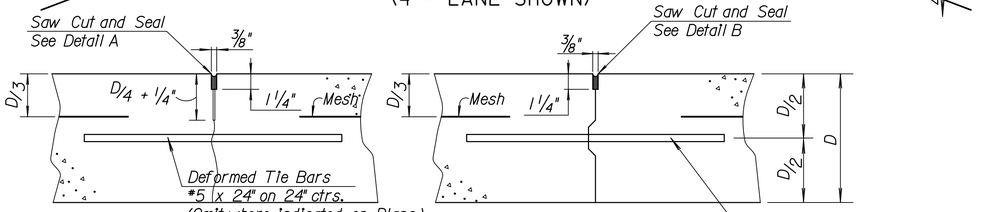


TRANSVERSE SECTION
(4 - LANE SHOWN)

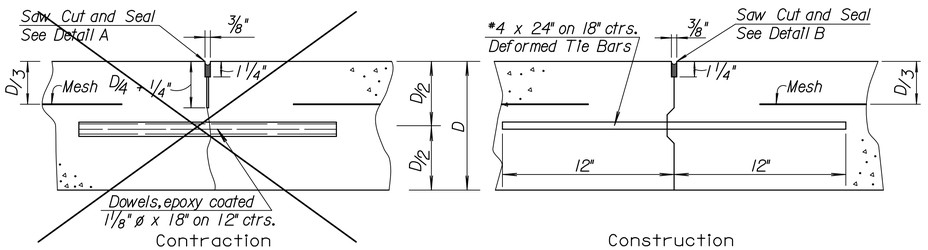
D= 9"



PLAN
(4 - LANE SHOWN)



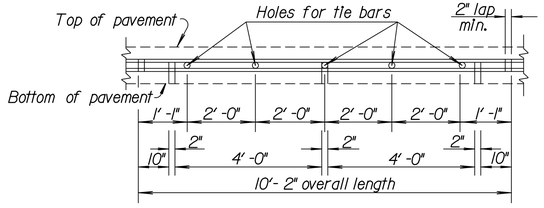
LONGITUDINAL JOINT DETAILS
(L.J.)



TRANSVERSE JOINT DETAILS
(C.J.)

Note: Contraction joints will be constructed at the planned location or as directed by the Engineer. No transverse construction joint shall be placed within ten (10) feet of a contraction joint.

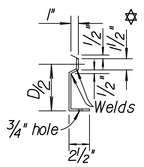
Note: A construction joint is required when the concrete placement has been interrupted for a substantial length of time or at the end of a days placement.



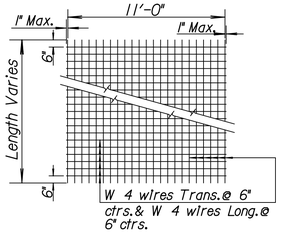
METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT

To be used only against forms. Shall not extend through contraction joints.

✡ Snap-in leg or other approved designs may be used in lieu of welded leg.



SECTION OF
RECESSED
FORM LEG

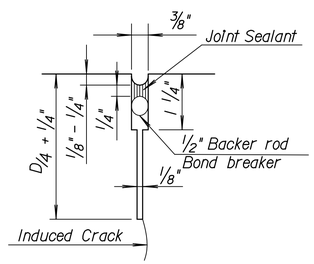


TYPICAL SHEET OF WELDED WIRE MESH
(NOT TO SCALE)
(12' Lane width shown)

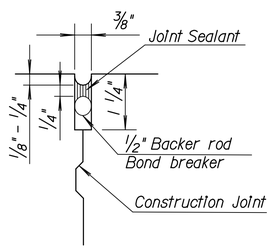
DETAIL OF LAP FOR WIRE MESH

The lap shall extend beyond the first transverse or longitudinal wire of each sheet.

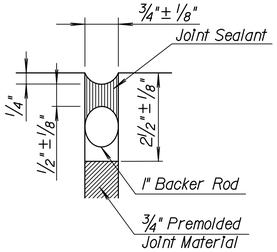
The sheet shall be wired securely at the edges and at intervals not to exceed 2'-6" for the full width of the sheet. Approximate weight of wire mesh = 58 lbs. per 100 sq. ft. Other methods for fastening the sheets of wire mesh at the laps may be used with the approval of the Engineer.



DETAIL A



DETAIL B

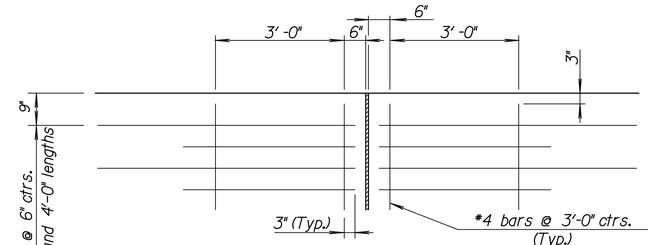


DETAIL C

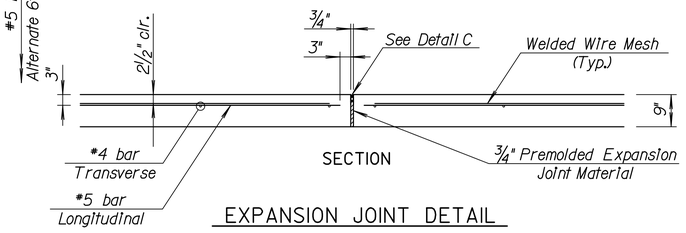
The 1/8" saw cut (D/4 + 1/4" depth) shall be done initially; the 3/8" saw cut shall be accomplished in a separate operation after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.

Note: Joint Sealant shall be Type I (Non Self-Leveling) Silicone unless otherwise approved by the Engineer.

Note: All sealant shall be 1/8" - 1/4" below surface and a minimum 1/4" thick.



PLAN



SECTION

EXPANSION JOINT DETAIL
(E.J.)

GENERAL NOTE

All deformed tie bars and smooth dowel bars shall be epoxy coated.

Deformed tie bars which require bending shall be billet steel reinforcing bars, Grade 40.

Tie bars shall be placed parallel to the pavement surface with a tolerance of one half inch in 18 inches in the vertical direction. Care should be taken to assure that tie bars are placed approximately perpendicular to the joint in the horizontal plane.

Unless otherwise noted, load transfer devices as shown in detail shall be used at all contraction joints.

Unless otherwise noted, all joints shall have either dowels or tie bars.

All joints on this project shall be sawed and filled with silicone sealant.

Shape of all keyed joints shall be similar to the section of recessed form leg as shown on this sheet.

At each transverse joint location, a 4 to 6 inch wide strip of pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint saw cut.

This Sheet adapted from KDOT Standard Sheet RD707.

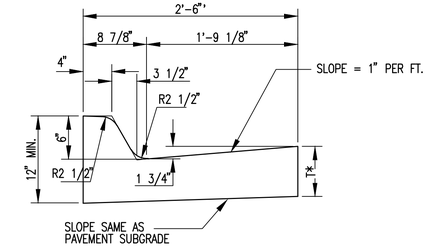
NO.	DATE	REVISIONS	BY	APP'D

CONCRETE PAVEMENT

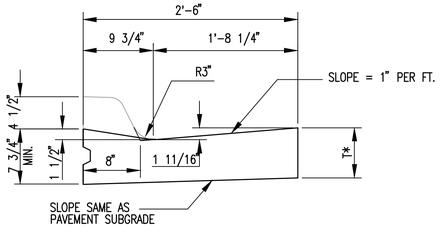
Note: Designer shall add applicable dowel sizes.

Drawn By : KDOT Plotted : 4-4-2013 svb
File : I:/2012/12275/002/standards/12275-002 RD707.dgn

TYPE 1
(ARTERIAL CURB)

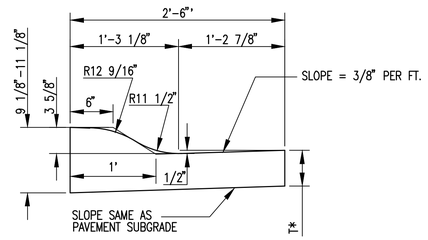


COMBINED CURB & GUTTER (6")

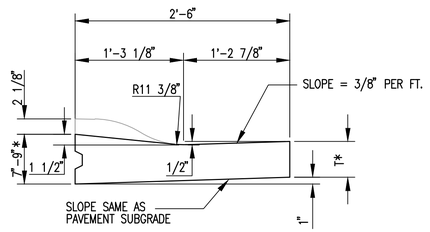


COMBINED CURB & GUTTER (1 1/2")

TYPE 2
(ROLL CURB)

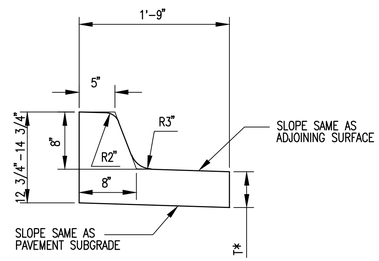


COMBINED CURB & GUTTER (3 5/8")

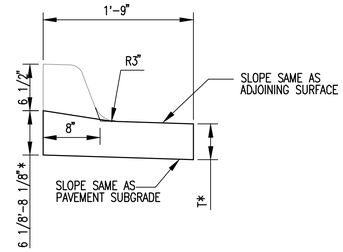


COMBINED CURB & GUTTER (1 1/2")

TYPE 3
(MEDIAN CURB)

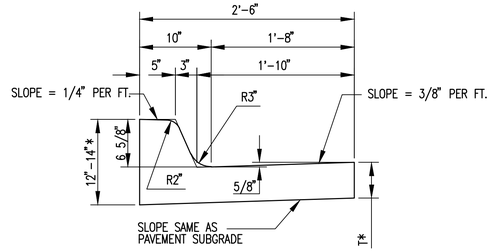


COMBINED CURB & GUTTER (8")

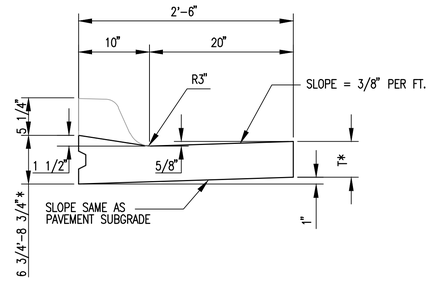


COMBINED CURB & GUTTER (1 1/2")

TYPE 4
(RESIDENTIAL CURB)

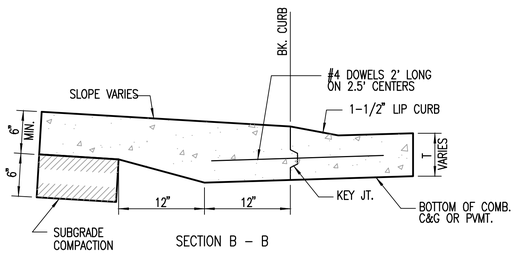


COMBINED CURB & GUTTER (6 5/8")

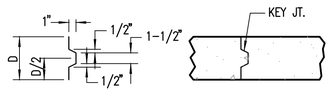


COMBINED CURB & GUTTER (1 1/2")

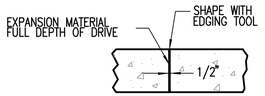
T* = THICKNESS OF CURB TO ADJUST WITH PAVEMENT THICKNESS



BACK OF CURB DETAIL



ALT. LONGITUDINAL CONSTRUCTION JOINT



EXPANSION JOINT (E.J.)

GENERAL NOTES

1. EXPANSION (ISOLATION) JOINTS SHALL BE CONSTRUCTED A MAXIMUM OF 300' APART AND AT ALL PIS, PCS, CUL-DE-SAC QUADRANTS, AND ENDS OF RETURNS.

2. CONTRACTION JOINTS SHALL BE CONSTRUCTED A MINIMUM OF 12' APART.

3. JOINT SEALER SHALL BE REQUIRED AT ALL JOINTS ON ARTERIAL AND INDUSTRIAL STREETS AND AT INTERSECTIONS ON RESIDENTIAL STREETS.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CURB & GUTTER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	12/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
41 of 157

PV-101

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Plot: Scale 1:10 04-30-2013 2:42:03 PM by JBJ
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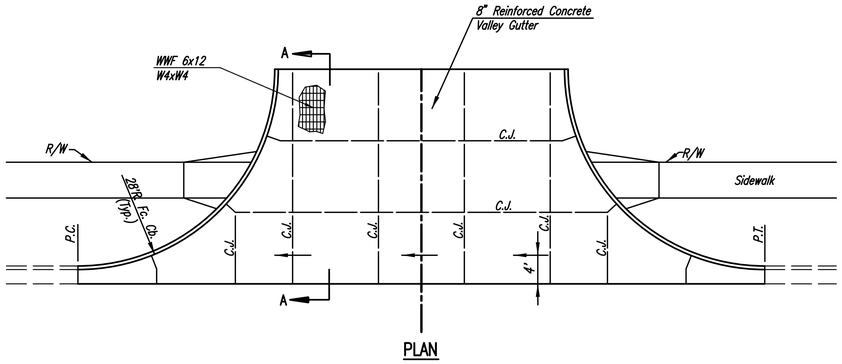
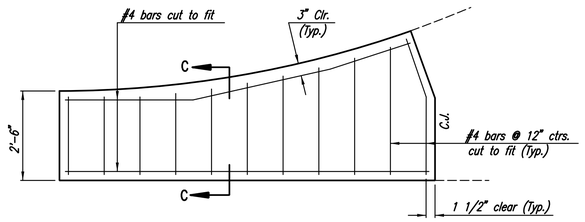
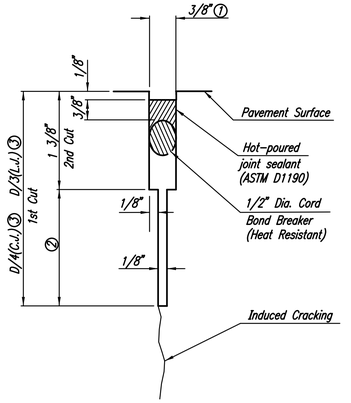


PLAN



WING REINFORCING DETAIL

NOTE: OMIT WIRE FABRIC REINFORCING IN THIS SECTION.

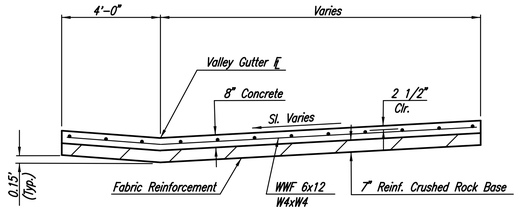


DETAIL A

① To be accomplished in 2 cuts for Longitudinal Joints and Contraction Joints. Initial cut to be 1/8" wide.

② Eliminate bottom of cut when metal keyway is used as part of Longitudinal or Transverse Construction Joint and at Doweled Construction Joint Locations.

③ 1 1/2" Minimum

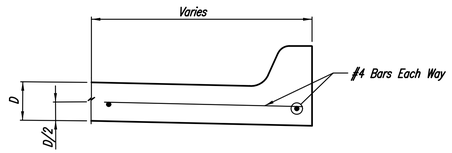


SECTION A-A

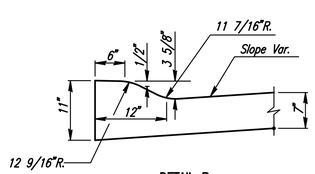
NOTE: OMIT REINFORCING MESH AT ALL JOINTS

NOTE: ALL CONCRETE VALLEY GUTTER REINFORCEMENT SHALL BE ADEQUATELY SUPPORTED BY BAR CHAIRS IN THE REQUIRED POSITION UNLESS APPROVED OTHERWISE BY THE ENGINEER.

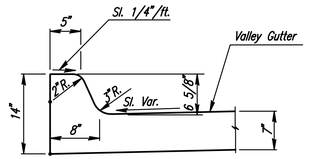
CONTRACTION JOINT DETAIL
REINFORCED PAVEMENT
(C.J.)



SECTION C-C



DETAIL B
(ROLL-TYPE CURB)(3 5/8")



DETAIL C
(STANDARD CURB)(6 5/8")

MONOLITHIC EDGE CURB

No.	Revision	By	Date

37TH STREET NORTH

VALLEY GUTTER DETAILS

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 42 of 157
Drawn by	SVB	Date	May, 2013	

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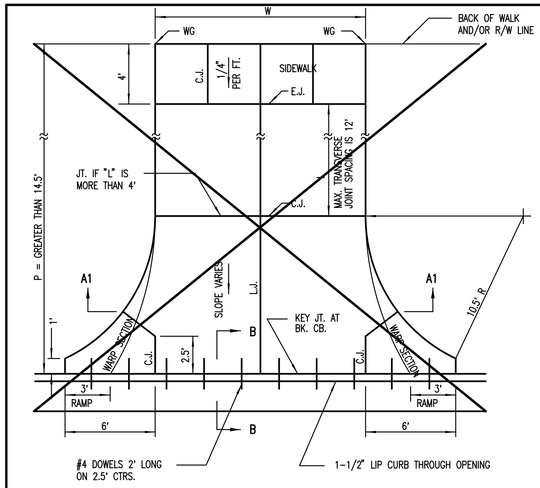
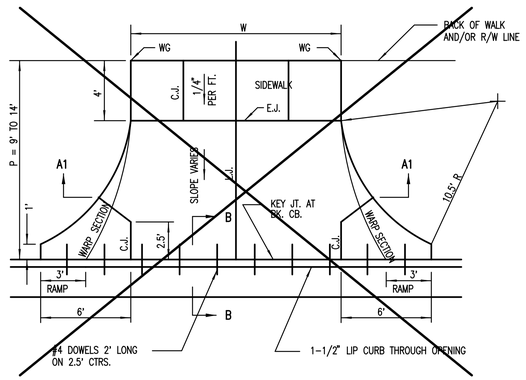
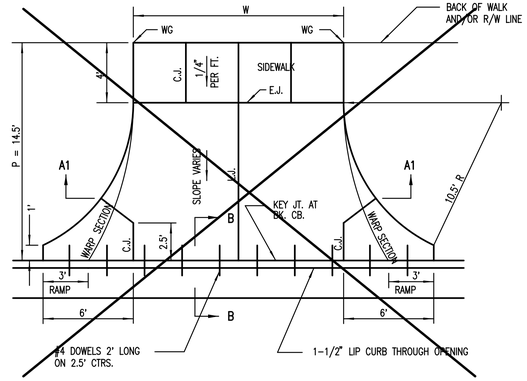
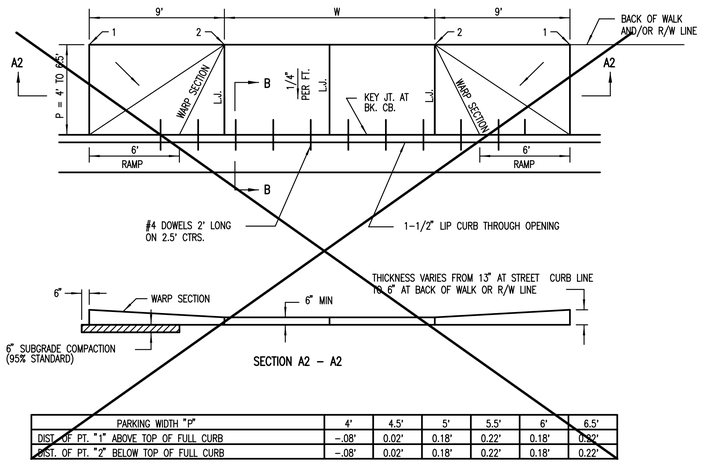


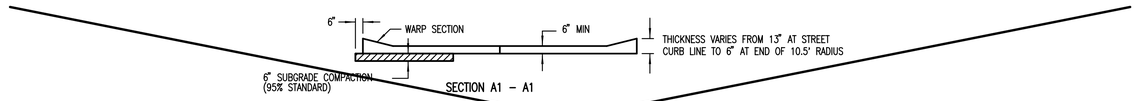






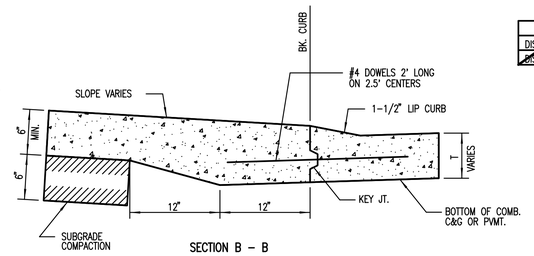
PARKING WIDTH "P"	4'	4.5'	5'	5.5'	6'	6.5'
DIST. OF PT. "1" ABOVE TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'	0.18'	0.22'
DIST. OF PT. "2" BELOW TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'	0.18'	0.22'

FULL RAMP DRIVE (P = 4.0' TO 6.5')

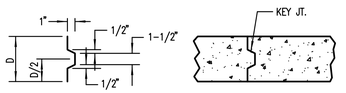


PARKING WIDTH "P"	9'	10'	11'	12'	13'	14.5'	20'	25'	30'	35'	40'	45'	50'
ABSOLUTE MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.27'	0.27'	0.32'	0.37'	0.52'	0.80'	1.35'	1.85'	2.35'	2.85'	3.35'	3.85'	4.35'
OPTIMUM MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.27'	0.27'	0.32'	0.37'	0.52'	0.62'	0.96'	1.22'	1.48'	1.74'	2.00'	2.26'	2.52'
OPTIMUM MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.19'	0.21'	0.23'	0.25'	0.30'	0.30'	0.42'	0.52'	0.62'	0.72'	0.82'	0.92'	1.02'
ABSOLUTE MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	–.19'	–.16'	–.13'	–.10'	–.06'	0.00'	0.00'	0.15'	0.25'	0.35'	0.45'	0.55'	0.65'

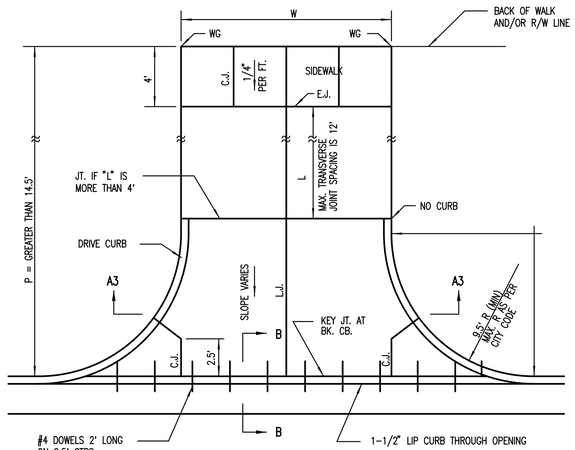
RADIUS RAMP DRIVES (P = 9.0' & GREATER)

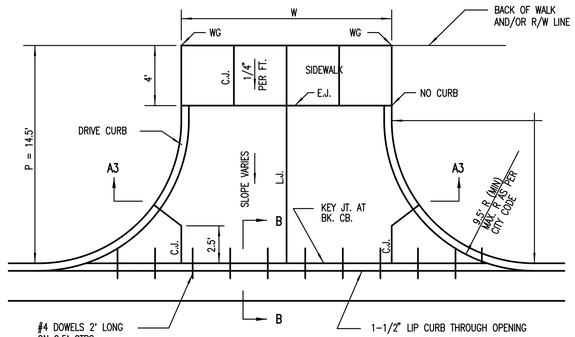


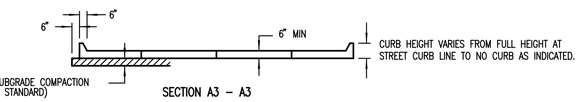
BACK OF CURB DETAIL



ALT. LONGITUDINAL CONSTRUCTION JOINT

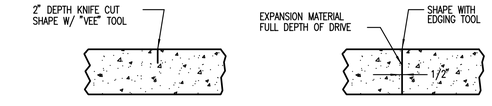


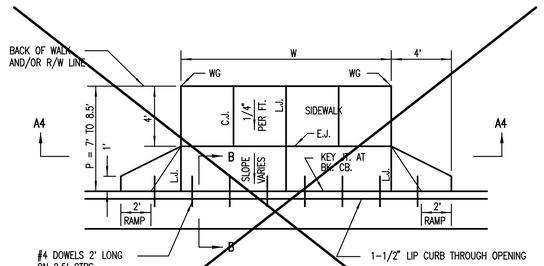




PARKING WIDTH "P"	14.5'	20'	25'	30'	35'	40'	45'	50'
ABSOLUTE MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.72'	1.27'	1.77'	2.27'	2.77'	3.27'	3.77'	4.27'
OPTIMUM MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.70'	1.04'	1.30'	1.56'	1.82'	2.08'	2.34'	2.60'
OPTIMUM MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.30'	0.42'	0.52'	0.62'	0.72'	0.82'	0.92'	1.02'
ABSOLUTE MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	0.00'	0.00'	0.15'	0.25'	0.35'	0.45'	0.55'	0.65'

FULL RADIUS DRIVES (P = 14.5' & GREATER)





PARKING WIDTH "P"	7'	7.5'	8'	8.5'
ABSOLUTE MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'
OPTIMUM MAX. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'
OPTIMUM MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	–.15'	–.16'	–.17'	–.17'
ABSOLUTE MIN. DIST. OF PT. "WG" ABOVE OR BELOW TOP OF FULL CURB	–.25'	–.20'	–.20'	–.20'

FULL RAMP DRIVE (P = 7.0' TO 8.5')

1. DRIVEWAY CONSTRUCTION DETAILED ON THIS SHEET IS FOR USE WITH FULL HEIGHT STREET CURBS AND IN AREAS WITHOUT FULL WALK CONSTRUCTION IN THE PARKING. SEE OTHER DETAIL SHEETS FOR DRIVEWAY CONSTRUCTION WITH FULL WALK.
2. ONE LONGITUDINAL JOINT SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVES HAVING A "W" DIMENSION OF 24' OR LESS. TWO LONGITUDINAL JOINTS SHALL BE CONSTRUCTED WITH EQUAL SPACINGS NOT TO EXCEED 10' FOR DRIVES WITH A "W" DIMENSION GREATER THAN 24'.
3. DRIVEWAY WIDTH DENOTED AS "W" ON THE DETAIL DRAWINGS SHALL BE A MINIMUM OF 10' AND A MAXIMUM OF 30'. THE MAXIMUM OPENING FOR RADIUS TYPE DRIVES WITH CURBS THROUGH THE RADIUS SHALL NOT EXCEED 52' AT THE STREET CURB LINE.
4. CONTRACTION JOINT SPACING IN THE DRIVEWAY WALK SECTION SHALL BE A MINIMUM OF 3' AND A MAXIMUM OF 6' AND ARE TO BE EQUALLY SPACED WITHIN THIS RANGE. WALK SECTION SHALL BE CONSTRUCTED TO THE SAME THICKNESS AS THE DRIVEWAY.
5. DOWEL BARS SHALL BE OMITTED FROM THE KEYED CONSTRUCTION JOINT ALONG THE BACK OF THE STREET CURB LINE WHEN DRIVEWAYS ARE CONSTRUCTED IN CONJUNCTION WITH NEW CONCRETE PAVEMENT CONSTRUCTION.
6. ~~ADDITIONAL THICKNESS OF DRIVE AS INDICATED IN THE DRAWINGS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE DRIVEWAY CONSTRUCTION.~~
7. ONE HALF INCH EXPANSION JOINTS SHALL BE INSTALLED WHEREVER DRIVE CONSTRUCTION ABUTS SIDEWALK. ONE HALF INCH EXPANSION JOINTS SHALL ALSO BE INSTALLED ALONG THE PROPERTY LINE AND/OR BACK OF WALK LINE WHEN DRIVE CONSTRUCTION ALONG THIS LINE ABUTS CONCRETE PARKING LOTS OR CONCRETE DRIVE EXTENSION.
8. ALL DRIVEWAYS SHALL BE A MINIMUM OF 6" IN THICKNESS AND SHALL BE WITHOUT REINFORCEMENT. DRIVEWAYS MAY BE CONSTRUCTED THICKER THAN 6" AND THEY MAY BE REINFORCED WITH 6"X12" W4–W4 WELDED WIRE FABRIC WHEN PROPERLY AUTHORIZED BY THE PROPERTY OWNER WITH THE ENGINEER'S CONCURRENCE.
9. OPTIMUM DRIVEWAY ELEVATIONS SHOWN IN THE TABLES ARE TO BE USED WHEREVER POSSIBLE. ABSOLUTE MAXIMUM AND MINIMUM ELEVATIONS ARE TO BE USED ONLY WHEN THESE VALUES WILL PERMIT NEW CONSTRUCTION TO MATCH EXISTING DRIVES OR PARKING LOTS. VALUES SHOWN IN THE TABLES ARE BASED ON A FULL CURB HEIGHT ELEVATION OF 0.55' ABOVE THE GUTTER FLOW LINE AND MUST BE ADJUSTED ACCORDINGLY FOR OTHER CURB HEIGHTS. VALUES SHOWN IN THE TABLES WITH MINUS SIGNS INDICATE ELEVATIONS BELOW TOP OF FULL HEIGHT CURB.

THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4184 FAX

STANDARD DRIVE ENTRANCES FULL HEIGHT CURB

GARY JANZEN, P.E.

PROJECT NUMBER	INDEX CODE
472-85083	707047
DATE: MAR 96	SHEET 43 OF 157

Plotted By: svb Date: 4/29/2013 4:56:10 PM
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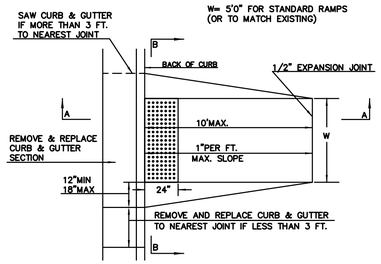
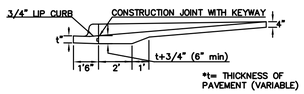
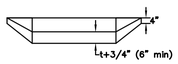
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER (CLASS A)



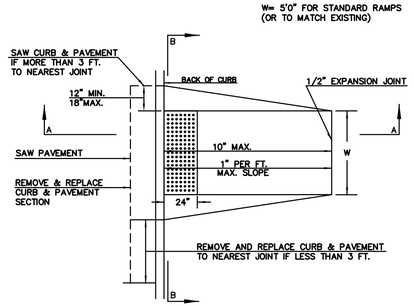


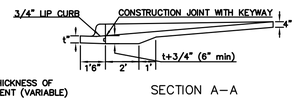
SECTION A–A



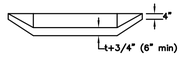
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR CONCRETE STREETS WITH MONOLITHIC CURB (CLASS A)



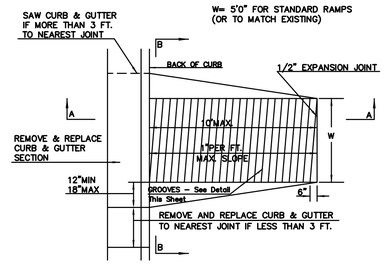


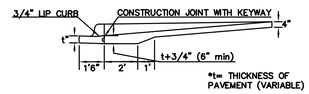
SECTION A–A



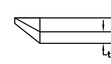
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR ENTRANCES WITH COMBINED CURB & GUTTER (CLASS B)



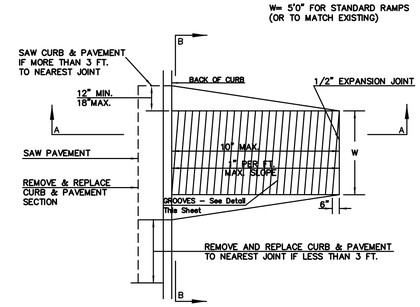


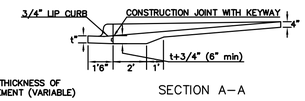
SECTION A–A



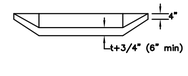
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR ENTRANCES WITH MONOLITHIC CURB (CLASS B)

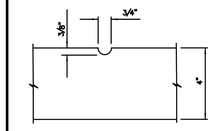




SECTION A–A

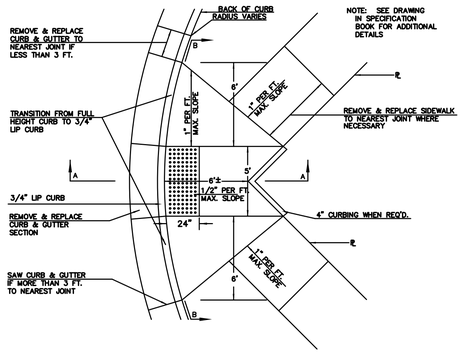


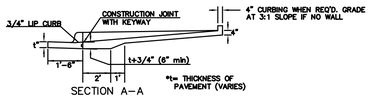
SECTION B–B



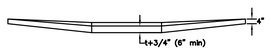
GROOVE DETAIL

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREET WITH COMBINED CURB AND GUTTER ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (CLASS C)



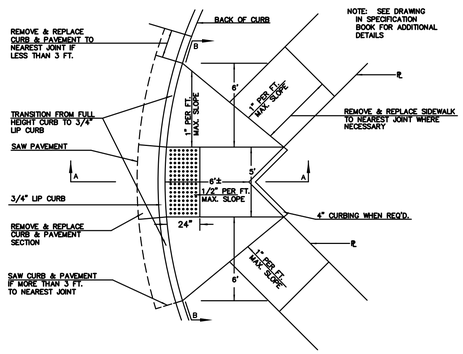


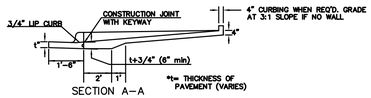
SECTION A–A



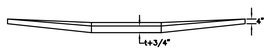
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREET WITH MONOLITHIC CURB ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (CLASS C)



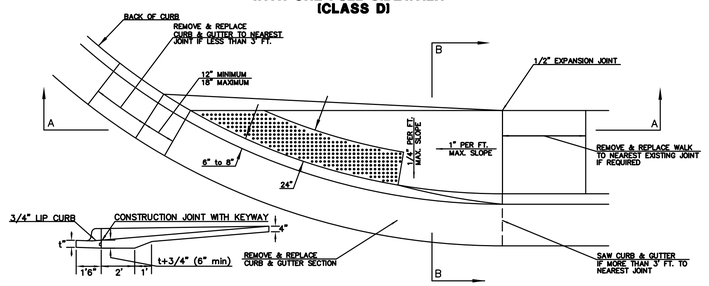


SECTION A–A

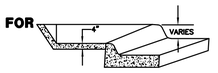


SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER WITH ONE FULL SIDEWALK (CLASS D)

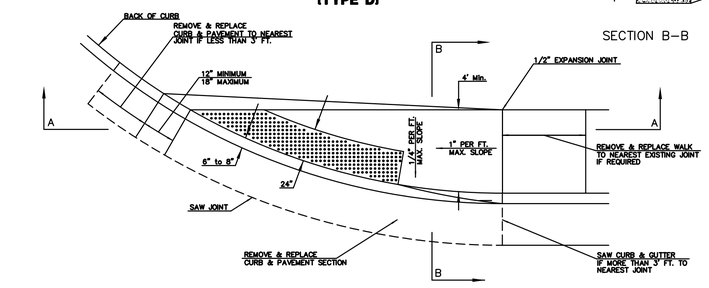


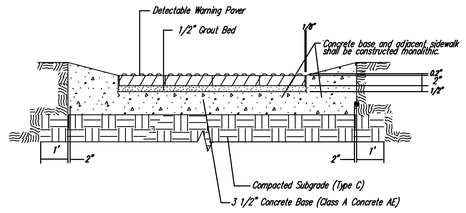
SECTION A–A



SECTION B–B

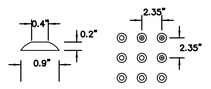
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH MONOLITHIC CURB WITH ONE FULL SIDEWALK (TYPE D)





TYPICAL SECTION DETECTABLE WARNING PAVER SECTION A–A

NOTE: HANOVER DETECTABLE WARNING PAVERS (OR AN APPROVED ALTERNATE) SHALL BE USED IN ALL WHEELCHAIR RAMPS. THE 11 3/4" "RED 15" PAVER SHALL BE USED IN ALL APPLICATIONS.
HANOVER ARCHITECTURAL PRODUCTS
240 BENDER ROAD
HANOVER, PA 17331
1–717–637–0500
www.hanoverpavers.com



DOME DETAIL

REV. 7–21–03

CITY OF WICHITA PUBLIC WORKS ENGINEERING

WHEELCHAIR RAMP DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472–85083	707047	07/03

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202–1620
(316) 268–4501
(316) 268–4114 FAX

DESIGN	DRAWN
City	City

SHEET
44 OF 157

Plotted By: svb Date: 4/24/2013 4:10:42 PM
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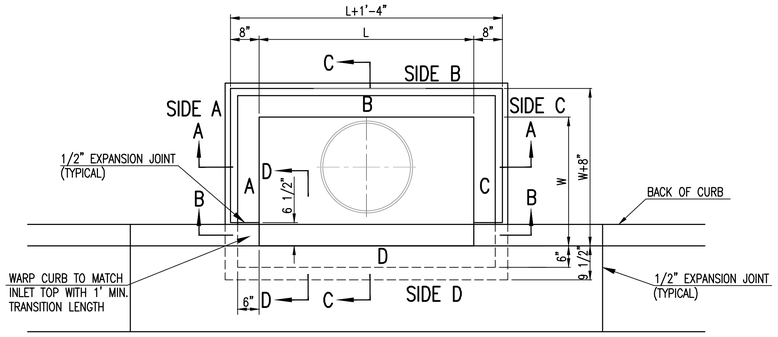


TOP VIEW

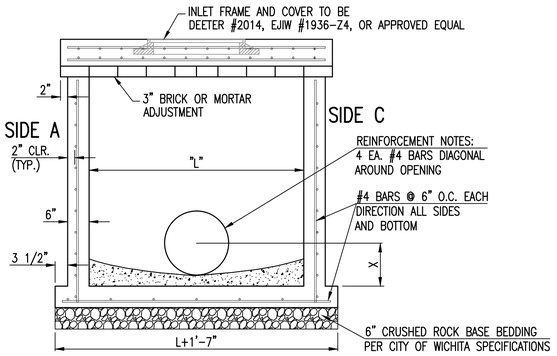
BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

PRECAST CURB INLET WIDTHS				
W	PRE-CAST TOP SIZE			PIPE DIA.**
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

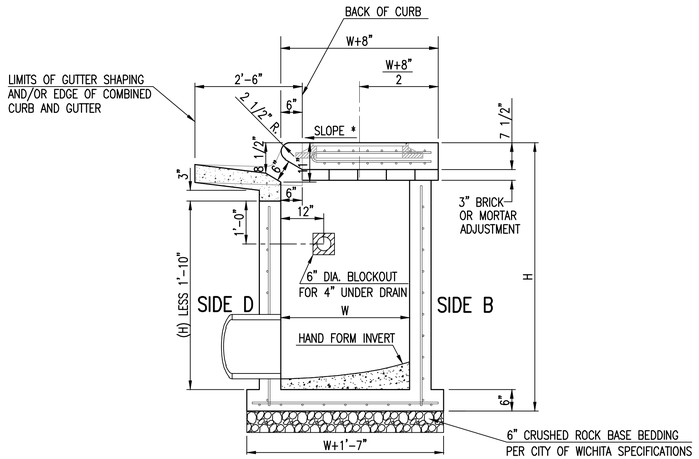
** FOR PIPES PERPENDICULAR TO INLET WALL

GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
3. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
6. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

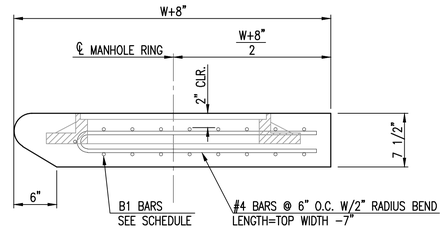


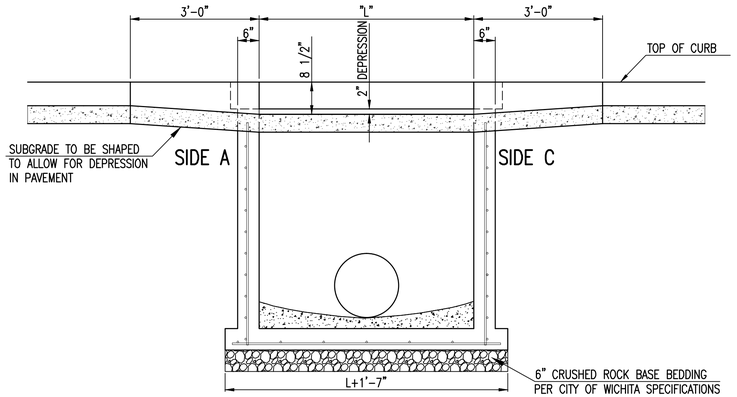
SECTION "A-A"



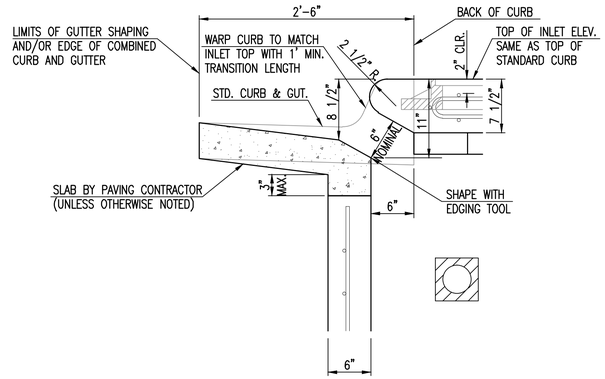
SECTION "C-C"

NOTES:
* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.





SECTION "B-B"



SECTION "D-D"

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STANDARD TYPE 1
CURB INLET
5'-0" OR 10'-0" OPENING

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
45 of 157

SW-101

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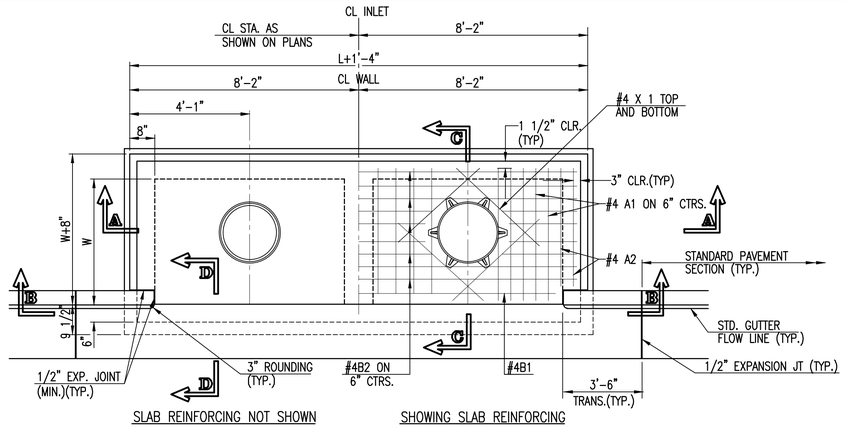
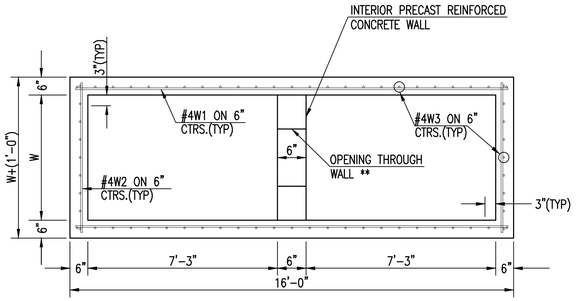
Plot Scale 1:20 04-30-2013 2:41:36 PM by ROB F. JOHNSON



PLAN



SECTION B-B

PRECAST CURB INLET WIDTHS				
W	PRE-CAST TOP SIZE			PIPE DIA.***
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

*** FOR PIPES PERPENDICULAR TO INLET WALL

GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
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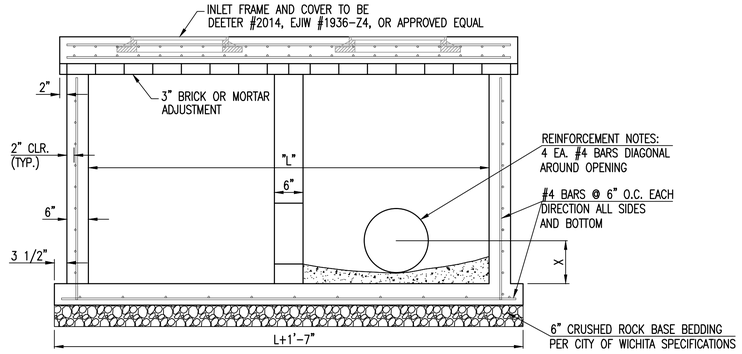
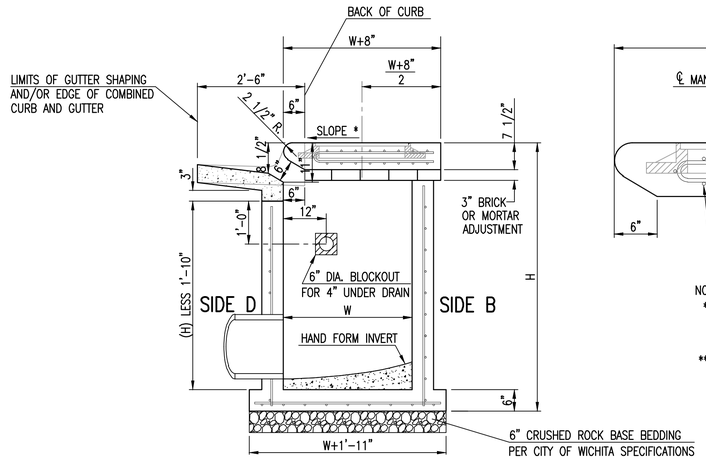
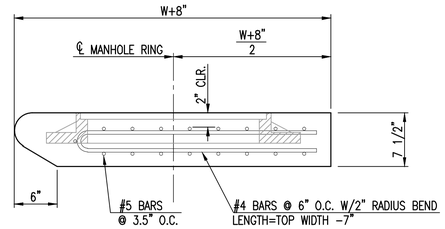
3. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936-Z4, OR APPROVED EQUAL, SEE SW-303.
6. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.



SECTION "A-A"

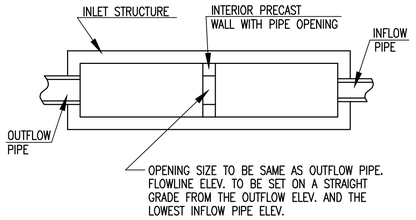


SECTION "C-C"

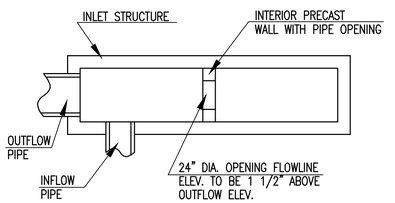


NOTES:
* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.

** AN INTERIOR WALL OPENING SHALL BE PROVIDED. SEE CASE I AND CASE II.

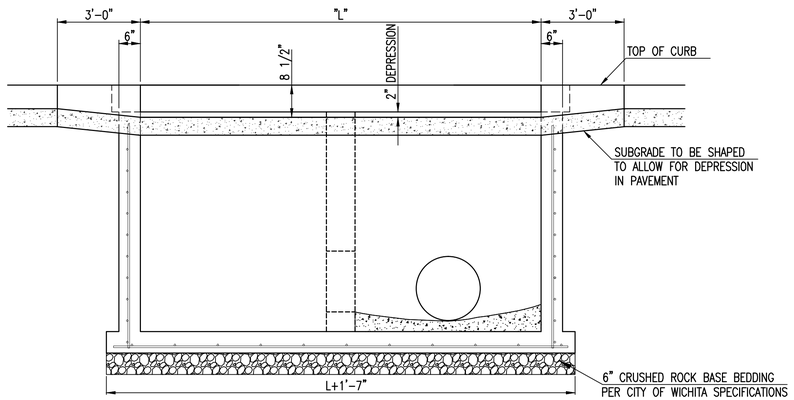


CASE I



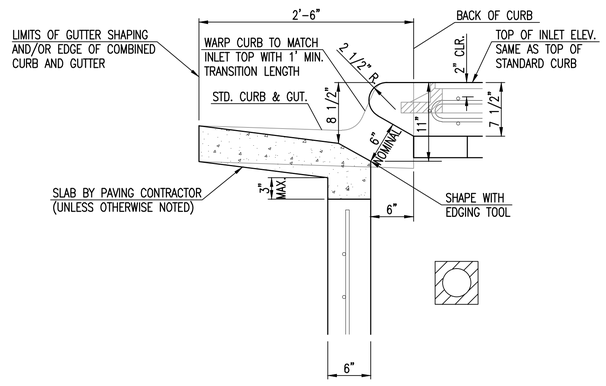
CASE II

NOTE: INTERIOR WALL OPENING SIZE SHALL BE AS SPECIFIED IN THE INLET CONSTRUCTION NOTE ON THE PLAN/ PROFILE SHEETS FOR THOSE CASES NOT SHOWN HERE.



SECTION "B-B"

NOTES:
* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.



SECTION "D-D"

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STANDARD TYPE 1 CURB INLET 15'-0" OPENING

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

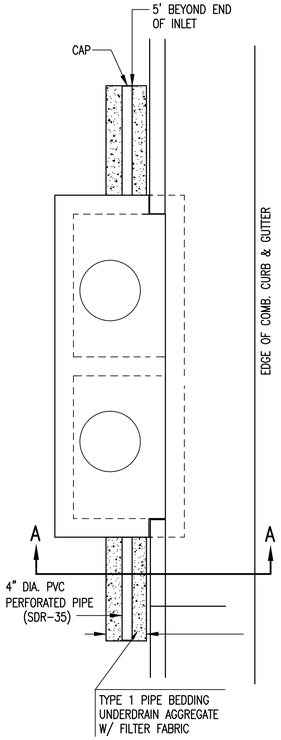
DESIGN | DRAWN

SHEET 46 of 157

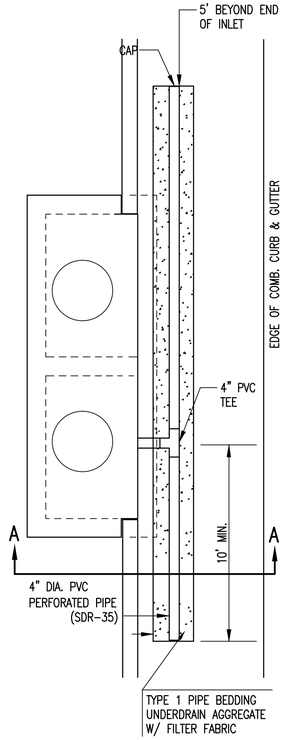
SW-102

Saved 04-24-2013 4:13:30 PM by JEJ
Plot Scale 1:1 04-30-2013 2:41:08 PM by BOB F. JOHNSON
I:\2012\12275\002\Standards\12275-002 SW-102-Type 1 Inlet L=15'

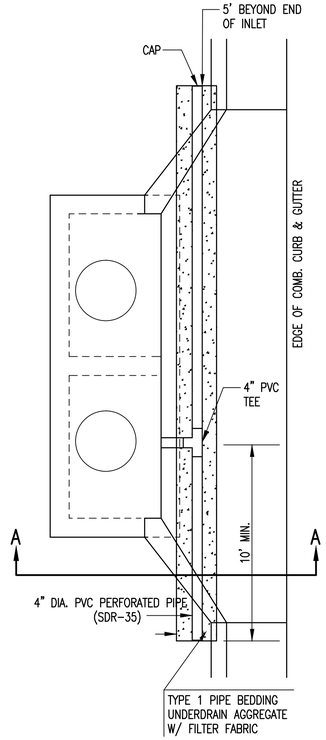
PAVEMENT UNDERDRAIN SHALL BE INSTALLED ON ALL CURB INLETS.



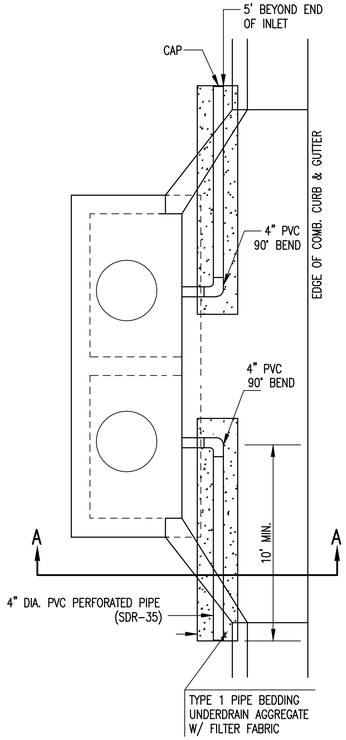
TYPE 1
OPTION 1



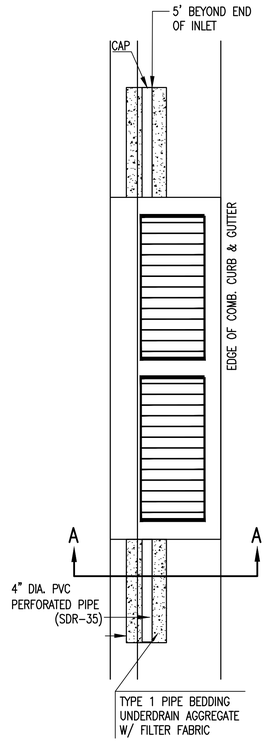
TYPE 1
OPTION 2



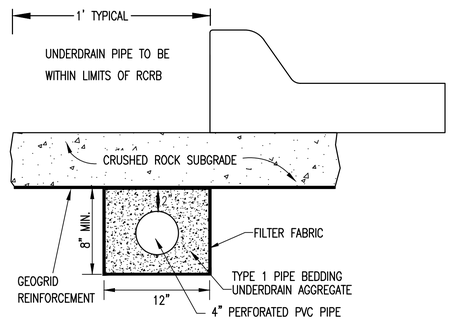
TYPE 1-A INLET
OPTION 1



TYPE 1-A INLET
OPTION 2



TYPE 2



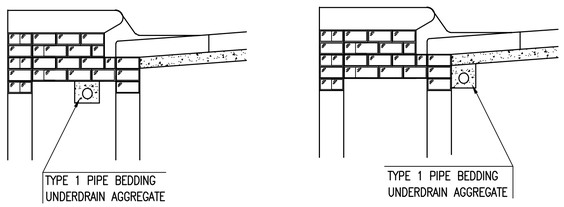
SECTION A–A (TYPICAL)

GENERAL NOTES

1. PAVEMENT CONTRACTOR WILL BE REQUIRED TO INSTALL SDR 35, 4" PERFORATED DRAIN PIPE AND TEE AS INDICATED IN THE DETAILS.

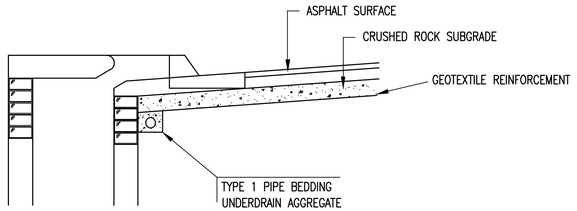
2. WHEN SWS CONSTRUCTED BY SEPARATE PROJECT, SWS CONTRACTOR SHALL INSTALL SDR 35, 4" DRAIN PIPE STUB ONLY THROUGH WALLS OF CURB INLETS AND CAP TO ALLOW FUTURE CONNECTION OF TEE AND ADDITIONAL DRAIN PIPE BY OTHERS.

~~2. UNDERDRAIN PIPE SHALL BE PAID AS A MEASURED QUANTITY BY THE LINEAL FOOT.~~



(MIN. 16 PERFORATIONS PER LIN. FT. @ 1/4" DIA.)
PERFORATIONS TO BE ON BOTTOM HALF

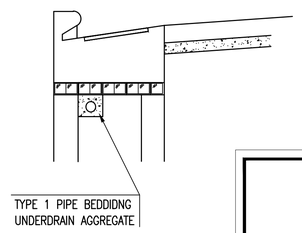
SECTION A–A



SECTION A–A

PAVEMENT UNDERDRAIN DETAIL

~~BID ITEM TO BE PROVIDED PER 4" PERFORATED UNDERDRAIN PIPE.~~



SECTION A–A

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CURB INLET
PAVEMENT UNDERDRAIN
DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	10/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
47 of 157

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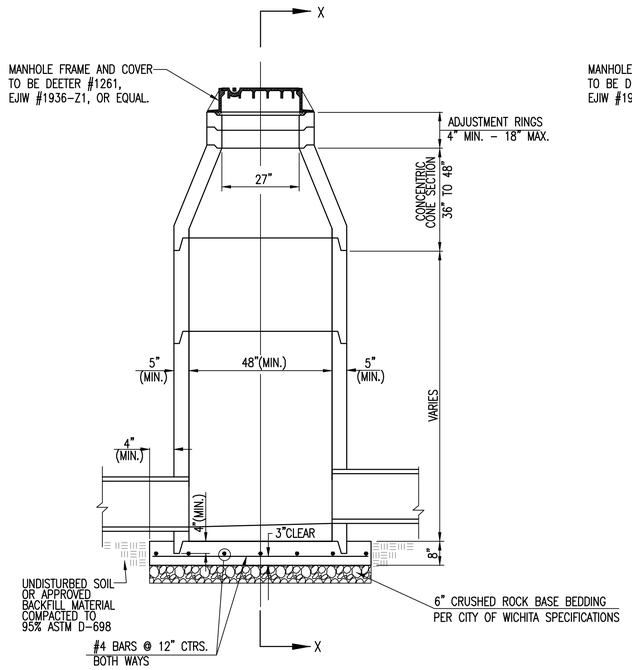
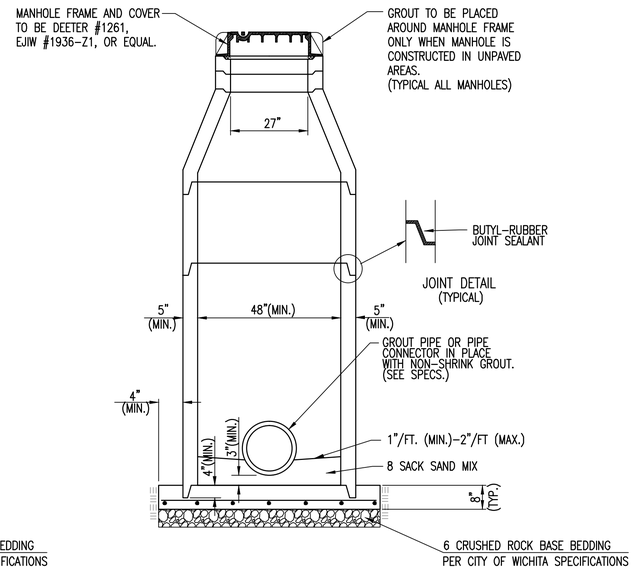
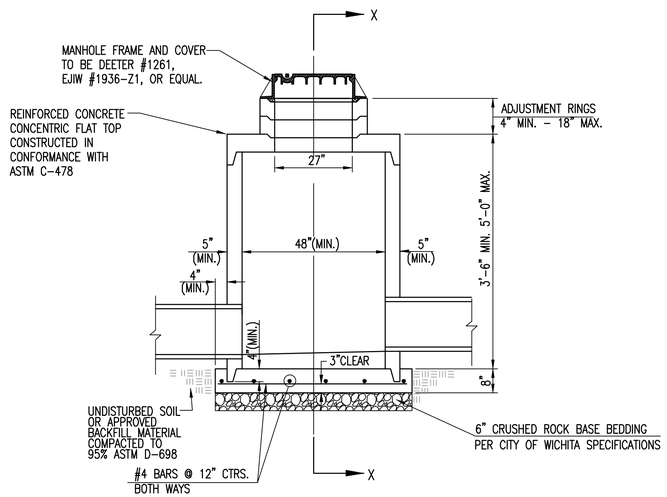
Plot Scale 1:1.0 04-30-2013 2:40:38 PM by ROB F. JOHNSON
c:\2012\12275\002\Standards\12275-002 SW-111-Pavement Underdrain



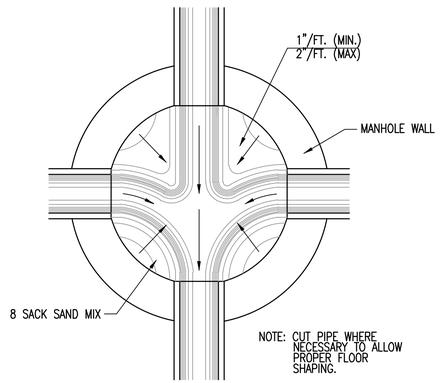
PRECAST
STANDARD MANHOLE
TYPE "A"



SECTION X-X
(TYPICAL)



PRECAST
SHALLOW MANHOLE
TYPE "B"



TYPICAL MANHOLE
FLOOR SHAPING

GENERAL NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-Z1, OR APPROVED EQUAL, SEE SW-303.
14. FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
15. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

PRECAST CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
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SW-301

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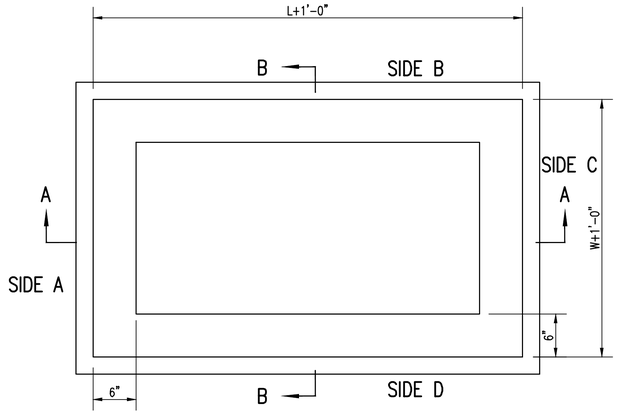
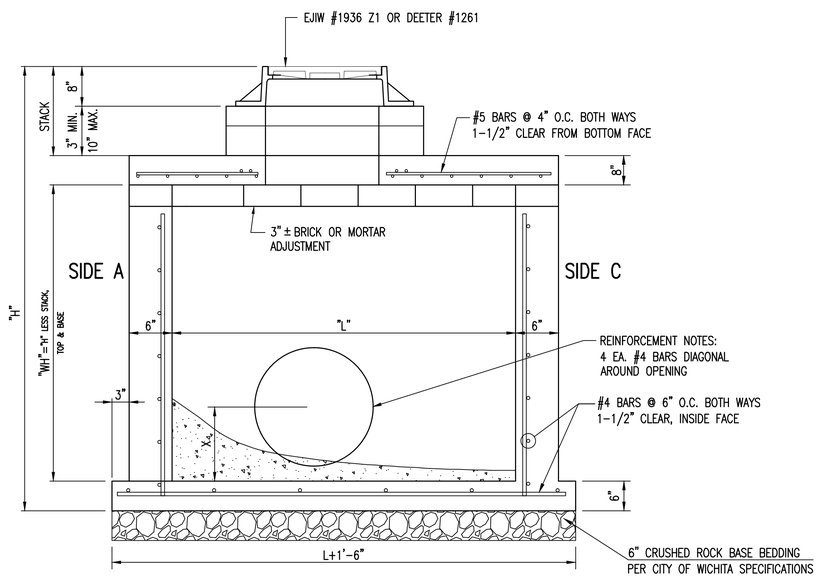
i:\2012\12275\002\Standards\12275-002 SW-301-Precast Conc MH



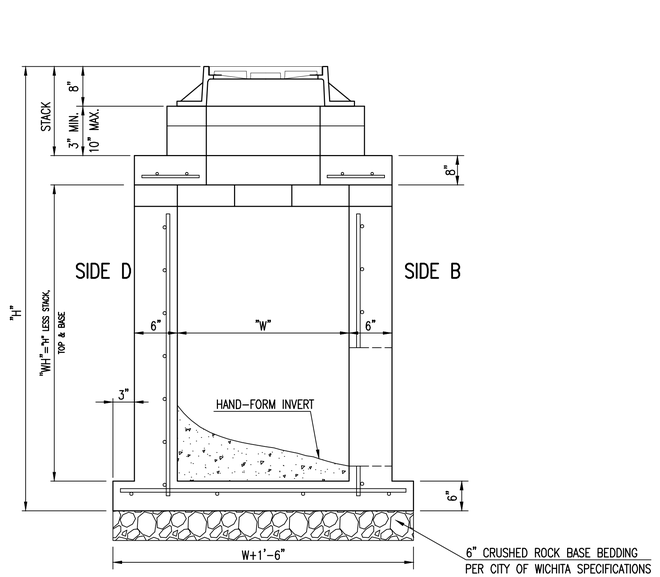
TOP VIEW

GENERAL NOTES

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #1261, EJIW #1936-Z1 OR APPROVED EQUAL, SEE SW-303.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.



SECTION "A-A"



SECTION "B-B"

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

REINFORCED CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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SW-302

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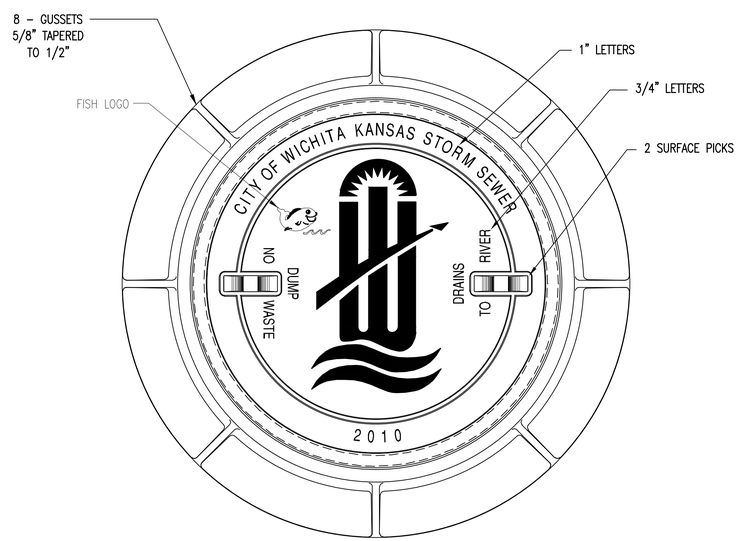
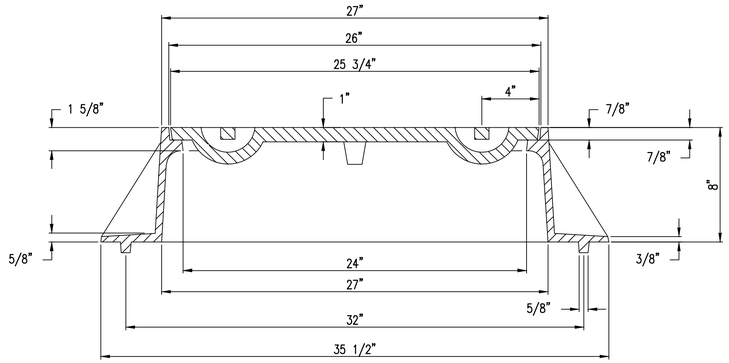
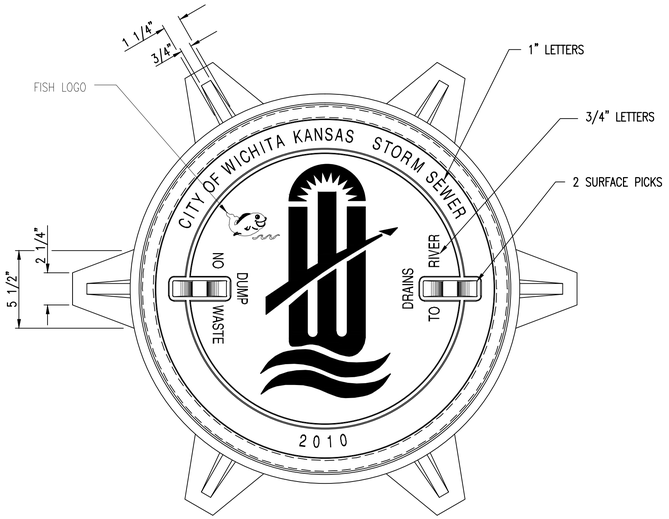
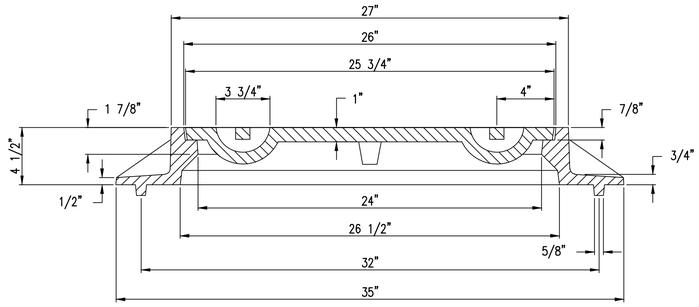




MANHOLE FRAME
DEETER #1261 OR EJIW #1936–Z1

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. COVER TO BE DEETER #1261 OR EJIW #1936A.





INLET FRAME
DEETER #2014 OR EJIW #1936–Z4

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
2. NOT TO BE USED UNDER PAVEMENT.
3. COVER TO BE DEETER #1261 OR EJIW #1936A.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

MANHOLE/INLET FRAME AND COVER (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
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SW–303

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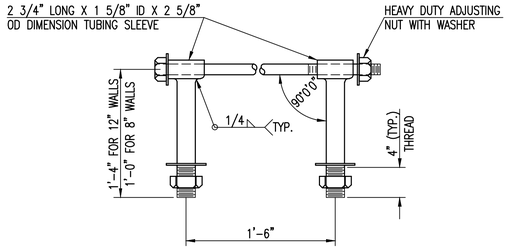
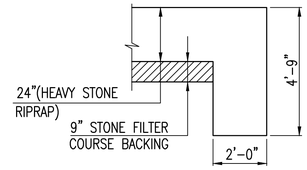


HEAVY DUTY (H.D.) COUPLER

NO SCALE

NOTES

1. BOLTS TO BE A-36 1 1/2" DIAMETER.
2. BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
3. WASHERS TO BE 3 1/2" O.D. X 7 GAUGE.
4. SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.



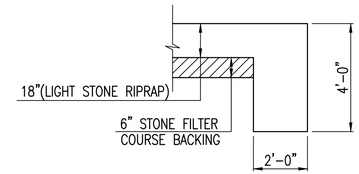
TYPICAL SECTION THRU TOEWALL

NO SCALE

NOTES

1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

HEAVY STONE RIPRAP DETAILS



TYPICAL SECTION THRU TOEWALL

NO SCALE

NOTES

1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

LIGHT STONE RIPRAP DETAILS

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

MISCELLANEOUS DETAILS (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

DESIGN	DRAWN

SHEET
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CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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INLET AND MANHOLE DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	NORTH COORDINATE	EAST COORDINATE	CONSTRUCT OR INSTALL: CURB INLET (TYPE I)	R.C. MANHOLE					G&F TYPE	L&F TYPE	DIMENSIONS: L (FT.)	W (FT.)	H (FT.)	STACK (FT.)	ELEVATIONS: TOP ⊛	FLOOR	INFLOW CONDUITS: SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	OUTFLOW CONDUITS: SIZE DIRECTION	FLOWLINE ELEV.	REMARKS
100	—	100+33.98	37th Street	82.38' Lt.	1,709,936.7662	1,659,445.1510															42"x27" (SE)	1346.98							Connect to Exist. Inlet
101	100	100+88.50	37th Street	44.50' Lt.	1,709,899.5070	1,659,500.0976		1							5.00	5.00	6.17	1.17	1352.63	1346.96	42"x27" (E)	1347.40	15" (S)	1348.18			42"x27" (NW)	1347.30	
102	101	103+00.00	37th Street	44.50' Lt.	1,709,908.5278	1,659,705.3608		1							5.00	5.00	7.33	1.33	1354.94	1348.11	42"x27" (NE)	1348.50	15" (S)	1349.45			42"x27" (W)	1348.43	
103	102	105+00.00	37th Street	22.50' Lt.	1,709,937.4992	1,659,895.7766		1							5.00	5.00	6.50	1.25	1354.88	1348.88	30" (NE)	1349.37	15" (SE)	1350.29			42"x27" (SW)	1349.27	
104	103	107+00.00	37th Street	32.00' Lt.	1,710,039.6255	1,660,059.7332	1								15.00	4.00	5.50		1355.70	1350.70	30" (NE)	1351.15	15" (SE)	1352.07			30" (SW)	1351.05	
105	104	109+00.00	37th Street	32.00' Lt.	1,710,157.2168	1,660,221.5116	1								15.00	4.00	5.50		1356.34	1351.34	24" (NE)	1352.29	15" (SE)	1352.71			30" (SW)	1351.79	
106	105	110+50.00	37th Street	32.00' Lt.	1,710,245.4104	1,660,342.8455	1								15.00	4.00	5.00		1357.19	1352.69	24" (SE)	1353.11					24" (SW)	1353.01	
107	106	110+50.00	37th Street	31.50' Rt.	1,710,194.0457	1,660,380.1807	1								15.00	3.00	5.00		1357.19	1352.69	15" (NE)	1354.05					24" (NW)	1353.24	
108	107	112+50.00	37th Street	31.50' Rt.	1,710,311.6371	1,660,541.9592	1								15.00	3.00	5.50		1360.42	1355.42							15" (SW)	1355.64	
109	101	100+88.50	37th Street	31.50' Lt.	1,709,886.5079	1,659,500.2440	1								10.00	3.00	4.50		1352.05	1348.05	15" (S)	1348.31					15" (N)	1348.24	
110	109	100+88.50	37th Street	31.50' Rt.	1,709,823.5119	1,659,500.9534	1								10.00	3.00	4.00		1352.06	1348.56							15" (N)	1348.75	
111	102	103+00.00	37th Street	31.50' Lt.	1,709,895.6602	1,659,707.2110	1								15.00	3.00	5.25		1354.40	1349.65	15" (S)	1349.89					15" (N)	1349.84	
112	111	103+00.00	37th Street	31.50' Rt.	1,709,833.3015	1,659,716.1774	1								15.00	3.00	4.00		1354.40	1350.90							15" (N)	1351.09	
113	103	105+50.00	37th Street	31.50' Rt.	1,709,908.4991	1,659,963.5924	1								15.00	3.00	4.00		1355.22	1351.72							15" (NW)	1351.91	
114	104	107+00.00	37th Street	31.50' Rt.	1,709,988.2608	1,660,097.0684	1								15.00	3.00	4.00		1355.70	1352.20							15" (NW)	1352.39	
115	105	109+00.00	37th Street	31.50' Rt.	1,710,105.8522	1,660,258.8469	1								15.00	3.00	4.00		1356.34	1352.84							15" (NW)	1353.03	
TOTALS							12	3																					

CONDUIT DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	CONSTRUCT OR INSTALL: TYPE OF CONDUIT SIZE	TYPE OF CONDUIT MATERIAL	LENGTH (L.F.)	CONDUIT FLOWLINES: INFLOW ELEV.	OUTFLOW ELEV.	COMMON (CU. YD)	STORM SEWER (LIN. FT.): 15"	18"	24"	30"	36"	42"	42"x27"					END SECTIONS (EACH)				AASHTO CONC. CLASS	SAND FILL, FLUSH & VIBRATE (L.F.)						REMARKS
101	100	100+88.50	37th Street	44.50' Lt.	42"x27"	RCPHE	66.4	1347.30	1346.98								66.4									66.4					Connect to Exist. Inlet
102	101	103+00.00	37th Street	44.50' Lt.	42"x27"	RCPHE	205.5	1348.43	1347.40								205.5									205.5					
103	102	105+00.00	37th Street	22.50' Lt.	42"x27"	RCPHE	192.6	1349.27	1348.50								192.6									192.6					
104	103	107+00.00	37th Street	32.00' Lt.	30"	RCP	193.2	1351.05	1349.37					193.2												193.2					
105	104	109+00.00	37th Street	32.00' Lt.	30"	RCP	200.0	1351.79	1351.15					200.0												200.0					
106	105	110+50.00	37th Street	32.00' Lt.	24"	RCP	150.0	1353.01	1352.29				150.0													150.0					
107	106	110+50.00	37th Street	31.50' Rt.	24"	RCP	63.5	1353.24	1353.11				63.5													63.5					
108	107	112+50.00	37th Street	31.50' Rt.	15"	RCP	200.0	1355.64	1354.05		200.0															200.0					
109	101	100+88.50	37th Street	31.50' Lt.	15"	RCP	13.0	1348.24	1348.18		13.0															13.0					
110	109	100+88.50	37th Street	31.50' Rt.	15"	RCP	63.0	1348.75	1348.31		63.0															63.0					
111	102	103+00.00	37th Street	31.50' Lt.	15"	RCP	13.0	1349.84	1349.45		13.0															13.0					
112	111	103+00.00	37th Street	31.50' Rt.	15"	RCP	63.0	1351.09	1349.89		63.0															63.0					
113	103	105+50.00	37th Street	31.50' Rt.	15"	RCP	73.8	1351.91	1350.29		73.8															73.8					
114	104	107+00.00	37th Street	31.50' Rt.	15"	RCP	63.5	1352.39	1352.07		63.5															63.5					
115	105	109+00.00	37th Street	31.50' Rt.	15"	RCP	63.5	1353.03	1352.71		63.5															63.5					
TOTALS											552.8	–	213.5	393.2	–	–	464.5									1624.0					

⊛ Note: Top Elevation is located as follows:
1. Manhole – Top of Manhole Ring
2. Curb Inlet – Top of Curb

No.	Revision	By	Date

37TH STREET NORTH

SCHEDULE OF INLETS AND MANHOLES

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	RJS	Job No.	12275-002	Sht. 52 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/24/2013 4:44:29 PM
FILE: h:\2012\12275\002\SWS\12275-002 SWS Schedule 1.dgn

INLET AND MANHOLE DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	NORTH COORDINATE	EAST COORDINATE	CONSTRUCT OR INSTALL: CURB INLET (TYPE I)	R.C. MANHOLE					G&F TYPE	L&F TYPE	DIMENSIONS: L (FT.)	W (FT.)	H (FT.)	STACK (FT.)	ELEVATIONS: TOP ⊛	FLOOR	INFLOW CONDUITS: SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	OUTFLOW: SIZE DIRECTION	CONDUITS: FLOWLINE ELEV.	REMARKS
200	–	116+19.57	37th St.	44.50' Rt.	1,710,518.4133	1,660,873.1595															42" (NE)	1359.05							Connect to RCB
201	200	116+50.00	37th St.	44.50' Rt.	1,710,536.3042	1,660,873.1595	1								10.00	5.00	9.00		1367.26	1358.76	42" (NE)	1359.55					42" (SW)	1359.45	
202	201	119+00.00	37th St.	44.50' Rt.	1,710,683.2934	1,661,075.3826	1								10.00	5.00	12.50		1371.76	1359.76	42" (NE)	1360.37	15" (NW)	1362.55			42" (SW)	1360.27	
203	202	122+00.00	37th St.	22.50' Rt.	1,710,877.4761	1,661,305.1152		1							5.00	5.00	15.00	1.25	1375.03	1360.53	42" (NE)	1361.22					42" (SW)	1361.12	
204	203	126+00.00	37th St.	32.50' Rt.	1,711,092.3194	1,661,636.0617	1								10.00	5.00	12.50		1373.62	1361.62	36" (NE)	1362.70	15" (NW)	1364.48			42" (SW)	1362.21	
205	204	128+00.00	37th St.	22.50' Rt.	1,711,166.1685	1,661,814.4591		1							5.00	5.00	9.00	1.25	1372.60	1364.10	36" (NE)	1364.56					36" (SW)	1364.46	
206	205	130+25.00	37th St.	32.50' Rt.	1,711,176.2665	1,662,033.7210	1								10.00	5.00	7.00		1371.84	1365.34	36" (E)	1365.79	15" (N)	1367.21			36" (SW)	1365.69	
207	206	131+07.00	37th St.	32.50' Rt.	1,711,177.7897	1,662,115.7069	1								10.00	5.00	6.50		1371.61	1365.61	36" (E)	1366.19	15" (N)	1367.85			36" (W)	1366.09	
208	207	134+00.00	37th St.	44.50' Rt.	1,711,171.2343	1,662,408.8792	1								10.00	5.00	6.00		1372.12	1366.62	36" (E)	1367.05	15" (N)	1368.71			36" (W)	1366.95	
209	208	138+00.00	37th St.	44.50' Rt.	1,711,178.6644	1,662,808.8102	1								10.00	5.00	6.50		1373.40	1367.40	30" (NE)	1368.40	15" (N)	1369.57			36" (W)	1367.90	
210	209	142+00.00	37th St.	32.00' Rt.	1,711,192.3645	1,663,204.3697	1								10.00	4.00	6.50		1375.04	1369.04	30" (SE)	1369.69	15" (NE)	1370.84			30" (SW)	1369.59	
211	210	143+75.00	37th St.	22.50' Rt.	1,711,165.9092	1,663,371.4233		1							4.00	4.00	6.50	1.25	1375.42	1369.42	24" (SE)	1370.45					30" (NW)	1369.96	
212	211	145+50.00	37th St.	32.00' Rt.	1,711,087.5104	1,663,521.2913	1								10.00	4.00	6.00		1376.32	1370.82	24" (SE)	1371.63	15" (NE)	1372.28			24" (NW)	1371.53	
213	212	147+00.00	37th St.	22.50' Rt.	1,711,010.5691	1,663,644.3452		1							4.00	4.00	6.00	1.25	1377.10	1371.60	24" (SE)	1372.17					24" (NW)	1372.07	
214	213	148+50.00	37th St.	32.00' Rt.	1,710,899.4602	1,663,737.7104	1								15.00	4.00	5.50		1378.24	1373.24	15" (SE)	1374.38	15" (NE)	1374.36			24" (NW)	1373.62	
215	214	151+50.00	37th St.	43.50' Rt.	1,710,643.2609	1,663,884.2939	1								10.00	3.00	4.00		1379.80	1376.30	15" (NE)	1376.66					15" (NW)	1376.56	
216	215	151+50.00	37th St.	31.50' Lt.	1,710,681.3287	1,663,948.9147	1								10.00	3.00	4.00		1380.16	1376.66							15" (SW)	1377.02	
217	–	116+81.43	37th St.	31.50' Lt.	1,710,616.2589	1,660,853.8974															15" (SW)	1360.74							Connect to RCB
218	217	116+50.00	37th St.	31.50' Lt.	1,710,597.7800	1,660,828.4748	1								10.00	3.00	6.00		1367.62	1362.12							15" (SE)	1362.31	
219	202	119+00.00	37th St.	31.50' Lt.	1,710,744.7693	1,661,030.6979	1								10.00	3.00	9.50		1372.12	1363.12							15" (SE)	1363.31	
220	204	126+00.00	37th St.	31.50' Lt.	1,711,149.5855	1,661,607.4855	1								10.00	3.00	9.00		1373.62	1365.12							15" (SE)	1365.31	
221	206	130+25.00	37th St.	31.50' Lt.	1,711,240.2555	1,662,032.5322	1								10.00	3.00	5.00		1371.84	1367.34							15" (S)	1367.53	
222	207	131+07.00	37th St.	31.50' Lt.	1,711,241.7787	1,662,114.5181	1								10.00	3.00	4.00		1371.61	1368.11							15" (S)	1368.30	
223	208	134+00.00	37th St.	31.50' Lt.	1,711,247.2212	1,662,407.4675	1								10.00	3.00	4.00		1372.48	1368.98							15" (S)	1369.17	
224	209	138+00.00	37th St.	31.50' Lt.	1,711,254.6513	1,662,807.3985	1								10.00	3.00	4.50		1373.76	1369.76							15" (S)	1369.95	
225	210	142+00.00	37th St.	31.50' Lt.	1,711,255.5057	1,663,211.1109	1								10.00	3.00	4.00		1375.04	1371.54							15" (SW)	1371.73	
226	212	145+50.00	37th St.	31.50' Lt.	1,711,142.2127	1,663,553.5388	1								10.00	3.00	4.00		1376.32	1372.82							15" (SW)	1373.01	
227	214	148+50.00	37th St.	31.50' Lt.	1,710,939.0279	1,663,787.3757	1								15.00	3.00	4.00		1378.24	1374.74							15" (SW)	1374.93	
TOTALS							22	4																					

CONDUIT DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	CONSTRUCT OR INSTALL: TYPE OF CONDUIT SIZE	TYPE OF CONDUIT MATERIAL	LENGTH (L.F.)	CONDUIT FLOWLINES: INFLOW ELEV.	OUTFLOW ELEV.	COMMON (CU. YD)	STORM SEWER (LIN. FT.): 15"	18"	24"	30"	36"	42"	42"x27"						END SECTIONS (EACH)				AASHTO CONC. CLASS	SAND FILL, FLUSH & VIBRATE (L.F.)					REMARKS
201	200	116+50.00	37th St.	44.50' Rt.	42"	RCP	30.4	1359.45	1359.05							30.4												30.4					Connect to RCB
202	201	119+00.00	37th St.	44.50' Rt.	42"	RCP	250.0	1360.27	1359.55							250.0												250.0					
203	202	122+00.00	37th St.	22.50' Rt.	42"	RCP	300.8	1361.12	1360.37							300.8												300.8					
204	203	126+00.00	37th St.	32.50' Rt.	42"	RCP	394.6	1362.21	1361.22							394.6												394.6					
205	204	128+00.00	37th St.	22.50' Rt.	36"	RCP	193.1	1364.46	1362.70						193.1													193.1					
206	205	130+25.00	37th St.	32.50' Rt.	36"	RCP	219.5	1365.69	1364.56						219.5													219.5					
207	206	131+07.00	37th St.	32.50' Rt.	36"	RCP	82.0	1366.09	1365.79						82.0													82.0					
208	207	134+00.00	37th St.	44.50' Rt.	36"	RCP	293.2	1366.95	1366.19						293.2													293.2					
209	208	138+00.00	37th St.	44.50' Rt.	36"	RCP	400.0	1367.90	1367.05						400.0													400.0					
210	209	142+00.00	37th St.	32.00' Rt.	30"	RCP	395.8	1369.59	1368.40					395.8														395.8					
211	210	143+75.00	37th St.	22.50' Rt.	30"	RCP	169.1	1369.96	1369.69					169.1														169.1					
212	211	145+50.00	37th St.	32.00' Rt.	24"	RCP	169.1	1371.53	1370.45				169.1															169.1					
213	212	147+00.00	37th St.	22.50' Rt.	24"	RCP	145.1	1372.07	1371.63				145.1															145.1					
214	213	148+50.00	37th St.	32.00' Rt.	24"	RCP	145.1	1373.62	1372.17				145.1															145.1					
215	214	151+50.00	37th St.	43.50' Rt.	15"	RCP	295.2	1376.56	1374.38		295.2																	295.2					
216	215	151+50.00	37th St.	31.50' Lt.	15"	RCP	75.0	1377.02	1376.66		75.0																	75.0					
218	217	116+50.00	37th St.	31.50' Lt.	15"	RCP	31.4	1362.31	1360.74		31.4																	31.4					Connect to RCB
219	202	119+00.00	37th St.	31.50' Lt.	15"	RCP	76.0	1363.31	1362.55		76.0																	76.0					
220	204	126+00.00	37th St.	31.50' Lt.	15"	RCP	64.0	1365.31	1364.48		64.0																	64.0					
221	206	130+25.00	37th St.	31.50' Lt.	15"	RCP	64.0	1367.53	1367.21		64.0																	64.0					
222	207	131+07.00	37th St.	31.50' Lt.	15"	RCP	64.0	1368.30	1367.85		64.0																	64.0					
223	208	134+00.00	37th St.	31.50' Lt.	15"	RCP	76.0	1369.17	1368.71		76.0																	76.0					
224	209	138+00.00	37th St.	31.50' Lt.	15"	RCP	76.0	1369.95	1369.57		76.0																	76.0					
225	210	142+00.00	37th St.	31.50' Lt.	15"	RCP	63.5	1371.73	1370.84		63.5																	63.5					
226	212	145+50.00	37th St.	31.50' Lt.	15"	RCP	63.5	1373.01	1372.28		63.5																	63.5					
227	214	148+50.00	37th St.	31.50' Lt.	15"	RCP	63.5	1374.93	1374.36		63.5																	63.5					
TOTALS											1012.1	–	459.3	564.9	1187.8	975.8	–											4199.9					

⊛ Note: Top Elevation is located as follows:
1. Manhole – Top of Manhole Ring
2. Curb Inlet – Top of Curb

No.	Revision	By	Date

37TH STREET NORTH

SCHEDULE OF INLETS AND MANHOLES

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	RJS	Job No.	12275-002	Sht. 53 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/24/2013 5:51:32 PM
FILE: h:\2012\12275\002\SWS\12275-002 SWS Schedule 2.dgn

INLET AND MANHOLE DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	NORTH COORDINATE	EAST COORDINATE	CONSTRUCT OR INSTALL: CURB INLET (TYPE I)	R.C. MANHOLE					G&F TYPE	L&F TYPE	DIMENSIONS: L (FT.)	W (FT.)	H (FT.)	STACK (FT.)	ELEVATIONS: TOP ⊛	FLOOR	INFLOW CONDUITS: SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	OUTFLOW CONDUITS: SIZE DIRECTION	FLOWLINE ELEV.	REMARKS
300	—	163+64.92	37th Street	48.00' Rt.	1,709,886.9337	1,664,761.0503															36" (W)	1366.16							Connect to RCB
301	300	163+25.00	37th Street	44.50' Rt.	1,709,869.9734	1,664,721.0895	1								10.00	5.00	6.50		1372.42	1366.42	30" (W)	1367.26					36" (E)	1366.76	
302	301	163+00.00	37th Street	44.00' Rt.	1,709,870.1853	1,664,696.0854	1								15.00	4.00	5.50		1372.64	1367.64	24" (NW)	1368.50					30" (E)	1367.94	
303	302	160+50.00	37th Street	32.00' Rt.	1,709,927.2422	1,664,438.6687	1								15.00	4.00	5.00		1374.33	1369.83	24" (NW)	1370.17					24" (SE)	1370.08	
304	303	159+75.00	37th Street	32.00' Rt.	1,709,964.4472	1,664,368.2601	1								15.00	4.00	5.00		1375.14	1370.64	18" (NW)	1371.37					24" (SE)	1370.89	
305	304	159+00.00	37th Street	31.50' Rt.	1,710,011.9479	1,664,304.3877	1								15.00	3.00	4.50		1376.04	1372.04	15" (NW)	1372.44					18" (SE)	1372.25	
306	305	157+50.00	37th Street	31.50' Rt.	1,710,131.5633	1,664,200.1041	1								15.00	3.00	4.50		1377.84	1373.84	15" (NE)	1374.06					15" (SE)	1374.03	
307	306	157+50.00	37th Street	31.50' Lt.	1,710,165.5585	1,664,253.1449	1								15.00	3.00	4.00		1377.56	1374.06							15" (SW)	1374.25	
400	—	163+65.01	37th Street	31.50' Lt.	1,709,946.4294	1,664,760.2185															15" (W)	1367.01							Connect to RCB
401	400	163+25.00	37th Street	31.50' Lt.	1,709,945.9684	1,664,720.2137	1								10.00	3.00	6.00		1372.84	1367.34	15" (W)	1367.63					15" (E)	1367.53	
402	401	163+00.00	37th Street	31.50' Lt.	1,709,945.6803	1,664,695.2153	1								15.00	3.00	5.50		1372.79	1367.79							15" (E)	1367.98	
TOTALS (THIS SHEET)							9	-																					
TOTALS (SHEET NO. 52)							12	3																					
TOTALS (SHEET NO. 53)							22	4																					
GRAND TOTALS							43	7																					

CONDUIT DATA

ROUTING SEQUENCE FROM	ROUTING SEQUENCE TO	LOCATIONS OF INSTALLATIONS: STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	CONSTRUCT OR INSTALL: TYPE OF CONDUIT SIZE	TYPE OF CONDUIT MATERIAL	LENGTH (L.F.)	CONDUIT FLOWLINES: INFLOW ELEV.	OUTFLOW ELEV.	COMMON (CU. YD)	STORM SEWER (LIN. FT.): 15"	18"	24"	30"	36"	42"	42"x27"					END SECTIONS (EACH):				AASHTO CONC. CLASS	SAND FILL, FLUSH & VIBRATE (L.F.)						REMARKS
301	300	163+25.00	37th Street	44.50' Rt.	36"	RCP	40.1	1366.76	1366.16						40.1												40.1					Connect to RCB
302	301	163+00.00	37th Street	44.00' Rt.	30"	RCP	25.0	1367.94	1367.26					25.0													25.0					
303	302	160+50.00	37th Street	32.00' Rt.	24"	RCP	263.7	1370.08	1368.50				263.7														263.7					
304	303	159+75.00	37th Street	32.00' Rt.	24"	RCP	79.6	1370.89	1370.17				79.6														79.6					
305	304	159+00.00	37th Street	31.50' Rt.	18"	RCP	79.6	1372.25	1371.37			79.6															79.6					
306	305	157+50.00	37th Street	31.50' Rt.	15"	RCP	158.7	1374.03	1372.44		158.7																158.7					
307	306	157+50.00	37th Street	31.50' Lt.	15"	RCP	63.0	1374.25	1374.06		63.0																63.0					
401	400	163+25.00	37th Street	31.50' Lt.	15"	RCP	40.0	1367.53	1367.01		40.0																40.0					Connect to RCB
402	401	163+00.00	37th Street	31.50' Lt.	15"	RCP	25.0	1367.98	1367.63		25.0																25.0					
TOTALS (THIS SHEET)											286.7	79.6	343.3	25.0	40.1	-	-										774.7					
TOTALS (SHEET NO. 52)											552.8	-	213.5	393.2	-	-	464.5										1624.0					
TOTALS (SHEET NO. 53)											1012.1	-	459.3	564.9	1187.8	975.8	-										4199.9					
GRAND TOTALS											1851.6	79.6	1016.1	983.1	1227.9	975.8	464.5										6598.6					

⊛ Note: Top Elevation is located as follows:
1. Manhole - Top of Manhole Ring
2. Curb Inlet - Top of Curb

No.	Revision	By	Date

37TH STREET NORTH

SCHEDULE OF INLETS AND MANHOLES

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	RJS	Job No.	12275-002	Sht. 54 of 157
Drawn by	SVB	Date	May, 2013	

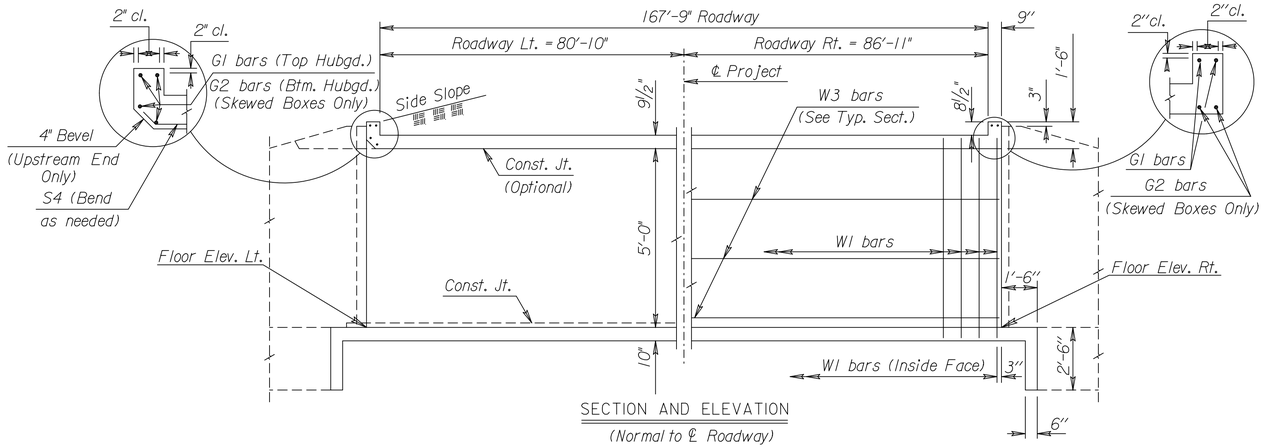
Plotted By: svb Date: 4/24/2013 6:07:32 PM
FILE: h:\2012\12275\002\SWS\12275-002 SWS Schedule 3.dgn

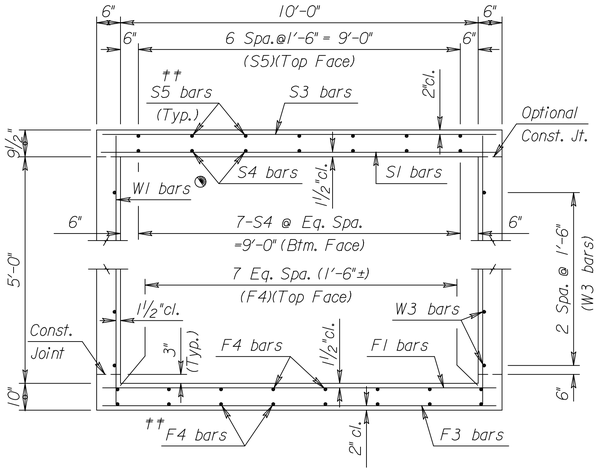
VERSION/ID	SYSTEM PART
12/16/2010	CADD VBA
4/25/2012	DATABASE
7.1.12	RCB PROGRAM
1049	KBOX MODEL ID
1/9/2012	CELL LIBRARY

06

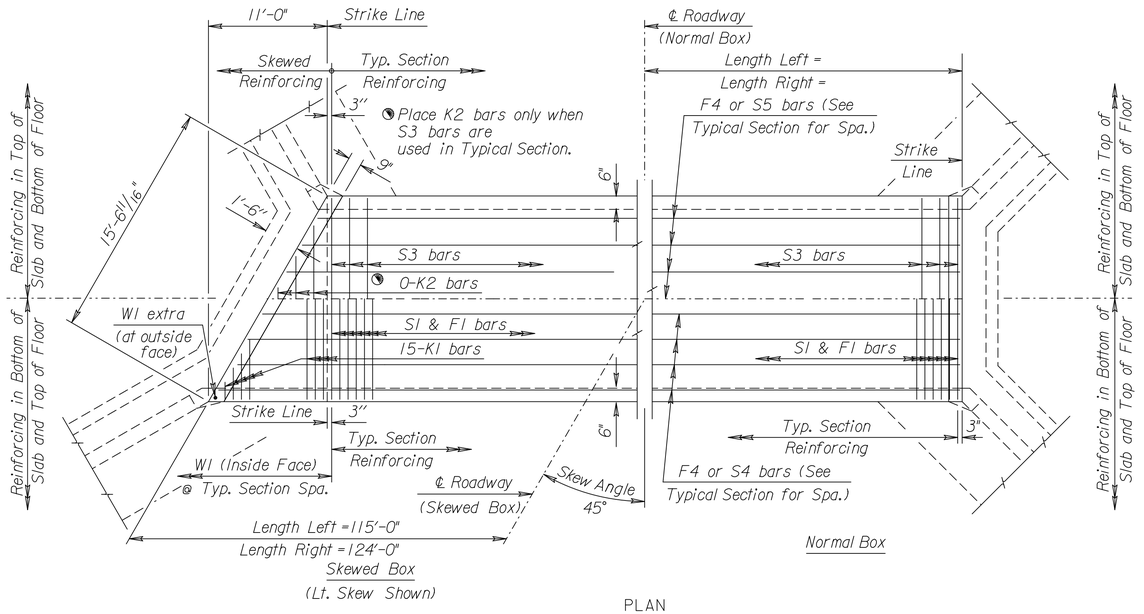
Plotted By: svb Plot Location:
File: h:\2012\12275\002\RCB\SKEW\2013-04-01_12275-004_1-10x5(Box).dgn
Plot Date: 4/29/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	55	157





TYPICAL SECTION



PLAN

* Both Upstream and Downstream

⧗For design purposes ONLY. Do NOT use for Construction					CULVERT SUMMARY			⊕includes any welded wire fabric						LRFR RATING FACTORS	
								Concrete			Reinf. Steel (Gr. 60)			HL-93 Loading	
Floor Elev. Lt.	Floor Elev. Rt.	Crown Gr. Elev.	⧗Design Fill Ht.	Skew Rt	Left Wings	Right Wings	Scour Apron	Soil Saver	Barrel (Cu.Yds.)	Wings (Cu.Yds.)	Total (Cu.Yds.)	Barrel (Lbs.)	⊕Wings (Lbs.)	Total (Lbs.)	Inventory	Operating
1358.91	1357.74	1368.24	4	45	Flared	Flared	*	No	203.07	23.94	227.01	24181	2410	26591	1.28	1.66

* See Bending Diagram

BAR SCHEDULE

F1						F3				F4			S1					S3				S4			S5		
Size	Spa.	No.	Length			No.	Length			No.	Length		Spa.	No.	Length			No.	Length			No.	Length			No.	Length
7	7"	391	10'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	56	35'-6"	7	7"	391	10'-8"	N/A	N/A	N/A	N/A	N/A	N/A	4	49	35'-6"	N/A	N/A	N/A

K1				K2				W1				W2				W3				G1			G2						
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length
7	7"	60	*	N/A	N/A	N/A	N/A	4	9"	638	6'-3"	N/A	N/A	N/A	N/A	4	42	35'-6"	N/A	N/A	N/A	N/A	5	4	15'-2"	8	4	15'-2"			

Varies from 10'-3" to 2'-1" by 7" Increments

K1
(Cut 4 each length)

BENDING DIAGRAM

All Dimensions are out to out of bars.

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

† For information only

†SUMMARY OF QUANTITIES	
Concrete (Grade 4.0)	227.1 C.Y.
Concrete (Grade 4.0)(AE)	0.0 C.Y.
Bridge Backwall Protection System (Subsidiary)	0 S.Y.
Reinforcing Steel (Gr. 60)	26600 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	0 Lbs.
Class III Excavation	0 C.Y.
Foundation Stabilization	78 C.Y.
Granular Backfill (Wingwalls)	46 C.Y.
Handrail	78.33 L.F.

See RCB Auxiliary Details for Optional Splice.

Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.
CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a ¾" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.
REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the bar unless otherwise noted.
FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.
QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when they are required by the plans.
GRANULAR BACKFILL (WINGWALLS): See the "Auxiliary Details" sheet.
STRIKE LINE: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.
BRIDGE BACKWALL PROTECTION SYSTEM: For structures with two foot of fill or less that have this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 116+57
SINGLE 10 ft x 5 ft RCB
(45°SKEW RT.)

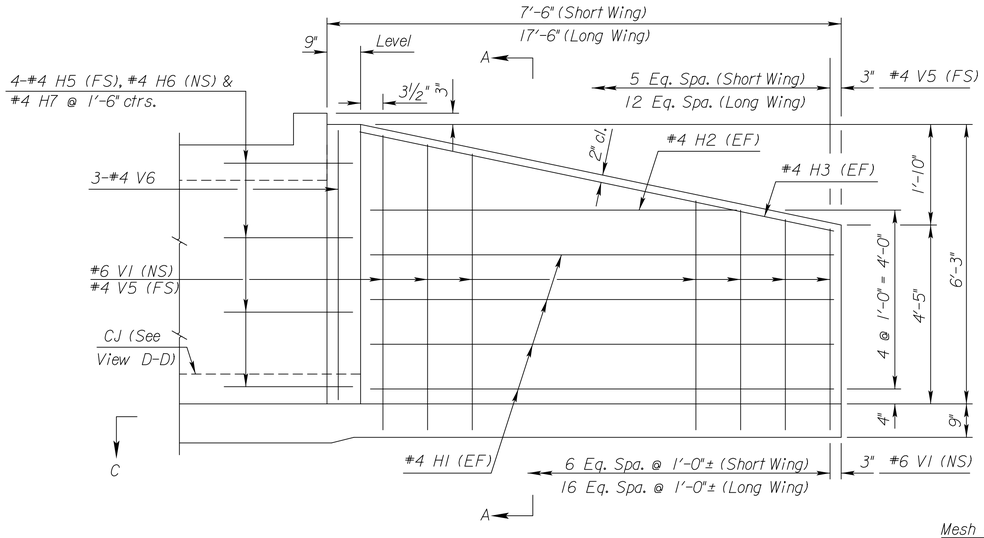
BR 1.10.5 P — Sedgwick Co.

FHWA APPROVAL		10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED		QUANTITIES	CADD
DESIGN CK.	DETAIL CK.		QUAN. CK.	CADD CK.

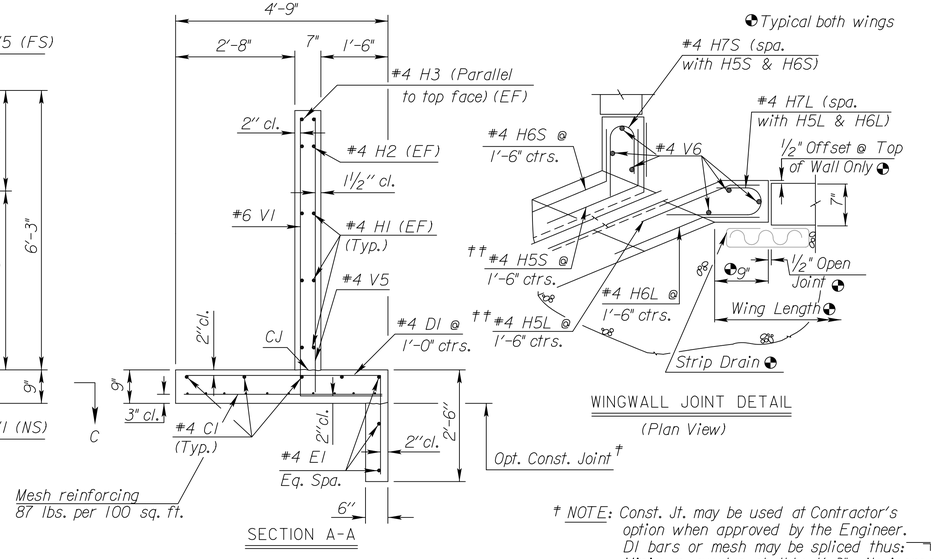
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	56	157

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular moulding.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6- W6 x W6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.
APRON: A 5" concrete slab shall be constructed between the upstream and the downstream wings in locations subject to scour only when specified on the plans or by the Engineer.
BACKFILL MATERIAL: Use Granular Backfill material meeting the requirements of SB-1, SB-2, SCA-2, SCA-3 or SCA-5. Backfill all wings to limits shown on the "RCB Auxiliary Sheet".
FILTER FABRIC: Separate in-situ material from granular backfill with approved filter fabric complying with Section 1710.
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.



ELEVATION OF WINGWALL
(Backface Shown)



SECTION A-A

WINGWALL JOINT DETAIL
(Plan View)

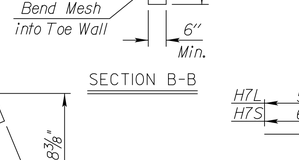
† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: ⌐¬ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

See "RCB Aux. Details" sheet for additional requirement.

VIEW D-D

SECTION E-E

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint



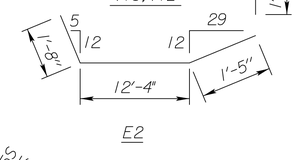
SECTION B-B

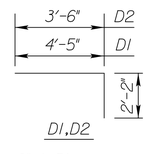
Bar	Incrmts.
V1S	3¼"
V1L	1¼"±
V5S	4⅜"±
V5L	1¾"±

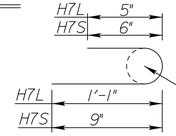
Var. 4'-11" to 6'-7" by equal increments (See Table)

V5S, V5L

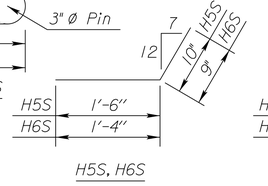
Var. 4'-11" to 6'-7" by equal increments (See Table)



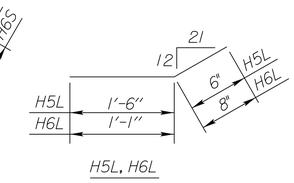




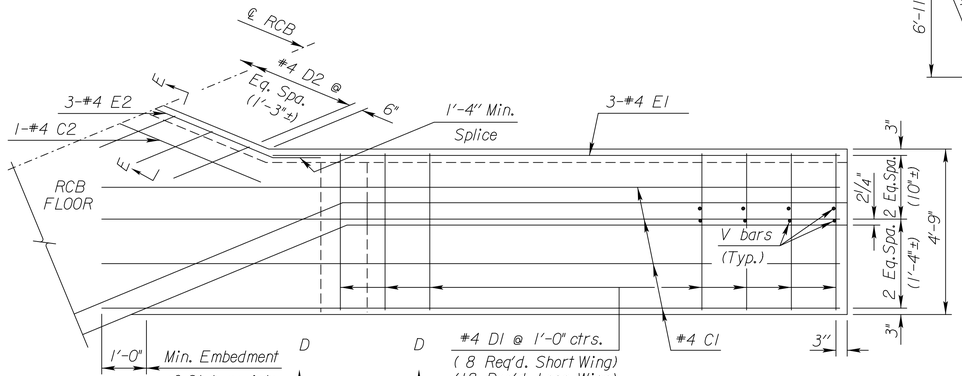
H7L, H7S



H5S, H6S

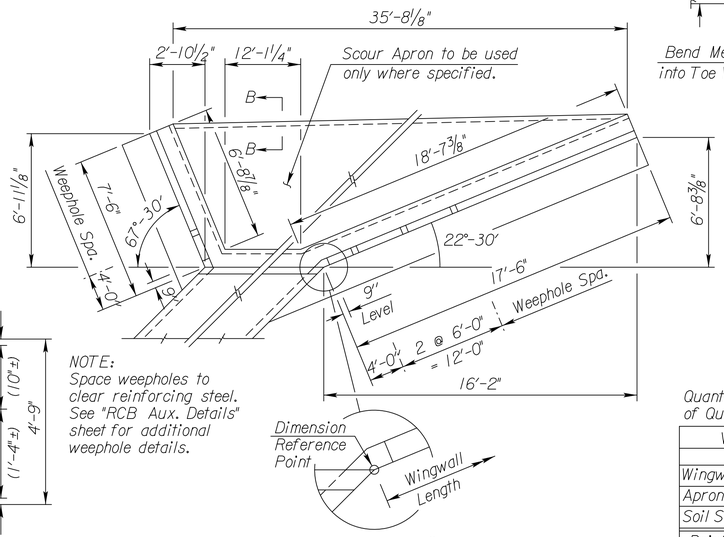


H5L, H6L



SECTION C-C
(Plan of Footing)

NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.



WING DIMENSIONS FOR 45° SKEWED BOX
(3½:1 Embankment Slope)

NOTE: Bars with an 'L' or 'S' designation identifies bars in the long wing-wall ('L') or short wingwall ('S'); ie. #4 H2L, #4 H2S, etc.

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	3.27	(C.Y.)	8.55	(C.Y.)
Apron	2.37	(C.Y.)	3.42	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)

Reinforcing Steel (Gr. 60)	913	Lbs.
Welded Wire Fabric (Wings)	113	Lbs.
Welded Wire Fabric (Apron)	179	Lbs.
Granular Backfill (Wingwalls)	23.00	C.Y.
Filter Fabric (subsidiary)	42.00	S.Y.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

45° Skew	Mark	#4 C1S	#4 C1L	#4 D1	#4 E1S	#4 E1L	#4 C2	#4 D2	#4 E2	#6 V1S	#6 V1L	#4 H1S	#4 H1L	#4 H2S	#4 H2L	#4 H3S	#4 H3L	#4 H5S	#4 H5L	#4 H6S	#4 H6L	#4 H7S	#4 H7L	#4 V5S	#4 V5L	#4 V6
	Number	4	4	26 *	3	3	1	10 *	3 *	7	17	8	8	2	2	2	2	4 *	4 *	4 *	4 *	4 *	4 *	6	13	6
	Length	9'-4"	24'-2"	6'-7"	6'-6"	18'-5"	15'-3"	5'-8"	15'-5"	*	*	6'-5"	16'-5"	6'-3"	15'-10"	6'-10"	16'-9"	2'-4"	2'-0"	2'-1"	1'-9"	1'-4"	1'-7"	*	*	6'-0"

* See Bending Diagram

BENDING DIAGRAM
(All dimensions are out to out of bars.)
†† Bend in Field

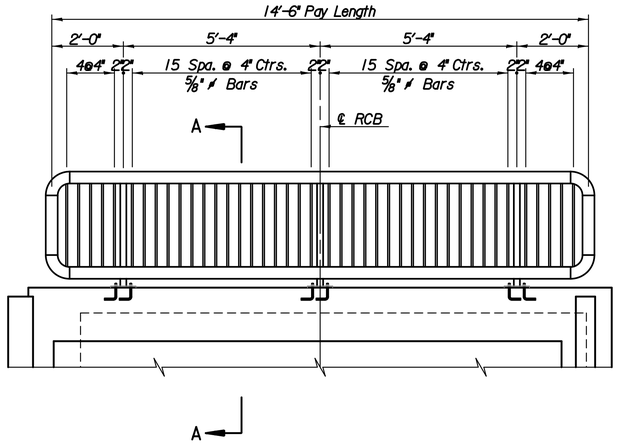
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 116+57
FLARED WINGWALLS
5 ft Rise (45°SKEW)

~~BR 10,45,05~~ Sedgwick Co.

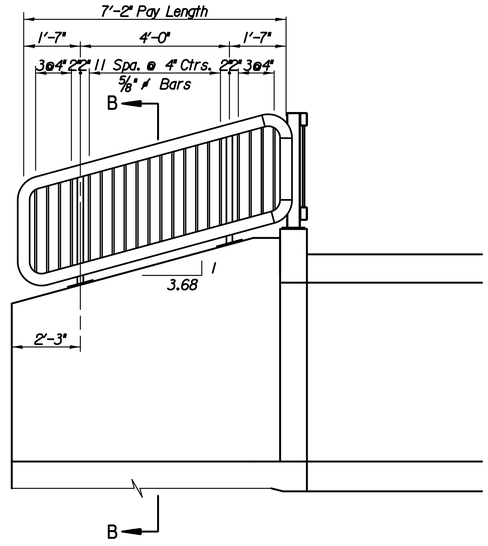
FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Plotted By: svb
Plot Location: File: I:\2012\1\2275\002\RCB\SKEW\2013-04-01_I-2275-004_I-10x5Wing1.dgn
Plot Date: 4/29/2013

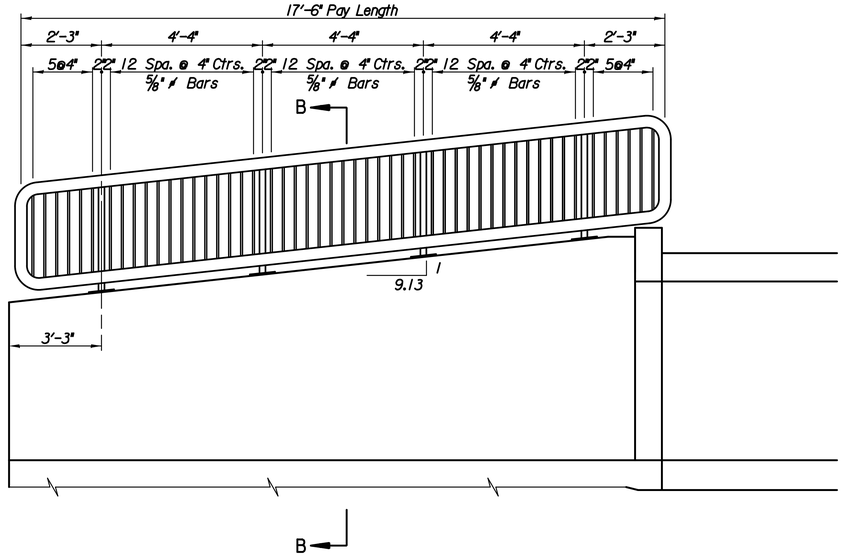


HANDRAIL ELEVATION
ON HEADWALL

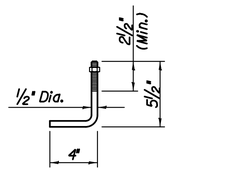
Each end



HANDRAIL ELEVATION
ON SHORT WING



HANDRAIL ELEVATION
ON LONG WING

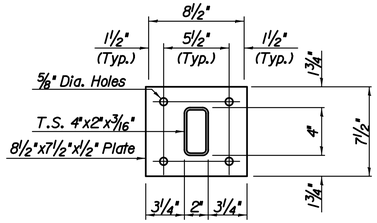


Galvanized (ASTM A153)

(May substitute expandable anchor bolts when approved by the Engineer)

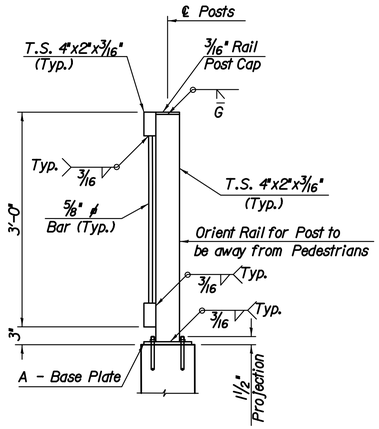
ANCHOR BOLT

(Orient to provide min. 2" edge clearance to either hubguard face or adjacent bolts)

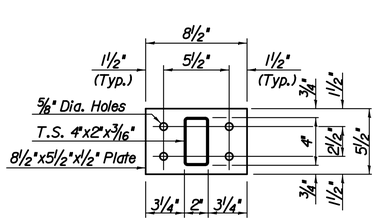


A-BASE PLATE

6 Required

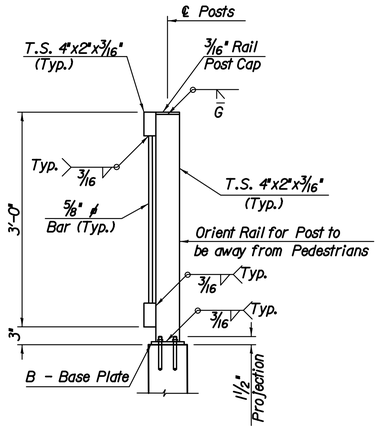


SECTION A-A



B-BASE PLATE

12 Required



SECTION B-B

GENERAL NOTES

The horizontal members of the rail and posts shall be hollow structural tubing. All structural steel and tubing shall comply to A.S.T.M. Designation A36 or A500 Grade B respectively.

Rail shall be fabricated in lengths shown.

Posts and bars shall be set vertical and shimmed if required.

Prior to painting, abrasive blast to commercial finish SSPC-SP6 to obtain surface profile of 1-½ Mils. The shop and field coats applied to structural steel shall conform to an inorganic Zinc Primer with water-borne Acrylic finish coat. (The finish coat shall match Carboline C-900) Provide a color sample to the Engineer with shop drawing submittal.

Material and construction shall conform to the latest edition of the A.W.S. Structural Welding Code.

Shop details must be submitted and approved by the Engineer.

No.	Revision	By	Date

37TH STREET NORTH

STA. 116+57

HANDRAIL DETAILS

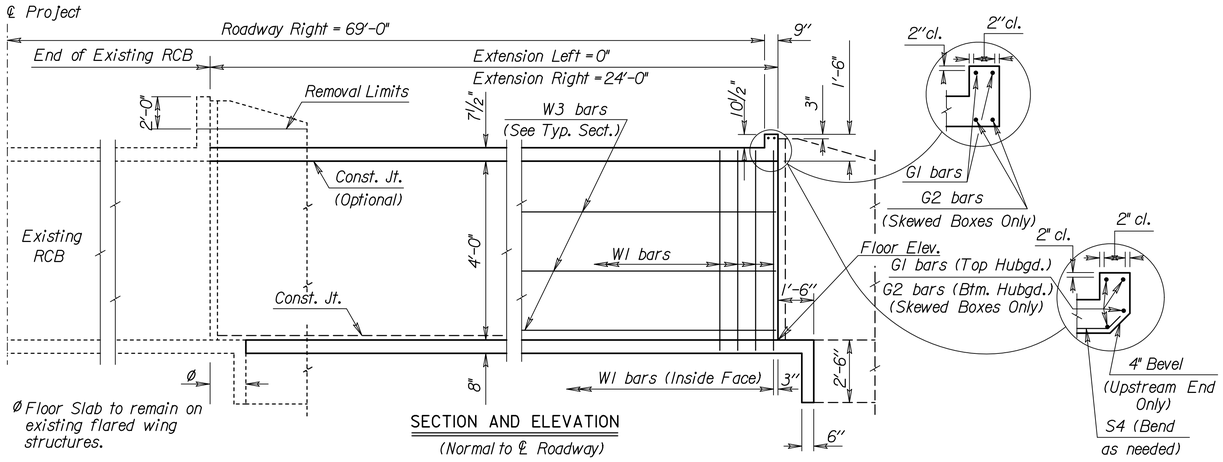
GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by MLB	Job No. 12275-002	Sht. 57 of 157
Drawn by MLB	Date May, 2013	

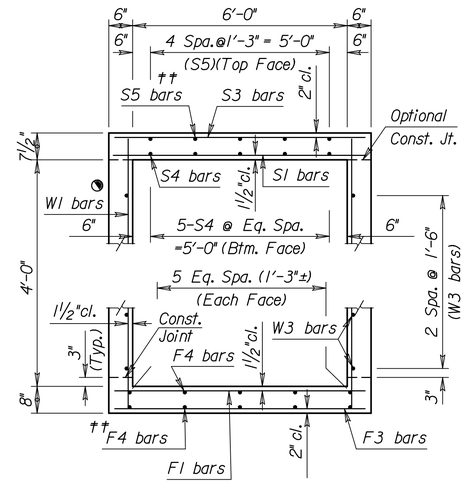
Plotted By: svb Date: 4/29/2013 6:08:21PM
FILE: h:\2012\12275\002\RCB\2013-02-01_12275-042_PedRail10x5 skew.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	58	157

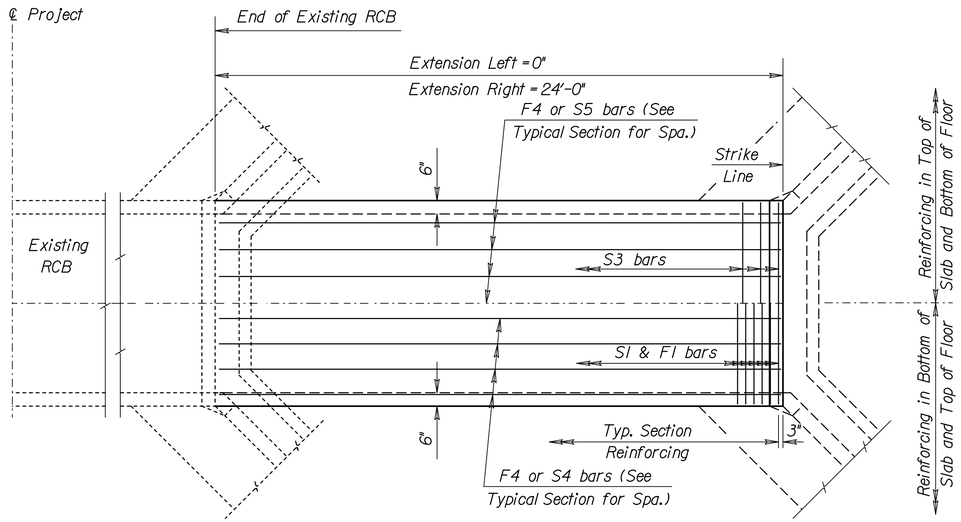


SECTION AND ELEVATION

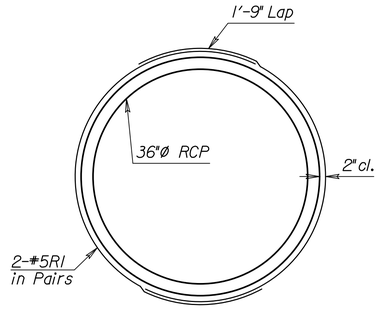
(Normal to ℄ Roadway)



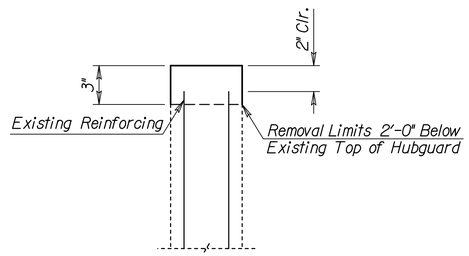
TYPICAL SECTION



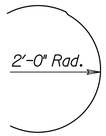
PLAN



LATERAL OPENING REINFORCING



TYPICAL HEADWALL AND
WINGWALL PARTIAL REMOVAL



R1

See RCB Auxiliary Details for Optional Splice.

Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

See Standard No. RD 080 for additional details.

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.
CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a ¾" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.
REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the bar unless otherwise noted.
FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.
QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when they are required by the plans.
GRANULAR BACKFILL (WINGWALLS): See the "Auxiliary Details" sheet.
STRIKE LINE: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.
BRIDGE BACKWALL PROTECTION SYSTEM: For structures with two foot of fill or less that have this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

⧗ For design purposes ONLY. Do NOT use for Construction — CULVERT SUMMARY — ⊕ includes any welded wire fabric

	Floor Elev.	Crown Gr. Elev.	⧗Design Fill Ht.	Skew	Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	⊕Wings (Lbs.)	Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading Inventory	Operating
Ext.Lt.	1365.64	1373.34	3	0	N/A	Yes	No	0.00	0.00	0.00	0	0	0	1.77	2.29
Ext.Rt.	1365.52				Flared			11.75	6.16	17.91	1313	677	1990		

BAR SCHEDULE

	F1 Size	F1 Spa.	F1 No.	F1 Length		F3 Size	F3 Spa.	F3 No.	F3 Length	F4 Size	F4 No.	F4 Length	S1 Size	S1 Spa.	S1 No.	S1 Length		S3 Size	S3 Spa.	S3 No.	S3 Length	S4 Size	S4 No.	S4 Length	S5 Size	S5 No.	S5 Length
Ext.Lt.	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ext.Rt.	5	5"	55	6'-8"		N/A	N/A	N/A	N/A	4	6	22'-2"	5	5"	58	6'-8"		N/A	N/A	N/A	N/A	4	5	23'-8"	N/A	N/A	N/A

	K1 Size	K1 Spa.	K1 No.	K1 Length		K2 Size	K2 Spa.	K2 No.	K2 Length	W1 Size	W1 Spa.	W1 No.	W1 Length		W3 Size	W3 No.	W3 Length		G1 Size	G1 No.	G1 Length	R1 Size	R1 No.	R1 Length				
Ext.Lt.	N/A	N/A	N/A			N/A	N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A				
Ext.Rt.	N/A	N/A	N/A			N/A	N/A	N/A		4	9"	66	4'-11"		4	6	23'-8"		5	2	6'-8"	5	4	8'-1"				

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

BILL OF MATERIALS

Concrete (Grade 4.0)	18.0 C.Y.
Concrete (Grade 4.0)(AE)	0.0 C.Y.
Bridge Backwall Protection System (Subsidiary)	—— S.Y.
Reinforcing Steel (Gr. 60)	1990 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	0 Lbs.
Class III Excavation	0 C.Y.
Foundation Stabilization	10 C.Y.
Granular Backfill (Wingwalls)	8 C.Y.
Handrail	61.9 L.F.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 163+67.92

SINGLE 6 ft x 4 ft RCB
24.0 ft EXT. RT.

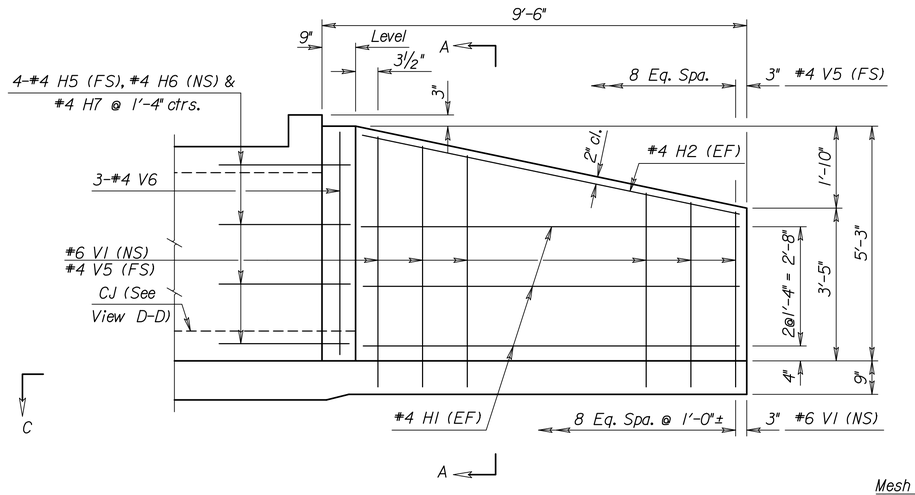
~~BR-1.6.4-P~~ Sedgwick Co.

FHWA APPROVAL		10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED		QUANTITIES	CADD
DESIGN CK.	DETAIL CK.		QUAN. CK.	CADD CK.

06	SYSTEM PART	VERSION/ID
	CADD V8A	12/6/2000
	DATABASE	4/25/2012
	RCB PROGRAM	7.1.12
	KBOX MODEL ID	289
	CELL LIBRARY	1/9/2012

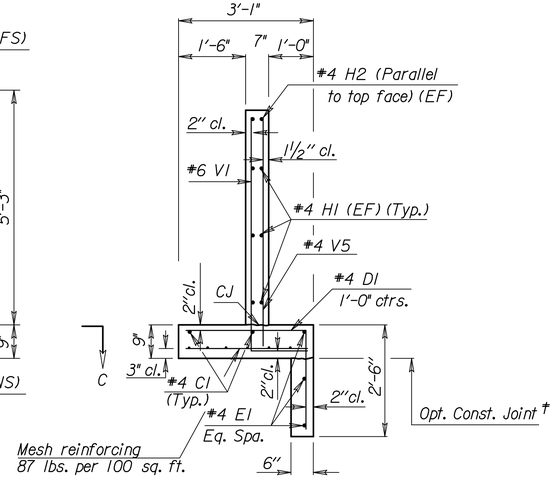
Plotted By: svb
File: I:\20\2\2275002\RCB\2013-02-01_I2275-042_1-6x4fBox1.dgn
Plot Location:
Plot Date: 4/29/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	59	157



ELEVATION OF WINGWALL

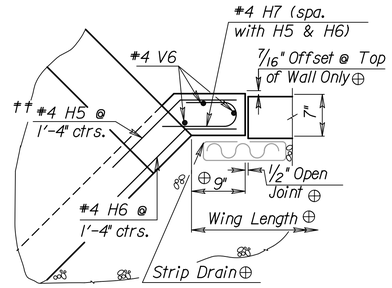
(Backface Shown)



SECTION A-A

See "RCB Aux. Details" sheet for additional requirements.

⊕ Typical both wings



WINGWALL JOINT DETAIL

(Plan View)

† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: ⌐ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.

DESIGN LOADING: HL93

UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.

CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular moulding.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6- W6 x W6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)

QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.

APRON: A 5" concrete slab shall be constructed between the down-stream wings in locations subject to scour only when specified on the plans or by the Engineer.

BACKFILL MATERIAL: Use Granular Backfill material meeting the requirements of SB-1, SB-2, SCA-2, SCA-3 or SCA-5. Backfill all wings to limits shown on the "RCB Auxiliary Sheet".

FILTER FABRIC: Separate in-situ material from granular backfill with approved filter fabric complying with Section 1710.

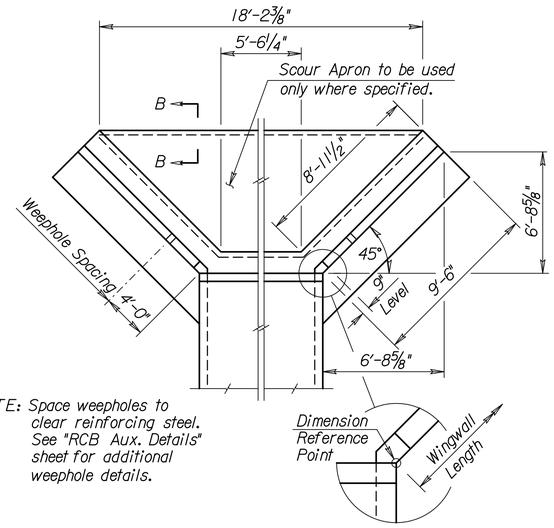
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

VIEW D-D

SECTION E-E

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

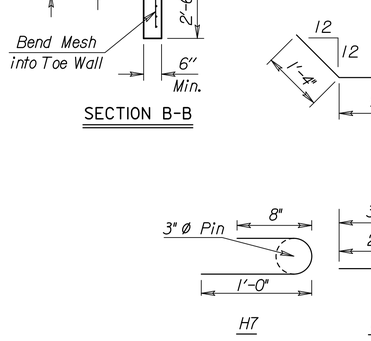
SECTION C-C



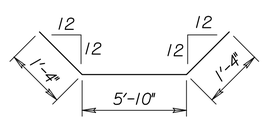
NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR NORMAL BOX

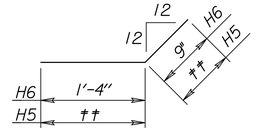
(3½:1 Embankment Slope)



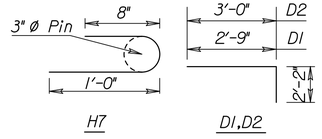
SECTION B-B



E2



H5, H6



H7 D1,D2

V5 | Var. 3'-10" to 5'-7" by equal increments (2⅝") | 2 Req'd. each length

V5

Var. 3'-10" to 5'-7" by equal increments (2⅝"±)

1'-3"

V1

(2 Req'd., each length)

BENDING DIAGRAM

(All dimensions are out to out of bars.)

†† Bend in Field

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL BILL OF MATERIALS (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	1.80	(C.Y.)	4.30	(C.Y.)
Apron	1.23	(C.Y.)	1.86	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)
Reinforcing Steel (Gr. 60)			521	Lbs.
Welded Wire Fabric (Wings)			51	Lbs.
Welded Wire Fabric (Apron)			105	Lbs.
Granular Backfill (Wingwalls)			8.00	C.Y.
Filter Fabric (subsidiary)			19.00	S.Y.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

✳ See Bending Diagram

0° Skew		#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#6V1	#4H1	#4H2	#4H5	#4H6	#4H7	#4V5	#4V6
	No.	4	18✳	6	1	5 ✳	3 ✳	18	12	4	8 ✳	8✳	8✳	18	6
	Length	11'-7"	4'-11"	8'-9"	6'-8"	5'-2"	8'-6"	✳	8'-4"	8'-6"	1'-10"	2'-1"	1'-9"	✳	5'-0"

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

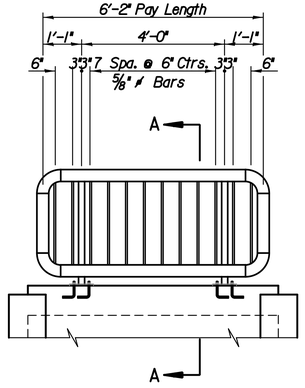
Sta. 163+67.92

FLARED WINGWALLS
4 ft Rise (0°SKEW)

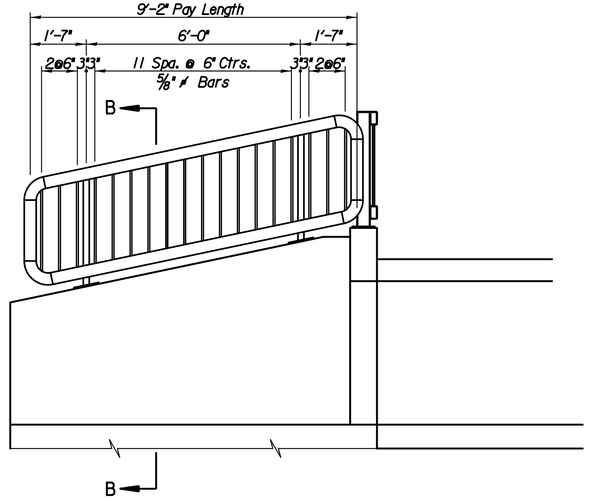
~~BR 10.00.04~~ Sedgwick Co.

FHWA APPROVAL		10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED		QUANTITIES	CADD
DESIGN CK.	DETAIL CK.		QUAN. CK.	CADD CK.

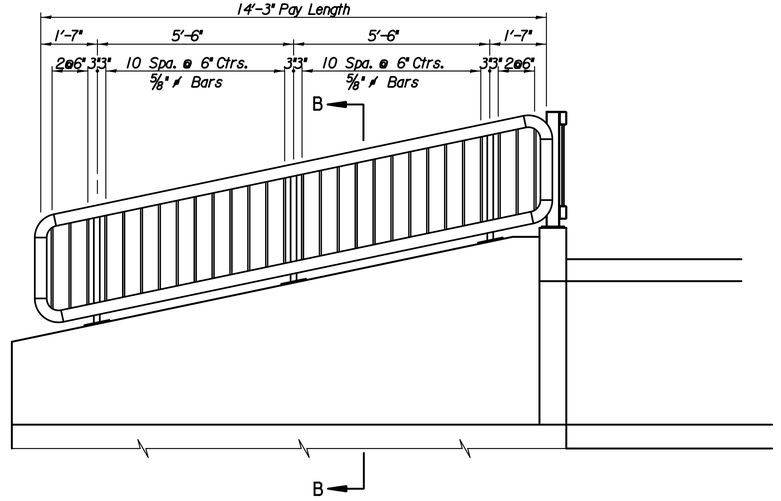
Plotted By: svb
Plot Location:
File: \\201\2\12275\002\RCB\2013-02-01_12275-042_I-6x4Wing1.dgn
Plot Date: 4/29/2013



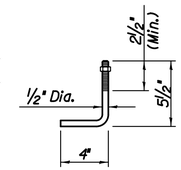
HANDRAIL ELEVATION
ON HEADWALL
Each end



HANDRAIL ELEVATION
ON WING OF RCB EXT.



HANDRAIL ELEVATION
ON WING OF EXISTING RCB

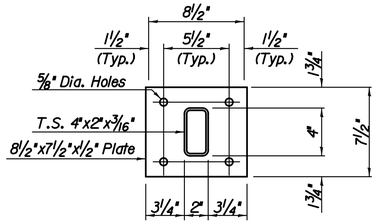


Galvanized (ASTM A153)

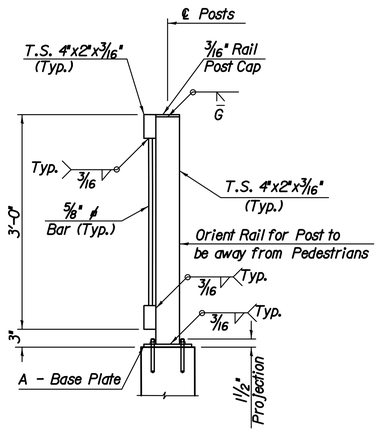
(May substitute expandable anchor bolts when approved by the Engineer)

ANCHOR BOLT

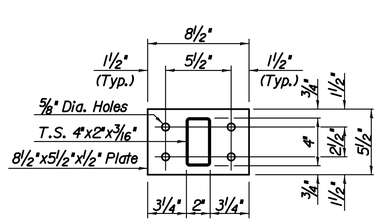
(Orient to provide min. 2" edge clearance to either hubguard face or adjacent bolts)



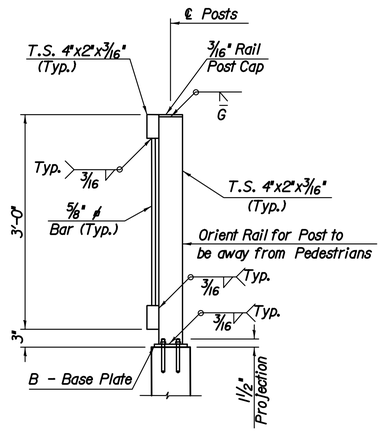
A-BASE PLATE
4 Required



SECTION A-A



B-BASE PLATE
10 Required



SECTION B-B

GENERAL NOTES

The horizontal members of the rail and posts shall be hollow structural tubing. All structural steel and tubing shall comply to A.S.T.M. Designation A36 or A500 Grade B respectively.

Rail shall be fabricated in lengths shown.

Posts and bars shall be set vertical and shimmed if required.

Prior to painting, abrasive blast to commercial finish SSPC-SP6 to obtain surface profile of 1-1/2 Mils. The shop and field coats applied to structural steel shall conform to an inorganic Zinc Primer with water-borne Acrylic finish coat. (The finish coat shall match Carboline C-900) Provide a color sample to the Engineer with shop drawing submittal.

Material and construction shall conform to the latest edition of the A.W.S. Structural Welding Code.

Shop details must be submitted and approved by the Engineer.

No.	Revision	By	Date

37TH STREET NORTH

STA. 163+67.92

HANDRAIL DETAILS

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

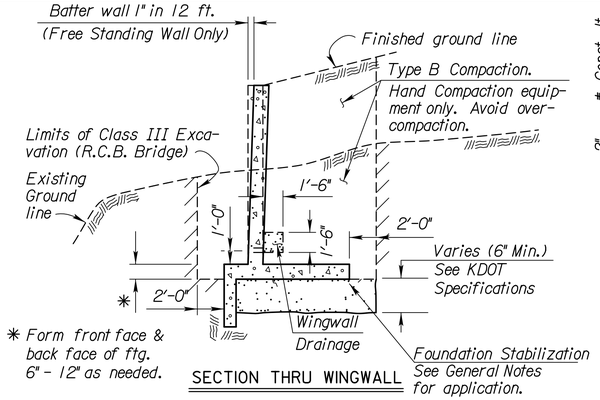
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MLB	Job No.	12275-002
Drawn by	MLB	Date	May, 2013

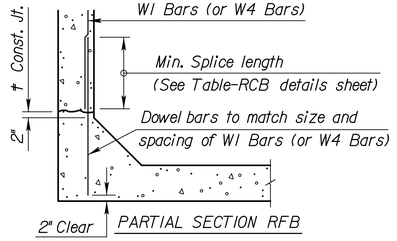
Sht. 60 of 157

Plotted By: svb Date: 4/29/2013 6:12:30 PM
FILE: I:\2012\12275\002\RCB\2013-02-01_12275-042_PedRail 6x4.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	61	157



SECTION THRU WINGWALL

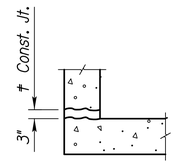


OPTIONAL BAR DETAIL

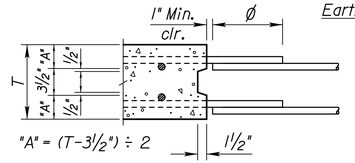
The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.

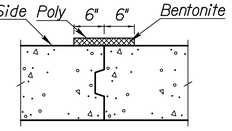
†OPTIONAL COLD JOINT

The Contractor has the option of placing the Lower Horizontal Construction Joint at the top of the slab for RCB's or at the top of the fillet for RFB's



Ø Longitudinal bars shall extend through the joint to provide a minimum lap equal to the required splice length. See RCB Details Sh. for required splice length.



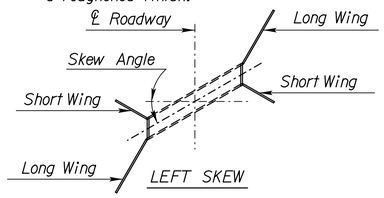


VERTICAL CONSTRUCTION JOINTS

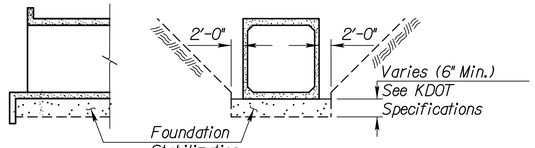
NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Backwall Protection System". ~~Material and installation of the bentonite system shall be subsidiary to the bid item "Grade 4.0 Concrete".~~

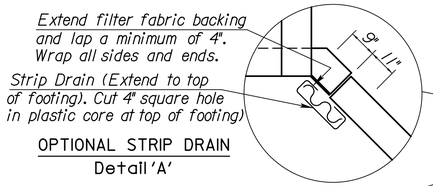


PLAN VIEW SKEWED R.C.B.

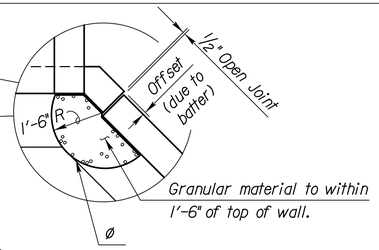


PARTIAL ELEVATION

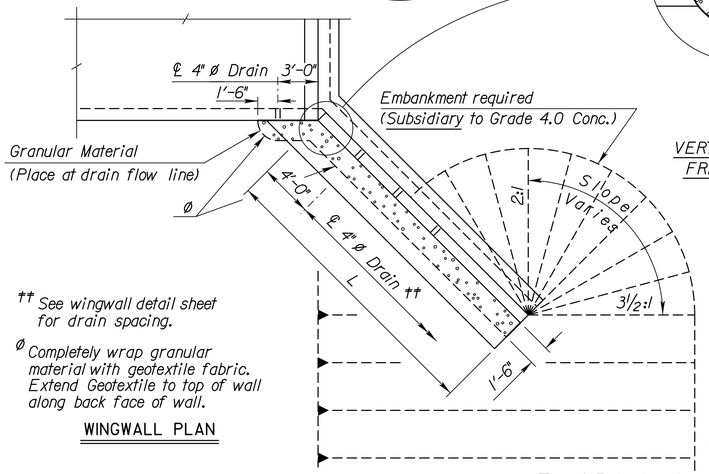
SECTION



OPTIONAL STRIP DRAIN
Detail 'A'



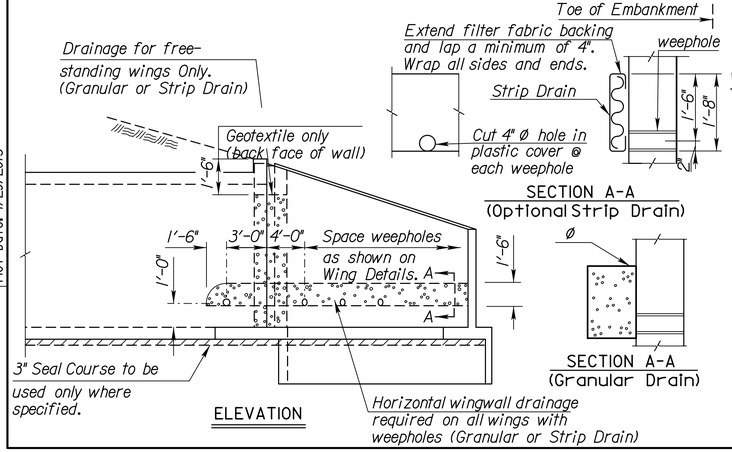
VERTICAL WINGWALL DRAINAGE FOR FREE-STANDING WINGWALLS ONLY



†† See wingwall detail sheet for drain spacing.

Ø Completely wrap granular material with geotextile fabric. Extend Geotextile to top of wall along back face of wall.

WINGWALL PLAN



ELEVATION

SECTION A-A
(Optional Strip Drain)

SECTION A-A
(Granular Drain)

GENERAL NOTES

Wingwall Drainage:

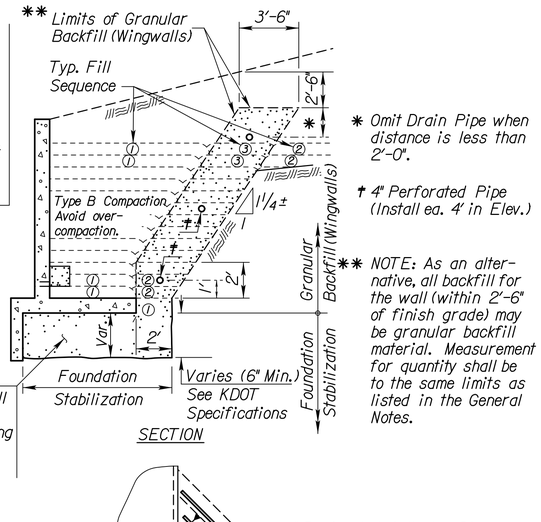
1. All wingwalls with weepholes shall have horizontal wingwall drainage as shown. Free-standing wingwalls shall also have the vertical wingwall drainage. Strip drains may be used in lieu of aggregate. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.
2. Construction and materials for wingwall drainage, including weepholes, geotextile fabric, granular material, and strip drain shall be subsidiary to the project. Granular material for wingwall drainage shall conform to the requirements of UD-1. Weepholes may be a formed opening or corrugated polyethylene tubing.

Wingwall Foundation Stabilization:

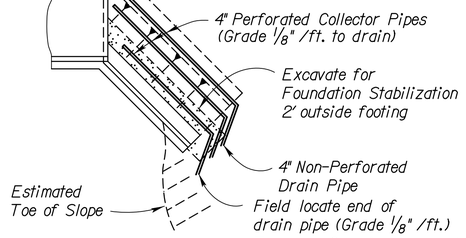
The Foundation Stabilization quantity has been calculated to the limits shown in the Section Thru Wingwall. The depth may be increased by the Engineer. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Seal Course:

1. Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.



SECTION



PLAN

GRANULAR BACKFILL AND FOUNDATION STABILIZATION

GENERAL NOTES

Foundation Stabilization:

The depth of Foundation Stabilization may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Granular Backfill (Wingwalls):

1. In locations where the material behind the wingwall consist of soils judged as high plasticity clays, fat clays, expansive clays or organic clays, Granular Backfill (Wingwalls) shall be used. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer.
2. ~~Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown. Drainage pipe, rodent screens, and excavation shall be subsidiary to the bid item, "Granular Backfill (Wingwalls)".~~
3. Material for Granular Backfill (Wingwalls) shall conform to the requirements of UD-1 or BD-1. Drainage Pipe shall be corrugated polyethylene tubing conforming to KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
3	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH
2	10/16/06	Add Found. Stab. Details and Notes	JPJ	KFH
1	3/2/06	Optional Construction Joint	JPJ	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

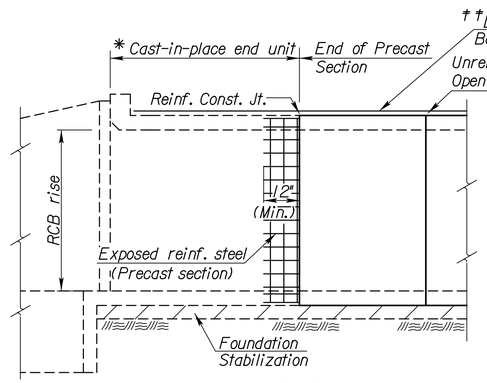
RCB
AUXILIARY DETAILS

~~BR020~~

FHWA APPROVAL		11/01/06	APP'D		KENNETH F. HURST
DESIGNED	RAM	DETAILED	RDR	QUANTITIES	TRACED
DESIGN CK.	RRR	DETAIL CK.	RRR	QUAN.CK.	TRACE CK.

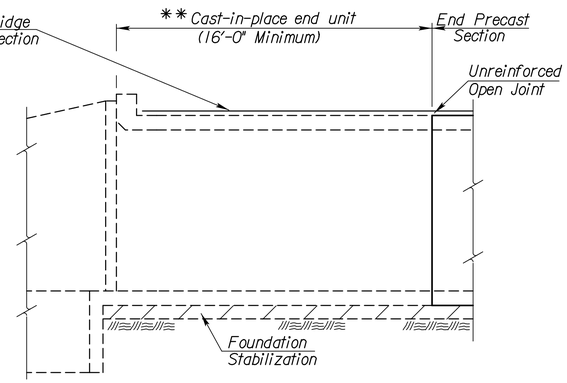
Std. Base File: br020.dgn
Plotted By: svb
Plot Location:
File: \\201\2\2275\002\RCB\2275-002 br020.dgn
Plot Date: 4/29/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	62	157



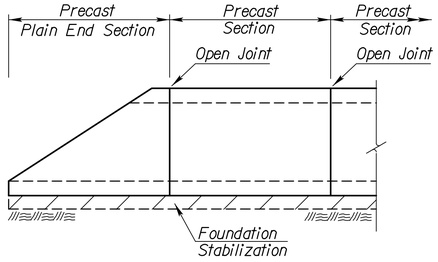
ELEVATION AT HEADWALL

* Minimum barrel length of cast-in-place end unit shall equal the RCB rise or 8'-0", whichever is less. This length can be used when the joint between the cast-in-place end unit and the pre-cast section is reinforced as shown.



ELEVATION AT HEADWALL

** Minimum barrel length of cast-in-place end unit shall be 16'-0" when using an unreinforced open joint at the end of the precast section.



ELEVATION AT PRECAST END SECTION

(Precast End Sections are permitted where straight wings are shown in the plans or at the downstream end for single cell RCB with a rise of six feet or less.)

NOTE: See "Bridge Excavation" sheet, (Std. No. BR100), for excavation details and basis of payment.

NOTE: Minimum length of precast section shall be 4'-0".

NOTE: A single cell box of equivalent area may be substituted for a double cell box with cell spans less than or equal to 6'-0". Any revision in the cell height from that shown on the plans will not be permitted, unless approved by the Engineer. Two single cell boxes may be substituted for a double cell box, when approved by the Engineer.

NOTE: See respective RCB Standard Sheets for cast-in-place details.

NOTE: When the fill height is 2'-0" or less "Bridge Backwall Protection" is required.

GENERAL NOTES

(All Items on this sheet are subsidiary)

PRECAST BOX CULVERTS: If precast boxes are specified, construct them at the locations shown in the plans and according to the requirement shown on this sheet. When approved by the Engineer, precast box culverts may be used in lieu of cast-in-place box culverts. If the Contractor chooses the precast option, use the cast-in-place quantities as the cost basis. This cost includes all labor equipment, material and incidentals necessary to complete the installation.

Unless otherwise approved by the Engineer, use cast-in-place collars at horizontal and vertical changes in RCB alignment. Use cast-in-place end sections and wingwalls except as noted on this sheet. The Engineer may require cast-in-place sections at junctions of drainage structures.

Cast-in-place concrete work shall conform to the requirements of the KDOT Specifications and KDOT's "Guidelines for Structural Design and Detail of Reinforced Concrete Box Culverts". Use Grade 4.0 concrete and Grade 60 reinforcing steel conforming to ASTM A615 for cast-in-place construction.

Cast-in-place box sections shall have member thicknesses and reinforcement not less than the RCB Standard from the original design. Connections between the cast-in-place and precast members shall be drilled and grouted according to details shown on this sheet. When the wall thicknesses differ between the cast-in-place and precast, transition at a 4:1 without reducing the box opening size. See KDOT Specifications for further requirements.

SPECIFICATIONS: Single-cell Precast Concrete Box Culverts shall conform to the requirements of the following specifications except as noted in the KDOT Specifications. Design multiple-cell precast boxes in accordance with the criteria used to develop the single-cell precast boxes. (See Appendix of ASTM Specification C 1577-08, Table 2 and the latest AASHTO LRFD Specifications.)

DISTRIBUTION SLAB: Fill heights less than 2 feet require a distribution slab. Construct the distribution slab over the width of the exterior walls of the barrel to the outside edges of the roadway shoulders. Terminate the slab a minimum of 2 feet from the edge of a barrel segment.

If the fill height is less than or equal to one foot then:

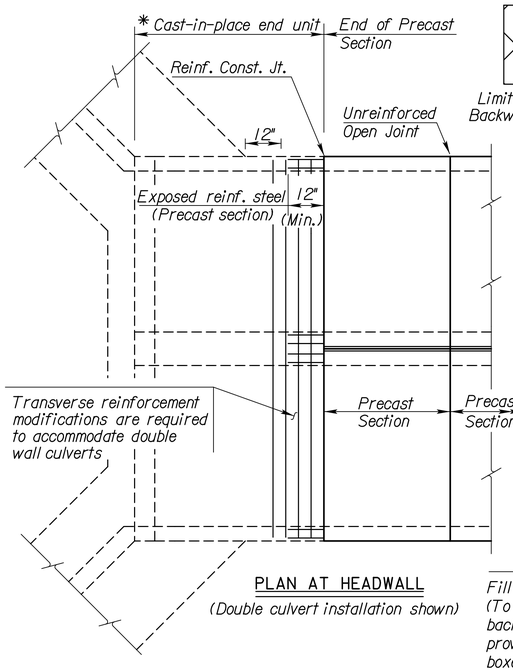
A distribution slab shall be a minimum of 6 inches thick, reinforced with #4 bars spaced at 18 inches, placed perpendicular to centerline of the box and with #5 bars spaced at 12 inches, placed parallel to centerline of the box. Substitution of an equivalent welded wire fabric is acceptable. Place a min. of 3" of granular material between the box and slab.

If the fill height is greater than one foot then:

(Use one of the following options)

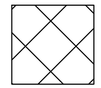
1) Use the cast-in-place criteria above.
2) Use precast distribution slabs with same criteria as the cast-in-place above. Center the joints in slabs over the box segments. Provide a minimum of 3 inches of granular material between the box and the slabs.
3) Reinforced concrete pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Reinforce as noted above. Provide a minimum of 3 inches of granular material between the concrete pavement and the precast boxes.
4) Asphalt pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Provide a minimum of 6 inches of granular material between the asphalt and the precast boxes. Also provide a geogrid on top of the granular material.

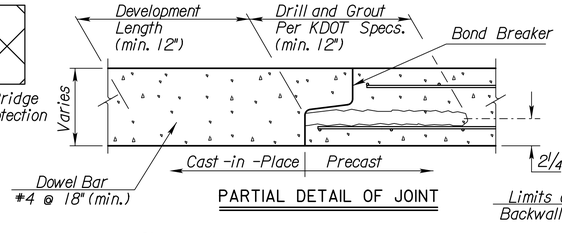
A special design will be required when the above options are not geometrically possible.



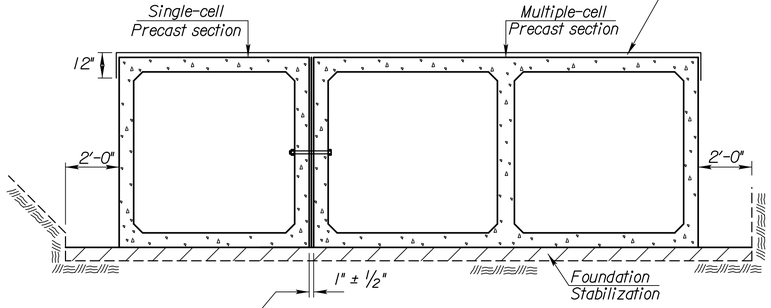
PLAN AT HEADWALL

(Double culvert installation shown)





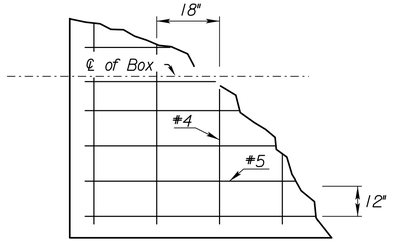
PARTIAL DETAIL OF JOINT



TYPICAL INSTALLATION DETAILS

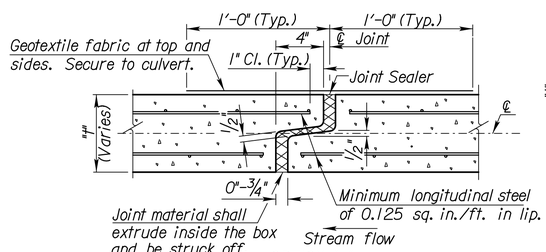
Fill space between boxes with grout. (To maintain proper joint gap, partially backfill boxes prior to grouting or provide a mechanical connection between boxes.)

Bridge Backwall Protection not shown for clarity

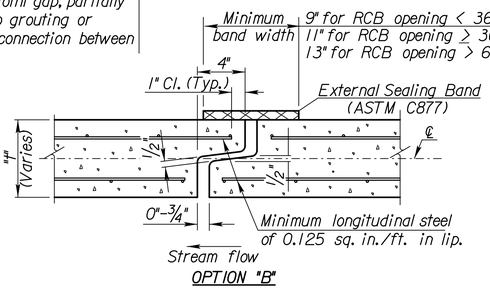


CAST IN PLACE DISTRIBUTION SLAB

(Partial plan of reinforcement)

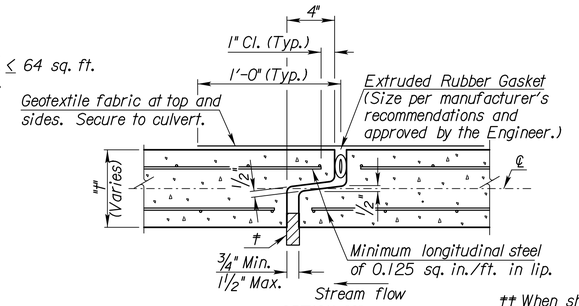


OPTION "A"



OPTION "B"

OPEN JOINT DETAIL



OPTION "C"

† Insert temporary, 3/4"-1" wide, hardwood wedges to prevent over-compressing gasket.

†† When shown on the shop details use a Bridge Backwall Protection conforming to Section 1700 of the KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
5	07-28-11	Added Bridge Backwall Protection	JPJ	TLF
4	03-10-10	Clarification of Extension	JPJ	KFH
3	12-03-09	Revised ASTM / Added Note	JPJ	KFH
2	4-07-09	Clarified Distribution Slab	JPJ	LRR
1	07-31-01	Revised Notes	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

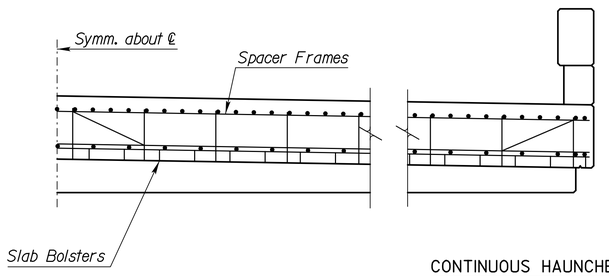
PRECAST CONCRETE BOX CULVERT DETAILS

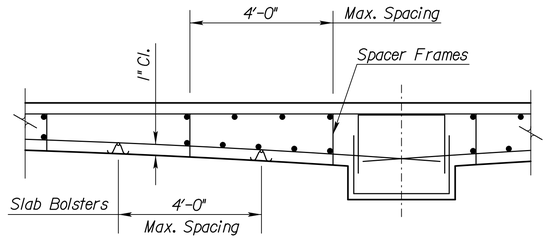
BR031

FHWA APPROVAL		9-20-11	APP'D	KENNETH F. HURST
DESIGNED	DETAILED PF		QUANTITIES	CADD
DESIGN CK.	DETAIL CK. RAM		QUAN. CK.	CADD CK.

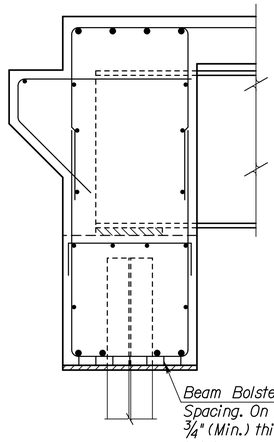
Std. Base File: br031.dgn
Plotted By: svb
Plot Location:
File: \\201211275002\RCB\2275-002 br031.dgn
Plot Date: 4/24/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	63	157



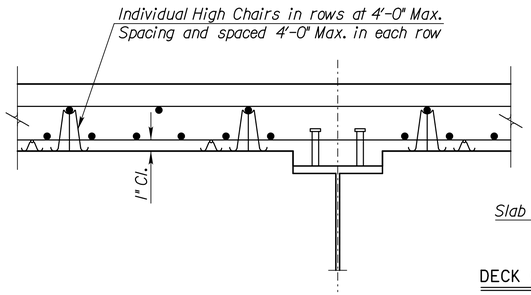


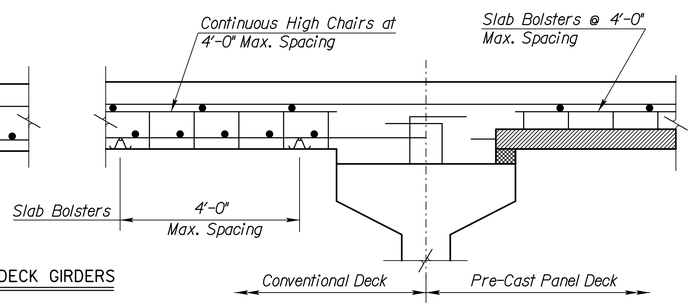
CONTINUOUS HAUNCHED SLAB



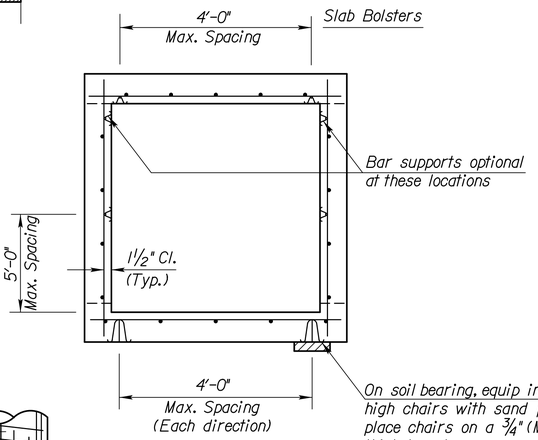
Beam Bolster at 4'-0" Max. Spacing. On soil bearing, place a 3/4" (Min.) thick board under bolster.

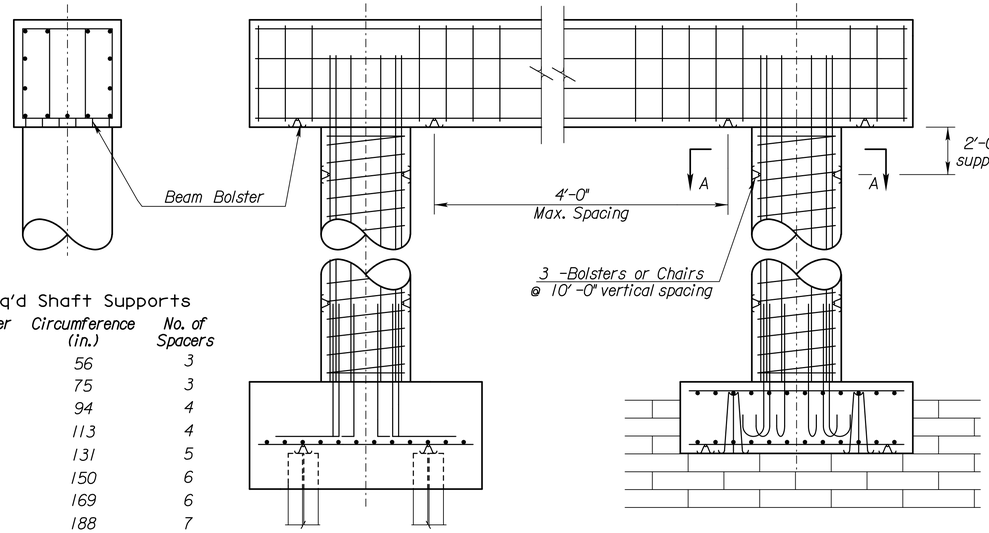
ABUTMENT





DECK GIRDERS

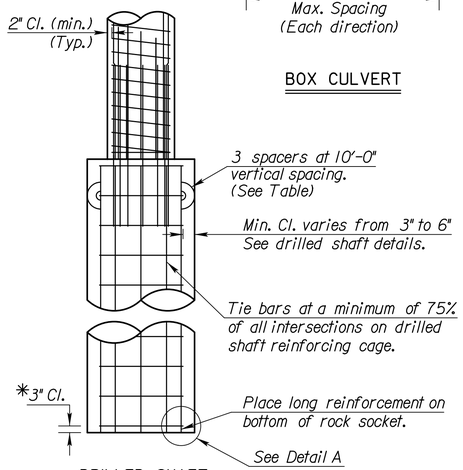




PIER

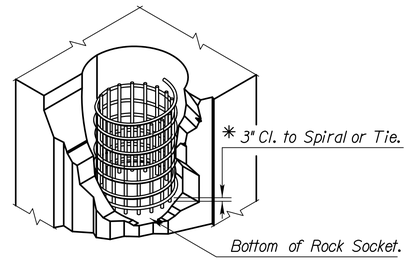
Req'd Shaft Supports

Diameter (in.)	Circumference (in.)	No. of Spacers
18	56	3
24	75	3
30	94	4
36	113	4
42	131	5
48	150	6
54	169	6
60	188	7
66	207	7
72	226	8
78	244	9
84	263	9
90	282	10
96	301	11
102	320	11
108	339	12



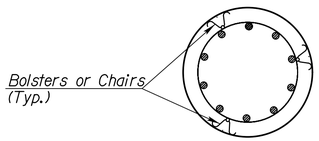
DRILLED SHAFT

BOX CULVERT



DETAIL A

* Note: Longitudinal reinforcing steel is placed on the bottom of the rock socket. Maintain 3" clearance from the bottom of rock socket to the first spiral or tie bar.



SECTION A-A

TYPICAL SECTION

Reference is made to the latest edition of the CRSI "Manual of Standard Practice" for recommended industry practices concerning reinforcing steel.

Use only the following types of bar supports:

1) Wire Bar Supports:

a) Epoxy coated reinforcing: Class 1 Protection
b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection

2) Plastic Bar Supports

3) Supplementary bars

When securing epoxy coated reinforcement, use tie wires or metal clips that are epoxy or plastic coated.

Do not weld reinforcing steel to bar supports or to other reinforcing steel. Shop weld spacer frames for haunched slabs.

Tie bars at all intersections around the perimeter of each mat and at not less than 2'-0" centers or at every intersection, whichever is greater.

Where more than one length of bar support is required, lap the end legs so they are locked or tied together.

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within 1/4" of that indicated on the plans.

Spacings shown are maximums. Use sufficient supports, as determined by the Engineer, to retain the reinforcing steel in position.

Construct any platforms, required for the support of workers and/or equipment during concrete placement, directly on the forms and not on the reinforcing steel.

Designs and arrangements of Supports or Spacers other than as shown on this sheet, may be used with the permission of the Engineer.

NO.	DATE	REVISIONS	BY	APP'D
5	11-10-10	Column Bar Supports Req'd	JPJ	TLF
4	12-01-05	Drilled Shaft Spiral Steel Placement	JPJ	KFH
3	8-21-00	Added Pre-Cast Panel Detail	RAM	KFH
2	12-20-99	Added Haunched Slab Bolsters	RAM	KFH
1	12-09-99	Revised Drilled Shaft Clearance	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

SUPPORTS AND SPACERS FOR REINFORCING STEEL

BRI20

FHWA APPROVAL		11-17-10	APP'D	Terry L. Fleck	
DESIGNED	RAM	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	LRR	DETAIL CK.	RAM	QUAN. CK.	CADD CK. RAM

Std. Base File: bri20.dgn
Plotted By: svb
File: I:\2013\2275002\RCBV\2275-002 bri20.dgn
Plot Date: 4/24/2013
Plot Location:

4" SIDEWALK PAVEMENT

LOCATION	STATION TO STATION		SIDE	WIDTH (FT)	QUANTITY (S.F.)
37th St.	100+51.08	100+58.25	Rt.	4	38.04
37th St.	100+51.22	100+72.79	Lt.	4	128.24
37th St.	100+58.25	105+00.00	Rt.	6	2778.84
37th St.	100+72.79	105+00.00	Lt.	6	2457.66
37th St.	105+00.00	111+00.00	Lt.	6	3517.20
37th St.	105+00.00	111+00.00	Rt.	6	3682.80
37th St.	111+00.00	117+00.00	Lt.	6	3600.00
37th St.	111+00.00	117+00.00	Rt.	6	3606.72
37th St.	117+00.00	123+00.00	Lt.	6	3600.00
37th St.	117+00.00	117+67.10	Rt.	6	407.11
37th St.	118+45.60	121+21.85	Rt.	6	1672.87
37th St.	121+44.77	123+00.00	Rt.	6	940.97
37th St.	123+00.00	129+00.00	Lt.	6	3781.62
37th St.	123+00.00	129+00.00	Rt.	6	3425.10
37th St.	129+00.00	135+00.00	Lt.	6	3627.00
37th St.	129+00.00	135+00.00	Rt.	6	3579.72
37th St.	135+00.00	141+00.00	Lt.	6	3601.08
37th St.	135+00.00	136+72.16	Rt.	6	1037.47
37th St.	137+50.66	141+00.00	Rt.	6	2100.97
37th St.	141+00.00	147+00.00	Lt.	6	3849.96
37th St.	141+00.00	147+00.00	Rt.	6	3352.56
37th St.	147+00.00	153+00.00	Lt.	6	3710.46
37th St.	147+00.00	153+08.78	Rt.	6	3550.45
37th St.	153+00.00	159+00.00	Lt.	6	3486.54
37th St.	153+87.28	159+00.00	Rt.	6	3204.07
37th St.	159+00.00	164+00.05	Lt.	6	2780.40
37th St.	159+00.00	160+90.09	Rt.	6	1277.45
37th St.	161+12.66	164+09.76	Rt.	6	1911.58
37th St.	164+00.05	164+04.41	Lt.	4	24.52
Total					74731.40

CURB AND GUTTER

LOCATION	STATION TO STATION		TYPE I (L.F.)
37th St.	100+78.83	105+00.00	842.34
37th St.	105+00.00	111+00.00	1200.00
37th St.	111+00.00	117+00.00	1201.14
37th St.	117+00.00	123+00.00	984.05
37th St.	123+00.00	129+00.00	1200.00
37th St.	129+00.00	135+00.00	1201.14
37th St.	135+00.00	141+00.00	1066.56
37th St.	141+00.00	147+00.00	1199.97
37th St.	147+00.00	153+00.00	1182.38
37th St.	153+00.00	159+00.00	1086.29
37th St.	159+00.00	164+28.51	1039.25
Total			12203.12

7" A.C. PAVEMENT (BM-2)

LOCATION	STATION TO STATION		QUANTITY (S.Y.)
37th St.	101+86.83	105+00.00	2362.76
37th St.	105+00.00	111+00.00	3733.33
37th St.	111+00.00	117+00.00	4069.87
37th St.	117+00.00	123+00.00	4359.53
37th St.	123+00.00	129+00.00	3733.33
37th St.	129+00.00	135+00.00	3929.77
37th St.	135+00.00	141+00.00	4519.20
37th St.	141+00.00	147+00.00	3778.27
37th St.	147+00.00	153+00.00	4148.05
37th St.	153+00.00	159+00.00	4264.54
37th St.	159+00.00	162+72.51	2582.27
Total			41480.91

WHEELCHAIR RAMPS

LOCATION	STATION	SIDE	QUANTITY (EACH)
37th St.	164+09.75	Rt.	1
Total			1

MANHOLE SUMMARY (EACH)

SWS LINE NO.	REINF. CONC. MANHOLE		
	LENGTH	WIDTH	QUANTITY
100	5'-0"	5'-0"	3
200	5'-0"	5'-0"	2
200	4'-0"	4'-0"	2
Total			7

COMMERCIAL ENTRANCES

LOCATION	STATION	SIDE	RADIUS (FT)	W (FT.)	CONC. PVMT. (8") (REINF.) (S.F.)
37th St.	161+01.04	Rt.	15.00	25	1345.35
Total					1345.35

CONCRETE PAVEMENT (9") (REINFORCED)

LOCATION	STATION TO STATION		QUANTITY (S.Y.)
37th St.	100+78.83	101+86.83	672.00
37th St.	162+72.51	164+30.51	797.79
Total			1469.79

INLET SUMMARY (EACH)

SWS LINE NO.	CURB INLET (TYPE I)					UNDERDRAIN 4" PVC (L.F.)
	10' x 3'	10' x 4'	10' x 5'	15' x 3'	15' x 4'	
100				2	3	55
101	2					22
102				2		22
103				1		11
104				1		11
105				1		11
200	2	2	7		1	132
201	1					11
202	1					11
203	1					11
204	1					11
205	1					11
206	1					11
207	1					11
208	1					11
209	1					11
210				1		11
300			1	3	3	77
400	1			1		22
Totals	14	2	8	12	7	473

REINFORCED CRUSHED ROCK BASE

LOCATION	STATION TO STATION		8" RCRB QUANTITY (S.Y.)	7" RCRB QUANTITY (S.Y.)	6" RCRB QUANTITY (S.Y.)
37th St.	100+78.83	105+00.00	2192.17		756.00
37th St.	105+00.00	111+00.00	4200.00		
37th St.	111+00.00	117+00.00	4536.98		
37th St.	117+00.00	123+00.00	4742.56		
37th St.	123+00.00	129+00.00	4200.00		
37th St.	129+00.00	135+00.00	4396.88		
37th St.	135+00.00	141+00.00	4933.87		
37th St.	141+00.00	147+00.00	4244.64		
37th St.	147+00.00	153+00.00	4607.87		
37th St.	153+00.00	159+00.00	4686.57		
37th St.	159+00.00	164+30.51	2957.14		827.22
W. Ent.	5+40.00	5+75.00		367.16	
Service Ent.	10+40.00	10+90.00		210.99	
N. Ent.	15+40.00	15+75.00		367.17	
E. Ent.	20+40.00	20+75.00		367.16	
Totals			45698.68	1312.48	1583.22

ELECTRIC CONDUIT

LOCATION	STATION TO STATION		3" RGC (L.F.)
37th St.	117+46 Lt.	117+46 Rt.	87
37th St.	117+46 Rt.	118+67 Rt.	121
37th St.	118+67 Rt.	118+67 Lt.	87
37th St.	118+67 Lt.	117+46 Lt.	121
37th St.	152+88 Lt.	152+88 Rt.	87
37th St.	152+88 Rt.	154+09 Rt.	121
37th St.	154+09 Rt.	154+09 Lt.	87
37th St.	154+09 Lt.	152+88 Lt.	121
Total			832

STORM SEWER CONDUIT DATA SUMMARY (LINEAL FOOT)

SWS SYSTEM NO.	REINFORCED CONCRETE PIPE						RCPHE
	15"	18"	24"	30"	36"	42"	42" x 27"
100	200.0		213.5	393.2			464.5
101	76.0						
102	76.0						
103	73.8						
104	63.5						
105	63.5						
200	370.2		459.3	564.9	1187.8	975.8	
201	31.4						
202	76.0						
203	64.0						
204	64.0						
205	64.0						
206	76.0						
207	76.0						
208	63.5						
209	63.5						
210	63.5						
300	221.7	79.6	343.3	25.0	40.1		
400	65.0						
Totals	1851.6	79.6	1016.1	983.1	1227.9	975.8	464.5

VALLEY GUTTERS

LOCATION	STATION TO STATION		CONC. PVMT. (8") (RCVG) (S.Y.)	EDGE CURB (L.F.)
W. Ent.	5+40.00	5+75.00	356.62	97.96
Service Ent.	10+40.00	10+90.00	196.69	131.25
N. Ent.	15+40.00	15+75.00	356.63	97.96
E. Ent.	20+40.00	20+75.00	356.62	97.96
Totals			1266.56	425.13

ELECTRIC SERVICE BOXES

LOCATION	STATION	OFFSET	QUANTITY (EACH)
37th St.	117+46	35' Lt.	1
37th St.	117+46	52' Rt.	1
37th St.	118+67	52' Rt.	1
37th St.	118+67	35' Lt.	1
37th St.	152+88	35' Lt.	1
37th St.	152+88	52' Rt.	1
37th St.	154+09	52' Rt.	1
37th St.	154+09	35' Lt.	1
Total			8

No.	Revision	By	Date

37TH STREET NORTH

SUMMARY OF QUANTITIES

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 64 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/24/2013 7:08:20 PM
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SUMMARY OF EARTHWORK QUANTITIES

STAGE	LOCATION	STATION TO STATION		EXCAVATION (C.Y.)	FILL (C.Y.)	FILL (BEHIND CURBS) (C.Y.)	COMPACTION THRU CUTS (C.Y.)	WASTE (C.Y.)
1	37th St.	105+50.00	159+50.00	175534	2414	407	6955	172215
1	Channel "A"	31+37.04	36+87.63	6939	20	——	——	6915
2	37th St.	100+78.83	105+50.00	1149	44	18	275	1076
2	37th St.	159+50.00	164+30.51	2274	107	17	251	2128
3	37th St.	100+78.83	105+50.00	2051	53	18	275	1967
3	37th St.	159+50.00	164+30.51	1632	261	16	324	1306
Totals				189579	2899	476	8080	185607

Note: Fill, Backfill Behind Curbs, and Compaction thru Cuts are all paid for as "Compacted Fill (95%)". Total Amount = 11,455 CY.

*RECAPITULATION OF QUANTITIES

ITEM	QUANTITY	UNIT
PAVING ITEMS (707047)		
Mobilization	1	LS
Field Office & Laboratory (Type A)	1	ea
Site Clearing	1	LS
Removal of Existing Structures	1	LS
Pavement Removal	7649	sy
Excavation	189579	cy
Fill, Compacted (95% Density)	11455	cy
Concrete Pavement (VG) 8" (Reinf)	1267	sy
Concrete Driveway 8" (Reinforced)	1345	sf
Concrete Pavement 9" (Reinforced)	1470	sy
AC Pavement 7" (5" Bit Base) (BM-2)	41481	sy
Crushed Rock Base 6", Reinforced	1583	sy
Crushed Rock Base 7", Reinforced	1312	sy
Crushed Rock Base 8", Reinforced	45699	sy
Concrete C&G, Comb. Type 1 (6" & 1-1/2")	12203	lf
Concrete Curb, Mono Edge (6" & 1-1/2")	425	lf
Concrete Sidewalk 4"	74731	sf
Wheelchair Ramp w/Detectable Warnings	1	ea
Signing	1	LS
Pavement Marking	1	LS
Traffic Signal Video Detection (WB 37th at Hillside)	1	LS
Traffic Signal Modification (37th & Oliver)	1	LS
Traffic Signal Conduit (3" RGC)	832	lf
Traffic Signal Service Boxes	8	ea
Traffic Control	1	LS
Sign, Electronic Portable Message	100	day
DRAINAGE ITEMS (707047)		
Inlet, Curb (Type 1) (L=10' W=3')	14	ea
Inlet, Curb (Type 1) (L=10' W=4')	2	ea
Inlet, Curb (Type 1) (L=10' W=5')	8	ea
Inlet, Curb (Type 1) (L=15' W=3')	12	ea
Inlet, Curb (Type 1) (L=15' W=4')	7	ea
Inlet Hookup	43	ea
MH, Reinforced Concrete (4' x 4')	2	ea
MH, Reinforced Concrete (5' x 5')	5	ea
Inlet Underdrain	473	lf
Pipe, RCP 15"	1852	lf
Pipe, RCP 18"	80	lf
Pipe, RCP 24"	1016	lf
Pipe, RCP 30"	983	lf
Pipe, RCP 36"	1228	lf
Pipe, RCP 42"	976	lf
Pipe, RCPHE 42"x27"	465	lf
Pipe, RCBC (10' x 5') w/ Wingwalls (Sta. 116+57)	239	lf
Handrail (Steel), Pedestrian (3'-6") (Sta. 116+57)	78	lf
Pipe, RCBC (6' x 4' Ext Rt) w/ Wingwalls (Sta. 163+68)	24	lf
Handrail (Steel), Pedestrian (3'-6") (Sta. 163+68)	62	lf
Fill, Sand (Flushed & Vibrated)	6862	lf

*RECAPITULATION OF QUANTITIES

ITEM	QUANTITY	UNIT
LANDSCAPE ITEMS (707047)		
Seeding	1	LS
Seeding, Native Grass Blend	1	LS
Seeding, Temporary	1	LS
Irrigation Sleeves, 4" PVC	240	lf
Tree, Donald Wyman Crabapple - 2" caliper	12	ea
Tree, Zumi Crabapple - 2" caliper	8	ea
Tree, Japanese Lilac - 2" caliper	8	ea
Tree, Common Chokecherry - 2" caliper	18	ea
Tree, Eastern Redbud - 2" caliper	20	ea
Tree, Bur Oak - 2.5" caliper	63	ea
Tree, Sawtooth Oak - 2.5" caliper	59	ea
Tree, Zelkova - 2.5" caliper	32	ea
Tree, Chinkapin Oak - 2.5" caliper	32	ea
Tree, Shumard Oak - 2.5" caliper	64	ea
Tree, Swamp White Oak - 2.5" caliper	8	ea
Tree, Canaert Red-Cedar - 2.5" caliper	18	ea
Shrub, Fragrant Sumac - 2 gal.	30	ea
Shrub, Golden Currant - 2 gal.	25	ea
BMP ITEMS (707047)		
BMP, Curb Inlet Protection	44	lf
BMP, Back of Curb Protection	12277	ea
BMP, Silt Fence	16000	lf
BMP, Construction Entrance	2	ea
WATERLINE ITEMS (707047)		
Pipe, WL 6"	25	lf
Pipe, WL 20"	5026	lf
Pipe, RJ 20"	675	lf
Valve Assembly, Anchored, 12"	2	ea
Valve Assembly, 20" Butterfly	2	ea
Air Release Assembly, 2"	4	ea
Fire Hydrant	1	ea
Fire Hydrant Assembly	3	ea
Fire Hydrant Removal	1	ea
Valve Box Adjusted	3	ea
Water Meter Removal	1	ea
AC Pavement Removed	285	lf
AC Pavement Replaced (Temporary)	285	lf
Curb and Gutter Remove & Replace	285	lf
Pipe Abandoned in Place	3652	lf

See Sh. No. 82 for Summary of Pavement Markings.
See Sh. No. 89 for Sign Assembly Tables.
See Sh. No. 98 for List of Traffic Control Devices.

* Items listed and their respective quantity are shown For Information Only.

No.	Revision	By	Date

37TH STREET NORTH

SUMMARY OF QUANTITIES
RECAP OF QUANTITIES

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 65 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 5/2/2013 11:16:38 AM
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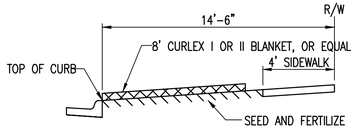

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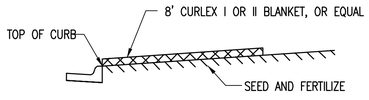

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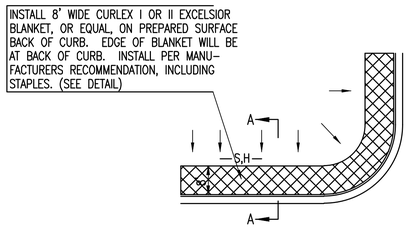
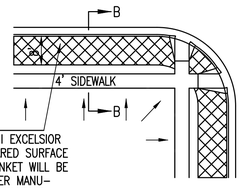


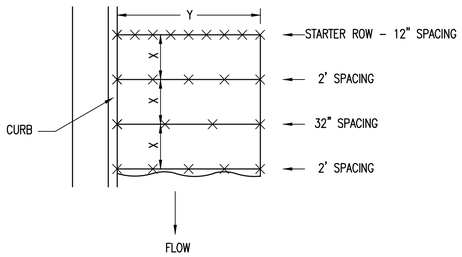
SOUTH STREET



GENERAL NOTES

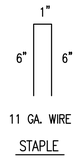
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



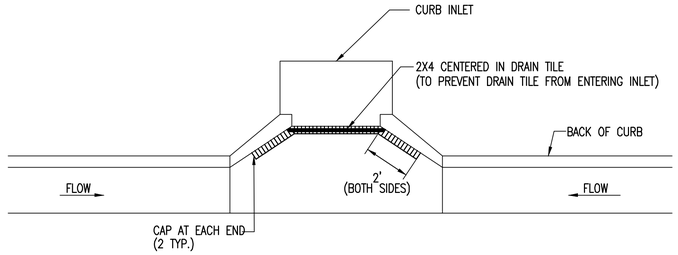
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)



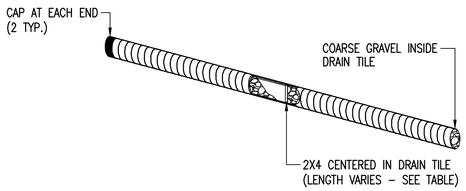
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT



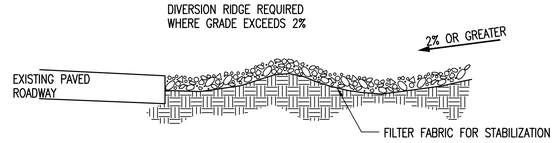
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"–1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

2X4 LENGTH	INLET TYPE	INLET OPENING
5'–6"	1–A	5'–0"
10'–6"	1–A	10'–0"
15'–6"	1–A	15'–0"

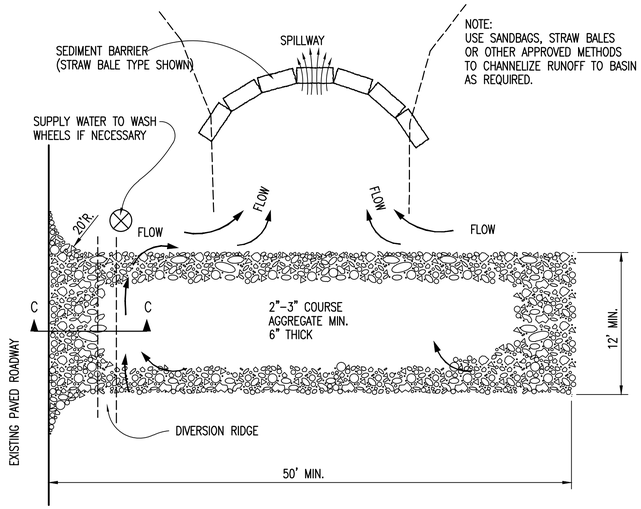


CURB INLET PROTECTION

4" PERFORATED PIPE W/ GRAVEL



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	08/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

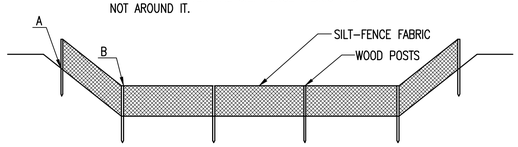
DESIGN | DRAWN

SHEET 66 of 157

SW–501

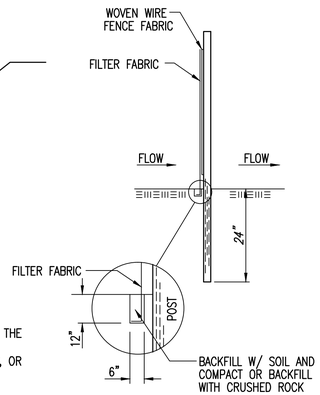
Saved 04–25–2013 7:21:05 PM by BEJ
Plot Scale 1:1 04–30–2013 2:37:36 PM by BEJ
I:\2012\12275\002\Standards\12275–002 SW–501–Back of Curb Prot, Curb Inlet Prot and Const. Entr

NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE SILT FENCE FABRIC AND NOT AROUND IT.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED.
WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED.
SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE.
EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK.
PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH.
LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

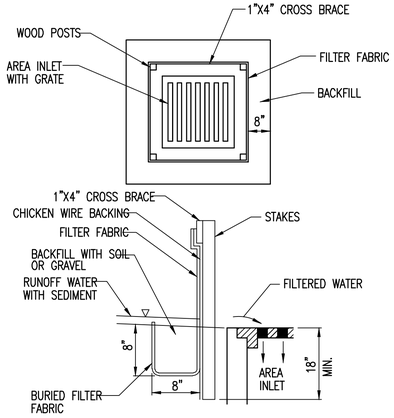
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK-NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM.
DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE.
DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS.
SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED.
WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME.
WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE.
DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET.
THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM.
CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING.
ATTACH THE WIRE OR POLYMERIC-MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED.
ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

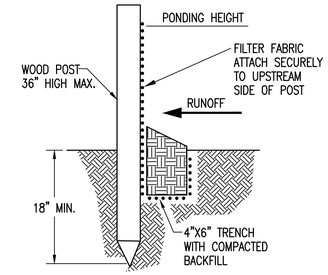
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET-NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED.
DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESISTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION.
THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE.
MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH.
PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT-FENCE FABRIC SHOULD REMAIN EXPOSED.
LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART.
ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES.
DO NOT PLACE SILT-FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL.
DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT.
SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND-SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DO THE SILT FENCES SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
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SW-502

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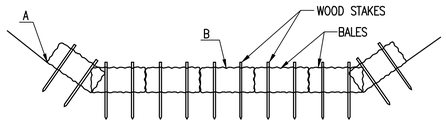
NOTE: POINT A MUST BE HIGHER THAN POINT B
SO THAT WATER FLOWS OVER THE BALES AND
NOT AROUND THEM.



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE.
OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD.
BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.
THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER.
OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

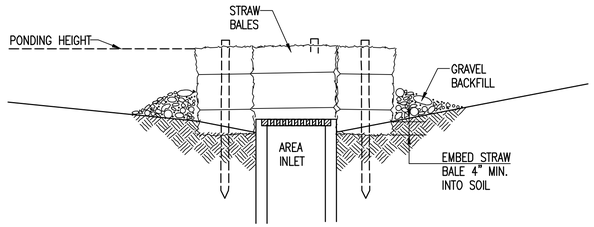
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.
DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.
FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.
DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE.
DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

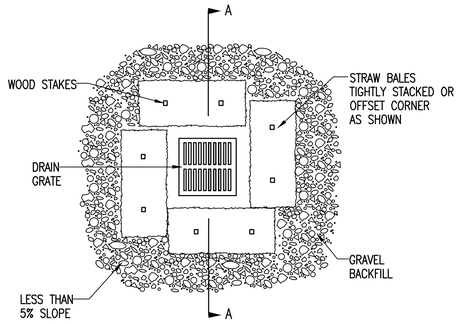
INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET.
WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS.
STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.
NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

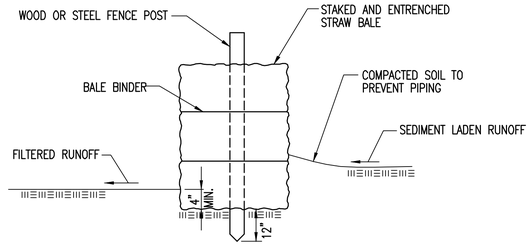
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR.
BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	11/2010

DESIGN | DRAWN

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
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SW-503

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GENERAL NOTES

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.

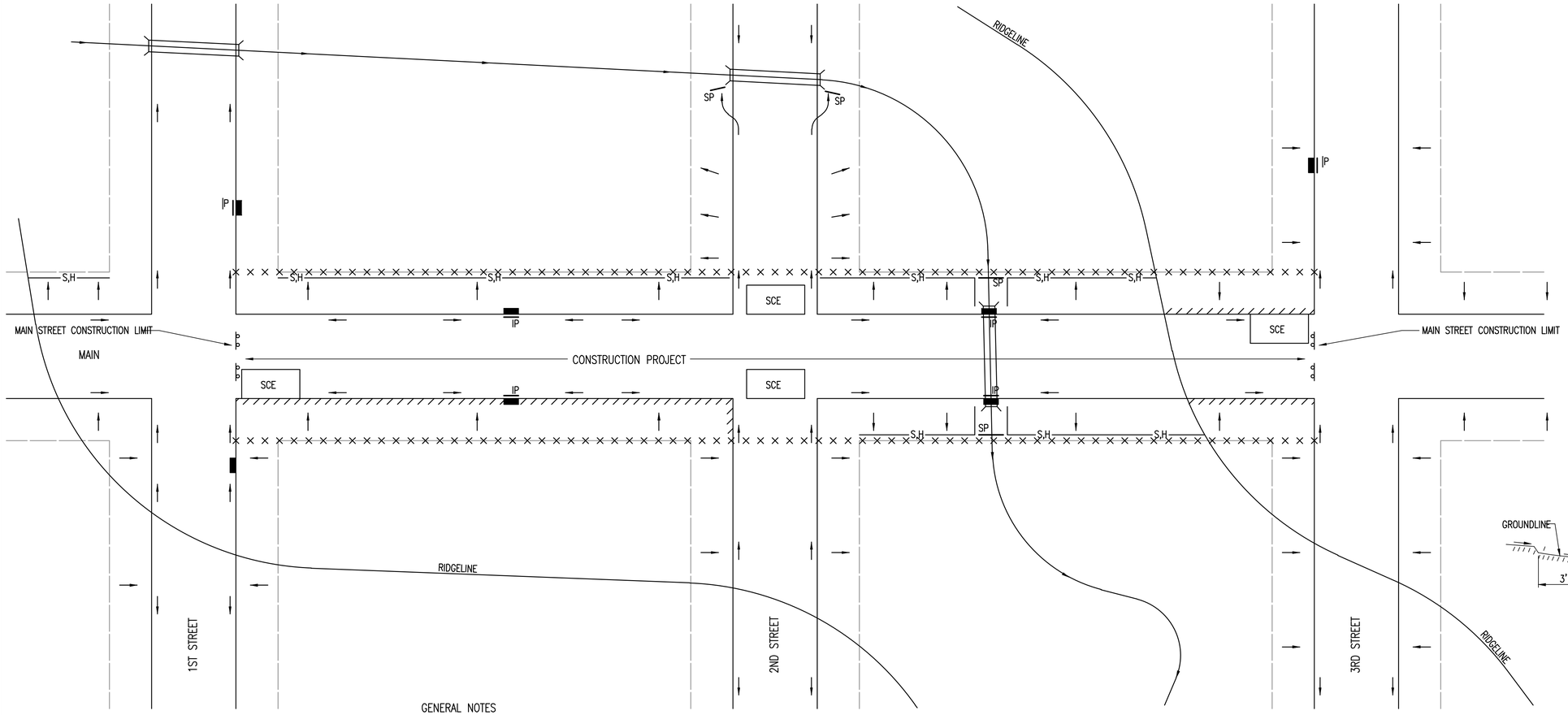
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.

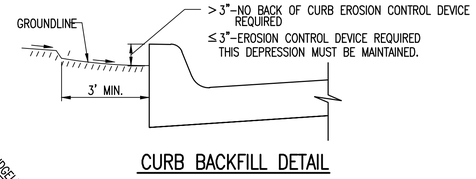
3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.

5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.

6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.





CURB BACKFILL DETAIL

LEGEND

- R-O-W LIMITS
- DRAINAGE FLOW PATH
- R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP — INLET PROTECTION
- S,H — SILT FENCE OR HAY BALE BARRIER
- SP — STREAM PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- BACK OF CURB PROTECTION

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.

2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.

3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.

4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.

5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.

6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.

8. THE CONTACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs – BACK OF CURB SEDIMENT BARRIER DETAILS)
   B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STREET IMPROVEMENT PROJECTS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	08/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN	DRAWN

SHEET
69 of 157

SW-504

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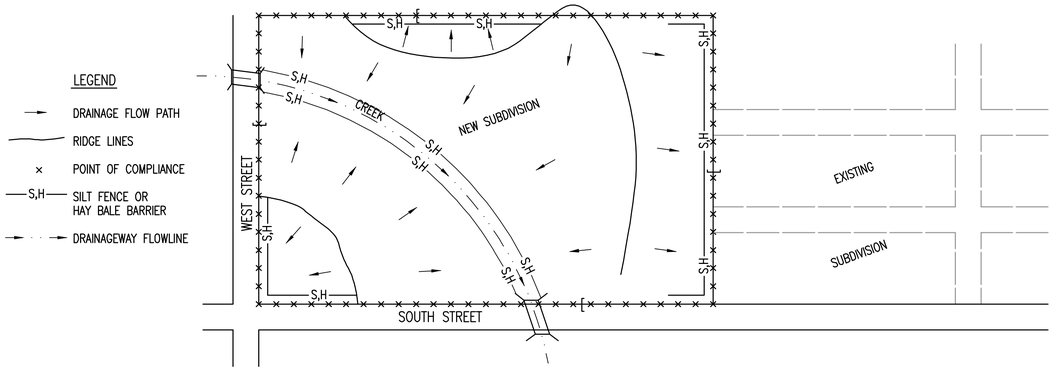
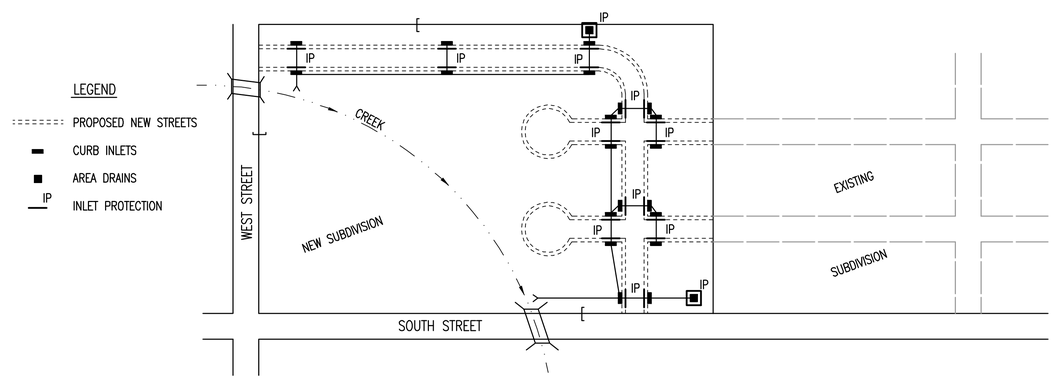
PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



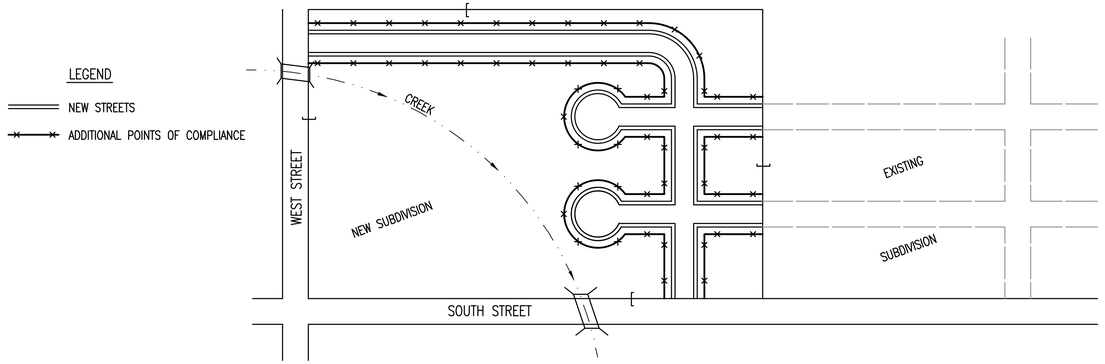
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
8. WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

PHASE 2 – INSTALLATION OF STORM SEWER



1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
7. ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
8. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

PHASE 3 – STREET CONSTRUCTION

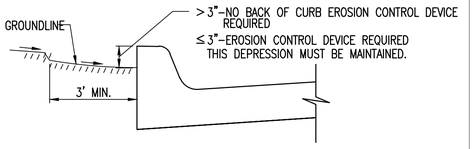


1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON–SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
4. PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
6. FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

SEE DETAIL SHEET FOR BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL (STREET CONSTRUCTION ONLY)

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SUBDIVISION DEVELOPMENT PROCESS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	08/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET 70 of 157

SW–505

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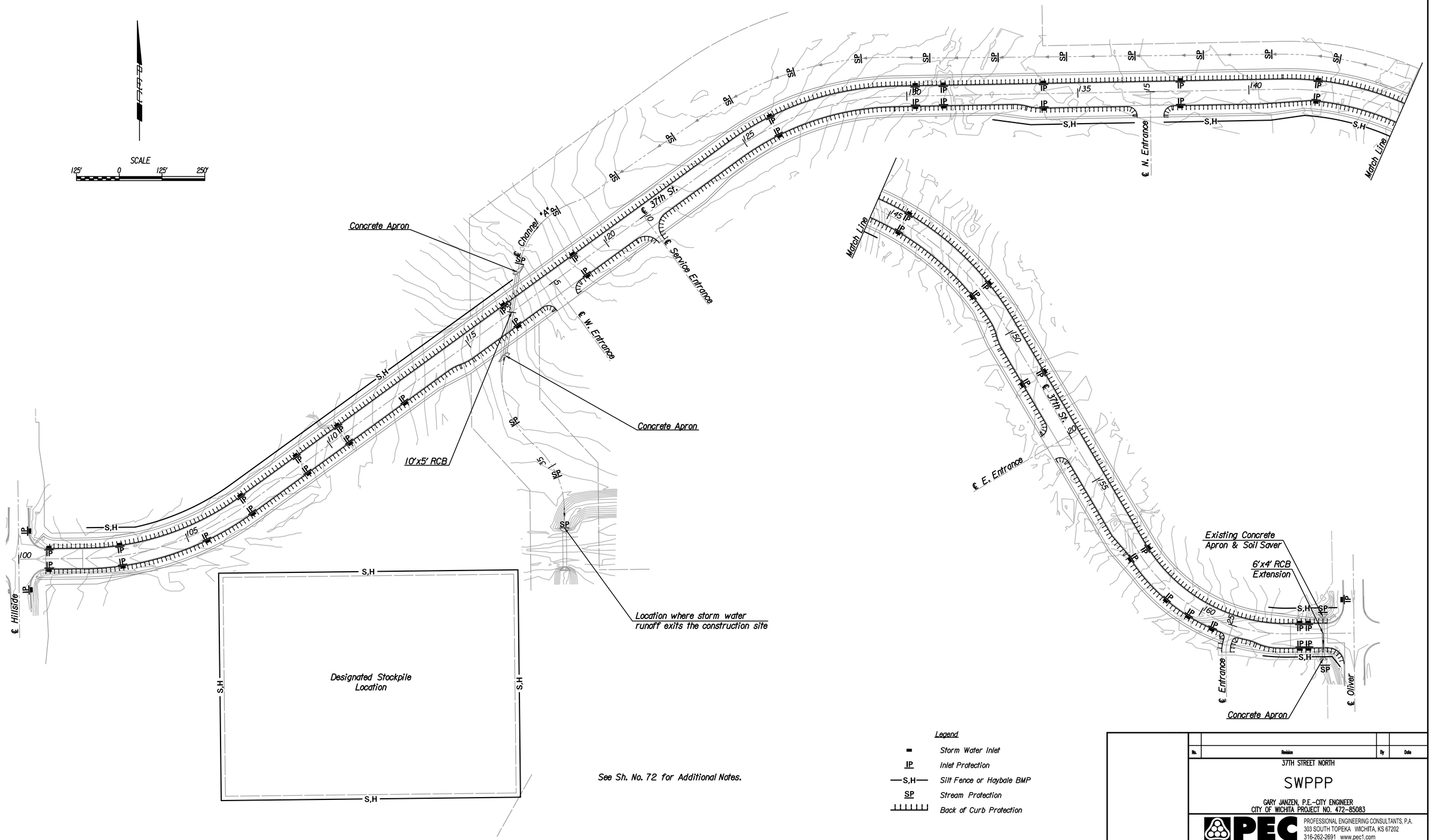

Legend

- Storm Water Inlet
- IP — Inlet Protection
- S,H — Silt Fence or Haybale BMP
- SP — Stream Protection
- Back of Curb Protection

No.	Revision	By	Date

37TH STREET NORTH

SWPPP

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 71 of 157

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GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE A MINIMUM FORTY-EIGHT (48) HOURS ADVANCE NOTICE (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO BEGINNING ANY EXCAVATION, TO KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ALL EXISTING LINES WITHIN THE PROJECT AREA: K.G.S. GAS, AQUILA, WESTAR, SBC, COX COMMUNICATIONS, CITY OF WICHITA SEWER MAINTENANCE AND CITY OF WICHITA WATER DEPARTMENT.

2. CONTRACTOR SHALL SATISFY HIMSELF OF SURFACE AND SUBSURFACE CONDITIONS PRIOR TO BIDDING.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.

4. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND IMPROVEMENTS CONSTRUCTED UNDER OTHER PROJECTS AND SHALL BE RESPONSIBLE FOR REPAIR OF DAMAGE TO IMPROVEMENTS IN PLACE. COSTS FOR COORDINATION AND REPAIRS TO IMPROVEMENTS IN PLACE, IF REQUIRED, SHALL BE BORNE BY THE CONTRACTOR.

5. ALL PLANT MATERIAL SHALL BE HIGH-QUALITY NURSERY GROWN STOCK WHICH MEETS THE "AMERICAN ASSOCIATION OF NURSERYMEN" STANDARDS AS SPECIFIED BY THE "AMERICAN NATIONAL STANDARDS INSTITUTE" IN ANSI Z60.1-1986 OR AS MAY BE AMENDED IN THE FUTURE.

6. ALL PLANT MATERIAL AND TURF SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF WICHITA SPECIFICATIONS.

PLANT MATERIALS LIST

KEY	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION
SMALL DECIDUOUS TREES					
DWC	12	Donald Wyman Crabapple	Malus 'Donald Wyman'	2-2.5" Cal.	B & B
JTL	8	Japanese Tree Lilac	Syringa reticulata	2-2.5" Cal.	B & B
ZCA	8	Zumi Crabapple	Malus x zumi 'Calocarpa'	2-2.5" Cal.	B & B
MEDIUM DECIDUOUS TREES					
CCC	18	Common Chokecherry	Prunus virginiana	1.5" Cal.	B & B
ERB	20	Eastern Redbud	Cercis canadensis	2-2.5" Cal.	B & B
LARGE DECIDUOUS TREES					
BRO	63	Bur Oak	Quercus macrocarpa	2.5-3" Cal.	B & B
CHO	32	Chinkapin Oak	Quercus muehlenbergii	2.5-3" Cal.	B & B
SHO	64	Shumard Oak	Quercus shumardii	2.5-3" Cal.	B & B
STO	59	Sawtooth Oak	Quercus acutissima	2.5-3" Cal.	B & B
SWO	8	Swamp White Oak	Quercus bicolor	2.5-3" Cal.	B & B
ZLK	32	Zelkova	Zelkova serrata	2.5-3" Cal.	B & B
EVERGREEN TREES					
CRC	18	Canaert Red-Cedar	Juniperus virginiana 'Canaertii'	6' Ht.	B & B
SHRUBS					
FS	30	Fragrant Sumac	Rhus aromatica	2 gal.	Cont.
GC	25	Golden Currant	Ribes aureum	2 gal.	Cont.

ALL TREES TO BE SINGLE TRUNK ONLY

ADDITIONAL LANDSCAPE QUANTITIES

ITEM	QUANTITY	NOTES
⊕ SEEDING	⊘ 47,590 SQ. YDS.	TO BE INSTALLED FROM BACK OF CURB TO LIMITS OF CONSTRUCTION AT LOCATIONS
		SHOWN ON PLANS.
⊕ SEEDING, NATIVE GRASS BLEND	⊘ 59,840 SQ.YDS.	TO BE INSTALLED IN ALL OF RESERVE "A" AND ALL OF RESERVE "B" NORTH
		OF EXISTING 37TH STREET.
⊖ SEEDING, TEMPORARY	⊘ 60,450 SQ.YDS.	TO BE INSTALLED ON STOCKPILE LOCATIONS.
IRRIGATION SLEEVES, 4" PVC	240 LF	TO BE INSTALLED AT LOCATIONS SHOWN ON LANDSCAPE PLANS.

⊕ SEED SHALL BE A MIX OF RYEGRASS APPLIED AT A RATE OF 50 LBS. PER ACRE AND BUFFALO GRASS (VARIETIES: "CODY OR BOWIE") APPLIED AT A RATE OF 200 LBS PER ACRE.

⊕ SEED SHALL BE A MIX OF LITTLE BLUESTEM, SAND BLUESTEM, SWITCHGRASS, YELLOW INDIANGRASS, AND SIDEOATS GRAMA AT A RATE OF 25 PLS POUNDS PER ACRE. SEE MIX PERCENTAGES THIS SHEET.

⊖ SEED SHALL BE RYEGRASS APPLIED AT A RATE OF 250 LBS PER ACRE.

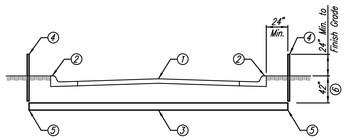
⊘ QUANTITY SHOWN FOR INFORMATION ONLY. THE CONTRACTOR WILL BE REQUIRED TO SEED ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION.

#NATIVE GRASS BLEND

LITTLE BLUESTEM	45%
SAND BLUESTEM	15%
SWITCHGRASS	15%
YELLOW INDIANGRASS	15%
SIDEOATS GRAMA	10%

TOTAL MIX = 25 PLS LBS./AC.

SEED SHALL BE A MIX OF ANNUAL RYEGRASS APPLIED AT A RATE OF 50 LBS PER ACRE AND 25 PLS LBS OF THE NATIVE GRASS BLEND SPECIFIED ABOVE.

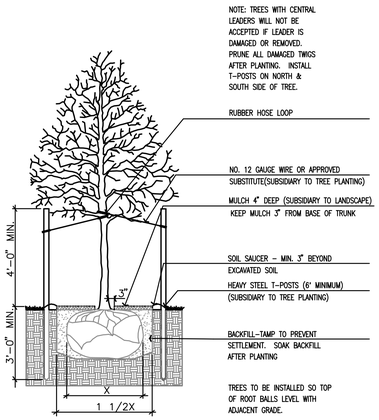


CLASS SDR 21 SLEEVES

Payment for "Irrigation Sleeves" Shall be per Lineal Foot and Shall Include Items 2 thru 5 Listed Below.

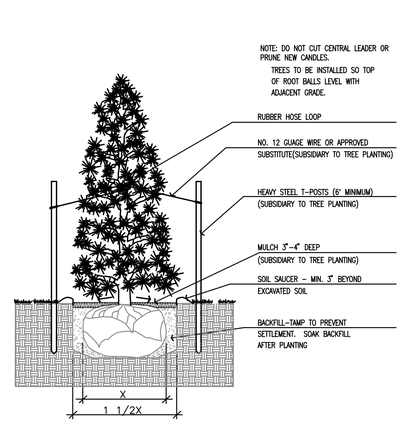
1. *Pavement/Street*
2. *Permanent Mark on Top of Curb, Stamped in Wet Concrete-"x" or "s"*
3. *4" Class SDR 21 Sleeve Extended 2' Past Back of Curbs. Sleeves Shall be Bedded and Backfilled in Accordance with City of Wichita Specifications for Flexible Sanitary/Storm Sewer Pipe.*
4. *Temporary T-Post Marker, Until Permanent Benchmark is Made in Concrete (2 Total)*
5. *4" PVC Caps-Not Glued (2 Total)*
6. *Adjust Depth Where Necessary to Avoid Other Utilities.*

Sleeves to be 42" below top of curb.
Each end of 4" PVC pipe sleeves shall be capped and marked with steel "T" posts or 2" dia. steel pipe a maximum of 12" above finished grade.
Pipe, caps, markers, and installation thereof shall be paid for at the unit price bid per each "Irrigation Sleeves".



TREE PLANTING & STAKING DETAIL

2" CALIPER AND LARGER — *NO SCALE*



EVERGREEN PLANTING & STAKING DETAIL

6' HEIGHT — *NO SCALE*

No.	Revision	By	Date

37TH STREET NORTH

LANDSCAPE DETAILS
LANDSCAPE NOTES AND DETAILS

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	IDK	Job No.	12275-002	Sht. 72 of 157
Drawn by	SVB	Date	May, 2013	

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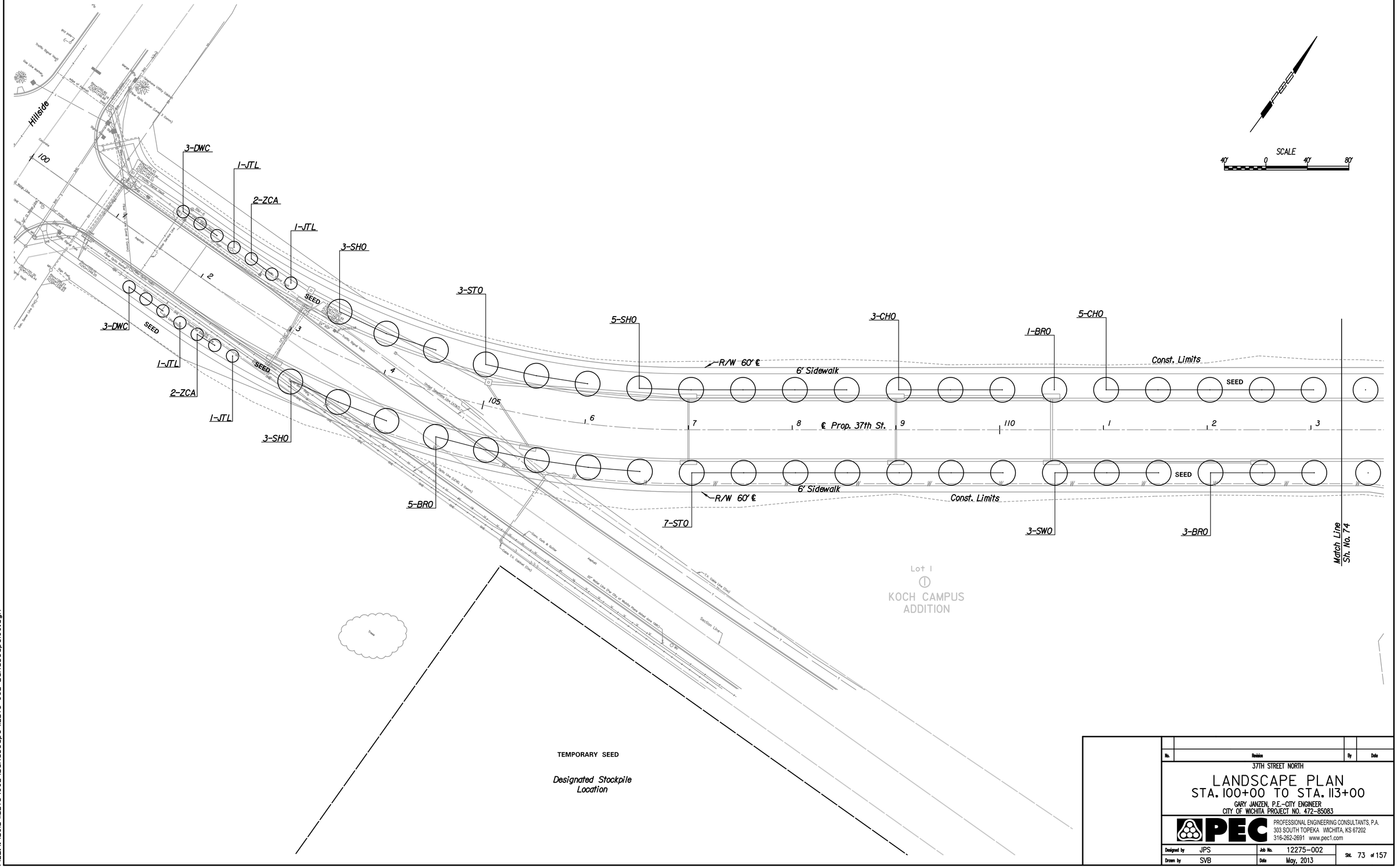

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No.	Revision	By	Date

37TH STREET NORTH

LANDSCAPE PLAN
STA. 100+00 TO STA. 113+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by JPS	Job No. 12275-002	Sht. 73 of 157
Drawn by SVB	Date May, 2013	

SCALE
40' 0 40' 80'

Sta. 117+20, 34' Lt. to 46' Rt. Install
80 L.F. SDR 21 4" PVC Pipe Sleeves
See Sh. No. 72

Res. "A" 295' ℄ ℄

Res. "A" ℄

Const. Limits

NATIVE GRASS BLEND

KOCH CAMPUS
ADDITION
RESERVE "A"

6' Sidewalk

R/W 60' ℄

SEED

℄ Prop. 37th St.

R/W 75' ℄

Match Line
Sh. No. 73

Match Line
Sh. No. 75

Lot 1
KOCH CAMPUS
ADDITION

RESERVE "B"
KOCH CAMPUS
ADDITION

Sec. Line

Match Line

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No.	Revision	By	Date

37TH STREET NORTH

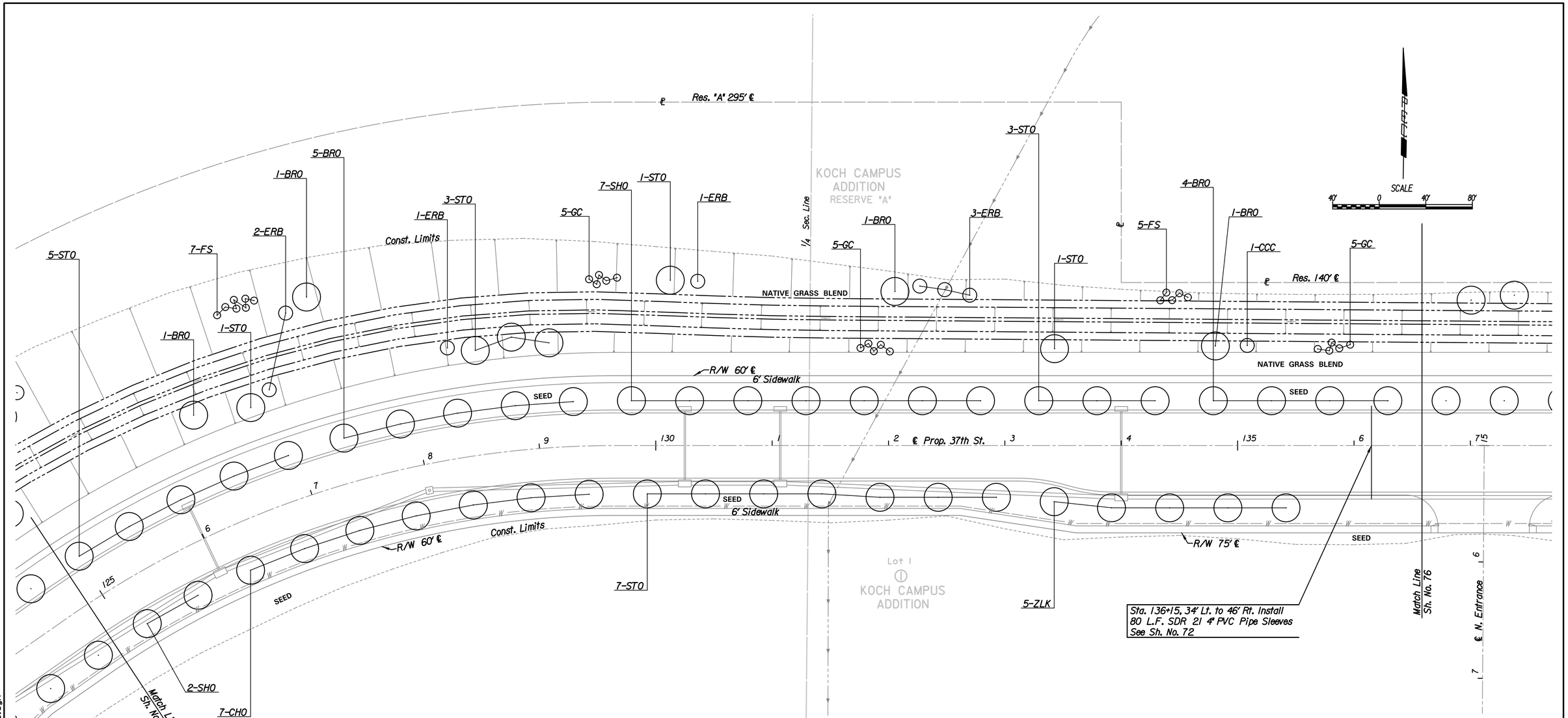
LANDSCAPE PLAN
STA. 113+00 TO STA. 125+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 74 of 157



No.	Revision	By	Date

37TH STREET NORTH

LANDSCAPE PLAN
STA. 125+00 TO STA. 137+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 75 of 157

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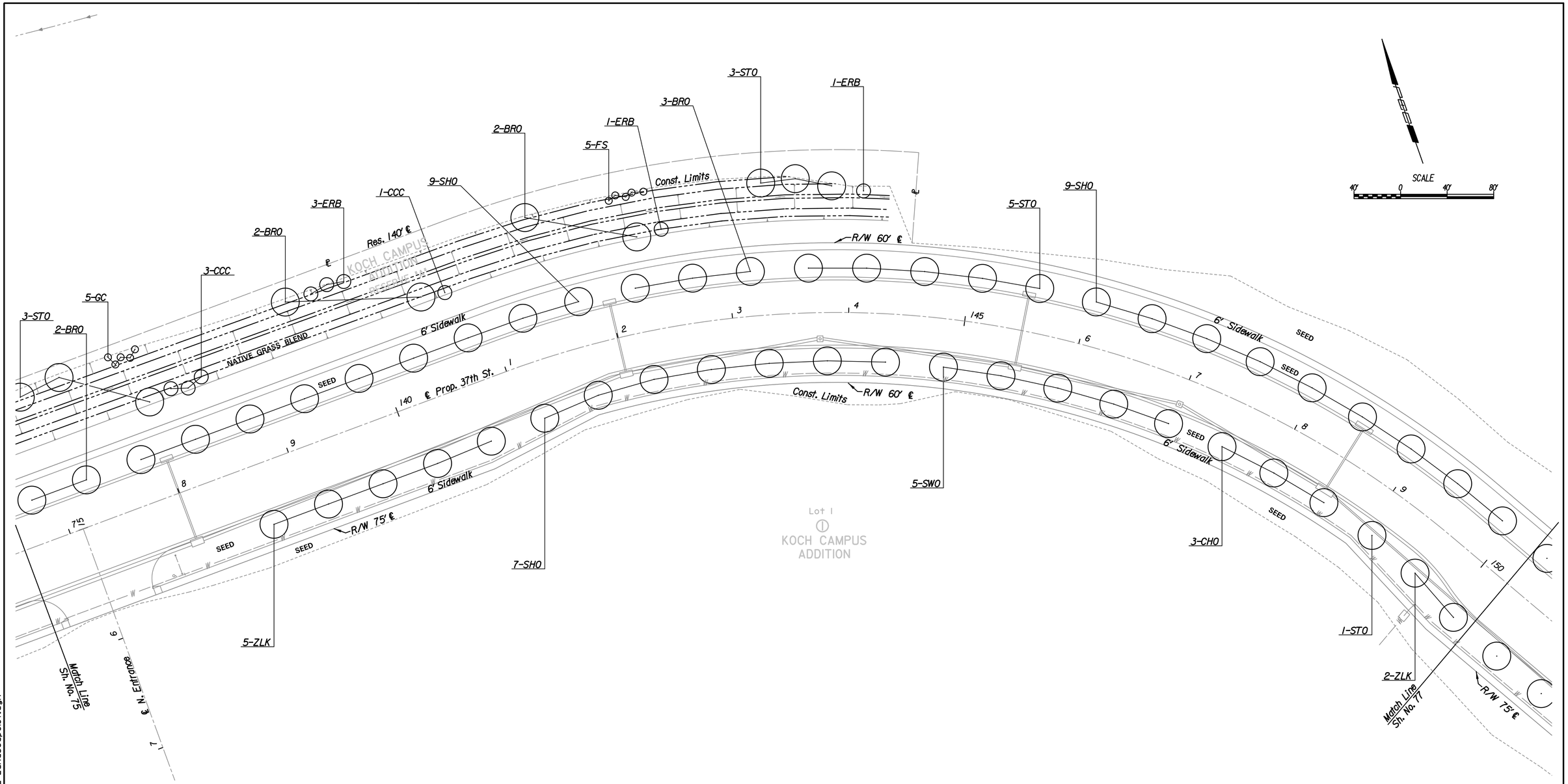

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No.	Revision	By	Date

37TH STREET NORTH

LANDSCAPE PLAN
STA. 137+00 TO STA. 150+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by JPS	Job No. 12275-002	Sht. 76 of 157
Drawn by SVB	Date May, 2013	

SCALE
40' 0 40' 80'

3-CHO
5-BRO
3-STO
7-SHO
3-DWC
1-JTL
2-ZCA
1-JTL
1-BRO
3-CHO
Exist. R/W
Oliver
3-DWC
Exist. R/W
1-JTL
2-ZCA
1-JTL

SEED
SEED
Const. Limits
R/W 60' ℄
6' Sidewalk
SEED
SEED
SEED

GENERAL NOTES

Existing utilities and their locations, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from record drawings or company provided field locations. The plan locations shown are not guaranteed. Additional existing utilities may also be encountered. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

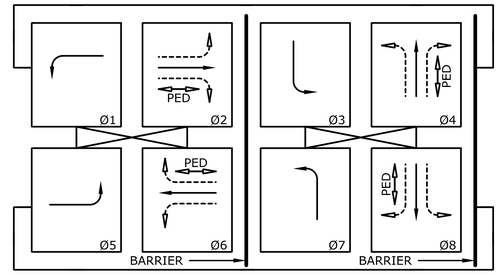
Traffic signal equipment damaged during removal and re-installation procedures shall be replaced at the Contractor's expense.

The Contractor shall furnish and install all equipment and materials necessary for complete operation of each Traffic Signal system whether specifically mentioned or not.

LEGEND

- Traffic Signal Pole with Mast Arm
- Traffic Signal Head
- Traffic Signal Head with Backplate
- Video Detection Camera
- Pedestrian Signal Head
- Controller
- Service Box (Pre-Fab)
- R10-12 Sign
- Rigid Galvanized Conduit (RGC)
- (2) Signal Phase
- Signal Pole Reference Number
- Street Name Sign
- Luminaire with Arm
- (M) Meter and Enclosure

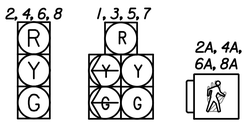
PHASE DIAGRAM



NOTE:
DASHED LINES CONNECTING PHASES DENOTE NON-CONFLICTING SIGNAL PHASES THAT CAN OCCUR CONCURRENTLY.

PEDESTRIAN INTERVALS TO OCCUR ONLY AFTER PUSHBUTTON ACTIVATION.

MOVEMENTS
- PROTECTED PHASE
- PERMITTED PHASE



SIGNAL HEADS

Utilities

Gas	Kansas Gas Service
Power	Westar Energy
Telephone	AT&T, Wichita Central Unit
Water	Wichita Water Utilities

Sta. 163+97, 50' Rt.
Install Service Box
See Sh. No. 81

Contractor shall Remove Exist. T.S. Cable from T.S. Controller to T.S. Service Box (Sta. 163+97) and T.S. Pole (Sta. 164+11). Contractor shall Clean Exist. RGC with Mandrel and Extend Conduit to Proposed T.S. Service Box (Sta. 163+97). Contractor shall Install New T.S. Cable from T.S. Controller to Relocated T.S. Pole (Sta. 164+12).

Sta. 164+12, 64' Rt.
Construct New Concrete Footing
Remove and Reset Exist.
Traffic Signal Pole
and All Related Equipment
from Exist. Concrete Footing
to New Concrete Footing
Top Pole Base Elev.=1373.00
See Sh. No. 80

Contractor to Replace Signal Back Plate on Head 3H

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC SIGNAL MODIFICATION 37TH ST. AND OLIVER

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 78 of 157

Plotted By: svb Date: 4/25/2013 11:08:24 PM
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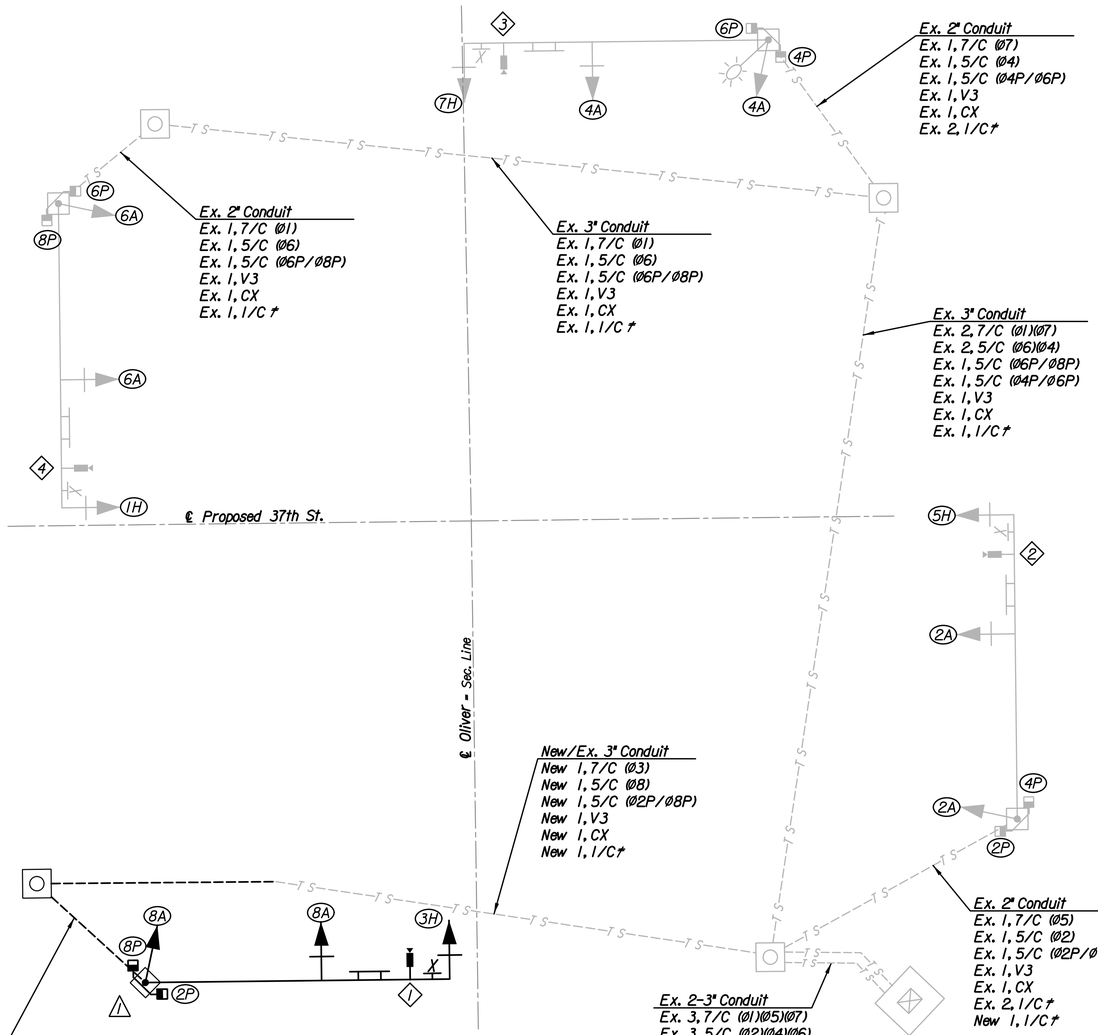


WIRING DIAGRAM

Not to Scale

SUMMARY OF TRAFFIC SIGNAL HEADS

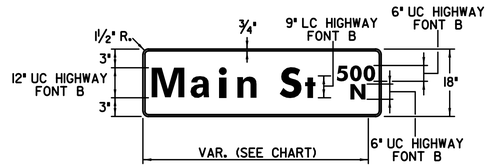
NUMBER	TYPE	SIZE	QUANTITY
TOTAL			

SERVICE BOX SUMMARY

STATION	DIST.-SIDE
163+97	50' Rt.

OVERHEAD STREET NAME SIGNS

LEGEND	LENGTH	QUANTITY



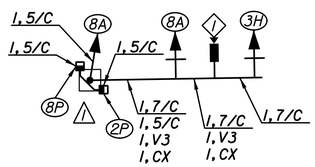
BILL OF MATERIALS

ITEM	UNIT	QUANTITY
PAD MOUNTED CONTROLLER & CABINET	EACH	—
TRAFFIC SIGNAL HEAD W/MOUNTING HARDWARE	EACH	—
TRAFFIC SIGNAL POLE STEEL (20')	EACH	—
TRAFFIC SIGNAL PEDESTAL ALUM. (10')	EACH	—
TRAFFIC SIGNAL PEDESTAL (JOINT USE) ALUM. (35')	EACH	—
CONCRETE CONTROLLER PAD	EACH	—
CONCRETE FOOTING - PEDESTAL	EACH	—
CONCRETE FOOTING - POLE	EACH	1
CONDUIT ELBOW 90°2"	EACH	AS REQ'D
CONDUIT ELBOW 90°3"	EACH	AS REQ'D
BACK PLATE 5" 3 SECTION	EACH	—
BACK PLATE 5" 5 SECTION	EACH	1
TERMINAL BLOCK	EACH	—
SERVICE BOX	EACH	1
JUNCTION BOX (PRE-FAB)	EACH	—
GROUND ROD & CLAMP	EACH	1
AUDIBLE PEDESTRIAN SIGNALS (POLARA 4-WIRE NAVIGATOR)	EACH	—
PEDESTRIAN INDICATIONS LED (16" COMBINATION) (COUNT DOWN)	EACH	—
LED TRAFFIC SIGNAL LENS (12")	EACH	—
ENTRANCE HEAD	EACH	—
CIRCUIT BREAKER & BOX 50 AMP.	EACH	—
SURGE ARRESTOR - A.C.SERVICE	EACH	—
SURGE ARRESTOR - DETECTOR	EACH	—
PEDESTRIAN PUSH BUTTON W/SIGN	EACH	—
6 PR. COMMUNICATION CABLE	LIN.FT.	—
DETECTOR LOOP WIRE NO. 14 AWG 1/c	LIN.FT.	—
LEAD-IN WIRE NO.6 AWG 1/c	LIN.FT.	AS REQ'D
MULTI-CONDUCTOR CABLE NO.14 AWG 7/c	LIN.FT.	230
MULTI-CONDUCTOR CABLE NO.14 AWG 5/c	LIN.FT.	405
MULTI-CONDUCTOR CABLE NO.14 AWG 3/c	LIN.FT.	—
SHEILDED DETECTOR LEAD-IN NO.14 AWG 2/c	LIN.FT.	—
CONDUIT ¾" (RGC)	LIN.FT.	AS REQ'D
CONDUIT 1 1/2"(RGC)	LIN.FT.	—
CONDUIT 2"(PVC)	LIN.FT.	—
CONDUIT 2"(RGC)	LIN.FT.	21
CONDUIT 3"(RGC)	LIN.FT.	34
#8 AWG GROUND (GREEN)	LIN.FT.	85
STREET NAME SIGN	EACH	—
LEFT TURN YIELD ON GREEN (R10-12) SIGN	EACH	—
VIDEO DETECTION CAMERA, MOUNTING HARDWARE & SUNSHIELD	EACH	—
VIDEO DETECTION UNIT	EACH	—
VIDEO POWER CABLE #16 A.W.G. 3/C	LIN.FT.	235
VIDEO CABLE 75 OHM COAXIAL (BELDON #8281 OR APPROVED EQUAL)	LIN.FT.	235
TV MONITOR	EACH	—
ITERIS LENS ADJUSTMENT UNIT	EACH	—
VIDEO SYSTEM PROGRAMMING UNIT	EACH	—

① A-10'Pedestal (Alum.)
B-20'Steel with Mast Arm(s)
C-30'Steel (Joint Use) with Mast Arm(s)
D-40'Steel with Mast Arm

TRAFFIC SIGNAL POLE SUMMARY

POLE NO.	TYPE ①	ARM LENGTH	NO. OF SIGNALS ON ARM	BRACKET TYPE	XI	X2	X3	X4	NO. OF SIGNALS ON POLE	BRACKET TYPE	NO.OF PUSH BUTTONS ON POLE	REMARKS
1												Existing



POLE WIRING DIAGRAM

Note: Each Pushbutton to be wired with 1, 2/C to pole base connection.

All splices to be in pole base, no splices permitted within servce box.

-QUANTITIES FOR INFORMATION ONLY-

NOTE: The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for the complete operation of the traffic signal system whether specifically mentioned or not.

No.	Revision	By	Date

37TH STREET NORTH

WIRING AND QUANTITIES 37TH ST. AND OLIVER

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 79 of 157
Drawn by	SVB	Date	May, 2013	

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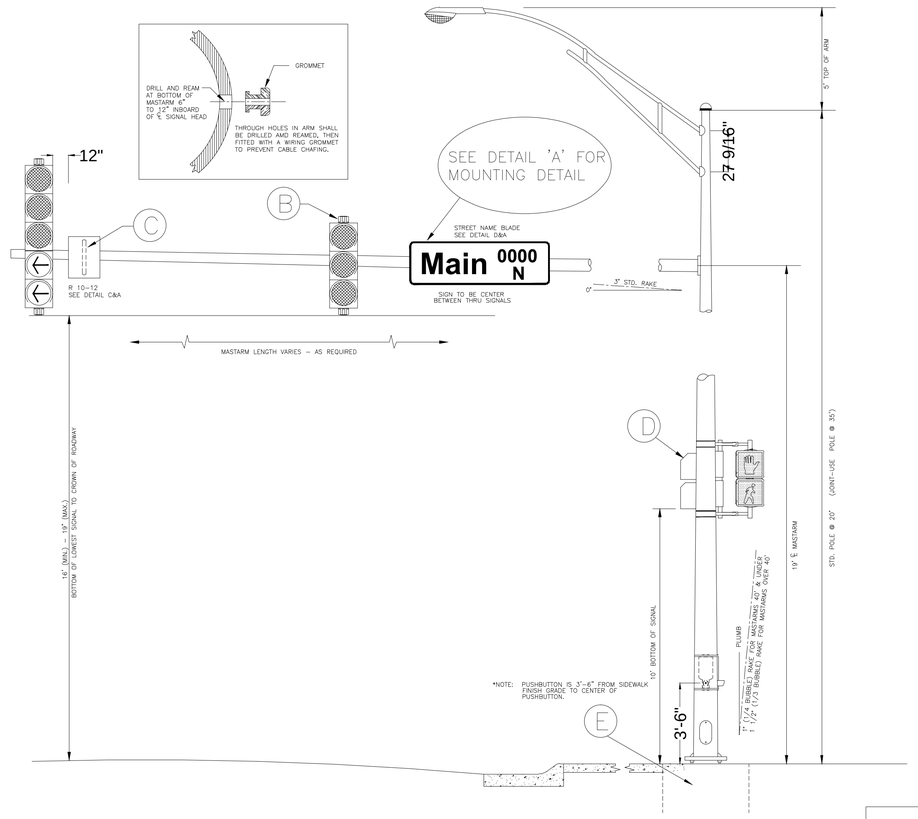
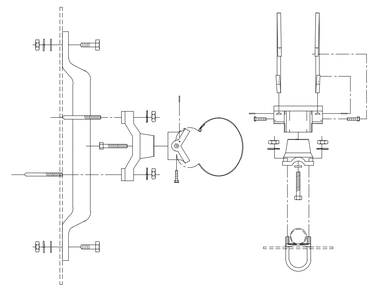
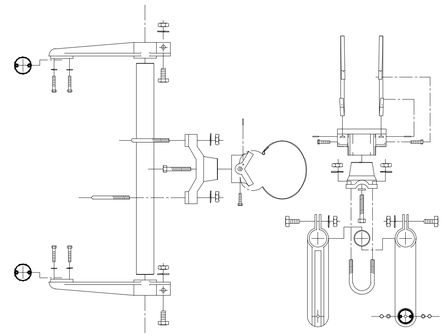


BANDED SIGN MOUNTING BRACKET DETAIL



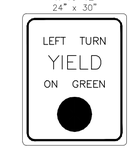
A

TYPE I SIGNAL MOUNTING BRACKET ASSEMBLY DETAIL



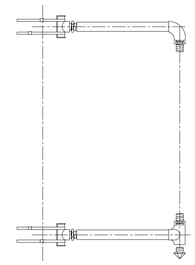
B

STANDARD SIGNING



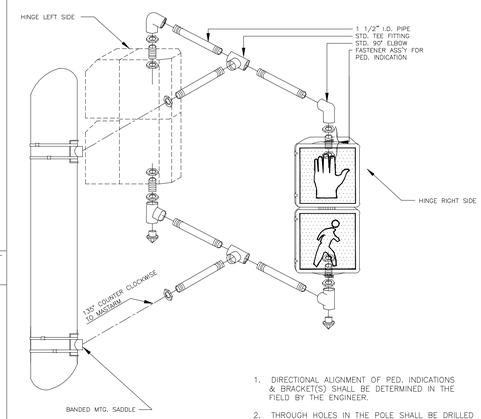
C

TYPE III SIDE-OF-POLE MOUNTING BRACKET ASSEMBLY



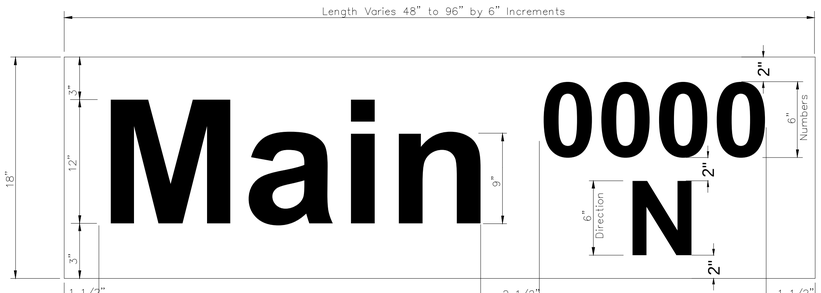
F

TYPE II SIGNAL MOUNTING BRACKET ASSEMBLY (SIDE-OF-POLE)

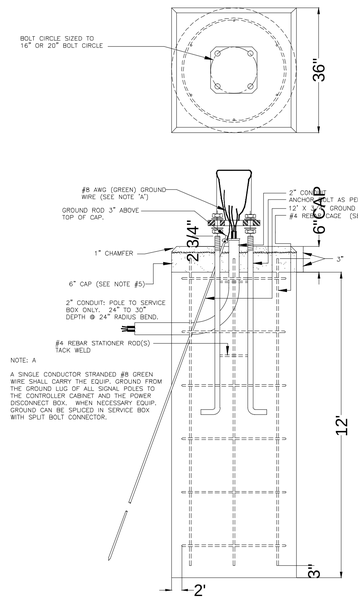


1. DIRECTIONAL ALIGNMENT OF PED. INDICATIONS & BRACKET(S) SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. THROUGH HOLES IN THE POLE SHALL BE DRILLED AND WELL REAMED TO PREVENT CABLE CHAFING.
3. HINGE PEDESTRIAN SIGNAL DOORS AWAY FROM POLE.
4. CLAM SHELL BRACKETS ARE NOT ACCEPTABLE.

D



DETAIL D
METRO



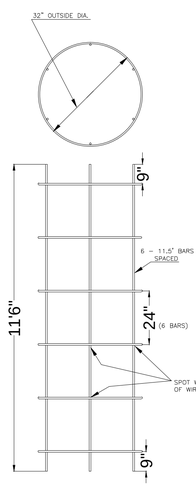
NOTE: A

A SINGLE CONDUCTOR STRANDED #8 GREEN WIRE SHALL CARRY THE EQUIP. GROUND FROM THE GROUND LUG OF ALL SIGNAL POLES TO THE CONTROLLER CABINET AND THE POWER DISCONNECT BOX. WHEN NECESSARY EQUIP. GROUND CAN BE SPLICED IN SERVICE BOX WITH SPLIT BOLT CONNECTOR.

NOTE:

1. THE ANCHOR BOLTS FOR THE SIGNAL POLE SHALL BE TACK WELDED TOGETHER IN A 16" OR 20" DIA. BOLT PATTERN (ON CENTERS AS SHOWN) TO MAINTAIN REQUIRED BOLT CONFIGURATION PATTERN AND TO AID IN VERTICAL POSITIONING WHILE CONCRETE BASE IS POURED.
2. USE ANTI-SEIZE COMPOUND ON ALL THREADS.
3. 12' x 3/4" GROUND ROD TO BE POSITIONED BEFORE POURING BASE.
4. CLASS 'A' CONCRETE SHALL BE USED TO CONSTRUCT BASE.
5. CONSTRUCT A 6" THICK x 36" SQUARE CONCRETE CAP AFTER POLE HAS BEEN ERECTED & PLUMBED. CHAMFER EDGE 1". MUST BE APPROVED BY ENG. BEFORE POURED.
6. CONDUIT SHALL HAVE PLASTIC (OR METAL) BUSHING (ABOVE BASE) TO PREVENT CABLE CHAFING.
7. USE #6 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.

REBAR CAGE



E

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STEEL SIGNAL POLE ASSEMBLY DETAILS

TRAFFIC ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	10/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
80 of 157

TR-101

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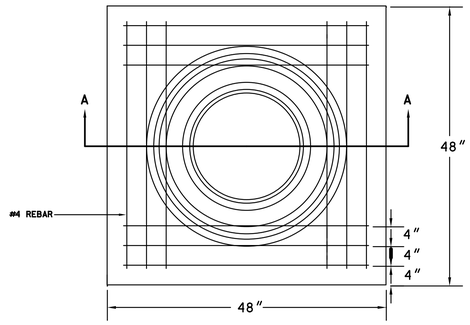
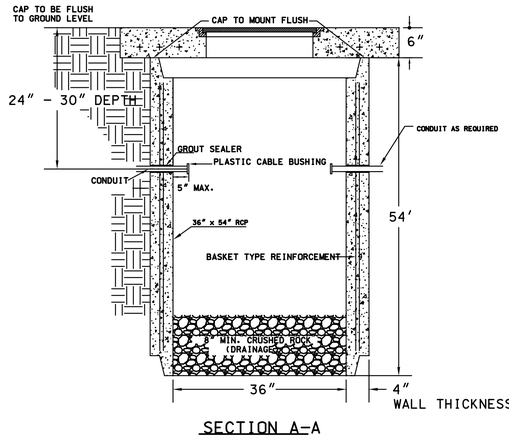
Plot Scale 1:1 04-30-2013 2:33:54 PM by RFJ

SERVICE BOX CONSTRUCTION/INSTALLATION DETAILS

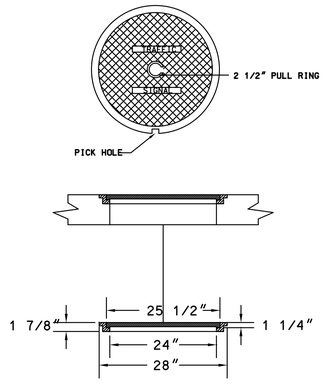


PRE-CAST CONCRETE SERVICE BOX

(36″ I.D. X 54″ RCP) with 6″ CAP

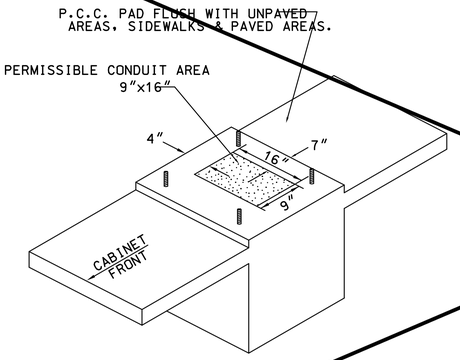


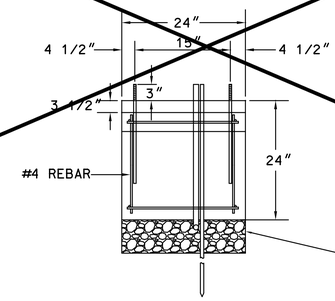
SECTION A–A

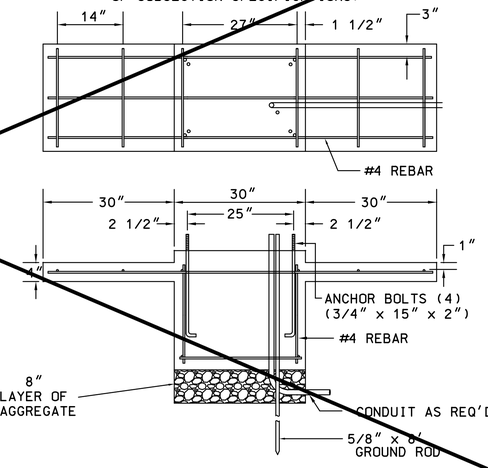


RING & COVER DETAIL

170 CONTROLLER PAD DETAILS

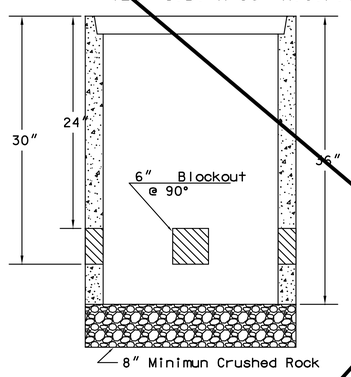




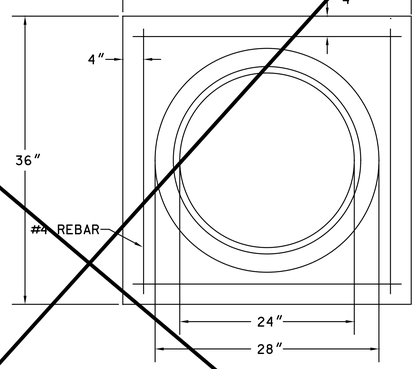


JUNCTION BOX DETAILS

PRE-FAB Junction Box (24″ I.D. X 36″ R.C.P.)

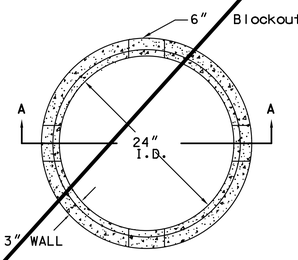


SECTION A–A



JUNCTION BOX CAP

36″ x 36″ x 6″ TOP OF CAP TO BE FLUSH WITH GROUND LEVEL.



"SEE SERVICE BOX INSTALLATION FOR RING & COVER DETAILS.

NOTES:

SERVICE & JUNCTION BOX:

1. CONDUIT CONNECTION TO BE FLUSH TO WITHIN 125 mm OF INSIDE FACE OF SIDE WALL. CONDUIT TO DRAIN INTO SERVICE BOX.
2. CONDUIT CONNECTIONS TO SERVICE BOX SHALL BE TERMINATED WITH PLASTIC CABLE BUSHING.
3. CONDUIT SHALL BE SEALED WITH APPROVED SEALER AT INSIDE WALL FACE.
4. ALL SERVICE & JUNCTION BOXES TO HAVE 200 mm OF CRUSHED ROCK.

TRENCHING:

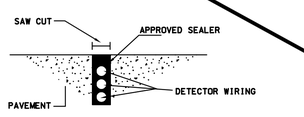
1. DEPTH TO BE 30″ MINIMUM WITH ROCK & STUBBLE FREE BACKFILL TO SERVE AS BEDDING MATERIAL. MAINTAIN MINIMUM CONDUIT DEPTH IN TRENCH.
2. BACKFILL TO BE COMPACTED IN 6″ LOOSE LIFTS BY HAND OR MECHANICAL TAMPING TO A 95% STANDARD DENSITY.

CONDUIT:

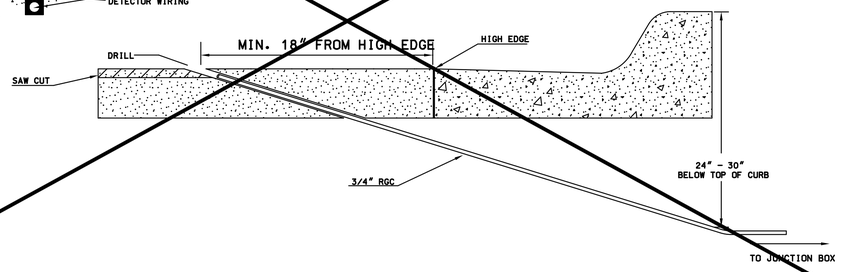
1. SLOPE CONDUIT TO DRAIN AS DIRECTED BY THE ENGINEER.
2. 3″ RIGID STEEL CONDUIT BTWN. SERVICE BOXES.
   1 1/4″ ″ ″ ″ BTWN. SERVICE & JUNCTION BOXES.
   3/4″ ″ ″ ″ BTWN. JUNCTION BOXES.
   3/4″ ″ ″ ″ BTWN. JUNCTION BOX & DETECTOR LOOP SAW CUT

SERVICE/JUNCTION BOX, CONTROLLER PAD CONSTRUCTION/INSTALLATION DETAILS

CONDUIT/DETECTOR WIRE INSTALLATION DETAILS



STD. CURB & GUTTER



REV. DATE	COMMENTS	INT

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

37TH STREET

SERVICE/JUNCTION BOX, CONTROLLER PAD CONSTRUCTION/INSTALLATION DETAILS

PROJECT NUMBER 472-85083

DRAWN BY: T.M.	SCALE: NO SCALE	REVISED BY:
DATE: April, 2002		DATE:

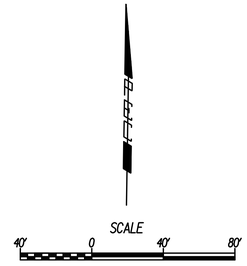
CITY OF WICHITA
DEPARTMENT OF PUBLIC WORKS

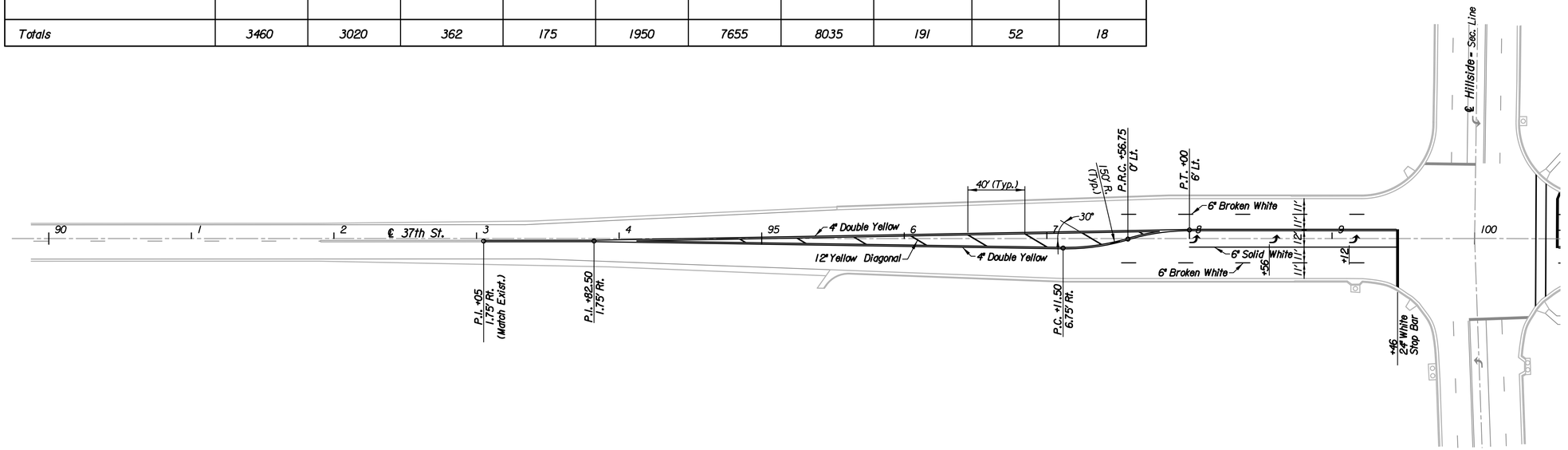
DIVISION OF TRAFFIC ENGINEERING
PAUL GUNZELMAN, P.E. TRAFFIC ENGINEER

SHEET 81 OF 157

Dsnr: i:/2012/12275/002/standards/12275-002 sb-dtl.dgn Last Rev: 4-4-2013 By: snb
Oper: SNB Scale: 1"=1' Plot Scale

SUMMARY OF PAVEMENT MARKINGS										
LOCATION	6" Broken White Lane Line (ft)	6" Solid White Lane Line (ft)	12" Solid White Crosswalk Line (ft)	24" Solid White Stop Line (ft)	4" Broken Yellow Line (ft)	4" Solid Yellow Edge Line (ft)	4" Solid Yellow Double Line (ft)	12" Solid Yellow Diagonal Line (ft)	Left Turn Arrows (each)	Right Turn Arrows (each)
Sta. 90+00 to Sta. 100+00	100	145		42			2016	101	3	
Sta. 100+00 to Sta. 113+00	630	395	173	40	380	1516	971		10	
Sta. 113+00 to Sta. 125+00	550	770			300	1107	798		9	7
Sta. 125+00 to Sta. 137+00	590	250			580	2290			7	4
Sta. 137+00 to Sta. 150+00	680	300			430	1714	778		8	
Sta. 150+00 to Sta. 164+00	730	1002		51	260	1028	1495		12	7
Sta. 164+00 to Sta. 176+00	180	158	189	42			1977	90	3	
Totals	3460	3020	362	175	1950	7655	8035	191	52	18





No.	Revision	By	Date

37TH STREET NORTH

SIGNING AND MARKING PLAN STA. 90+00 TO STA. 100+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 82 of 157
Drawn by	SVB	Date	May, 2013	

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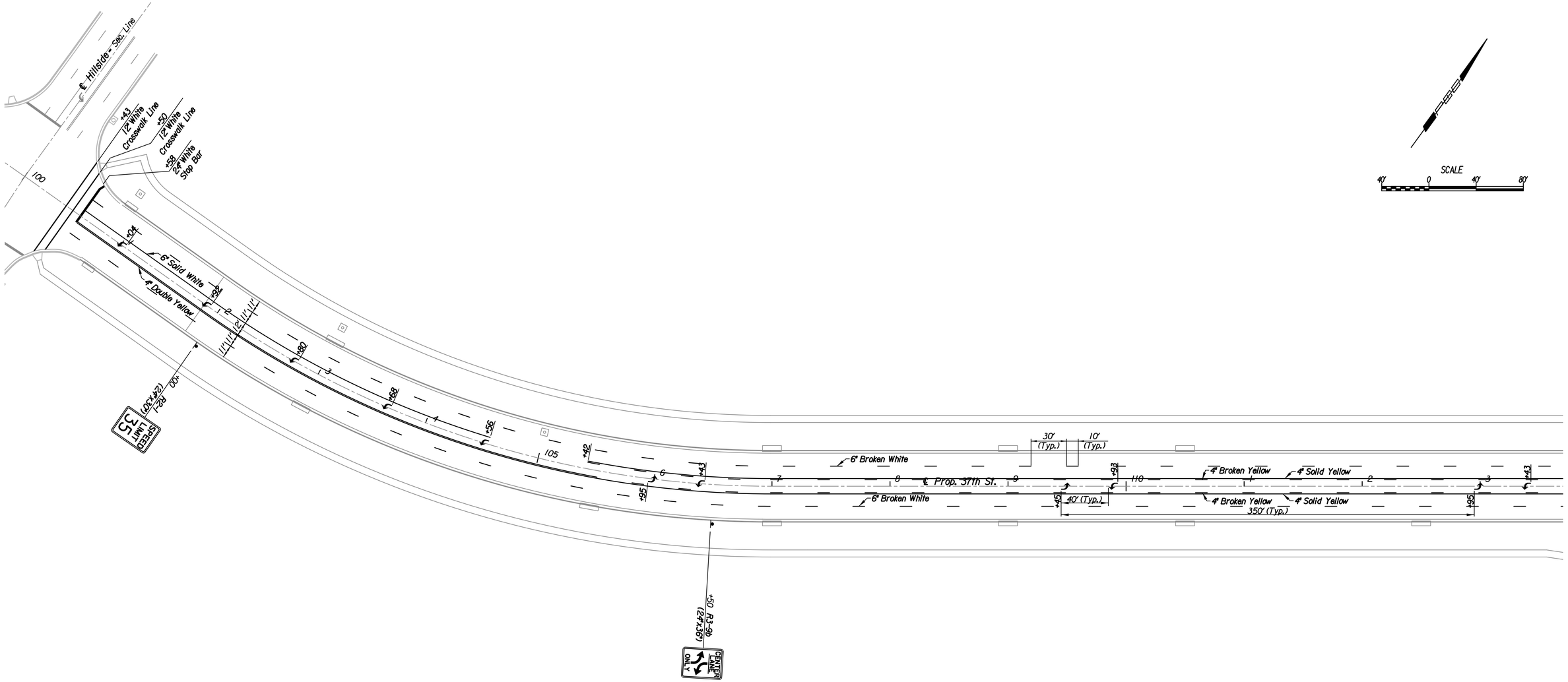

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No.	Revision	By	Date

37TH STREET NORTH

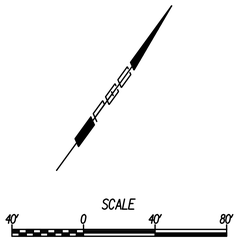
SIGNING AND MARKING PLAN STA. 100+00 TO STA. 113+00

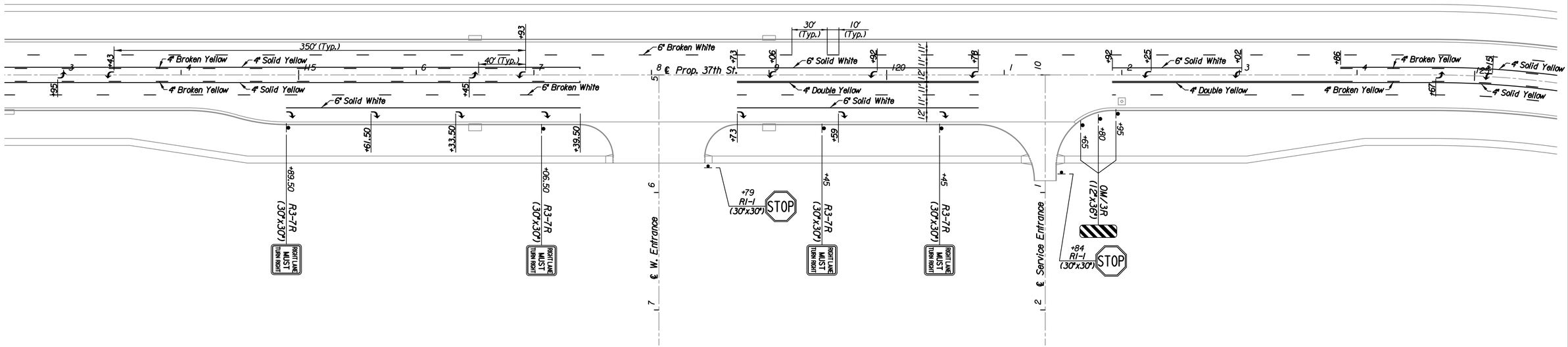
GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 83 of 157





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No.	Revision	By	Date

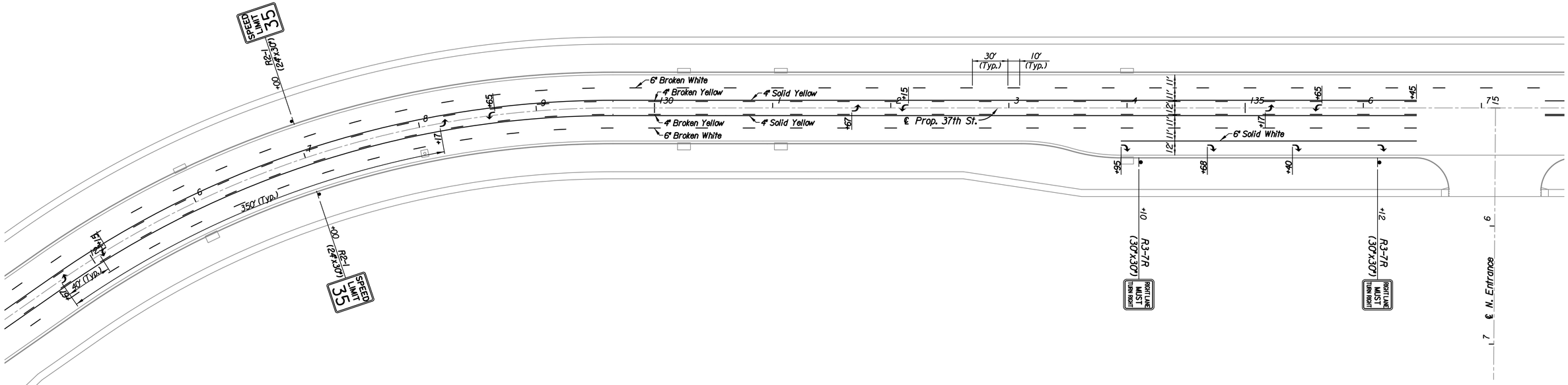
37TH STREET NORTH

SIGNING AND MARKING PLAN STA. 113+00 TO STA. 125+00

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 84 of 157
Drawn by	SVB	Date	May, 2013	



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No.	Revision	By	Date

37TH STREET NORTH

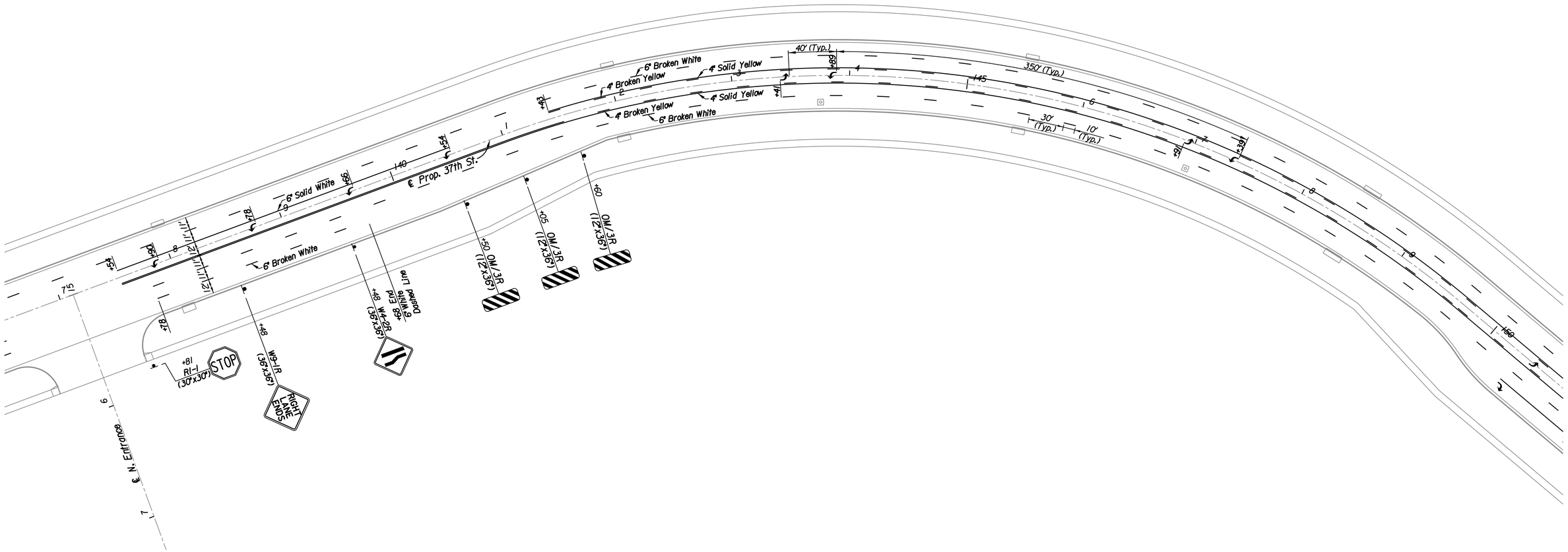
SIGNING AND MARKING PLAN STA. 125+00 TO STA. 137+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 85 of 157



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No.	Revision	By	Date

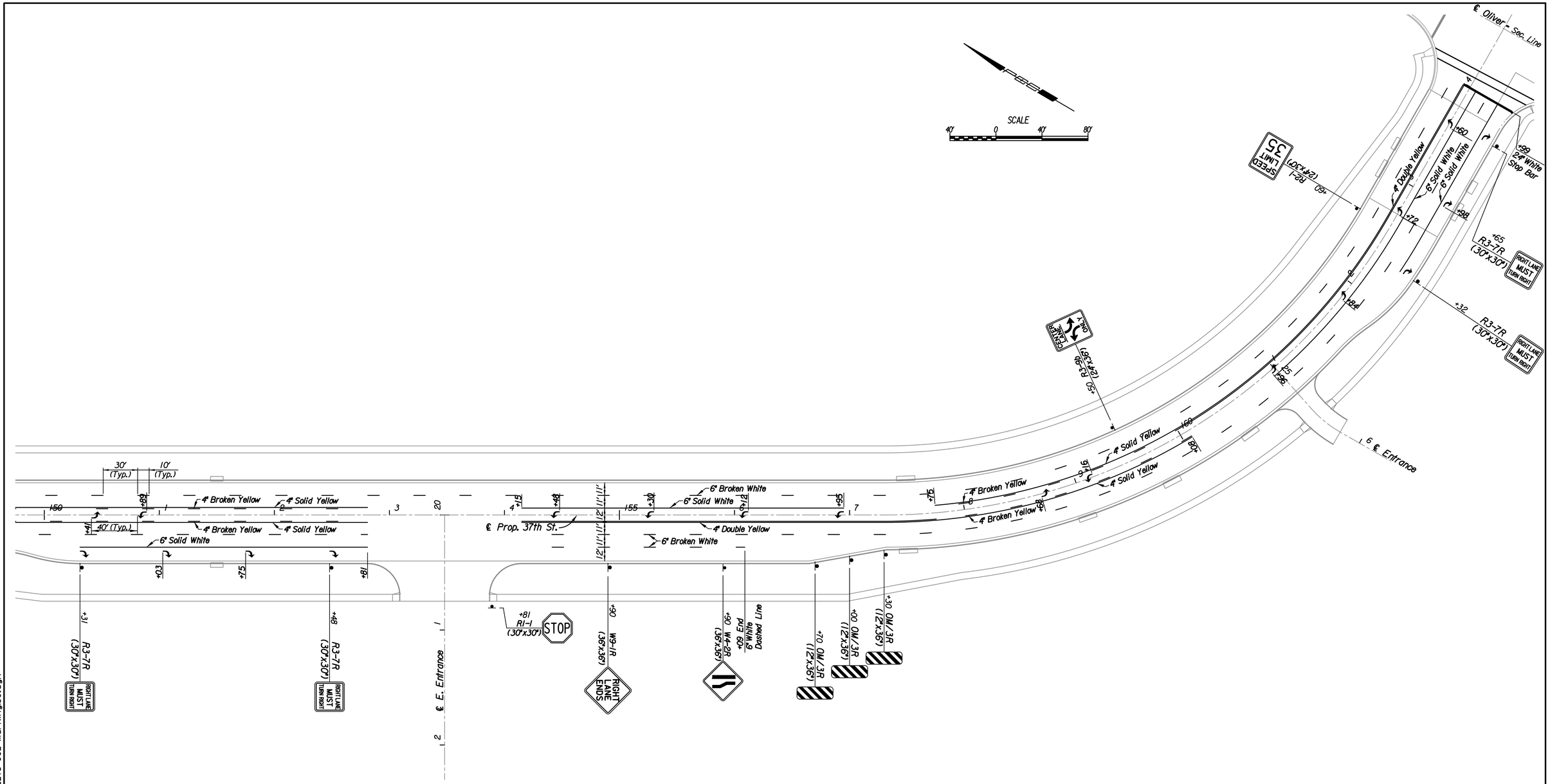
37TH STREET NORTH

SIGNING AND MARKING PLAN STA. 137+00 TO STA. 150+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 86 of 157
Drawn by	SVB	Date	May, 2013	



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No.	Revision	By	Date

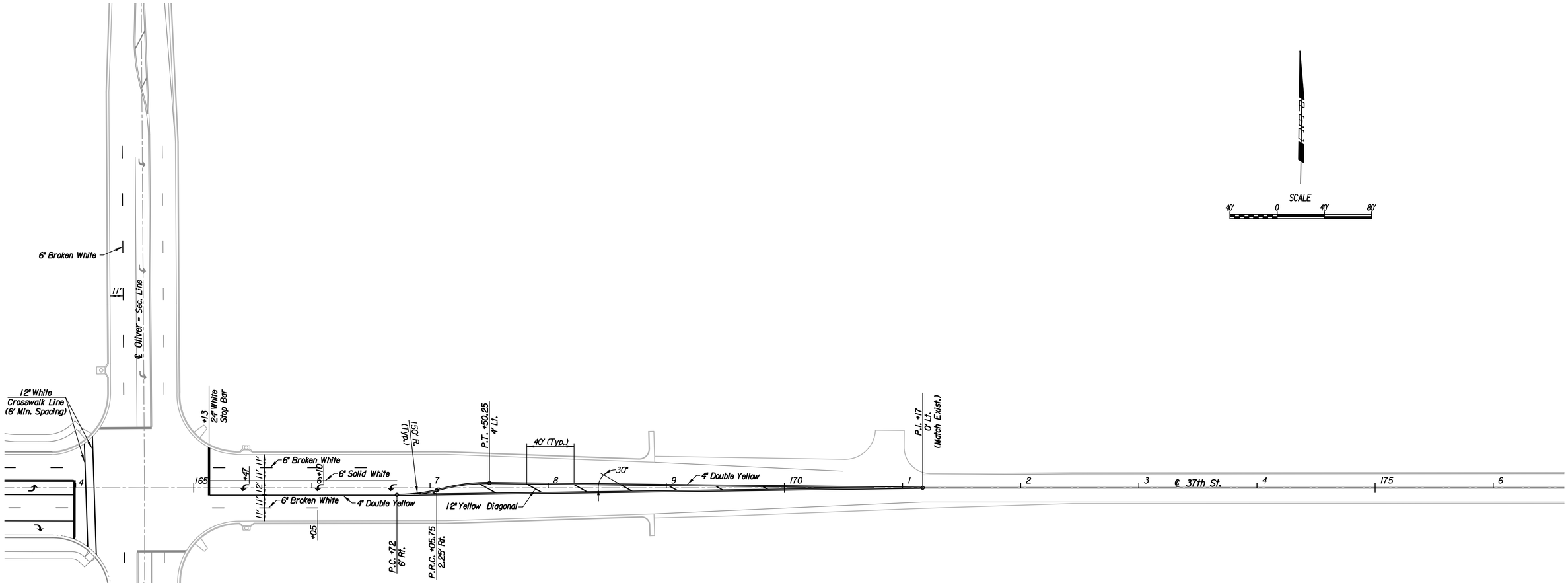
37TH STREET NORTH

SIGNING AND MARKING PLAN STA. 150+00 TO STA. 164+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013



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No.	Revision	By	Date

37TH STREET NORTH

SIGNING AND MARKING PLAN
STA. 164+00 TO STA. 176+00

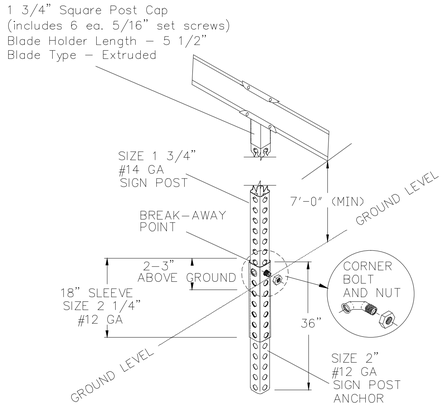
GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

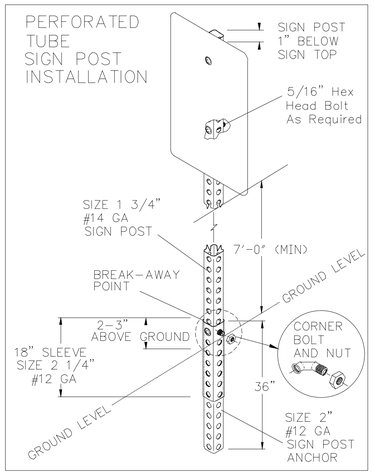
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

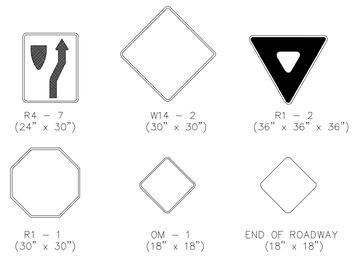
Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 88 of 157

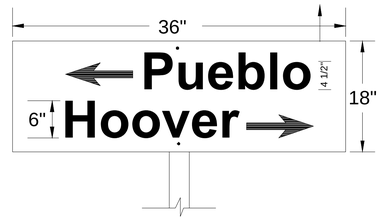
FHWA REG NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	SHEETS
7	KANSAS	472-85083	2013	89	157







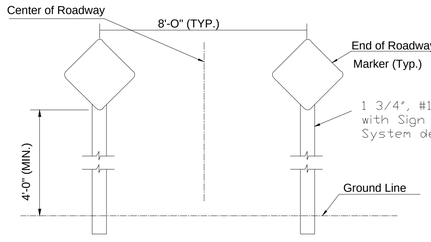
* IN NO CASE SHALL THE SPECIFICATIONS BE LESS THAN REQUIRED BY THE CURRENT MUTCD.



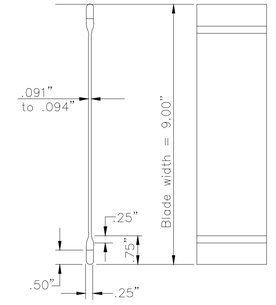
FLAT PLATE STREET NAME SIGN

TYPICAL TRAFFIC CONTROL AND STREET NAME SIGN MOUNTING INSTALLATION

CURB AND GUTTER SECTION



TYPICAL END OF ROADWAY SIGN MOUNTING INSTALLATION



STREET NAME SIGN

BLADE DETAILS

STREET NAME	NO. BLADES REQ'D	
	6 3/4" STD.	9" METRO

NOTE: REFERENCES BELOW TO "STANDARD SPECIFICATIONS" DENOTE "STANDARD SPECIFICATION FOR STATE ROAD AND BRIDGE CONSTRUCTION EDITION 1990" BY THE KANSAS DEPARTMENT OF TRANSPORTATION.

* IN NO CASE SHALL THE SPECIFICATIONS BE LESS THAN REQUIRED BY THE CURRENT MUTCD.

1. POST ANCHORS: POSTS SHALL BE ANCHORED WITH A YIELDING BASE POST SUPPORT AS DETAILED.
2. POSTS FOR TRAFFIC CONTROL SIGNS: POSTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 1620 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT ALL POSTS SHALL WEIGH 3 LBS./FT. MINIMUM.
3. POSTS FOR STREET NAME SIGNS (SNS): POSTS SHALL BE 9 FEET LONG, CONSTRUCTED FROM #14 GALVANIZED STEEL PIPE AND SHALL BE 1 3/4" SQUARE WEIGHING A MINIMUM OF 3 LBS/FT. POSTS SHALL BE POSITIONED SO THAT THE BOTTOM BLADE IS 7 FEET ABOVE GRADE.
4. POSTS FOR END OF ROADWAY SIGN TO BE 8' LONG AND INSTALLED A MINIMUM OF 4' FROM ROADWAY TO BOTTOM OF SIGN.
5. SIGN BLANKS FOR TRAFFIC CONTROL SIGNS: SIGN BLANKS SHALL BE FABRICATED FROM 0.080" ALUMINUM ALLOY 6063-T6 CONFORMING TO THE REQUIREMENTS OF SUBSECTION 1626 OF THE STANDARD SPECIFICATIONS.
6. SIGN BLADES FOR STREET NAME SIGNS: EXTRUDED ALUMINUM BLADES SHALL BE ALUMINUM ALLOY CONFORMING TO 6063-T6 OR 5052-H38 (ASTM SPECIFICATION B221, LATEST ISSUE). BLADES SHALL HAVE AN ALODINE OR PHOSPHATE ETCHED FINISH. BLADES SHALL HAVE SQUARE CORNERS AND NO HOLES.

   MINIMUM BLADE LENGTH SHALL BE 24". MAXIMUM BLADE LENGTH SHALL BE 48". LENGTH VARIES BY INCREMENTS OF 6".

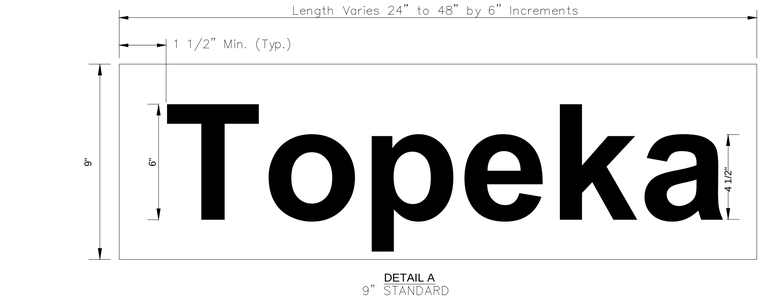
   BLADES BEARING THE STREET NAMES SHALL BE FIRMLY ATTACHED TO THE MOUNTING BRACKETS USING ALLEN-TYPE CONICAL SET SCREWS. THE BLADES SHALL BE ORIENTED PARALLEL TO THE STREET.
7. MOUNTING BRACKETS FOR SIGNS: DIE-CAST ALUMINUM BRACKETS SHALL BE ALUMINUM ALLOY 360 HAVING A TENSILE STRENGTH OF 44,000 PSI. THE BRACKETS SHALL BE SMOOTHLY FINISHED FREE OF PITS, BURRS, AND FLAWS. EACH BRACKET SHALL BE TAPPED AND DRILLED FOR 5/16" ZINC-PLATED ALLEN-TYPE SET SCREWS HAVING SELF-LOCKING SAW-TOOTH ENDS.
8. FASTENERS: ALL STEEL FASTENERS FOR TRAFFIC CONTROL SIGNS SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 1614 OF THE STANDARD SPECIFICATIONS.
9. REFLECTIVE SHEETING: REFLECTIVE SHEETING SHALL BE A MINIMUM OF HIGH INTENSITY PRISMATIC.
10. PROCESS INK: ALL PROCESS INK SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 2202 OF THE STANDARD SPECIFICATIONS.
11. FABRICATION AND INSTALLATION OF ALL SIGNS SHALL CONFORM TO THE LATEST ADDITION OF THE MUTCD.
12. DETAILS - SNS: THE REFLECTIVE SHEETING FOR THE 9" STANDARD SIZE SNS IS TO BE THE HIGHWAY GREEN BACKGOUND WITH SILVER-WHITE #2 COPY WITH 6" UPPER CASE AND 4 1/2" LOWER CASE PRIMARY COPY AND SUFFIX COPY. BOTH SERIES "C". FACES TO TRIM TO A 8 1/2". (SEE DETAIL A.)

    THE REFLECTIVE SHEETING FOR THE 9" METRO SIZE SNS IS TO BE THE HIGHWAY GREEN BACKGROUND WITH SILVERWHITE #2 COPY WITH 6" UPPER CASE AND 4 1/2" LOWER CASE PRIMARY COPY AND SUFFIX COPY, BOTH SERIES "C". THE CARDINAL DIRECTION CENTERED DIRECTLY BELOW THE BLOCK NUMBER SHALL BE AN UPPER CASE, 3" SERIES "C" LETTER. FACES TO TRIM TO A 8 1/2" WIDTH. (SEE DETAIL B.)

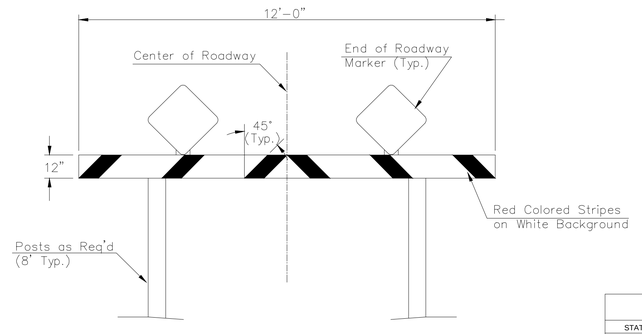
    FOR CUL-DE-SAC STREETS, A 9" METRO SIZE BLADE SHALL BE USED WITH THE BLOCK NUMBERS DISPLAYED BENEATH THE STREET NAME.

    IF BLOCK NUMBERS ARE NOT SHOWN ON THE PLANS THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER AT 268-4501 PRIOR TO MANUFACTURING THE SIGN.

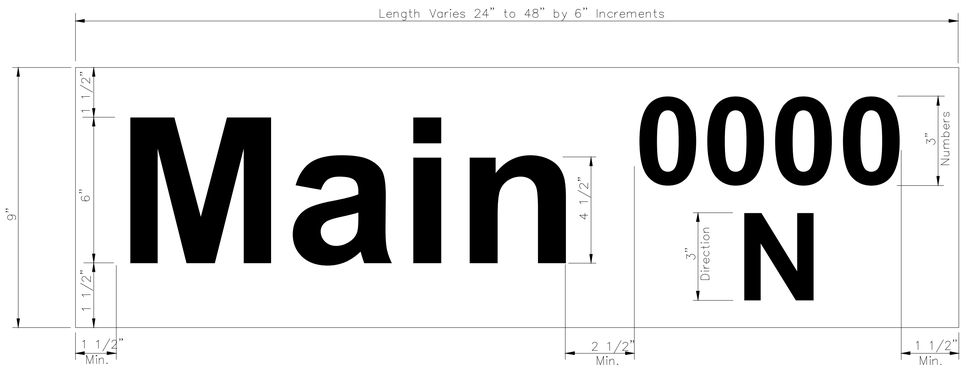
    SHOP DRAWINGS OF LAYOUT FOR SNS SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION OF THE CITY OF WICHITA FOR APPROVAL PRIOR TO FABRICATION. THE FINISHED SIGNS AS SUPPLIED SHALL BE OF GOOD APPEARANCE, FREE FROM RAGGED EDGES, CRACKS SCALES OR BLISTERS AND SHALL BE CLEAN-CUT. SIGNS SHALL BE PACKED IN SUCH MANNER AS TO PREVENT DAMAGE OR DEFACEMENT DURING SHIPMENT OR STORAGE.
13. ~~PERMANENT TRAFFIC CONTROL AND SNS: PERMANENT TRAFFIC CONTROL AND SNS SHALL BE MEASURED AND PAID FOR AT THE LUMP SUM PRICE FOR SIGNING. THE PAYMENT AS SET FORTH ABOVE SHALL BE CONSIDERED FULL COMPENSATION FOR ALL EXCAVATION, BACKFILLING, POSTS, ANCHORS, FASTENERS, MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.~~



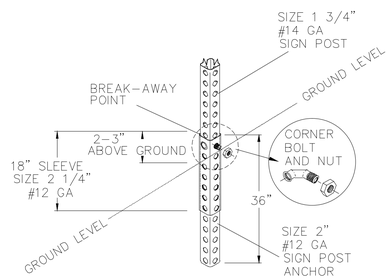
DETAIL A
9" STANDARD



TYPE I BARRICADE DETAIL W/ E.O.R. MARKERS



DETAIL B
9" METRO



SIGN POST ANCHOR SYSTEM

SIGN ASSEMBLY TABLE

STATION	OFFSET	SIGN	QUANTITY (EACH)* ⊛
102+00	Rt.	R2-1	1
106+50	Rt.	R3-9b	1
114+89.50	Rt.	R3-7R	1
117+06.50	Rt.	R3-7R	1
5+79	Lt.	R1-1	1
119+45	Rt.	R3-7R	1
120+45	Rt.	R3-7R	1
10+84	Lt.	R1-1	1
121+65	Rt.	OM-3R	1
121+80	Rt.	OM-3R	1
121+95	Rt.	OM-3R	1
127+00	Lt.	R2-1	1
127+00	Rt.	R2-1	1
134+10	Rt.	R3-7R	1
136+12	Rt.	R3-7R	1
15+81	Lt.	R1-1	1
138+48	Rt.	W9-1R	1
139+48	Rt.	W4-2R	1
140+50	Rt.	OM-3R	1
141+05	Rt.	OM-3R	1
141+60	Rt.	OM-3R	1
150+31	Rt.	R3-7R	1
152+48	Rt.	R3-7R	1
20+81	Lt.	R1-1	1
154+90	Rt.	W9-1R	1
155+90	Rt.	W4-2R	1
156+70	Rt.	OM-3R	1
157+00	Rt.	OM-3R	1
157+30	Rt.	OM-3R	1
159+50	Lt.	R3-9b	1
162+32	Rt.	R3-7R	1
162+60	Lt.	R2-1	1
163+65	Rt.	R3-7R	1
TOTAL			33

⊛ For Information Only

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGN DETAILS

TRAFFIC ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-85083	707047	10/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
89 of 157

TR–106

Saved 04–30–2013 11:08:51 AM by BJS
Plot: Scale 1:1 04–30–2013 2:33:07 PM by BEJ
i:\2012\12275\002\Standards\12275-002 TR-106 SIGN DETAIL

GENERAL NOTES

THE SEQUENCE SHOWN IS INTENDED AS A GUIDE FOR MAJOR ITEMS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL MINOR ITEMS. VARIATIONS TO THE SEQUENCE SHOWN MAY BE USED AS APPROVED BY THE ENGINEER. REGARDLESS OF THE SEQUENCE USED, TRAFFIC HANDLING SHALL BE ESSENTIALLY IN ACCORDANCE WITH THAT SHOWN. PART OF THE WORK SHOWN FOR A SPECIFIC STAGE MAY BE ACCOMPLISHED IN OTHER STAGES. MAJOR WORK NOT CONSTRUCTED WITHIN THE INDICATED STAGE SHALL BE APPROVED BY THE ENGINEER. TRAFFIC CONTROL FOR CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (LATEST EDITION).

TEMPORARY STRIPING SHOWN ON NEW ROADWAYS BEING USED TO CARRY DIVERTED TRAFFIC DURING CONSTRUCTION SHALL BE APPLIED BEFORE PLACEMENT OF THE FINAL SURFACE COURSE. PRIOR TO THE FINAL OPENING, THE SURFACE COURSE SHALL BE PLACED COVERING THE TEMPORARY STRIPING.

TEMPORARY PAVEMENT SHALL BE AC TEMPORARY PAVEMENT 6". THIS BID ITEM SHALL INCLUDE CONSTRUCTION OF PAVEMENT INCLUDING SUBGRADE PREPARATION, AC PLACEMENT, ALL COSTS INCURRED TO PROPERLY MAINTAIN THE TEMPORARY PAVEMENT WHILE IN USE, REMOVAL AND DISPOSAL OF TEMPORARY PAVEMENT WHEN NO LONGER NEEDED.

INSTALLATION AND REMOVAL OF TEMPORARY DRAINAGE AND ENTRANCE PIPES AS SHOWN ON THE TRAFFIC CONTROL PLANS WILL NOT BE MEASURED OR PAID FOR SEPARATELY.

ADDITIONAL SIGNS, BARRICADES AND ANY OTHER TRAFFIC CONTROL DEVICES NOT SHOWN ON THE PLANS WHICH MAY BE DEEMED NECESSARY BY THE ENGINEER FOR TRAFFIC CONTROL DURING CONSTRUCTION WILL NOT BE MEASURED OR PAID FOR SEPARATELY BUT SHALL BE SUBSIDIARY TO THE CONTRACT.

THE CONTRACTOR SHALL PROVIDE ALL WEATHER ACCESS DRIVES TO ALL PROPERTIES ADJACENT TO THE PROJECT. ALL COSTS ASSOCIATED WITH PROVIDING ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION SHALL BE INCLUDED IN THE CONTRACT.

STAGE	MAJOR CONSTRUCTION ITEMS	HANDLING OF TRAFFIC	REMARKS
1	Construct Channel "A" Construct mainline 37th St. from Sta. 105+50 to 159+50. Install waterline (See Sh. B3 for sequencing).	Existing traffic configuration to be maintained.	Private utilities to be installed BY OTHERS after initial grading and prior to paving operations.
2	Install traffic signal video detection for WB 37th St. traffic at Hillside. Construct North half of 37th St. from Sta. 100+79 to 105+50 and Sta. 159+50 to 163+81.	2-Lane, 2-Way traffic on existing 37th St. thru Hillside and Oliver intersections.	Prior to Stage 3 construction activities, a paved drive connection must be made from new 37th St. to the parking lot North of existing 37th St.
3	Traffic signal modification at 37th St. and Oliver. Construct South half of 37th St. from Sta. 100+79 to 105+50 and Sta. 159+50 to 164+31.	2-Lane, 2-Way traffic on new 37th St. thru Hillside and Oliver intersections.	
4	Surface course, signing, marking, seeding, and other miscellaneous items.	Open lanes to traffic as surface course is completed.	Lane closures with the use of flaggers will be permitted during daylight hours with the approval of the Engineer. All traffic control shall be in accordance with the MUTCD (Latest Edition).

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC HANDLING & CONSTRUCTION SEQUENCE

GARY JANZEN, P.E.–CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 90 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/30/2013 11:18:48 AM
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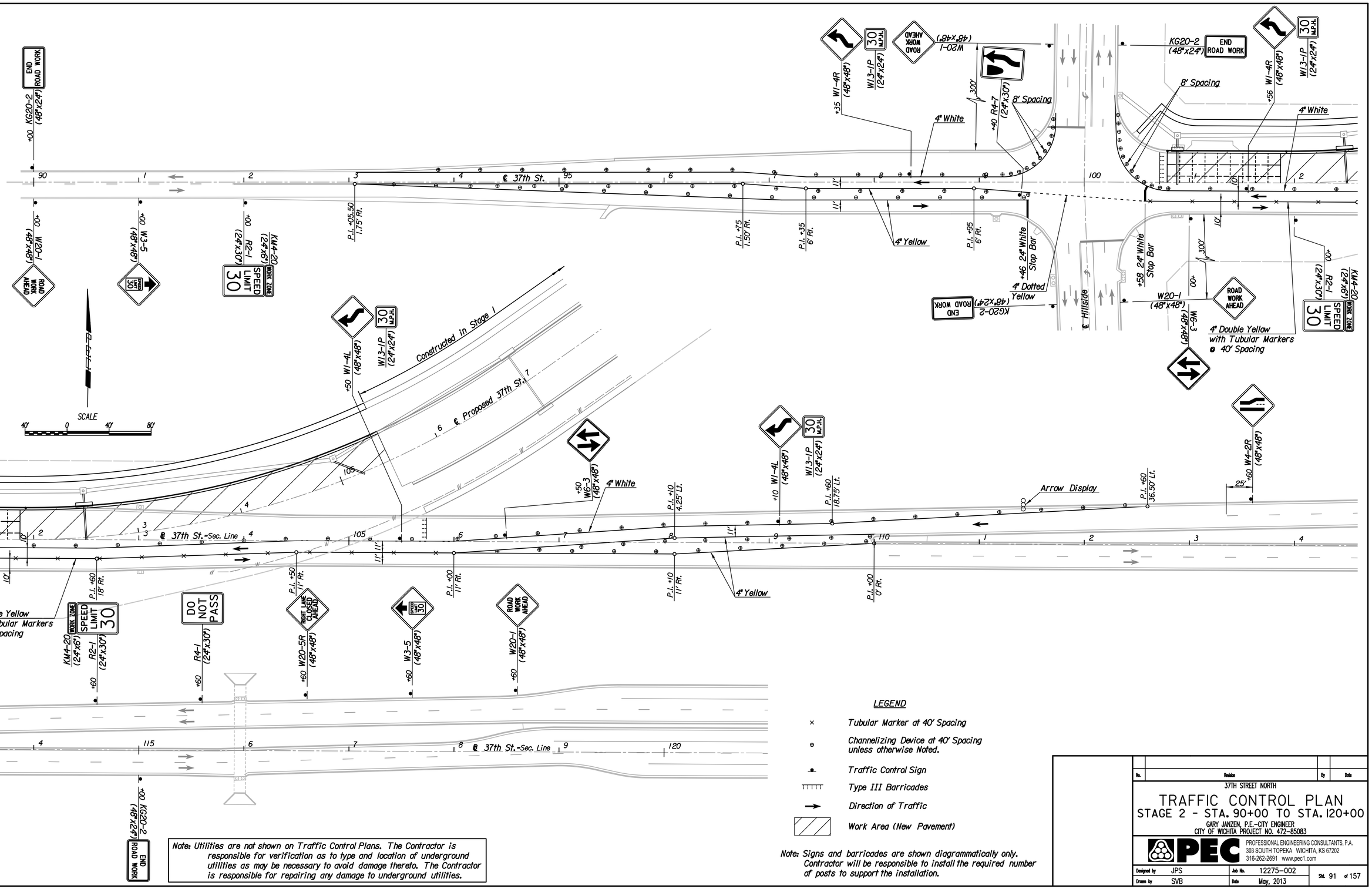

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

LEGEND

- × Tubular Marker at 40' Spacing
- ⊕ Channelizing Device at 40' Spacing unless otherwise Noted.
- Traffic Control Sign
- Type III Barricades
- → Direction of Traffic
- Work Area (New Pavement)

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 2 - STA. 90+00 TO STA. 120+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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Designed by	JPS	Job No.	12275-002	Sht. 91 of 157
Drawn by	SVB	Date	May, 2013	

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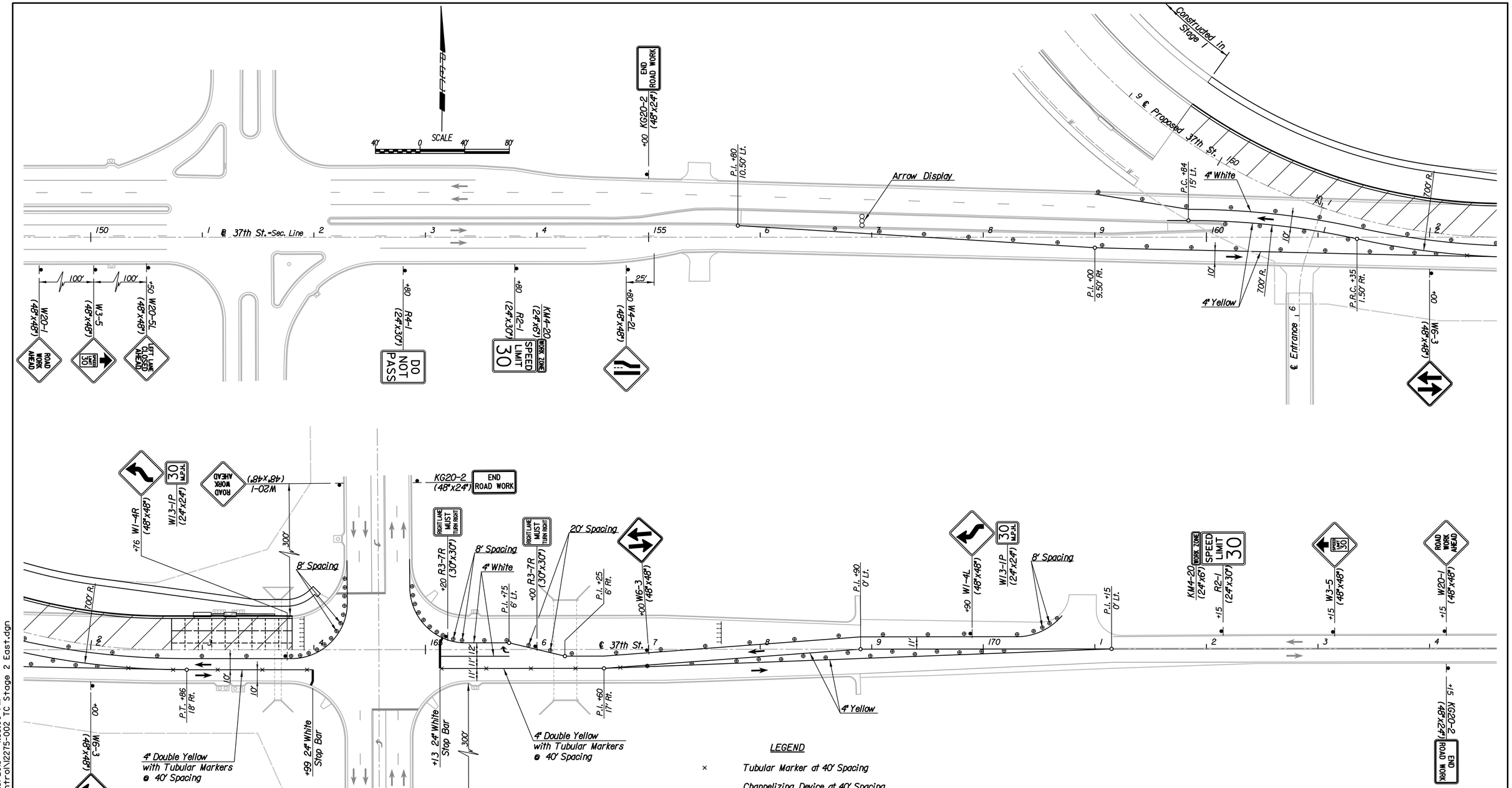

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 2 - STA. 150+00 TO STA. 174+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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Designed by	JPS	Job No.	12275-002	Sht. 92 of 157
Drawn by	SVB	Date	May, 2013	

Plotted By: svb Date: 4/25/2013 4:53:00 PM
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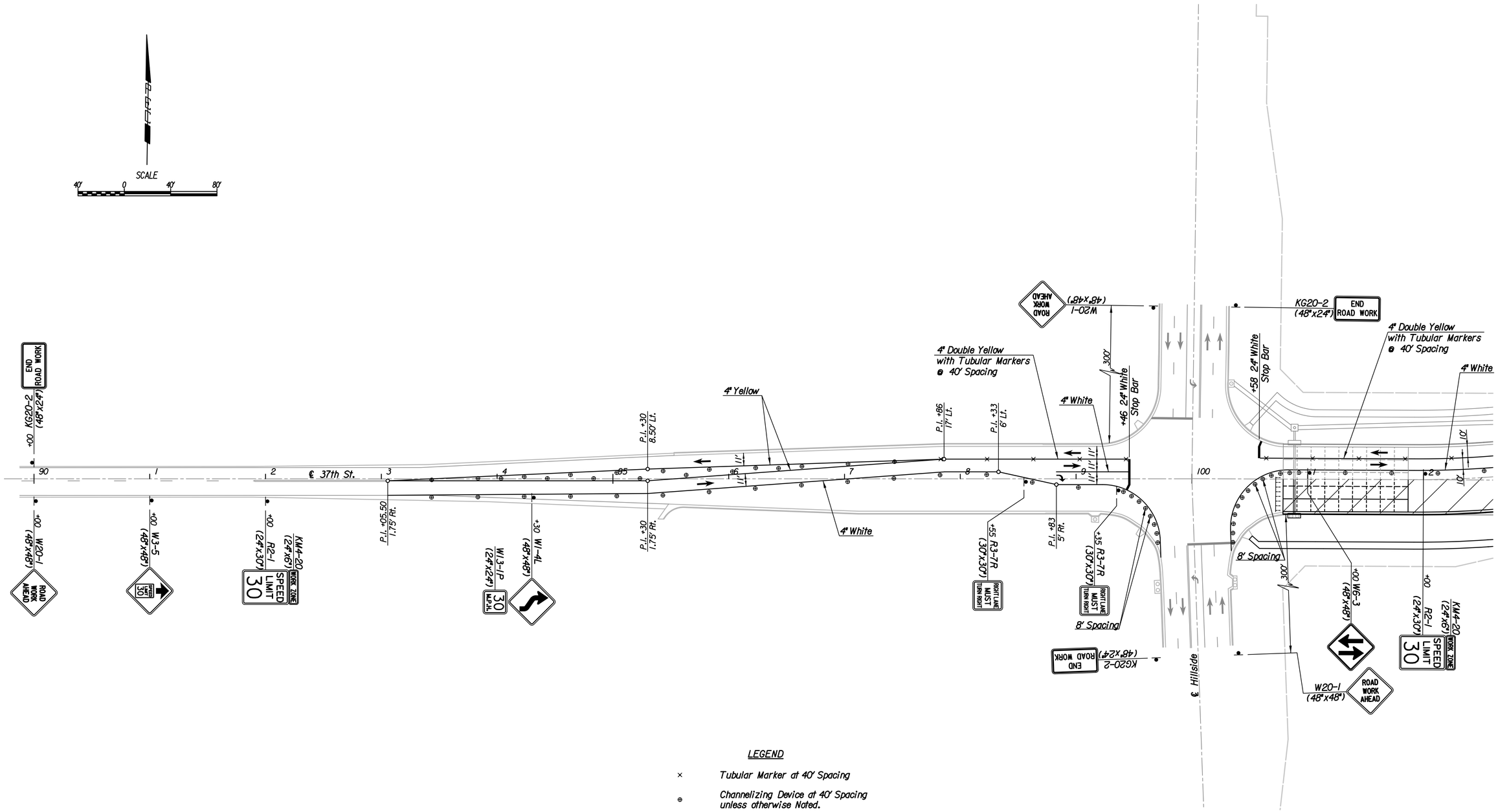

LEGEND

- × — *Tubular Marker at 40' Spacing*
- ⊕ — *Channelizing Device at 40' Spacing unless otherwise Noted.*
- ● — *Traffic Control Sign*
- ┬┬┬┬ — *Type III Barricades*
- → — *Direction of Traffic*
- ▨ — *Work Area (New Pavement)*

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 3 - STA. 90+00 TO STA. 102+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 93 of 157
Drawn by	SVB	Date	May, 2013	

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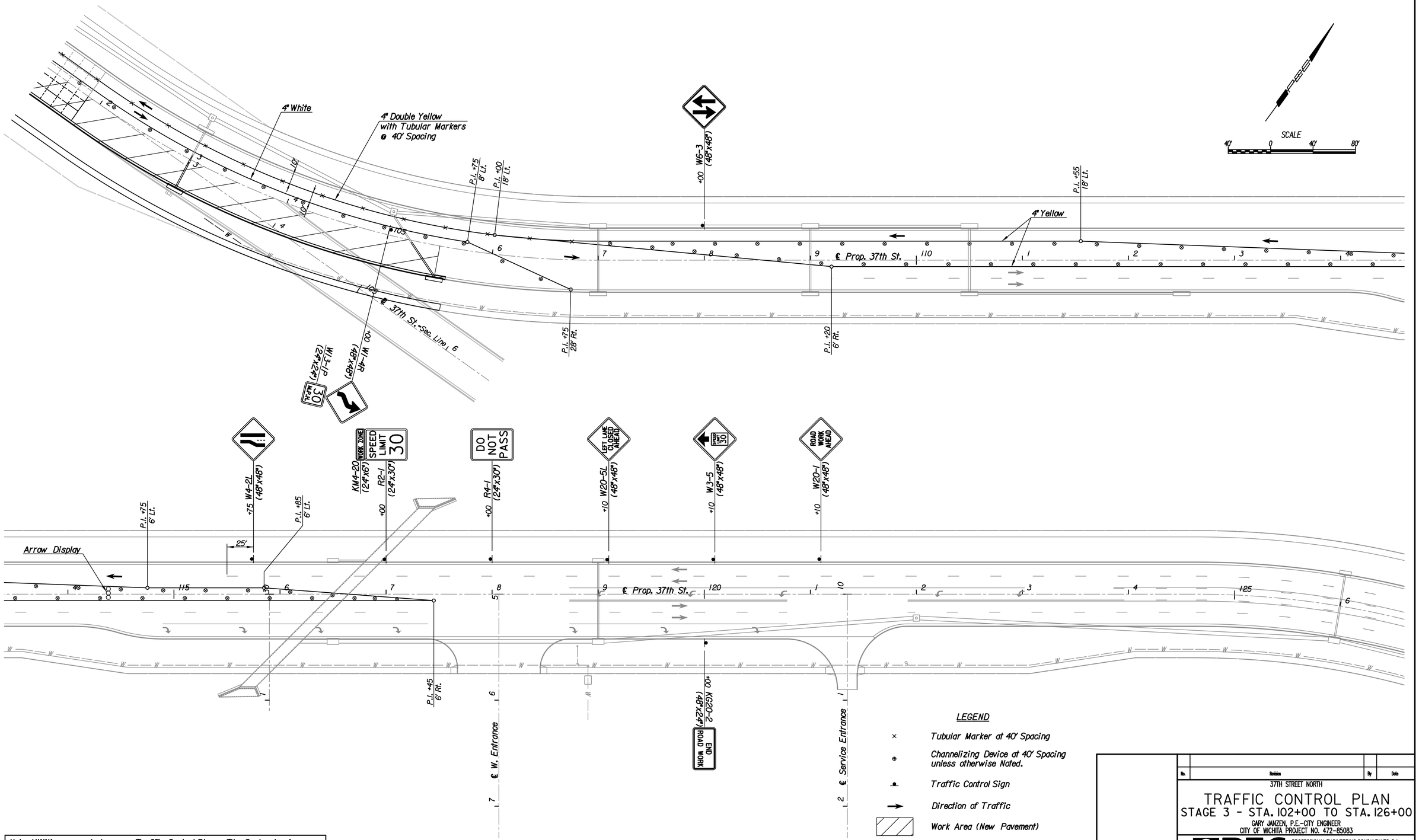

LEGEND

- Tubular Marker at 40' Spacing
- Channelizing Device at 40' Spacing unless otherwise Noted.
- Traffic Control Sign
- Direction of Traffic
- Work Area (New Pavement)

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 3 - STA. 102+00 TO STA. 126+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 94 of 157
Drawn by	SVB	Date	May, 2013	

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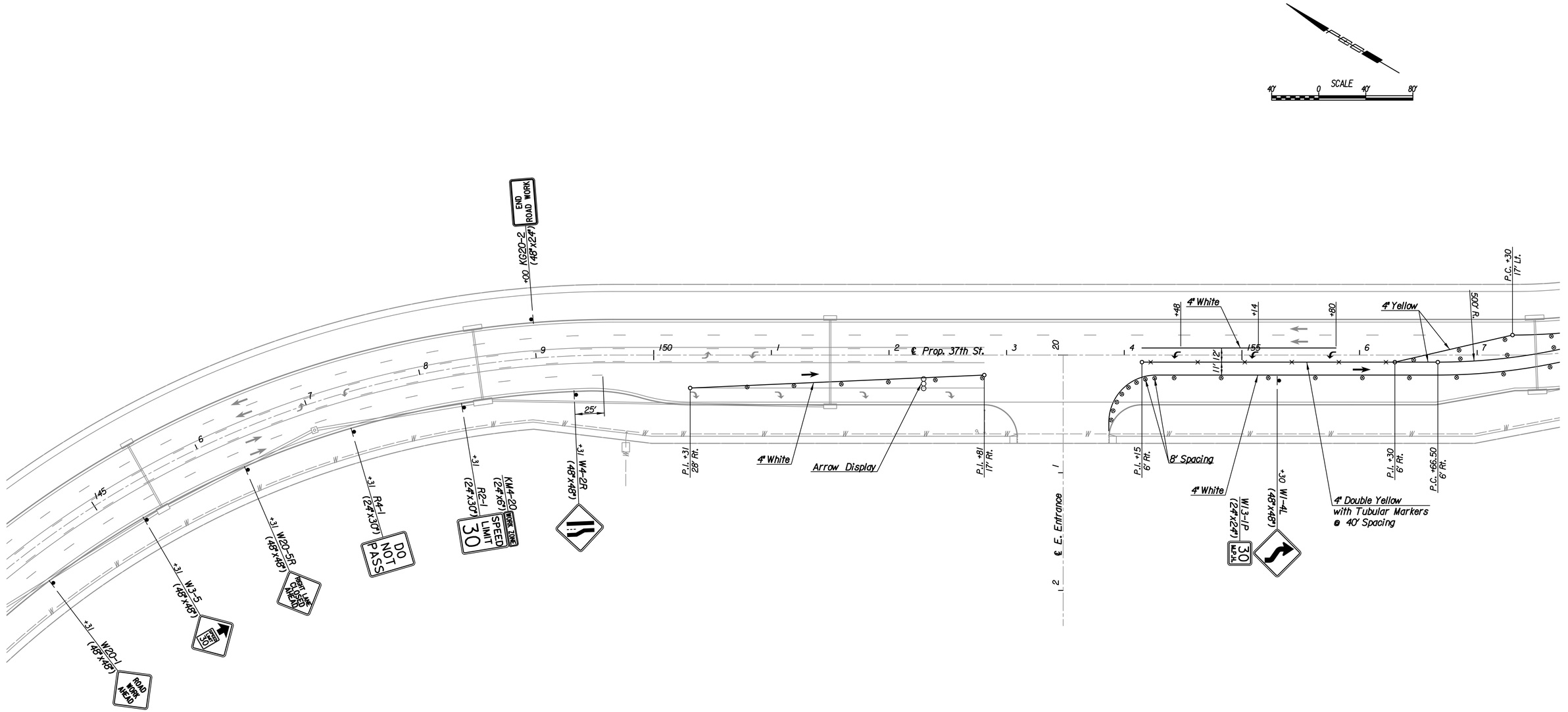

LEGEND

× Tubular Marker at 40' Spacing

⊕ Channelizing Device at 40' Spacing unless otherwise Noted.

● Traffic Control Sign

→ Direction of Traffic

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 3 - STA. 145+00 TO STA. 157+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

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303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 95 of 157
Drawn by	SVB	Date	May, 2013	

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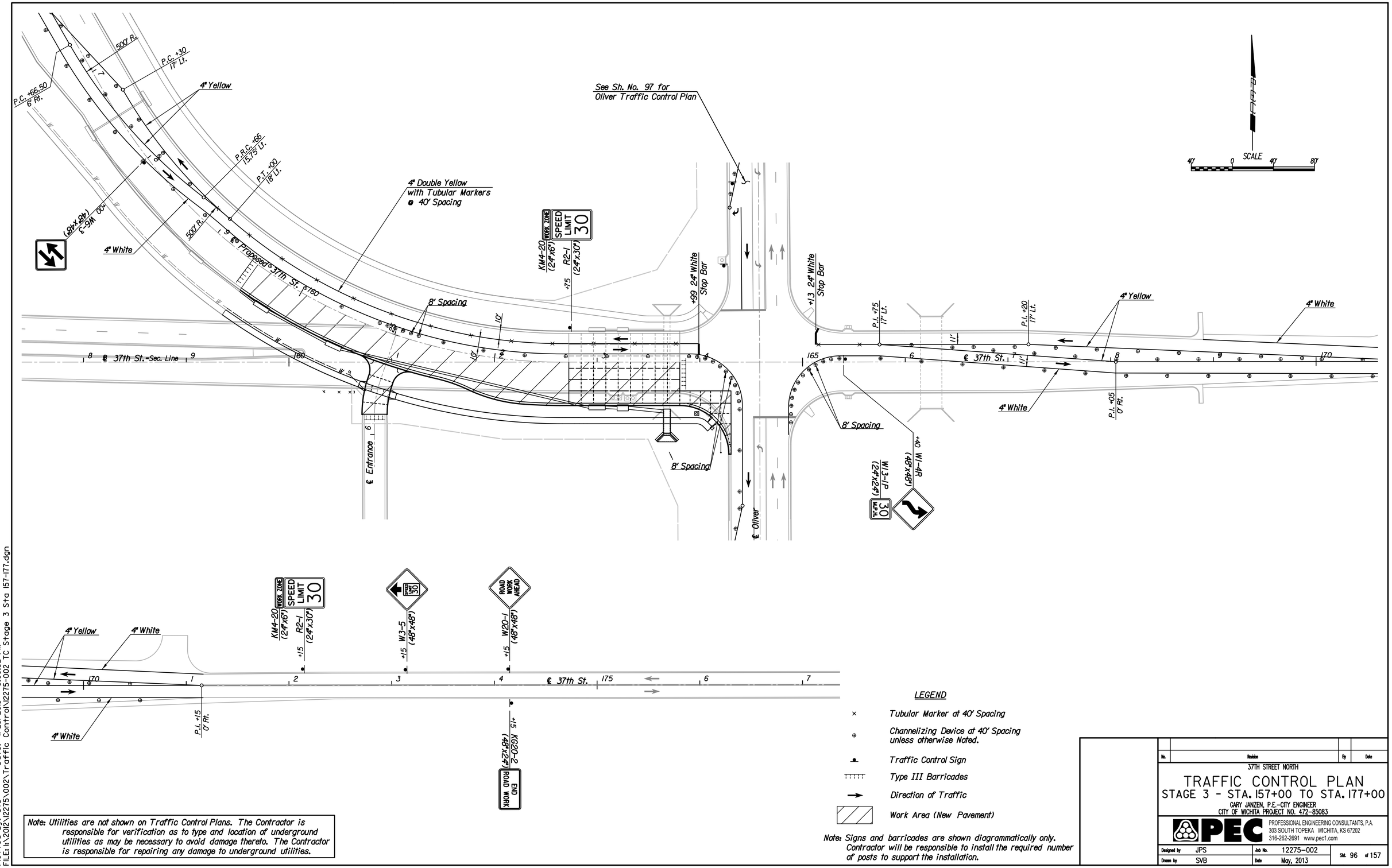

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 3 - STA. 157+00 TO STA. 177+00

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002	Sht. 96 of 157
Drawn by	SVB	Date	May, 2013	

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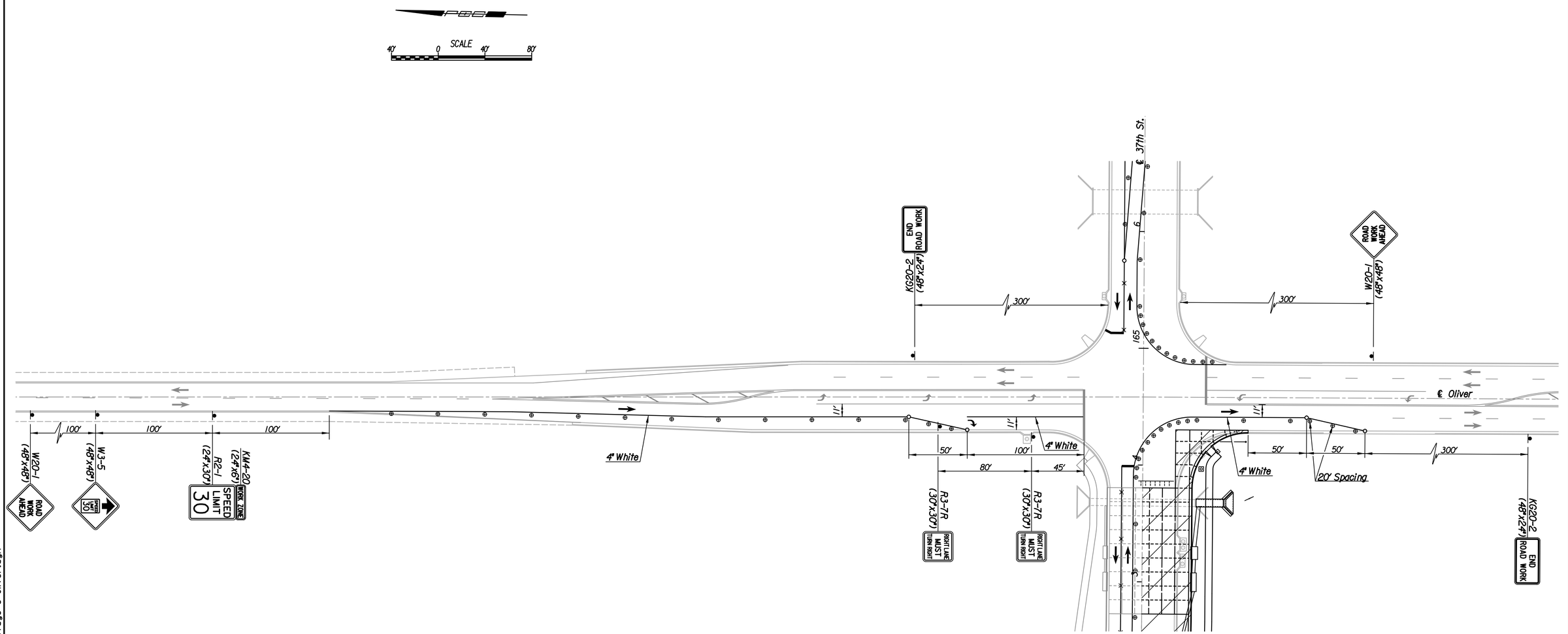

LEGEND

- × — *Tubular Marker at 40' Spacing*
- ⊕ — *Channelizing Device at 40' Spacing unless otherwise Noted.*
- ● — *Traffic Control Sign*
- *Type III Barricades*
- → — *Direction of Traffic*
- *Work Area (New Pavement)*

Note: Signs and barricades are shown diagrammatically only. Contractor will be responsible to install the required number of posts to support the installation.

Note: Utilities are not shown on Traffic Control Plans. The Contractor is responsible for verification as to type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor is responsible for repairing any damage to underground utilities.

No.	Revision	By	Date

37TH STREET NORTH

TRAFFIC CONTROL PLAN
STAGE 3 - OLIVER

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85083

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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316-262-2691 www.pec1.com

Designed by	JPS	Job No.	12275-002
Drawn by	SVB	Date	May, 2013

Sht. 97 of 157

Plotted By: svb Date: 4/25/2013 5:10:57 PM
FILE: I:\2012\12275\002\Traffic Control\12275-002 TC Stage 3 Oliver.dgn

COUNTY	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SEDGWICK	KANSAS	472-85083	2013	98	157

W8-1
48"x48"

BUMP SIGN
(AS REQUIRED BY THE ENGINEER)

W8-11
48"x48"

UNEVEN LANES SIGN
(SPACED @ 1/4 MILE THROUGHOUT
PROJECT AS REQUIRED)

W8-9a
48"x48"

SHOULDER DROP-OFF SIGN
(SPACED @ 1/4 MILE THROUGHOUT
PROJECT AS REQUIRED)

(LEGEND TO BE DETERMINED
BY THE ENGINEER)

G20-SPECIAL
72"x36" 6" SERIES "C" LETTERS
or
96"x48" 10" SERIES "D" LETTERS

LIST OF TRAFFIC CONTROL DEVICES *

MUTCD DEVICE NO.	NO.	FLASHERS TYPE A	FLASHERS TYPE B	REMARKS
R2-1	7			SPEED LIMIT
R3-7R	4			RIGHT LANE MUST TURN RIGHT
R4-1	2			DO NOT PASS
R4-7	1			KEEP RIGHT
KG20-2	8			END ROAD WORK
KM4-20	7			WORK ZONE

MUTCD DEVICE NO.	NO.	FLASHERS TYPE A	FLASHERS TYPE B	REMARKS
W1-4L	3	3		ROADWAY SHIFT
W1-4R	3	3		ROADWAY SHIFT
W3-5	5	5		SPEED LIMIT AHEAD
W4-2L	1	1		LANE ENDS
W4-2R	1	1		LANE ENDS
W6-3	5	5		2-WAY SYMBOL
W13-1P	6			SPEED ADVISORY
W20-1	8	8		ROAD WORK AHEAD
W20-5L	1	1		LANE CLOSED AHEAD
W20-5R	1	1		LANE CLOSED AHEAD

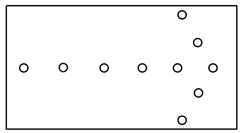
* FOR INFORMATION ONLY QUANTITY SHOWN REPRESENTS MAXIMUM REQUIRED DURING ANY SINGLE STAGE.

DELINEATORS & CHANNELIZATION DEVICES

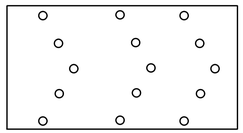
DEVICE	NO.	SIZE	FLASHERS TYPE A	FLASHERS TYPE B	FLASHERS TYPE C
BARRICADES					
TYPE III	11	12'	8		
TYPE II					
TYPE I					
DRUMS	246				
CONES					
TUBES	42	28"			
VERTICAL PANELS					
SINGLE					
BACK TO BACK					
PAVEMENT MARKING ø	WHITE	YELLOW			
TYPE I 4" SOLID (Lin. Ft.)	6170	8530			
TYPE I 4" DOTTED (Lin. Ft.)		110			
TYPE II 4" SOLID (Lin. Ft.)	1820	4760			
TYPE II 4" DOTTED (Lin. Ft.)					
TURN ARROW	6				
24" WHITE STOP BAR	As Required				
TEMP. CONCRETE SAFETY BARRIER		(Lin. Ft.)			
ARROW DISPLAY	2				
INERTIAL BARRIER SYSTEM					

SEE SHEET NO. 99 FOR TRAFFIC CONTROL NOTES

ARROW DISPLAY



FLASHING ARROW



SEQUENTIAL CHEVRON

ARROW DISPLAY ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL-RATED LAMP VOLTAGE. FULL LAMP VOLTAGE SHOULD BE USED FOR DAY AND DIMMED MODE SHALL BE USED FOR NIGHT.

ø PAVEMENT MARKINGS:

(A) TYPE I TAPE IS TO BE APPLIED TO A FINAL SURFACE AS A TEMPORARY MARKING WHEN THE PATTERN OF THE PERMANENT MARKINGS WILL BE DIFFERENT THAN THE TEMPORARY MARKING. TYPE II TAPE IS TO BE APPLIED TO A TEMPORARY SURFACE THAT IS TO BE REMOVED OR COVERED BY FUTURE CONSTRUCTION. TYPE II TAPE IS ALSO TO BE APPLIED TO A FINAL SURFACE WHERE IT IS KNOWN THERE WILL BE PERMANENT MARKINGS PLACED IN THE SAME PATTERN AS THE TEMPORARY TYPE II TAPE.

(B) ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED AND ALL TRANSITION TAPERS, CROSSOVERS, AND EDGE LINES ALONG CHANNELIZING DEVICES SHALL BE MARKED WITH SOLID FOUR-INCH WIDE PAVEMENT MARKING TAPE WHEN THE WORK WILL OCCUPY A LOCATION MORE THAN THREE DAYS.

11/94	CHG W8-9a & ADDED W8-11	DRS

SUMMARY OF TRAFFIC CONTROL DEVICES

T.C. NO. 2.0

PREPARED BY
SEDGWICK COUNTY PUBLIC WORKS
HIGHWAY DIVISION

DAVID C. SPEARS, P.E. DIRECTOR/COUNTY ENGINEER

REVISED	SCALE	DESIGNED	TRACED	CHECKED	SHEET NO.
		M.R.B.	D.R.S.	M.R.B.	98
	DATE	6/88	3/94	3/94	
	PLANFILE ~~TC-2-0~~		TOTAL SHEETS		

Plotted By: svb Date: 4/30/2013 11:25:57 AM
FILE: i:\2012\12275\002\Standards\12275-002 tc-2-0.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	99	157

1. MUTCD COMPLIANCE:

ALL TEMPORARY TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION AND MAINTENANCE SHALL COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS WHICH HAS BEEN ADOPTED BY THE SECRETARY OF TRANSPORTATION. WHENEVER THE TEMPORARY TRAFFIC CONTROL STANDARDS CONFLICT WITH THE MUTCD, THE STANDARDS SHALL GOVERN.

2. DESIGN SPEED:

THOSE ITEMS DELEGATED TO TEMPORARY TRAFFIC CONTROL SHOULD BE DESIGNED AND INSTALLED USING THE POSTED/LEGAL SPEED OF THE ROADWAY PRIOR TO WORK STARTING.

3. CLEAR ZONE:

ALL CONSTRUCTION EQUIPMENT (INCLUDING VEHICLES), MATERIALS, AND DEBRIS SHALL BE STORED OUT OF THE CLEAR ZONE. WHERE THIS CANNOT BE ACHIEVED, THE CONTRACTOR SHALL PLACE APPROPRIATE SIGNS, OBJECT IDENTIFIERS, AND/OR BARRICADES AS DESIGNATED BY THE ENGINEER. ~~TEMPORARY TRAFFIC CONTROL DEVICES NEEDED FOR THIS CONDITION SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.~~

4. MINIMUM LANE WIDTHS:

LANE WIDTHS SHALL BE A MINIMUM OF 11' (MEASURED BETWEEN CENTERLINES OF PAVEMENT MARKINGS) OR AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. A LANE WIDTH LESS THAN 11' MAY REQUIRE RESTRICTED ROADWAY WIDTH SIGNING.

5. FLAGGER:

A MINIMUM OF ONE FLAGGER SHALL BE STATIONED WITHIN EACH MULTI-LANE ROADWAY ACTIVITY AREA WHERE WORK IS IN A CLOSED LANE ADJACENT TO TRAFFIC AND NOT SEPARATED BY A CONCRETE SAFETY BARRIER SYSTEM.

6. PAVEMENT MARKING:

WHEN THE WORK WILL OCCUPY A LOCATION MORE THAN THREE DAYS, ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED OR MASKED AND ALL TRANSITION TAPERS, CROSSOVERS, AND EDGE LINES ALONG CHANNELIZING DEVICES SHALL BE MARKED WITH SOLID 4" WIDE PAVEMENT MARKING.

7. FIRST MODULE OF IBS:

THE FIRST MODULE OF EACH INERTIAL BARRIER SYSTEM (IBS) SHALL HAVE A MINIMUM OF 2 SQ. FT. OF FLUORESCENT ORANGE ASTM TYPE IV SHEETING FACING TRAFFIC. EITHER A VERTICAL RECTANGLE OR DIAMOND SHAPE MAY BE USED.

8. PEDESTRIAN / BICYCLE SAFETY:

WORK ZONE SIGNS SHALL NOT INHIBIT PEDESTRIAN AND BICYCLE TRAFFIC ON SIDEWALKS OR OTHER AREAS DESIGNATED FOR PEDESTRIAN OR BICYCLE USE.

CONSIDERATION SHOULD BE MADE TO SEPARATE PEDESTRIAN AND BICYCLE MOVEMENTS FROM BOTH WORK SITE ACTIVITY AND VEHICULAR TRAFFIC. UNLESS A REASONABLE SAFE ROUTE THAT DOES NOT INVOLVE CROSSING THE ROADWAY CAN BE PROVIDED, PEDESTRIANS AND BICYCLISTS SHOULD BE APPROPRIATELY DIRECTED WITH ADVANCE SIGNING THAT ENCOURAGES THEM TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY. IN URBAN AND SUBURBAN AREAS WITH HIGH VEHICULAR TRAFFIC VOLUMES, THESE SIGNS SHOULD BE PLACED AT INTERSECTIONS (RATHER THAN MIDBLOCK LOCATIONS) SO THAT PEDESTRIANS AND BICYCLISTS ARE NOT CONFRONTED WITH MIDBLOCK WORK SITES THAT WILL INDUCE THEM TO ATTEMPT SKIRTING THE WORK SITE OR MAKING A MIDBLOCK CROSSING.

WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED, THE TEMPORARY FACILITIES SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.

9. CHANGED STOP CONDITIONS:

ATTACH TWO FLUORESCENT RED-ORANGE FLAGS AND A RED TYPE "B" HIGH INTENSITY WARNING LIGHT TO ANY STOP SIGN THAT CREATES A NEW STOP CONDITION OR MOVES THE STOP CONDITION TO A NEW LOCATION. LEAVE FLAGS AND LIGHTS IN PLACE FOR AT LEAST THE FIRST 30 DAYS. INSTALL W3-1 (SYMBOLIC STOP AHEAD) SIGN IN ADVANCE OF STOP SIGN IF STOP SIGN IS NOT VISIBLE FOR A MINIMUM OF DISTANCE 'A' (SEE CHART ON TE710) OR IF STOP CONDITION IS MOVED TO LESS THAN DISTANCE 'A' FROM AN EXISTING STOP AHEAD SIGN.

10. ~~LUMP SUM BIDDING:~~

~~WHEN TRAFFIC CONTROL IS BID LUMP SUM, ADDITIONAL DEVICES WILL BE PAID FOR AS EXTRA WORK.~~

11. NIGHTTIME LIGHTING:

WHEN NIGHTTIME WORK IS REQUIRED, FLOODLIGHTS SHOULD BE USED TO ILLUMINATE FLAGGER STATIONS, EQUIPMENT CROSSINGS, AND OTHER AREAS WHERE EXISTING LIGHTING IS NOT ADEQUATE FOR THE WORK TO BE PERFORMED SAFELY.

IN NO CASE SHALL FLOODLIGHTS BE PERMITTED TO CREATE A DISABLING GLARE FOR THE DRIVER. THE ADEQUACY OF THE FLOODLIGHT PLACEMENT AND ELIMINATION OF POTENTIAL GLARE SHOULD BE CHECKED BY DRIVING THROUGH THE PROJECT.

12. NCHRP REPORT 350 CRASHWORTHY REQUIREMENTS:

TRAFFIC CONTROL DEVICES SHALL MEET THE EVALUATION CRITERIA IN NCHRP REPORT 350 OR IN MASH REPORT 2009 AS SUPPLEMENTED BY FHWA MEMORANDUM "IDENTIFYING ACCEPTABLE HIGHWAY SAFETY FEATURES," DATED JULY 25, 1997. AVAILABLE ON THE INTERNET AT http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/policy_memo/

ANY DEVICE NOT ADDRESSED BY THE TE STANDARDS MAY BE APPROVED ON A CASE BY CASE BASIS BY THE ENGINEER. THE DEVICE SHALL BE ACCOMPANIED BY AND INSTALLED ACCORDING TO MASH REPORT 2009. ANY DEVICE ACCEPTED PRIOR TO THE ADOPTION OF MASH REPORT 2009 USING CRITERIA FROM NCHRP REPORT 350 MAY REMAIN IN PLACE AND CONTINUE TO BE USED. ANY TRAFFIC CONTROL DEVICE ACCEPTED USING NCHRP REPORT 350 CRITERIA IS NOT REQUIRED TO BE TESTED UNDER MASH REPORT 2009. HOWEVER, NEW TRAFFIC CONTROL DEVICES NOT PREVIOUSLY EVALUATED MUST UTILIZE MASH REPORT 2009 FOR TESTING AND EVALUATION.

THE CONTRACTOR SHALL:

1) PROVIDE TO THE ENGINEER A COPY OF THE MANUFACTURER'S SELF-CERTIFICATION THAT ANY CATEGORY 1 (i.e. - PLASTIC CONICAL DELINEATORS, TUBULAR MARKERS, DRUMS WITHOUT ATTACHMENTS) AND CATEGORY 2 (i.e. - PORTABLE SIGN STANDS (WITH SIGNS), TYPE II AND III BARRICADES, AND VERTICAL PANELS) DEVICES USED ON THE PROJECT ARE NCHRP REPORT 350 OR MASH REPORT 2009 COMPLIANT.

2) PROVIDE TO THE ENGINEER A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER (WZ-xxx) FOR ANY CATEGORY 2 DEVICE (i.e. - PORTABLE SIGN STANDS (WITH SIGNS), TYPE II AND III BARRICADES, AND VERTICAL PANELS) USED ON THE PROJECT. WORK ZONE FHWA ACCEPTANCE LETTERS (WZ-xxx) ARE AVAILABLE ON THE INTERNET AT: http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/wzd/

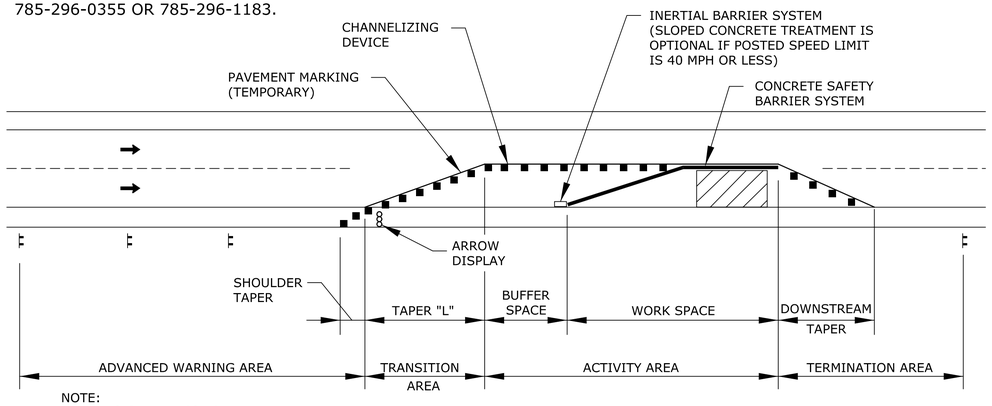
3) CERTIFY THAT THE TRUCK MOUNTED ATTENUATORS (TMA'S) (WHICH ARE DEFINED AS CATEGORY 3 DEVICES BY THE FHWA MEMORANDUM) MEET CURRENT CRASHWORTHY SPECIFICATIONS AS DEFINED ABOVE AND INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER. ALL CATEGORY 1 & 2 DEVICES SHALL BE NCHRP REPORT 350 OR MASH REPORT 2009 COMPLIANT.

13. LEAD IN CHANNELIZING DEVICES ON CENTERLINE:

TEMPORARY RUMBLE STRIPS MAY BE USED IN LIEU OF LEAD IN CENTERLINE CHANNELIZING DEVICES WHEN THE ROADWAY IS LESS THAN OR EQUAL TO 30' (FEET) INCLUDING PAVED SHOULDERS. WHEN EXTENUATING CIRCUMSTANCES EXIST, THE AREA ENGINEER MAY ELECT TO ELIMINATE BOTH THE LEAD IN CHANNELIZERS AND THE RUMBLE STRIPS.

14. TEMPORARY RUMBLE STRIPS:

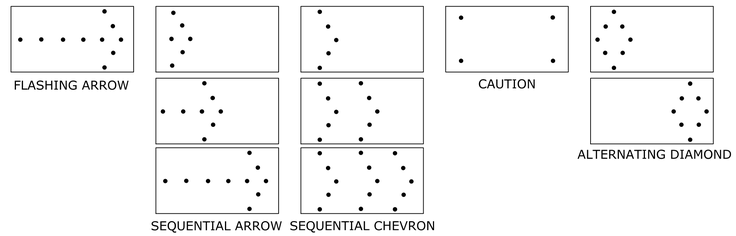
ALTERNATIVE TEMPORARY RUMBLE STRIP OPTIONS MAY BE AVAILABLE. PLEASE CONTACT THE TEMPORARY TRAFFIC CONTROL UNIT FOR MORE INFORMATION AT 785-296-0355 OR 785-296-1183.



NOTE:
REFER TO STD. TE702 FOR TAPER "L" FORMULA.

TYPICAL WORK ZONE COMPONENTS

ARROW DISPLAYS



ARROW DISPLAY ELEMENTS SHALL BE CAPABLE OF A MINIMUM 50 PERCENT DIMMING FROM THEIR FULL-RATED LAMP VOLTAGE. FULL LAMP VOLTAGE SHOULD BE USED DURING THE DAY AND DIMMED MODE SHALL BE USED AT NIGHT. FOR SHOULDER WORK, ROADSIDE WORK NEAR THE SHOULDER, BLOCKING THE SHOULDER, OR FOR TEMPORARY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, AN ARROW PANEL SHALL BE USED ONLY IN THE CAUTION MODE.

BUFFER SPACE

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ POSTED SPEED PRIOR TO WORK STARTING

NEITHER WORK ACTIVITY NOR STORAGE OF EQUIPMENT, VEHICLES, OR MATERIAL SHOULD OCCUR IN THE BUFFER SPACE. WHEN A PROTECTION VEHICLE IS PLACED IN ADVANCE OF THE WORK SPACE, ONLY THE SPACE UPSTREAM OF THE VEHICLE CONSTITUTES THE BUFFER SPACE.

IF TEMPORARY CONCRETE SAFETY BARRIER SYSTEM IS USED TO SEPARATE APPROACHING TRAFFIC FROM THE WORK SPACE, THE BARRIER SYSTEM SHALL BE CONSIDERED PART OF THE ACTIVITY AREA. A FULL LANE WIDTH SHOULD BE AVAILABLE THROUGHOUT THE LENGTH OF THE BUFFER SPACE. SEE TYPICAL WORK ZONE COMPONENTS.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Removed Note 13. Added Alternating Diamonds	J.A.M.	K.P.
2	10/4/11	Modified Notes 9,12 & 15. Added Note 15	J.A.M.	K.P.
1	11/30/09	Added Note 14	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

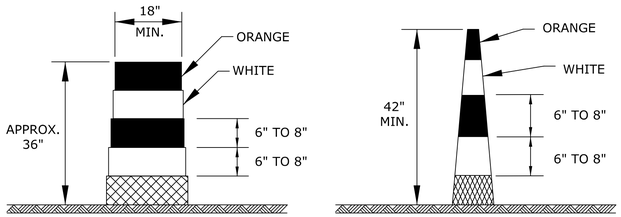
GENERAL TRAFFIC CONTROL

~~TE700~~

FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle
DESIGNED	B.A.H.	DETAILED B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.	QUAN. CK.	TRACE CK.

Drawn By : svb
File : I:\2012\12275\002\Standards\122275-002 te700.dgn
Plotted : 4/30/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	100	157

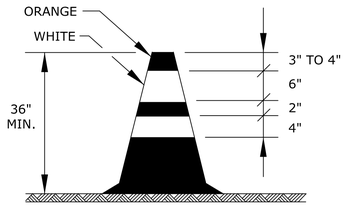


DRUM

CONICAL DELINEATOR

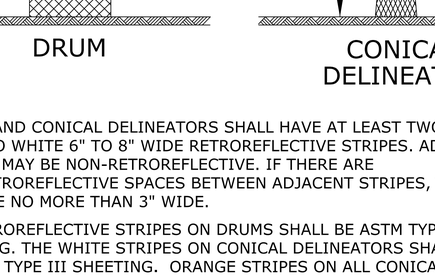
DRUMS AND CONICAL DELINEATORS SHALL HAVE AT LEAST TWO ORANGE AND TWO WHITE 6" TO 8" WIDE RETROREFLECTIVE STRIPES. ADDITIONAL STRIPES MAY BE NON-RETROREFLECTIVE. IF THERE ARE NON-RETROREFLECTIVE SPACES BETWEEN ADJACENT STRIPES, THEY SHALL BE NO MORE THAN 3" WIDE.

ALL RETROREFLECTIVE STRIPES ON DRUMS SHALL BE ASTM TYPE III SHEETING. THE WHITE STRIPES ON CONICAL DELINEATORS SHALL BE ASTM TYPE III SHEETING. ORANGE STRIPES ON ALL CONICAL DELINEATORS SHALL BE FLUORESCENT ORANGE ASTM TYPE IV SHEETING.



TRAFFIC CONE

TRAFFIC CONES MAY BE USED AS CHANNELIZING DEVICES FOR DAYTIME OPERATIONS ONLY. THEY WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS. THE ENGINEER MAY REQUIRE THAT TRAFFIC CONES BE SUPPLEMENTED BY OTHER TRAFFIC CONTROL DEVICES IN CERTAIN SITUATIONS.

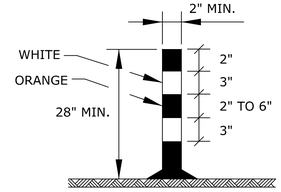


TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.

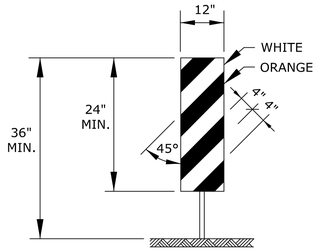
THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL BE ASTM TYPE III SHEETING.

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



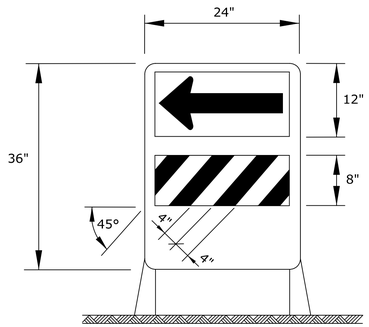
TUBULAR MARKER

THE TWO WHITE RETROREFLECTIVE STRIPES SHALL BE ASTM TYPE III SHEETING. STRIPING AS SHOWN FOR UP TO 42".



VERTICAL PANEL

THE ENTIRE AREA OF VERTICAL PANELS, BOTH FRONT AND BACK, SHALL HAVE ASTM TYPE III SHEETING. THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



DIRECTION INDICATOR BARRICADE

THE ARROW PANEL SHALL BE BLACK ON FLUORESCENT ORANGE ASTM TYPE IV SHEETING. THE STRIPES SHALL BE ORANGE AND WHITE ASTM TYPE III SHEETING SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.

THE DIRECTION INDICATOR BARRICADE SHALL BE USED IN SERIES TO DIRECT THE MOTORIST INTO THE INTENDED LANE OF TRAVEL.

THE ARROW PANEL SHOULD NOT BE VISIBLE TO OPPOSING TRAFFIC.

TAPER FORMULAS:

L = WS FOR SPEEDS OF 45 MPH OR MORE

$L = WS^2/60$ FOR SPEEDS OF 40 MPH OR LESS

WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
S = NUMERICAL VALUE OF POSTED SPEED PRIOR TO WORK STARTING IN MPH
W = WIDTH OF OFFSET IN FEET

CHANNELIZER PLACEMENT:

(A) THE SPACING BETWEEN DEVICES IN TRANSITION AREA (TAPER) SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO 1/2 THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

(B) THE SPACING BETWEEN DEVICES IN THE ADVANCED WARNING AREA AND THE ACTIVITY AREA SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO TWO TIMES THE POSTED SPEED LIMIT IN MPH PRIOR TO WORK STARTING.

(C) CHANNELIZING DEVICES SHALL BE PLACED FOR OPTIMUM VISIBILITY, NORMALLY AT RIGHT ANGLES TO THE TRAFFIC FLOW.

(D) CHANNELIZING DEVICES PLACED ALONG SHOULDER EDGES OR IN DROPOFFS SHALL HAVE A MINIMUM OF 24" FROM THE TOP OF THE CHANNELIZING DEVICE TO THE TOP OF THE PAVEMENT.

ITEM / LOCATION		CROSS-OVERS	SHOOFLY DIVERSIONS	TANGENTS	TAPERS	RAMPS	HEAD TO HEAD	OBJECT IDENTIFIER	LEAD IN DEVICES	GORES
PORTABLE										
	DRUMS	YES	YES	YES	YES	YES	(1)	YES	YES	YES
	CONICAL DELINEATORS	YES	YES	YES	YES	YES	(1)	YES	YES	YES
	VERTICAL PANELS	(2)	(2)	(2)	(2)	(2)	(1,2)	YES	(2)	(2)
	DIRECTION INDICATOR BARRICADE	NO	NO	NO	YES	NO	NO	NO	NO	NO
	TYPE II BARRICADE	(2)	(2)	(2)	(2)	NO	NO	YES	NO	NO
FIXED										
	TUBULAR MARKERS	(3)	(3)	(3)	NO	(3)	YES	NO	YES	YES
	VERTICAL PANELS	(3)	(3)	(3)	(3)	(3)	(3)	YES	(2,3)	(2)

(1) NOT ALLOWED ON CENTERLINE DELINEATION ALONG FREEWAYS OR EXPRESSWAYS.

(2) THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

(3) MAY BE USED UPON THE APPROVAL OF THE ENGINEER.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Added Lead In Devices Into Matrix Table	J.A.M.	K.P.
2	10/4/11	Added Dimension To Tubular Marker Detail	J.A.M.	K.P.
1	4/20/09	Channelizer Placement & Traffic Cone Detail	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

CHANNELIZING DEVICES

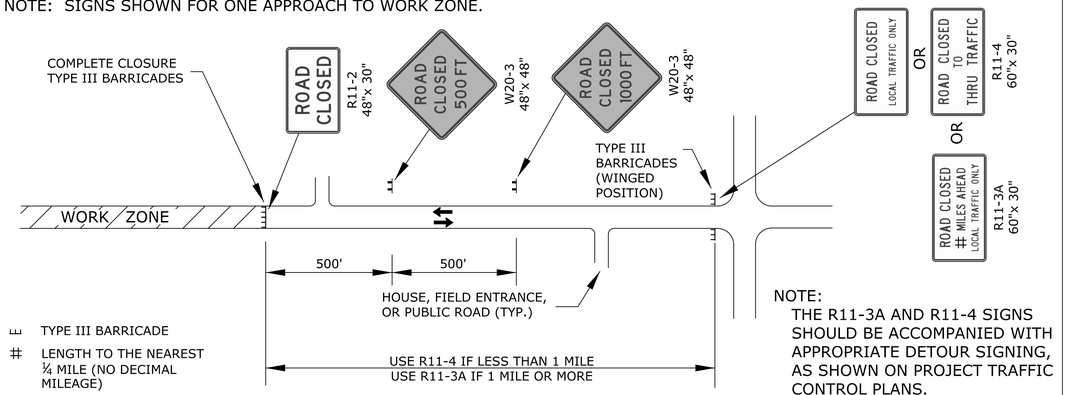
TE702

FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle	
DESIGNED	L.E.R.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 4/25/2013
Drawn By : svb
File : I:\2012\12275\002\Standards\12275-002 te702.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	101	157

NOTE: SIGNS SHOWN FOR ONE APPROACH TO WORK ZONE.



NOTE:
THE R11-3A AND R11-4 SIGNS SHOULD BE ACCOMPANIED WITH APPROPRIATE DETOUR SIGNING, AS SHOWN ON PROJECT TRAFFIC CONTROL PLANS.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE

NOTE: SIGNS SHOWN FOR ONE APPROACH TO INTERSECTION (WORK ZONE).

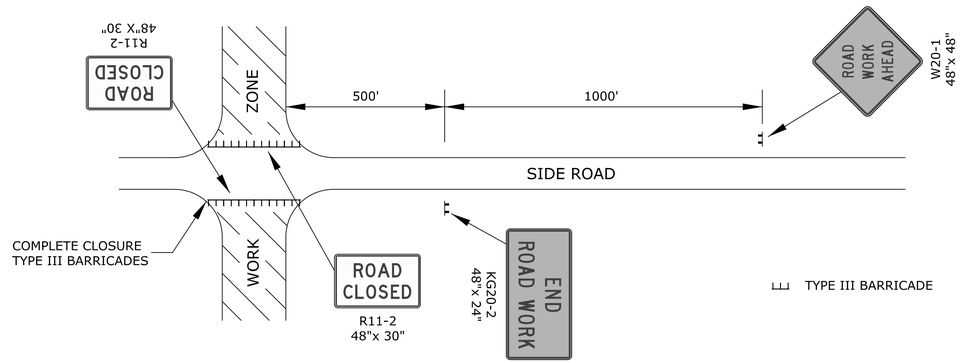


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

NOTE: SIGNS SHOWN FOR ONE APPROACH TO INTERSECTION (WORK ZONE).

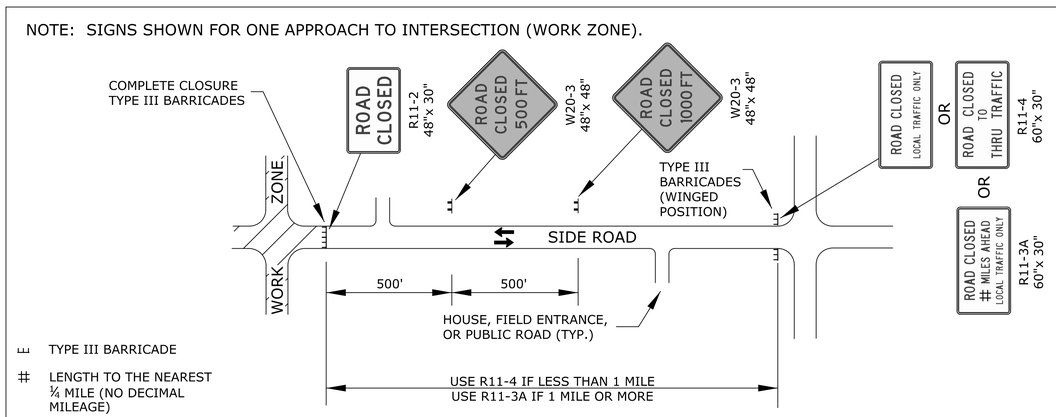


FIGURE 3: TYPICAL SIGNING FOR SIDE ROAD CLOSED

NOTE: SIGNS SHOWN FOR ONE APPROACH TO WORK ZONE.

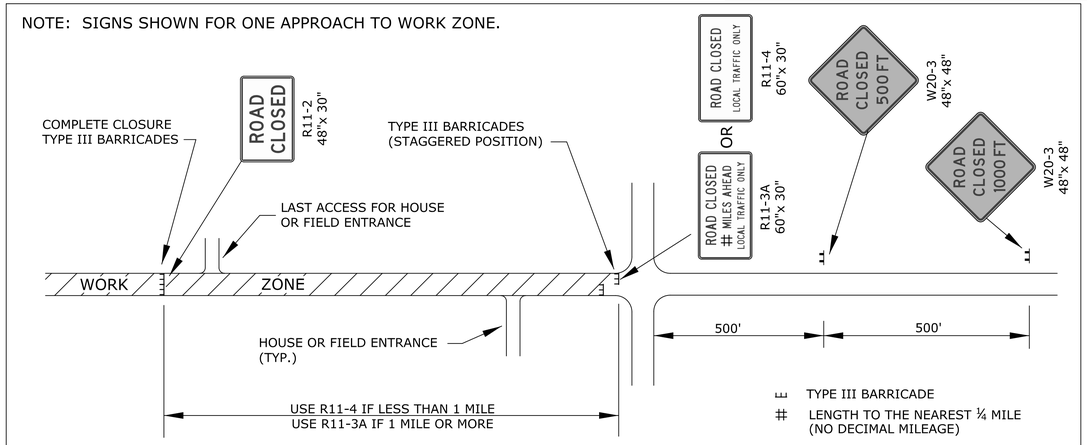


FIGURE 4: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

NOTES:

1. SIGNS:

THE R11-4 (ROAD CLOSED TO THRU TRAFFIC OR ROAD CLOSED LOCAL TRAFFIC ONLY) SIGN SHALL BE USED WHEN THE DISTANCE TO THE POINT OF COMPLETE CLOSURE OF THE ROADWAY IS LESS THAN 1 MILE.

THE R11-3A (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) SIGN SHALL BE USED WHEN THE DISTANCE TO THE POINT OF COMPLETE CLOSURE OF THE ROADWAY IS 1 MILE OR GREATER.

THE WORDS "BRIDGE OUT" (OR BRIDGE CLOSED) MAY BE SUBSTITUTED FOR THE WORDS "ROAD CLOSED" ON THE R11-3A OR R11-4 SIGN WHERE APPLICABLE.

2. BARRICADE PLACEMENT:

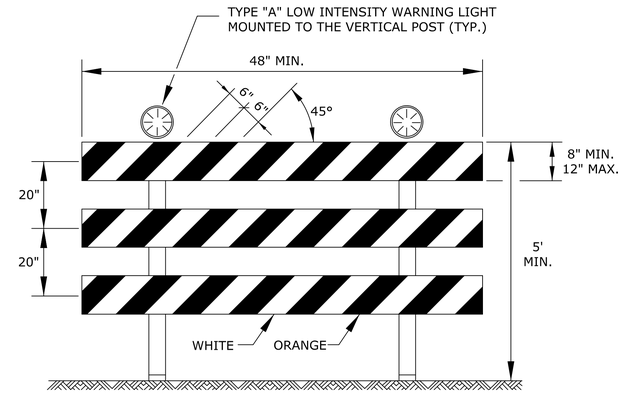
A) COMPLETE ROAD CLOSURE

WHEN A ROADWAY IS CLOSED, TYPE III BARRICADES SHALL BE PLACED END-TO-END TO COMPLETELY COVER THE ROADWAY AND SHOULDERS. WHEN ACCESS MUST BE ALLOWED FOR CONSTRUCTION OR OTHER OFFICIAL/GOVERNMENT VEHICLES, TYPE III BARRICADES SHALL BE LONGITUDINALLY STAGGERED FAR ENOUGH APART FROM ONE ANOTHER TO ALLOW SAFE PASSAGE OF VEHICLES AND MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. TYPE III BARRICADES SHALL BE REALIGNED AND PLACED END-TO-END TO DENY ANY ACCESS WHEN THE CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY.

B) ROAD CLOSED - LOCAL TRAFFIC

AS SHOWN IN FIGURE 4, WHEN LOCAL TRAFFIC MUST BE ALLOWED ACCESS INTO THE WORK ZONE, TYPE III BARRICADES SHALL BE LONGITUDINALLY STAGGERED TO MAINTAIN THE APPEARANCE OF A CLOSED ROADWAY. A SECOND LINE OF END-TO-END TYPE III BARRICADES SHALL BE PLACED JUST BEYOND THE LAST ACCESS POINT IN THE WORK ZONE, TO COMPLETELY CLOSE THE ROADWAY AS DESCRIBED IN NOTE 2-A.

AS SHOWN IN FIGURE 1 AND FIGURE 3, AT THE POINT WHERE THRU TRAFFIC MUST DETOUR AND LOCAL TRAFFIC CAN PROCEED TO THE LOCATION WHERE THE ROADWAY IS COMPLETELY CLOSED, THE R11-3A (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) OR R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY OR ROAD CLOSED TO THRU TRAFFIC) SIGN SHALL BE USED WITH TYPE III BARRICADES (WINGED POSITION), PLACED ON THE SHOULDERS OF ROADWAY.



TYPE III BARRICADE WITH LIGHTS

THE ENTIRE AREA OF BARRICADE RAILS, BOTH FRONT AND BACK, SHALL HAVE ASTM TYPE III SHEETING.

THE STRIPES SHALL SLOPE DOWNWARD TO THE SIDE TRAFFIC IS TO PROCEED OR TOWARD THE CENTER OF THE ROADWAY AT ROAD CLOSURES.

APPROVED SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

WHEN BARRICADES ARE PLACED END-TO-END OR STAGGERED, A TYPE "A" LOW INTENSITY WARNING LIGHT SHALL BE MOUNTED TO THE VERTICAL POST NEAR EACH OUTSIDE CORNER OF THE END BARRICADES.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Type III Barricade Note	J.A.M.	K.P.
2	8/8/07	Added Position To Type III Barricade	M.B.	A.A.A.
1	12/29/05	Note #1 Modified	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL ROAD CLOSURES

TE704

FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle	
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Drawn By : svb
File : i:\2012\12275\002\Standards\12275-002 te704.dgn
Plotted : 4/25/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	102	157

SIGN LAYOUT INFORMATION

KG20-2

STD. SIZE EXPWY/FREEWAY
6" C
48"x 24"

KG20-5

STD. SIZE EXPWY/FREEWAY
6" C
48"x 24"

KM4-2O

STD. SIZE	EXPWY/FREEWAY
3" C	6" C
24"x 6"	48"x 12"

W7-3a

MILEAGE TO BE DETERMINED BY THE ENGINEER.

W8-11

STD. SIZE EXPWY/FREEWAY
8" D
48"x 48"

W8-17

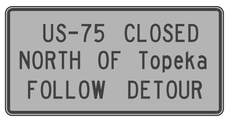
STD. SIZE EXPWY/FREEWAY
48"x 48"

W8-17P
(OPTIONAL)

STD. SIZE EXPWY/FREEWAY
30"x 24"

SP-01
(SPECIAL SIGN)

STD. SIZE	EXPWY/FREEWAY
6" C	10" D



SP-02
(SPECIAL SIGN)

STD. SIZE	EXPWY/FREEWAY
UPPERCASE: 6" C	UPPERCASE: 10" D
LOWERCASE: 4.5" C	LOWERCASE: 8" D

ALL CITY NAMES AND STREET NAMES ON SPECIAL SIGNS AND DESTINATION SIGNS MUST HAVE UPPER AND LOWER CASE LETTERS.

ALL SIGNS SHALL BE BLACK ON ORANGE RETROREFLECTIVE SHEETING.

GENERAL NOTES

1. MAINTENANCE:

THE CONTRACTOR SHALL MAINTAIN ALL SIGNS AND DEVICES IN AN UPRIGHT POSITION. THE CONTRACTOR SHALL CLEAN OR REPLACE ANY DAMAGED OR ILLEGIBLE SIGN OR DEVICE AS DIRECTED BY THE ENGINEER.

2. EXISTING SIGNS:

IF EXISTING SIGNS THAT ARE TO REMAIN (WHETHER DENOTED ON THE PLANS OR NOT) INTERFERE WITH CONSTRUCTION WORK, THE CONTRACTOR SHALL REMOVE, STORE, AND RESET THE SIGNS. ~~THIS SHALL BE SUBSIDIARY TO OTHER TRAFFIC CONTROL BID ITEMS.~~ SIGNING DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

3. CONFLICTING SIGNS, SIGNS NOT IN USE, AND TRAFFIC SIGNALS:

SIGNS AND TRAFFIC SIGNALS THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN OR DO NOT APPLY TO THE TRAFFIC OPERATIONS SHALL BE IMMEDIATELY REMOVED, TURNED SO NOT VISIBLE TO TRAFFIC FROM ANY DIRECTION, OR COMPLETELY COVERED WITH ADEQUATE OPAQUE BREATHABLE MATERIAL. TAPE SHALL NOT BE APPLIED TO THE FACE OF THE SIGN.

4. PORTABLE AND POST MOUNTED SIGNS:

TEMPORARY TRAFFIC CONTROL SIGNS THAT ARE ANTICIPATED TO REMAIN IN PLACE FOR 3 DAYS OR LESS ARE CONSIDERED "PORTABLE." PORTABLE SIGNS SHALL BE MOUNTED ON AN APPROVED SUPPORT AT A MINIMUM HEIGHT OF 12" ABOVE THE TRAVELED WAY. TRAFFIC CONTROL SIGNS IN PLACE FOR OVER 3 DAYS ARE REQUIRED TO BE MOUNTED ON APPROVED POSTS. A MINIMUM OF 42" OF THE APPROVED POST MUST BE BELOW THE GROUND SURFACE WITH ADEQUATE BACKFILL AND COMPACTION. ALL POSTS AT MINIMUM SHALL EXTEND TO THE TOP EDGE OF THE SIGN AND NO GREATER THAN 6" ABOVE THE SIGN.

WHEN THE SIGN WIDTH IS EQUAL TO OR GREATER THAN 9', THREE OR MORE WOOD POSTS MAY BE USED WITH A MINIMUM OF 4' BETWEEN THE CENTERLINE OF EACH POST. ALL SIGNS LESS THAN 9' IN WIDTH SHALL USE A MAXIMUM OF TWO WOOD POSTS.

"ROLL-UP" SIGNS MAY BE USED FOR PORTABLE WARNING SIGNS. THEY MUST BE FLUORESCENT ORANGE ASTM TYPE IV SIGNS OF OPAQUE MATERIAL. MESH SIGNS ARE NOT ALLOWED.

IN THE CASE OF HITTING ROCK WHEN DRIVING POSTS
1. SHIFT THE SIGN LOCATION. DO NOT VIOLATE MINIMUM SIGN SPACING.
2. WITH THE ENGINEER'S APPROVAL, USE ACCEPTABLE ALTERNATIVE SIGN STANDS.

5. SHEETING:

ALL ORANGE SIGNS SHALL HAVE FLUORESCENT ORANGE ASTM TYPE IV SHEETING. ALL OTHER SIGNS SHALL HAVE ASTM TYPE III SHEETING OF STANDARD COLORS.

6. SIGNS INVOLVING SPEEDS:

THE W3-5 (SPEED REDUCTION) SHOULD BE USED ONLY IF THE ENGINEER DETERMINES THAT A REDUCED SPEED IS REQUIRED ON THE PROJECT.

THE KM4-20 (WORK ZONE) PLAQUE SHALL BE PLACED ABOVE ALL SPEED LIMIT SIGNS, (R2-1), EXISTING AND TEMPORARY. MOUNT THE WORK ZONE PLAQUES TO THE POST. DO NOT OVERLAP THE R2-1 AND KM4-20 SIGNS.

FOR SPEEDS OF 30 MPH OR LESS, THE W1-1(TURN) OR W1-3(REVERSE TURN) SHOULD BE USED. FOR SPEEDS OF 35 MPH OR MORE, THE W1-2(CURVE) OR W1-4(REVERSE CURVE) SHOULD BE USED. THE W13-1(MPH) IS TO BE ELIMINATED IF THE ADVISORY SPEED IS WITHIN 5 MPH OF THE SPEED LIMIT.

7. SIGNS CONTROLLING WORK ZONE:

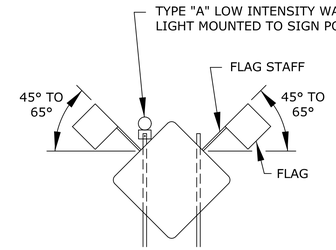
THE KG20-2(END ROAD WORK) SHOULD BE PLACED 5OO' FROM THE END OF THE ACTUAL WORK SPACE, NOT NECESSARILY AT THE EXTREME LIMITS OF THE PROJECT. THE KG20-2 SHOULD BE MOUNTED ON TWO POSTS. THE KG20-2 MAY BE MOUNTED ON ONE POST IF IN URBAN AREAS WHERE UTILITIES ARE A PROBLEM AND WIND LOADS ARE NOT AN ISSUE.

WHERE TWO WORK ZONES ARE LESS THAN 1 MILE APART IN RURAL AREAS OR ¼ MILE APART IN URBAN AREAS, THE KG20-2(END ROAD WORK) FOR THE FIRST WORK ZONE AND THE W20-1(ROAD WORK) FOR THE SECOND WORK ZONE SHOULD BE ELIMINATED.

8. WARNING LIGHTS ON SIGNS:

A TYPE "A" LOW INTENSITY WARNING LIGHT IS AN L.E.D. BI-DIRECTIONAL FLASHING WORK ZONE WARNING LIGHT. TYPE "A" LOW INTENSITY WARNING LIGHTS SHOULD BE USED WITH ALL CONSTRUCTION ACTION WARNING SIGNS AND SHALL NOT BE USED ON SIGNS MOUNTED LESS THAN 5' HIGH ON TEMPORARY SUPPORTS. ON ALL OTHER CONSTRUCTION WARNING SIGNS, TYPE "A" LOW INTENSITY WARNING LIGHTS ARE TO BE USED AS DIRECTED BY THE ENGINEER.

TYPE "A" LOW INTENSITY WARNING LIGHTS SHALL BE MAINTAINED SO AS TO BE CAPABLE OF BEING VISIBLE ON A CLEAR NIGHT FROM A DISTANCE OF 3000 FT. IF A TYPE "A" LOW INTENSITY WARNING LIGHT HAS A SEPARATE BATTERY CASE, THE BATTERY CASE SHALL BE MOUNTED NO HIGHER THAN 12" ABOVE THE GROUND AND MOUNTED BEHIND THE SIGN POST. A TYPE "A" LOW INTENSITY WARNING LIGHT WHERE THE LENS AND BATTERY ARE ONE UNIT SHALL BE MOUNTED ON THE TEMPORARY SIGN POST NEAREST TO THE TRAVELED WAY. FLAGS SHALL NOT INTERFERE WITH THE VISABILITY OF THE TYPE "A" LOW INTENSITY WARNING LIGHT.



TWO (2) 18" x 18" FLUORESCENT RED-ORANGE FLAGS SHALL BE ATTACHED (IN THE POSITION SHOWN) ON THE W20-2(DETOUR),W1-1(TURN), W1-2(CURVE), W1-3(REVERSE TURN), W1-4(REVERSE CURVE), W3-3(SIGNAL AHEAD), W4-2(LANE REDUCTION), W20-4(ONE LANE ROAD), W20-5(LANE CLOSED), W20-7A(FLAGGER), AND W3-4 (BE PREPARED TO STOP) SIGNS AND ANY OTHER ACTION SIGNS AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. THE FLAGS AND STAFFS ARE TO BE ATTACHED IN SUCH A MANNER THAT THE SIGN WILL NOT BE OBSCURED. THE FLAGS MAY BE EITHER A CLOTH OR VINYL MATERIAL. ~~THE FLAGS SHALL BE SUBSIDIARY TO THE CONSTRUCTION SIGN BID ITEMS.~~

MINIMUM ADVANCE WARNING SIGN SPACING (IN FEET):

	A	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

THE MINIMUM SPACING BETWEEN SIGNS SHALL BE NO LESS THAN 1OO', UNLESS DIRECTED BY THE ENGINEER.

THE SPACING BETWEEN ANY SIGNS MAY BE INCREASED BEYOND THE MINIMUM VALUES IN THE TABLE ABOVE AS APPROVED BY THE ENGINEER IN ORDER TO MAXIMIZE VISIBILITY.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Removed Note 9, Modified Sign Layout Detail	J.A.M.	K.P.
2	10/4/11	Modified Note 3	J.A.M.	K.P.
1	2/24/10	Modified AFAD Note	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGNS

~~TE710~~

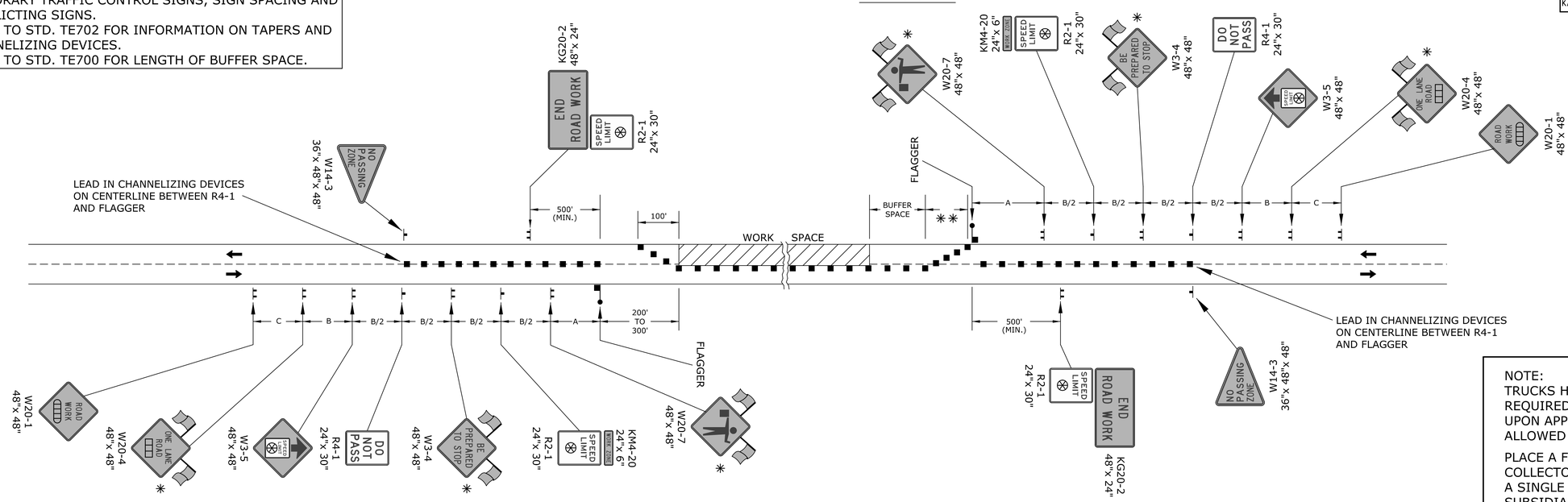
FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle	
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 4/30/2013
Drawn By : svb
File : I:\2012\12275\002\Standards\12275-002 te710.dgn

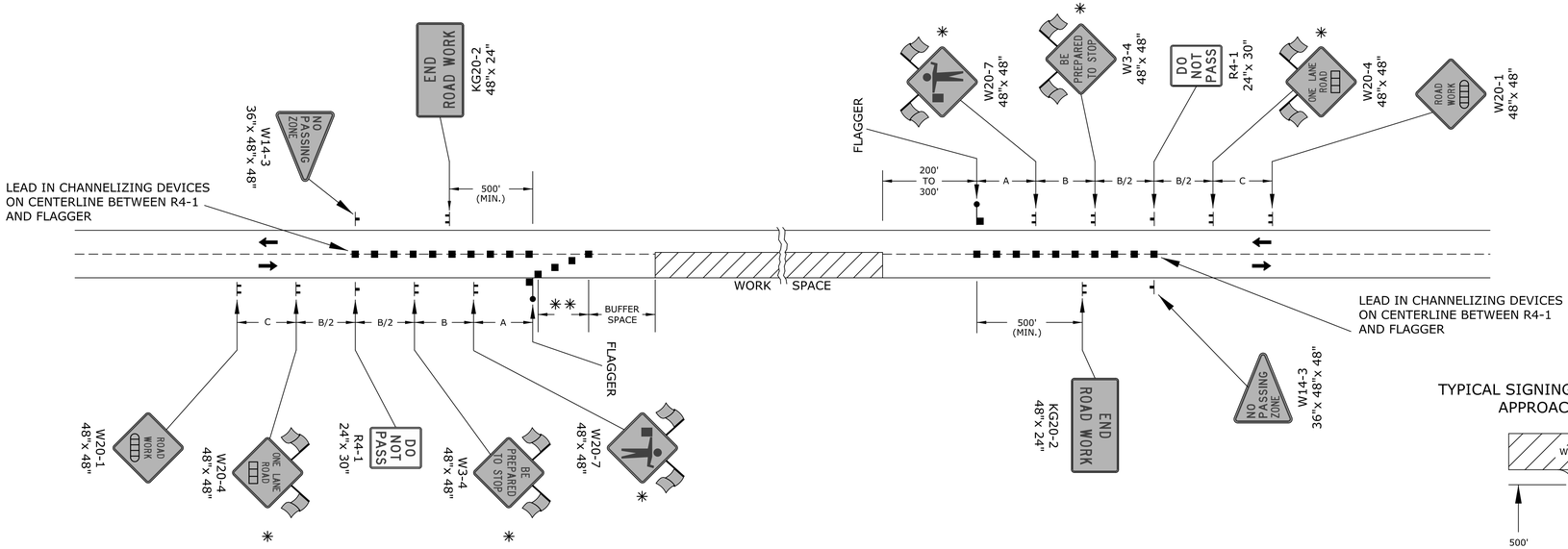
REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS, SIGN SPACING AND CONFLICTING SIGNS.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	103	157

FLAGGER



FLAGGER AND PILOT CAR



- ■ CHANNELIZING DEVICE
- AHEAD, 1500 FT, OR 1 MILE
- AHEAD, 1000 FT, 1500 FT, OR ½ MILE
- SPEED TO BE DETERMINED BY THE ENGINEER
- TYPE "A" LOW INTENSITY WARNING LIGHT

NOTE:
TRUCKS HAULING MATERIAL TO THE PROJECT ARE REQUIRED TO STOP AT FLAGGER. AFTER STOPPING, UPON APPROVAL OF ENGINEER, TRUCKS MAY BE ALLOWED TO MOVE AROUND FLAGGER.

PLACE A FLAGGER AT ALL HIGHWAY AND MAJOR COLLECTOR INTERSECTIONS IN THE WORK SPACE. A SINGLE FLAGGER AT EACH INTERSECTION IS SUBSIDIARY TO OTHER ITEMS. THE NEED FOR A FLAGGER AT A MINOR SIDE ROAD INTERSECTION SHALL BE DETERMINED BY THE ENGINEER. ~~IF REQUESTED BY THE ENGINEER, EACH ADDITIONAL FLAGGER WILL BE MEASURED AND PAID FOR EACH HOUR THEY ARE REQUIRED.~~ PLACE A W20-7 (FLAGGER SYMBOL) SIGN ON EACH SIDE ROAD APPROACH THAT IS CONTROLLED BY A FLAGGER.

EXISTING SIGNS SHALL NOT BE COVERED OR REMOVED BETWEEN FLAGGER STATIONS.

* WHEN APPLICABLE, USE TYPE "A" LOW INTENSITY WARNING LIGHTS FOR NIGHTTIME OPERATIONS ONLY OR AS DIRECTED BY ENGINEER.

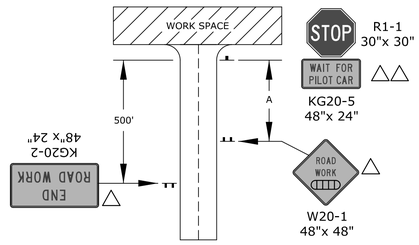
** THERE SHOULD BE A MINIMUM OF SIX (6) CHANNELIZERS SPACED AT 20' INTERVALS.

△ NOT REQUIRED ON SUBSTANTIAL MAINTENANCE PROJECTS (1R)

△△ THE KG20-5 (WAIT FOR PILOT CAR) SIGN SHALL BE MOUNTED ON AN APPROVED PORTABLE SUPPORT AND NOT ATTACHED TO THE EXISTING STOP SIGN POST.

THE KG20-5 SIGN SHALL BE PLACED IMMEDIATELY IN FRONT OF THE EXISTING STOP SIGN, A MINIMUM OF 6" BELOW THE BOTTOM OF THE STOP SIGN. THE SIGN SHOULD BE REMOVED OR COVERED WHEN THERE IS NO PILOT CAR.

TYPICAL SIGNING FOR A MINOR SIDE ROAD APPROACH TO WORK SPACE



NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Lead In Channelizer Note	J.A.M.	K.P.
2	10/4/11	Removed Conflicting Signs Note	J.A.M.	K.P.
1	4/20/09	Changed Location Of Centerline Delineation	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL FLAGGER OR PILOT CAR TWO-LANE ONE LANE CLOSED EXCLUDING CONCRETE SHOULDERS EQUAL TO OR GREATER THAN 8 FT

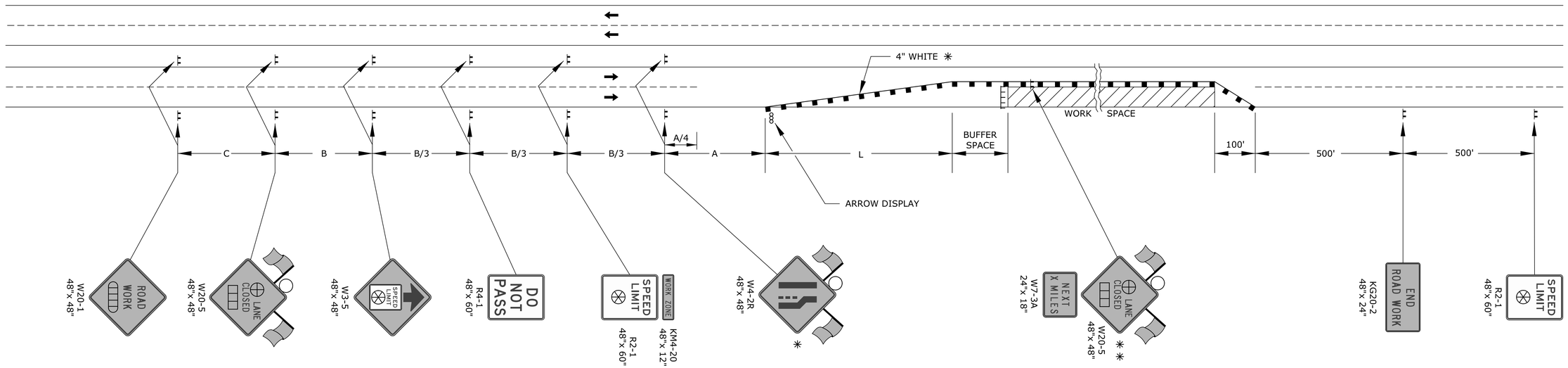
~~TE730~~

FHWA APPROVAL			10/16/12	APP'D	Kristina Pyle
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Drawn By : svb
File : I:\2012\12275\002\Standards\12275-002 te730.dgn
Plotted : 4/30/2013

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	104	157

REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE704 FOR TYPE III BARRICADES.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.



LEFT-SIDE SIGNS SHALL BE OMITTED FOR A FOUR-LANE UNDIVIDED HIGHWAY.

✳ FOR LEFT LANE CLOSURES USE W4-2L AND YELLOW EDGE LINE ALONG CHANNELIZING DEVICES.

✳ ✳ THE W20-5 (⊕ LANE CLOSED) AND W7-3A (NEXT X MILES) SIGNS SHOULD BE PLACED AT 2 MILE INCREMENTS ON A PROJECT OF 4 MILES OR LONGER.

- TYPE III BARRICADES
- X LENGTH TO THE NEAREST WHOLE MILE
- ■ CHANNELIZING DEVICE
- AHEAD, 1500 FT, OR 1 MILE
- AHEAD, 1000 FT, 1500 FT, OR ½ MILE
- ⊕ RIGHT OR LEFT
- ⊗ SPEED TO BE DETERMINED BY THE ENGINEER
- ○ TYPE "A" LOW INTENSITY WARNING LIGHT

NO.	DATE	REVISIONS	BY	APP'D
3	8/8/07	Sign Spacing Change	M.B.	A.A.A.
2	12/29/05	M4-20 Changed to KM4-20	M.B.	A.A.A.
1	2/1/05	Clarified Notes, Updated Warning Signs	B.H.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL FOUR-LANE HIGHWAY ONE LANE CLOSED

TE744 9/1/00

FHWA APPROVAL		8/8/2007	APP'D	Anthony A. Alrobaire	
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 11-02-2011

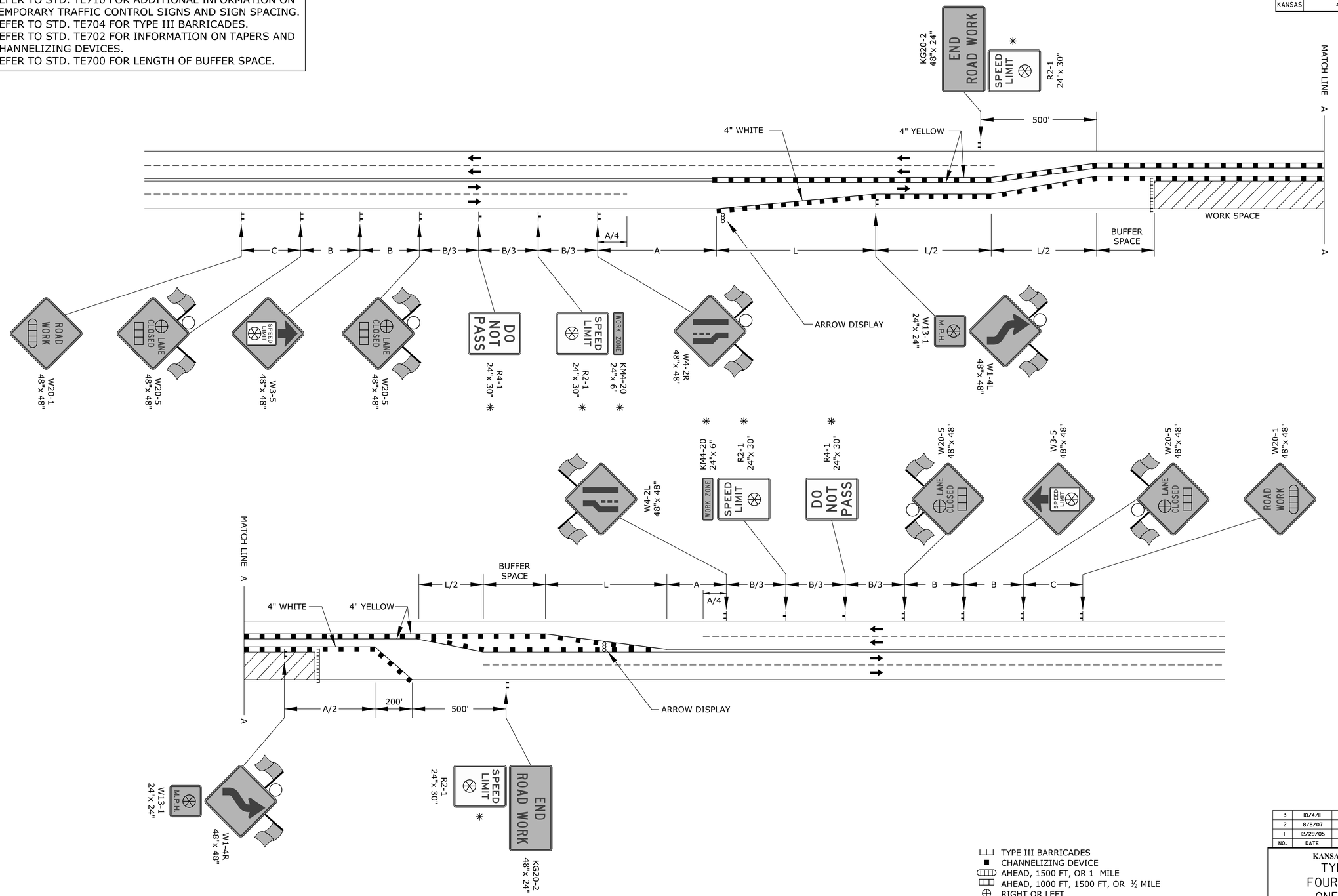
Sh. No. 104

KDOT Graphics Certified

Plotted : 4/25/2013
Drawn By : svb
File : I:\2012\12275\002\Standards\12275-002 te744.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85083	2013	105	157

REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE704 FOR TYPE III BARRICADES.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.



* FOR SPEEDS GREATER THAN 45 MPH USE FREEWAY / EXPRESSWAY SIZE SIGNS.

- TYPE III BARRICADES
- CHANNELIZING DEVICE
- AHEAD, 1500 FT, OR 1 MILE
- AHEAD, 1000 FT, 1500 FT, OR ½ MILE
- RIGHT OR LEFT
- SPEED TO BE DETERMINED BY THE ENGINEER
- TYPE "A" LOW INTENSITY WARNING LIGHT

NO.	DATE	REVISIONS	BY	APP'D
3	10/4/11	Adjusted R2-1 and KM4-20 Sign Sizes	J.A.M.	K.P.
2	8/8/07	Sign Spacing Change	M.B.	A.A.A.
1	12/29/05	M4-20 Changed to KM4-20	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL FOUR-LANE UNDIVIDED HIGHWAY ONE-HALF ROADWAY CLOSED

TE748 9/1/00

FHWA APPROVAL			10/4/11	APP'D	Kristina Pyle
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

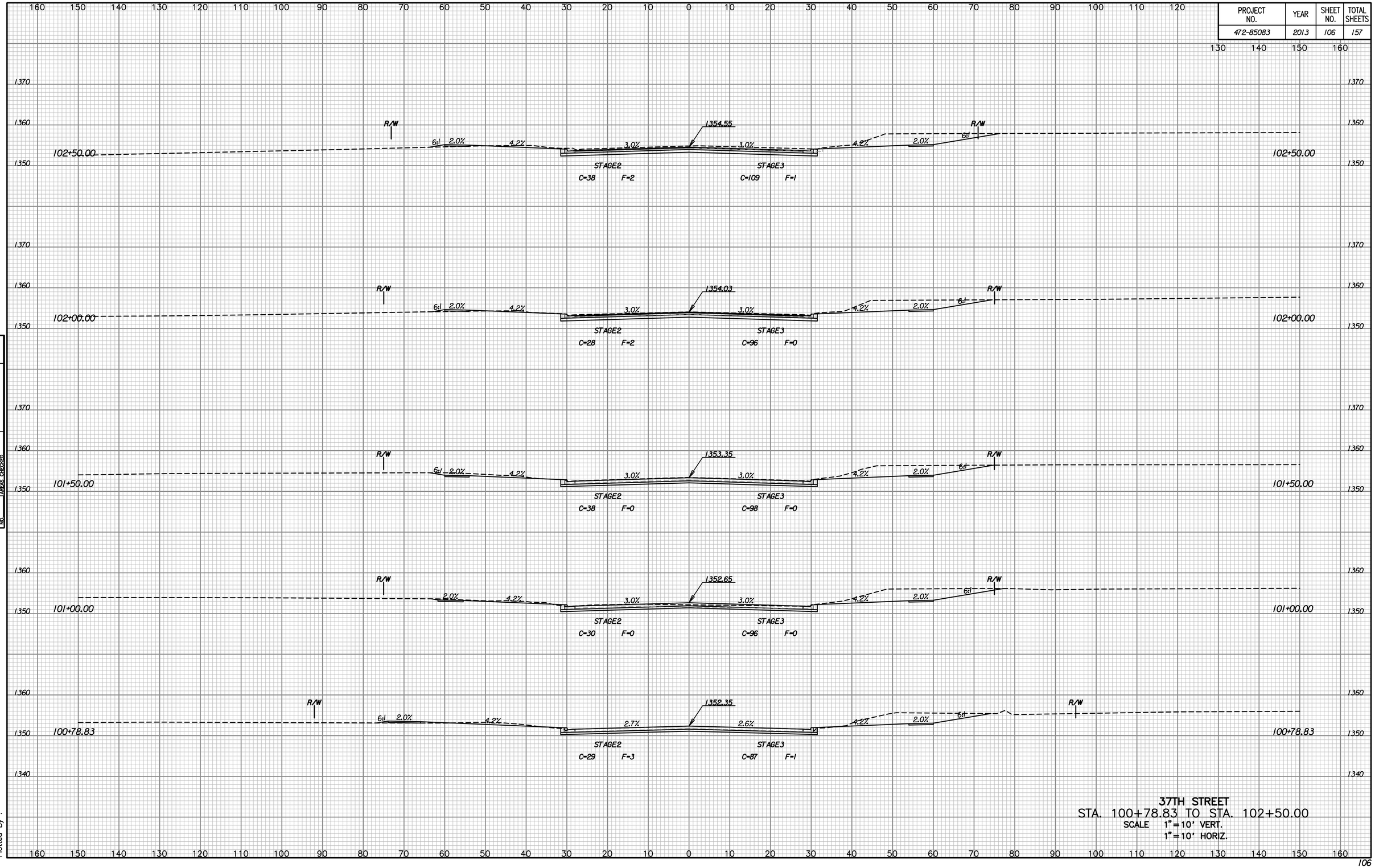
KDOT Graphics Certified 11-08-2011

Sh. No. 105

KDOT Graphics Certified

Drawn By : svb
Plotted : 4/25/2013
File : I:\2012\12275\002\Standards\12275-002 te748.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	106	157



NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

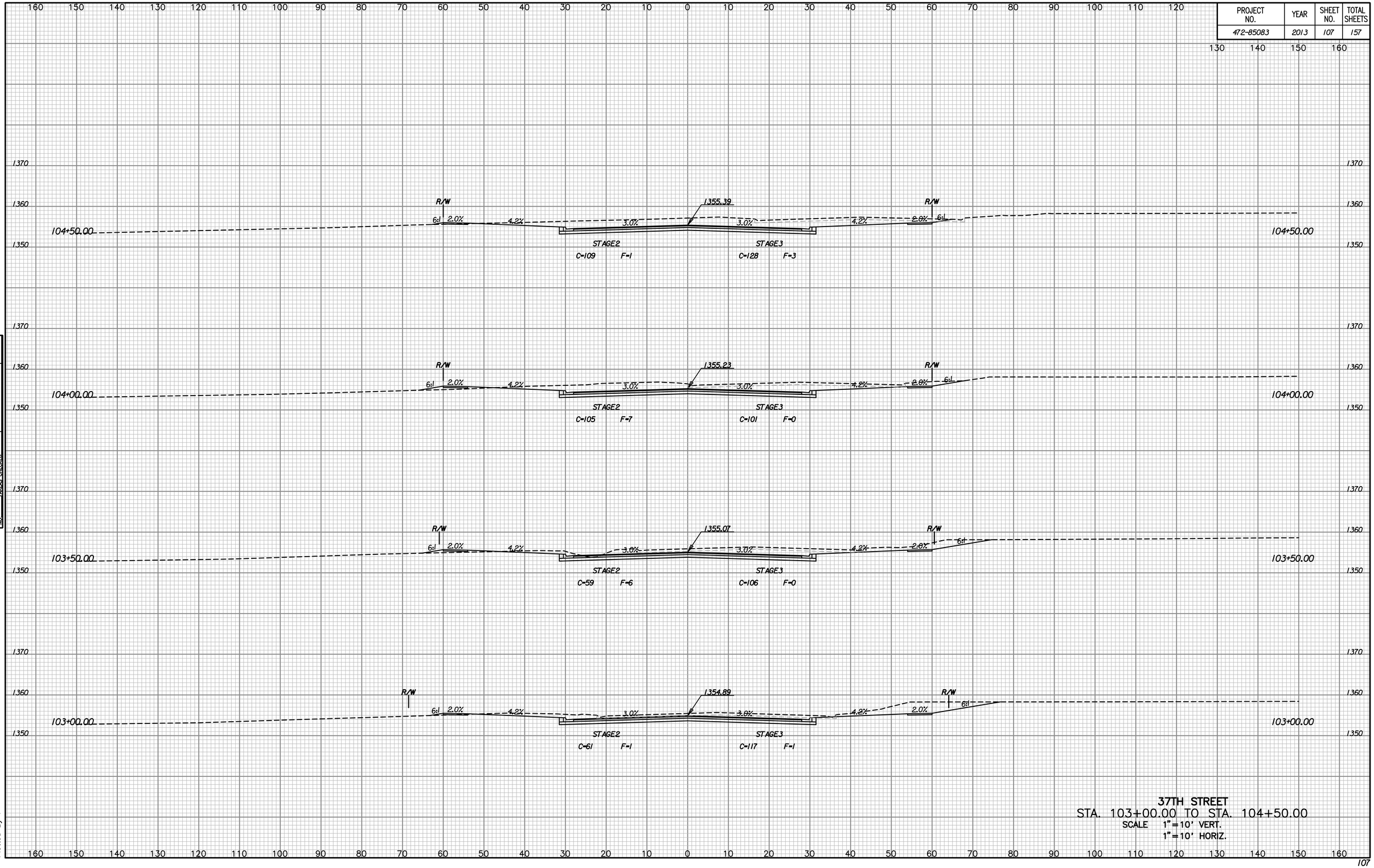
Drawn By :
Plotted By :

37TH STREET

STA. 100+78.83 TO STA. 102+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	107	157

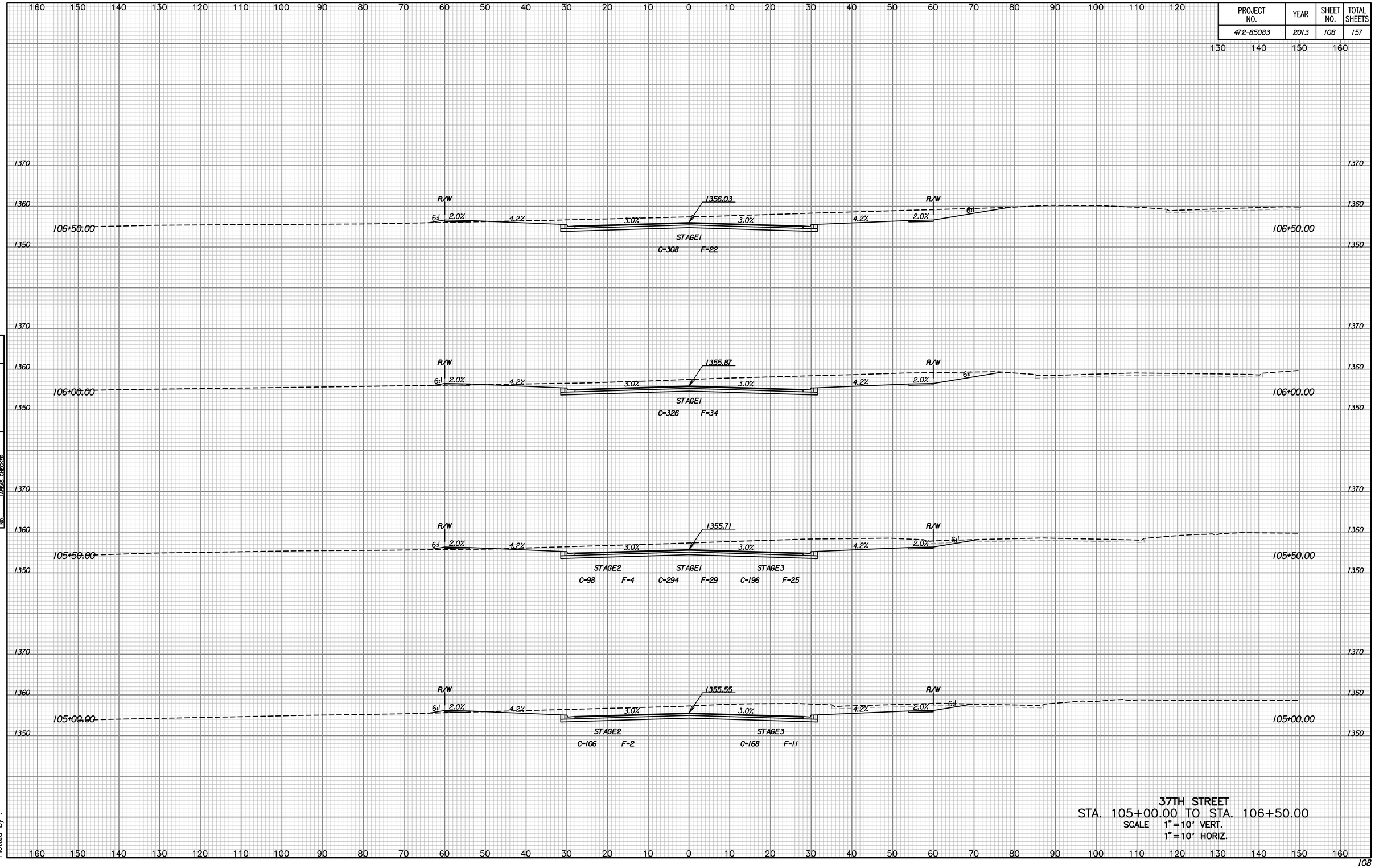


NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 103+00.00 TO STA. 104+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	108	157

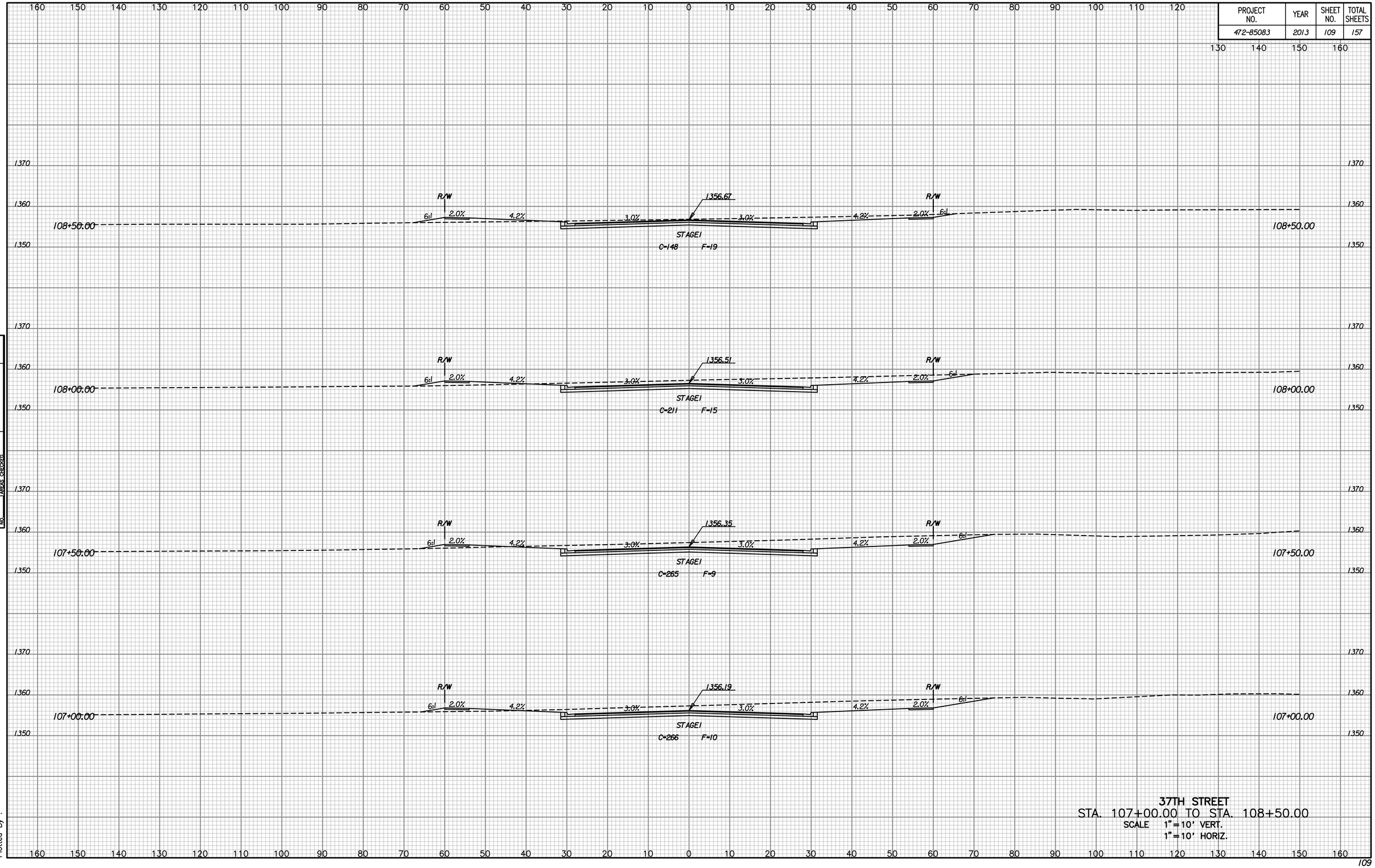


NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 105+00.00 TO STA. 106+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	109	157

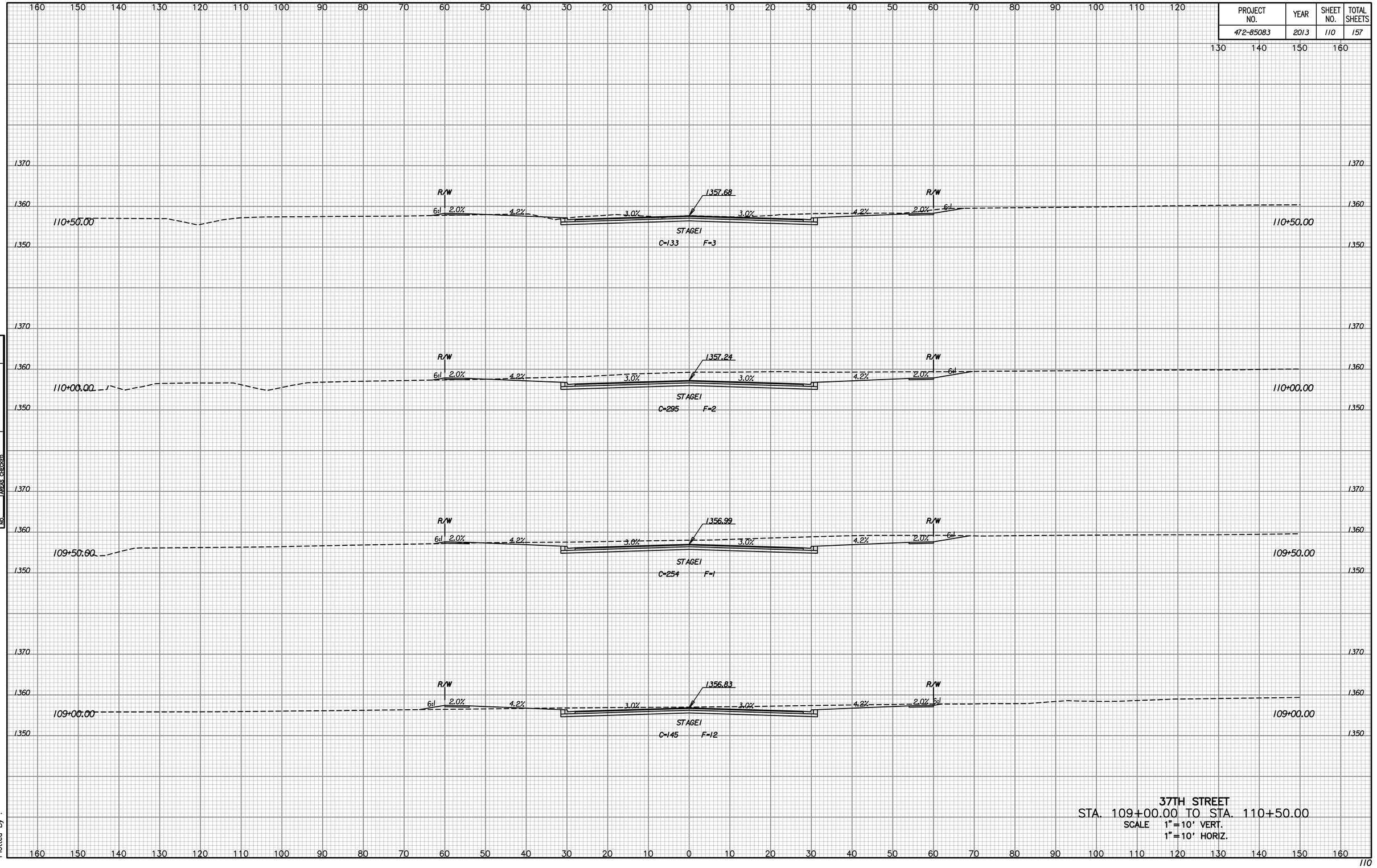


NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 107+00.00 TO STA. 108+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	110	157



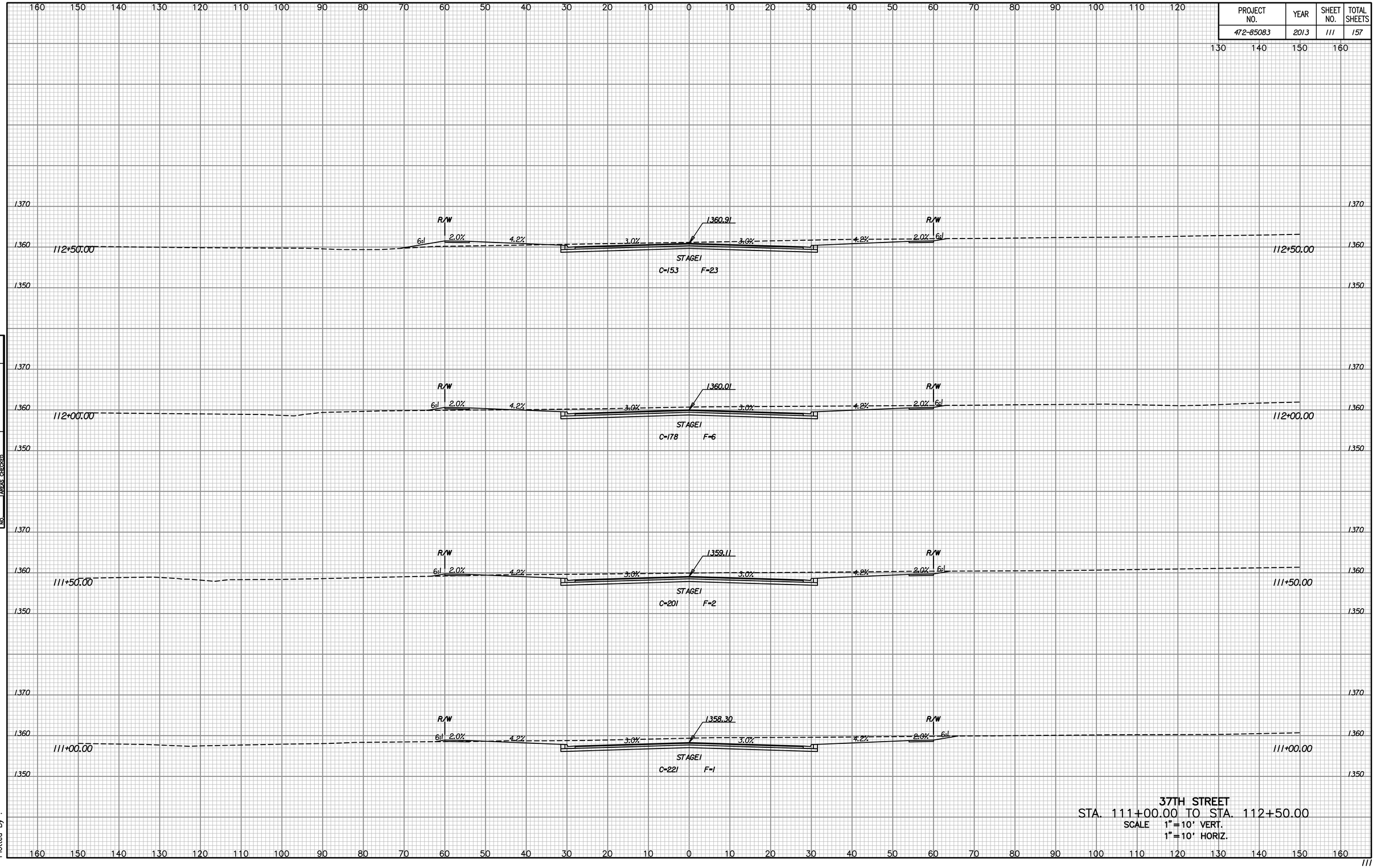
NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 109+00.00 TO STA. 110+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	111	157

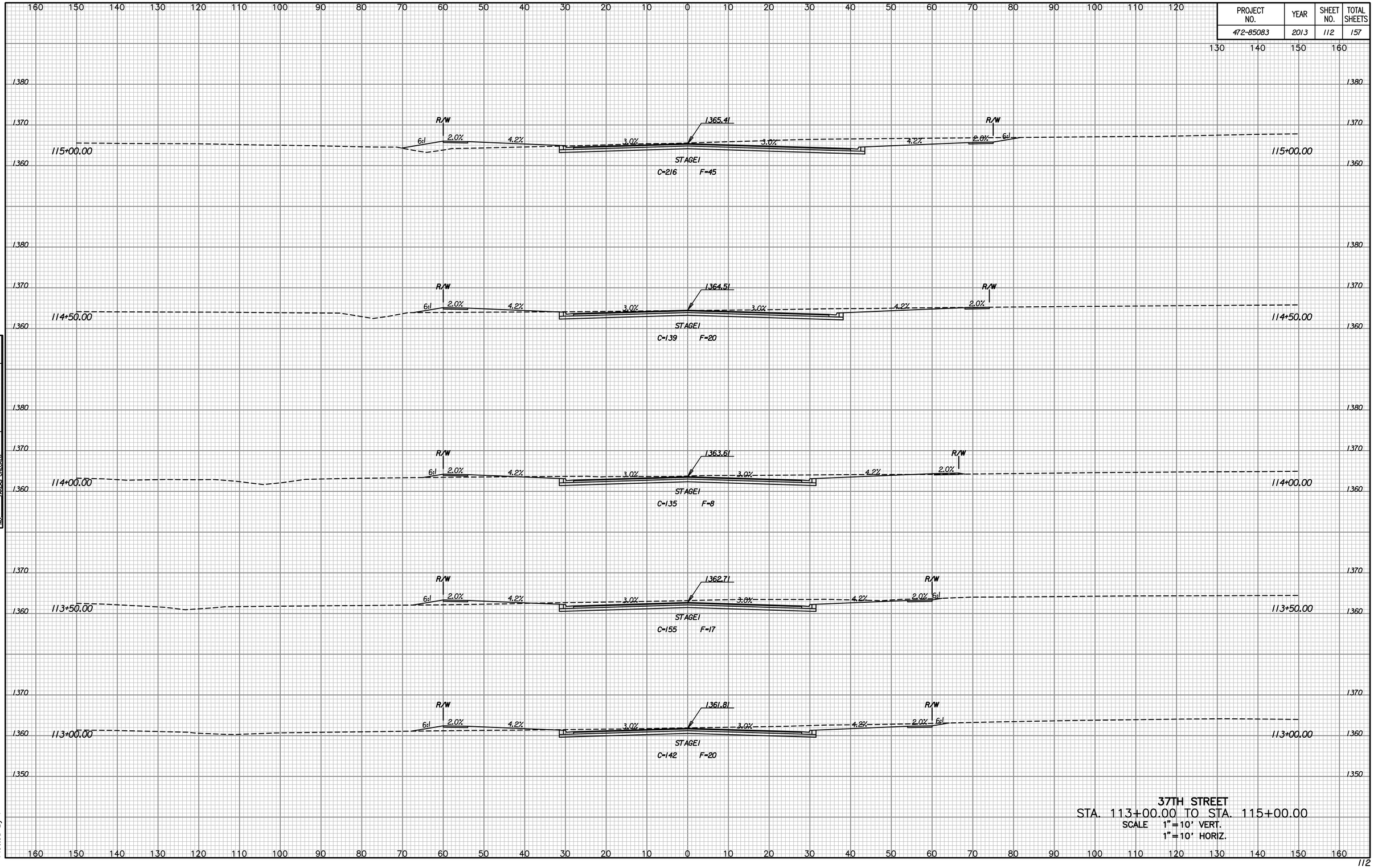
NO.	NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED



37TH STREET
STA. 111+00.00 TO STA. 112+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

Drawn By :
Plotted By :

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	112	157



NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

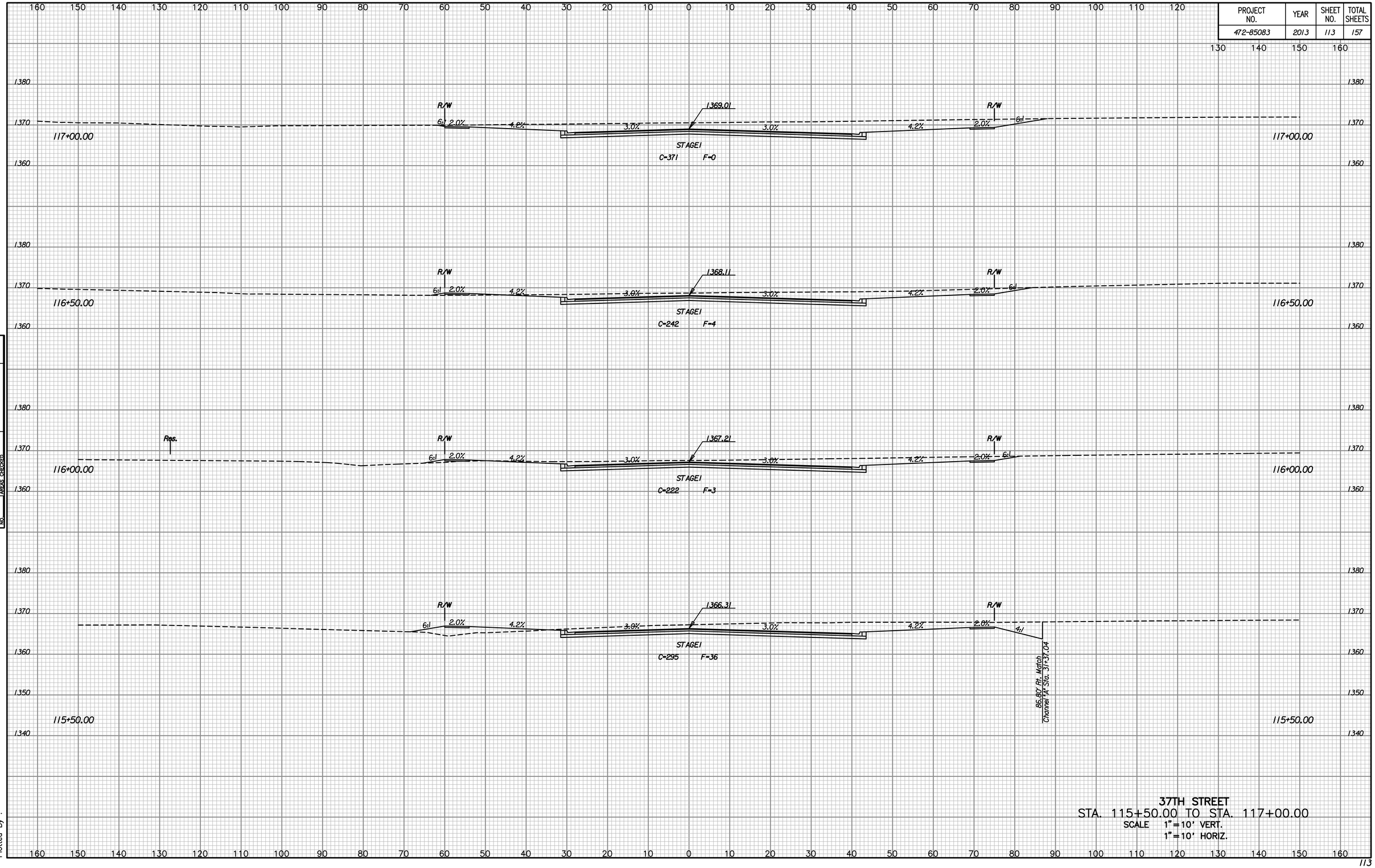
Drawn By :
Plotted By :

37TH STREET

STA. 113+00.00 TO STA. 115+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	113	157

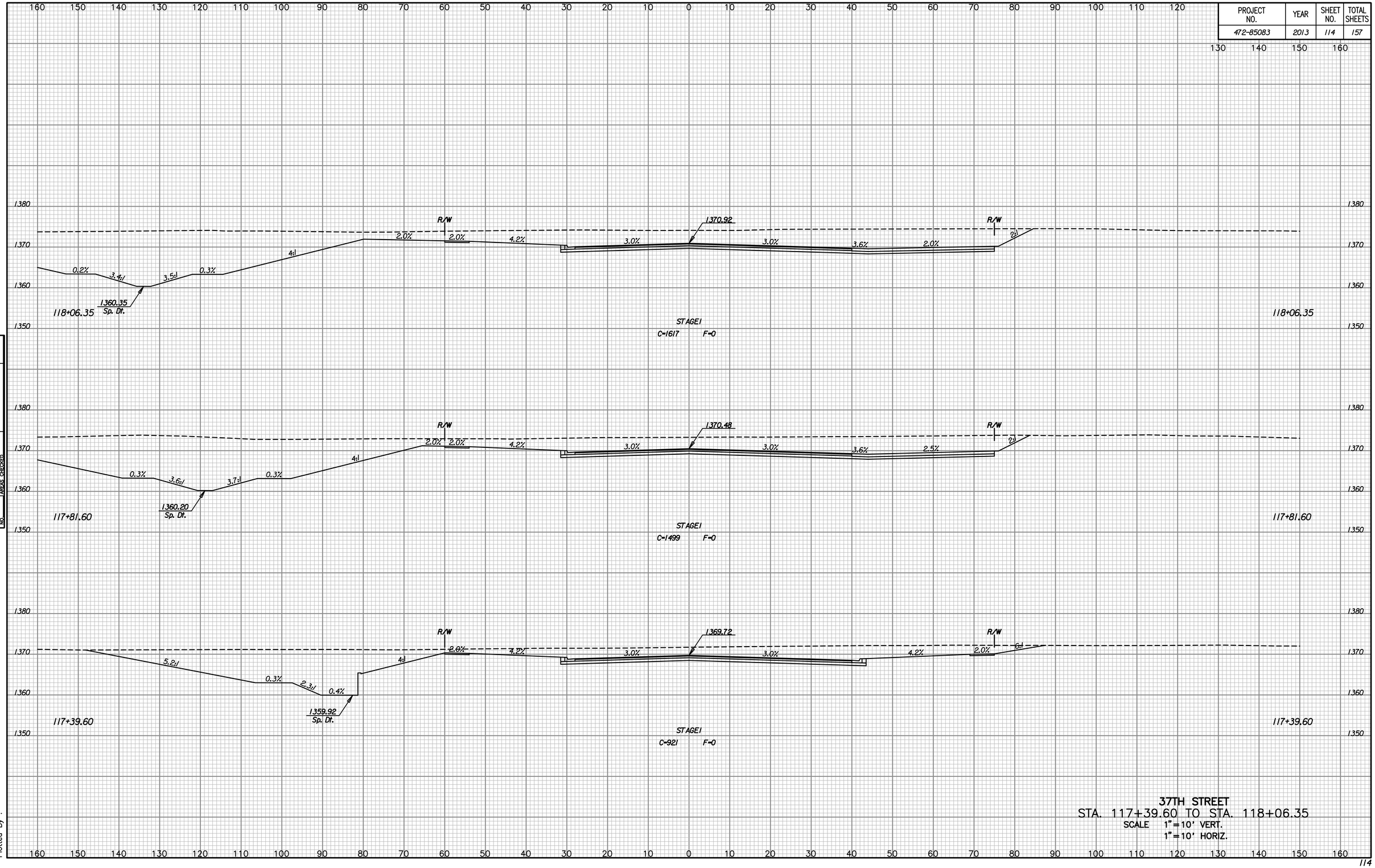


NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 115+50.00 TO STA. 117+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	114	157



PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	115	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1380
1370
1360
1350

118+06.35

Res.

4.3:/

118+06.35

1380
1370
1360
1350

Res.

4.6:/

117+81.60

117+81.60

1380
1370
1360
1350

Res.

117+39.60

117+39.60

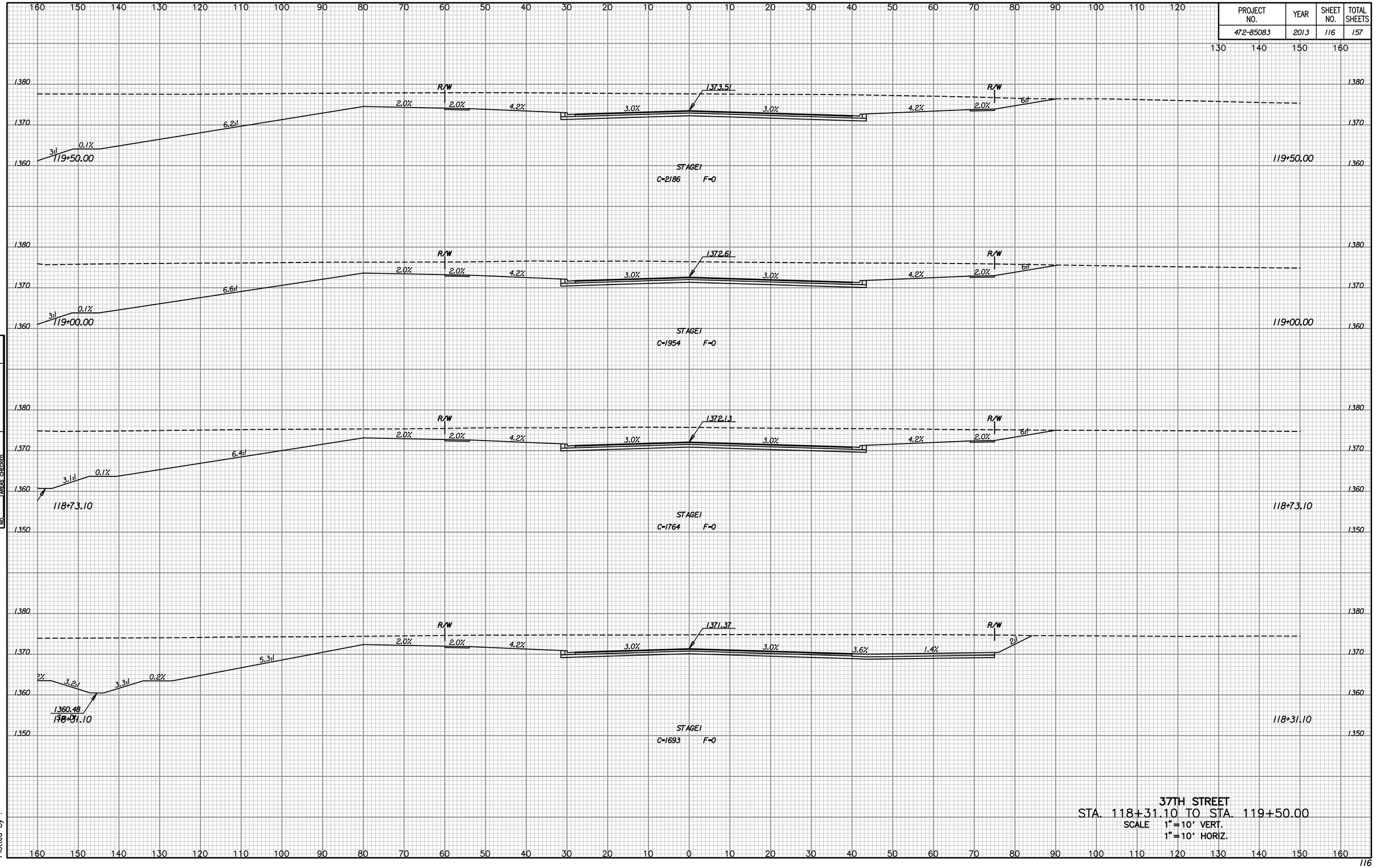
480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 117+39.60 TO STA. 118+06.35
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	116	157



NOTE BOOK TEMPLATE AREAS CHECKED NO.

Drawn By :
Plotted By :

37TH STREET
STA. 118+31.10 TO STA. 119+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	117	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1380
1370
1360
1350

119+50.00

Res.

4:1
0.0%
3:1
1361.09
Sp. Dt.

119+50.00

119+00.00

Res.

4:1
0.0%
3:1
1360.84
Sp. Dt.

119+00.00

118+73.10

Res.

4:1
0.1%
3:1
1360.70
Sp. Dt.

118+73.10

118+31.10

Res.

4:1
0.2

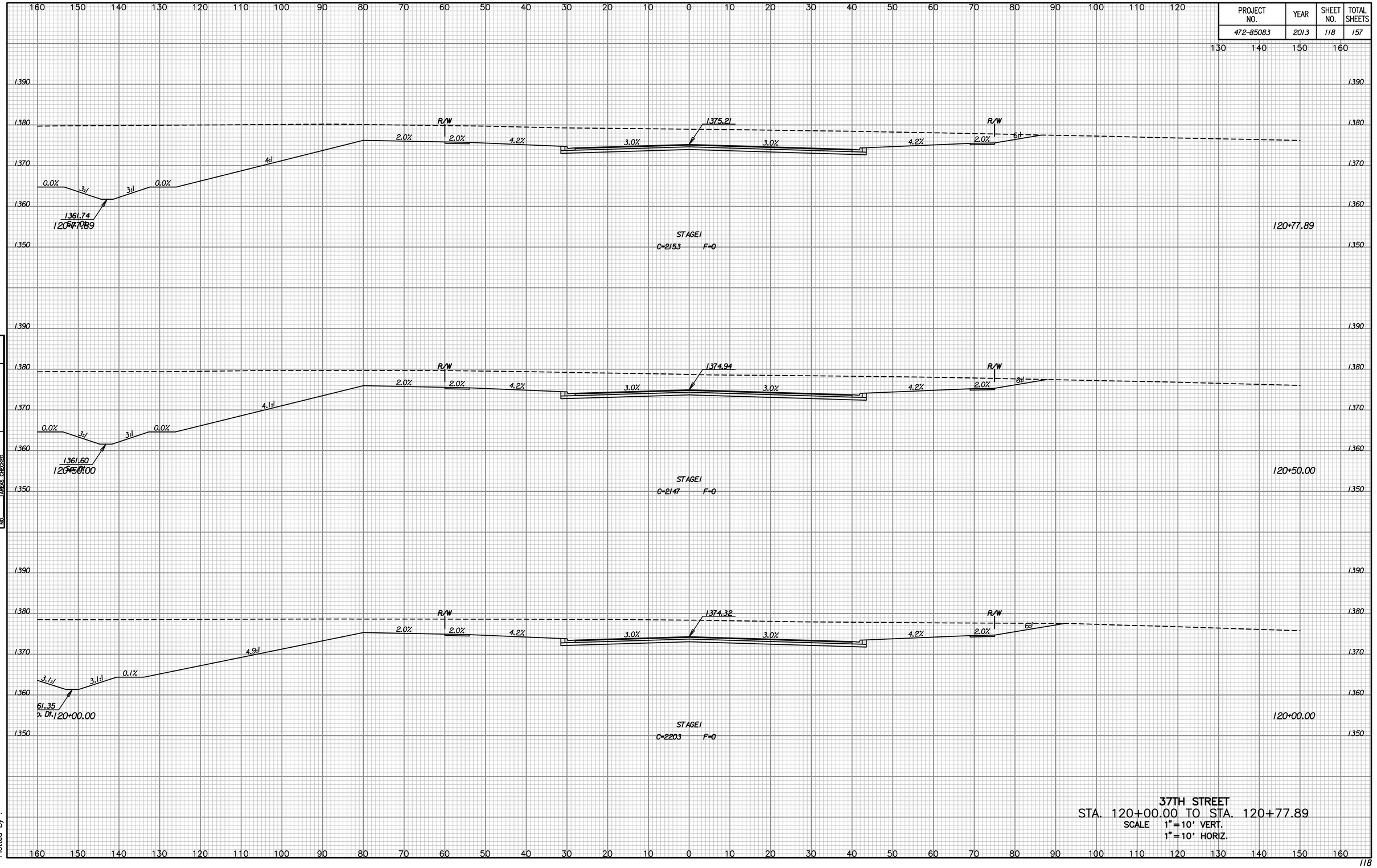
118+31.10

NOTE BOOK
NO.
TEMPLATE AREAS
AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 118+31.10 TO STA. 119+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	118	157



NOTE BOOK TEMPLATE
AREAS
NO. AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 120+00.00 TO STA. 120+77.89
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	119	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1390
1380
1370
1360
1350

120+77.89

Res.

4:1

120+77.89

1390
1380
1370
1360
1350

120+50.00

Res.

4:1

120+50.00

1390
1380
1370
1360
1350

120+00.00

Res.

4.2:1

0.1%

120+00.00

13/S1

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

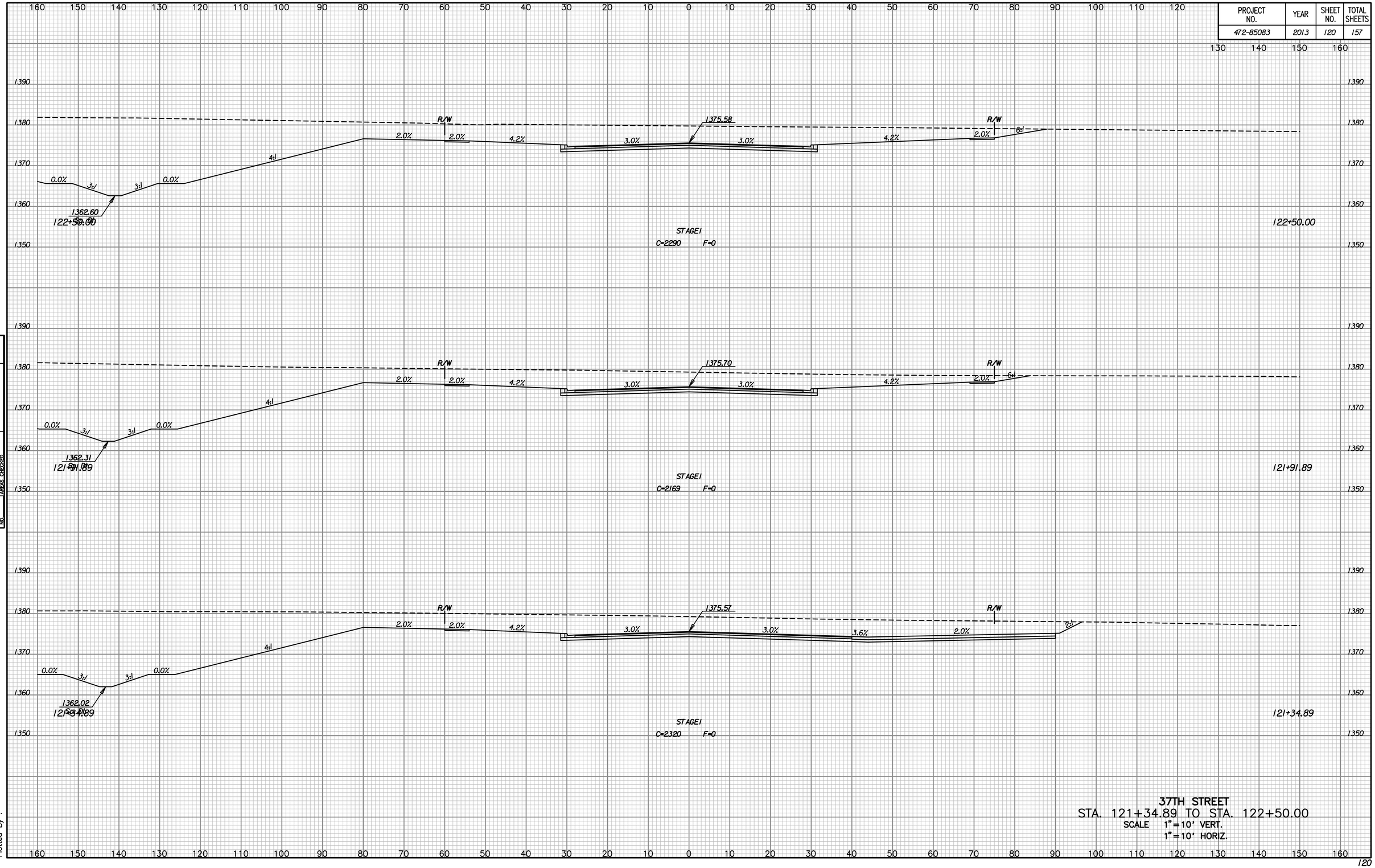
NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 120+00.00 TO STA. 120+77.89

SCALE 1"=10' VERT.
1"=10' HORIZ.

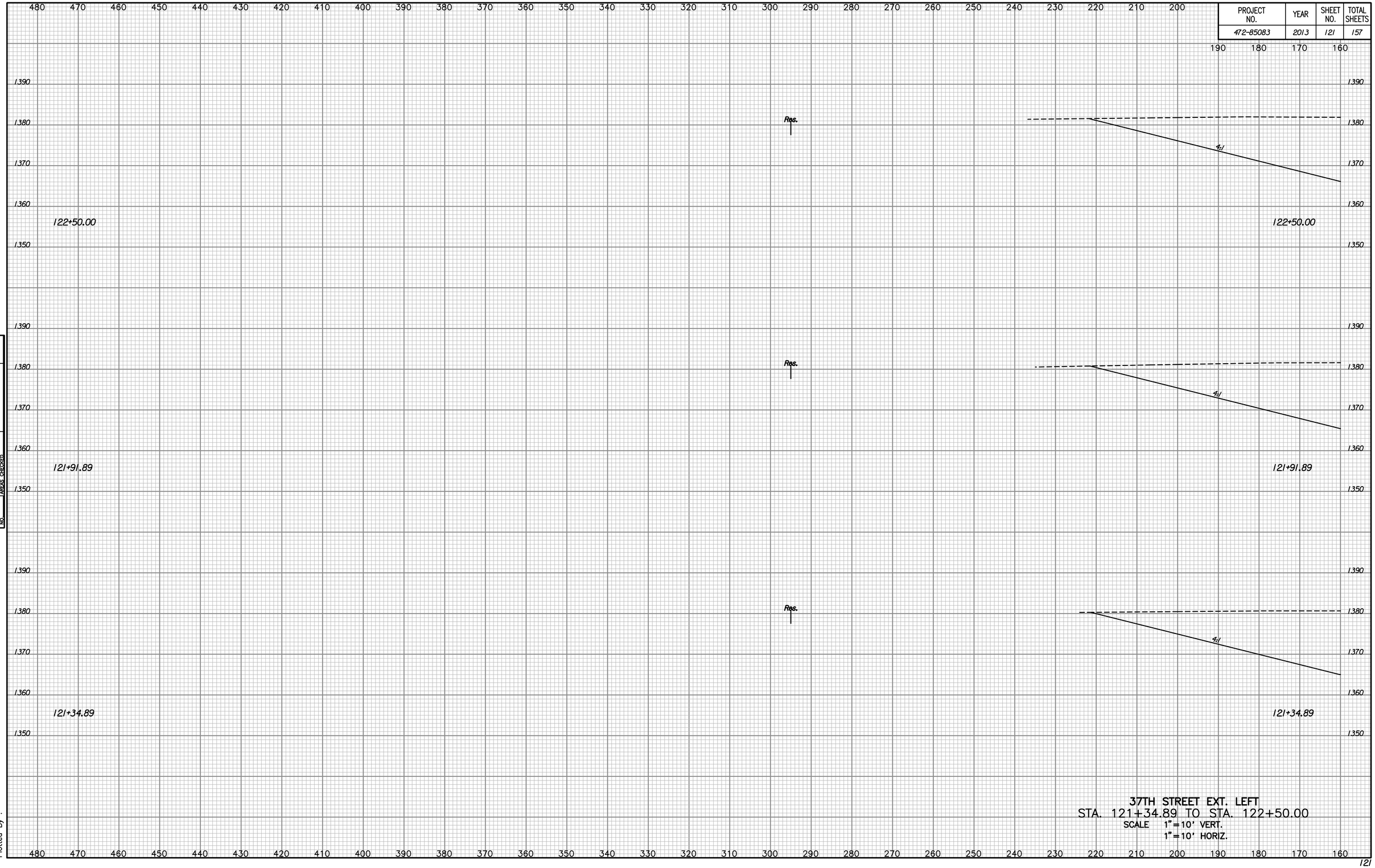
PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	120	157



PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	121	157

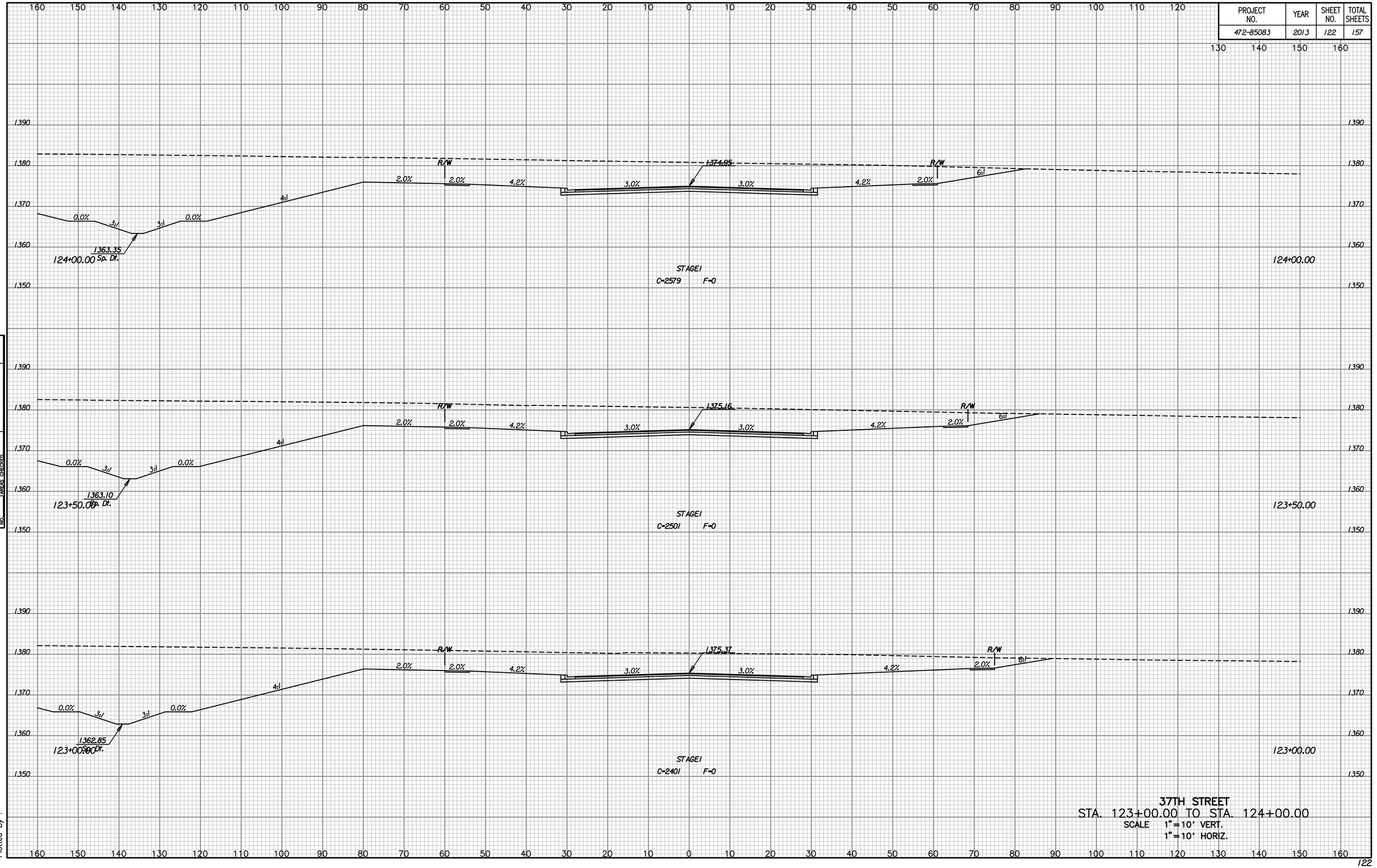
NO.	NOTE BOOK	TEMPLATE
		AREAS
		AREAS CHECKED

Drawn By :
Plotted By :



37TH STREET EXT. LEFT
STA. 121+34.89 TO STA. 122+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	122	157



NOTE BOOK
NO.

TEMPLATE AREAS
AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 123+00.00 TO STA. 124+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	123	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1390
1380
1370
1360
1350

124+00.00

Res.

4:1

124+00.00

123+50.00

Res.

4:1

123+50.00

123+00.00

Res.

4:1

123+00.00

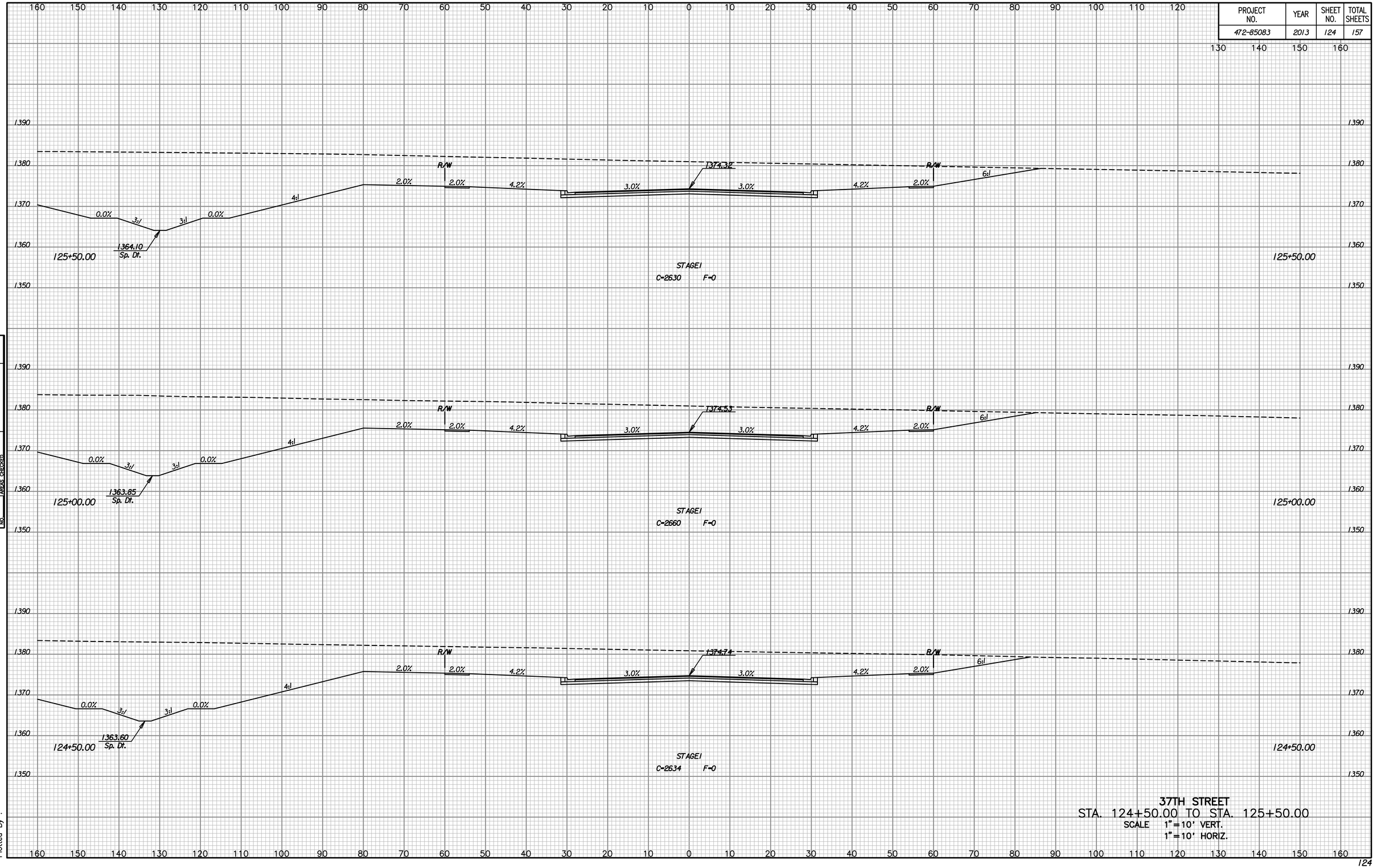
NOTE BOOK | TEMPLATE AREAS | AREAS CHECKED
NO

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 123+00.00 TO STA. 124+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	124	157



NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET

STA. 124+50.00 TO STA. 125+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	125	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1390
1380
1370
1360
1350

125+50.00

Res.

4:1

125+50.00

1390
1380
1370
1360
1350

Res.

4:1

125+00.00

125+00.00

1390
1380
1370
1360
1350

Res.

4:1

124+50.00

124+50.00

1390
1380
1370
1360
1350

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

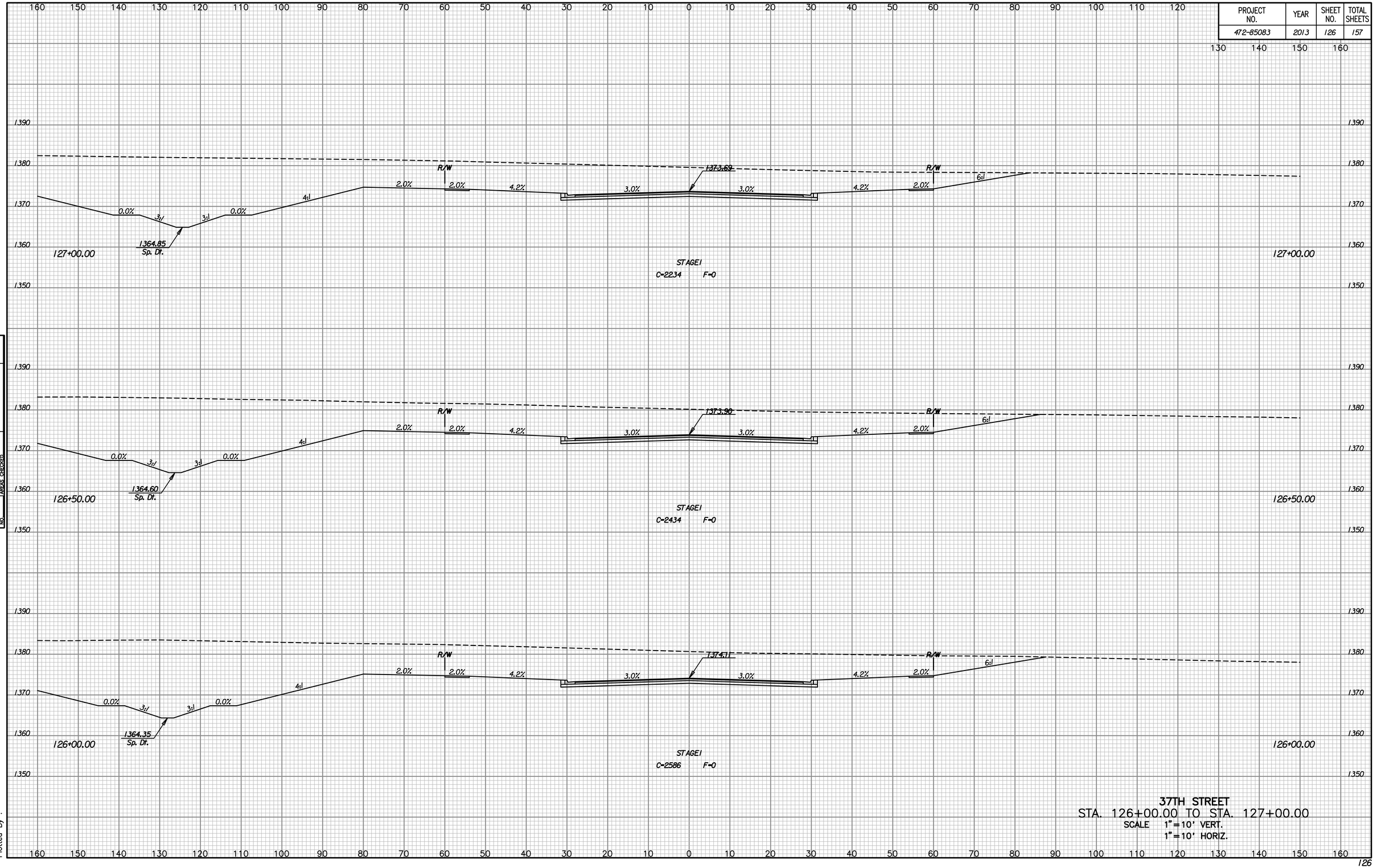
NOTE BOOK TEMPLATE
NO AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 124+50.00 TO STA. 125+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	126	157



NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 126+00.00 TO STA. 127+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	127	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1390
1380
1370
1360
1350

127+00.00

Res.

4:1

127+00.00

126+50.00

Res.

4:1

126+50.00

Res.

4:1

126+00.00

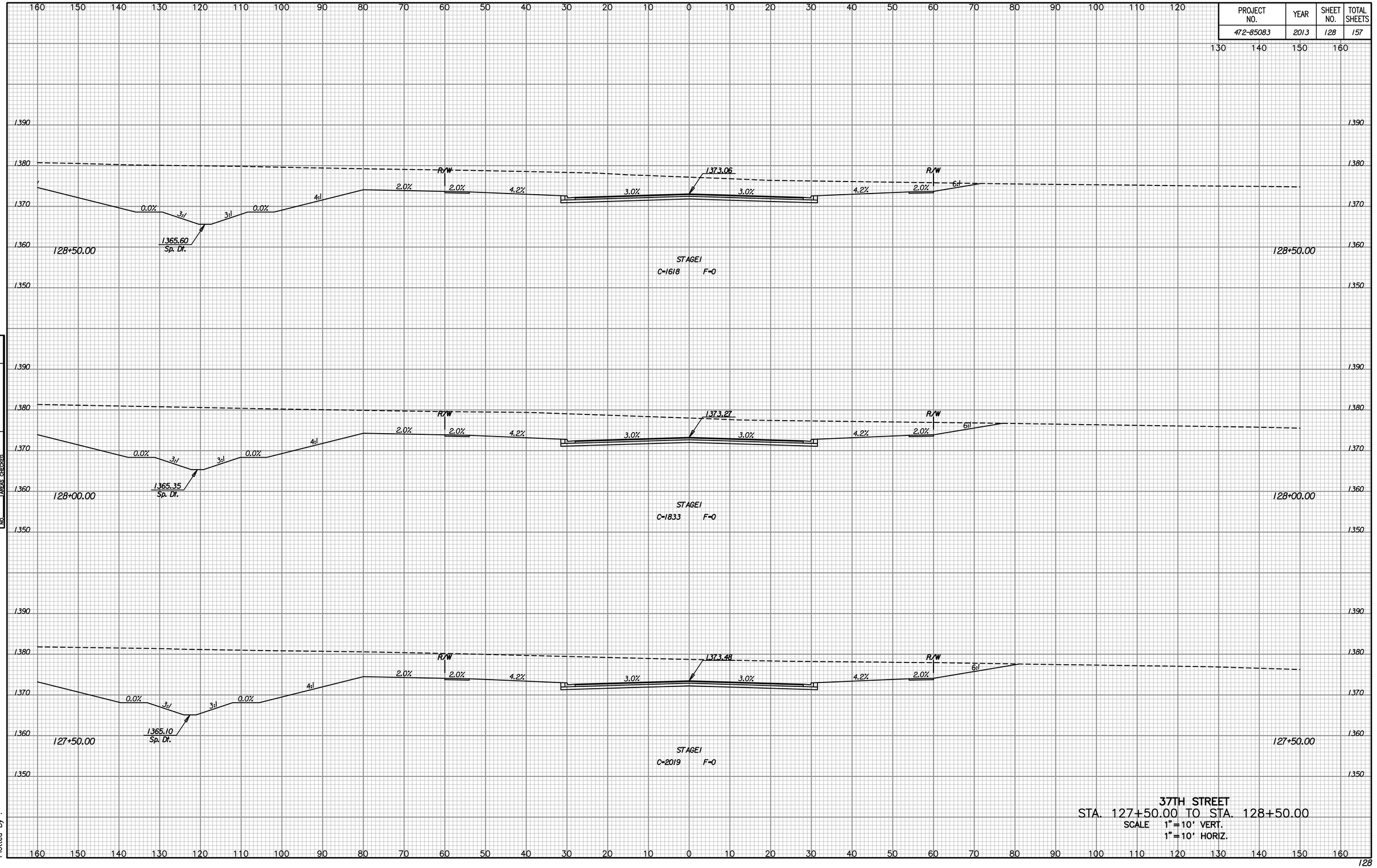
126+00.00

NOTE BOOK | TEMPLATE AREAS | AREAS CHECKED
NO

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 126+00.00 TO STA. 127+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	128	157



NOTE BOOK TEMPLATE AREAS AREAS CHECKED NO.

Drawn By :
Plotted By :

37TH STREET
STA. 127+50.00 TO STA. 128+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	129	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1390
1380
1370
1360
1350

128+50.00

Res.

4:1

128+50.00

1390
1380
1370
1360
1350

Res.

4:1

128+00.00

128+00.00

1390
1380
1370
1360
1350

Res.

4:1

127+50.00

127+50.00

1390
1380
1370
1360
1350

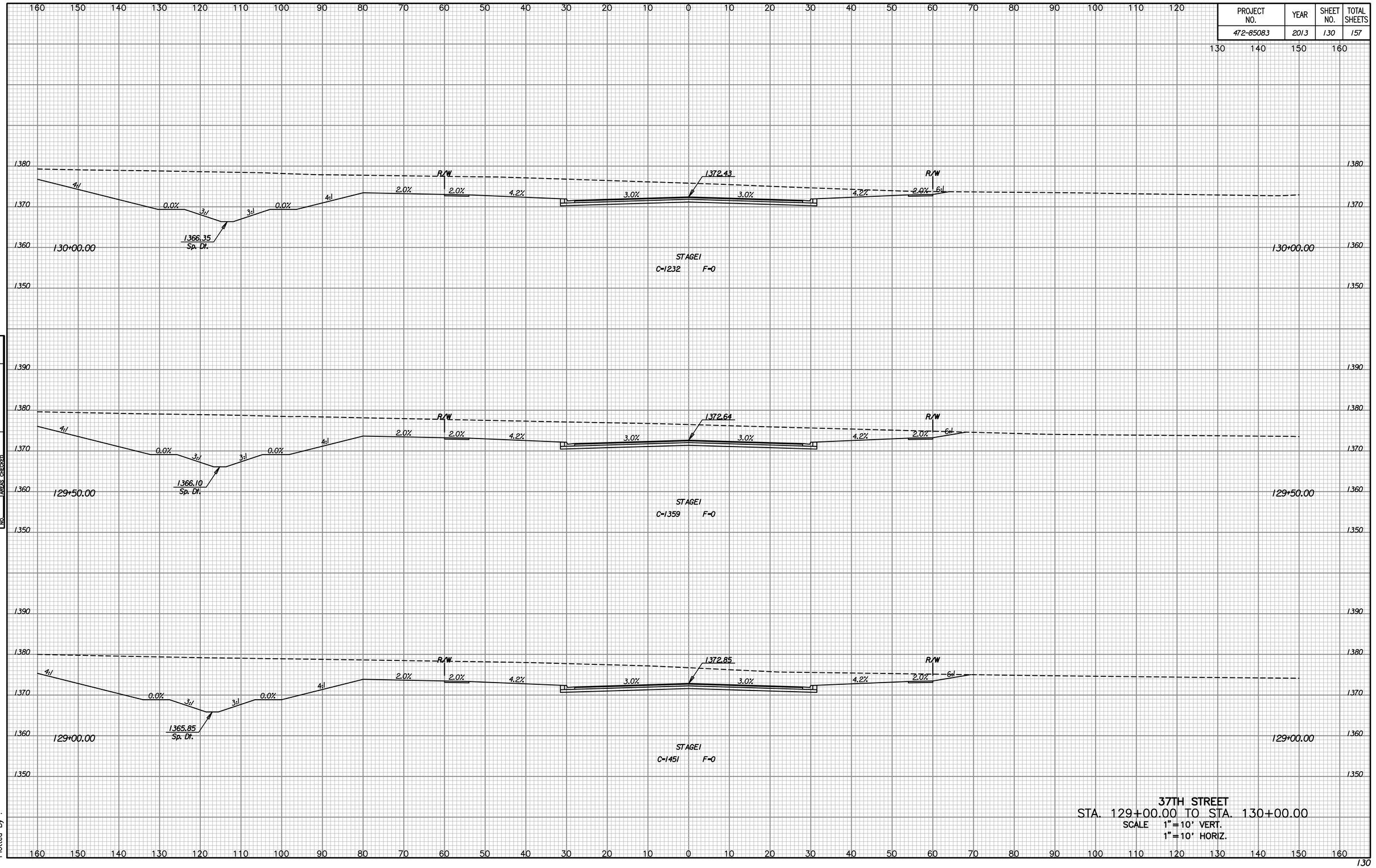
480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 127+50.00 TO STA. 128+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	130	157



NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 129+00.00 TO STA. 130+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	131	157

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1380
1370
1360
1350
1390
1380
1370
1360
1350

130+00.00

Res.

130+00.00

129+50.00

Res.

129+50.00

1390
1380
1370
1360
1350

Res.

129+00.00

129+00.00

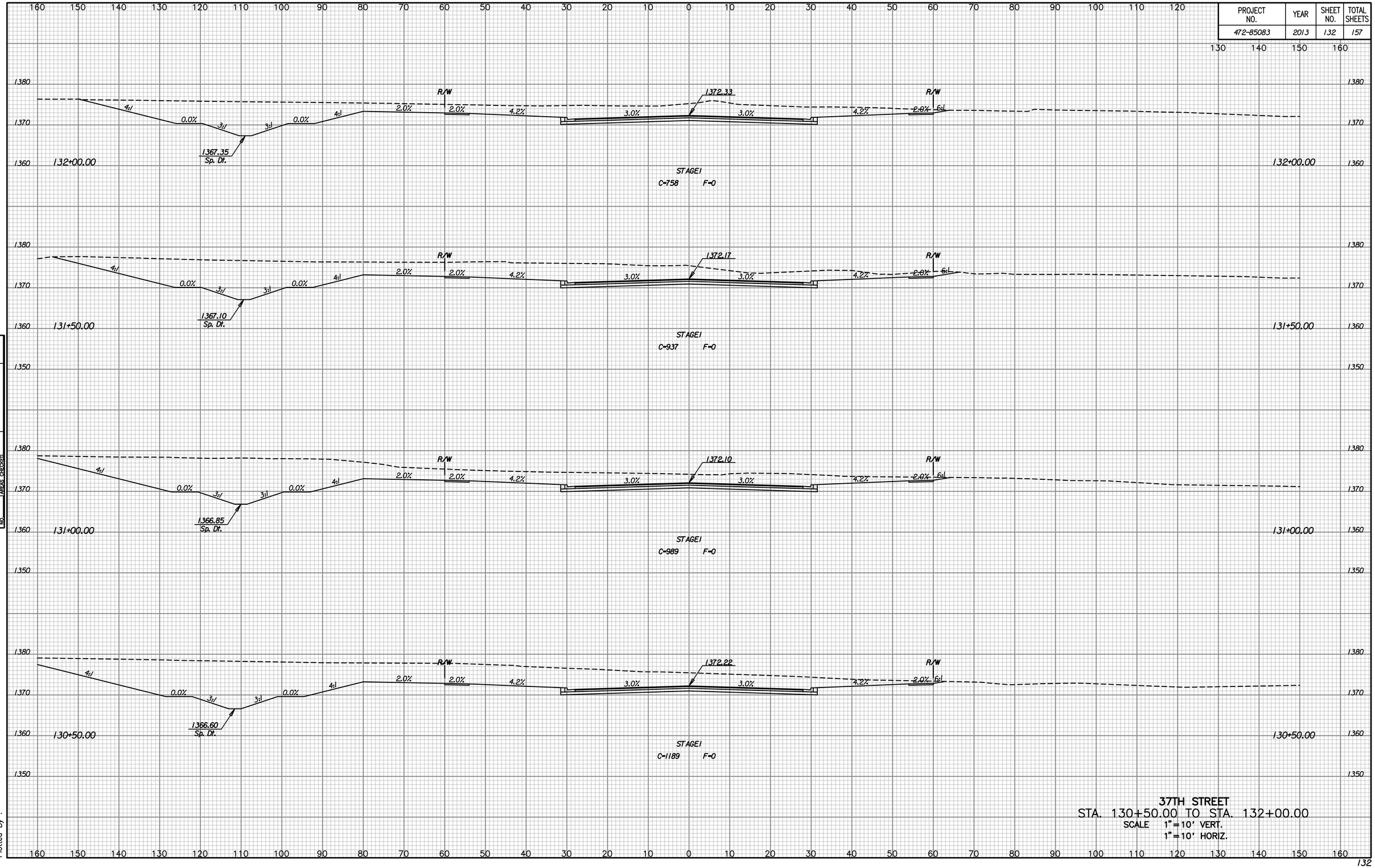
NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED
NO.			

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 129+00.00 TO STA. 130+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	132	157



NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 130+50.00 TO STA. 132+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	133	157

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

1380
1370
1360
1350

131+00.00

Res.

1380
1370
1360
1350

130+50.00

Res.

1380
1370
1360
1350

131+00.00

1380
1370
1360
1350

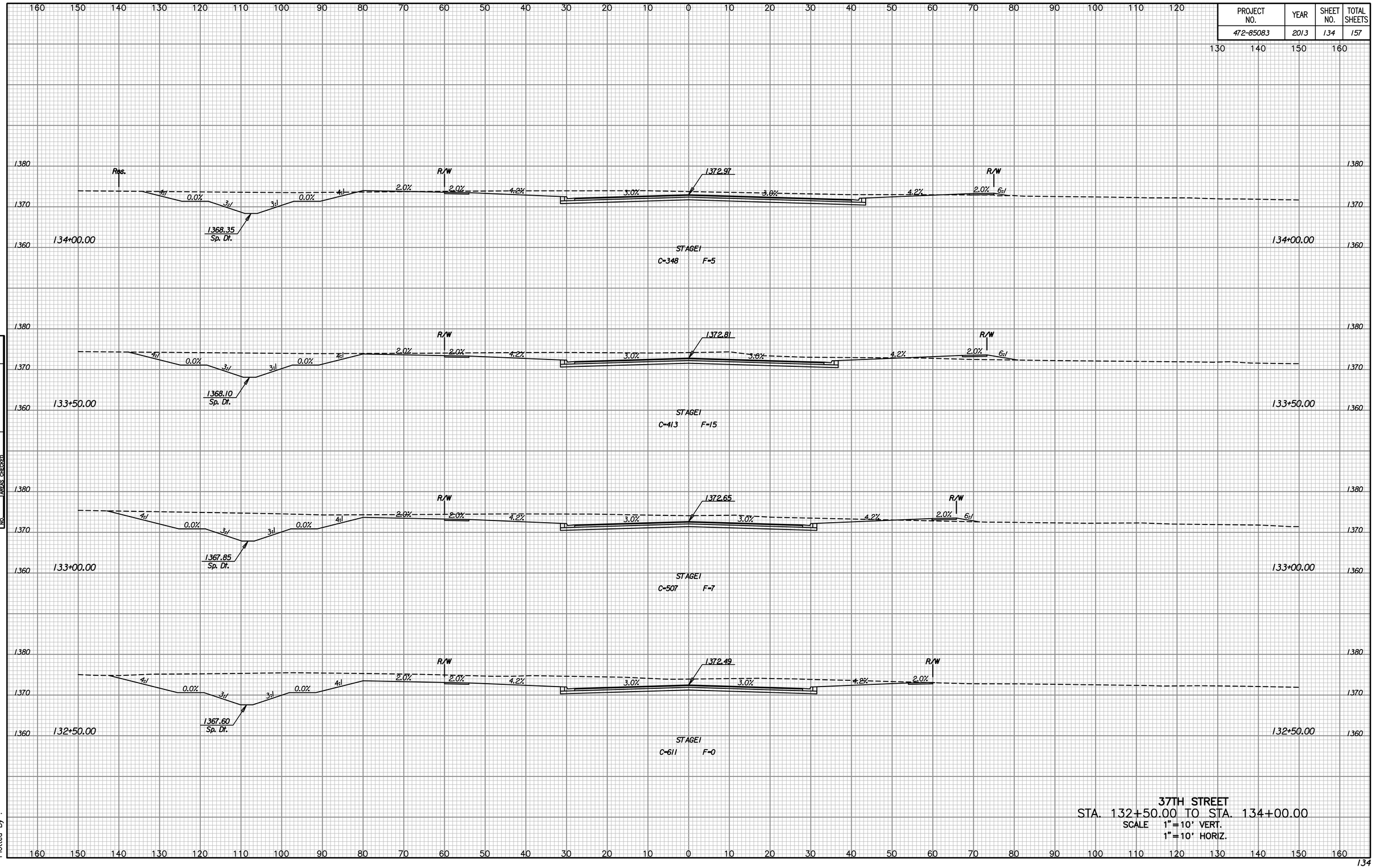
130+50.00

Drawn By :
Plotted By :

37TH STREET EXT. LEFT
STA. 130+50.00 TO STA. 132+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	134	157

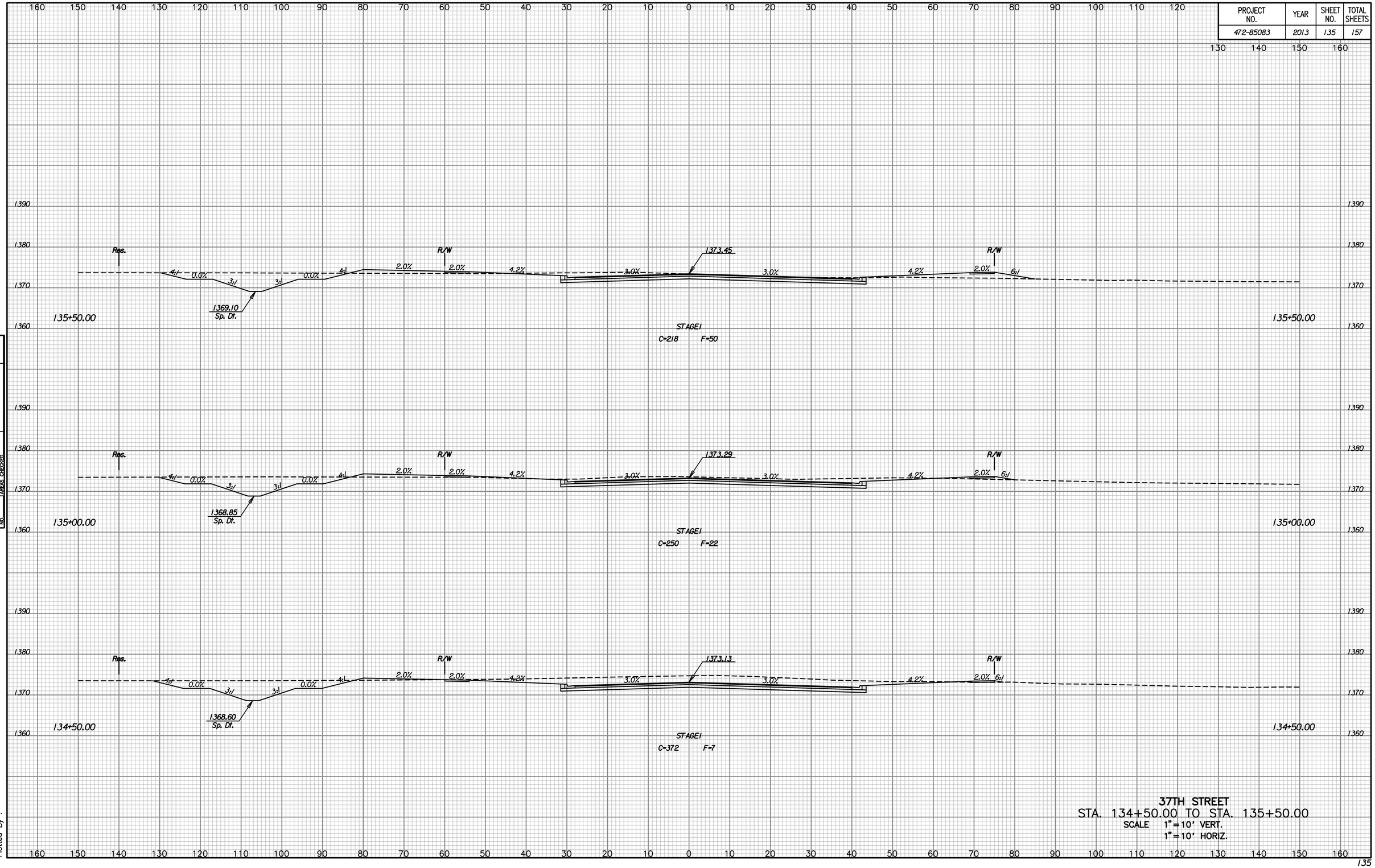


NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 132+50.00 TO STA. 134+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	135	157



NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

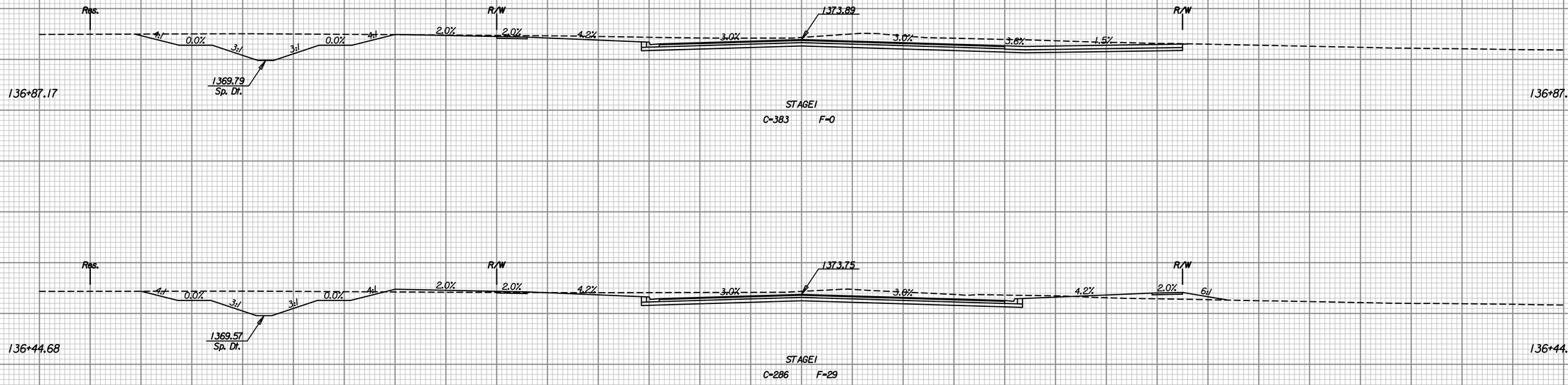
Drawn By :
Plotted By :

37TH STREET
STA. 134+50.00 TO STA. 135+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	136	157

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

130 140 150 160



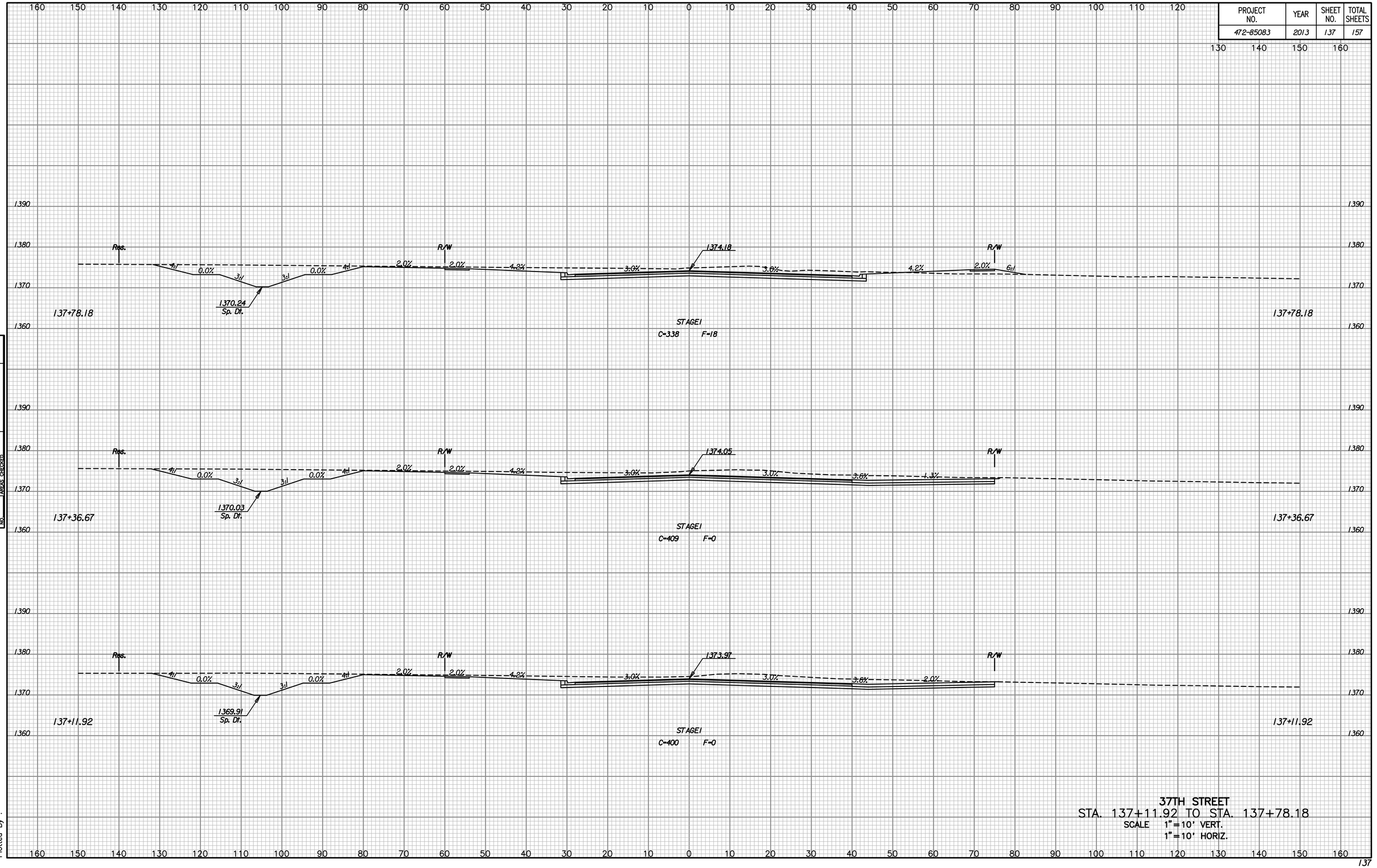
NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 136+00.00 TO STA. 136+87.17
SCALE 1"=10' VERT.
1"=10' HORIZ.

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	137	157

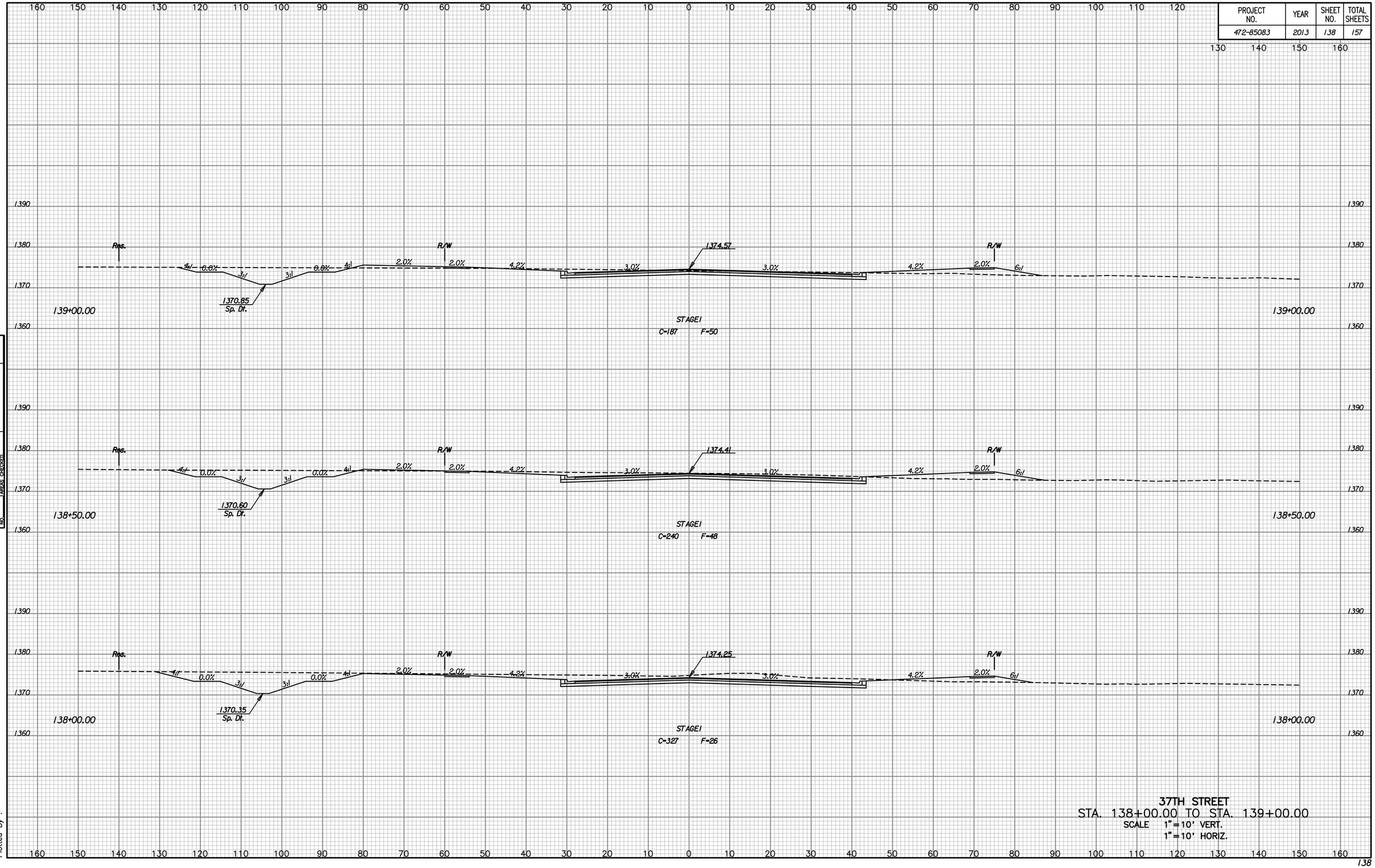


NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 137+11.92 TO STA. 137+78.18
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	138	157

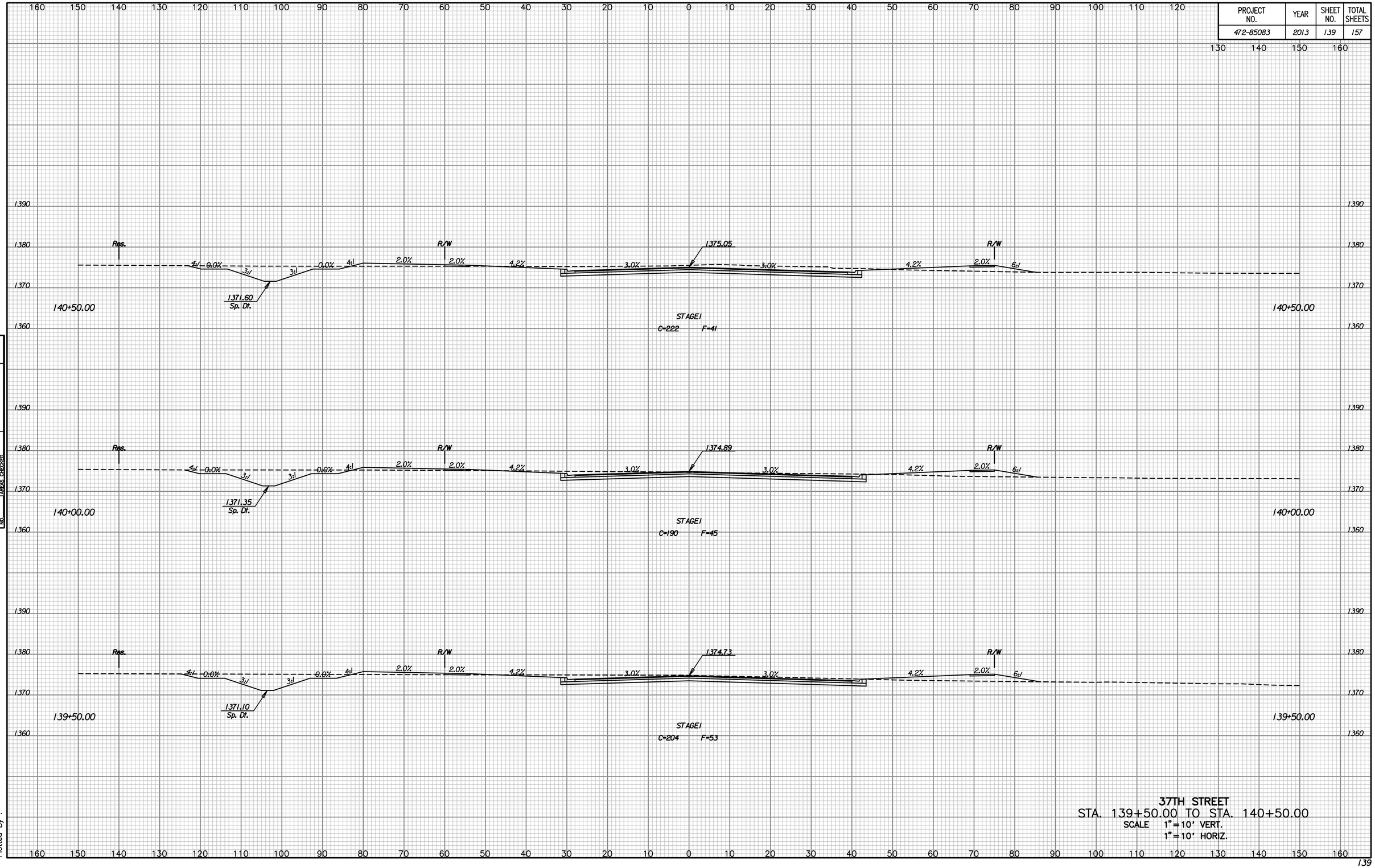


NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 138+00.00 TO STA. 139+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	139	157

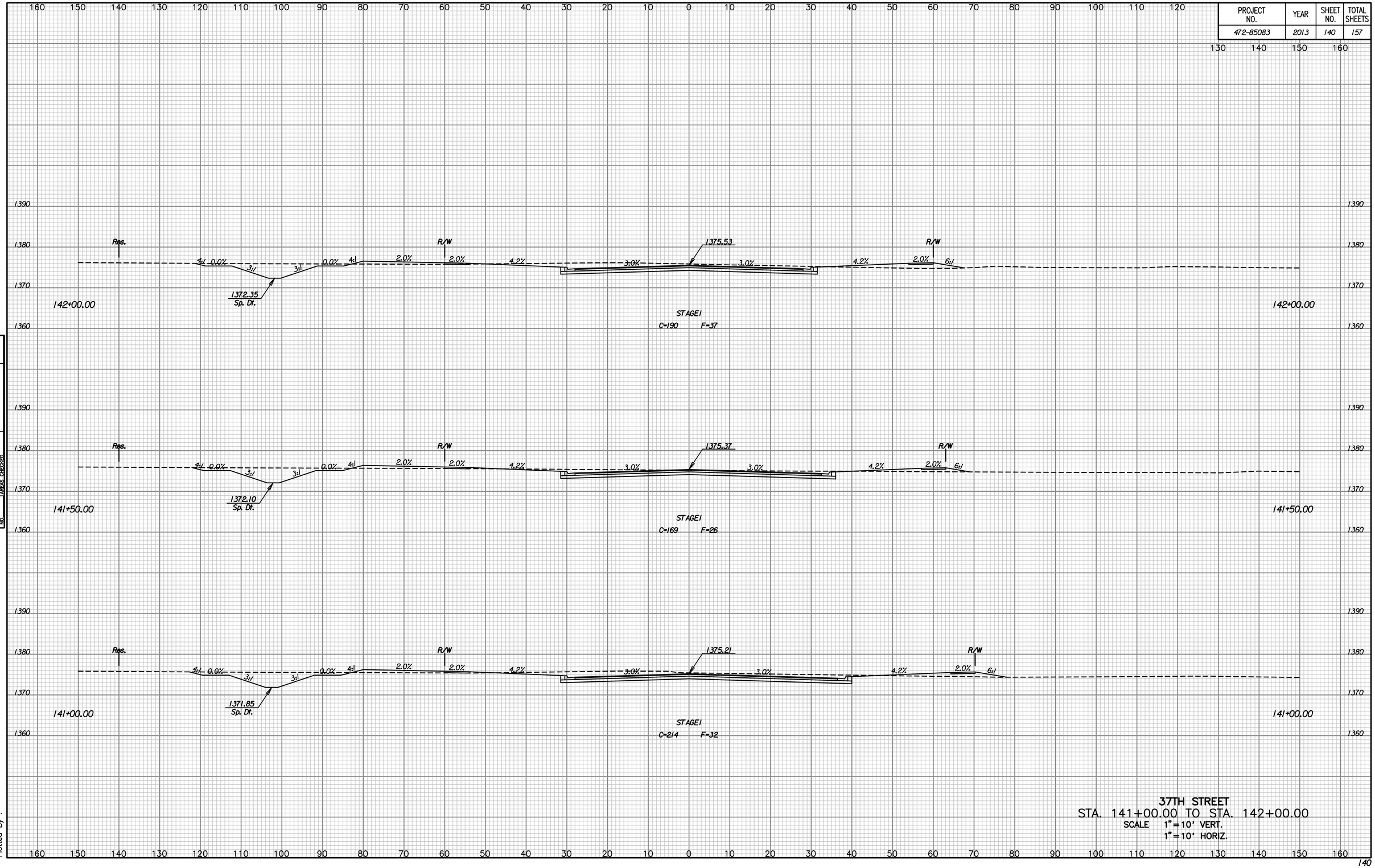


NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 139+50.00 TO STA. 140+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	140	157

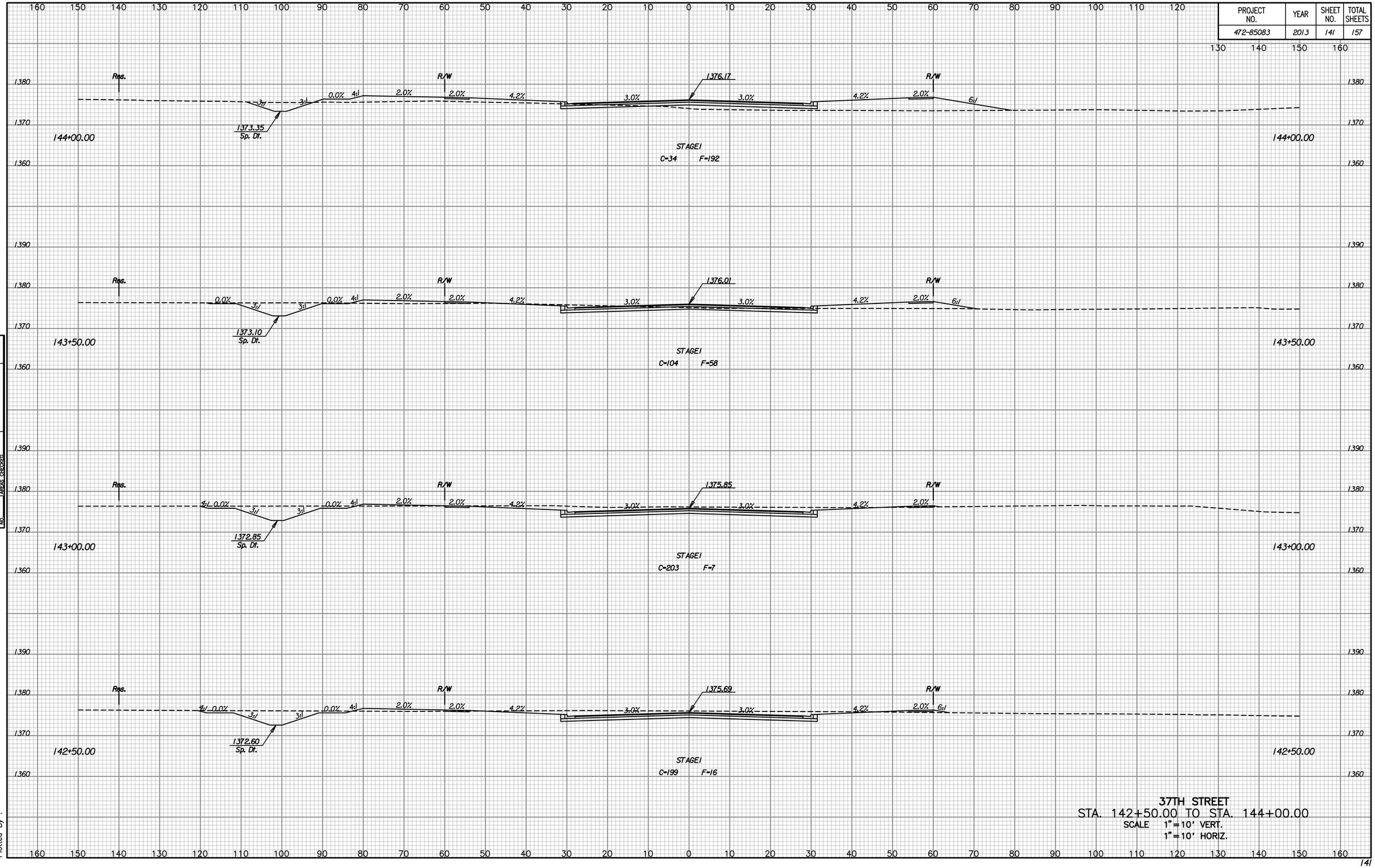


NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 141+00.00 TO STA. 142+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	141	157



NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

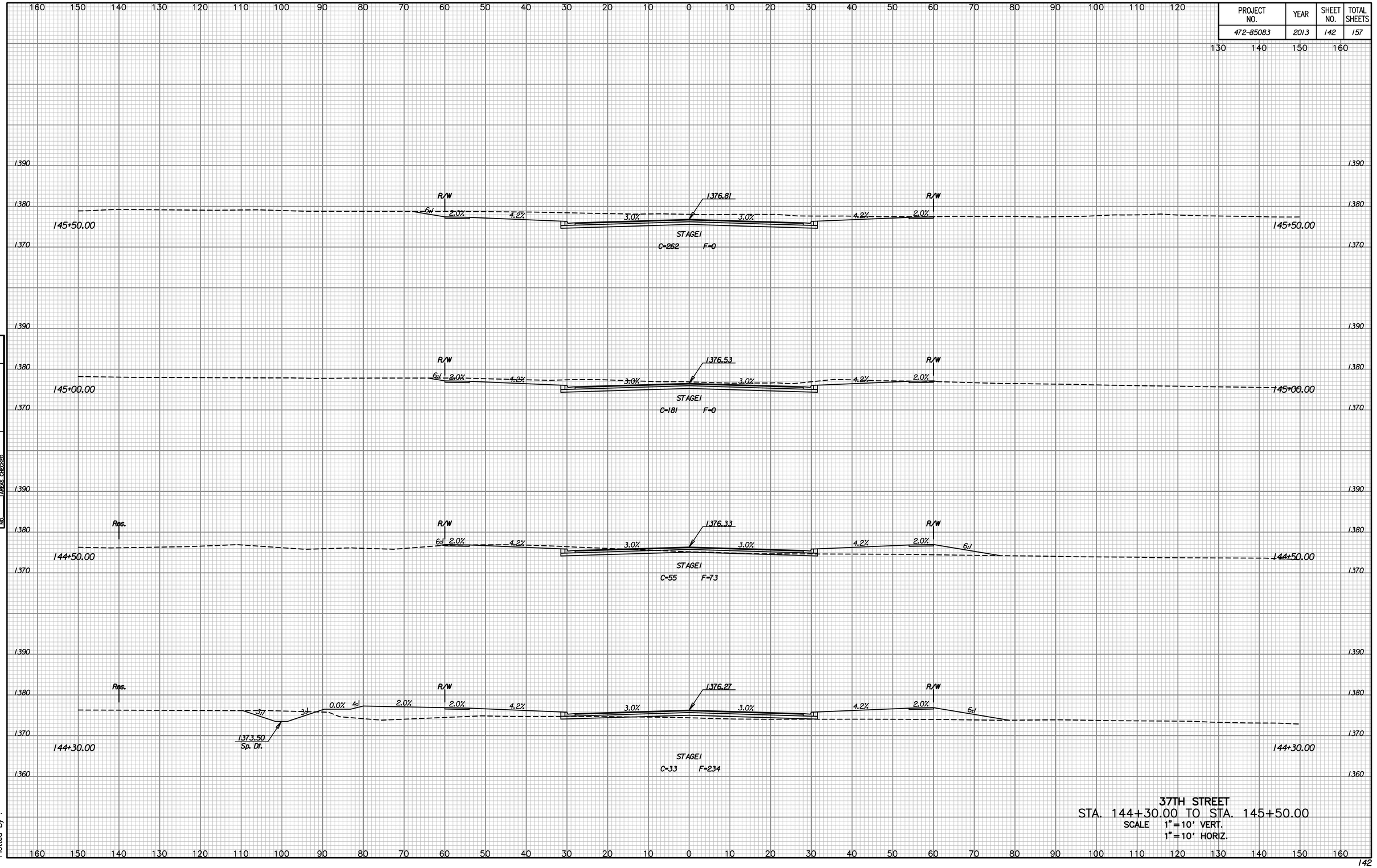
Drawn By :
Plotted By :

37TH STREET

STA. 142+50.00 TO STA. 144+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	142	157

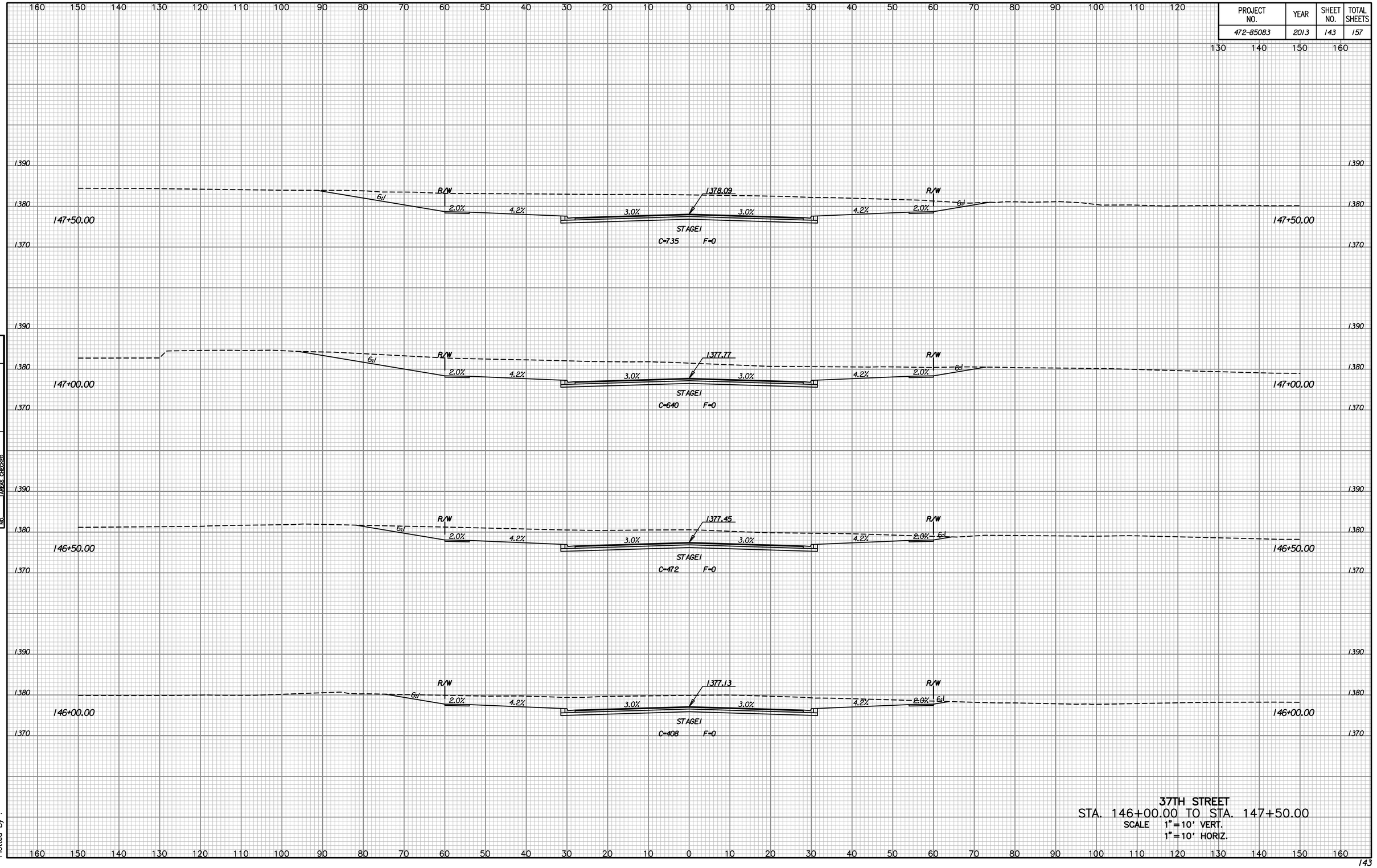


NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 144+30.00 TO STA. 145+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	143	157



NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

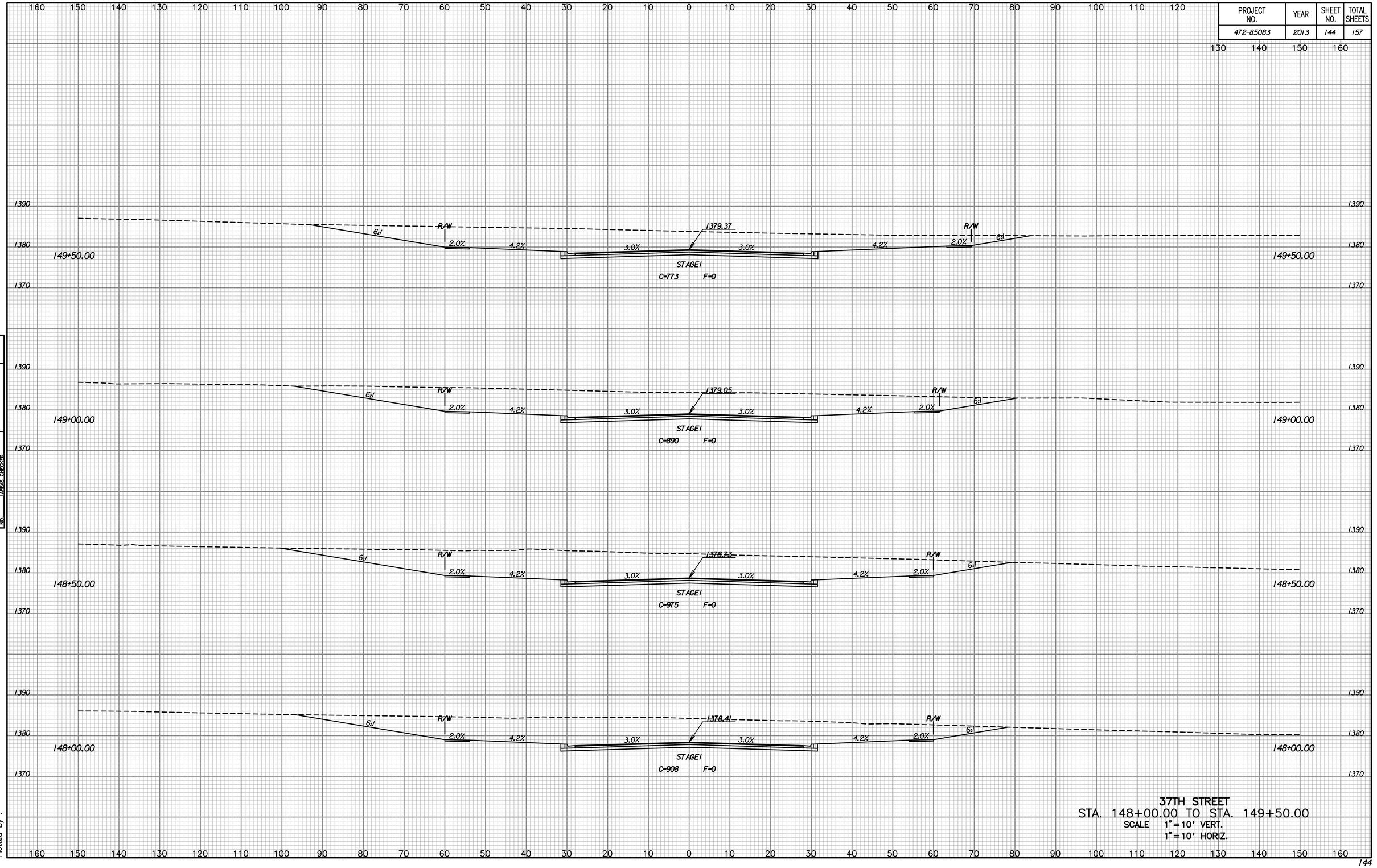
Drawn By :
Plotted By :

37TH STREET
STA. 146+00.00 TO STA. 147+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	144	157

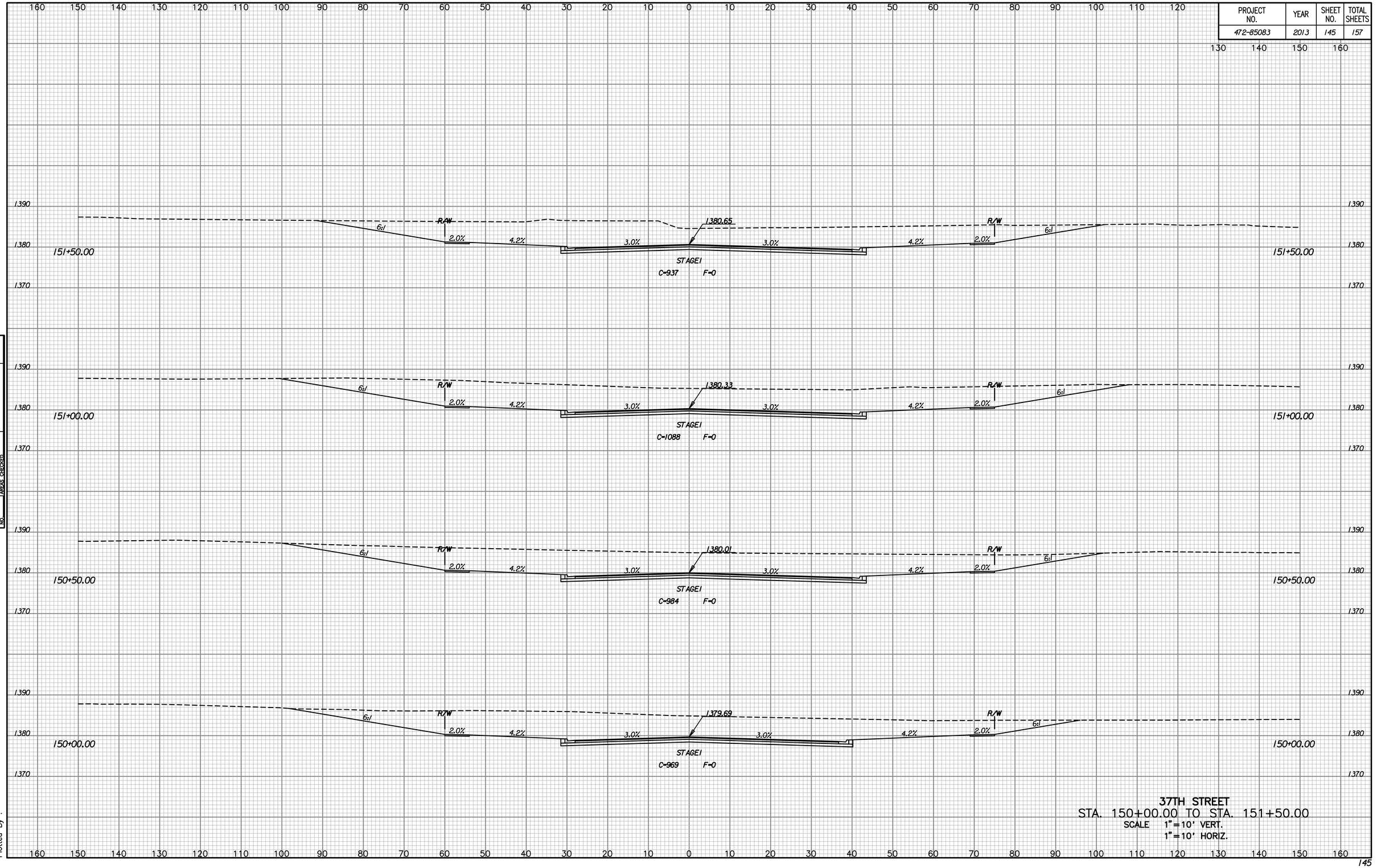
NO.	NOTE BOOK	TEMPLATE
		AREAS
		AREAS CHECKED

Drawn By :
Plotted By :



37TH STREET
STA. 148+00.00 TO STA. 149+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	145	157



NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

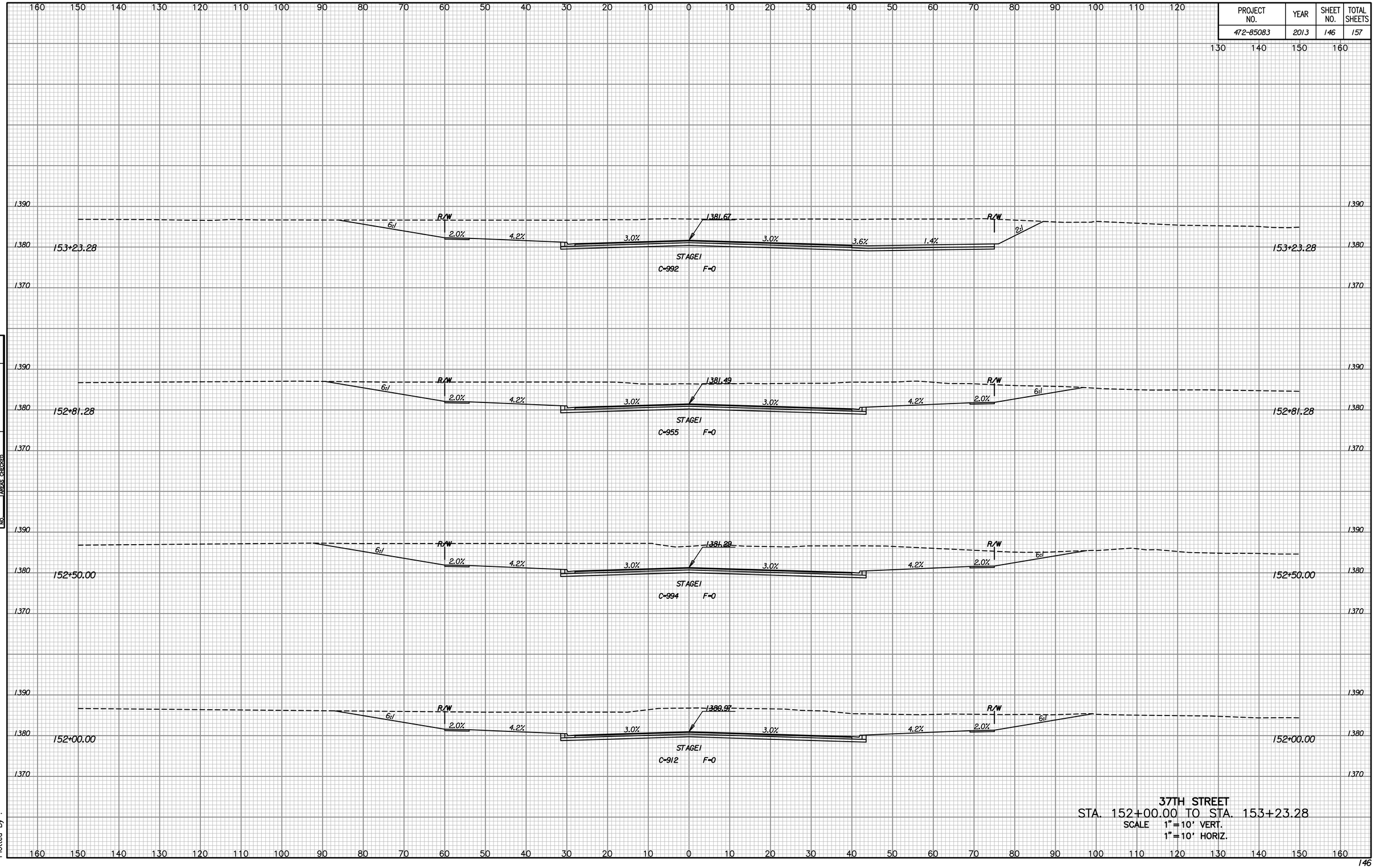
Drawn By :
Plotted By :

37TH STREET
STA. 150+00.00 TO STA. 151+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	146	157

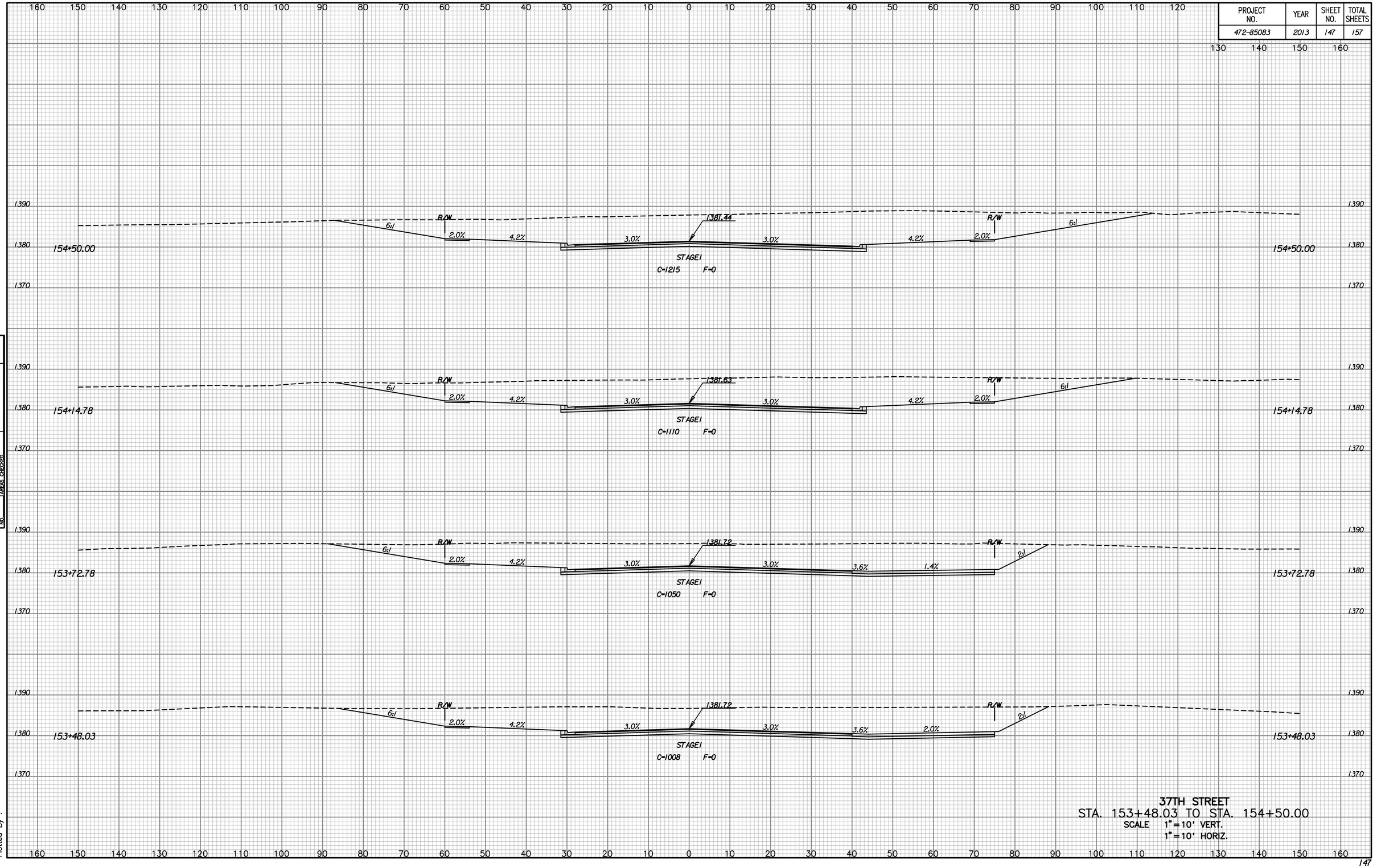
NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :



37TH STREET
STA. 152+00.00 TO STA. 153+23.28
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	147	157



NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

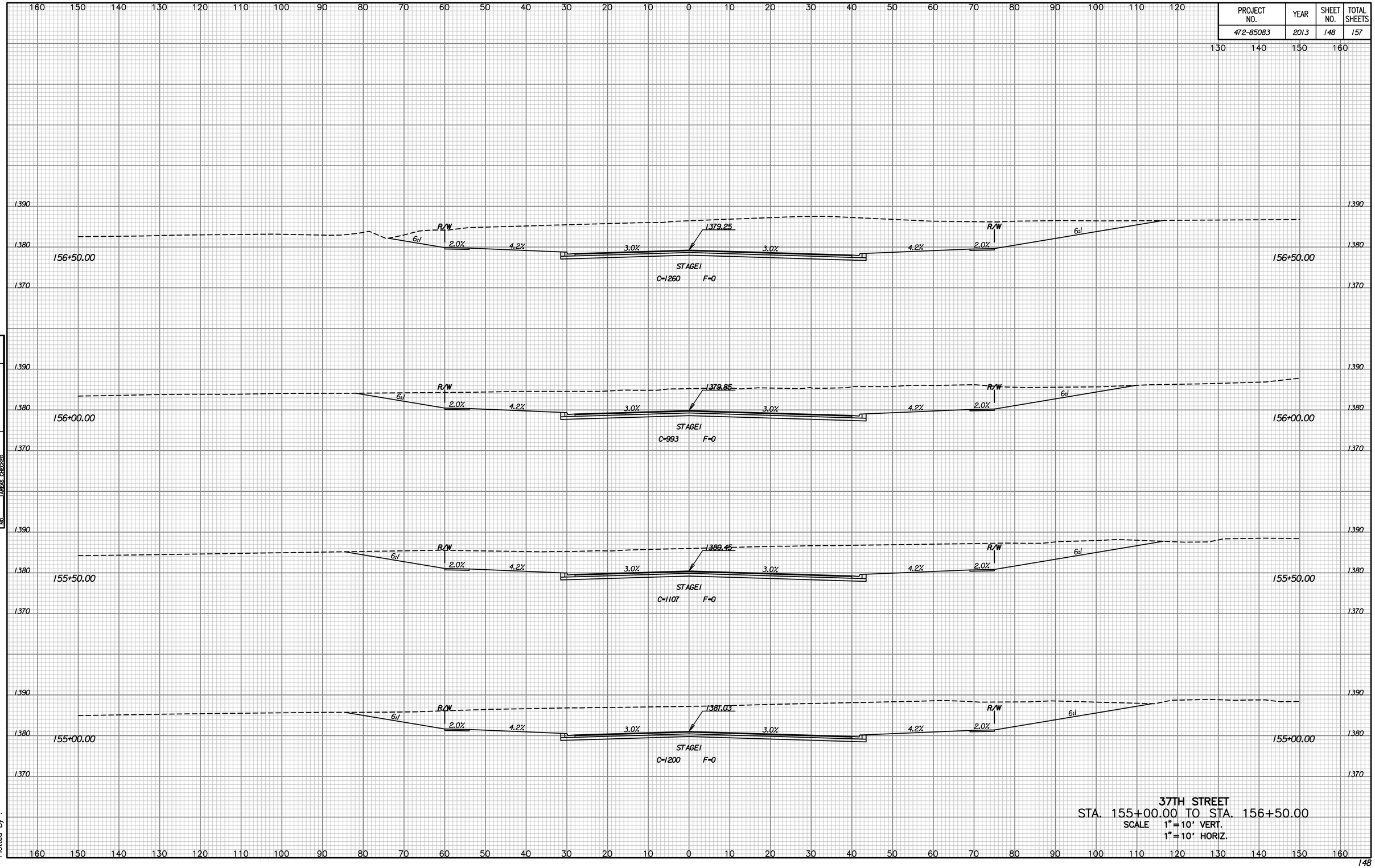
Drawn By :
Plotted By :

37TH STREET
STA. 153+48.03 TO STA. 154+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	148	157

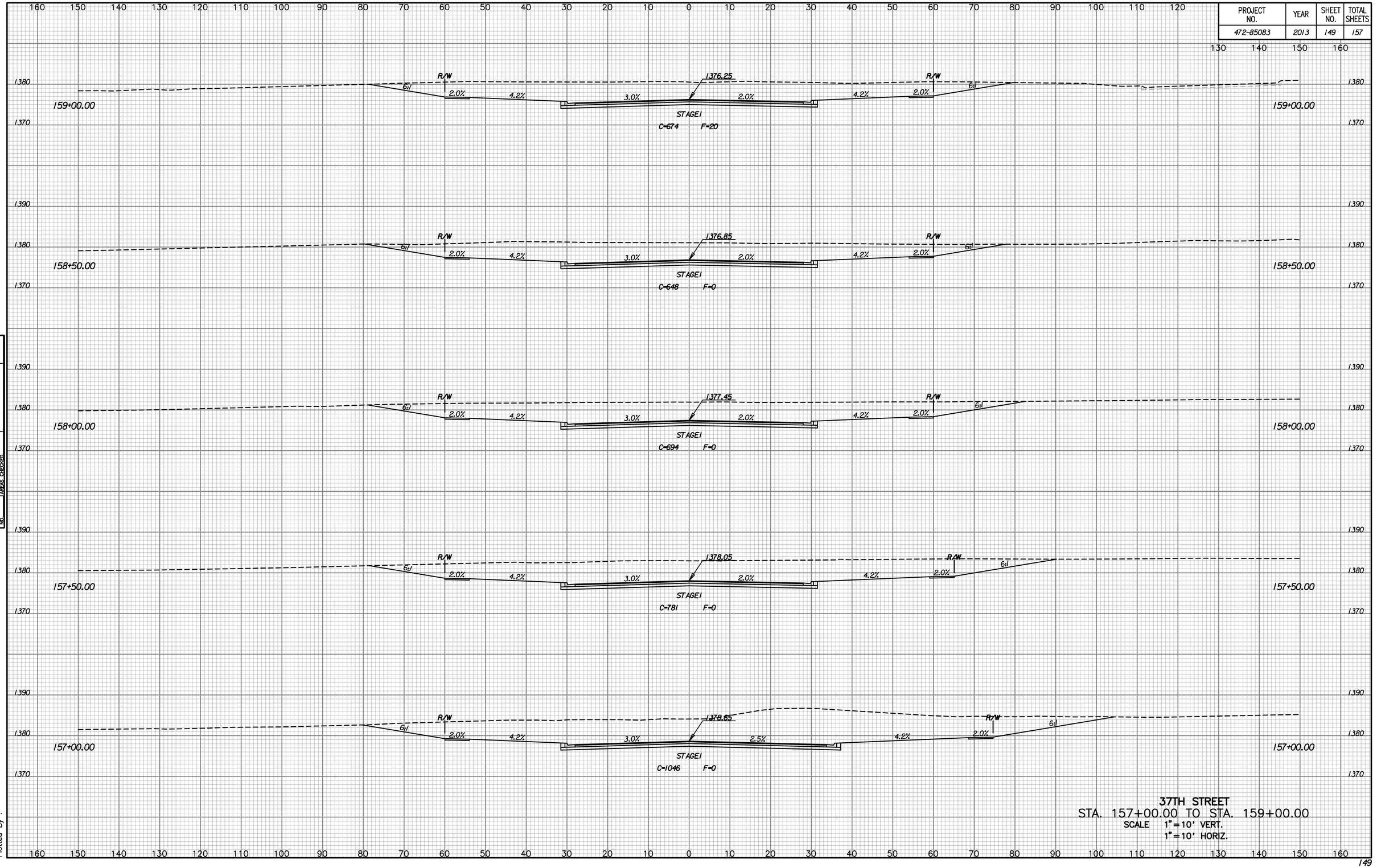
NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :



37TH STREET
STA. 155+00.00 TO STA. 156+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	149	157

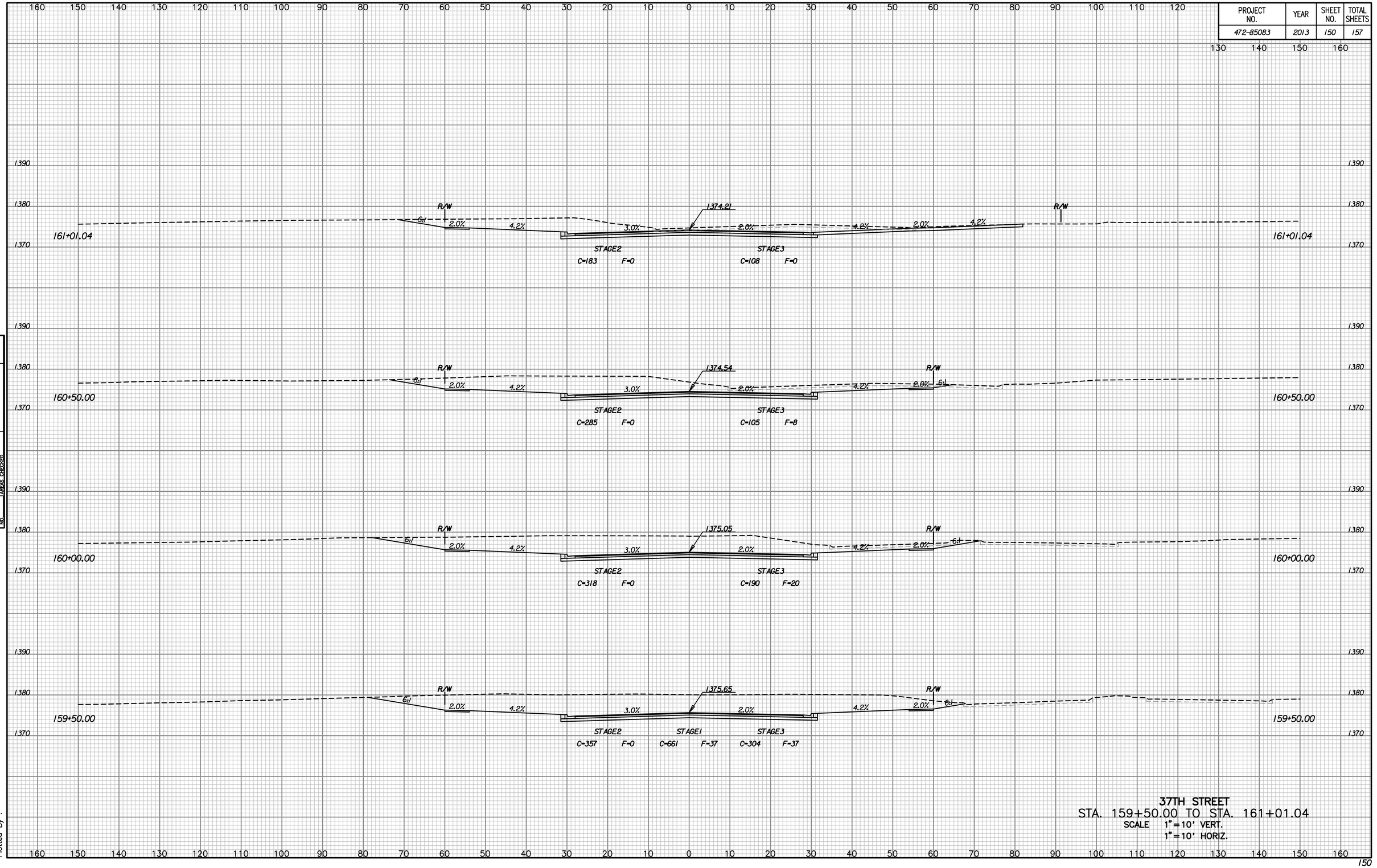


NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Drawn By :
Plotted By :

37TH STREET
STA. 157+00.00 TO STA. 159+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	150	157

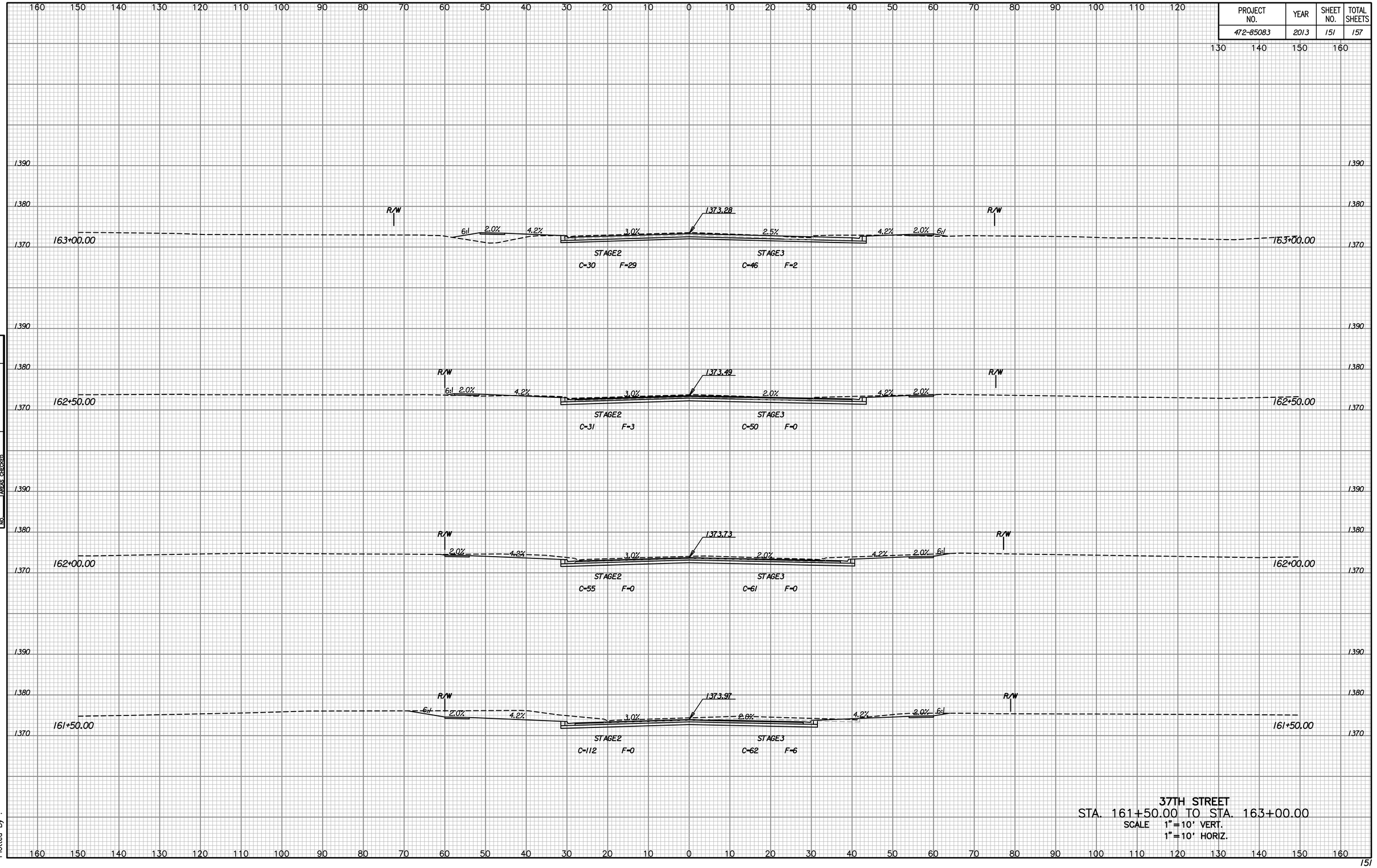


NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 159+50.00 TO STA. 161+01.04
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	151	157

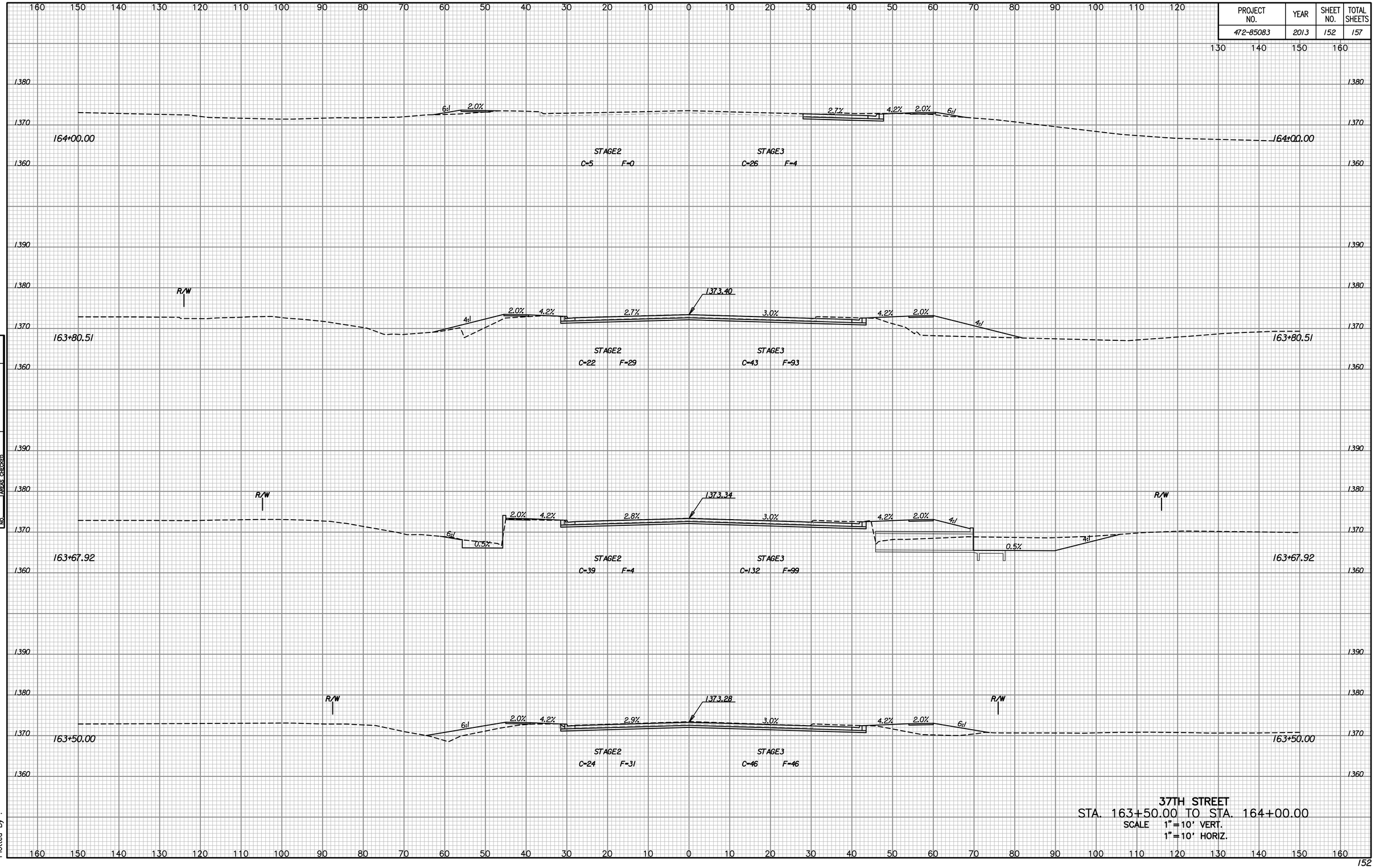


37TH STREET
STA. 161+50.00 TO STA. 163+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	152	157



NOTE BOOK TEMPLATE AREAS AREAS CHECKED
NO.

Drawn By :
Plotted By :

37TH STREET
STA. 163+50.00 TO STA. 164+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	153	157

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

1380
1370
1360

164+30.51

STAGE2
C=0 F=0

STAGE3
C=41 F=0

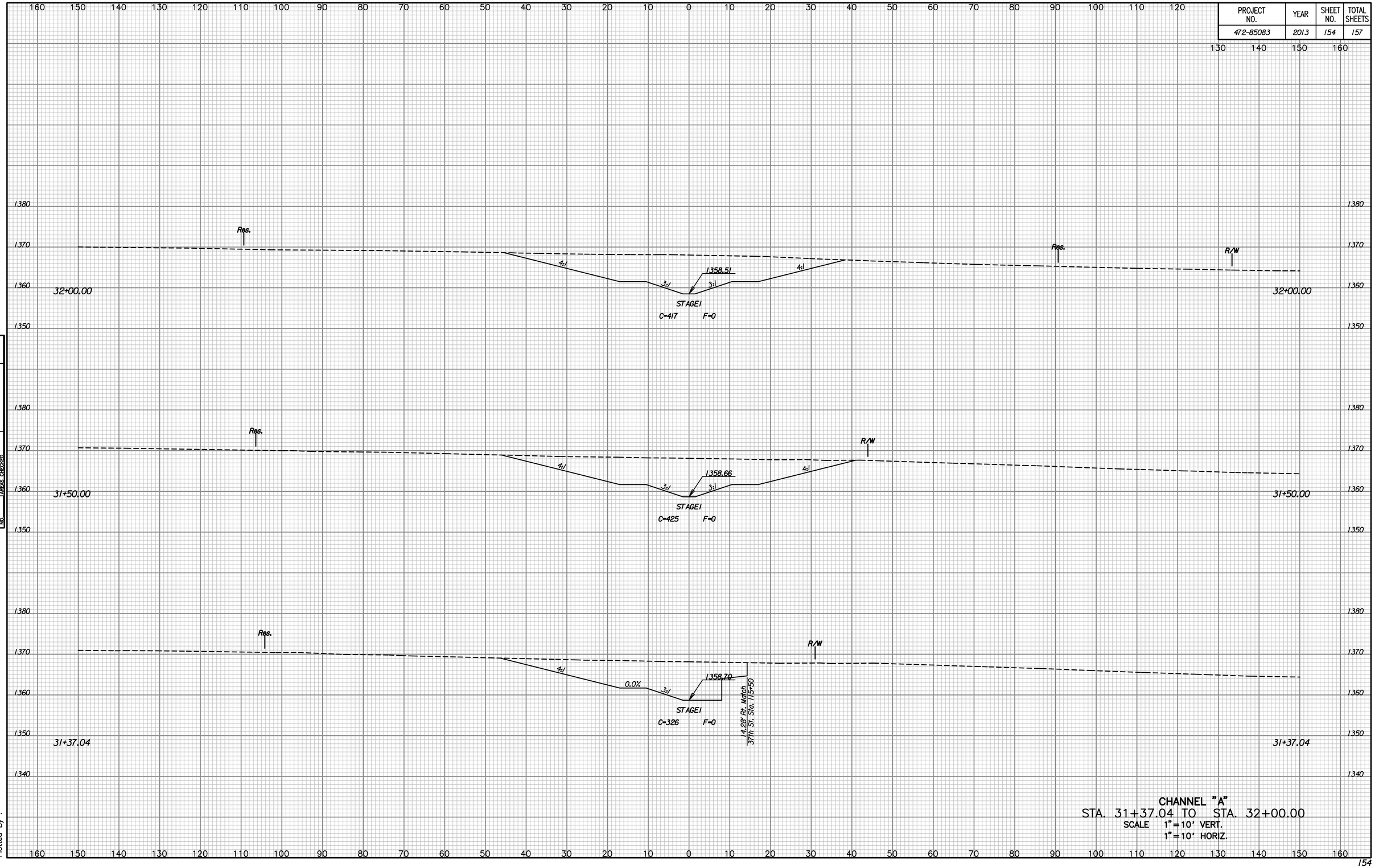
0.7% 1.9% 0.5% 0.8%

164+39.51

37TH STREET
STA. 164+30.51 TO STA. 164+30.51
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	154	157

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

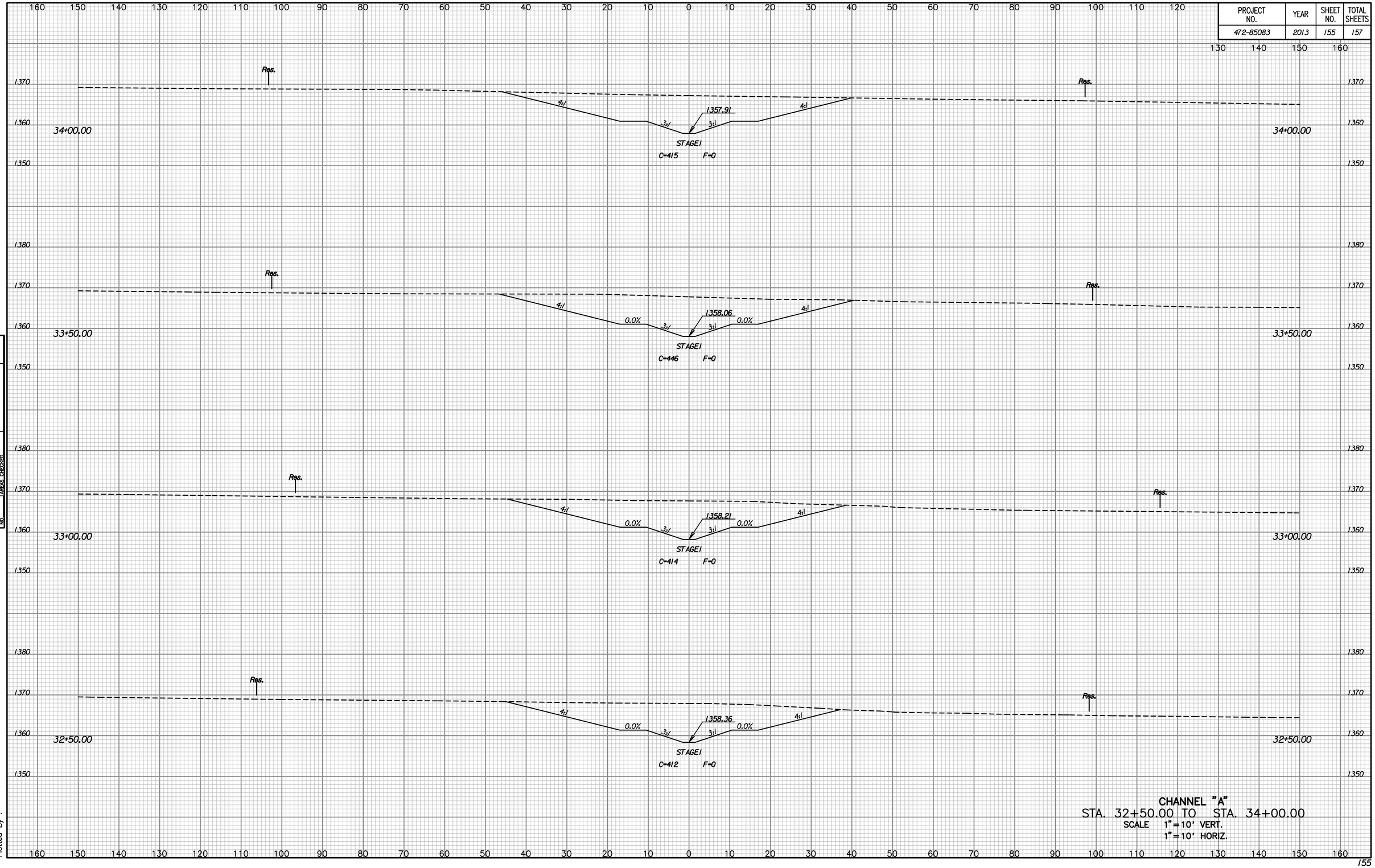


Drawn By :
Plotted By :

CHANNEL "A"
STA. 31+37.04 TO STA. 32+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	155	157

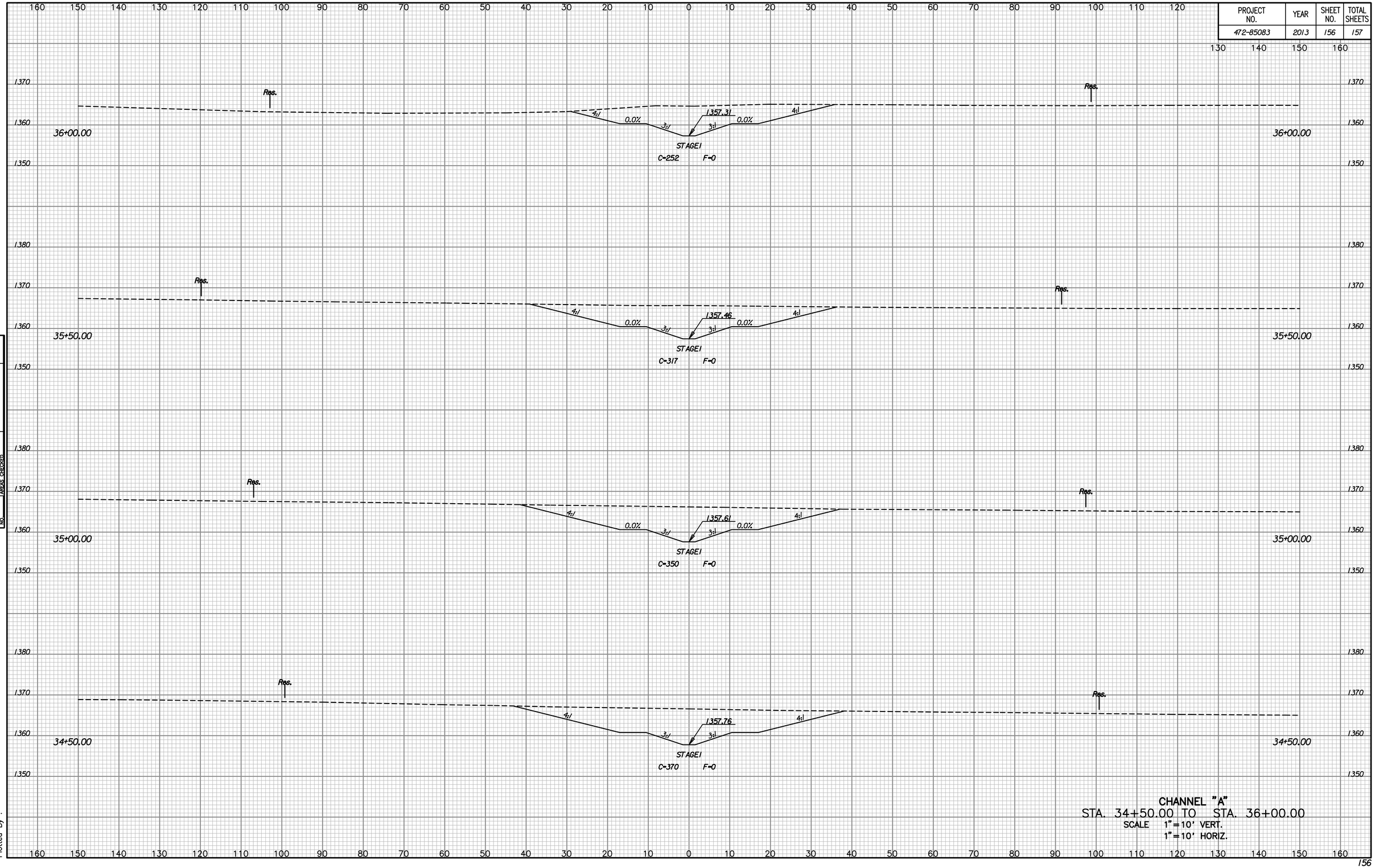


NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :

CHANNEL "A"
STA. 32+50.00 TO STA. 34+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-85083	2013	156	157



CHANNEL "A"
STA. 34+50.00 TO STA. 36+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ.

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Drawn By :
Plotted By :