STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA-2289-01	2014	1	201

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PART A: PLAN AND PROFILE OF PROPOSED (US-54) NORTH FRONTAGE ROAD 151ST ST. W. TO 135TH ST. W. KA-2289-01

CITY OF WICHITA PROJECT NO. 472-84840 O.C.A. NO. 760621

PART B: WATERLINE IMPROVEMENTS (NON-PARTICIPATING)

CITY OF WICHITA PROJECT NO. 448-90578 O.C.A. NO. 635813

PART C: SANITARY SEWER IMPROVEMENTS (NON-PARTICIPATING)

CITY OF WICHITA PROJECT NO. 468-84860 O.C.A. NO. 652024

SEDGWICK COUNTY

CITY OF WICHITA

GRADING & CONCRETE PAVEMENT **635813**
SURFACING **652024**
FENCING **760621**
SEEDING
SIGNING
PAVEMENT MARKING
LIGHTING

INDEX OF SHEETS

PART A:

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6 - 13	Plan and Profiles (Fr. Rd.)
14 - 17	Plan and Profiles (151st)
18	Plan and Profile (Kellogg Lane Additions)
19 - 25	Coordinate Geometry Sheets
26	Curve Stackout Tables
27 - 28	Intersection Details
29 - 36	Paving Plans
37 - 44	Pavement Details
45	Wheelchair Ramp Details
46 - 53	Inlet and Manhole Details
54 - 59	SWS Plan and Profiles
60 - 61	Schedule of Inlets and Manholes
62	Ditch Lining
63 - 69	End Sections
70 - 79	RCB Culverts and Details
80 - 83	Fencing Plans and Details
84 - 86	Summary and Recapulation of Quantities
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156 - 179	North Frontage Rd. Cross-Sections
180 - 186	US-54 (N. Frt. Rd.) Cross-Sections
187 - 200	151st St. W. Cross-Sections
201	Auburn Hills Rd. Cross-Sections

PART B: WATERLINE

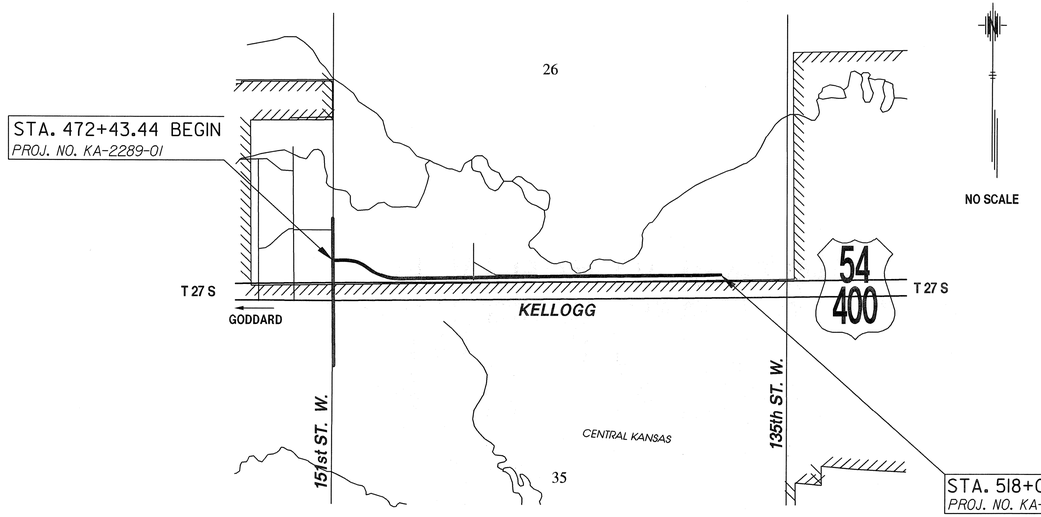
B1	PPW Title Sheet
B2	PPW Key Map and General Notes
B3	Standard Water Details
B4	Miscellaneous Water Details
B5	Piping Details
B6	Water Assembly Adjustments
B7 - B15	Waterline Plan and Profile
B16 - B17	Soil Erosion BMP Details

PART C: SANITARY SEWER

C1	PPS Title Sheet
C2	PPS Key Map and General Notes
C3	Lift Station and Forcemain Abandonment Plan
C4 - C5	Sanitary Sewer Plan and Profile
C6	Force Main Plan and Profile
C7	Force Main Connection
C8	Precast Sanitary Sewer Manhole
C9	Manhole Frame and Cover
C10 - C11	Soil Erosion BMP Details

DESIGN DESIGNATION

AADT (2012)	= 600
AADT (2035)	= 1300
DHV	= 11.0%
D	= 65%/35%
T	= 5%
V	= 40 MPH
C of A	= PARTIAL
Clear Zone	= 6'



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 PRIOR TO 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.

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 THE CITY. 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. SAW CUTTING SHALL BE SUBSIDIARY TO THE BID ITEM "PAVEMENT REMOVAL".

ALL RCB, STORM SEWER, 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; BUT SHALL BE SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.

CONVENTIONAL SIGNS

COUNTY LINE
CITY LIMITS
STATE OR NATIONAL LINE
TOWNSHIP, SECTION or GRANT LINE
PROPERTY LINE
HIGHWAY FENCE
EXISTING FENCE
GUARDRAIL
CONSTRUCTION LIMITS
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS

CENTER LINE OF PROJECT
TERRACE
CULVERTS
DROP INLET & STORM SEWER
ACCESS CONTROL
POWER POLE
TELEPHONE POLE
MARSH
HEDGE
TREES
PROFILE ELEVATION
STREAM or CREEK

GROSS LENGTH OF PROJECT	4256.63 FT.	
EXCEPTIONS	0.00 FT.	
ADDITIONS	0.00 FT.	
NET LENGTH OF PROJECT	4256.63 FT.	0.81 MILES
NET LENGTH OF BRIDGES	0.00 FT.	0.00 MILES
NET LENGTH OF ROAD	4256.63 FT.	0.81 MILES

Construction Traffic Notes

TRAFFIC TO BE CARRIED THROUGH CONSTRUCTION ON US-54. FOR TRAFFIC HANDLING AND CONSTRUCTION SEQUENCE SEE SH. NO. 122

COLIN K. COSTLEY — 19782 — 15-JUL-14 — KANSAS — PROFESSIONAL ENGINEER

PLANS PREPARED BY:

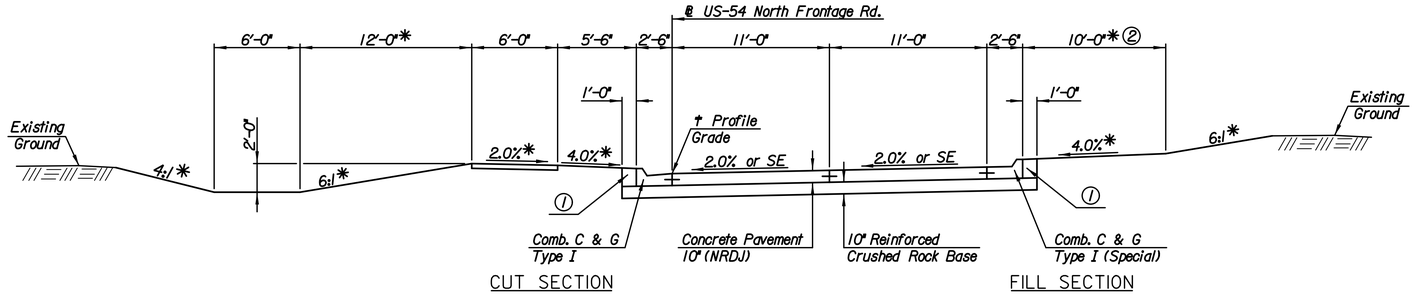
PEC — PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

RECOM. FOR APPROVAL-DATE
Daryl Jarvis 07/15/14
LOCAL PUBLIC OFFICIAL

KANSAS DEPARTMENT OF TRANSPORTATION

BY	DATE
SURVEY	
CADD TECHNICIAN	
DESIGNERS	
SQUAD	

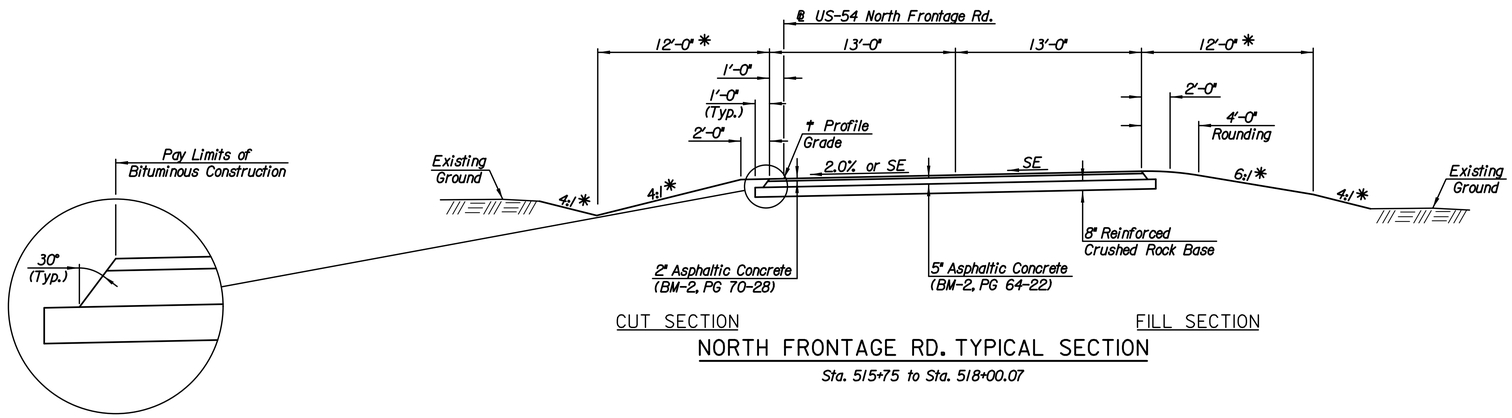
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Drawn By : drp
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CUT SECTION FILL SECTION

NORTH FRONTAGE RD. TYPICAL SECTION

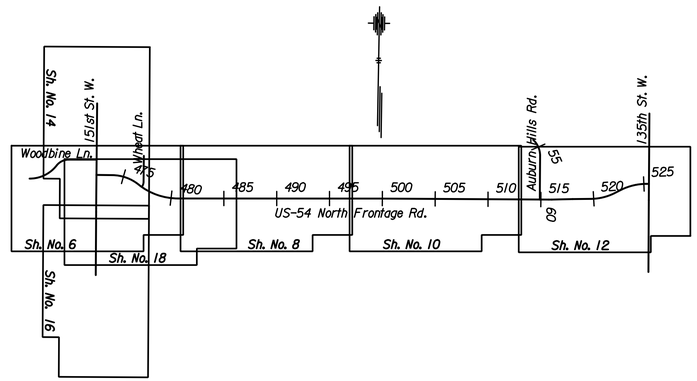
Sta. 473+85 to Sta. 515+75



CUT SECTION FILL SECTION

NORTH FRONTAGE RD. TYPICAL SECTION

Sta. 515+75 to Sta. 518+00.07



① Backfill behind Curb. Quantities for this work are included in the Earthwork Summary Table.

② Varies from 10'-0" ℄ Sta. 483+00 to 6'-0" ℄ Sta. 484+00
Varies from 6'-0" ℄ Sta. 484+50 to 10'-0" ℄ Sta. 485+50
Varies from 10'-0" ℄ Sta. 515+00 to 7'-0" ℄ Sta. 515+75

† Point of Superelevation Rotation.

* Dimensions and slopes for standard ditches and fills. See Plan and Cross-Sections for variations.

No.	Revision	By	Date

CITY OF WICHITA

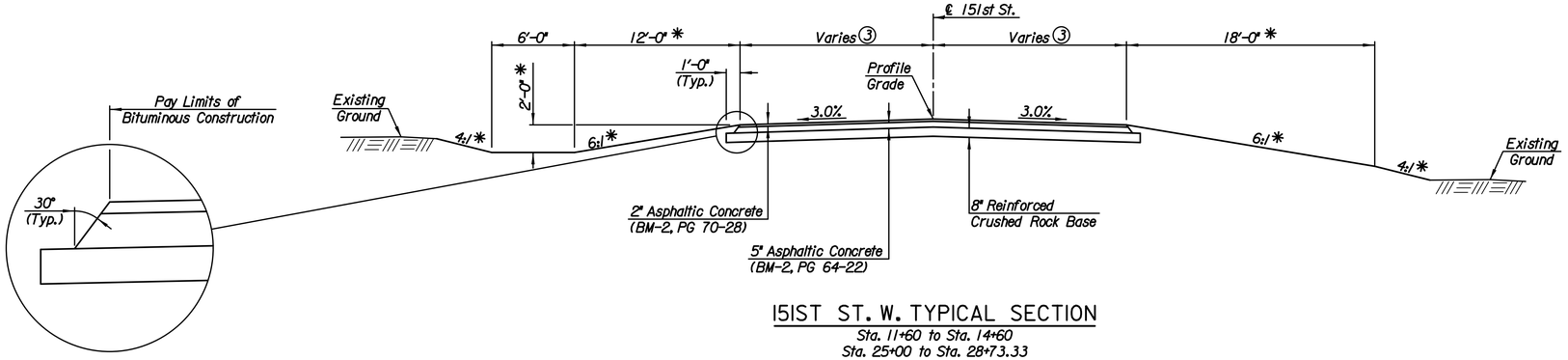
TYPICAL SECTIONS US-54 NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
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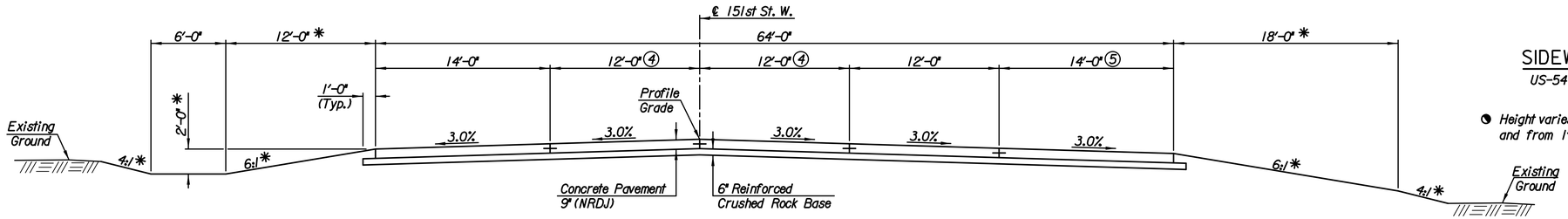
Designed by	CKC	Job No.	08313	Sht. 2 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:35 PM
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151ST ST. W. TYPICAL SECTION

Sta. 11+60 to Sta. 14+60
Sta. 25+00 to Sta. 28+73.33

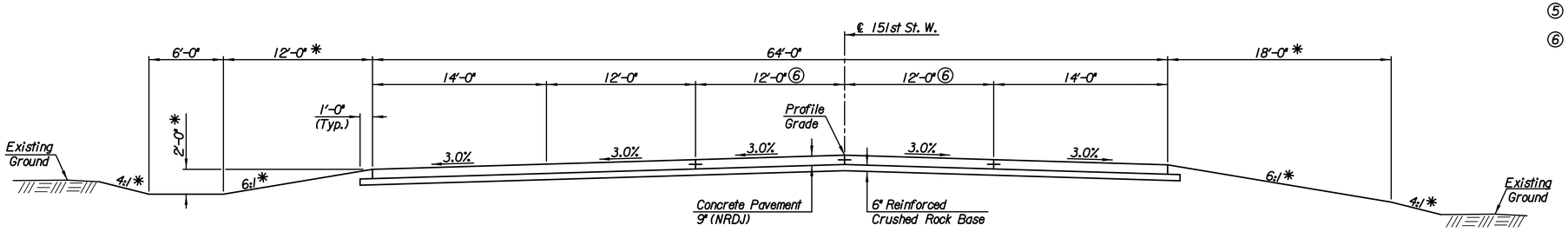


CUT SECTION

FILL SECTION

151ST ST. W. TYPICAL SECTION

Sta. 14+60 to Sta. 19+60.75

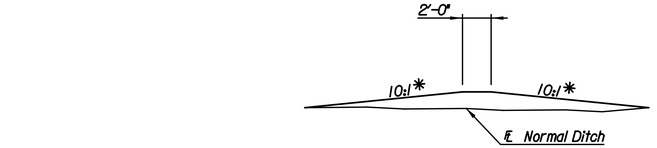


CUT SECTION

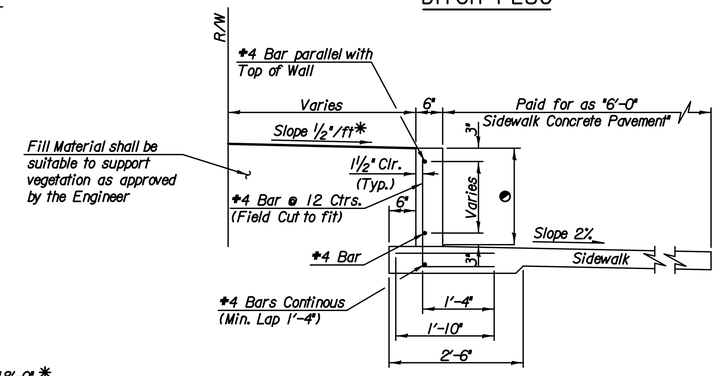
FILL SECTION

151ST ST. W. TYPICAL SECTION

Sta. 20+39 to Sta. 25+00



DITCH PLUG



SIDEWALK RETAINING WALL DETAIL

US-54 North Frontage Rd. Sta. 489+00 to Sta. 492+50

◔ Height varies from 0'-0" to 1'-6" between Sta. 489+00 to Sta. 489+50 and from 1'-6" to 0'-0" between Sta. 492+00 to Sta. 492+50.

③ Varies from 13'-0" @ Sta. 11+60 to 20'-0" @ Sta. 14+60
Varies from 20'-0" @ Sta. 25+00 to 10'-3" @ Sta. 28+73.33

④ Varies from 6'-0" @ Sta. 14+60 to 12'-0" @ Sta. 16+50

⑤ Varies from 2'-5" @ Sta. 15+54.29 to 14'-0" @ Sta. 16+50

⑥ Varies from 12'-0" @ Sta. 23+40 to 6'-0" @ Sta. 25+00

* Dimensions and slopes for standard ditches and fills. See Plan and Cross-Sections for variations.

No.	Revision	By	Date

CITY OF WICHITA

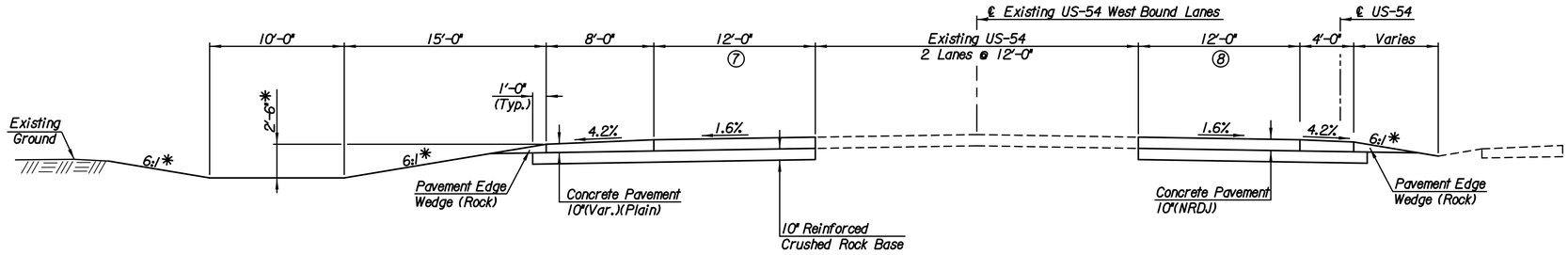
TYPICAL SECTIONS 151ST STREET WEST

PROJECT NO. 472-84840 SEDGWICK CO.

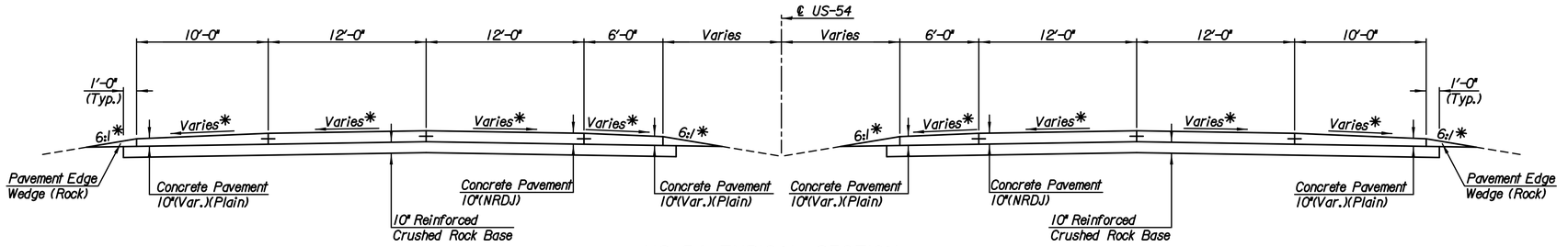
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 3 of 201
Drawn by	DRP	Date	June, 2014	

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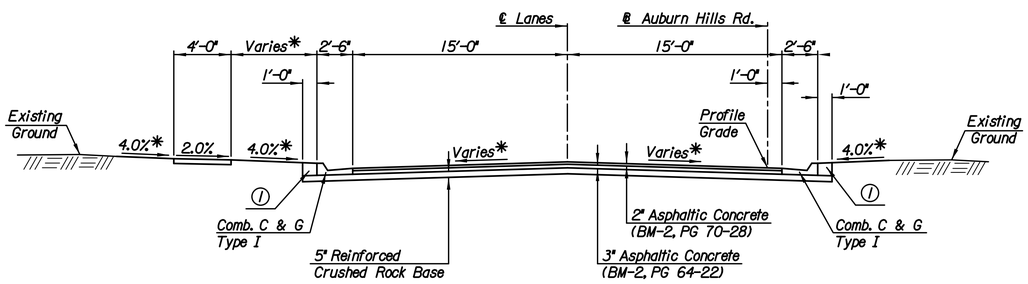


US-54 TYPICAL SECTION



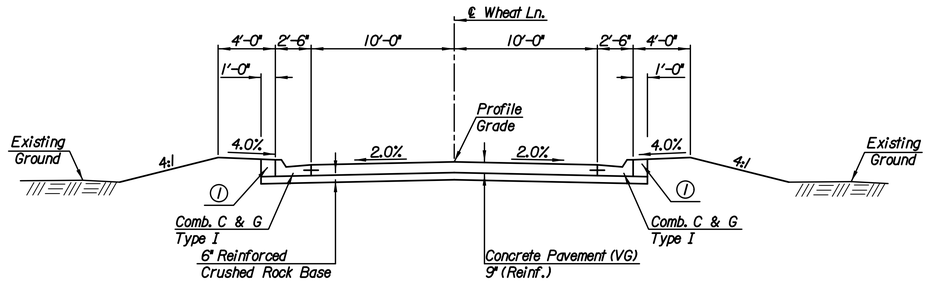
US-54 TYPICAL SECTION

Sta. 500+64.91 to Sta. 501+24.91



AUBURN HILLS ROAD TYPICAL SECTION

Sta. 59+00 to Sta. 59+70



WHEAT LANE TYPICAL SECTION

* *Dimensions and slopes for standard ditches and fills. See Plan and Cross-Sections for variations.*

① *Backfill behind Curb. Quantities for this work are included in the Earthwork Summary Table.*

⑦ *Varies from 12'-0" @ Sta. 479+20 to 1'-0" @ Sta. 480+85.*

⑧ *Varies from 12'-0" @ Sta. 479+20 to 1'-0" @ Sta. 480+84.88*

No.	Revision	By	Date

CITY OF WICHITA

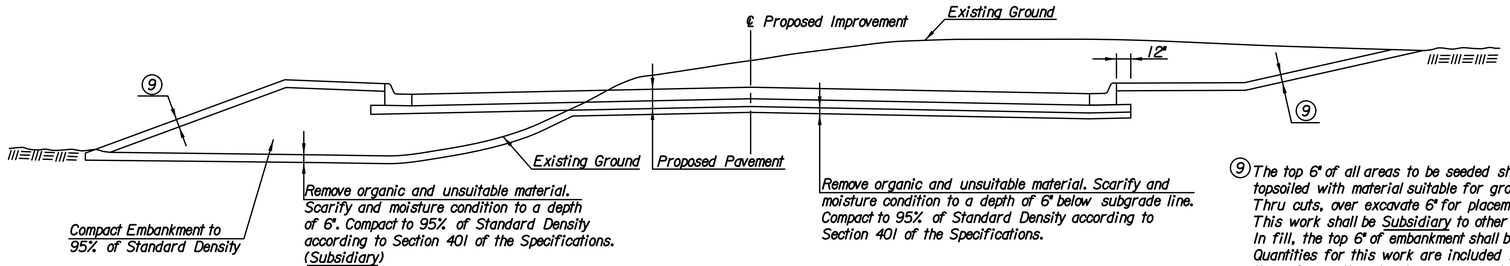
TYPICAL SECTIONS

PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 4 of 201
Drawn by	DRP	Date	June, 2014	

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IN FILL

COMPACTION DIAGRAM

IN CUT

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

(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. This work shall be Subsidiary to other earthwork items. In fill, the top 6" of embankment shall be topsoil. Quantities for this work are included in the contract bid items for earthwork. No measurement or payment will be made for material required to replace material excavated during stripping operations.*

No.	Revision	By	Date

CITY OF WICHITA

FOUNDATION TREATMENT & COMPACTION OF EARTHWORK

PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 5 of 201
Drawn by	DRP	Date	June, 2014	

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UTILITIES

AT&T
Wichita Central Unit
154 N. Broadway, Rm. 210
Wichita, ks. 67202
John Fagan (316) 268-2102

Black Hills Energy
1611 S. Hoover Rd.
Wichita, Ks. 67209
Calvin Briggs (316) 941-1608

City of Goddard
118 N. Main St.
Goddard, Ks. 67052
City Clerk Office (316) 794-2441
Spanky Brooks

Cox Communications
901 George Washington Blvd.
Wichita, Ks. 67211
Marc Henderson (316) 260-7745

Kansas Fiber Network (KsFiberNet)
121 N. Mead, Ste. 200
Wichita, Ks. 67202
(Network Control)
Steve Lindner (855) 536-4357

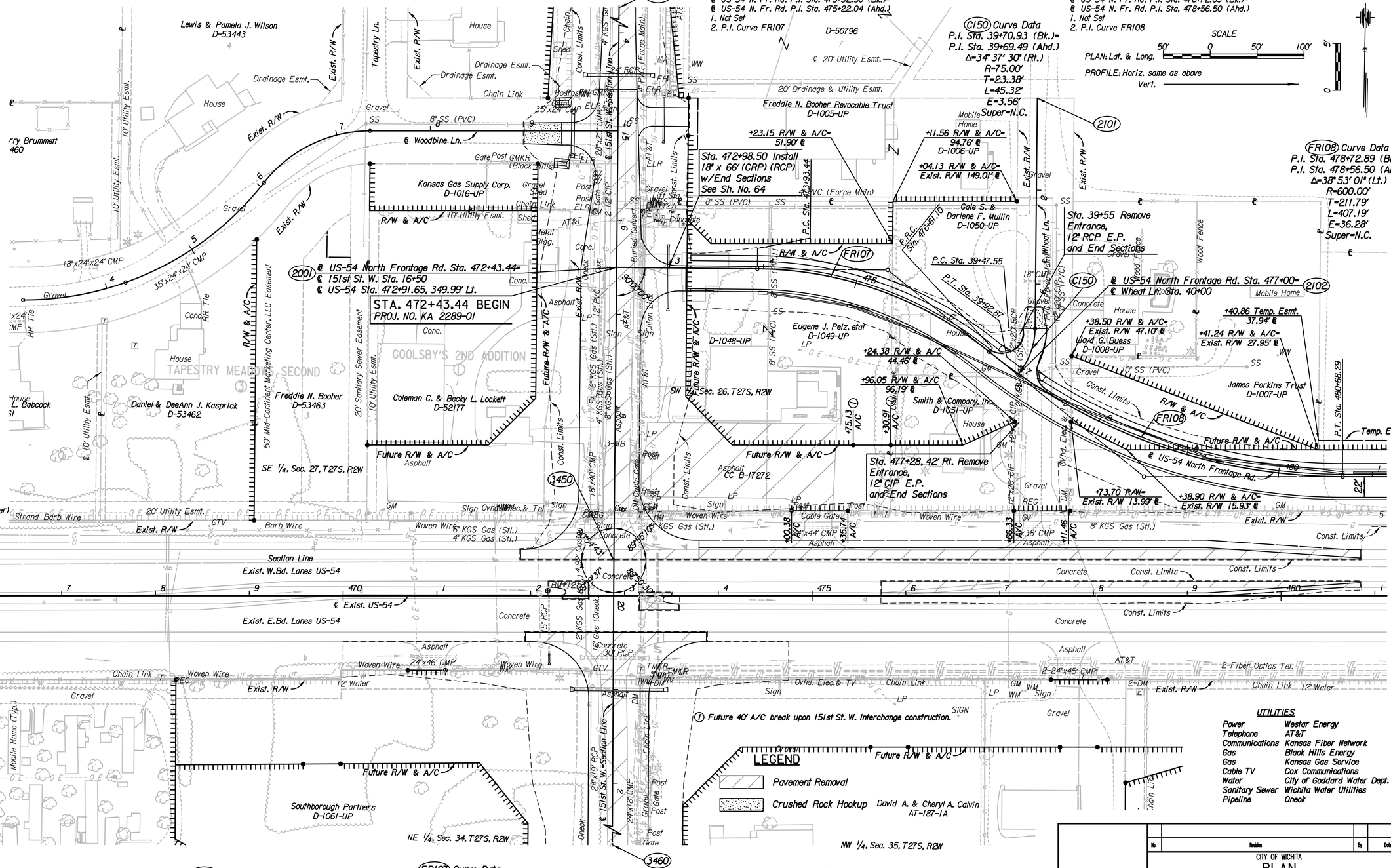
Kansas Gas Service
1021 E. 26th St. N.
Wichita, Ks. 67219
Jim Coe (316) 832-3126

Oneok Field Services
30317 N. US HWY 281
Pratt, Ks. 67124-7931
Clay Robertson (620) 672-9425
Ext. 14

Westar Energy
1900 E. Central (3rd Floor)
Wichita, Ks. 67201
Miles Capps (316) 261-6824

Wichita Public Schools
U.S.D. 259
3850 N. Hydraulic
Wichita, Ks. 67219
Mark Blackwell (316) 973-4241

Wichita Water Utilities
455 N. Main (8th Floor - City Hall)
Wichita, Ks. 67202
Bill Perkins (316) 268-4555 (San. Sewer)
Greg Lolley (316) 268-4555 (Water)



PROJECT SURVEY CONTROL

Datum Bench Mark: BM#9
Chisled "+" cut on ℄ south concrete headwall on 4' x 4' RCB, 60.5' Rt. Sta. 442+59.5. Elev. 1414.91 NGVD 29 on 1992 KDOT Proj. 54-87 K-3388-01. Located 3,029.20' W. of 151st St. W., 60.37' S. of ℄ US-54.

BM#12 Chis. "D" center W edge ditch inlet in median of Kellogg, 75'± W of ℄ 151st St. W.
℄ 151st St. W. Sta. 19+95.10, 70.37' Rt. Elev. 1399.72

E1/4Cor. Sec. 27, T27S, R2W (2760)
1. Found 3/4" iron pipe
2. 3 nails south face fence corner post 32.93' E
3. 3 nails west face fence line post 52.69' NE
4. 3 nails west face power pole 83.76' NNE
5. 1/2" rebar with Baughman cap 50.05' W

BM#12A RR Spike W face power pole @ San. Sewer Lift Station E side 151st St. W. Just S of Woodbine Lane.
@ Sta. 472+71.07, 60.32' Lt. Elev. 1394.78

E1/4Cor. Sec. 34, T27S, R2W (3460)
1. Found 1/2" rebar
2. 3 nails south face guy pole 28.82' W
3. 3 nails south face power pole 30.84' E
4. 3 nails west face power pole 117.28' NNW
5. Ctr. drive to house #1951 61.02' N

NE Cor. Sec. 34, T27S, R2W (3450)
1. Found 5/8" rebar in thimble
2. Ctr. west bound lanes 10.32' S
3. Ctr. east bound lanes 64.46' SW
4. Ctr. R/W monument 120.38' SW
5. Ctr. R/W monument 130.61' SE
6. Ctr. R/W monument 59.14' NE
7. Ctr. R/W monument 51.57' NW

UTILITIES

Power	Westar Energy
Telephone	AT&T
Communications	Kansas Fiber Network
Gas	Black Hills Energy
Gas	Kansas Gas Service
Cable TV	Cox Communications
Water	City of Goddard Water Dept.
Sanitary Sewer	Wichita Water Utilities
Pipeline	Oneok

No.	Revision	By	Date

CITY OF WICHITA
PLAN
US-54 NORTH FRONTAGE ROAD
STA. 472+43.44 TO STA. 481+00
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 6 of 201

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SUPERELEVATION DIAGRAM

For Earthwork Balance
See Sh. No. 9

To Sta. 518+00

+17.44

@ US-54 North Frontage Rd.

E.O.P. Rt.

-2.0%

0.44'

+75

1:199

P.R.C. +61.10

+62.50

+50

+2.0%

0.44'

+43.44 ℄ 151st St. W.

+61 Buried Telephone (AT&T)

+66 Buried Telephone (AT&T)

+68 Buried Telephone (AT&T)

+69 Buried Telephone (AT&T)

+71 Overhead Electric and TV

+07 Sanitary Sewer (8" PVC)

100' V.C.
K-69

+45 Overhead Electric

+00.00 ℄ Wheat Ln.

+07 Gas (KGS 2" Stl.)

+43 Sanitary Sewer (4" PVC Force Main)

+65 Overhead Electric and Telephone

-1.80%

Existing Ground Line

-0.36%

0.50% Sp. Dt. Rt.

-0.90% Sp. Dt. Rt.

Profile Grade Proposed Improvement

1390.42
+25 Rt.

1389.67
+75 Rt.

1388.09
+50 Rt.

6' x Sp. Dt. Rt.

+25

+50

| | | |

SW 1/4, Sec. 26, T27S, R2W

℄ 10' Utility Esmt. ℄ 10' Utility Esmt. ℄

FAWNWOOD ADDITION

Sand

Exist. R/W Fawnwood Dr. Exist. R/W

D-53444

℄ 20' Utility Esmt.

Wichita Friends School, Inc.
D-53445

Conc. Chain Link

D-53446

D-1004-UP

Doris M. Rishel Trust
D-1002-UP

Conc. House Gravel

Sta. 489+00 to Sta. 492+50
Construct 350 L.F. Retaining Wall
See Sh. No. 3

+97.79 Perm. Esmt. 38.51' ℄
+97.69 Perm. Esmt.= Exist. R/W 28.51' ℄
+03.88 Temp. Esmt.= Exist. R/W 38.50' ℄
+03.69 R/W & A/C= Exist. R/W 28.50' ℄
+82.79 Perm. Esmt. 38.51' ℄
+82.69 Perm. Esmt.= Exist. R/W 28.51' ℄
+02.58 R/W & A/C= Exist. R/W 28.50' ℄
+73.73 R/W & A/C 28.49' ℄
+73.76 A/C
+89.99 Temp. Esmt. 41.21' ℄
+98.00 40' Ent.
+56.52 Temp. Esmt. 38.24' ℄
+35.50 15' Ent.
+42.76 R/W 37.55' ℄

Wichita Friends School, Inc.
D-1009-UP

Temp. Esmt. Const. Limits R/W=Exist. R/W R/W & A/C Drainage Esmt. Gravel WW Asphalt R/W=Exist. R/W Temp. Esmt. Const. Limits R/W

1 2 3 4 485 6 7 8 9 490 1 2 3 4 495 6 7

℄ US-54 North Frontage Rd.

Cultivated Field 5 Strand Barb Wire AT&T Exist. R/W Const. Limits 5 Strand Barb Wire Gravel WM Sedgwick County AT-790 Chain Link Asphalt FWM GM 4 Strand Barb Wire Cultivated Field Chain Link Const. Limits 8" KGS Gas (Stl.) Exist. R/W WM WM

+02.51' A/C +72.51' A/C -97.03' A/C -77.03' A/C 24"x48" CMP Asphalt MB

Section Line

Sta. 486+42 Remove Comm. Entrance Concrete

Sta. 486+50 Const. Ditch Plug Rt.

2-MB

Exist. W.Bd. Lanes US-54 Concrete

Sta. 496+44 Remove Entrance, 24" CMP and End Sections

Section Line

1 2 3 4 485 BM#13 6 7 8 9 490 1 2 3 4 495 6 7

℄ Exist. US-54

15" RCP 24" RCP 15" RCP 6" KGS Gas (Stl.) 15" RCP

Concrete MB Exist. E.Bd. Lanes US-54 Concrete

10' Waterline Esmt. Chain Link Exist. R/W 12" Water Chain Link Sign AT&T Asphalt WM FH Barb Wire 2-Fiber Optics Tel. WV 4 Strand Barb Wire 12" Water 24"x44" CMP Exist. R/W

R/W & A/C UNITED INDUSTRIAL ADDITION ① United Auto Parts, Inc. D-53792 30' Drainage Esmt. Chain Link Gravel United Circle AT&T R/W & A/C R/W

Grass Concrete 20' Utility Esmt. Exist. R/W Exist. R/W Cultivated Field

BM#13 Chis."CP" W edge ditch inlet in Kellogg median, 90' ± W of drive to Bldg. #14820. @ Sta. 485+52.21, 126.79' Rt. Elev. 1387.89

United Auto Parts, Inc., etal
AT-187

NW 1/4, Sec. 35, T27S, R2W

UTILITIES

Power	Westar Energy
Telephone	AT&T
Gas	Kansas Gas Service
Cable TV	Cox Communications
Water	City of Goddard Water Dept.

No.	Revision	By	Date

CITY OF WICHITA

PLAN
US-54 NORTH FRONTAGE ROAD
STA. 481+00 TO STA. 497+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 8 of 201

Plotted By: drp Date: 7/14/2014 2:48:41 PM
FILE: i:\2008\08313\Frontage Rd North\Plan\08313-pl481.dgn

From Sta. 473+17.44

North Fr. Rd. Balance Sta. 473+17.44 to Sta. 518+00

To Sta. 518+00

✱ 13391 Cu. Yds. Common Excavation (VMF=0.80)

21100 Cu. Yds. Embankment

✱An Additional 1153 Cu. Yds. To be hauled in from US-54 Balance Sta. 470+00 to Sta. 501+24.90

✱An Additional 3020 Cu. Yds. To be hauled in from 151st St. West Balance Sta. 11+60 to Sta. 19+60.75

✱An Additional 6076 Cu. Yds. To be hauled in from 151st St. West Balance Sta. 20+39 to Sta. 30+40

✱ An Additional 126 Cu. Yds. To be hauled in from Auburn Hills Rd. Balance Sta. 56+00 to Sta. 59+50

✱An Additional 2609 Cu. Yds. To be hauled in from South Fr. Rd. Balance Sta. 473+23.72 to Sta. 525+16.45 (City of Wichita Proj. No. 472-84841)

+49 Buried Telephone (AT&T)

+65 Buried Television (Cox)

+69 Buried Electric

+00 Entrance Lt.

+29 Overhead Electric

+35.50 Entrance Lt.

Ditch Plug
El. 1388.00

Existing Ground Line

Profile Grade Proposed Improvement

-0.36%

-2.16%

150' V.C.
S.S.D.=674'
K=83

1435 1430 1425 1420 1415 1410 1405 1400 1395 1390 1385 1380 1375 1370 1365 1360 1355 1350 1345 1340

1389.51 1389.33 1389.15 1388.97 1388.79 1388.61 1388.43 1388.25 1388.07 1387.89 1387.71 1387.53 1387.35 1387.17 1386.99 1386.81 1386.63 1386.45 1386.27 1386.09 1385.91 1385.73 1385.55 1385.37 1385.19 1385.01 1384.83 1384.74 P.C. +25 1384.61 1384.13 P.I. +00 P.I. Elev.=1384.49 1383.35 1382.85 P.T. +75 1382.31 1381.23 1380.15

1 2 3 4 485 6 7 8 9 490 1 2 3 4 495 6 7

US-54 North Frontage Rd. Sta. 481+00.00 to Sta. 497+00.00

Sheet 9 of 201

Plotted By: drp Date: 7/14/2014 2:48:42 PM
FILE: i:\2008\083I3\Frontage Rd North\Profile\083I3-pr-481.dgn

OFFICE LOCATION
@ US-54 N. Fr. Rd. P.I. Sta. 499+26.97 (Bk.)=
@ US-54 N. Fr. Rd. P.I. Sta. 499+26.96 (Ahd.)
1. Not Set
2. P.I. Curve FR109

2600

SE 1/4, Sec. 26, T27S, R2W

20' Drainage & Utility Esmt.

+02.51 Temp. Esmt.=
1/4℄ 78.47' ℄
+02.32 R/W=
1/4℄ 35.46' ℄

Conc.
Conc.
Pool

Jerry C., Jr. & Sally J. Goodwin
D-1052-UP

Cage

P.C. Sta. 498+77.71

1/4 Section Line

P.T. Sta. 499+76.22

+77.15 R/W
74.33' ℄

+27.15 R/W
74.63' ℄

Sta. 501+00 Const.
Ditch Plug Rt.

Rebah J. Hubbard Revocable Inter Vivos Trust
D-996-UP

+00
℄ 24' Ent.

Temp. Esmt.

+32.15 R/W
36.06' ℄

+72.15 R/W
36.89' ℄

R/W

Const. Limits

FR109

500

1

2

3

4

505

6

7

8

9

510

1

2

3

Tilt Tilt

@ US-54 North Frontage Rd.

22'

Exist. R/W

TR

2 - Barb Wire

RBC

2 - Barb Wire

8" KGS Gas (St.)

8" KGS Gas (St.)

+98.95
A/C.

+38.95
A/C

5 Strand Barb Wire

Exist. R/W

Stone Fence

BM#14

BM#15

Const. Limits

3540

Concrete

Exist. W.Bd. Lanes US-54

Sta. 504+25 Const.
Ditch Plug Rt.

Sta. 504+22 Remove
Entrance

℄ Exist. US-54

Concrete

Concrete

Exist. E.Bd. Lanes US-54

3'x3' RCB

15" RCP

15" RCP

24" RCP

Concrete

MB
Asphalt

AT&T

2-Fiber Optics Tel.

24"x49" CMP

24"x50' CMP

Woven Wire Fence

Woven Wire Fence

5 Strand Barb Wire

Exist. R/W

12" Water

12" Water

Cultivated Field

12" Water

Exist. R/W

United Auto Parts, Inc., etal
AT-187

US-54 Sta. 500+64.9

US-54 Sta. 501+24.9

Chain Link

Chain Link

Chain Link

Gravel

R/W

NW 1/4, Sec. 35, T27S, R2W

Barb Wire

Lagoon

Concrete

House

3500

NE 1/4, Sec. 35, T27S, R2W

CathyMark Colorado Investments, LLC, etal
D-997-UP

AUBURN

West

20' Drainage & Utility Esmt.

+95.32 Temp. Esmt.
84.17' ℄

+95.32 Temp. Esmt.
69.17' ℄

+95.32 R/W
41.17' ℄

+15
℄ 24' Ent.

+35.32 Temp. Esmt.
69.41' ℄

Sta. 510+61, 15' Lt.
Plug Water Well

+05.52 R/W & A/C=
Temp. Esmt. 50.98' ℄

R/W & A/C

Temp. Esmt.

Const. Limits

WW Vault

24" Oak

15" Ced

12" Oak

22'

20' GRV

Stone Fence

Barb

+82.32
A/C

+53.52
A/C

+14.76

R/W

Ctr. Sec. 26, T27S, R2W (2600)
1. Found 3/4" iron pipe
2. 3 nails north face 20" osage orange 7.23' WSW
3. 3 nails south face 18" osage orange 8.30' SE
4. 3 nails east face 20" mulberry 32.81' NE

N1/4Cor. Sec. 35, T27S, R2W (3540)
1. Found 5/8" rebar in thimble
2. Ctr. west bound lanes 10.76' N
3. Ctr. east bound lanes 43.57' S
4. Nail & shiner north face power pole 109.43' SSE
5. 3 nails SE face power pole 154.38' NW

Ctr. Sec. 35, T27S, R2W (3500)
1. Not Found

FR109 Curve Data
P.I. Sta. 499+26.97 (Bk.)=
P.I. Sta. 499+26.96 (Ahd.)
Δ=00° 21' 00" (Rt.)
R=16,127.00'
T=49.26'
L=98.51'
E=0.08'
Super=N.C.

BM#14 Chis. "D" center N hubguard RCB, 135' ± E of S1/4Cor. Sec. 26, T27S, R2W.
@ Sta. 500+39.09, 52.51' Rt. Elev. 1369.94

BM#15 Chis. "D" E corner RCB Headwall, 100' ± W of drive to house #13728.
@ Sta. 509+95.62, 53.35' Rt. Elev. 1370.57

UTILITIES

Power	Westar Energy
Telephone	AT&T
Gas	Kansas Gas Service
Cable TV	Cox Communications
Water	City of Goddard Water Dept.

No.	Revision	By	Date

CITY OF WICHITA
PLAN
US-54 NORTH FRONTAGE ROAD
STA. 497+00 TO STA. 513+00
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 10 of 201

Plotted By: drp Date: 7/14/2014 2:48:43 PM
FILE: i:\2008\08313\Frontage Rd North\Plan\08313-pl497.dgn

From Sta. 473+17.44

For Earthwork Balance See Sh. No. 9

To Sta. 518+00

+00 Prop. 6'x6'x315'-8" RCB

+00 Entrance Lt.

+15 Entrance Lt.

+62 Overhead Electric

200' V.C. K=75

Ditch Plug El. 1372.86

Ditch Plug 1373.00

Profile Grade Proposed Improvement

Existing Ground Line

-2.16%

-2.20% Sp. Dt. Rt.

+0.85% Sp. Dt. Rt.

-0.30% Sp. Dt. Rt.

+0.40% Sp. Dt. Rt.

+2.60% Sp. Dt. Rt.

+0.50%

0.80% Sp. Dt. Rt.

+0.72% Sp. Dt. Rt.

-0.30% Sp. Dt. Rt.

+1.20% Sp. Dt. Rt.

+0.40% Sp. Dt. Rt.

1375.20 +50 Rt.

1371.02 +40 Rt.

1371.36 +80 Rt.

1369.86 +35 Rt.

1369.74 +75 Rt.

1370.34 +25 Rt.

1372.29 +00 Rt.

1372.35 +50 Rt.

1371.15 +00 Rt.

1372.95 +50 Rt.

1372.50 +00 Rt.

1373.70 +00 Rt.

1374.30 +50 Rt.

Varies x Sp. Dt. Rt.

Varies x Sp. Dt. Rt.

Varies x Sp. Dt. Rt.

+50 +80 +35 +00 +50 +50

1380.15 1379.07 1377.99 1376.91 1375.83 1374.75 1373.67 1373.13 P.C. +25 1372.63 1371.88 1371.64 P.I. +25 P.I. Elev.=1370.97 +35 1371.47 1371.39 1371.47 P.T. +25 1371.60 1371.85 1372.10 1372.35 1372.60 1372.85 1373.10 1373.35 1373.60 1373.85 1374.10 1374.35 1374.60 1374.85 1375.10 1375.35 1375.60 1375.85 1376.10 1376.35 1376.60 P.C. +50 1376.68

7 8 9 500 1 2 3 4 505 6 7 8 9 510 1 2 3

1435 1430 1425 1420 1415 1410 1405 1400 1395 1390 1385 1380 1375 1370 1365 1360 1355 1350 1345 1340

Plotted By: drp Date: 7/14/2014 2:48:44 PM
FILE: i:\2008\0831\Frontage Rd North\Profile\0831-pr497.dgn

OFFICE LOCATION
@ US-54 N. Fr. Rd. P.I. Sta. 515+89.10 (Bk.)=
@ US-54 N. Fr. Rd. P.I. Sta. 515+89.10 (Ahd.)
1. Not Set
2. P.I. Curve FRI10

OFFICE LOCATION
@ US-54 N. Fr. Rd. P.I. Sta. 518+00.07
Deflection Angle = 00° 35' 52" Rt.
1. Not Set

Sta. 514+57 Remove Area Inlet, 15" RCP E.P. and End Sections

@ US-54 North Frontage Rd. Sta. 514+90.06= (2103)
℄ Auburn Hills Rd. Sta. 60+00

STA. 518+00.07 END
PROJ. NO. KA-2289-01

FELLOWSHIP ACRES ADDITION
Evangel Presbyterian Church, Wichita, KS D-53971

AUBURN HILLS 15TH ADDITION
West Wichita Development, Inc. D-59309

+13.02 R/W & A/C
52.19' ℄

+82.23 R/W & A/C=
Exist. R/W 23.19' ℄

+67.81 R/W & A/C=
Exist. R/W 11.98' ℄

+92.22 A/C

+27.73 A/C

+65.31 A/C

+83.92 A/C=
Exist. R/W 130.39' ℄

Sedgwick County
SW 1/4, Sec. 25, T27S, R2W

Sedgwick County
SE 1/4, Sec. 26, T27S, R2W

P.C. Sta. 515+75.00
P.T. Sta. 516+03.20
P.I. Sta. 518+00.07 Match Exist.

@ US-54 North Frontage Rd.
℄ Exist. US-54
℄ Auburn Hills Rd.
℄ 135th St. W.
℄ Kellogg
Section Line

R/W & A/C
R/W=Exist. R/W
Exist. R/W
Future R/W & A/C
Temp. Esmt.
10' Utility Esmt.
Const. Limits
Exist. W.Bd. Lanes US-54
Exist. E.Bd. Lanes US-54
Cultivated Field
Traffic Camera
Traffic Elec. Box
2-Fiber Optic Tel.
5 Strand Barb Wire
12" Water
Chain Link
Barb Wire
Wrought Iron Fence
Irrigation Valve
Sidewalk
Building
Crosses
Asphalt
Concrete
Brush
Sign
FRI10

2-30"x19" RCP
30" RCP (Plugged & Filled)
24" RCP
8" KGS Gas (Stl.)
4" KGS Gas (Stl.)
AT&T
BM*16R
BM*16D
3-DM
2-DM
5-DM

2660
3550
3560

FRI10 Curve Data
P.I. Sta. 515+89.10 (Bk.)=
P.I. Sta. 515+89.10 (Ahd.)
Δ=01° 36' 56" (Lt.)
R=1,000.00'
T=14.10'
L=28.20'
E=0.10'
Super=N.C.

E 1/4 Cor. Sec. 26, T27S, R2W (2660)
1. Found 1" iron pipe
2. Chis. "+" east hdwl. RCB 15.01' SE
3. Chis. "+" west hdwl. RCB 15.03' SW
4. 60d nail NE face 10" Elm 34.32' NW
5. Nail/shiner NW face power pole 59.52' NE

NE Cor. Sec. 35, T27S, R2W (3550)
1. Found 5/8" rebar in thimble
2. Ctr. east bound lanes 6.46' S
3. Ctr. west bound lanes 47.93' N
4. KDOT nail/washer east face power pole 70.26' SW
5. KDOT nail/washer west face power pole 96.67' SE
6. 3 nails south face power pole 114.20' NW

E 1/4 Cor. Sec. 35, T27S, R2W (3560)
1. Found 1" iron pipe
2. 3 nails south face power pole 43.64' NW
3. Chain link fence to east 40.03' N
4. RR crossing sign 43.96' SSE
5. Ctr. drive to house #1940 78.08' N

BM#16D RR Spike in N face power pole, 80' ± N of ℄ Kellogg, 460' W of ℄ 135th St. W.
@ Sta. 520+58.97, 37.55' Rt. Elev. 1372.52

BM#16R Chis. "O" center front curb inlet on W side 135th St. W., 350' ± N of ℄ Kellogg.
@ Sta. 525+11.70, 93.97' Lt. Elev. 1358.48

UTILITIES

Power	Westar Energy
Telephone	AT&T
Gas	Kansas Gas Service
Cable TV	Cox Communications
Water	City of Goddard Water Dept.
Water	Wichita Water Utilities

No.	Revision	By	Date

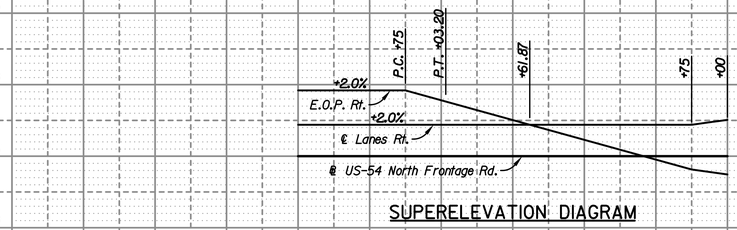
CITY OF WICHITA
PLAN
US-54 NORTH FRONTAGE ROAD
STA. 513+00 TO STA. 518+00
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 12 of 201

Plotted By: drp Date: 7/14/2014 2:48:45 PM
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SUPERELEVATION DIAGRAM

From Sta. 473+17.44 — For Earthwork Balance See Sh. No. 9 — +00

Auburn Hills Rd. Balance Sta. 59+00 to Sta. 59+70

* 136 Cu. Yds. Common Excavation (VMF=0.80)

8 Cu. Yds. Embankment

* Includes 126 Cu. Yds. To be hauled to North Fr. Rd. Balance Sta. 473+17.44 to Sta. 518+00

+60 Buried Television
+61 Buried Electric
+90.06 Auburn Hills Rd.
+89 Buried Electric
+13 2-24" RCP
100' V.C. K=128
Existing Ground Line
Profile Grade Proposed Improvement
-1.48%
-0.70%
150' V.C. S.S.D.=620' K=76
1373.42 +50 Rt.
-3.30% Sp. Dt. Rt.
1370.66 +88 Lt.
1370.95 +25 Rt.
-1.30% Sp. Dt. Rt.
1369.20 +50 Lt.
-0.90% Sp. Dt. Lt.
1369.32 +50 Rt.
+88
"Vee" x Sp. Dt. Lt.
+50
"Vee" x Sp. Dt. Rt.
+50
1376.68
1376.60 P.I. +25
P.I. Elev.=1376.59'
1376.44
1375.86 P.T. +00
1375.12
1374.38
1373.64
1372.90
1372.16 P.C. +50
1371.52 P.I. +00
P.I. Elev.=1371.42
1371.07 P.T. +50
+50
1370.72 P.I. +00.07
Match Existing

3 4 5/5 6 7 8

Plotted By: drp Date: 7/14/2014 2:48:45 PM
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℄ 151st St. W. P.I. Sta. -6+80.88
E1/4Cor. Sec. 27, T27S, R2W
1. See References Below

℄ 151st St. W. P.I. Sta. 19+62.43
NE Cor. Sec. 34, T27S, R2W
1. See References Below

℄ 151st St. W. Sta. 16+50
℄ North Frontage Rd. Sta. 472+43.44
℄ US-54 Sta. 472+91.65, 349.99' Lt.

Sta. 14+45 Remove
24" (CRP) (RCP)
and End Sections

Sta. 14+45 Install
24" x 38" x 67' (CRP) (RCPHE)
w/End Sections
See Sh. No. 65

Sta. 14+89 Install
24" x 46' E.P. Lt. (ACSP, FEP, PVC and RCP)
w/End Sections
See Sh. No. 64, 66-69

Sta. 9+52 Install
24" x 38" x 42' (CRP) (RCPHE)
w/End Sections
See Sh. No. 65

Sta. 14+74 Construct
Concrete Ditch Lining (Backslope) Rt.
See Sh. No. 62

Sta. 9+87 Remove
28"x28" (CMP) (CRP)
and End Sections

Sta. 15+87 Remove
Buried Culvert

Sta. 17+03 Remove
12" PVC E.P.
and End Sections

Sta. 18+71 Remove
18" CMP E.P.
and End Sections

Sta. 15+76 Remove
2-12" CIP E.P.
and End Sections

Sta. 15+41 Construct
Concrete Ditch Lining (Backslope) Rt.
See Sh. No. 62

℄ 151st St. W. Sta. 15+04.43=
℄ Woodbine Ln. Sta. 10+00

+23.49 R/W & A/C 100' ℄
+98.72 R/W & A/C 75' ℄
+78.72 R/W & A/C 75' ℄
+23.72 Temp. Esmt.- R/W & A/C 75' ℄
+23.63 Temp. Esmt. 85' ℄
+89 ℄ 20' Esmt. +108.72 A/C
+38.25 R/W= Exist. R/W 125' ℄
+86.72 R/W & A/C 75' ℄
+68.63 Temp. Esmt.- Exist. R/W 85' ℄
+68.72 R/W= Temp. Esmt. & Exist. R/W 75' ℄
+68.82 R/W & A/C 65' ℄
+32.93 R/W & A/C- Exist. R/W 50' ℄
+29.99 R/W & A/C 58.35' ℄
+59.91 R/W & A/C= Exist. R/W 50' ℄
+00.07 R/W & A/C 66.70' ℄
+70.15 R/W & A/C= Exist. R/W 75' ℄
+90.25 R/W & A/C 85' ℄
+40.72 R/W & A/C 135' ℄
+91.96 R/W & A/C 264' ℄
+41.96 R/W & A/C 264' ℄
+40.25 R/W & A/C= Exist. R/W 85' ℄
+41.96 R/W & A/C= Exist. R/W 264' ℄

Exist. R/W
Future R/W & A/C
Const. Limits
℄ Wheat Ln.
℄ 151st St. W.-Section Line
℄ Exist. US-54
℄ US-54 North Frontage Rd.
℄ 20' Drainage & Utility Esmt.
℄ 20' Drainage & Utility Esmt.
℄ 10' Utility Esmt.
℄ 40' Drainage Esmt.
℄ 5' Esmt.
℄ 7.5' Woodbine Ln.
℄ Tapestry Ln.
℄ Lynndale St.
℄ Exist. US-54
Edge of Water
Sidewalk
Asphalt Lynndale St.
Chain Link
Drainage Esmt.
Gravel
Concrete
Asphalt
Woven Wire
Barbed Wire
Wood Fence
Oneok
Cox
AT&T
Sign
Mailbox
Planter
Gate Post
Cable Gate
Buried Culvert
Mobile Home
House
Conc. Limits
Const. Limits
Chain Link
Drainage Esmt.
Exist. R/W
Exist. R/W
Exist. R/W

151st St. West Balance Sta. 11+60 to Sta. 19+60.75

* 3454 Cu. Yds. Common Excavation (VMF=0.80)
559 Cu. Yds. Embankment

* Includes 3020 Cu. Yds. To be hauled to North Fr. Rd. Balance Sta. 473+17.44 to Sta. 518+00

+60 — +60.75

+45.24 x 38' CRP (RCPHE)
+63 Buried Telephone (AT&T)
+89 Entrance Lt.
+98 Sanitary Sewer (8" PVC)
+04.43 ℄ Woodshire Ln.
+69 Overhead Electric
+93 Sanitary Sewer (8" PVC)
+00 Buried Telephone (AT&T)
+50 ℄ US-54 North Frontage Rd.
+68 Overhead Electric
+10 Buried Television (Coax)
+12 Overhead Electric
+18 Gas (K&S 8" STL)
+24 Buried Telephone (AT&T)
+00 US-54

100' V.C.
K=125

150' V.C.
K=114

Profile Grade Proposed Improvement

-0.20%
+0.60%
+1.92%
+2.55% Sp. Dt. Rt.
+2.65% Sp. Dt. Lt.

Existing Ground Line

1397.28 +25 Rt.
1396.08 +20 Lt.

+0.20% Sp. Dt. Rt. 1390.87 +60 Lt.
1390.61 +55 Rt.
-0.40% Sp. Dt. Lt.
1391.10 +00 Rt.
1390.21 +25 Lt.
-1.30% Sp. Dt. Rt.
-0.93% Sp. Dt. Lt.
1389.22 +45 Rt.
1388.95 +60 Lt.
+0.50% Sp. Dt. Rt.
1389.74 +50 Rt.
+0.54% Sp. Dt. Lt.
+1.20% Sp. Dt. Rt.
1391.54 +00 Rt.
1390.25 +00 Lt.

Pr. Gr.=1393.59
Proposed ℄ Lt.=1389.03
Proposed ℄ Rt.=1389.22

+60 — +20: 6' x Sp. Dt. Lt.
+55 — +25: 6' x Sp. Dt. Rt.

1392.60 P.I. +60 Match Existing
1392.52 P.C. +00
1392.52 P.I. +50 P.I. Elev.=1392.42
1392.72 P.T. +00
1393.02
1393.32
1393.62
1393.92
1394.22
1394.52
1394.82 P.C. +50
1395.23
1395.52 P.I. +25 P.I. Elev.=1395.27
1395.86
1396.71 P.T. +00
1397.67
1398.63
1399.59
1399.80 P.I. +60.75 Match Existing

1440 1435 1430 1425 1420 1415 1410 1405 1400 1395 1390 1385 1380 1375 1370 1365 1360 1355 1350 1345

10 1 2 3 4 15 6 7 8 9 20

151st Street West Sta. 11+60.00 to Sta. 19+60.75

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℄ 151st St. W. P.I. Sta. 45+94.30
E1/4 Cor. Sec. 34, T27S, R2W
1. See References Below

Sta. 21+00 Install 24" x 38" x 95' (CRP) (RCPHE) w/End Sections See Sh. No. 65

KDOT Proj. No. KA 2285-01
COW Proj. No. 472-84841

Sta. 22+22 Remove 24" CMP E.P. and End Sections

Sta. 25+35 Install 18" x 51' E.P. Lt. (ACSP, PEP, PVC and RCP) w/End Sections See Sh. No. 64, 66-69

Sta. 26+62.55 Install 18" x 51' E.P. Lt. (ACSP, PEP, PVC and RCP) w/End Sections See Sh. No. 64, 66-69

Sta. 26+65 Remove 21"x15" CMP E.P. and End Sections

Sta. 27+52 Install 18" x 44' E.P. Lt. (ACSP, PEP, PVC and RCP) w/End Sections See Sh. No. 64, 66-69

Sta. 27+52 Remove 18" CMP E.P. and End Sections

Sta. 21+83 Remove 24" RCP E.P. and End Sections

Sta. 23+71 Remove Entrance 18" CMP E.P. and End Sections

Sta. 20+66 Remove 30" (CRP) (RCP) and End Sections

℄ 151st St. W. Sta. 23+40=
@ US-54 South Frontage Rd. Sta. 472+37.72 (2004)
℄ US-54 Sta. 472+86.66, 340.80' Rt.

+60.71 R/W & A/C 136.69' ℄
+68.91 R/W & A/C 100' ℄
+93.22 R/W & A/C 75' ℄
+23.04 R/W & A/C 75' ℄
+55.72 75' ℄
+55.86 R/W= Exist. R/W 50' ℄
+18.06 R/W= Exist. R/W 50' ℄
+92.89 R/W= Exist. R/W 50' ℄
+91.99 R/W & A/C= Exist. R/W 466.20' ℄
+43.51 R/W & A/C 90' ℄
+79.11 R/W & A/C 142' ℄
+80.85 A/C ①
+81.32 A/C ①
+82.92 R/W & A/C 466.20' ℄
+61.99 R/W & A/C 466.20' ℄
+95.51 R/W & A/C 90' ℄
+70.57 R/W & A/C 115' ℄
+70.57 R/W & A/C 265' ℄
+79.29 R/W 78.57' ℄
+49.89 R/W 90' ℄
+95.07 R/W 59.53' ℄
+02.95 R/W 50' ℄
+10.95 R/W 50' ℄

P.I. +38.47 99.26' Lt.
P.I. +39.50 93.61' Rt.
P.I. +40 26' Rt.
P.I. +00 20' Lt.
P.I. +46.67 14.50' Lt.
P.I. +62.55
P.I. +00 20' Rt.
P.I. +73.33 14.50' Lt.
P.I. +73.33 6' Rt.
+09.89 A/C
+15.72 A/C
+35 ℄ 30' Ent.
+10 ℄ 20' Ent.
+52 ℄ 30' Ent.

Future R/W & A/C
R/W & A/C
R/W
R/W-Exist. R/W
Const. Limits
℄ 151st St. W.-Section Line
℄ US-54 South Frontage Rd.
Temp. Esmt.
NW 1/4, Sec. 35, T27S, R2W
NE 1/4, Sec. 34, T27S, R2W
20' Drainage & Utility Esmt.
10' Utility Esmt.
20' Utility Esmt.
Saw Cut
Chain Link
Barb Wire
Woven Wire
Septic Tank
Exist. R/W
Exist. W. Bd. Lanes US-54
Exist. E. Bd. Lanes US-54
Section Line
Exist. 1/S-54
Exist. R/W
Exist. 12" Water
Exist. 4" KGS Gas (St.)
Exist. 6" KGS Gas (St.)
Exist. 4" KGS Gas (Sil.)
Exist. 8" KGS Gas (Onaok)
Exist. 30" RCP
Exist. 24"x46" CMP
Exist. 24"x38" CMP
Exist. 24"x44" CMP
Exist. 2-24"x45" CMP
Exist. 24"x18" RCP
Exist. 24"x18" CMP
Exist. 24"x15" CMP
Exist. 21"x15" CMP
Exist. 18" CMP
Exist. 2-DM
Exist. TWH
Exist. FH
Exist. PWR
Exist. TWR
Exist. GTV
Exist. Elec. & TV
Exist. Ovhd. Elec. & TV
Exist. 18" PVC Flagpole
Exist. Building
Exist. Sign
Exist. Gravel
Exist. Concrete
Exist. Asphalt
Exist. Chain Link
Exist. Woven Wire
Exist. Barb Wire
Exist. Split Rail
Exist. Gate Post
Exist. Gate
Exist. Oneok
Exist. Gravel Drive
Exist. Asphalt Drive
Exist. Concrete Drive
Exist. Gravel Drive
Exist. Concrete Drive
Exist. Asphalt

151st St. West Balance Sta. 20+39 to Sta. 30+40

* 6408 Cu. Yds. Common Excavation (VMF=0.80)
266 Cu. Yds. Embankment

*Includes 6076 Cu. Yds. To be hauled to North Fr. Rd. Balance Sta. 473+17.44 to Sta. 518+00

+39 | +40

+00 ℄ US-54

+85 Waterline

+00 24" x 38" CAP (ROPHE)

Gas (K6S 2" Stl.)

+40 ℄ South Frontage Rd.

+35 Entrance Lt.

+70 Entrance Rt.

+62.55 Entrance Lt.

+52 Entrance Lt.

200' V.C.
K=82

Existing Ground Line

Profile Grade Proposed Improvement

-0.03%

+1.76%

-0.38%

-1.20%

-0.30% Sp. Dt. Lt.

+0.30% Sp. Dt. Rt.

-1.20% Sp. Dt. Lt.

-0.30% Sp. Dt. Lt.

-1.45% Sp. Dt. Rt.

1396.02 +75 Rt.

1394.35 +75 Lt.

+0.80% Sp. Dt. Lt.

-2.00% Sp. Dt. Rt.

1395.52 +00 Rt.

1394.55 +00 Lt.

+2.30% Sp. Dt. Lt.

1396.85 +00 Lt.

+1.50% Sp. Dt. Rt.

1398.25 +00 Lt.

+1.40% Sp. Dt. Lt.

1398.52 +00 Rt.

1399.85 +60 Lt.

200' V.C.
S.S.D.=604'
K=93

1399.27 +50 Rt.

1399.54 +00 Rt.

1399.05 +25 Lt.

-0.60% Sp. Dt. Rt.

100' V.C.
S.S.D.=136'
K=122

1397.85 +25 Lt.

1397.41 +73.33 Lt.

1397.89 +75 Rt.

1395.50 +40 Rt.

Pr. Gr.=1399.51
Proposed ℄ Lt.=1394.55
Proposed ℄ Rt.=1395.52

+75 | +00 — 6' x Sp. Dt. Lt.

+60 | +50 — 6' x Sp. Dt. Lt.

+50 | +73.33 — "Vee" x Sp. Dt. Lt.

+75 | +50 — 6' x Sp. Dt. Rt.

+00 | +40 — 6' x Sp. Dt. Rt.

| | | |

OFFICE LOCATION
℄ US-54 P.I. Sta. 446+65.79
1. Not Set

OFFICE LOCATION
℄ US-54 P.I. Sta. 472+89.04
Deflection Angle = 00°00'07" Rt.
1. Not Set

eddie N. Booher
D-53463

Coleman C. & Becky L. Lockett
D-52177

Smith & Company, Inc.
D-1051-UP

James Perkins Trust
D-1007-UP

Wichita Friends School, Inc.
D-1009-UP

Southborough Partners
D-1061-UP

David A. & Cheryl A. Calvin
AT-187-1A

United Auto Parts, Inc.
D-53792

Sta. 477+19 Remove Entrance, 12" CIP and End Sections

Sta. 475+05 Remove Comm. Entrance, 24" CMP and End Sections

Sta. 477+34 Remove Entrance, 24" CMP and End Sections

Sta. 470+97 Remove Entrance, 24" CMP and End Sections

Sta. 472+20 Extend 15" x 67' RCP with 15" x 10' RCP Rt. w/End Section See Sh. No. 60, 64

℄ US-54 Sta. 472+88.48= ℄ 151st St. W. Sta. 20+00 (1012)

SW 1/4, Sec. 26, T27S, R2W

NE 1/4, Sec. 34, T27S, R2W

NW 1/4, Sec. 35, T27S, R2W

Future R/W & A/C

R/W & A/C

Const. Limits

Asphalt

Concrete

Gravel

Woven Wire

Chain Link

Ovhd. Elec. & Tel.

Sign

Post

Cable Gate

Cultivated Field

5 Strand Barb Wire

Section Line

12" Water

10" Waterline Esmt.

2-Fiber Optics Tel.

Temp. Esmt.

30" Drainage Esmt.

UNITED INDUSTRIAL ADDITION

3450

90°54'43"

89°55'10"

89°41'34"

89°50'30"

BM#12A RR Spike 'W' face power pole @ San. Sewer Lift Station E. side 151st St. W. Just S. of Woodbine Lane. @ Sta. 472+71.07, 60.32' Lt. Elev. 1394.78

BM#13 Chis."D" W. edge ditch inlet in Kellogg median, 90' ± W. of drive to Bldg. #14820. @ Sta. 485+52.21, 126.79' Rt. Elev. 1387.89

NE Cor. Sec. 34, T27S, R2W
1. Found ⅝" rebar in thimble
2. Ctr. west bound lanes — 10.32' S
3. Ctr. east bound lanes — 64.46' SW
4. Ctr. R/W monument — 120.38' SW
5. Ctr. R/W monument — 130.61' SE
6. Ctr. R/W monument — 59.14' NE
7. Ctr. R/W monument — 51.57' NW

① Future 40' A/C break upon 151st St. W. Interchange construction.

UTILITIES

Power	Westar Energy
Telephone	AT&T
Communications	Kansas Fiber Network
Gas	Black Hills Energy
Gas	Kansas Gas Service
Cable TV	Cox Communications
Water	City of Goddard Water Dept.
Sanitary Sewer	Wichita Water Utilities
Pipeline	Oneok

US-54 Balance Sta. 470+00 to Sta. 501+24.90

* 1506 Cu. Yds. Common Excavation (VMF=0.80)
283 Cu. Yds. Embankment
*Includes 1153 Cu. Yds. To be hauled to North Fr. Rd. Balance Sta. 473+17.44 to Sta. 518+00

+20 15" RCP Extension

℄ US-54 Sta. 472+90.58

1400.54 +00 Rt.

-2.10% Sp. Dt. Rt.

1396.02 +15 Rt.

Proposed ℄ Rt.=1396.02

1394.35 +70 Rt.

-0.80% Sp. Dt. Rt.

1393.51 +75 Rt.

Existing Ground Line

-1.30% Sp. Median Dt.

1395.24 +74.39 Med.

1392.31 +00 Med.

-1.00% Sp. Median Dt.

1390.21 +10 Med.

Standard Dt. Lt.

Sp. "Vee" Med. Dt.

10' x Sp. Dt. Rt.

No Sp. Dt. Rt.

10' x Sp. Dt. Rt.

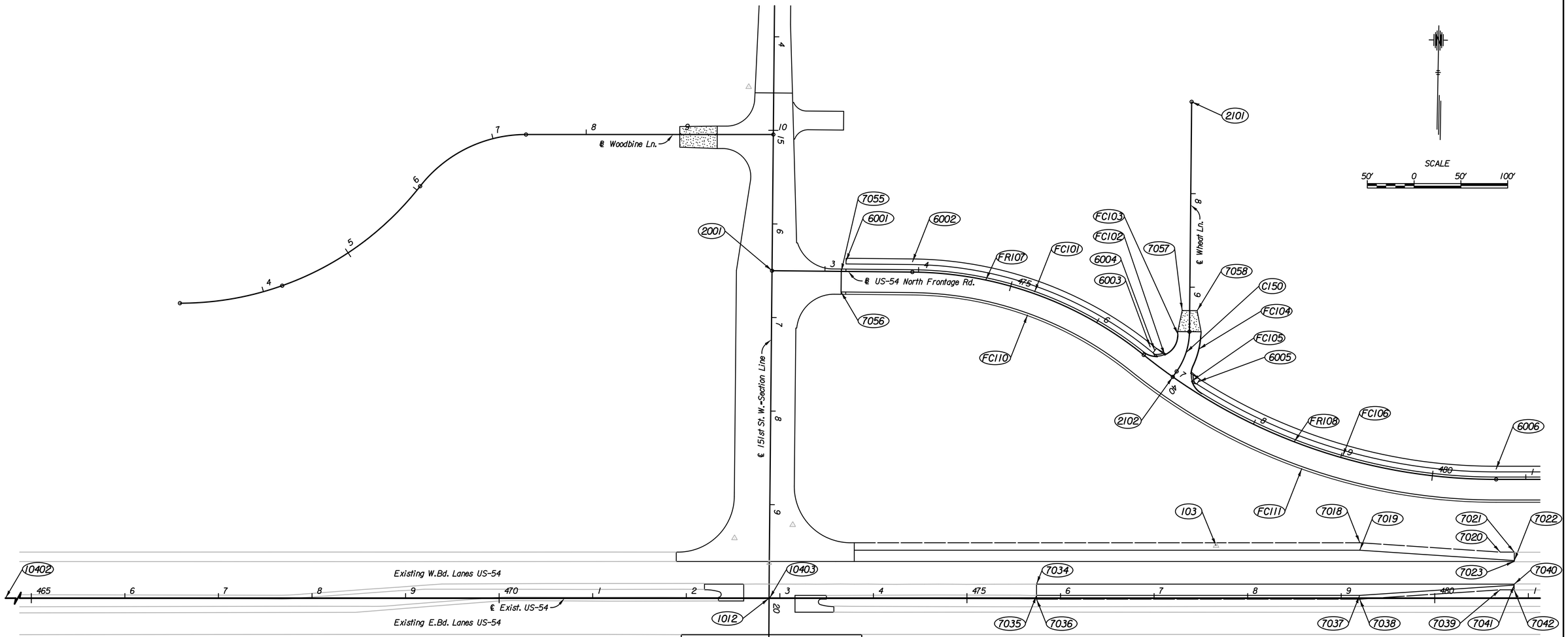
CITY OF WICHITA
PLAN AND PROFILE
KELLOGG LANE ADDITIONS
SEDGWICK CO.
PROJECT NO. KA 472-84840

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

Job No. 08313
Date June, 2014
Designed by CKC
Drawn by DRP

Sheet 18 of 201

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CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
103	1,677,296.0000	1,597,608.9290	478+16.55	134.70' Rt.	Monument HCP
1012	1,677,231.8579	1,597,132.1327	472+88.48	0.00' Rt.	℄ Exist. US-54
2001	1,677,581.8466	1,597,129.3500	472+43.44	0.00' Rt.	℄ US-54 North Frontage Rd.
2101	1,677,769.9854	1,597,574.6810	37+01.85	0.00' Rt.	℄ Wheat Ln.
2102	1,677,475.6878	1,597,559.5561	40+00.00	0.00' Rt.	℄ Wheat Ln.
10402	1,677,187.1812	1,594,509.8221	466+65.79	0.00' Rt.	℄ Exist. US-54
10403	1,677,231.8675	1,597,132.6964	472+89.04	0.00' Rt.	℄ Exist. US-54

COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7018	1,677,301.8336	1,597,762.4037	479+19.85	59.25' Lt.	Edge of Shoulder P.I.
7019	1,677,293.8348	1,597,762.5397	479+19.85	51.25' Lt.	Edge of Pavement P.I.
7020	1,677,294.3853	1,597,912.5520	480+69.85	49.25' Lt.	Edge of Shoulder P.I.
7021	1,677,294.6413	1,597,927.6050	480+84.91	49.25' Lt.	Edge of Shoulder
7022	1,677,285.6389	1,597,927.7581	480+84.91	40.25' Lt.	Edge of Pavement
7023	1,677,284.6427	1,597,927.1750	480+84.91	39.25' Lt.	Edge of Pavement
7034	1,677,251.7166	1,597,417.7406	475+74.39	15.00' Lt.	Edge of Pavement
7035	1,677,239.7183	1,597,417.9446	475+74.39	3.00' Lt.	Edge of Pavement
7036	1,677,235.7189	1,597,418.0127	475+74.39	1.00' Rt.	Edge of Shoulder
7037	1,677,245.5898	1,597,763.2412	479+19.73	3.00' Lt.	Edge of Pavement P.I.
7038	1,677,241.5903	1,597,763.3092	479+19.73	1.00' Rt.	Edge of Shoulder P.I.
7039	1,677,254.1391	1,597,913.1175	480+69.73	9.00' Lt.	Edge of Shoulder P.I.
7040	1,677,260.3957	1,597,928.1565	480+84.88	15.00' Lt.	Edge of Pavement
7041	1,677,259.4054	1,597,928.1733	480+84.88	14.01' Lt.	Edge of Pavement
7042	1,677,254.3966	1,597,928.2585	480+84.88	9.00' Lt.	Edge of Shoulder
7055	1,677,582.4018	1,597,203.3479	473+17.44	0.00' Rt.	Edge of Pavement P.I.
7056	1,677,560.4024	1,597,203.5130	473+17.44	22.00' Rt.	Edge of Pavement P.I.
7057	1,677,546.7848	1,597,568.3555	39+25.00	8.00' Rt.	Edge of Pavement
7058	1,677,546.9049	1,597,584.3550	39+25.00	8.00' Lt.	Edge of Pavement

See Sh. No. 25 for Sidewalk Coordinate Table (Point Nos. 6001-6013)

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
FR107	38°20'22" Rt.	400.00'	139.06'	267.66'	23.48'	1,677,582.9720	1,597,279.3458	1,677,584.0154	1,597,418.3997	1,677,498.5759	1,597,528.1137	1,677,182.9833	1,597,282.3470
FR108	38°53'01" Lt.	600.00'	211.79'	407.19'	36.28'	1,677,498.5759	1,597,528.1137	1,677,368.4509	1,597,695.2092	1,677,372.0515	1,597,906.9648	1,677,971.9648	1,597,896.7639
C150	34°37'30" Rt.	75.00'	23.38	45.32'	3.56'	1,677,524.2958	1,597,576.5245	1,677,500.9186	1,597,576.6999	1,677,481.5821	1,597,563.5612	1,677,523.7331	1,597,501.5266
FC101	37°58'37" Rt.	402.00'	138.33'	266.45'	23.13'	1,677,584.9720	1,597,279.3308	1,677,586.0096	1,597,417.6558	1,677,501.7106	1,597,527.3304	1,677,182.9833	1,597,282.3470
FC102	122°06'52" Lt.	23.00'	41.59'	49.02'	24.53'	1,677,501.7106	1,597,527.3304	1,677,476.3645	1,597,560.3061	1,677,517.7688	1,597,564.2436	1,677,519.9463	1,597,541.3469
FC103	05°51'44" Lt.	63.00'	3.23'	6.45'	0.08'	1,677,517.7688	1,597,564.2436	1,677,520.9801	1,597,564.5490	1,677,524.2058	1,597,564.5248	1,677,523.7331	1,597,501.5266
FC104	24°45'42" Rt.	87.00'	19.10'	37.60'	2.07'	1,677,524.3859	1,597,588.5241	1,677,505.2888	1,597,588.6674	1,677,487.8875	1,597,580.7988	1,677,523.7331	1,597,501.5266
FC105	83°27'50" Lt.	23.00'	20.52'	33.50'	7.82'	1,677,487.8875	1,597,580.7988	1,677,459.1945	1,597,572.3462	1,677,458.6690	1,597,589.9556	1,677,478.4111	1,597,601.7569
FC106	31°50'31" Lt.	598.00'	170.58'	332.34'	23.85'	1,677,458.6690	1,597,589.9556	1,677,371.1511	1,597,736.3745	1,677,374.0513	1,597,906.9308	1,677,971.9648	1,597,896.7639
FC110	38°20'22" Rt.	376.00'	130.71'	251.60'	22.07'	1,677,558.9727	1,597,279.5259	1,677,559.9534	1,597,410.2365	1,677,479.6403	1,597,513.3677	1,677,182.9833	1,597,282.3470
FC111	38°53'01" Lt.	624.00'	220.26'	423.48'	37.73'	1,677,479.6403	1,597,513.3677	1,677,344.3103	1,597,687.1470	1,677,348.0550	1,597,907.3728	1,677,971.9648	1,597,896.7639

No.	Revision	By	Date

CITY OF WICHITA

US-54 NORTH FRONTAGE ROAD COORDINATE GEOMETRY PLAN STA. 472+43.44 TO STA. 481+00

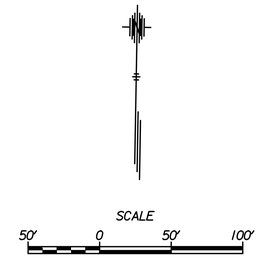
PROJECT NO. 472-84840 SEDGWICK CO.

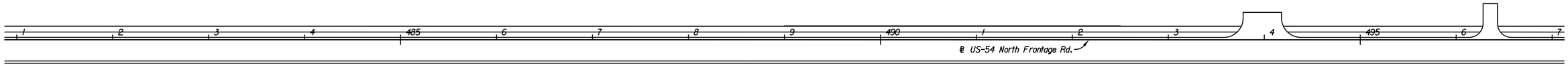
PEC
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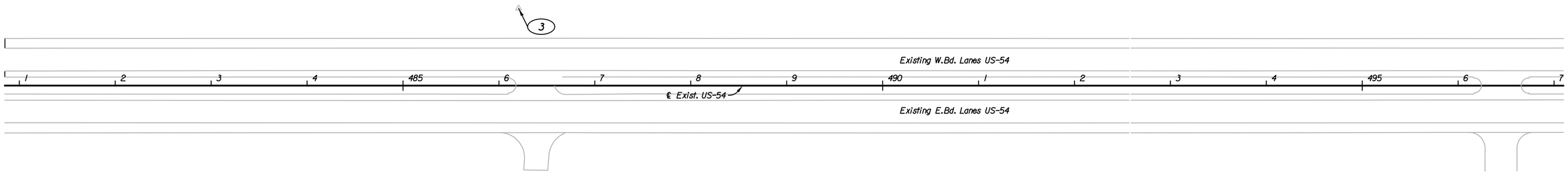
Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 19 of 201

Plotted By: drp Date: 7/14/2014 2:48:52 PM
FILE: i:\2008\08313\Frontage Rd North\Geometry\08313-Geo467.dgn







CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
3	1,677,335.1160	1,598,462.5810	486+23.20	46.38' Rt.	Monument HCP

No.	Revision	By	Date

CITY OF WICHITA

US-54 NORTH FRONTAGE ROAD COORDINATE GEOMETRY PLAN STA. 481+00 TO STA. 497+00

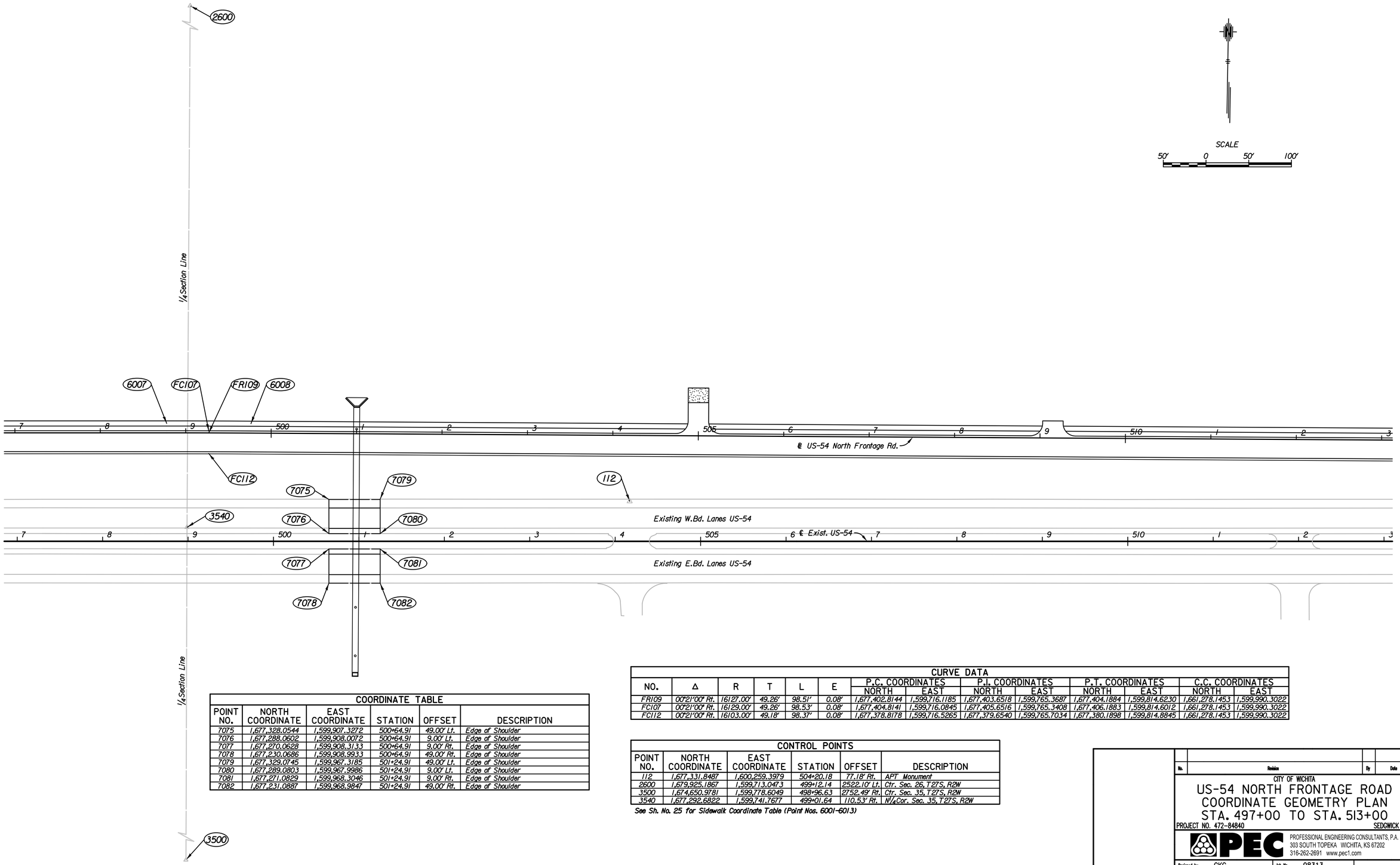
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 20 of 201

Plotted By: drp Date: 7/14/2014 2:48:53 PM
FILE: I:\2008\08313\Frontage Rd North\Geometry\08313-Geo48l.dgn



COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7075	1,677,328.0544	1,599,907.3272	500+64.91	49.00' Lt.	Edge of Shoulder
7076	1,677,288.0602	1,599,908.0072	500+64.91	9.00' Lt.	Edge of Shoulder
7077	1,677,270.0628	1,599,908.3133	500+64.91	9.00' Rt.	Edge of Shoulder
7078	1,677,230.0686	1,599,908.9933	500+64.91	49.00' Rt.	Edge of Shoulder
7079	1,677,329.0745	1,599,967.3185	501+24.91	49.00' Lt.	Edge of Shoulder
7080	1,677,289.0803	1,599,967.9986	501+24.91	9.00' Lt.	Edge of Shoulder
7081	1,677,271.0829	1,599,968.3046	501+24.91	9.00' Rt.	Edge of Shoulder
7082	1,677,231.0887	1,599,968.9847	501+24.91	49.00' Rt.	Edge of Shoulder

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
FR109	00°21'00" Rt.	16127.00'	49.26'	98.51'	0.08'	1,677,402.8144	1,599,716.1185	1,677,403.6518	1,599,765.3687	1,677,404.1884	1,599,814.6230	1,661,278.1453	1,599,990.3022
FC107	00°21'00" Rt.	16129.00'	49.26'	98.53'	0.08'	1,677,404.8141	1,599,716.0845	1,677,405.6516	1,599,765.3408	1,677,406.1883	1,599,814.6012	1,661,278.1453	1,599,990.3022
FC112	00°21'00" Rt.	16103.00'	49.18'	98.37'	0.08'	1,677,378.8178	1,599,716.5265	1,677,379.6540	1,599,765.7034	1,677,380.1898	1,599,814.8845	1,661,278.1453	1,599,990.3022

CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
112	1,677,331.8487	1,600,259.3979	504+20.18	77.18' Rt.	APT Monument
2600	1,679,925.1867	1,599,713.0473	499+12.14	2522.10' Lt.	Ctr. Sec. 26, T27S, R2W
3500	1,674,650.9781	1,599,778.6049	498+96.63	2752.49' Rt.	Ctr. Sec. 35, T27S, R2W
3540	1,677,292.6822	1,599,741.7677	499+01.64	110.53' Rt.	N1/4Cor. Sec. 35, T27S, R2W

See Sh. No. 25 for Sidewalk Coordinate Table (Point Nos. 6001-6013)

No.	Revision	By	Date

CITY OF WICHITA

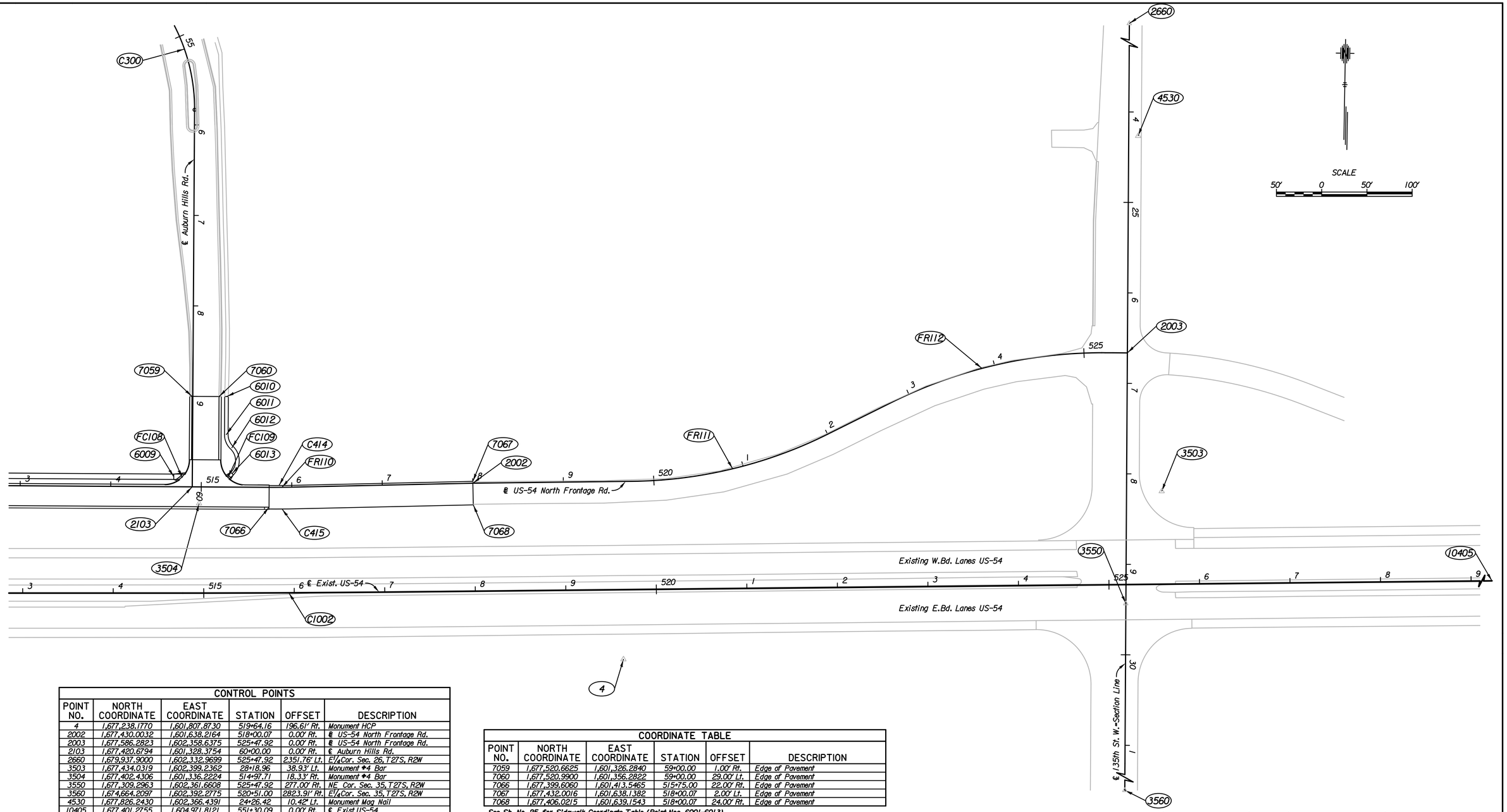
US-54 NORTH FRONTAGE ROAD
COORDINATE GEOMETRY PLAN
STA. 497+00 TO STA. 513+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 21 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:53 PM
FILE: I:\2008\08313\Frontage Rd North\Geometry\08313-Geo497.dgn



CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
4	1,677,238.1770	1,601,807.8730	519+64.16	196.61' Rt.	Monument HCP
2002	1,677,430.0032	1,601,638.2164	518+00.07	0.00' Rt.	℄ US-54 North Frontage Rd.
2003	1,677,586.2823	1,602,358.6375	525+47.92	0.00' Rt.	℄ US-54 North Frontage Rd.
2103	1,677,420.6794	1,601,328.3754	60+00.00	0.00' Rt.	℄ Auburn Hills Rd.
2660	1,679,937.9000	1,602,332.9699	525+47.92	2351.76' Lt.	E1/4Cor. Sec. 26, T27S, R2W
3503	1,677,434.0319	1,602,399.2362	28+18.96	38.93' Lt.	Monument #4 Bar
3504	1,677,402.4306	1,601,336.2224	514+97.71	18.33' Rt.	Monument #4 Bar
3550	1,677,309.2963	1,602,361.6608	525+47.92	277.00' Rt.	NE Cor. Sec. 35, T27S, R2W
3560	1,674,664.2097	1,602,392.2775	520+51.00	2823.91' Rt.	E1/4Cor. Sec. 35, T27S, R2W
4530	1,677,826.2430	1,602,366.4391	24+26.42	10.42' Lt.	Monument Mag Nail
10405	1,677,401.2755	1,604,971.8121	551+30.09	0.00' Rt.	℄ Exist US-54

COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7059	1,677,520.6625	1,601,326.2840	59+00.00	1.00' Rt.	Edge of Pavement
7060	1,677,520.9900	1,601,356.2822	59+00.00	29.00' Lt.	Edge of Pavement
7066	1,677,399.6060	1,601,413.5465	515+75.00	22.00' Rt.	Edge of Pavement
7067	1,677,432.0016	1,601,638.1382	518+00.07	2.00' Lt.	Edge of Pavement
7068	1,677,406.0215	1,601,639.1543	518+00.07	24.00' Rt.	Edge of Pavement

See Sh. No. 25 for Sidewalk Coordinate Table (Point Nos. 6001-6013)

CURVE DATA												
NO.	Δ	R	T	L	E	P.C. COORDINATES NORTH	P.C. COORDINATES EAST	P.I. COORDINATES NORTH	P.I. COORDINATES EAST	P.T. COORDINATES NORTH	P.T. COORDINATES EAST	C.C. COORDINATES NORTH	C.C. COORDINATES EAST
C300	41°58'08" Rt.	200.00'	88.98'	167.44'	18.90'	1,677,985.1561	1,601,256.1170	1,677,926.3054	1,601,322.8565	1,677,837.3300	1,601,323.8277	1,677,835.1472	1,601,123.8396
C414	01°36'56" Lt.	998.00'	14.07'	28.14'	0.10'	1,677,423.6045	1,601,413.2850	1,677,423.7578	1,601,427.3553	1,677,424.3077	1,601,441.4157	1,678,421.5453	1,601,402.4133
C415	01°36'56" Lt.	1024.00'	14.44'	28.87'	0.10'	1,677,397.6061	1,601,413.5682	1,677,397.7634	1,601,428.0051	1,677,398.3276	1,601,442.4318	1,678,421.5453	1,601,402.4133
C1002	00°35'06" Lt.	22918.34'	117.01'	234.02'	0.30'	1,677,303.0686	1,601,320.0110	1,677,305.0579	1,601,437.0042	1,677,308.2418	1,601,553.9709	1,700,218.0972	1,600,930.3642
FC108	90°00'04" Lt.	28.00'	28.00'	43.98'	11.60'	1,677,422.3416	1,601,297.3548	1,677,422.6466	1,601,325.3537	1,677,450.6455	1,601,325.0481	1,677,450.3399	1,601,297.0498
FC109	89°59'56" Lt.	28.00'	28.00'	43.98'	11.60'	1,677,451.0147	1,601,359.0461	1,677,423.0170	1,601,359.3517	1,677,423.3220	1,601,387.3494	1,677,451.3203	1,601,387.0444
FR110	01°36'56" Lt.	1000.00'	14.10'	28.20'	0.10'	1,677,421.6047	1,601,413.3068	1,677,421.7583	1,601,427.4053	1,677,422.3093	1,601,441.4938	1,678,421.5453	1,601,402.4133
FR111	25°47'23" Lt.	499.00'	114.24'	224.61'	12.91'	1,677,435.0392	1,601,813.8881	1,677,438.3127	1,601,928.0809	1,677,490.9423	1,602,029.4754	1,677,933.8342	1,601,799.5891
FR112	26°48'24" Rt.	521.00'	124.15'	243.76'	14.59'	1,677,527.4646	1,602,099.8382	1,677,584.6602	1,602,210.0297	1,677,586.0152	1,602,334.1734	1,677,065.0463	1,602,339.8597

No.	Revision	By	Date

CITY OF WICHITA

US-54 NORTH FRONTAGE ROAD COORDINATE GEOMETRY PLAN STA. 513+00 TO STA. 518+00

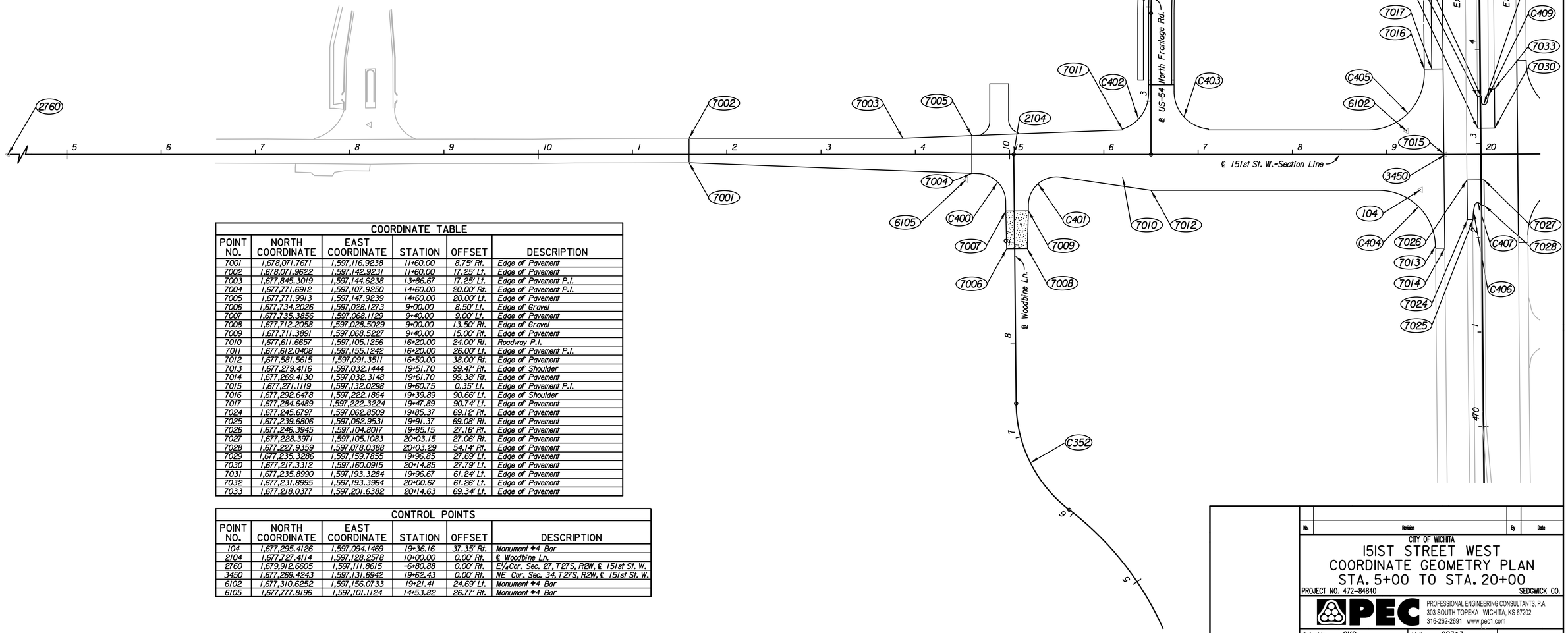
PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 22 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:53 PM
FILE: i:\2008\08313\Frontage Rd North\Geometry\08313-Geo513.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
C352	52°02'18" Rt.	143.52'	70.06'	130.35'	16.19'	1,677,665.7369	1,596,751.7667	1,677,721.7011	1,596,793.9124	1,677,722.8978	1,596,863.9611	1,677,579.3987	1,596,866.4126
C400	87°18'14" Rt.	30.00'	28.62'	45.71'	11.46'	1,677,764.6549	1,597,107.7140	1,677,736.0473	1,597,106.8561	1,677,735.5585	1,597,078.2398	1,677,765.5542	1,597,077.7275
C401	98°52'09" Rt.	30.00'	35.04'	51.77'	16.13'	1,677,711.4895	1,597,074.4021	1,677,712.0879	1,597,109.4414	1,677,677.3754	1,597,104.6304	1,677,681.4939	1,597,074.9144
C402	71°47'24" Lt.	40.00'	28.95'	50.12'	9.38'	1,677,612.0483	1,597,156.1242	1,677,584.6170	1,597,165.3771	1,677,584.8342	1,597,194.3261	1,677,624.8331	1,597,194.0260
C403	84°58'49" Lt.	40.00'	36.64'	59.33'	14.25'	1,677,557.8488	1,597,196.3785	1,677,557.5739	1,597,159.7390	1,677,521.0509	1,597,156.8069	1,677,517.8499	1,597,196.6787
C404	89°27'14" Rt.	60.00'	59.43'	93.68'	24.45'	1,677,339.8879	1,597,093.1644	1,677,280.4588	1,597,093.6103	1,677,279.4464	1,597,034.1882	1,677,339.4377	1,597,033.1661
C405	90°32'39" Lt.	60.00'	60.57'	94.82'	25.26'	1,677,352.1193	1,597,157.0744	1,677,291.5484	1,597,157.5289	1,677,292.5782	1,597,218.0928	1,677,352.5695	1,597,217.0728
C406	16°46'29" Rt.	50.00'	7.37'	14.64'	0.54'	1,677,239.7031	1,597,064.2717	1,677,239.8287	1,597,071.6428	1,677,237.8216	1,597,078.7364	1,677,189.7103	1,597,065.1235
C407	163°13'31" Rt.	3.00'	20.35'	8.55'	17.57'	1,677,237.8216	1,597,078.7364	1,677,232.2819	1,597,098.3147	1,677,231.9353	1,597,077.9707	1,677,234.9349	1,597,077.9196
C408	163°13'31" Lt.	3.00'	20.35'	8.55'	17.57'	1,677,231.8050	1,597,187.8374	1,677,231.4591	1,597,167.4934	1,677,225.9188	1,597,187.0716	1,677,228.8054	1,597,187.8885
C409	16°46'29" Lt.	50.00'	7.37'	14.64'	0.54'	1,677,225.9188	1,597,187.0716	1,677,223.9115	1,597,194.1651	1,677,224.0368	1,597,201.5362	1,677,274.0296	1,597,200.6861



COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7001	1,678,071.7671	1,597,116.9238	11+60.00	8.75' Rt.	Edge of Pavement
7002	1,678,071.9622	1,597,142.9231	11+60.00	17.25' Lt.	Edge of Pavement
7003	1,677,845.3019	1,597,144.6238	13+86.67	17.25' Lt.	Edge of Pavement P.I.
7004	1,677,771.6912	1,597,107.9250	14+60.00	20.00' Rt.	Edge of Pavement P.I.
7005	1,677,771.9913	1,597,147.9239	14+60.00	20.00' Lt.	Edge of Pavement
7006	1,677,734.2026	1,597,028.1273	9+00.00	8.50' Lt.	Edge of Gravel
7007	1,677,735.3856	1,597,068.1129	9+40.00	9.00' Lt.	Edge of Pavement
7008	1,677,712.2058	1,597,028.5029	9+00.00	13.50' Rt.	Edge of Gravel
7009	1,677,711.3891	1,597,068.5227	9+40.00	15.00' Rt.	Edge of Pavement
7010	1,677,611.6657	1,597,105.1256	16+20.00	24.00' Rt.	Roadway P.I.
7011	1,677,612.0408	1,597,155.1242	16+20.00	26.00' Lt.	Edge of Pavement P.I.
7012	1,677,581.5615	1,597,091.3511	16+50.00	38.00' Rt.	Edge of Pavement
7013	1,677,279.4116	1,597,032.1444	19+51.70	99.47' Rt.	Edge of Shoulder
7014	1,677,269.4130	1,597,032.3148	19+61.70	99.38' Rt.	Edge of Pavement
7015	1,677,271.1119	1,597,132.0298	19+60.75	0.35' Lt.	Edge of Pavement P.I.
7016	1,677,292.6478	1,597,222.1864	19+39.89	90.66' Lt.	Edge of Shoulder
7017	1,677,284.6489	1,597,222.3224	19+47.89	90.74' Lt.	Edge of Pavement
7024	1,677,245.6797	1,597,062.8509	19+85.37	69.12' Rt.	Edge of Pavement
7025	1,677,239.6806	1,597,062.9531	19+91.37	69.08' Rt.	Edge of Pavement
7026	1,677,246.3945	1,597,104.8017	19+85.15	27.16' Rt.	Edge of Pavement
7027	1,677,228.3971	1,597,105.1083	20+03.15	27.06' Rt.	Edge of Pavement
7028	1,677,227.9359	1,597,078.0388	20+03.29	54.14' Rt.	Edge of Pavement
7029	1,677,235.3286	1,597,159.7855	19+96.85	27.69' Lt.	Edge of Pavement
7030	1,677,217.3312	1,597,160.0915	20+14.85	27.79' Lt.	Edge of Pavement
7031	1,677,235.8990	1,597,193.3284	19+96.67	61.24' Lt.	Edge of Pavement
7032	1,677,231.8995	1,597,193.3964	20+00.67	61.26' Lt.	Edge of Pavement
7033	1,677,218.0377	1,597,201.6382	20+14.63	69.34' Lt.	Edge of Pavement

CONTROL POINTS					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
104	1,677,295.4126	1,597,094.1469	19+36.16	37.35' Rt.	Monument ⌀4 Bar
2104	1,677,727.4114	1,597,128.2578	10+00.00	0.00' Rt.	℄ Woodbine Ln.
2760	1,679,912.6605	1,597,111.8615	-6+80.88	0.00' Rt.	E1/4Cor. Sec. 27, T27S, R2W, ℄ 151st St. W.
3450	1,677,269.4243	1,597,131.6942	19+62.43	0.00' Rt.	NE Cor. Sec. 34, T27S, R2W, ℄ 151st St. W.
6102	1,677,310.6252	1,597,156.0733	19+21.41	24.69' Lt.	Monument ⌀4 Bar
6105	1,677,777.8196	1,597,101.1124	14+53.82	26.77' Rt.	Monument ⌀4 Bar

No.	Revision	By	Date

CITY OF WICHITA

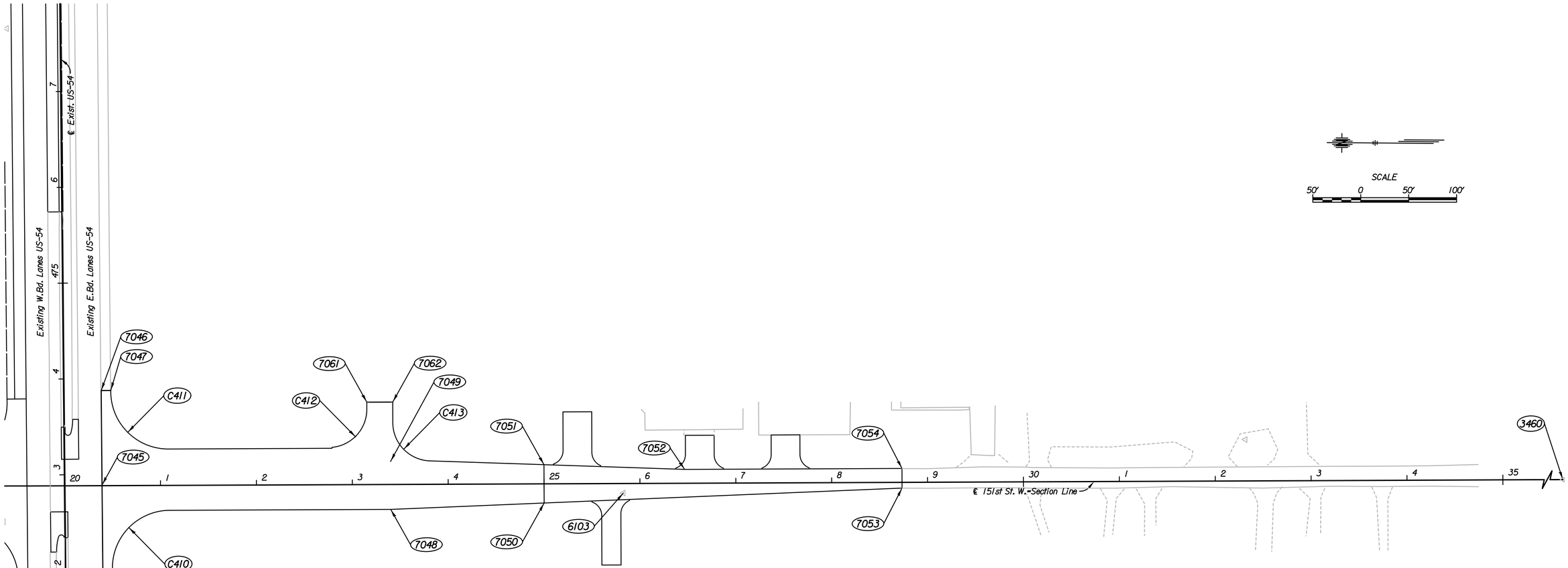
151ST STREET WEST
COORDINATE GEOMETRY PLAN
STA. 5+00 TO STA. 20+00

PROJECT NO. 472-84840 SEDGWICK CO.

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303 SOUTH TOPEKA WICHITA, KS 67202
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Designed by	CKC	Job No.	08313	Sht. 23 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:54 PM
FILE: I:\2008\08313\Frontage Rd North\Geometry\08313-Geo151st.dgn



CURVE DATA

NO.	Δ	R	T	L	E	P.C. COORDINATES NORTH	P.C. COORDINATES EAST	P.I. COORDINATES NORTH	P.I. COORDINATES EAST	P.T. COORDINATES NORTH	P.T. COORDINATES EAST	C.C. COORDINATES NORTH	C.C. COORDINATES EAST
C410	90°18'26" Rt.	60.00'	60.32'	94.57'	25.08'	1,677,181.3901	1,597,046.3943	1,677,182.4177	1,597,106.7081	1,677,122.0992	1,597,107.4122	1,677,121.3988	1,597,047.4163
C411	89°41'41" Lt.	60.00'	59.68'	93.93'	24.63'	1,677,184.5213	1,597,230.3722	1,677,183.5067	1,597,170.6998	1,677,123.8296	1,597,171.3964	1,677,124.5300	1,597,231.3923
C412	84°58'49" Lt.	40.00'	36.64'	59.33'	14.25'	1,676,953.3322	1,597,174.3868	1,676,916.8721	1,597,178.0187	1,676,917.2998	1,597,214.6568	1,676,957.2971	1,597,214.1898
C413	87°51'09" Lt.	40.00'	38.53'	61.33'	15.54'	1,676,890.1334	1,597,200.5607	1,676,889.6837	1,597,162.0352	1,676,851.1684	1,597,161.0409	1,676,850.1361	1,597,201.0276

COORDINATE TABLE

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
7043	1,677,191.2654	1,597,038.9907	20+39.50	93.61' Rt.	Edge of Pavement
7044	1,677,181.2669	1,597,039.1610	20+49.50	93.56' Rt.	Edge of Shoulder
7045	1,677,192.87.32	1,597,133.3614	20+39.00	0.77' Lt.	Edge of Pavement P.I.
7046	1,677,194.5477	1,597,231.8357	20+38.47	99.26' Lt.	Edge of Pavement
7047	1,677,184.5491	1,597,232.0058	20+48.47	99.31' Lt.	Edge of Shoulder
7048	1,676,891.5776	1,597,110.1033	23+40.00	26.00' Rt.	Edge of Pavement P.I.
7049	1,676,892.1613	1,597,160.0999	23+40.00	24.00' Lt.	Roadway P.I.
7050	1,676,731.6585	1,597,117.9706	25+00.00	20.00' Rt.	Edge of Pavement P.I.
7051	1,676,732.1255	1,597,157.9678	25+00.00	20.00' Lt.	Edge of Pavement P.I.
7052	1,676,585.4046	1,597,154.1803	26+46.67	14.50' Lt.	Edge of Pavement P.I.
7053	1,676,358.5141	1,597,136.3275	28+73.33	6.00' Rt.	Edge of Pavement
7054	1,676,358.7534	1,597,156.8261	28+73.33	14.50' Lt.	Edge of Pavement
7061	1,676,917.3833	1,597,221.8097	23+15.50	86.00' Lt.	Edge of Pavement
7062	1,676,890.3851	1,597,222.1249	23+42.50	86.00' Lt.	Edge of Pavement

CONTROL POINTS

POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
3460	1,674,637.7334	1,597,162.4159	45+94.30	0.00' Rt.	E1/4Cor. Sec. 34, T27S, R2W, ℄ 151st St. W.
6103	1,676,649.1410	1,597,129.0075	25+82.64	9.93' Rt.	Monument #4 Bar

No.	Revision	By	Date

CITY OF WICHITA

151ST STREET WEST
COORDINATE GEOMETRY PLAN
STA. 20+00 TO STA. 35+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 24 of 201

Plotted By: drp Date: 7/14/2014 2:48:55 PM
FILE: i:\2008\08313\Frontage Rd North\Geometry\08313-Geo151stSouth.dgn

SIDEWALK COORDINATE TABLE					
POINT NO.	NORTH COORDINATE	EAST COORDINATE	STATION	OFFSET	DESCRIPTION
6001	1,677,593.4390	1,597,208.2653	473+22.44	11.00' Lt.	℄ Sidewalk P.I. (Begin Sidewalk)
6002	1,677,593.9717	1,597,279.2633	473+93.44	11.00' Lt.	℄ Sidewalk P.C. (411' R.)
6003	1,677,507.2547	1,597,534.8723	476+61.10	11.00' Lt.	℄ Sidewalk P.R.C. (411' R., 589' R.)
6004	1,677,503.4877	1,597,539.7623	476+67.39	11.00' Lt.	℄ Sidewalk P.T. (589' R.) (WCR)
6005	1,677,471.0235	1,597,586.9594	477+25.77	11.00' Lt.	℄ Sidewalk P.C. (589' R.) (WCR)
6006	1,677,383.0500	1,597,906.7778	480+68.29	11.00' Lt.	℄ Sidewalk P.T. (589' R.)
6007	1,677,413.8128	1,599,715.9315	498+77.71	11.00' Lt.	℄ Sidewalk P.C. (16138' R.)
6008	1,677,415.1878	1,599,814.5032	499+76.22	11.00' Lt.	℄ Sidewalk P.T. (16138' R.)
6009	1,677,431.4554	1,601,307.7561	514+69.56	11.00' Lt.	℄ Sidewalk P.I. (End Sidewalk) (WCR)
6010	1,677,521.0800	1,601,364.5317	59+00.00	37.25' Lt.	℄ Sidewalk P.I. (End Sidewalk)
6011	1,677,479.0786	1,601,364.9902	59+42.00	37.25' Lt.	℄ Sidewalk P.C. (20' R.)
6012	1,677,464.6444	1,601,371.3763	59+56.51	43.48' Lt.	℄ Sidewalk P.R.C. (20' R., 20' R.)
6013	1,677,436.0047	1,601,372.0592	515+33.91	14.85' Lt.	℄ Sidewalk P.T. (20' R.) (End Sidewalk) (WCR)

Plotted By: drp Date: 7/14/2014 2:48:55 PM
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No.	Revision	By	Date

CITY OF WICHITA

US-54 NORTH FRONTAGE ROAD SIDEWALK COORDINATE TABLE

PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 25 of 201
Drawn by	DRP	Date	June, 2014	

Curve No. FC101

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8001	473+93.44	2.00' Lt.	1,677,584.9720	1,597,279.3308	1,677,592.9717	1,597,279.2708	P.C.
8002	475+26.01	2.00' Lt.	1,677,564.0789	1,597,410.2929	1,677,571.6629	1,597,412.8391	1/2 Pt.
8003	476+58.57	2.00' Lt.	1,677,501.7106	1,597,527.3304	1,677,508.0534	1,597,532.2057	P.T.

Curve No. FC102

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8003	476+58.57	2.00' Lt.	1,677,501.7106	1,597,527.3304	1,677,508.0534	1,597,532.2057	P.C.
8004	476+79.02	13.73' Lt.	1,677,498.8555	1,597,550.5219	1,677,506.1914	1,597,547.3306	1/2 Pt.
8005	39+55.22	12.00' Rt.	1,677,517.7688	1,597,564.2436	1,677,518.5262	1,597,556.2795	P.T.

Curve No. FC103

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8005	39+55.22	12.00' Rt.	1,677,517.7688	1,597,564.2436	1,677,518.5262	1,597,556.2795	P.C.
8006	39+51.39	12.00' Rt.	1,677,520.9837	1,597,564.4665	1,677,521.3328	1,597,556.4742	1/2 Pt.
8007	39+47.55	12.00' Rt.	1,677,524.2058	1,597,564.5248	1,677,524.1458	1,597,556.5250	P.T.

Curve No. FC104

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8008	39+47.55	12.00' Lt.	1,677,524.3859	1,597,588.5241	1,677,524.4459	1,597,596.5239	P.C.
8009	39+63.76	12.00' Lt.	1,677,505.7177	1,597,586.6409	1,677,504.0611	1,597,594.4675	1/2 Pt.
8010	39+79.96	12.00' Lt.	1,677,487.8875	1,597,580.7988	1,677,484.5914	1,597,588.0882	P.T.

Curve No. FC105

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8010	39+79.96	12.00' Lt.	1,677,487.8875	1,597,580.7988	1,677,484.5914	1,597,588.0882	P.C.
8011	477+19.34	7.64' Lt.	1,677,471.5330	1,597,579.8084	1,677,473.9254	1,597,587.4423	1/2 Pt.
8012	477+34.84	2.00' Lt.	1,677,458.6690	1,597,589.9556	1,677,465.5358	1,597,594.0600	P.T.

Curve No. FC106

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8012	477+34.84	2.00' Lt.	1,677,458.6690	1,597,589.9556	1,677,465.5358	1,597,594.0600	P.C.
8013	479+01.57	2.00' Lt.	1,677,394.1976	1,597,742.5268	1,677,401.9270	1,597,744.5902	1/2 Pt.
8014	480+68.29	2.00' Lt.	1,677,374.0513	1,597,906.9308	1,677,382.0501	1,597,906.7948	P.T.

Curve No. FC107

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8015	498+77.71	2.00' Lt.	1,677,404.8141	1,599,716.0845	1,677,412.8129	1,599,715.9485	P.C.
8016	499+26.96	2.00' Lt.	1,677,405.5764	1,599,765.3418	1,677,413.5756	1,599,765.2302	1/2 Pt.
8017	499+76.22	2.00' Lt.	1,677,406.1883	1,599,814.6012	1,677,414.1878	1,599,814.5141	P.T.

Curve No. FC108

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8018	514+59.06	2.00' Lt.	1,677,422.3416	1,601,297.3548	1,677,430.3411	1,601,297.2676	P.C.
8019	514+78.86	10.20' Lt.	1,677,430.7580	1,601,317.0635	1,677,436.3528	1,601,311.3453	1/2 Pt.
8020	59+70.00	3.00' Rt.	1,677,450.6455	1,601,325.0481	1,677,450.5582	1,601,317.0486	P.T.

Curve No. FC109

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8021	59+70.00	31.00' Lt.	1,677,451.0147	1,601,359.0461	1,677,451.1021	1,601,367.0456	P.C.
8022	515+29.26	10.20' Lt.	1,677,431.3066	1,601,367.4625	1,677,437.0248	1,601,373.0573	1/2 Pt.
8023	515+49.06	2.00' Lt.	1,677,423.3220	1,601,387.3494	1,677,431.3215	1,601,387.2623	P.T.

Curve No. FC110

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8029	473+93.44	24.00' Rt.	1,677,558.9727	1,597,279.5259	1,677,550.9729	1,597,279.5859	P.C.
8030	475+27.27	24.00' Rt.	1,677,539.0505	1,597,403.1451	1,677,531.4746	1,597,400.5749	1/2 Pt.
8031	476+61.10	24.00' Rt.	1,677,479.6403	1,597,513.3677	1,677,473.3285	1,597,508.4524	P.T.

Curve No. FC111

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8031	476+61.10	24.00' Rt.	1,677,479.6403	1,597,513.3677	1,677,473.3285	1,597,508.4524	P.C.
8032	478+64.70	24.00' Rt.	1,677,380.0993	1,597,699.0994	1,677,372.5113	1,597,696.5652	1/2 Pt.
8033	480+68.29	24.00' Rt.	1,677,348.0550	1,597,907.3728	1,677,340.0562	1,597,907.5089	P.T.

Curve No. FC112

POINT NO.	STATION	OFFSET	ON CURVE		8' OFFSET		COMMENT
			NORTH	EAST	NORTH	EAST	
8034	498+77.71	24.00' Rt.	1,677,378.8178	1,599,716.5265	1,677,370.8190	1,599,716.6626	P.C.
8035	499+26.96	24.00' Rt.	1,677,379.5789	1,599,765.7045	1,677,371.5797	1,599,765.8160	1/2 Pt.
8036	499+76.22	24.00' Rt.	1,677,380.1898	1,599,814.8845	1,677,372.1903	1,599,814.9716	P.T.

No.	Revision	By	Date

CITY OF WICHITA

CURVE STAKE-OUT TABLES

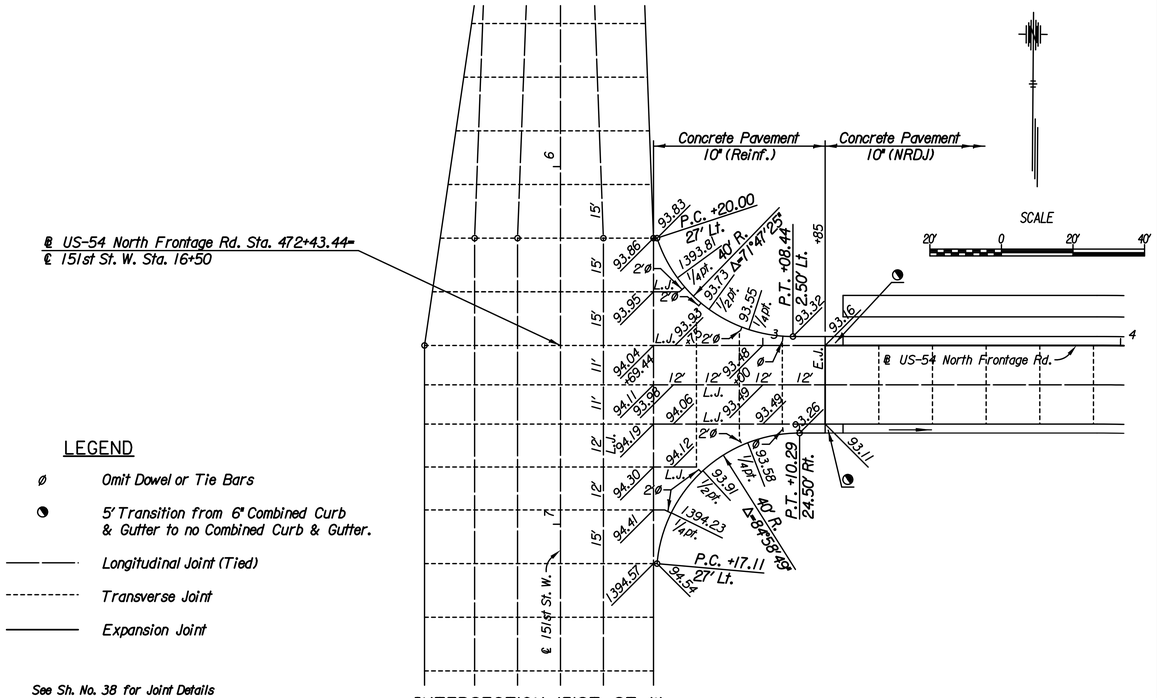
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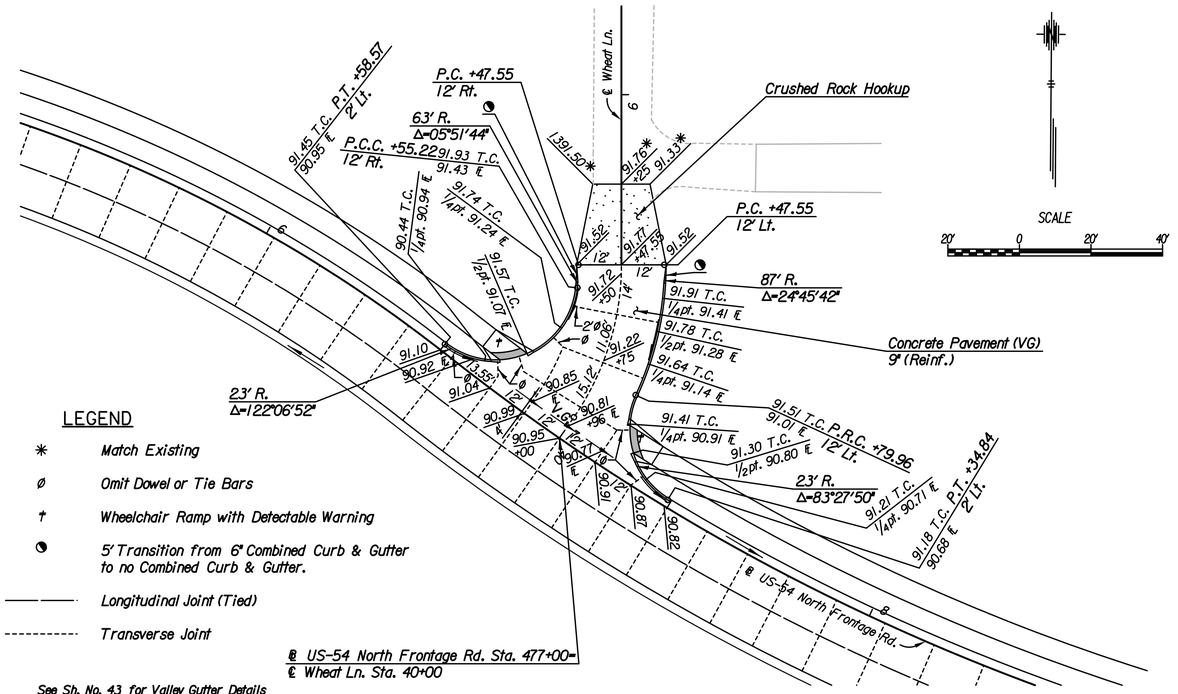
Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 26 of 201

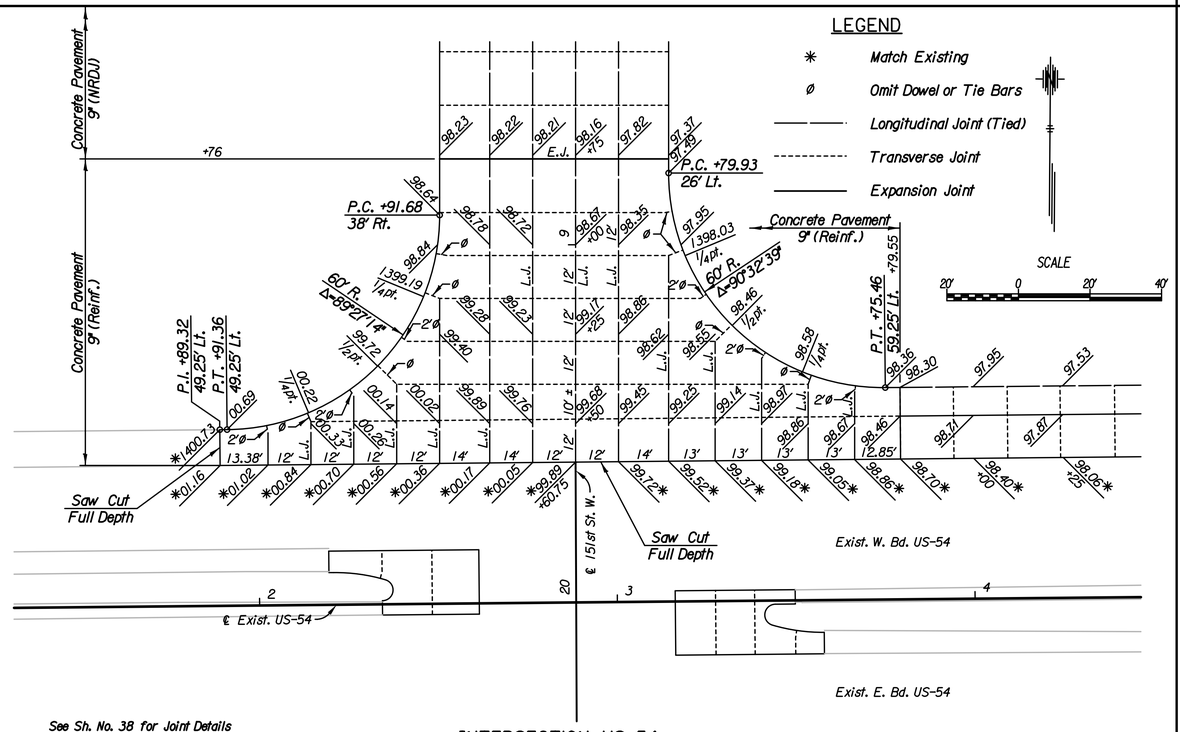
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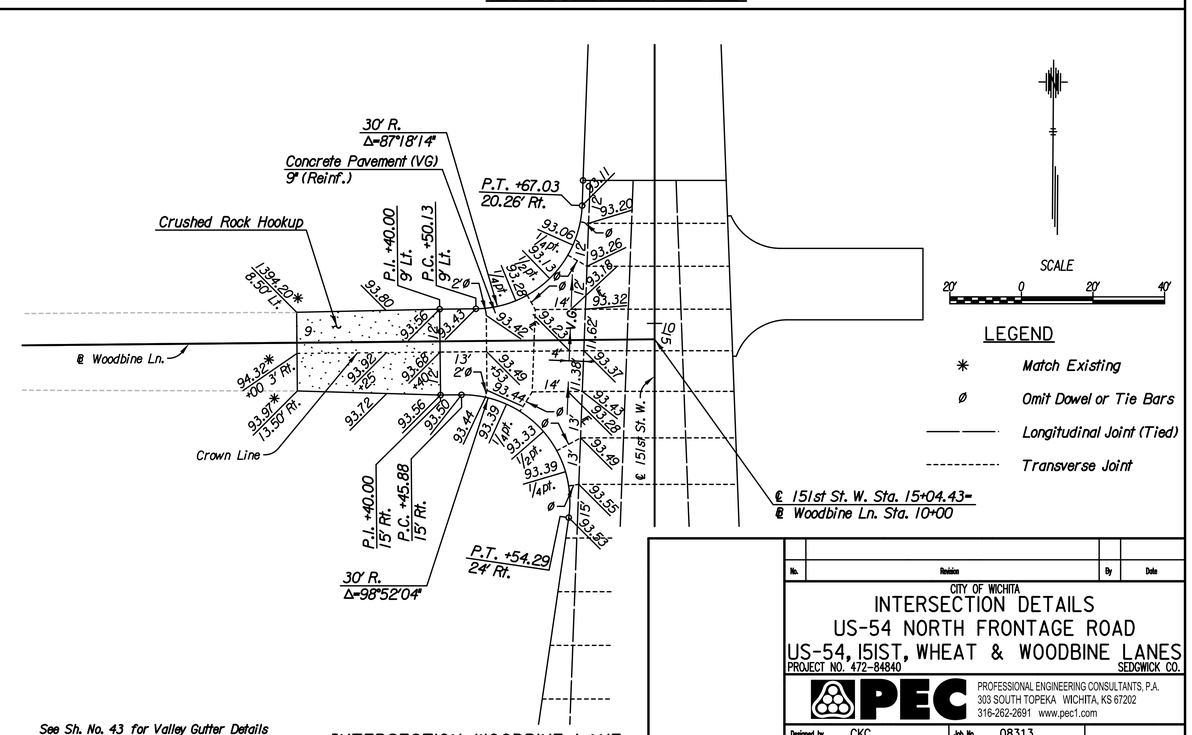
INTERSECTION 151ST ST. W.



INTERSECTION WHEAT LANE



INTERSECTION US-54



INTERSECTION WOODBINE LANE

No.	Revision	By	Date

CITY OF WICHITA

INTERSECTION DETAILS
US-54 NORTH FRONTAGE ROAD
US-54, 151ST, WHEAT & WOODBINE LANES

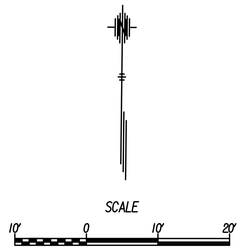
PROJECT NO. 472-84840 SEDGWICK CO.

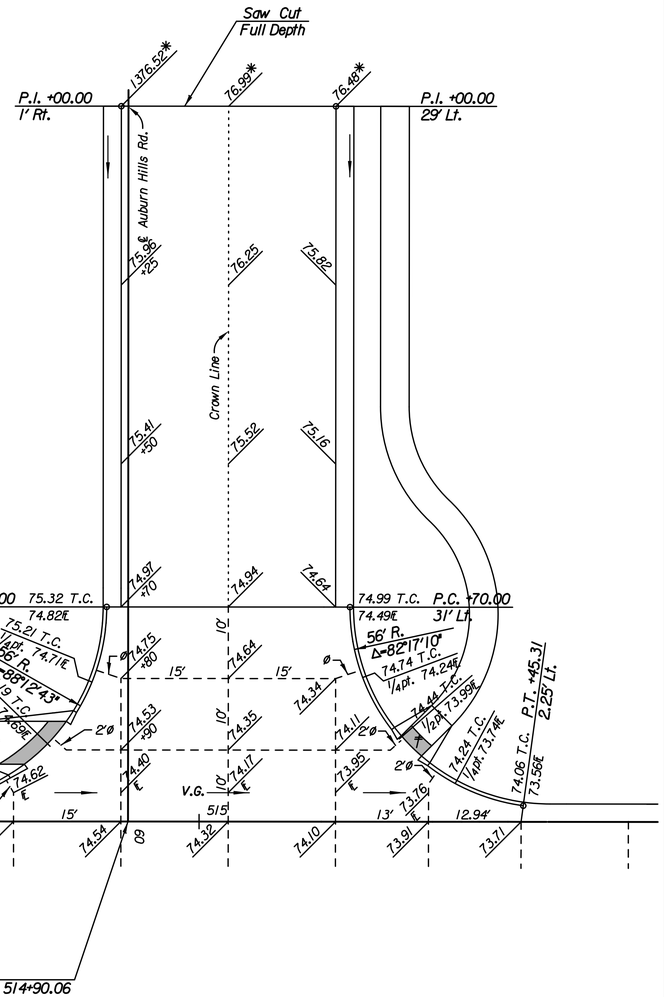
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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 27 of 201

Plotted By: drp Date: 7/14/2014 2:48:56 PM
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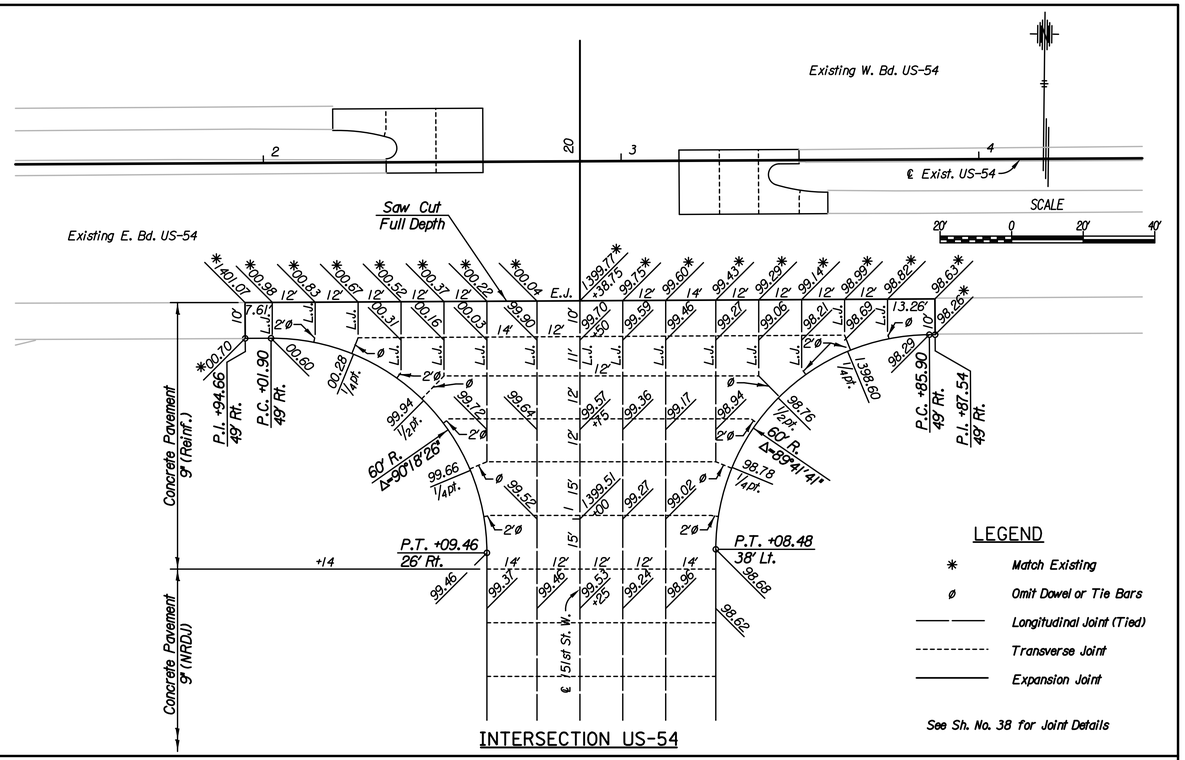


INTERSECTION AUBURN HILLS

LEGEND

- ø — Omit Dowel or Tie Bars
- ♿ — Wheelchair Ramp with Detectable Warning
- ——— Longitudinal Joint (Tied)
- - - - - - Transverse Joint
- ——— Expansion Joint

See Sh. No. 43 for Valley Gutter Details

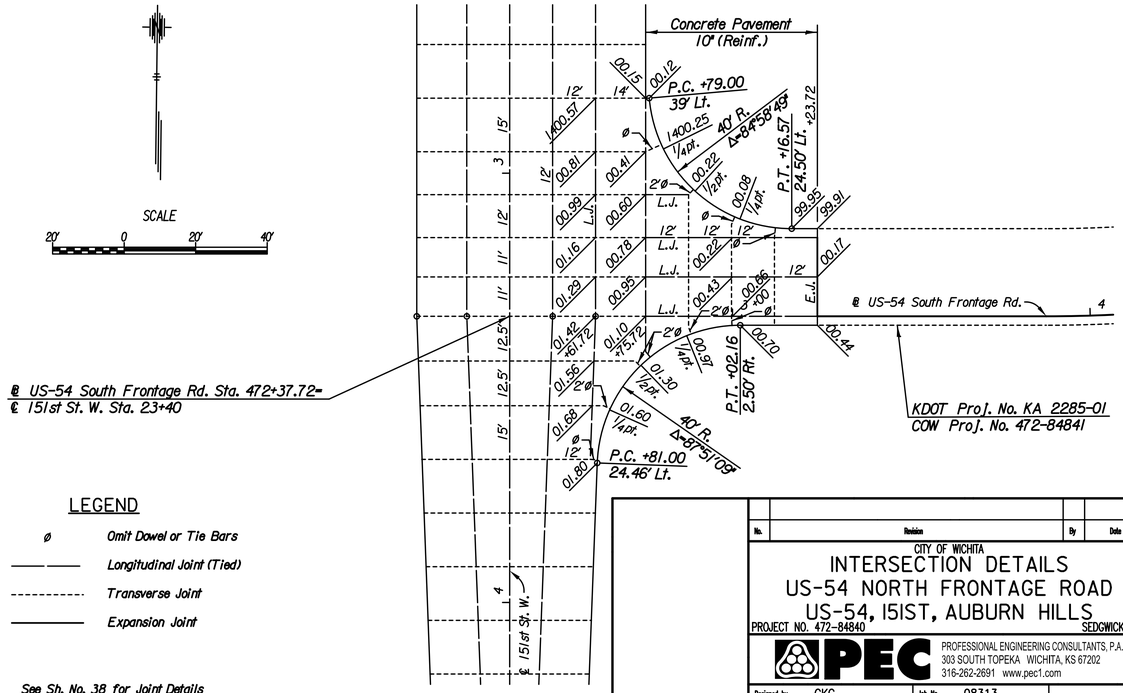


INTERSECTION US-54

LEGEND

- ✱ — Match Existing
- ø — Omit Dowel or Tie Bars
- ——— Longitudinal Joint (Tied)
- - - - - - Transverse Joint
- ——— Expansion Joint

See Sh. No. 38 for Joint Details



KDOT Proj. No. KA 2285-01
COW Proj. No. 472-84841

LEGEND

- ø — Omit Dowel or Tie Bars
- ——— Longitudinal Joint (Tied)
- - - - - - Transverse Joint
- ——— Expansion Joint

See Sh. No. 38 for Joint Details

INTERSECTION 151ST ST. W.

No.	Revision	By	Date

CITY OF WICHITA

INTERSECTION DETAILS
US-54 NORTH FRONTAGE ROAD
US-54, 151ST, AUBURN HILLS

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 28 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:56 PM
FILE: I:\2008\08313\Frontage Rd North\Intersection\08313-151stSt.dgn

P.C. Sta. 473+93.44

+17.44

+25 393.02

98.62 +50

98.30 +75

91.84 +25

91.85 +50

91.76 +75

91.67 +00

91.58 +25

91.49 +50

91.40 +75

91.31 +00

91.22 +25

91.16 +50

91.16 +60

90.96

91.00

91.03

90.95 +00

91.04 +25

91.14

90.86 +25

90.68 +75

90.59 +00

91.21

91.16

91.03

91.14

91.23

91.32

91.41

91.50

91.64

91.99

92.43

98.08 +00

1392.96

E.J.

11'

11'

3

4

6

475

23 @ 15'

Combined Curb & Gutter
(Type I)(Special)

Combined Curb & Gutter
(Type I)

Concrete Pavement
10" (NRDJ)

See Intersection Detail
Sh. No. 27

℄ US-54 North Frontage Rd. Sta. 472+43.44=
℄ 151st St. W. Sta. 16+50

℄ 151st St. W.=Section Line

℄ Wheat Ln.

9

P.R.C. Sta. 476+61.10

+62.44

Crushed Rock Hookup

See Intersection Detail
Sh. No. 27

Combined Curb & Gutter
(Type I)

3 @ 13'

84 @ 15'

+74.84

+35.84

+23.84

91.17

+35.84

91.21

91.16

91.03

Combined Curb & Gutter
(Type I)(Special)

℄ US-54 North Frontage Rd. Sta. 477+00=
℄ Wheat Ln. 40+00

+60

+75.99

3 @ 12'

+12

40

7

8

8'

7'

6'

SCALE
20' 0 20' 40'

All contraction joints in curves are dimensioned along the baseline and are radial to curve unless otherwise noted.

Spot elevations are given at the top of pavement.

See Paving Plan
Sh. No. 34

LEGEND

- Longitudinal Joint (Tied)
- Transverse Joint
- Expansion Joint
- Wheelchair Ramp with Detectable Warning
- 5' Transition from 6" Combined Curb & Gutter to no Combined Curb & Gutter.
- 5' Transition from Combined Curb & Gutter (Type I) to Combined Curb & Gutter (Type I)(Special).

No.	Revision	By	Date

CITY OF WICHITA

PAVING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 472+43.44 TO STA. 478+00

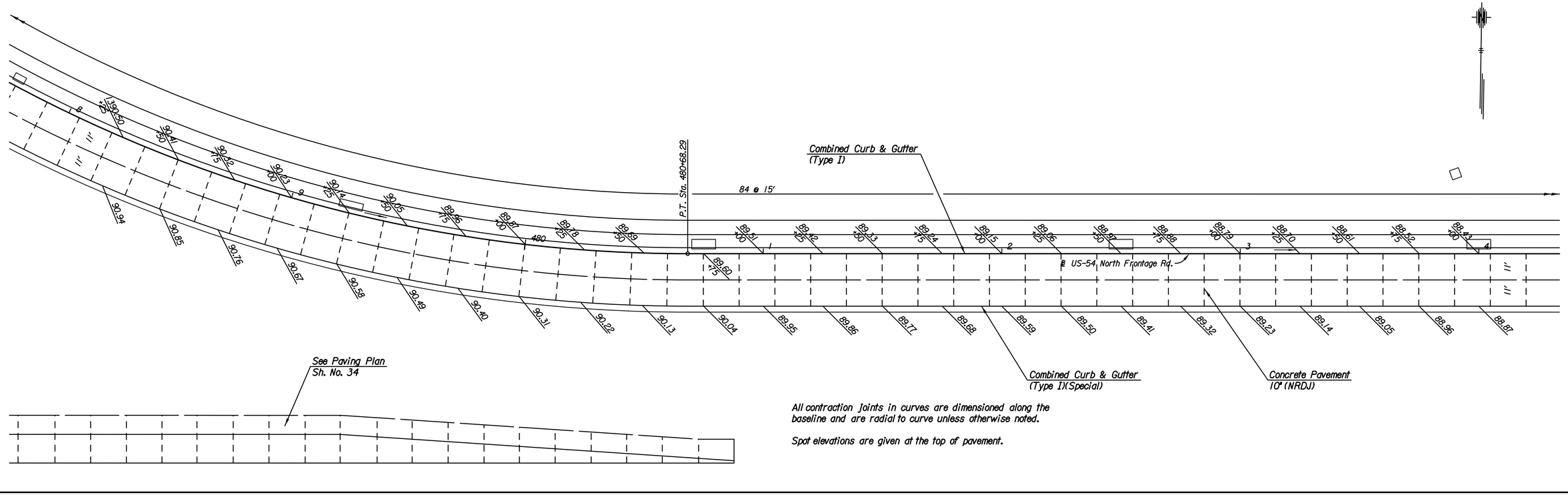
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

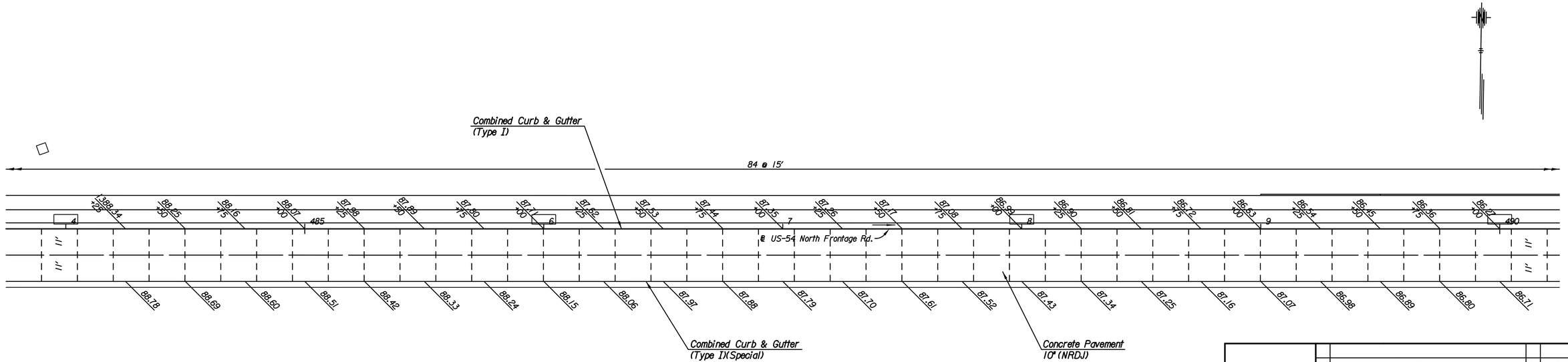
Sht. 29 of 201

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FILE: I:\2008\08313\Frontage Rd North\Paving\08313-paving472.dgn



All contraction joints in curves are dimensioned along the baseline and are radial to curve unless otherwise noted.

Spot elevations are given at the top of pavement.



LEGEND

Longitudinal Joint (Tied)

Transverse Joint

No.	Revision	By	Date

CITY OF WICHITA

PAVING PLAN
NORTH FRONTAGE ROAD
STA. 478+00 TO STA. 490+00

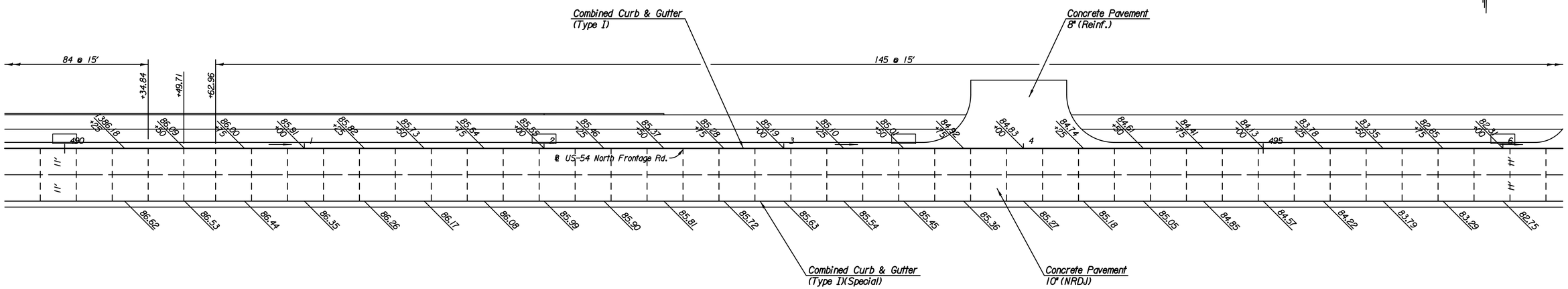
PROJECT NO. 472-84840 SEDGWICK CO.

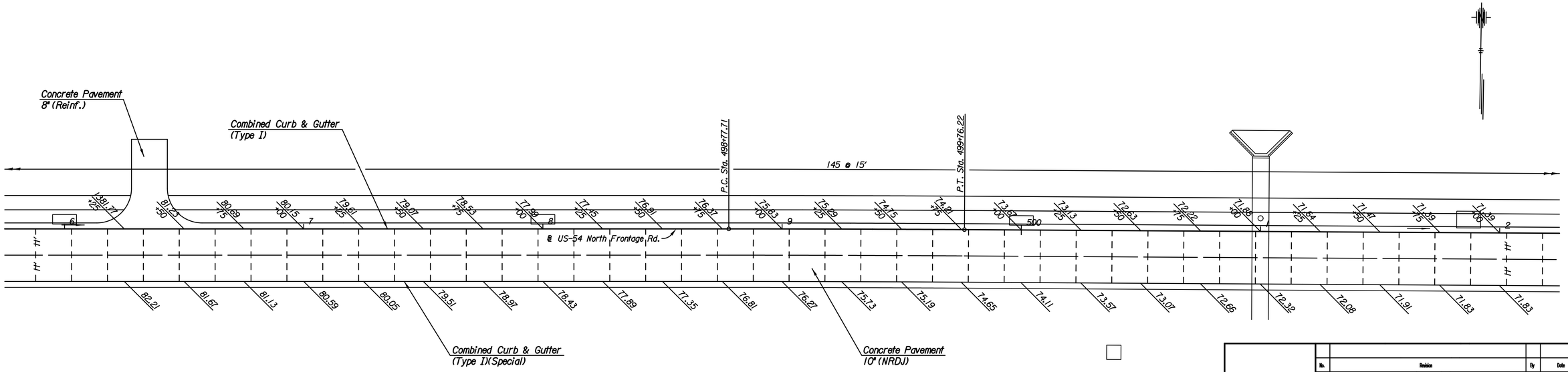
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 30 of 201

Plotted By: drp Date: 7/14/2014 2:48:58 PM
FILE: I:\2008\08313\Frontage Rd North\Paving\08313-paving478.dgn





All contraction joints in curves are dimensioned along the baseline and are radial to curve unless otherwise noted.

Spot elevations are given at the top of pavement.

LEGEND

——— Longitudinal Joint (Tied)

– – – – Transverse Joint

No.	Revision	By	Date

CITY OF WICHITA

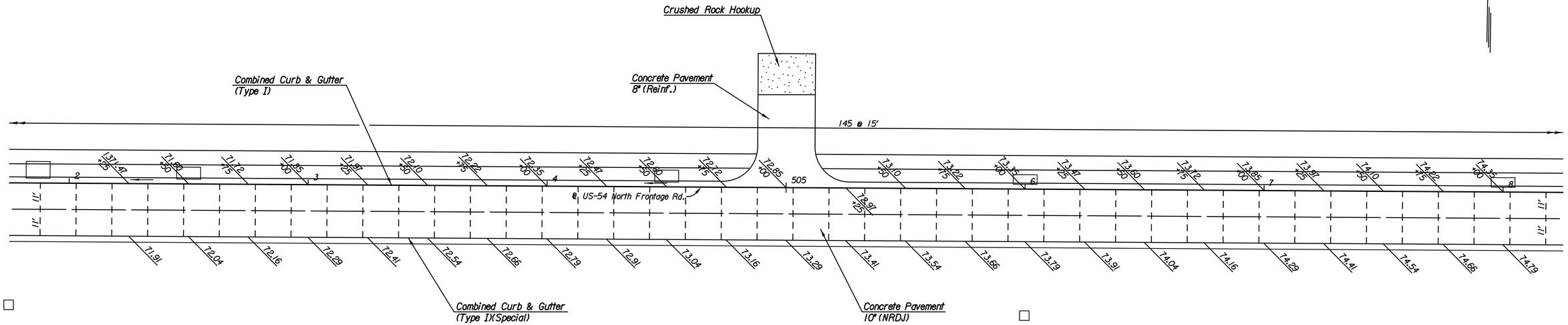
PAVING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 490+00 TO STA. 502+00

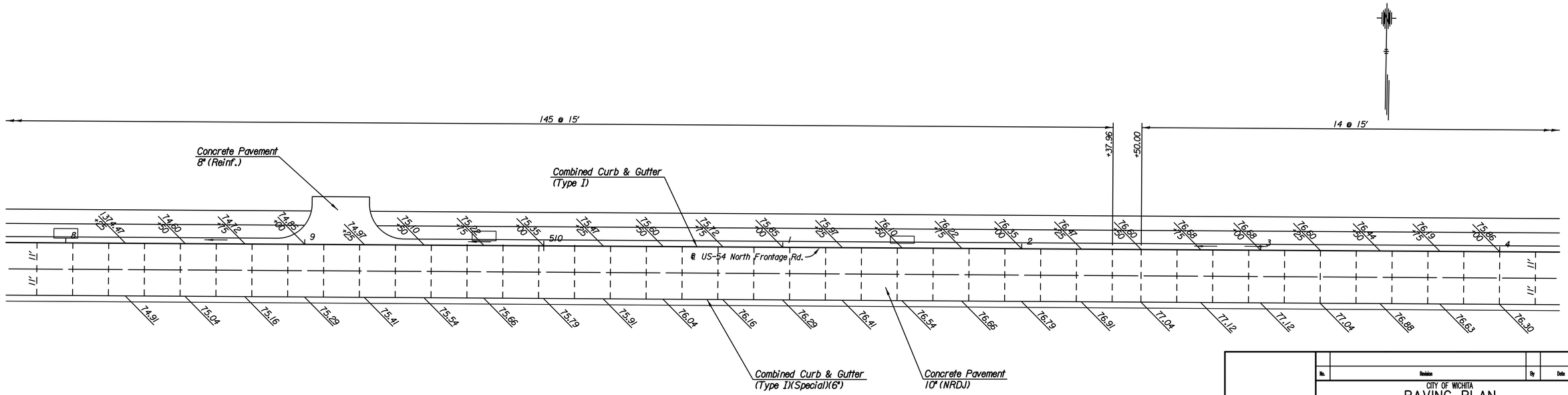
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 31 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:58 PM
FILE: I:\2008\08313\Frontage Rd North\Paving\08313-paving490.dgn





LEGEND

Longitudinal Joint (Tied)

Transverse Joint

No.	Revision	By	Date

CITY OF WICHITA

PAVING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 502+00 TO STA. 514+00

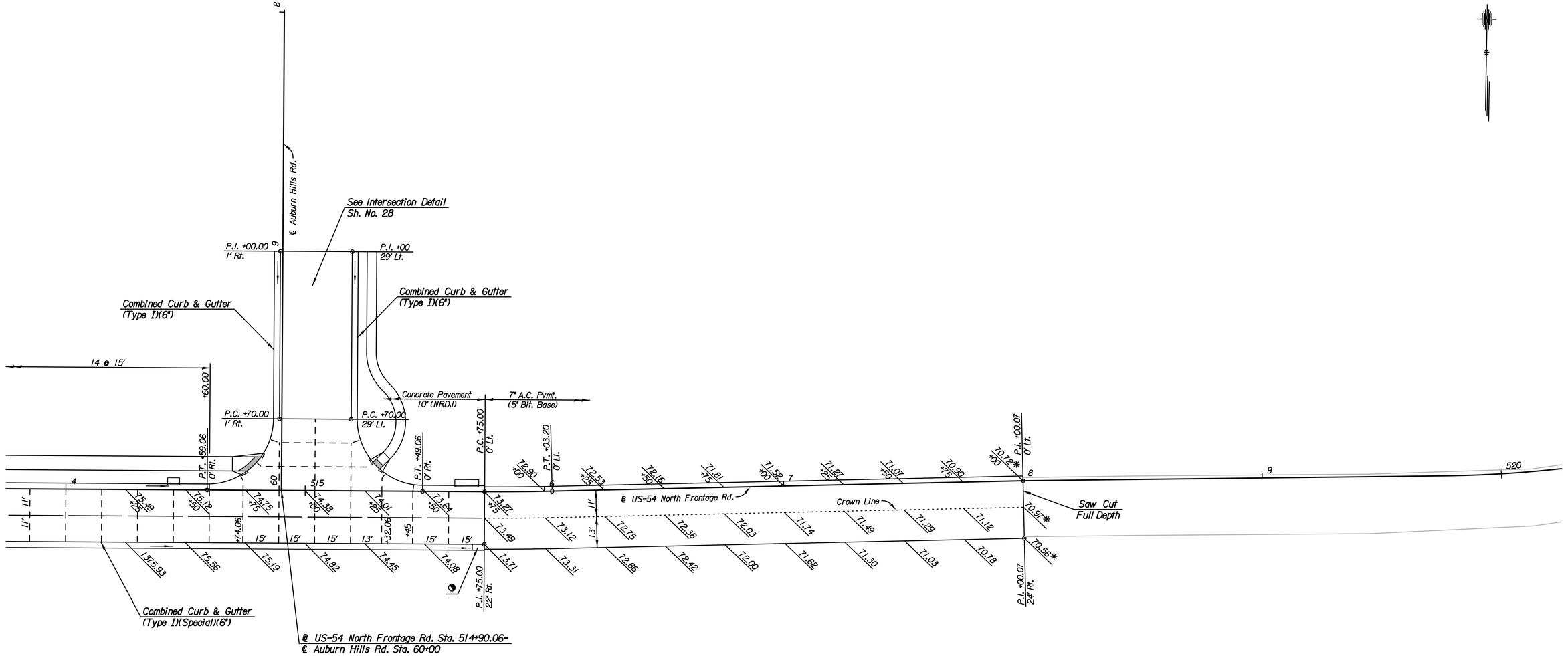
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 32 of 201

Plotted By: drp Date: 7/14/2014 2:48:58 PM
FILE: I:\2008\08313\Frontage Rd North\Paving\08313-paving502.dgn



LEGEND

*	Match Existing
———	Longitudinal Joint (Tied)
- - - - -	Transverse Joint
———	Expansion Joint
	A.C. Pvmt.
◔	5' Transition from 6" Combined Curb & Gutter to no Combined Curb & Gutter.

No.	Revision	By	Date

CITY OF WICHITA

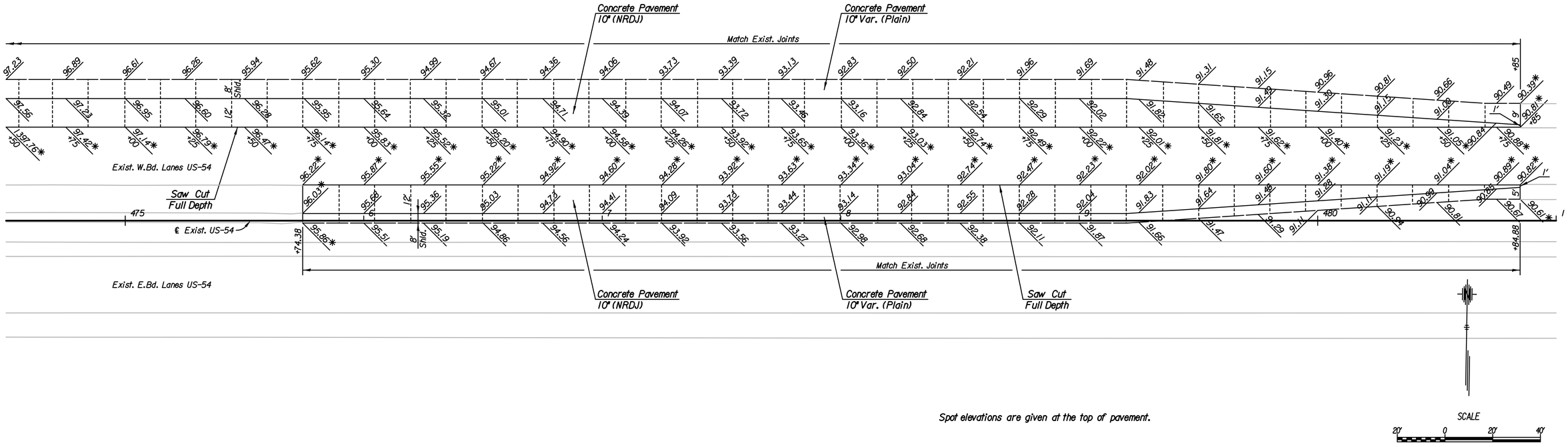
PAVING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 514+00 TO STA. 518+00

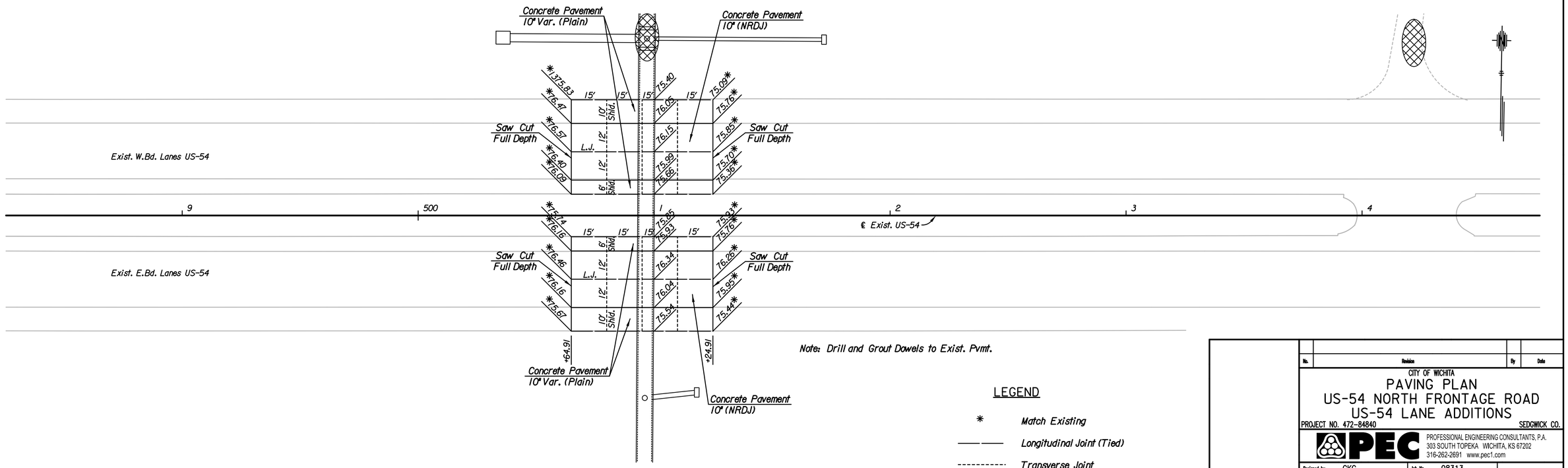
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 33 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:48:59 PM
FILE: i:\2008\08313\Frontage Rd North\Paving\08313-paving514.dgn





Note: Drill and Grout Dowels to Exist. Pvmt.

LEGEND

* Match Existing

——— Longitudinal Joint (Tied)

---------- Transverse Joint

No.	Revision	By	Date

CITY OF WICHITA

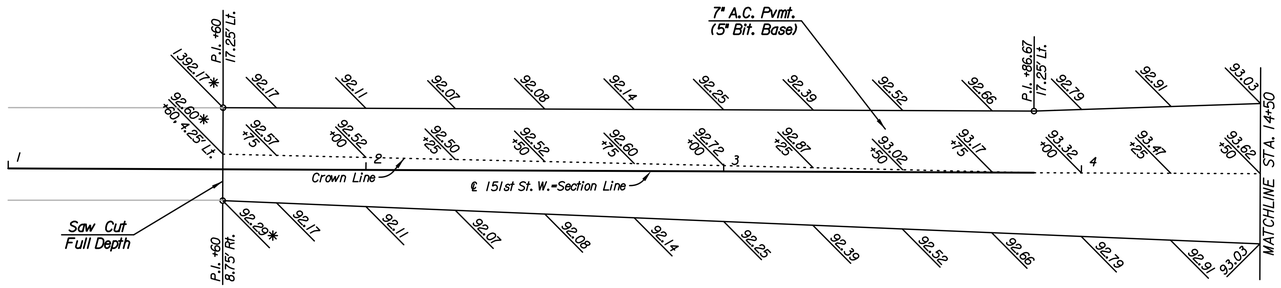
PAVING PLAN
US-54 NORTH FRONTAGE ROAD
US-54 LANE ADDITIONS

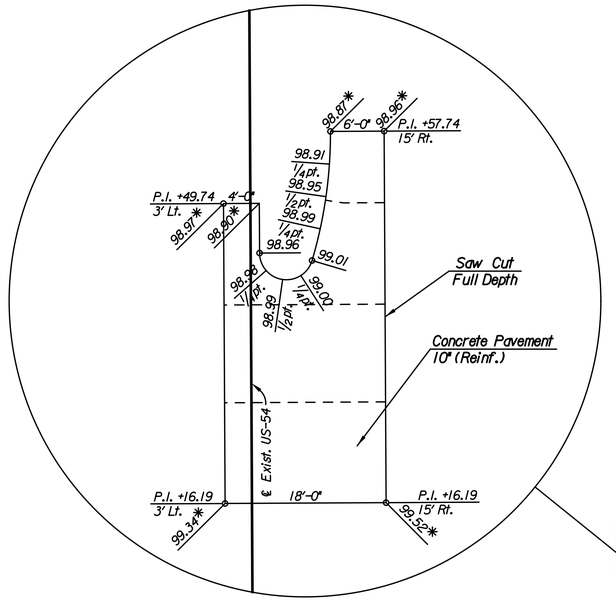
PROJECT NO. 472-84840 SEDGWICK CO.

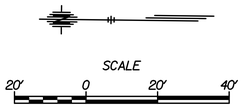
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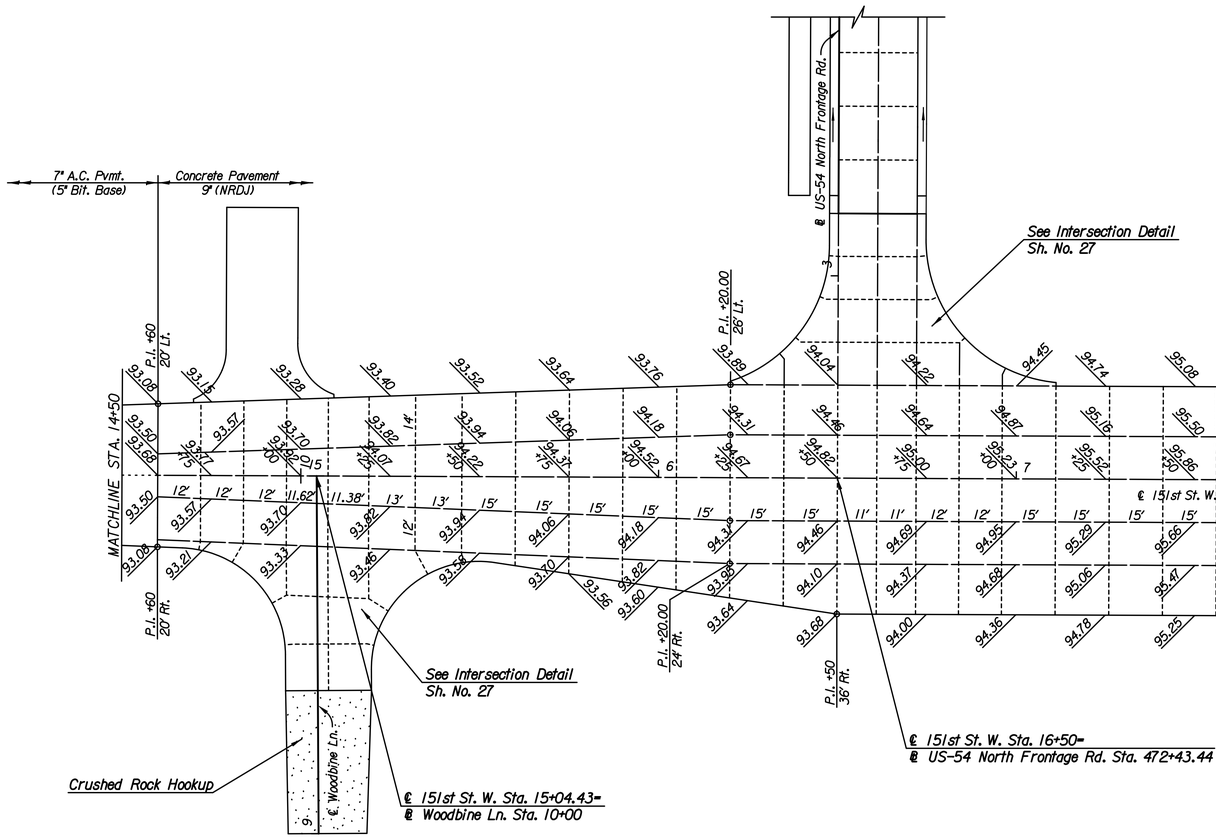
Designed by	CKC	Job No.	08313	Sht. 34 of 201
Drawn by	DRP	Date	June, 2014	

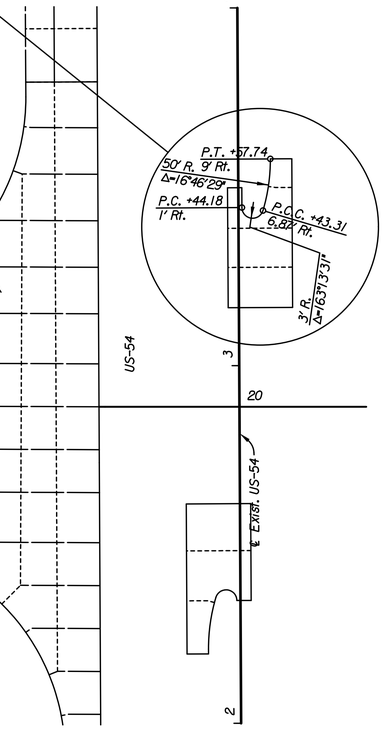
Plotted By: drp Date: 7/17/2014 7:56:17 AM
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LEGEND

- * Match Existing
- Longitudinal Joint (Tied)
- Transverse Joint
- Expansion Joint
- 7" A.C. Pvmt.

No.	Revision	By	Date

CITY OF WICHITA

PAVING PLAN
151ST STREET WEST
STA. 11+50 TO STA. 19+60.75

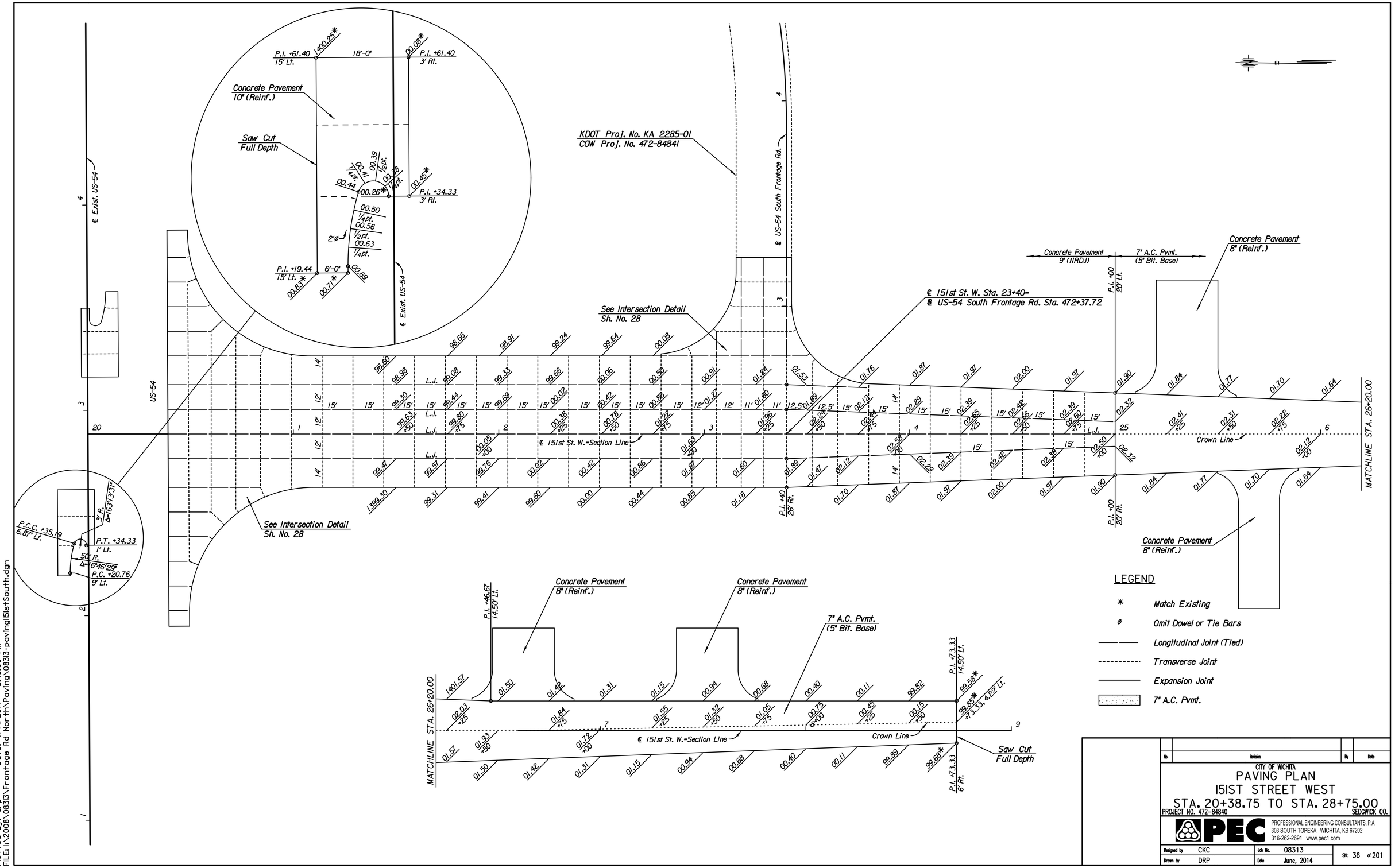
PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 35 of 201

Plotted By: drp Date: 7/14/2014 2:49:00 PM
FILE: I:\2008\08313\Frontage Rd North\Paving\08313-paving151st.dgn



LEGEND

- * Match Existing
- ø Omit Dowel or Tie Bars
- Longitudinal Joint (Tied)
- Transverse Joint
- Expansion Joint
- 7" A.C. Pvmt.

No.	Revision	By	Date

CITY OF WICHITA

PAVING PLAN
151ST STREET WEST
STA. 20+38.75 TO STA. 28+75.00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 36 of 201

Plotted By: drp Date: 7/14/2014 2:49:00 PM
FILE: I:\2008\08313\Frontage Rd North\Paving\08313-pavingI51stSouth.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA-2289-01	2014	37	201

Construct rumble strips on shoulder through passing or climbing lane
(Except for entrances, sideroads, and intersections)

℄ Major Highway

TYPICAL PASSING OR CLIMBING LANES

Limit of rumble strips on outside shoulder

No rumble strips to be constructed on outside shoulder through this area

Rumble strips on outside shoulder

Rumble strips continuous on median shoulders

Limit of rumble strips on outside shoulder

No rumble strips to be constructed on outside shoulder through this area

Rumble strips on outside shoulder

TYPICAL INTERCHANGE RAMP ENTRANCE & EXIT

Rumble strips on shoulder

No rumble strips to be constructed on shoulder through this area

Rumble strips on shoulder

Unimportant Road

℄ Major Highway

Minor Highway

Rumble strips on shoulder

No rumble strips to be constructed on shoulder through this area

Rumble strips on shoulder

TYPICAL INTERSECTION

Rumble strips on shoulder

No rumble strips to be constructed through this area

Rumble strips on shoulder

Shoulder

End of Rad.

Sideroad or Paved Entrance

End of Rad.

℄ Project

MINOR SIDEROAD OR ENTRANCE

Note: Construct rumble strips at normal spacing on the shoulders at field or other low-use, non-paved entrances.

15'-0"

10 Depressions

2'-8½"

2'-8½"

2'-8½"

12" Typ.

Edge of Travel Way

6"

Contr. Jt. (Conc.)

Contr. Jt. (Conc.)

15'-0"

PLAN VIEW-SPACING OF RUMBLE STRIPS

6'-0" (typ.)

Edge of Travel Way

6"

12" Typ.

14½"

Trans. Jt.

Trans. Jt.

Trans. Jt.

Trans. Jt.

Conc. Sho.

MILLED RUMBLE STRIP on PCCP OVERLAY (≥ 5")

GENERAL NOTES

All work and materials required for construction of rumble strips in asphalt or concrete pavement are paid under the bid item "Rumble Strips Milled".

See typical sections for other surfacing and shoulder details.

Do not construct rumble strips on bridges or concrete bridge approaches.

⊛ Construct rumble strips on directional ramps and tapers.

Adjust the number of depressions when concrete pavement contraction joint spacing is less than 15'-0". No variation in spacing between depressions is permitted. Clearance is 2'-0" (min.) to 3'-0" (max.) between the edge of depression and contraction joint. Center each group of depressions between contraction joints.

Either rumble strip shape is acceptable with no mixing of shapes on a project unless approved by the engineer.

12"

Top of pavement

½" to ⅝" depth

SECTION B-B

12"

Top of pavement

½" to ⅝" depth

SECTION B-B (ALT. SHAPE)

12" Radius

½" to ⅝" depth

SECTION A-A
(Typical for both shapes)

½" to ⅝" depth

12" Radius

ELEVATION

12"

7"

5"

A

B

12"

PLAN
DETAILS OF DEPRESSION

7"

12"

7"

5"

12"

PLAN
DETAILS OF DEPRESSION (Alternate Shape)

NO.	DATE	REVISIONS	BY	APP'D
6	11-8-2012	Revised Detail, Rumble Strip Dim.	S.W.K.	J.O.B.
5	10-10-10	Add. detail for Rumble strip on PCCP	S.W.K.	J.O.B.
4	6-5-07	Added Sec. B-B (Alt.)	S.W.K.	J.O.B.
3	2-2-06	Rev. Layout and Added Alt. Shape	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

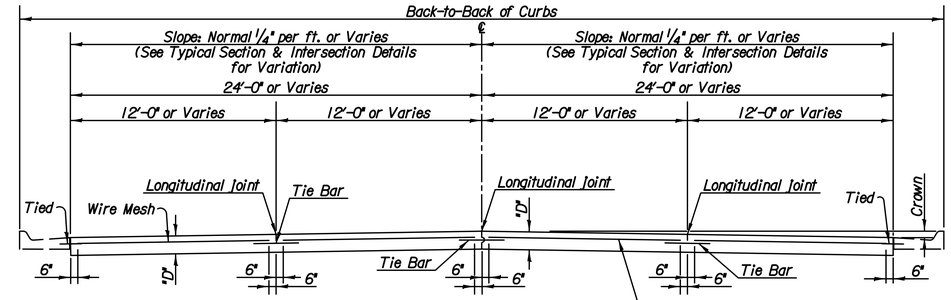
MILLED RUMBLE STRIPS (CONCRETE/ASPHALT SHOULDER) SHOULDER WIDTH ≥ 2'-0"

RD707

FHWA APPROVAL	5-21-2013	APP'D. James O.Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

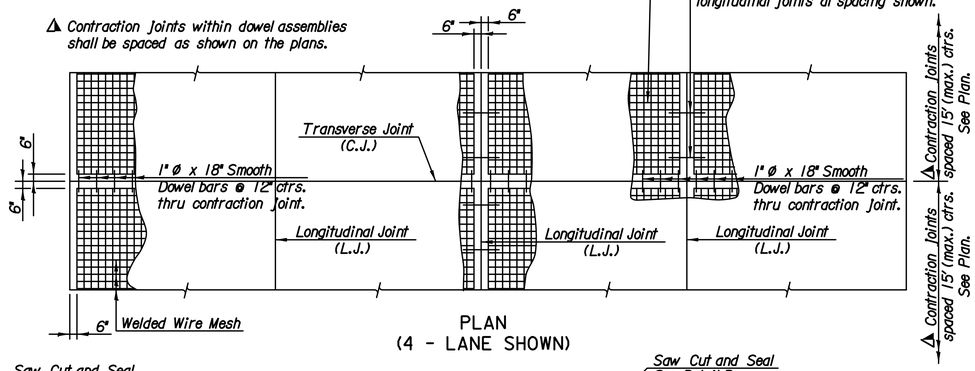
Note to Designer: Construct rumble strips on high speed and/or high traffic volume ramps on directional type interchanges.

Plotted : 14-JUL-2014 14:51
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd707.dgn

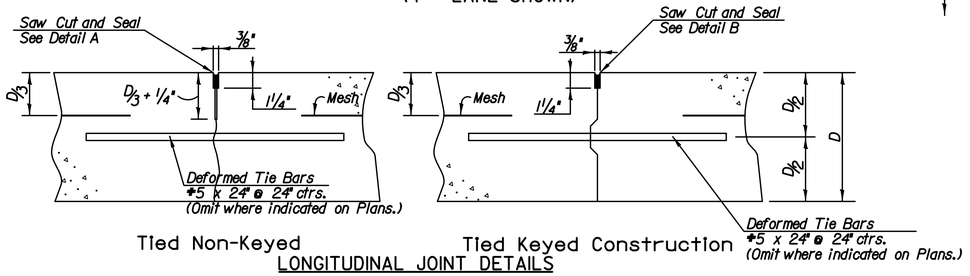


For Curb & Gutter details
See Sh. No.

TRANSVERSE SECTION
(4 - LANE SHOWN)

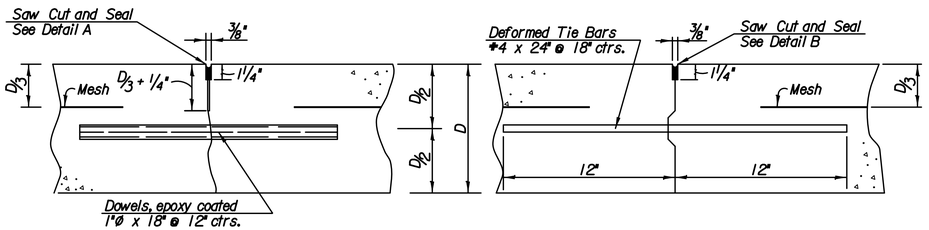


PLAN
(4 - LANE SHOWN)



Tied Non-Keyed Tied Keyed Construction

LONGITUDINAL JOINT DETAILS
(L.J.)

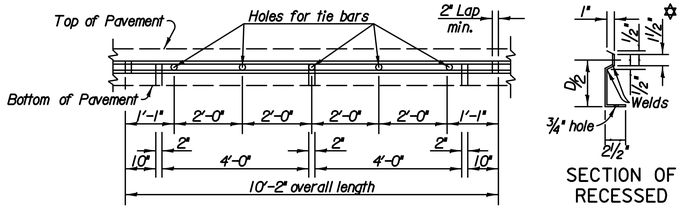


Contraction Construction

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.

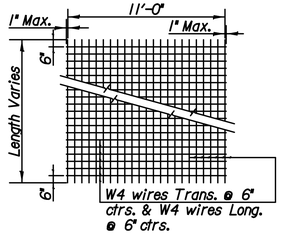


METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT

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



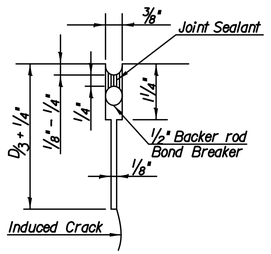
TYPICAL SHEET OF WELDED WIRE MESH
(NOT TO SCALE)
(12' Lane Width Shown)



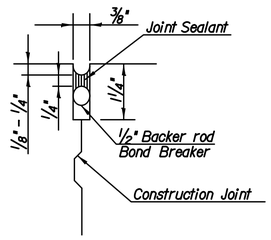
DETAIL OF LAP FOR WIRE MESH

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

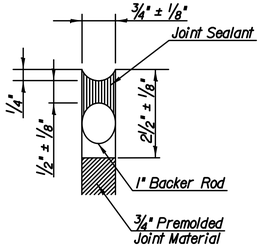
The sheet shall be wired securely at the edges and at intervals not to exceed 2'-6" for the full width of the sheet. Approximate weigtht of wire mesh = 58 lbs. per 100 sq. ft. Other methods for fastening the sheets of wire mesh at the laps may be used with the approval of the Engineer.



DETAIL A



DETAIL B



DETAIL C

GENERAL NOTE

All deformed tie bars shall be epoxy coated. Any damage to the epoxy coating shall be patched in accordance with the Standard Specifications.

Deformed tie bars which require bending shall be billet steel reinforcing bars, Grade 40 and may or may not be epoxy coated.

Tie bars shall be placed parallel to the pavement surface with a tolerance of 1/2" in 18" in the vertical direction. Care should be taken to assure that tie bars are placed approximately perpendicular to the joint in the horizontal plane.

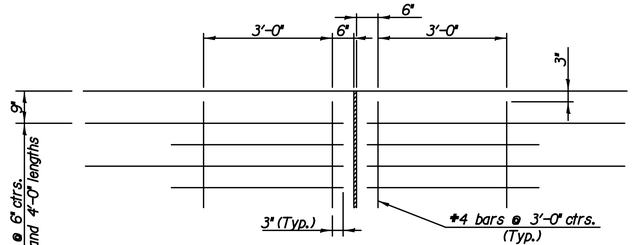
Unless otherwise noted, load transfer devices as shown in detail shall be used at all contraction joints.

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

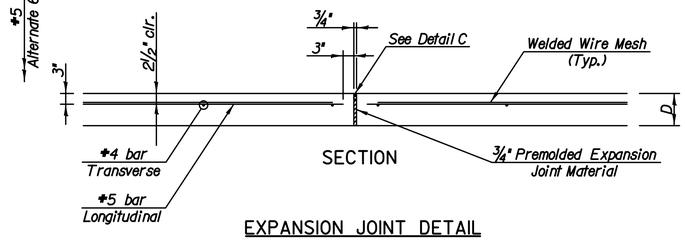
All joints on this project shall be sawed and filled with hot pour type sealant.

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" wide strip of pavement surface shall be protected from the texturing operation to provied a transverse textureless surface centered over the joint saw cut.



PLAN



SECTION

EXPANSION JOINT DETAIL
(E.J.)

DOWEL SIZE	
D (in.)	Diameter
8	1"
9	1 1/8"
10	1 1/4"
11	1 3/8"
12	1 1/2"

This Sheet is adapted from KDOT Standard Sheet RD708.

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

Note: Joint Sealant shall be Hot Pour Type unless otherwise approved by the Engineer

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

No.	Revision	By	Date

CITY OF WICHITA

CONCRETE PAVEMENT

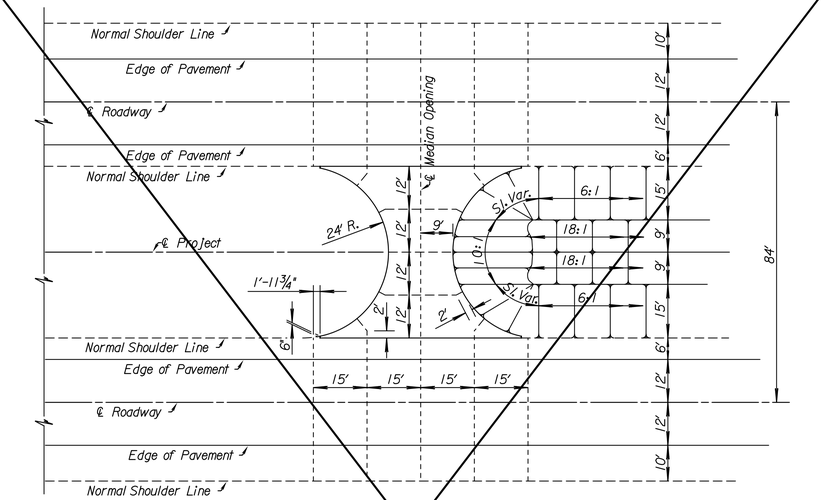
PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

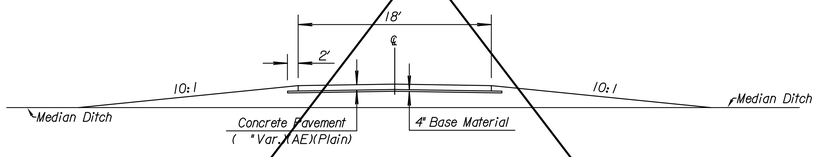
Designed by	CKC	Job No.	08313	Sht. 38 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:01PM
FILE: I:\2008\08313\Frontage Rd North\Standards\08313-Concrete Pvmt.dgn

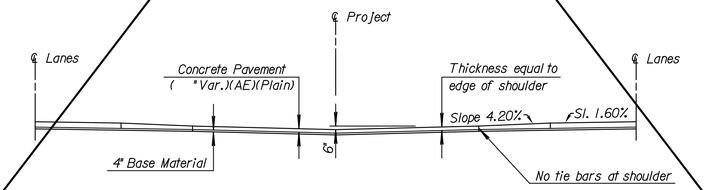
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	39	201



U-TURN MEDIAN OPENING - FOUR LANES (DIVIDED)

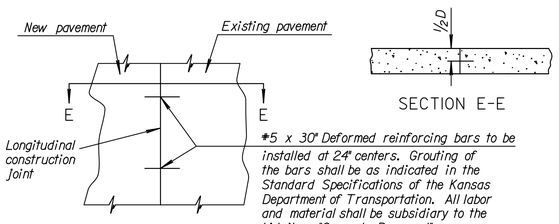


TYPICAL SECTION at PROJECT ℄



TYPICAL SECTION at ℄ of CROSSOVER

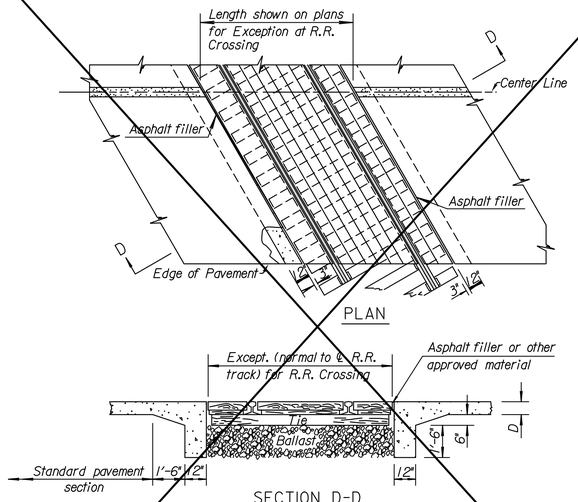
Note: The U-Turn Median Opening constructed to the dimensions shown shall be paid as 150 sq. yds. of Concrete Pavement (in. Var.) (AE) (Plain).



#5 x 30" Deformed reinforcing bars to be installed at 24" centers. Grouting of the bars shall be as indicated in the Standard Specifications of the Kansas Department of Transportation. All labor and material shall be subsidiary to the bid item "Concrete Pavement".

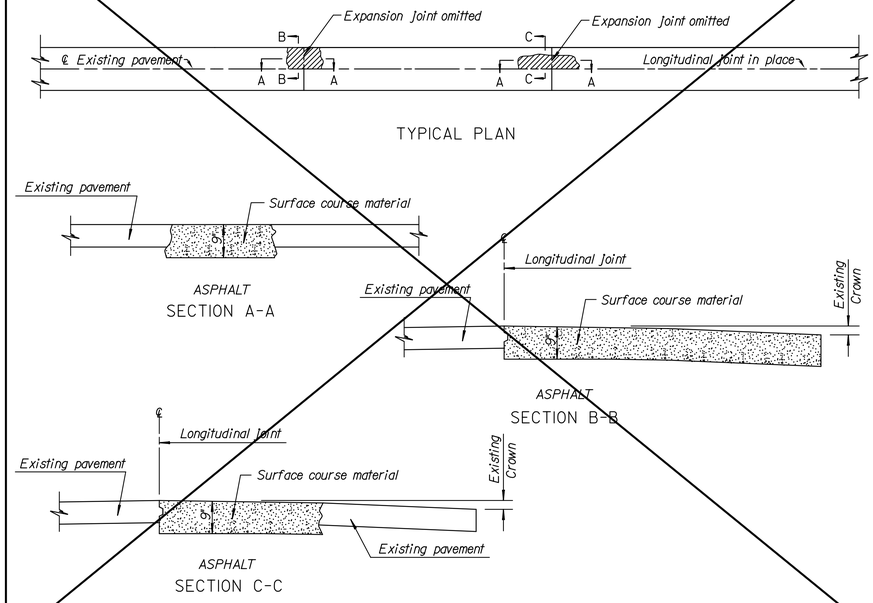
METHOD OF TYING PAVEMENT TO EXISTING PAVEMENT

PAVEMENT WIDENING

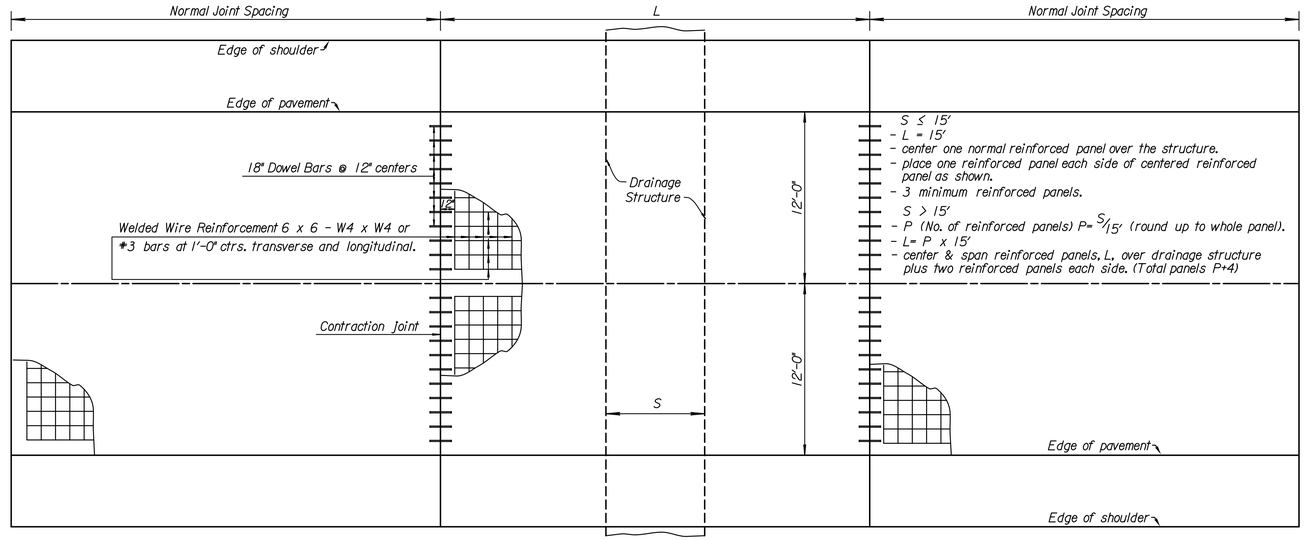


CONCRETE HEADER AT RAILROAD CROSSINGS

NOTE: Header to be paid for as additional area of concrete pavement, to be computed by adding two (2) feet times the width parallel to R.R. track for each header.



ASPHALT PAVEMENT PATCHING



OPTIONAL REINFORCED PCCP PANEL OVER DRAINAGE STRUCTURES

(Example shown with drainage structure less than normal slab width.)

GENERAL NOTE:

This procedure is to be used to mitigate interpanel cracking in PCCP panels being placed over drainage structures. Welded wire reinforcement or #3 rebar may be used to reinforce the pavement.

Welded wire reinforcement should be a minimum size of 6 x 6 - W4 x W4. Material placement is 9" from centerline/shoulder joint and 12" from contraction joints. The depth of placement is half the depth of the pavement, +/- a tenth of that depth.

When #3 bars are used the spacing is a 12" x 12" grid with 12" spacing from centerline/shoulder joint and 12" from contraction joints. The depth of placement is half the depth of the pavement, +/- a tenth of that depth.

See typical sections and pavement standard drawings for normal panel details. The contractor may elect to extend the reinforced panels to any distance or reinforce other locations where potential pavement cracking may occur as coordinated with the engineer.

All work and material required for reinforcing PCCP panel over drainage structure or other locations not specified in the plans shall be subsidiary. See the KDOT Standard Specifications for additional details.

NO.	DATE	REVISIONS	BY	APP'D
9	1-10-07	Changed bituminious to asphalt	S.W.K.	J.O.B.
8	3-30-05	Revised reinforcing wire callout	S.W.K.	J.O.B.
7	6-15-04	Added reinf. panel over drain. struct	S.W.K.	J.O.B.
6	5-12-98	Add. Median Crossover pay quantity	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

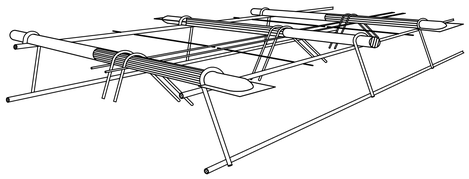
CONCRETE PAVEMENT AUX. DETAILS REIN. PANEL OVER STRUCTURE & PAVEMENT PATCHING DETAILS

RD720

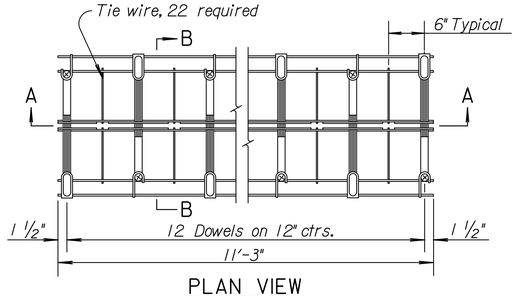
FHWA APPROVAL	6-13-05	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seltz

Plotted : 14-JUL-2014 14:51
Drawn By : drp
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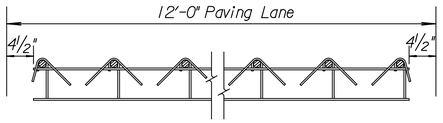
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KANSAS	KA 2289-01	2014	40	201



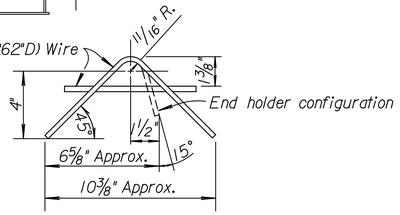
PERSPECTIVE VIEW

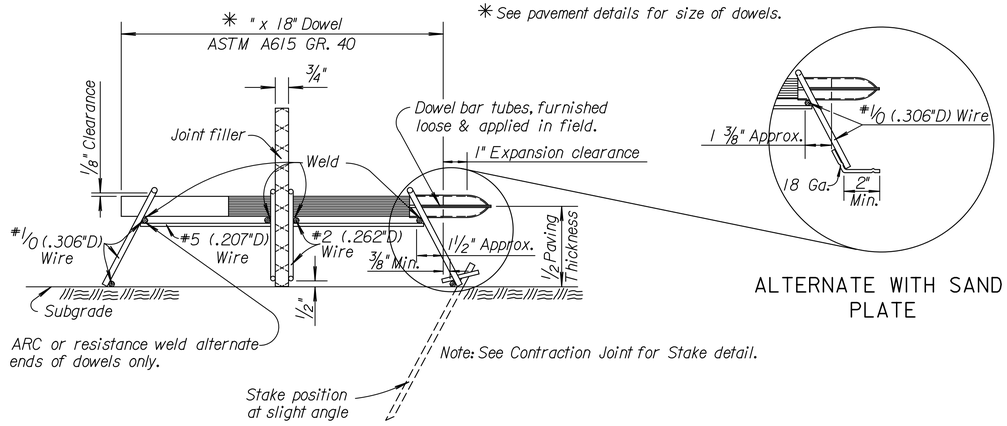


PLAN VIEW



SEC. A-A



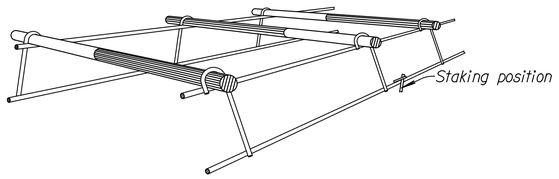


SEC. B-B

* See pavement details for size of dowels.

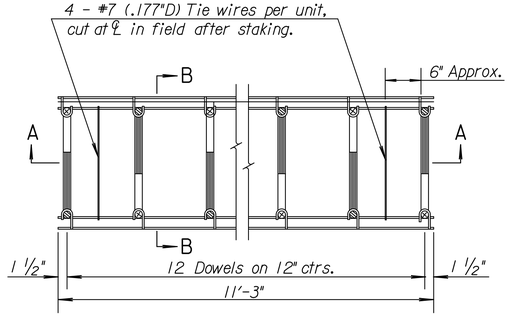
ALTERNATE WITH SAND PLATE

EXPANSION JOINT

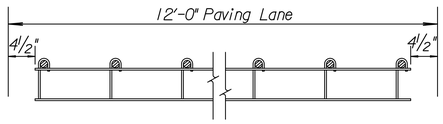


Staking position

PERSPECTIVE VIEW

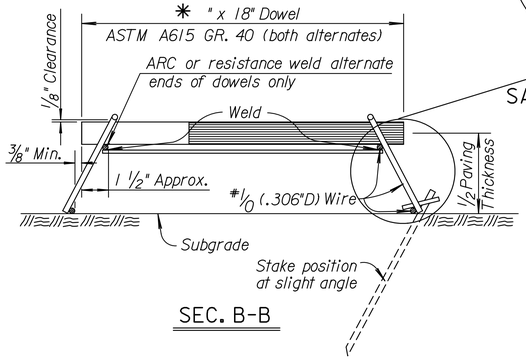


PLAN VIEW

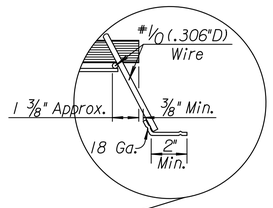


SEC. A-A

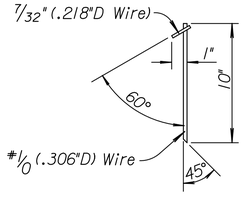
* See pavement details for size of dowels.



SEC. B-B



SAND PLATE (Alt. 1)



STAKE DETAIL

(6 Pieces minimum required)

CONTRACTION JOINT

Note: Wire sizes shown are minimum required.

Sides held together with tie wire, allowing quick separation of sides & insertion of expansion material, provided in field.

One length of Preformed Expansion Joint filler (Type B), or other approved material, cut to fit crown and subgrade shall be used for each lane of pavement as expansion joint filler.

A string line shall be stretched between the pavement forms along the center line of the joint.

Each dowel bar shall be coated with an epoxy coating that meets the standard specifications. The coating material shall be a powdered epoxy resin approved by the Chief, Bureau of Materials and Research and shall be uniformly applied according to accepted practices and the resin manufacturer's recommendations. For Alt. I the coating need not be applied to the end faces of the bars and will not be required within 2" of the end which will be fixed in the supporting basket by welding.

In order to identify the location of the bond breaker application, the working end of dowel and the supporting leg shall receive a light application of red paint at the place of fabrication. The bond breaker to be applied in the field prior to concrete placement shall consist of coating approximately three-fifths of the length of each dowel bar with hard grease at the working end identified by the red paint.

The cutting to length of the dowel bars shall be done in such a manner to result in no appreciable deformation of the ends.

The entire joint assembly shall be carefully leveled up so that the dowels are parallel to the slab surface and free to slide in the dowel holders. Any grease scraped off the dowels in assembling the joint shall be replaced. Any excess grease on the dowel holders shall be removed.

After the complete expansion joint is assembled, it shall be checked to be certain that the vertical plane of the joint will be perpendicular to the finished surface of the slab and at a right angle with the center line of the slab. The dowels shall be checked to be certain that they are level and will remain in a position parallel with the finished surface of the slab.

Concrete shall be placed over and adjacent to the joint in accordance with the requirements of the Specifications.

To finish the joint after completion of machine finishing, floating and straight edging of the surface. the concrete over the filler shall be carefully removed and the joint edged with an edger of the proper size.

Expansion Joint material is to be installed in the field.

Other approved designs may be used in lieu of the type shown.

GENERAL NOTE

Dowel bar insertion may be by mechanical dowel placers regardless of the joint spacing.

Each dowel bar shall be coated with an epoxy coating that meets the standard specifications. The coating material shall be a powdered epoxy resin approved by the Chief, Bureau of Materials and Research and shall be uniformly applied according to accepted practices and the resin manufacturer's recommendations. For Alt. I the coating need not be applied to the end faces of the bars and will not be required within 2" of the end which will be fixed in the supporting basket by welding.

The cutting to length of the dowel bars shall be done in such a manner to result in no appreciable deformation of the ends.

Alt. 1 (Baskets)

Wire sizes shown are minimum required.

Basket to be staked to sub-grade, as shown. Ramset or similar type fastener with clip to be used when subgrade condition requires it.

A string line shall be stretched between the pavement forms along the center line of the joint. The position of the joint shall be carefully marked so that the saw cut will coincide with the center line of the joint.

In order to identify the location of the bond breaker application, the working end of dowel and the supporting leg shall receive a light application of red paint at the place of fabrication. The bond breaker to be applied in the field prior to concrete placement shall consist of coating approximately three-fifths of the length of each dowel bar with hard grease at the working end identified by the red paint.

The entire joint assembly shall be carefully leveled so that the dowels are parallel to the slab surface and free to slide in the dowel holders. Any coating scraped off the dowels in assembling the joint shall be replaced.

After the complete contraction joint is assembled, it shall be checked to be certain that the vertical plane of the joint will be perpendicular to the finished surface of the slab and at a right angle with the center line of the slab unless shown otherwise on the plans. The dowels shall be checked to be certain that they are level and will remain in a position parallel with the finished surface of the slab.

Concrete shall be placed over and adjacent to the joint in accordance with the requirements of the Specifications.

Other approved designs may be used in lieu of the type shown.

Alt. 2 (Mechanical placement)

Joint spacing shall be normal to centerline.

The pavement shall be placed and consolidated to full depth prior to insertion of the dowel bars.

The dowel bars shall be coated with a bond breaking agent prior to insertion into the plastic concrete.

The dowel bars shall be inserted into the plastic concrete ahead of the finishing beam or screed.

The installing device shall consolidate the concrete around the dowel bars such that no voids exist, without the supplemental use of hand held vibrators.

The dowel bars shall be located within one inch of the planned transverse location and within the range of depth of D/2 ± 0.1 D measured from mid depth and mid length of the bar where D represents the pavement thickness.

The dowel bars shall be located within two inches of the planned longitudinal location.

The dowel bars shall be parallel to the pavement surface and centerline within a tolerance of one half inch in 18 inches in both the vertical and horizontal direction.

The forward movement of the finishing beam or screed shall not be interrupted by the inserting of the dowel bars.

A positive method of marking the locations of the transverse joints shall be provided.

NO.	DATE	REVISIONS	BY	APP'D
8	2-15-06	Chg. Grade 60 to Grade 40 Steel	S.W.K.	J.O.B.
7	5- 5-04	Revision on Epoxy coating	S.W.K.	J.O.B.
6	4- 9-03	Rev. General Note on Epoxy coating	S.W.K.	J.O.B.
5	4-24-90	Revised notes, added Alt. 1&2 Cont. Jt.	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

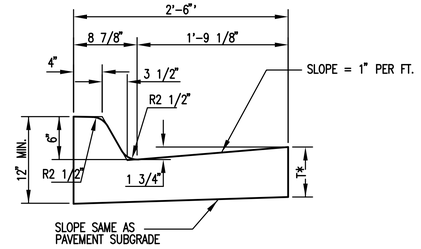
CONTRACTION & EXPANSION JT. DOWEL ASSEMBLIES

RD735

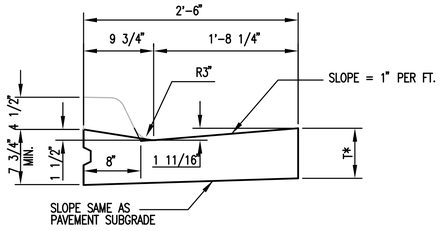
FHWA APPROVAL	4-20-06	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht

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TYPE 1
(ARTERIAL CURB)

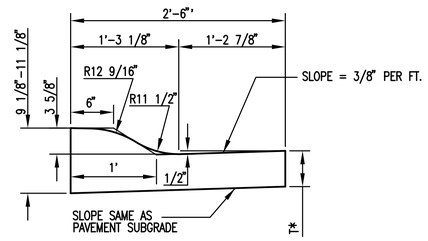


COMBINED CURB & GUTTER (6")

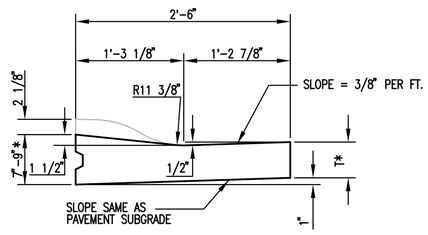


COMBINED CURB & GUTTER (1 1/2")

TYPE 2
(ROLL CURB)

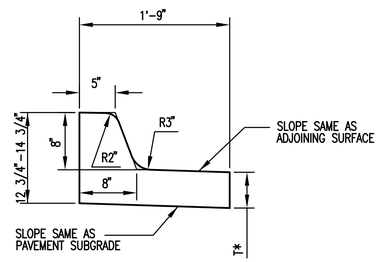


COMBINED CURB & GUTTER (3 5/8")

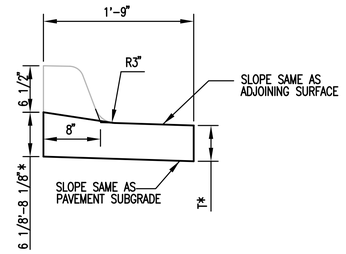


COMBINED CURB & GUTTER (1 1/2")

TYPE 3
(MEDIAN CURB)

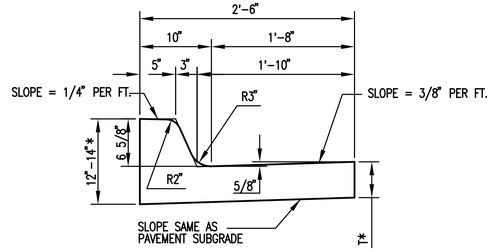


COMBINED CURB & GUTTER (8")

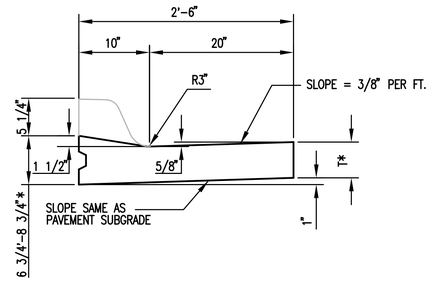


COMBINED CURB & GUTTER (1 1/2")

TYPE 4
(RESIDENTIAL CURB)

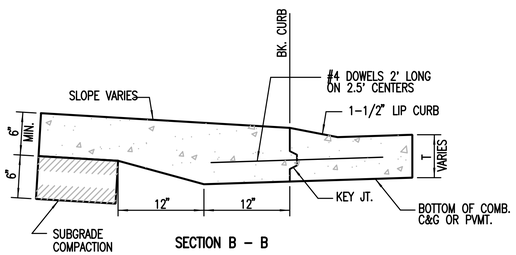


COMBINED CURB & GUTTER (6 5/8")

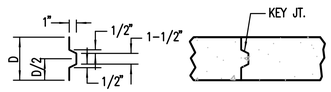


COMBINED CURB & GUTTER (1 1/2")

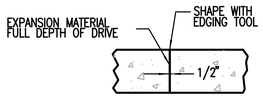
T* = THICKNESS OF CURB TO ADJUST WITH PAVEMENT THICKNESS



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
472-84840	760621	12/2010

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

DESIGN | DRAWN

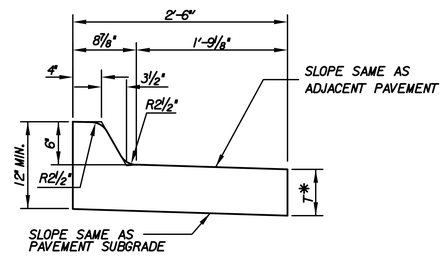
SHEET
41 of 201

PV-101

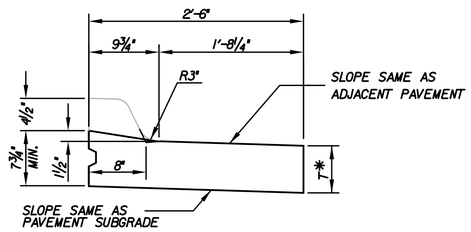
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TYPE I (SPECIAL)

(ARTERIAL CURB)



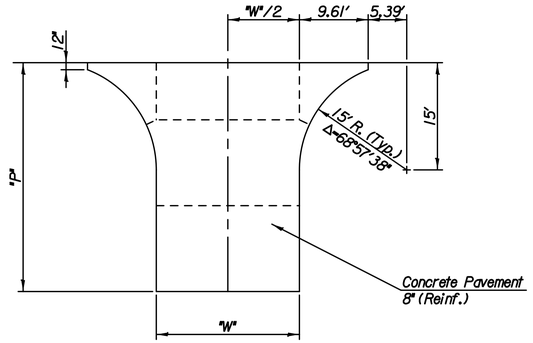
COMBINED CURB & GUTTER (6")



COMBINED CURB & GUTTER (11/2")

T* - THICKNESS OF CURB TO ADJUST WITH PAVEMENT THICKNESS

See Sheet No. 26 for additional curb and gutter notes and details.



ENTRANCE DETAIL

Sta. 14+89 Lt. (151st St. W.)
Sta. 25+35 Lt. (151st St. W.)
Sta. 25+70 Rt. (151st St. W.)
Sta. 26+62.55 Lt. (151st St. W.)
Sta. 27+52 Lt. (151st St. W.)

See Sheet No. 44 for additional entrance notes and details.

No.	Revision	By	Date

CITY OF WICHITA

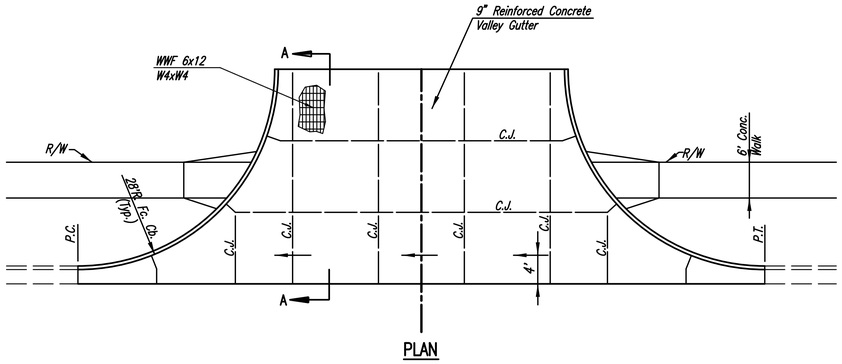
CURB AND GUTTER AND ENTRANCE DETAILS

PROJECT NO. 472-84840 SEDGWICK CO.

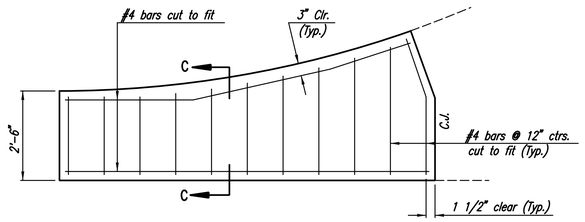
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 42 of 201
Drawn by	DRP	Date	June, 2014	

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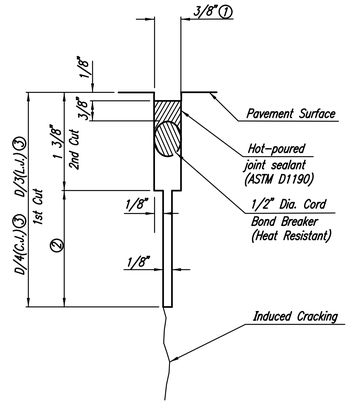


PLAN



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.

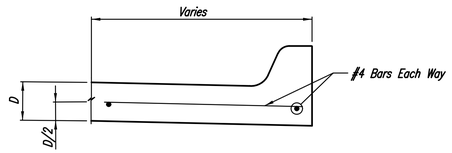
③ 1 1/2" Minimum

SECTION A-A

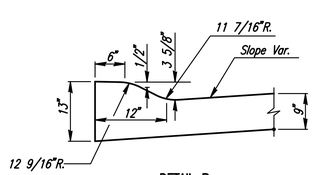
NOTE: OMIT REINFORCING MESH AT ALL JOINTS

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

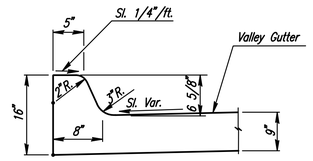
CONTRACTION JOINT DETAIL
REINFORCED PAVEMENT
(C.J.)



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

CITY OF WICHITA

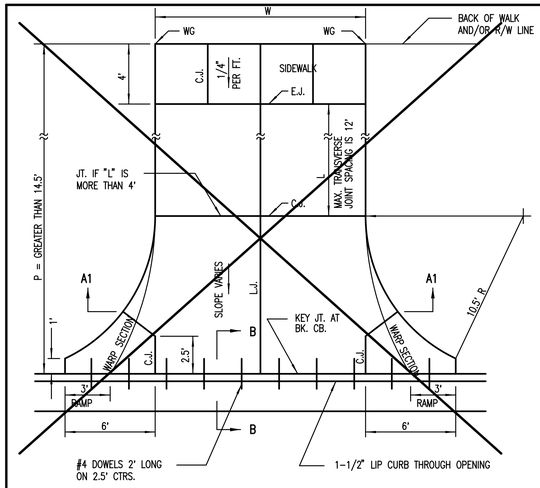
VALLEY GUTTER DETAILS

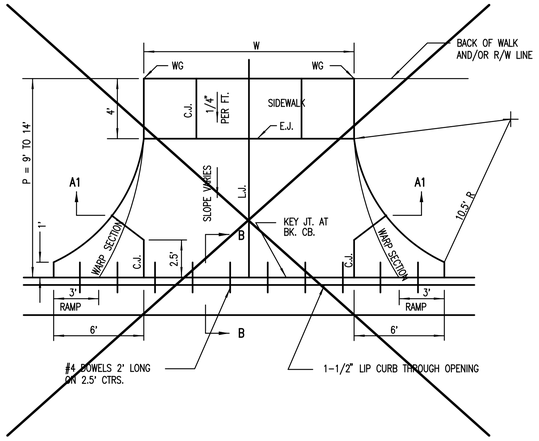
PROJECT NO. 472-84840 SEDGWICK CO.

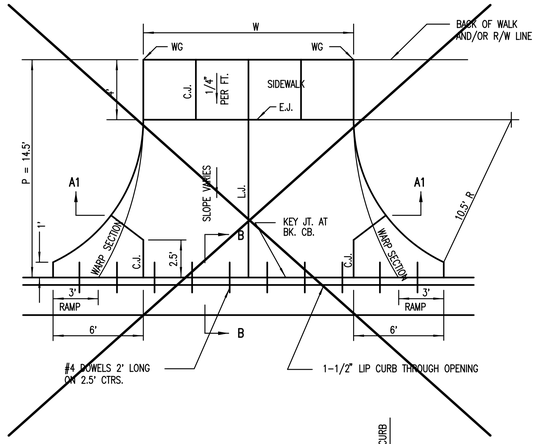
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

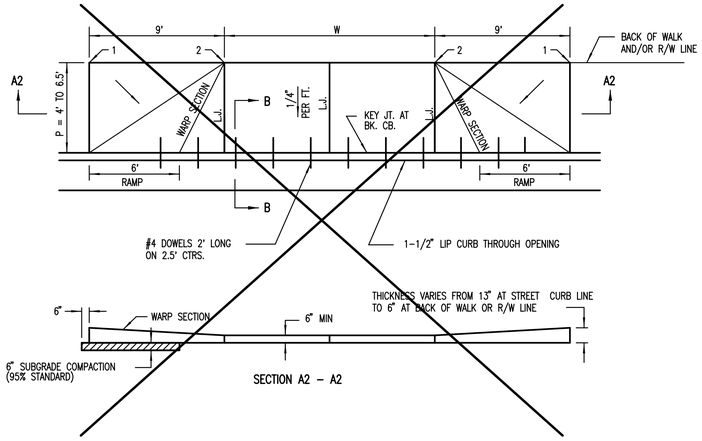
Designed by	CKC	Job No.	08313	Sht. 43 of 201
Drawn by	DRP	Date	June, 2014	

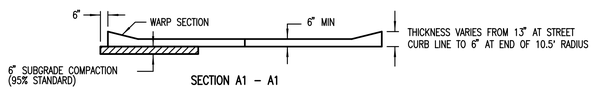
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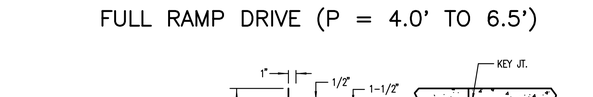








SECTION A1 – A1



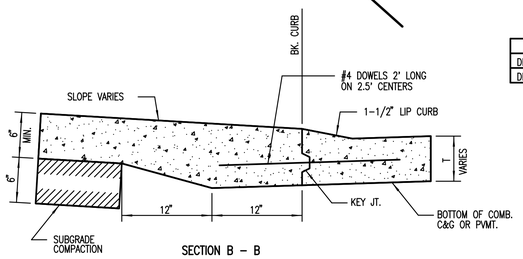
SECTION A2 – A2

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)

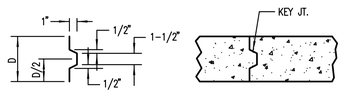
PARKING WIDTH "P"	4'	4.5'	5'	5.5'	6'	6.5'
DIST. OF PT. "1" ABOVE TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'	0.18'	0.22'
DIST. OF PT. "2" BELOW TOP OF FULL CURB	–.08'	0.02'	0.18'	0.22'	0.18'	0.22'

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

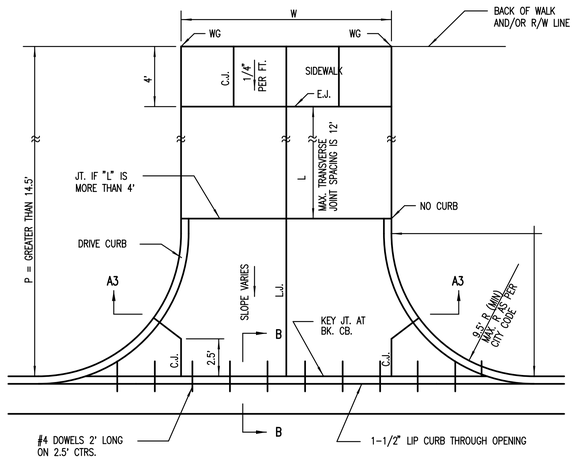


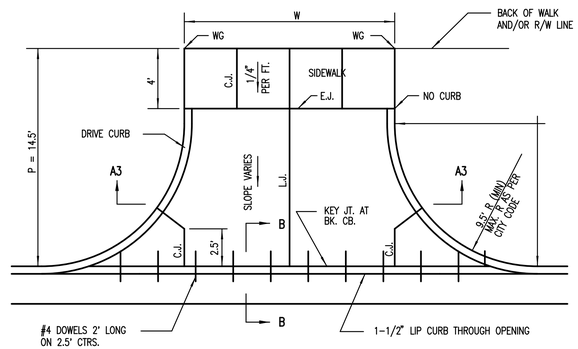
SECTION B – B

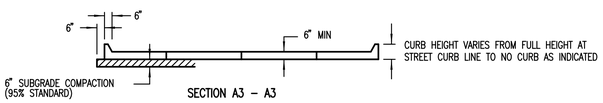
BACK OF CURB DETAIL



ALT. LONGITUDINAL CONSTRUCTION JOINT



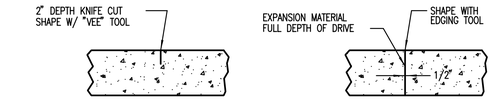


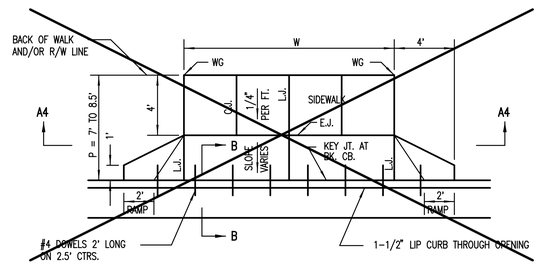


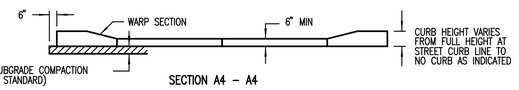
SECTION A3 – A3

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)







SECTION A4 – A4

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

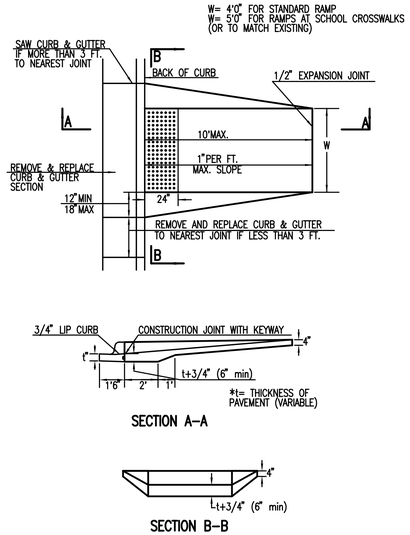
STANDARD DRIVE ENTRANCES FULL HEIGHT CURB

JAMES L. ARMOUR, P.E. – CITY ENGINEER

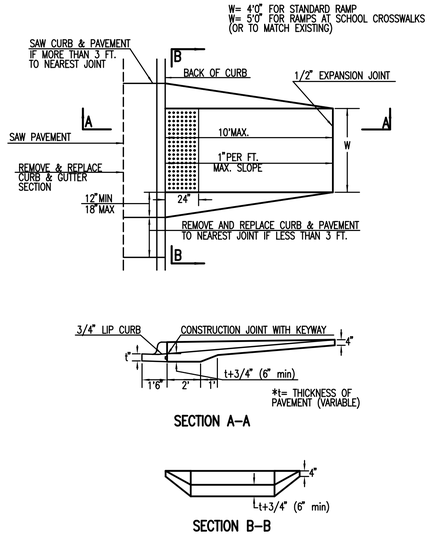
PROJECT NUMBER	INDEX CODE
472-84840	760621
DATE: MAR 96	SHEET 44 OF 201

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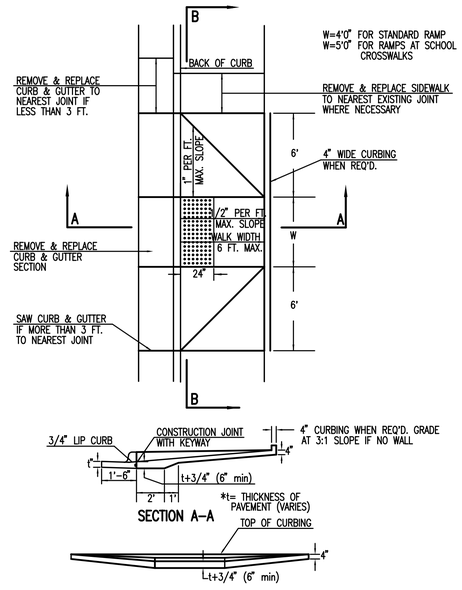
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER (TYPE A)



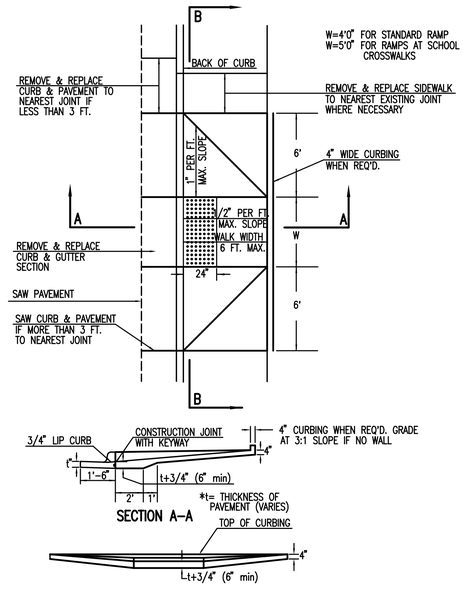
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR CONCRETE STREETS WITH MONOLITHIC CURB (TYPE A)



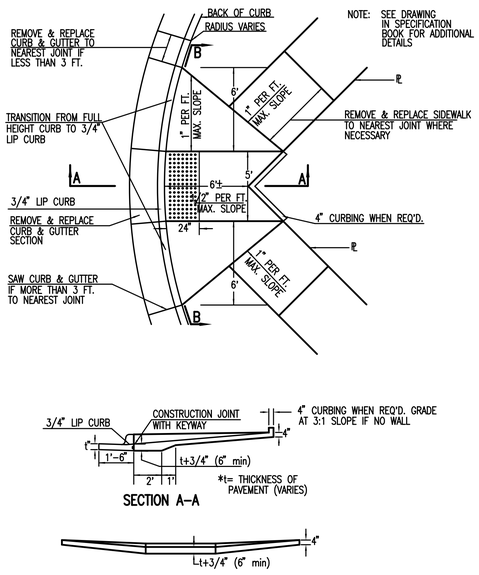
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER AND FULL WALK (TYPE B)



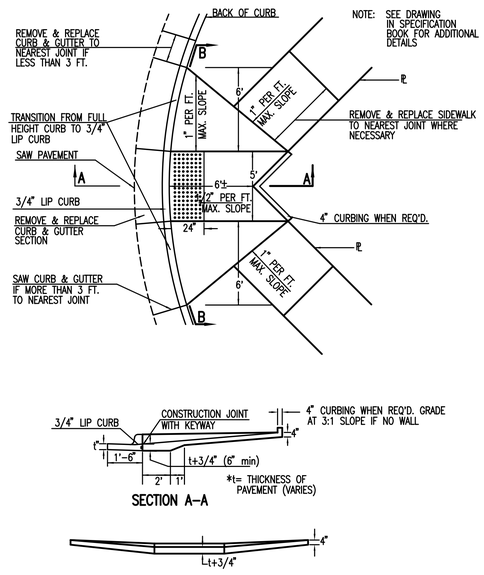
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH MONOLITHIC CURB AND FULL WALK (TYPE B)



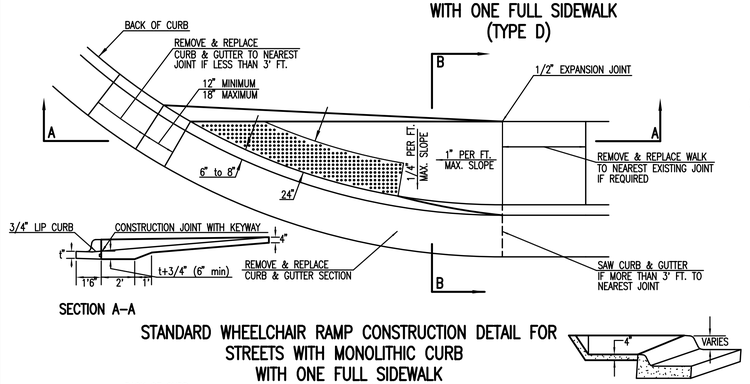
STANDARD WHEELCHAIR RAMP CONSTRUCTION DEAIL FOR STREET WITH COMBINED CURB AND GUTTER ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (TYPE C)



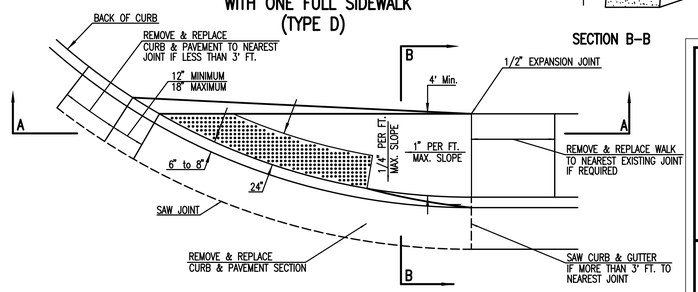
STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREET WITH MONOLITHIC CURB ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (TYPE C)

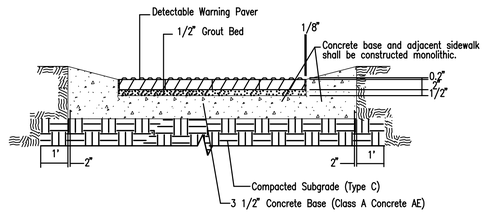


STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER WITH ONE FULL SIDEWALK (TYPE D)



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



CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

WHEELCHAIR RAMP DETAILS WITH DETECTABLE WARNING

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	08/2013

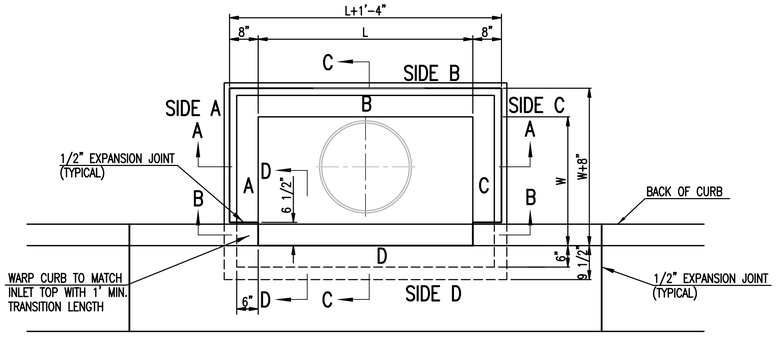
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
45 of 201

PV-110

Plotted By: drp Date: 7/14/2014 3:19:26 PM
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TOP VIEW

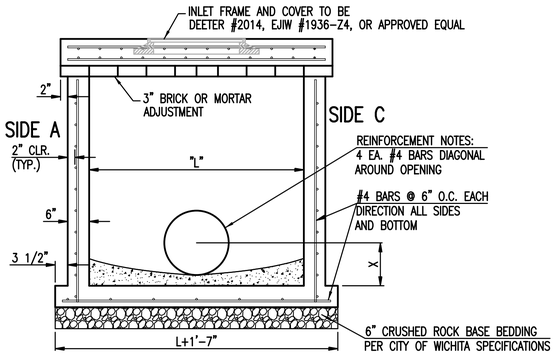
BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

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"

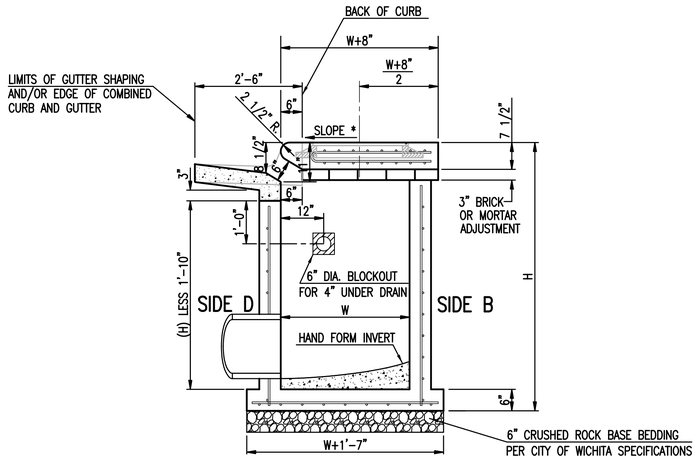
** FOR PIPES PERPENDICULAR TO INLET WALL

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.

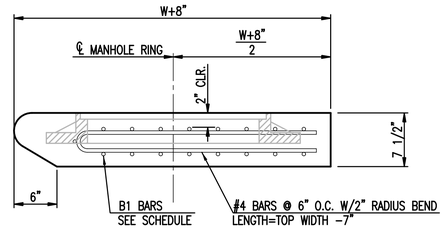


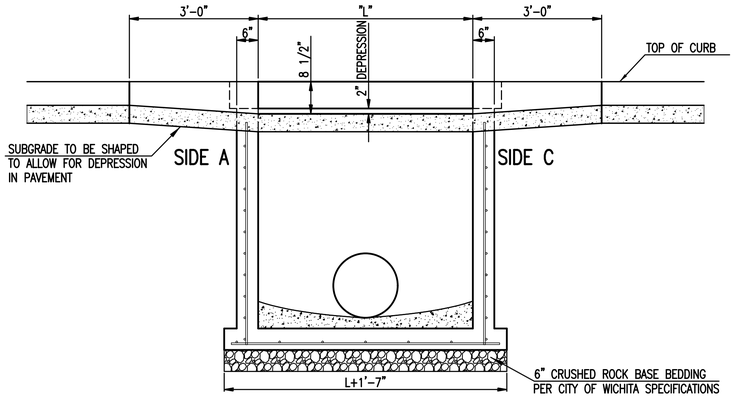
SECTION "A-A"



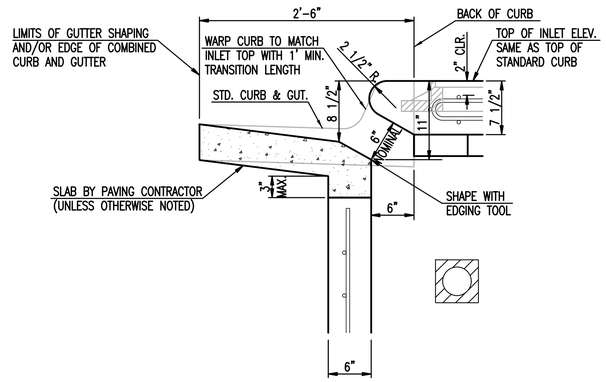
SECTION "C-C"

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
472-84840	760621	11/2010

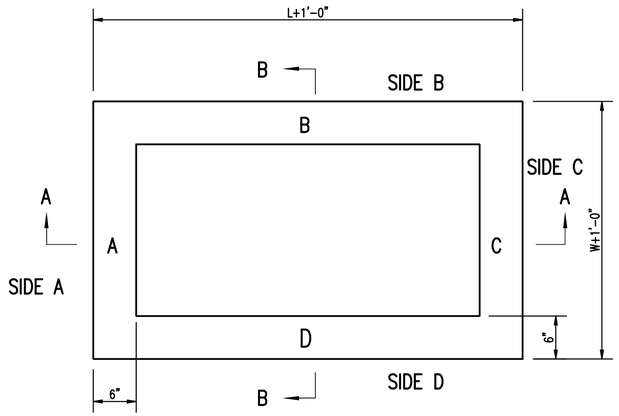
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

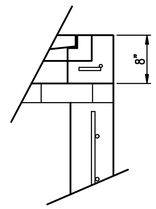
SHEET
46 of 201

SW-101

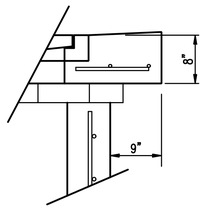
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TOP VIEW

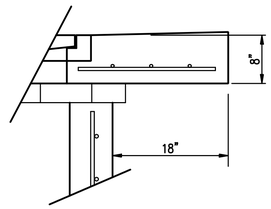


FLUSH STYLE TOP
NO APRON



9" APRON

* APRON TO EXTEND ON ALL 4 SIDES OF INLET. DESIGNER TO DESIGNATE APRON SIZE.



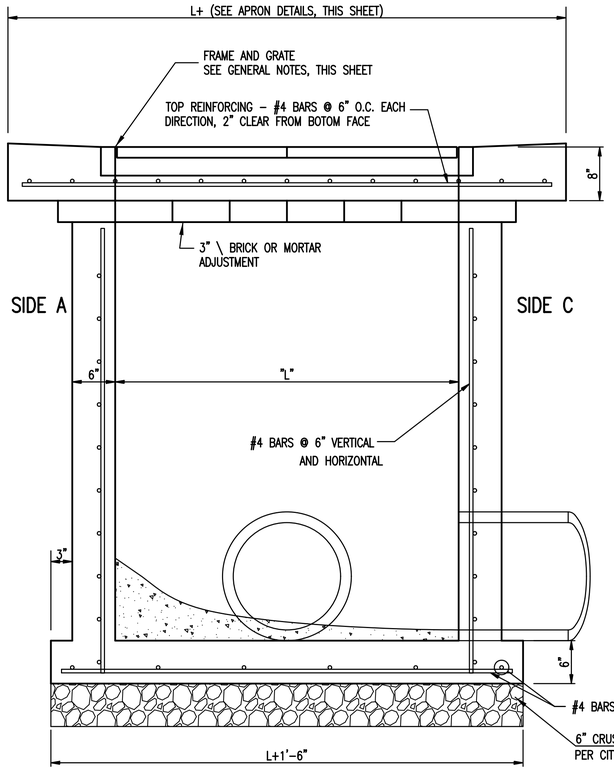
18" APRON

W=2' and L=2' for SINGLE DROP INLET
W=2' and L=4' for DOUBLE DROP INLET

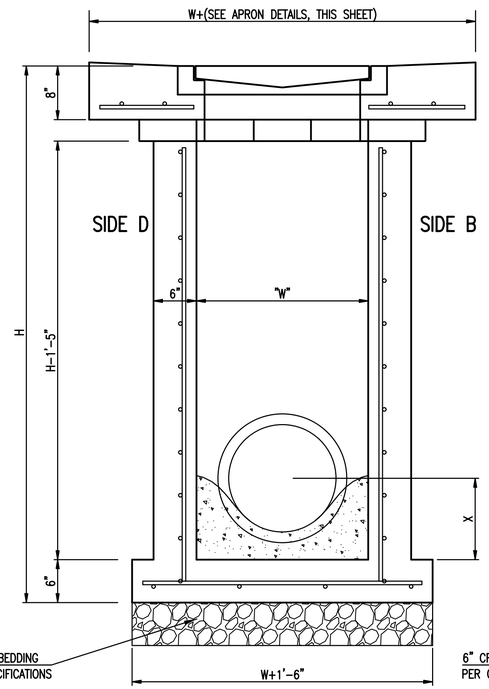
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

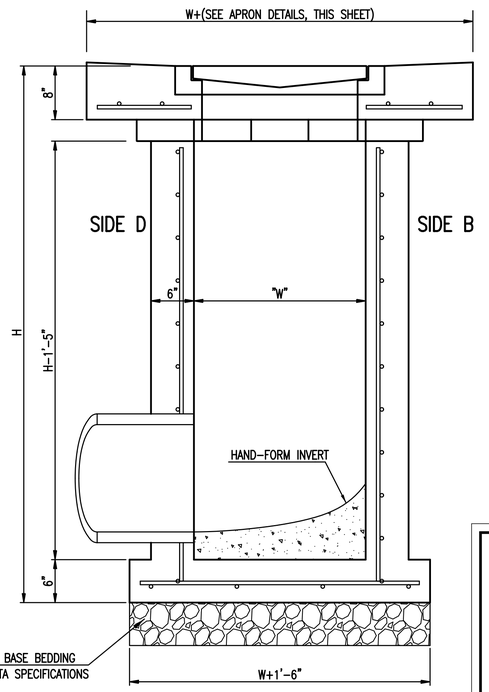
1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE 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 #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
5. 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 "B-B"
END OUTLET



SECTION "B-B"
SIDE OUTLET

REVISED 05/10/2011 - GJ

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

SINGLE/DOUBLE DROP INLET

CITY ENGINEER
GARY JANZEN, P.E.

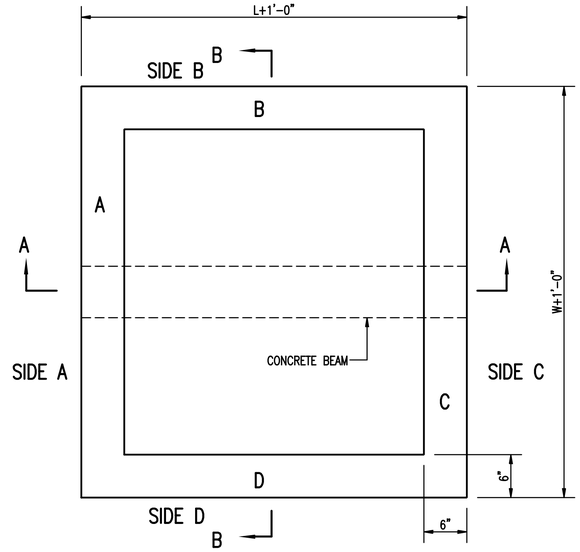
PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	11/2010

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

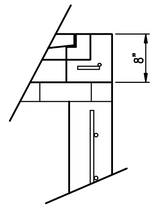
SHEET
47 of 201

SW-201

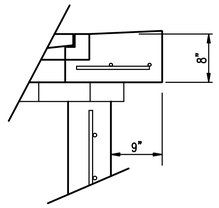
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TOP VIEW

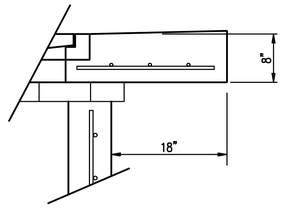


FLUSH STYLE TOP
NO APRON



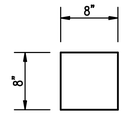
9" APRON

* APRON TO EXTEND ON ALL 4 SIDES OF INLET. DESIGNER TO DESIGNATE APRON SIZE.

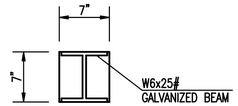


18" APRON

BEAM REQUIRED FOR THIS INLET



CONCRETE BEAM POCKET



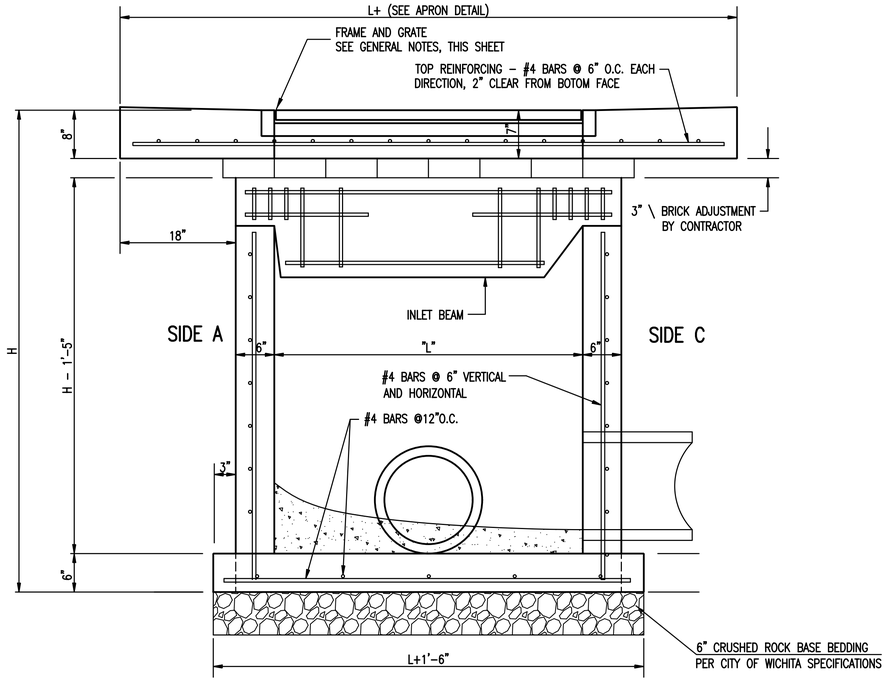
GALV. STEEL BEAM POCKET

W=4'-4" and L=4' for DOUBLE DROP INLET

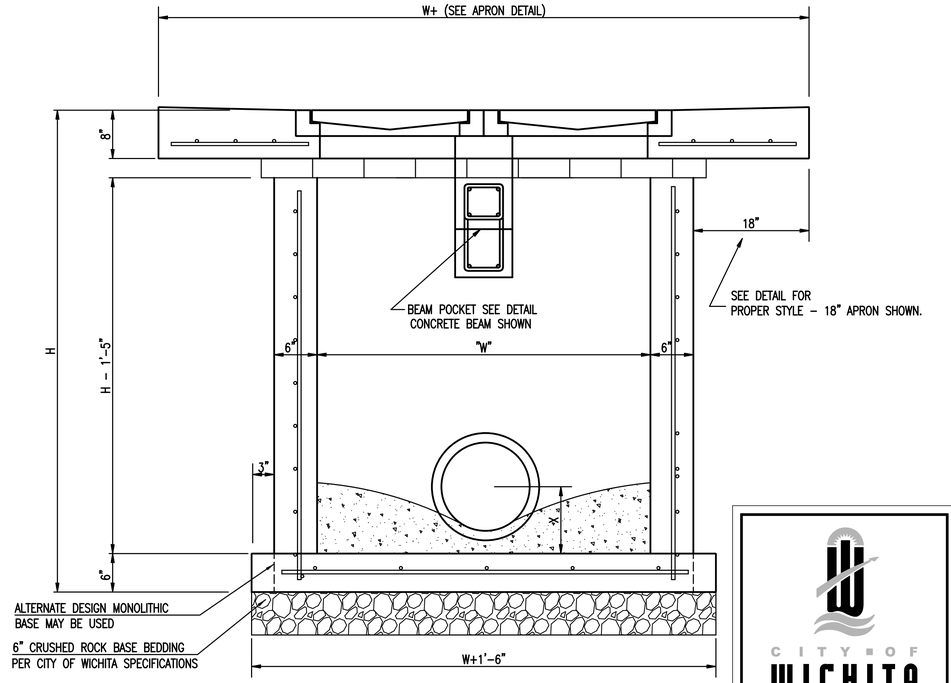
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

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.
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5. 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 "B-B"

REVISED 05/10/2011 - GJ

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

DOUBLE DOUBLE
DROP INLET
WITH BEAM

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	11/2010

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

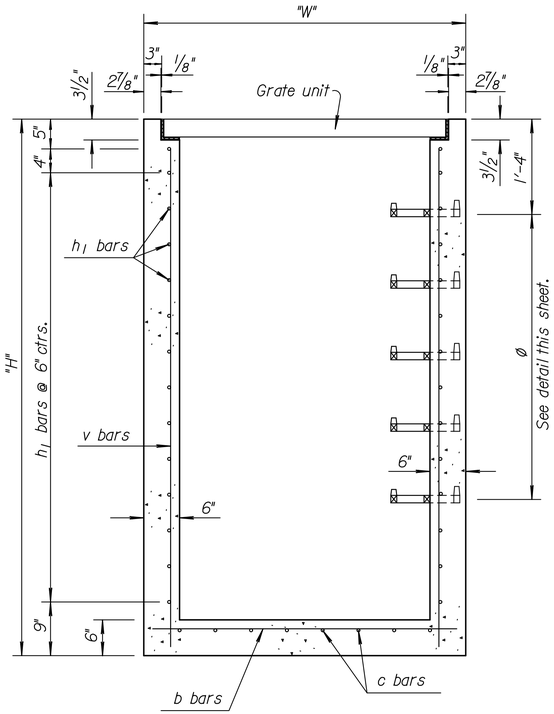
SHEET
48 of 201

SW-202

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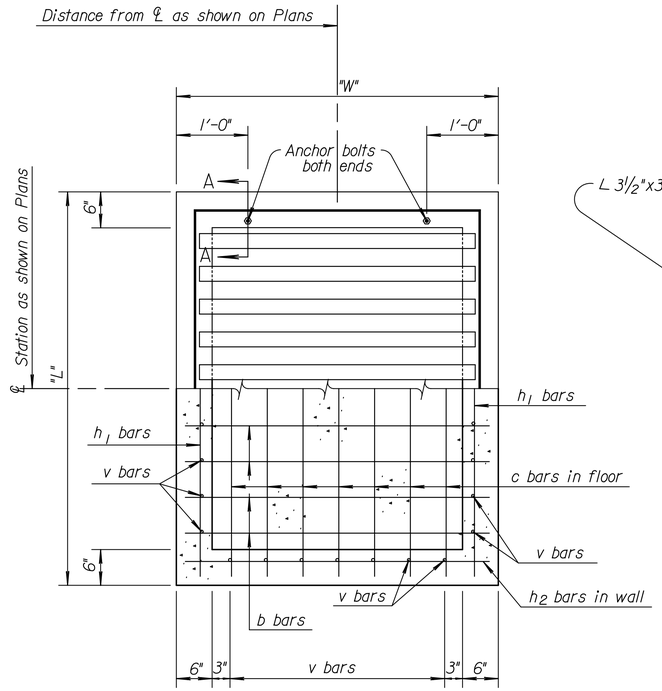
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	49	201

Note to Designer: For dimensions in any direction larger than those listed on this sheet, a structural design of both the inlet and grate should be performed.

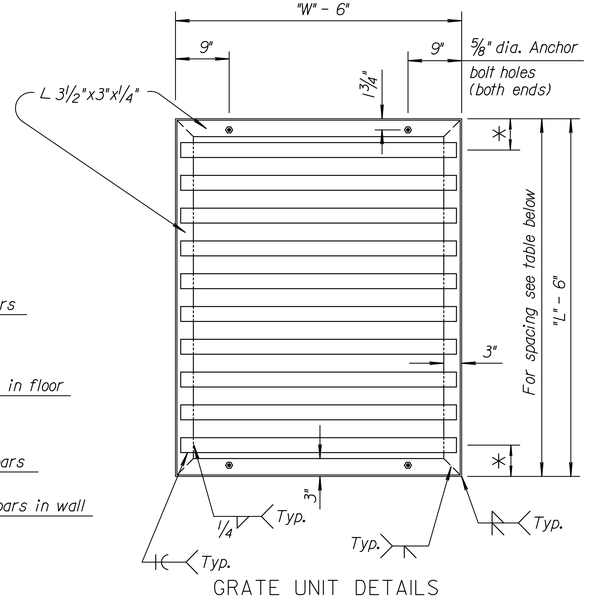


SECTION

Ø Steps shall be uniformly spaced. Spacing shall be 12" minimum and 16½" maximum.



PLAN AND SECTION



GRATE UNIT DETAILS

GENERAL NOTE

Use Concrete Grade 3.0 throughout. All exposed edges shall be finished with an edging tool.

At the contractors option, Concrete Grade 3.0 (AE) or mix used in concrete pavement may be used throughout.

In general, pipes will enter and leave the manhole at various positions. Where possible bend bars around pipes.

Floor of inlet shall be shaped as shown in various "Examples" on Reinforced Concrete Manhole Standard Drawing RD633. Concrete used for shaping shall be unreinforced Concrete Grade 3.0 or concrete pavement mix. No addition in concrete quantities shall be made for shaping floor of inlets.

Manhole steps, where used, shall be placed to afford easy access to top of shaped invert.

No deductions in concrete quantities shall be made for pipe openings.

All bars are #4 @ 6" spacing and shall have a minimum clearance of 1½" unless otherwise noted on the plans.

The top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions as directed by the Engineer.

Steps shall be installed on all storm sewer inlets when specified in the plans or when "H" is equal to or greater than six feet. Steps shall comply with the KDOT Standard Specification.

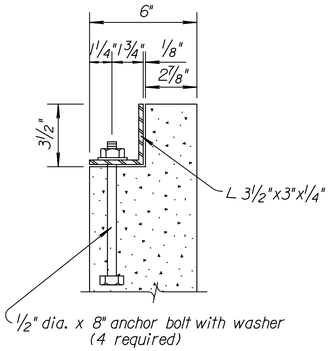
The grate shall be fabricated from standard or commercial grade structural steel and black steel pipe. The unit shall be hot dipped, galvanized after fabrication, in accordance with ASTM A123 except the weight of coating shall average not less than 2.0 ounces per square foot of actual surface and no individual test shall show less than 1.8 ounces of coating per square foot of actual surface area.

BILL OF MATERIALS FOR INLET-MANHOLE (SPECIAL)

"L" 6'-6"	"W" 6'-0"	"H" 6'-6"		"L"	"W"	"H"		"L"	"W"	"H"													
Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length
v	42	#4	6"-0"	v		#4		v		#4		v		#4		v		#4		v		#4	
c	10	#4	6'-3"	c		#4		c		#4		c		#4		c		#4		c		#4	
b	11	#4	5'-9"	b		#4		b		#4		b		#4		b		#4		b		#4	
h_1	24	#4	6'-3"	h_1		#4		h_1		#4		h_1		#4		h_1		#4		h_1		#4	
h_2	24	#4	5'-9"	h_2		#4		h_2		#4		h_2		#4		h_2		#4		h_2		#4	
Conc. Grade 3.0	3.22	Cu.Yd.		Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.
Reinf. steel	444	Lbs.		Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.
Struct. steel	466	Lbs.		Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.
Class III Excav.	17	Cu.Yd.		Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.

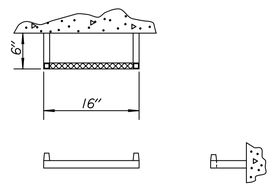
BILL OF MATERIALS FOR INLET-MANHOLE (SPECIAL)

"L"	"W"	"H"		"L"	"W"	"H"		"L"	"W"	"H"		"L"	"W"	"H"		"L"	"W"	"H"		"L"	"W"	"H"	
Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length
v		#4		v		#4		v		#4		v		#4		v		#4		v		#4	
c		#4		c		#4		c		#4		c		#4		c		#4		c		#4	
b		#4		b		#4		b		#4		b		#4		b		#4		b		#4	
h_1		#4		h_1		#4		h_1		#4		h_1		#4		h_1		#4		h_1		#4	
h_2		#4		h_2		#4		h_2		#4		h_2		#4		h_2		#4		h_2		#4	
Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0	2.		Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.
Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.
Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.
Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.



SECTION A-A

Note: Anchor bolts are subsidiary to the bid item "Inlet-Manhole, Special".



STEP DETAILS

PIPE DIMENSIONS AND SPACING

L x W	No. of Bars	Dia. x Length x Spacing	∢
6'-6"x4'-6"	11	2½"Ø x 3'-10¼" pipes @ 6" ctrs.	6"

NO.	DATE	REVISIONS	BY	APP'D
10	6-13-12	Revised Concrete Quantity	S.W.K.	J.O.B.
9	1-28-05	Chaned Class to Grade Concrete	S.W.K.	J.O.B.
8	12-5-00	Added Note to Designer	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

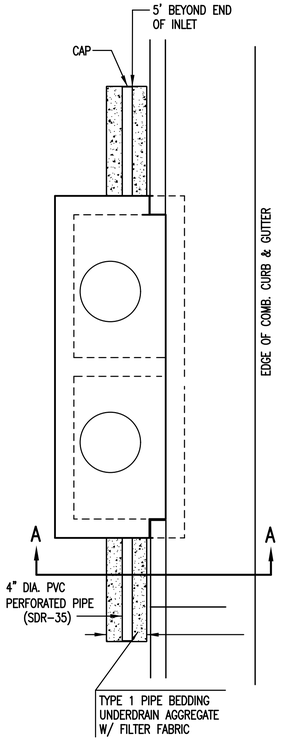
INLET - MANHOLE, SPECIAL

~~RD648~~

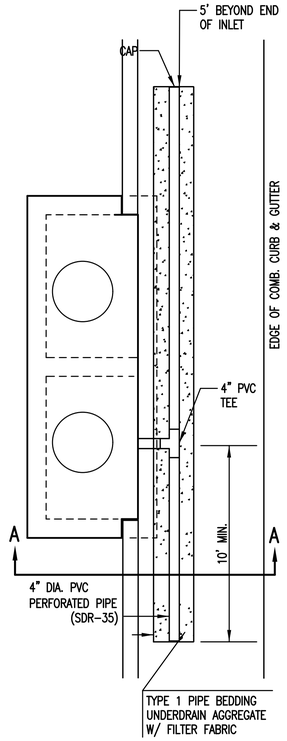
FHWA APPROVAL	06-25-12	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. R.J.S.

Drawn By : drp
Plotted : 14-JUL-2014 14:51
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd648.dgn

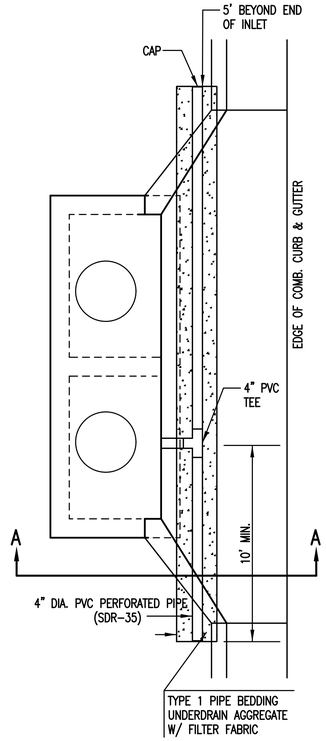
PAVEMENT UNDERDRAIN SHALL BE INSTALLED ON ALL CURB INLETS.



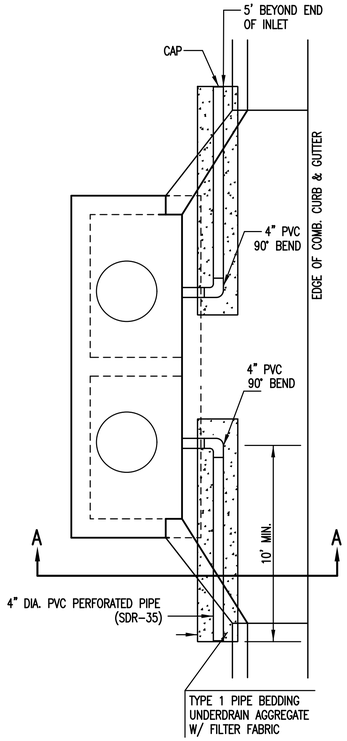
TYPE 1
OPTION 1



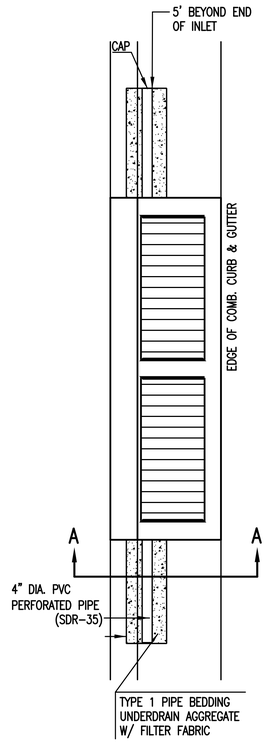
TYPE 1
OPTION 2



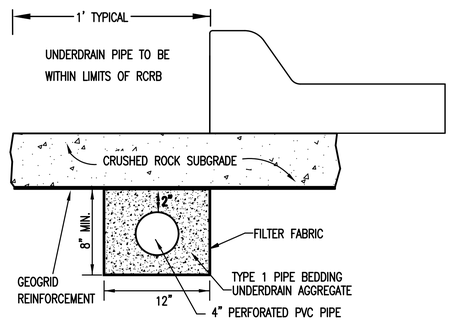
TYPE 1-A INLET
OPTION 1



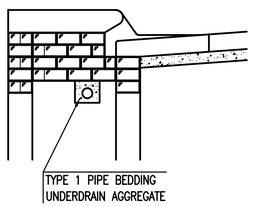
TYPE 1-A INLET
OPTION 2

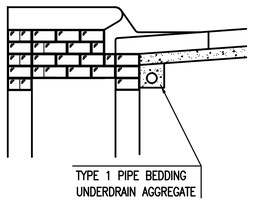


TYPE 2



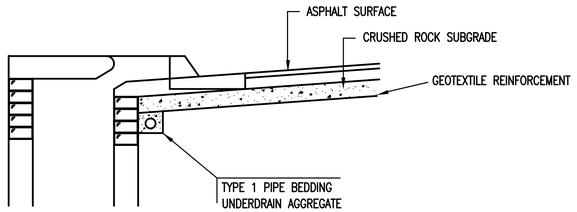
SECTION A-A (TYPICAL)





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

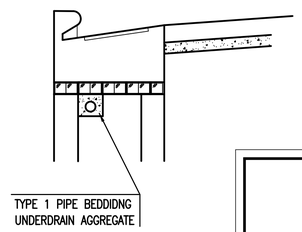
SECTION A-A



SECTION A-A

PAVEMENT UNDERDRAIN DETAIL

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



SECTION A-A

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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CURB INLET
PAVEMENT UNDERDRAIN
DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

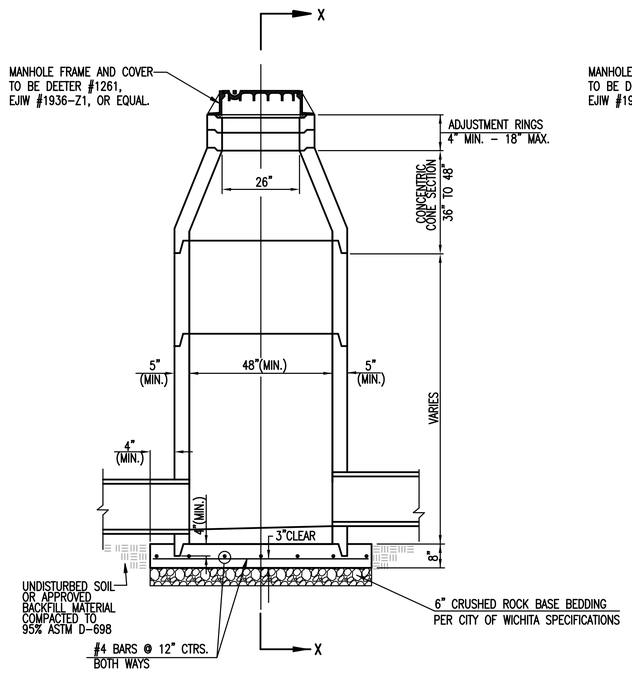
PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	10/2012

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

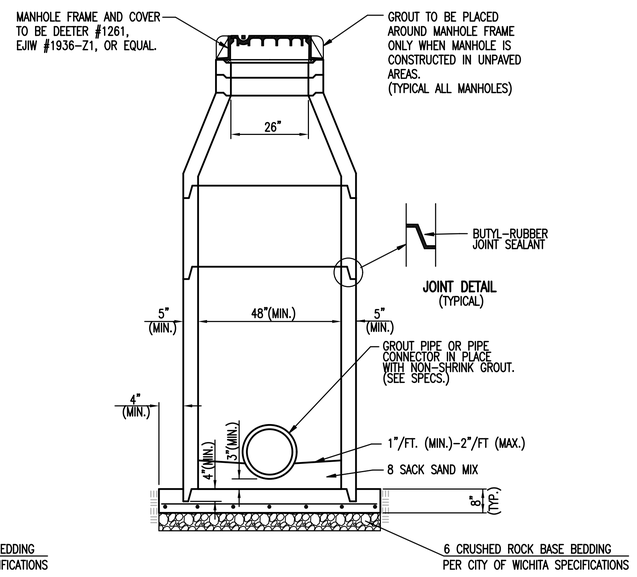
SHEET
50 of 201

SW-111

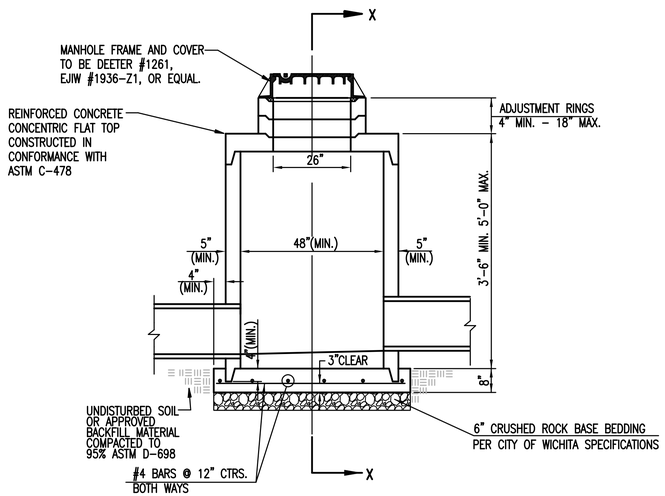
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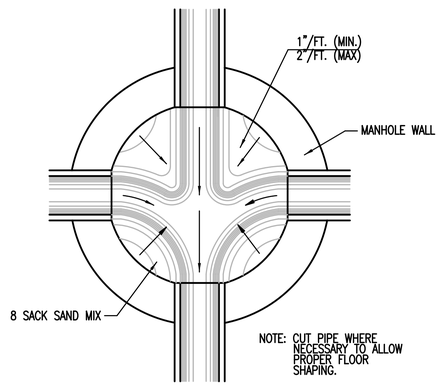
PRECAST
STANDARD MANHOLE
TYPE "A"



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
472-84840	760621	11/2010

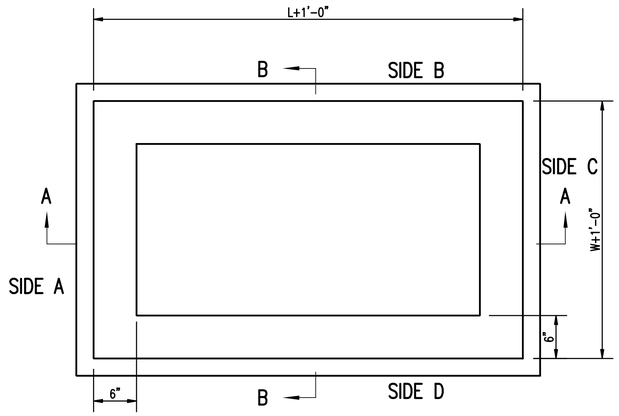
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

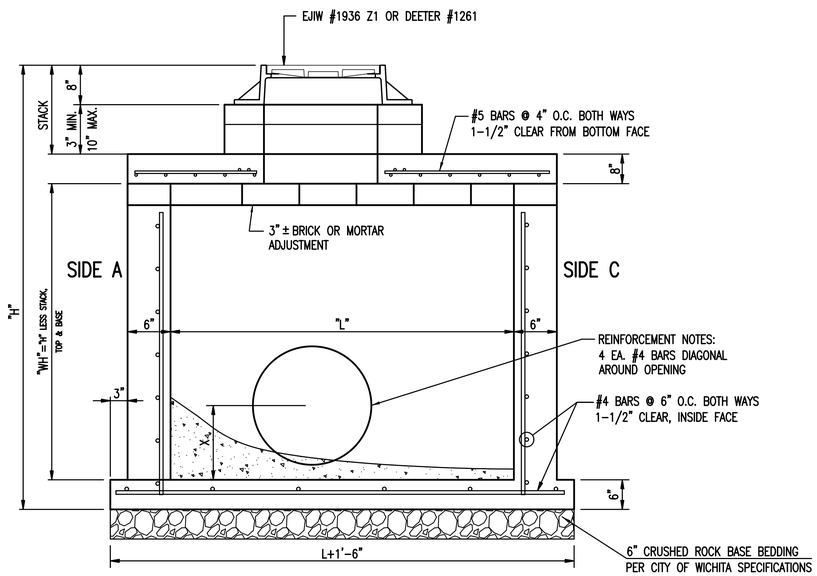
SHEET
51 of 201

SW-301

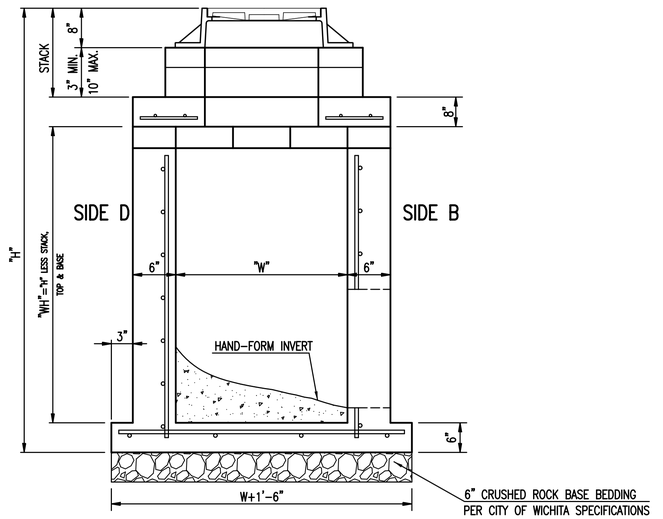
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TOP VIEW



SECTION "A-A"



SECTION "B-B"

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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

REINFORCED CONCRETE MANHOLE (STORM SEWER)

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	11/2010

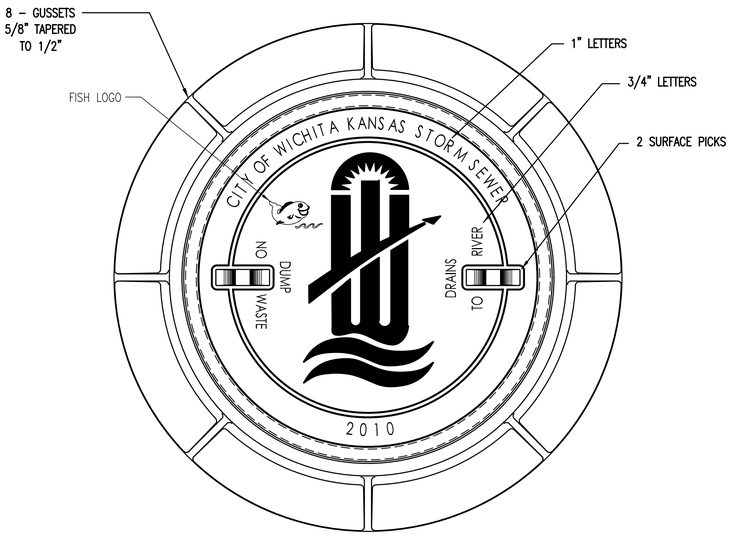
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

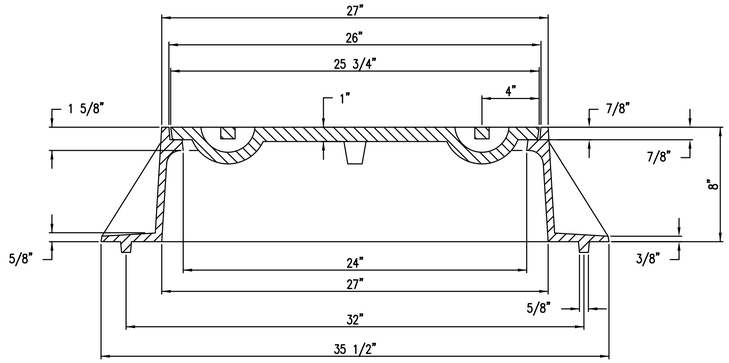
DESIGN | DRAWN

SHEET
52 of 201

SW-302

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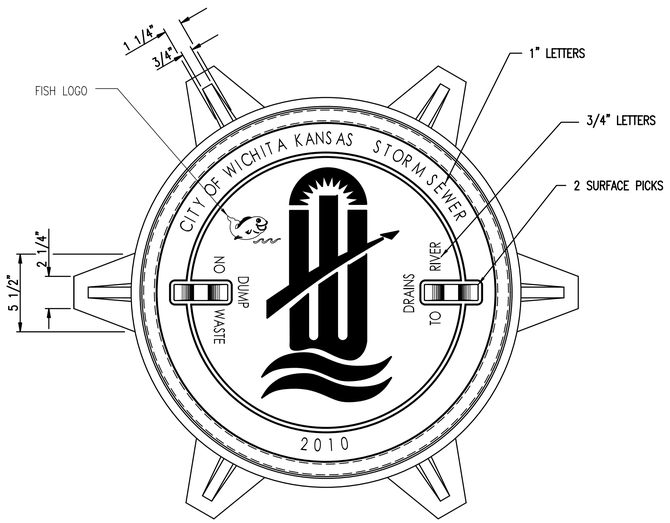


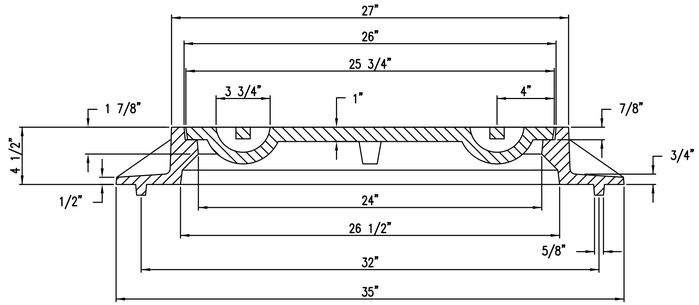


MANHOLE FRAME

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
472-84840	760621	11/2010

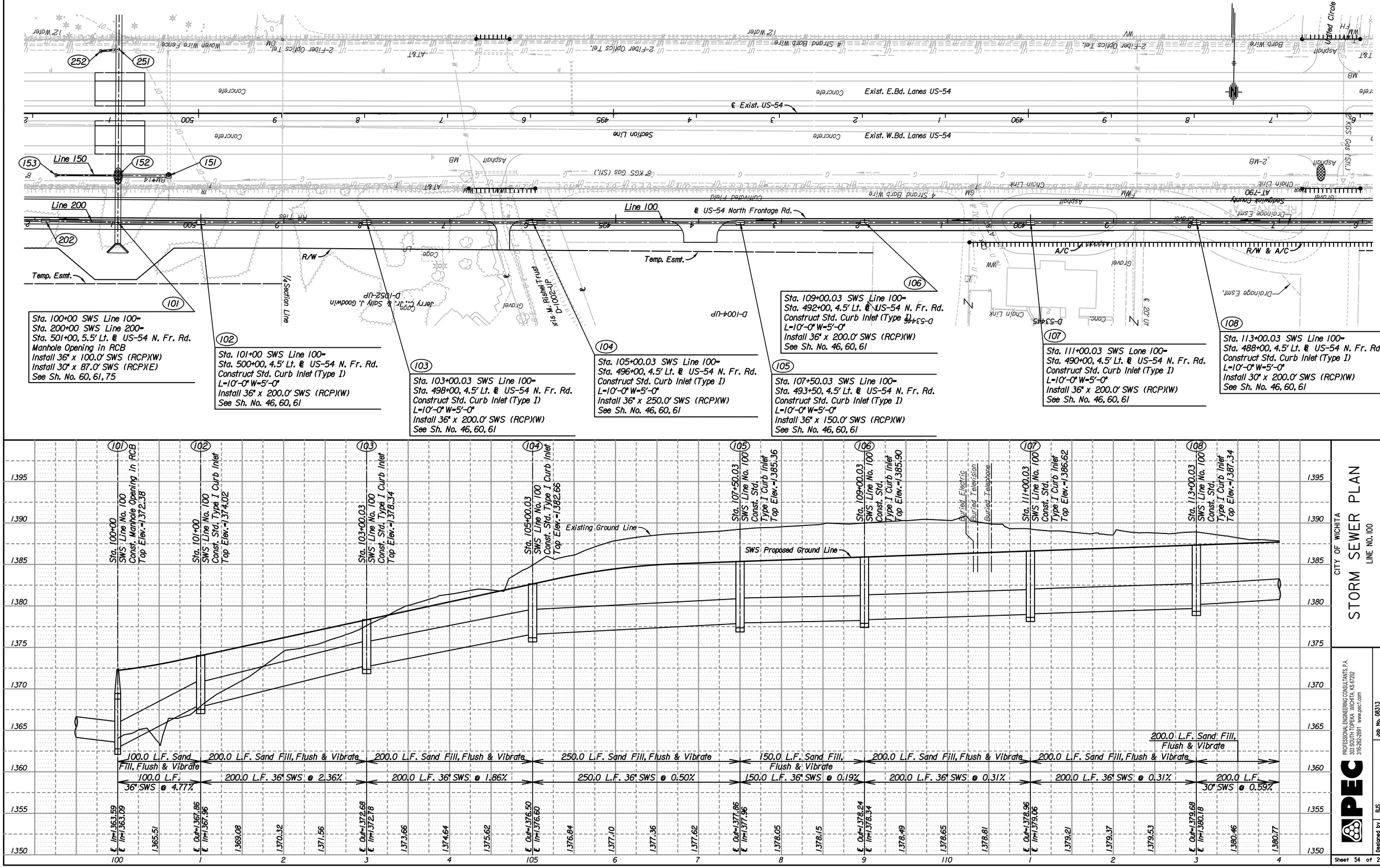
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

DESIGN | DRAWN

SHEET
53 of 201

SW-303

Plotted By: drp Date: 7/14/2014 3:26:28 PM
FILE: i:\2008\08313\Frontage Rd North\Standards\08313-SW-303-MH-Inlet Frame & Cover.dwg



CITY OF WICHITA
STORM SEWER PLAN
LINE NO. 100
SEDGWICK CO.
PROJECT NO. KA 472-84840

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

Job No. 08313
Date June, 2014
Designed by RJS
Drawn by DRP

Sheet 54 of 201

Plotted By: drp Date: 7/14/2014 2:49:04 PM
FILE: i:\2008\08313\Frontage Rd North\SWS\08313-SWS100-lpl-pr.dgn

Sta. 5+31.15 SWS Line 105=
Sta. 483+90, 33.5' Lt. @ US-54 N. Fr. Rd.
Construct Std. Double Double Drop Inlet
L=4'-0" W=4'-0"
See Sh. No. 48, 60, 61

(118)

Sta. 125+20.90 SWS Line 100=
Sta. 475+75, 25.5' Rt. US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=3'-0"
Install 18" x 70.1' SWS (RCP)(W)
See Sh. No. 46, 60, 61

(115)

Sta. 125+91.01 SWS Line 100=
Sta. 475+00, 25.5' Rt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=5'-0" x W=3'-0"
Install 15" x 93.4' SWS (RCP)(W)
See Sh. No. 46, 60, 61

(116)

Sta. 126+84.39 SWS Line 100=
Sta. 474+00, 25.5' Rt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=3'-0"
See Sh. No. 46, 60, 61

(117)

Sta. 115+00.03 SWS Line 100=
Sta. 486+00, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 30" x 200.0' SWS (RCP)(W)
See Sh. No. 46, 60, 61

(109)

Sta. 118+50.03 SWS Line 100=
Sta. 482+50, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 24" x 175.0' SWS (RCP)(W)
See Sh. No. 46, 60, 61

(111)

Sta. 117+00.03 SWS Line 100=
Sta. 5+00 SWS Line 105=
Sta. 484+00, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 24" x 150.0' SWS (RCP)(W)
Install 24" x 31.1' SWS (RCP, ACSP, PEP, PVCP)(NW)
See Sh. No. 46, 60, 61

(110)

Sta. 121+73.69 SWS Line 100=
Sta. 479+25, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 18" x 148.7' SWS (RCP)(NW)
See Sh. No. 46, 60, 61

(113)

Sta. 120+25.03 SWS Line 100=
Sta. 480+75, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 24" x 148.7' SWS (RCP)(NW)
See Sh. No. 46, 60, 61

(112)

Sta. 123+22.37 SWS Line 100=
Sta. 477+75, 3.5' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=5'-0" W=3'-0"
Install 18" x 198.5' SWS (RCP)(W)
See Sh. No. 46, 60, 61

(114)

Exist. E.Bd. Lanes US-54
Exist. W.Bd. Lanes US-54
℄ Exist. US-54
Section Line
℄ US-54 North Frontage Rd.
Line 105
Line 100
R/W-Exist. R/W
A/C
Future R/W & A/C
Temp. Esmt.
R/W & A/C
Future R/W & A/C
℄ 135th St. W.-Section Line
Sta. 126+84.39 SWS Line 100=
Sta. 474+00, 25.5' Rt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=3'-0"
See Sh. No. 46, 60, 61
SW ¼, Sec. 26, T27S, R2W
SBY'S 2ND ADDITION
C. & Becky L. Lockett
D-52177
Smith & Company, Inc.
D-1051-UP
Eugene J. Pelz, etal
D-1049-UP
D-1048-UP
Lloyd G. Busse
D-1008-UP
James Perkins Trust
D-1007-UP
Wichita Friends School, Inc.
D-1009-UP
Mobile Home
Church Link
Chain Link
Overhead Elec. & TV
Underground Elec.
Underground Tel.
Underground Gas
Underground Water
Underground Sewer
Underground Storm Sewer
Underground Cable TV
Underground Fiber Optics Tel.
Overhead Elec. & Tel.
Overhead Elec.
Overhead Tel.
Overhead Cable TV
Concrete
Asphalt
Gravel
Woven Wire
Barb Wire
Sign
Mail Box
Gas Meter
Gas Valve
Water Valve
Water Meter
Fire Hydrant
Light Pole
Power Pole
Guy Wire
Guy Anchor
Telephone Pedestal
Cable TV Pedestal
Cable TV Box
Electric Box
Electric Meter
Telephone Booth
Telephone Manhole
Telephone Riser
Electric Manhole
Electric Vault
Storm Sewer Manhole
Storm Sewer Inlet
Sanitary Sewer Manhole
Sanitary Sewer Cleanout
Water Manhole
Water Vault
Water Blow Off
Water Air Vent
Gas Manhole
Gas Vault
Gas Blow Off
Gas Air Vent
Gas Marker
Gas Test Station
Gas Regulator
Gas Meter Set
Gas Line Valve
Gas Line Vent
Gas Line Marker
Gas Line Test Station
Gas Line Regulator
Gas Line

Sta. 200+87.01 SWS Line 200=
Sta. 501+87, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 30" x 63.0' SWS (RCP)(E)
connect to RCB (101)
See Sh. No. 46, 60, 61

Sta. 201+50.01 SWS Line 200=
Sta. 502+50, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 30" x 200.0' SWS (RCP)(E)
See Sh. No. 46, 60, 61

Sta. 203+50.01 SWS Line 200=
Sta. 504+50, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 30" x 150.0' SWS (RCP)(E)
See Sh. No. 46, 60, 61

Sta. 205+00.01 SWS Line 200=
Sta. 5+00 SWS Line 205=
Sta. 506+00, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 24" x 200.0' SWS (RCP)(E)
Install 18" x 57.0' SWS (RCP)(S)
See Sh. No. 46, 60, 61

Sta. 207+00.01 SWS Line 200=
Sta. 508+00, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 24" x 175.0' SWS (RCP)(E)
See Sh. No. 46, 60, 61

Sta. 208+75.01 SWS Line 200=
Sta. 5+00 SWS Line 210=
Sta. 509+75, 4' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=4'-0"
Install 15" x 175.0' SWS (RCP)(E)
Install 24" x 62.5' SWS (RCP)(SE)
See Sh. No. 46, 60, 61

Sta. 210+50.01 SWS Line 200=
Sta. 511+50, 3.5' Lt. @ US-54 N. Fr. Rd.
Construct Std. Curb Inlet (Type I)
L=10'-0" W=3'-0"
See Sh. No. 46, 60, 61

Sta. 5+57 SWS Line 205=
Sta. 506+00, 53' Rt. @ US-54 N. Fr. Rd.
Construct Double Drop Inlet
L=4'-0" W=2'-0"
See Sh. No. 47, 60, 61

Sta. 5+62.49 SWS Line 210=
Sta. 509+95.60, 55.00' Rt. @ US-54 N. Fr. Rd.
Construct Double Drop Inlet
L=4'-0" W=2'-0"
See Sh. No. 47, 60, 61

Rebah J. Hubbard Revocable Inter Vivos Trust
D-996-UP

CathyMark Colorado Investments, LLC, etal
D-997-UP

AUBURN HILLS 15TH ADDITION
West Wichita Development, Inc.
D-59309

Line 100 · Line 150 · Line 200 · Line 205 · Line 210 · Line 300

Exist. W.Bd. Lanes US-54 · Exist. E.Bd. Lanes US-54 · @ US-54 North Frontage Rd. · @ Exist. US-54

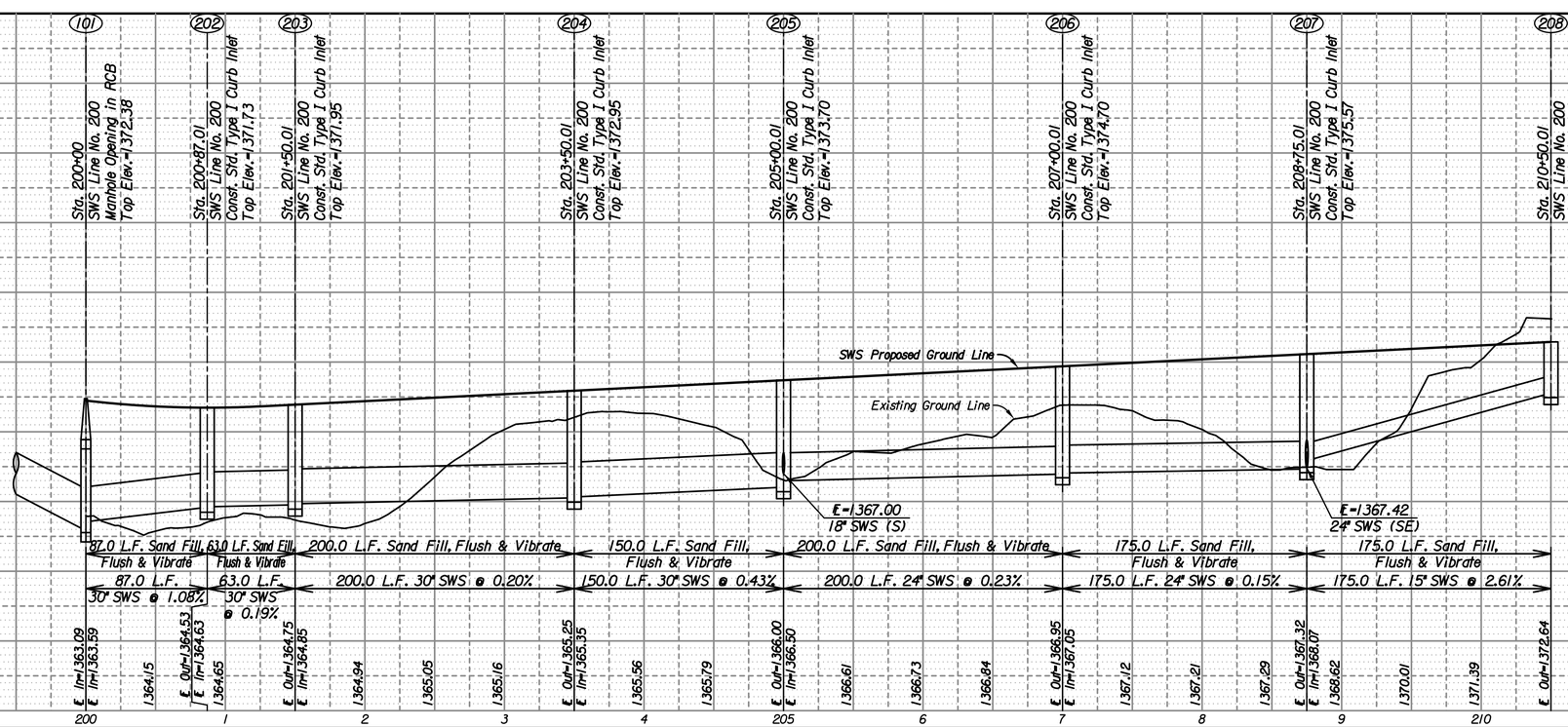
Temp. Esmt. · R/W · R/W & A/C · 20' Drainage & Utility Esmt. · 10' Utility Esmt. · 20' Utility Esmt. · RESERVE "A"

2 - Barb Wire · 5 Strand Barb Wire · Woven Wire Fence · Stone Fence · Chain Link · Concrete · Asphalt · Brush · Sign · Fountain · Planter

8" KGS Gas (Stl.) · 12" Water · 6" PVC · 8" Pine · 20" Ced · 15" Pine · 6" Ced · 12" Ced · 20" Pine · 20" Loc · 24" Oak · 8" Oak · 6" Cot · 6" Jun · 8" Oso · 20" GRT · 6" Irrigation Valve · 8" Auburn Hills Rd.

WW · Vault · MH · WV · DM · MB · AT&T · E&R · BM#14 · BM#15

101 · 102 · 151 · 152 · 153 · 202 · 203 · 204 · 205 · 206 · 207 · 208 · 209 · 210 · 251 · 252 · 301 · 302 · 303



CITY OF WICHITA
STORM SEWER PLAN
LINE NO. 200

SEDGWICK CO.
PROJECT NO. KA 472-84840

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

PEC

Job No. 08313	
Date June, 2014	
Designed by	RJS
Drawn by	DRP

Sheet 56 of 201

Plotted By: drp Date: 7/14/2014 2:49:06 PM
FILE: I:\2008\08313\Frontage Rd North\SWS\08313-SWS200-pl-pr.dgn

Rebah J. Hubbard Revocable Inter Vivos Trust
D-996-UP

Sta. 150+75 SWS Line 150=
Sta. 501+75, 51' Rt. US-54 N. Fr. Rd.
Construct Double Drop Inlet
L=4'-0" W=2'-0"
See Sh. No. 47, 60, 61

Sta. 150+00 SWS Line 150=
Sta. 501+00, 51' Rt. US-54 N. Fr. Rd.
RCB Drop Structure
Install 42" x 61.0' SWS (RCP, ACSP)(W)
Install 18" x 75.0' SWS (RCP, ACSP, PEP, PVCP,)(E)
See Sh. No. 60, 61, 74

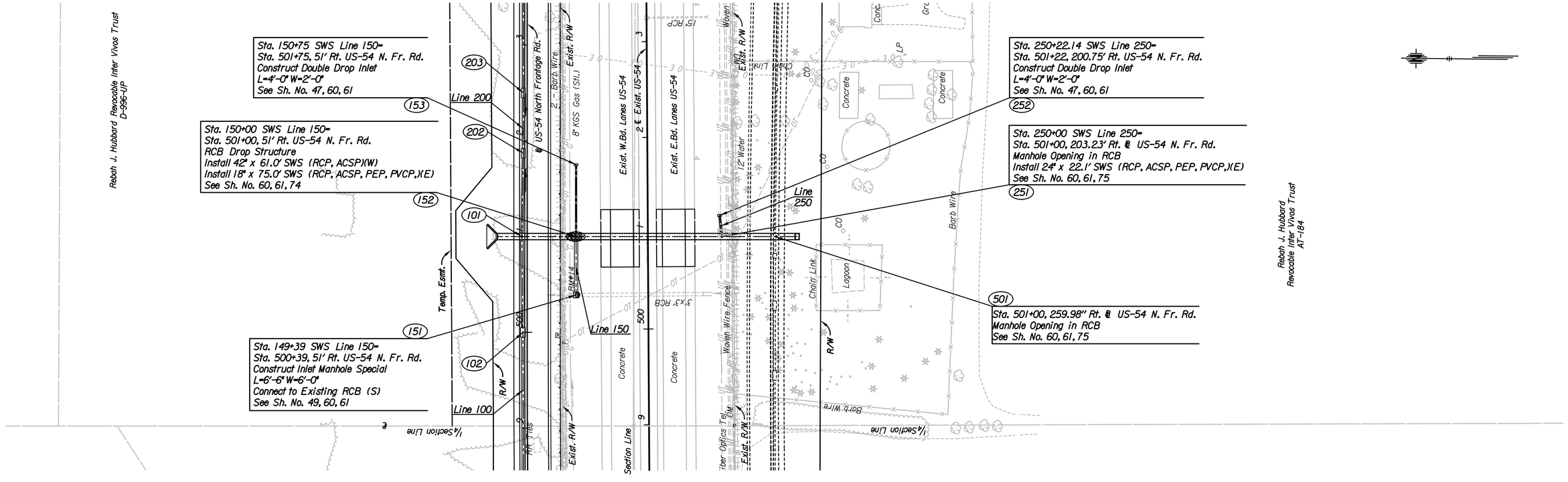
Sta. 149+39 SWS Line 150=
Sta. 500+39, 51' Rt. US-54 N. Fr. Rd.
Construct Inlet Manhole Special
L=6'-6" W=6'-0"
Connect to Existing RCB (S)
See Sh. No. 49, 60, 61

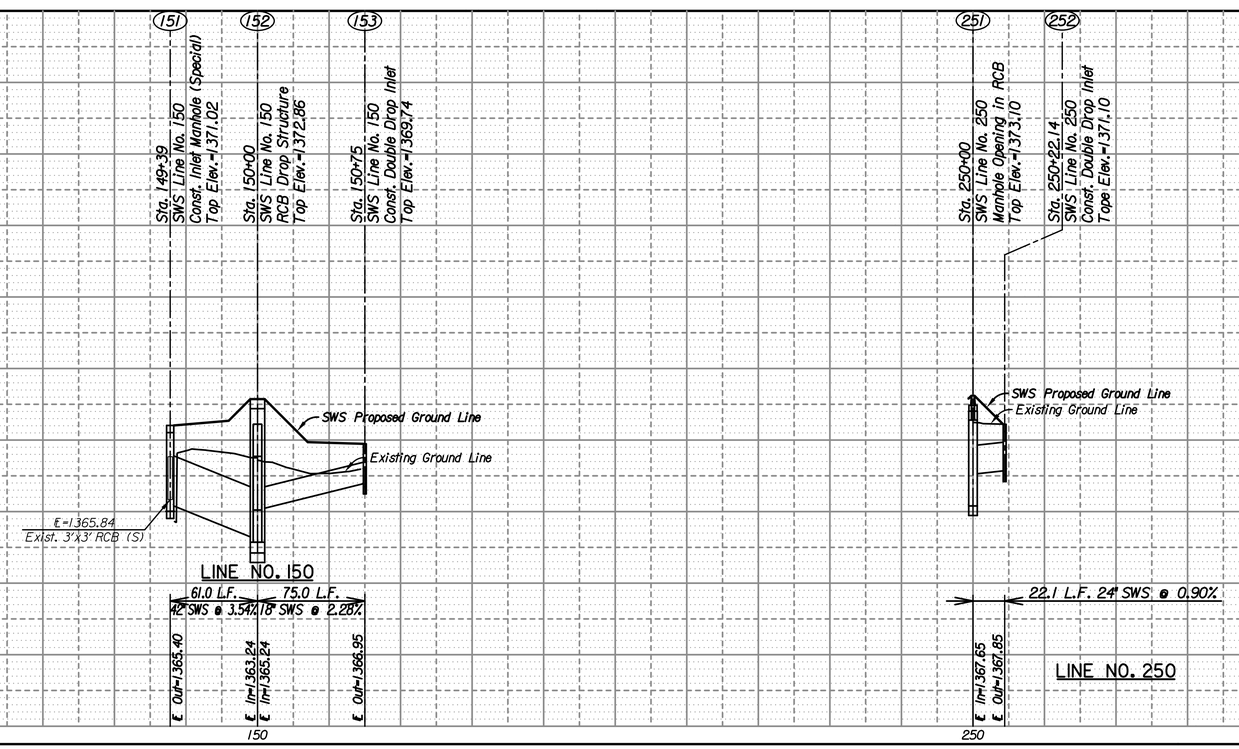
Sta. 250+22.14 SWS Line 250=
Sta. 501+22, 200.75' Rt. US-54 N. Fr. Rd.
Construct Double Drop Inlet
L=4'-0" W=2'-0"
See Sh. No. 47, 60, 61

Sta. 250+00 SWS Line 250=
Sta. 501+00, 203.23' Rt. @ US-54 N. Fr. Rd.
Manhole Opening in RCB
Install 24" x 22.1' SWS (RCP, ACSP, PEP, PVCP,)(E)
See Sh. No. 60, 61, 75

Sta. 501+00, 259.98' Rt. @ US-54 N. Fr. Rd.
Manhole Opening in RCB
See Sh. No. 60, 61, 75

Rebah J. Hubbard
Revocable Inter Vivos Trust
AT-184





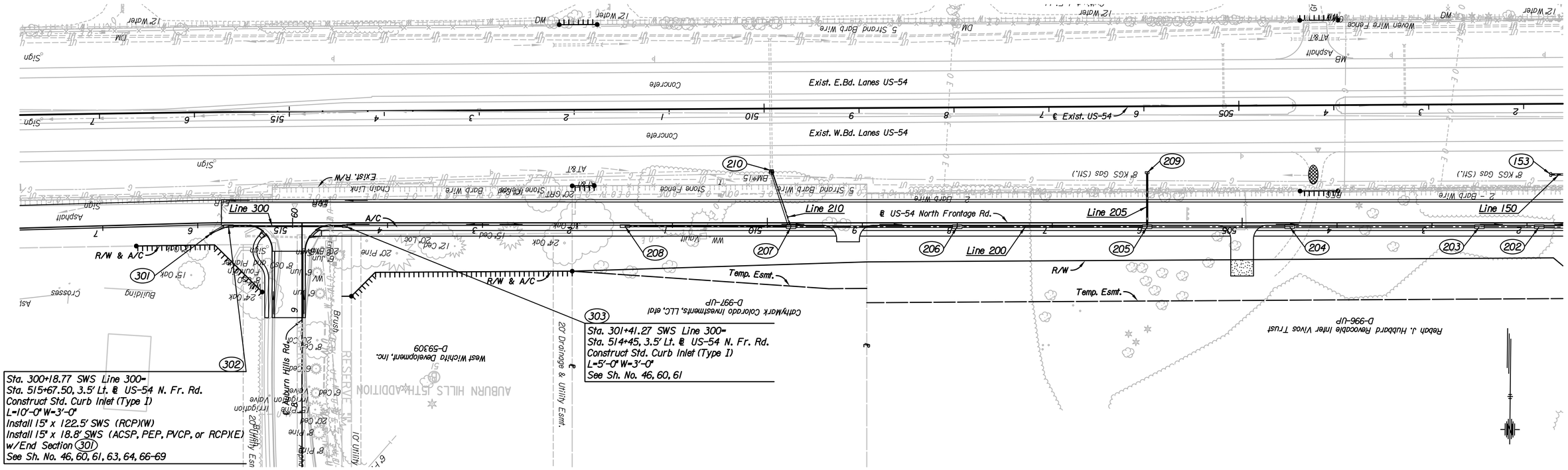
CITY OF WICHITA
STORM SEWER PLAN
LINE NO. 150, 250
SEDGWICK CO.
PROJECT NO. KA 472-84840

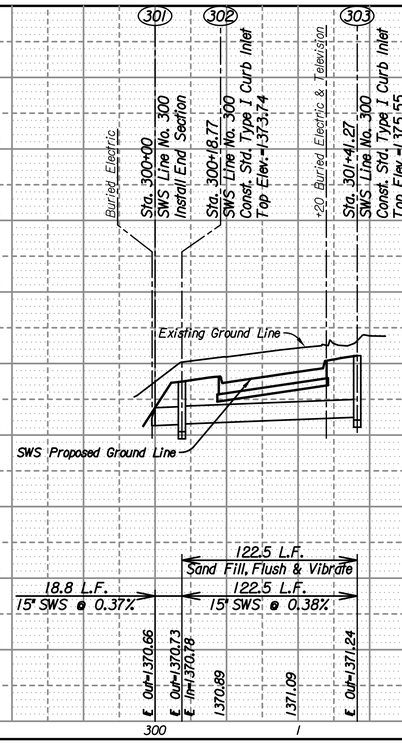
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Job No. 08313
Date June, 2014
Designed by RJS
Drawn by DRP

Sheet 57 of 201

Plotted By: drp Date: 7/14/2014 2:49:07 PM
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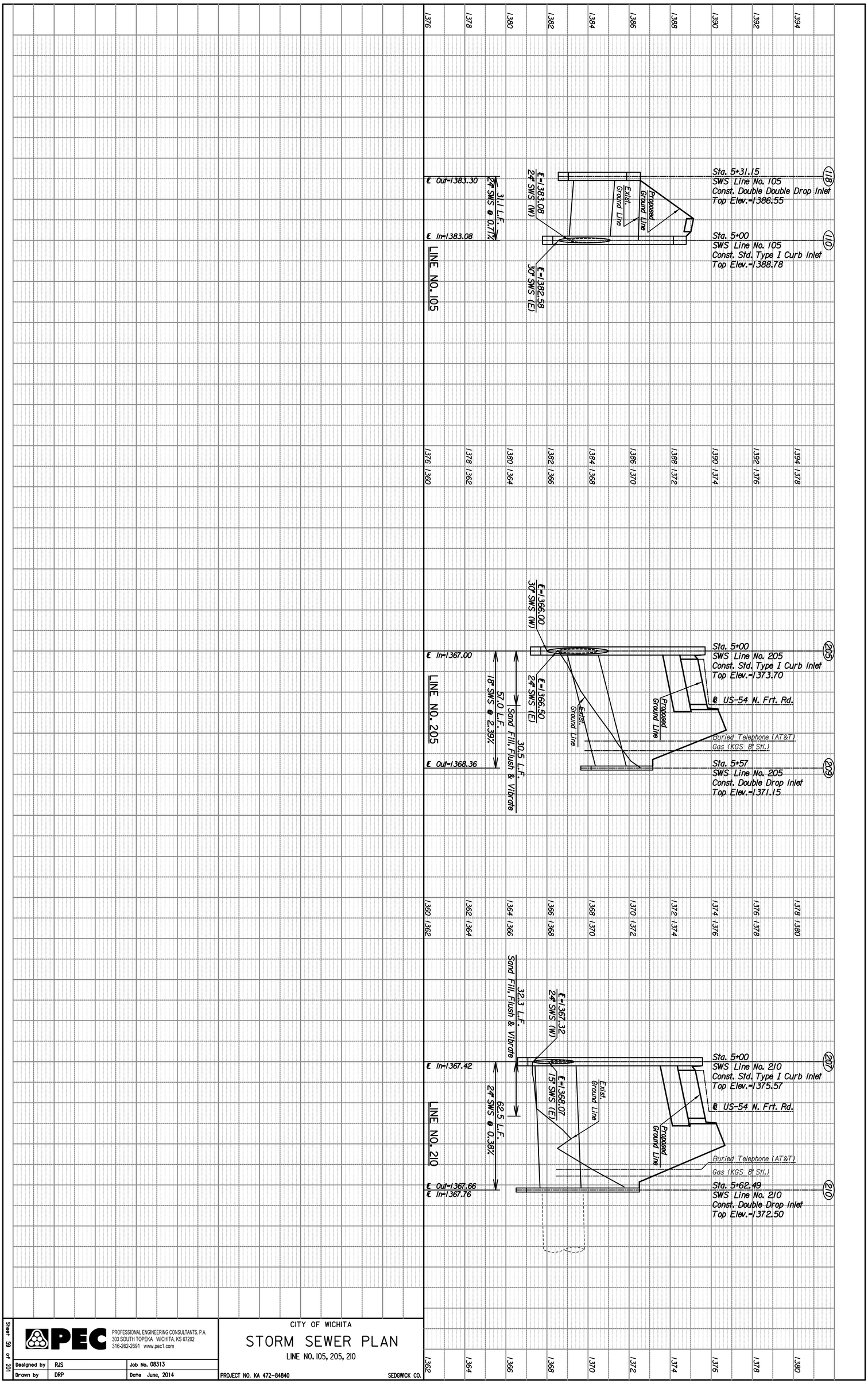
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CITY OF WICHITA
STORM SEWER PLAN
LINE NO. 300
SEDGWICK CO.
PROJECT NO. KA 472-84840

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Job No. 08313
Date June, 2014
Designed by RJS
Drawn by DRP

Plotted By: drp Date: 7/14/2014 2:49:09 PM
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Designed by	RJS	Job No. 08313
Drawn by	DRP	Date June, 2014

CITY OF WICHITA

STORM SEWER PLAN

LINE NO. 105, 205, 210

PROJECT NO. KA 472-84840 SEDGWICK CO.

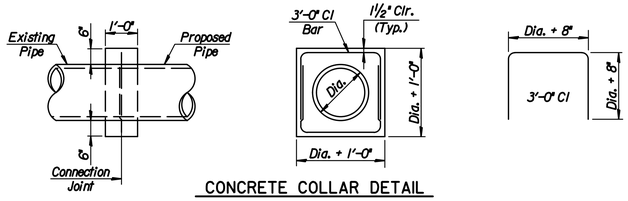
Sheet 59 of 201

INLET AND MANHOLE DATA

ROUTING SEQUENCE		LOCATIONS OF INSTALLATIONS					CONSTRUCT OR INSTALL							DIMENSIONS				ELEVATIONS		INFLOW CONDUITS						OUTFLOW CONDUITS		FOR INFORMATION ONLY					REMARKS
FROM	TO	STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	NORTH COORDINATE	EAST COORDINATE	INLET (TYPE I)	RCB MANHOLE OPENING	DOUBLE DROP INLET	DOUBLE DOUBLE DROP INLET	INLET MANHOLE SPECIAL	END SECTION		L (FT.)	W (FT.)	H (FT.)	H_T (FT.)	TOP ⊛	FLOOR	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECT.	FLOWLINE ELEV.	SIZE DIRECTION	FLOWLINE ELEV.	CLASS III EXC. (CU. YD.)	CAST IRON (LBS.)	STRUCT. STEEL (LBS.)	REINF. STEEL (LBS.)	CONC. (MISC.) GRADE 3.0 (CU. YD.)	
101	—	501+00.00	North Fr. Rd.	5.50' Lt.	1,677,411.0365	1,599,938.3344		1						2.17	2.17	3.00	1.83	1372.38	—	36" (W)	1363.09	30" (E)	1363.59										MH Opening in RCB
102	101	500+00.00	North Fr. Rd.	4.50' Lt.	1,677,408.9472	1,599,838.3512	1							10.00	5.00	7.00		1374.02	1367.52	36" (W)	1367.96					36" (E)	1367.86						
103	102	498+00.00	North Fr. Rd.	4.50' Lt.	1,677,405.9926	1,599,638.3461	1							10.00	5.00	6.50		1378.34	1372.34	36" (W)	1372.78					36" (E)	1372.68						
104	103	496+00.00	North Fr. Rd.	4.50' Lt.	1,677,402.5923	1,599,438.3750	1							10.00	5.00	7.00		1382.66	1376.16	36" (W)	1376.60					36" (E)	1376.50						
105	104	493+50.00	North Fr. Rd.	4.50' Lt.	1,677,398.3419	1,599,188.4112	1							10.00	5.00	8.50		1385.36	1377.36	36" (W)	1377.96					36" (E)	1377.86						
106	105	492+00.00	North Fr. Rd.	4.50' Lt.	1,677,395.7917	1,599,038.4328	1							10.00	5.00	8.50		1385.90	1377.90	36" (W)	1378.34					36" (E)	1378.24						
107	106	490+00.00	North Fr. Rd.	4.50' Lt.	1,677,392.3914	1,598,838.4618	1							10.00	5.00	8.50		1386.62	1378.62	36" (W)	1379.06					36" (E)	1378.96						
108	107	488+00.00	North Fr. Rd.	4.50' Lt.	1,677,388.9911	1,598,638.4907	1							10.00	5.00	8.50		1387.34	1379.34	30" (W)	1380.18					36" (E)	1379.68						
109	108	486+00.00	North Fr. Rd.	4.00' Lt.	1,677,385.0908	1,598,438.5281	1							10.00	4.00	7.50		1388.06	1381.06	30" (W)	1381.46					30" (E)	1381.36						
110	109	484+00.00	North Fr. Rd.	4.00' Lt.	1,677,381.6905	1,598,238.5570	1							10.00	4.00	7.00		1388.78	1382.28	24" (W)	1383.08	24" (NW)	1383.08			30" (E)	1382.58						
111	110	482+50.00	North Fr. Rd.	4.00' Lt.	1,677,379.1403	1,598,088.5787	1							10.00	4.00	5.50		1389.32	1384.32	24" (W)	1384.67					24" (E)	1384.57						
112	111	480+75.00	North Fr. Rd.	4.00' Lt.	1,677,376.1650	1,597,913.6040	1							10.00	4.00	5.50		1389.95	1384.95	24" (NW)	1385.30					24" (E)	1385.20						
113	112	479+25.00	North Fr. Rd.	4.00' Lt.	1,677,390.5673	1,597,765.6422	1							10.00	4.00	5.50		1390.49	1385.49	18" (NW)	1386.24					24" (SE)	1385.74						
114	113	477+75.00	North Fr. Rd.	3.50' Lt.	1,677,440.6362	1,597,625.6511	1							5.00	3.00	5.00		1391.03	1386.53	18" (NW)	1386.84					18" (SE)	1386.74						
115	114	475+75.00	North Fr. Rd.	25.50' Rt.	1,677,520.7865	1,597,444.0234	1							10.00	3.00	4.50		1391.31	1387.31	18" (NW)	1387.62					18" (SE)	1387.52						
116	115	475+00.00	North Fr. Rd.	25.50' Rt.	1,677,545.0029	1,597,378.2221	1							5.00	3.00	4.50		1391.58	1387.58	15" (NW)	1388.04					18" (SE)	1387.79						
117	116	474+00.00	North Fr. Rd.	25.50' Rt.	1,677,557.4685	1,597,285.6765	1							10.00	3.00	4.00		1391.99	1388.49							15" (SE)	1388.68						
118	110	483+90.00	North Fr. Rd.	33.50' Lt.	1,677,411.0162	1,598,228.0569				1				4.00	4.00	4.00		1386.55	1383.05							24" (SE)	1383.30						
151	152	500+39.00	North Fr. Rd.	51.00' Rt.	1,677,353.8753	1,599,877.9535					1			6.50	6.00	6.50		1371.02	1365.02	Exist. 3x3 (S)	1365.84					42" (E)	1365.40						Connect Exist. RCB
152	—	501+00.00	North Fr. Rd.	51.00' Rt.	1,677,354.5398	1,599,938.9499		† 1						11.08	8.00	10.75		1372.86	1362.86	18" (E)	1365.24	42" (W)	1363.24										RCB Drop Structure
153	152	501+75.00	North Fr. Rd.	51.00' Rt.	1,677,355.3568	1,600,013.9454			1					4.00	2.00	3.50		1369.74	1366.74							18" (W)	1366.95						
202	101	501+87.00	North Fr. Rd.	4.00' Lt.	1,677,410.4843	1,600,025.3456	1							10.00	4.00	8.00		1371.73	1364.23	30" (E)	1364.63					30" (W)	1364.53						
203	202	502+50.00	North Fr. Rd.	4.00' Lt.	1,677,411.1706	1,600,088.3418	1							10.00	4.00	8.00		1371.95	1364.45	30" (E)	1364.85					30" (W)	1364.75						
204	203	504+50.00	North Fr. Rd.	4.00' Lt.	1,677,413.3493	1,600,288.3300	1							10.00	4.00	8.50		1372.95	1364.95	30" (E)	1365.35					30" (W)	1365.25						
205	204	506+00.00	North Fr. Rd.	4.00' Lt.	1,677,414.9833	1,600,438.3211	1							10.00	4.00	8.50		1373.70	1365.70	18" (S)	1367.00	24" (E)	1366.50			30" (W)	1366.00						
206	205	508+00.00	North Fr. Rd.	4.00' Lt.	1,677,417.1620	1,600,638.3092	1							10.00	4.00	8.50		1374.70	1366.70	24" (E)	1367.05					24" (W)	1366.95						
207	206	509+75.00	North Fr. Rd.	4.00' Lt.	1,677,419.0683	1,600,813.2988	1							10.00	4.00	9.00		1375.57	1367.07	15" (E)	1368.07	24" (SE)	1367.42			24" (W)	1367.32						
208	207	511+50.00	North Fr. Rd.	3.50' Lt.	1,677,420.4747	1,600,988.2939	1							10.00	3.00	4.50		1376.45	1372.45							15" (W)	1372.64						
209	205	506+00.00	North Fr. Rd.	53.00' Rt.	1,677,357.9867	1,600,438.9420			1					4.00	2.00	3.50		1371.15	1368.15							18" (N)	1368.36						
210	207	509+95.60	North Fr. Rd.	55.00' Rt.	1,677,360.2962	1,600,834.5403			1					4.00	2.00	6.00		1372.50	1367.00	Exist. 24" (S)	1367.76					24" (NW)	1367.66						Connect Exist. RCP
251	—	501+00.00	North Fr. Rd.	203.23' Rt.	1,677,202.3178	1,599,940.6082		1						2.17	2.17	1.08	0.00	1373.10	—	24" (E)	1367.65												MH Opening in RCB
252	251	501+22.00	North Fr. Rd.	200.75' Rt.	1,677,205.0384	1,599,962.5799			1					4.00	2.00	4.00		1371.10	1367.60							24" (W)	1367.85						
301	—	515+85.00	North Fr. Rd.	10.50' Lt.	1,677,432.2613	1,601,423.0861						*								15" (W)	1370.66												
302	301	515+67.50	North Fr. Rd.	3.50' Lt.	1,677,425.0228	1,601,405.7691	1							10.00	3.00	4.00		1373.74	1370.24	15" (W)	1370.78					15" (E)	1370.73						
303	302	514+45.00	North Fr. Rd.	3.50' Lt.	1,677,423.6883	1,601,283.2764	1							5.00	3.00	5.00		1375.55	1371.05							15" (E)	1371.24						
501	—	501+00.00	North Fr. Rd.	259.98' Rt.	1,677,145.5694	1,599,941.2264		1						2.17	2.17	3.50	2.33	1375.64	—	15" (E)	1368.75	24" (W)	1368.00										
TOTALS							25	4	4	1	1	*	* End Sections are recapitulated with the conduits on Sh. No. 61																				

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

† RCB Drop Structure.



CONCRETE COLLAR DETAIL

Concrete collars shall be provided at connection to existing conduits where, in the opinion of the Engineer, a collar is required for a satisfactory connection. Class A Concrete or the mix used in concrete pavement shall be used throughout. Concrete collars will not be paid for directly, but shall be considered Subsidiary to the various pipes involved.

GENERAL NOTE:
The quantities, dimensions, and flowlines given on this sheet are to be used if the following types of "SMOOTH PIPES" are furnished: RCP, VCP – ES, BCCMP – FP, RCPHE.

No.	Revision	By	Date

CITY OF WICHITA

SCHEDULE OF INLETS AND MANHOLES

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	RJS	Job No.	08313	Sht. 60 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:11 PM
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CONDUIT DATA

ROUTING SEQUENCE		LOCATIONS OF INSTALLATIONS			CONSTRUCT OR INSTALL			CONDUIT FLOWLINES		SEWER EXCAVATION		STORM SEWER (LIN. FT.)								END SECTIONS (EACH)					CONC. HEADWALLS (EACH)					AASHTO CONC. CLASS	SAND FILL, FLUSH, AND VIBRATE (L.F.)	REMARKS
FROM	TO	STATION	ROUTE IDENTIFICATION	DISTANCE LEFT/RIGHT	TYPE OF CONDUIT SIZE	TYPE OF CONDUIT MATERIAL	LENGTH (L.F.)	INFLOW ELEV.	OUTFLOW ELEV.	ROCK (CU. YD.)	COMMON (CU. YD.)	15"	18"	24"	30"	36"	42"			15"												
102	101	500+00	North Fr. Rd.	4.50' Lt.	36"	RCP	100.0	1367.86	1363.09							100.0													100.0	Connect to RCB
103	102	498+00	North Fr. Rd.	4.50' Lt.	36"	RCP	200.0	1372.68	1367.96							200.0													200.0	
104	103	496+00	North Fr. Rd.	4.50' Lt.	36"	RCP	200.0	1376.50	1372.78							200.0													200.0	
105	104	493+50	North Fr. Rd.	4.50' Lt.	36"	RCP	250.0	1377.86	1376.60							250.0													250.0	
106	105	492+00	North Fr. Rd.	4.50' Lt.	36"	RCP	150.0	1378.24	1377.96							150.0													150.0	
107	106	490+00	North Fr. Rd.	4.50' Lt.	36"	RCP	200.0	1378.96	1378.34							200.0													200.0	
108	107	488+00	North Fr. Rd.	4.50' Lt.	36"	RCP	200.0	1379.68	1379.06							200.0													200.0	
109	108	486+00	North Fr. Rd.	4.00' Lt.	30"	RCP	200.0	1381.36	1380.18						200.0														200.0	
110	109	484+00	North Fr. Rd.	4.00' Lt.	30"	RCP	200.0	1382.58	1381.46						200.0														200.0	
111	110	482+50	North Fr. Rd.	4.00' Lt.	24"	RCP	150.0	1384.57	1383.08					150.0															150.0	
112	111	480+75	North Fr. Rd.	4.00' Lt.	24"	RCP	175.0	1385.20	1384.67					175.0															175.0	
113	112	479+25	North Fr. Rd.	4.00' Lt.	24"	RCP	148.7	1385.74	1385.30					148.7															148.7	
114	113	477+75	North Fr. Rd.	3.50' Lt.	18"	RCP	148.7	1386.74	1386.24				148.7																148.7	
115	114	475+75	North Fr. Rd.	25.50' Rt.	18"	RCP	198.5	1387.52	1386.84				198.5																198.5	
116	115	475+00	North Fr. Rd.	25.50' Rt.	18"	RCP	70.1	1387.79	1387.62				70.1																70.1	
117	116	474+00	North Fr. Rd.	25.50' Rt.	15"	RCP	93.4	1388.68	1388.04			93.4																	93.4	
118	110	483+90	North Fr. Rd.	33.50' Lt.	24"	ACSP,PEP,PVCP,RCP	31.1	1383.30	1383.08					31.1																
151	152	500+39	North Fr. Rd.	51.00' Rt.	42"	ACSP,RCP	61.0	1365.40	1363.24								61.0													Connect to RCB
153	152	501+75	North Fr. Rd.	51.00' Rt.	18"	RCP	75.0	1366.95	1365.24				75.0																	Connect to RCB
202	101	501+87	North Fr. Rd.	4.00' Lt.	30"	RCP	87.0	1364.53	1363.59						87.0														87.0	Connect to RCB
203	202	502+50	North Fr. Rd.	4.00' Lt.	30"	RCP	63.0	1364.75	1364.63						63.0														63.0	
204	203	504+50	North Fr. Rd.	4.00' Lt.	30"	RCP	200.0	1365.25	1364.85						200.0														200.0	
205	204	506+00	North Fr. Rd.	4.00' Lt.	30"	RCP	150.0	1366.00	1365.35						150.0														150.0	
206	205	508+00	North Fr. Rd.	4.00' Lt.	24"	RCP	200.0	1366.95	1366.50					200.0															200.0	
207	206	509+75	North Fr. Rd.	4.00' Lt.	24"	RCP	175.0	1367.32	1367.05					175.0															175.0	
208	207	511+50	North Fr. Rd.	3.50' Lt.	15"	RCP	175.0	1372.64	1368.07			175.0																	175.0	
209	205	506+00	North Fr. Rd.	53.00' Rt.	18"	RCP	57.0	1368.36	1367.00				57.0																30.5	
210	207	509+96	North Fr. Rd.	55.00' Rt.	24"	RCP	62.5	1367.66	1367.42					62.5															32.3	
252	251	501+22	North Fr. Rd.	200.75' Rt.	24"	ACSP,PEP,PVCP,RCP	22.1	1367.85	1367.65					22.1																Connect to RCB
302	301	515+68	North Fr. Rd.	3.50' Lt.	15"	ACSP,PEP,PVCP,RCP	18.8	1370.73	1370.66			18.8								1										
303	302	514+45	North Fr. Rd.	3.50' Lt.	15"	RCP	122.5	1371.24	1370.78			122.5																	122.5	
TOTALS												409.7	549.3	964.4	900.0	1300.0	61.0			1									3919.7	

The use of Aluminized Corrugated Steel Pipe (ACSP) will only be approved after the Contractor submits verification that ACSP meets KDOT Pipe Policy service life criteria. Prior to using ACSP on this project, the Contractor will need to submit to the Engineer the certified lab reports for the soil and water ph and resistivity values as well as determine the resulting service life value based on instructions in the KDOT Pipe Policy for each pipe location. All work, labor, materials and incidentals for this evaluation shall be subsidiary.

THE PIPES ON THIS PROJECT ARE IN ACCORDANCE WITH THE CURRENT KDOT PIPE POLICY OR LOCAL PIPE POLICY THAT HAS BEEN APPROVED BY KDOT. ALL PIPES SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

GENERAL NOTE:
The quantities, dimensions, and flowlines given on this sheet are to be used if the following types of "SMOOTH PIPES" are furnished: RCP,VCP - ES, BCCMP - FP, RCPHE.

No.	Revision	By	Date

CITY OF WICHITA

SCHEDULE OF INLETS AND MANHOLES

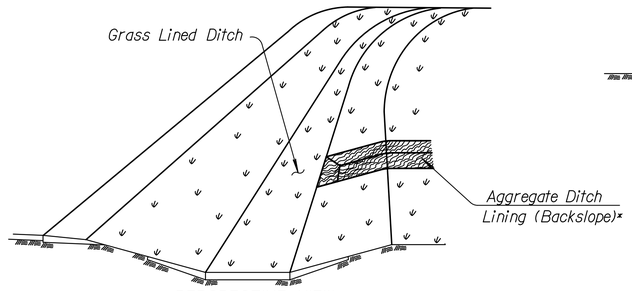
PROJECT NO. 472-84840 SEDGWICK CO.

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

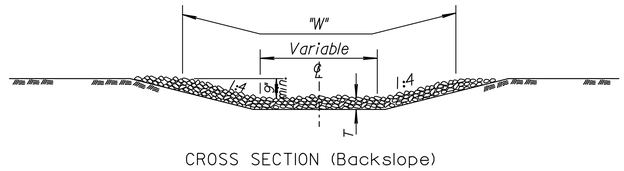
Designed by	RJS	Job No.	08313	SHT. 61 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:12 PM
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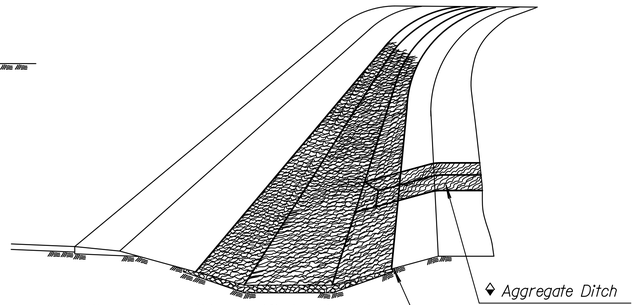
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	62	201



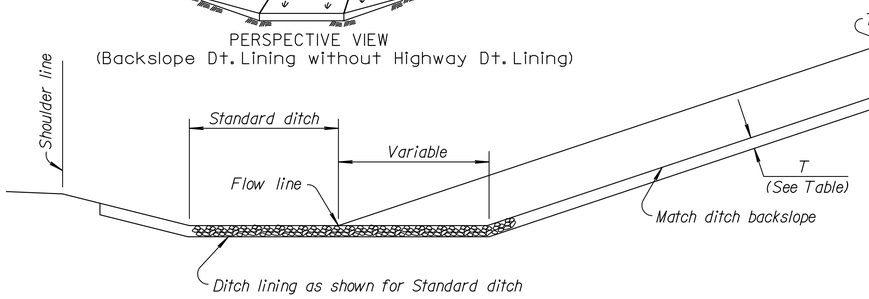
PERSPECTIVE VIEW
(Backslope Dt. Lining without Highway Dt. Lining)



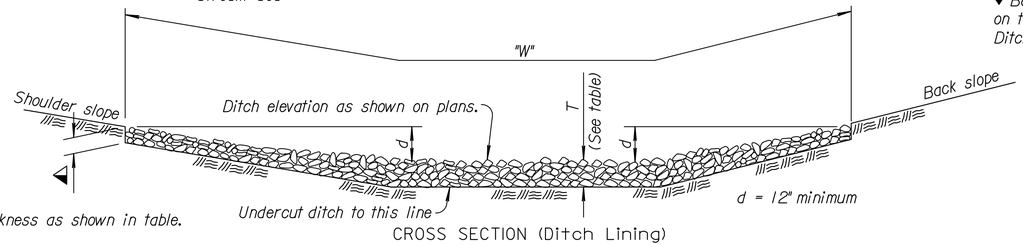
CROSS SECTION (Backslope)



PERSPECTIVE VIEW



LONGITUDINAL SECTION (Backslope)



CROSS SECTION (Ditch Lining)

◭ Feather edges to nominal thickness as shown in table.

GENERAL NOTE

All work and materials required for this construction shall be paid for by the ton of "Aggregate Ditch Lining (D_{50})".

Dumped aggregate shall be spread in reasonable conformity with the ditch section as shown and as directed by the Engineer.

Aggregate Ditch Lining shall be measured and paid for by the ton in the vehicle at the location designated by the Engineer and shall be full compensation for excavation for undercutting, furnishing, hauling, placing and maintaining the material as specified to complete the work.

The weight of the aggregate is based on a standard density of 120 PCF. When the standard density of the material is more or less than 120 PCF, the thickness may vary correspondingly.

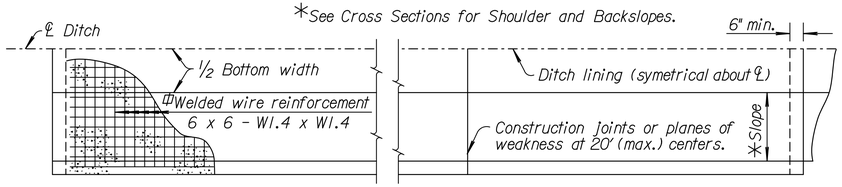
◆ Backslope aggregate ditch lining, constructed as indicated on this sheet, shall be paid for by the ton of "Aggregate Ditch Lining (D_{50})."

			QUANTITIES FOR TYPICAL 10' DITCH with 6:1 shoulder slope & 4:1 backslope			
D_{50}	T	◭	Approx. Excavation per Station (cu.yd.)			
			d = 1.0	d = 2.0	d = 3.0	d = 4.0
4"	12"	8"	68	99	130	161
6"	18"	12"	102	148	195	241

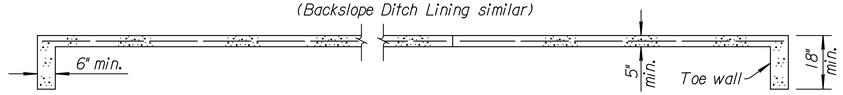
Note: Quantities provided for information only.

AGGREGATE DITCH LINING (D_{50})

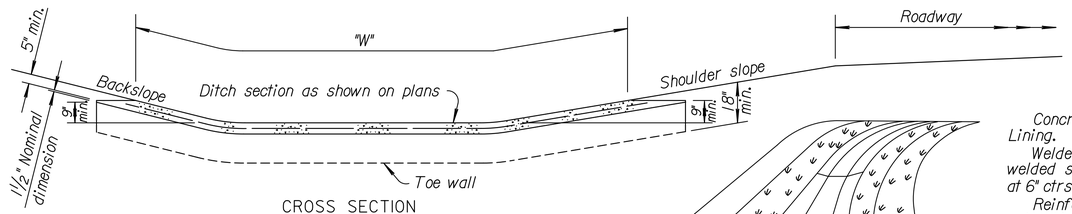
*See Cross Sections for Shoulder and Backslopes.



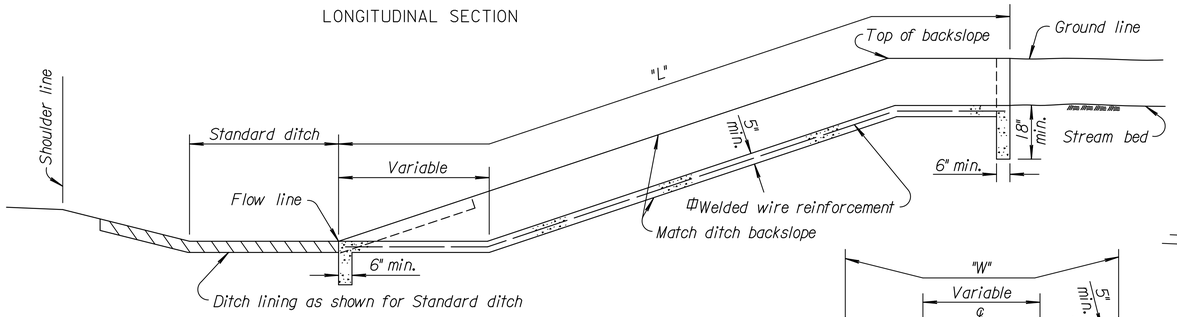
HALF PLAN
(Backslope Ditch Lining similar)



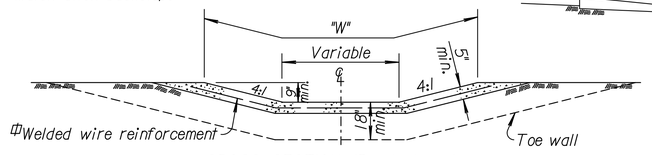
LONGITUDINAL SECTION



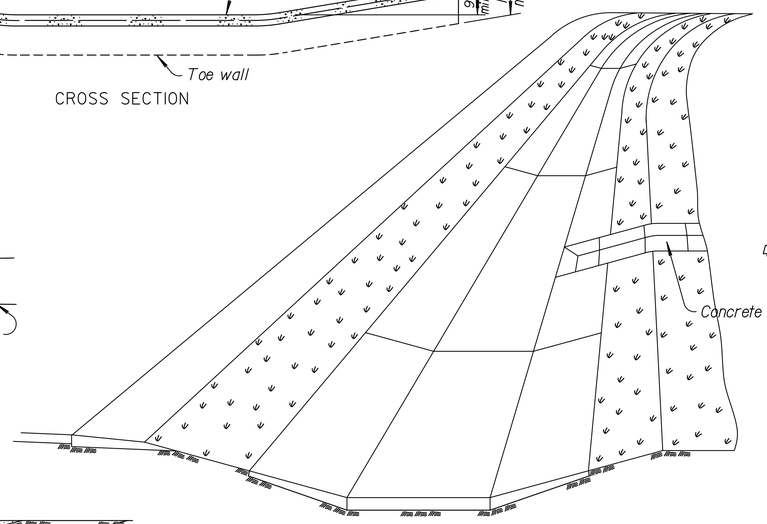
CROSS SECTION



LONGITUDINAL SECTION (Backslope)



CROSS SECTION (Backslope)



PERSPECTIVE VIEW

GENERAL NOTE

Concrete Grade 3.0 shall be used in Concrete Ditch Lining.

Welded wire reinforcement shall be of the electrically welded square mesh type with No. W1.4 wires spaced at 6" ctrs. each way.

Reinforcement as shown is included in the unit price bid for "Concrete Ditch Lining".

Measurements of Concrete Ditch Lining shall be in sq. yds. of outside surface area. Add 1'-6" times "W" for each toewall.

The exact location and dimensions may be adjusted, if required, by the Engineer at the time of construction.

Longitudinal construction joints may be constructed at the Contractor's option.

Φ Welded wire can be substituted with micro fiber reinforcement. See Standard Specifications for micro fiber and application rate requirements.

CONCRETE DITCH LINING

NO.	DATE	REVISIONS	BY	APP'D
9	8-1-12	Revised General Note	S.W.K.	J.O.B.
8	3-20-08	Rev. agg. edge thickness and quant.	S.W.K.	J.O.B.
7	11-07-07	Revised aggregate to 120 PCF	S.W.K.	J.O.B.
6	3-22-05	Changed conc. grade, reinforcing	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

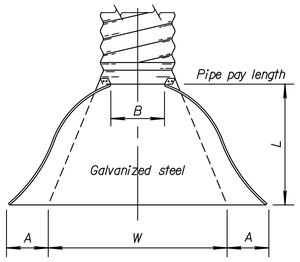
DITCH LINING

RD502

FHWA APPROVAL	9-10-12	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Kling

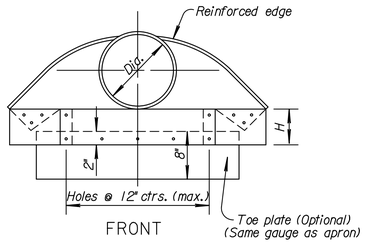
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2285-01	2014	63	201

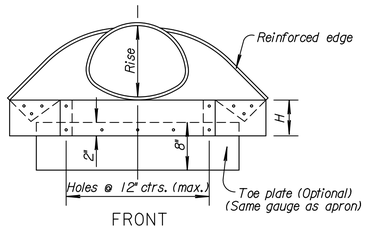


PLAN

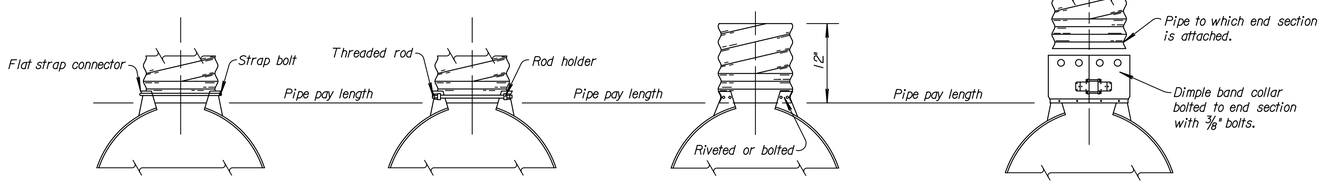
(Illustrated with Type #3 Connection)



FRONT



FRONT



TYPE 1

Available in sizes 12" through 24" only.

TYPE 2

Available in sizes 30" and 36" Round and 17"x13" through 57"x38" Pipe-Arches.

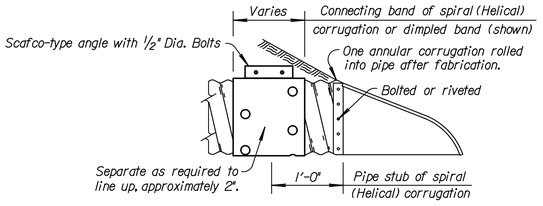
TYPE 3

Available in sizes 42" through 96" Round and 60"x46" through 81"x59" Pipe-Arches.

TYPE 5

Available for all Round and equivalent Pipe-Arch sizes, (Type 1 and Type 2 connections are recommended for the smaller sizes with annular ends).

Note: Type 3 connection may be furnished instead of Type 1 or Type 2 for smaller round or arch pipe.



SPIRAL (HELICAL) CORRUGATION

For all sizes of round and arch culvert pipes having Spiral (Helical) corrugations, the end sections and connecting bands shall be as shown above.

Thickness CSP/ACSP	Thickness CAP	Gauge
0.064"	0.060"	16 ga.
0.079"	0.075"	14 ga.
0.109"	0.105"	12 ga.
0.138"	0.135"	10 ga.
0.168"	0.164"	8 ga.

Pipe Dia. (In.)	CS,ACS or CA Gauge	Dimensions in Inches A (min.)	B (max.)	H (min.)	L (+/-2")	W (min.)	Approx. Slope
12"	16	5	7	6	21	22	2½:1
15"	16	6	8	6	26	28	2½:1
18"	16	7	10	6	31	34	2½:1
21"	16	8	12	6	36	40	2½:1
24"	16	9	13	6	41	46	2½:1
30"	14	11	16	8	51	55	2½:1
36"	14	13	19	9	60	70	2½:1
42"	12	15	25	10	69	82	2½:1
48"	12	17	29	12	78	88	2¼:1
54"	12	17	33	12	84	100	2¼:1
60"	12/10	17	36	12	87	112	2:1
66"	12/10	17	39	12	87	118	2:1
72"	12/10	17	44	12	87	120	2:1
78"	12/10	17	48	12	87	130	1½:1
84"	12/10	17	52	12	87	136	1½:1
90"	12/10	17	58	12	87	142	1½:1
96"	12/10	17	58	12	87	144	1½:1

Bid Designation Sq. Ft.	Nom. W.W. Area Sq. Ft.	Pipe Arch Span & Rise	Dimensions in Inches 2⅔"x ½" Corrugations CS,ACS or CA Gauge	A (min.)	B (max.)	H (min.)	L (+/-2")	W (min.)	Dimensions in Inches 3" x 1" or 5" x 1" Corr. CS,ACS or CA Gauge	A (min.)	B (max.)	H (min.)	L (+/-2")	W (min.)	Approx. Slope
1.0	1.1	17" x 13"	16	5	9	6	20	28							2½:1
1.5	1.6	21" x 15"	16	6	11	6	24	34							2½:1
2.0	2.2	24" x 18"	16	7	12	6	28	40							2½:1
2.5	2.9	28" x 20"	16	7	16	6	32	46							2½:1
3.0 or 4.0	4.5	35" x 24"	14	9	16	6	39	58							2½:1
5.0 or 6.0	6.5	42" x 29"	14	11	18	7	46	73							2½:1
7.0 or 8.5	8.9	49" x 33"	12	12	21	9	53	82							2½:1
10.0 or 11.0	11.7	53" x 41"							12	17	26	12	63	88	2 :1
10.0 or 11.0	11.6	57" x 38"	12	16	26	12	62	88							2 :1
12.5 or 14.0	15.6	60" x 46"							12	17	36	12	70	100	2 :1
12.5 or 14.0	14.7	64" x 43"	12	17	30	12	69	100							2 :1
16.5	19.3	66" x 51"							12/10	17	36	12	70	112	1½:1
16.5	18.1	71" x 47"	12/10	17	36	12	77	112							1½:1
21.0	23.2	73" x 55"							12/10	17	36	12	77	124	1½:1
21.0	21.9	77" x 52"	12/10	17	36	12	77	124							1½:1
25.0	27.4	81" x 59"							12/10	17	44	12	77	136	1½:1
25.0	26.0	83" x 57"	12/10	17	44	12	77	130							1½:1
32.0	32.1	87" x 63"							12/10	17	44	12	77	136	1½:1
36.0	37.0	95" x 67"							12/10	17	44	12	87	160	1½:1
42.0	42.4	103" x 71"							12/10	17	44	12	87	172	1½:1
47.0	48.0	112" x 75"							12/10	17	44	12	87	172	1½:1

(Information listed in these tables are nominal and may vary by manufacturer.)

GENERAL NOTE for END SECTIONS

End section material shall follow KDOT Pipe Policy for geographic location. Location shall govern use of CS (Galvanized), ACS (Aluminized) or CA (Aluminum) (Type I) End Section. Pipe material and End Section material shall be the same with no mixing of types per location.

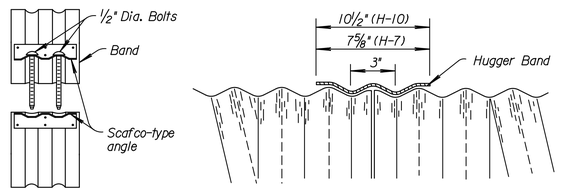
Toe plate extension, when specified, is an accessory and shall be the same gauge and metal as end section. Toe plate shall be punched to match holes in apron lip and attached with furnished ⅜" diameter nuts & bolts.

W + 10" for 12" to 30" diameter pipes inclusive.
W + 20" for 36" to 84" diameter pipes inclusive.
W + 10" for pipe-arches with a rise of 13" to 29" inclusive.
W + 20" for pipe-arches with a rise of 33" to 59" inclusive.

Multiple panel end sections may contain dual gauges of like metal and shall have lap seams which are tightly joined with rivets or bolts. For 60" and larger diameter round pipe end sections and 77"x52" arch pipe end sections, the reinforced edges are supplemented with stiffener angles. The angles are attached with nuts and bolts. Angle reinforcement may be required uder the center panel seams of 73"x55" and larger arch pipe end sections depending on manufacturer.

Other approved designs may be used in lieu of type shown.

Connection of end sections by welding will not be permitted.



CONNECTION DETAIL
H-7 or H-10 BAND

UNIVERSAL REFORMED END with
H-7 or H-10 HUGGER BAND

DETAILS FOR H-7 HUGGER BAND (12" thru 36")
or H-10 HUGGER BAND (12" thru 120")

Pipe Dia. Inches	Minimum Gauge of Round Pipe 2⅔"x ½" Corr. CSP or ACSP	3" x 1" Corr. CSP or ACSP	5" x 1" Corr. CSP or ACSP	2⅔"x ½" Corr. CAP	3" x 1" Corr. CAP
12"	14			16	
15"	14			16	
18"	14			16	
21"	14			16	
24"	14			16	
30"	14			14	
36"	14			14	16
42"	14			12	16
48"	12	14 16	14 16	12	16
54"	12	14 16	14 16	12	16
60"	10	14 16	14 16	10	16
66"	10	14 16	14 16	8	16
72"	10	14 16	14 16	8	16
78"	8	14 14	14 14		14
84"	8	14 14	14 14		12
90"		14 14	14 14		12
96"		12 12	12 12		12
102"		12 12	12 12		10
108"		12 12	12 12		10
114"		12 12	12 12		8
120"		10 10	10 10		8

Bid Designation Sq. Ft.	Pipe Dimension Span & Rise	Sq. Ft.	Equiv. Round Pipe Diameter	Minimum Gauge of Arch Pipe 2⅔"x ½" Corr. CSP or ACSP	3" x 1" Corr. CSP or ACSP	5" x 1" Corr. CSP or ACSP	2⅔"x ½" Corr. CAP	3" x 1" Corr. CAP
1.0	17" x 13"	1.1	15"	14			16	
1.5	21" x 15"	1.6	18"	14			16	
2.0	24" x 18"	2.2	21"	14			16	
2.5	28" x 20"	2.9	24"	14			14	
3.0 or 4.0	35" x 24"	4.5	30"	14			14	
5.0 or 6.0	42" x 29"	6.5	36"	14			12	
7.0 or 8.5	49" x 33"	8.9	42"	14			12	
10.0 or 11.0	53" x 41"	11.7	48"		14			
10.0 or 11.0	57" x 38"	11.6	48"	12			10	
12.5 or 14.0	60" x 46"	15.6	54"		14			14
12.5 or 14.0	64" x 43"	14.7	54"	12			10	
16.5	66" x 51"	19.3	60"		14			14
16.5	71" x 47"	18.1	60"	10			8	
21.0	73" x 55"	23.2	66"		14			14
21.0	77" x 52"	21.9	66"	8				
25.0	81" x 59"	27.4	72"		14	12		12
25.0	83" x 57"	26.0	72"	8				
32.0	87" x 63"	32.1	78"		12	12		12
36.0	95" x 67"	37.0	84"		12	12		12
42.0	103" x 71"	42.4	90"		12	12		10
47.0	112" x 75"	48.0	96"		12	12		8
54.0	117" x 79"	54.2	102"		10	10		
60.0	128" x 83"	60.5	108"		10	10		
67.0	137" x 87"	67.4	114"		10	10		
74.0	142" x 91"	74.5	120"		8	8		

GENERAL NOTE for METAL PIPE

Culvert "Type" listed may be CSP, ACSP, CAP, RCP, PVCP & PEP within guidelines of KDOT Pipe Policy for geographic location. More than one pipe "Type" may be acceptable for a design location with allowable types listed for each site.

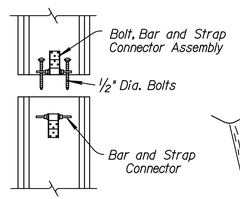
There shall be no payment for gain in pipe length due to fit of pipe at connecting band.

When Hugger Bands are used, the H-7 Hugger Band may be used on circular pipes 36" diameter and smaller or pipe arches 42"x 29" and smaller. The H-10 Hugger Band may be used on 12" thru 120" pipe. The H-12 or H-13 Hugger Band are for pipe sizes larger than 36" diameter or 42"x29" arch pipe.

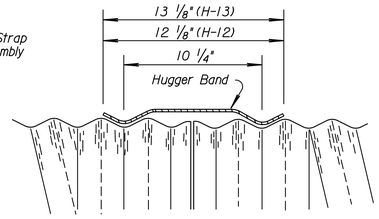
Pipe gauge listed in the tables on this sheet are minimum for E'=750 p.s.i. soil. Pipe gauge will be determined for each site based on the Design Manual Volume I- Part C Fill Height Tables and shall shall be listed in the Pipe Culvert Summary. Gauges shown on this Standard Drawing are KDOT minimum and may not be industry minimum gauge.

In geographic areas that allow CSP (24" or smaller arched or round pipe) for entrance and side road installation with less than 3,000 AADT, 16 gauge ACSP may be substituted for 14 gauge CSP.

Aluminum or aluminized pipes or end sections shall be coated with an asphaltic paint when in contact with fresh concrete in accordance with the Standard Specifications.

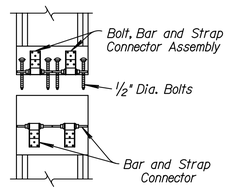


CONNECTION DETAIL
SINGLE HARNESS



UNIVERSAL REFORMED END with
HUGGER BAND

DETAILS FOR H-12 or H-13 HUGGER BAND



CONNECTION DETAIL
DOUBLE HARNESS

NO.	DATE	REVISIONS	BY	APP'D
4	9-10-09	Rev. Round and Arch tables, add. Alum	S.W.K.	J.O.B.
3	1-20-09	Rev. Round Pipe Gauges	S.W.K	J.O.B.
2	4-18-08	Rev. layout, details, tables and notes	S.W.K.	J.O.B.
1	4-27-98	Added pipe corrugation option note	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

METAL END SECTION FOR ROUND & ARCH METAL CULVERTS (TYPE I) & PIPE GAUGE TABLES

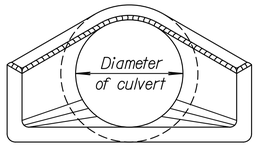
RD660

FHWA APPROVAL	12-16-09	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

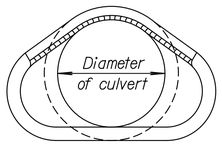
Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

Drawn By: drp
Plotted: 14-JUL-2014 14:51
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	64	201

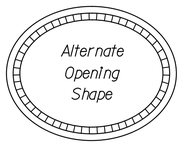


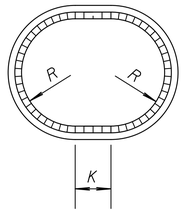
END ELEVATION (TYPE I)



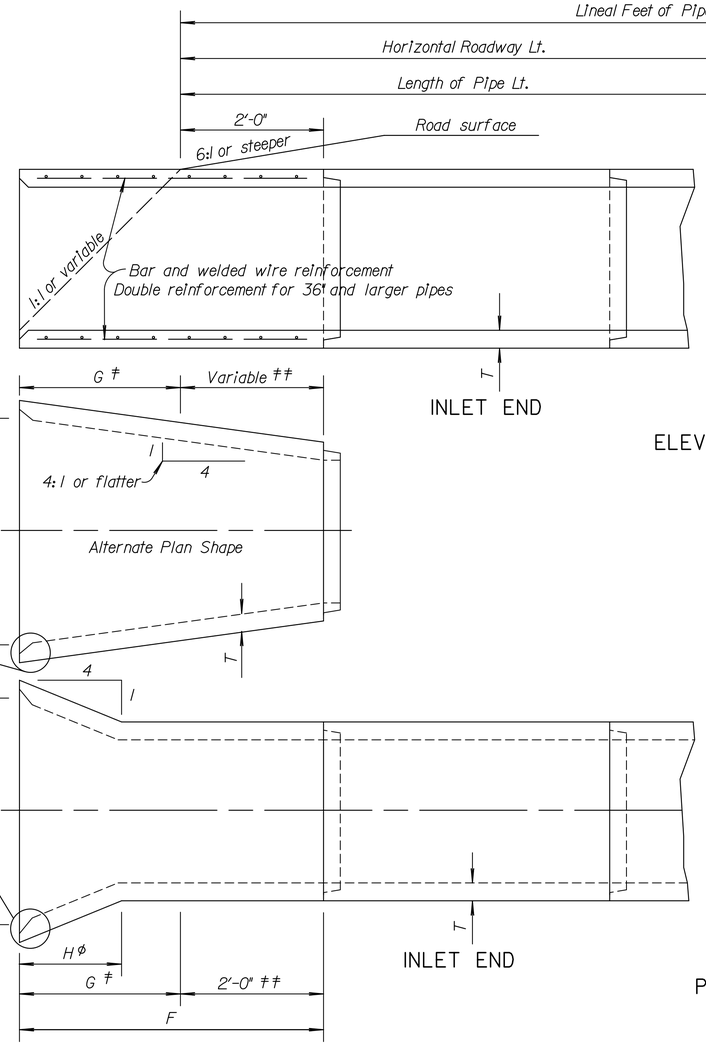
SECTION A-A

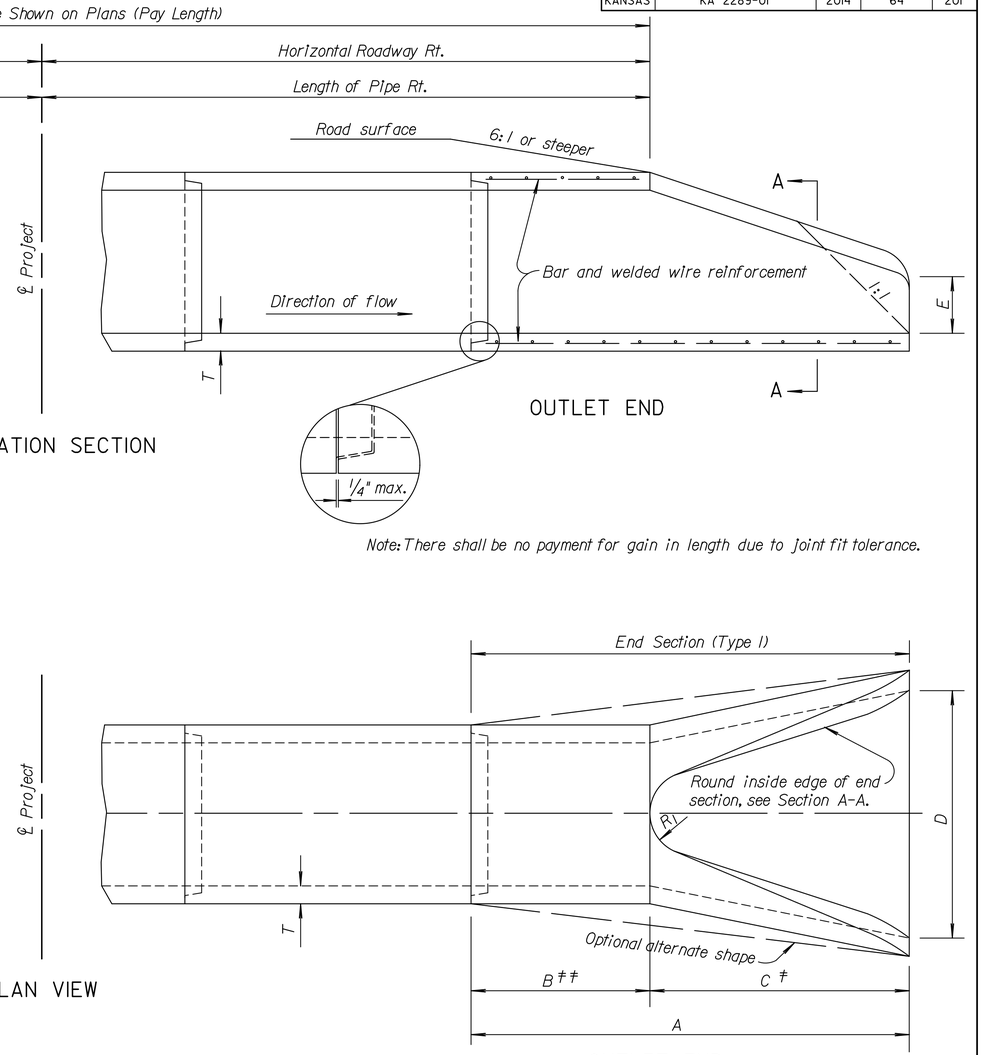
Showing rounding of inside edge of end section.





END ELEVATION (TYPE III)





Note: There shall be no payment for gain in length due to joint fit tolerance.

ø *Transition to round pipe.*

ǂ *Paid for as separate item of End Section, except when structures shall bid as alternates. In that case End Sections shall be subsidiary to bid item. "Drainage Structure No. ".*

ǂǂ *Included in pay length of pipe.*

⚹ *Minimum waterway area is calculated at the inside of the bevel.*

END SECTION (TYPE I) NOMINAL DIMENSIONS

Diam.	A	B ǂǂ	C ǂ	D	E	R_1	Slope	T
12"	6'-0 7/8"	4'-0 7/8"	2'-0"	2'-0"	4"	9	3:1	2"
15"	6'-1"	3'-10"	2'-3"	2'-6"	6"	11	3:1	2 1/4"
18"	6'-1"	3'-10"	2'-3"	3'-0"	9"	12	3:1	2 1/2"
24"	6'-1 1/2"	2'-6"	3'-7 1/2"	4'-0"	9 1/2"	14	3:1	3"
30"	6'-1 3/4"	1'-7 3/4"	4'-6"	5'-0"	1'-0"	15	3:1	3 1/2"
36"	8'-1 3/4"	2'-10 3/4"	5'-3"	6'-0"	1'-3"	20	3:1	4"
42"	8'-2"	2'-11"	5'-3"	6'-6"	1'-9"	22	3:1	4 1/2"
48"	8'-2"	2'-2"	6'-0"	7'-0"	2'-0"	22	3:1	5"
54"	8'-2 1/4"	2'-9 1/4"	5'-5"	7'-6"	2'-3"	24	2.4 :1	5 1/2"
60"	8'-3"	3'-3"	5'-0"	8'-0"	2'-11"	24	2:1	6"
72"	8'-3"	1'-9"	6'-6"	9'-0"	3'-0"	24	1.86 :1	7"
84"	9'-3 1/2"	1'-9"	7'-6 1/2"	10'-0"	3'-0"	24	1.6 :1	8"

SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS

Diam.	Min. W.W. ⚹ Area Sq.Ft.	F	G	H	I	J	K	R	T
24"	4.5	4'-3"	2'-3"	1'-5 1/8"	2'-8"	1 1/2"	8"	1'-0"	3"
30"	7.0	4'-9 1/2"	2'-9 1/2"	1'-9 1/2"	3'-4"	2"	10"	1'-3"	3 1/2"
36"	10.1	5'-4"	3'-4"	2'-1 1/2"	4'-0"	2"	1'-0"	1'-6"	4"
42"	13.7	5'-10 1/2"	3'-10 1/2"	2'-5 7/8"	4'-8"	2 1/2"	1'-2"	1'-9"	4 1/2"
48"	17.9	6'-5"	4'-5"	2'-10 1/8"	5'-4"	3"	1'-4"	2'-0"	5"
54"	22.7	6'-11 1/2"	4'-11 1/2"	3'-2 1/2"	6'-0"	3 1/2"	1'-6"	2'-3"	5 1/2"
60"	28.0	7'-6"	5'-6"	3'-6 7/8"	6'-8"	4"	1'-8"	2'-6"	6"
72"	40.3	8'-7"	6'-7"	4'-3 5/8"	8'-0"	5"	2'-0"	3'-0"	7"
84"	54.8	9'-8"	7'-8"	5'-0 3/8"	9'-4"	6"	2'-4"	3'-6"	8"

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

NO.	DATE	REVISIONS	BY	APP'D
2	4-18-08	Added ref. to KDOT Pipe Policy	S.W.K.	J.O.B.
1	4- 5-05	Revised reinforcement callout	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD662

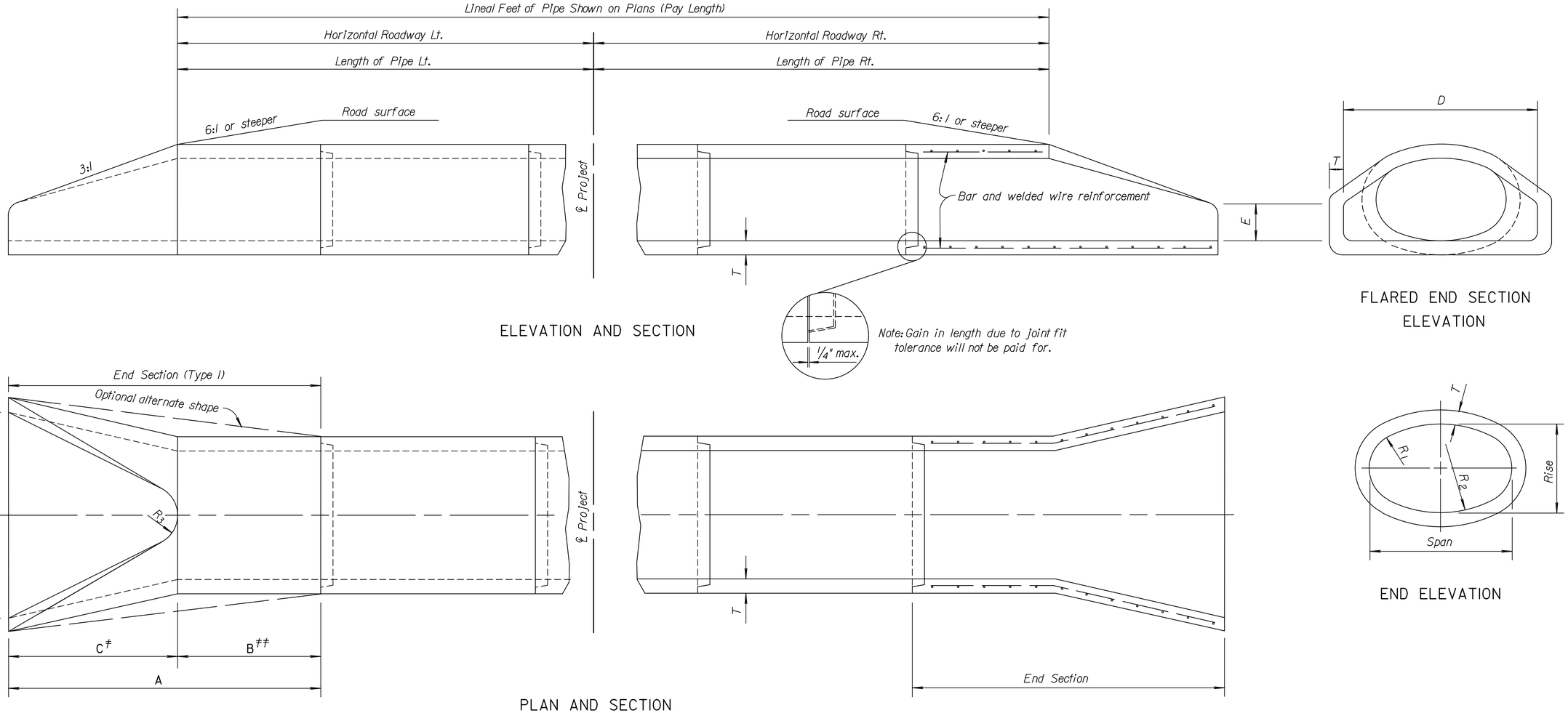
FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/ minimum fill heights and classes of pipe.

Drawn By : drp
Plotted : 14-JUL-2014 14:51
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd662.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	65	201

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.



ELEVATION AND SECTION

FLARED END SECTION ELEVATION

PLAN AND SECTION

END ELEVATION

END SECTION (TYPE I) NOMINAL DIMENSIONS

Bid Designation Sq. Ft.	Min. W.W. Area Sq. Ft.	Span	Rise	Overall Length A	Barrel Length B ǂǂ	C ǂ	D	E	R_1	R_2	R_3	T
1.0 or 1.5	1.8	23"	14"	6'-0"	3'-9"	2'-3"	3'-0"	8"	6"	20"	6"	2 3/4"
2.0,2.5 or 3.0	3.3	30"	19"	6'-0"	2'-9"	3'-3"	4'-0"	8 1/2"	8 1/4"	26 1/4"	7"	3 1/4"
4.0	4.1	34"	22"	6'-0"	2'-2"	3'-10"	4'-6"	9"	9 1/4"	29 17/32"	8"	3 1/2"
5.0	5.1	38"	24"	6'-0"	1'-6"	4'-6"	5'-0"	9 1/2"	10 1/4"	32 3/4"	9"	3 3/4"
6.0	6.3	42"	27"	6'-0"	1'-3"	4'-9"	5'-6"	10 3/8"	11 7/16"	36 3/16"	10 1/2"	3 3/4"
7.0	7.4	45"	29"	8'-0"	3'-0"	5'-0"	6'-0"	11 1/4"	12 1/4"	39 1/4"	12"	4 1/2"
8.5	8.8	49"	32"	8'-0"	3'-0"	5'-0"	6'-3"	12"	13 9/16"	42 21/32"	12 1/2"	4 3/4"
10.0	10.2	53"	34"	8'-0"	3'-0"	5'-0"	6'-6"	15 3/4"	14 3/4"	46"	13"	5"
11.0 or 12.5	12.9	60"	38"	8'-0"	3'-0"	5'-0"	7'-0"	21"	16 1/2"	51 3/4"	14"	5 1/2"
14.0 or 16.5	16.6	68"	43"	8'-0"	3'-0"	5'-0"	7'-6"	25 1/2"	18 21/32"	58 13/32"	16"	6"

ǂ Paid for as separate item of "End Sections".

ǂǂ Included in pay length of pipe.

Design of end section shall conform to standard reinforced concrete horizontal elliptical pipe. Slight variations in the dimensions specified will be allowed.

NO.	DATE	REVISIONS	BY	APP'D
3	4-18-08	Added ref. to KDOT Pipe Policy	S.W.K.	J.O.B.
2	4- 6-05	Revised reinforcement callout	S.W.K.	J.O.B.
1	6-16-95	Revised table & labeling	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

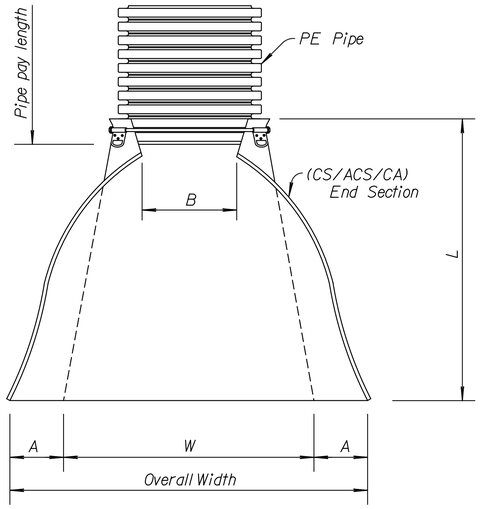
CONCRETE END SECTION FOR REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE TYPE I

RD663

FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

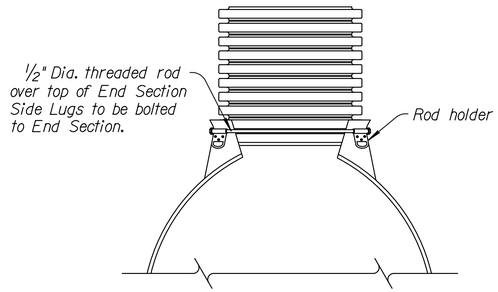
Drawn By : drp
Plotted : 14-JUL-2014 14:51
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd663.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	66	201



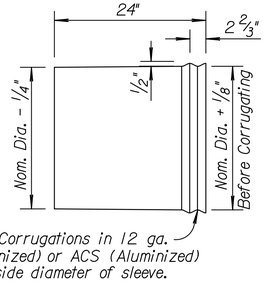
PLAN

(Illustrated with Type 2 Connector)



TYPE 2 CONNECTOR

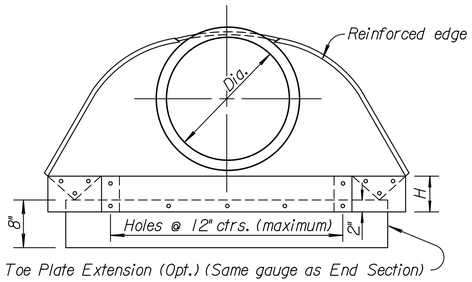
(12" & Larger)



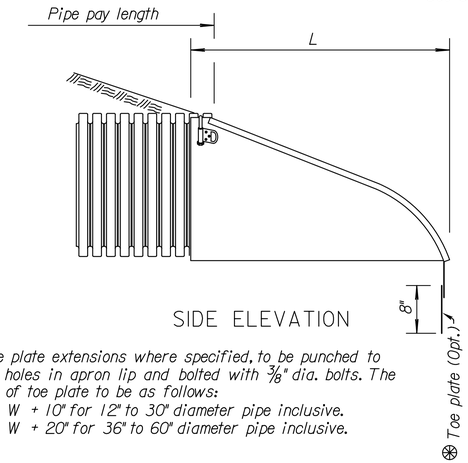
Form 1/2" x 2 2/3" Corrugations in 12 ga. smooth CS (Galvanized) or ACS (Aluminized) metal, maintain inside diameter of sleeve.

SMOOTH TAPERED SLEEVE DETAIL

(Optional)



FRONT ELEVATION

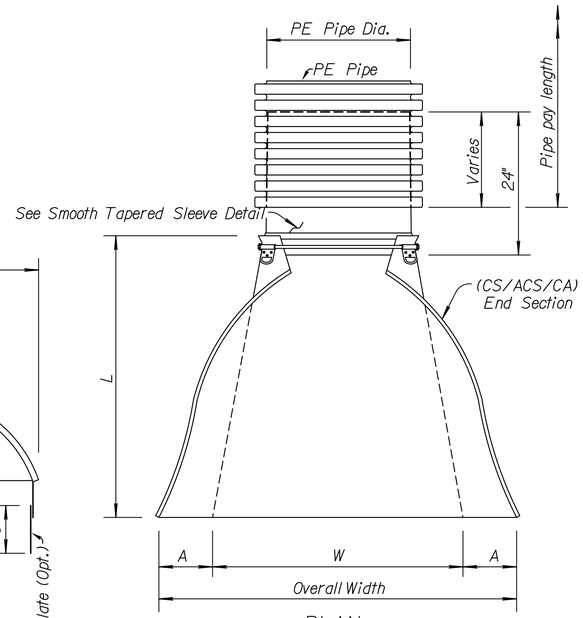


SIDE ELEVATION

✻ *Toe plate extensions where specified, to be punched to match holes in apron lip and bolted with 3/8" dia. bolts. The length of toe plate to be as follows:*

W + 10" for 12" to 30" diameter pipe inclusive.

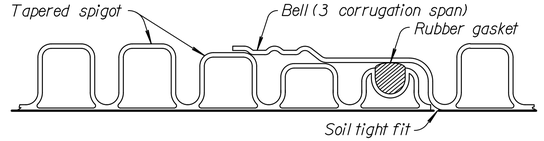
W + 20" for 36" to 60" diameter pipe inclusive.



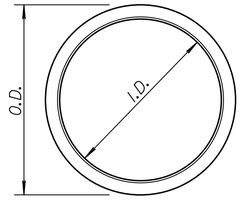
PLAN

TAPERED SLEEVE FOR ATTACHING METAL END SECTION TO PE PIPE

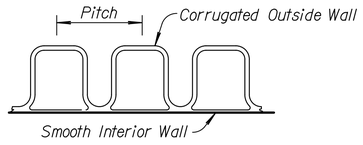
(Illustrated with Type 2 Connector)



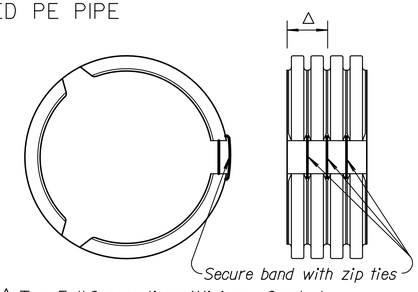
PEP BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT



DETAILS OF
CORRUGATED PE PIPE



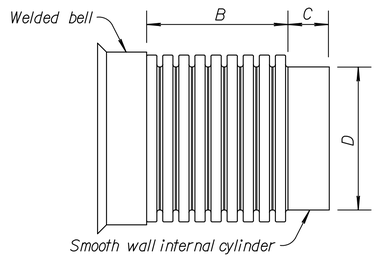
TYPICAL SECTION
CORRUGATED PE PIPE



△ *Two Full Corrugations (Minimum Overlap)*

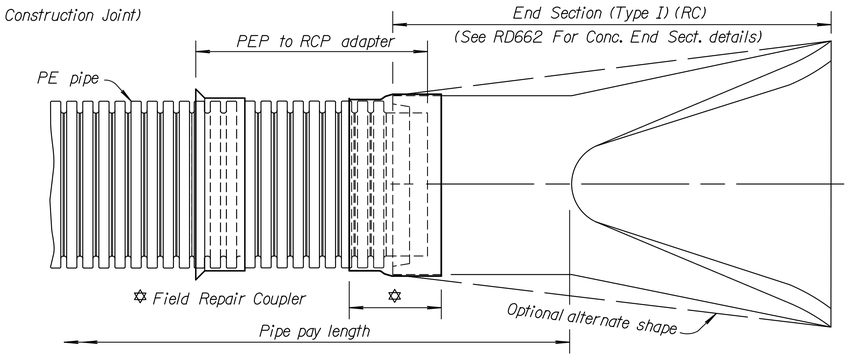
PEP SPLIT BAND COUPLER
SOIL TIGHT JOINT

This band is used for (Field Splice Construction Joint)



PEP to RCP ADAPTER

PEP TO RCP ADAPTER			
Pipe Dia. (In.)	B	C	D
18"	18 1/4"	6"	18"
24"	25"	6"	24"
30"	32 3/16"	6"	30"
36"	36 3/4"	6"	36"
42"	36"	6"	41 1/4"
48"	36 3/4"	6"	41 1/4"
60"	36"	6"	59"



PEP to RCP ADAPTER to CONCRETE END SECTION

(This installation is for Acidic Soil Conditions)

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PE pipe (Type S).

PE pipe couplings shall be designed to cover at least two full corrugations on each side of a joint.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PE pipe, end sections, couplings, and fittings shall conform with the Standard Specifications.

See Standard Specifications for PE Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

Attachment to PE pipe 12" diameter and up shall be made with Type 2 Connector.

All work and materials required for construction and installation of end section shall be included in the bid item "End Section".

(CS/ACS/CA) END SECTION FOR PE PIPE							
Pipe Dia. (In.)	Min. Gauge Ends	Dimensions in Inches					Slope
		A (min.)	B (max.)	H (min.)	L (+/-2")	W (min.)	
12"	16	6	7	6	21	24	2 1/2:1
15"	16	7	8	6	26	30	2 1/2:1
18"	16	8	10	6	31	36	2 1/2:1
21"	16	9	12	6	36	42	2 1/2:1
24"	16	10	13	6	41	48	2 1/2:1
30"	14	12	16	8	51	60	2 1/2:1
36"	14	14	19	9	60	72	2 1/2:1
42"	12	16	25	11	69	84	2 1/2:1
48"	12	18	29	12	78	90	2 1/4:1
54"	12	18	33	12	84	102	2 1/4:1
60"	12/10	18	36	12	87	114	2:1

NO.	DATE	REVISIONS	BY	APP'D
1	2-8-08	Added ref. to KDOT pipe policy	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

METAL/CONCRETE END SECTION (TYPE I) for PE PIPE

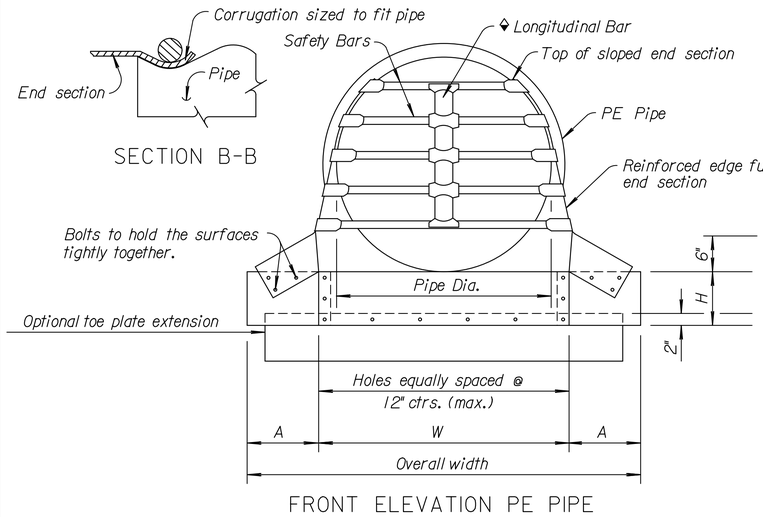
RD667

FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

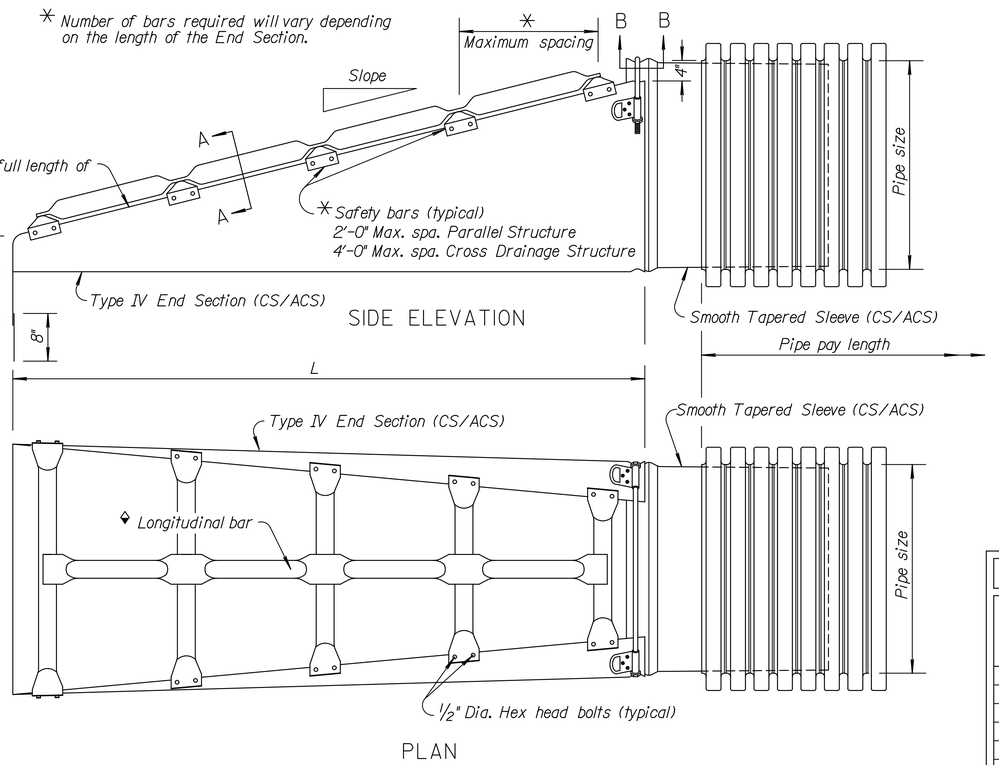
Drawn By : drp
Plotted : 14-JUL-2014 14:51
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd667.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	67	201



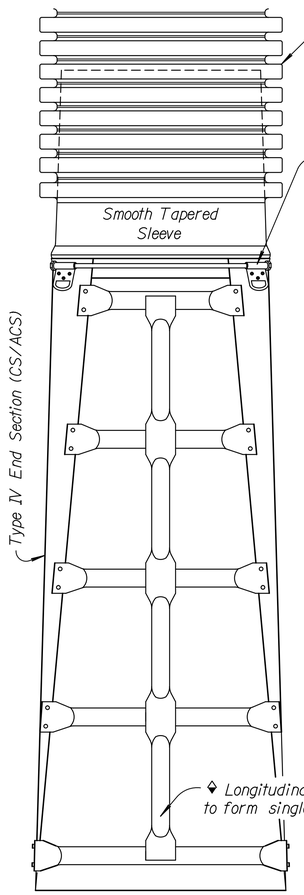
SECTION B-B

FRONT ELEVATION PE PIPE

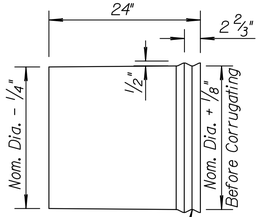


SIDE ELEVATION

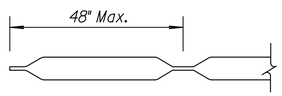
PLAN



TYPE 2 CONNECTOR DETAILS
(For 30" and larger pipe)

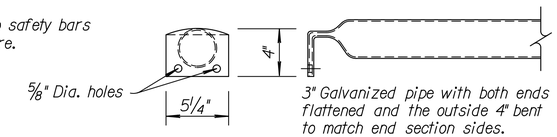


SMOOTH TAPERED SLEEVE DETAIL
(Required with Type IV on PE Pipe)

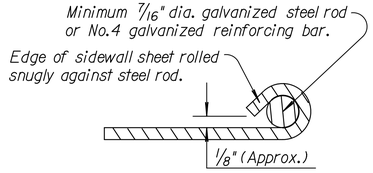


LONGITUDINAL BAR DETAIL

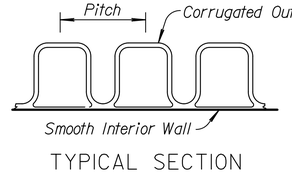
♦ *Longitudinal bar required for cross drainage structures when span is greater than 30".*



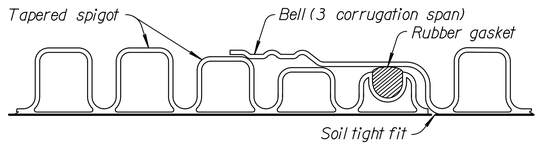
DETAIL OF SAFETY BAR
(Optional)



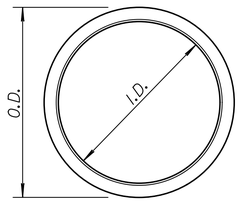
SECTION A-A



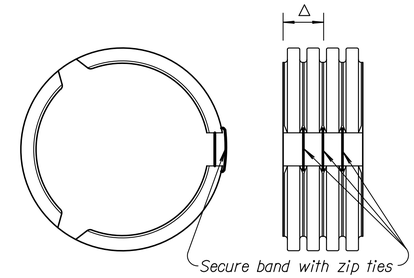
TYPICAL SECTION
CORRUGATED PE PIPE



PEP BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT



DETAILS OF
CORRUGATED PE PIPE



Δ *Two Full Corrugations (Minimum Overlap)*

PEP SPLIT BAND COUPLER
SOIL TIGHT JOINT
This band is used for (Field Splice Construction Joint)

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PE pipe (Type S).

Couplings shall be designed to cover at least two full corrugation on each side of a joint.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PE pipe, end sections, couplings, and fittings shall conform with the Standard Specifications.

See Standard Specifications for PE Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

Safety bars shall be fabricated from steel pipe meeting the requirements of ASTM A-53 Schedule 40 Specifications. Safety bars shall be hot dipped galvanized after fabrication.

Attachment to PE pipe shall be made with Smooth Tapered Sleeve.

All work and materials required for construction and installation of safety slope end section shall be included in the bid item "End Section (Type IV)".

TYPE IV END SECTIONS (CS or ACS) FOR PE PIPE

Pipe Dia. (In.)	Min. Gauge Ends	Dimensions + or - 2"				L Dimensions + or - 2"			
		A	H	W	Overall Width	Slope	Length (In.)	Slope	Length (In.)
30"	12	12	9	36	60	4:1	80	6:1	120
36"	12	12	9	42	66	4:1	104	6:1	156
42"	12	16	12	48	80	4:1	128	6:1	192
48"	12	16	12	54	86	4:1	152	6:1	228
54"	12	16	12	60	92	4:1	176	6:1	264
60"	12	16	12	66	98	4:1	200	6:1	300

NO.	DATE	REVISIONS	BY	APP'D
1	2-8-08	Add ref. to KDOT pipe policy	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

TYPE IV END SECTION FOR PE PIPE

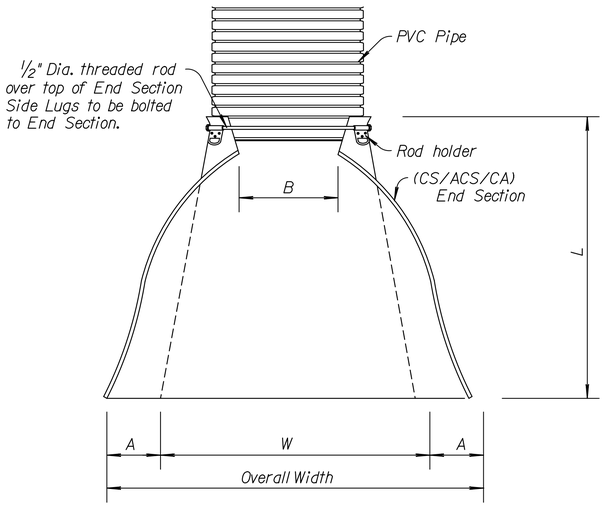
RD667 A

FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

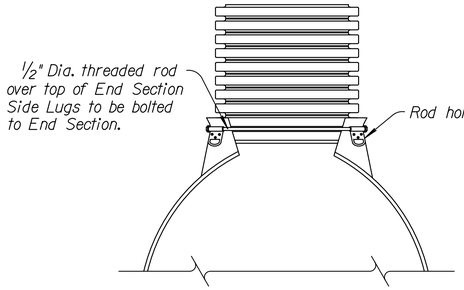
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	68	201



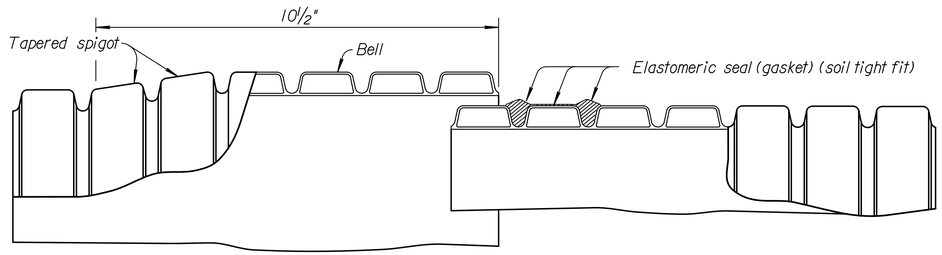
PLAN

(Illustrated with Type 2 Connector on 12" or larger)

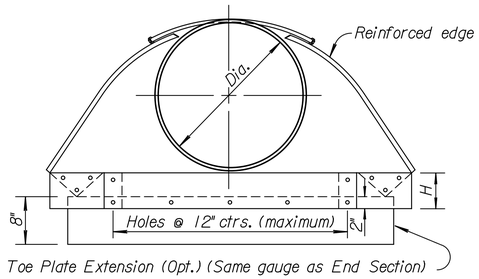


TYPE 2 CONNECTOR

(12" & Larger)

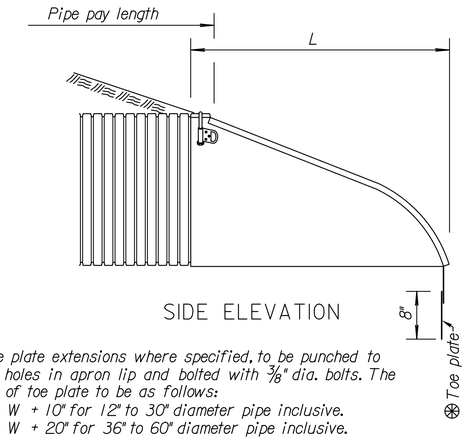


PVC BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT



Toe Plate Extension (Opt.) (Same gauge as End Section)

FRONT ELEVATION

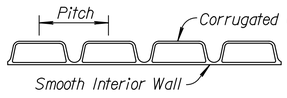


SIDE ELEVATION

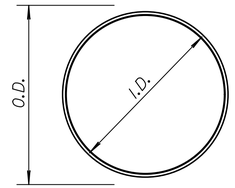
⊛ *Toe plate extensions where specified, to be punched to match holes in apron lip and bolted with 3/8" dia. bolts. The length of toe plate to be as follows:*

W + 10" for 12" to 30" diameter pipe inclusive.

W + 20" for 36" to 60" diameter pipe inclusive.



TYPICAL SECTION
CORRUGATED PVC PIPE



DETAILS OF
CORRUGATED PVC PIPE

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PVC pipe.

PVC pipe shall be joined with an integral bell gasket joint and Flexible Elastomeric Seals. PVC Pipe is available in lengths of 2.5' to 20'. PVC pipe can be field cut to length, cut through a corrugation valley using a hand or power saw. Gaskets are shipped loose and fitted on spigot/cut pipe end following Manufacturer's installation instructions.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PVC pipe, end sections and fittings shall conform with the Standard Specifications.

See Standard Specifications for PVC Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

The End Section attachment to PVC pipe shall be made with a Type 2 Connector for 12" or greater pipe size.

All work and materials required for construction and installation of end section shall be included in the bid item "End Section".

(CS/ACS/CA) END SECTION FOR PVC PIPE

Pipe Dia. (In.)	Min. Gauge Ends	Dimensions in Inches					Slope
		A ±" Tol.	B (max.)	H (min.)	L (+/- 2")	W (min.)	
12"	16	6	7	6	21	24	2 1/2:1
15"	16	7	8	6	26	30	2 1/2:1
18"	16	8	10	6	31	36	2 1/2:1
21"	16	9	12	6	36	42	2 1/2:1
24"	16	10	13	6	41	48	2 1/2:1
30"	14	12	16	8	51	60	2 1/2:1
36"	14	14	19	9	60	72	2 1/2:1

NO.	DATE	REVISIONS	BY	APP'D
	2-8-08	Added ref. to KDOT Pipe Policy	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

METAL END SECTION (TYPE I) for PVC PIPE

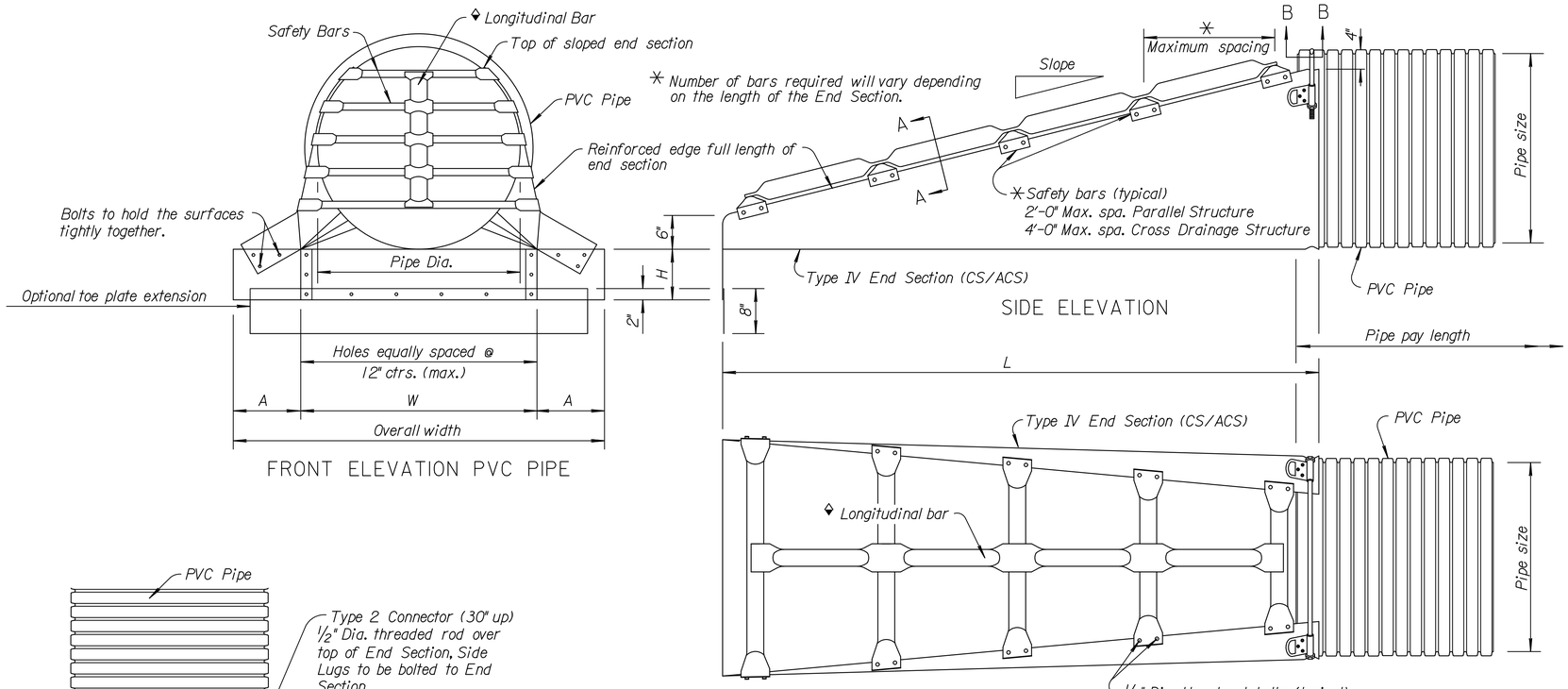
RD667 B

FHWA APPROVAL	6-27-08	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

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Plotted : 14-JUL-2014 14:51
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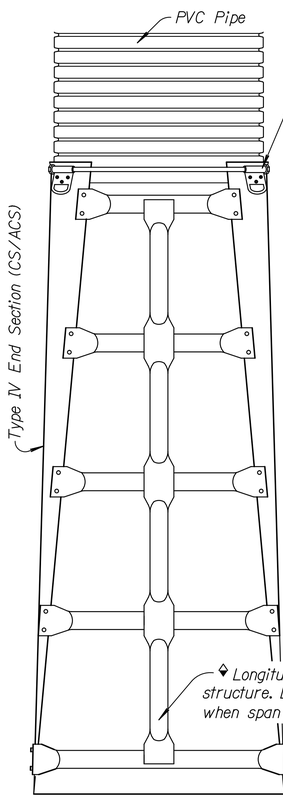
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	69	201



FRONT ELEVATION PVC PIPE

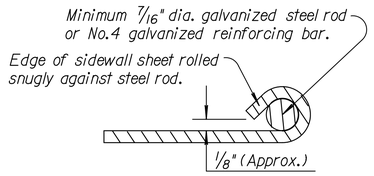
* Number of bars required will vary depending on the length of the End Section.

PLAN

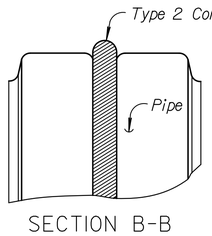


TYPE 2 CONNECTOR DETAILS

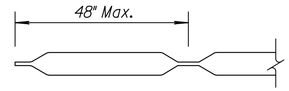
Note: Bars shown are for Cross Drainage Structures.



SECTION A-A

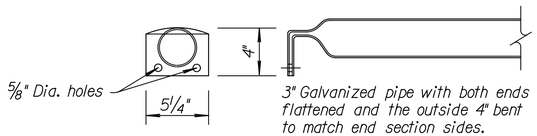


SECTION B-B

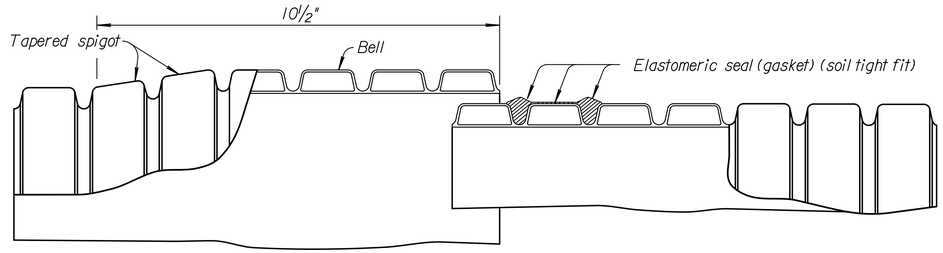


LONGITUDINAL BAR DETAIL

◆ Longitudinal bar required for cross drainage structures when span is greater than 30".



DETAIL OF SAFETY BAR
(Optional)



PVCP BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PVC pipe.

PVC pipe shall be joined with an integral bell gasket joint and Flexible Elastomeric Seals. PVC Pipe is available in lengths of 2.5' to 20'. PVC pipe can be field cut to length, cut through a corrugation valley using a hand or power saw. Gaskets are shipped loose and fitted on spigot/cut pipe end following Manufacturer's installation instructions.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PVC pipe, end sections and fittings shall conform with the Standard Specifications.

See Standard Specifications for PVC Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

Safety bars shall be fabricated from steel pipe meeting the requirements of ASTM A-53 Schedule 40 Specifications. Safety bars shall be hot dipped galvanized after fabrication.

Type IV End Section attachment to PVC pipe shall be made with Type 2 Connector.

All work and materials required for construction and installation of safety slope end section shall be included in the bid item "End Section (Type IV)".

TYPE IV END SECTIONS (CS or ACS) FOR PVC PIPE

Pipe Dia. (In.)	Min. Gauge Ends	Dimensions + or - 2"				L Dimensions + or - 2"			
		A	H	W	Overall Width	Slope	Length (In.)	Slope	Length (In.)
30"	12	12	9	36	60	4:1	80	6:1	120
36"	12	12	9	42	66	4:1	104	6:1	156

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

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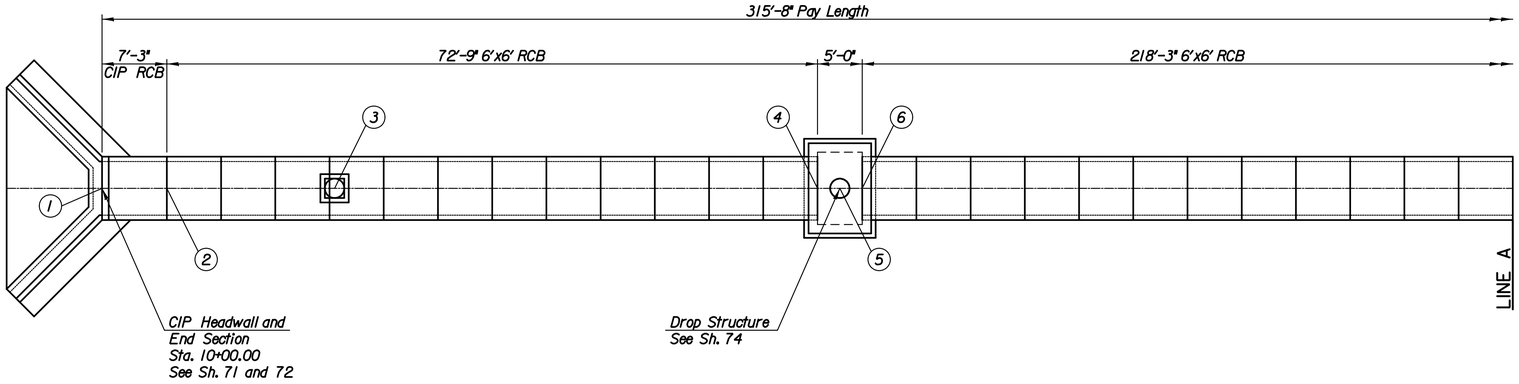
NO.	DATE	REVISIONS	BY	APP'D
1	2-8-08	Added ref. to KDOT pipe policy	S.W.K	J.O.B

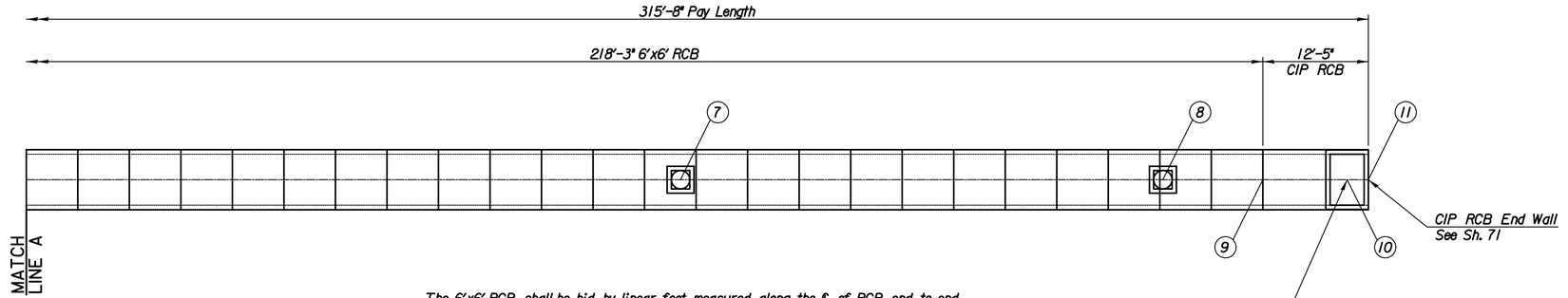
KANSAS DEPARTMENT OF TRANSPORTATION

TYPE IV END SECTION FOR PVC PIPE

RD667 C

FHWA APPROVAL		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King





The 6'x6' RCB shall be bid by linear foot, measured along the ℄ of RCB end to end. It shall include all labor, material, excavation, backfill, concrete, reinforcing steel, and all other incidentals necessary to complete the work. Quantities are for information only.

TABLE OF COORDINATES							
REFERENCE ℄ OF RCB	POINT NO.	MAINLINE STATION	MAINLINE OFFSET	RCB STATION	FLOWLINE ELEVATION	TOP ELEVATION	H
CIP Beginning	1	501+00.00	31.50' LT	10+00.00	1362.70	-	-
CIP End	2	501+00.00	24.25' LT	10+07.25	1362.71	-	-
RCB Manhole Opening #1	3	501+00.00	5.50' LT	10+26.00	1362.75	1372.38	3.00
RCB Drop Structure Beginning	4	501+00.00	48.50' RT	10+80.00	1362.86	-	-
RCB Manhole Opening #2	5	501+00.00	51.00' RT	10+82.50	1362.87	1372.86	0.00
RCB Drop Structure End	6	501+00.00	53.50' RT	10+85.00	1365.11	-	-
RCB Manhole Opening #3	7	501+00.00	203.23' RT	12+34.73	1365.40	1373.10	1.08
RCB Manhole Opening #4	8	501+00.00	259.98' RT	12+91.48	1365.51	1375.64	3.50
CIP Beginning	9	501+00.00	271.75' RT	13+03.25	1365.53	-	-
RCB Area Inlet (Special)	10	501+00.00	281.68' RT	13+13.18	1365.55	1373.33	-
CIP End	11	501+00.00	284.17' RT	13+15.67	1365.56	-	-

Note: H is based on the dimension from top of the manhole ring and cover to top of RCB. If RCB or P.I. top slabs vary, H must be adjusted.

BILL OF MATERIALS		
6'x6' RCB	315.67	L.F.
* Drop Structure	1	Ea.
* Area Inlet (Special)	1	Ea.
* Manhole Openings	3	Ea.

* Quantities are Subsidary to the bid item "6'x6' RCB".

No.	Revision	By	Date

CITY OF WICHITA

6'x6' RCB LAYOUT

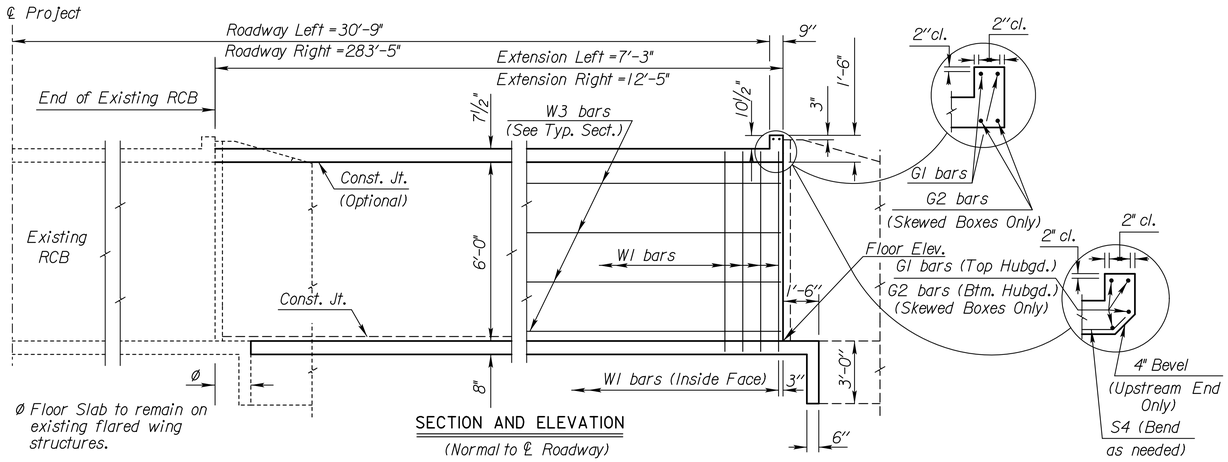
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	MLB	Job No.	08313	Sht. 70 of 201
Drawn by	MLB	Date	June, 2014	

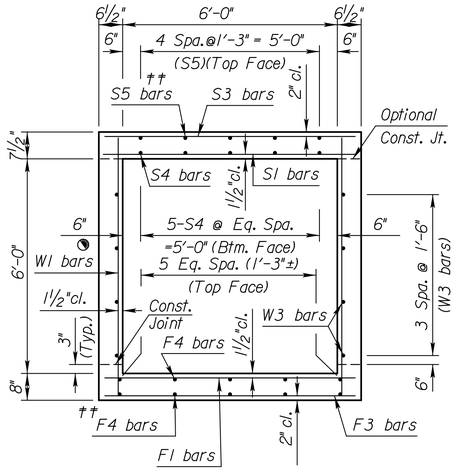
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	71	201



SECTION AND ELEVATION

(Normal to ℄ Roadway)



TYPICAL SECTION

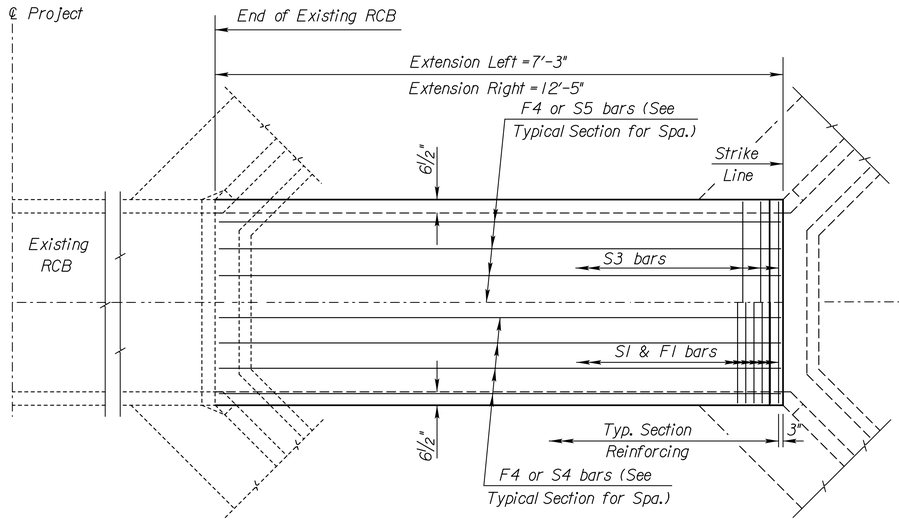
- See RCB Auxiliary Details for Optional Splice.

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

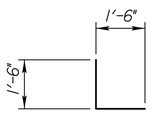
  Note:
  F3 bars omitted unless floor thickness is greater than or equal to 12.".

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

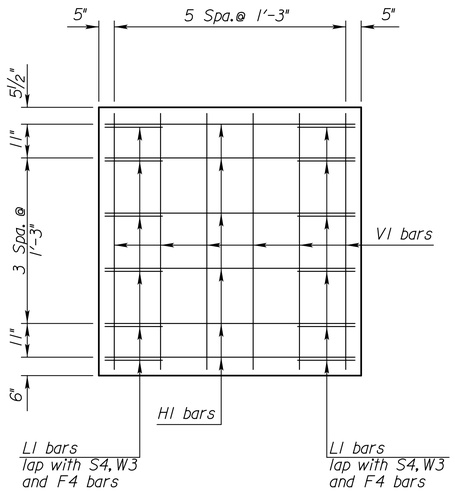
See Standard No. RD 080 for additional details.



PLAN



L1 BAR



END WALL

(Right extension only)

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.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete. Excavation for RCB bridges shall be paid for as Class III Excavation.

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.

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

Quantities listed below are subsidiary to the bid item "6'x6' RCB"

For design purposes ONLY. Do NOT use for Construction	CULVERT SUMMARY	◔ includes any welded wire fabric	LRFR RATING FACTORS

	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.)	Reinf. Steel (Gr. 60) ◔Wings (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)	HL-93 Loading Inventory	HL-93 Loading Operating
Ext.Lt.	1362.70	1371.88	3	0	Flared	Yes	No	4.36	8.74	13.10	521	1179	1700	1.78	2.30
Ext.Rt.	1365.55				None			7.86	0	7.86	951	0	951		

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.	5	5"	21	6'-9"		N/A	N/A	N/A	N/A	N/A	4	6'-11"	5	5"	18	6'-9"		N/A	N/A	N/A	N/A	4	5	6'-11"	N/A	N/A	N/A
Ext.Rt.	5	5"	33	6'-9"		N/A	N/A	N/A	N/A	N/A	4	12'-1"	5	5"	30	6'-9"		N/A	N/A	N/A	N/A	4	5	12'-1"	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	H1 Size	H1 No.	H1 Length	V1 Size	V1 No.	V1 Length	L1 Size	L1 No.	L1 Length
Ext.Lt.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	9"	20	6'-11"	4	8	6'-11"	5	2	6'-9"	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	N/A	N/A	5	9"	34	6'-11"	4	8	12'-1"	5	2	6'-9"	4	6	6'-9"	5	6	6'-11"	4	12	3'-0"

BILL OF MATERIALS

Concrete (Grade 4.0)	21.0 C.Y.
Concrete (Grade 4.0)(AE)	0.0 C.Y.
Bridge Backwall Protection System (Subsidiary)	0 S.Y.
Reinforcing Steel (Gr. 60)	2650 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	0 Lbs.
Class III Excavation	0 C.Y.
Foundation Stabilization	67 C.Y.
Granular Backfill (Wingwalls)	22 C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 501+00

SINGLE 6 ft x 6 ft RCB
78.0 ft EXT. LT.

~~BR 1.6.6 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.

SYSTEM PART	VERSION/ID
CADD V8A	12/6/2010
DATABASE	4/25/2012
RCB PROGRAM	7.1.12
KBOX MODEL ID	367
CELL LIBRARY	1/9/2012

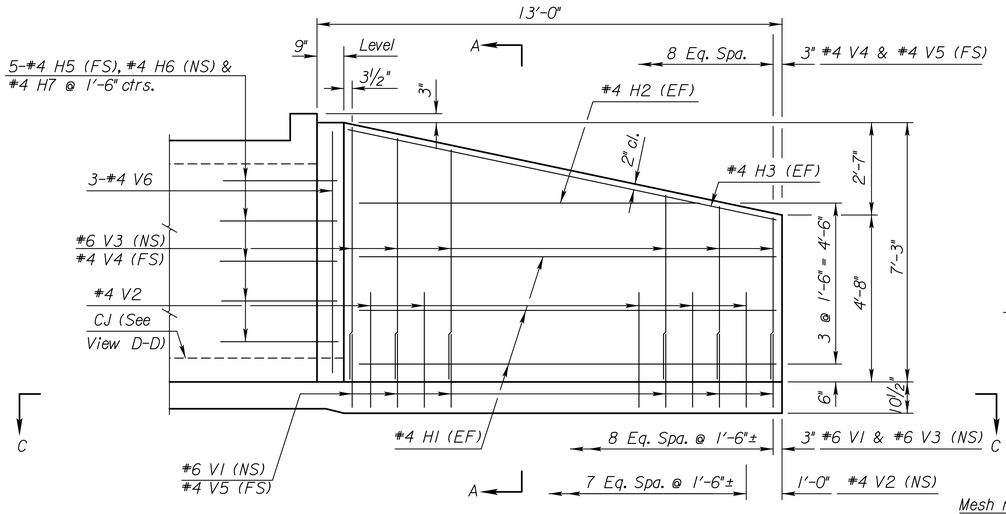
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Plot Location:
Plotted By: drp
File: i:\2008\08313\Frontage Rd North\RCB08313_6x6(Box).dgn
Plot Date: 14-JUL-2014 14:51

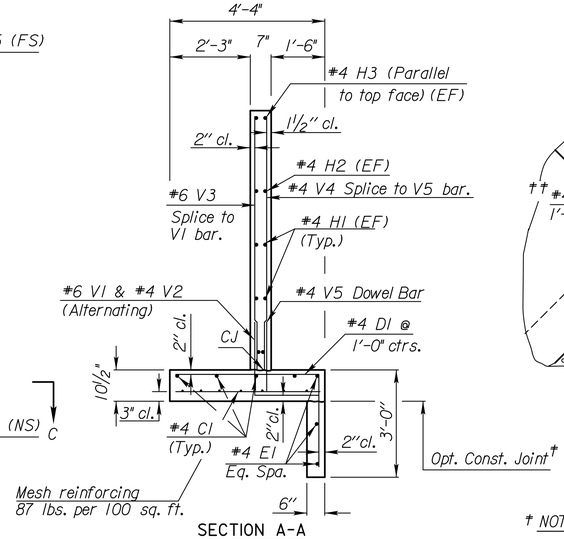
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	72	201

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. Filter Fabric is subsidiary to "Granular Backfill".
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.



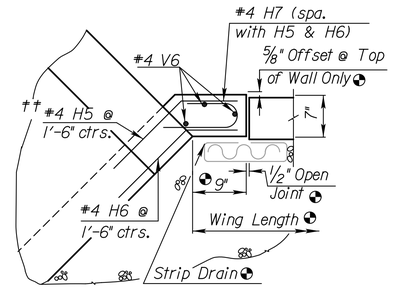
ELEVATION OF WINGWALL
(Backface Shown)



SECTION A-A

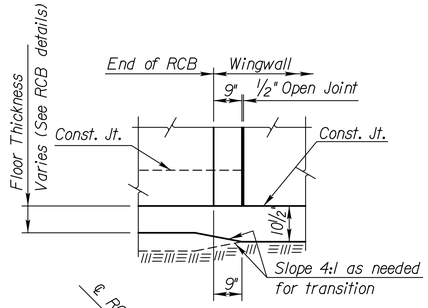
See "RCB Aux. Details" sheet for additional requirements.

Typical both wings

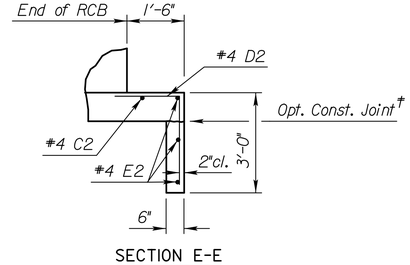


WINGWALL JOINT DETAIL
(Plan View)

† 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.

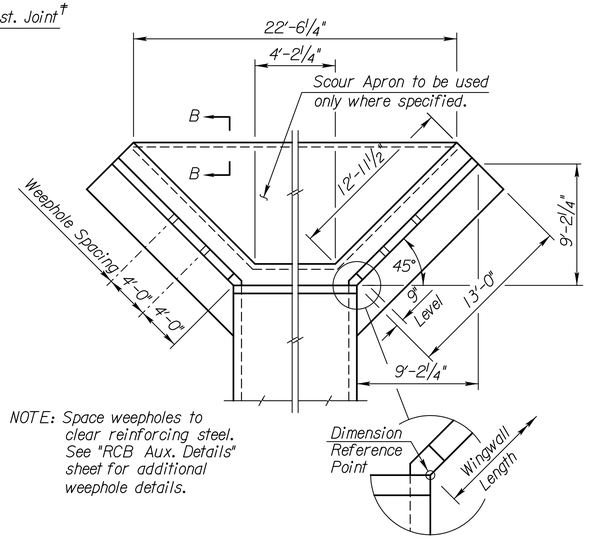


VIEW D-D



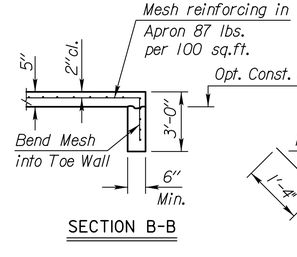
SECTION E-E

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

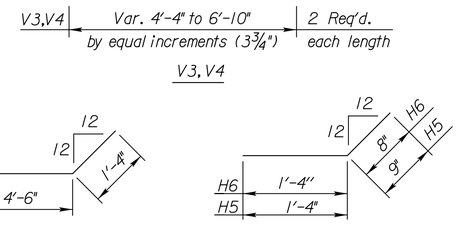


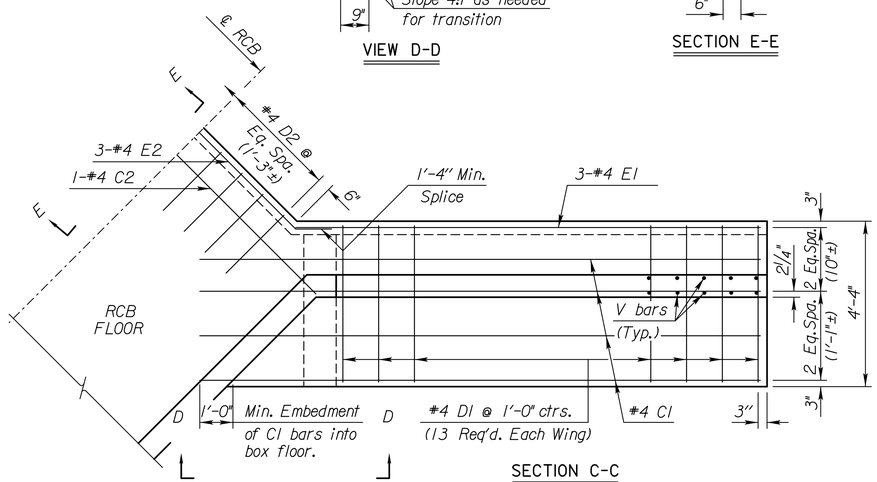
NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR NORMAL BOX
(3½:1 Embankment Slope)

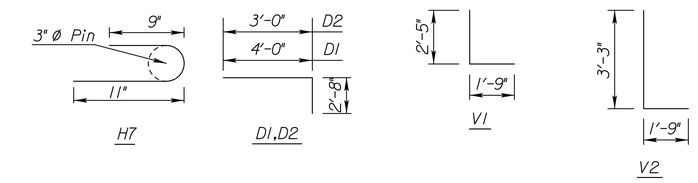


SECTION B-B





SECTION C-C
(Plan of Footing)



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

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

✳ See Bending Diagram

	Mark	#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#6V1	#4V2	#6V3	#4H1	#4H2	#4H3	#4H5	#4H6	#4H7	#4V4	#4V5	#4V6
0° Skew	Number	8	26✳	6	1	4 ✳	3✳	18✳	16✳	18	12	4	4	10 ✳	10 ✳	10 ✳	18	18	6
	Length	15'-10"	6'-8"	12'-10"	6'-9"	5'-8"	7'-2"	4'-2"	5'-0"	✳	11'-10"	9'-7"	12'-1"	2'-1"	2'-0"	1'-9"	✳	2'-2"	7'-0"

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

WINGWALL QUANTITIES (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	3.11	(C.Y.)	8.74	(C.Y.)
Apron	2.06	(C.Y.)	2.94	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)
Reinforcing Steel (Gr. 60)			916	Lbs.
Welded Wire Fabric (Wings)			98	Lbs.
Welded Wire Fabric (Apron)			165	Lbs.
Granular Backfill (Wingwalls)			22.00	C.Y.
Filter Fabric (subsidiary)			36.00	S.Y.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 501+00

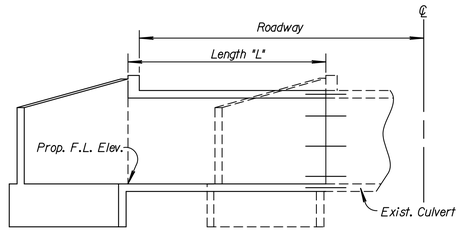
FLARED WINGWALLS
6 ft Rise (0°SKEW)

BR 10.00.06 Sedgwick Co.

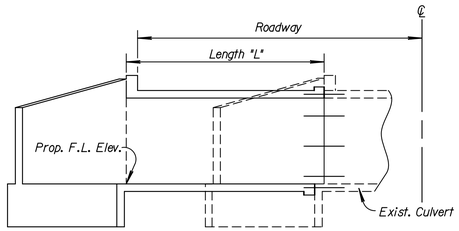
FHWA APPROVAL		10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED		QUANTITIES	CADD
DESIGN CK.	DETAIL CK.		QUAN. CK.	CADD CK.

Plotted By: drp | Plot Location:
File: I:\2008\0831\3\Frontage Rd North\RCB\0831_3_6x6Wing1.dgn
Plot Date: 14-JUL-2014 14:51

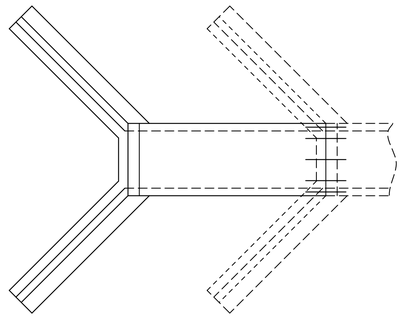
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	73	201



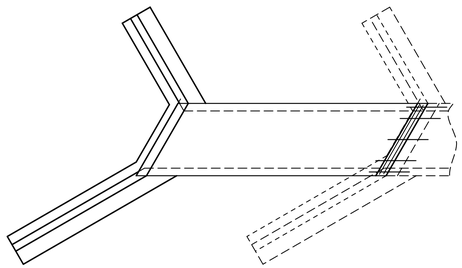
TYPICAL SECTION
(Flared Wings)



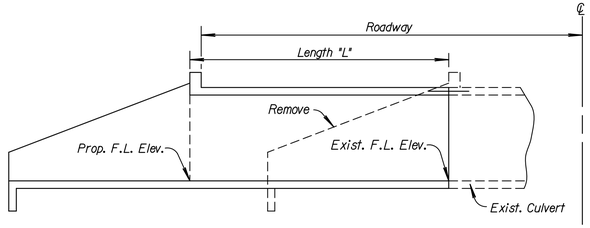
TYPICAL SECTION
(Skewed Structure)



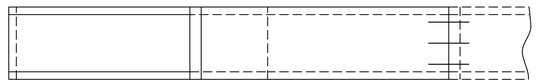
TYPICAL PLAN
(Flared Wings)



TYPICAL PLAN
(Skewed Structure)



TYPICAL SECTION
(Straight Wings)



TYPICAL PLAN
(Straight Wings)

GENERAL NOTE

Dimensions of existing structures shall be checked in the field prior to starting the new construction. Interior walls of multiple box extensions need not be the same thickness as the existing walls.

All existing concrete surfaces adjacent to new concrete shall be thoroughly cleaned by brushing, and soaked with water immediately prior to placing the new concrete.

All work and material necessary for installing the dowel bars shall be subsidiary to the bid item "Reinforcing Steel".

Grouting of bars shall meet the Standard Specifications of the Kansas Department of Transportation. Locate dowel bars near the center of walls and slabs.

For non-skewed boxes "s_1" and "f_1" bars shall be placed at $\frac{1}{2}$ normal spacing for the first 18".

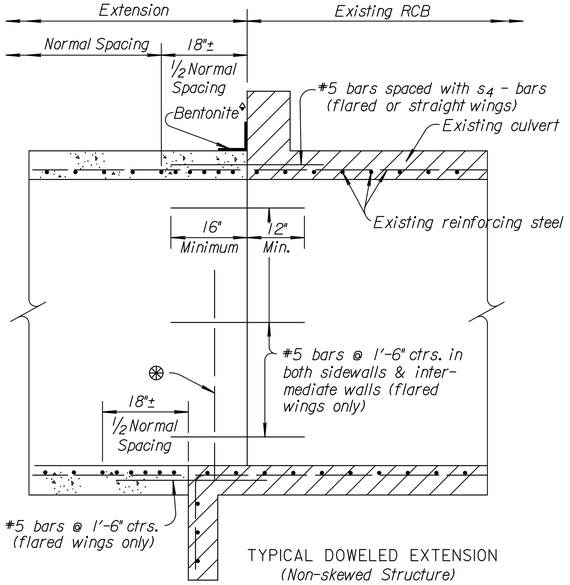
Straight Wing Extensions

Remove existing wings and wing aprons. Remove top of hubguard if necessary to clear new construction. A minimum of 24" length of the existing wing and floor steel shall be left intact and shall be cleaned and straightened to bond into the new concrete. Dowels (#5 deformed bars) shall be inserted across the top of box as shown in sketch. Butt extensions against existing culvert. This work shall be subsidiary to the bid item "Grade 4.0 Concrete".

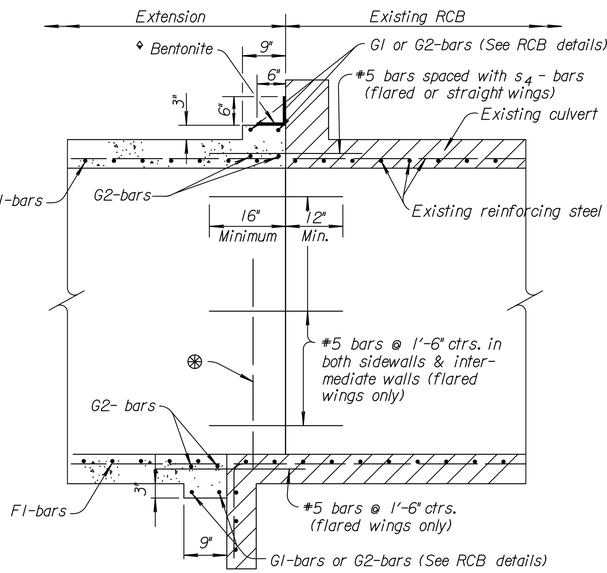
Flared Wing Extensions

Remove top of hubguard, if necessary, to clear new construction. Dowels (#5 deformed bars) shall be inserted in top, bottom, sides and intermediate walls, as shown in sketch. Butt extensions against existing culvert.

If the existing wingwall has an open vertical joint that interferes with the installation of the dowels, remove part of the wingwall to clear construction. This work shall be subsidiary to the bid item "Grade 4.0 Concrete".



TYPICAL DOWELED EXTENSION
(Non-skewed Structure)



TYPICAL DOWELED EXTENSION
(Skewed Structure)

◆ *NOTE: The joint between the RCB extension and the existing structure shall be protected by a bentonite based system as shown when the following conditions exist:*

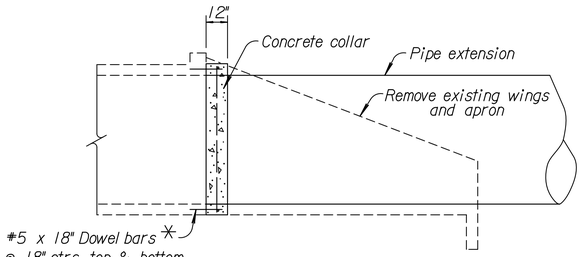
1. *Fill depth over the joint is 2 feet or less.*
2. *Lateral location of the joint is 20 feet or less from edge of pavement.*
3. *RCB span is equal to or greater than 8 feet.*

The bentonite shall be placed on the exterior walls and top slab and shall conform with the requirements of the Special Provision for "Bridge Backwall Protection System". All materials and labor required for this work shall be Subsidiary to the bid item "Grade 4.0 Concrete".

⊛ *If the existing footings are left in place, dowel any vertical reinforcing steel located in the new walls into the existing footing. For rigid frame boxes, this may require additional #5 dowel bars to splice to the exterior vertical bars in the wall.*

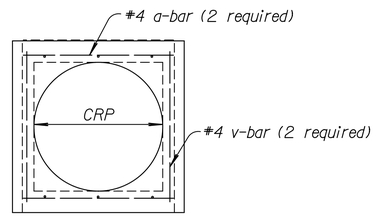
Quantities on this sheet are included in Summary of Quantities, Sh. No.

Station	Size Exist. R.C.B.	Roadway Lt.	Roadway Rt.	Length "L" Lt.	Length "L" Rt.	Grade 4.0 Conc. Cu. Yds.	Reinf. Steel Lbs.	Remarks

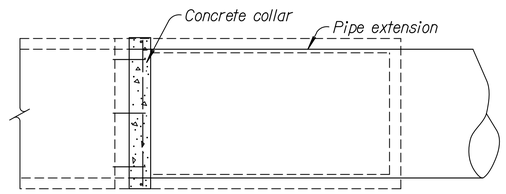


✳ *Drill and grout into end of existing RCB.*

SIDE VIEW



END VIEW



TOP VIEW

CONSTRUCTION OF COLLAR

NOTE: All Labor, Equipment, Materials, and Incidentals necessary to complete the concrete collar shall not be paid for directly but shall be considered Subsidiary to the individual pipe bid item.

Station	Size Exist. R.C.B.	Size C.R.P. Extension	Ext. Length Lt.	Ext. Length Rt.	End Section Lt.	End Section Rt.

NO.	DATE	REVISIONS	BY	APP'D
8	5-04-05	Class to Grade Conc., notes& details	S.W.K.	J.O.B.
7	4-18-01	Revised General Note	R.J.S.	J.O.B.
6	12- 5-00	Rev. General Note flared wing ext.	R.J.S.	J.O.B.
5	12-30-97	Added bentonite system	R.J.S.	J.O.B.

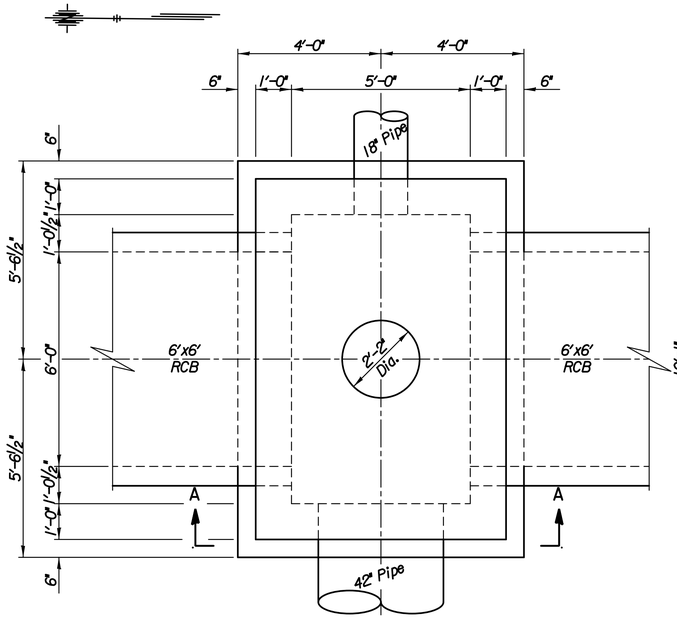
KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL CULVERT EXTENSIONS

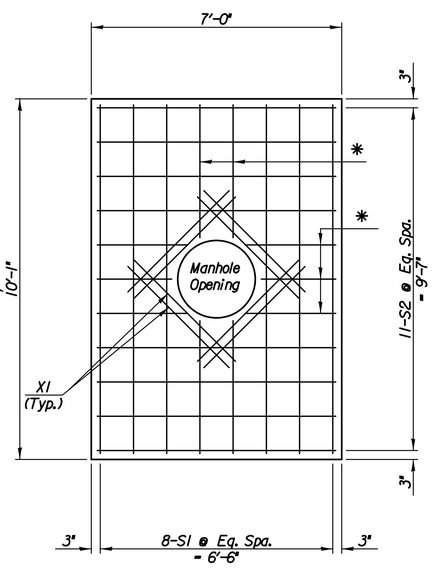
RD080

FHWA APPROVAL	6-10-05	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seitz

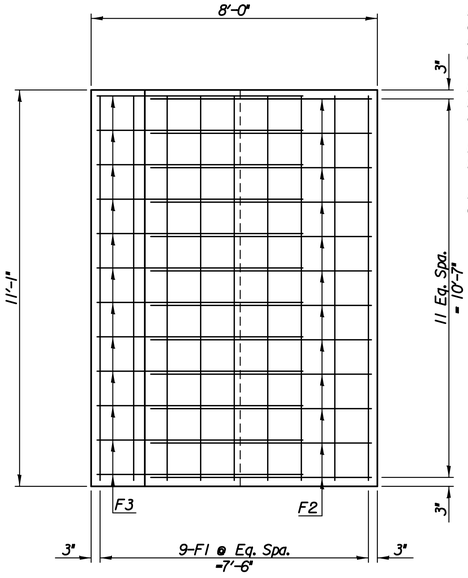
Plotted : 14-JUL-2014 14:51
Drawn By : drp
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DIMENSION PLAN



SLAB



FLOOR

GENERAL NOTE

Concrete shall be air-entrained and have a 28-day compressivestrength of 4,000 p.s.i. All exposed edges shall be finished with an edging tool.

All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

In general, RCBs and pipes will enter and leave the manhole at various positions. Where possible bend bars around. Field cut rebars where required.

Deductions in concrete quantities shall be made for RCB openings.

All reinforcing shall have 2" end clearance and 2" edge clearance unless noted otherwise.

LEGEND

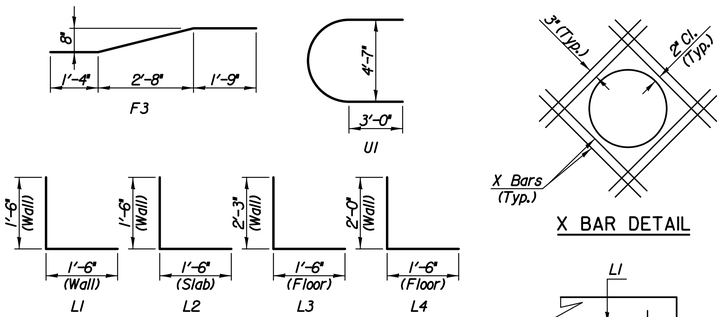
* - Cut Bars in Field as needed.

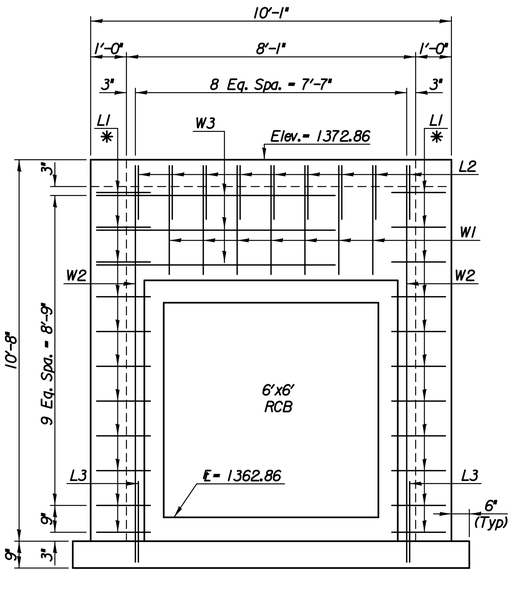
REINFORCING STEEL

Straight Bars				Bent Bars			
Mark	Size	No.	Length	Mark	Size	No.	Length
F1	#5	9	10'-9"	F3	#5	12	5'-10"
F2	#5	12	6'-2"				
				L1	#5	42	3'-0"
S1	#5	8	9'-9"	L2	#5	30	3'-0"
S2	#5	11	6'-8"	L3	#5	14	3'-9"
				L4	#5	9	3'-6"
W1	#5	7	3'-1"				
W2	#5	2	11'-1"	U1	#5	2	13'-3"
W3	#5	6	9'-9"				
W4	#5	14	10'-5"				
W5	#5	20	6'-8"				
X1	#5	8	4'-0"				
X2	#5	8	3'-9"				

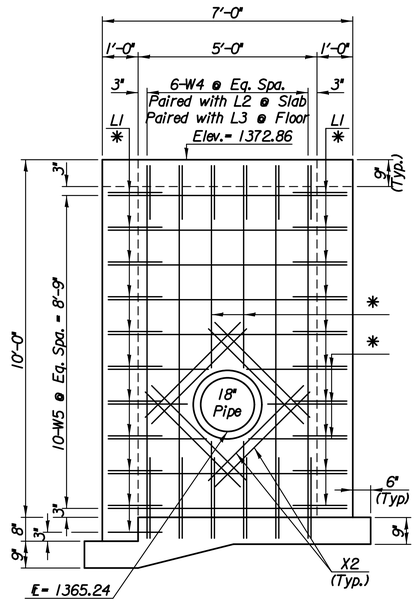
BILL OF MATERIALS

Item	Quantity	Unit
Concrete	14.7	C.Y.
Reinforcing Steel (Grade 60)	1212	Lbs.

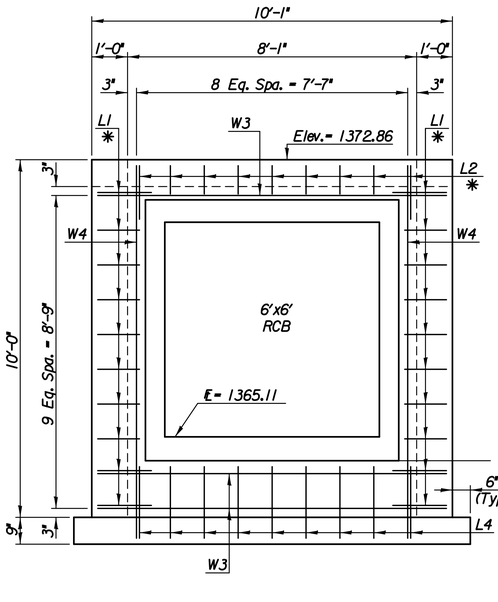




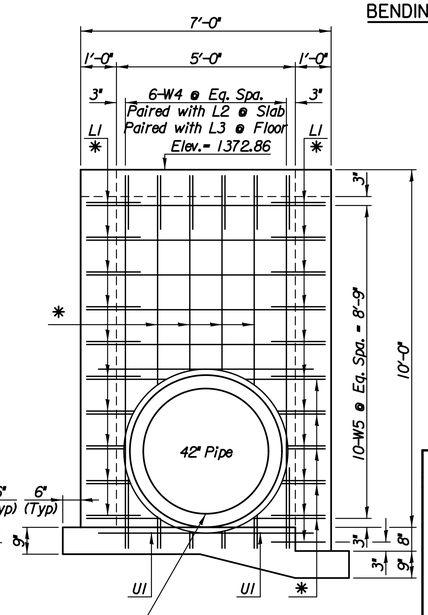
NORTH WALL



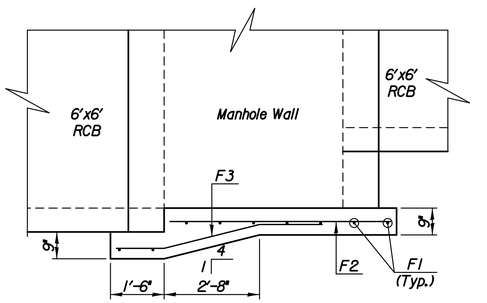
EAST WALL



SOUTH WALL



WEST WALL



SECTION VIEW A-A

No.	Revision	By	Date

CITY OF WICHITA

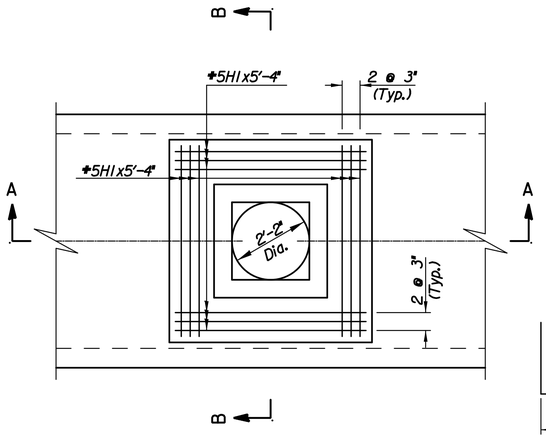
6'x6' RCB DROP STRUCTURE

PROJECT NO. 472-84840 SEDGWICK CO.

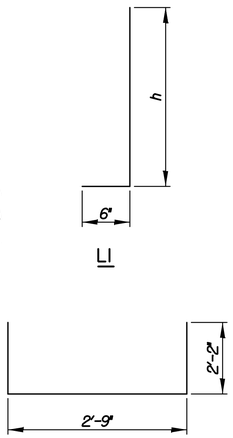
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MLB	Job No.	08313	SHT. 74 of 201
Drawn by	CP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:12 PM
FILE: i:\2008\08313\Frontage Rd North\RCB\08313_6x6 RCB_Drop Structure.dgn



TYPICAL RCB MANHOLE OPENING



UI

GENERAL NOTE

Use Concrete Grade 3.0 throughout. All exposed edges shall be finished with an edging tool.

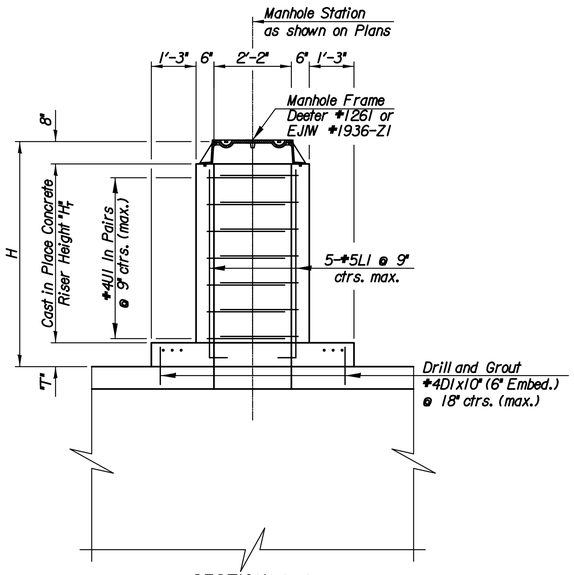
At the contractors option, Concrete Grade 3.0 (AE) or mix used in concrete pavement may be used throughout.

All wall and slab dimensions based on cast-in-place values. Adjustments must be made for precast values and submitted to the Engineeer prior to shop drawing approvals.

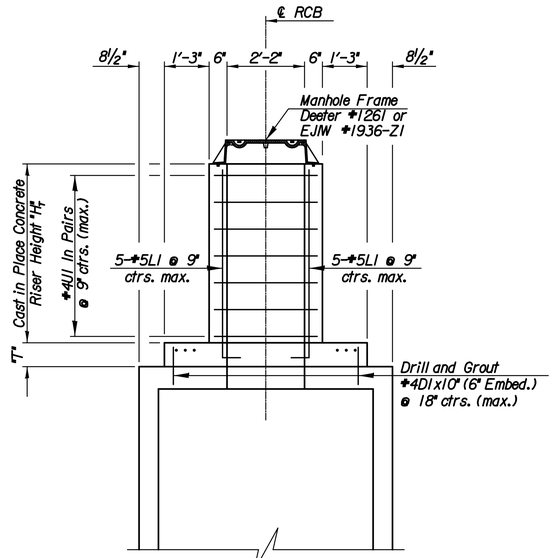
The top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions as directed by the Engineer.

All castings shall be gray iron and shall comply with the Standard Specifications.

The Contractor has the option of using precast manholes, as approved by the Engineer.



SECTION A-A



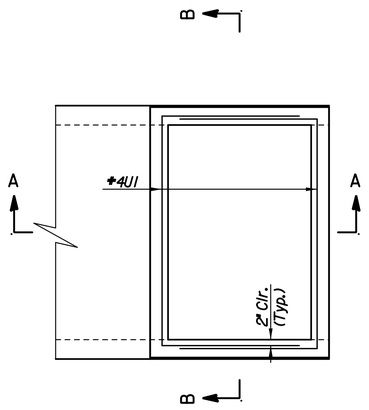
SECTION B-B

BILL OF MATERIALS		
Item	*Quantity*	*Unit*
Concrete	*2.8*	*C.Y.*
Reinforcing Steel (Grade 60)	*363*	*Lbs.*

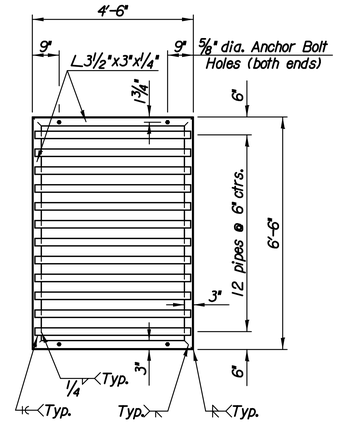
SCHEDULE OF MANHOLES										
Station	*T*	*Ht*	*h*	◔	*#4DI Bars*	*#5HI Bars*	*#4UI Bars*	*#5LI Bars*	*Concrete C.Y.*	*Reinf. Steel Lbs.*
10+26.00	*6"*	*1'-10"*	*1'-10"*	*2'-4"*	*16*	*12*	*6*	*16*	*0.9*	*144*
**12+34.73*	*5"*	*-*	*-*	*-*	*16*	*12*	*0*	*0*	*0.5*	*76*
**12+91.48*	*6"*	*2'-3"*	*2'-3"*	*2'-9"*	*16*	*12*	*6*	*16*	*1.1*	*150*

**Place Manhole Frame on CIP Slab*

REINFORCING STEEL					
Straight Bars			*Bent Bars*		
Mark	*Size*	*Length*	*Mark*	*Size*	*Length*
DI	*#4*	*10"*	*UI*	*#4*	*7'-1"*
HI	*#5*	*5'-4"*	*LI*	*#5*	◔



RCB AREA INLET
(SPECIAL)



GRATE UNIT DETAILS

GENERAL NOTE

Use Concrete Grade 3.0 throughout. All exposed edges shall be finished with an edging tool.

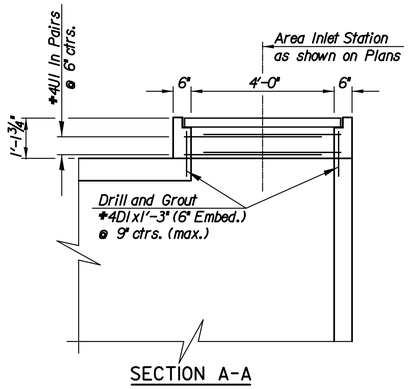
At the contractors option, Concrete Grade 3.0 (AE) or mix used in concrete pavement may be used throughout.

The top of the area inlet shall be set level.

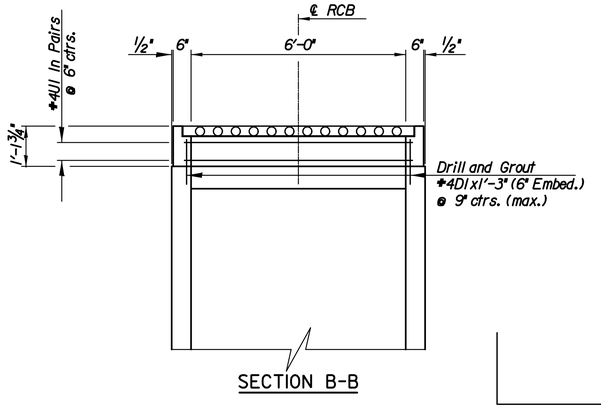
The grate shall be fabricated from standard or commercial grade structural steel and black steel pipe. The unit shall be hot dipped, galvanized after fabrication, in accordance with ASTM A123 except the weight of coating shall average not less than 2.0 ounces per square foot of actual surface and no individual test shall show less than 1.8 ounces of coating per square foot of actual surface area.

See "Inlet-Manhole Special" Standard Drawing RD648 for Grate Plan and Anchor Bolt Details.

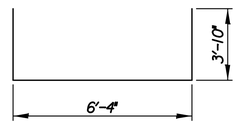
STRUCTURAL BILL OF MATERIALS		
Item	*Quantity*	*Unit*
2½"Ø x 4'-4¼" pipes (Standard Wt.)	*12*	*Each*
∠3½" x 3" x ¼" x 6'-6"	*2*	*Each*
∠3½" x 3" x ¼" x 4'-6"	*2*	*Each*



SECTION A-A



SECTION B-B



UI

BILL OF MATERIALS		
Item	*Quantity*	*Unit*
Concrete	*0.5*	*C.Y.*
Reinforcing Steel (Grade 60)	*63*	*Lbs.*
Structural Steel	*422*	*Lbs.*

REINFORCING STEEL							
Straight Bars				*Bent Bars*			
Mark	*Size*	*No.*	*Length*	*Mark*	*Size*	*No.*	*Length*
DI	*#4*	*30*	*1'-3"*	*UI*	*#4*	*4*	*14'-0"*

No.	Revision	By	Date

CITY OF WICHITA

6'X6' RCB MANHOLE OPENINGS AND AREA INLET (SPECIAL)

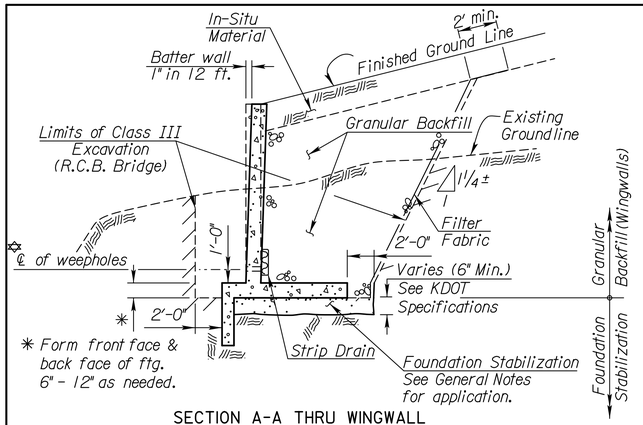
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	MLB	Job No.	08313	Sht. 75 of 201
Drawn by	MLB	Date	June, 2014	

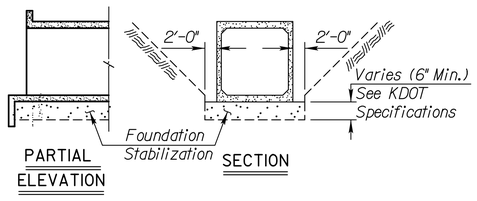
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	76	201

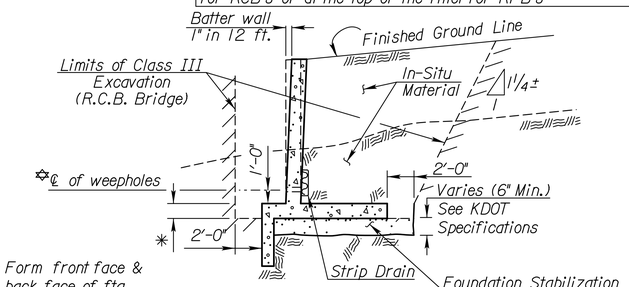


SECTION A-A THRU WINGWALL

Granular Backfill And Foundation Stabilization

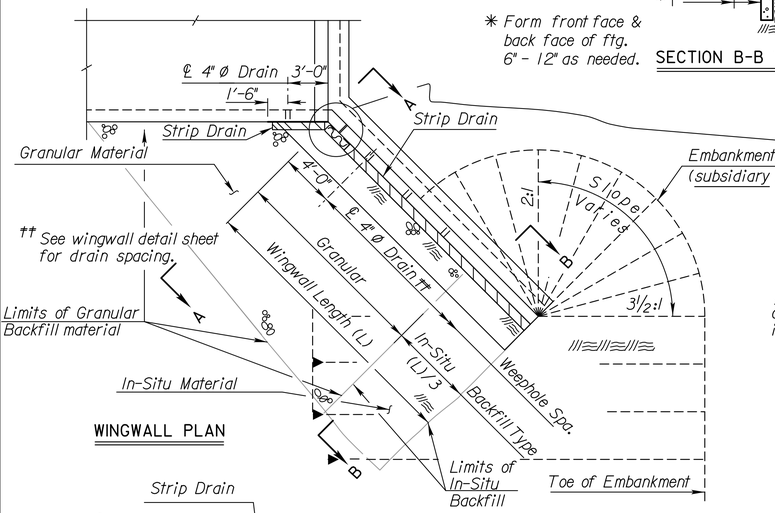


PARTIAL ELEVATION SECTION

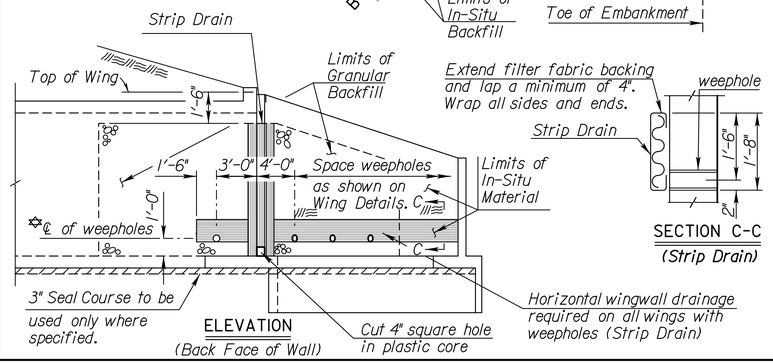


✳ Form front face & back face of ftg. 6" - 12" as needed.

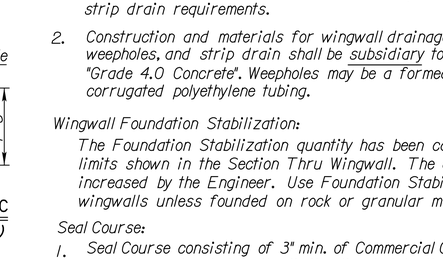
SECTION B-B THRU WINGWALL



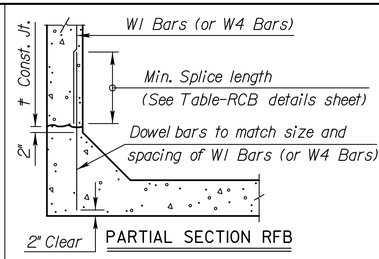
WINGWALL PLAN



ELEVATION (Back Face of Wall)



SECTION C-C (Strip Drain)



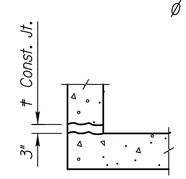
PARTIAL SECTION RFB

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.

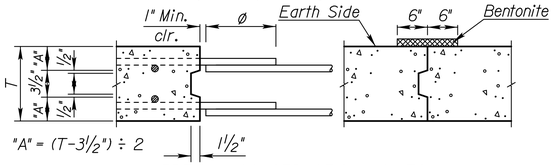
† OPTIONAL COLD JOINT

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



PARTIAL SECTION RCB

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.*

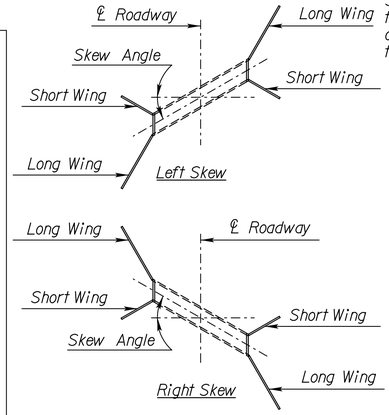


VERTICAL CONSTRUCTION JOINTS

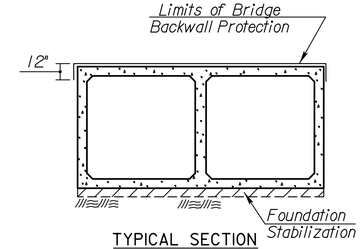
NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

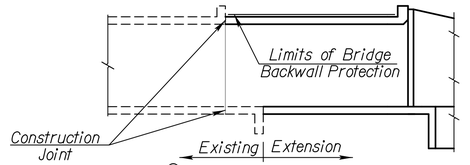
NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge 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.

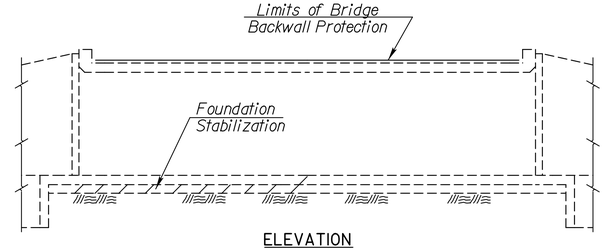


TYPICAL SECTION



⊗ BOX EXTENSION

⊗ *See "Typical Culvert Extension" RD080 for additional information.*



ELEVATION

(New Construction)

GENERAL NOTES

Wingwall Drainage:

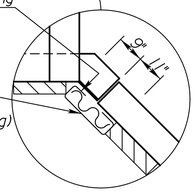
1. *All wingwalls with weepholes shall have horizontal and vertical wingwall drainage as shown. Strip drains will be used. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.*
2. *Construction and materials for wingwall drainage, including weepholes, and strip drain shall be subsidiary to the bid item, "Grade 4.0 Concrete". 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.*



VERTICAL STRIP DRAIN

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. *Granular Backfill shall be used to backfill behind wingwalls to the limits shown in the WINGWALL PLAN detail. 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.*
3. *Material for Granular Backfill (Wingwalls) shall conform to the requirements of SB-1, SB-2, SCA-2, SCA-3 or SCA-5.*
4. *Consolidate Granular Backfill using hand equipment only. Avoid over consolidation.*
5. *Use filter fabric complying with Section 1710. Filter Fabric is subsidiary to "Granular Backfill". Use only within the limits of Granular Backfill.*

In-Situ Backfill (Wingwalls):

1. *Use any material found within the project limits except Highly Plastic Clay(s) or organic material. The material is subsidiary to "Granular Backfill".*
2. *Use Type "B" Compaction.*
3. *Use only hand or walk behind equipment for Compaction.*

GENERAL NOTES

Bridge Backwall Protection System:

1. *For all structures with less than or equal to 2'-0" of fill, apply a "Bridge Backwall Protection System" from Section 1700 to the limits shown. Do not place hot mix asphalt directly on this material.*
2. *Use a "non-coal tar" material from KDOT's approved list.*
3. *Protect this material from damage during backfilling. Repair at no additional cost.*
4. *When the Plans show hot mix asphalt placed directly on the slab, substitute "Pavement Water Proofing" material from Section 800, this material shall be subsidiary. Wait 28 days after top slab is completed before applying this material.*
5. *Bridge Backwall Protection System is subsidiary to "Grade 4.0 Concrete".*

NO.	DATE	REVISIONS	BY	APP'D
6	10/11/12	Added Weep Hole Note	JPJ	TLF
5	8/2/12	Modified Backwall Notes	JPJ	TLF
4	3/7/12	Added Filter Fabric to Detail	JPJ	TLF
3	12/15/11	Added Bridge Backwall Protection	JPJ	TLF
2	3/3/10	Modified Backfill Details	JPJ	TLF
1	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

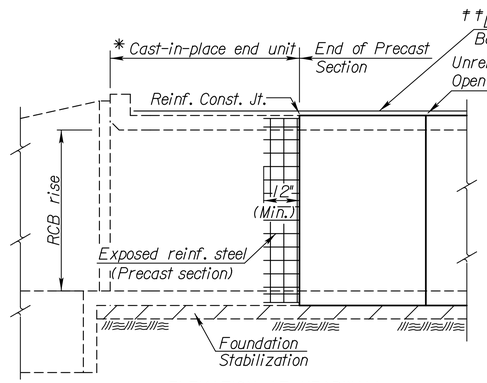
RCB AUXILIARY DETAILS (LRFD)

BR020B

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DESIGN CK.	JSR	DETAIL CK. JPJ	QUAN.CK.	CADD CK. JPJ

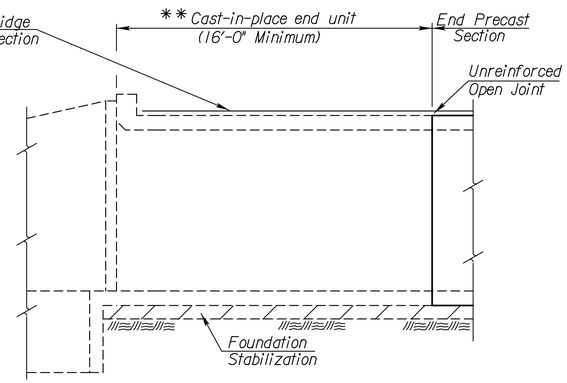
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	77	201



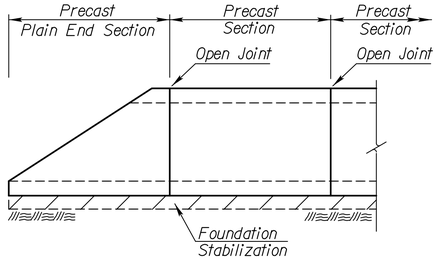
ELEVATION AT HEADWALL

* 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:

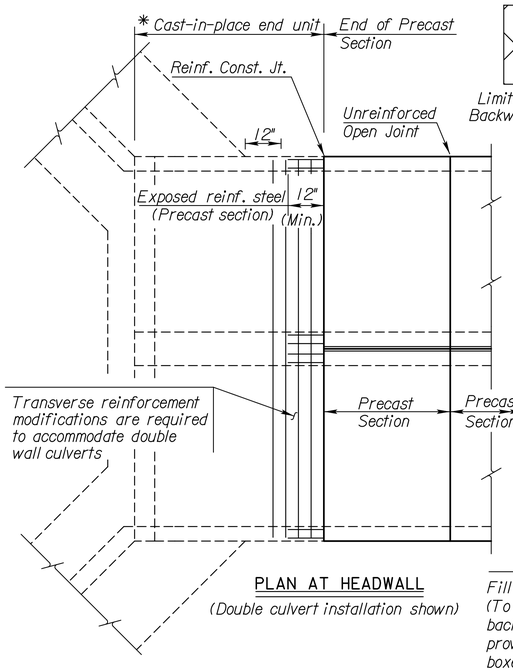
A distribution slab shall be a minimum of 6 inches thick, reinforced with #4 bars spaced at 18 inches, placed perpendicular to centerline of the box and with #5 bars spaced at 12 inches, placed parallel to centerline of the box. Substitution of an equivalent welded wire fabric is acceptable. Place a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

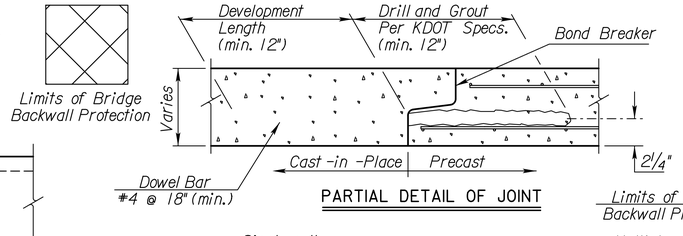
1) Use the cast-in-place criteria above.
2) Use precast distribution slabs with same criteria as the cast-in-place above. Center the joints in slabs over the box segments. Provide a minimum of 3 inches of granular material between the box and the slabs.
3) Reinforced concrete pavement (min. 6 inches 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.

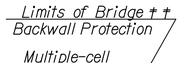


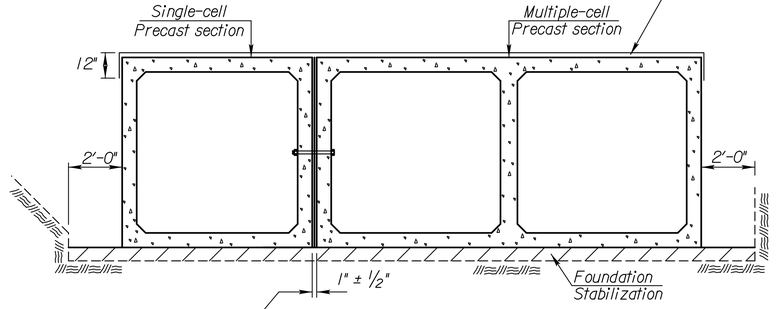
PLAN AT HEADWALL

(Double culvert installation shown)



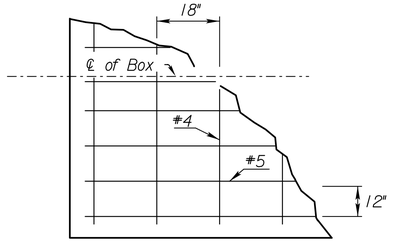
PARTIAL DETAIL OF JOINT





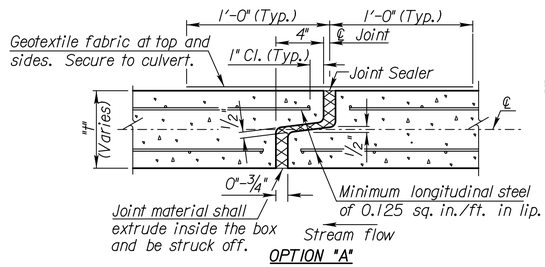
TYPICAL INSTALLATION DETAILS

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

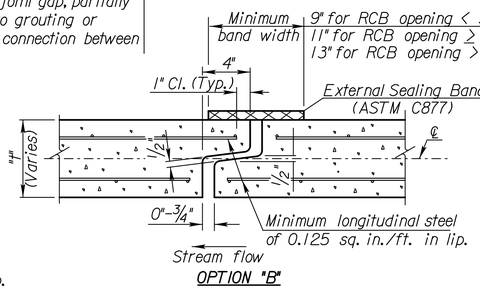


CAST IN PLACE DISTRIBUTION SLAB

(Partial plan of reinforcement)

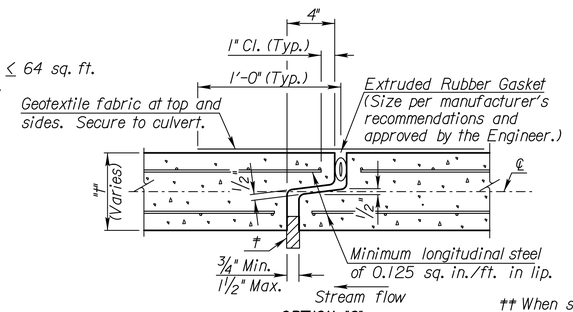


OPTION "A"



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

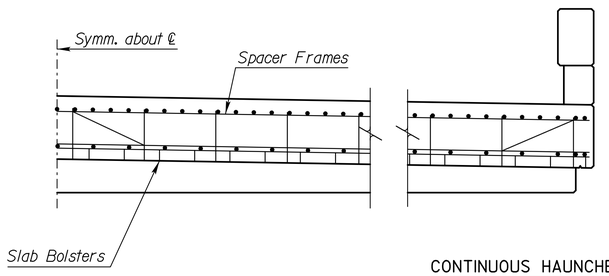
PRECAST CONCRETE BOX CULVERT DETAILS

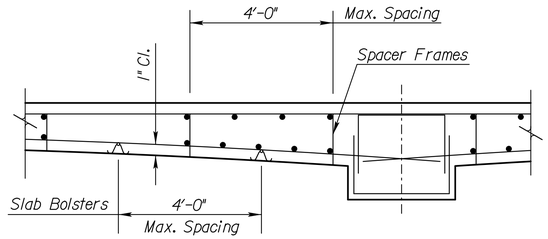
BR031

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

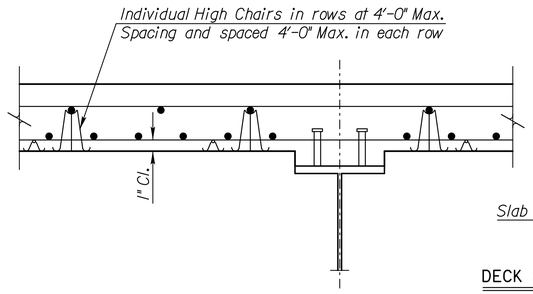
Std. Base File: br031.dgn
Plotted By: drp
Plot Location:
File: I:\2009\08313\Frontage Rd North\RCB\08313_br031.dgn
Plot Date: 14-JUL-2014 14:51

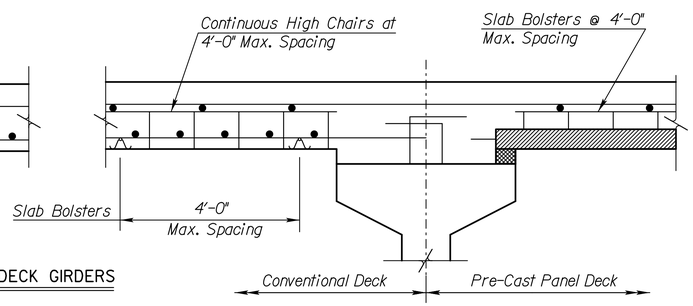
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	78	201



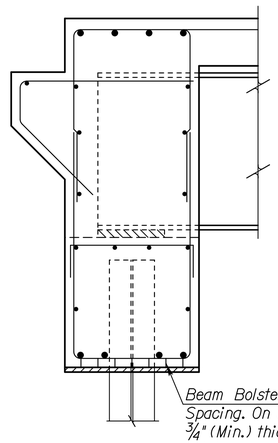


CONTINUOUS HAUNCHED SLAB

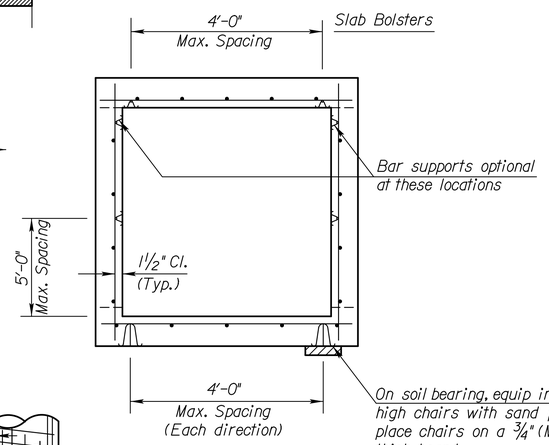




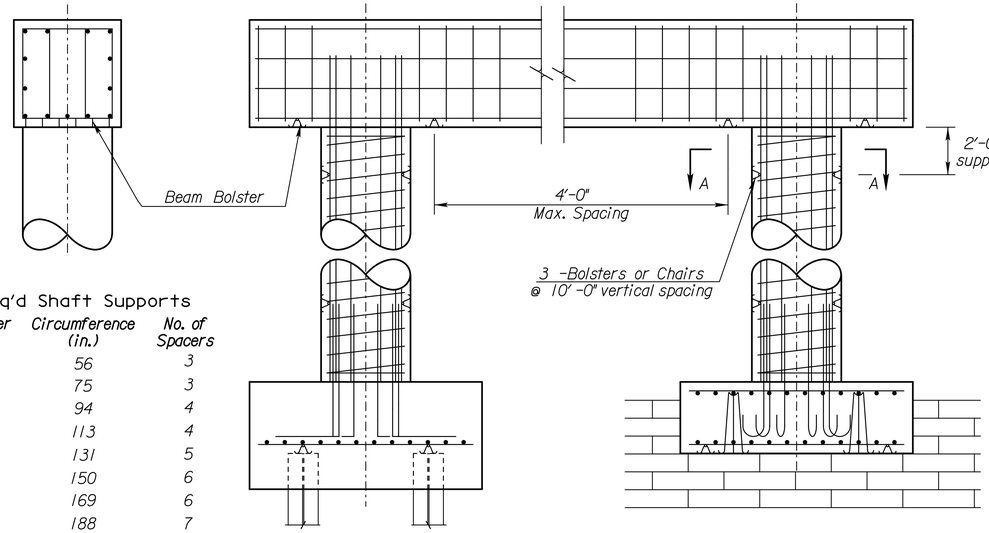
DECK GIRDERS



ABUTMENT



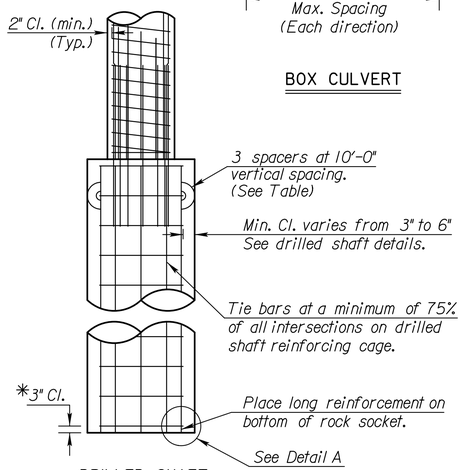
BOX CULVERT



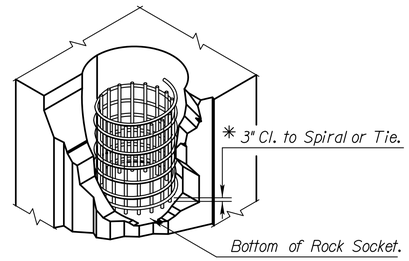
PIER

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

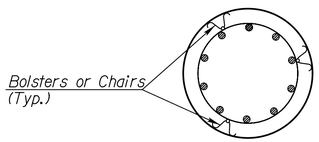


DRILLED SHAFT



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

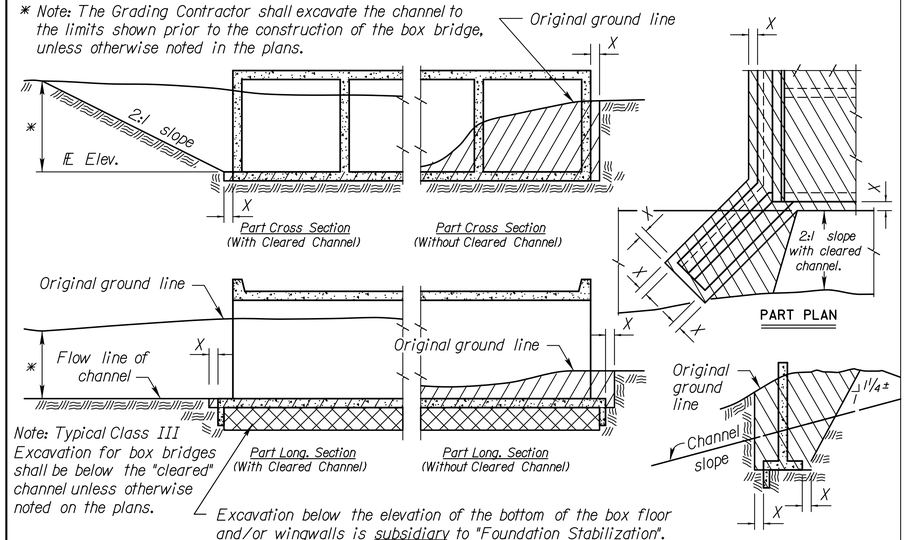
BRI20

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: drp
File: I:\2008\08313\Frontage Rd North\RCBV08313_bri20.dgn
Plot Date: 14-JUL-2014 14:51
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	79	201

* Note: The Grading Contractor shall excavate the channel to the limits shown prior to the construction of the box bridge, unless otherwise noted in the plans.

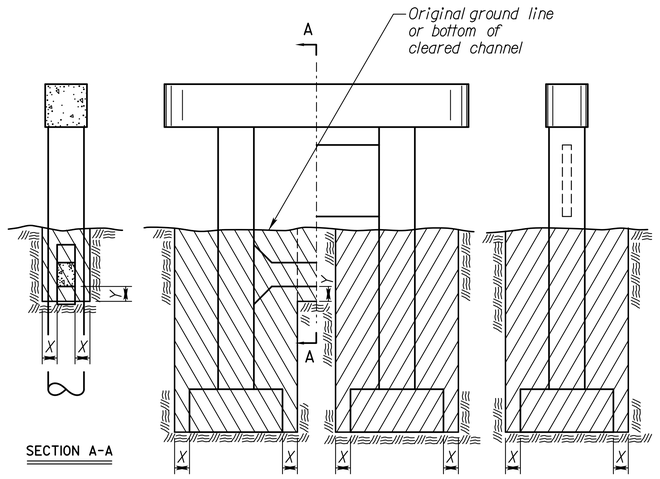


Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

Excavation below the elevation of the bottom of the box floor and/or wingwalls is subsidiary to "Foundation Stabilization".

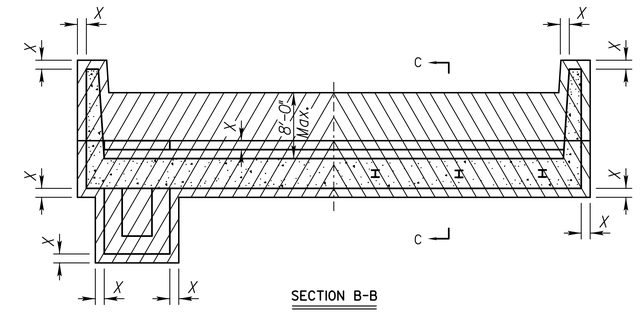
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

Note: Excavation for culverts less than bridge length shall not be paid for as Class III Excavation but shall be subsidiary to Grade 4.0 Concrete.



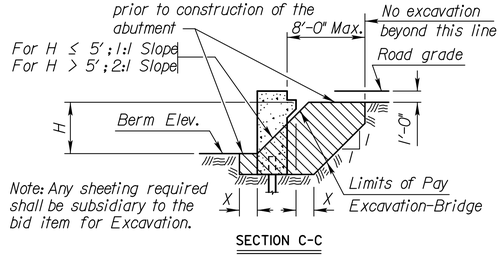
EXCAVATION DETAILS FOR TYPICAL PIERS

See detail when rock or shale (rock) is encountered. ⊛



Grading Contractor to complete embankment to this profile prior to construction of the abutment

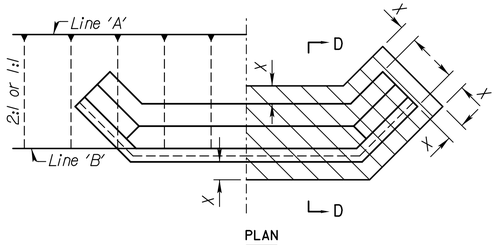
Note: Bridge Contractor shall finish the embankment and berms after the construction of the abutment and dispose of any excess material as approved by the Engineer.

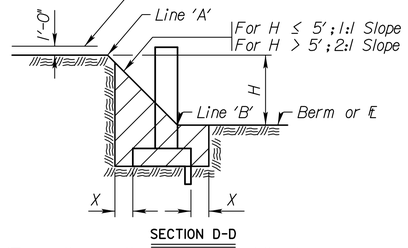


Note: Any sheeting required shall be subsidiary to the bid item for Excavation.

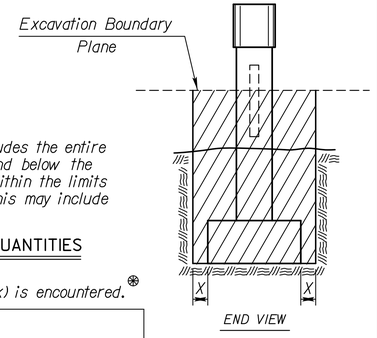
EXCAVATION DETAILS FOR TYPICAL ABUTMENTS

See detail when rock or shale (rock) is encountered. ⊛





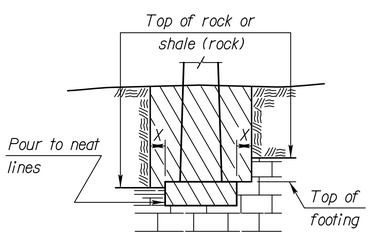
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



Note: Class II Excavation includes the entire volume of whatever nature found below the "Excavation Boundary Plane", within the limits specified for measurement. This may include water or air.

CLASS II EXCAVATION QUANTITIES

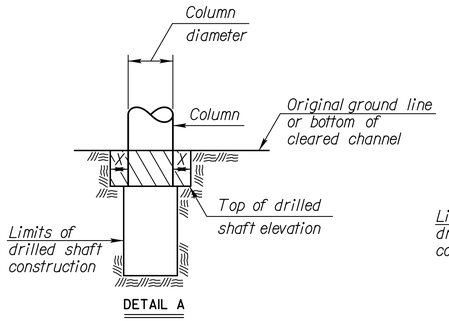
See detail when rock or shale (rock) is encountered. ⊛



⊛ EXCAVATION DETAIL FOR FOOTINGS IN ROCK OR SHALE (ROCK)

(Piers and Abutments)

Note: Excavation below top of rock, hard shale or below top of footing, whichever is lower, shall be to neat lines of the concrete construction.



DRILLED SHAFT DETAILS

Note: Whenever the limits of the drilled shaft construction are greater than the Column Diameter + 2X, the limits of Class I, II or III Excavation shall be the limits of the drilled shaft construction. (See Detail B)

Note: All bridge excavation shall be computed on the basis of the cross-hatch areas and boundary lines indicated on this sheet and the Excavation Boundary Plane on the Construction Layout.

Sides of trenches in hard or compacted soil including embankments shall be shored, sheeted, braced or otherwise supported when the trench is more than 5 feet in depth and 8 feet or more in length. In lieu of the shoring, the sides of the trench above the 5 foot level may be sloped to preclude collapse. The slope for average soils shall be 1:1. If the angle of repose of the soil is less, flatter slopes shall be required.

Dimension "X" shall be 2'-0" unless indicated otherwise on the general plans.

Dimension "Y" shall be 1'-6" unless indicated otherwise on the general plans.

NO.	DATE	REVISIONS	BY	APP'D
9	3-3-10	Revised Wing Excavation	JPJ	TLF
8	10-16-06	Revised "Foundation Stab." Note	JPJ	KFH
7	10-19-04	Concrete - Class to Grade	RAM	KFH
6	4-10-02	Added "Foundation Stab." Note	RAM	KFH
5	8-12-95	Correct Section BB at abutment	LRR	KFH
4	1-30-95	Drilled Shaft Excavation	LRR	KFH
3	7-26-94	Change limits at abutment	LRR	KFH
2	1-26-93	Add Class 2 & Flared Wing det.	LRR	KFH
1	4-6-90	Change limits at abutments	LRR	KFH

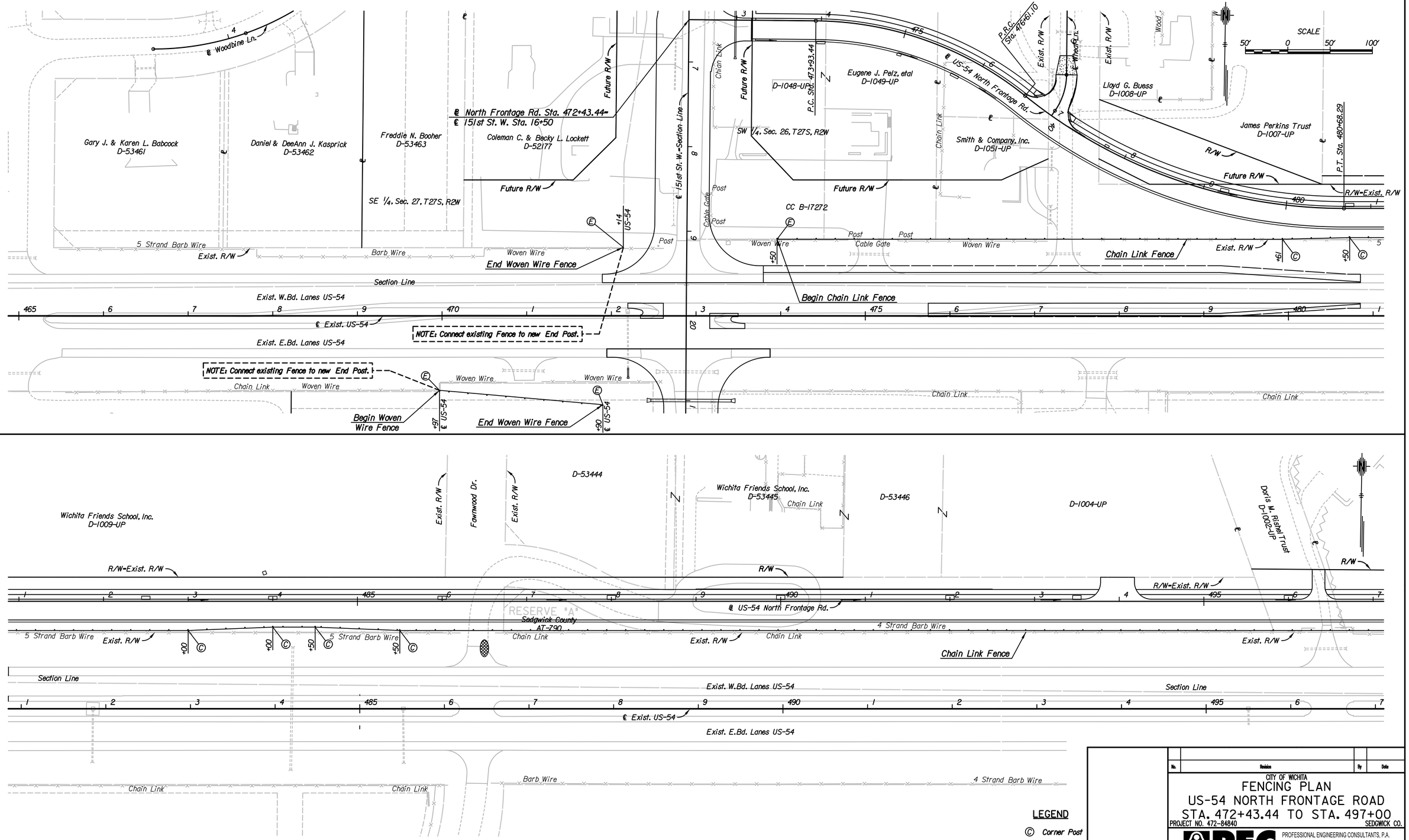
KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE EXCAVATION (LRFD)

BRIOOB

FHWA APPROVAL		4/17/10	APP'D	TERRY L. FLECK
DESIGNED	DETAILED	RDR	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	LRR	QUAN. CK.	CADD CK.

Std. Base File: br100.dgn | Plot Location:
Plotted By: drp
File: I:\2008\08313\Frontage Rd North\RCBA08313_br100b.dgn
Plot Date: 14-JUL-2014 14:51



Plotted By: drp Date: 7/14/2014 2:49:15 PM
FILE: I:\2008\08313\Frontage Rd North\Fencing\08313-fc472.dgn

No.	Revision	By	Date

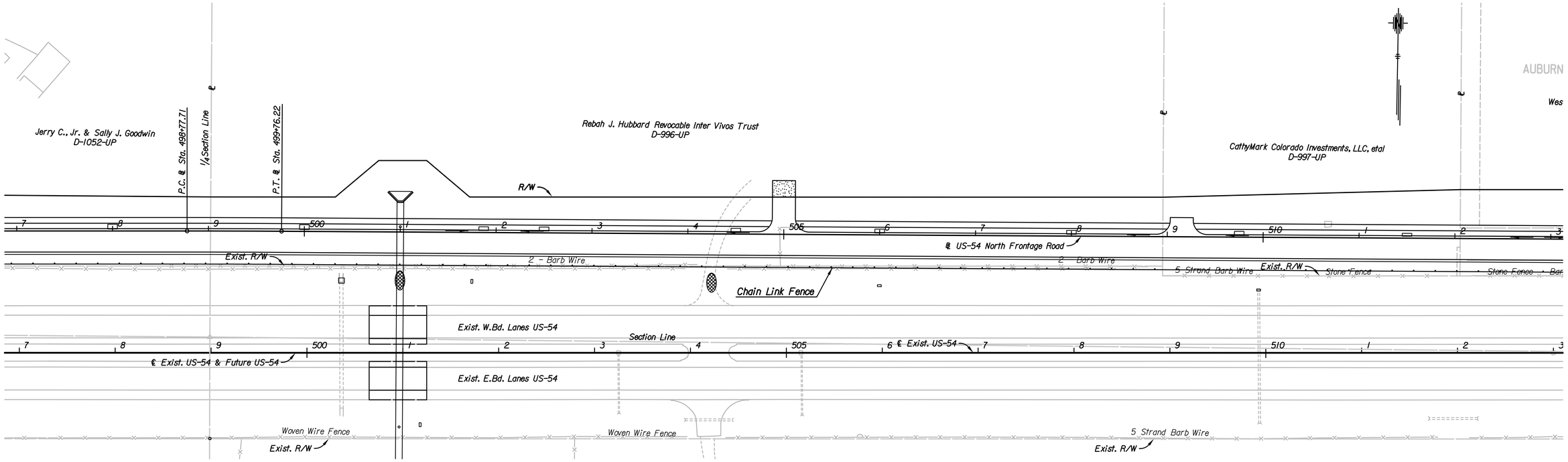
CITY OF WICHITA

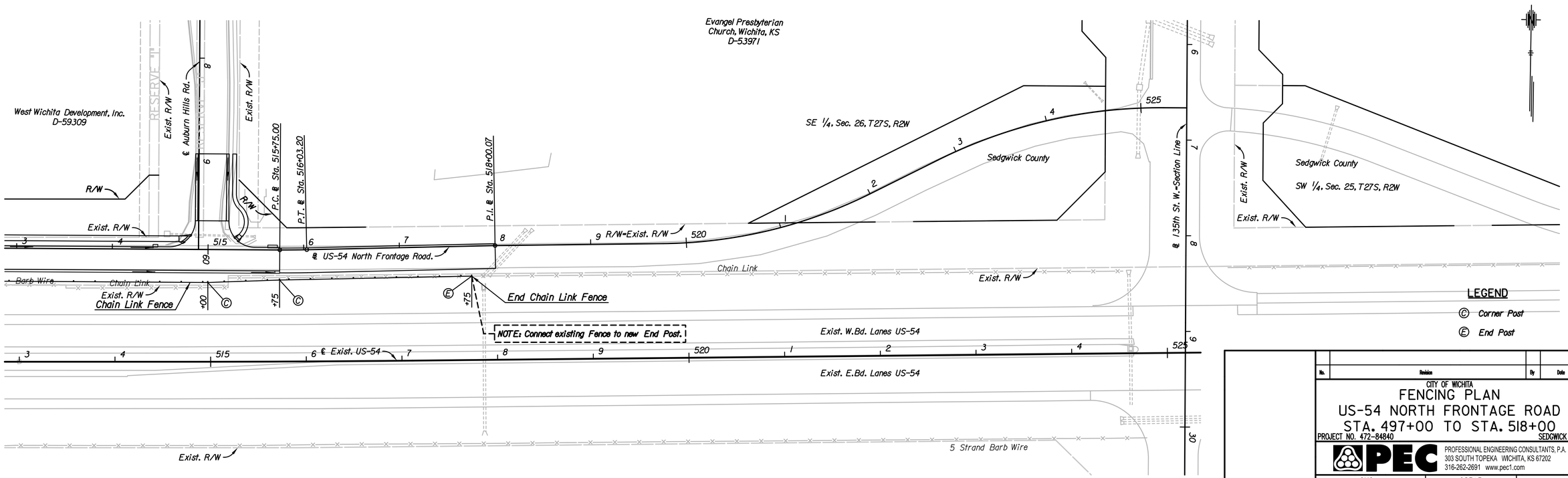
FENCING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 472+43.44 TO STA. 497+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 80 of 201
Drawn by	DRP	Date	June, 2014	





Plotted By: drp Date: 7/14/2014 2:49:15 PM
FILE: I:\2008\08313\Frontage Rd North\Fencing\08313-fc497.dgn

No.	Revision	By	Date

CITY OF WICHITA

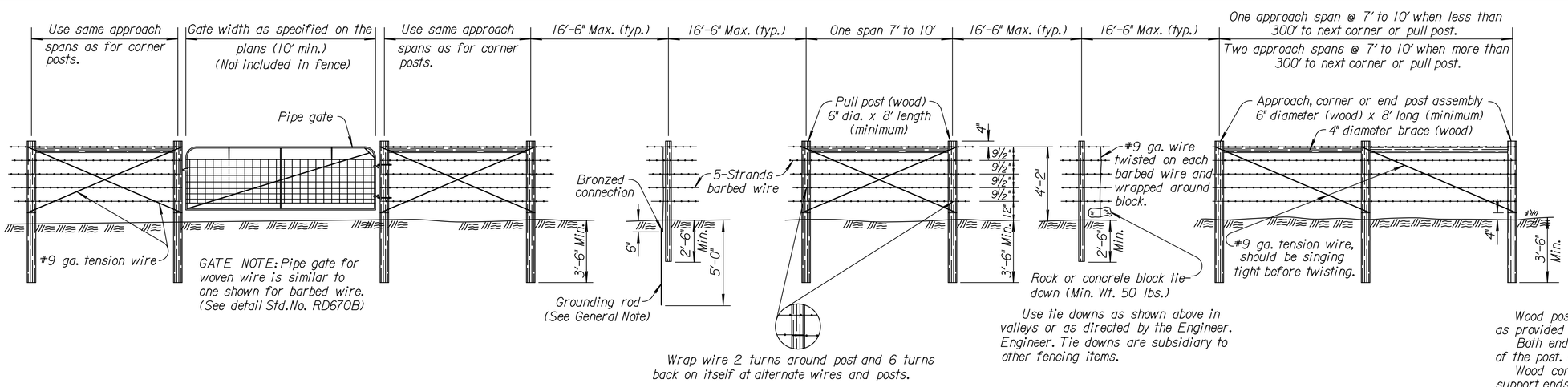
FENCING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 497+00 TO STA. 518+00

PROJECT NO. 472-84840 SEDGWICK CO.

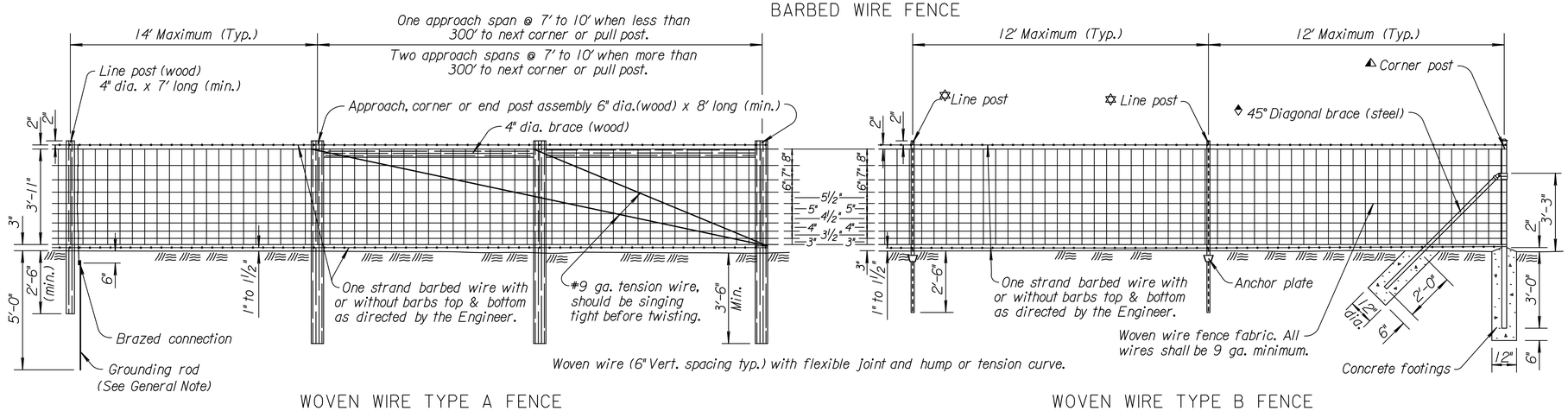
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 81 of 201
Drawn by	DRP	Date	June, 2014	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	82	201



BARBED WIRE FENCE

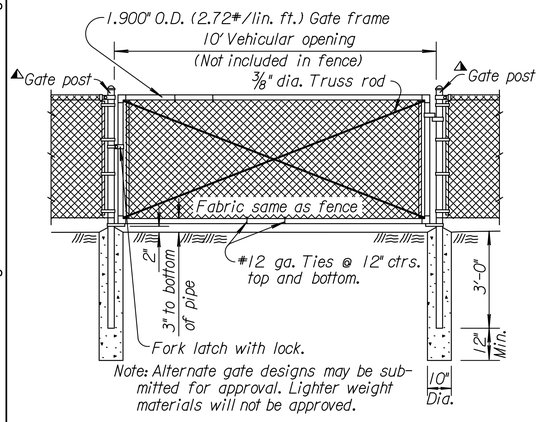


Woven wire (6" Vert. spacing typ.) with flexible joint and hump or tension curve.

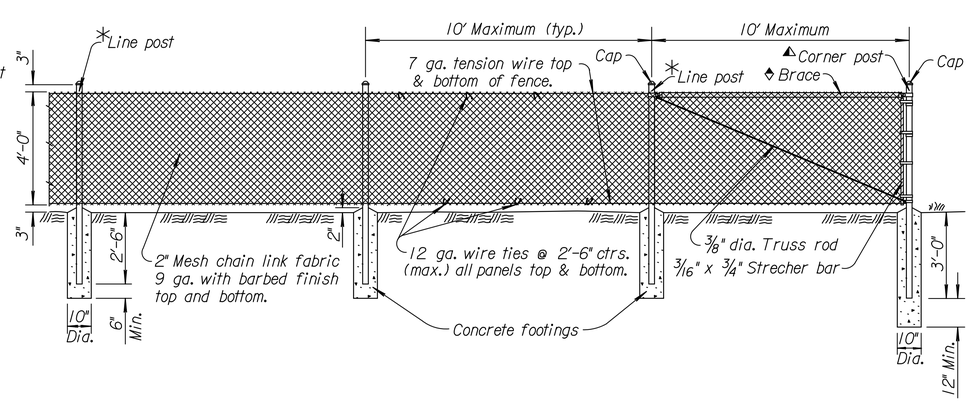
WOVEN WIRE TYPE A FENCE

WOVEN WIRE TYPE B FENCE

Pull post assembly for woven wire with wood posts is similar to barbed wire pull post assembly detail.



DETAIL of GATE, HINGE & SPECIFICATIONS



CHAIN LINK FENCE

(STEEL)

✡ Steel line post 7'-0" length
Studded T (1.33#/lin. ft.)
U (1.33#/lin. ft.)
H (2.27#/lin. ft.)

♦ Brace
1.660" O.D., 0.111" Th. (1.84#/lin. ft.) pipe (Group 1C) or 1.660" O.D., 0.140" Th. (2.27#/lin. ft.) pipe (Group 1A) or 1⅝"x1¼" Brace rail (See Alt. Details)

✳ Line post 7'-0" length.
2.375" O.D., 0.154" Th. (3.65#/lin. ft.) pipe (Group 1A) or 2.375" O.D., 0.130" Th. (3.12#/lin. ft.) pipe (Group 1C) or 1⅝"x1⅞" C Post (2.28#/lin. ft.)

▲ End, corner, gate, or pull post 7'-6" length.
(A120) 2.875" O.D., 0.203" Th. (5.79#/lin. ft.) pipe (Group 1A) or 2.875" O.D., 0.160" Th. (4.64#/lin.ft.) pipe (Group 1C)

GENERAL NOTE

Wood posts and braces shall be given a preservative treatment as provided in the KDOT Standard Specifications.

Both ends of all wood posts shall be cut normal to the axis of the post. Pointed posts will not be permitted.

Wood corner, end, pull and approach posts shall be notched to support ends of wood braces. Wood braces shall be toenailed to the posts with 2-10d nails in each end of the brace.

When wood posts are used, both ends of all tension wires shall be wrapped around the posts twice and stapled in place.

When wood posts are used the fence shall be grounded by a ⅝" diameter galvanized or copper coated rod five feet long, driven vertically until the top is six inches below the ground surface. A #6 solid copper conductor shall be securely fastened to each element of the fence by use of clamps or other suitable device. Grounding rod shall be installed at intervals of 175' maximum.

In lieu of using the galvanized or copper coated rod as described above the contractor may, at his option, use a steel line post at intervals not to exceed each eighth post.

The galvanized or copper coated rod shall be used where power lines pass over the fence.

All steel posts, braces, fittings, and gate frames shall be galvanized and/or coated in accordance with the Standard Specifications.

Steel posts shall be provided with fasteners prevent slippage of the wire strands.

Outside diameters shown for tubular steel posts, bracing and gate frames are nominal. Weight tolerances shall be as shown in the KDOT Standard Specifications.

Posts may be set by driving or digging. If by digging, the posts shall be set in the center of the hole and the soil tamped securely on all sides.

Pull post assembly shall be used at sharp breaks in vertical grade or at approximately 330' centers (Woven & Chain link) or 1320' centers (Barbed wire) on straight runs or as directed by the Engineer.

Concrete used in fence installation shall conform to the requirements of the KDOT Standard Specifications.

Woven wire, chain link fabric, barbed wire and tension wire shall be either zinc coated (galvanized) or aluminum coated.

Minimum strength of barbed wire and tension wire shall be as provided in the KDOT Standard Specifications.

Use #9 gauge galvanized staples 1½" to 1¾" long, or #9 gauge galvanized Ring-shank staples 1½" to 1¾" long.

Alternate gate designs may be submitted for approval. Lighter weight materials will not be approved.

Padlocks for gates shall be furnished by the State.

No Wood Posts are allowed for new or reconstruction fence installations on the State Highway System. Shop drawings for steel gate post assembly designs are to be submitted to the State Road Office, Bureau of Design for approval prior to construction.

NO.	DATE	REVISIONS	BY	APP'D
9	11-30-09	Rev. post listing, wood po. restrict.	S.W.K.	J.O.B.
8	11-08-05	Revised brace dimension	S.W.K.	J.O.B.
7	11-02-04	Added assembly to end post label	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

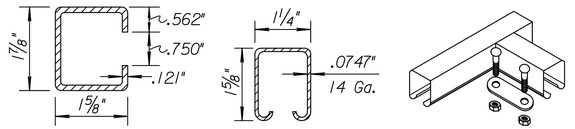
HIGHWAY FENCE BARBED, WOVEN, & CHAIN LINK

RD670A

FHWA APPROVAL	12-16-09	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Kling

Plotted : 14-JUL-2014 14:51
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd670a.dgn

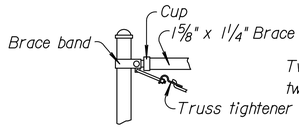
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	83	201



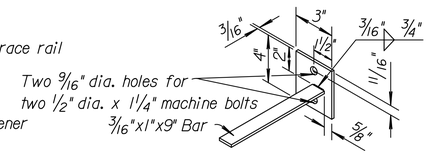
LINE POST (C)
2.28#/Lin. Ft.

BRACE RAIL SECTION

CORNER CONNECTOR
for BRACE RAILS



BRACE & TRUSS CONNECTION
at BRACE POST



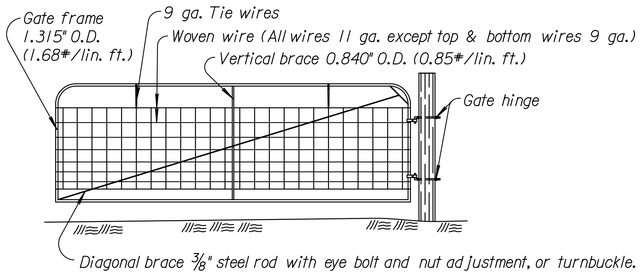
END POST TORQUE BAR

ALTERNATE CHAIN LINK DETAILS

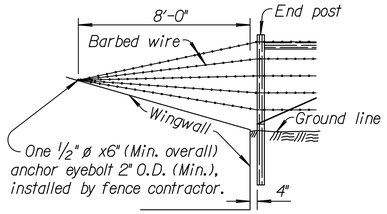
GENERAL NOTE

A line post shall be used in the KDOT fence at each private cross fence, and the contractor shall make a temporary connection. This work shall be subsidiary to other bid items.

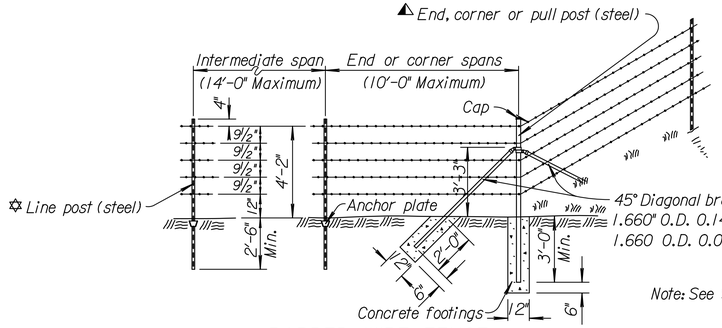
In general, where needed, use small channel crossing as shown. Type I and Type II Floodgates will be used very seldom.



DETAIL of GATE, HINGE & SPECIFICATIONS
(for Barbed & Woven Fence)

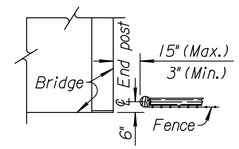


FENCE DETAILS
AT DRAINAGE STRUCTURES
(Type A, B, or Barbed wire fence.)

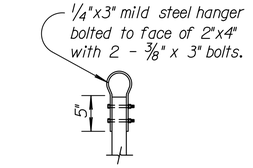


BARBED WIRE FENCE
STEEL POST (ALTERNATE)
Steel posts may be used in lieu of wood posts as shown above.

Note: See Standard Drawing RD670A for steel post requirements.

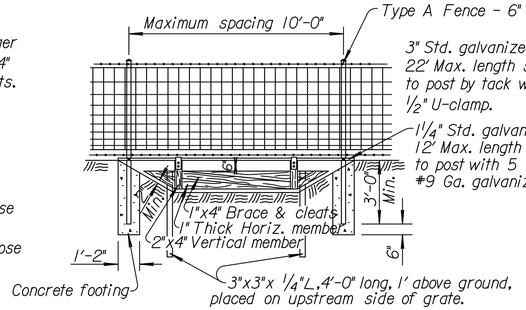


FENCE DETAILS
AT BRIDGE ABUTMENTS
(Use appropriate post and brace for fence type, dimensions are common for all fence types.)

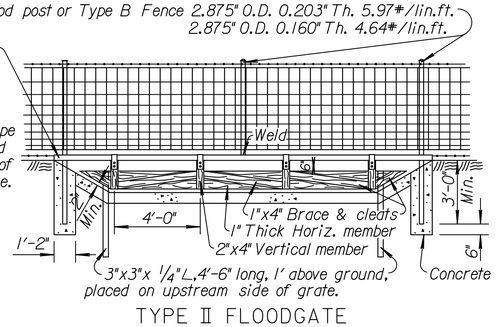


Type I bend hanger for loose fit on 1 1/4" dia. std. galv. pipe.
Type II bend hanger for loose fit on 3" dia. std. galv. pipe.

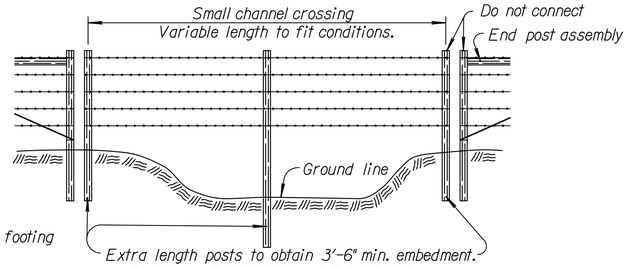
FLOODGATE
HANGER DETAIL



TYPE I FLOODGATE

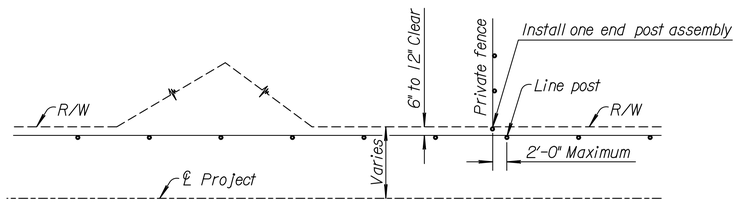


TYPE II FLOODGATE
(Grouted stone or concrete lined ditch.



SMALL CHANNEL CROSSING

The above sketch is typical only and can be varied to fit existing conditions. Small channel crossings shall be included in lin. ft. of fence. All extra materials and labor within the small channel crossing shall be subsidiary to lin. ft. of fence.

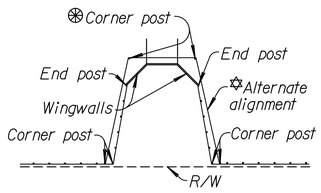


TYPICAL INSTALLATION DIAGRAM

Note: Right of Way fence shall generally be set parallel to and 6" to 12" clear from the Right of Way line.

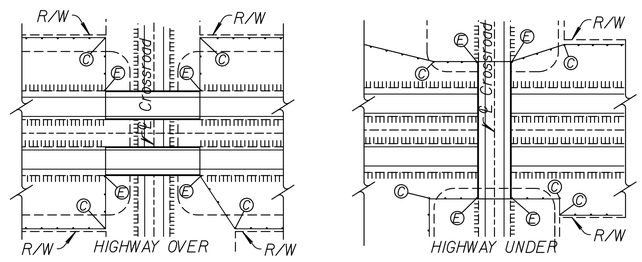
The alignment layouts as shown are typical, but are not representative of all situations that may occur. Construction may be varied, as required to meet field conditions and/or as directed by the Engineer.

The access control fence shall be attached to the private fence end post assembly using leader wires or staples.



FENCE ALIGNMENT
AT UNDERPASS OR
BOX DRAINAGE STRUCTURE

Alternate alignment may be used at deep underfill culverts, as directed by the Engineer.



FENCE ALIGNMENT AT BRIDGE ABUTMENTS

Where fence installation over a drainage structure is located within the clear zone, horizontal bracing at the corner posts will not be permitted. An alternate design utilizing diagonal bracing shall be provided.

NO.	DATE	REVISIONS	BY	APP'D
7	7-28-09	Revised Steel size listing	S.W.K.	J.O.B.
6	11-02-04	Revised General Note	S.W.K.	J.O.B.
5	5-30-02	Removed KDOT ownership sign.	S.W.K.	J.O.B.
4	12-30-97	Connect to Private Fence End Post	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAILS
BARBED, WOVEN, & CHAIN LINK

RD670B

FHWA APPROVAL	12-16-09	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Plotted : 14-JUL-2014 14:51
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd670b.dgn

REMOVAL OF EXISTING STRUCTURES (FOR INFORMATION ONLY)

LOCATION	SIDE	REMARKS
North Fr. Rd.		
477+28	Rt.	Entrance and 12" CIP and End Sections
486+42	Rt.	Entrance
496+44	Rt.	Entrance and 24" CMP and End Sections
504+22	Rt.	Entrance
514+57	Lt.	Area Inlet and 15" RCP and End Section
US-54		
470+97	Rt.	Entrance and 24" CMP and End Sections
475+05	Lt.	Entrance and 24" CMP and End Sections
477+19	Lt.	Entrance and 12" CIP and End Sections
477+34	Lt.	Entrance and 24" CMP and End Sections
Wheat Lane		
39+55	Rt.	Entrance and 12" RCP and End Sections
Woodbine		
9+87	℄	28"x20" CMP and End Sections
151st St. W.		
14+45	℄	24" RCP and End Sections
15+76	Rt.	2-12" CIP and End Sections
15+87	Lt.	Buried Culvert
17+03	Rt.	12" PVC and End Section
18+71	Rt.	18" CMP and End Sections
20+66	℄	30" RCP and End Sections
21+83	Rt.	24" RCP and End Sections
23+77	Rt.	Entrance and 18" CMP and End Sections
26+65	Lt.	21"x15" CMP and End Sections
27+52	Lt.	18" CMP and End Sections

REINFORCED CRUSHED ROCK BASE

LOCATION	STATION TO STATION		5" RCRB QUANTITY (S.Y.)	6" RCRB QUANTITY (S.Y.)	8" RCRB QUANTITY (S.Y.)	10" RCRB QUANTITY (S.Y.)
North Fr. Rd.	472+69.44	481+00.00				2755.42
North Fr. Rd.	481+00.00	497+00.00				5155.56
North Fr. Rd.	497+00.00	513+00.00				5155.34
North Fr. Rd.	513+00.00	515+75.00				886.11
North Fr. Rd.	515+75.00	518+00.07			701.18	
US-54	472+19.44	472+61.40				65.98
US-54	473+16.19	473+57.74				69.87
US-54	473+79.56	480+84.91				1545.79
US-54	475+74.39	480+84.88				864.14
151st St. West	11+60.00	14+60.00			1132.07	
151st St. West	14+60.00	19+60.75		3729.43		
151st St. West	20+39.00	25+00.00		3403.66		
151st St. West	22+79.00	23+52.19				207.29
151st St. West	25+00.00	28+73.33			1268.56	
Wheat Lane	39+47.55	39+96.50		179.76		
Auburn Hills	59+00.00	59+70.00	287.78			
Auburn Hills	59+70.00	59+96.50		142.43		
Woodbine	9+40.00	9+81.86		172.86		
Total			287.78	7628.14	3101.81	16705.50

DRIVE ENTRANCES (MEASURED QUANTITY)

LOCATION	STATION	SIDE	RADIUS (FT.)	W (FT.)	P (FT.)	CONC. PVMT. 8" (REINF.)(S.F.)
North Fr. Rd.	493+98.00	Lt.	20.00	40	26.00	1211.68
North Fr. Rd.	496+35.50	Lt.	14.50	15	35.00	615.24
North Fr. Rd.	505+00.00	Lt.	14.50	24	32.50	870.24
North Fr. Rd.	509+15.00	Lt.	14.50	24	17.50	510.24
151st St. W.	14+89.00	Lt.	15.00	20	53.91	1171.60
151st St. W.	25+35.00	Lt.	15.00	30	56.31	1782.72
151st St. W.	25+70.00	Rt.	15.00	20	67.63	1445.85
151st St. W.	26+62.55	Lt.	15.00	30	35.50	1162.39
151st St. W.	27+52.00	Lt.	15.00	30	35.50	1158.01
Total						9927.97

DRIVE CRUSHED ROCK HOOKUP (MEASURED QUANTITY)

LOCATION	STATION	SIDE	LENGTH (FT.)	WIDTH (FT.)	QUANTITY (S.Y.)
North Fr. Rd.	505+00.00	Lt.	21.00	24	56.00
Total					56.00

PIPE CULVERT SUMMARY

LOCATION	STATION	SIDE	TYPE	MATERIAL	SIZE	CROWN GRADE	FLOWLINE LT.	FLOWLINE RT.	HORIZ. ROADWAY LT.	HORIZ. ROADWAY RT.	DEGREE OF ROTATION	PIPE LENGTH LT.	PIPE LENGTH RT.	LINEAR FT. OF PIPE	END SECTIONS LT.	END SECTIONS RT.
North Fr. Rd.	472+98.50	℄	CRP	RCP	18"	1393.50	1390.64	1391.49	22.50	43.50	0°	22.50	43.50	66	1	1
US-54	472+19.77	Rt.	Ext.	Match Existing	15"	1400.96	—	1396.02	—	71.45	0°	—	10.00	10	—	1
151st St. W.	14+45.00	℄	CRP	RCPHE	24" x 38"	1393.59	1389.09	1389.22	34.00	33.00	0°	34.00	33.00	67	1	1
151st St. W.	14+89.00	Lt.	EP	ACSP,PEP, PVCP, or RCP	18"	1393.06	1389.32	1389.57	20.50	25.50	0°	20.50	25.50	46	1	1
151st St. W.	21+00.00	℄	CRP	RCPHE	24" x 38"	1399.51	1394.55	1395.52	53.75	41.25	0°	53.75	41.25	95	1	1
151st St. W.	25+35.00	Lt.	EP	ACSP,PEP, PVCP, or RCP	18"	1402.00	1399.40	1399.24	25.23	25.73	2° Rt.	25.25	25.75	51	1	1
151st St. W.	26+62.55	Lt.	EP	ACSP,PEP, PVCP, or RCP	18"	1401.66	1398.93	1398.26	25.00	26.00	0°	25.00	26.00	51	1	1
151st St. W.	27+52.00	Lt.	EP	ACSP,PEP, PVCP, or RCP	18"	1400.33	1397.84	1397.70	22.41	21.42	5° Rt.	22.50	21.50	44	1	1
Woodbine	9+52.00	℄	CRP	RCPHE	24" x 38"	1393.50	1389.40	1389.66	18.00	24.00	1° Rt.	18.00	24.00	42	1	1

The use of Aluminized Corrugated Steel Pipe (ACSP) will only be approved after the Contractor submits verification that ACSP meets KDOT Pipe Policy service life criteria. Prior to using ACSP on this project, the Contractor will need to submit to the Engineer the certified lab reports for the soil and water ph and resistivity values as well as determine the resulting service life value based on instructions in the KDOT Pipe Policy for each pipe location. All work, labor, materials and incidentals for this evaluation shall be subsidiary.

THE PIPES ON THIS PROJECT ARE IN ACCORDANCE WITH THE CURRENT KDOT PIPE POLICY OR LOCAL PIPE POLICY THAT HAS BEEN APPROVED BY KDOT. ALL PIPES SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

CURB AND GUTTER

LOCATION	STATION TO STATION		SIDE	TYPE I 6" (L.F.)	TYPE I 1½" (L.F.)	TYPE I (SPECIAL) 6" (L.F.)
North Fr. Rd.	473+17.44	476+58.57	Lt.			342.45
North Fr. Rd.	473+17.44	476+65.00	Rt.	331.65		
North Fr. Rd.	476+65.00	481+00.00	Rt.			451.13
North Fr. Rd.	477+35.85	481+00.00	Lt.	363.04		
North Fr. Rd.	481+00.00	493+58.01	Lt.	1258.01		
North Fr. Rd.	481+00.00	497+00.00	Rt.			1600.00
North Fr. Rd.	493+58.01	494+38.01	Lt.		80.00	
North Fr. Rd.	494+38.01	496+13.50	Lt.	175.49		
North Fr. Rd.	496+13.50	496+57.50	Lt.		44.00	
North Fr. Rd.	496+57.50	497+00.00	Lt.	42.50		
North Fr. Rd.	497+00.00	504+73.50	Lt.	773.51		
North Fr. Rd.	497+00.00	513+00.00	Rt.			1599.85
North Fr. Rd.	504+73.50	505+26.50	Lt.		53.00	
North Fr. Rd.	505+26.50	508+88.50	Lt.	362.00		
North Fr. Rd.	508+88.50	509+41.50	Lt.		53.01	
North Fr. Rd.	509+41.50	513+00.00	Lt.	358.50		
North Fr. Rd.	513+00.00	514+59.94	Lt.	159.94		
North Fr. Rd.	513+00.00	515+75.00	Rt.			275.00
North Fr. Rd.	515+49.06	515+75.00	Lt.	25.94		
Auburn Hills	59+00.00	59+70.00	Lt.	70.00		
Auburn Hills	59+00.00	59+70.00	Rt.	70.00		
Total				3990.58	230.01	4268.43

VALLEY GUTTERS

LOCATION	STATION TO STATION		CONC. PVMT. (VG) 9" (S.Y.)	EDGE CURB (L.F.) TYPE I 6"
Wheat Lane	39+47.55	40+00.00	195.92	127.57
Auburn Hills	59+70.00	60+00.00	167.76	87.09
Woodbine	9+40.00	9+81.86	161.90	
Total			525.58	214.66

PLUGGING (WATER) WELLS

LOCATION	STATION	OFFSET (FT.)	SIDE	QUANTITY (EACH)
North Fr. Rd.	510+61	15	Lt.	1
Total				1

PERMANENT FENCING (MEASURED QUANTITY)

LOCATION	STATION TO STATION		SIDE	CHAIN LINK LENGTH (L.F.)	CHAIN LINK POSTS CORNER	CHAIN LINK POSTS END	CHAIN LINK POSTS PULL	WOVEN WIRE LENGTH (L.F.)	WOVEN WIRE POSTS CORNER	WOVEN WIRE POSTS END	WOVEN WIRE POSTS PULL
North Fr. Rd.	473+50.00	517+75.00	Rt.	4377.46	8	2	10				
US-54	469+97.00	471+90.00	Rt.					193.75		2	
US-54	472+14.00		Lt.							1	
Total				4377.46	8	2	10	193.75		3	

REINFORCED CRUSHED ROCK BASE (MEASURED QUANTITY)

LOCATION	STATION TO STATION		SIDE	10" RCRB QUANTITY (S.Y.)
US-54	500+64.91	501+24.91	Lt.	280.00
US-54	500+64.91	501+24.91	Rt.	280.00
Total				560.00

WHEELCHAIR RAMPS

LOCATION	STATION	SIDE	QUANTITY (EACH)
North Fr. Rd.	476+67.39	Lt.	1
North Fr. Rd.	477+25.77	Lt.	1
North Fr. Rd.	514+69.56	Lt.	1
North Fr. Rd.	515+33.91	Lt.	1
Total			4

REMOVAL OF EXISTING FENCE (MEASURED QTY)

LOCATION	STATION TO STATION		SIDE	LENGTH (L.F.)
North Fr. Rd.	472+79	475+03	Rt.	154.32
North Fr. Rd.	476+40	477+67	Rt.	176.20
North Fr. Rd.	478+11	486+21	Rt.	843.92
North Fr. Rd.	486+63	496+34	Rt.	976.54
North Fr. Rd.	496+53	503+97	Rt.	752.11
North Fr. Rd.	498+46	504+10	Rt.	563.49
North Fr. Rd.	504+39	508+80	Rt.	441.02
North Fr. Rd.	504+41	508+46	Rt.	405.01
North Fr. Rd.	508+95	511+84	Rt.	288.73
North Fr. Rd.	512+18	517+75	Rt.	571.59
US-54	469+97	470+77	Rt.	89.18
US-54	471+18	472+60	Rt.	142.28
US-54	472+14	472+62	Lt.	47.66
Total				5452.05

4" SIDEWALK PAVEMENT (MEASURED QUANTITY)

LOCATION	STATION TO STATION		SIDE	WIDTH (FT.)	QUANTITY (S.F.)
North Fr. Rd.	473+22.44	476+67.39	Lt.	6	2113.16
North Fr. Rd.	477+25.77	481+00.00	Lt.	6	2207.72
North Fr. Rd.	481+00.00	493+76.12	Lt.	6	7645.41
North Fr. Rd.	494+19.91	496+27.69	Lt.	6	1228.64
North Fr. Rd.	496+43.31	497+00.00	Lt.	6	333.37
North Fr. Rd.	497+00.00	504+87.69	Lt.	6	4719.77
North Fr. Rd.	505+12.31	509+02.69	Lt.	6	2328.73
North Fr. Rd.	509+27.31	513+00.00	Lt.	6	2229.37
North Fr. Rd.	513+00.00	514+69.56	Lt.	6	1017.38
Auburn Hills	59+00.00	59+86.57	Lt.	4	360.65
Total					24184.20

No.	Revision	By	Date

CITY OF WICHITA

SUMMARY OF QUANTITIES

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 84 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 8/1/2014 9:39:41 AM
FILE: I:\2008\08313\Frontage Rd North\Quantities\08313-SumQty.dgn

CONCRETE PAVEMENT 10" (NRDJ)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
North Fr. Rd.	473+17.44	481+00.00	1913.17
North Fr. Rd.	481+00.00	497+00.00	3911.11
North Fr. Rd.	497+00.00	513+00.00	3910.95
North Fr. Rd.	513+00.00	515+75.00	672.22
US-54	473+79.56	480+84.91	839.57
US-54	475+74.39	480+84.88	579.64
Total			11826.66

CONCRETE PAVEMENT 10" (VAR.) (PLAIN)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
US-54	473+79.56	480+84.91	627.82
US-54	475+74.39	480+84.88	227.73
Total			855.55

CONCRETE PAVEMENT 10" (REINF.)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
North Fr. Rd.	472+69.44	473+17.44	219.73
US-54	472+19.44	472+61.40	63.43
US-54	473+16.19	473+57.74	66.85
151st St. W.	22+79.00	23+51.42	194.61
Total			544.62

CONCRETE PAVEMENT 10" (NRDJ) (MEASURED QTY.)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
W. Bd. US-54	500+64.91	501+24.91	160.00
E. Bd. US-54	500+64.91	501+24.91	160.00
Total			320.00

CONCRETE PAVEMENT 10" (VAR.) (PLAIN) (MEASURED QTY.)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
W. Bd. US-54	500+64.91	501+24.91	106.67
E. Bd. US-54	500+64.91	501+24.91	106.67
Total			213.34

CONCRETE DITCH LINING (BACKSLOPE)						
LOCATION	STATION	SIDE	d (IN.)	W (FT.)	"L" (FT.)	QUANTITY (S.Y.)
151st St. W.	14+74	Rt.	9	10	17.00	18.92
151st St. W.	15+41	Rt.	9	10	16.25	18.00
Total						36.92

CONCRETE PAVEMENT 9" (NRDJ)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
151st St. W.	14+60.00	18+76.00	2644.62
151st St. W.	21+14.00	25+00.00	2454.13
Total			5098.75

CONCRETE PAVEMENT 9" (REINF.)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
151st St. W.	18+76.00	19+60.75	986.95
151st St. W.	20+39.00	21+14.00	848.45
Total			1835.40

A.C. PAVEMENT (BM-2)				
LOCATION	STATION TO STATION		5" A.C. QUANTITY (S.Y.)	7" A.C. QUANTITY (S.Y.)
North Fr. Rd.	515+75.00	518+00.07		651.10
151st St. W.	11+60.00	14+60.00		1065.37
151st St. W.	25+00.00	28+73.33		1185.56
Auburn Hills	56+00.00	59+50.00	233.33	
Total			233.33	2902.03

CRUSHED ROCK HOOKUP (MEASURED QUANTITY)			
LOCATION	STATION TO STATION		QUANTITY (S.Y.)
Wheat Lane	39+25.00	39+47.55	51.36
Woodbine	9+00.00	9+40.00	102.22
Total			153.58

PAVEMENT EDGE WEDGE (ROCK) (MEASURED QUANTITY)				
LOCATION	STATION TO STATION		SIDE	QUANTITY (TON)
US-54	473+79.56	480+84.91	Lt.	76.6
US-54	475+74.39	480+84.88	Lt.	58.6
US-54	500+64.90	500+24.90	℄	20.5
Total				155.7

STORM SEWER CONDUIT DATA SUMMARY (L.F.)										
SWS LINE NO.	15"	18"	24"	42"	RCP 15"	RCP 18"	RCP 24"	RCP 30"	RCP 36"	SAND, FILL (FLUSHED AND VIBRATED) (L.F.)
100					93.4	417.3	473.7	400.0	1300.0	2684.4
105			31.1							
150		75.0		61.0						
200					175.0		375.0	500.0		1050.0
205						57.0				30.5
210							62.5			32.3
250			22.1							
300	18.8				122.5					122.5
Total	18.8	75.0	53.2	61.0	390.9	474.3	911.2	900.0	1300.0	3919.7

INLET SUMMARY (EACH)								
SWS LINE NO.	INLET, CURB (TYPE I) 5' x 3'	10' x 3'	10' x 4'	10' x 5'	INLET, DROP (DOUBLE)	INLET, DROP (DOUBLE DOUBLE)	INLET-MANHOLE SPECIAL	UNDERDRAIN 4" PVC (L.F.)
100	2	2	5	7				176
105						1		
150					1		1	
200		1	6					77
205					1			
210					1			
250					1			
300	1	1						22
Total	3	4	11	7	4	1	1	275

END SECTION SUMMARY (EACH)	
SWS LINE NO.	15"
300	1
Total	1

SUMMARY OF EARTHWORK QUANTITIES												
STAGE	LOCATION	STATION TO STATION		EXCAVATION (C.Y.)	EXCAVATION (V.M.F.)	BORROW EXCAVATION (CONTRACTOR FURNISHED) (C.Y.)	BORROW EXCAVATION (CONTRACTOR FURNISHED) (V.M.F.)	FILL (C.Y.)	FILL (BEHIND CURBS) (C.Y.)	THRU EARTH CUTS EXCAVATION (C.Y.)	THRU EARTH CUTS FILL (C.Y.)	HAUL (C.Y.)
1	US-54 Rt. Turn Lane	474+00.00	480+84.90	588	0.80	—	0.80	230	0	250	250	301
	US-54 Lt. Turn Lane	475+74.39	480+84.90	283	0.80	—	0.80	30	0	144	144	246
	US-54 Eastbound	470+00.00	474+75.00	468	0.80	—	0.80	23	0	5	5	439
	US-54	500+64.90	501+24.90	167	0.80	—	0.80	0	0	93	93	167
	151st St. West	11+60.00	19+60.75	3454	0.80	—	0.80	347	0	774	774	3020
	151st St. West	20+39.00	30+40.00	5522	0.80	—	0.80	217	0	484	484	5251
2	Auburn Hills	59+00.00	59+70.00	136	0.80	—	0.80	3	5	48	48	126
	151st St. West	20+39.00	30+40.00	886	0.80	—	0.80	49	0	347	347	825
	North Fr. Rd.	473+17.44	518+00.07	13391	0.80	① 2609	0.80	20700	400	1722	1722	—
Total				24895		① 2609		21599	405	3867	3867	10375

Note: Fill, Fill Behind Curbs, and Compaction Thru Cuts are paid for as "Fill, Compacted (95% Density)". Total Amount = 25871 CY.

① 2609 Cu. Yds. to be hauled in from South Fr. Rd. Balance Sta. 473+23.72 to Sta. 525+16.45 (City of Wichita Proj. No. 472-84841)

No.	Revision	By	Date

CITY OF WICHITA

SUMMARY OF QUANTITIES

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 85 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/15/2014 8:56:21 AM
FILE: I:\2008\08313\Frontage Rd North\Quantities\08313-Sum0ty2.dgn

RECAPITULATION OF QUANTITIES

ITEM	QUANTITY	UNIT
LUMP SUM BID ITEMS (760621)		
Mobilization	1	Lump Sum
Mobilization (DBE)	1	Lump Sum
Field Office & Laboratory (Type A)	1	Each
Site Clearing	1	Lump Sum
Site Restoration	1	Lump Sum
Removal of Existing Structures	1	Lump Sum
Concrete &/or Asphalt Pavement Removed	15535	Sq. Yd.
Excavation	28762	Cu. Yd.
Excavation, Borrow (Contractor Furnished)	2609	Cu. Yd.
Fill, Compacted (95% Density)	25871	Cu. Yd.
Concrete Pavement 9" (NRDJ)	5099	Sq. Yd.
Concrete Pavement 9" (Reinf.)	1835	Sq. Yd.
Concrete Pavement (VG) 9" (Reinf)	526	Sq. Yd.
Concrete Pavement 10" (NRDJ)	11827	Sq. Yd.
Concrete Pavement 10" (Var.) (NRDJ)	856	Sq. Yd.
Concrete Pavement 10" (Reinf)	545	Sq. Yd.
AC Pavement 5" (3" Bit Base)(BM-2)	233	Sq. Yd.
AC Pavement 7" (5" Bit Base)(BM-2)	2902	Sq. Yd.
Crushed Rock Base 5", Reinforced	288	Sq. Yd.
Crushed Rock Base 6", Reinforced	7628	Sq. Yd.
Crushed Rock Base 8", Reinforced	3102	Sq. Yd.
Crushed Rock Base 10", Reinforced	16706	Sq. Yd.
Concrete C & G, Comb. Type I (6" & 1-1/2")	4221	L.F.
Concrete C & G, Comb. Type I (Special) (6" & 1-1/2")	4268	L.F.
Concrete Curb, Mono Edge (6" & 1-1/2")	215	L.F.
Wheelchair Ramp w/ Detectable Warnings	4	Each
Signing, Except Street Name Signs	1	Lump Sum
Pavement Marking	1	Lump Sum
Traffic Signalization (Kellogg & 151st)	1	Lump Sum
Traffic Control	1	Lump Sum
Electric Lighting System	1	Lump Sum
Plugging (Water) Wells	1	Each
LUMP SUM BID ITEMS - DRAINAGE (760621)		
Inlet, Curb (Type I) (L=5' W=3')	3	Each
Inlet, Curb (Type I) (L=10' W=3')	4	Each
Inlet, Curb (Type I) (L=10' W=4')	11	Each
Inlet, Curb (Type I) (L=10' W=5')	7	Each
Inlet, Drop (Double) (L=4' W=2')	4	Each
Inlet, Drop (Double Double) (L=4' W=4')	1	Each
Inlet - Manhole (Special) (L=6'-6" W=6'-0")	1	Each
Inlet Hookup	25	Each
Concrete Backslope Ditch Lining	37	Sq. Yd.
Pipe, PVC 4", Perforated	275	L.F.
Pipe, Cross Road 15" (RCP)	10	L.F.
Pipe, Cross Road 18" (RCP)	66	L.F.
Pipe, Cross Road 24" x 38" (RCPHE)	204	L.F.
Pipe, Entrance 18"	192	L.F.
Pipe, 15" End Section	1	Each
Pipe, 15" End Section (RC)	1	Each
Pipe, 18" End Section	8	Each
Pipe, 18" End Section (RC)	2	Each
Pipe, 24" x 38" End Section (RCPHE)	6	Each
Pipe, SWS 15"	19	L.F.
Pipe, SWS 15" (RCP)	391	L.F.
Pipe, SWS 18"	75	L.F.
Pipe, SWS 18" (RCP)	474	L.F.
Pipe, SWS 24"	53	L.F.
Pipe, SWS 24" (RCP)	911	L.F.
Pipe, SWS 30" (RCP)	900	L.F.
Pipe, SWS 36" (RCP)	1300	L.F.
Pipe, SWS 42"	61	L.F.
Pipe, RCBC (6 ' x 6') w/ Wingwall (Sta. 501+00)	316	L.F.
Fill, Sand (Flushed & Vibrated)	4532	L.F.
LUMP SUM BID ITEMS - NON-PARTICIPATING (760621)		
Transportation of Salvaged Material	1	Lump Sum
Signing, Street Name Signs Only	1	Lump Sum
LUMP SUM BID ITEMS - LANDSCAPING (760621)		
Seeding	1	Lump Sum
Sodding	1	Lump Sum

RECAPITULATION OF QUANTITIES

ITEM	QUANTITY	UNIT
MEASURED QUANTITY BID ITEMS - PAVING (760621)		
Concrete Sidewalk 4"	24184	Sq. Ft.
Retaining Wall, Sidewalk	350	L.F.
Concrete Pavement 10" (NRDJ)	320	Sq. Yd.
Concrete Pavement 10" (Var.) (NRDJ)	213	Sq. Yd.
Concrete Driveway 8" (Reinforced)	9928	Sq. Ft.
Crushed Rock Hookup	210	Sq. Yd.
Crushed Rock Base 10", Reinforced	560	Sq. Yd.
Pavement Edge Wedge (Rock)	156	Ton
AC Pvmt 6" (4" Bit Base), Temp for Widening (w/5" RCRB)	1335	Sq. Yd.
AC Pvmt 6", Temp for Patching	75	Sq. Yd.
Fence, Chain Link	4377	L.F.
Fence Woven Wire	194	L.F.
Posts (Corner)(Chain Link)	8	Each
Posts (Ends)(Chain Link)	2	Each
Posts (Ends)(Woven Wire)	3	Each
Posts (Pull)(Chain Link)	10	Each
Fence Removed	5452	L.F.
Fence (Termporary Construction)	50	L.F.
Sign, Electronic Portable Message	100	Day
MH Adjusted, Sanitary Sewer	1	Each
MEASURED QUANTITY BID ITEMS - LANDSCAPING (760621)		
Tree, Bur Oak - 2" caliper	13	Each
Tree, Chinese Pistache - 2" caliper	18	Each
Tree, Prairie Pride Hackberry - 2" caliper	5	Each
Tree, Oklahoma Redbud - 1.5" caliper	23	Each
Tree, Goldenrain Tree - 1.5" caliper	17	Each
Tree, Canaert Juniper - 1.5" caliper	17	Each
MEASURED QUANTITY BID ITEMS - BMP'S (760621)		
BMP, Curb Inlet Protection	25	Each
BMP, Back of Curb Protection	8364	L.F.
BMP, Silt Fence	15450	L.F.
BMP, Construction Entrance	3	Each
WATERLINE IMPROVEMENTS - NON-PARTICIPATING (635813)		
Fill, Sand (Flushed & Vibrated)	1545	L.F.
AC Pavement Removed	599	L.F.
AC Pavement Replace (Temporary)	599	L.F.
AC Pavement Removed and Replaced	257	L.F.
Gravel Drive Removed & Replaced	144	L.F.
Steel Casing by Open Cut (min. I.D. 28")	21	L.F.
Steel Casing by Boring (min. I.D. 28")	195	L.F.
Concrete Encasement 8", Reinforced	20	L.F.
Pipe, DI CL 6"	40	L.F.
Pipe, DI CL SJ 6"	22	L.F.
Pipe, DI CL SJ 8"	24	L.F.
Pipe, WL 8"	132	L.F.
Pipe, DI CL RJ 16"	34	L.F.
Pipe, DI CL SJ 16"	35	L.F.
Pipe, WL 16"	6337	L.F.
Fire Hydrant Assembly	4	Each
Fire Hydrant	2	Each
Fire Hydrant Removal	4	Each
Service Line, Short 1"	2	Each
Service Line, Short 2"	1	Each
Valve Box Adjusted	4	Each
Valve Assembly, Air Release 2"	1	Each
Valve Assembly, 8"	1	Each
Valve Assembly, Butterfly 16"	4	Each
Valve Assembly, Butterfly Anchored 16"	4	Each
Check Valve Vault	1	Each
Water Meter Installed	3	Each
Water Meter Removed	3	Each
SANITARY SEWER IMPROVEMENTS - NON-PARTICIPATING (652024)		
Air Testing, SS Pipe	223	L.F.
Fill, Sand (Flushed and Vibrated)	13	L.F.
Lift Station Removed	1	Lump Sum
BMP, Construction Entrance	1	Each
BMP, Ditch Check	1	Each
BMP, Silt Fence	170	L.F.
Pipe, SS Force Main 4" Abandon	1800	L.F.
Fence Removed and Reset	20	L.F.
AC Pavement Removed and Replaced	12	L.F.
Gravel Drive Removed and Replaced	15	L.F.
Pipe, SS 8"	223	L.F.
MH Removed	1	Each
Pipe, SS Force Main 4"	88	L.F.
MH, Joint Wrap	16	L.F.
MH, Standard SS (4')	4	Each
Force Main Connection	1	Lump Sum
Concrete Encasement 8", Reinforced	20	L.F.

See Sh. No. 99 for Landscaping.
See Sh. No. 111 for Traffic Signal.
See Sh. No. 114 for Summary of Pavement Markings.
See Sh. No. 121 for Sign Assembly Tables.
See Sh. No. 140 for Traffic Control.
See Part B for Waterline.
See Part C Sanitary Sewer.

No.	Revision	By	Date

CITY OF WICHITA

RECAPITULATION OF QUANTITIES

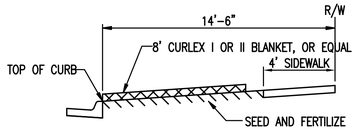
PROJECT NO. 472-84840 SEDGWICK CO.

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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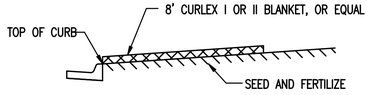
Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 86 of 201

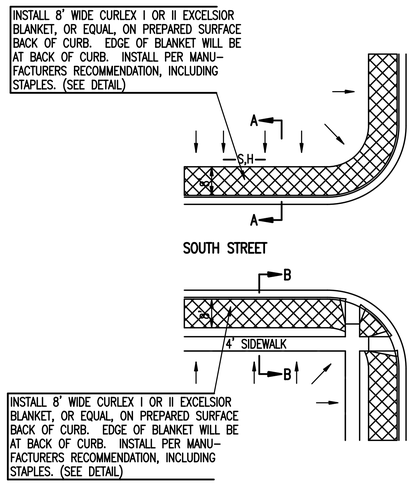
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SECTION B-B



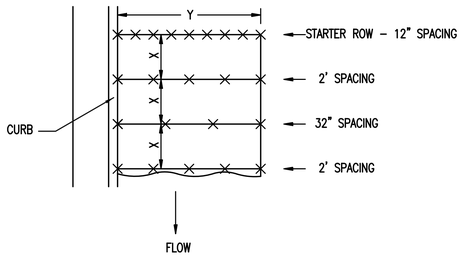
SECTION A-A



GENERAL NOTES

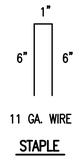
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE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

BACK OF CURB PROTECTION DETAIL



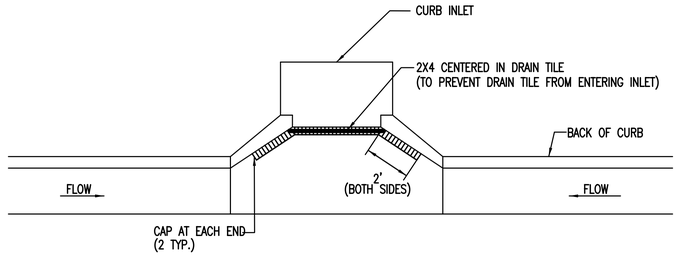
STAPLE PATTERN

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



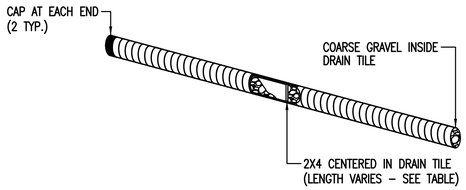
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT

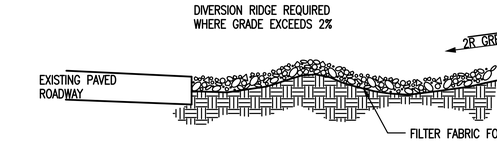


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

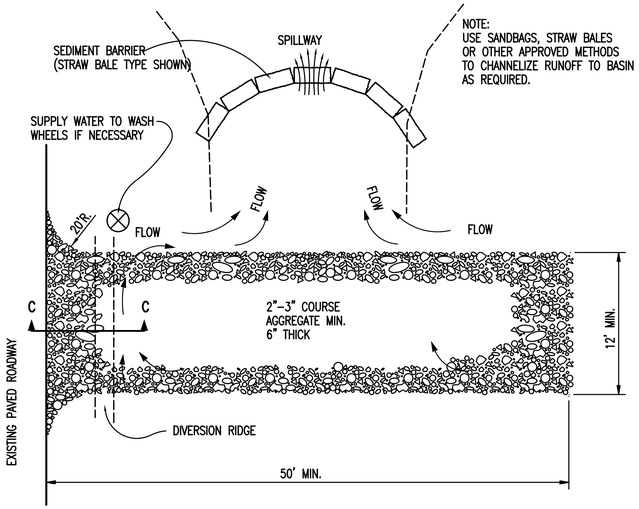
2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



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.

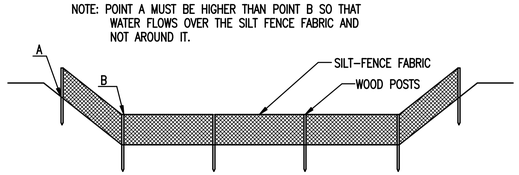
PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	08/2012

DESIGN | DRAWN

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CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
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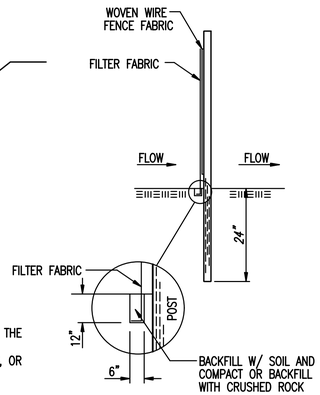
SHEET
87 of 201

SW-501



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 6R LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

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

DITCH CHECK DITCH GRADE (%)	SPACING 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.

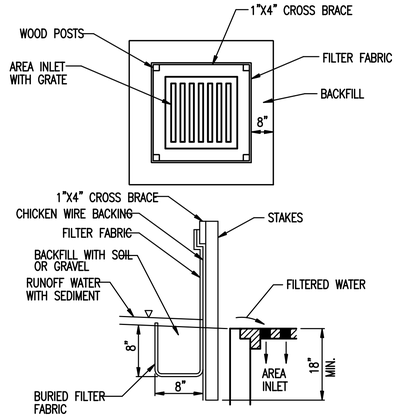
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

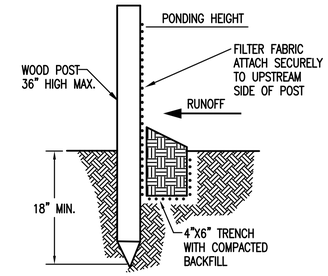
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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
472-84840	760621	11/2010

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CITY HALL - SEVENTH FLOOR
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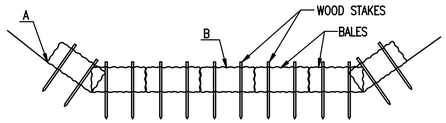
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SW-502

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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 6R LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.
THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK SPACING

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".

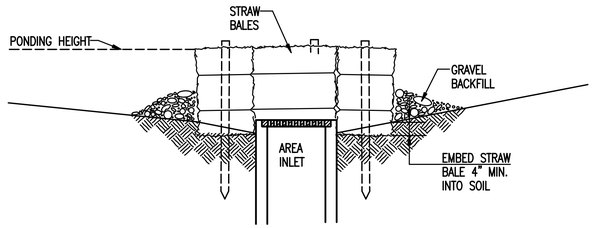
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

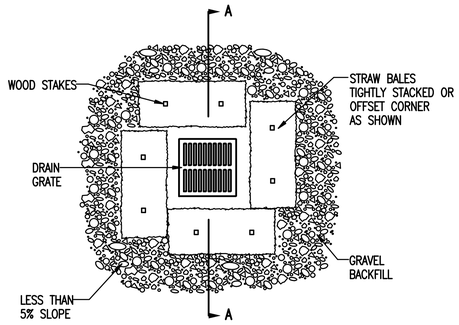
INSPECTION AND MAINTENANCE:

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.

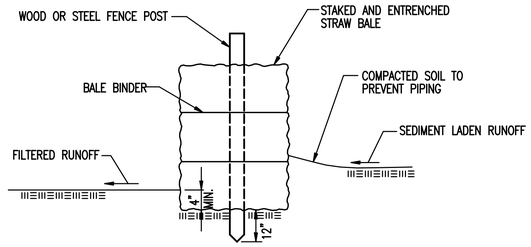
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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
472-84840	760621	11/2010

DESIGN | DRAWN

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

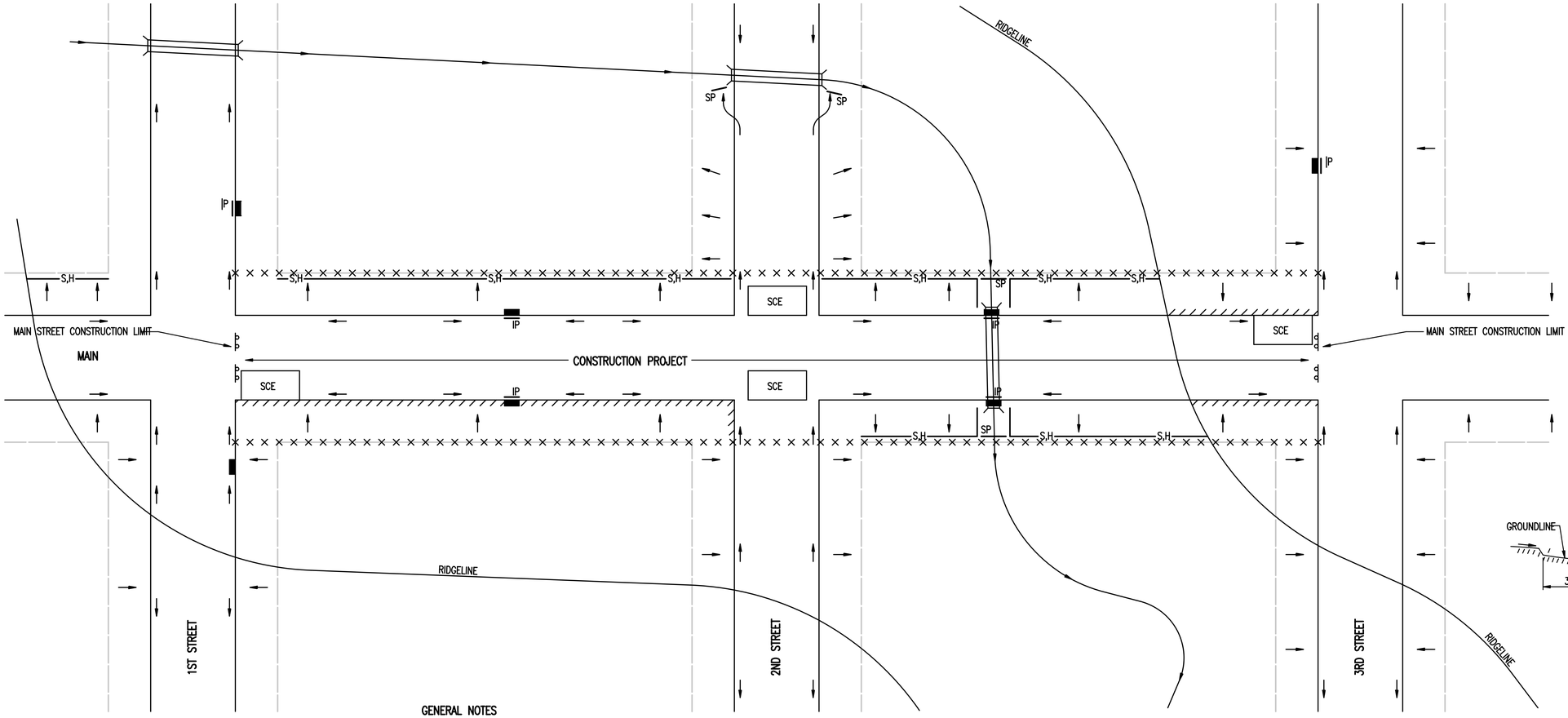
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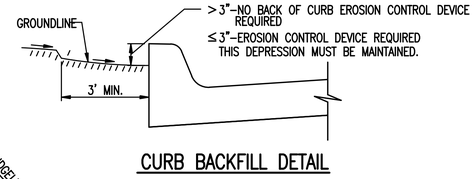
SW-503

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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
472-84840	760621	08/2012

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

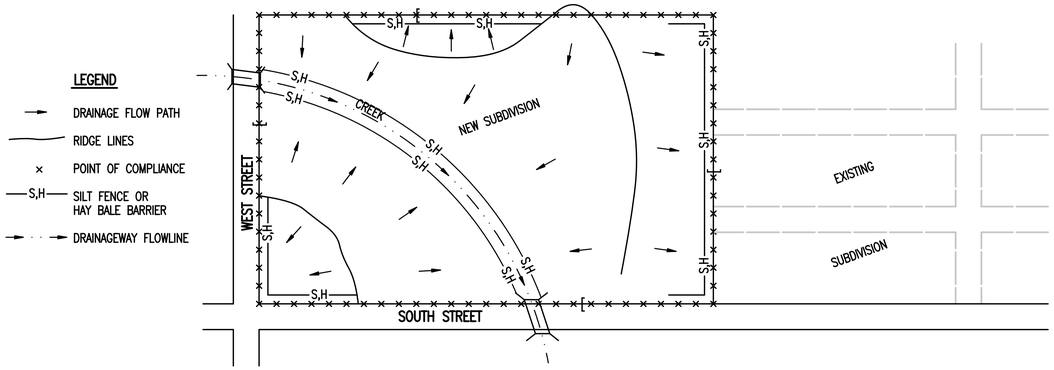
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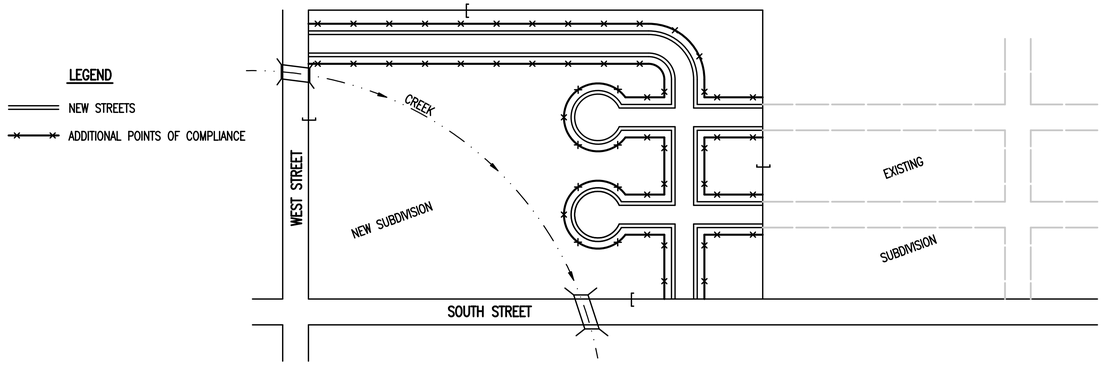
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PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



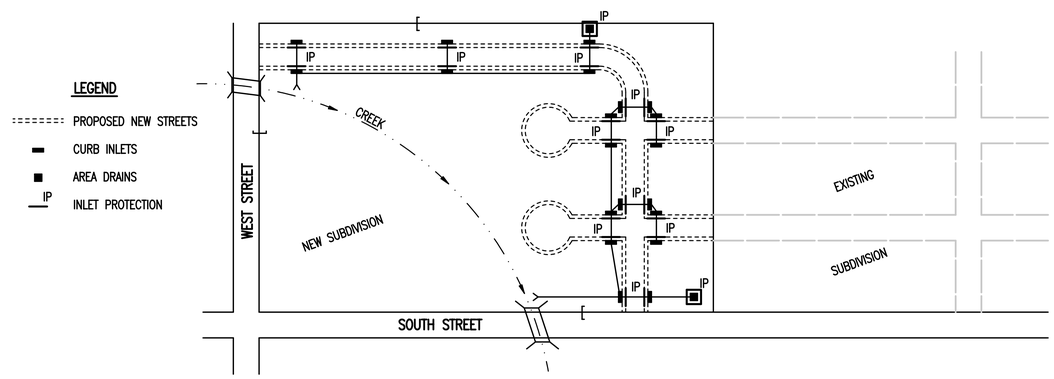
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. 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 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.

PHASE 2 – INSTALLATION OF STORM SEWER

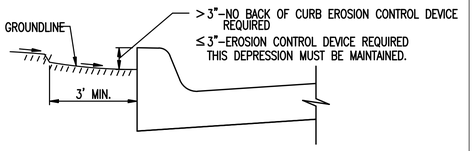


1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON 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.

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
472-84840	760621	08/2012

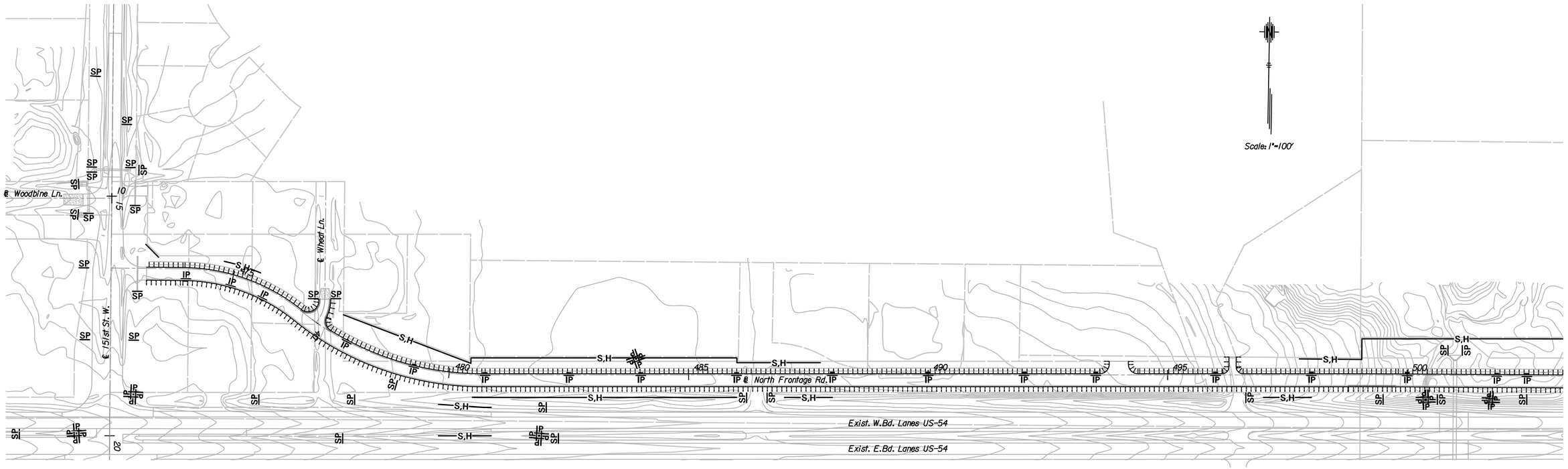
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

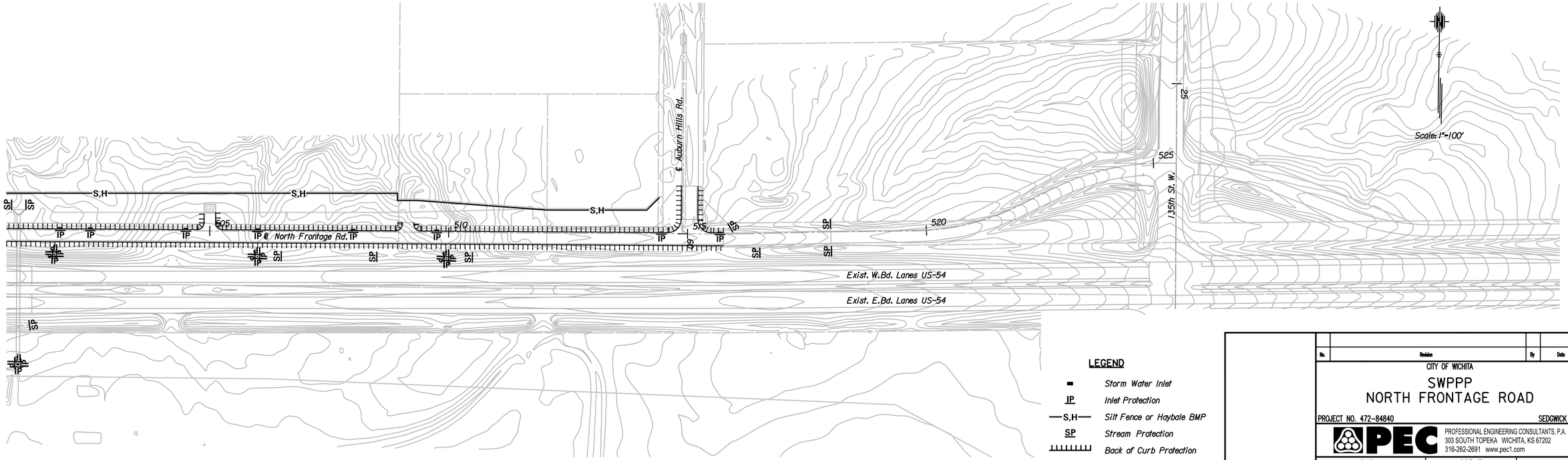
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LEGEND

- Storm Water Inlet
- IP — Inlet Protection
- S,H — Silt Fence or Haybale BMP
- SP — Stream Protection
- Back of Curb Protection

No.	Revision	By	Date

CITY OF WICHITA

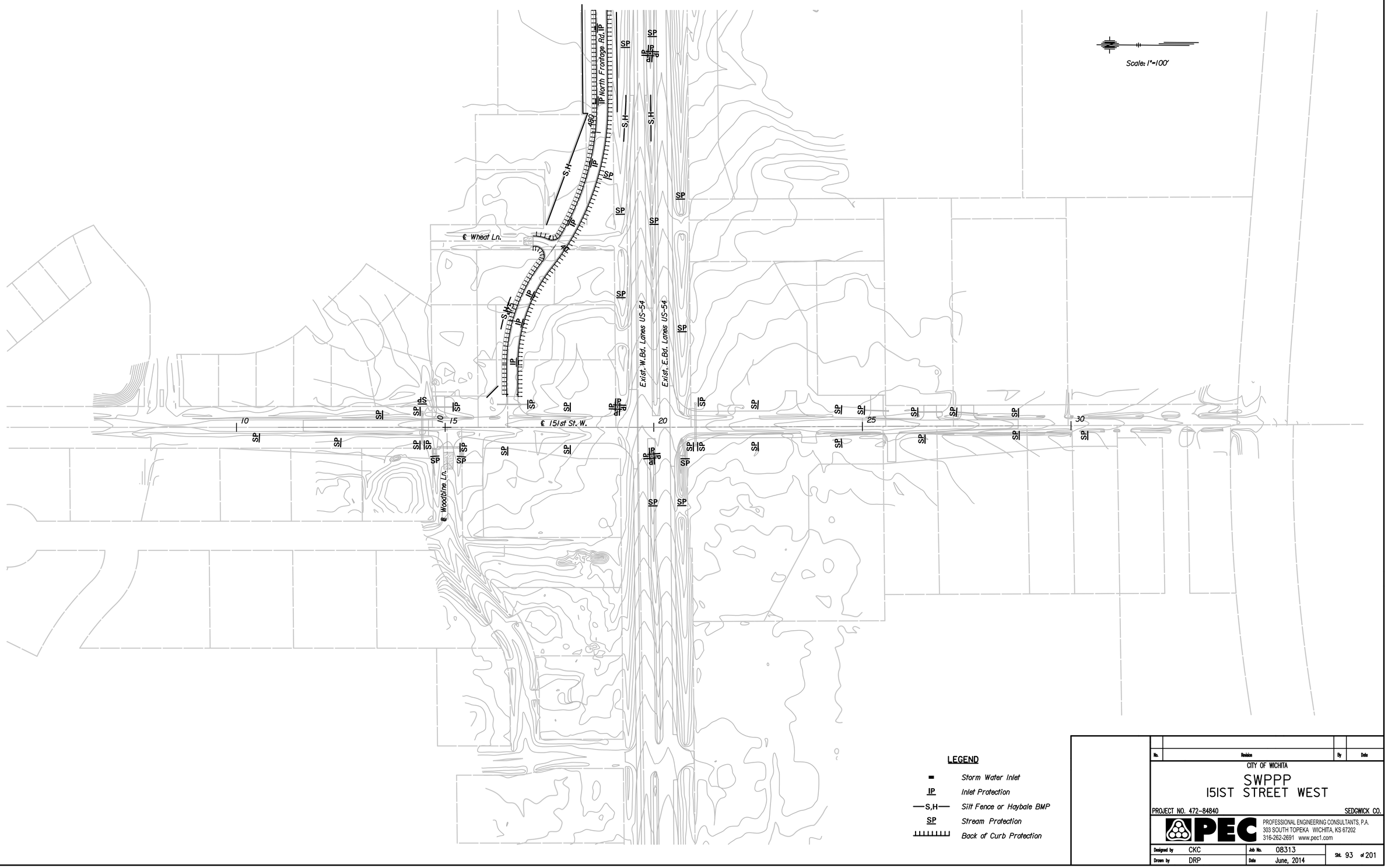
SWPPP
NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 92 of 201
Drawn by	DRP	Date	June, 2014	

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No.	Revision	By	Date

CITY OF WICHITA

SWPPP
151ST STREET WEST

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by CKC	Job No. 08313	Sht. 93 of 201
Drawn by DRP	Date June, 2014	

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SCALE
50' 0 50' 100'
PLAN: Lat. & Long
PROFILE: Horiz. same as above
Vert.

Lewis & Pamela J. Wilson
D-53443
4

Randall & Sherry Brummett
D-53460
6

Drainage Esmt.
10' Utility Esmt.
Tapestry Ln.
Woodbine Ln.
Post
GMKR
(Block
SEED
Const. Limits
151st St. W.=Section Line
Kansas Gas Supply Corp.
D-1016-UP
R/W & A/C
WV RWD#4
20' Sanitary Sewer Easement
50' Mid-Continent Marketing Center, LLC Easement
Future R/W & A/C
TAPESTRY MEADOWS SECOND
GOOLSBY'S 2ND ADDITION
Coleman C. & Becky L. Lockett
D-52177
Freddie N. Booher
D-53463
3
Gary J. & Karen L. Babcock
D-55461
Daniel & DeeAnn J. Kasprick
D-53462
SE „ Sec. 27, T27S, R2W
20' Utility Esmt.
GTV
Sign
WM
Section Line
Exist. W.Bd. Lanes US-54
Exist. E.Bd. Lanes US-54
RM#12
Southborough Partners
D-1061-UP
David A. & Cheryl A. Calvin
AT-187-1A

D-50796
7
20' Utility Esmt.
20' Drainage & Utility Esmt.
Eugene J. Pelz Trust
D-1005-UP
D-1006-UP
Exist. R/W
Wheat Ln.
Gale S. & Darlene F. Mullin
D-1050-UP
Eugene J. Pelz, et al
D-1049-UP
D-1048-UP
SW „ Sec. 28, T27S, R2W
Smith & Company, Inc.
D-1051-UP
CC B-17272
Floyd G. Buess
D-1008-UP
Pool
10" SS (PVC)
James Perkins Trust
D-1007-UP
Temp. Esmt.
US-54 North Frontage Rd.
Const. Limits
10" Waterline Esmt.

LEGEND

APPROXIMATE LIMITS OF AREA TO BE SEEDED (BUFFALO / RYE SEED MIX)
G.C. SHALL SEED ALL ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

NEW TREES

GLMV Architecture
1525 E. Douglas, Wichita, KS 67211
Tel: (316) 265-9367
www.glmv.com

Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$

No.	Revision	By	Date

CITY OF WICHITA
LANDSCAPE PLAN
US-54 NORTH FRONTAGE ROAD
STA. 472+43.44 TO STA. 481+00
PROJECT NO. KA 2289-01 SEDGWICK CO.

MARK L. DAVIS LICENSED 788 KANSAS LANDSCAPE ARCHITECT 7/15/13

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	May, 2013

Sht. 94 of 201

Wichita Friends School, Inc.
D-1009-UP

(3) CANAERT JUNIPER
Temp. Esmt.
(3) CHINESE PISTACHE
(2) BUR OAK
(3) OKLAHOMA REDBUD
(3) GOLDENRAIN TREE
(1) BUR OAK
(1) HACKBERRY

Fawnwood Dr.
Exist. R/W
Exist. R/W

10' Utility Esmt.
10' Utility Esmt.
20' Utility Esmt.

D-53444
1

FAWNWOOD ADDITION
1

Wichita Friends School, Inc.
D-53445
2

D-53446
3

D-1004-UP

Drainage Esmt.

(3) CANAERT JUNIPER
(3) CHINESE PISTACHE
(1) BUR OAK

R/W & A/G

RESERVE "A"
Sedgwick County
AT=790

Drainage Esmt.

WW

(1) BUR OAK
(1) CHINESE PISTACHE
(3) OKLAHOMA REDBUD
(3) GOLDENRAIN TREE
Temp. Esmt.
(3) CANAERT JUNIPER
(1) BUR OAK
(1) HACKBERRY
Const. Limits

Exist. R/W
SEED

} US-54 North Frontage Rd.

Doris M. Rishel Trust
D-1002-UP

R/W

SEED

Const. Limits

Section Line

Exist. W.Bd. Lanes US-54

Exist. US-54

Exist. E.Bd. Lanes US-54

Section Line

BM#13

MB

10' Waterline Esmt.

Sign

Exist. R/W

R/W & A/G

UNITED INDUSTRIAL ADDITION
1

United Auto Parts, Inc.
D-53792

30' Drainage Esmt.

20' Utility Esmt.

Exist. R/W

United Circle

Exist. R/W

R/W & A/G

R/W

LEGEND

APPROXIMATE LIMITS OF AREA TO BE SEEDED (BUFFALO / RYE SEED MIX) G.C. SHALL SEED ALL ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

LIMITS OF AREA TO BE SODDED (HARDY FESCUE BLEND)

NEW TREES

GLMV Architecture
1525 E. Douglas, Wichita, KS 67211
Tel: (316) 265-9367
www.glmv.com

No.	Revision	By	Date

CITY OF WICHITA

LANDSCAPE PLAN
US-54 NORTH FRONTAGE ROAD
STA. 481+00 TO STA. 497+00

PROJECT NO. KA 2289-01 SEDGWICK CO.

MARK L. DAY CLARK LICENSED 788 KANSAS LANDSCAPE ARCHITECT

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	May, 2013

Sht. 95 of 201

Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$

SW „ Sec. 26, T27S, R2W

SE „ Sec. 26, T27S, R2W

Jerry C., Jr. & Sally J. Goodwin
D-1052-UP

Rebah J. Hubbard Revocable Inter Vivos Trust
D-996-UP

CathyMark Colorado Investments, LLC, etal
D-997-UP

Section Line

(2) GOLDENRAIN TREE
(3) OKLAHOMA REDBUD
(3) CHINESE PISTACHE
(3) CANAERT JUNIPER
(1) BUR OAK
(3) GOLDENRAIN TREE
(1) HACKBERRY
(1) CANAERT JUNIPER
(4) OKLAHOMA REDBUD
Temp. Esmt.
(3) BUR OAK
(2) CHINESE PISTACHE
(1) HACKBERRY
(3) OKLAHOMA REDBUD
(4) GOLDENRAIN TREE
(1) BUR OAK
(3) CANAERT JUNIPER
(3) CHINESE PISTACHE
(1) HACKBERRY
(2) GOLDENRAIN TREE
(2) OKLAHOMA REDBUD
Temp. Esmt.
(1) BUR OAK
(3) OKLAHOMA REDBUD
(1) CANAERT JUNIPER
(3) CHINESE PISTACHE

Const. Limits
SEED
R/W
Const. Limits
SEED
Const. Limits

} US-54 North Frontage Rd.

Exist. R/W
SEED
Exist. R/W
SEED
Exist. R/W

Exist. W.Bd. Lanes US-54
Exist. E.Bd. Lanes US-54
} Exist. US-54

7 8 9 500 2 3 4 505 7 8 9 510 1 2 3

United Auto Parts, Inc., etal
AT-187

NW „ Sec. 35, T27S, R2W

?Section Line

R/W

NE „ Sec. 35, T27S, R2W

LEGEND

APPROXIMATE LIMITS OF AREA TO BE SEEDED (BUFFALO / RYE SEED MIX) G.C. SHALL SEED ALL ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

LIMITS OF AREA TO BE SODDED (HARDY FESCUE BLEND)

NEW TREES

No.	Revision	By	Date

CITY OF WICHITA

LANDSCAPE PLAN
US-54 NORTH FRONTAGE ROAD
STA. 497+00 TO STA. 513+00

PROJECT NO. KA 2289-01 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	May., 2013

Sht. 96 of 201

Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$

FELLOWSHIP ACRES ADDITION

Evangel Presbyterian Church, Wichita, KS D-55971

West Wichita Development, Inc. D-59309

RESERVE "A"

SE „ Sec. 26, T27S, R2W

SW „ Sec. 25, T27S, R2W

NW „ Sec. 36, T27S, R2W

Sedgwick County

Auburn Hills Rd.

135th St. W.

Section Line

10' Utility Esmt.

20' Utility Esmt.

Temp. Esmt.

R/W

Const. Limits

SEED

SEED

} US-54 North Frontage Rd.

Exist. W.Bd. Lanes US-54

{ Exist. US-54

Exist. E.Bd. Lanes US-54

BM#16D

BM#16R

Traffic Camera

Traffic Elec. Box

Irrigation Valve

Sign

Brush

Oak

Pine

Elm

Ced

Cot

2-DM

DM

MB

515

520

525

LEGEND

APPROXIMATE LIMITS OF AREA TO BE SEEDED (BUFFALO / RYE SEED MIX) G.C. SHALL SEED ALL ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

LIMITS OF AREA TO BE SODDED (HARDY FESCUE BLEND)

NEW TREES

MARK L. DAVIS LICENSED 788 LANDSCAPE ARCHITECT

No.	Revision	By	Date

CITY OF WICHITA

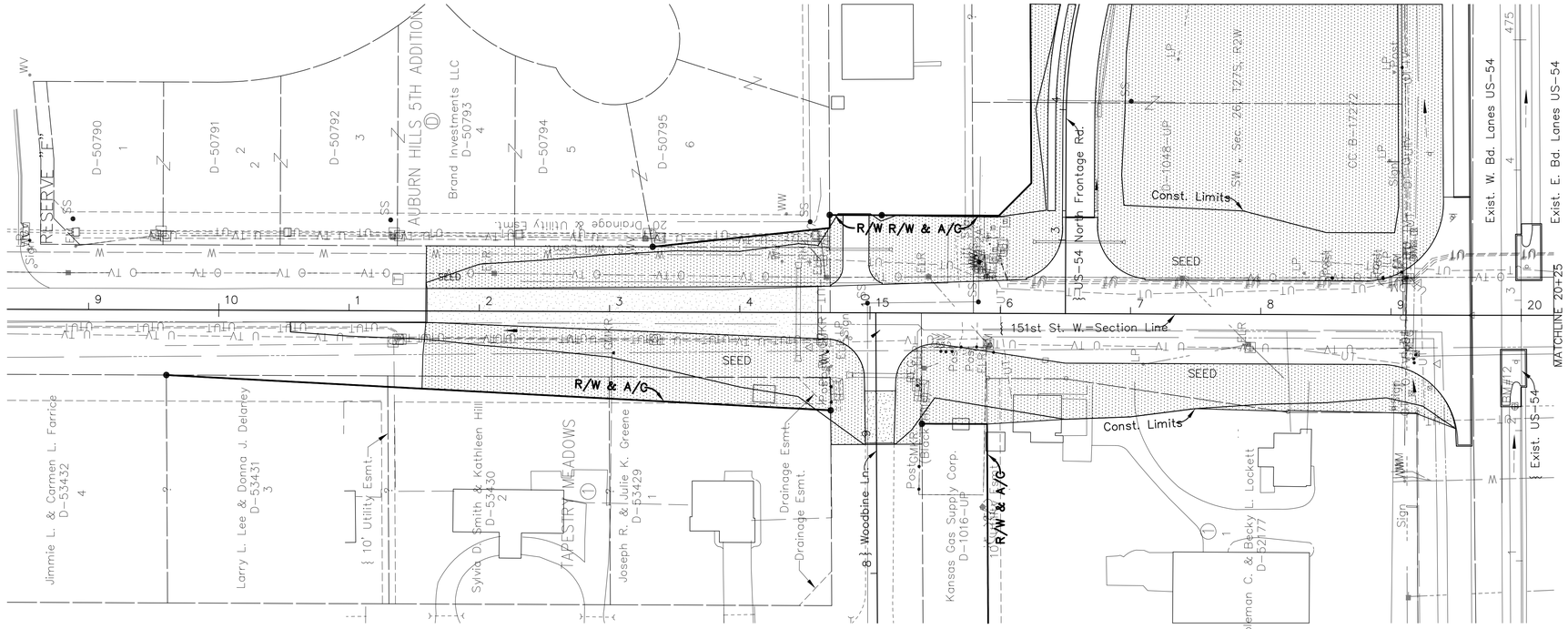
LANDSCAPE PLAN
US-54 NORTH FRONTAGE ROAD
STA. 513+00 TO STA. 518+00

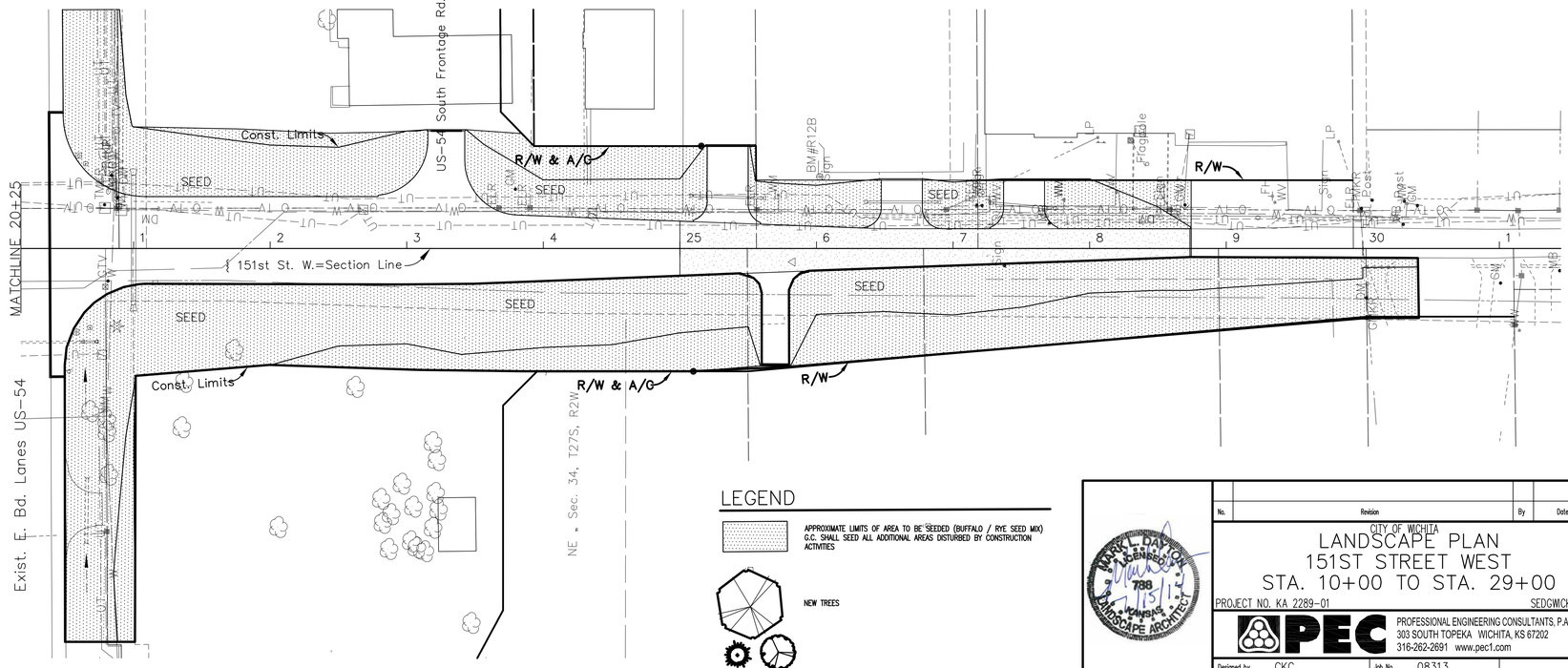
PROJECT NO. KA 2289-01 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 97 of 201
Drawn by	DRP	Date	May, 2013	

Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$





LEGEND

APPROXIMATE LIMITS OF AREA TO BE SEEDED (BUFFALO / RYE SEED MIX) G.C. SHALL SEED ALL ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

NEW TREES

GLMV Architecture
1525 E. Douglas, Wichita, KS 67211
Tel: (316) 265-9367
www.glmv.com

Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$

No.	Revision	By	Date

CITY OF WICHITA

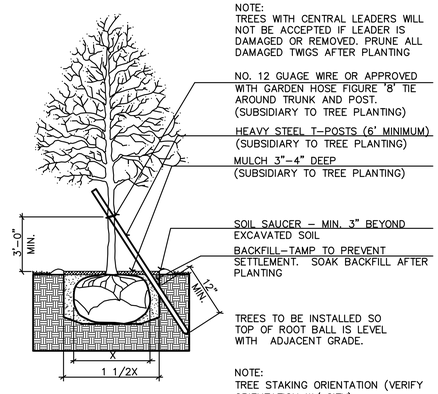
LANDSCAPE PLAN
151ST STREET WEST
STA. 10+00 TO STA. 29+00

PROJECT NO. KA 2289-01 SEDGWICK CO.

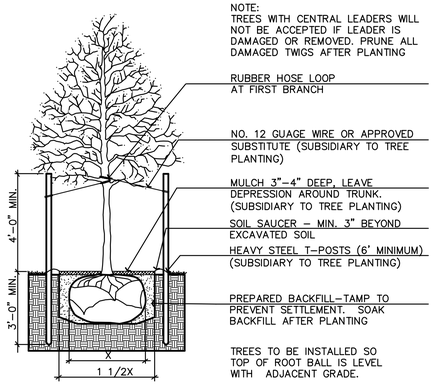
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

MARK L. DAWSON JENNINGS 788 5/15/13 KANSAS LANDSCAPE ARCHITECT

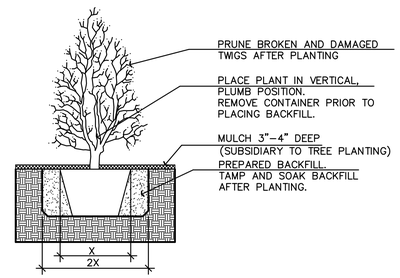
Designed by	CKC	Job No.	08313	Sht. 98 of 201
Drawn by	DRP	Date	May, 2013	



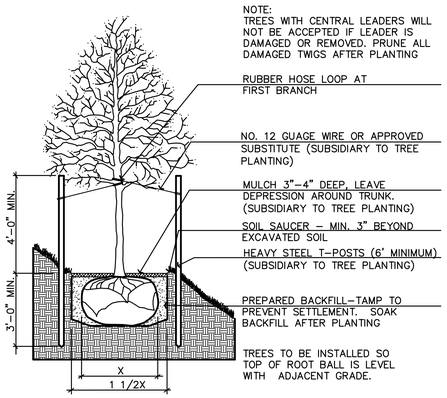
1 TREE PLANTING & STAKING DETAIL
1 3/4" CALIPER AND SMALLER — NOT TO SCALE



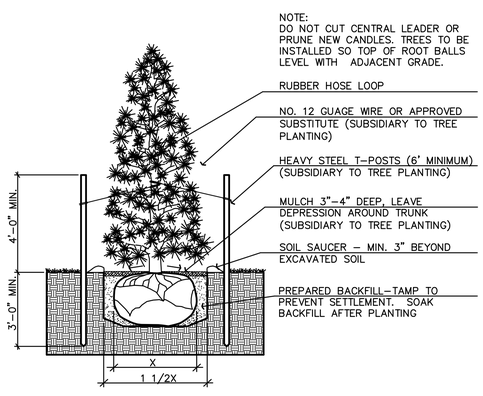
2 TREE PLANTING & STAKING DETAIL
2" CALIPER AND LARGER — NOT TO SCALE



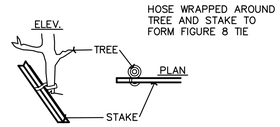
5 SHRUB PLANTING DETAIL
NOT TO SCALE



3 TREE PLANTING & STAKING DETAIL
SLOPE AREA PLANTING LARGER THAN 2" CALIPER — NOT TO SCALE



4 EVERGREEN PLANTING & STAKING DETAIL
NOT TO SCALE



6 FIGURE '8' DETAIL
NOT TO SCALE

PLANT LIST

QTY.	COMMON NAME	BOTANICAL NAME	SIZE	COND.
	TREES			
13	BUR OAK	QUERCUS MACROCARPA	2" CAL.	B & B
18	CHINESE PISTACHE	PISTACHE CHINENSIS	2" CAL.	B & B
5	PRAIRIE PRIDE HACKBERRY	CELTIS OCCIDENTALIS 'PRAIRIE PRIDE'	2" CAL.	B & B
	ORNAMENTAL TREES			
23	OKLAHOMA REDBUD	CERCIS RENIFORMIS 'OKLAHOMA'	1.5" CAL.	B & B
17	GOLDENRAIN TREE	KOELREUTERIA PANICULATA	1.5" CAL.	B & B
	EVERGREEN TREES			
17	CANAERT JUNIPER	JUNIPERUS VIRGINIANA 'CANAERTII'	1.5" CAL.	B & B

LANDSCAPE NOTES:

1. LANDSCAPE SPECIFICATIONS FOR THIS PROJECT SHALL BE STANDARD CITY OF WICHITA SPECIFICATIONS. REFERENCE SECTIONS 901-905 OF THE STANDARD SPECIFICATIONS. THE FOLOWING NOTES SHALL BE INCLUDED AS ADDITIONS TO THOSE SPECIFICATIONS.
2. GENERAL CONTRACTOR SHALL ENGAGE AN EXPERIENCED INSTALLER WHO HAS COMPLETED WORK SIMILAR IN MATERIAL, DESIGN AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL LANDSCAPE ESTABLISHMENT.
3. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF TREES INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK"
4. GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR SHALL CONDUCT A PRE-INSTALLATION CONFERENCE ON SITE PRIOR TO ANY PLANTING OR SEEDING. CONFERENCE SHALL INCLUDE PROJECT ENGINEER, LANDSCAPE ARCHITECT, AND REPRESENTATIVES FROM THE CITY OF WICHITA. PROVIDE WRITTEN NOTIFICATION TO PROJECT ENGINEER AND LANDSCAPE ARCHITECT 7 DAYS PRIOR TO CONFERENCE.
5. LANDSCAPE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO INSTALLATION. COORDINATE WITH KANSAS ONE CALL.
6. LANDSCAPE CONTRACTOR SHALL PROVIDE SOIL CONDITIONERS TO TREE PITS AS FOLLOWS:
   BACKFILL WITH 1/3 COTTON BOLL COMPOST TO 2/3 EXISTING SOIL. COTTON BOLL COMPOST SHALL BE EQUAL TO BACK TO EARTH COTTON BOLL COMPOST AS MANUFACTURED BY BACK TO EARTH RESOURCES INC., DALLAS, TEXAS. DURING BACKFILLING INCLUDE MYCORRHIZAL FUNGI "MYCOR PLANT SAVER" AS MANUFACTURED BY PLANT HEALTH CARE INC. 440 WILLIAM WAY, PITTSBURGH, PA. 1-800-421-9051 APPLY PER MFR. RECOMENDATIONS. FOR TREES LOCATED IN NON-IRRIGATED AREAS INCLUDE TERRA-SORB HYDROGEL MEDIUM GRADE AS MANUFACTURED BY PLANT HEALTH CARE INC. MIX RATIO: 2LBS PER CUBIC YARD OF BACKFILL MIX OF 1 OZ. PER EACH CUBIC FOOT OF BACKFILL MIX. FERTILIZE AS PER CITY OF WICHITA STANDARD LANDSCAPE SPECIFICATIONS. FOR SHRUB PLANTING AREAS COTTON BOLL COMPOST AND FERTILIZER SHALL BE TILLED INTO SOIL OVER ENTIRE PLANTING AREA TO A DEPTH OF SIX INCHES PRIOR TO PLANTING.
7. LANDSCAPE CONTRACTOR SHALL SUBMIT A PROJECT SCHEDULE 2 WEEKS PRIOR TO BEGINNING INSTALLATION. SCHEDULE SHALL IDENTIFY AREAS TO BE PLANTED AND SEEDED AND WHEN THE WORK WILL BE PERFORMED.
8. NO SUBSTITUTIONS SHALL BE ALLOWED WITHOUT APPROVAL.
9. QUANTITIES IN THE PLANT LIST ARE FOR INFORMATION ONLY. CONTRACTOR SHALL VERIFY.
10. ALL PLANT LOCATIONS ARE APPROXIMATE, ADJUST AS NECESSARY TO AVOID CONFLICTS.
11. REFERENCE CITY OF WICHITA LANDSCAPE SPECIFICATION (AND KANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION) FOR MULCH TYPE.
12. WHEN CLAY SOIL IS ENCOUNTERED IN THE ESTABLISHMENT OF THE LAWN OR THE INSTALLATION OF PLANT MATERIAL, SOIL SHALL BE IMPROVED IN ACCORDANCE WITH STANDARD TRADE PRACTICE. i.e. ADDITION OF LIME, GYPSUM, ETC. THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "FURNISHING & PLANTING PLANT MATERIALS."
13. THE PLANTING BEDS RECEIVING MULCH SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE PRIOR TO PLANTING AND MULCH PLACEMENT. APPLY IN ACCORDANCE WITH STANDARD TRADE PRACTICE.
14. ANY PLANTING BED ADJACENT TO WALKS OR CURBING SHALL HAVE THE GRADE LOWERED TO A SUFFICIENT DEPTH TO ALLOW THE TOP OF THE MULCH TO MATCH THE TOP OF WALK OR CURBING.
15. SEED TURF AREAS WITH SEED TYPE INDICATED ON DRAWINGS. REFERENCE CITY OF WICHITA LANDSCAPE SPECS FOR SEEDING SPECIFICATIONS.

NOTE:
UTILITIES INDICATED CONSIST OF EXISTING AND PROPOSED. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY INFORMATION. COORDINATE THROUGH KANSAS ONE CALL.

ADDITIONAL LANDSCAPE QUANTITIES

ITEM	QUANTITY	NOTES
①SEEDING AND EROSION CONTROL MAT	②78,199 SQ. YDS.	TO BE INSTALLED FROM BACK OF CURB TO LIMITS OF CONSTRUCTION AT LOCATIONS
		SHOWN ON PLANS.
SODDING	②1,118 SQ. YDS.	TO BE INSTALLED FROM BACK OF CURB TO LIMITS OF CONSTRUCTION AT LOCATIONS
		SHOWN ON PLANS.

①SEED SHALL BE A MIX OF RYEGRASS APPLIED AT A RATE OF 50 LBS. PER ACRE AND BUFFALO GRASS APPLIED AT A RATE OF 200 LBS PER ACRE. EROSION CONTROL MAT SHALL BE CURLEX I EXCELSIOR BLANKET, OR APPROVED EQUAL.

②QUANTITY SHOWN FOR INFORMATION ONLY. THE CONTRACTOR WILL BE REQUIRED TO SEED AND MAT OR SOD ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION.

GLMV Architecture
1525 E. Douglas, Wichita, KS 67211
Tel: (316) 265-9367
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Plotted By: $USERNAME$ Date: $DATE$ $TIME$
FILE: $FILE$

MARK L DAVIS LICENSED 788 KANSAS LANDSCAPE ARCHITECT 7/15/13

No.	Revision	By	Date

CITY OF WICHITA
LANDSCAPE PLAN INSTALLATION DETAILS, MATERIAL SCHEDULE, AND NOTES
PROJECT NO. KA 2285-01 — SEDGWICK CO.

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

Designed by	JDS	Job No.	08313
Drawn by	MLD	Date	MAY, 2013

Sht. 99 of 201

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	100	201

THE GENERAL NOTES:

THE GENERAL NOTES, REMOVAL NOTES AND NOTES ON THE PLAN SHEETS HAVE BEEN GENERALLY WRITTEN IN THE IMPERATIVE MOOD. THE SUBJECT ' THE CONTRACTOR' IS IMPLIED. ALSO IMPLIED IN THIS LANGUAGE ARE 'SHALL', 'SHALL BE', OR SIMILAR WORDS OR PHRASES. THE WORD 'WILL' GENERALLY PERTAINS TO DECISIONS OR ACTIONS OF THE KANSAS DEPARTMENT OF TRANSPORTATION (KDOT).

ALL WIRING AND WIRING METHODS SHALL COMPLY WITH THE MOST CURRENT NATIONAL ELECTRIC CODE STANDARDS, ANY CHANGES TO THESE STANDARDS SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.

LOCATE ALL EXISTING UTILITES PRIOR TO BEGINNING WORK.

GROUND ALL METAL PARTS OF SWITCHES, CASES, POLES AND CONDUIT USED ABOVE GROUND WITH A NO. 6 BARE WIRE.

~~PROVIDE INSPECTION OF EACH TOWER BY A FACTORY REPRESENTATIVE OF THE RAISE AND LOWER DEVICE PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE KANSAS DEPARTMENT OF TRANSPORTATION.~~

MAKE SPLICES IN THE INDUCT SECONDARY CABLE INSIDE OF TOWER BASES, POLE BASES AND JUNCTION BOXES. CONTACT THE BUREAU OF TRANSPORTATION SAFETY & TECHNOLOGY FOR APPROVAL OF OTHER SPLICE LOCATIONS.

~~A REPRESENTATIVE FROM THE KANSAS DEPARTMENT OF TRANSPORTATION'S REGIONAL MATERIALS LAB WILL VISUALLY INSPECT ALL TOWERS AND COMPLETE A TEST REPORT PRIOR TO ASSEMBLY.~~

~~PROVIDE WELD PROCEDURE NUMBERS FOR THE DIFFERENT TYPES OF WELDS ON THE SHOP DRAWINGS FOR LIGHTING TOWERS. INCLUDE THE KDOT LAB NUMBER UNDER WHICH THESE WELD PROCEDURES HAVE BEEN APPROVED.~~

~~OZ EXPANSION JOINTS SHALL BE INSTALLED IN THE CONDUIT RUNS AT ALL BRIDGE EXPANSION JOINTS.~~

FURNISH AND INSTALL LIGHTING EQUIPMENT, ~~INCLUDING TOWERS, CONCRETE BASES FOR TOWERS,~~ ANCHOR BOLTS, LUMINAIRES, LAMPS, WIRING, CONDUIT, CONDUIT FITTINGS, SUPPORTS, INTERCONNECTIONS, GROUND RODS, AND ALL INCIDENTIALS NECCESSARY FOR THE COMPLETE INSTALLATION WITHIN THE LIMITS SHOWN ON THE PLANS. FURNISH AND INSTALL ALL EQUIPMENT NECESSARY FOR SATISFACTORY OPERATION, WHETHER SPECIFICALLY MENTIONED OR NOT.

PLOW OR TRENCH AND BACKFILL UNDERGROUND CONDUCTOR INDUCT APPROXIMATELY 2 FT. BELOW GROUNDLINE. BACKFILL IN ALL AREAS SHALL BE FREE OF RUBBLE AND ROCK.

FINAL LOCATION FOR ENCLOSURE INSTALLATION(S) IS/ARE TO BE DETERMINED BY THE ENGINEER IN CHARGE. POSITION THE ENCLOSURE(S) SO THAT THE PHOTOCELL(S) IS/ARE POINTED DUE NORTH.

~~THE FOLLOWING COMPANIES HAVE A RAISE AND LOWERING DEVICE THAT HAS BEEN ACCEPTED BY THE KANSAS DEPARTMENT OF TRANSPORTATION: AMERICAN HIGH MAST, EAGLE HIGH MAST LIGHTING CO., CAROLINA HIGH MAST, HALOPHANE, METROLUX AND STRATUS. ADDITIONAL COMPANIES DESIRING APPROVAL BY THE KDOT MUST INSTALL ONE RAISE AND LOWERING DEVICE ON A POLE PROVIDED BY THE KDOT IN TOPEKA, OR ON ANOTHER POLE AS APPROVED. THE INSTALLATION WILL BE REVIEWED AND TESTED BY KDOT PRIOR TO APPROVAL ON THIS PROJECT. ALL ASSOCIATED COSTS WILL BE THE RESPONSIBILITY OF THE MANUFACTURERS/CONTRACTORS.~~

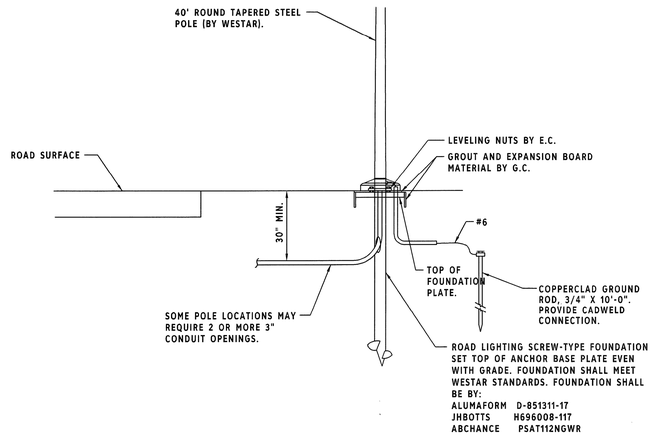
THE FOLLOWING COMPANIES HAVE SCREW-IN LIGHT POLE FOUNDATIONS THAT HAVE BEEN ACCEPTED BY THE KANSAS DEPARTMENT OF TRANSPORTATION : A.B. CHANCE COMPANY AND J.H. BOTTS, INC. ADDITIONAL COMPANIES DESIRING APPROVAL BY KDOT MUST SUBMIT DESIGN COMPUTATIONS AND CATALOG CUTS TO THE KANSAS DEPARTMENT OF TRANSPORTATION, BUREAU OF TRANSPORTATION SAFETY & TECHNOLOGY, EISENHOWER BUILDING, 700 SW HARRISON, 6TH FLOOR, TOPEKA, KS 66603-3754.

DUE TO SOIL CONDITIONS IN ALL OR PART OF THE FOLLOWING COUNTIES, SCREW-IN LIGHT POLE FOUNDATIONS MAY ONLY BE USED FOR ROADWAY LIGHTING UPON APPROVAL BY THE KANSAS DEPARTMENT OF TRANSPORTATION, BUREAU OF TRANSPORTATION SAFETY & TECHNOLOGY: BOURBON, CRAWFORD, CHEROKEE, LABETTE, MEADE, CLARK, COMANCHE, KIOWA, BARBER, HARPER, AND KINGMAN. SCREW-IN FOUNDATIONS SHALL NOT BE INSTALLED IN DISTRICT ONE.

~~ALL ATTACHMENTS TO BRIDGES SHALL HAVE A HIGHWAY RIGHT OF WAY PERMIT (DOT304) AND UTILITY ATTACHMENT PERMIT (DOT 310) APPROVED BEFORE WORK BEGINS, IN ACCORDANCE WITH CURRENT KANSAS DEPARTMENT OF TRANSPORTATION UTILITY ACCOMMODATION POLICY~~.

LEGEND

- 40 FT. GROUND MOUNTED LIGHTING STANDARD WITH (1) 250W HPS COBRA HEAD LUMINAIRE (PROVIDED BY OTHERS)
- ~~TOWER AND LUMINAIRE TO BE INSTALLED~~
- 3" SCHEDULE 80 PVC TO BE INSTALLED WITH PULL ROPE
- 3" METALLIC CONDUIT TO BE INSTALLED (UNDER ROAD/DRIVE)
- ENCLOSURE TO BE INSTALLED
- ~~JUNCTION BOX TO BE INSTALLED~~
- ~~SERVICE POLE TO BE INSTALLED~~
- EXISTING POWER POLE



1 **LIGHTING POLE DETAIL**
NO SCALE

NO.	DATE	REVISIONS	BY	APP'D
3	1/12/12	Fixed Typo's	C.E.	B.D.G.
2	6/14/11	Changed to 3" Schedule 80 PVC	V.V.H.	V.V.H.
1	3/23/11	Current Release	V.V.H.	V.V.H.

KANSAS DEPARTMENT OF TRANSPORTATION

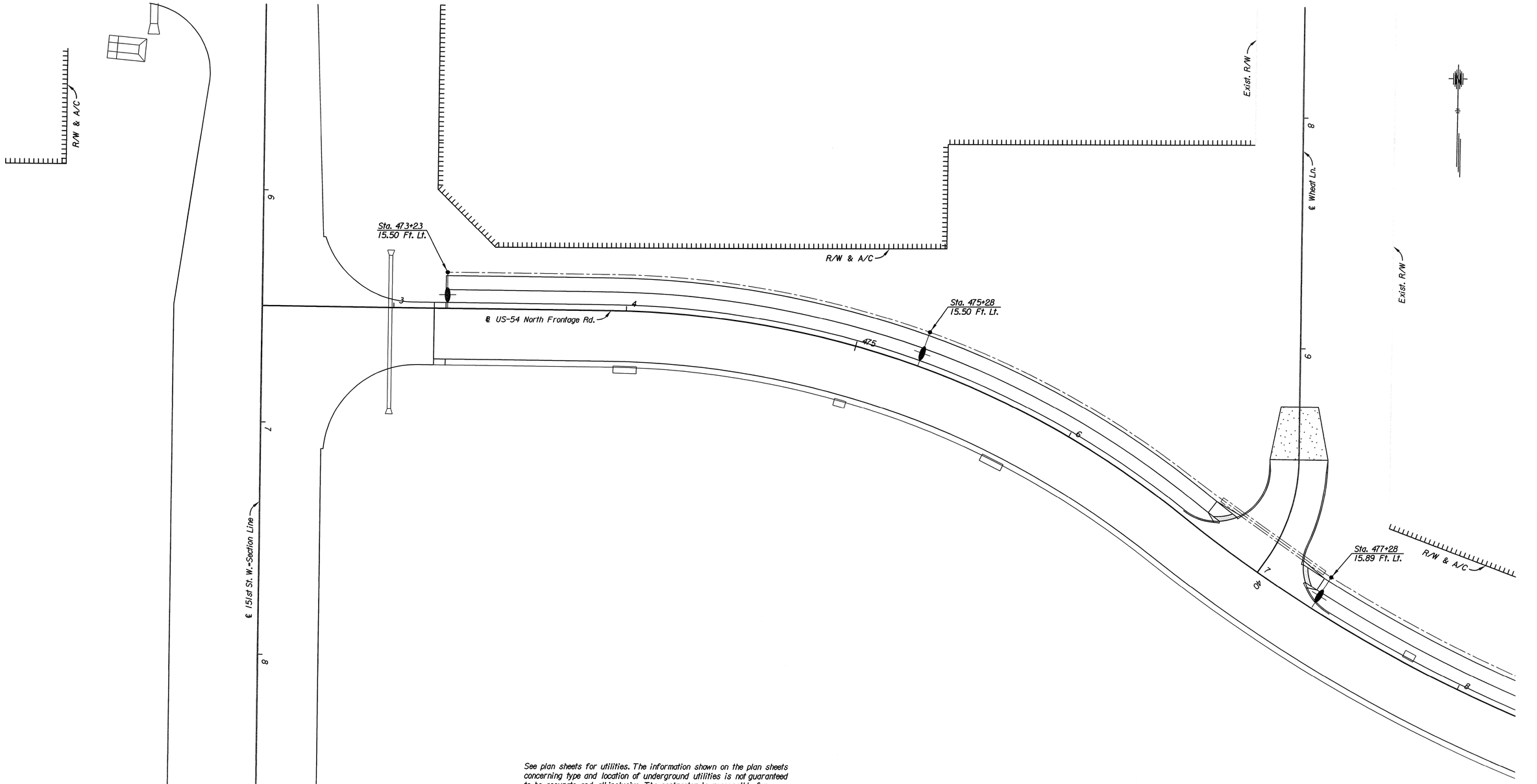
GENERAL NOTES

~~TE200b~~

FHWA APPROVAL					APP'D	
DESIGNED	C.E.	DETAILED	C.E.	QUANTITIES		TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.		TRACE CK.

SHAWN M. SCHRADER LICENSED 13340 8-1-14 KANSAS PROFESSIONAL ENGINEER

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See plan sheets for utilities. The information shown on the plan sheets concerning type and location of underground utilities is not guaranteed to be accurate and all inclusive. The contractor is responsible for making his own verification as to the type and location of underground utilities as may be necessary to avoid damage thereto. The contractor is responsible for repairing any damage that he incurs to any existing underground utilities.

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

SHAWN M. SCHRADER
13340
KANSAS
PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA

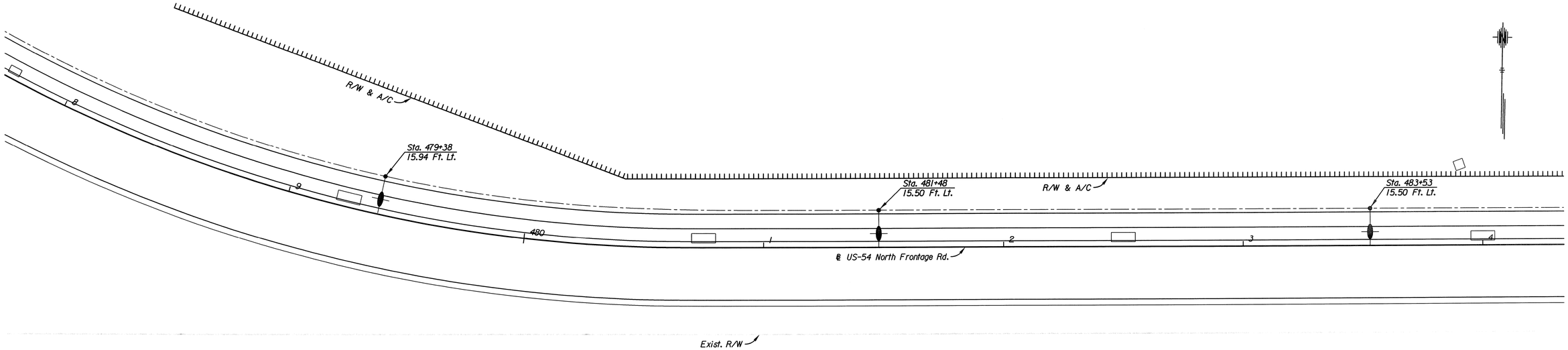
LIGHTING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 472+43.44 TO STA. 478+00

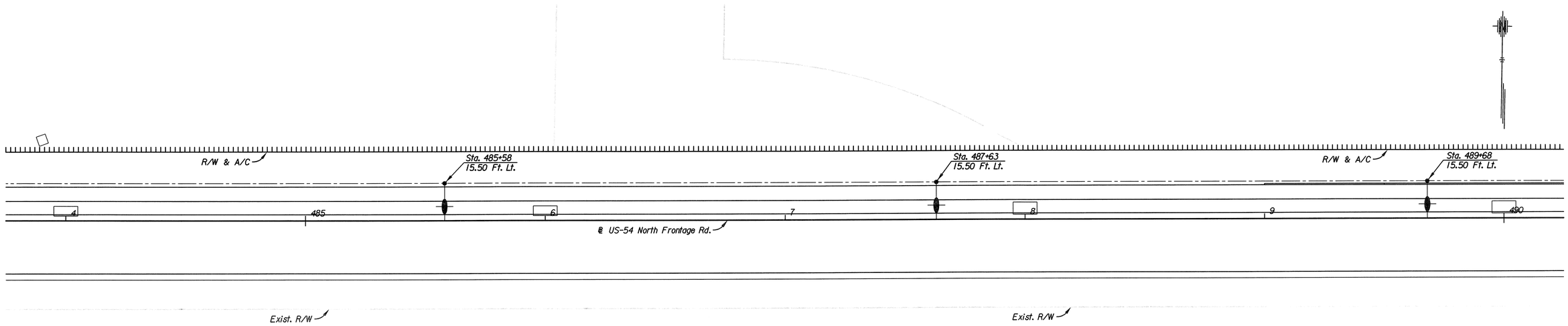
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 101 of 201
Drawn by	DRP	Date	June, 2014	

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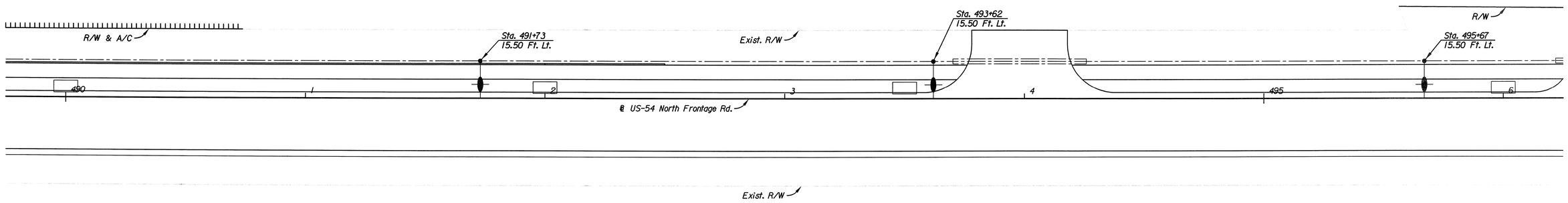
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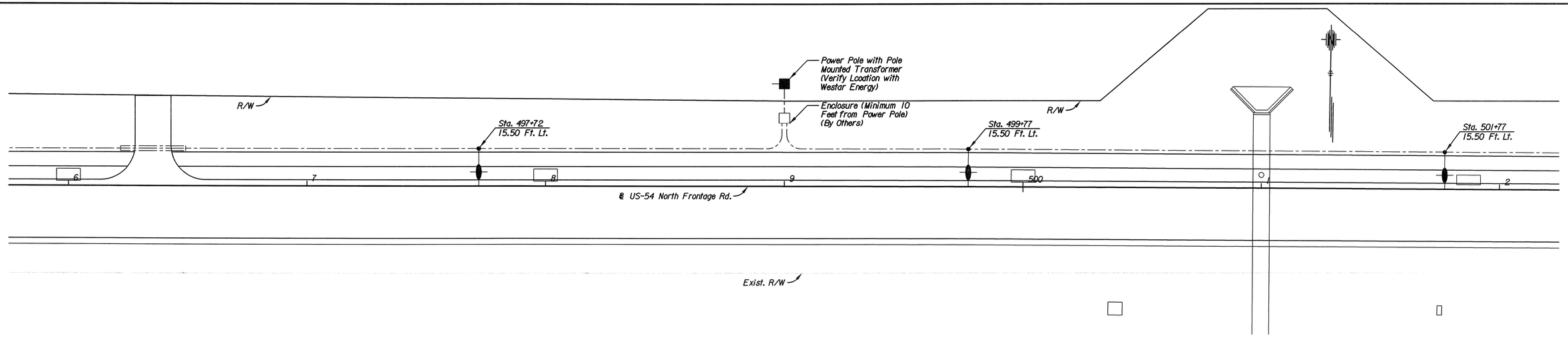
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SHAWN M. SCHRADER LICENSED PROFESSIONAL ENGINEER 13340 8-1-14 KANSAS PROFESSIONAL ENGINEER

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Drawn by	DRP	Date	June, 2014	





No.	Revision	By	Date

CITY OF WICHITA

LIGHTING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 490+00 TO STA. 502+00

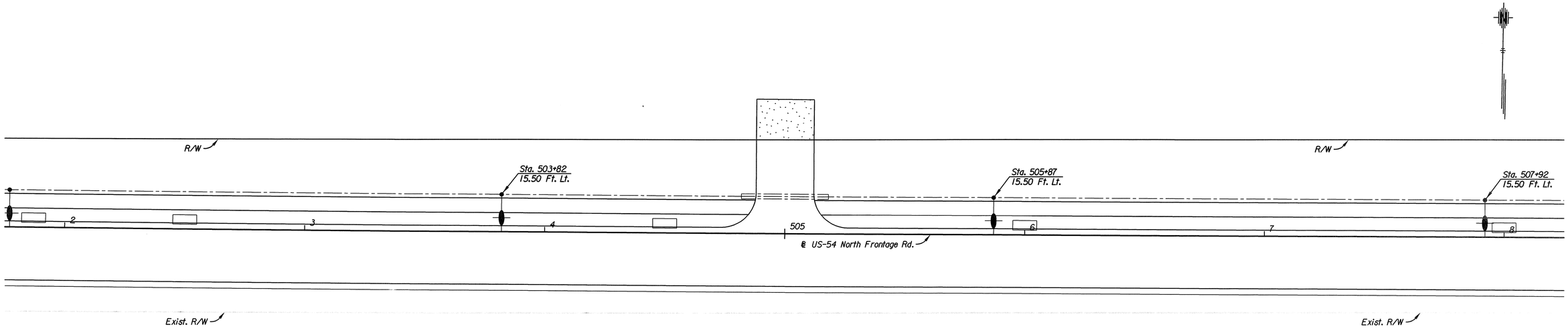
PROJECT NO. 472-84840 SEDGWICK CO.

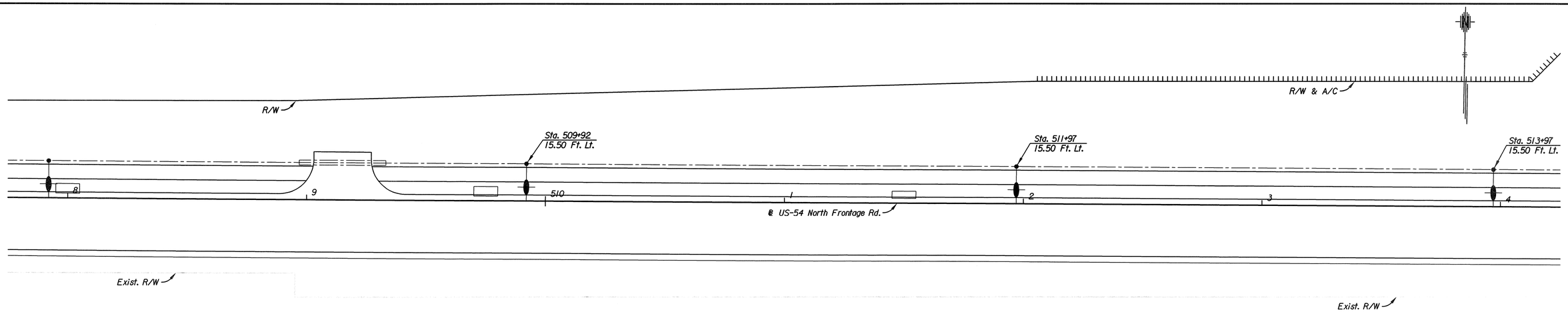
SHAWN M. SCHRADER
13540
8-1-14
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Drawn by	DRP	Date	June, 2014	

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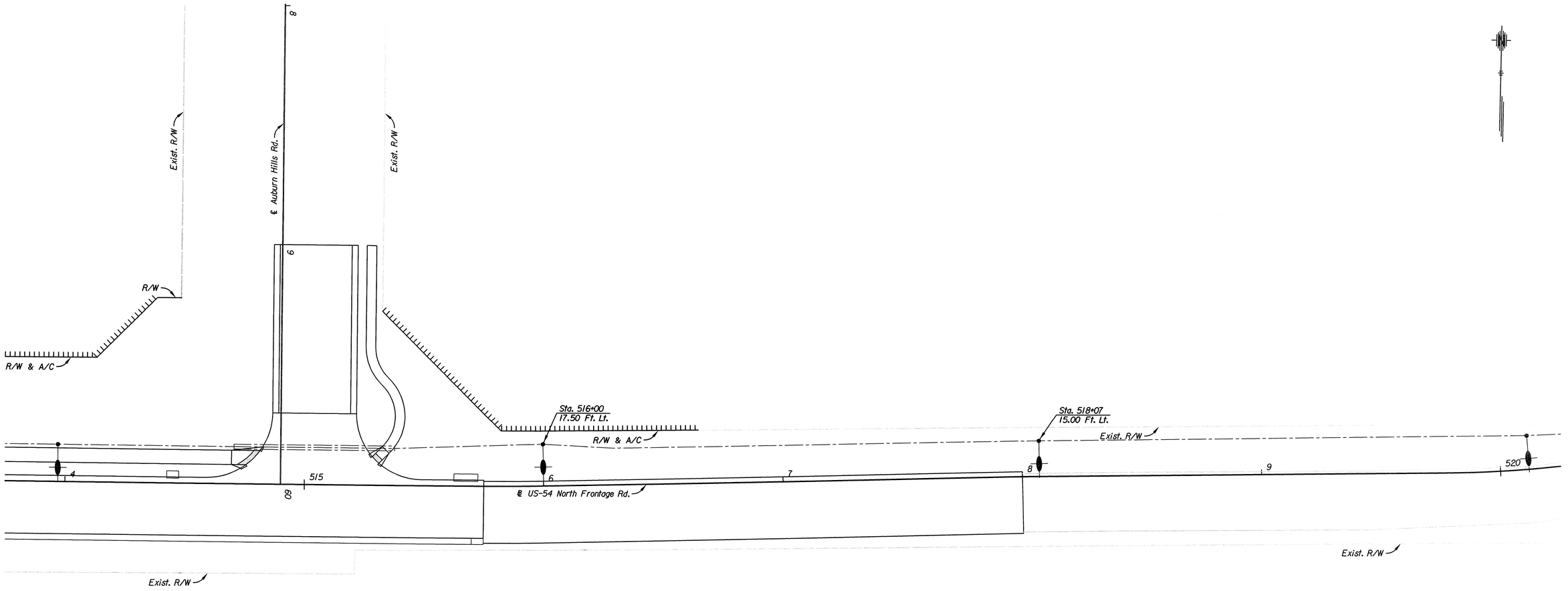
LIGHTING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 502+00 TO STA. 514+00

PROJECT NO. 472-84840 SEDGWICK CO.

JOSHAWN M. SCHRADER — 13340 — 8-1-14 — KANSAS — PROFESSIONAL ENGINEER

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Designed by	CKC	Job No.	08313	Sht. 104 of 201
Drawn by	DRP	Date	June, 2014	



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SHAWN M. SCHRADER
LICENSED
12-31-14
KANSAS
PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA

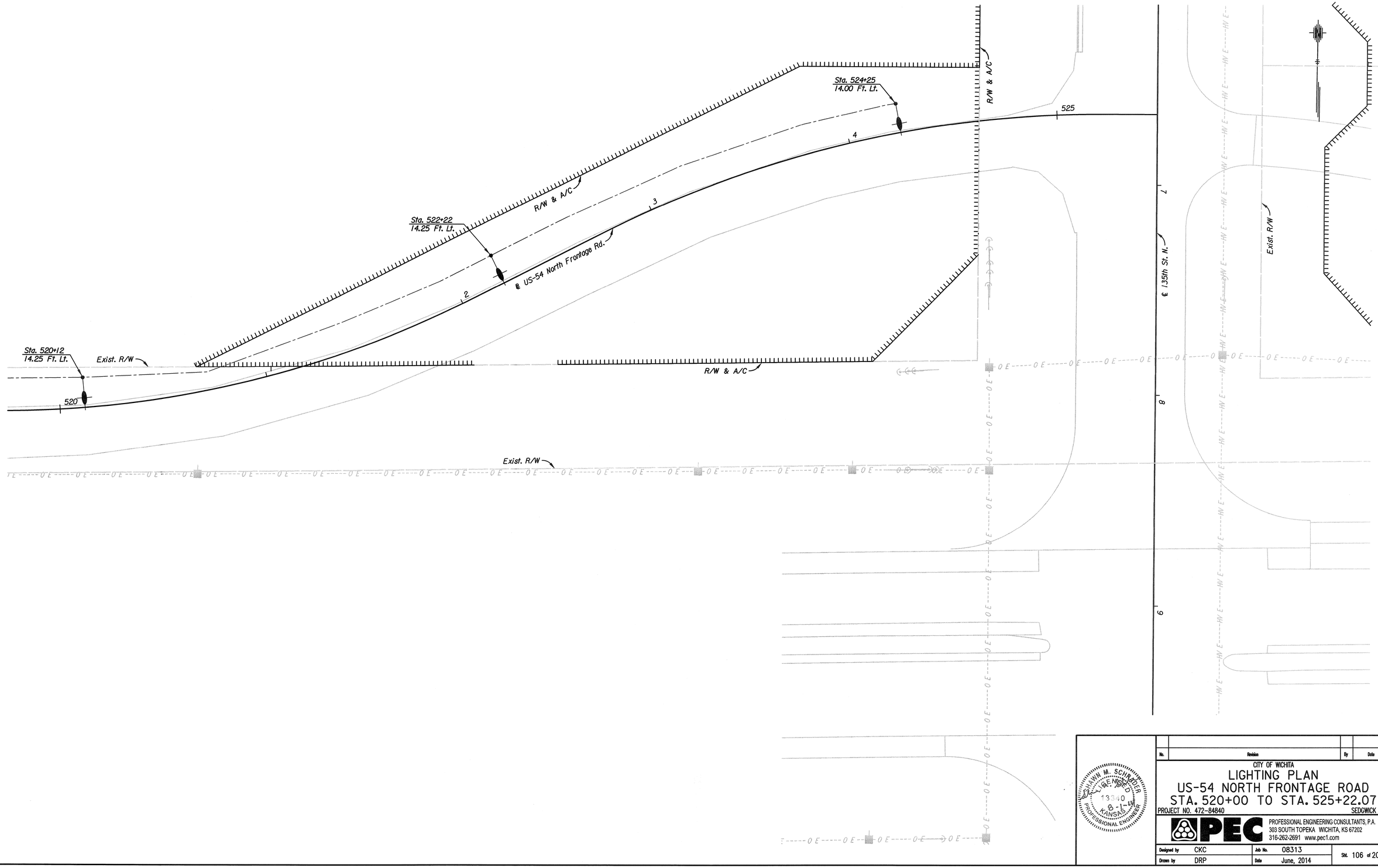
LIGHTING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 514+00 TO STA. 520+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Drawn by	DRP	Date	June, 2014

Sht. 105 of 201



No.	Revision	By	Date

CITY OF WICHITA

LIGHTING PLAN
US-54 NORTH FRONTAGE ROAD
STA. 520+00 TO STA. 525+22.07

PROJECT NO. 472-84840 SEDGWICK CO.

SHAWN M. SCHNEIDER LICENSED PROFESSIONAL ENGINEER 13340 KANSAS

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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Designed by	CKC	Job No.	08313	Sht. 106 of 201
Drawn by	DRP	Date	June, 2014	

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	107	201

NOTE:
WHENEVER THE PLAN SPECIFICATIONS CONFLICT WITH THE STANDARD KANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST EDITION, THE PLAN SPECIFICATIONS SHALL GOVERN.

CONSTRUCTION:
LIGHT STANDARDS SHALL BE DESIGNED TO COMPLY WITH THE 2009 EDITION OF THE AASHTO PUBLICATION, STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR THE HIGHWAY SIGNS, LUMINAIRES, TRAFFIC SIGNALS, AND CURRENT INTERIMS. USE FATIGUE CATEGORY II. SEE STANDARD SPECIFICATIONS, LATEST EDITION, SECTION 814.

LIGHT STANDARDS:
(A) STEEL STANDARDS: THE LIGHT STANDARDS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM 607 WITH THE EXCEPTIONS AND/OR ADDITIONS AS LISTED IN THE STANDARD KANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST EDITION, SECTION 1608.2. THE LIGHT STANDARDS WITH 40' MOUNTING SHALL BE ONE (1) SECTION. THE DIAMETER OF THE STANDARDS SHALL BE SHOWN ON THE DETAIL SHEETS.

(a) BASE: THE BASE SHALL BE EITHER A ONE (1) PIECE STEEL BASE COMPLYING WITH THE REQUIREMENTS OF ASTM A-27, GRADE 65-35, A STEEL FORGED BASE COMPLYING WITH THE REQUIREMENTS OF ASTM A-668, CLASS C OR A PLATE BASE COMPLYING WITH THE REQUIREMENTS OF ASTM A 36-77A. THE BASE SHALL BE SECURED TO THE BOTTOM SECTION BY TWO (2) CONTINUOUS ELECTRIC ARC WELDS.

(b) MAST ARMS: THE MAST ARMS SHALL BE FABRICATED FROM 2" STANDARD PIPE MEETING THE REQUIREMENTS OF ASTM A-53 OR ASTM A-35.

(c) FINISH: THE BASE, MAST ARMS, AND LIGHT STANDARDS SHALL BE GALVANIZED ACCORDING TO ASTM A-123.

(B) ALUMINUM STANDARDS: STANDARDS SHALL CONFORM TO THE PLAN DRAWINGS AND SPECIFICATIONS. THE SHAFT SHALL BE SPUN FROM ONE PIECE OF SEAMLESS TUBING (ASTM B-429) ALUMINUM ASSOCIATION ALLOY 6063-T6, WITH MINIMUM NOMINAL WALL THICKNESS OF 0.312 INCH FOR 40' MOUNTING HEIGHT. AFTER FABRICATION IT SHALL HAVE MECHANICAL STRENGTH OF NOT LESS THAN T6 TEMPER. THE SHAFT SHALL HAVE NO LONGITUDINAL NOR CIRCUMFERENTIAL WELDS EXCEPT AT THE LOWER END JOINING THE SHAFT TO THE BASE.

(a) BASE: A ONE-PIECE CAST ALUMINUM (ASTM B-108 ALLOY S.G. 70A-T6) ANCHOR BASE OF ADEQUATE STRENGTH, SHAPE AND SIZE BE SECURED TO THE LOWER END OF THE SHAFT BY TWO (2) CONTINUOUS WELDS. THE BASE SHALL TELESCOPE THE SHAFT AND THE ONE WELD SHALL BE ON THE INSIDE OF THE BASE AT THE END OF THE SHAFT WHILE THE OTHER WELD SHALL BE ON THE OUTSIDE AT THE TOP OF THE BASE. (THE TWO (2) WELDS SHALL DEVELOP THE DESIGN STRENGTH OF THE POLE ASSEMBLY.)

(b) MAST ARMS: SINGLE MEMBER TYPE: THE BRACKET ARM ASSEMBLY SHALL CONSIST OF A TAPERED ALUMINUM ARM, ELLIPTICAL IN SHAPE AT THE POLE END AND TAPERING TO A MINIMUM OF 2 1/4" O.D. AT THE LUMINAIRE END, MADE OF (ASTM B-429) ALUMINUM ASSOCIATION ALLOY 6063-T6 TUBING.

TRUSS TYPE MEMBER: THE UPPER AND LOWER MEMBERS SHALL BE 2" IPS ALUMINUM PIPE, (ASTM B-429) ALUMINUM ASSOCIATION ALLOY 6063-T6.

(c) FINISH: ALL HARDWARE (BOLTS, NUTS, AND WASHERS - BUT NOT INCLUDING ANCHOR BOLTS) NOT OTHERWISE SPECIFICALLY DESIGNATED IN THE SPECIFICATIONS, SHALL BE ALUMINUM OR STAINLESS STEEL. ALL MATERIALS SHALL BE FURNISHED IN NATURAL ALUMINUM COLOR, POLE SHAFTS SHALL BE FURNISHED WITH A POLISHED SURFACE.

ELECTRICAL MATERIAL:

(A) PHOTO CELL: PHOTO-ELECTRIC CONTROL SHALL BE SOLID STATE TYPE, 1000 W/1800 VA, SINGLE POLE, SINGLE THROW, TWIST LOCK MOUNTING, 105 TO 300 VOLT OPERATION. THE OPERATING LEVELS SHALL BE 1.6 FT. C. ON AND 0.4 FT. C. OFF, WITH AN ALLOWABLE 0.5 FT. C. VARIANCE ON OR OFF. THE PHOTO-ELECTRIC CONTROL SHALL HAVE A MINIMUM OF 30 SECOND TIME DELAY AND FAIL IN THE ON MODE.

(B) DUCT: THE DUCT FOR SECONDARY CABLE UNDERGROUND SHALL BE POLYETHYLENE DUCT WITH MINIMUM TENSILE STRENGTH OF 3100 PSI DUCT TO PROVIDE FOR 40% MAXIMUM FILL. THE DUCT SIZED SHALL MEET ASTM D3485 (LATEST REVISION).

(C) CONDUCTOR: CONDUCTOR SHALL BE STRANDED ANNEALED COPPER MEETING THE REQUIREMENTS OF ASTM B-8 AND ASTM B-33.

(a) SECONDARY CABLE (INDUCT): SECONDARY CABLE SHALL BE COPPER SINGLE CONDUCTOR CABLE FOR OPERATION AT 600 VOLTS MAXIMUM. MATERIAL SHALL MEET THE APPLICABLE REQUIREMENTS OF ICEA STANDARD S-105-692 AND LISTED BY UL AS TYPE USE-2 FOR DIRECT BURIAL.

(D) LUMINAIRES: ALL LUMINAIRES SHALL BE SUPPLIED WITH HIGH POWER FACTOR BALLAST.

150 WATT LUMINAIRES: 150 WATT LUMINAIRES SHALL HAVE A HOUSING OF ALUMINUM ALLOY CASTING WITH AN INTEGRAL SLIPFITTER FOR A 2 INCH BRACKET MOUNTING WITH A NATURAL UNPAINTED ALZAK ALUMINUM REFLECTOR. THE BALLASTS SHALL BE A VOLTAGE AUTO-REGULATOR TYPE FOR HIGH PRESSURE SODIUM AT A VOLTAGE OF 480 VOLTS. THE REFRACTORS SHALL BE ACRYLIC WITH TYPE III LIGHT DISTRIBUTION.

(E) SODIUM LUMINAIRE IGNITORS: ALL HPS LUMINAIRES SHALL BE EQUIPPED WITH THE FOLLOWING:

HIGH PRESSURE SODIUM IGNITORS: ELECTRONIC IGNITOR FOR THE IGNITION OF HIGH PRESSURE SODIUM (HPS) VAPOR LAMPS. THE IGNITOR SHALL BE DESIGNED TO DIRECT THE HIGH VOLTAGE SPIKE DIRECTLY TO THE LAMP WITHOUT BEING DIRECTED TO THE LAMP THROUGH THE BALLAST WINDINGS. THE IGNITOR SHALL BE CAPABLE OF BEING USED WITH ALL BRANDS AND TYPES OF 60 HERTZ HPS BRANDS. THE IGNITOR SHALL BE DESIGNED SO THAT CYCLING OR EXTINGUISHED LAMP SHALL NOT ADVERSELY AFFECT THE IGNITOR OR BALLAST. THE IGNITOR SHALL BE BE TOTALLY EPOXY ENCAPSULATED IN A METAL CAN AND SHALL BE OPEN CIRCUIT TESTED FOR A PERIOD OF 48 HOURS WITH POWER APPLIED AT ELEVATED TEMPERATURES TO 100°C WITH CONSTANT MONITORING OF CASE TEMPERATURES. THE IGNITOR SHALL HAVE A TWO (2) MINUTE TIME DELAY. IF THE LAMP DOES NOT START, THE IGNITOR WILL BE SHUT OFF UNTIL THE POWER TO THE LUMINAIRES IS RESET BY THE PHOTO CONTROL. THE IGNITOR SHALL BE WARRANTED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN FIVE (5) YEARS FROM THE SHIPPING DATE.

(F) LAMPS: (a) 150 WATT LAMPS: 150 WATT LAMPS SHALL BE 16,000 LUMEN, HIGH PRESSURE SODIUM.

(G) ENCLOSURE: THE ENCLOSURE CABINET SHALL BE CONSTRUCTED OF 5052 ALLOY ALUMINUM 0.125" THICK. THE CABINET SHALL BE OF CLEAN CUT DESIGN HAVING NO SHARP EDGES, CORNERS OR PROJECTIONS. THE CIRCUITING SHALL BE SERVICEABLE BY MEANS OF A FULL LENGTH HINGED DOOR WITH PADLOCK PROVISIONS. THE ENCLOSURE SHALL HAVE 600 VOLT RATED MOLDED CASE MAIN AND SECONDARY BREAKERS, TWIST-LOCK PHOTO-CELL SOCKET, AND ELECTRICALLY HELD CONTACTORS. THE EQUIPMENT WITHIN THE ENCLOSURE SHALL BE WIRED PRIOR TO DELIVERY. THE ENCLOSURE SHALL HAVE A METER VIEW WINDOW AND A GLASS TO ALLOW LIGHT TO THE PHOTO-CELL.

(a) MAIN AND SECONDARY BREAKERS: THE MAIN AND SECONDARY BREAKERS SHALL HAVE A MOUNTING DIMENSIONS OF 1 3/8" WIDE X 4 1/2" HIGH MOUNTING HOLES SHALL BE POSITIONED TO ACCOMMODATE A BREAKER 2 3/4" WIDE SIDE BY SIDE. SEE ENCLOSURE DETAIL SHEET.

GENERAL MATERIALS AND NOTES:

(A) MISCELLANEOUS HARDWARE: MISCELLANEOUS HARDWARE THAT REQUIRES GALVANIZING OR ELECTROPLATING SHALL CONFORM TO THE STANDARD KANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST EDITION, SECTION 1703.2 (c).

(B) METALLIC CONDUIT: METALLIC CONDUIT SHALL BE RIGID STEEL CONDUIT MEETING THE REQUIREMENTS OF AMERICAN STANDARD SPECIFICATION C-80.1. TRENCHING FOR CONDUIT WILL NOT BE PERMITTED THROUGH EXISTING PAVEMENT. JACKING WILL NOT BE PERMITTED IN DISTRICT ONE UNLESS APPROVED BY THE ENGINEER IN CHARGE OF CONSTRUCTION.

(C) METALLIC CONDUIT FITTINGS: METALLIC CONDUIT FITTINGS SHALL BE ZINC COATED AND SHALL MEET THE REQUIREMENTS OF AMERICAN STANDARD SPECIFICATION C-80.1.

(D) NON-METALLIC CONDUIT: D.1 RIGID POLYVINYL CHLORIDE MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATIONS NO. LP 1036A, TYPE II, ELECTRICAL CLASS 2, GRADE C. EACH LENGTH SHALL BEAR THE UNDERWRITERS, INC. LABEL. NON-METALLIC CONDUIT FITTINGS SHALL BE FABRICATED FROM POLYVINYL CHLORIDE HAVING THE SAME CHEMICAL AND PHYSICAL PROPERITIES AS THE CONDUIT WITH WHICH IT IS TO BE USED. EACH SHALL BEAR THE UNDERWRITERS, INC. LABEL. THE JOINTS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

D.2. HIGH DENSITY POLYETHYLENE (HDPE) MEETING THE REQUIREMENTS OF ASTM F 2160 AND ASTM F 2176. A LETTER OF CERTIFICATION (LOC) WILL BE REQUIRED FROM THE CONDUIT PRODUCER AND/OR RESIN PRODUCER. THE CONDUIT WILL NEED TO BE MARKED WITH ASTM F 2160 DESIGNATION ON THE PRINT LINE.

(E) GROUND: GROUND WIRE SHALL BE A #6 AWG SOLID BARE COPPER WIRE AND ARRANGEMENT SHALL BE AS NOTED ON PLANS.

(F) ANCHOR BOLTS: ANCHOR BOLTS SHALL CONFORM TO THE STANDARD KANSAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST EDITION, SECTION 1600 (GRADE 55), WITH THE FOLLOWING EXCEPTION. DO NOT USE CUT THREADS, USE ROLLED THREADS.

(G) BREAK-AWAY CABLE CONNECTORS: THE CONNECTORS SHALL PROVIDE A FUSED WATERPROOF WIRING CONNECTION THAT WHEN SUBJECTED TO STRAIN CONSISTANT WITH A KNOCKDOWN WILL SEPARATE WITHOUT DAMAGE TO WIRING. WHEN SEPARATION OCCURS, THE CONNECTORS SHALL HAVE NO CONTACTS EXPOSED TO PRESENT A SHOCK HAZARD. THE CABLE CONNECTORS SHALL MEET AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (LATEST EDITION), ARTICLE 12.5.3 (C). CONNECTOR INSTALLATION SHALL BE AS DIRECTED BY THE MANUFACTURER.

(H) FRANGIBLE BASE: FRANGIBLE BASE SHALL BE CAST ALUMINUM TO MEET THE STANDARDS OF THE LATEST AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, AND TRAFFIC SIGNALS. THE FRANGIBLE BASE SHALL ACCOMMODATE UP TO A 15" BOTTOM BOLT CIRCLE. THE FRANGIBLE BASE SHALL HAVE HIGH DENSITY PLASTIC DOORS. THE COLOR SHALL BE PIGMENTED THROUGHOUT TO GIVE THE APPEARANCE OF ALUMINUM. THE DOORS SHALL WITHSTAND TEMPERATURE EXTREMES OF -70° TO 150° F. AND ARE COMPOUNDED WITH U.V. INHIBITORS.

(I) JUNCTION BOXES (IN-GROUND): THE JUNCTION BOX SHALL BE OF SUFFICIENT SIZE TO FACILITATE THE CONDUIT AND WIRING AS INDICATED IN THE PLANS. JUNCTION BOXES SHALL HAVE THE MINIMUM NOMINAL DIMENSIONS OF 12 INCHES DEEP WITH A MINIMUM PHYSICAL OPENING OF 130 SQUARE INCHES. IN-GROUND JUNCTION BOXES MAY BE CONSTRUCTED OF ONE OF THE FOLLOWING METHODS:

PRE-CAST CONCRETE WITH A CAST IRON COVER; POLYMER CONCRETE WITH A POLYMER CONCRETE COVER; FIBERGLASS REINFORCED POLYMER BODY WITH A POLYMER CONCRETE RING AND COVER; HIGH DENSITY POLYETHYLENE BODY WITH POLYMER CONCRETE RING AND COVER. THE RING SHALL BE SECURELY ATTACHED TO THE BODY.

ENCLOSURES, BOXES AND COVERS ARE REQUIRED TO CONFORM TO ALL TEST PROVISIONS OF ANSI/SCTE 77 2002 "SPECIFICATION FOR UNDERGROUND INTEGRITY" FOR TIER 15 APPLICATIONS.

THE COVER SHALL BEAR THE LOGO "TRAFFIC SIGNAL" CLEARLY AND PERMANENTLY MOLDED OR ETCHED INTO THE COVER.

JUNCTION BOXES (ABOVE-GROUND): ABOVE GROUND JUNCTION BOXES SHALL HAVE THE NOMINAL DIMENSIONS OF 12 INCHES BY 12 INCHES BY 6 INCHES. THE JUNCTION BOX SHALL BE MADE OF 14 GAUGE SHEET METAL(STEEL) WITH WELDED SEAMS, KNOCKOUTS AND WEATHER PROOF SCREW COVER. BOXES SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A-123 AFTER FABRICATION.

(J) WEDGE TYPE STUD BOLT ANCHORS: THE CONTRACTOR SHALL INSTALL TWO 3/8" X 3" WEDGE TYPE ANCHORS FOR CONDUIT CLAMPS. THE ANCHORS SHALL BE WEDGE TYPE MADE FROM CARBON STEEL MEETING AISI 12L14 STEEL. THE MINIMUM EMBEDDED DEPTH SHALL BE 1 3/4".

(K) CONDUIT CLAMPS WITH CLAMP BACKS: THE CONTRACTOR SHALL INSTALL 2" CONDUIT CLAMPS WITH A COMPATIBLE CLAMP BACK. CLAMPS SHALL BE HEAVY DUTY STEEL TO SECURE THE 2" RIGID CONDUIT TO STRUCTURE. CONDUIT CLAMPS ARE TO BE SPACED AT 6' INTERVALS.

(L) CABLE GRIP SUPPORTS: THE CONTRACTOR SHALL INSTALL ONE (1) CABLE SUPPORT GRIP IN EACH ROADWAY LIGHTING POLE. THE CABLE SUPPORT GRIP SHALL BE MADE OF HIGH GRADE, NON-MAGNETIC TIN COATED BRONZE STRAND. THE CABLE SUPPORT GRIP SHALL BE CAPABLE OF SECURING TWO (2) #10 AWG TYPE USE-2 CABLES IN A VERTICAL POSITION HOLDING THE WEIGHT OF THE CABLES AND CABLE CONNECTORS OFF THE LUMINAIRE ASSEMBLY. SEE ROADWAY LIGHTING DETAILS SHEET.

(M) ALL WELDS SHALL BE SMOOTH CLEAN DENSE DEPOSIT THAT WILL EXCLUDE MOISTURE AND CONFORM TO A.W.S. SPECIFICATION D1.1 (LATEST REVISION). FIELD WELDS WILL NOT BE ALLOWED.

(N) GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4" DIAMETER BY 10' LONG.

NO.	DATE	REVISIONS	BY	APP'D
3	02/27/13	Modified LGT STD & (F), Add (D) D.2, Typos	C.E.	B.D.G.
2	7/14/11	Modify Note (F) chg 250 to 150 watt	V.H.	B.D.G.
1	6/27/11	Modify Note (F) chg 150 to 250 watt	V.H.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIAL REQUIREMENTS FOR HIGHWAY LIGHTING (CONVENTIONAL)

TE207

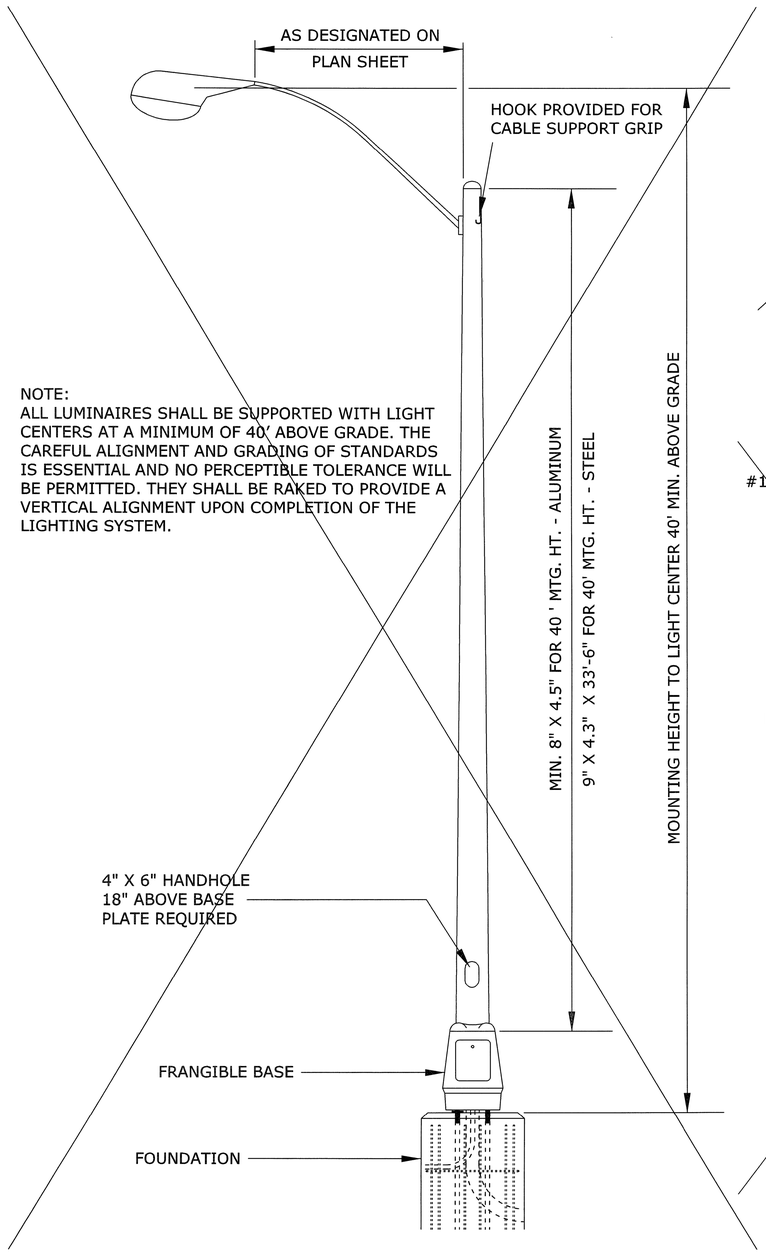
FHWA APPROVAL			04/29/2013	APP'D	Brian D. Gower
DESIGNED	V.H.	DETAILED	V.H.	QUANTITIES	TRACED
DESIGN CK.	C.A.L.	DETAIL CK.	C.A.L.	QUAN. CK.	TRACE CK.

SHAWN M. SCHRODER — LICENSED — 13340 — KANSAS — PROFESSIONAL ENGINEER

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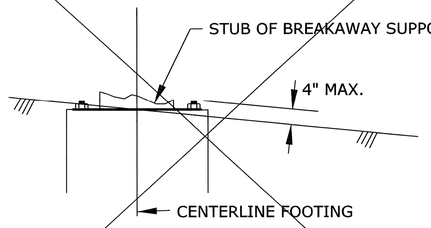
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	108	201

GROUNDING NOTE:
LIGHT STANDARDS SHALL BE GROUNDED BY MEANS OF A NO.6 AWG SOLID BARE COPPER GROUND WIRE BOLTED TO THE INSIDE OF THE LIGHT STANDARD SHAFT WITH A 1½" GROUNDING NUT. GROUND WIRE SHALL BE CONNECTED TO THE COPPERCLAD GROUND ROD BY MEANS OF A GROUND ROD CLAMP WITH AN EXOTHERMIC CONNECTION.



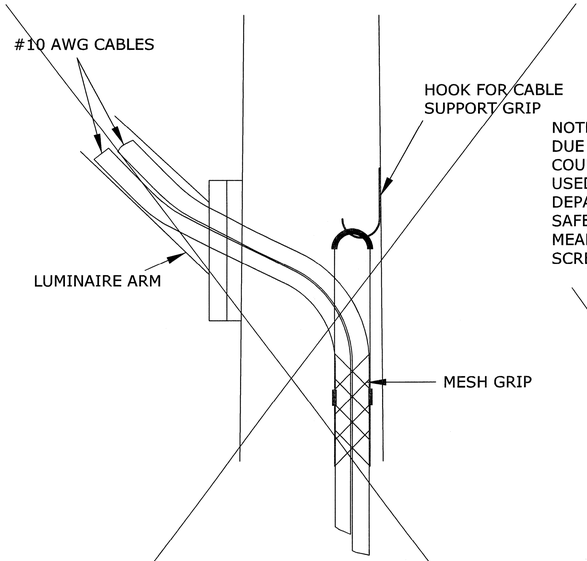
NOTE:
ALL LUMINAIRES SHALL BE SUPPORTED WITH LIGHT CENTERS AT A MINIMUM OF 40' ABOVE GRADE. THE CAREFUL ALIGNMENT AND GRADING OF STANDARDS IS ESSENTIAL AND NO PERCEPTIBLE TOLERANCE WILL BE PERMITTED. THEY SHALL BE RAKED TO PROVIDE A VERTICAL ALIGNMENT UPON COMPLETION OF THE LIGHTING SYSTEM.

THE 4" MAX. IS A REQUIREMENT OF THE BREAKAWAY CRITERIA IN THE LATEST EDITION OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (NO. 12.5.3).



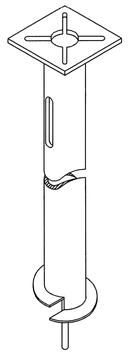
BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

NOTE:
THE FOUNDATION SHALL BE INSTALLED TO MEET THE BREAKAWAY SUPPORT STUB CLEARANCE OF 4" MAXIMUM, TO INCLUDE ANCHOR BOLTS.



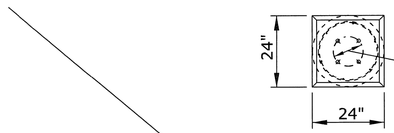
CABLE SUPPORT GRIP

NOTE:
THE CABLE SUPPORT GRIP SHALL BE INSTALLED ON THE HOOK SUPPLIED WITHIN THE LIGHT POLE AS SHOWN ABOVE.

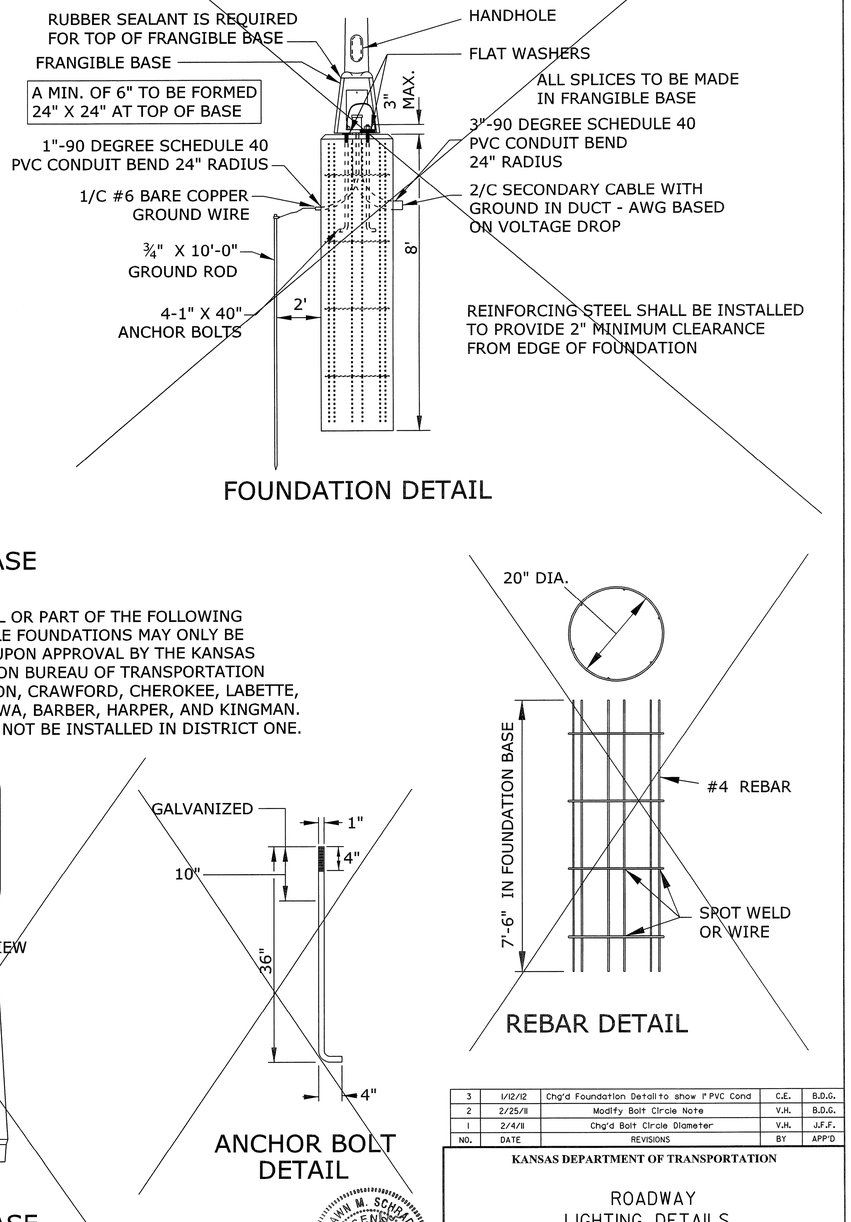


SCREW-IN BASE

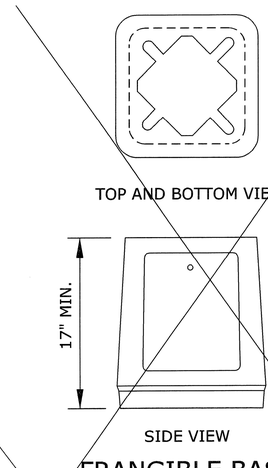
NOTE:
DUE TO SOIL CONDITIONS IN ALL OR PART OF THE FOLLOWING COUNTIES, SCREW-IN LIGHT POLE FOUNDATIONS MAY ONLY BE USED FOR ROADWAY LIGHTING UPON APPROVAL BY THE KANSAS DEPARTMENT OF TRANSPORTATION BUREAU OF TRANSPORTATION SAFETY & TECHNOLOGY: BOURBON, CRAWFORD, CHEROKEE, LABETTE, MEADE, CLARK, COMANCHE, KIOWA, BARBER, HARPER, AND KINGMAN. SCREW-IN FOUNDATIONS SHALL NOT BE INSTALLED IN DISTRICT ONE.



TOP VIEW FOUNDATION



FOUNDATION DETAIL



FRANGIBLE BASE

* NOTE:
THE FRANGIBLE BASE MUST ACCOMMODATE UP TO A 15" BOTTOM BOLT CIRCLE.

ANCHOR BOLT DETAIL

REBAR DETAIL

NO.	DATE	REVISIONS	BY	APP'D
3	1/12/12	Chg'd Foundation Detail to show 1" PVC Cond	C.E.	B.D.G.
2	2/25/11	Modify Bolt Circle Note	V.H.	B.D.G.
1	2/4/11	Chg'd Bolt Circle Diameter	V.H.	J.F.F.

KANSAS DEPARTMENT OF TRANSPORTATION

ROADWAY LIGHTING DETAILS

TE201

FHWA APPROVAL		12/15/2011	APP'D	Brian D. Gower	
DESIGNED	C.E.	DETAILED	C.E.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

SHAWN M. SCHRADER LICENSED 13340 12-1-14 KANSAS PROFESSIONAL ENGINEER

Plotted : 24-JUL-2014 10:19
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Lighting\08313-te201.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	109	201

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (HARDWARE)

ITEM	UNIT	QUANTITY
SOLID STATE PHOTO CELL	EACH	
ENCLOSURE	EACH	
ABOVE GROUND JUNCTION BOX (12" X 12" X 6")	EACH	
CABLE CONNECTORS	EACH	
OZ EXPANSION JOINT	EACH	
CABLE SUPPORT GRIP	EACH	
600 VOLT 2/C SECONDARY CABLE WITH GROUND WIRE (IN DUCT) #4 A.W.G.	LIN FT	
600 VOLT 2/C SECONDARY CABLE WITH GROUND WIRE (IN DUCT) #6 A.W.G.	LIN FT	
600 VOLT 1/C SECONDARY CABLE WITH GROUND WIRE #6 A.W.G.	LIN FT	
600 VOLT 1/C SECONDARY CABLE WITH GROUND WIRE #8 A.W.G.	LIN FT	
600 VOLT 1/C SECONDARY CABLE #10 A.W.G.	LIN FT	
GROUNDWIRE, #6 A.W.G.SOLID BARE COPPER	LIN FT	156
1" METALLIC CONDUIT	LIN FT	
2" METALLIC CONDUIT	LIN FT	
3" METALLIC CONDUIT	LIN FT	277
3" 90 DEGREE PVC CONDUIT BENDS 24" RADIUS	EACH	52
2" SCHEDULE 40 PVC	LIN FT	
3" SCHEDULE 40 PVC	LIN FT	
3" SCHEDULE 80 PVC	LIN FT	4857
3" 90 DEGREE SCHEDULE 40 PVC CONDUIT BENDS 36" RADIUS	EACH	
1" 90 DEGREE SCHEDULE 40 PVC CONDUIT BENDS 24" RADIUS	EACH	26
3/8" x 3" WEDGE TYPE ANCHOR BOLTS	EACH	
ALUMINUM TRIPLEX #4 A.W.G. (AERIAL)	LIN FT	
2" CONDUIT CLAMPS W/ CLAMP BACKS	EACH	
GROUND RODS WITH CLAMPS 3/4" X 10'	EACH	26

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (LIGHT STANDARDS)

ITEM	UNIT	QUANTITY
40' MOUNTING HEIGHT LIGHT STANDARD WITH 8' MASTARM	EACH	
40' MOUNTING HEIGHT LIGHT STANDARD WITH 10' MASTARM	EACH	
40' MOUNTING HEIGHT LIGHT STANDARD WITH 12' MASTARM	EACH	
40' MOUNTING HEIGHT LIGHT STANDARD WITH 15' MASTARM	EACH	
150 WATT LUMINAIRE, AUTO REGULATOR BALLAST, HIGH PRESSURE SODIUM	EACH	
150 WATT, 16,000 LUMEN, HIGH PRESSURE SODIUM, 24,000 LAMP HOUR	EACH	
FRANGIBLE BASE	EACH	
SCREW-IN BASE FOR LIGHT STANDARD	EACH	26
30" CONCRETE BASE FOR LIGHT STANDARD	EACH	

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (MISCELLANEOUS ITEMS)

ITEM	UNIT	QUANTITY
TRENCH AND BACKFILL	LIN FT	5134
REMOVAL OF CONCRETE BASE	EACH	

THE FOLLOWING COMPANIES HAVE A RAISE AND LOWERING DEVICE THAT HAS BEEN ACCEPTED BY THE KANSAS DEPARTMENT OF TRANSPORTATION : AMERICAN HIGH MAST, EAGLE HIGH MAST LIGHTING CO., CAROLINA HIGH MAST, METROLUX AND HALOPHANE. ADDITIONAL COMPANIES DESIRING APPROVAL BY THE KDOT MUST INSTALL ONE RAISE AND LOWERING DEVISE ON A POLE PROVIDED BY THE KDOT IN TOPEKA, OR ON ANOTHER POLE AS APPROVED. THE INSTALLATION WILL BE REVIEWED AND TESTED BY KDOT PRIOR TO APPROVAL ON THIS PROJECT. ALL ASSOCIATED COSTS WILL BE THE RESPONSIBILITY OF THE MANUFACTURERS/CONTRACTORS.

✳ EACH TOWER SHALL BE INSPECTED BY A FACTORY REPRESENTATIVE OF THE RAISE AND LOWER DEVICE MANUFACTURER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE KANSAS DEPARTMENT OF TRANSPORTATION.

NOTE: LINEAR QUANTITIES ARE APPROXIMATE AND INCLUDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONDUCT ALL WORK, AND FURNISH AND INSTALL ALL EQUIPMENT NECESSARY, TO INSURE COMPLETE AND SATISFACTORY OPERATION OF THE ELECTRIC LIGHTING SYSTEM WHETHER SPECIFICALLY MENTIONED OR NOT.

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (TOWER)

	1000 WATT LUMINAIRE, PEAK LEAD AUTO TRANSFORMER BALLAST, METAL HALIDE, ASYMMETRIC	EACH	
	1000 WATT LUMINAIRE, PEAK LEAD AUTO TRANSFORMER BALLAST, METAL HALIDE, SYMMETRIC	EACH	
	1000 WATT, 110,00 LUMEN, METAL HALIDE, VERTICAL BURNING, 12,000 HOUR LAMP	EACH	
✳	RAISE AND LOWER DEVICE	EACH	
	1/2" HEAVY DUTY REVERSIBLE DRILL	EACH	
	STEP DOWN TRANSFORMER	EACH	

BID ITEM

ITEM	UNIT	QUANTITY
ELECTRIC LIGHTING SYSTEM	L.S.	Lump Sum
HIGH MAST LIGHT TOWER (100')(36" CONCRETE BASE)	EACH	
HIGH MAST LIGHT TOWER (110')(36" CONCRETE BASE)	EACH	
HIGH MAST LIGHT TOWER (120')(42" CONCRETE BASE)	EACH	
HIGH MAST LIGHT TOWER (100')	EACH	
HIGH MAST LIGHT TOWER (110')	EACH	
HIGH MAST LIGHT TOWER (120')	EACH	

NOTE: FOR ADDITIONAL CONSTRUCTION QUANTITES, SEE THE FOLLOWING SHEETS, AS APPLICABLE:
1. CONSTUCTION AND MATERIAL REQUIREMENTS AND QUANTITIES FOR SIGN LIGHTING
2. UNDERDECK LIGHTING DETAIL.
3. FOOTING DETAILS & ENGINEERING GEOLOGY FOR FOOTING LENGTHS.

THE BID ITEM "HIGH MAST LIGHT TOWER" INCLUDES ALL WORK PERSONS, TOOLS, EQUIPMENT AND NEW HARDWARE NECESSARY TO COMPLETE THE WORK.

ITEMS NOT SPECIFICALLY CALLED OUT ARE SUBSIDIARY TO OTHER BID ITEMS.

NO.	DATE	REVISIONS	BY	APP'D
3	1/12/12	Chg'd Bid Items & Add 1" PVC Conduit	C.E.	B.D.G.
2	7/14/11	Change 250 Watts to 150 Watts	V.H.	B.D.G.
1	6/14/11	Changed 150 to 250 Watts	V.H.	B.D.G.

SHAWN M. SCHAMBER — 13340 — 8-1-14 — KANSAS — PROFESSIONAL ENGINEER

KANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION QUANTITIES FOR ELECTRIC LIGHTING SYSTEM

TE209

FHWA APPROVAL			12/15/2011	APP'D	Brian D. Gower
DESIGNED	V.H.	DETAILED	V.H.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

Plotted : 24-JUL-2014 10:19
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Lighting\08313-te209.dgn

DETECTOR SUMMARY

CAMERA NO.	DETECTION ZONE	MODE	SIZE (LxW)	PHASE CALLED	PHASE EXTENDED	DELAY/ STRETCH TIMER	INITIAL SETTING (SEC.)
1	D3-2	Pulse	6x6	3	3	S	1
1	D3-3	Presence	60x6	3	3	D	10
1	D8-4	Pulse	6x6	8	8	S	1
1	D8-5	Presence	60x6	8	8	-	-
1	D8-9	Pulse	6x6	8	8	S	1
1	D8-10	Presence	60x6	8	8	D	10
2	DI-2	Pulse	6x6	1	1	S	1
2	DI-3	Presence	100x6	1	1	-	-
2	D6-4	Pulse	6x6	6	6	S	1
2	D6-5	Presence	100x6	6	6	-	-
2	D6-9	Pulse	6x6	6	6	S	1
2	D6-10	Presence	100x6	6	6	-	-
3	D7-2	Pulse	6x6	7	7	S	1
3	D7-3	Presence	60x6	7	7	D	10
3	D4-4	Pulse	6x6	4	4	S	1
3	D4-5	Presence	60x6	4	4	-	-
3	D4-9	Pulse	6x6	4	4	S	1
3	D4-10	Presence	60x6	4	4	D	10
4	D5-2	Pulse	6x6	5	5	S	1
4	D5-3	Presence	100x6	5	5	-	-
4	D2-4	Pulse	6x6	2	2	S	1
4	D2-5	Presence	100x6	2	2	-	-
4	D2-9	Pulse	6x6	2	2	S	1
4	D2-10	Presence	100x6	2	2	-	-
4	D2-14	Pulse	6x6	2	2	S	1
4	D2-15	Presence	100x6	2	2	D	10
5	D3-1	Pulse	6x6	3	3	S	1
5	D8-1	Pulse	6x6	8	8	S	1
5	D8-2	Pulse	6x6	8	8	S	1
5	D8-3	Pulse	6x6	8	8	S	1
5	D8-6	Pulse	6x6	8	8	S	1
5	D8-7	Pulse	6x6	8	8	S	1
5	D8-8	Pulse	6x6	8	8	S	1
6	DI-1	Pulse	6x6	1	1	S	1
6	D6-1	Pulse	6x6	6	6	S	1
6	D6-2	Pulse	6x6	6	6	S	1
6	D6-3	Pulse	6x6	6	6	S	1
6	D6-6	Pulse	6x6	6	6	S	1
6	D6-7	Pulse	6x6	6	6	S	1
6	D6-8	Pulse	6x6	6	6	S	1
7	D7-1	Pulse	6x6	7	7	S	1
7	D4-1	Pulse	6x6	4	4	S	1
7	D4-2	Pulse	6x6	4	4	S	1
7	D4-3	Pulse	6x6	4	4	S	1
7	D4-6	Pulse	6x6	4	4	S	1
7	D4-7	Pulse	6x6	4	4	S	1
7	D4-8	Pulse	6x6	4	4	S	1
8	D5-1	Pulse	6x6	5	5	S	1
8	D2-1	Pulse	6x6	2	2	S	1
8	D2-2	Pulse	6x6	2	2	S	1
8	D2-3	Pulse	6x6	2	2	S	1
8	D2-6	Pulse	6x6	2	2	S	1
8	D2-7	Pulse	6x6	2	2	S	1
8	D2-8	Pulse	6x6	2	2	S	1
8	D2-11	Pulse	6x6	2	2	S	1
8	D2-12	Pulse	6x6	2	2	S	1
8	D2-13	Pulse	6x6	2	2	S	1

PHASE TIMING

FUNCTION	PHASE							
	1	2	3	4	5	6	7	8
MINIMUM GREEN	7.0	12.0	7.0	10.0	7.0	12.0	10.0	7.0
MAXIMUM GREEN	34.0	42.0	28.0	32.0	34.0	42.0	32.0	28.0
YELLOW CHANGE	5.0	5.0	4.3	4.5	5.0	5.0	4.3	4.5
RED CLEAR	1.4	1.6	1.5	1.8	1.4	1.6	1.5	1.8
ADDED INITIAL	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MAXIMUM INITIAL	10.0	15.0	10.0	15.0	10.0	15.0	10.0	15.0

Phase Timing reflects initial operation.
Phases 2 & 6 to Dwell on Green.

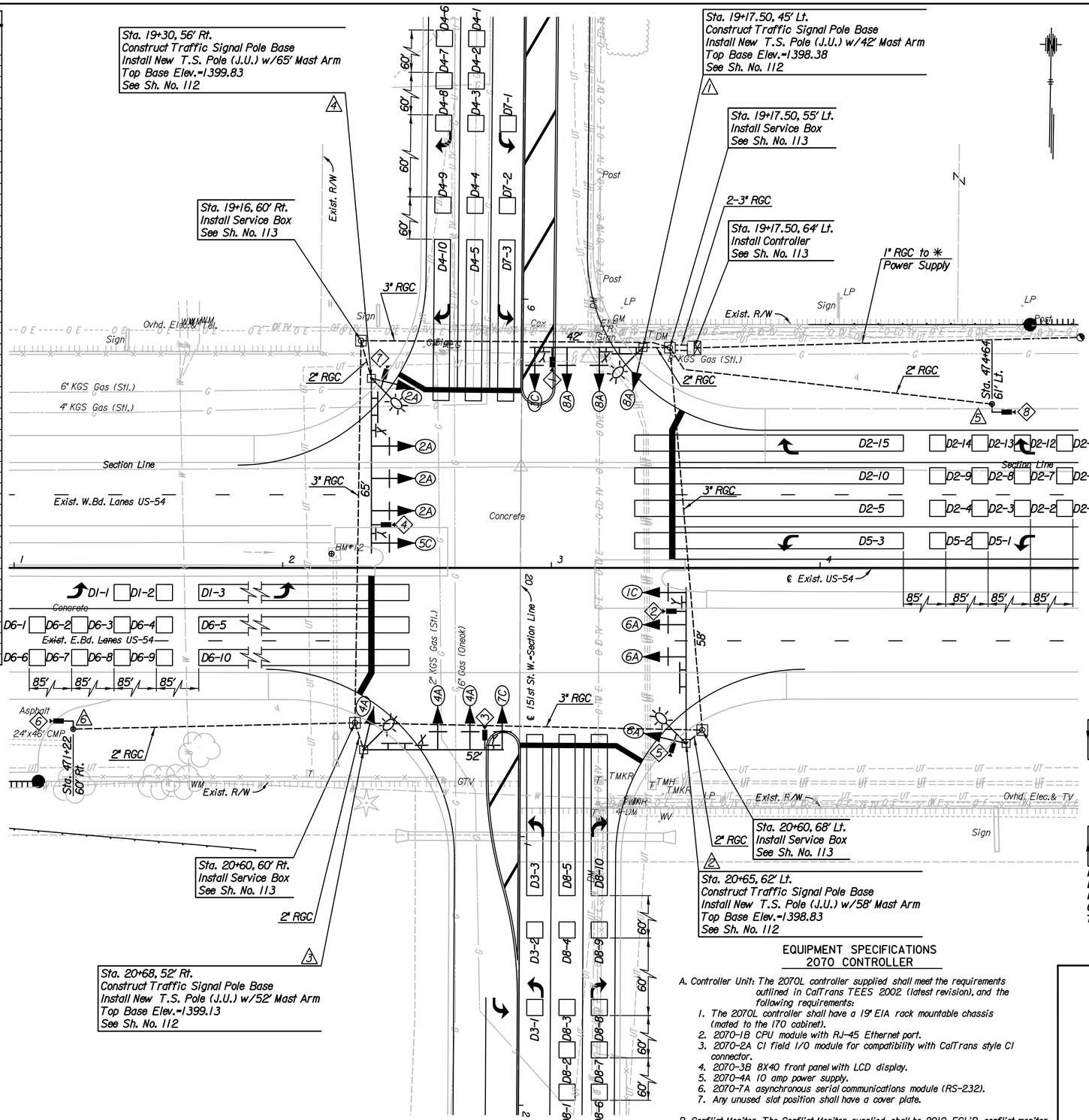
GENERAL NOTES

All Signal Heads shall have 12" LED lenses.

Placement of Signal Poles, Service/Junction Boxes, Conduit runs and Controller are typical and may be adjusted as directed by the Engineer to facilitate installation.

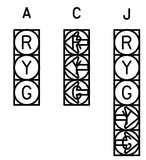
Utility locations are approximate. The Contractor shall be responsible for locating all underground utilities prior to construction.

** The Contractor shall coordinate with Westar Energy for the exact location of the meter and disconnect box and for the connection of power for the traffic signal installation.*

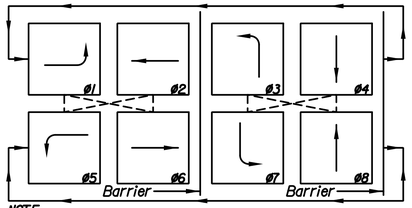


LEGEND

- Traffic Signal Pole with Mast Arm & Length
- Traffic Signal Head
- Traffic Signal Head with Backplate
- Traffic Signal Camera
- Light Pole w/Luminaire Arm and Traffic Signal Camera
- Pedestrian Signal Head
- Controller
- D(Phase) — Detector Zone
- Service Box (Pre-Fab)
- R3-5R Sign
- R10-10L Sign
- Rigid Galvanized Conduit (RGC)
- Signal Phase & Head Arrangement
- Signal Pole Reference Number
- Traffic Signal Camera Reference Number
- Street Name Sign
- Luminaire with Arm
- Meter and Enclosure
- Power Supply



SIGNAL HEADS



NOTE:
DOTTED LINES CONNECTING PHASES DENOTE NON-CONFLICTING SIGNAL PHASES THAT CAN OCCUR CONCURRENTLY.

MOVEMENTS
- Protected Phase
- Permitted Phase

PHASE DIAGRAM

EQUIPMENT SPECIFICATIONS
2070 CONTROLLER

A. Controller Unit: The 2070L controller supplied shall meet the requirements outlined in CalTrans TEES 2002 (latest revision), and the following requirements:

1. *The 2070L controller shall have a 19" EIA rack mountable chassis (mated to the 170 cabinet).*
2. *2070-1B CPU module with RJ-45 Ethernet port.*
3. *2070-2A CI field I/O module for compatibility with CalTrans style CI connector.*
4. *2070-3B 8X40 front panel with LCD display.*
5. *2070-4A 10 amp power supply.*
6. *2070-7A asynchronous serial communications module (RS-232).*
7. *Any unused slot position shall have a cover plate.*

B. Conflict Monitor: The Conflict Monitor supplied shall be 2010 ECLiP conflict monitor.

No.	Revision	By	Date

CITY OF WICHITA

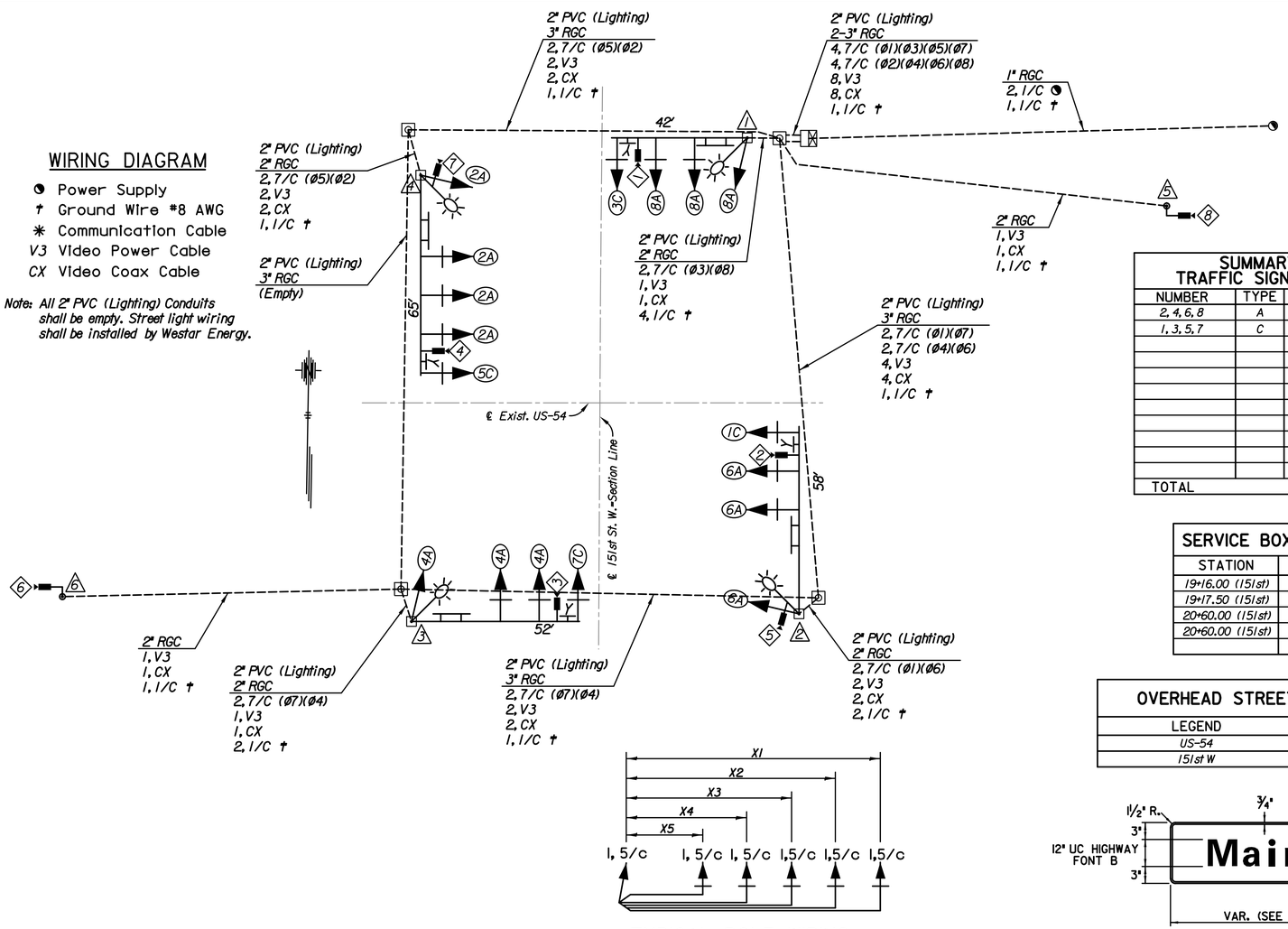
TRAFFIC SIGNAL PLAN
151ST STREET WEST AND US-54
NORTH & SOUTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	SAC	Job No.	08313	Sht. 110 of 201
Drawn by	DRP	Date	June, 2014	

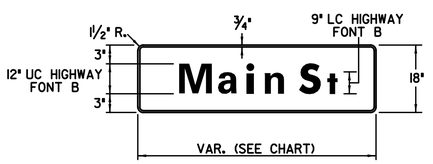
Plotted By: drp Date: 7/14/2014 2:57:09 PM
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WIRING DIAGRAM

- Power Supply
- † Ground Wire #8 AWG
- ✳ Communication Cable
- V3 Video Power Cable
- CX Video Coax Cable

Note: All 2" PVC (Lighting) Conduits shall be empty. Street light wiring shall be installed by Westar Energy.



TYPICAL POLE WIRING

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.

SUMMARY OF TRAFFIC SIGNAL HEADS

NUMBER	TYPE	SIZE	QUANTITY
2, 4, 6, 8	A	12"	10
1, 3, 5, 7	C	12"	4
TOTAL			14

SERVICE BOX SUMMARY

STATION	DIST.-SIDE
19+16.00 (151st)	60' Rt.
19+17.50 (151st)	55' Lt.
20+60.00 (151st)	60' Rt.
20+60.00 (151st)	68' Lt.

OVERHEAD STREET NAME SIGNS

LEGEND	LENGTH	QUANTITY
US-54	4'-0"	2
151st W	5'-0"	2

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
PAD MOUNTED CONTROLLER & CABINET	EACH	1
TRAFFIC SIGNAL HEAD W/MOUNTING HARDWARE	EACH	17
TRAFFIC SIGNAL POLE, STEEL (SEE POLE SUMMARY)	EACH	4
TRAFFIC SIGNAL PEDESTAL ALUM. (15')	EACH	-
TRAFFIC SIGNAL PEDESTAL (JOINT USE) ALUM. (30')	EACH	-
LUMINAIRE POLE W/15' ARM (SEE POLE SUMMARY)	EACH	2
CONCRETE CONTROLLER PAD	EACH	1
CONCRETE FOOTING - PEDESTAL	EACH	-
CONCRETE FOOTING - POLE	EACH	4
CONDUIT ELBOW 90°2"	EACH	AS REQ'D
CONDUIT ELBOW 90°3"	EACH	AS REQ'D
BACK PLATE 5" 3 SECTION	EACH	13
BACK PLATE 5" 5 SECTION	EACH	-
TERMINAL BLOCK	EACH	4
SERVICE BOX	EACH	4
JUNCTION BOX (PRE-FAB)	EACH	-
GROUND ROD & CLAMP	EACH	8
PEDESTRIAN INDICATIONS LED (16"x18" COMBINATION) (COUNTDOWN)	EACH	-
LED TRAFFIC SIGNAL LENS (12")	EACH	42
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX 50 AMP.	EACH	1
SURGE ARRESTOR - A.C.SERVICE	EACH	1
SURGE ARRESTOR - DETECTOR	EACH	-
PEDESTRIAN PUSHBUTTON 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.	2235
MULTI-CONDUCTOR CABLE NO.14 AWG 5/c	LIN.FT.	-
MULTI-CONDUCTOR CABLE NO.14 AWG 3/c	LIN.FT.	-
SHEILDED DETECTOR LEAD-IN NO.14 AWG 2/c	LIN.FT.	-
CONDUIT 1"(RGC)	LIN.FT.	AS REQ'D
CONDUIT 1 1/2"(RGC)	LIN.FT.	-
CONDUIT 2"(PVC)	LIN.FT.	590
CONDUIT 2"(RGC)	LIN.FT.	185
CONDUIT 3"(RGC)	LIN.FT.	555
#8 AWG GROUND (GREEN)	LIN.FT.	875
STREET NAME SIGN	EACH	4
LEFT TURN SIGNAL (R10-10) SIGN	EACH	4
RIGHT TURN ONLY (R3-5R) SIGN	EACH	3
VIDEO DETECTION CAMERA, MOUNTING HARDWARE AND SUNSHIELD	EACH	8
VIDEO DETECTION UNIT	EACH	1◔
VIDEO POWER CABLE #16 AWG 3/C	LIN. FT.	2095
VIDEO CABLE 75 OHM COAXIAL (BELDON #8281 OR APPROVED EQUAL)	LIN. FT.	2095
TV MONITOR	EACH	1
MAST ARM CAMERA RISER BRACKETS	EACH	4

◔8 Modules Required.

TRAFFIC SIGNAL POLE SUMMARY

POLE NO.	POLE HEIGHT	ARM HEIGHT	ARM LENGTH	NO. OF SIGNALS ON ARM	BRACKET TYPE	XI	X2	X3	X4	X5	NO. OF SIGNALS ON POLE	BRACKET TYPE	NO.OF PUSH BUTTONS ON POLE	LUMINAIRE MOUNTING HEIGHT
1	35'	21'	42'	3	I	40'	28'	16'	-	-	1	II	-	40'
2	35'	21'	58'	3	I	56'	44'	32'	-	-	1	II	-	40'
3	35'	21'	52'	3	I	52'	40'	28'	-	-	1	II	-	40'
4	35'	21'	65'	4	I	62'	50'	38'	26'	-	1	II	-	40'
5 ✳	35'	-	-	-	-	-	-	-	-	-	-	-	-	-
6 ✳	35'	-	-	-	-	-	-	-	-	-	-	-	-	-

✳ Luminaire Poles

POLE AND EQUIPMENT FINISH:

Surface preparation
The exterior steel surface shall be blasted clean in accordance with the requirements outlined in the Steel Structures Painting Council Surface Preparation Specification No. 6, (SSPCSP60) utilizing a dry abrasive, closed cycle, recirculating system with centrifugal wheels and abrasive. The abrasive used shall be steel shot conforming to the Society of Automotive Engineers (SAE) Recommended Practice No. J827 with particle size meeting SAE Shot No. S280.

Zinc Coating
The pole assembly shall be hot-dip galvanized to the requirements of either ASTM A123 (Fabricated items) or ASTM A153 (Hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810°F and 850°F. Maximum aluminum content of the bath shall not exceed 0.01%.

Top Coat
All visually exposed exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum dry film thickness (DFT) of 0.05mm (2.0 mils). Prior to application of the topcoat, the surface shall be mechanically etched and pre-heated to 450°F for a minimum of one hour. The coating shall be electrostatically applied and cured at a minimum temperature of 400°F and the color shall be black.

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES

ITEM	UNIT	QUANTITY
TRAFFIC SIGNALIZATION (Kellogg and 151st Street)	LUMP SUM	1

-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.

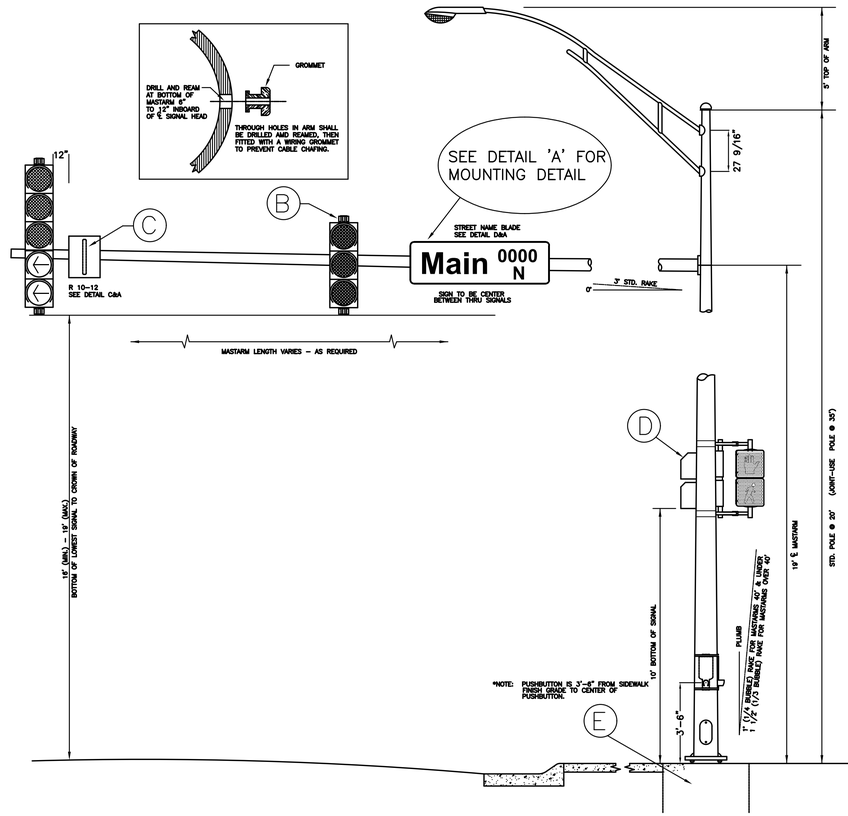
No.	Revision	By	Date

CITY OF WICHITA
WIRING AND QUANTITIES
151ST STREET WEST AND US-54
FRONTAGE ROADS
PROJECT NO. 472-84840 SEDGWICK CO.

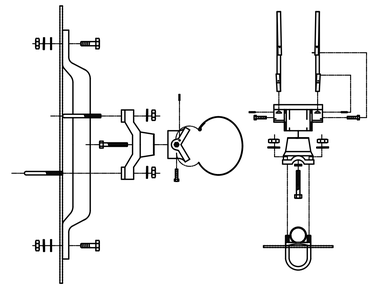
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	SAC	Job No.	08313	Sht. 111 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:23 PM
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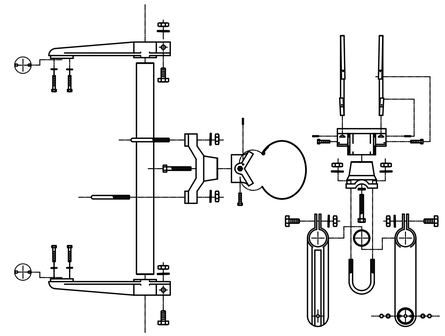


BANDED SIGN MOUNTING BRACKET DETAIL



A

TYPE I SIGNAL MOUNTING BRACKET ASSEMBLY DETAIL



B

STANDARD SIGNING



C

DWG. NO. N45AN0-X

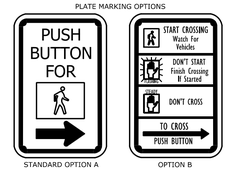
PUSH BUTTON STATION

Message and Sound options include:
* Locating tone
* Verbal Street Name (Example: Crossing Main at Central)
* All features field selectable using a Configurator.

Construction :
* Die-cast aluminum, powder coated Black in color.
* Street Name In Braille In the directional arrow of the sign.
* Option "B" signing option.

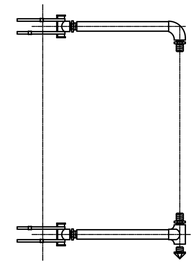
Push button :
* ADA compliant
* Raised tactile arrow on the button
* Solid State switch rated at a Minimum of 20 million actuations

PLATE MARKING OPTIONS



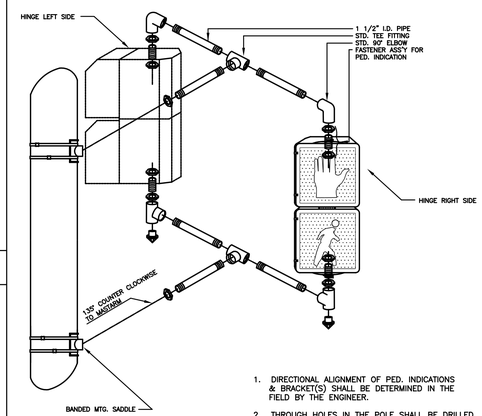
STANDARD OPTION A — OPTION B

TYPE III SIDE-OF-POLE MOUNTING BRACKET ASSEMBLY



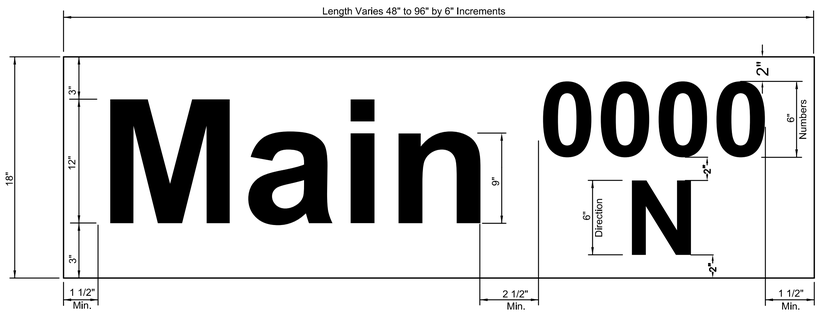
F

TYPE II SIGNAL MOUNTING BRACKET ASSEMBLY (SIDE-OF-POLE)

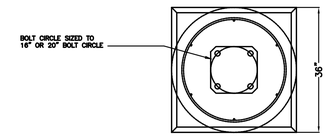


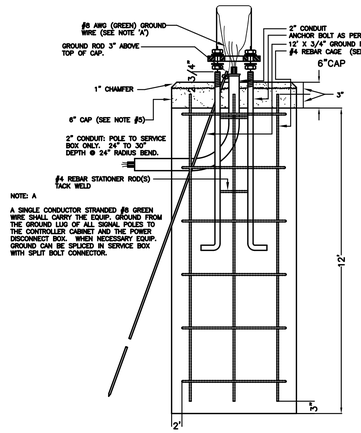
1. DIRECTIONAL ALIGNMENT OF PED. INDICATIONS & BRACKET(S) SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. THROUGH HOLES IN THE POLE SHALL BE DRILLED AND WELL REAMED TO PREVENT CABLE CHAFING.
3. HINGE PEDESTRIAN SIGNAL DOORS AWAY FROM POLE.
4. CLAM SHELL BRACKETS ARE NOT ACCEPTABLE.

D



DETAIL D
METRO

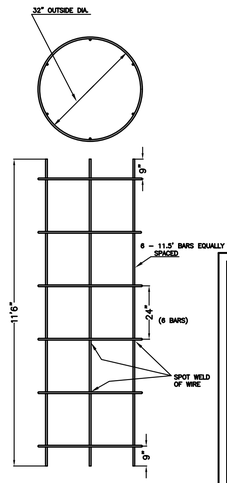




NOTE: A
A SINGLE CONDUCTOR STRANDED #8 GREEN WIRE SHALL CARRY THE EQUIP. GROUND FROM THE GROUND LUG OF ALL SIGNAL POLES TO THE CONTROLLER CABINET AND THE POWER DISCONNECT BOX. WHEN NECESSARY EQUIP. GROUND CAN BE SPLICED IN SERVICE BOX WITH SPLIT BOLT CONNECTOR.

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 #8 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.

REBAR CAGE



E

REVISED: MAY 2014

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STEEL SIGNAL POLE ASSEMBLY DETAILS

TRAFFIC ENGINEER
BRIAN A. COON, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	

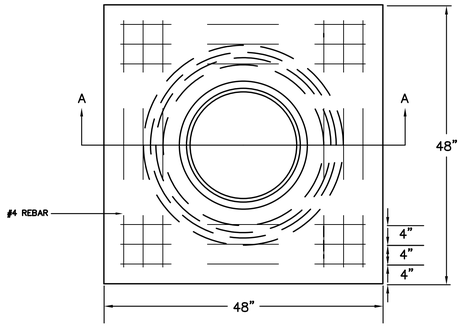
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
112 of 201

TR-101

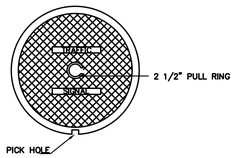
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FILE: i:\2008\08313\Frontage Rd North\Standards\08313-TR-101 STEEL SIGNAL POLE ASSEMBLY.dwg

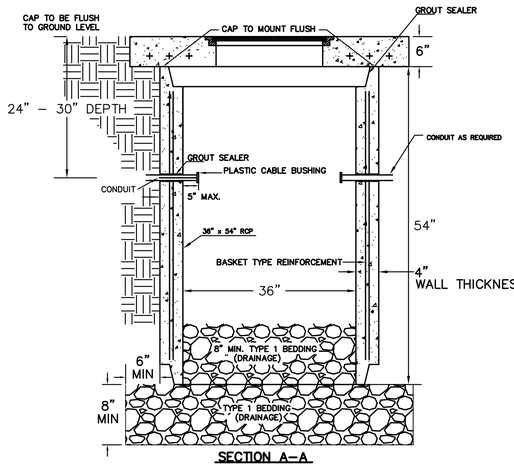
SERVICE BOX CONSTRUCTION/INSTALLATION DETAILS



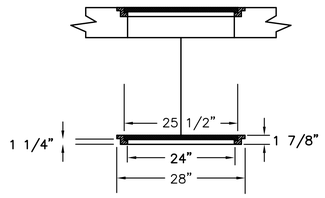
PRE-CAST CONCRETE
SERVICE BOX

(36" I.D. X 54" RCP)
with 6" CAP



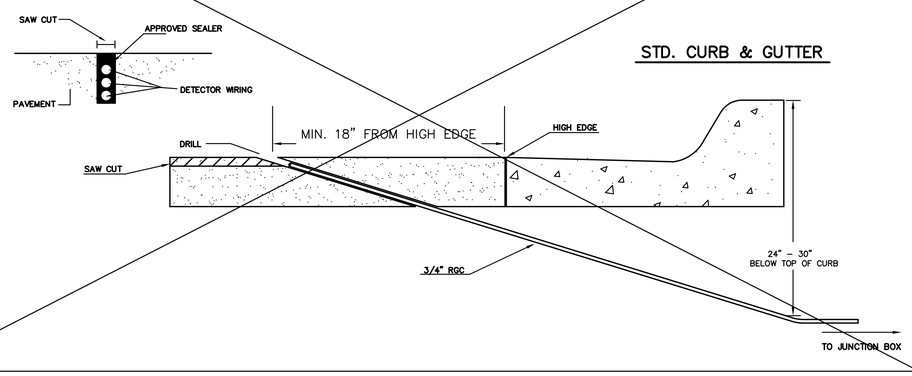


SECTION A–A

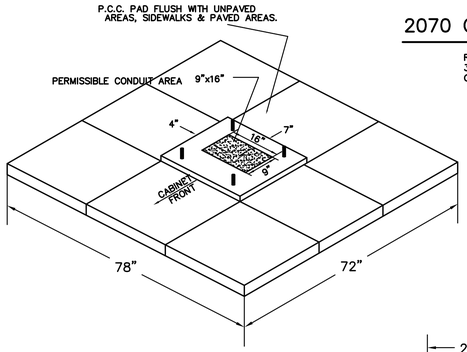


RING & COVER DETAIL

CONDUIT/DETECTOR WIRE INSTALLATION DETAILS

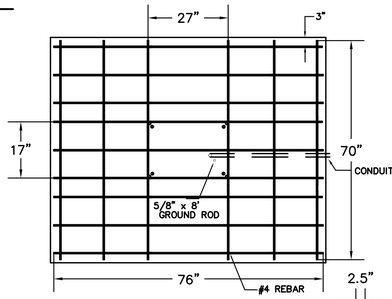


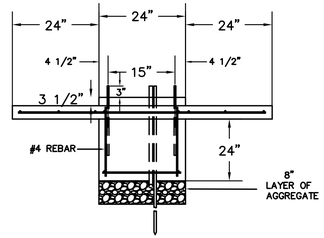
STD. CURB & GUTTER

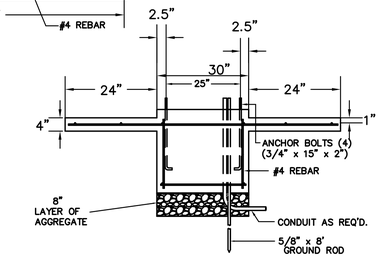


2070 CONTROLLER PAD DETAILS

REBAR SHALL BE ASTM A615M GRADE 300 MEETING THE REQUIREMENTS OF SUBSECTION SPECIFICATIONS.

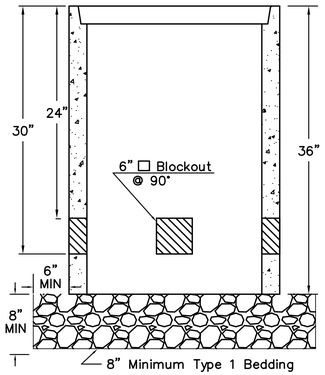




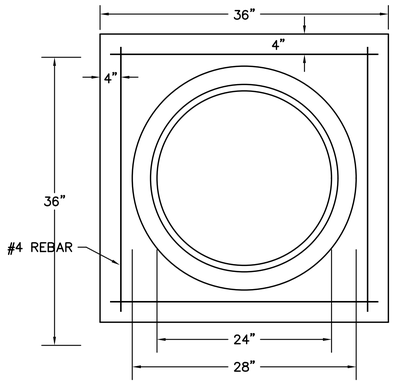


JUNCTION BOX DETAILS

PRE-FAB Junction Box
(24" I.D. X 36" R.C.P.)

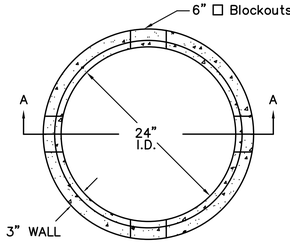


SECTION A–A



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 5" 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 8" 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.
   2" " " BTWN. SERVICE BOX AND POLE.
   1 1/4" " " BTWN. SERVICE & JUNCTION BOXES.
   3/4" " " BTWN. JUNCTION BOXES.
   3/4" " " BTWN. JUNCTION BOX & DETECTOR LOOP SAW CUT

REVISED 12/2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SERVICE/JUNCTION BOX, CONTOLLER PAD CONSTRUCTION/INSTALLATION

TRAFFIC ENGINEER
BRIAN COON, P.E.

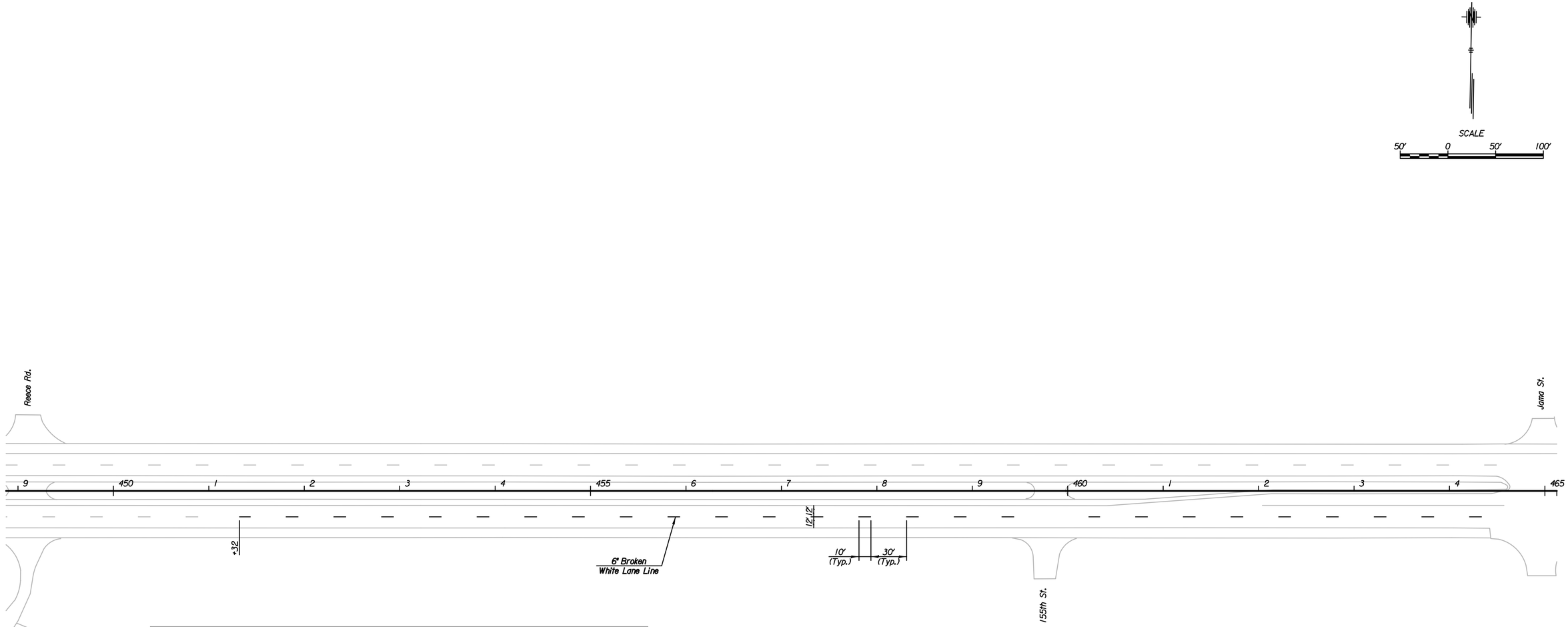
PROJECT NUMBER	OCA NUMBER	DATE
472-84842	760621	

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

SHEET
113 of 201

TR-109

Plotted By: drp Date: 7/14/2014 3:33:12 PM
FILE: i:\2008\08313\Frontage Rd North\Standards\08313-TR-109 Service Box and Controller Pad.dwg



SUMMARY OF PAVEMENT MARKINGS *									
LOCATION	4" Solid Yellow Double Line (ft)	6" Solid Yellow Edge Line (ft)	12" Solid Yellow Diagonal Line (ft)	6" Solid White Lane Line (ft)	6" Solid White Edge Line (ft)	6" Broken White Lane Line (ft)	24" Solid White Stop Line (ft)	Left Turn Arrows (each)	Right Turn Arrows (each)
Sta. 472+67 to Sta. 481+00	1493				146		16		
Sta. 481+00 to Sta. 497+00	3200								
Sta. 497+00 to Sta. 513+00	3200								
Sta. 513+00 to Sta. 518+00	1001				451				
151st St. W. Sta. 11+60 to Sta. 32+24	5436		448	992	3779		94	10	8
US-54 Sta. 450+32 to Sta. 465+00						320			
US-54 Sta. 465+00 to Sta. 481+00		740		1378	706	660	102	7	7
US-54 Sta. 481+00 to Sta. 497+00		1033			1753	780			
US-54 Sta. 497+00 to Sta. 513+00		2440			2879	750			
US-54 Sta. 513+00 to Sta. 520+13		364			364	190			
TOTAL	14330	4577	448	2370	10079	2700	212	17	15

* For Information only.
Pavement marking is paid for as Lump Sum.

Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

No.	Revision	By	Date

CITY OF WICHITA

SIGNING AND PAVEMENT MARKING US-54 NORTH FRONTAGE ROAD STA. 449+00 TO STA. 465+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 114 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 3:08:26 PM
FILE: I:\2008\08313\Frontage Rd North\Signing-Marking\08313-Signing-Marking449.dgn

℄ Woodbine Ln.

℄ US-54 North Frontage Rd. Sta. 472+43.44=
℄ 151st St. W. Sta. 16+50

24" Solid White Stop Line

R1-1 (30"x30") STOP

+11.50 40' R.

+88.50

4" Solid Double Yellow Lines

W3-1 (36"x36")

STOP (30"x30") R1-1

℄ Wheat Ln.

W14-2 (36"x36") NO OUTLET

D3 Wheat 1300 S Outlet

D3 Kellogg Dr 13700

+42' R.

6" Solid White Edge Line

+14

W1-2 (48"x48")

+30

4" Solid Double Yellow Lines

W3-3 (48"x48")

W5-54 2058

KDIO-9 (18"x48")

24" Solid White Stop Line

+45

+79.55

6" Solid Yellow Edge Line

6" Solid White Edge Line

6" Solid White Lane Line

6" Broken White Lane Line

+92 +90 +68 +56 +44 +32 +20 +85

6" Broken White Lane Line

+05

Exist. W.Bd. Lanes US-54

Exist. E.Bd. Lanes US-54

℄ Exist. US-54

6" Broken White Lane Line

6" Broken White Lane Line

+33 24" Solid White Stop Line

℄ 151st St. W.-Section Line

KDIO-9 (18"x48")

W5-54 2058

W3-3 (48"x48")

465 470 475 480

Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

☐ Remove & Reset

No.	Revision	By	Date

CITY OF WICHITA

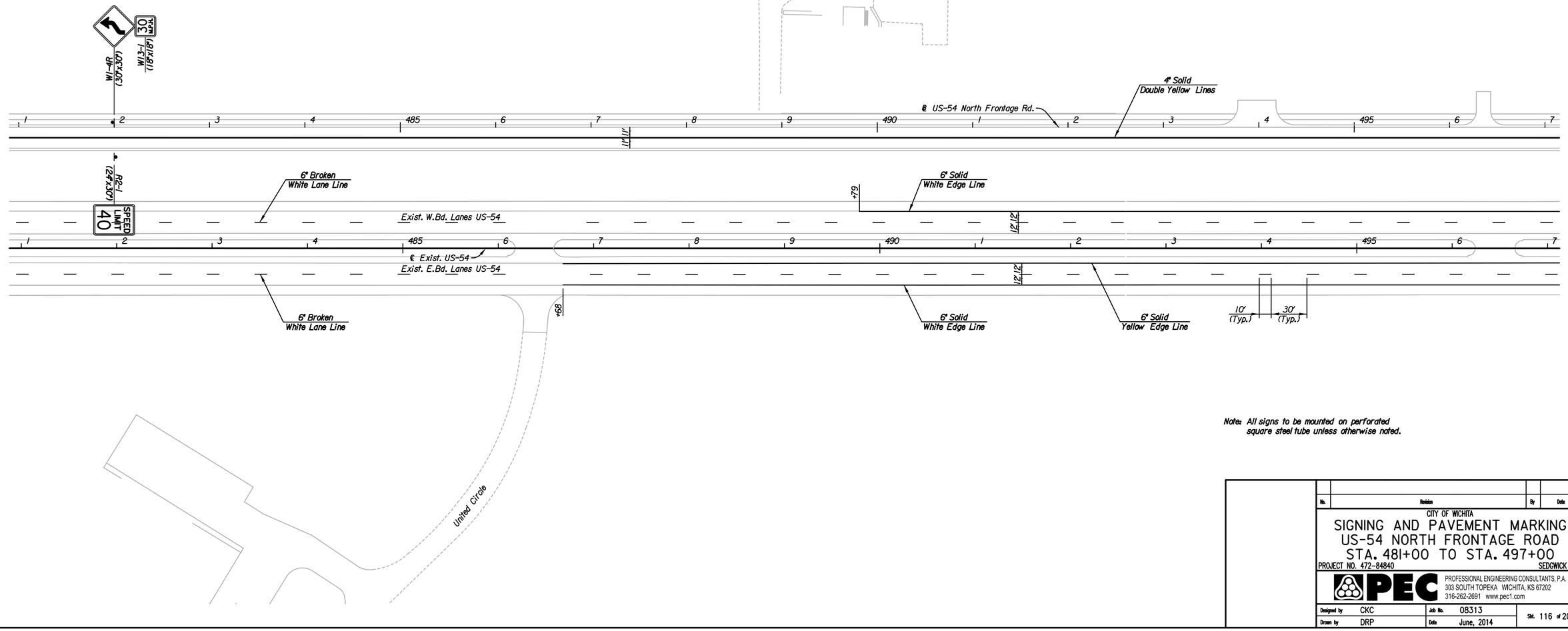
SIGNING AND PAVEMENT MARKING US-54 NORTH FRONTAGE ROAD STA. 465+00 TO STA. 481+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 115 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 3:11:26 PM
FILE: I:\2008\08313\Frontage Rd North\Signing-Marking\08313-Signing-Marking467.dgn



Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

No.	Revision	By	Date

CITY OF WICHITA

SIGNING AND PAVEMENT MARKING US-54 NORTH FRONTAGE ROAD STA. 481+00 TO STA. 497+00

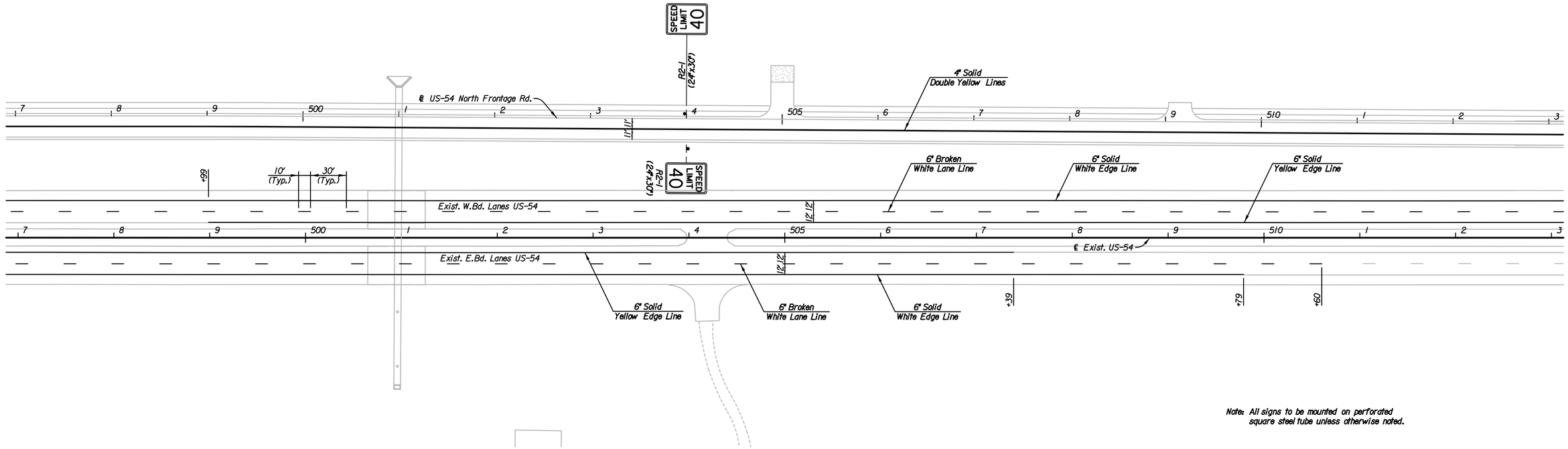
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 116 of 201

Plotted By: drp Date: 7/18/2014 3:20:32 PM
FILE: I:\2008\08313\Frontage Rd North\Signing-Marking\08313-Signing-Marking481.dgn



Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

No.	Revision	By	Date

CITY OF WICHITA

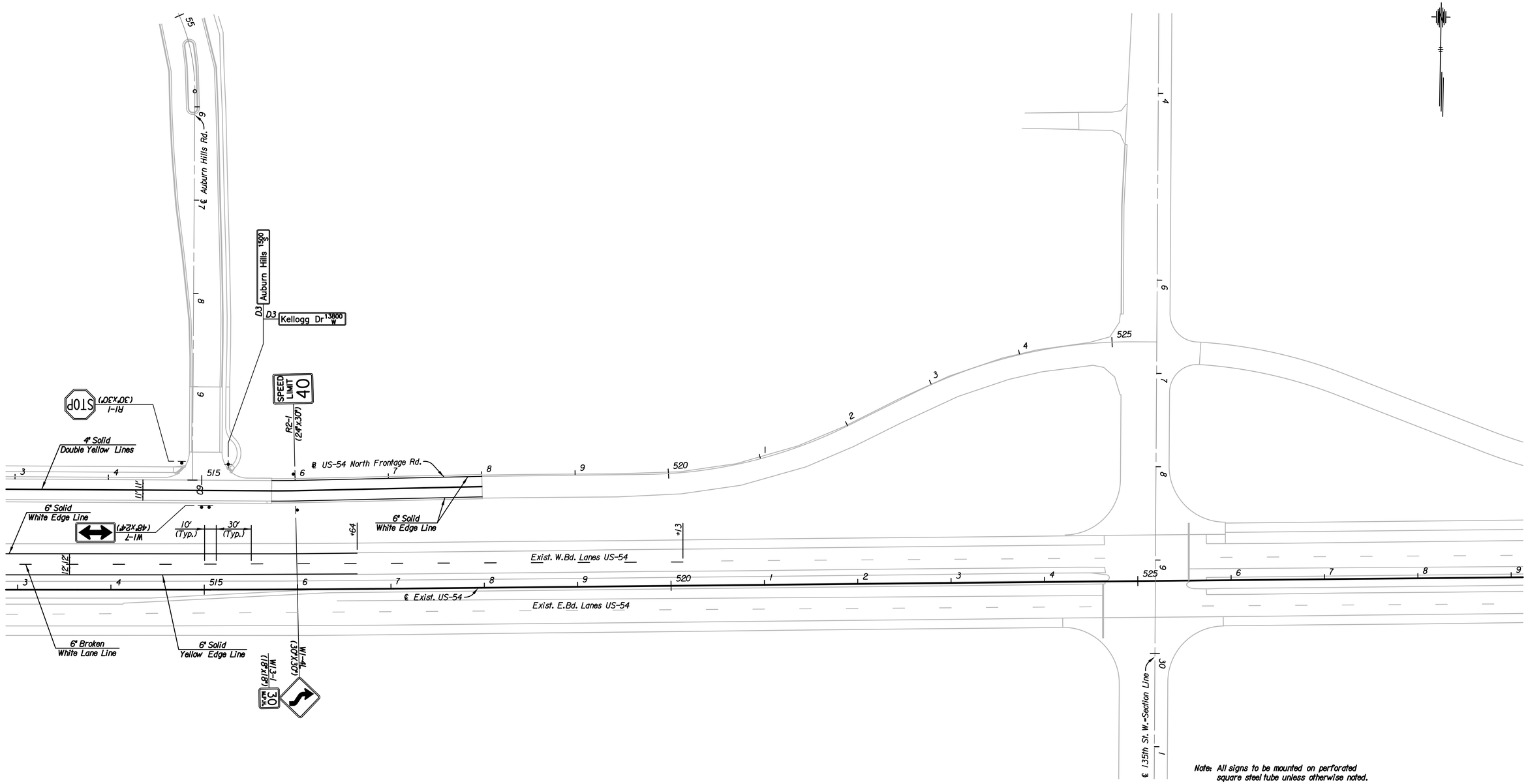
SIGNING AND PAVEMENT MARKING US-54 NORTH FRONTAGE ROAD STA. 497+00 TO STA. 513+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 117 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 3:14:09 PM
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Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

No.	Revision	By	Date

CITY OF WICHITA

SIGNING AND PAVEMENT MARKING US-54 NORTH FRONTAGE ROAD STA. 513+00 TO STA. 518+00

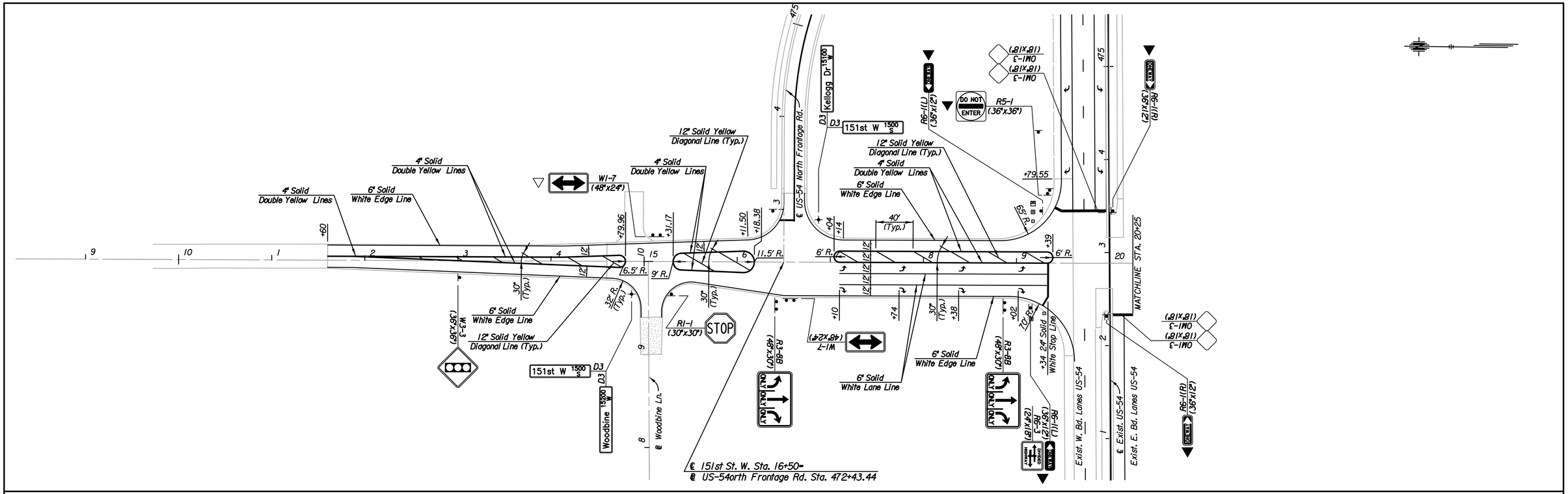
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 118 of 201

Plotted By: drp Date: 7/14/2014 3:15:42 PM
FILE: i:\2008\08313\Frontage Rd North\Signing-Marking\08313-Signing-Marking513.dgn



Note: All signs to be mounted on perforated square steel tube unless otherwise noted.

▼ - Mount on Wood Post

No.	Revision	By	Date

CITY OF WICHITA

SIGNING AND PAVEMENT MARKING 151ST STREET WEST STA. 11+60 TO STA. 28+85

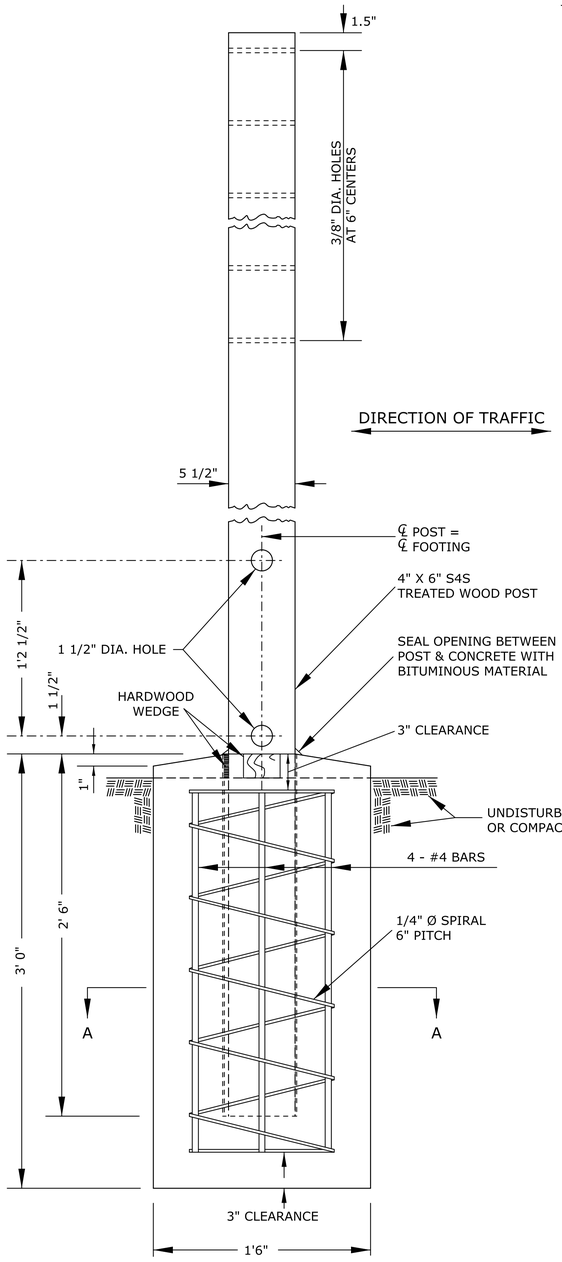
PROJECT NO. 472-84840 SEDGWICK CO.

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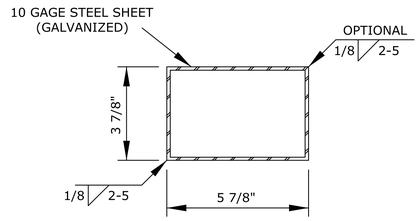
Designed by	CKC	Job No.	08313	Sht. 119 of 201
Drawn by	DRP	Date	June, 2014	

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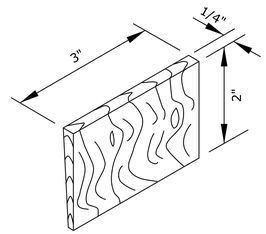
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KANSAS	KA 2289-01	2014	120	201



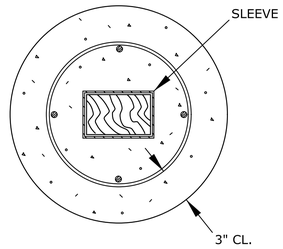
SIDE ELEVATION



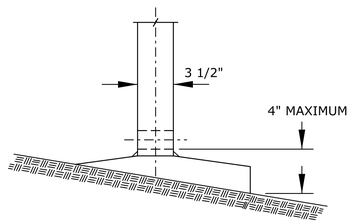
SECTION THRU SLEEVE



HARDWOOD WEDGE



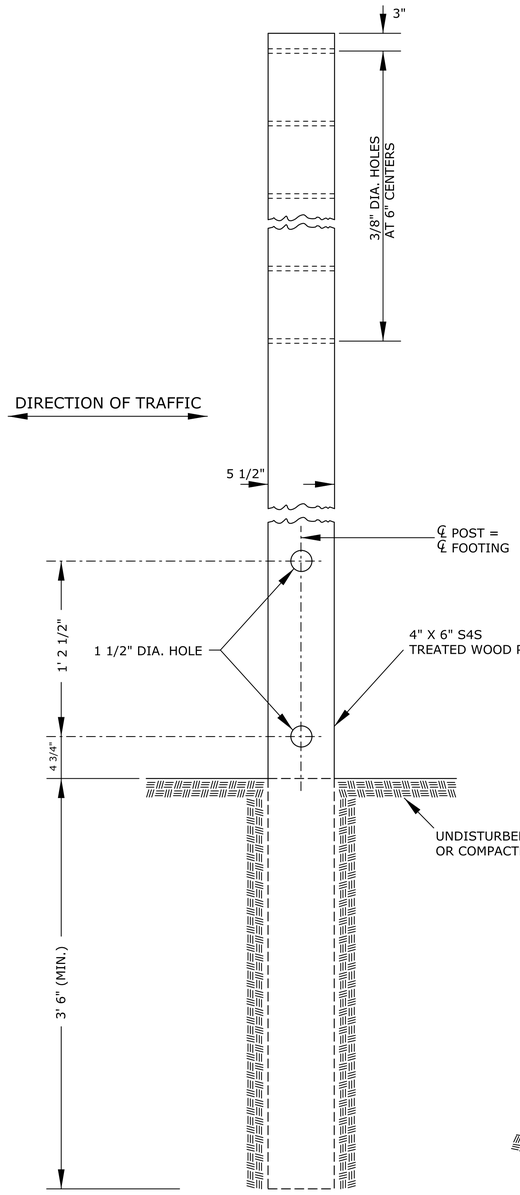
SECTION A-A



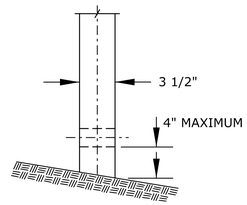
FRONT ELEVATION

NOTE:
COMMERCIAL GRADE CONCRETE MAY BE SUBSTITUTED FOR GRADE 25 CONCRETE FOR SIGN SUPPORT FOOTINGS.

WOOD POST IN CONCRETE FOOTING



SIDE ELEVATION



FRONT ELEVATION

WOOD POST IN SOIL

GENERAL NOTES

DESIGN CONFORMS WITH ASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS 2002". FOUNDATION DESIGN CONFORMS WITH "DESIGN PROCEDURE COMPARED TO FULL-SCALE TESTS OF DRILLED SHAFT FOOTINGS", TEXAS TRANSPORTATION INSTITUTE, FEBRUARY 1970.

THE POST SLEEVE SHALL BE FORMED FROM STEEL SHEET WHICH WAS PRODUCED TO MEET THE REQUIREMENTS OF ASTM A653M AND ZINC COATED TO MEET THE REQUIREMENTS OF COATING DESIGNATION A123. IT IS PERMISSIBLE TO CLOSE THE BOTTOM OF THE SLEEVE WITH A METAL PLATE. BASIS OF ACCEPTANCE SHALL BE VISUAL INSPECTION OF THE FINISHED SLEEVE AND DETERMINATION OF ZINC THICKNESS BY MAGNETIC GAGE.

ALL SIGN MOUNTING HOLES IN THE WOOD POSTS SHALL BE DRILLED PRIOR TO TREATING.

BREAKAWAY HOLES AND FIELD CUTS SHALL BE TREATED IN ACCORDANCE WITH THE PRESERVATIVE TREATMENT SPECIFICATIONS.

PRIOR TO SEALING THE OPENING BETWEEN THE WOOD POST AND THE TOP OF THE CONCRETE FOOTING, PLACE TWO HARDWOOD WEDGES INTO THE OPENING ON TWO ADJACENT SIDES OF POST AND FORCE DOWN TO WITHIN 3/8" OF TOP OF FOOTING.

NOTE TO THE ENGINEER:
THE INTENT OF THE "ROADSIDE DESIGN GUIDE" AND THESE PLANS IS TO HAVE A 4" OR LESS PROJECTION ABOVE THE GROUND LINE AFTER IMPACT.

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

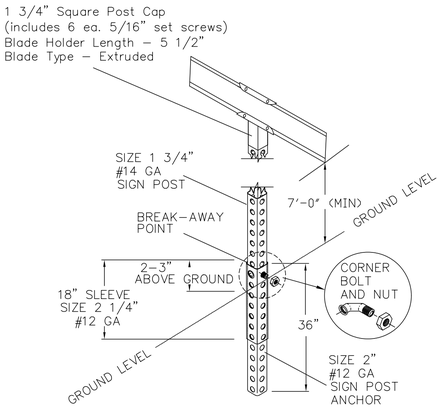
DETAILS FOR WOOD POSTS

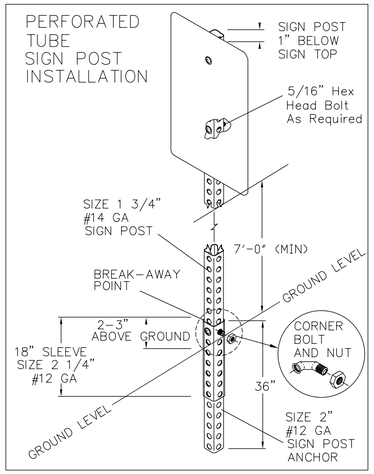
TE460 7/1/03

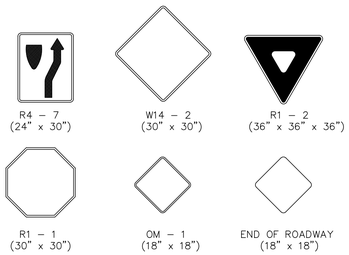
FHWA APPROVAL		7/22/2003	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.C.	QUAN. CK.	TRACE CK.

Plotted : 14-JUL-2014 14:52
Drawn By: : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te460.dgn

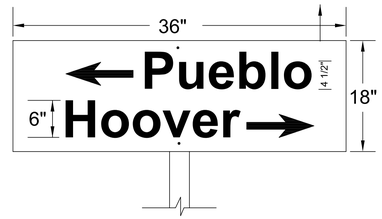
FHWA REG NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	SHEETS
7	KANSAS	472-84840	2013	121	201



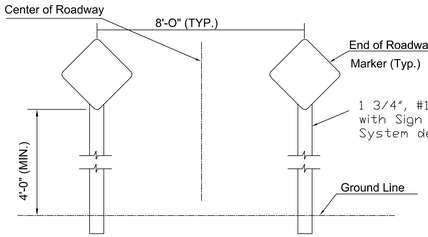




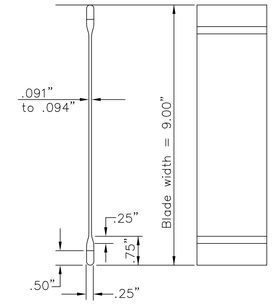
* IN NO CASE SHALL THE SPECIFICATIONS BE LESS THAN REQUIRED BY THE CURRENT MUTCD.



FLAT PLATE STREET NAME SIGN



TYPICAL END OF ROADWAY SIGN MOUNTING INSTALLATION



STREET NAME SIGN
BLADE DETAILS

TYPICAL TRAFFIC CONTROL AND STREET NAME SIGN MOUNTING INSTALLATION
CURB AND GUTTER SECTION

DETAIL A
9" STANDARD

TYPE I BARRICADE DETAIL W/ E.O.R. MARKERS

DETAIL B
9" METRO

SIGN POST ANCHOR SYSTEM

SIGN ASSEMBLY TABLE

SIGN	SIZE	QUANTITY*	REMARKS
Adopt-A-Highway	Existing	1	Remove & Reset
KD10-9	Existing	2	Remove & Reset
OM1-3	18"x18"	4	
R1-1	30"x30"	4	
R2-1	24"x30"	4	Speed Limit 40
R3-7L	30"x30"	2	
R3-8B	48"x30"	4	
R5-1	36"x36"	2	
R6-1L	36"x12"	4	
R6-1R	36"x12"	2	
R6-3	36"x36"	2	
W1-4L	30"x30"	1	
W1-4R	30"x30"	1	
W1-7	48"x24"	5	
W3-1	36"x36"	1	
W3-3	36"x36"	2	
W3-3	48"x48"	4	
W13-1	18"x18"	2	30 MPH
W14-2	36"x36"	1	
TOTAL		45	

STREET NAME *	NO. BLADES REQ'D	
	6 3/4" STD.	9" METRO
151st W (1500 S)	-	2
151st W (1600 S)	-	1
Auburn Hills (1500 S)	-	1
Kellog Dr (13800 W)	-	1
Kellog Dr (15100 W)	-	3
Wheat (1500 S)	-	1
Woodbine (15200 W)	-	1

* Street Name Signs are a non-participating bid item

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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

SIGN DETAILS

TRAFFIC ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-84840	760621	10/2012

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

SHEET
121 of 201

TR-106

Plotted By: drp Date: 7/14/2014 3:32:33 PM
FILE:i:\2008\08313\Frontage Rd North\Standards\08313-TR-106 Sign Details.dwg

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 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.

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 LUMP SUM PRICE BID FOR "TRAFFIC CONTROL".

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 LUMP SUM PRICE BID FOR "TRAFFIC CONTROL".

IN THE EVENT THAT CITY OF WICHITA PROJECT 472-84841 (US-54 SOUTH FRONTAGE ROAD - 151ST ST. WEST TO 135TH ST. WEST) IS CONSTRUCTED CONCURRENT WITH THIS PROJECT, THE CONTRACTOR SHALL COORDINATE ALL TRAFFIC HANDLING WITH THE CONTRACTOR FOR PROJECT 472-84841.

STAGE	MAJOR CONSTRUCTION ITEMS	HANDLING OF TRAFFIC	REMARKS
I	Begin RCB Construction Construct Waterline Begin 151st St. West Construction from Sta. 11+60 to Sta. 19+60.75. Construct Westbound US-54 Right-Turn Lane @ 151st St. West. Construct 151st St. West Temporary Pavement Rt. Sta. Sta. 20+60 to Sta. 30+40.	One-lane, Westbound traffic on US-54 HWY. Close 151st St. West North of US-54 and South of Lynndale Ave. Existing traffic configuration to be maintained on 151st St. West South of US-54.	The Contractor shall focus efforts towards completing the roadway work on US-54 HWY to minimize lane closures. Traffic control for temporary widening to comply with Std. TE720 and the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways (Latest Edition).
IB	Construct Westbound US-54 Left-Turn Lane @ 151st St. West including median improvements at 151st St. West.	One-lane, Westbound traffic on US-54 HWY. One-lane, Eastbound traffic on US-54 HWY.	The Contractor shall focus efforts towards completing the roadway work to minimize lane closures on US-54 HWY.
IC	Construct Eastbound US-54 Ditch Improvements @ 151st St. West. Construct N. Bd. 151st St. West roadway improvements from Sta. 20+39 to Sta. 28+73.33.	One-lane, Eastbound traffic on US-54 HWY. One-lane, Southbound traffic on 151st St. South of US-54 Highway.	The Contractor shall focus efforts towards completing the roadway work to minimize lane closures on US-54 HWY.
2	Construct Auburn Hills roadway Improvements Construct US-54 North Frontage Road. Construct S. Bd. 151st St. West roadway Improvements from Sta. 20+39 to Sta. 30+40. Continue 151st St. West Construction North of US-54.	Close Auburn Hills. Close Existing Frontage Road @ 135th St. West. One-lane, Southbound traffic on 151st St. South of US-54 Highway. 151st St. West to remain Closed North of US-54.	
3	Install Traffic Signal at 151st St. West and US-54 Highway, Surface Course, final seeding, marking 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

CITY OF WICHITA

TRAFFIC HANDLING AND CONSTRUCTION SEQUENCE

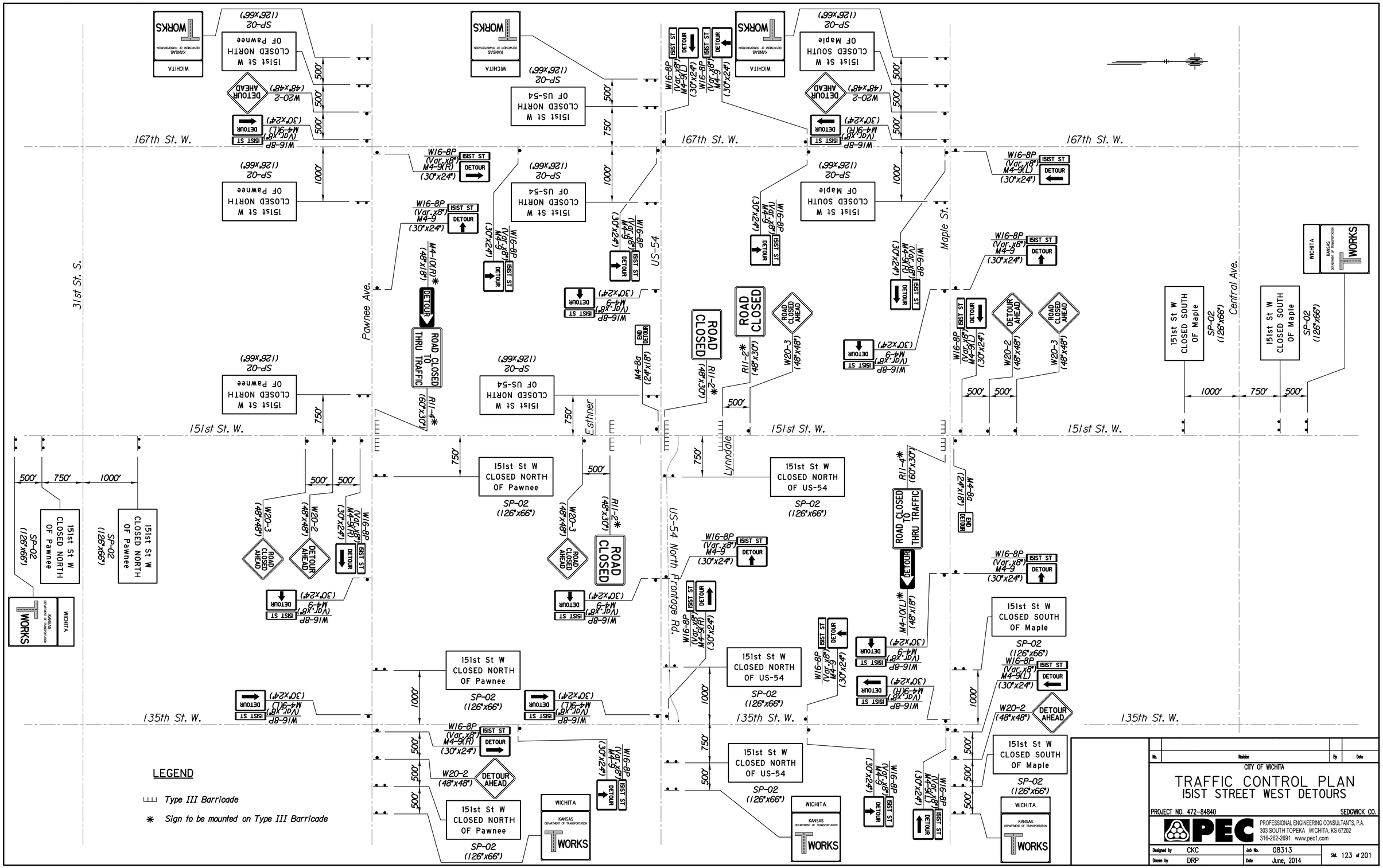
PROJECT NO. 472-84840 SEDGWICK CO.

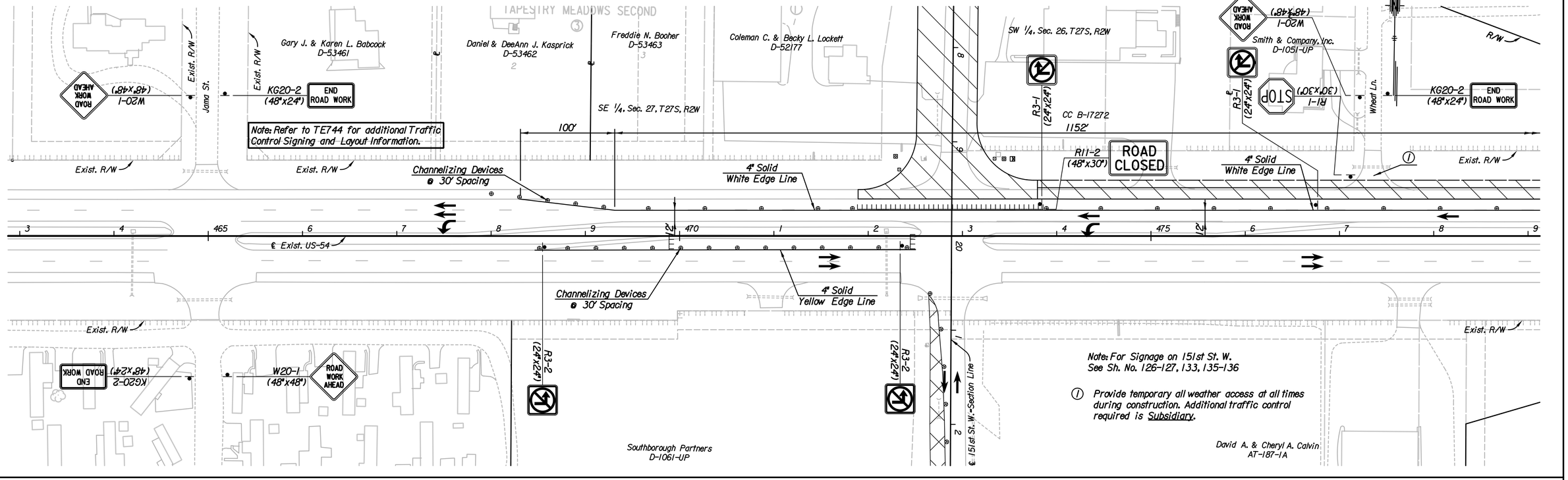
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 122 of 201

Plotted By: drp Date: 7/14/2014 2:49:24 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-ConstSeq.dgn


167th St. W.
151st St. W.
135th St. W.
31st St. S.
Pawnee Ave.
US-54
Esthner
Lynndale
US-54 North Frontage Rd.
Maple St.
Central Ave.
WORKS
WICHITA
KANSAS DEPARTMENT OF TRANSPORTATION
DETOUR AHEAD
ROAD CLOSED AHEAD
ROAD CLOSED
ROAD CLOSED TO THRU TRAFFIC
END DETOUR
DETOUR
ISIST ST
W16-8P (Var.x8") M4-9(R) (30"x24")
W16-8P (Var.x8") M4-9(L) (30"x24")
W16-8P (Var.x8") M4-9 (30"x24")
W16-8P (Var.x8") M4-9(L) (30"x24")
W16-8P (Var.x8") M4-9 (30"x24")
W20-2 (48"x48")
W20-3 (48"x48")
M4-10(R)* (48"x18")
M4-10(L)* (48"x18")
M4-8a (24"x18")
R11-2* (48"x30")
R11-4* (60"x30")
R1-2* (48"x30")
SP-02 (126"x66")
151st St W CLOSED NORTH OF Pawnee
151st St W CLOSED NORTH OF US-54
151st St W CLOSED SOUTH OF Maple
151st St W CLOSED SOUTH OF Maple
500'
750'
1000'
LEGEND
Type III Barricade
* Sign to be mounted on Type III Barricade
CITY OF WICHITA
TRAFFIC CONTROL PLAN
151ST STREET WEST DETOURS
PROJECT NO. 472-84840
SEDGWICK CO.
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com
Designed by CKC
Drawn by DRP
Job No. 08313
Date June, 2014
Sht. 123 of 201
Plotted By: drp Date: 7/14/2014 2:49:24 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-TCP.dgn



CITY OF WICHITA

TRAFFIC CONTROL PLAN STAGE I US-54 AND NORTH FRONTAGE ROAD STA. 463+00 TO STA. 495+00

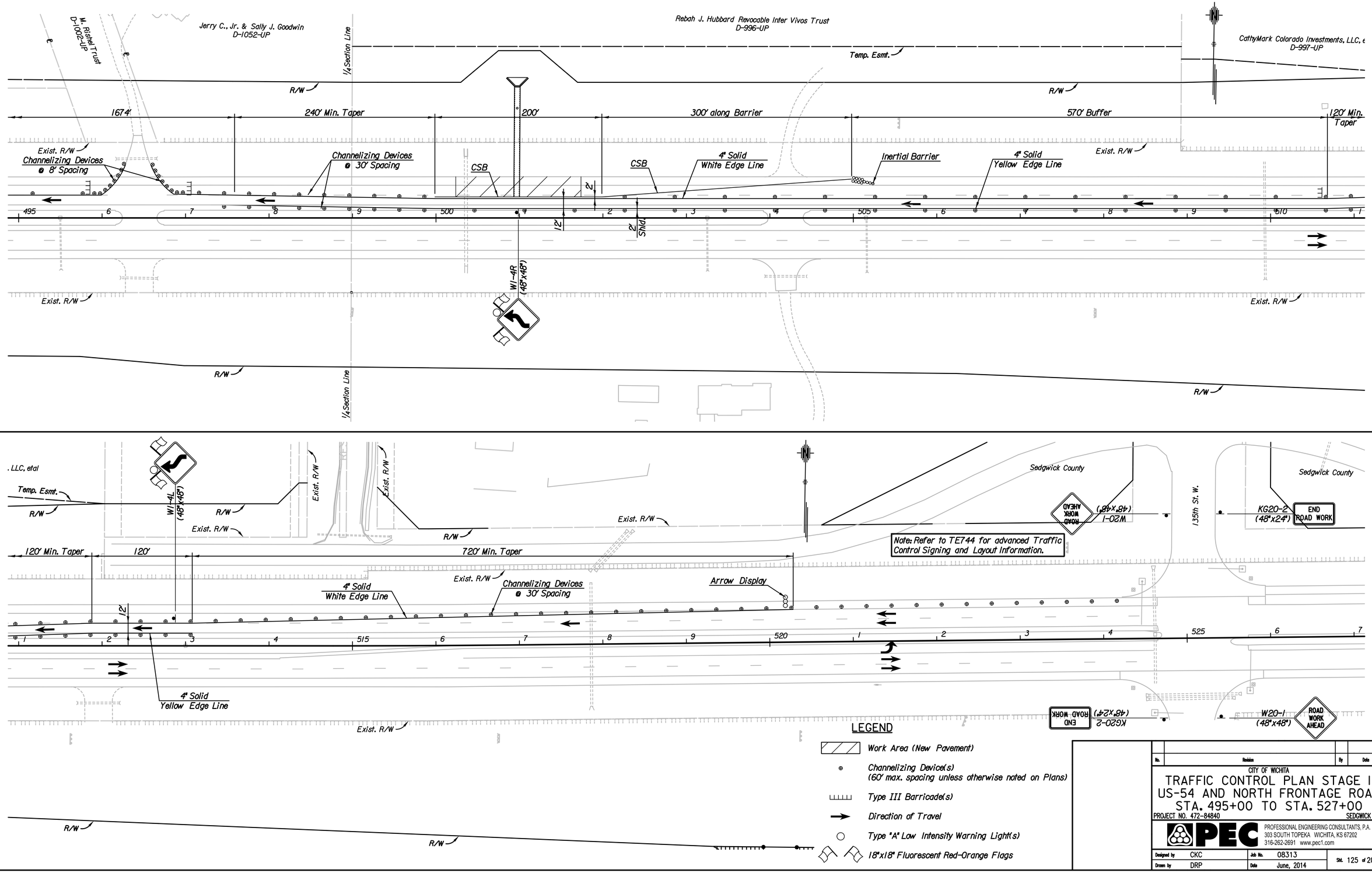
PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 124 of 201
Drawn by	DRP	Date	June, 2014	

No.	Revision	By	Date

Plotted By: drp Date: 7/14/2014 2:49:25 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg 1Box 1.dgn



LEGEND

- Work Area (New Pavement)
- Channelizing Device(s) (60' max. spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel
- Type "A" Low Intensity Warning Light(s)
- 18"x18" Fluorescent Red-Orange Flags

No.	Revision	By	Date

CITY OF WICHITA

TRAFFIC CONTROL PLAN STAGE I US-54 AND NORTH FRONTAGE ROAD STA. 495+00 TO STA. 527+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 125 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:26 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg I Box 2.dgn

Plotted By: drp Date: 7/14/2014 2:49:27 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg 1151stCLOSED.dgn

Lyndale St.
Moselyn St.
RES. "E"
AUBURN HILLS 5TH ADDITION
D-50790
D-50791
D-50792
D-50793
D-50794
D-50795
D-50796
D-50797
Brand Investments LLC D-50793
Freddie N. Booher Revocable Trust D-1005-UP
D-1006-UR
Gale S. & Darlene F. Mullin D-1050-UP
Smith & Company, Inc. D-1051-UP
Eugene J. Pelz, etal D-1049-UP
D-1048-UP
Exist. R/W
R/W
Temp. Esmt.
℄ US-54 North Frontage Rd.
SW 1/4, Sec. 26, T27S, R2W
CC B-17272
℄ Exist. US-54
℄ 151st St. W.-Section Line
R3-2 (24"x24")
R11-4 (60"x30") ROAD CLOSED TO THRU TRAFFIC
R11-2 (48"x30") ROAD CLOSED
Jimmie L. & Carmen L. Farrice D-53432
Larry L. Lee & Donna J. Delaney D-53431
Sylvia D. Smith & Kathleen Hill D-53430
TAPESTRY MEADOWS
Joseph R. & Julie K. Greene D-53429
Woodbine Ln.
Kansas Gas Supply Corp. D-1016-UP
GOOLSBY'S 2ND ADDITION
Coleman C. & Becky L. Lockett D-52177
Tapestry Ln.
Temp. Esmt.
Freddie N. Booher D-53463
SE 1/4, Sec. 27, T27S, R2W
TAPESTRY MEADOWS SECOND
Daniel & DeeAnn J. Kasprick
Match Line
W20-3 (48"x48") ROAD CLOSED 500 FT
Jama St.

Note: See Traffic Control Plan - 151st St. W. Closures for additional Traffic Control Signing and Layout Information.

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

- Work Area (New Pavement)
- Channelizing Device(s) (40' spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

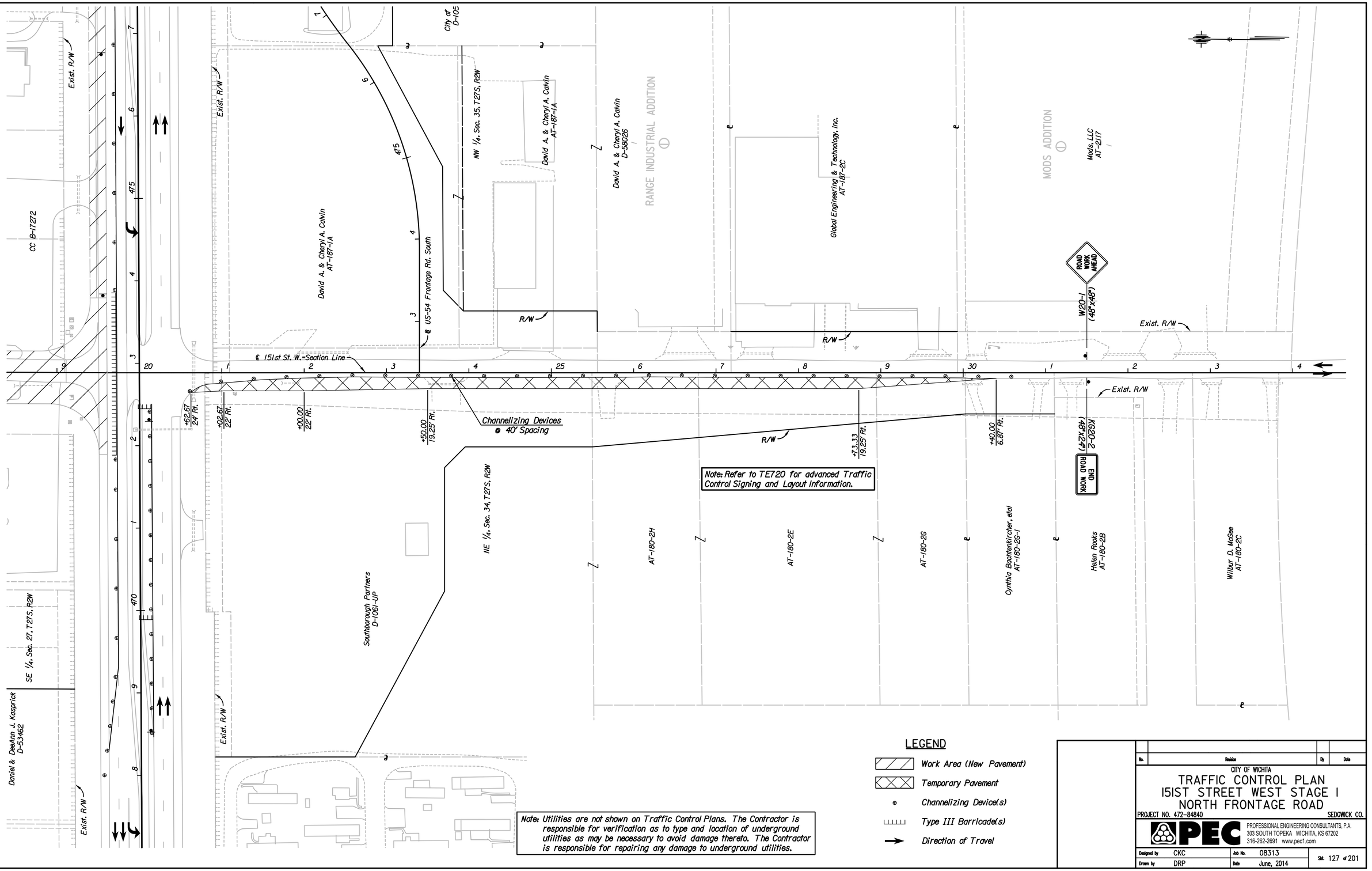
CITY OF WICHITA

TRAFFIC CONTROL PLAN 151ST STREET WEST STAGE I NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 126 of 201
Drawn by	DRP	Date	June, 2014	



LEGEND

- Work Area (New Pavement)
- Temporary Pavement
- Channelizing Device(s)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

TRAFFIC CONTROL PLAN
151ST STREET WEST STAGE I
NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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Designed by CKC	Job No. 08313	Sht. 127 of 201
Drawn by DRP	Date June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:28 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg 151st South Widening.dgn

Lynn Wisener, etux
AT-155-14

Dennis W. Mies, etux
AT-155-36

Exist. R/W

Arrow Display

1 2 3 4 455 6 7 8 9

Channelizing Devices @ 30' Spacing

4" Solid Yellow Edge Line

12'

Channelizing Devices @ 8' Spacing

720' Min. Taper

Exist. R/W

Note: Refer to TE744 for advanced Traffic Control Signing and Layout Information.

END ROAD WORK (48"x24") K620-2

155th St. W.

W20-1 (48"x48") ROAD WORK AHEAD

460 1 2 3 4

Section Line

℄ Exist. US-54

4" Solid White Lane Line

Channelizing Devices @ 8' Spacing

465 6 7

4" Solid Yellow Edge Line

12'

Exist. R/W

1402'

END ROAD WORK (48"x24") K620-2

W20-1 (48"x48") ROAD WORK AHEAD

Exist. R/W

Jama St.

Exist. R/W

Gary J. & Karen L. Babcock
D-53461

KG20-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

Exist. R/W

High Halo Kennels, Inc.
AT-180-1A-3

Dick Kunkle Bldg. & Inv. Corp.
AT-180-1A-1

Earline M. Shuman
AT-180-1A-2

TAPESTRY MEADOWS SECOND

Daniel & DeeAnn J. Kasprick
D-53462

Freddie N. Booher
D-53463

Coleman C. & Becky L. Lockett
D-52177

Exist. R/W

SW 1/4, Sec. 26, T27S, R2W

R3-1 (24"x24")

CC B-17272

501'

143'

312'

Exist. R/W

Channelizing Devices @ 30' Spacing

4" Solid Yellow Edge Line

12'

7 8 9 470 1 2

4" Solid Yellow Edge Line

Channelizing Devices @ 8' Spacing

1402'

Exist. R/W

R3-2 (24"x24")

R3-2 (24"x24")

℄ 151st St. W.-Section Line

Southborough Partners
D-1061-UP

① Provide temporary all weather access at all times during construction. Additional traffic control required is Subsidiary.

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.

W20-1 (48"x48") ROAD WORK AHEAD

Smith & Company, Inc.
D-1051-UP

R3-1 (24"x24")

STOP (30"x30") R1-1

Wheat Ln.

R11-2 (48"x30") ROAD CLOSED

4" Solid White Edge Line

12'

20 4 475 6 7 8 9 480 1 2 3

4" Solid Yellow Edge Line

12'

1259'

Exist. R/W

David A. & Cheryl A. Calvin
AT-187-1A

James Perkins Trust
D-1007-UP

R/W

KM4-20 (48"x12") R2-1 (48"x60") WORK ZONE SPEED LIMIT XX

Temp. Esmt.

R/W

KG20-2 (48"x24") END ROAD WORK

Exist. R/W

Wichita Friends School, Inc.
D-1009-UP

Exist. R/W

4" Solid White Edge Line

Channelizing Devices @ 8' Spacing

4" Solid White Lane Line

4" Solid Yellow Edge Line

12'

Exist. R/W

KM4-20 (48"x12") R2-1 (48"x60") WORK ZONE SPEED LIMIT XX

LEGEND

- Work Area (New Pavement)
- Temporary Widening
- Channelizing Device(s) (60' max. spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

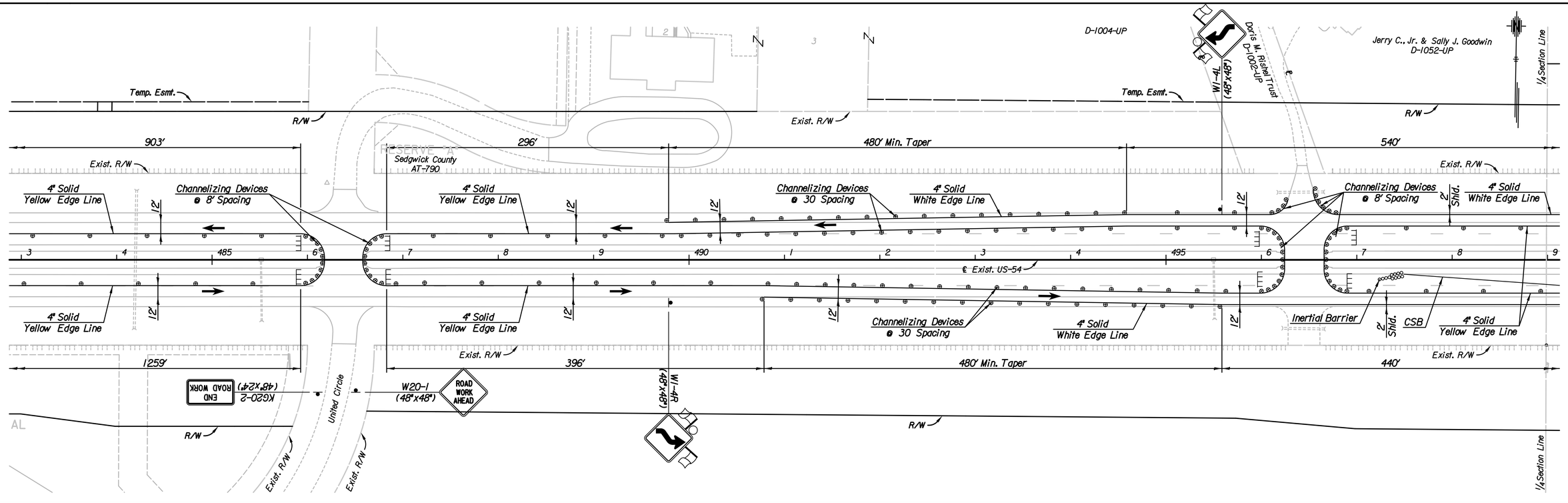
TRAFFIC CONTROL PLAN STAGE IB US-54 AND NORTH FRONTAGE ROAD STA. 451+00 TO STA. 483+00

PROJECT NO. 472-84840 SEDGWICK CO.

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PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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Designed by	CKC	Job No.	08313	Sht. 128 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/21/2014 8:57:58 AM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg IB Box 1.dgn



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

CITY OF WICHITA

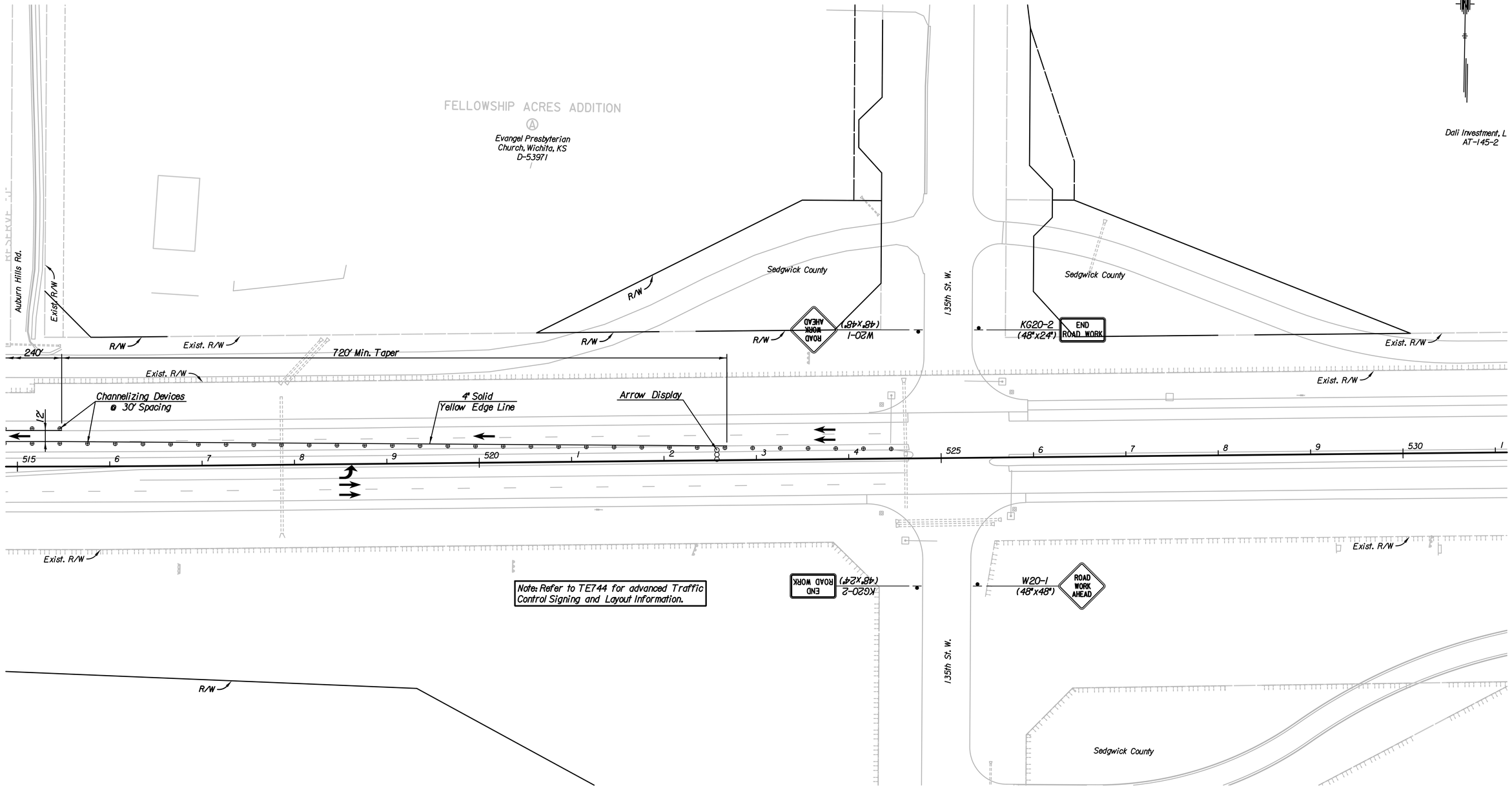
TRAFFIC CONTROL PLAN STAGE IB US-54 AND NORTH FRONTAGE ROAD STA. 483+00 TO STA. 515+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 129 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:29 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg IB Box 2.dgn



LEGEND

- Work Area (New Pavement)
- Channelizing Device(s) (60' spacing unless otherwise noted on Plans)
- Direction of Travel

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

CITY OF WICHITA

TRAFFIC CONTROL PLAN STAGE IB US-54 AND NORTH FRONTAGE ROAD STA. 515+00 TO STA. 531+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 130 of 201

Plotted By: drp Date: 7/14/2014 2:49:30 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg IB Box 3.dgn

Lynn Wisener, etux
AT-155-14

Dennis W. Mies, etux
AT-155-36

Exist. R/W

Exist. R/W

Jama St.

Exist. R/W

Gary J. &

KG20-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

Exist. R/W

450 1 2 3 4 455 6 7 8 9 460 1 2 3 4 465 6

℄ Exist. US-54

12'

Arrow Display

4" Solid White Edge Line

Channelizing Devices @ 30' Spacing

Exist. R/W

720' Min. Taper

80'

399'

669'

Note: Refer to TE744 for advanced Traffic Control Signing and Layout Information.

K620-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

155th St. W.

Channelizing Devices @ 8' Spacing

Channelizing Devices @ 8' Spacing

High Halo Kennels, Inc.
AT-180-1A-3

Dick Kunkle Bldg. & Inv. Corp.
AT-180-1A-1

Earline M. Shuman
AT-180-1A-2

TAPESTRY MEADOWS SECOND

ry J. & Karen L. Babcock
D-53461

Daniel & DeeAnn J. Kasprick
D-53462

Freddie N. Booher
D-53463

Coleman C. & Becky L. Lockett
D-52177

SE 1/4, Sec. 27, T27S, R2W

SW 1/4, Sec. 26, T27S, R2W

Exist. R/W

R3-2 (24"x24")

R3-2 (24"x24")

501'

CC B-17272

4" Solid White Edge Line

R3-1 (24"x24")

R11-2 (48"x30") ROAD CLOSED

W20-1 (48"x48") ROAD WORK AHEAD

Smith & Company, Inc.
D-1051-UP

R1-1 (30"x30") STOP

R3-1 (24"x24")

Exist. R/W

Wheat Ln.

Exist. R/W

James Perkins Trust
D-1007-UP

Wichita Friends
D-1009-

R/W

Temp. Esmt.

R/W

KG20-2 (48"x24") END ROAD WORK

Exist. R/W

4" Solid White Edge Line

Channelizing Devices @ 8' Spacing

4" Solid White Lane Line

Exist. R/W

6 7 8 9 470 1 2 3 4 ℄ Exist. US-54 475 6 7 8 9 480 1 2

12'

4" Solid White Edge Line

4" Solid Yellow Edge Line

Channelizing Devices @ 30' Spacing

669'

4" Solid White Edge Line

1279'

Exist. R/W

Exist. R/W

Channelizing Devices @ 8' Spacing

151st St. W.-Section Line

Southborough Partners
D-1061-UP

David A. & Cheryl A. Calvin
AT-187-1A

Ⓘ Provide temporary all weather access at all times during construction. Additional traffic control required is Subsidiary.

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

- Work Area (New Pavement)
- Temporary Widening
- Channelizing Device(s) (60' spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

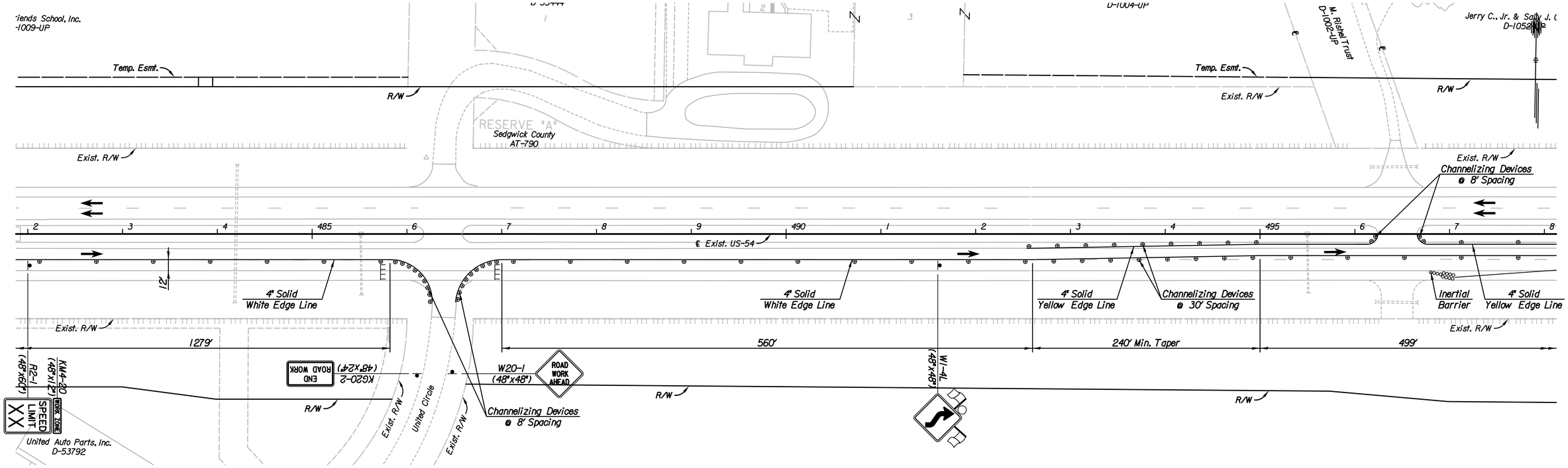
TRAFFIC CONTROL PLAN STAGE IC US-54 AND NORTH FRONTAGE ROAD STA. 450+00 TO STA. 482+00

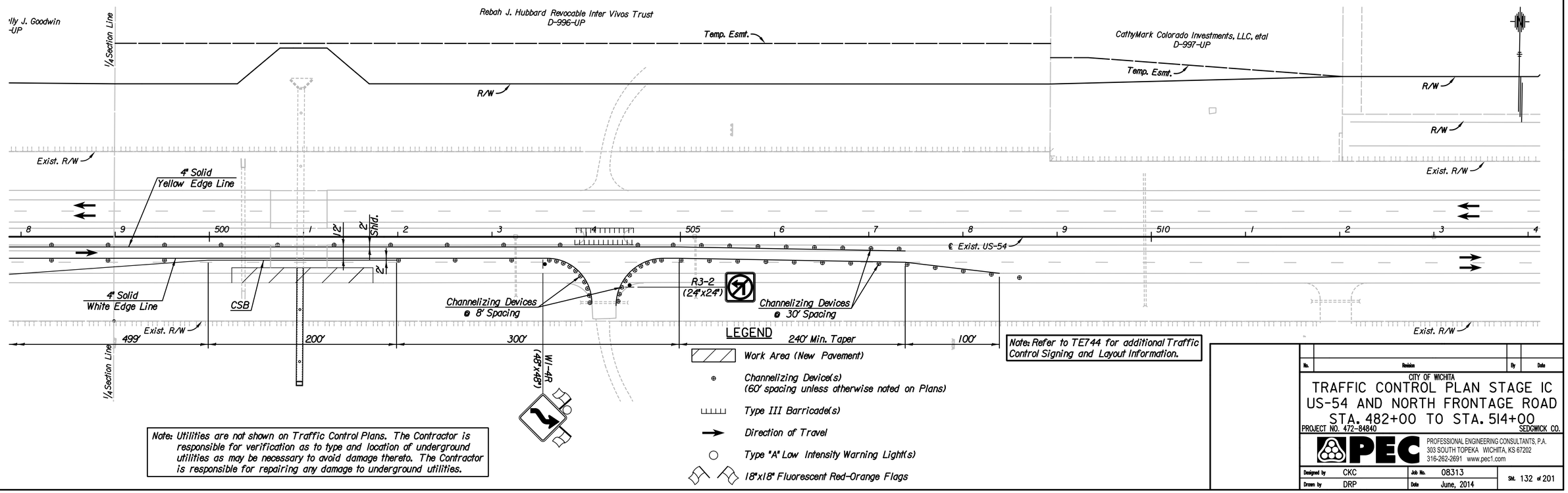
PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313	Sht. 131 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:30 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg IC Box 1.dgn





LEGEND

- Work Area (New Pavement)
- Channelizing Device(s) (60' spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel
- Type "A" Low Intensity Warning Light(s)
- 18"x18" Fluorescent Red-Orange Flags

Note: Refer to TE744 for additional Traffic Control Signing and Layout Information.

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

CITY OF WICHITA

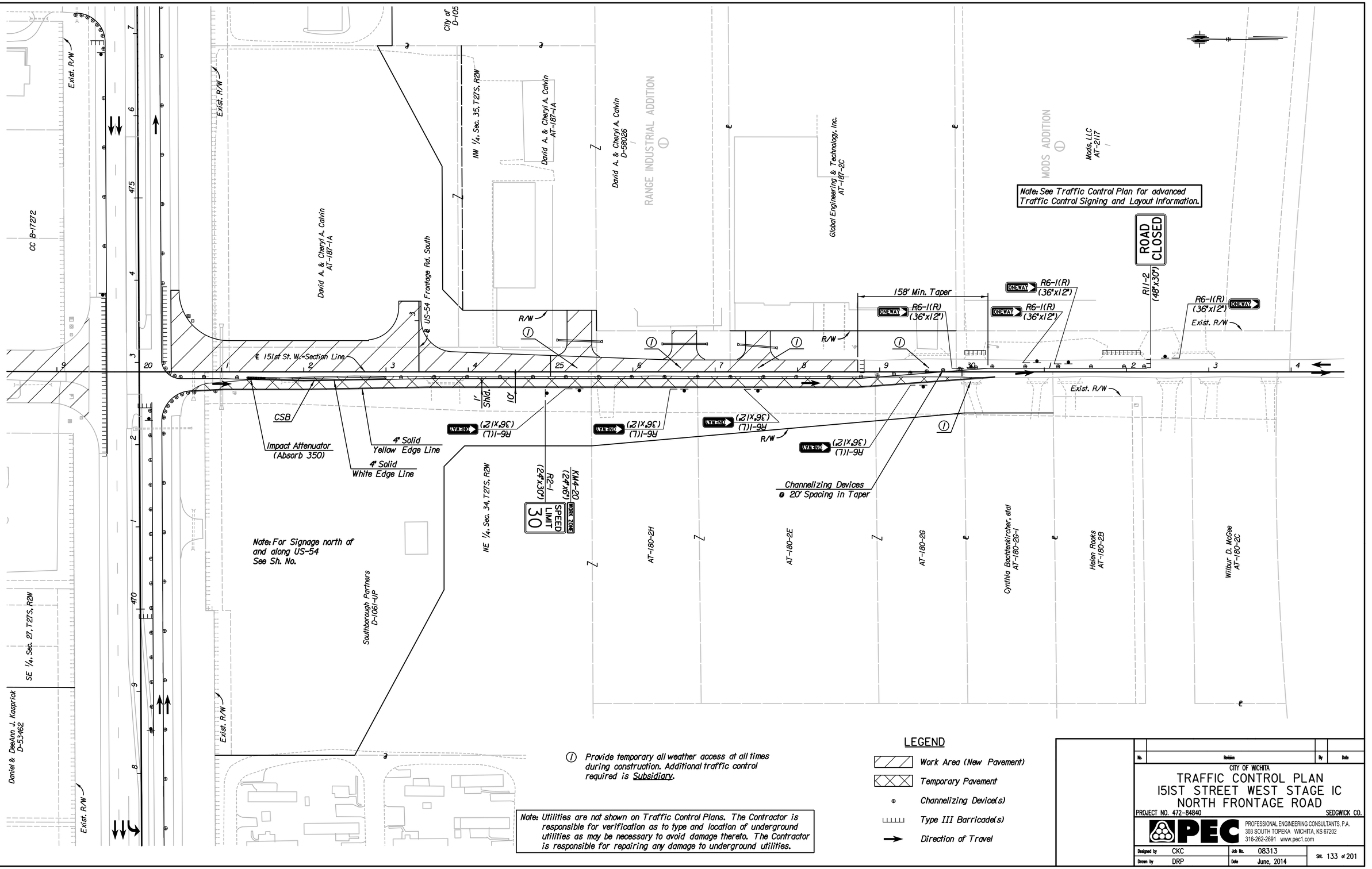
TRAFFIC CONTROL PLAN STAGE IC US-54 AND NORTH FRONTAGE ROAD STA. 482+00 TO STA. 514+00

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 132 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:31PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg IC Box 2.dgn


Exist. R/W
CC B-17272
475
Exist. R/W
City of D-105
NW 1/4, Sec. 35, T27S, R2W
David A. & Cheryl A. Calvin AT-187-1A
David A. & Cheryl A. Calvin D-58026
RANGE INDUSTRIAL ADDITION
Global Engineering & Technology, Inc. AT-187-2C
MODS ADDITION
Mods, LLC AT-2117
Note: See Traffic Control Plan for advanced Traffic Control Signing and Layout Information.
ROAD CLOSED
R11-2 (48"x30")
David A. & Cheryl A. Calvin AT-187-1A
US-54 Frontage Rd. South
℄ 151st St. W.-Section Line
R/W
158' Min. Taper
ONE-WAY R6-1(R) (36"x12")
ONE-WAY R6-1(R) (36"x12")
ONE-WAY R6-1(R) (36"x12")
ONE-WAY R6-1(R) (36"x12")
Exist. R/W
1" Shld.
10'
CSB
Impact Attenuator (Absorb 350)
4" Solid Yellow Edge Line
4" Solid White Edge Line
ONE-WAY R6-1(L) (36"x12")
ONE-WAY R6-1(L) (36"x12")
ONE-WAY R6-1(L) (36"x12")
ONE-WAY R6-1(L) (36"x12")
R/W
Channelizing Devices @ 20' Spacing in Taper
NE 1/4, Sec. 34, T27S, R2W
KM4-20 (24"x18") WORK ZONE
R2-1 (24"x30") SPEED LIMIT 30
Note: For Signage north of and along US-54 See Sh. No.
Southborough Partners D-1061-UP
AT-180-2H
AT-180-2E
AT-180-2G
Cynthia Bachtenkircher, etal AT-180-2G-1
Helen Rooks AT-180-2B
Wilbur D. McGee AT-180-2C
SE 1/4, Sec. 27, T27S, R2W
Daniel & DeeAnn J. Kasprick D-53462
Exist. R/W
Exist. R/W
Exist. R/W

Lynn Wisener, etux
AT-155-14

Dennis W. Mies, etux
AT-155-36

Exist. R/W

Exist. R/W

Jama St.

Exist. R/W

Gary J. &

KG20-2
(48"x24")

END
ROAD WORK

ROAD WORK AHEAD

W20-1
(48"x48")

Exist. R/W

450 1 2 3 4 455 6 7 8 9 460 1 2 3 4 465 6

℄ Exist. US-54

Exist. R/W

Exist. R/W

155th St. W.

KG20-2
(48"x24")

END ROAD WORK

W20-1
(48"x48")

ROAD WORK AHEAD

High Halo Kennels, Inc.
AT-180-1A-3

Dick Kunkle Bldg.
& Inv. Corp.
AT-180-1A-1

Earline M. Shuman
AT-180-1A-2

TAPESTRY MEADOWS SECOND

ry J. & Karen L. Babcock
D-53461

Daniel & DeeAnn J. Kasprick
D-53462

Freddie N. Booher
D-53463

SE 1/4, Sec. 27, T27S, R2W

Coleman C. & Becky L. Lockett
D-52177

SW 1/4, Sec. 26, T27S, R2W

Exist. R/W

Exist. R/W

Smith & Company, Inc.
D-1051-UP

ROAD WORK AHEAD
(48"x48")
W20-1

STOP
(30"x30")
R1-1

Exist. R/W

Wheat Ln.

James Perkins Trust
D-1007-UP

Wichita Friends
D-1009-

Temp. Esmt.

R/W

KG20-2
(48"x24")

END
ROAD WORK

Exist. R/W

R/W

Exist. R/W

R3-2
(24"x24")

R3-2
(24"x24")

501'

CC B-17272

4" Solid
White Edge Line

R3-1
(24"x24")

R11-2
(48"x30")

ROAD
CLOSED

R3-1
(24"x24")

Channelizing Devices
@ 8' Spacing

6" Solid
White Lane Line

6 7 8 9 470 1 2 3 4 ℄ Exist. US-54 475 6 7 8 9 480 1 2

12'

12'

12'

Channelizing Devices
@ 30' Spacing

4" Solid
Yellow Edge Line

Channelizing Devices
@ 30' Spacing

4" Solid
White Lane Line

+37

+41

4" Solid
White Edge Line

Exist. R/W

Exist. R/W

Channelizing Devices
@ 8' Spacing

151st St. W.-Section Line

R/W

Southborough Partners
D-1061-UP

David A. & Cheryl A. Calvin
AT-187-1A

Note: Refer to TE722 for advanced Traffic Control Signing and Layout Information.

① Provide temporary all weather access at all times during construction. Additional traffic control required is Subsidiary.

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

- Work Area (New Pavement)
- Temporary Widening
- Channelizing Device(s) (60' max. spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

TRAFFIC CONTROL PLAN STAGE 2
US-54 AND NORTH FRONTAGE ROAD
STA. 450+00 TO STA. 482+00

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 134 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:32 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg 2 Detail.dgn

Note: See Traffic Control Plan - 151st St. W. Closures for additional Traffic Control Signing and Layout Information.

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

- Work Area (New Pavement)
- Channelizing Device(s) (40' spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

Moselyn St.
Lyndale St.
RESERVE "F"
AUBURN HILLS 5TH ADDITION
D-50790
D-50791
D-50792
D-50793
D-50794
D-50795
D-50796
D-50797
Brand Investments LLC D-50793
Freddie N. Booher Revocable Trust D-1005-UP
D-1006-UP
Gale S. & Darlene F. Mullin D-1050-UP
Smith & Company, Inc. D-1051-UP
Eugene J. Pelz, etal D-1049-UP
D-1048-UP
Exist. R/W
R/W
Temp. Esmt.
℄ US-54 North Frontage Rd.
SW 1/4, Sec. 26, T27S, R2W
CC B=17272
℄ 151st St. W.-Section Line
4" Solid White Edge Line
ROAD CLOSED
R11-2 (48"x30")
R3-1 (24"x24")
R3-2 (24"x24")
℄ Exist. US-54
Channelizing Devices @ 30' Spacing
4" Solid Yellow Edge Line
R11-4 (60"x30") ROAD CLOSED TO THRU TRAFFIC
Jimmie L. & Carmen L. Farrice D-53432
Larry L. Lee & Donna J. Delaney D-53431
Sylvia D. Smith & Kathleen Hill D-53430
Joseph R. & Julie K. Greene D-53429
TAPESTRY MEADOWS
℄ Woodbine Ln.
Kansas Gas Supply Corp. D-1016-UP
GOOLSBY'S 2ND ADDITION
Coleman C. & Becky L. Lockett D-52177
Tapestry Ln.
Temp. Esmt.
Freddie N. Booher D-53463
SE 1/4, Sec. 27, T27S, R2W
TAPESTRY MEADOWS SECOND
Daniel & DeeAnn J. Kasprick
Match Line
W20-3 (48"x48") ROAD CLOSED 500 FT
Jama St.

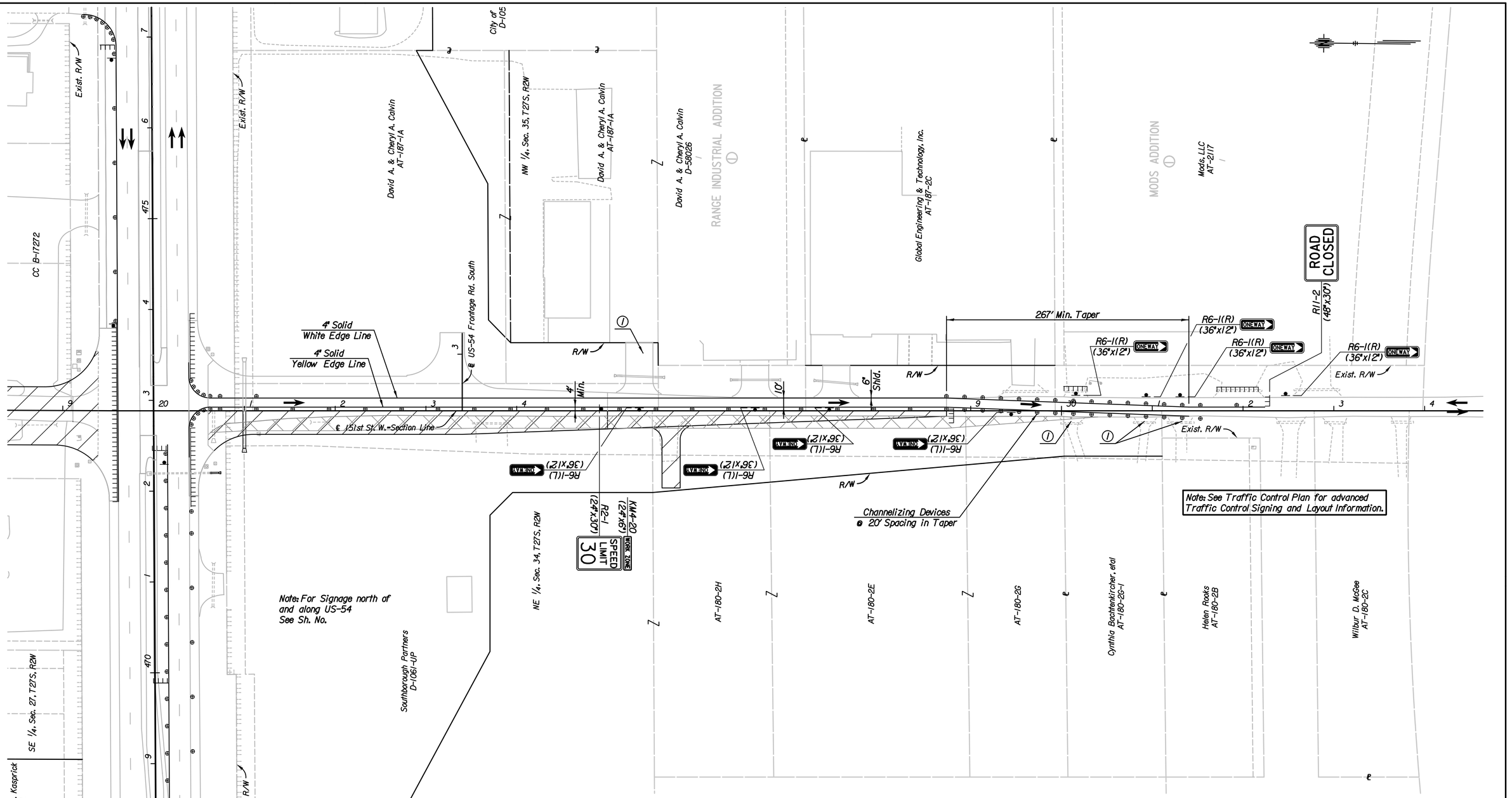
CITY OF WICHITA
TRAFFIC CONTROL PLAN
151ST STREET WEST STAGE 2
NORTH FRONTAGE ROAD
PROJECT NO. 472-84840
SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 135 of 201
Drawn by	DRP	Date	June, 2014	

No.	Revision	By	Date

Plotted By: drp Date: 7/14/2014 2:49:33 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg 2 151stCLOSED.dgn



① Provide temporary all weather access at all times during construction. Additional traffic control required is Subsidiary.

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

- Work Area (New Pavement)
- Temporary Pavement
- Channelizing Device(s)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

TRAFFIC CONTROL PLAN 151ST STREET WEST STAGE 2 NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

Designed by	CKC	Job No.	08313
Drawn by	DRP	Date	June, 2014

Sht. 136 of 201

Plotted By: drp Date: 7/14/2014 2:49:34 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg 2 151st South.dgn

Note: Adjust signing dimensions as conditions allow.

W20-3 (48"x48") ROAD CLOSED 1000 FT

500'

W20-3 (48"x48") ROAD CLOSED 500 FT

500'

Auburn Hills Ct.

R11-4 (60"x30") ROAD CLOSED TO THRU TRAFFIC

R11-2 (48"x30") ROAD CLOSED

Jimmy & Karen L. Edgington
D-1047-UP

℄ Auburn Hills Rd.

FELLOWSHIP ACRES ADDITION
Ⓐ
Evangel Presbyterian Church, Wichita, KS
D-53971

AUBURN HILLS 15TH ADDITION
Ⓑ
West Wichita Development, Inc.
D-59309

RESERVE "I"

Mark Colorado Investments, LLC, etal
D-997-UP

Temp. Esmt.

R/W

ROAD CLOSED

R11-2 (48"x30")

Exist. R/W

℄ US-54 North Frontage Rd.

Exist. R/W

℄ Exist. US-54

SE 1/4, Sec. 26, T27S, R2W

Sedgwick County

℄ 135th St. W.

Section Line

ROAD CLOSED

R11-2 (48"x30")

525

520

515

510

LEGEND

Work Area (New Pavement)

Type III Barricade(s)

Direction of Travel

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

CITY OF WICHITA

TRAFFIC CONTROL PLAN
AUBURN HILLS ROAD STAGE 2
NORTH FRONTAGE ROAD

PROJECT NO. 472-84840 SEDGWICK CO.

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Designed by	CKC	Job No.	08313	Sht. 137 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:34 PM
FILE: i:\2008\08313\Frontage Rd North\Traffic\08313-Stg 3-Auburn Hills.dgn

Lynn Wisener, etux
AT-155-14

Dennis W. Mies, etux
AT-155-36

Gary J. &

Exist. R/W

Jama St.

Exist. R/W

Exist. R/W

KG20-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

Exist. R/W

450 1 2 3 4 455 6 7 8 9 460 1 2 3 4 465 6

℄ Exist. US-54

12'

Arrow Display

4" Solid White Edge Line

Channelizing Devices @ 30' Spacing

4" Solid White Edge Line

Exist. R/W

720' Min. Taper

80'

399'

707'

Exist. R/W

Exist. R/W

Note: Refer to TE744 for advanced Traffic Control Signing and Layout Information.

K620-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

155th St. W.

Channelizing Devices @ 8' Spacing

K620-2 (48"x24") END ROAD WORK

W20-1 (48"x48") ROAD WORK AHEAD

Channelizing Devices @ 8' Spacing

High Halo Kennels, Inc.
AT-180-1A-3

Dick Kunkle Bldg. & Inv. Corp.
AT-180-1A-1

Earline M. Shuman
AT-180-1A-2

TAPESTRY MEADOWS SECOND

ry J. & Karen L. Babcock
D-53461

Daniel & DeeAnn J. Kasprick
D-53462

Freddie N. Booher
D-53463

SE 1/4, Sec. 27, T27S, R2W

Coleman C. & Becky L. Lockett
D-52177

SW 1/4, Sec. 26, T27S, R2W

Exist. R/W

Smith & Company, Inc.
D-1051-UP

ROAD WORK AHEAD (48"x48") W20-1

STOP (30"x30") R1-1

Exist. R/W

Exist. R/W

James Perkins Trust
D-1007-UP

Wichita Friends
D-1009-

Temp. Esmt.

R/W

R/W

Exist. R/W

KG20-2 (48"x24") END ROAD WORK

Exist. R/W

Wheat Ln.

R3-2 (24"x24")

R3-2 (24"x24")

501'

CC B-17272

4" Solid White Edge Line

R3-1 (24"x24")

R11-2 (48"x30") ROAD CLOSED

R3-1 (24"x24")

Channelizing Devices @ 8' Spacing

6" Solid White Lane White Line

Exist. R/W

6 7 8 9 470 1 2 3 4 ℄ Exist. US-54 475 6 7 8 9 480 1 2

12'

4" Solid White Edge Line

4" Solid Yellow Edge Line

Channelizing Devices @ 30' Spacing

707'

70'

100'

Exist. R/W

Exist. R/W

R/W

Southborough Partners
D-1061-UP

℄ 151st St. W.-Section Line

Channelizing Devices @ 8' Spacing

4" Solid White Edge Line

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.

① Provide temporary all weather access at all times during construction. Additional traffic control required is Subsidiary.

David A. & Cheryl A. Calvin
AT-187-1A

LEGEND

- Work Area (New Pavement)
- Temporary Widening
- Channelizing Device(s) (60' spacing unless otherwise noted on Plans)
- Type III Barricade(s)
- Direction of Travel

No.	Revision	By	Date

CITY OF WICHITA

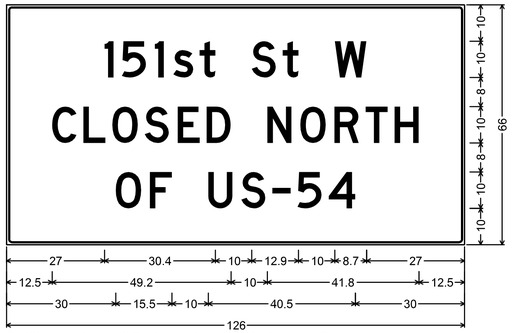
TRAFFIC CONTROL PLAN STAGE 2A US-54 AND NORTH FRONTAGE ROAD STA. 450+00 TO STA. 482+00

PROJECT NO. 472-84840 SEDGWICK CO.

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316-262-2691 www.pec1.com

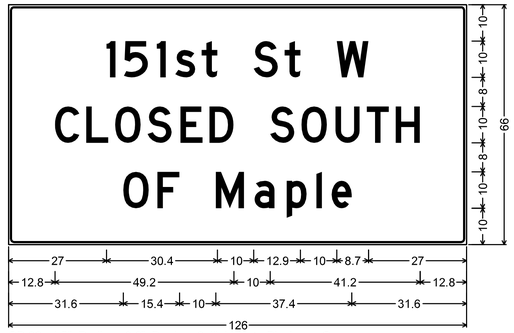
Designed by	CKC	Job No.	08313	Sht. 138 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:35 PM
FILE: I:\2008\08313\Frontage Rd North\Traffic\08313-Stg 2.dgn



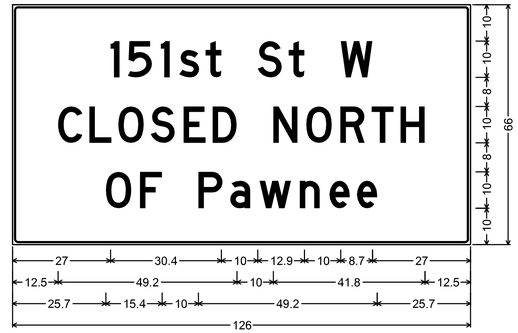
SP-02; 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[151st St W] D; [CLOSED NORTH] D; [OF US-54] D;
Table of distances between letter and object lefts.

27.0	l 4.7	5 9.1	l 5.1	s 7.2	t 14.3	S 8.5	t 14.4	W 8.7	27.0					
12.5	C 8.6	L 8.0	O 8.9	S 9.1	E 7.9	D 16.7	N 9.1	O 9.4	R 8.6	T 8.0	H 6.7	12.5		
30.0	O 9.4	F 16.1	U 9.1	S 8.6	- 6.8	5 8.6	4 7.4	30.0						



SP-02; 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[151st St W] D; [CLOSED SOUTH] D; [OF Maple] D;
Table of distances between letter and object lefts.

27.0	l 4.7	5 9.1	l 5.1	s 7.2	t 14.3	S 8.5	t 14.4	W 8.7	27.0					
12.8	C 8.6	L 7.9	O 8.9	S 9.1	E 8.0	D 16.7	S 8.6	O 9.4	U 8.5	T 8.0	H 6.7	12.8		
31.6	O 9.3	F 16.1	M 10.7	a 8.8	p 8.2	l 4.2	e 5.5	31.6						



SP-02; 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[151st St W] D; [CLOSED NORTH] D; [OF Pawnee] D;
Table of distances between letter and object lefts.

27.0	l 4.7	5 9.1	l 5.1	s 7.2	t 14.3	S 8.5	t 14.4	W 8.7	27.0					
12.5	C 8.6	L 8.0	O 8.9	S 9.1	E 7.9	D 16.7	N 9.1	O 9.4	R 8.6	T 8.0	H 6.7	12.5		
25.7	O 9.3	F 16.1	P 8.8	a 8.0	w 11.1	n 8.2	e 7.6	e 5.5	25.7					

No.	Revision	By	Date

CITY OF WICHITA

TRAFFIC CONTROL SIGN LAYOUTS

PROJECT NO. 472-84840 SEDGWICK CO.

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

Designed by	CKC	Job No.	08313	Sht. 139 of 201
Drawn by	DRP	Date	June, 2014	

Plotted By: drp Date: 7/14/2014 2:49:36 PM
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA-2289-01	2014	140	201

IBS REPLACEMENT MODULES	
REPLACEMENT MODULE SIZES	QUANTITY
REPLACEMENT MODULES (F2OO)	3
REPLACEMENT MODULES (F4OO)	2
REPLACEMENT MODULES (F7OO)	4
REPLACEMENT MODULES (F14OO)	2
REPLACEMENT MODULES (F21O0)	2

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

WORK ZONE SIGN (SPECIAL)		
SIGN NO.	16.25 SQ.FT. & LESS	16.26 SQ.FT. & OVER
SP-02		20

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH PER DAY)

✳ QUANTITY MOST USED ON THE PROJECT AT ANY ONE TIME

WORK ZONE SIGNS ✳			
SIGN NO.	SIZE - SQ.FT.		
	0-9.25	9.26-16.25	16.26 & OVER
KG20-2	10		
KM4-20	4		
M4-8a	2		
M4-9	16		
M4-9L	8		
M4-9R	7		
M4-10L	1		
M4-10R	1		
R1-1	1		
R2-1			6
R2-1	1		
R3-1	2		
R3-2	5		
R4-1			2
R6-1L	4		
R6-1R	4		
R11-2		7	
R11-4		4	
W1-4L		2	
W1-4R		2	
W3-5		2	
W4-2L			1
W4-2R			2
W16-8P	31		
W20-1		9	
W20-2		6	
W20-3		7	
W20-5		2	
W21-5		1	
W21-5B		2	

BARRICADES✳	CHANNELIZING DEVICES✳	
TYPE III (4' TO 12')	FIXED	PORTABLE
87		435

LIGHTED DEVICES ✳	
WORK ZONE WARNING LIGHT (TYPE "A" LOW INTENSITY)	66
WORK ZONE WARNING LIGHT (RED TYPE "B" HIGH INTENSITY)	
ARROW DISPLAY	2
PORTABLE CHANGEABLE MESSAGE SIGN	

RECAPITULATION OF QUANTITIES		
ITEM	QUANTITY	UNIT
WORK ZONE SIGNS (O TO 9.25 SQ.FT.)	97	EACH PER DAY
WORK ZONE SIGNS (9.26 TO 16.25 SQ.FT.)	44	EACH PER DAY
WORK ZONE SIGNS (16.26 SQ.FT. & OVER)	11	EACH PER DAY
WORK ZONE BARRICADES (TYPE III - 4' TO 12')	87	EACH PER DAY
CHANNELIZER (FIXED)		EACH PER DAY
CHANNELIZER (PORTABLE)	435	EACH PER DAY
WORK ZONE WARNING LIGHT (TYPE "A" LOW INTENSITY)	66	EACH PER DAY
WORK ZONE WARNING LIGHT (RED TYPE "B" HIGH INTENSITY)		EACH PER DAY
ARROW DISPLAY	2	EACH PER DAY
PORTABLE CHANGEABLE MESSAGE SIGN		EACH PER DAY
PAVEMENT MARKING (TEMPORARY)		
4" SOLID (TYPE I TAPE OR PAINT)	340	STA./LINE
4" SOLID (TYPE II TAPE OR PAINT)	26	STA./LINE
4" BROKEN (8.0') (TYPE I TAPE OR PAINT)		STA./LINE
4" BROKEN (8.0') (TYPE II TAPE OR PAINT)		STA./LINE
4" BROKEN (8.0') (FLEXIBLE RAISED PAVEMENT MARKER)		STA./LINE
4" BROKEN (3.0') (TYPE I TAPE OR PAINT)		STA./LINE
4" BROKEN (3.0') (TYPE II TAPE PAINT)		STA./LINE
4" BROKEN (3.0') (FLEXIBLE RAISED PAVEMENT MARKER)		STA./LINE
4" DOTTED EXTENSION (TYPE I TAPE OR PAINT)		STA./LINE
4" DOTTED EXTENSION (TYPE II TAPE OR PAINT)		STA./LINE
SOLID (LINE MASKING TAPE)		STA./LINE
BROKEN (LINE MASKING TAPE)		STA./LINE
PAVEMENT MARKING REMOVAL	11746	LIN. FT.
CONCRETE SAFETY BARRIER (TYPE F3)(TEMPORARY)	1000	LIN. FT.
CONCRETE SAFETY BARRIER (TYPE F3)(TEMP.-INSTALL ONLY)		LIN. FT.
CONCRETE SAFETY BARRIER (TYPE F3)(TEMP.-RELOCATE)	1150	LIN. FT.
INERTIAL BARRIER SYSTEM	2	EACH
REPLACEMENT MODULES	13	EACH
IMPACT ATTENUATOR	1	EACH
WORK ZONE SIGN (SPECIAL) (16.25 SQ. FT. & LESS)		EACH
WORK ZONE SIGN (SPECIAL) (16.26 SQ. FT. & MORE)	20	EACH
TEMPORARY RAISED PAVEMENT MARKER (TYPE I)		EACH
TEMPORARY RAISED PAVEMENT MARKER (TYPE II)		EACH
TRAFFIC SIGNAL INSTALLATION (TEMPORARY)		LUMP SUM
TRAFFIC CONTROL (INITIAL SET UP)	LUMP SUM	LUMP SUM
TRAFFIC CONTROL	1	LUMP SUM
FLAGGER (SET PRICE)	1	HOUR
TWORKS SIGN ASSEMBLY	8	EACH

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Pavement Marking Requirements	J.A.M.	K.P.
2	10/4/11	Added IBS Quantities, Added TWorks Quanity	J.A.M.	K.P.
1	8/8/07	2007 Spec Revision	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMERY OF DEVICES AND RECAPITULATION OF QUANTITIES

TE795

FHWA APPROVAL		10/16/12	APP'D	
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN. CK.	TRACE CK.

Drawn By : drp
Plotted : 14-JUL-2014 14:52
File : I:\2008\08313\Frontage Rd North\Standards\08313-te795.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	141	201

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/

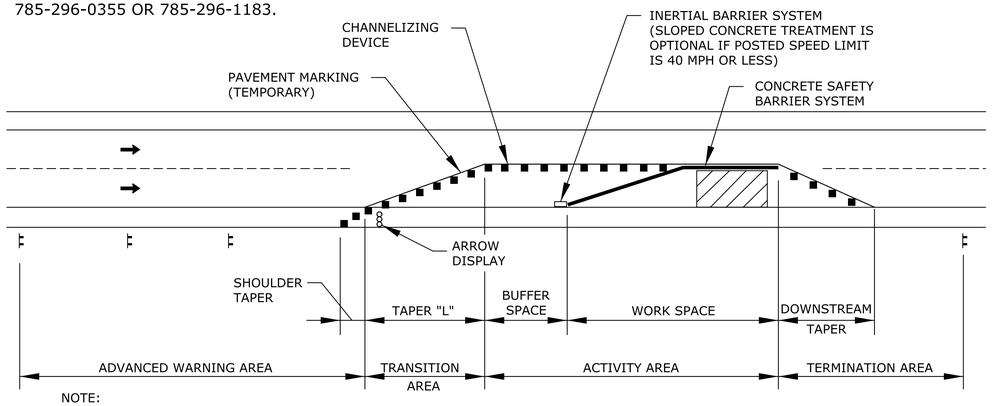
3) CERTIFY THAT THE TRUCK MOUNTED ATTENUATORS (TMA'S) (WHICH ARE DEFINED AS CATEGORY 3 DEVICES BY THE FHWA MEMORANDUM) MEET CURRENT CRASHWORTHY SPECIFICATIONS AS DEFINED ABOVE AND INCLUDE A COPY OF THE ENTIRE FHWA ACCEPTANCE LETTER. ALL CATEGORY 1 & 2 DEVICES SHALL BE NCHRP REPORT 350 OR MASH REPORT 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:

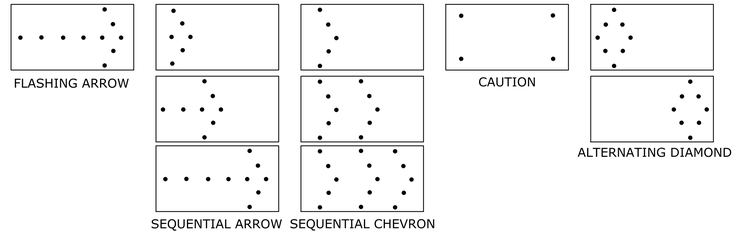
ALTERNATIVE TEMPORARY RUMBLE STRIP OPTIONS MAY BE AVAILABLE. PLEASE CONTACT THE TEMPORARY TRAFFIC CONTROL UNIT FOR MORE INFORMATION AT 785-296-0355 OR 785-296-1183.



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

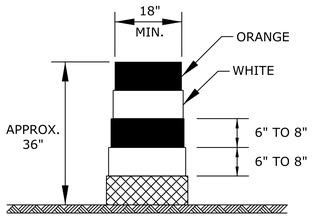
GENERAL TRAFFIC CONTROL

TE700

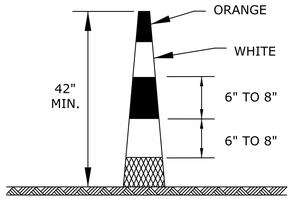
FHWA APPROVAL	10/16/12	APP'D	Kristina Pyle
DESIGNED B.A.H.	DETAILED B.A.H.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te700.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	142	201



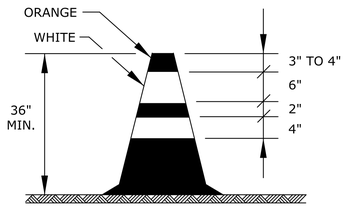
DRUM



CONICAL DELINEATOR

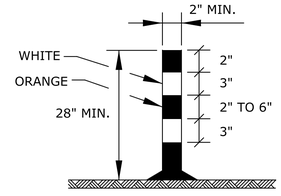
DRUMS AND CONICAL DELINEATORS SHALL HAVE AT LEAST TWO ORANGE AND TWO WHITE 6" TO 8" WIDE RETROREFLECTIVE STRIPES. ADDITIONAL STRIPES MAY BE NON-RETROREFLECTIVE. IF THERE ARE NON-RETROREFLECTIVE SPACES BETWEEN ADJACENT STRIPES, THEY SHALL BE NO MORE THAN 3" WIDE.

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.



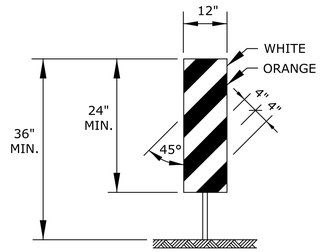
TRAFFIC CONE

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.



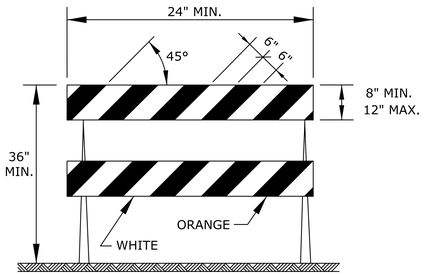
TUBULAR MARKER

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.

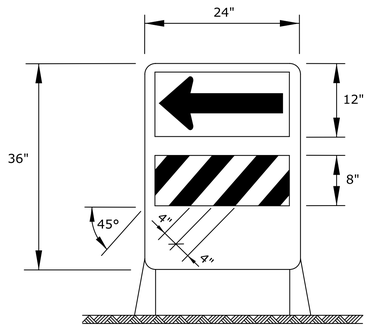


TYPE II BARRICADE

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.



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

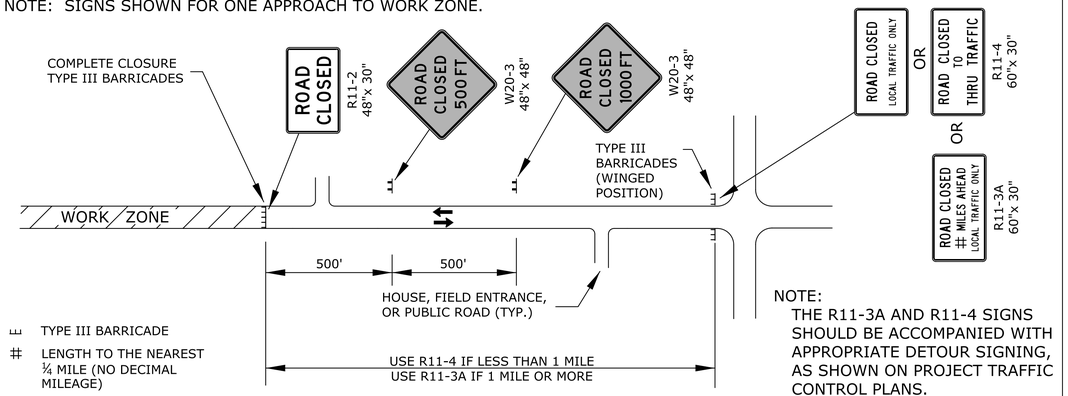
TE702

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.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	143	201

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).

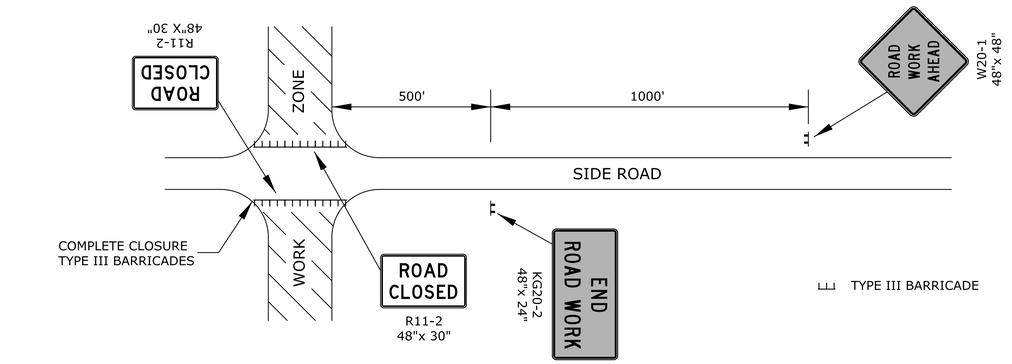


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

NOTE: SIGNS SHOWN FOR ONE APPROACH TO INTERSECTION (WORK ZONE).

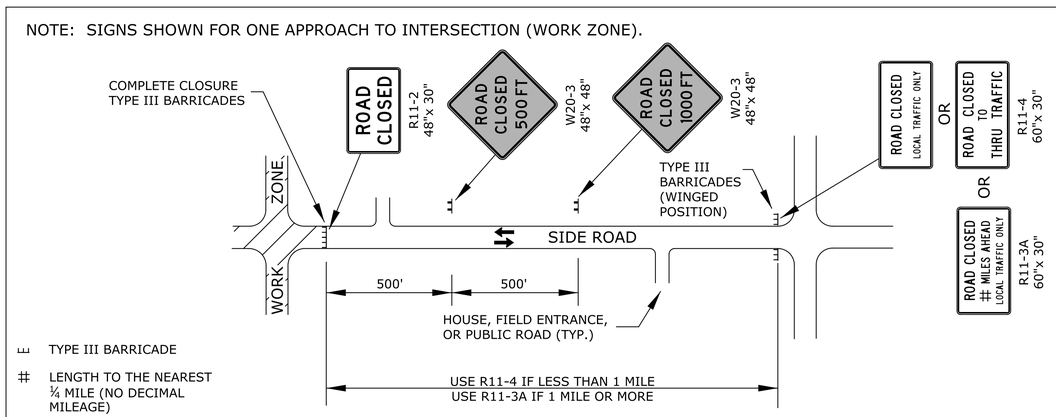


FIGURE 3: TYPICAL SIGNING FOR SIDE ROAD CLOSED

NOTE: SIGNS SHOWN FOR ONE APPROACH TO WORK ZONE.

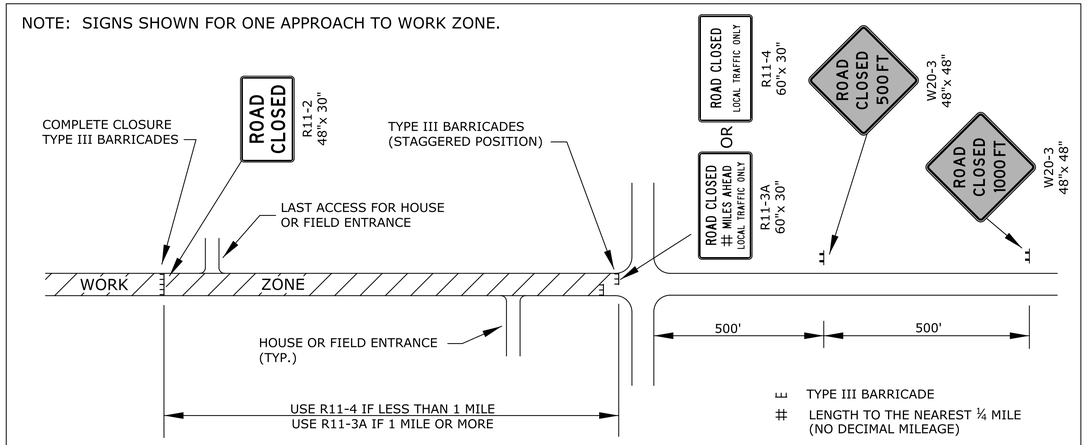


FIGURE 4: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

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:

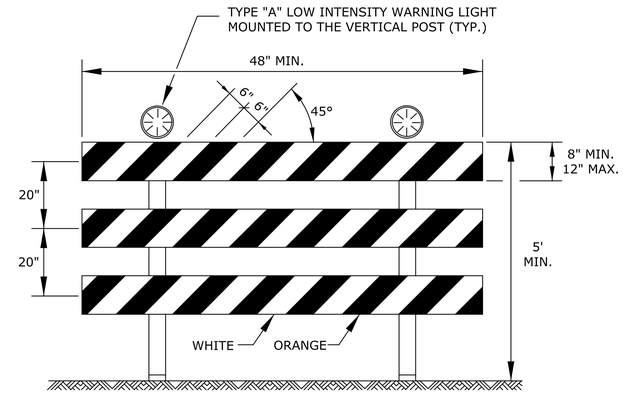
A) COMPLETE ROAD CLOSURE

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.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	144	201

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"



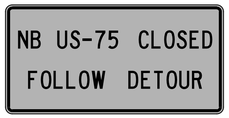
W8-17

STD. SIZE EXPWY/FREEWAY
48"x 48"



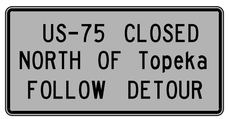
W8-17P
(OPTIONAL)

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:

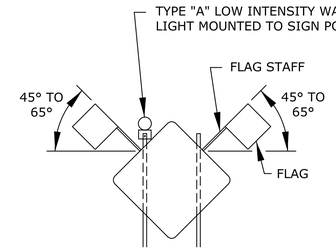
THE KG20-2(END ROAD WORK) SHOULD BE PLACED 500' FROM THE END OF THE ACTUAL WORK SPACE, NOT NECESSARILY AT THE EXTREME LIMITS OF THE PROJECT. THE KG20-2 SHOULD BE MOUNTED ON TWO POSTS. THE KG20-2 MAY BE MOUNTED ON ONE POST IF IN URBAN AREAS WHERE UTILITIES ARE A PROBLEM AND WIND LOADS ARE NOT AN ISSUE.

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 100', 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

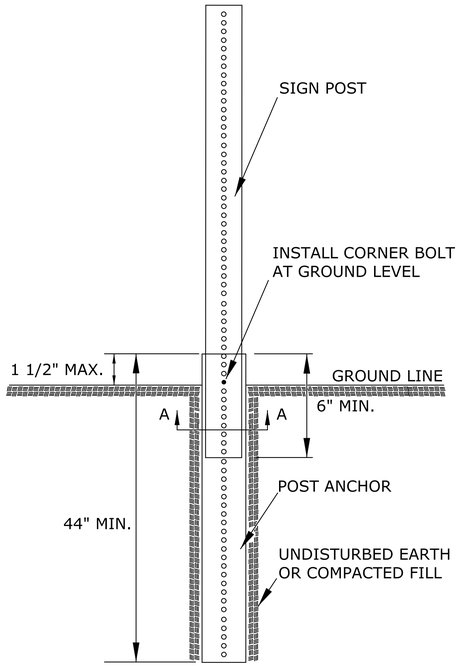
TRAFFIC CONTROL SIGNS

TE710

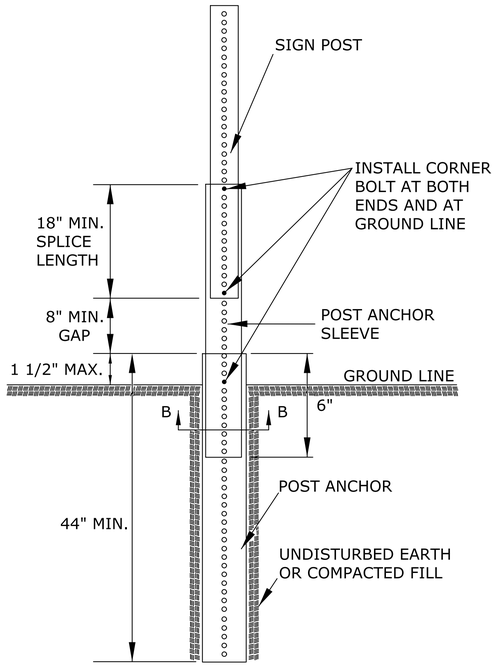
FHWA APPROVAL			10/16/12	APP'D	Kristina Pyle
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te710.dgn

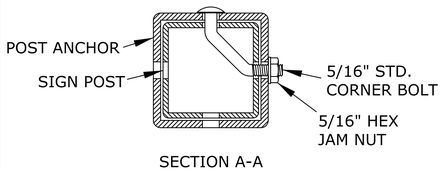
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



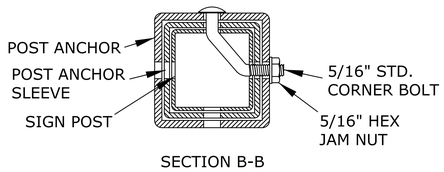
P.S.S.T. DETAIL



TELESCOPING P.S.S.T. DETAIL



SECTION A-A

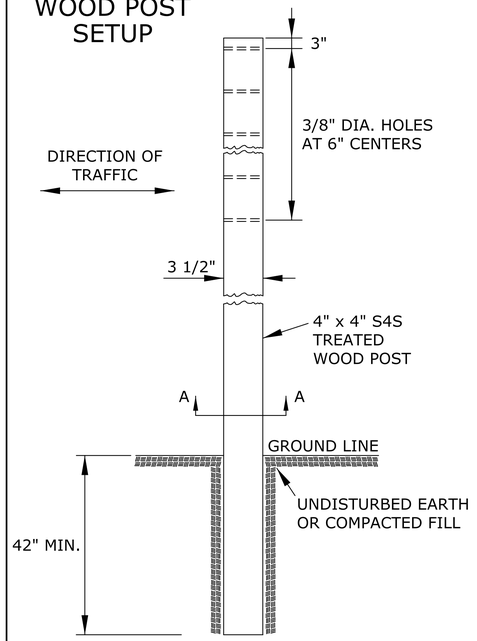


SECTION B-B

DETAILS FOR 2", 2 1/4", OR 2 1/2" SIGN POST

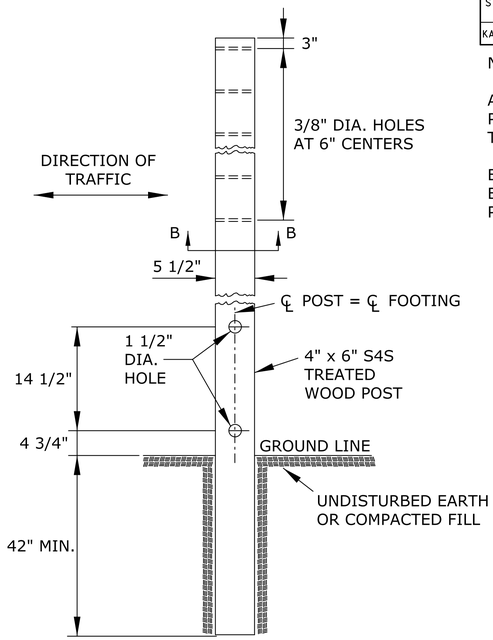
PLACE BOLTS IN THE SAME CORNER ALONG EACH SIGN POST.

WOOD POST SETUP



SIDE ELEVATION

4" X 4" WOOD POST IN SOIL



SIDE ELEVATION

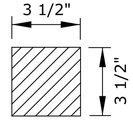
4" X 6" WOOD POST IN SOIL

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	145	201

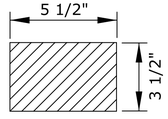
NOTES:

ALL SIGN MOUNTING HOLES IN THE WOOD POSTS SHALL BE DRILLED PRIOR TO TREATING.

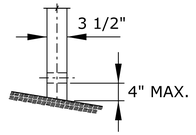
BREAKAWAY HOLES AND FIELD CUTS SHALL BE TREATED IN ACCORDANCE WITH THE PRESERVATIVE TREATMENT SPECIFICATIONS.



SECTION A-A

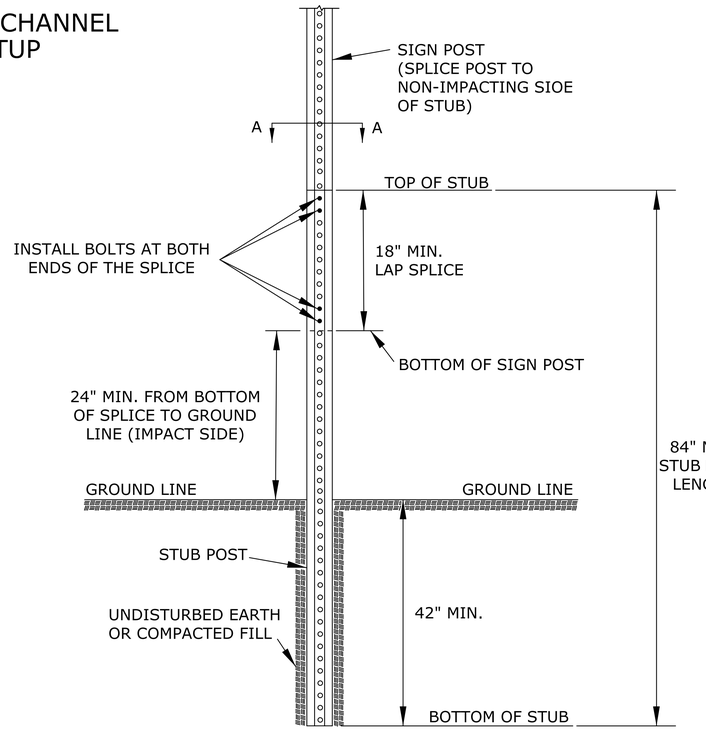


SECTION B-B



FRONT ELEVATION

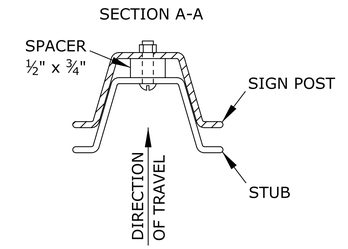
3 LB/F U-CHANNEL SETUP



NOTES:

PLACE TWO BOLTS AT BOTH ENDS OF THE SPLICE THROUGH THE HOLES NEAREST THE ENDS OF THE SPLICE.

SPACERS WILL BE USED OVER THE BOLTS BETWEEN THE SPLICED PIECES OF U-CHANNEL. THREADED OR UNTHREADED SPACERS MAY BE USED. DO NOT SUBSTITUTE PIPE OR OTHER "ITEMS" FOR THE SPACERS.



NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Added Spacer Dimension, Removed PSST Note	J.A.M.	K.P.
2	10/4/11	Removed Washer On PSST Detail	J.A.M.	K.P.
1	6/1/10	Modified Post Anchor Sleeve Dimension	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

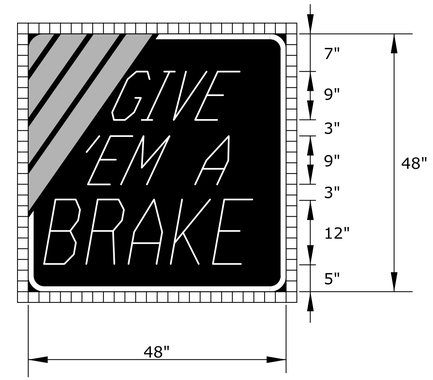
APPROVED TEMPORARY POST SETUPS

TE712

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 : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te712.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	146	201

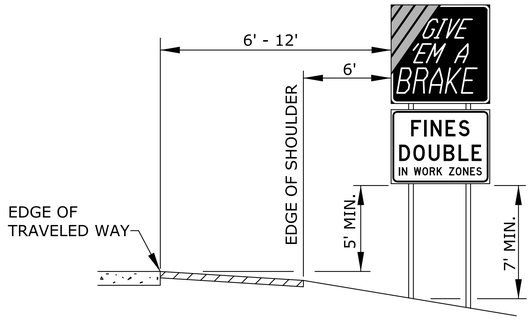


KI-104a

COLORS:
- BACKGROUND - BLACK
- BORDER - WHITE
- LEGEND - WHITE
- STRIPES - ORANGE

BORDER WIDTH - 1"
CORNER RADIUS - 4"
STRIPE WIDTH - 3"

LEGEND:
" GIVE " - DUTCH 801 ROMAN SWC - 25 DEGREE SLANT
" 'EM A " - DUTCH 801 ROMAN SWC - 25 DEGREE SLANT
" BRAKE " - DUTCH 801 ROMAN SWC - 10 DEGREE SLANT



HEIGHT AND LATERAL PLACEMENT

NOTE:
IF THERE IS NO SHOULDER, THE SIGN SHALL BE PLACED 6'- 12' FROM THE EDGE OF TRAVELED WAY AND NOT LESS THAN 6' FROM THE EDGE OF PAVED SHOULDER. SIGNS SHALL NOT OVERLAP EACH OTHER.

NOTES:

THE SIGN BLANK MATERIAL SHALL BE ALUMINUM, WOOD, OR FIBERGLASS REINFORCED PLASTIC.

THE ORANGE PORTION OF THE KI-104a SIGN SHALL BE ASTM TYPE IV SHEETING. THE WHITE PORTION SHALL BE ASTM TYPE III SHEETING.

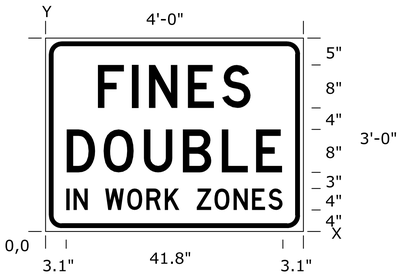
THE KI-105a SIGN FACE SHALL BE COVERED WITH ASTM TYPE III SHEETING.

THE SIGNS ARE TO BE MOUNTED ON CRASHWORTHY SUPPORTS, BRACING, GUY WIRES AND TIE-DOWNS ARE NOT ALLOWED.

TYPICALLY, THERE ARE TWO SETS OF INFORMATIONAL SIGNS INSTALLED PER PROJECT: ONE FOR EACH DIRECTION OF TRAFFIC.

INSTALL SIGNS A MINIMUM OF 250' IN ADVANCE OF THE ROAD WORK AHEAD SIGN. THE ENGINEER MAY DESIGNATE A MORE APPROPRIATE LOCATION IF CONDITIONS DICTATE.

THE INFORMATIONAL SIGNS ARE NOT TO INTERFERE WITH THE TRAFFIC CONTROL SIGNS FOR THE PROJECT.



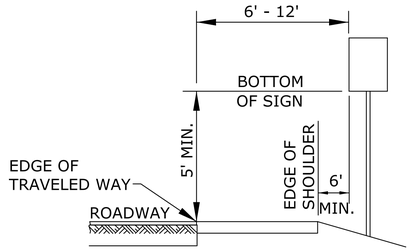
KI-105a

SIGN NUMBER	FINES DOUBLE
WIDTH x HEIGHT	4'-0" x 3'-0"
BORDER WIDTH	0.9"
CORNER RADIUS	3.0"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: WHITE
LEGEND/BORDER	TYPE: NON-REFLECTIVE
	COLOR: BLACK

DIMENSIONS IN INCHES — SPACINGS ARE TO START OF NEXT LETTER

Y FONT	LETTER SPACINGS																					HT LEN
23.0 D		F	I	N	E	S																8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7															28.6
11.0 D		D	O	U	B	L	E															8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9														40.3
4.0 D		I	N		W	O	R	K		Z	O	N	E	S								4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1							41.8

HEIGHT AND LATERAL DIMENSIONS FOR GROUND MOUNTED SIGNS (SIGNS LEFT IN PLACE OVER 3 DAYS)



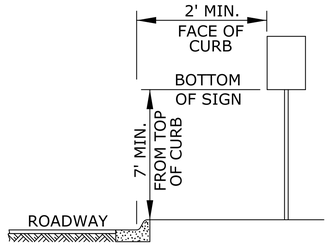
RURAL DISTRICT

RURAL:
1) GROUND-MOUNTED SIGNS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 5' MEASURED FROM THE BOTTOM OF SIGN TO THE NEAR EDGE OF THE PAVEMENT.

2) LARGE SIGNS HAVING AN AREA EXCEEDING 50 SQUARE FEET INSTALLED ON MULTIPLE BREAKAWAY POSTS SHALL BE MOUNTED A MINIMUM OF 7' ABOVE THE GROUND.

* 3) THE HEIGHT OF THE SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 4' MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT. SIGNS SHALL NOT OVERLAP EACH OTHER.

4) SIGN SUPPORTS SHALL BE CRASHWORTHY.



URBAN DISTRICT

URBAN:
1) SIGNS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 7' MEASURED FROM THE BOTTOM OF SIGN TO THE NEAR EDGE OF THE PAVEMENT.

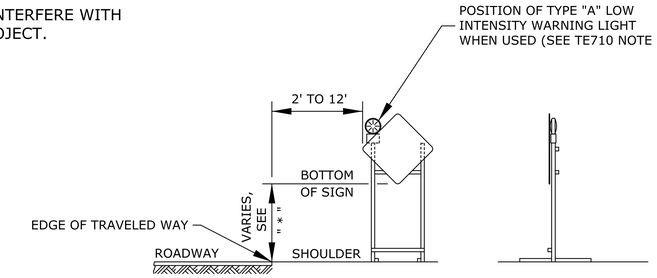
2) NEITHER PORTABLE NOR PERMANENT SIGN SUPPORTS SHOULD BE LOCATED ON SIDEWALKS OR AREAS DESIGNATED FOR PEDESTSRIAN OR BICYCLE TRAFFIC.

3) SIGNS MOUNTED LOWER THAN 7' SHOULD NOT PROJECT MORE THAN 4" INTO PEDESTRIAN FACILITIES.

* 4) THE HEIGHT FROM OF THE SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 6' MEASURED FROM THE BOTTOM OF SIGN TO THE NEAR EDGE OF THE PAVEMENT. SIGNS SHALL NOT OVERLAP EACH OTHER.

5) LARGE SIGNS HAVING AN AREA EXCEEDING 50 SQUARE FEET INSTALLED ON MULTIPLE BREAKAWAY POSTS SHALL BE MOUNTED A MINIMUM OF 7' ABOVE THE GROUND.

6) SIGN SUPPORTS SHALL BE CRASHWORTHY.



(SEE NOTE 4 ON TE710 FOR "ROLL-UP" SIGNS OPTION)

HEIGHT AND LATERAL DIMENSIONS FOR SIGNS MOUNTED ON SKIDS OR OTHER SUPPORTS ON PAVEMENT

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Note 3 & 4 On Ground Mounted Signs	J.A.M.	K.P.
2	10/4/11	Modified Note On Skid Mounted Detail	J.A.M.	K.P.
1	6/1/10	Changed Type A Warning Light Note	J.A.M.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

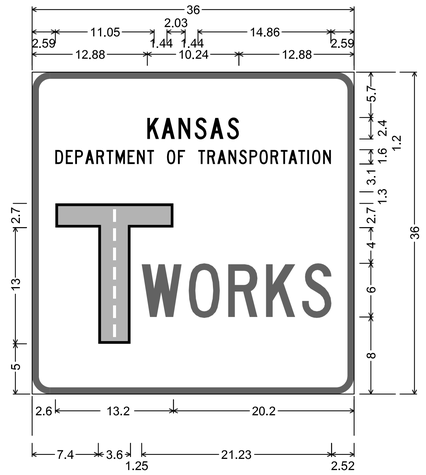
GROUND AND SKID MOUNTED DETAIL DETAILS FOR "GIVE 'EM A BRAKE" AND "FINES DOUBLE" SIGNS

TE714

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 : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te714.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	147	201



TWORKS SIGN 8
2.00" RADIUS, 0.75" BORDER, BLUE ON WHITE;
[KANSAS] BLACK C;
[DEPARTMENT OF TRANSPORTATION] BLACK C 90% SPACING;
[T] ORANGE; 0.3" BLACK BORDER
LANE LINES: .3"X1.4" WHITE; 0.75" SPACING FROM BOTTOM
[WORKS] C 75% SPACING;
TABLE OF DISTANCES BETWEEN LETTER AND OBJECT LEFTS.

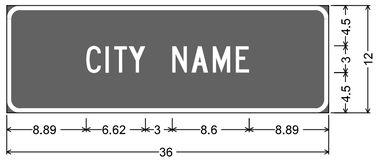
12.88	K 1.58	A 1.91	N 1.82	S 1.71	A 1.91	S 1.31	12.88

2.59	D 1.18	E 1.04	P 1.12	A 1.24	R 1.12	T 1.05	M 1.34	E 1.04	N 1.12	T 2.24	O 1.23	F 2.24

T 1.04	R 1.12	A 1.24	N 1.18	S 1.18	P 1.11	O 1.23	R 1.12	T 0.88	A 1.08	T 1.05	I 0.53	O 1.22	N 0.88	2.59

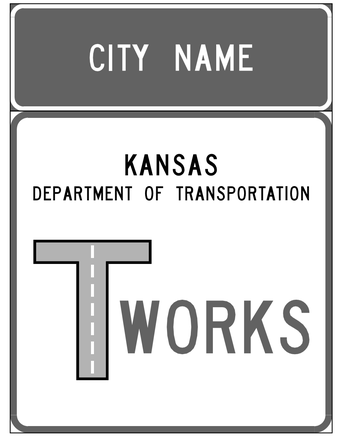
2.6	T 13.2	20.2	

12.25	W 5.26	O 4.42	R 4.22	K 4.05	S 3.28	2.52	



TWORKS SIGN 7
1.50" RADIUS, 0.50" BORDER, WHITE ON BLUE;
[CITY NAME] C;
TABLE OF DISTANCES BETWEEN LETTER AND OBJECT LEFTS.

8.89	C 2.14	I 0.93	T 1.67	Y 4.88	N 2.14	A 2.39	M 2.57	E 1.50	8.89



TYPICAL SIGN ASSEMBLY

GENERAL NOTES

THE "TWORKS" SIGN BLANK MATERIAL SHALL BE ALUMINUM, WOOD, OR FIBERGLASS REINFORCED PLASTIC.

THE "TWORKS" SIGN FACES SHALL BE COVERED WITH TYPE IV HIGH INTENSITY RETROREFLECTIVE SHEETING.

THE "TWORKS" SIGNS SHOULD BE MOUNTED ON APPROVED POSTS, AS SHOWN ON TE712 WITHOUT THE USE OF BRACING, GUY WIRES, OR TIE-DOWNS. THE "TWORKS" SIGNS MAY ALSO BE MOUNTED ON SKIDS. THE MOUNTING HEIGHTS AND LATERAL OFFSETS ARE TO BE SHOWN ON TE714.

THE "TWORKS" SIGNS SHOULD BE INSTALLED IN ADVANCE OF THE FIRST TRAFFIC CONTROL SIGN A DISTANCE OF 500' FOR A TWO-WAY ROADWAY IN A RURAL LOCATION AND 100' TO 350' IN AN URBAN AREA DEPENDING UPON THE SPEED. THE FIRST TRAFFIC CONTROL SIGN IS EITHER THE "ROAD WORK AHEAD" OR THE "GIVE 'EM A BRAKE" SIGN. THE ENGINEER MAY DESIGNATE A MORE APPROPRIATE LOCATION IF CONDITIONS DICTATE.

THE "TWORKS" SIGNS SHALL NOT INTERFERE WITH THE TRAFFIC CONTROL SIGNS FOR THE PROJECT OR WITH ANY OTHER REGULATORY, WARNING, OR GUIDE SIGN THAT IS TO REMAIN IN PLACE DURING CONSTRUCTION.

THE TWORKS SIGN ASSEMBLY CONSISTS OF A TWORKS SIGN 7 AND AND TWORKS SIGN 8. THE BID ITEM FOR THIS ASSEMBLY IS "TWORKS SIGN ASSEMBLY" WITH A BID UNIT OF "EACH".

THE TWORKS SIGN ASSEMBLY SHOULD REMAIN IN PLACE FOR SIX (6) MONTHS FOLLOWING THE COMPLETION OF THE PROJECT AND BECOME THE PROPERTY OF KDOT OR THE LOCAL JURISDICTION.

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified General Note	J.A.M.	K.P.
2	10/4/11	Removed Swoosh From TWork Sign	J.A.M.	K.P.
1	9/1/10	Modified Bid Item	J.A.M.	K.P.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR THE TRANSPORTATION WORKS FOR THE KANSAS (TWORKS) SIGNS LOCAL PROJECTS

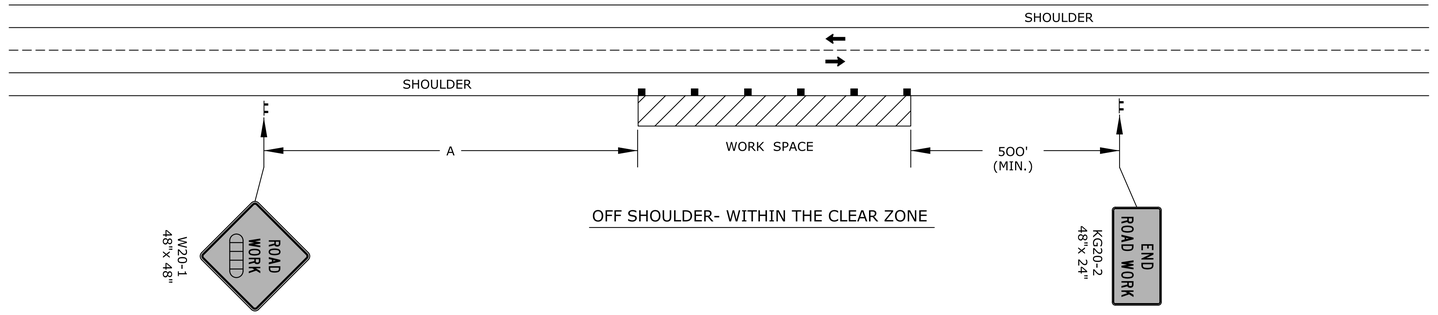
TE715C

FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle	
DESIGNED	D.G.	DETAILED	D.G.	QUANTITIES	TRACED
DESIGN CK.	J.A.M.	DETAIL CK.	J.A.M.	QUAN. CK.	TRACE CK.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te715c.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	148	201

REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.



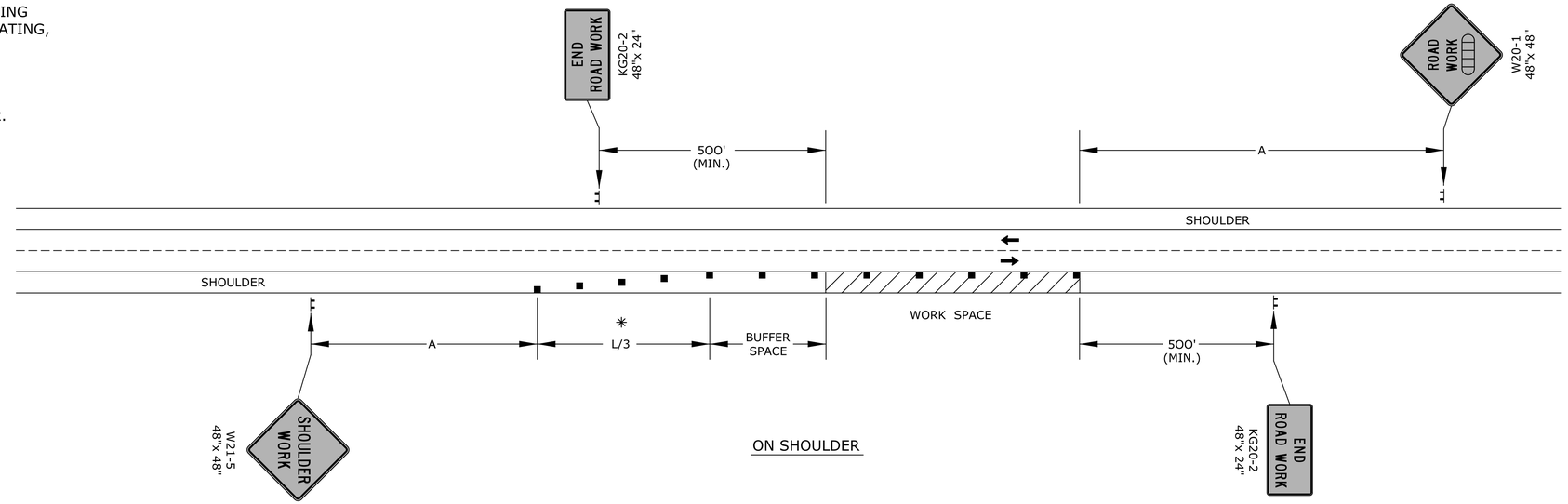
OFF SHOULDER- WITHIN THE CLEAR ZONE

NOTES:

NO TRAFFIC CONTROL IS REQUIRED IF THE WORK SPACE IS LOCATED OUTSIDE OF THE CLEAR ZONE.

FOR OPERATIONS OF 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS IS USED.

WHEN CONCRETE BARRIER SYSTEM IS USED, PORTABLE CHANNELIZING DEVICES ARE NOT NEEDED ALONG THE TANGENT BARRIER SECTION. DELINEATION ON THE BARRIER SYSTEM IS STILL REQUIRED. SEE RD622.



ON SHOULDER

* OMIT TAPER IF PAVED SHOULDER IS LESS THAN 8' WIDE.

■ CHANNELIZING DEVICE
AHEAD, 1500 FT, OR 1 MILE

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Shoulder Detail	J.A.M.	K.P.
2	4/20/09	Combined And Moved General Notes	J.A.M.	A.A.A.
1	8/8/07	G20-2 Changed To KG20-2	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL WORK ON OR NEAR THE SHOULDER UNDIVIDED HIGHWAY (2 OR 4 LANE)

TE720

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.

Drawn By : drp
Plotted : 14-JUL-2014 14:52
File : I:\2008\08313\Frontage Rd North\Standards\08313-te720.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	149	201

REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS AND SIGN SPACING.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.

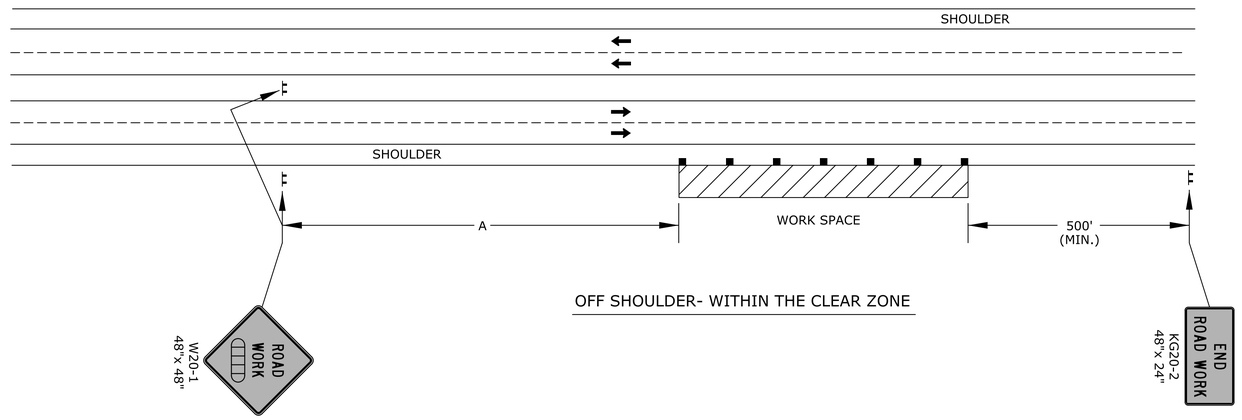
NOTES:

FOR WORK IN THE MEDIAN, INSTALL SIGNS AND CHANNELIZING DEVICES FOR EACH DIRECTION OF TRAFFIC ACCORDING TO THE APPLICABLE TYPICAL DRAWING.

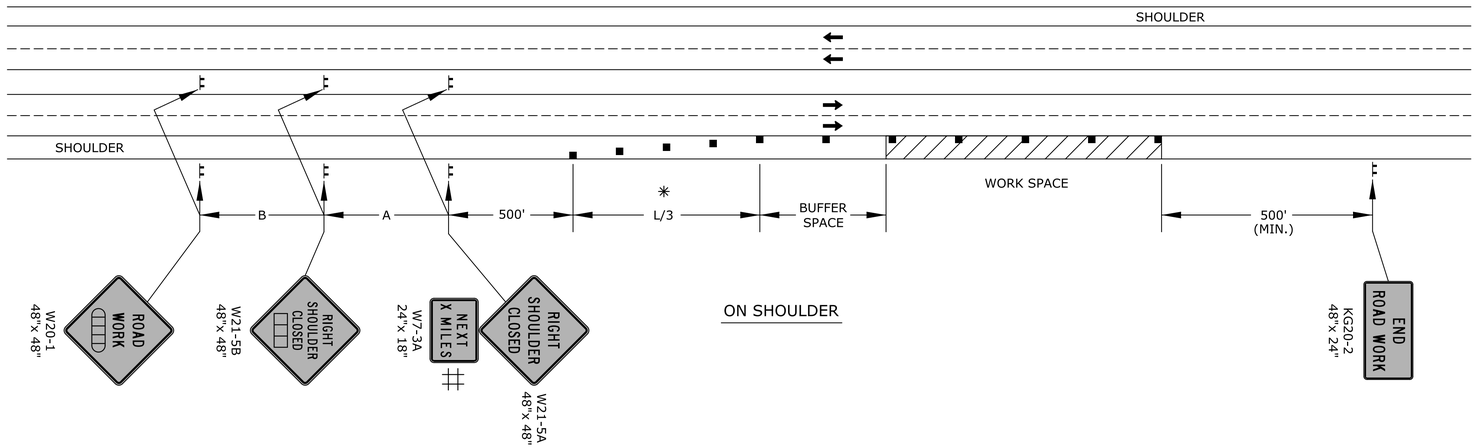
NO TRAFFIC CONTROL IS REQUIRED IF THE WORK SPACE IS LOCATED OUTSIDE OF THE CLEAR ZONE.

FOR OPERATIONS OF 60 MINUTES OR LESS, ALL SIGNS AND CHANNELIZING DEVICES MAY BE ELIMINATED IF A VEHICLE WITH A HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHT IS USED.

WHEN CONCRETE BARRIER SYSTEM IS USED, PORTABLE CHANNELIZING DEVICES ARE NOT NEEDED ALONG THE TANGENT BARRIER SECTION. DELINEATION ON THE BARRIER SYSTEM IS STILL REQUIRED. SEE RD622.



OFF SHOULDER- WITHIN THE CLEAR ZONE



ON SHOULDER

ELIMINATE W7-3A IF SHOULDER IS CLOSED FOR LESS THAN 2 MILES.

✳ OMIT TAPER IF PAVED SHOULDER IS LESS THAN 8' WIDE.

X LENGTH TO THE NEAREST WHOLE MILE
■ CHANNELIZING DEVICE
AHEAD, 1500 FT, OR 1 MILE
AHEAD, 1000 FT, 1500 FT OR ½ MILE

NO.	DATE	REVISIONS	BY	APP'D
3	10/16/12	Modified Shoulder Detail	J.A.M.	K.P.
2	4/20/09	Combined And Moved General Notes	J.A.M.	A.A.A.
1	8/8/07	G20-2 Changed To KG20-2	M.B.	A.A.A.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL WORK ON OR NEAR THE SHOULDER DIVIDED HIGHWAY

TE722

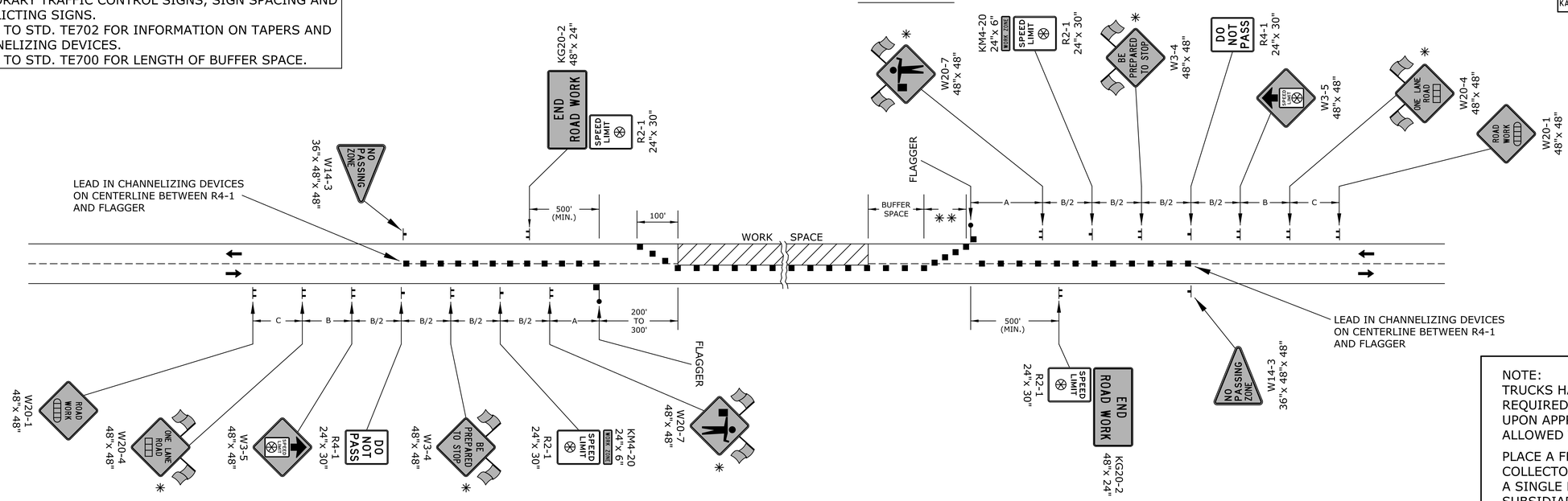
FHWA APPROVAL		10/16/12	APP'D	Kristina Pyle
DESIGNED	L.E.R.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te722.dgn

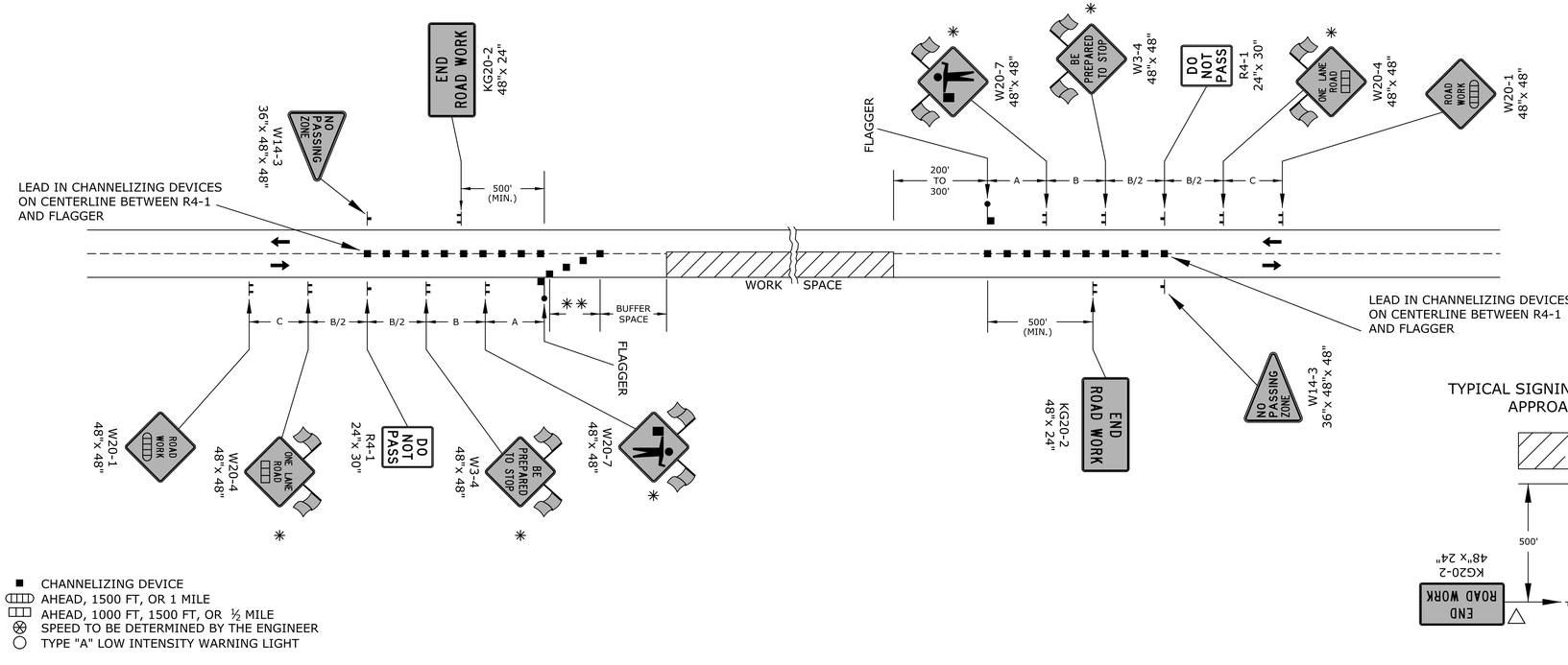
REFER TO STD. TE710 FOR ADDITIONAL INFORMATION ON TEMPORARY TRAFFIC CONTROL SIGNS, SIGN SPACING AND CONFLICTING SIGNS.
REFER TO STD. TE702 FOR INFORMATION ON TAPERS AND CHANNELIZING DEVICES.
REFER TO STD. TE700 FOR LENGTH OF BUFFER SPACE.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	150	201

FLAGGER



FLAGGER AND PILOT CAR



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.

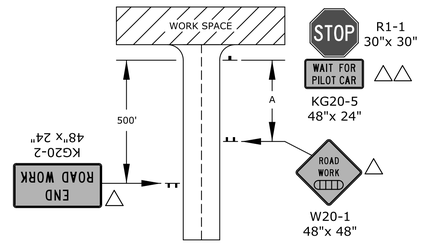
✳✳ THERE SHOULD BE A MINIMUM OF SIX (6) CHANNELIZERS SPACED AT 20' INTERVALS.

△ 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

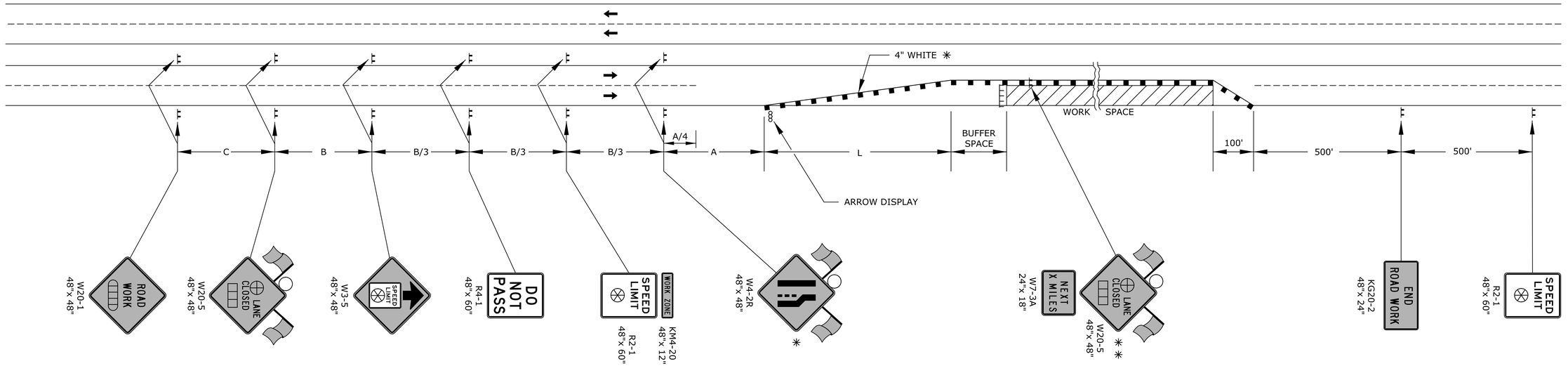
TE730

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.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-te730.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	151	201

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

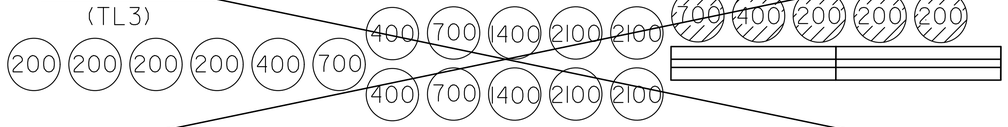
TE744 9/1/00

FHWA APPROVAL		8/8/2007	APP'D	Anthony A. Airobaire	
DESIGNED	B.A.H.	DETAILED	B.A.H.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

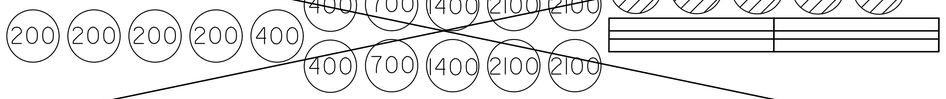
Drawn By : drp
Plotted : 14-JUL-2014 14:52
File : I:\2008\08313\Frontage Rd North\Standards\08313-te744.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	152	201

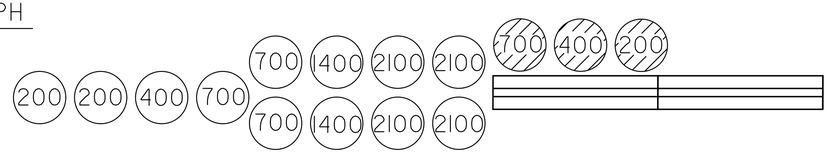
V≥ 70 MPH
(TL3)



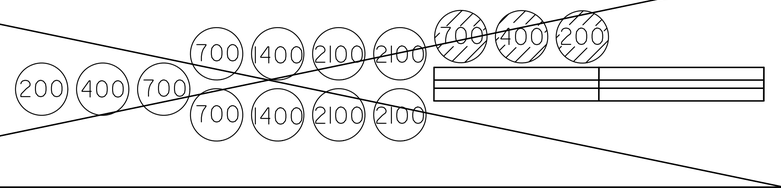
V= 65 MPH
(TL3)



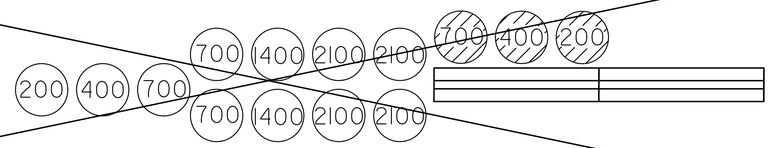
V= 60 MPH
(TL3)



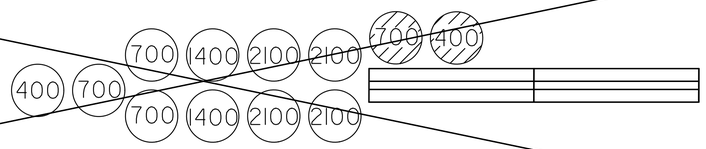
V= 55 MPH
(TL3)



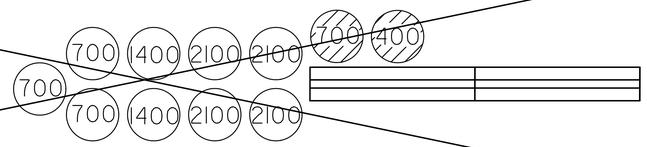
V= 50 MPH
(TL3)



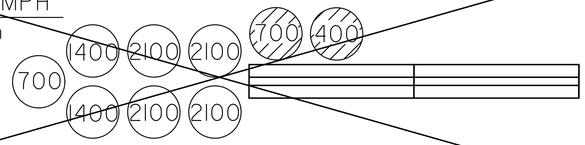
V= 45 MPH
(TL2)



V= 40 MPH
(TL2)



V= 35 MPH
(TL2)



INERTIAL BARRIER SYSTEM			
Station	*Side*	*Design Speed*	*Comments*
498+50	*Rt.*	*60*	*Stage IC*
499+00	*Lt.*	*60*	*Stage IB*
503+00	*Rt.*	*60*	*Stage I*
503+75	*Lt.*	*60*	*Stage IB*

GENERAL NOTE

This drawing details general configurations for Inertial Barrier Systems. Some project specific conditions may require variations which are designed to meet prevailing criteria.

Use Inertial Barrier System consisting of the units as shown for the specified design speed, all hardware and attachments.

Install Inertial Barrier System on a flat, stable base with cross-slope no steeper than 10:1. See Manufacturer's recommendations for module materials and method of installation.

See standard specifications for mixture to fill modules requirements.

Provide a 6" spacing between modules and one foot between the end of concrete barrier or other rigid object.

When installed as part of project traffic control, the bid item "Inertial Barrier" includes the original installation and required relocations.

Keep available replacement modules to replace any size module used on site, Engineer's direction.

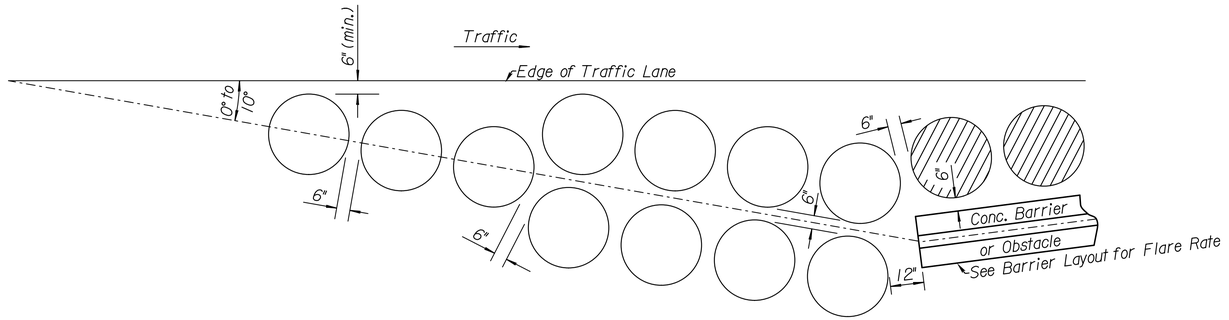
Inertial Barrier System modules damaged by the Contractor during relocation of Inertial Barrier System are replaced at the Contractor's expense.

Module weights shown are in pounds.

Install 270 square inches of Type II High Performance (vertical, rectangular or diamond shape) reflective sheeting on first module of Inertial Barrier System facing traffic.

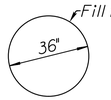
Where sufficient space is available the Inertial Barrier System may be aligned at an angle, not to exceed 10°, in the direction of approach traffic.

No portion of the system shall encroach into the approach traffic lane.



TYPICAL PLAN of INERTIAL BARRIER

When two-way traffic is adjacent to only one side of Concrete Barrier or Obstacle, these additional modules will be placed on the Traffic Side of Concrete Barrier or Obstacle. Traffic adjacent to both sides of the Concrete Barrier or Obstacle require an additional set of modules each side if approach traffic is exposed to the back portion of the Inertial Barrier. These additional modules are not required along the sides of Concrete Barrier or Obstacle when it's location is outside the Clear Zone or one-way directional traffic.



PLAN
Replacement Module

NO.	DATE	REVISIONS	BY	APP'D
6	2-3-12	Revised General Note	S.W.K.	J.O.B.
5	6-27-11	Rdvised notes & Typical Plan detail	S.W.K.	J.O.B.
4	9-10-09	Impact Attenuator to Inertial Barrier	S.W.K.	J.O.B.
3	12-10-08	Add. modules, replacement, std. title	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

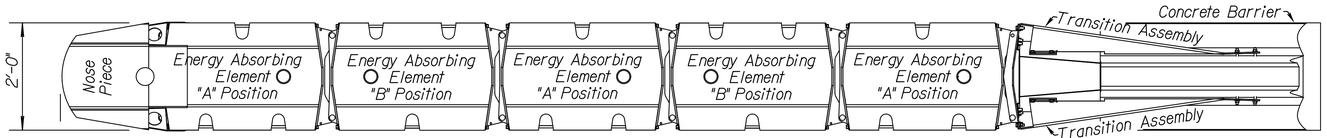
INERTIAL BARRIER (TL2 or TL3)

RD620

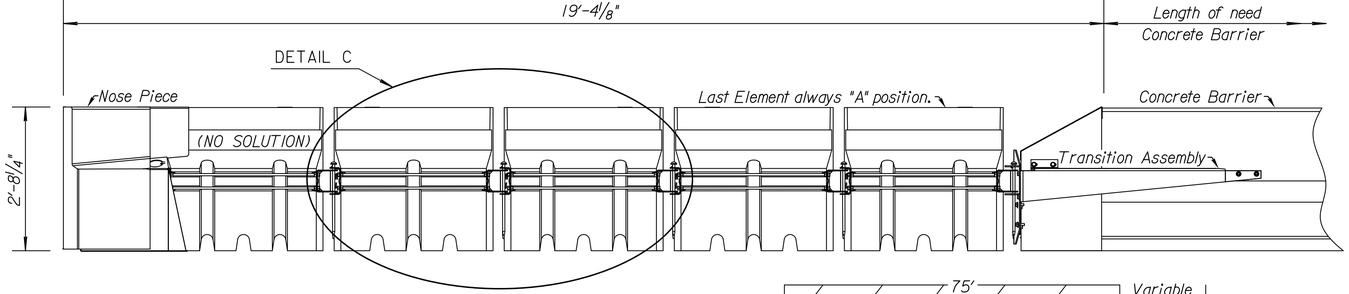
FHWA APPROVAL	4-25-12	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd620.dgn

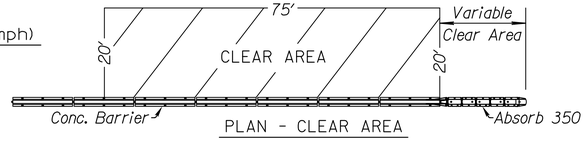
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	153	201



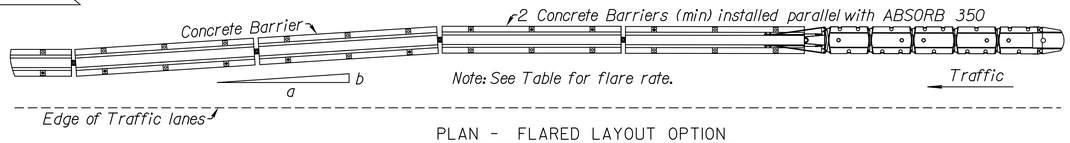
PLAN - ABSORB 350 (TL2 ≤ 45 mph)



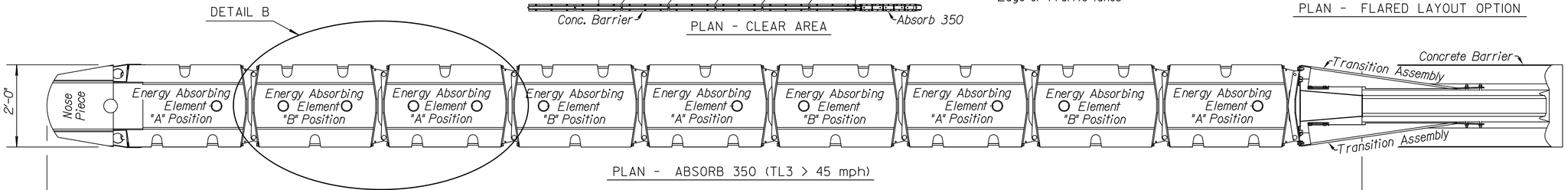
ELEVATION - ABSORB 350 (TL2 ≤ 45 mph)



PLAN - CLEAR AREA

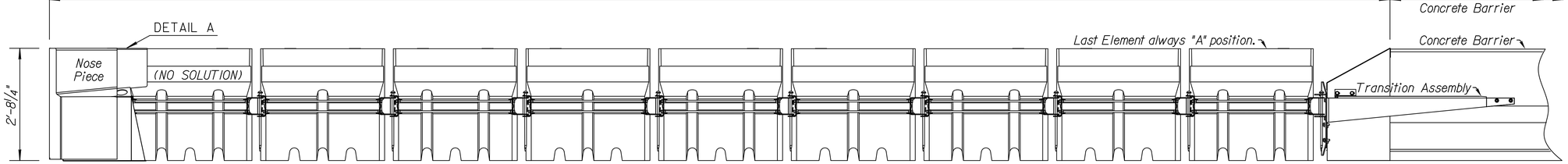


PLAN - FLARED LAYOUT OPTION

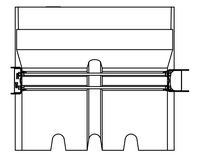


PLAN - ABSORB 350 (TL3 > 45 mph)

Design Parameters	
Design Speed (mph)	Flare Rate (a:b)
70	15:1
60	14:1
55	12:1
50	11:1
45	10:1
40	8:1

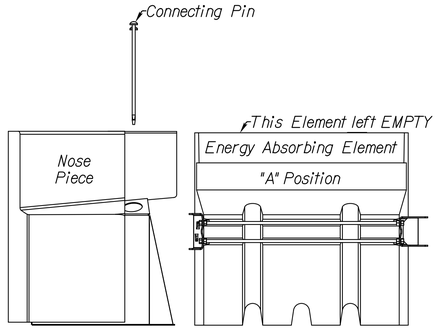


ELEVATION - ABSORB 350 (TL3 > 45mph)

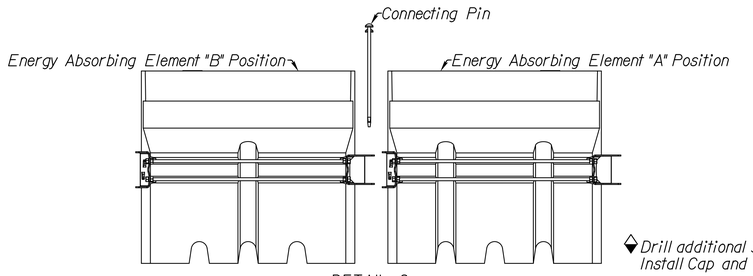


ELEVATION
Replacement Module
("B" Position shown)

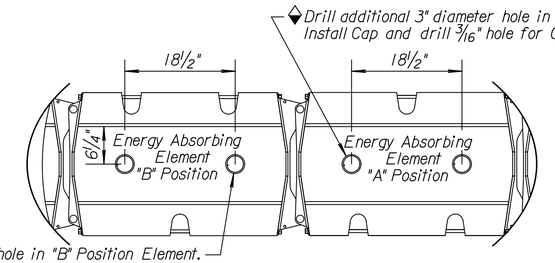
◆ Additional holes required on some higher speed configurations. See ABSORB 350 System Configuration Chart for location of additional vent holes.



DETAIL A



DETAIL C



DETAIL B (TL3)

NO.	DATE	REVISIONS	BY	APP'D
2	10-05-10	Rev. notes & flared layout opt.	S.W.K.	J.O.B.
1	11-16-09	Revised Temporary Bld Item	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

IMPACT ATTENUATOR ABSORB 350 (TL2 OR TL3) (for Temporary Installation

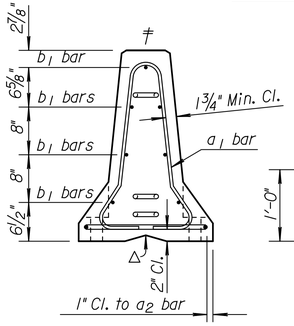
RD627B

FHWA APPROVAL	5-26-11	APP'D. James O. Brewer	
DESIGNED	DETAILED RGC	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

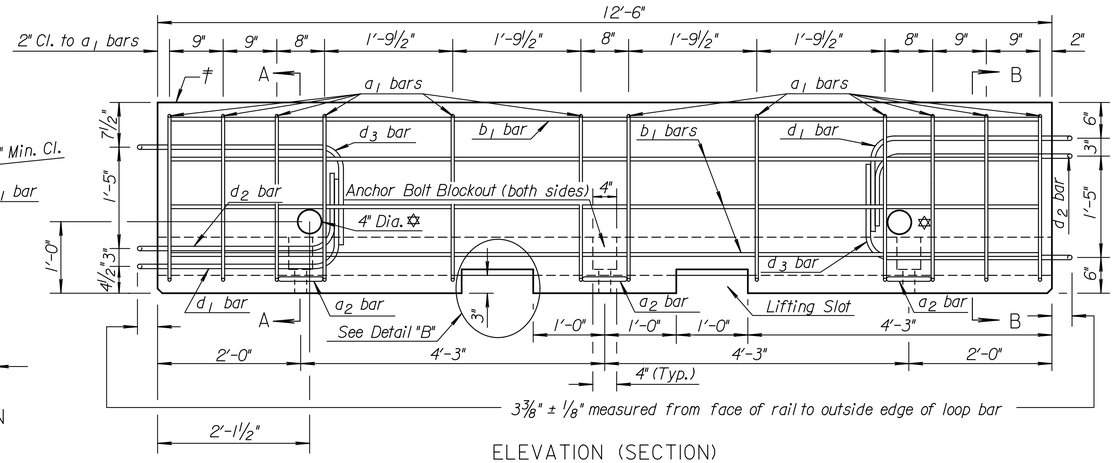
Note to Designer: Where the chance of high angle, high speed impacts are low, Consider using a redirective crash cushion when these types of impacts are likely to occur.

Plotted : 14-JUL-2014 14:52
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd627b.dgn

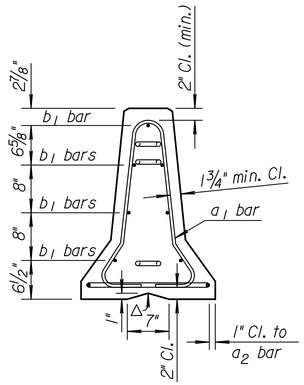
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	154	201



SECTION A-A
TYPICAL SECTION
(Stirrup Placement)

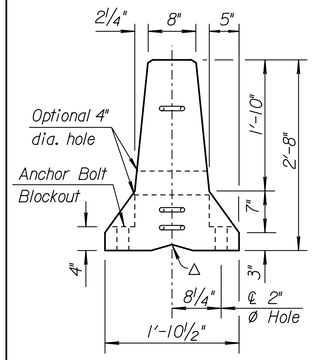


ELEVATION (SECTION)

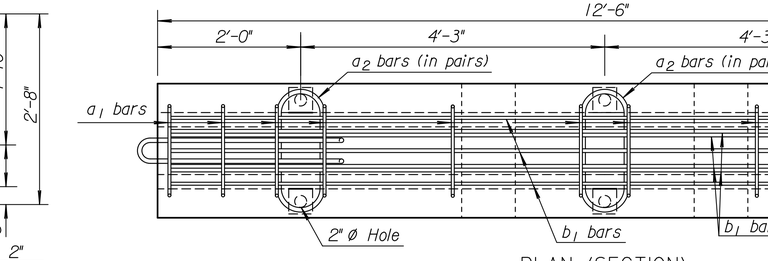


SECTION B-B
TYPICAL SECTION
(Stirrup Placement)

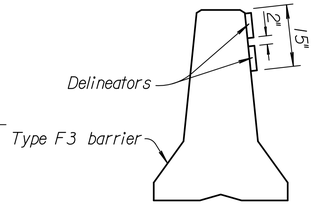
‡ *Marked End*
✡ *4" diameter - 11 gauge steel round mechanical tubing sleeve. These holes are optional.*
△ *V Notch is optional*



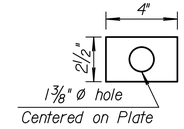
END VIEW



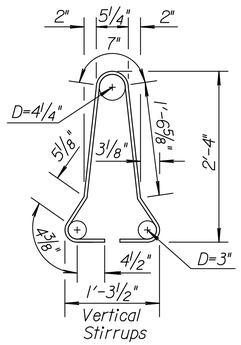
PLAN (SECTION)



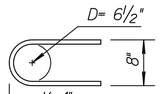
DELINEATOR DETAILS



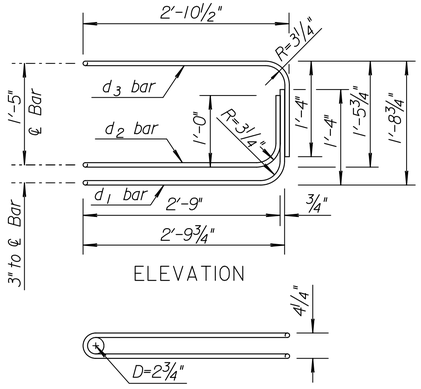
(1/2" Top Plate Detail)



a1 bar

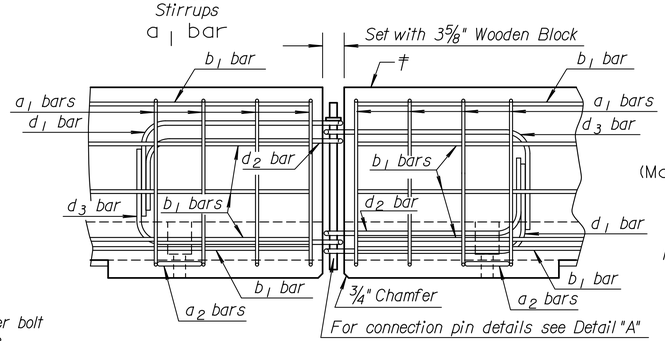


a2 bar



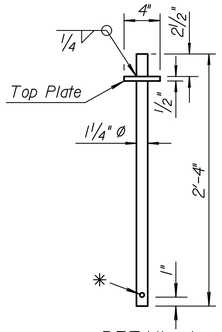
ELEVATION

PLAN
LOOP BAR ASSEMBLY
(Marked end shown, invert for other end)
(Material as stated in General Notes)



For connection pin details see Detail "A"

DETAILS OF BARRIER CONNECTION



DETAIL A
CONNECTION PIN
(A36 Steel) 10.9 lbs. each

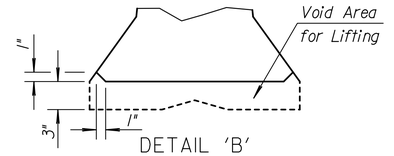
✳ *5/8" Ø hole for retainer bolt. The retainer bolt & nut are installed at Contractor's option.*
Note: Retainer bolt & nut required with Tie Down Strap.

NOTE: At no time shall the barriers be lifted, moved, etc. by use of the loop bars: d_1, d_2 or d_3.

Per 12'-6" Barrier Section

REINFORCING A615 Gr. 60					
Bar	*Bar Size*	*Shape*	*No. of Bars*	*Length Ft.*	*Weight Lbs.*
a_1	#4		12	6'-0"	48.1
a_2	#6		6	2'-11"	26.3
b_1	#5		7	12'-2"	88.8
LOOP ASSEMBLY					
d_1	#6		2	8'-5"	25.3
d_2	#6		2	7'-7"	22.8
d_3	#6		2	8'-6"	25.5

Concrete Quantity = 1.3 C.Y.
(Dimensions are out to out of bars unless otherwise noted.)



DETAIL 'B'
LIFTING SLOT DETAIL
(1" Chamfer to prevent spalling)

GENERAL NOTES:

MATERIAL: Use ASTM A615, Grade 60 reinforcing bars, except for the loop bars (d_1, d_2 and d_3).

The loop bars (d_1, d_2 and d_3) shall be 3/4" smooth steel bars with a minimum yield of 60 ksi, a tensile strength of not less than 1.25 times the yield strength but a minimum of 80 ksi, a minimum 14% elongation in 8 inches, and passing a 180 degree bend test using a 3.5 D pin bend diameter. The loops shall be installed within 1/8" of the plan dimensions.

Use air-entrained concrete with f'c = 5,000 p.s.i.

SECTION: The section furnished must generally comply with dimensions shown. Requests for minor variations in section geometry and attachments may be submitted to the Engineer for approval.

LIFTING SLOTS: Lifting slots shall be constructed where specified on the plans to facilitate the drainage of water after installation on the roadway.

TEMPORARY CONCRETE SAFETY BARRIER: Furnishing and placing of all materials when required and all labor and equipment required to position the temporary barrier shall be included in the Contract unit price bid for "Concrete Safety Barrier (Type F3)(Temporary)". Any relocation of the barrier required for the project shall be paid in accordance with the Special Provisions under the bid item "Concrete Safety Barrier (Type F3) (Temporary-Relocate)". Unless otherwise noted on the Plans, the Temporary Concrete Safety Barrier shall become the property of the Contractor and shall be removed from the site upon acceptance of the completed project. Approximate weight of one unit equals 2.7 tons.

SURFACE PREPARATION: Barrier shall be placed on a paved surface. All loose dirt and sand shall be removed from the roadway surface just prior to placement of the barrier.

MARKING: The left end (‡) of each barrier shall be permanently marked by stamping or forming into the barrier the following information:
- *Type F3*
- *Manufacturer code (as specified by KDOT Bureau of Const. & Maint.)*
- *Date manufactured (month and year)*

DELINEATION: Delineators shall be spaced on 50' centers, except through curves having 1900' or greater curvature where they shall be spaced on 25' centers.

The delineation shall be mounted on the side of the Temporary Concrete Safety Barrier with two delineators at each location. Each delineator shall have a minimum height-to-width ratio of 1.75, and a minimum reflective surface area of 7 sq. in.. The delineators shall be affixed to the Temporary Concrete Safety Barrier as recommended by the manufacturer.

Delineators shall be attached to bridge rail or other structures in construction zones when roadway is narrowed and traffic is adjacent to the structure. The method and location of placement shall be similar to permanent barrier delineation.

When traffic flow is in one direction, the delineators shall be yellow when used on the left, white when used on the right. When traffic flow is in both directions delineators shall be placed back-to-back, and shall correspond to the color of the edge line.

The work and materials required for the installation of delineators as mentioned shall be subsidiary to the bid item "Concrete Safety Barrier (Type F3) (Temporary).

Note: If necessary, include Standard Drawing RD622A for Taper Section, Standard drawing RD622B for anchor and tie down details, Standard Drawing RD622C for Bridges with thermal expansion of 1 1/2" or greater and Standard Drawing RD622D for Barrier Layouts.

Note: The Contractor shall be responsible for maintaining a clear area, shown as dimension "A" on Standard Drawing RD622B. The clear area is located behind the Temporary Concrete Safety Barrier and shall be kept free of any equipment, material stockpiles or other obstacles.

NO.	DATE	REVISIONS	BY	APP'D
3	06-03-12	Revised General Note, Clear Area	S.W.K.	J.O.B.
2	02-06-07	Revised additional sheets note	S.W.K.	J.O.B.
1	01-10-07	Rev. layout & notes, add. Delineation	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3

RD622

FHWA APPROVAL	08-01-12	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

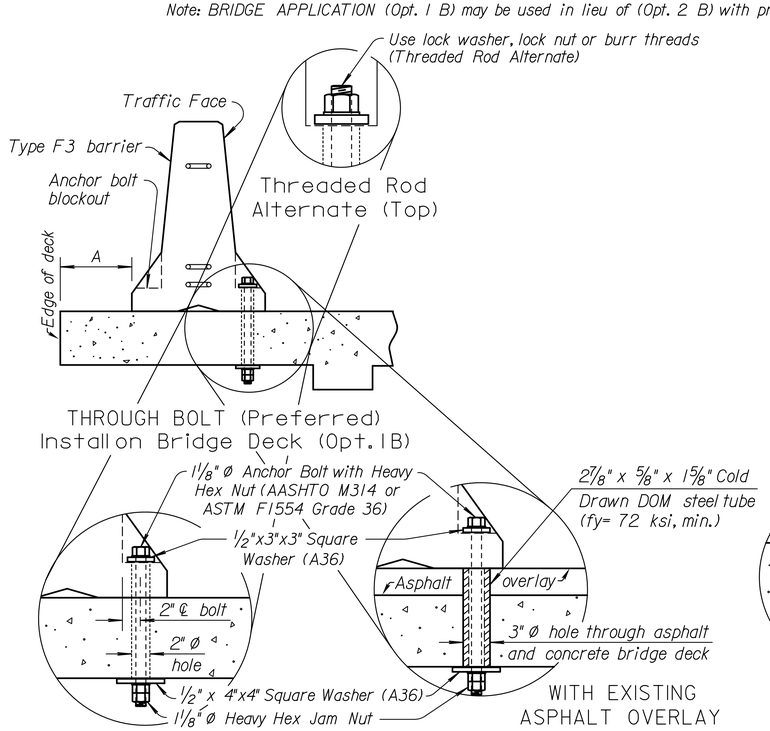
Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd622.dgn
Plotted : 14-JUL-2014 14:52

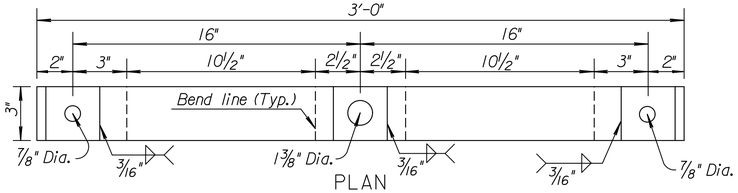
Option	BRIDGE DECK APPLICATION	
1 B	0′ ≤ A < 2′	Anchor each barrier with 3 bolts on traffic face
2 B	△2′ ≤ A < 4′	Anchor with Tie-down strap connector
3 B	A ≥ 4′	No anchorage required unless shown on plans

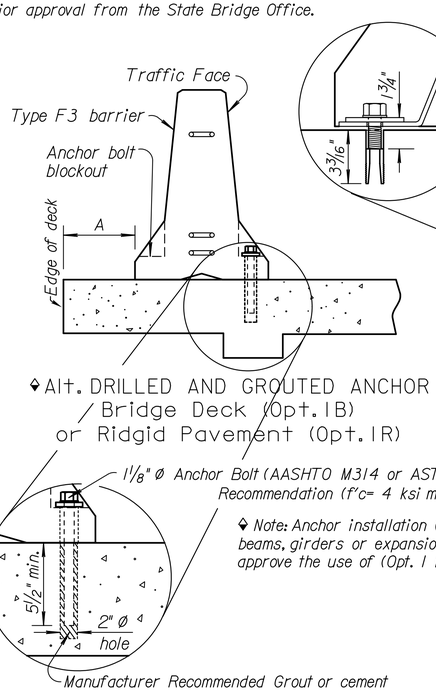
Option	ROAD PAVEMENT APPLICATION	
1 R	0" ≤ A < 2′	Anchor each barrier with 3-bolts on traffic face
2 R	6" ≤ A < 2′	Anchor with Tie-down Strap or Staked Down (flexible)
3 R	A ≥ 2′	No anchorage required

△ *This dimension may be reduced to 1′ on a newly constructed Bridge Deck.*

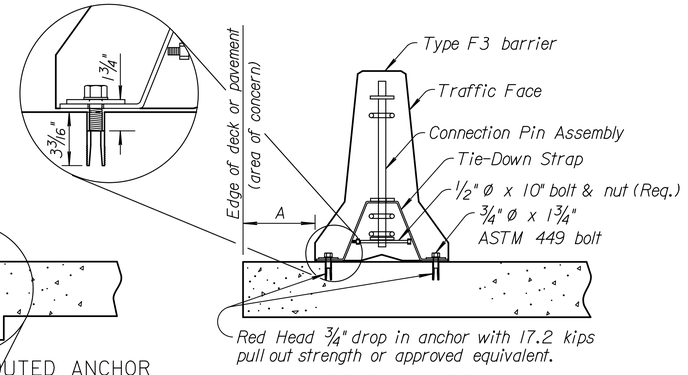
Note: BRIDGE APPLICATION (Opt. 1 B) may be used in lieu of (Opt. 2 B) with prior approval from the State Bridge Office.

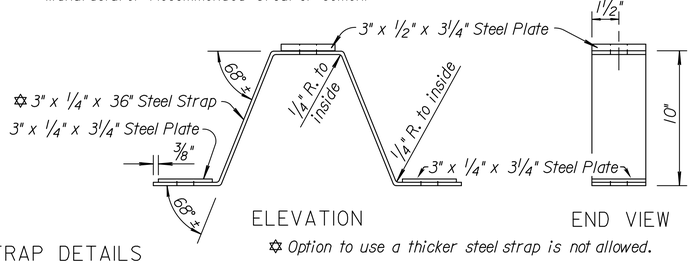






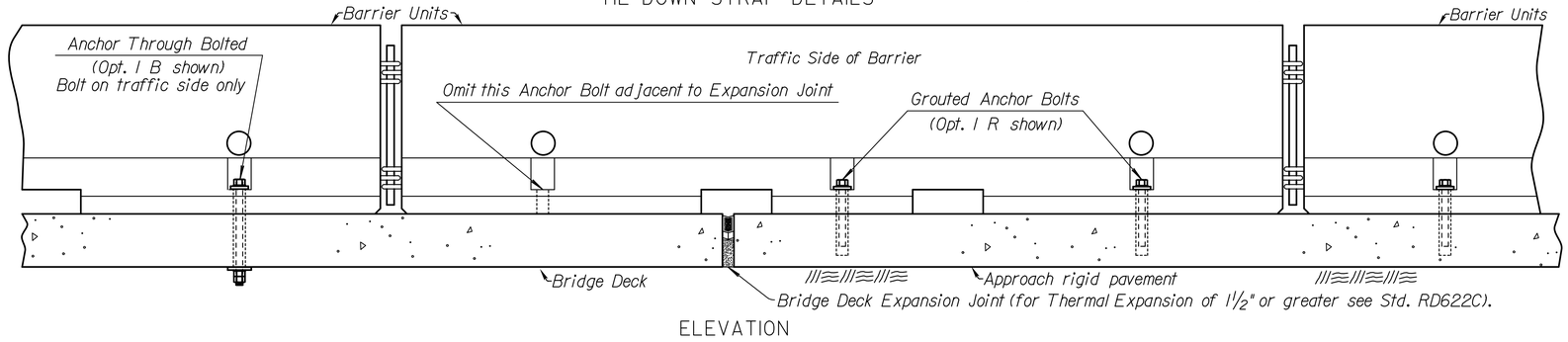
♦ *Note: Anchor installation (Opt. 1 B) avoids damage to the support beams, girders or expansion joint. The State Bridge Office shall approve the use of (Opt. 1 B).*



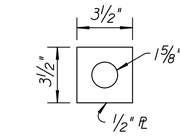


✡ *Option to use a thicker steel strap is not allowed.*

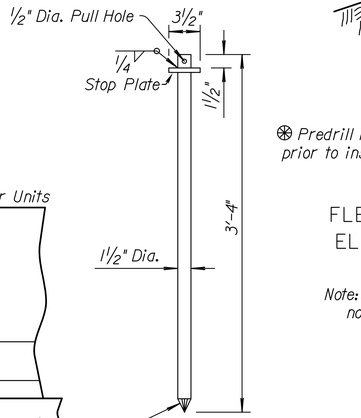
TIE-DOWN STRAP DETAILS

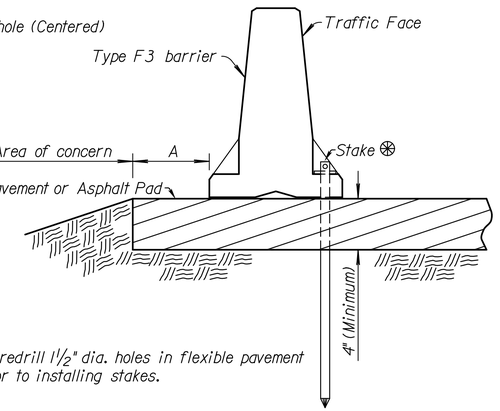


TREATMENT AT BRIDGE DECK EXPANSION JOINT SCHEMATIC (Expansion < 1½")



STOP PLATE DETAIL





⊛ *Predrill 1½" dia. holes in flexible pavement prior to installing stakes.*

FLEXIBLE PAVEMENT ROAD APPLICATION ELEVATION - STAKED DOWN (Opt. 2 R)

Note: See Std. Drawing No. RD622 for details and quantities not shown on this sheet.

NO.	DATE	REVISIONS	BY	APP'D
5	6-27-11	Revised General Note	S.W.K.	J.O.B.
4	9-14-10	Add. through bolt with asphalt over.	S.W.K.	J.O.B.
3	2-2-10	Rev. Anchor to Tie-down callout	S.W.K.	J.O.B.
2	10-2-07	Rev. anchor bolt call-out	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3 ANCHORAGE

RD622B

FHWA APPROVAL	8-30-2011	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	KA 2289-01	2014	155	201

GENERAL NOTES:

INSTALLATION: Holes into the pavement to anchor the concrete safety barrier may be drilled after positioning barrier. Install barrier with through anchor bolt where possible, use grouted anchor bolts where through bolt can't be used. Do not drill into or otherwise damage support beams, girders, or or expansion joints. All work and materials required for the installation of the anchors are subsidiary to the bid item "Concrete Safety Barrier".

UTILITIES & STRUCTURES (Stakes) Verify buried utilities and structures within stake depth. If conflicts between stake and buried elements exist, up to 2 stakes maximum in a single barrier may be omitted if adjacent barriers have 3 stakes each.

ANCHORAGE: Use galvanized grouted anchor bolts, through anchor bolts, nuts & washers that meet standard specifications.

Install three anchor bolts or asphalt pins per barrier on the traffic side except on transition barrier as shown.

BARRIER REMOVAL: Remove grouted or wedge anchor system by drilling the anchor with a core barrel 2x the diameter of the insert. Core to a depth equal to the installed depth and remove the core, prepare the hole by removing any dust and debris. Fill hole with material that meets KDOT Prequalified "Non-shrink grouts for grouting anchor bolts and reinforcing into previously poured concrete". Follow the manufacturer's procedures for mixing, hole preparation and curing.

To fill through bolt anchor, remove and completely fill the hole using instructions for drop-in anchors except no coring is required.

For removed or relocated barrier on flexible pavement, fill stake holes completely with hot or cold asphalt patch material.

Work and materials required to remove and patch anchor holes is subsidiary to the bid item "Concrete Safety Barrier".

SIGNING: For sign spacing, traffic control device details and reference notes, see Index of Sheets.

TEMPORARY BARRIERS: Temporary Barriers shown in the details of this drawing are not allowed for permanent installations.

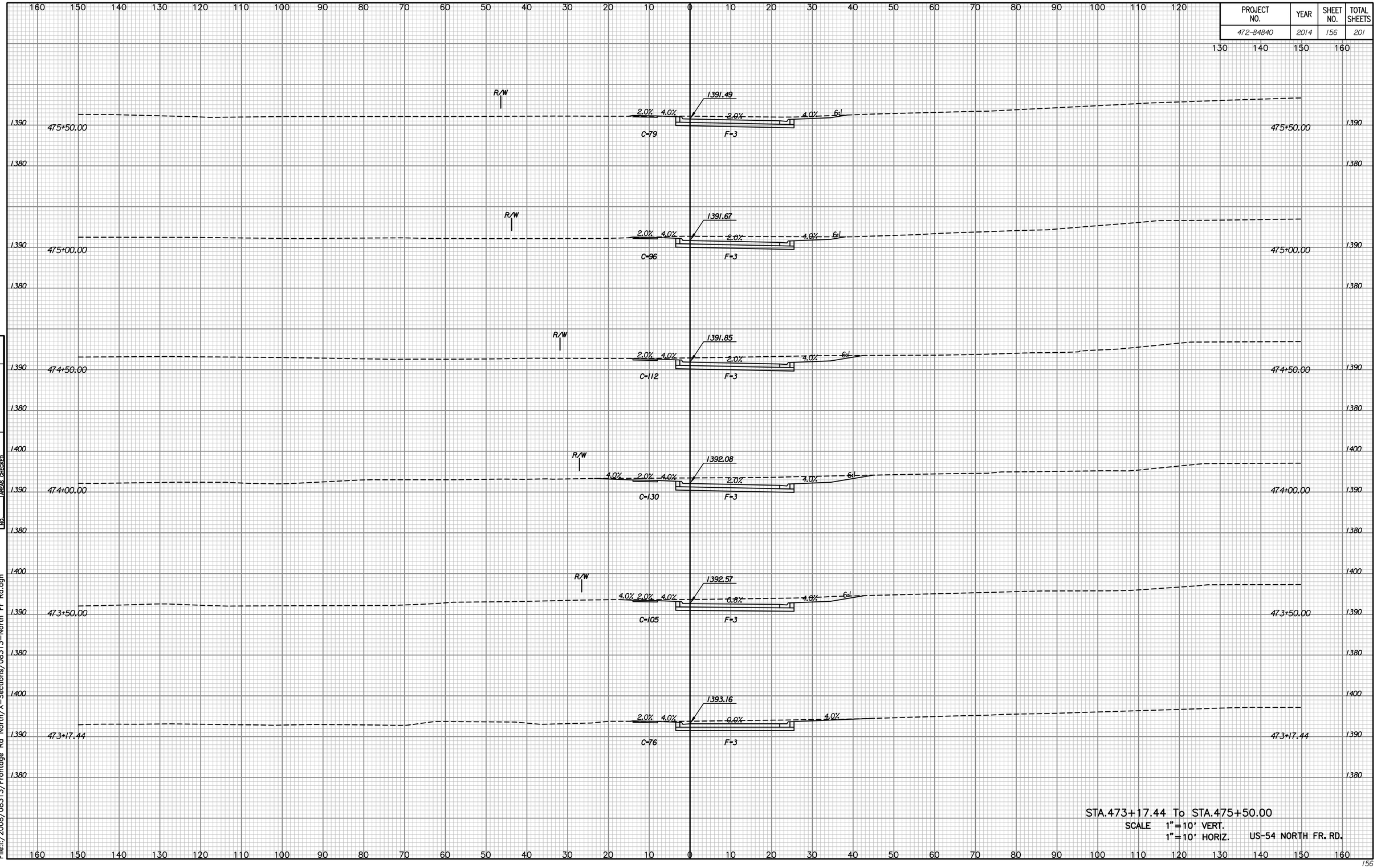
See RD622D for transition details between anchored and free-standing barriers.

Note to Designer: For use on Haunched slab bridges, the Road Designer shall coordinate with the Bridge Designer for "corridor in the reinforcing steel layout to accommodate barrier anchoring". Road Designer shall coordinate barrier layout with Bridge Designer to accomodate for expansion during construction.

Drawn By : drp
File : I:\2008\08313\Frontage Rd North\Standards\08313-rd622b.dgn
Plotted : 14-JUL-2014 14:52

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	156	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

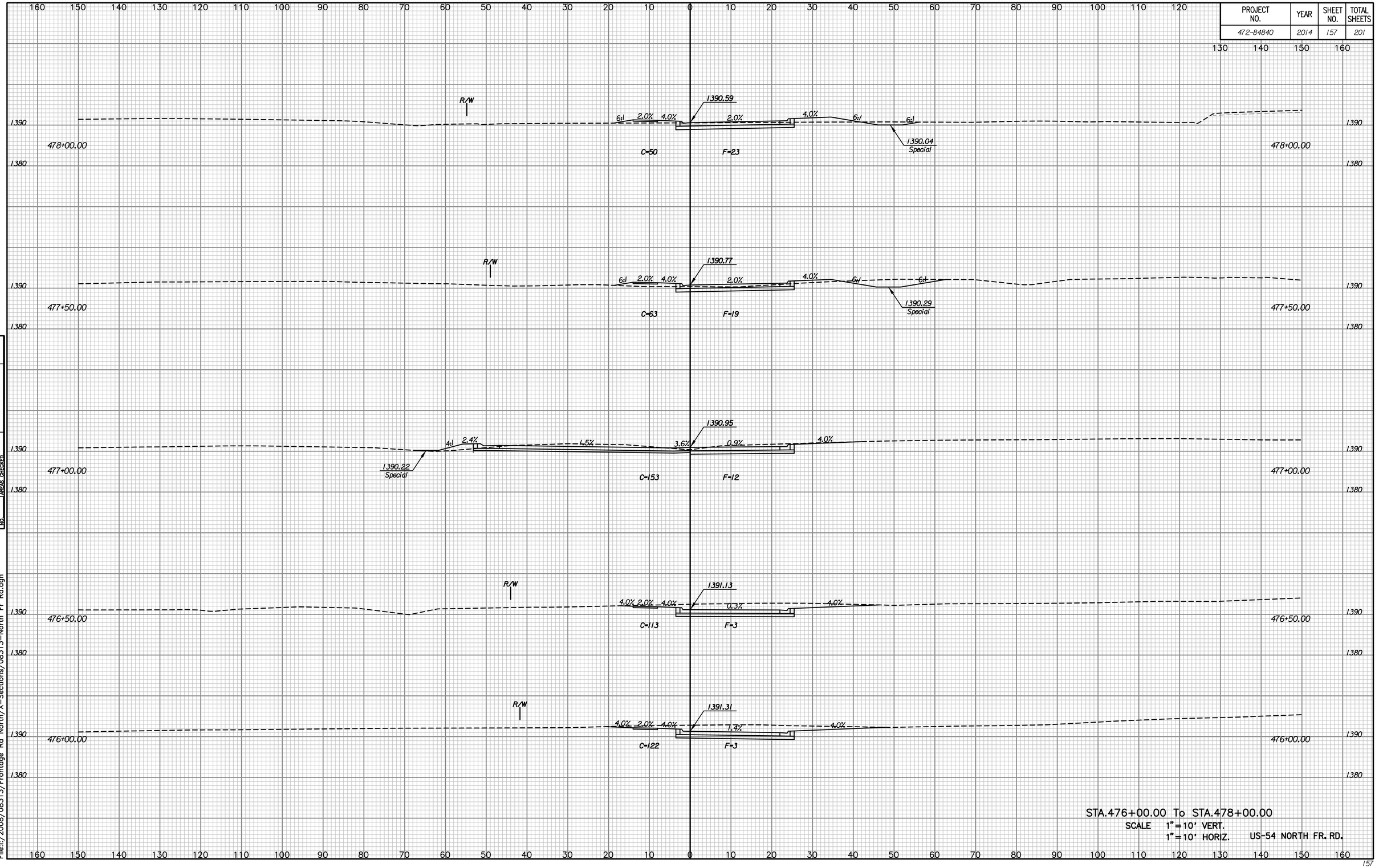


STA.473+17.44 To STA.475+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	157	201



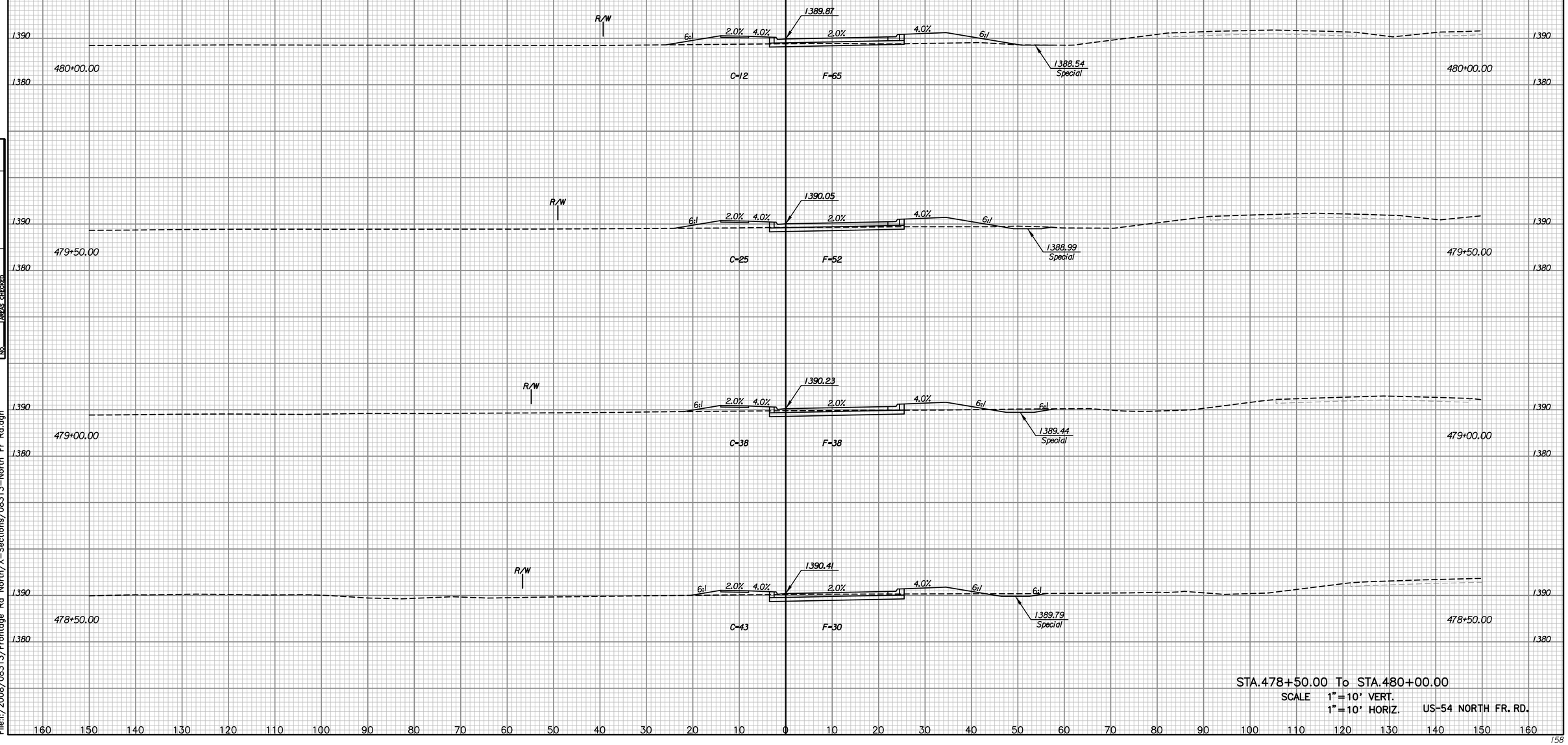
NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

STA.476+00.00 To STA.478+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	158	201

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STA.478+50.00 To STA.480+00.00

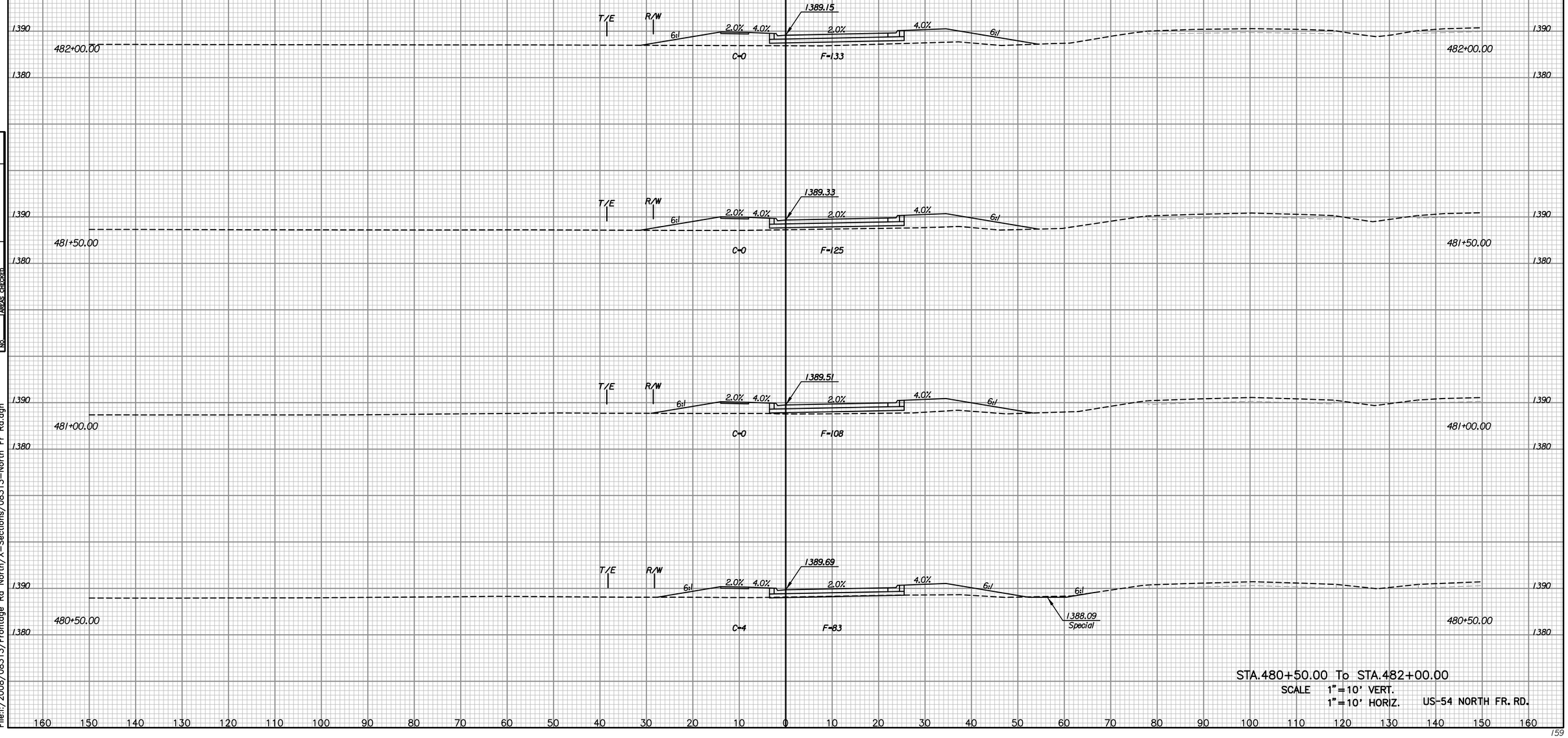
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1"=10' HORIZ. US-54 NORTH FR. RD.

NO.	AREAS CHECKED	TEMPLATE AREAS	NOTE BOOK

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	159	201

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STA.480+50.00 To STA.482+00.00

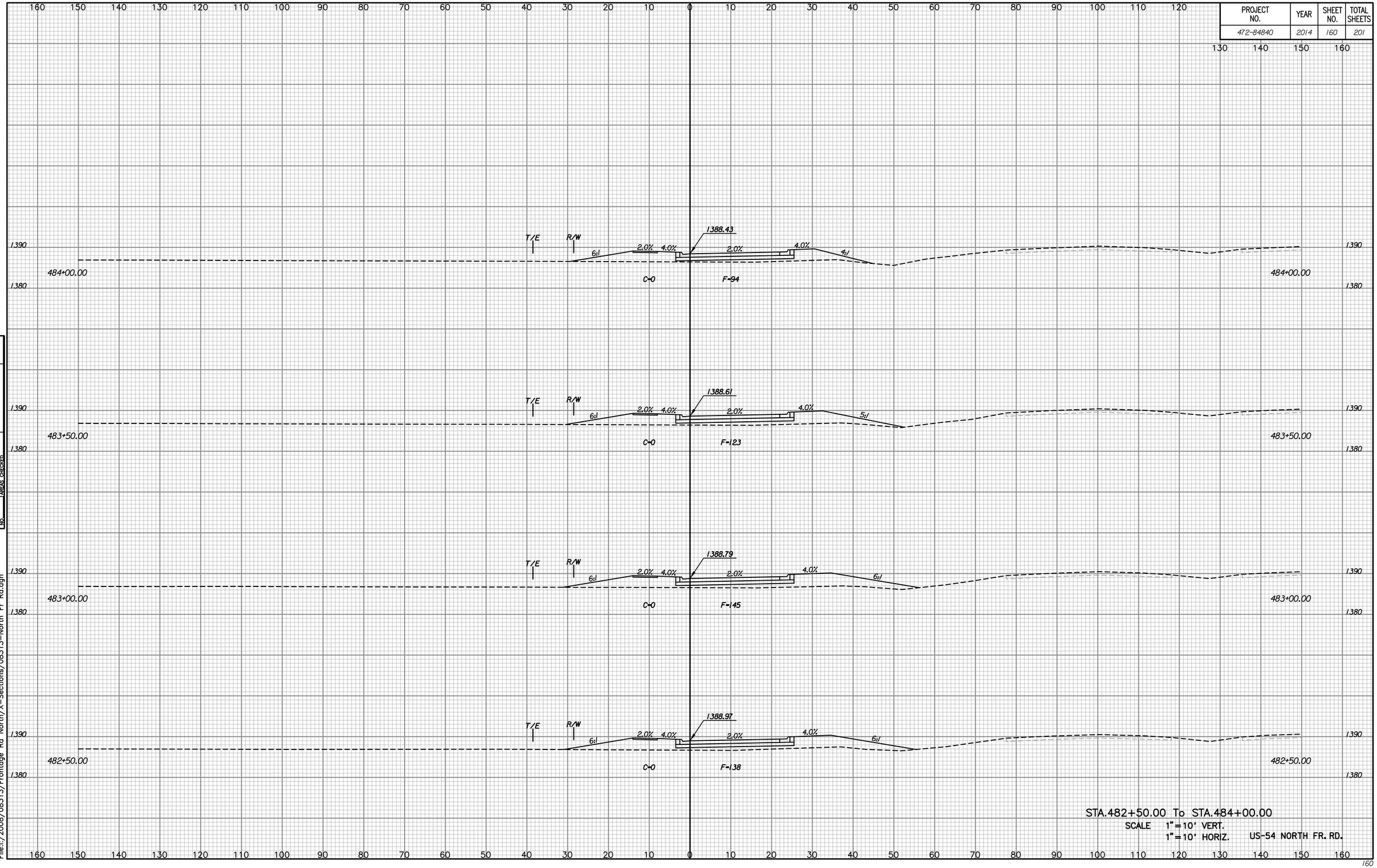
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1"=10' HORIZ. US-54 NORTH FR. RD.

NO.	AREAS CHECKED	TEMPLATE AREAS	NOTE BOOK

Plotted By:CKC Date:05-29-2014
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PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	160	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



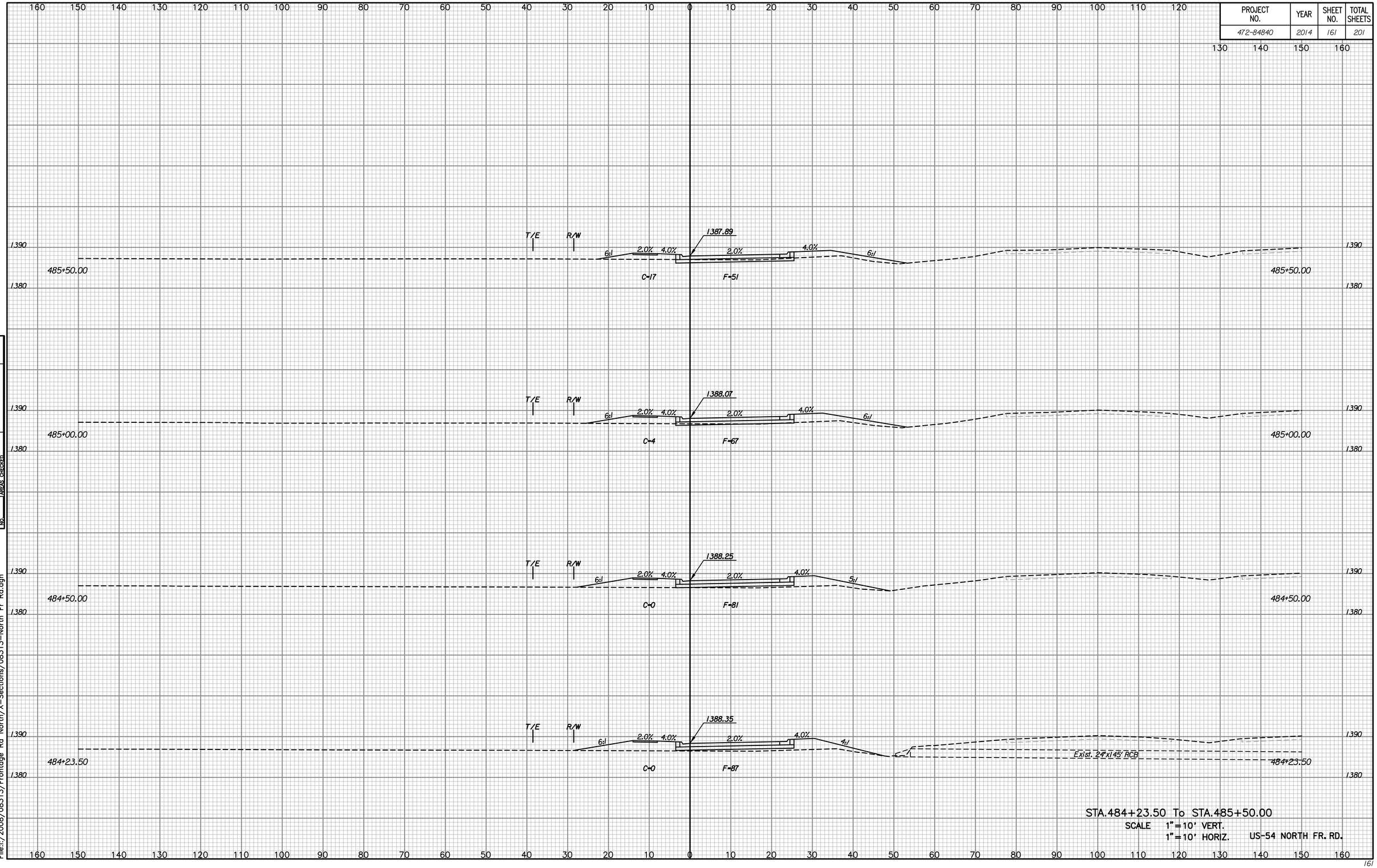
STA.482+50.00 To STA.484+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	161	201

NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED
NO.		

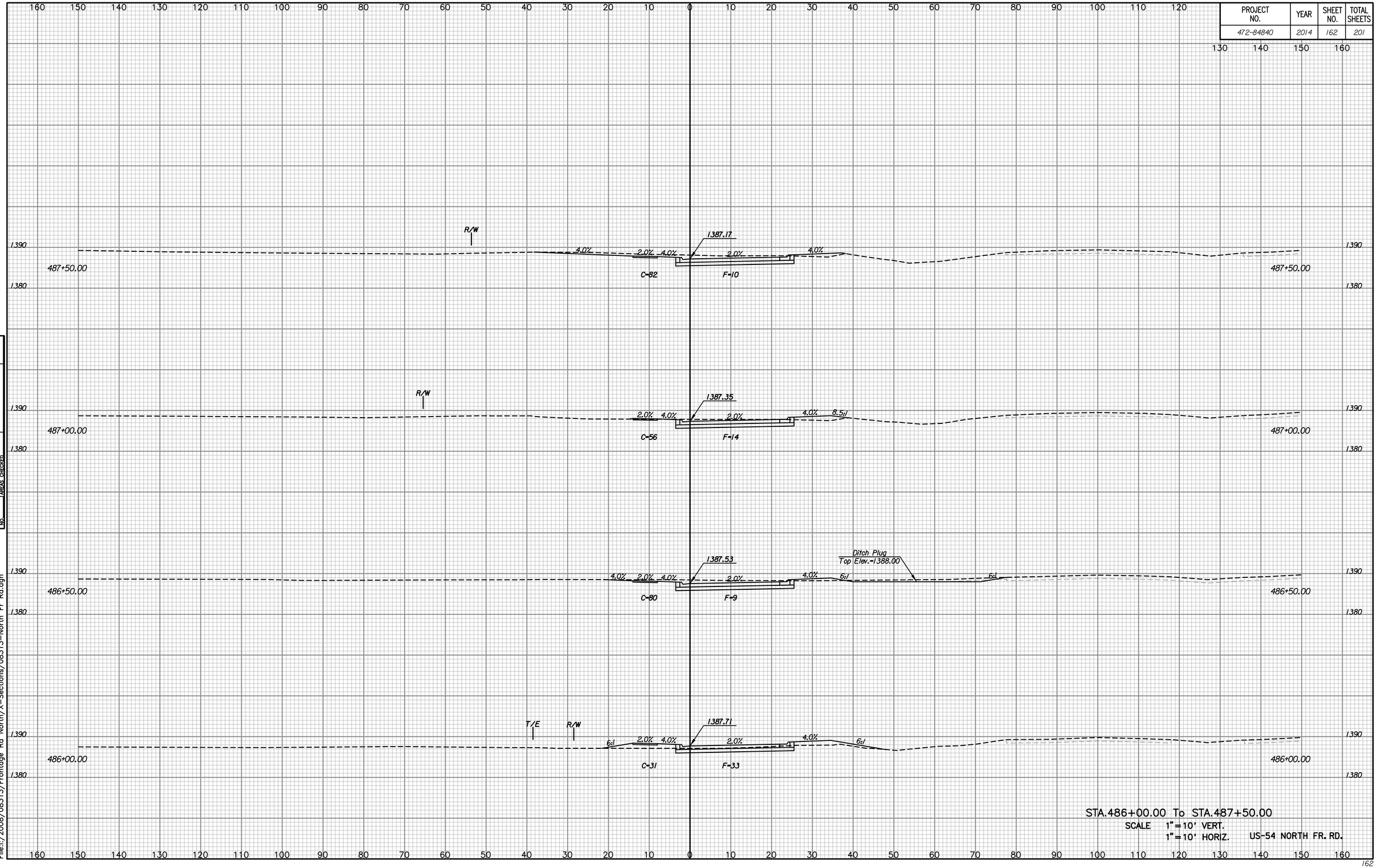


STA.484+23.50 To STA.485+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	162	201



NO.	AREAS CHECKED	TEMPLATE AREAS	NOTE BOOK

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

STA.486+00.00 To STA.487+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	163	201

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

R/W
1386.45
9.2%
2.0%
4.0%
2.0%
4.0%
1390
1380
489+50.00
C=172
F=4
489+50.00

R/W
1386.63
6.2%
2.0%
4.0%
2.0%
4.0%
1390
1380
489+00.00
C=145
F=3
489+00.00

R/W
1386.81
9.7%
2.0%
4.0%
2.0%
4.0%
1390
1380
488+50.00
C=138
F=3
488+50.00

R/W
1386.99
6.2%
2.0%
4.0%
2.0%
4.0%
1390
1380
488+00.00
C=109
F=5
488+00.00

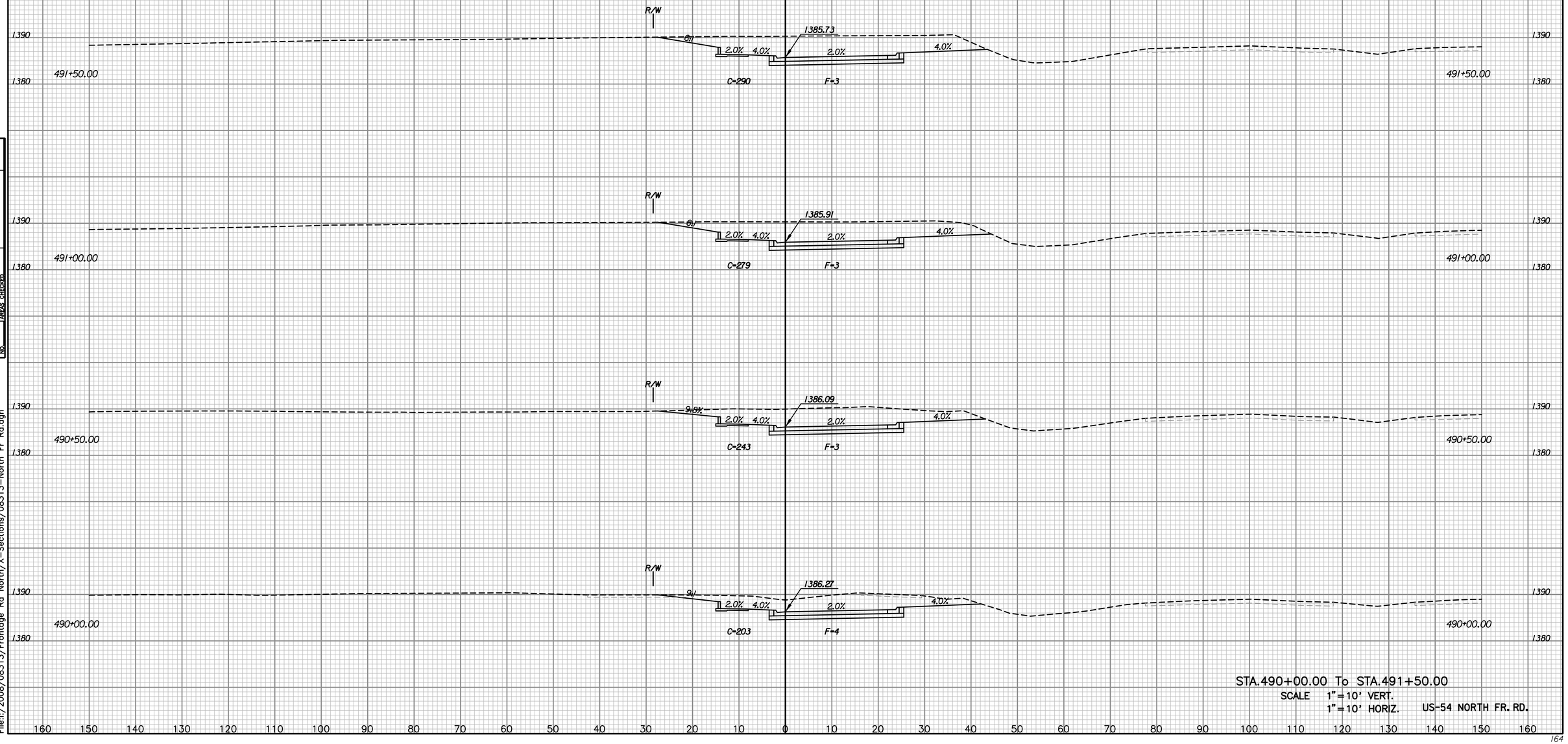
STA.488+00.00 To STA.489+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ.
US-54 NORTH FR. RD.

NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	164	201

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



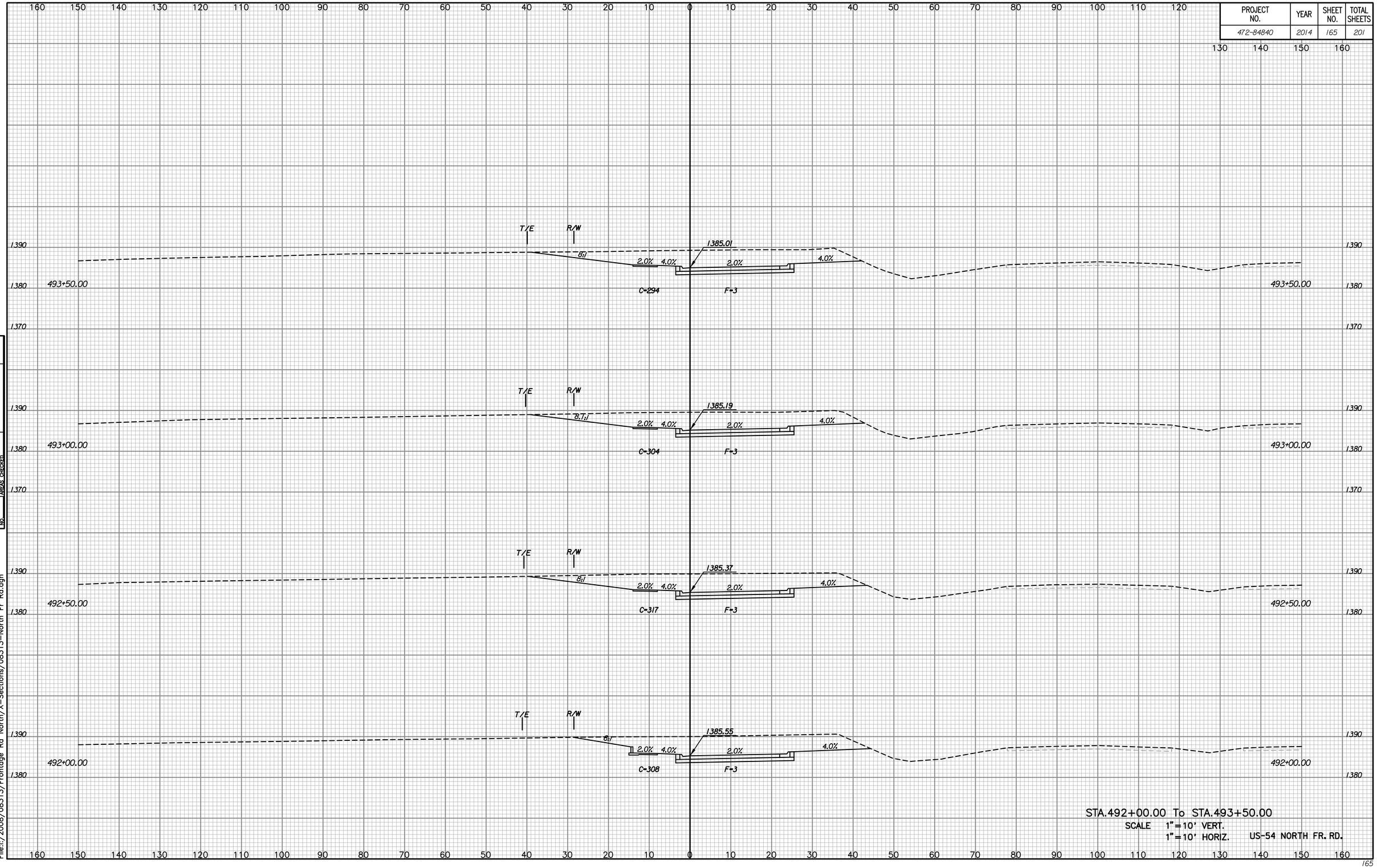
NOTE BOOK TEMPLATE AREAS AREAS CHECKED NO.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

STA.490+00.00 To STA.491+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	165	201

NO.	NOTE BOOK
	TEMPLATE
	AREAS
	AREAS CHECKED



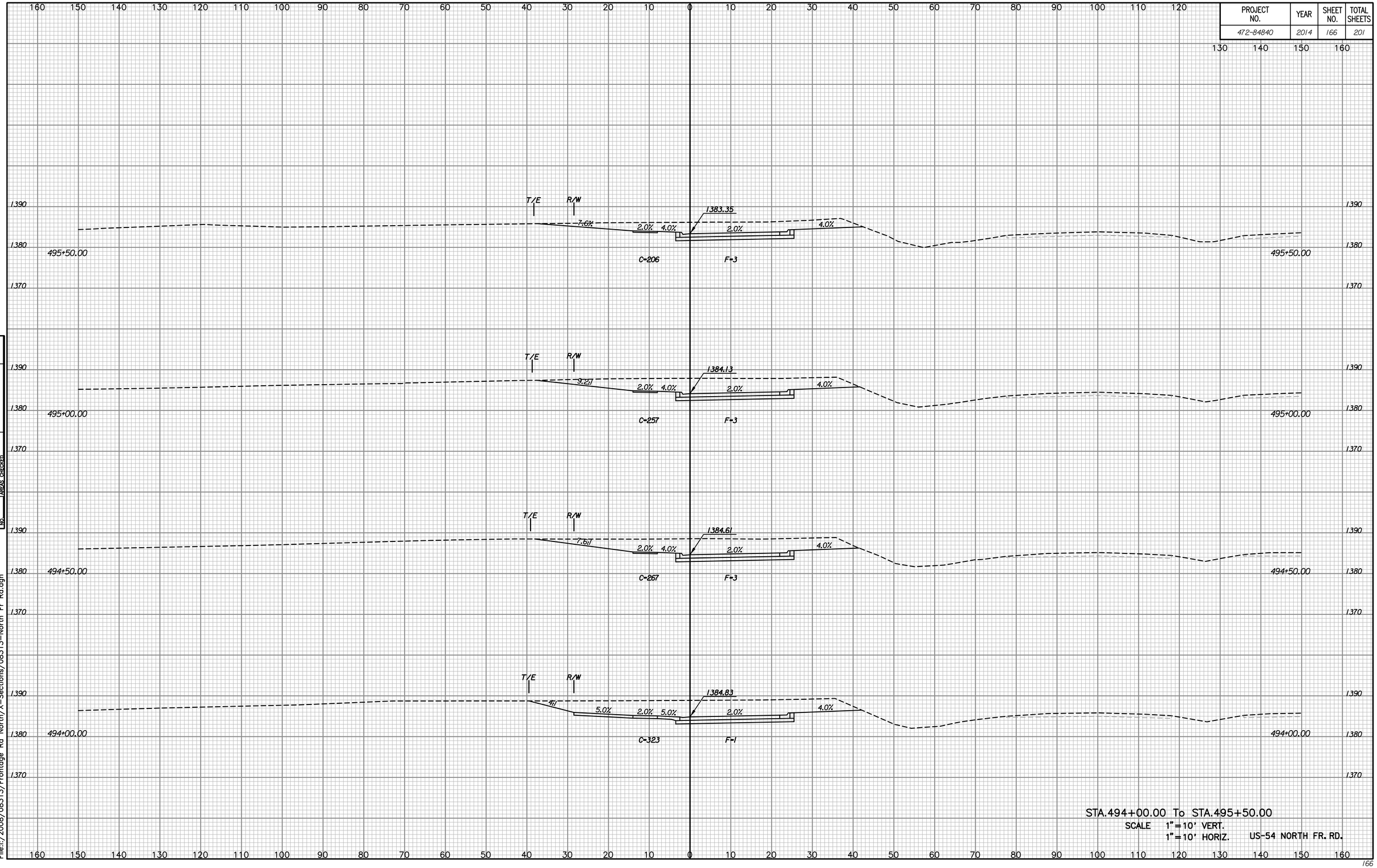
STA.492+00.00 To STA.493+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	166	201

NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED
NO.		



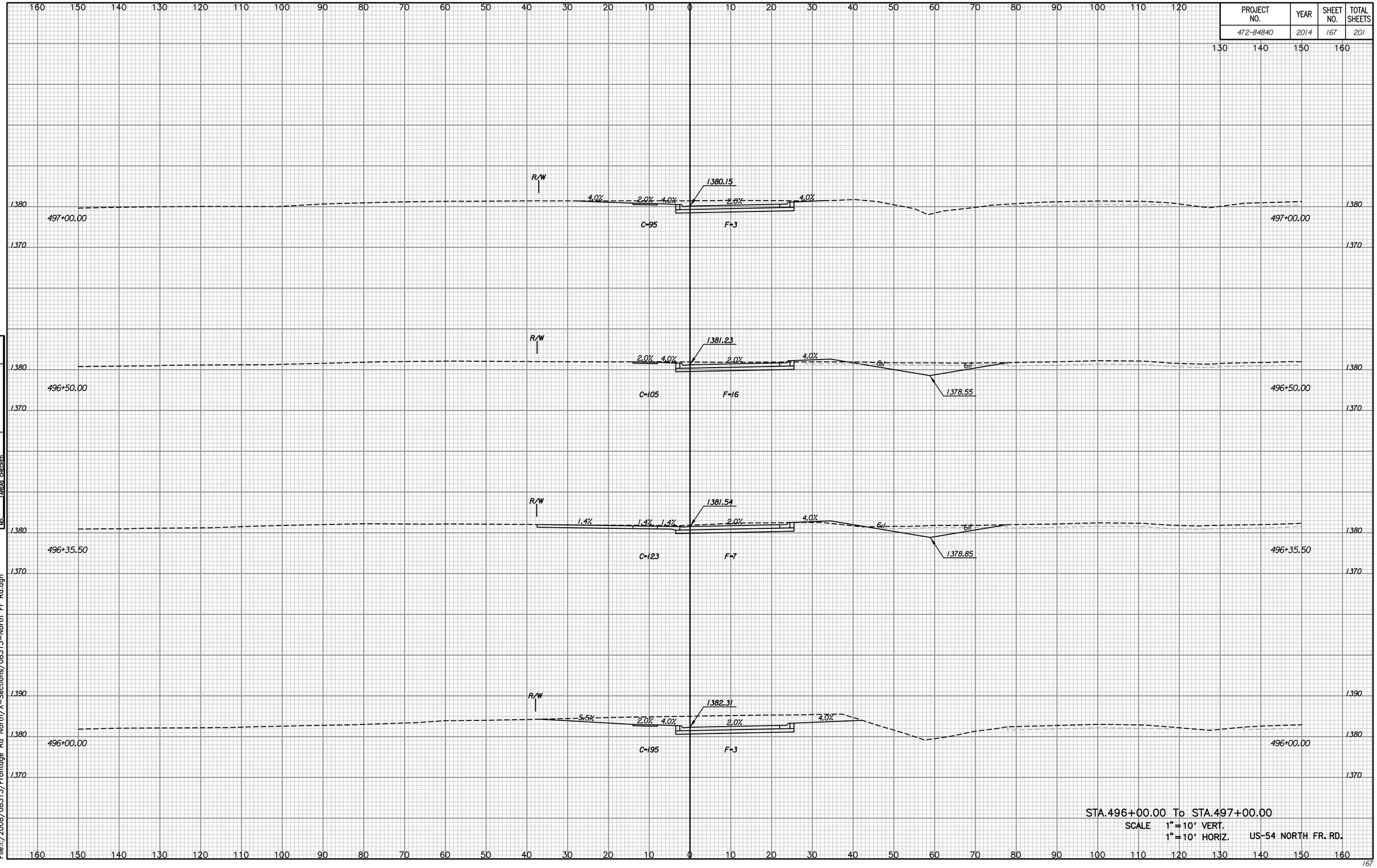
STA.494+00.00 To STA.495+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	167	201

NO.	NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED



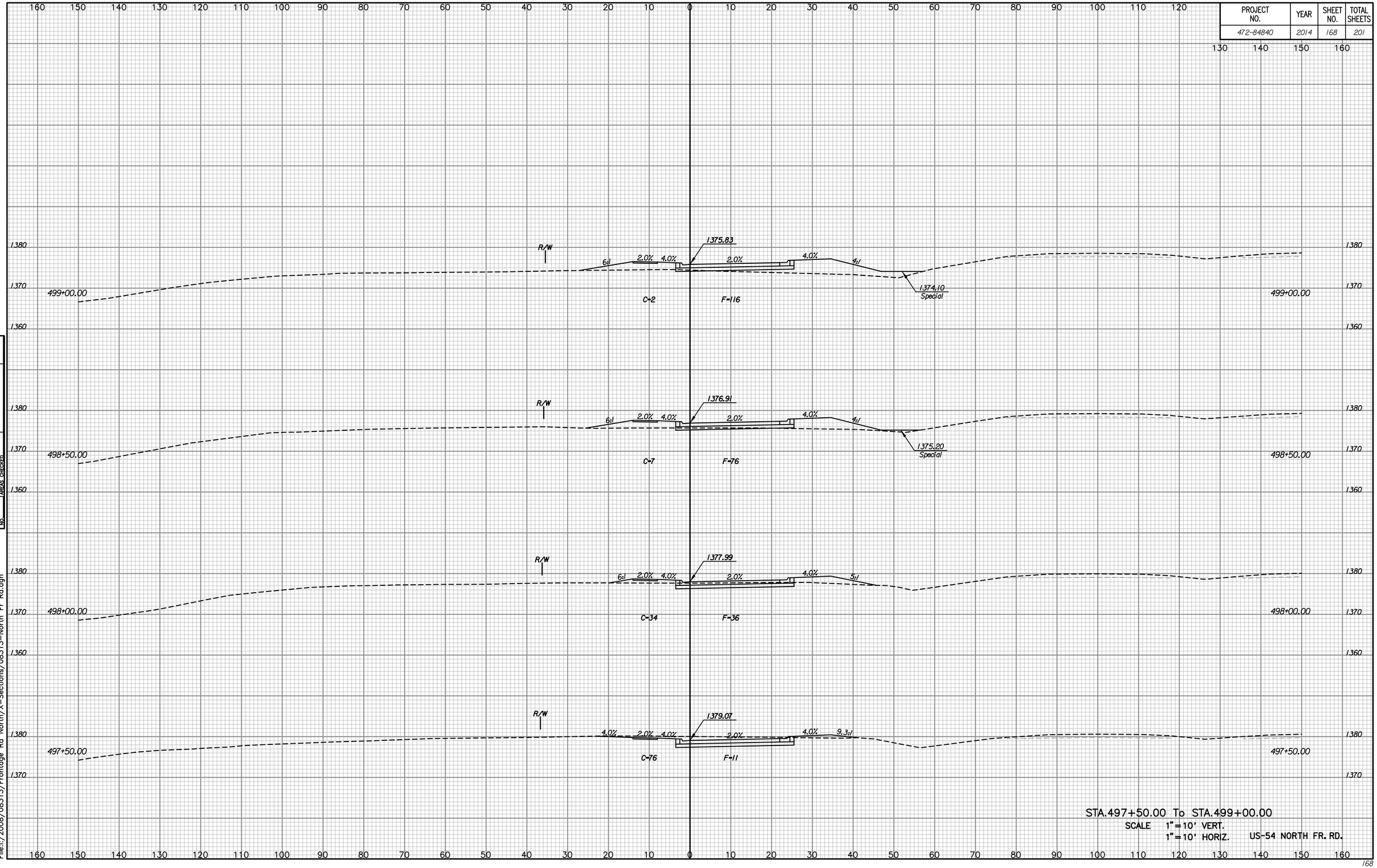
STA.496+00.00 To STA.497+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	168	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



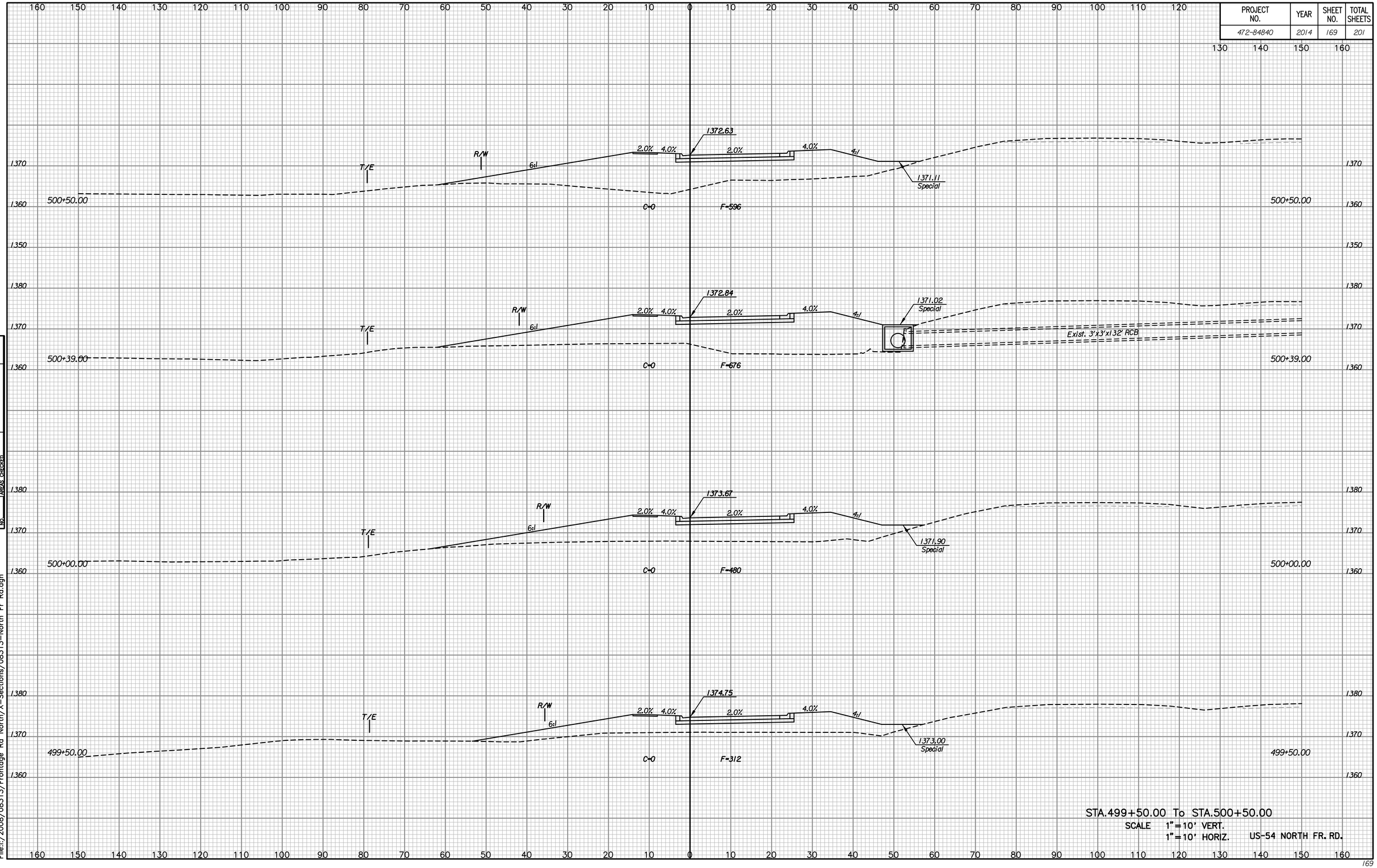
STA.497+50.00 To STA.499+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	169	201

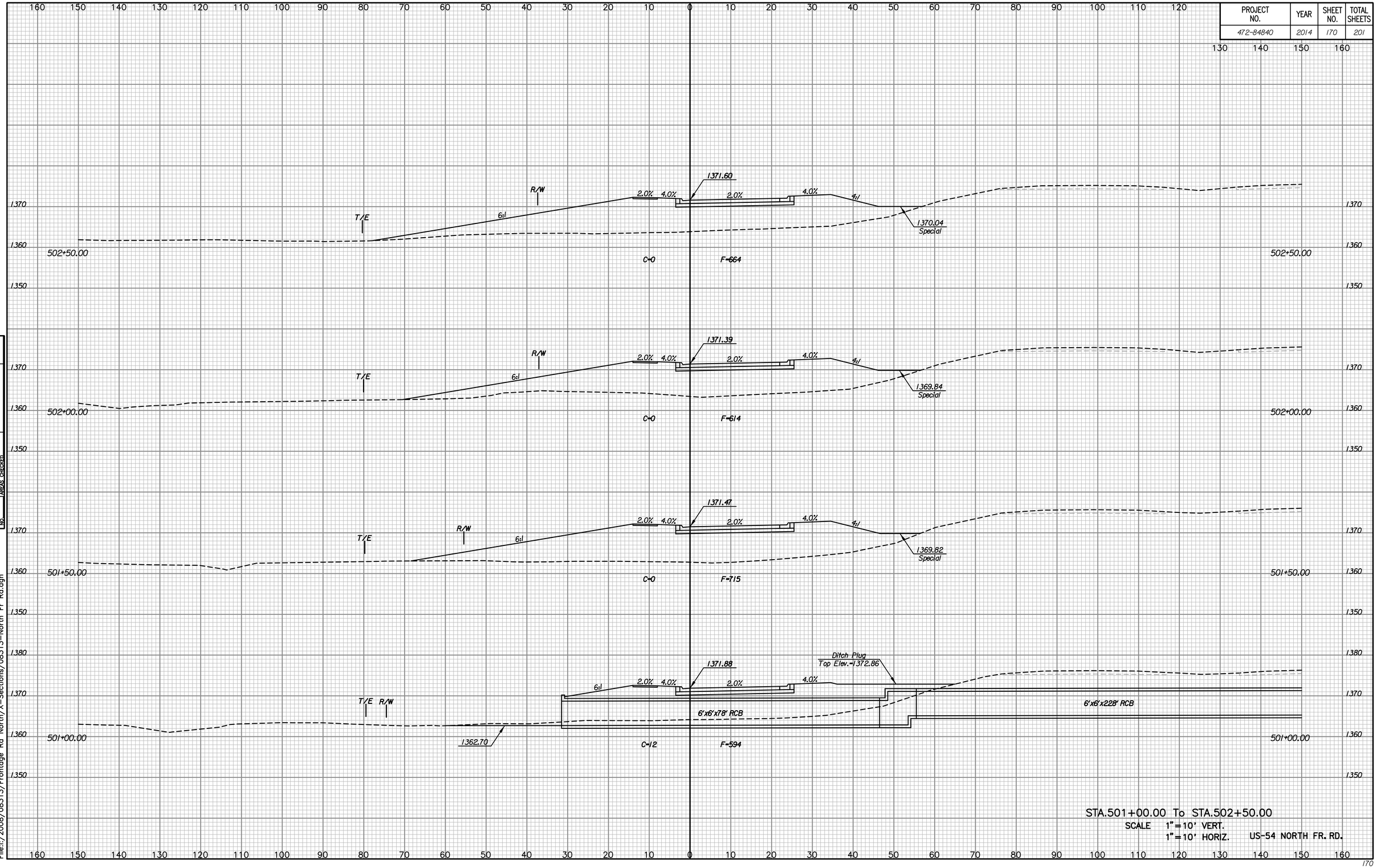
NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	170	201

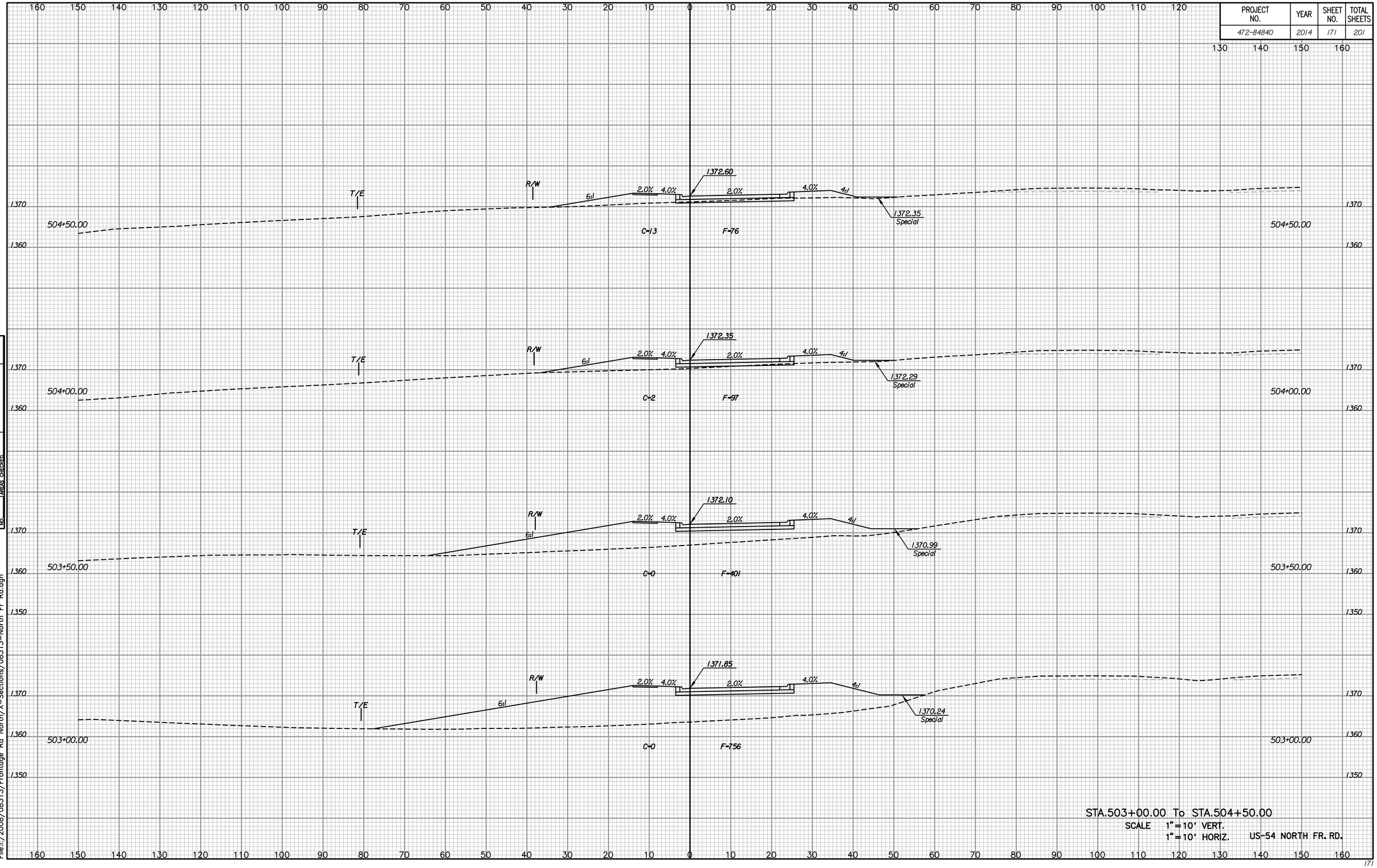
NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED
NO.		



Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	171	201

NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED
NO.			



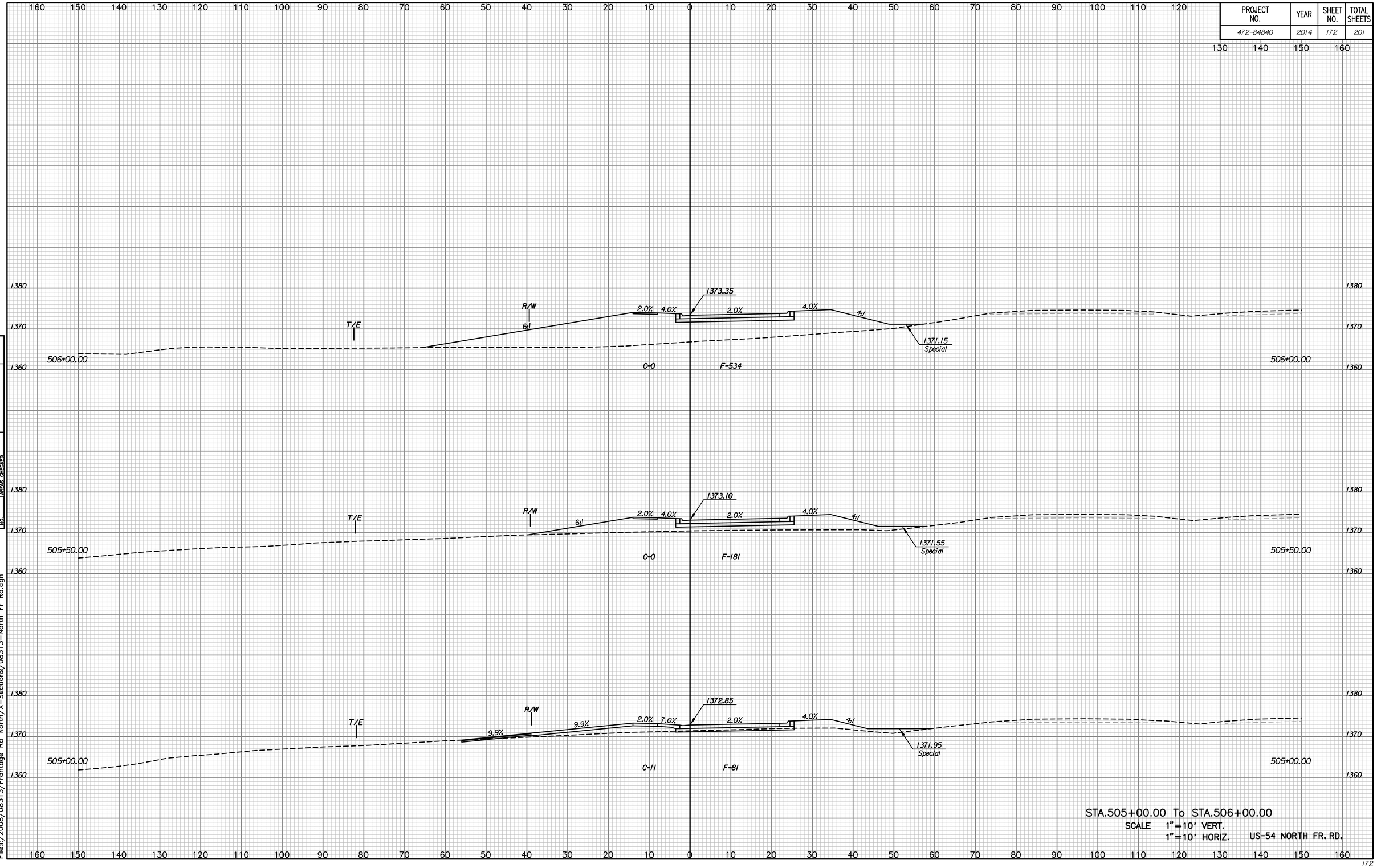
STA.503+00.00 To STA.504+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	172	201

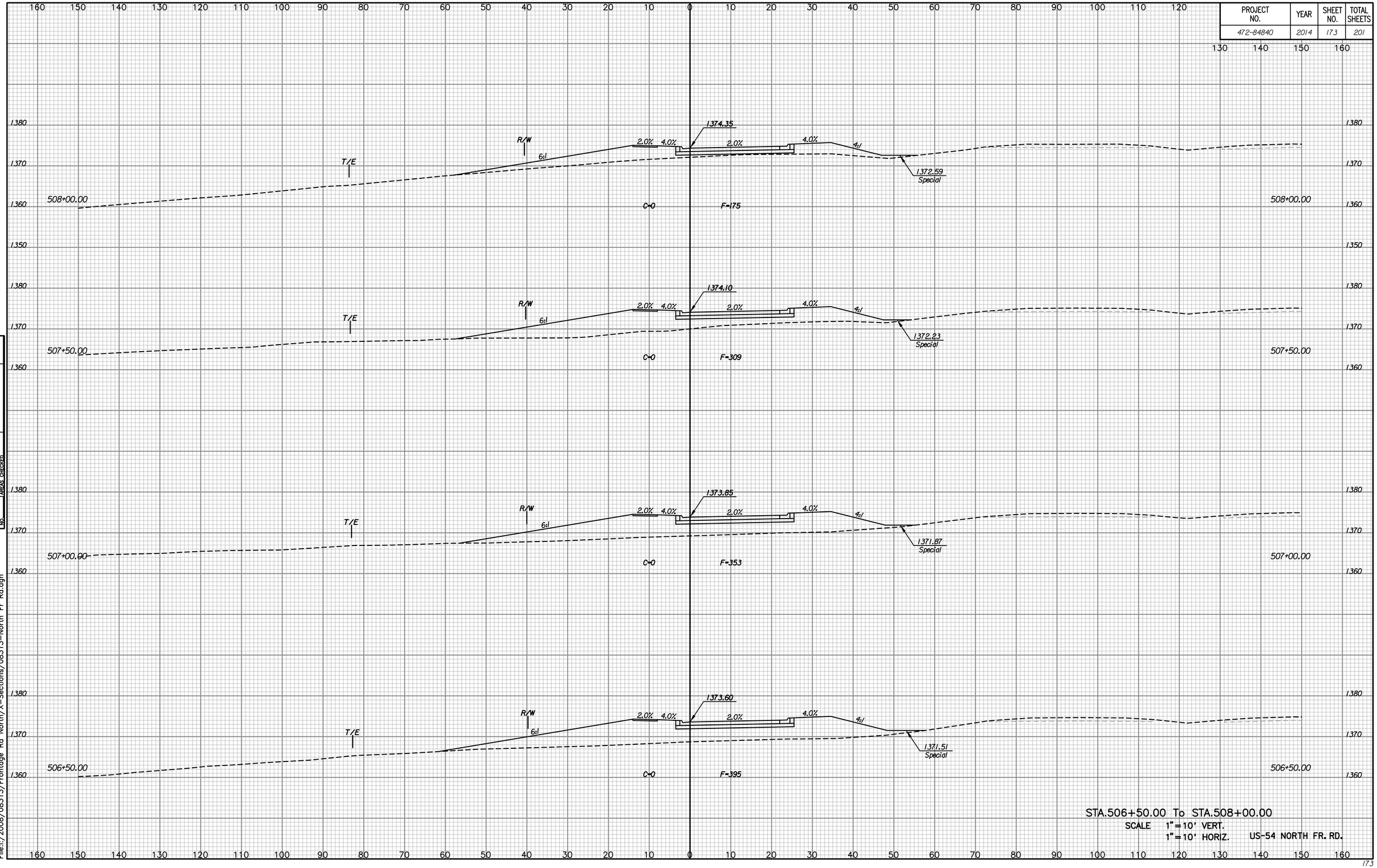
NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	173	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



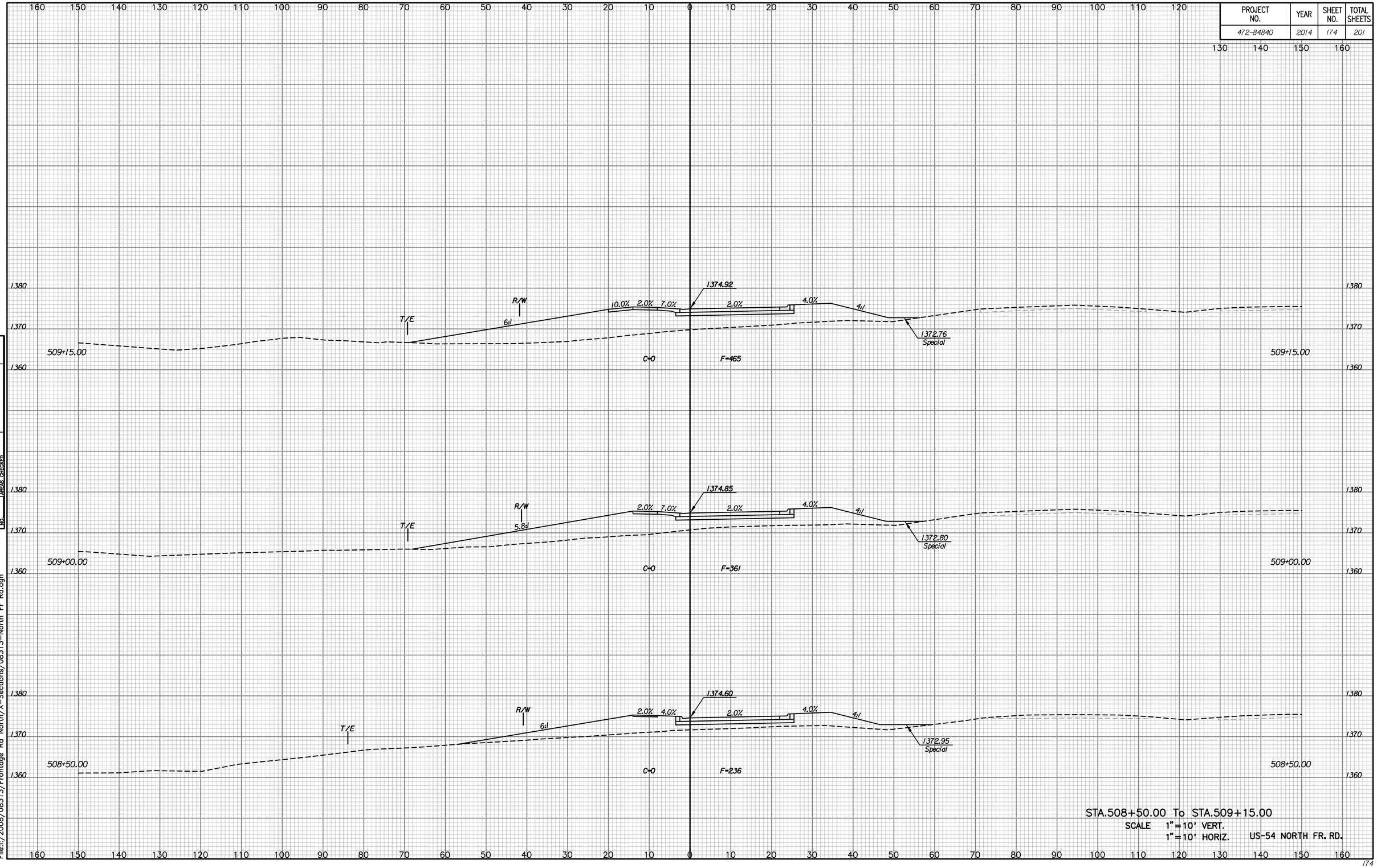
STA.506+50.00 To STA.508+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	174	201

NO.	NOTE BOOK	TEMPLATE
		AREAS
		AREAS CHECKED



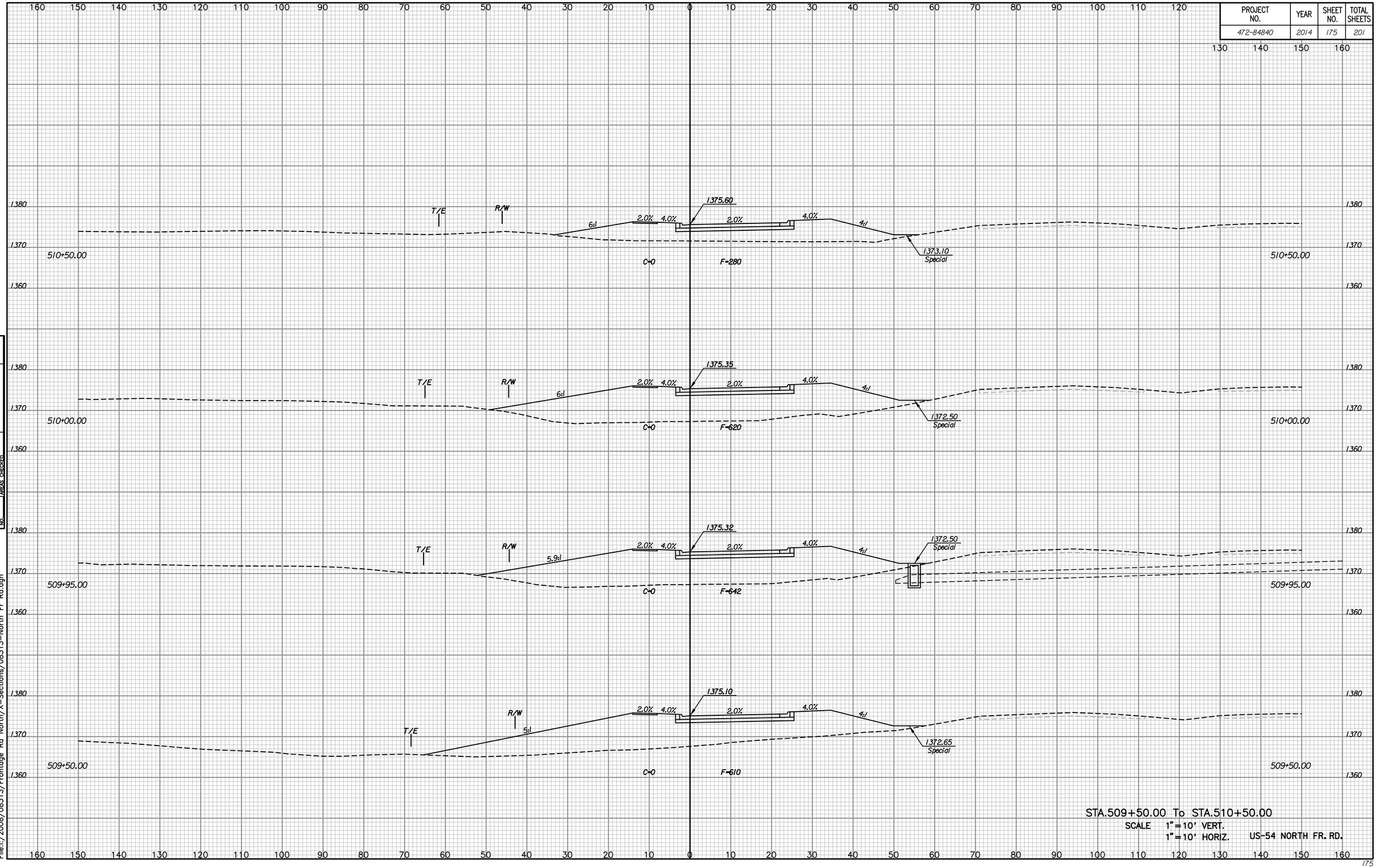
STA.508+50.00 To STA.509+15.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	175	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



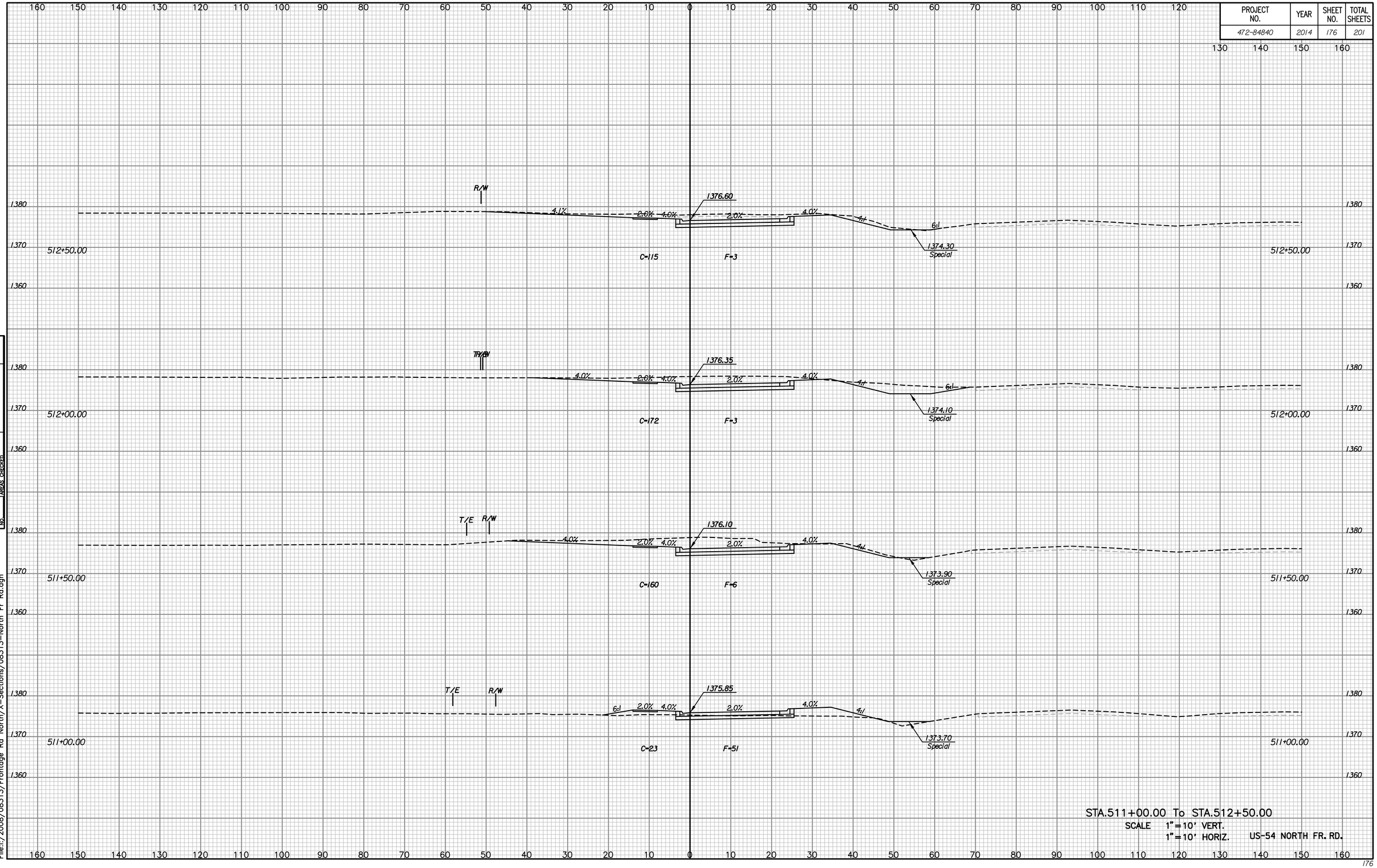
STA.509+50.00 To STA.510+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	176	201

NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED
NO.		



STA.511+00.00 To STA.512+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	177	201

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

514+50.00

1375.12

4.0% 2.0% 4.0% 2.0% 4.0%

C-96 F+3

514+50.00

R/W

514+00.00

1375.86

4.0% 2.0% 4.0% 2.0% 4.0%

C-87 F+3

514+00.00

R/W

513+50.00

1376.43

4.0% 2.0% 4.0% 2.0% 4.0%

C-80 F+3

513+50.00

R/W

513+00.00

1376.68

4.0% 2.0% 4.0% 2.0% 4.0%

C-82 F+3

513+00.00

STA.513+00.00 To STA.514+50.00

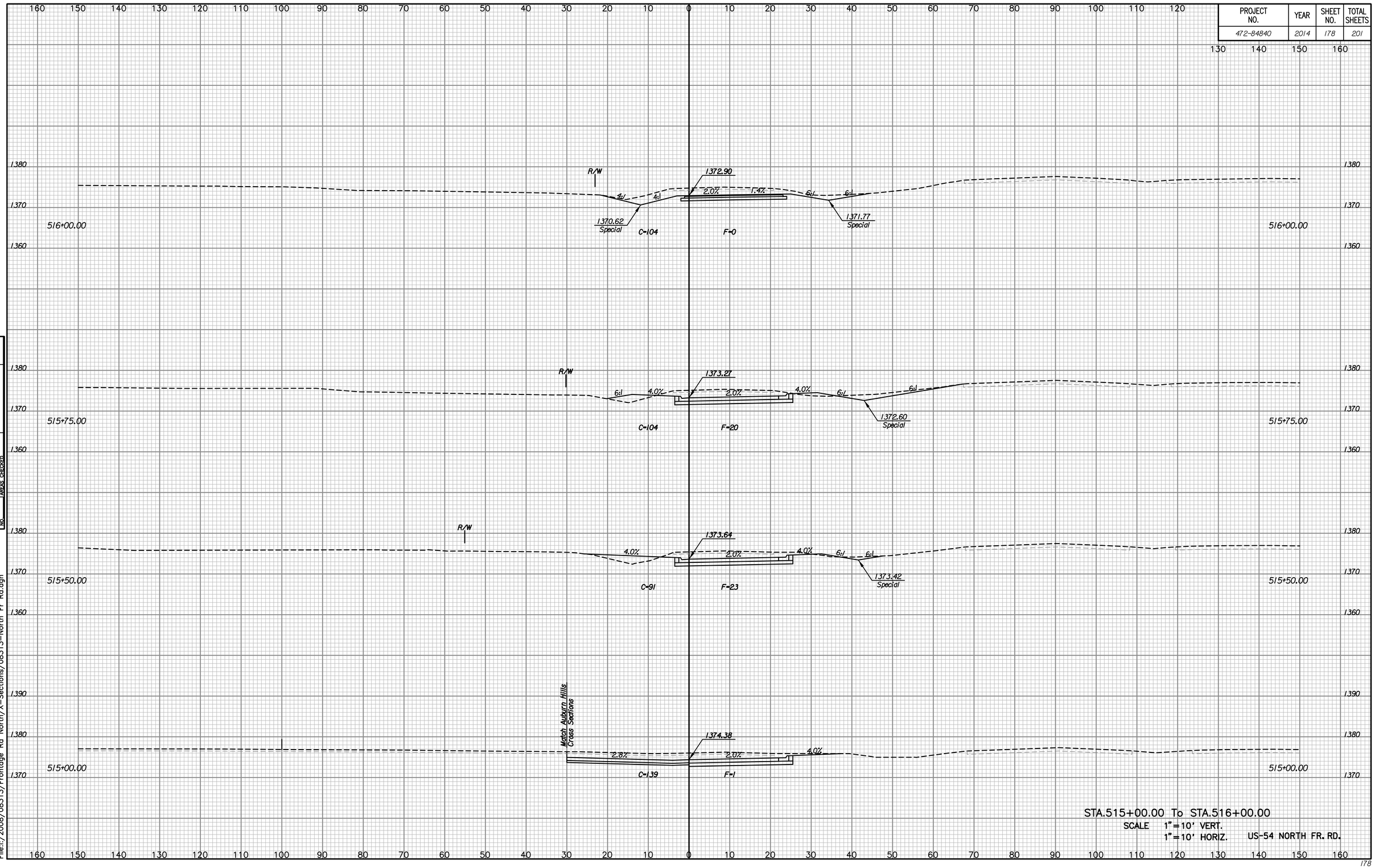
SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	178	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



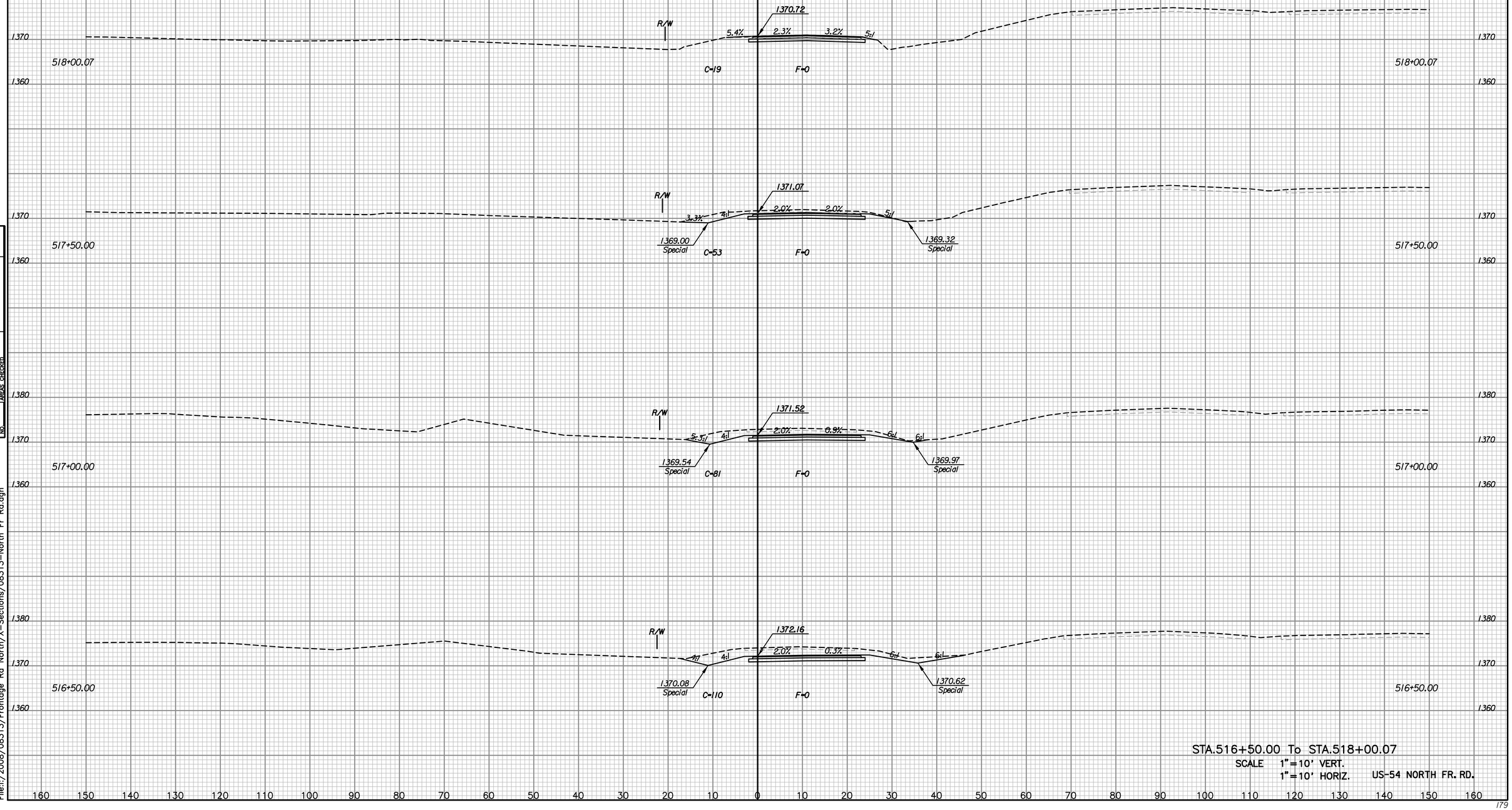
STA.515+00.00 To STA.516+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	179	201

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



STA.516+50.00 To STA.518+00.07

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 NORTH FR. RD.

NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-North Fr Rd.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	180	201

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

1400
1390

471+50.00 C=56 F=2 6:1 4:1 1397.39 Special 471+50.00

471+00.00 C=58 F=2 6:1 4:1 1398.44 Special 471+00.00

470+50.00 C=7 F=1 6:1 4:1 1399.49 Special 470+50.00

470+00.00 C=0 F=0 6:1 1400.54 Special 470+00.00

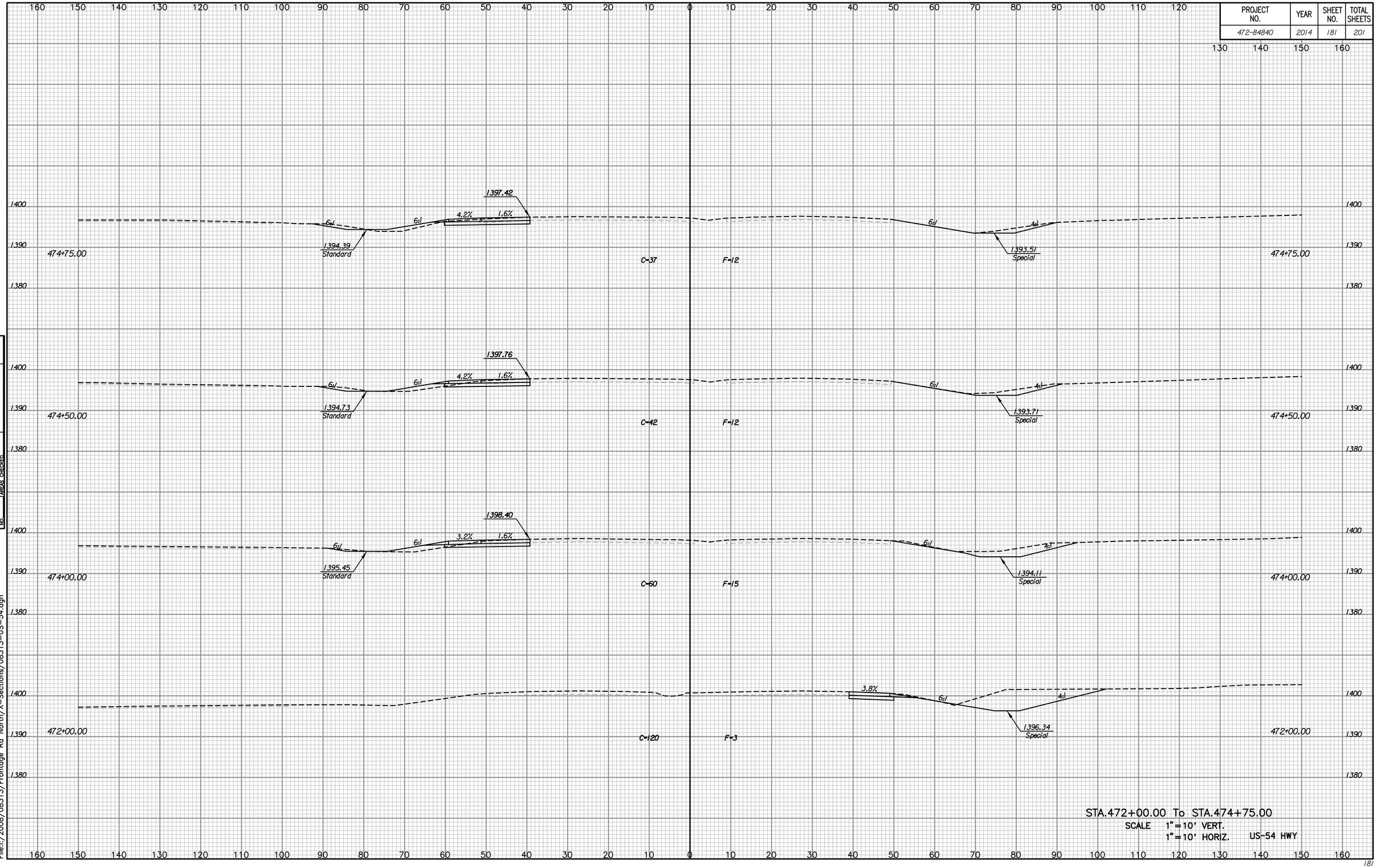
NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

STA.470+00.00 To STA.471+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

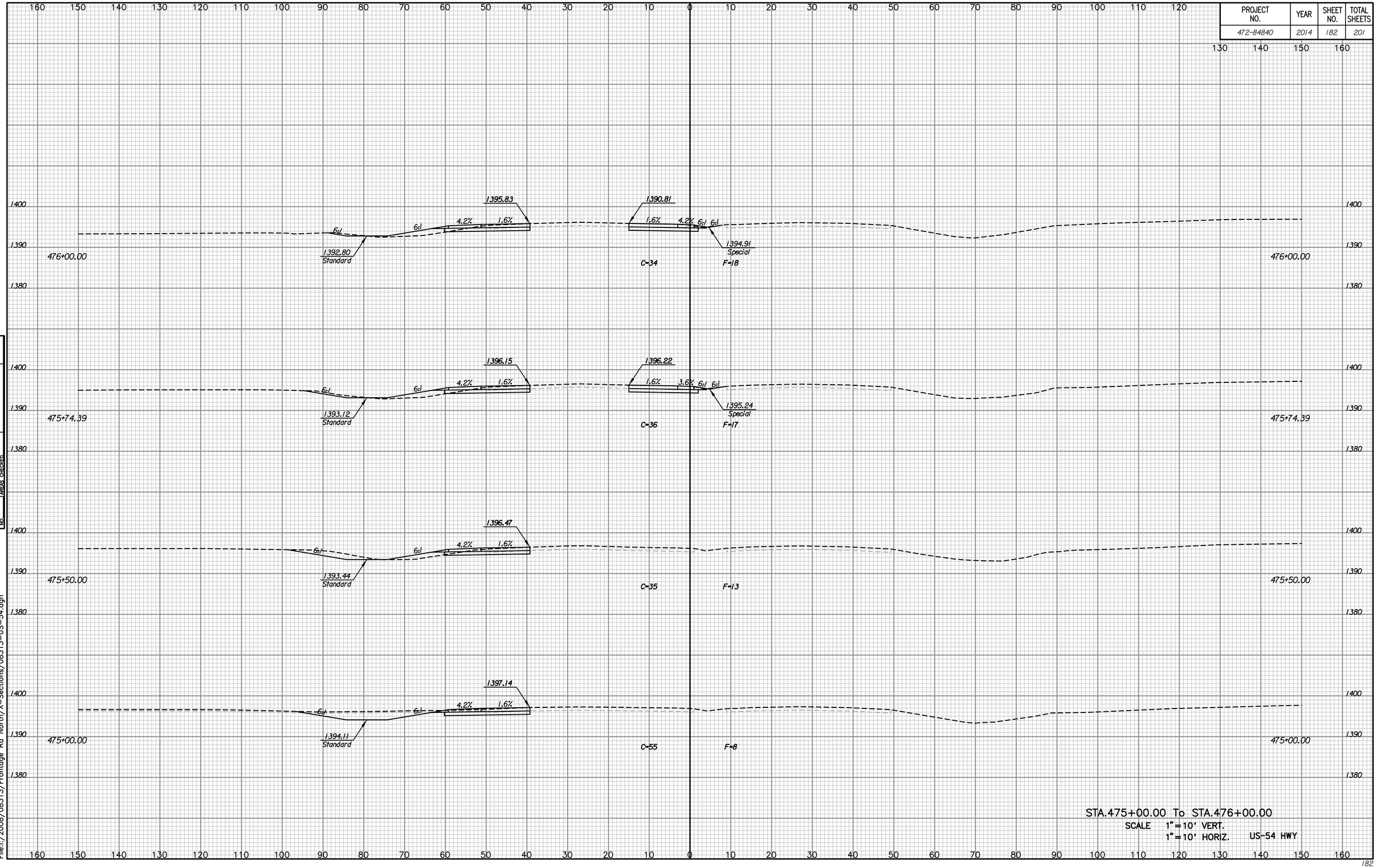
PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	181	201

NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED
NO.			



Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	182	201



NOTE BOOK TEMPLATE
NO. AREAS AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

STA.475+00.00 To STA.476+00.00
SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	183	201

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

1400
1390
1380

477+35.00

6:1 6:1 4.2% 1.6%

1394.12

1391.10
Standard

C=52

1390.81

1.6% 4.2% 6:1 6:1

1393.16
Special

F=6

6:1 4:1

1390.75
Special

477+35.00

1400
1390
1380

1400
1390
1380

477+00.00

6:1 6:1 4.2% 1.6%

1394.58

1391.56
Standard

C=39

1390.81

1.6% 4.2% 6:1 6:1

1393.61
Special

F=15

477+00.00

1400
1390
1380

1400
1390
1380

476+50.00

6:1 6:1 4.2% 1.6%

1395.19

1392.16
Standard

C=38

1390.81

1.6% 4.2% 6:1 6:1

1394.26
Special

F=14

476+50.00

1400
1390
1380

STA.476+50.00 To STA.477+35.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

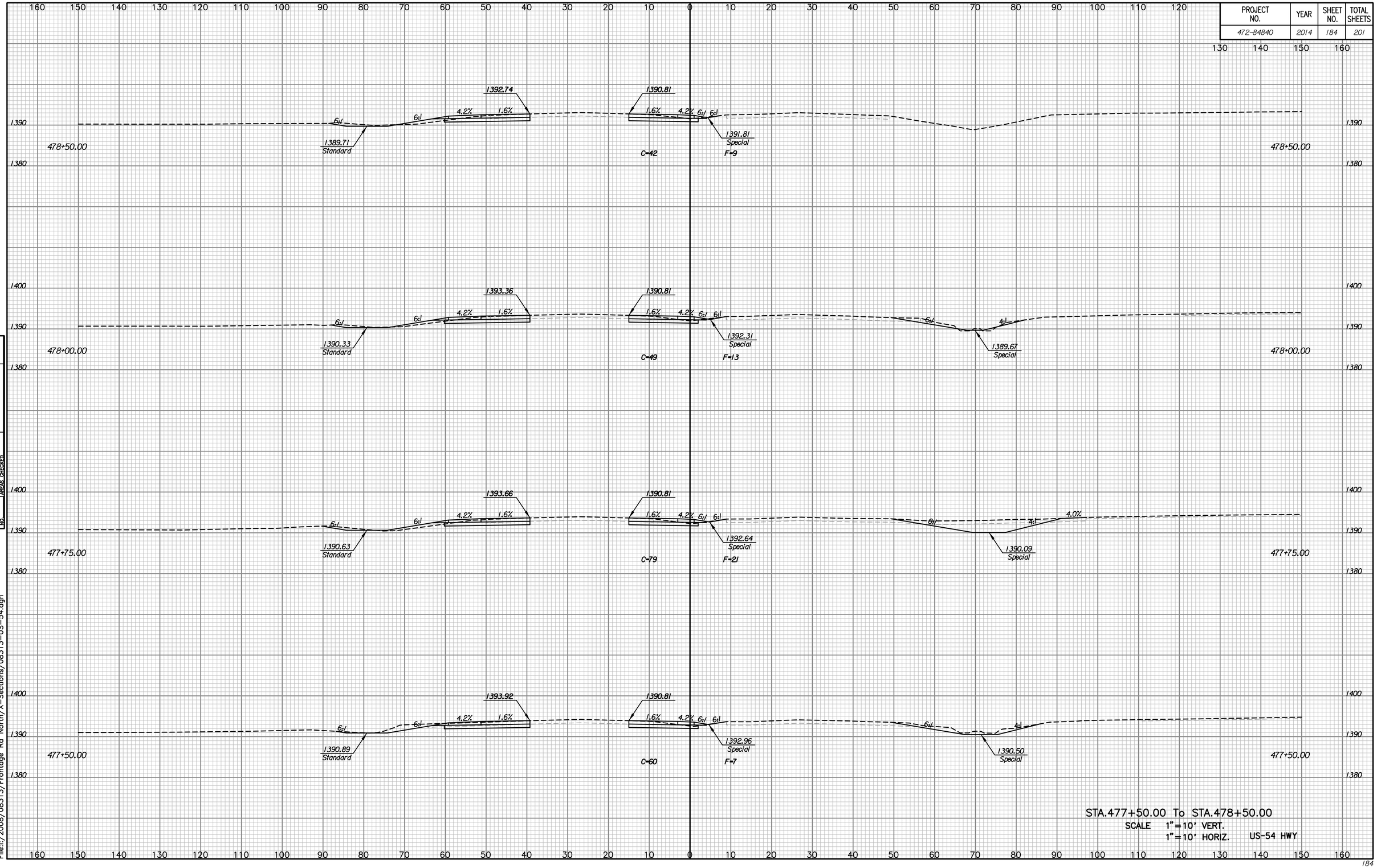
160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	184	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



STA.477+50.00 To STA.478+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	185	201

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

1390
1380

480+50.00

6.1:1 4.2% 1.6% 1391.05 1390.81 1.6% 4.2% 7:1

C=20 F=3

480+50.00

480+00.00

1391.40 1390.81 6:1 4.2% 1.6% 1.6% 4.2% 6:1

C=26 F=5

480+00.00

479+50.00

1391.81 1390.81 6:1 6:1 4.2% 1.6% 1.6% 4.2% 6:1 6:1 1388.81 Standard 1390.81 Special

C=34 F=9

479+50.00

479+19.85

1392.05 1390.81 6:1 6:1 4.2% 1.6% 1.6% 4.2% 6:1 6:1 1389.02 Standard 1391.11 Special

C=40 F=10

479+19.85

479+00.00

1392.21 1390.81 6:1 6:1 4.2% 1.6% 1.6% 4.2% 6:1 6:1 1389.19 Standard 1391.31 Special

C=40 F=10

479+00.00

STA.479+00.00 To STA.480+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

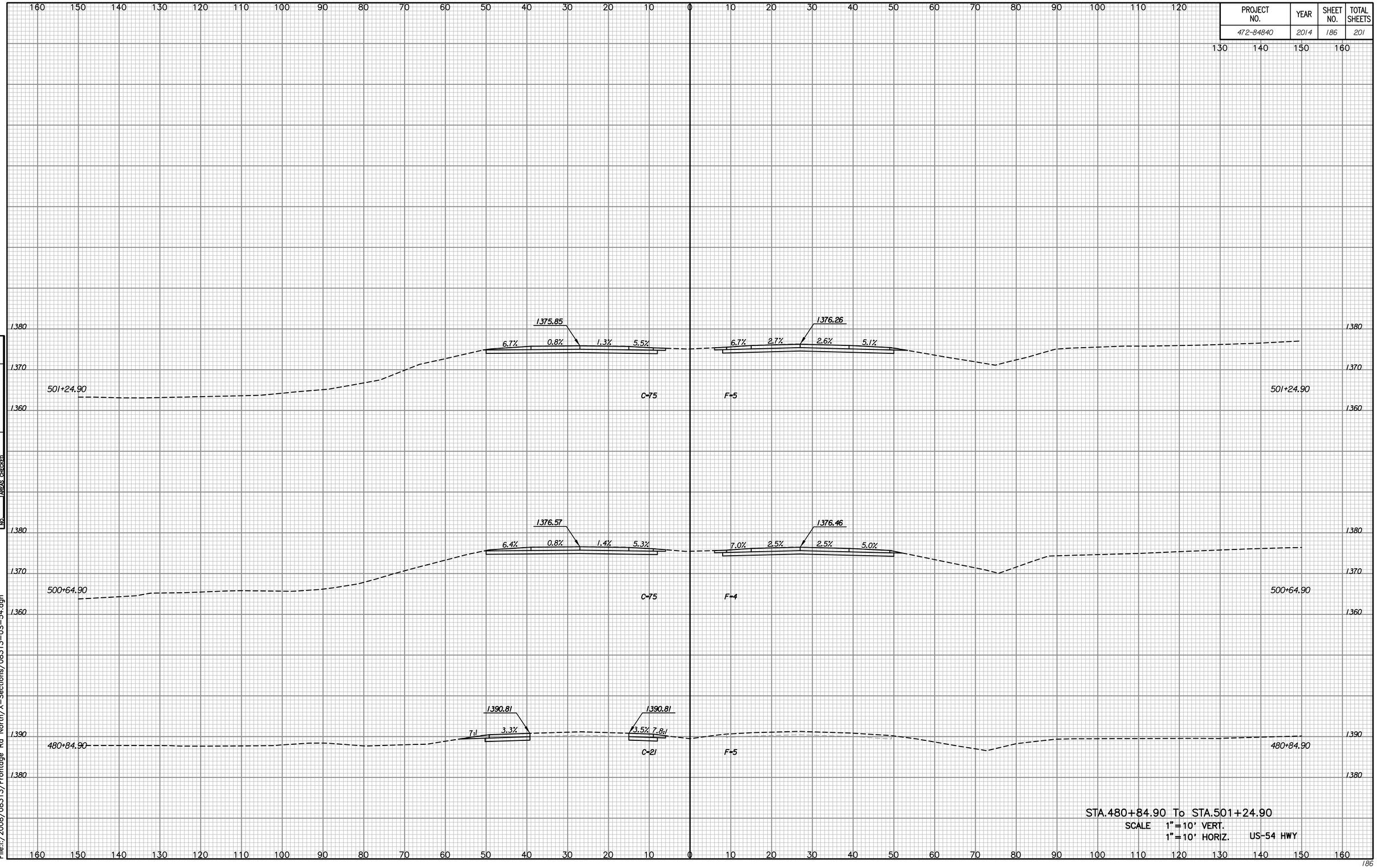
160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	186	201

NO.	NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED



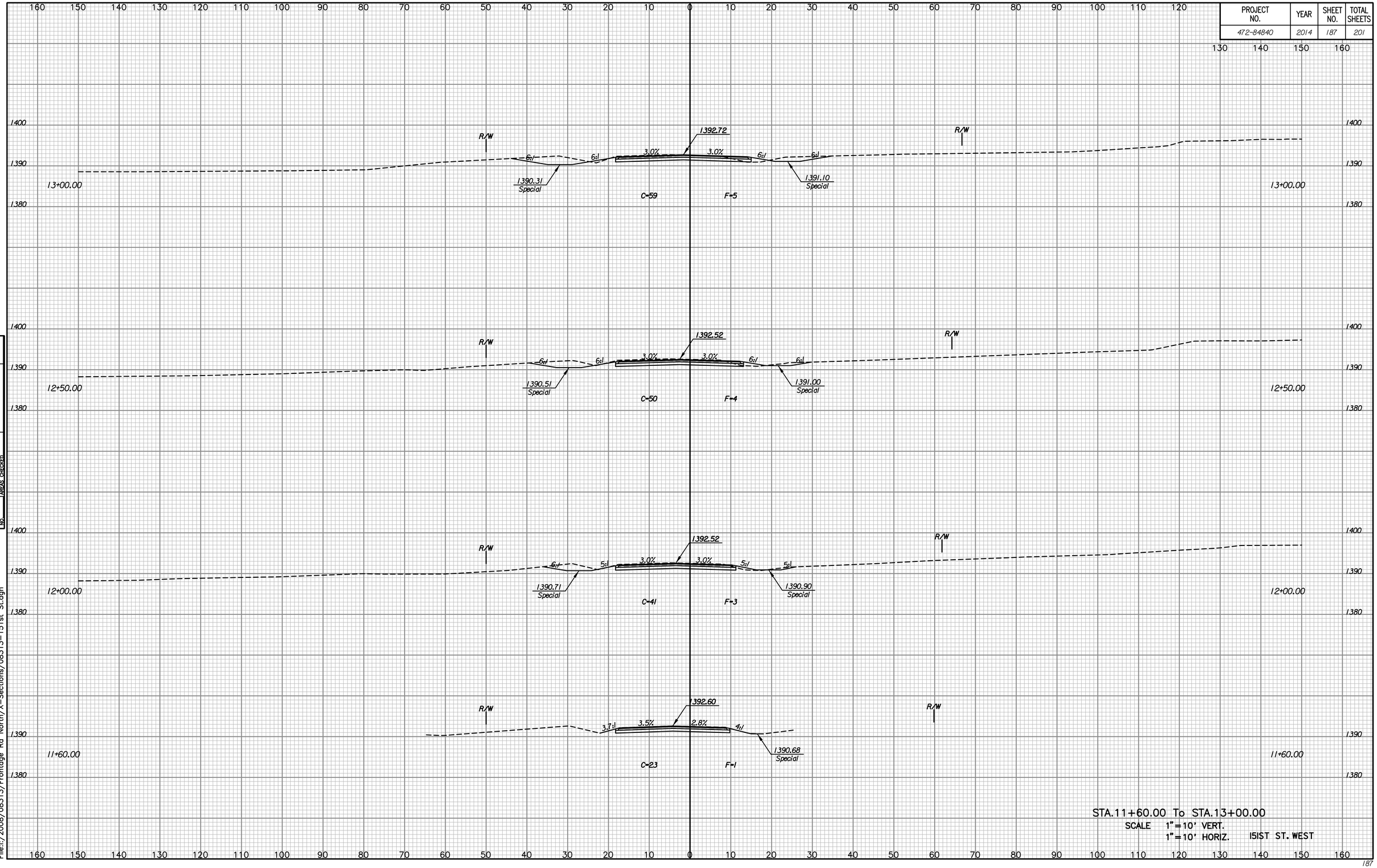
STA.480+84.90 To STA.501+24.90

SCALE 1"=10' VERT.
1"=10' HORIZ. US-54 HWY

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-US-54.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	187	201

NO.	NOTE BOOK	TEMPLATE
		AREAS
		AREAS CHECKED

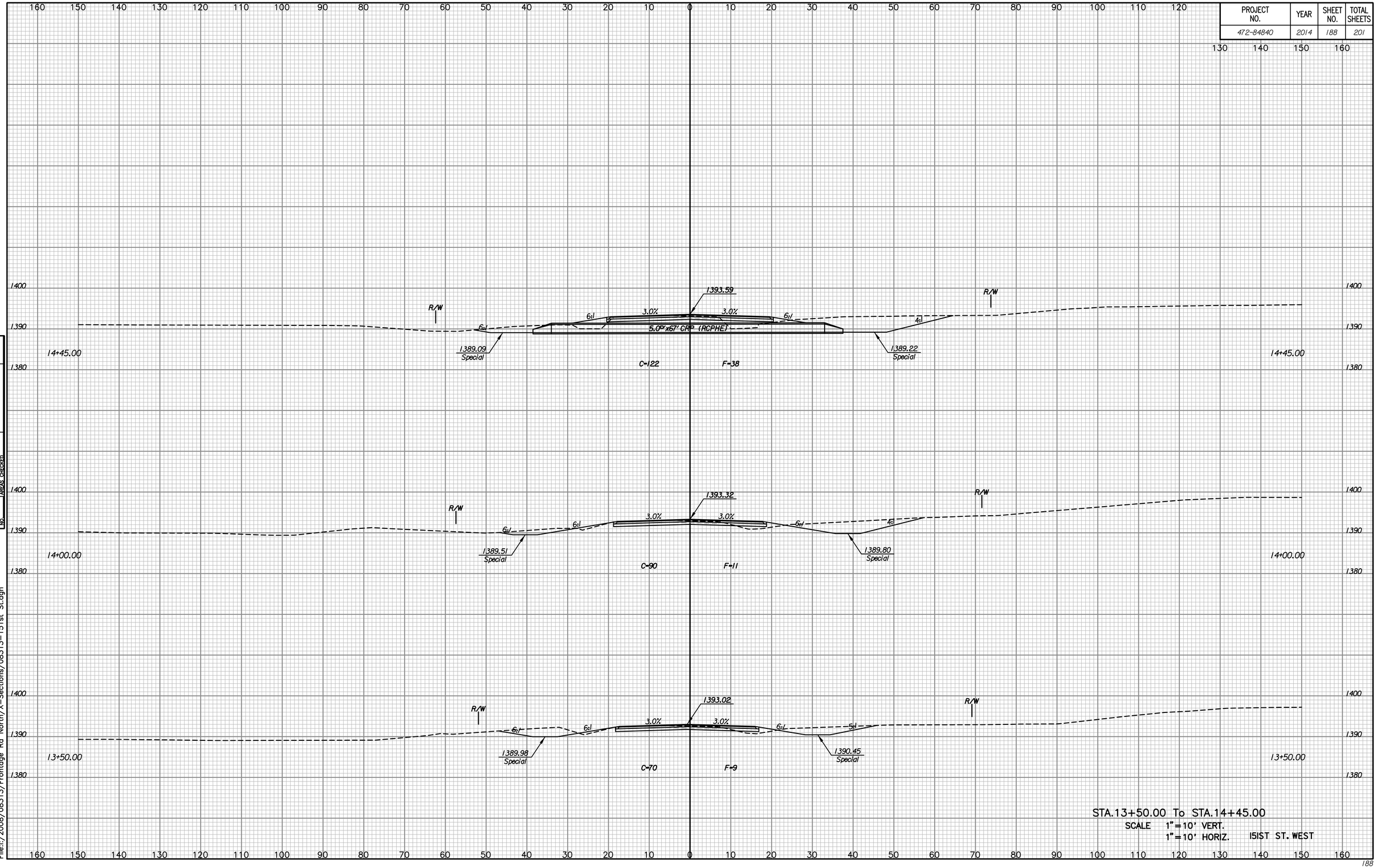


STA.11+60.00 To STA.13+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	188	201



STA.13+50.00 To STA.14+45.00

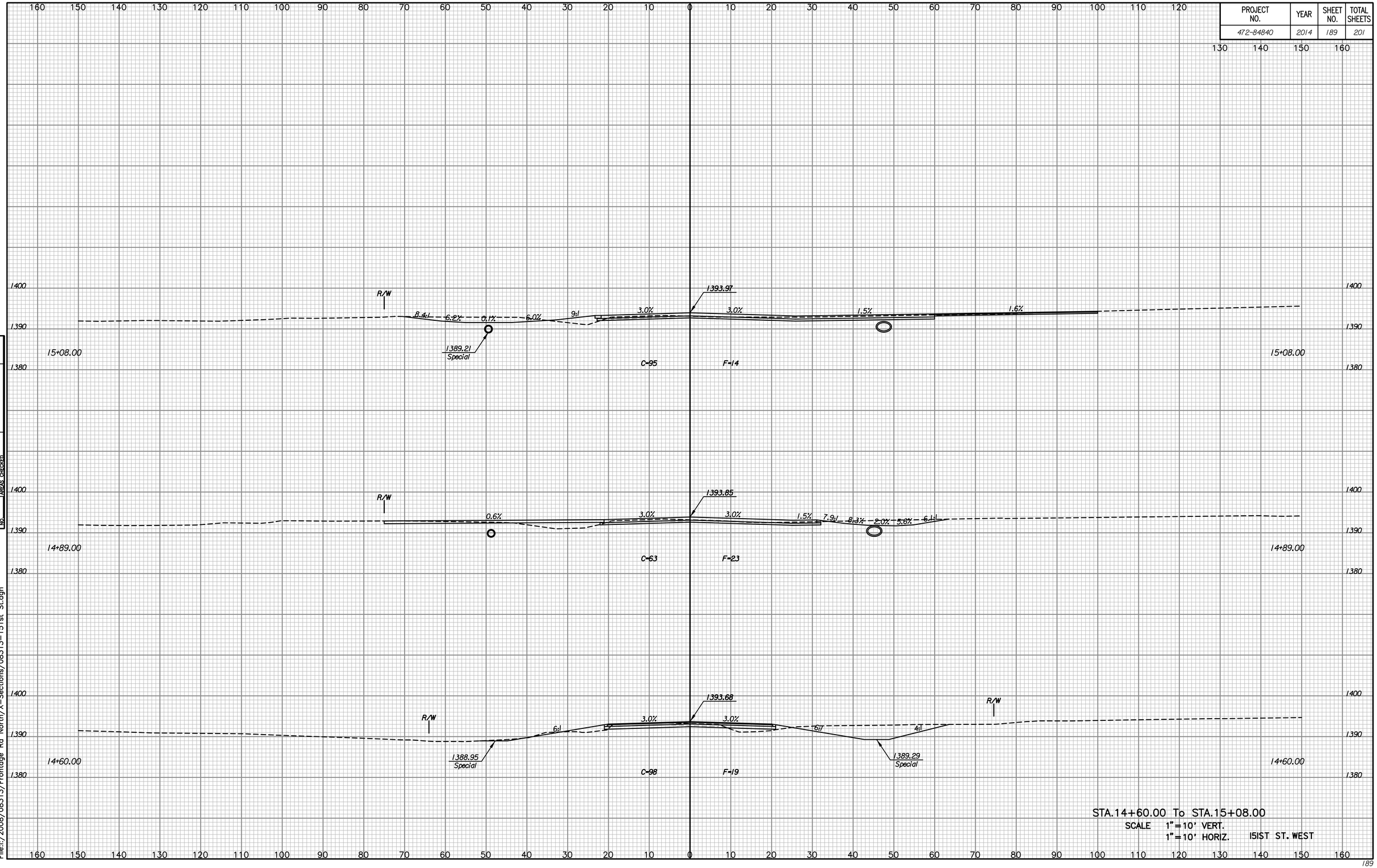
SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

NOTE BOOK TEMPLATE
AREAS
AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	189	201

NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED
NO.			



STA.14+60.00 To STA.15+08.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	190	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

Match US-54 Fr. Rd. Cross Sections

1410 / 1400 / 1390 / 1380

16+50.00 — C=222 — F=3

1.8% | 3.0% | 3.0% | 6:1 | 5:1

1394.82

1390.94 Special

16+50.00

16+00.00 — C=224 — F=6

R/W | 6:1 | 6:1 | 3.0% | 3.0% | 6:1 | 4:1 | R/W

1394.52

1389.71 Special

1390.34 Special

16+00.00

15+50.00 — C=174 — F=17

R/W | 6:1 | 6:1 | 3.0% | 3.0% | 6:1 | 4:1 | R/W

1394.22

1389.44 Special

1389.74 Special

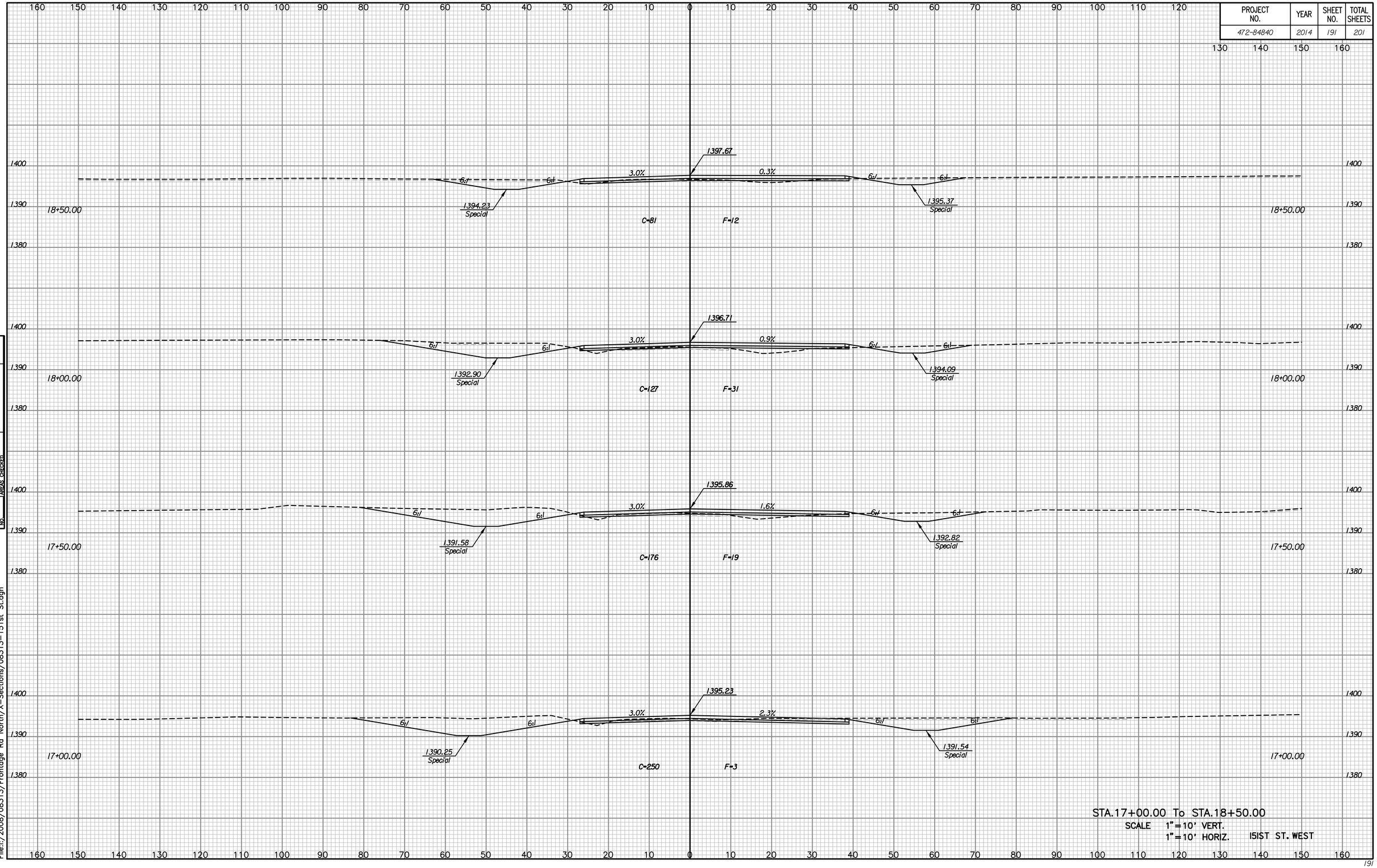
15+50.00

STA.15+50.00 To STA.16+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	191	201

NO.	NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED



STA.17+00.00 To STA.18+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	192	201

NOTE BOOK	TEMPLATE	AREAS CHECKED
NO.	AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

1399.77
20+39.00
1.2%
1.4%
STAGE1
C=48 F=0
STAGE2
C=44 F=0
20+39.00

Match US-54 Cross Sections
1399.80
19+60.75
1.2%
1.3%
C=99 F=0
19+60.75

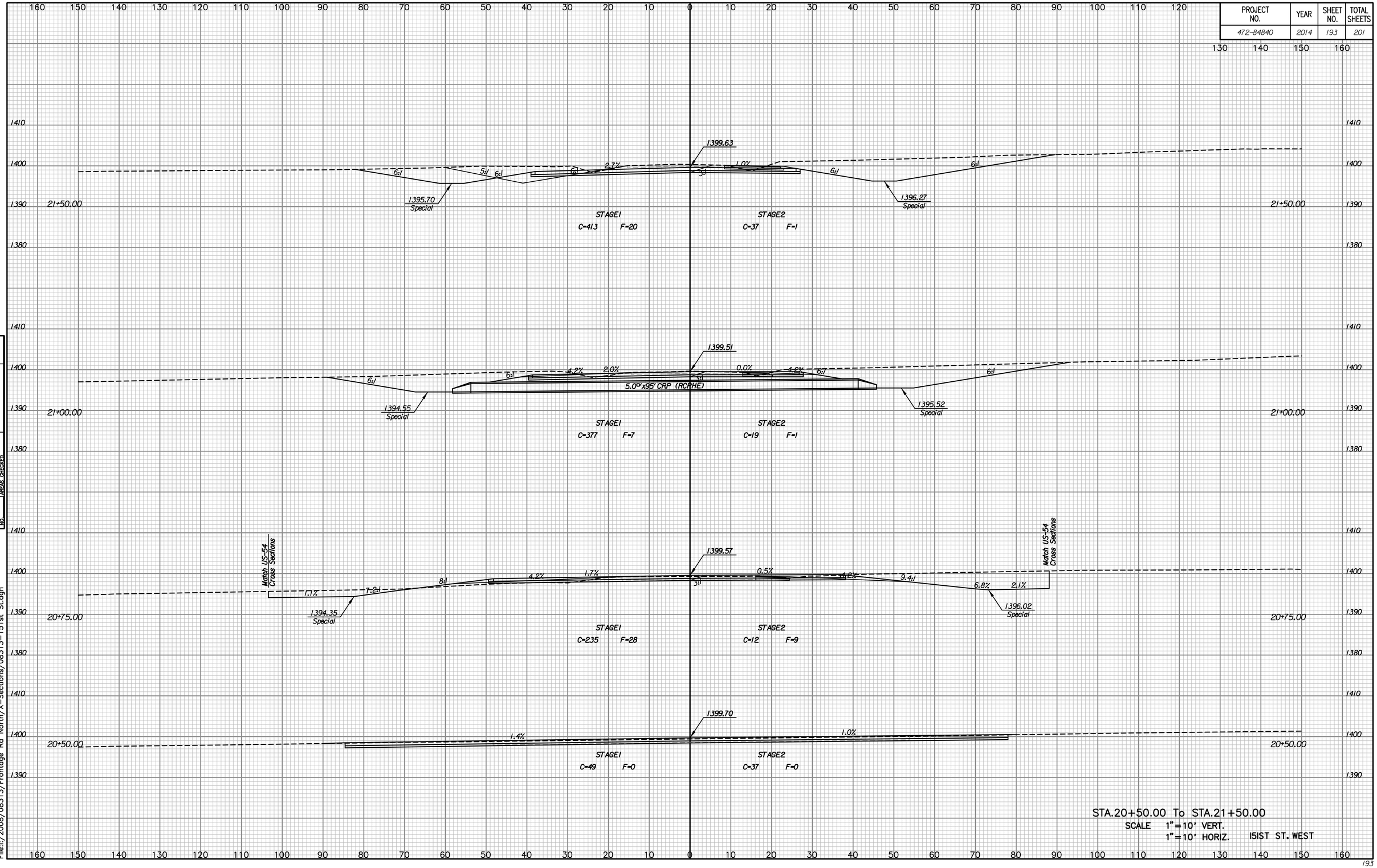
Match US-54 Cross Sections
1399.59
19+50.00
1.3%
0.9%
C=100 F=0
19+50.00

1398.63
6:1
6:1
2.5%
0.4%
6:1
6:1
1395.55
Special
1396.64
Special
19+00.00
C=38 F=16
19+00.00

STA.19+00.00 To STA.20+39.00
SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	193	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



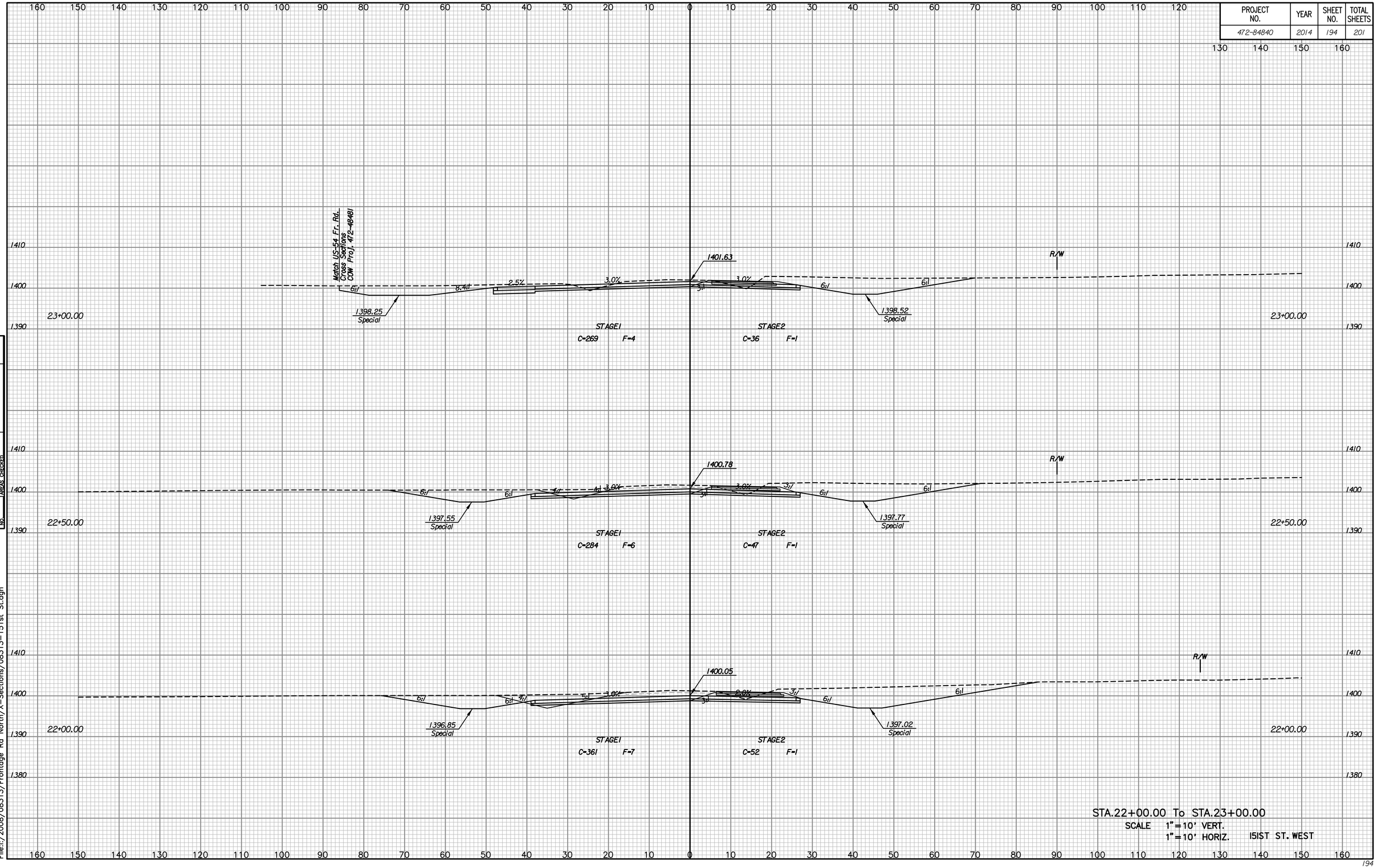
STA.20+50.00 To STA.21+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	194	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED



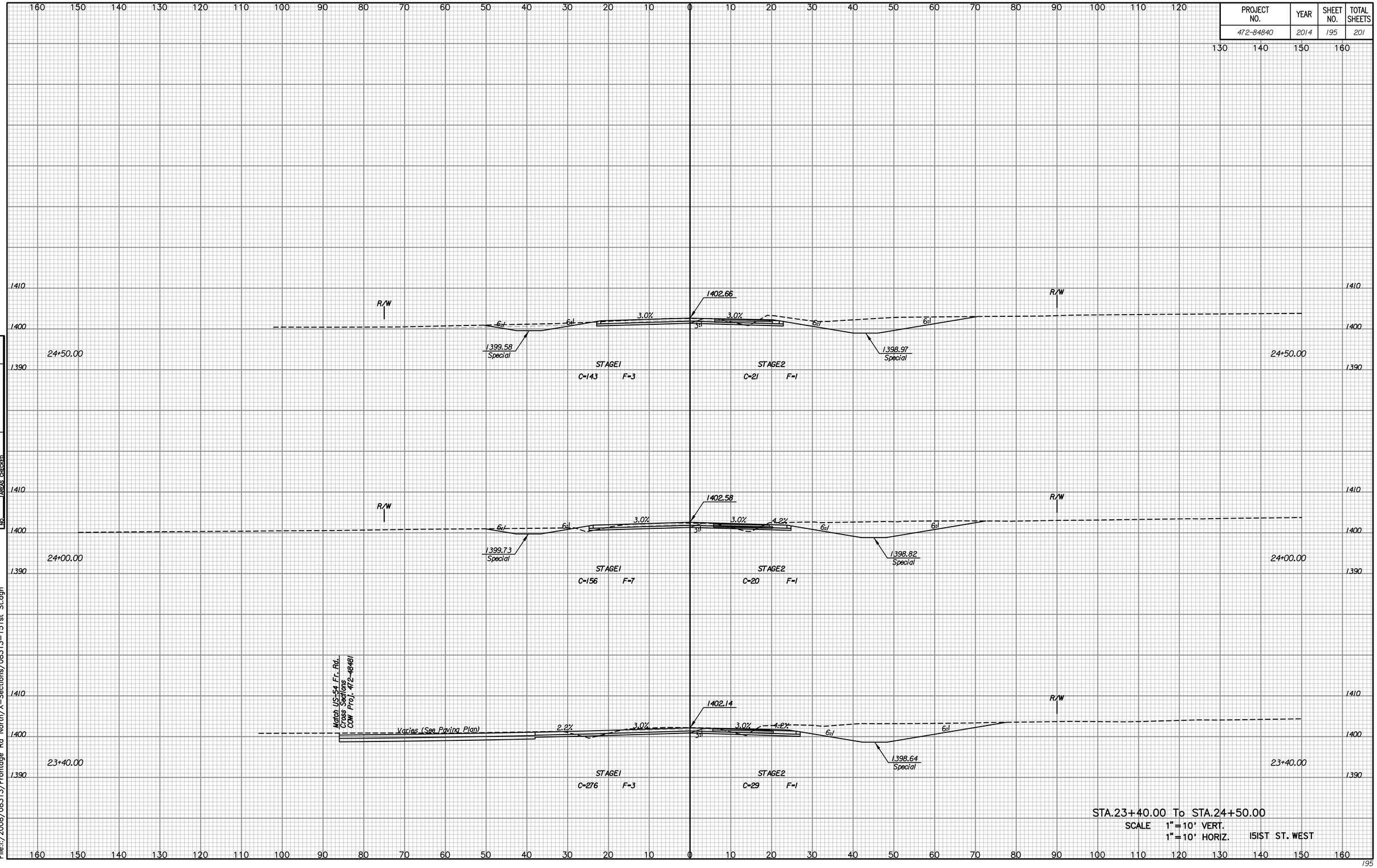
STA.22+00.00 To STA.23+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	195	201

NO.	NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED



STA.23+40.00 To STA.24+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	196	201

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

1410
1400
1390

R/W
2.0%
1.0%
3.0%
1402.31
3.0%
3:1
3:1
6:1
6:1
1399.27
Special
R/W
25+50.00
STAGE1
C=105 F=2
STAGE2
C=18 F=0
25+50.00

R/W
3.0%
1.0%
3.0%
1402.37
3.0%
3:1
3:1
6:1
6:1
1399.23
Special
R/W
25+35.00
STAGE1
C=108 F=3
STAGE2
C=19 F=0
25+35.00

R/W
6:1
6:1
3.0%
1402.50
3.0%
3:1
3:1
6:1
6:1
1399.43
Special
1399.12
Special
R/W
25+00.00
STAGE1
C=129 F=3
STAGE2
C=21 F=0
25+00.00

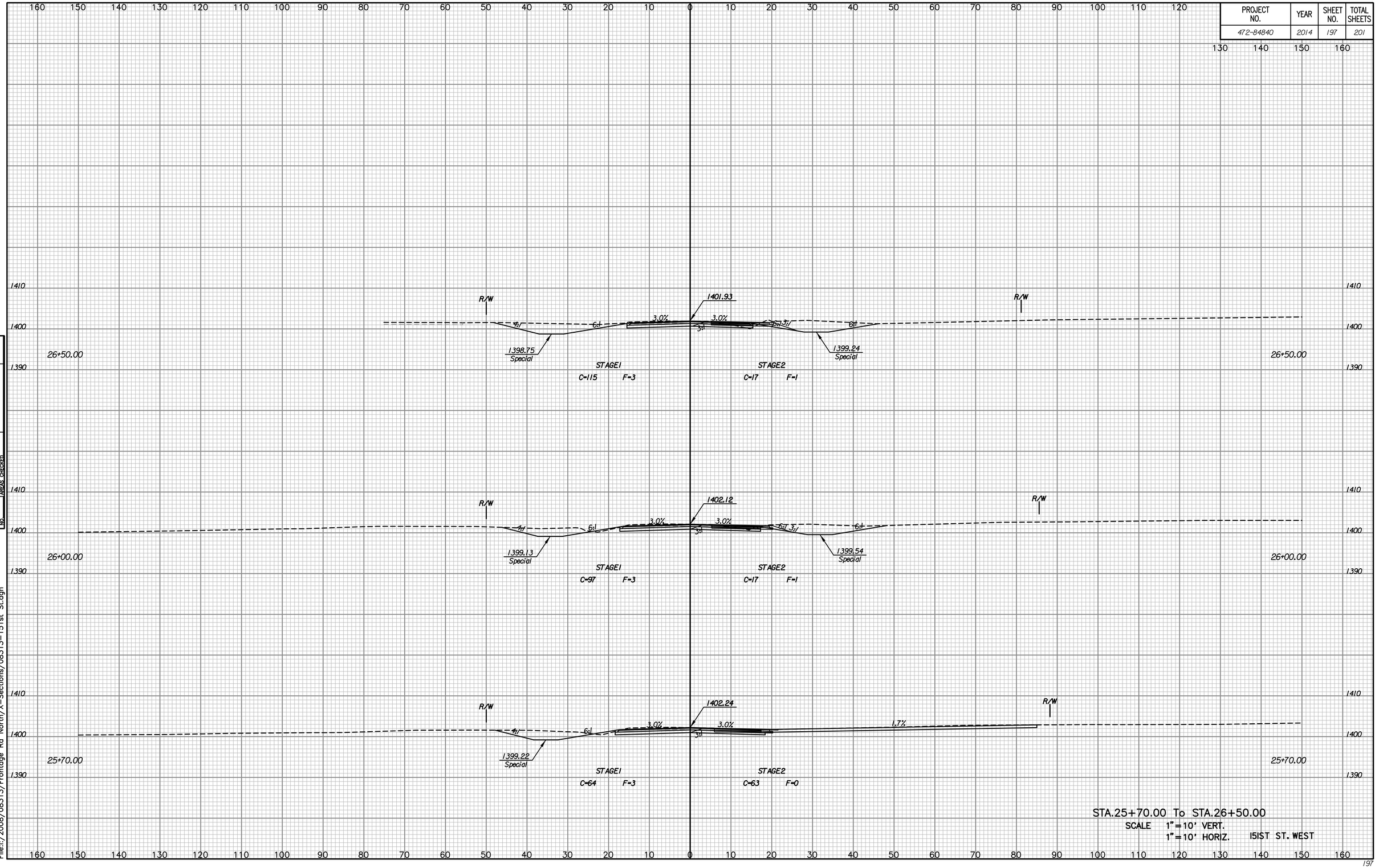
STA.25+00.00 To STA.25+50.00
SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	197	201

NOTE BOOK	TEMPLATE	AREAS	AREAS CHECKED
NO.			



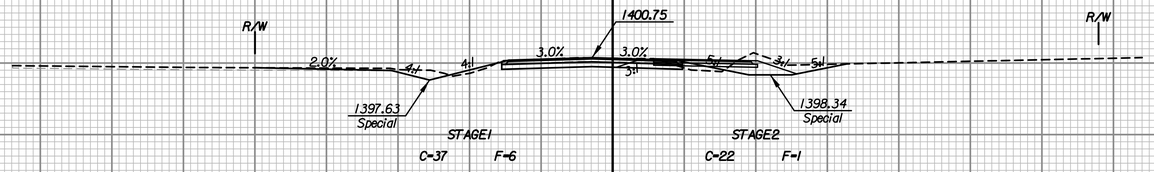
STA.25+70.00 To STA.26+50.00

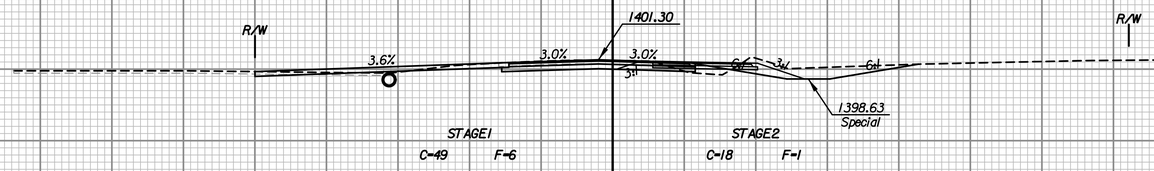
SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

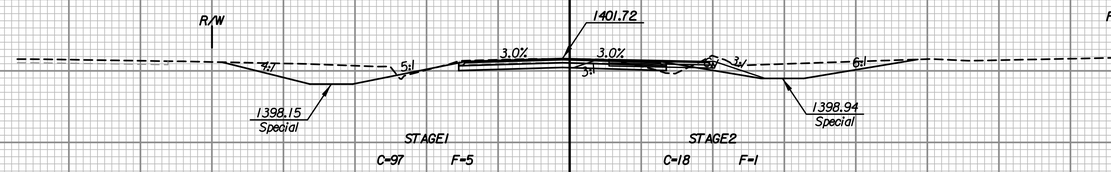
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File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	198	201

NO.	NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED









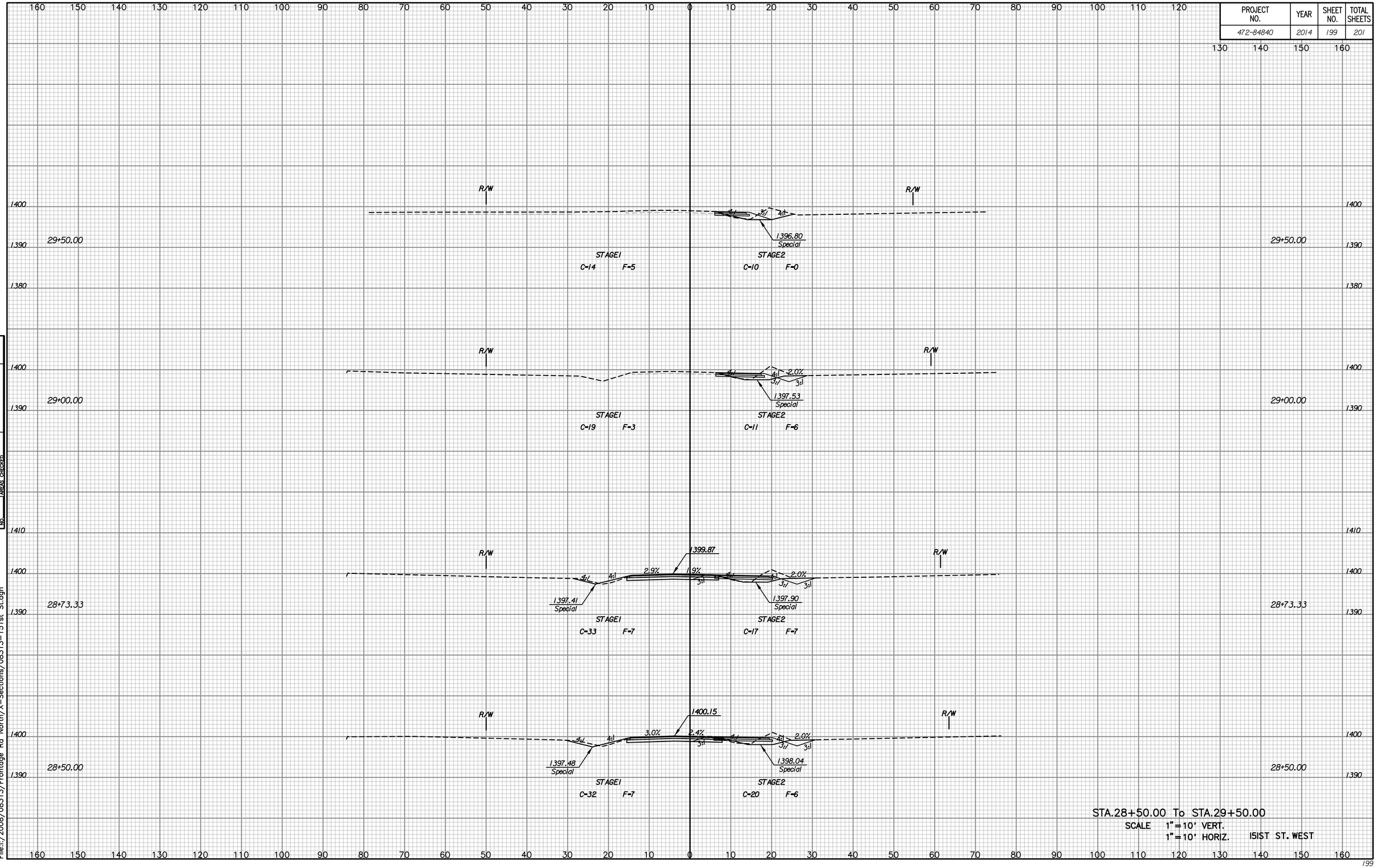
STA.26+62.55 To STA.28+00.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	199	201

NO.	NOTE BOOK	TEMPLATE
		AREAS
		AREAS CHECKED



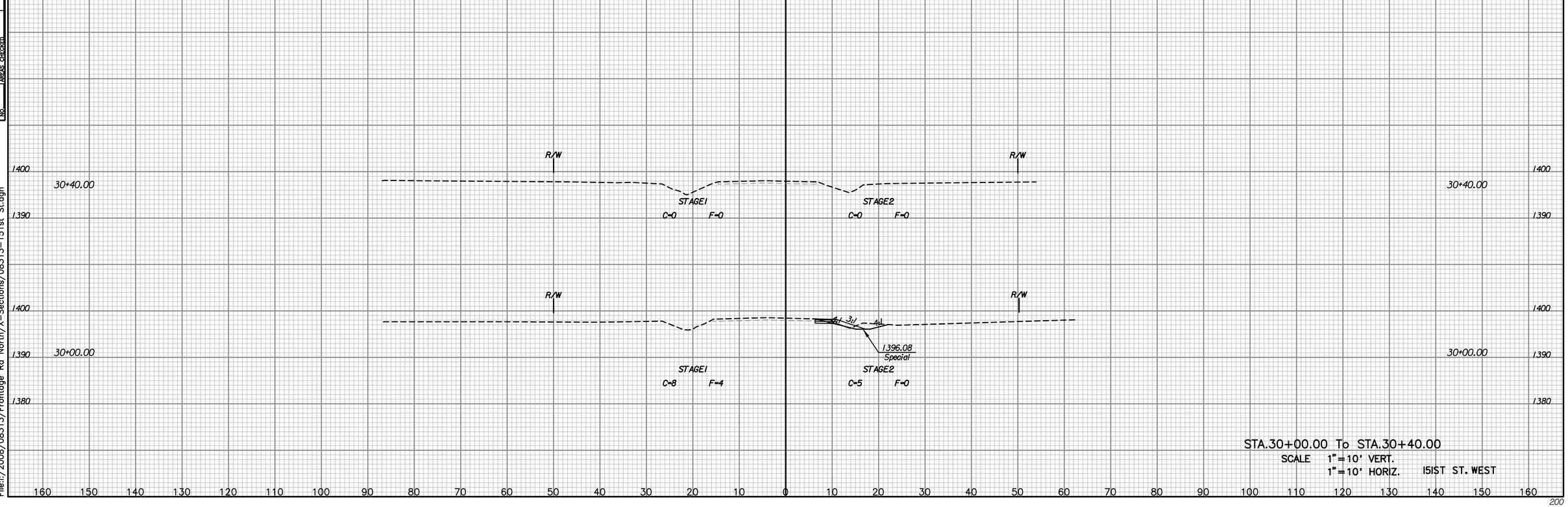
STA.28+50.00 To STA.29+50.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	200	201

NO.	AREAS CHECKED	TEMPLATE AREAS	NOTE BOOK



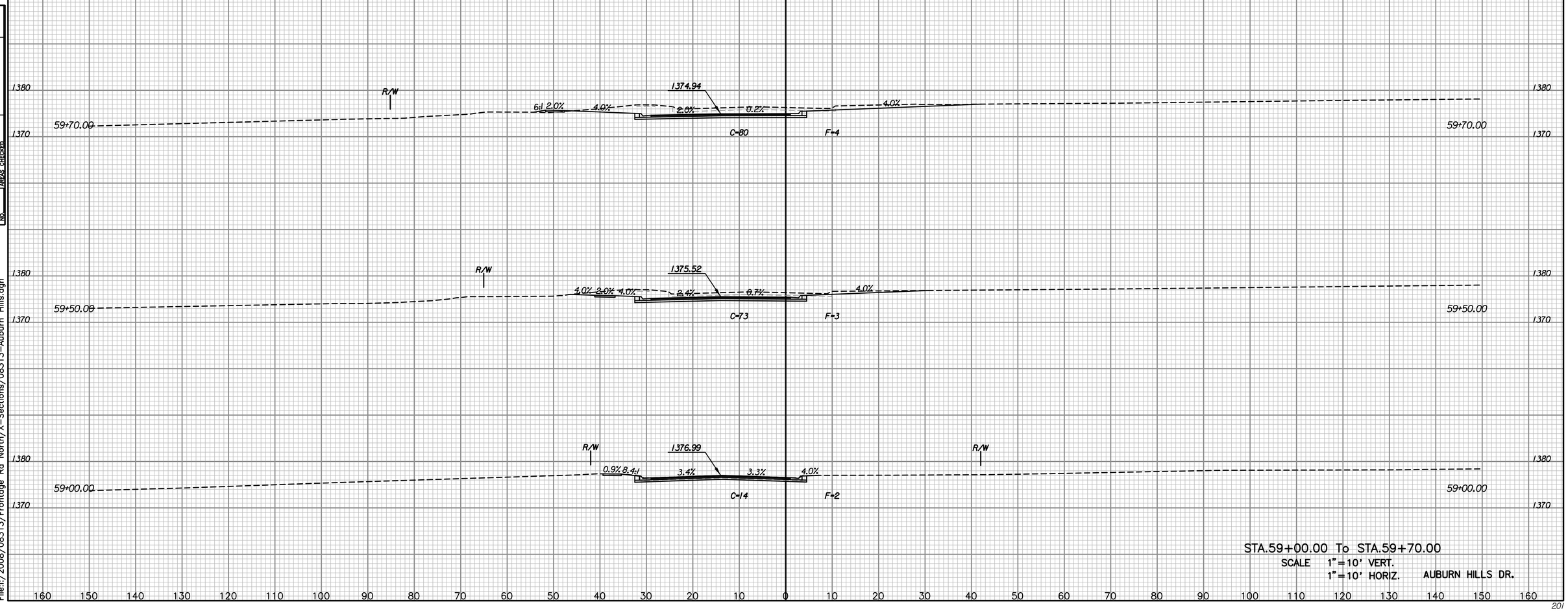
STA.30+00.00 To STA.30+40.00

SCALE 1"=10' VERT.
1"=10' HORIZ. 151ST ST. WEST

Plotted By:CKC Date:05-29-2014
File:I:/2008/08313/Frontage Rd North/X-Sections/08313-151st St.dgn

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
472-84840	2014	201	201

NOTE BOOK	TEMPLATE AREAS	AREAS CHECKED
NO.		



STA.59+00.00 To STA.59+70.00

SCALE 1"=10' VERT.
1"=10' HORIZ. AUBURN HILLS DR.

Plotted By:CKC Date:05-29-2014
File:i:/2008/08313/Frontage Rd North/X-Sections/08313-Auburn Hills.dgn

WATER DISTRIBUTION SYSTEM IMPROVEMENTS

TO SERVE

KELLOGG AVENUE (U.S. 54) - 135TH ST. W. TO 151ST ST. W.

IN CONJUNCTION WITH

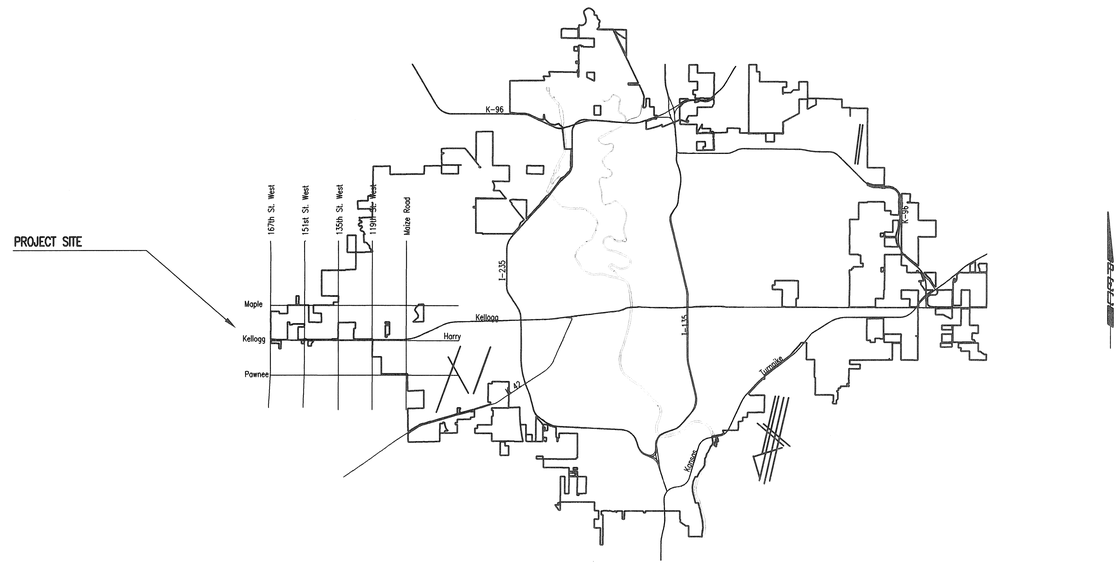
U.S. 54 IMPROVEMENTS - KDOT PROJ. NO. 54-87 K-6657-03 (CITY OF WICHITA PROJ. NO. 472-84842)

CITY OF WICHITA PROJECT NO. 448-90578

OCA NO. 635813

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E. - CITY ENGINEER



LOCATION MAP

PART B - INDEX OF SHEETS

SHEET NO. B1	TITLE SHEET
SHEET NO. B2	KEY MAP AND GENERAL NOTES
SHEET NO. B3	STANDARD WATER DETAILS
SHEET NO. B4	MISCELLANEOUS WATER DETAILS
SHEET NO. B5	PIPING DETAILS
SHEET NO. B6	UTILITY ADJUSTMENTS
SHEET NO. B7-B15	PLAN/PROFILE
SHEET NO. B16-B17	SOIL EROSION BMP DETAILS

JULY 2014

PLANS PREPARED BY

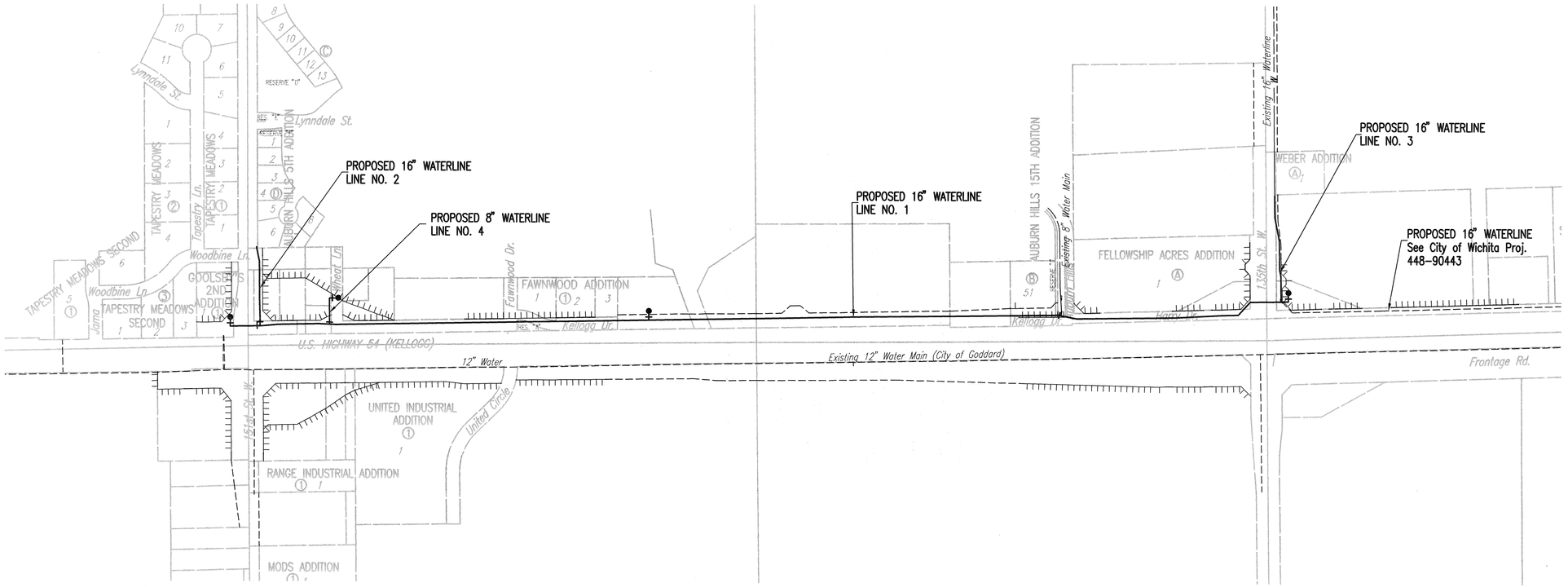
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

MICHAEL D. KELLER LICENSED 13944 KANSAS PROFESSIONAL ENGINEER 7/14/14

Saved 07-11-2014 1:07:16 PM by TDS
Plotted 07-11-2014 1:27:59 PM by TED SCRIPTER
O:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\08313-001 B1-WL TITLE



SCALE:

0 300 600

INDEX OF PLAN/PROFILE SHEETS

LINE NO.	STATION TO STATION	SHEET NO.
1	10+00.00 TO 20+00.00	B7
1	20+00.00 TO 30+00.00	B8
1	30+00.00 TO 40+00.00	B9
1	40+00.00 TO 50+00.00	B10
1	50+00.00 TO 60+00.00	B11
1	60+00.00 TO 64+31.31	B12
2	0+00.00 TO 4+01.21	B13
3	0+00.00 TO 5+39.57	B14
4	0+00.00 TO 1+31.82	B15

LEGEND

- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING BLOW OFF
- PROPOSED BLOW OFF
- PROPOSED HYDRANT TEE w/FUTURE FIRE HYDRANT

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE BASED ON NGVD(29) DATUM.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY-TWO (72) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE-CALL	687-2470 OR 811
CITY OF GODDARD MR. RANDY BROOKS	794-8992

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

EMERGENCY DISPATCH	911
COX COMMUNICATIONS	800-778-9140
KANSAS GAS SERVICE	888-482-4950
WESTAR ENERGY	800-383-1183
BLACK HILLS ENERGY	800-694-8989
CITY OF WICHITA WATER DEPARTMENT	262-6000
CITY OF WICHITA SEWER MAINTENANCE	262-6000

3. ALL WATER MAINS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF WICHITA, KANSAS STANDARD SPECIFICATIONS.
4. THE WATER MAIN SHALL BE CONSTRUCTED ON THE ALIGNMENT SHOWN BY THE PLANS. 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.
5. OPENING AND CLOSING WATER VALVES SHALL BE DONE SLOWLY TO PREVENT DAMAGE TO THE WATER DISTRIBUTION SYSTEM FROM WATER HAMMER. ALL VALVES CLOSED BY THE CONTRACTOR MUST BE REOPENED AS NEW CONSTRUCTION PERMITS. PROJECT INSPECTOR MUST ASCERTAIN THAT ANY VALVE CLOSED BY THE CONTRACTOR IS REOPENED. CONTRACTOR WILL BE PERMITTED TO OPERATE WATER VALVES ONLY WHEN THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT.
6. THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED TO THE PROJECT AND IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.
7. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL 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.
9. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES, AND BANKLINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.
10. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL UTILIZE BARRICADES, SIGNS, GUARDS, AND FLAGMEN IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. ALL TRAFFIC CONTROL REQUIRED TO COMPLETE WATERLINE CONSTRUCTION SHALL BE SUBSIDIARY TO WATERLINE PROJECT COSTS. TRAFFIC CONTROL REQUIRED FOR WATERLINE CONSTRUCTION IS INDEPENDENT OF TRAFFIC CONTROL REQUIRED FOR THE HIGHWAY
11. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS AND EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED OF BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL 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 MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
12. ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR6.5 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION.
13. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER.
14. THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 14 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
15. EACH BIDDER SHALL VISIT THE SITE OF THE PROJECT BEFORE SUBMITTING THE PROPOSAL FOR THIS WORK SO THAT HE WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD OF THE CONTRACT THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARDS TO TIME AND MONEY FOR CONDITIONS THAT MAY HAVE BEEN EVALUATED DURING ANY INSPECTION OF THE SITE.
16. CONTRACTOR SHALL PROVIDE MATERIALS FOR TEMPORARY BLOWOFF OF WATERLINES. CONNECTIONS TO THE EXISTING WATERLINE SHALL BE MADE WITH CLEAN, SWABBED PIPE, AND FLUSHED UPON COMPLETION OF TIE-INS. ALL COSTS FOR TEMPORARY BLOWOFFS AND CONNECTIONS TO EXISTING PIPING SHALL BE INCLUDED IN THE PRICE BID FOR WATERLINES.
17. REQUESTS FOR SHORT TERM WATER SERVICE INTERRUPTIONS SHALL BE MADE TO THE CITY WATER AND SEWER DEPARTMENT AND WILL BE SUBJECT TO THEIR APPROVAL. SUBJECT TO THEIR APPROVAL, THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO ANY PROPERTY OWNER, BUSINESS, AND/OR TENANTS THAT WILL HAVE WATER SERVICE INTERRUPTED AT LEAST 5 DAYS IN ADVANCE. SUCH NOTIFICATIONS SHOULD INDICATE THE TIME AND DATE THAT THE WATER WILL BE TURNED OFF AND WHEN THE SERVICE WILL BE RESTORED. NO BUSINESS, PROPERTY OWNER, AND/OR TENANT SHALL BE WITHOUT WATER SERVICE FOR MORE THAN 8 HOURS. PROPOSED TIE IN LOCATIONS WHICH WILL AFFECT WATER SERVICE TO PROPERTY OWNERS SHALL BE PERFORMED DURING NON-PEAK HOURS. THE CONTRACTOR'S PROPOSED SEQUENCING FOR TAPPING THE EXISTING WATER MAINS SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL.
18. PAVEMENT REMOVAL AND/OR REPLACEMENT WILL BE MEASURED AND PAID FOR ON THE LINEAL FEET BASIS AS MEASURED ALONG THE CENTERLINE OF THE WATER LINE REGARDLESS OF WIDTH, PAVEMENT TYPE AND/OR PAVEMENT THICKNESS. MINIMUM LIMITS OF SUCH PAVEMENT REMOVAL AND REPLACEMENT SHALL BE 1.0 FOOT BEYOND THE LIMITS OF THE EXCAVATION MADE FOR THE WATER LINE OR THE STRUCTURE, EXCEPT WHEN SUCH SAW CUTS ARE WITHIN ONE 3.0 FEET OF AN EXISTING JOINT THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CITY OF WICHITA STANDARD SPECIFICATION. PAVEMENT REMOVAL AND REPLACEMENT FOR THE WATERLINE CONSTRUCTION SHALL BE INDEPENDENT OF THE HIGHWAY CONSTRUCTION.
19. A SAW CUT OF AT LEAST ONE-HALF THE DEPTH OF EXISTING SURFACE COURSES OR ONE FOURTH THE DEPTH OF THE EXISTING TOTAL PAVEMENT THICKNESS SHALL BE PROVIDED AT LOCATIONS WHERE PROPOSED CONSTRUCTION ABUTS AN EXISTING SURFACE COURSE OR PAVEMENT FOR WHICH PARTIAL REMOVAL OF THAT SURFACE OR PAVEMENT IS REQUIRED, WHEN SUCH SAW CUTS ARE WITHIN ONE 3.0 FEET OF AN EXISTING JOINT THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE REMOVAL OF THE SURFACE OR PAVEMENT. SEE GENERAL NOTE NO. 20.
20. THE CONTRACTOR MUST SCHEDULE THE CONNECTIONS TO THE EXISTING MAINS WITH THE CITY SUCH THAT THERE IS A MINIMUM OF DISRUPTION TO THE CITY. CONNECTIONS SHALL BE MADE DURING PERIODS OF LOW WATER USAGE. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED SCHEDULE FOR THEIR APPROVAL FOR COMPLETING WORK AT LEAST 10 DAYS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SEQUENCE PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
21. THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE PROPERTIES IN THE PROJECT AREA DURING CONSTRUCTION OF THE WATER MAINS. THE TEMPORARY CLOSINGS OF ANY STREETS OR ACCESS DRIVES SHALL BE KEPT TO A MINIMUM AND APPROVED BY THE ENGINEER. CONSTRUCTION AFFECTING ACCESS TO PROPERTIES MAY BE REQUIRED TO BE PERFORMED DURING NON-PEAK HOURS. REMOVAL OF DRIVEWAYS SHALL BE APPROVED BY THE ENGINEER.
22. ALL VALVE BOXES SHALL BE ADJUSTED TO FINAL GRADE AS DIRECTED BY THE ENGINEER. ALL VALVE BOXES SHALL HAVE CAST IRON RING AND LID AND SUCH LID SHALL HAVE THE WORD "WATER" EMBEDDED INTO ITS SURFACE. ALL VALVE BOX PARTS (UNLESS EXPLICITLY STATED OTHERWISE) SHALL BE MADE OF DUCTILE IRON OR POLYIRON MATERIALS. ANY VALVE WITH ITS OPERATING NUT MORE THAN 5 FEET BELOW FINAL GRADE SHALL HAVE A KEY EXTENSION INSTALLED AND THE TOP OF SUCH KEY EXTENSION SHALL BE 3 FEET BELOW FINAL GRADE. SUCH KEY EXTENSION SHALL BE MADE FROM 2 INCH STRUCTURAL STEEL TUBING WITH A BASE TO FIT OVER, AROUND, AND ATTACH TO THE VALVE OPERATING NUT. THE KEY EXTENSION SHALL BE SECURELY FASTENED TO THE VALVE BY BOLTING OR WELDING TO THE VALVE OPERATOR AND/OR THE VALVE STEM. THE TOP WILL BE ENCLOSED SQUARE STEEL TUBING THE SIZE OF THE STANDARD OPERATING NUT AND SHALL HAVE A CIRCULAR PIECE OF 1/2 INCH FLAT STEEL AS A DIRT COLLAR AND TO PREVENT EXCESSIVE MOVEMENT IN THE VALVE BOX. THE INSPECTOR SHALL SEE THAT THIS REQUIREMENT IS MET AND SHALL NOTE KEY EXTENSION LENGTHS ON AS-BUILTS.
23. IN LOCATIONS WHERE FLOWABLE FILL IS SHOWN FOR BACKFILL, THE CONTRACTOR SHALL USE JETTED FILL SAND FOR BACKFILL WHERE PROPOSED STORM SEWERS ARE TO BE INSTALLED. APPROVED SAND MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES WITH 100% PASSING THE 3/4" SIEVE; TO BE JETTED AND MECHANICALLY VIBRATED INTO PLACE AND COMPACTED TO 95% DENSITY AS DETERMINED BY ASTM D698.
24. EROSION CONTROL (BMP'S)
EROSION CONTROL MEASURES FOR THE PROJECT WILL BE PERFORMED BY THE PAVING CONTRACTORS. THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH THE PAVING CONTRACTOR AND ENSURE THAT EROSION PROTECTION MEASURES ARE IN PLACE PRIOR TO EXCAVATION FOR INSTALLATION OF THE WATERLINE. SEE PAVING PLANS FOR ADDITIONAL INFORMATION.
25. DEFLECTIONS AT PIPE JOINTS OR COUPLINGS SHALL NOT NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDED MAXIMUM. WHERE REQUIRED DEFLECTIONS ARE GREATER THAN THE MAXIMUM ALLOWED, THE CONTRACTOR SHALL UTILIZE CI MJ LONG SLEEVES OR MULTIPLE JOINTS.
26. THE CONTRACTOR SHALL PROVIDE THREADED RODS AND COLLARS TO ANCHOR VALVES AND SLEEVES TO PROPOSED RESTRAINED JOINT PIPING, AS SHOWN IN THE PLANS. THREADED RODS AND COLLARS SHALL BE HIGH STRENGTH, HEAT TREATED CORTEN STEEL AND SHALL CONFORM TO ASTM A242, TYPE 2, AS MANUFACTURED BY STAR NATIONAL PRODUCTS OR APPROVED EQUAL. THE NUMBER OF TIEBOLT RESTRAINERS AND FASTENING METHOD SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TIE BOLTS SHALL BE DESIGNED FOR A TOTAL DESIGN PRESSURE OF 200 PSI.
27. SEE ROAD PLANS FOR HORIZONTAL AND VERTICAL CONTROL.
28. FIRE HYDRANT BURY DEPTHS ARE BASED ON THE TOP ELEVATION OF THE PROPOSED WATER MAIN AND THE APPROXIMATE PROPOSED GROUND ELEVATION AT THE LOCATION OF THE FIRE HYDRANT. THE CONTRACTOR SHALL VERIFY THESE ELEVATIONS PRIOR TO INSTALLING FIRE HYDRANTS. ANY MODIFICATIONS REQUIRED TO THE FIRE HYDRANT BURY DEPTH DUE TO THE CONTRACTOR'S FIELD ADJUSTMENTS TO THE WATER MAIN PROFILE SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY. PROPOSED ADJUSTMENTS MUST BE APPROVED BY THE PROJECT INSPECTOR PRIOR TO CONSTRUCTION.
29. THE CONTRACTOR SHALL RESTRAIN ALL BENDS, VALVES, AND TEES THROUGH THE USE OF RESTRAINED JOINT PIPE AS SPECIFIED. ALL VALVES/FITTINGS FOR THIS PROJECT SHALL BE RESTRAINED JOINT.

RESTRAINED JOINT DUCTILE IRON PIPE SHALL BE GRIFFIN SNAP-LOK, AMERICAN FLEX RING, OR APPROVED EQUAL, IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS.

THE CONTRACTOR MAY USE SIGMA PV-LOK SERIES PWP OR APPROVED EQUAL FOR RESTRAINING PVC PIPE BELL ASSEMBLIES. CLAMPING RING SHALL BE OF HIGH STRENGTH DUCTILE IRON AND SHALL CONFORM TO ASTM A536, GRADE 65-45-12. SIDE CLAMPING BOLT AND HEX NUTS SHALL BE AT HIGH STRENGTH STEEL AND SHALL CONFORM TO ASTM A449 AND ZINC PLATED TO B633, TYPE III SC. 1. RESTRAINING RODS AND HEX NUTS SHALL BE AT HIGH STRENGTH, LOW ALLOY STEEL AND SHALL CONFORM TO AWWA/ANSI C111/A21.11 AND PRORATE A MINIMUM 45,000 PSI YIELD AND 60,000 PSI TENSILE STRENGTH.

THE CONTRACTOR MAY USE SIGMA PV-LOK SERIES PWM OR APPROVED EQUAL FOR RESTRAINT OF FITTINGS ON THE PROJECT. CLAMPING RING SHALL BE OF HIGH STRENGTH DUCTILE IRON AND SHALL CONFORM TO ASTM A536, GRADE 65-45-12. SIDE CLAMPING BOLT AND HEX NUTS SHALL BE AT HIGH STRENGTH STEEL AND SHALL CONFORM TO ASTM A449 AND ZINC PLATED TO B633, TYPE III SC. 1. RESTRAINING RODS AND HEX NUTS SHALL BE AT HIGH STRENGTH, LOW ALLOY STEEL AND SHALL CONFORM TO AWWA/ANSI C111/A21.11 AND PRORATE A MINIMUM 45,000 PSI YIELD AND 60,000 PSI TENSILE STRENGTH.

MICHAEL D. KELLEY LICENSED 13944 KANSAS PROFESSIONAL ENGINEER 7/16

No.	Revision	By	Date

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS

KEY MAP AND GENERAL NOTES

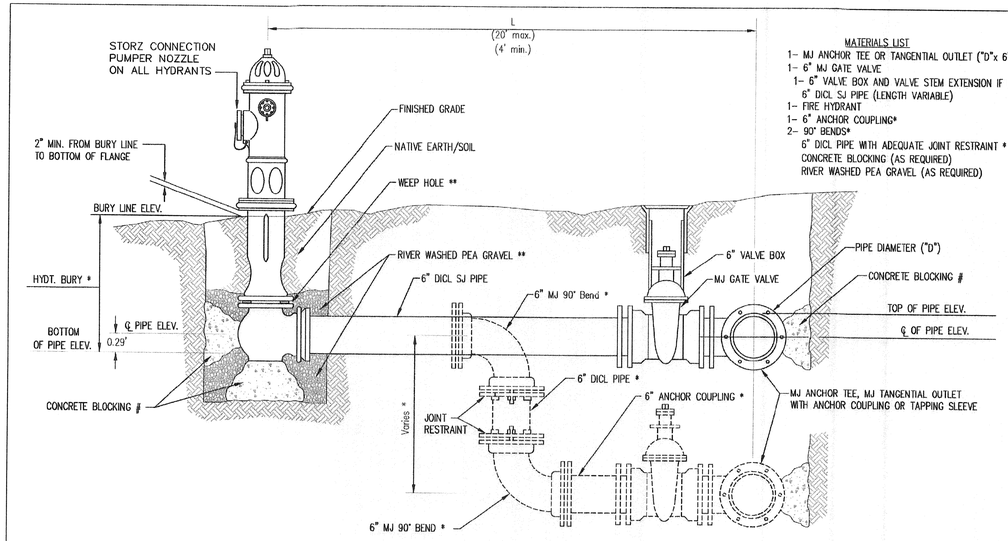
GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578

PROJECT NO. 54-87 K-6657-03 SEDGWICK CO.

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

Designed by MDK | Job No. 08313-001 | Sht. B2 of B17
Drawn by CSL | Date March 27, 2009

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Plot Scale 1.300 '/ 1'-0" 7-11-2014 4:28:33 PM by TED SCRIPTER
Q:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\08313-001-B2-KEYMAP A



MATERIALS LIST
1- MJ ANCHOR TEE OR TANGENTIAL OUTLET ("D"x 6")
1- 6" MJ GATE VALVE
1- 6" VALVE BOX AND VALVE STEM EXTENSION IF REQUIRED *
6" DICL SJ PIPE (LENGTH VARIABLE)
1- FIRE HYDRANT
1- 6" ANCHOR COUPLING*
2- 90° BENDS*
6" DICL PIPE WITH ADEQUATE JOINT RESTRAINT *
CONCRETE BLOCKING (AS REQUIRED)
RIVER WASHED PEA GRAVEL (AS REQUIRED)

* IF THE REQUIRED HYDRANT BURY IS IN EXCESS OF 5', BUT LESS THAN 7', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY. IF THE REQUIRED HYDRANT BURY IS GREATER THAN 7', CONTRACTOR SHALL USE 5' HYDRANT BURY, 2-MJ 90° BENDS, 6" ANCHOR COUPLING AND 6" DICL PIPE AS NECESSARY FOR VERTICAL ADJUSTMENT. THE CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING AT HYDRANT AND MEGALUGS, OR SIMILAR RESTRAINT BETWEEN 90° BENDS TO SECURE ALL FITTINGS DURING TESTING AND OPERATION. THE CONTRACTOR SHALL PROVIDE A VALVE STEM EXTENSION PER DETAIL THIS SHEET.

** CAUTION: WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES. PLACE 1 CUBIC FOOT OF RIVER WASHED PEA GRAVEL AROUND EACH WEEP HOLE.

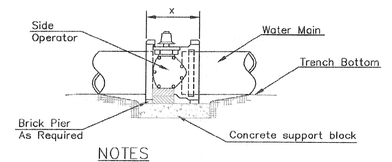
CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

FIRE HYDRANT ASSEMBLY

PER CITY OF WICHITA SPECIFICATIONS

FIRE HYDRANTS REQUIRED				
LOCATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
10+00.00, WL NO 1	1397.3	1391.31	6.0	6.0
31+50.01, WL NO 1	1385.3	1380.50	5.0	5.0
64+31.31, WL NO 1	1359.9	1354.74	5.0	5.0
1+31.82, WL NO 4	1391.6	1385.77	6.5	6.5
CL 151st St. W., Sta. 14+68.78, 41.09' Rt.	1389.6	**		
CL Auburn Hills, Sta. 55+24.40, 33.00' Rt.	1375.6	**		

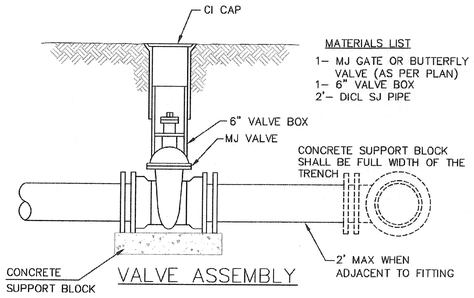
** CONTRACTOR TO VERIFY EXISTING PIPE ELEVATIONS AND REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.



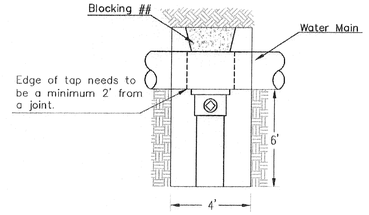
NOTES

1. This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. 24" and larger lines to be detailed on plans.
2. 6" Valve Box and Cover required per City of Wichita Std. Specifications.
3. Conc. Support Block to be full width of trench.

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION

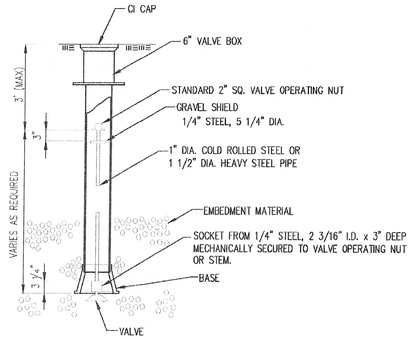


VALVE ASSEMBLY



CITY TAP

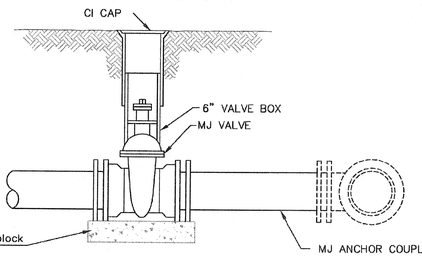
When the City of Wichita makes tap, blocking is to be done by Contractor



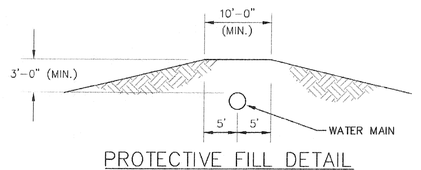
VALVE STEM EXTENSION DETAIL

NOTE: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.

MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-MJ ANCHOR COUPLING (12" OR SMALLER)
1-6" VALVE BOX
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

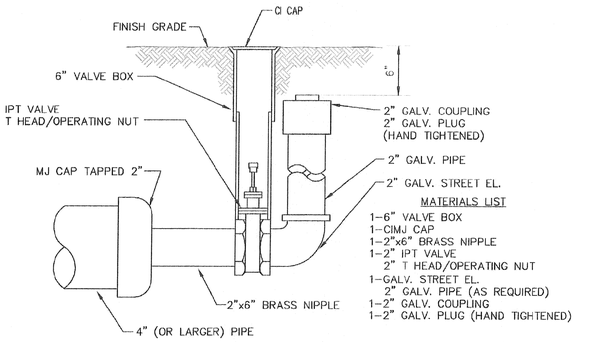


ANCHORED VALVE ASSEMBLY



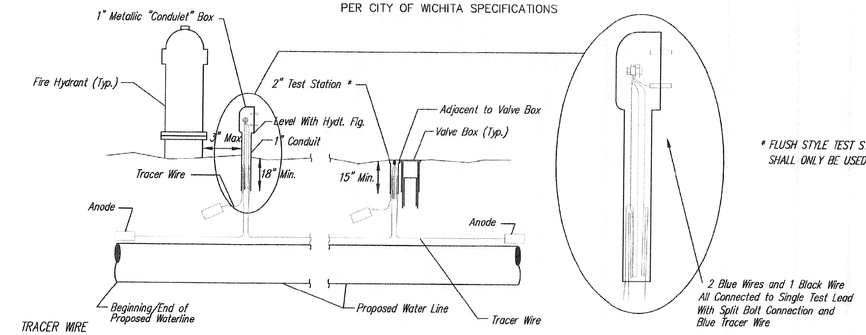
PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN 3'. (COST SUBSIDIARY TO PIPE INSTALLATION)



MATERIALS LIST
1-6" VALVE BOX
1-CIMJ CAP
1-2"x6" BRASS NIPPLE
1-2" IPT VALVE
2" T HEAD/OPERATING NUT
1-GALV. STREET EL.
2" GALV. PIPE (AS REQUIRED)
1-2" GALV. COUPLING
1-2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY



* FLUSH STYLE TEST STATIONS SHALL ONLY BE USED IN PAVEMENT.

TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of the waterlines. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 3 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed waterline. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE

The tracer wire shall be Blue No. 12 THHN annealed soft copper wire with thermal plastic insulation or Blue No. 12 AWG CCS with 30 mil HDPE insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

TEST STATIONS

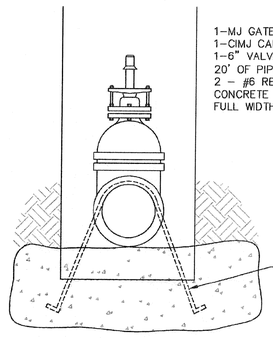
The test station for fire hydrant applications shall be a 1 inch galvanized "conduiet" style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PSJB as manufactured by HANDLEY Industries or approved equal. The "conduit" style test station shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

ANODES

The anodes shall be 3 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

TRACER WIRE DETAIL

COST IS SUBSIDIARY TO PIPE INSTALLATION



Notes:
1. Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
2. The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.
3. All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

THRUST AT VALVES	
VALVE	THRUST AT 150 #/in²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.
16"	**35670 lbs.**



ANCHORED VALVE ASSEMBLY, SPECIAL

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STANDARD WATER ASSEMBLY DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

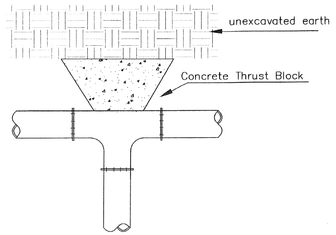
PROJECT NUMBER	OCA NUMBER	DATE
448-90578	635813	04/2013

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

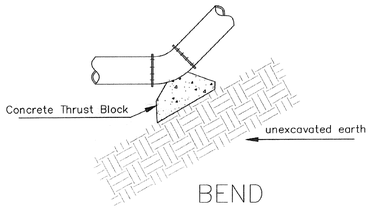
SHEET
B3 of B17

WL-101

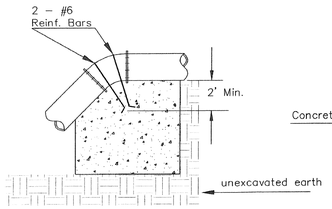
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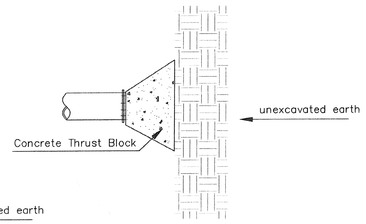
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BEND



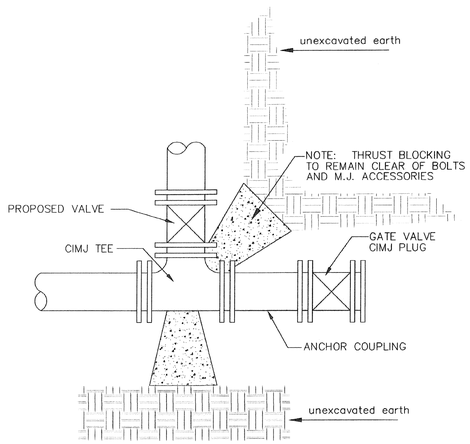
VERTICAL BEND



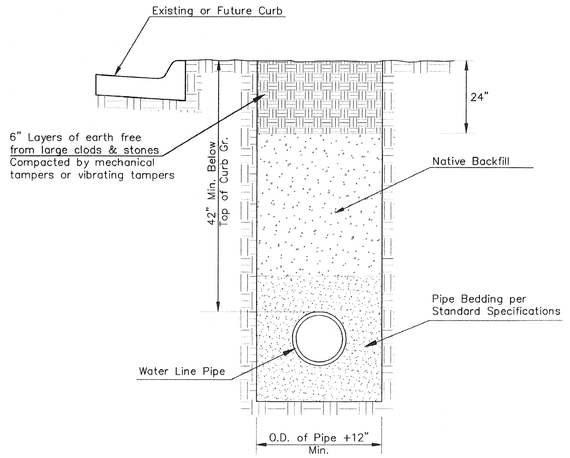
PLUG

PIPE SIZE	THRUST AT FITTINGS IN TONS–AT 150#/IN^{2}P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

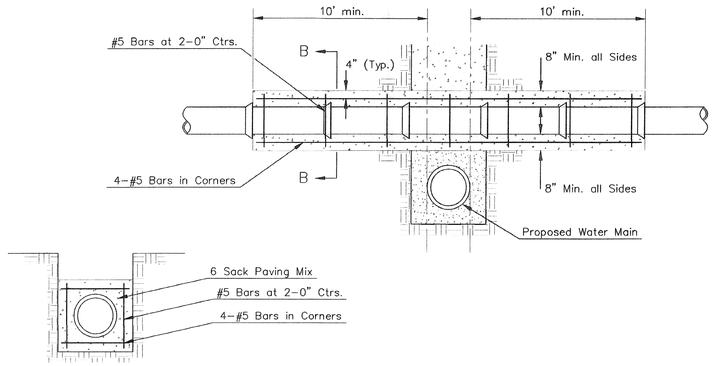
TYPICAL THRUST BLOCKS



KEY BLOCK DETAIL



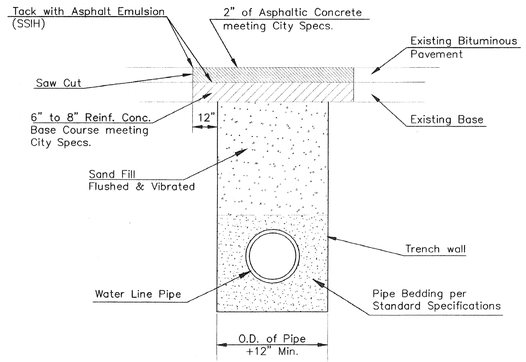
TRENCH COMPACTION IN ROAD RIGHT–OF–WAY



Note: Encasement to begin and end at a Bell on Sanitary Sewer Pipe.

SECTION B–B

REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER



PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS

* PLANS GOVERN
UNLESS OTHERWISE NOTED ON PLANS

GARY L. JANZEN LICENSED 16294 KANSAS PROFESSIONAL ENGINEER
04/22/13

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

MISCELLANEOUS WATER DETAILS

CITY ENGINEER
GARY JANZEN, P.E..

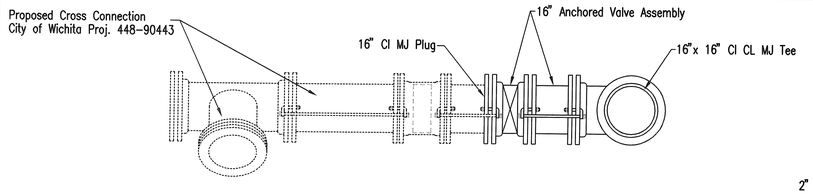
PROJECT NUMBER	OCA NUMBER	DATE
448-90578	635813	04/2013

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

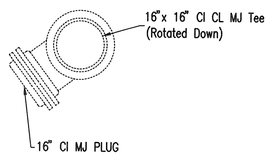
SHEET
B4 of B17

WL-104

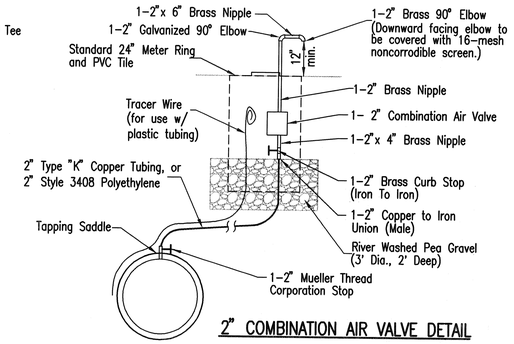
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Plot Scale 1:1 07-11-2014 4:31:41 PM by TDS
O:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\08313-001-B4-WL-104 Misc. Water Dtls



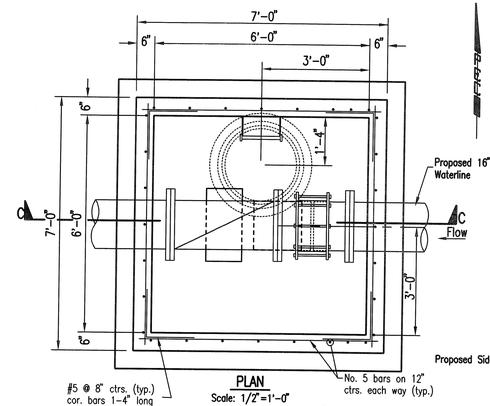
SECTION A-A



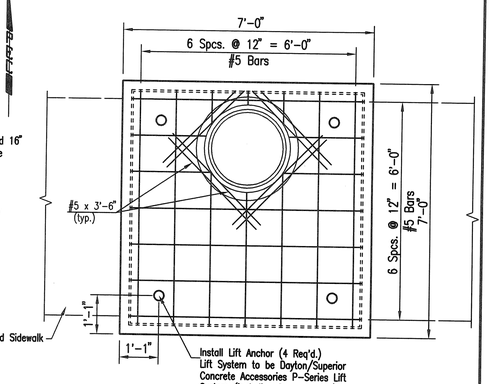
SECTION B-B

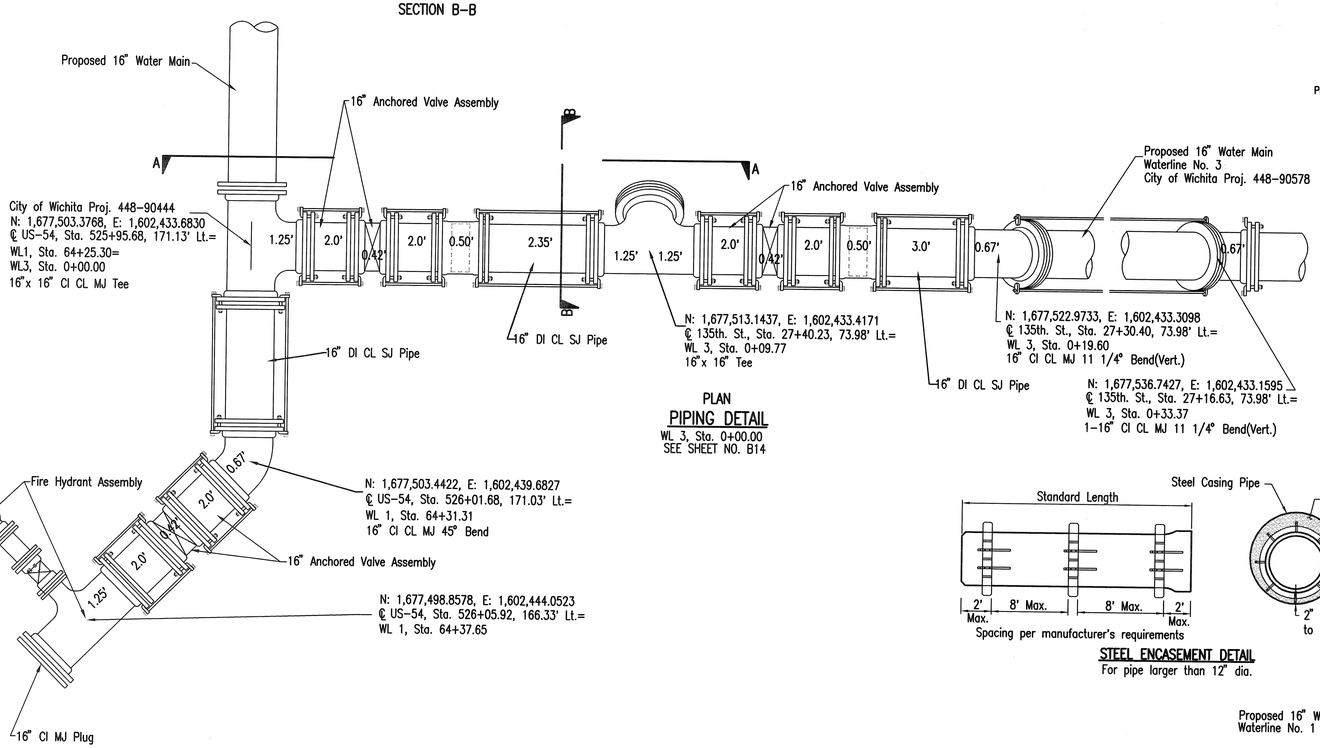


2" COMBINATION AIR VALVE DETAIL



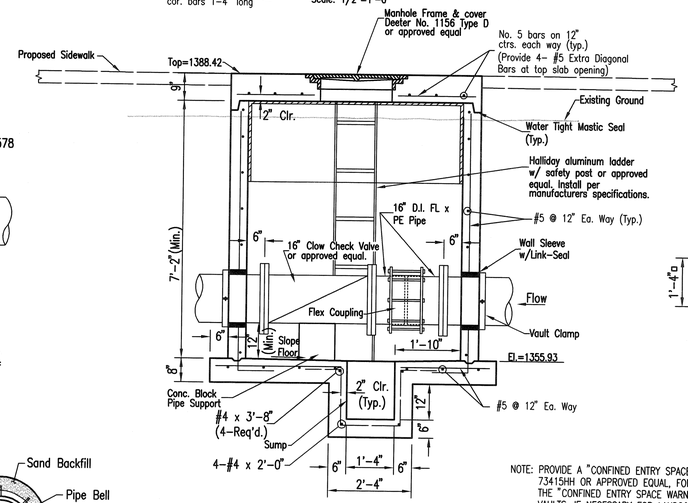
PLAN
Scale: 1/2"=1'-0"





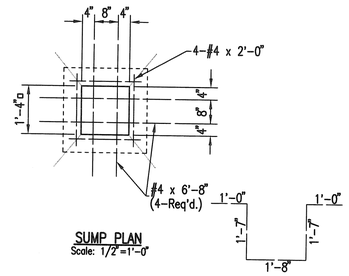
PLAN

PIPING DETAIL
WL 3, Sta. 0+00.00
SEE SHEET NO. B14



TOP SLAB PLAN
Scale: 1/2"=1'-0"

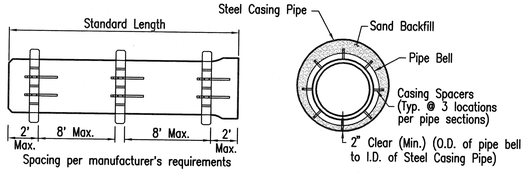
SECTION C-C
Scale: 1/2"=1'-0"



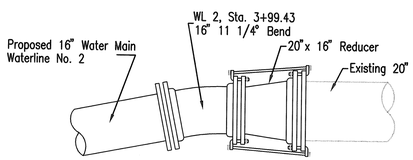
SUMP PLAN
Scale: 1/2"=1'-0"

NOTE: PROVIDE A "CONFINED ENTRY SPACE WARNING" SIGN, CHAMPION AMERICAN MODEL 73415HH OR APPROVED EQUAL, FOR VAULT AT LOCATION AS APPROVED BY THE ENGINEER. THE "CONFINED ENTRY SPACE WARNING" SIGN SHALL BE FASTENED TO THE TOP OF ALL VAULTS. IF NECESSARY FOR LANDSCAPING OR SITE CONSIDERATIONS, THE SIGN MAY BE FASTENED TO THE VAULT LID IF IT DOES NOT IMPEDE ACCESS OR AIR FLOW.

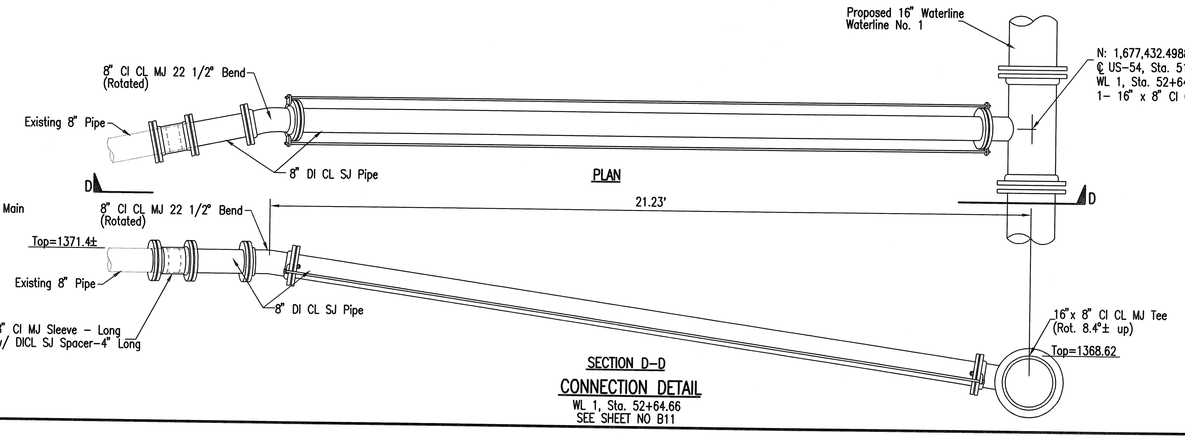
CHECK VALVE VAULT DETAIL
LINE 1 STA. 23+80.00



STEEL ENCASEMENT DETAIL
For pipe larger than 12" dia.



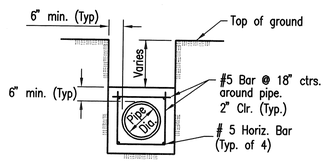
CONNECTION DETAIL
WL 2, Sta. 3+99.43
SEE SHEET NO. B13



PLAN

SECTION D-D

CONNECTION DETAIL
WL 1, Sta. 52+64.66
SEE SHEET NO B11



CONCRETE ENCASEMENT DETAIL

MICHAEL D. KELLER LICENSED 13944 KANSAS PROFESSIONAL ENGINEER 7/14/14

No.	Revision	By	Date

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS

PIPING DETAILS

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578

PROJECT NO. 54-87 K-6657-03 SEDGWICK CO.

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

Designed by MDK	Job No. 08313-001	Sht. B5 of B17
Drawn by CSL	Date March 27, 2009	

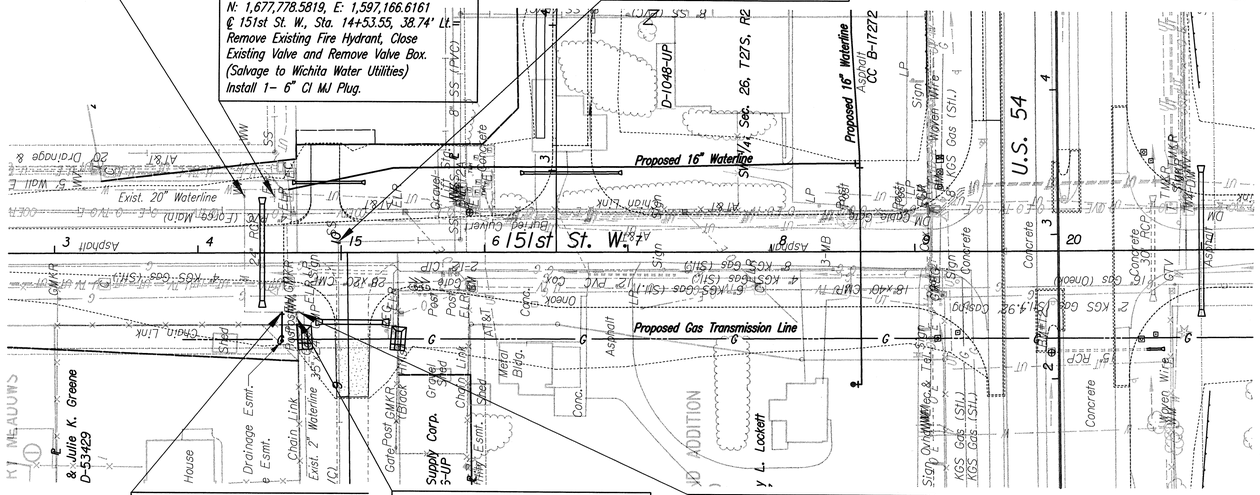
Saved 07-11-2014 4:00:23 PM by TDS
Plot Scale 1:2 07-11-2014 4:32:50 PM by JED SCRIPTER
O:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\08313-001-B5-Piping Details

N: 1,677,799.7397, E: 1,597,166.8353
℄ 151st St. W., Sta. 14+32.39, 39.12' Lt.=
Adjust Existing Water Valve Box
Existing Top of Box Elev.= 1390.47
Proposed Top of Box Elev.= 1389.59
Difference = −0.88'

N: 1,677,778.5819, E: 1,597,166.6161
℄ 151st St. W., Sta. 14+53.55, 38.74' Lt.=
Remove Existing Fire Hydrant, Close
Existing Valve and Remove Valve Box.
(Salvage to Wichita Water Utilities)
Install 1− 6" CI MJ Plug.

N: 1,677,733.8787, E: 1,597,135.6863
℄ 151st St. W., Sta. 14+98.02, 7.48' Lt.=
Adjust Existing Sanitary Sewer Manhole Top
Existing Top of Rim Elev.= 1393.30
Proposed Top of Rim Elev.= 1393.68
Difference = +0.38'

SCALE:
0 50 100


151st St. W.
Proposed 16" Waterline
Proposed Gas Transmission Line
Exist. 20" Waterline
U.S. 54
D-1048-UP
Sec. 26, T27S, R2
Asphalt
Concrete
Gravel
Metal Bldg.
Chain Link
Wrought Iron Fence
Wood Fence
Barbed Wire
Overhead Wires
Sign
Utility Pole
Fire Hydrant
Gate Valve
Buried Guard
Union Line
Supply Corp. 3-UP
Julie K. Greene D-53429
L. Lockett
KD ADDITION
House
Drainage Esmt.
Exist. 2" Waterline
Exist. 4" KGS Gas (Stl.)
Exist. 6" KGS Gas (Stl.)
Exist. 8" KGS Gas (Stl.)
Exist. 12" KGS Gas (Stl.)
Exist. 16" KGS Gas (Stl.)
Exist. 2" KGS Gas (Stl.)

N: 1,677,368.1467, E: 1,597,038.9363
℄ US-54, Sta. 471+97.62, 137.86' Lt.=
℄ 151st. St. W., Sta. 18+63.02, 92.34' Rt.=
WL 1, Sta. 10+00.00
Begin 16" Waterline installation.
1- Fire Hydrant Assembly
L= 4'
Top Valve Box El.= 1397.4
FH Bury Line El.= 1397.3
1- 16" CI MJ Plug (W)

N: 1,677,369.1896, E: 1,597,100.4347
WL1, Sta. 10+61.83 to
N: 1,677,370.2544, E: 1,597,163.2256
WL1, Sta. 11+24.63
Install 62.8 L.F. Steel
Casing by boring.
Min. I.D. = 28"

N: 1,677,370.7602, E: 1,597,191.9322
℄ US-54, Sta. 473+50.63, 137.87' Lt.=
WL 1, Sta. 11+53.02=
WL 2, Sta. 0+00.00
1- 16" x 16" CI CL MJ Tee
1- 16" Valve Assembly (N)
(MJ Butterfly Valve)
1- 16" Anch. Valve Assembly (W)
(MJ Butterfly Valve)
Top Valve Box El.= 1396.7 (N)
Top Valve Box El.= 1396.7 (W)

N: 1,677,377.4882, E: 1,597,282.1311
℄ US-54, Sta. 474+40.93, 143.06' Lt.=
WL 1, Sta. 12+43.48
Horizontal Deflection
Defl.= 3°30'00"

N: 1,677,381.0670, E: 1,597,493.1638
℄ US-54, Sta. 476+52.00, 143.05' Lt.=
WL 1, Sta. 14+54.54
Horizontal Deflection
Defl.= 3°30'00"

N: 1,677,378.6291, E: 1,597,548.3705
℄ 135th. St., Sta. 477+07.15, 139.7' Lt.=
WL 1, Sta. 15+09.80
1- 16" x 8" CI CL MJ Tee
1- 8" Valve Assembly (N)
(MJ Gate Valve)
Top Valve Box El.= 1392.3

N: 1,677,377.2974, E: 1,597,578.5400
℄ US-54, Sta. 477+37.30, 137.83' Lt.=
WL 1, Sta. 15+40.00
Horizontal Deflection
Defl.= 3°30'00"

N: 1,677,377.4240, E: 1,597,586.0043
WL1, Sta. 15+47.47 to
N: 1,677,377.7800, E: 1,597,607.0012
WL1, Sta. 15+68.47
Install 21 L.F. Steel
Casing by open cut.
Min. I.D. = 28"

LINE NO. 2
See Sheet B13

LINE NO. 4
See Sheet B15

CAUTION !!!
2" Gas Line
(KGS)

CAUTION !!!
Existing 4"
Sanitary Sewer
Force Main*

CAUTION !!!
Proposed 18" RCP
Storm Water Sewer
(by others)

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT. 5 0

. & Becky L. Lockett
D-52177

SW 1/4, Sec. 26, T27S, R2W

Smith & Company, Inc.
D-1051-UP

James Perkins Trust
D-1007-UP

Wichita Friends School, Inc.
D-1009-UP

N: 1,677,365.0970
E: 1,598,038.4739
℄ US-54, Sta. 481+97.80
137.81' Lt.=
WL 1, Sta. 20+00.00
Match Point

Proposed 16" Waterline

Asphalt
CC B-17272

Gravel

10" SS (PVC)

Sign

Woven Wire

8" KGS Gas (Stl.)

4" KGS Gas (Stl.)

Concrete

24"x44" CMP
Asphalt

24"x38" CMP
Asphalt

Cable Gate

Post

REG

GV

10.5'

2"x20" CL

Section Line

US HIGHWAY 54 (KELLOGG)

153.02'- 16" Pipe

846.98'- 16" Pipe

Remove and replace
203 L.F. Asphalt
Pavement in kind.

Remove and replace
17.5 L.F. Gravel drive
in kind.

N: 1,677,370.8260, E: 1,597,196.9318
℄ US-54, Sta. 473+55.63, 137.85' Lt.=
WL 1, Sta. 11+58.02
Horizontal Deflection
Defl.= 3°30'00"

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 4" SANITARY SEWER FORCE MAIN TO VERIFY HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

MICHAEL D. KELSEY LICENSED 13944 KANSAS PROFESSIONAL ENGINEER 7/7/14

PLAN
DATE | BY | CHECKED | CHECKED

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

Begin Waterline No. 1
Fire Hydrant Assembly
+00.00
1391.31

Buried Telephone
Buried Line
8" Gas Line
4" Gas Line
8" Gas Line
Section Line 151st. Street West
+61.83 Top Casing=1391.54
1391.00

Buried Telephone
16" x 16" Tee
Proposed Ground
+24.63 Top Casing=1391.22
1390.80
1390.68
+53.02
1390.53

Buried Telephone
1389.89
1388.52
1387.16

16" x 8" Tee
2" Gas Line
4" S.S. Force Main
Top=1385.68
+09.80
1385.79
+20.00
1385.66
1385.52
+47.47 Top Casing=1385.99
+68.47 Top Casing=1385.90
1385.19
1384.77

18" RCP SWS
I.E.= 1385.18
+80.00
1384.44
+00.00
1384.00
1383.99

Match Point
+00.00
1383.99

Existing Ground
Top Proposed 16" Water Main
Proposed Top of Curb
Proposed Ground
Existing Ground
Top Proposed 16" Water Main

Sta. 16+55.28 to Sta. 17+81.78
Place 126.50 L.F. Fill, Sand(Flushed & Vibrated) from Top Pipe Bedding to Elev. 1388.56

1405 1400 1395 1390 1385 1380 1375 1370 1365

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00

PROFILE
DATE | BY | CHECKED | CHECKED

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 1
(16")
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

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

Designed By MDK, SAD
Drawn By JAN
Job No. 08313-001
Date March 27, 2009

Sheet B7 of B17

Saved 07-11-2014 4:00:27 PM by TDS
Plot Scale 1:40 07-11-2014 4:18:57 PM by TED SCRIPTER
Q:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\LINE 1 - 16 INCH\08313-001-B7-WLPP01

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT. 5 0

CAUTION !!!
Proposed 24" RCP
Storm Water Sewer
(by others)

N: 1,677,391.5422, E: 1,598,418.5371
℄ US-54, Sta.485+77.41, 137.79' Lt.=
WL 2, Sta. 23+76.50 to 23+83.50
Install 1-16" Check Valve Vault
See Detail, Sheet B5

Install Water Meter
See Sheet B13
Coordinate Installation
with City of Wichita

Install 2" Service Line, connect
to exist. 2" Service Line. Verify
Location with the City of
Wichita Water Dept.

Remove Fire Hydrant
and Water Meter Salvage
to the City of Goddard.

riends School, Inc.
-1009-UP

N: 1,677,385.0970
E: 1,598,038.4739
137.81' Lt.=
WL 1, Sta. 20+00.00
Match Point

N: 1,677,402.0526
E: 1,599,038.3301
137.76' Lt.=
WL 1, Sta. 30+00.00
Match Point

Wichita Friends School, Inc.
D-53445
D-53446
Fawnwood Dr.
Drainage Esmt.
℄ 20' Utili.
Conc.
Chain Link
Gravel
WW
Asphalt
Proposed 16" Waterline
485
490
RESERVE A
Sedgwick County
AT-790
Kellogg Dr.
Cultivated Field
5 Strand Barb Wire
4 Strand Barb Wire
AT&T
Chain Link
Asphalt
2-MB
Section Line
Concrete
US HIGHWAY 54 (KELLOGG)
BM#13
RCP
KGS Gas (St.)

376.50'- 16" Pipe

Remove and replace
101 L.F. Gravel drive
in kind.

616.50'- 16" Pipe

Remove and replace
54 L.F. Asphalt
Pavement in kind.

MICHAEL D. KELSEY
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

Match Point
24" RCP SWS
E=1382.49
Check Valve Vault
Match Point

Proposed Ground
Existing Ground
Proposed Top of Curb
Existing Ground
Top Proposed 16" Water Main

1400 1400 1395 1390 1385 1380 1375 1370 1365

+00.00 +20.00 +88.29 +08.29 +58.29 +80.00 +80.00 +80.00 +00.00

1383.99 1383.73 1383.67 1381.25 1381.25 1381.25 1382.98 1382.98 1382.98 1382.98 1382.98 1382.98 1382.98 1382.98 1382.91 1382.62 1382.54 1382.11

20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 1
(16")
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

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

Job No. 08313-001
Date March 27, 2009
Designed By MDK, SAD
Drawn By JAN

Sheet B8 of B17

PLAN: DATE | BY | CHECKED | CHECKED
PROFILE: DATE | BY | CHECKED | CHECKED

Saved 07-11-2014 4:00:12 PM by TDS
Plot Scale 1:40 07-11-2014 4:19:54 PM by TED_SCRIPTER
Q:\2008\08313\001\PHASE 1 Waterlines- 151st to 135th\LINE 1 - 16 INCH\08313-001-B8-WLP01Q

N: 1,677,404.5959, E: 1,599,188.3053
℄ US-54, Sta. 493+47.29, 137.75' Lt.=
WL 1, Sta. 31+50.01
1- Fire Hydrant Assembly
L= 4'
Top Valve Box El.= 1385.5
FH Bury Line El.= 1385.3

N: 1,677,407.8990, E: 1,599,383.0822
℄ US-54, Sta. 495+42.10, 137.75' Lt.=
WL 1, Sta. 33+44.81
Horizontal Deflection
Defl.= 0°00'12"

Install Water Meter
See Sheet B13
Coordinate Installation
with City of Wichita

Install 2-1" Service Lines
Verify Location with the
City of Wichita Water Dept.

N: 1,677,414.4008, E: 1,599,765.2119
℄ US-54, Sta. 499+24.28, 137.75' Lt.=
WL 1, Sta. 37+26.99
Horizontal Deflection
Defl.= 0°08'43"

CAUTION !!!
Proposed 5'x4' RCB
Storm Water Sewer
(by others)

SCALE:
0 40 80
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.

D-53446

D-1004-UP

CAUTION !!!
12" Gas Line (KGS)
(Record Info.)
Contractor to verify
location prior to
waterline construction.

N: 1,677,402.0526
E: 1,599,038.3301
137.76' Lt.=
WL 1, Sta. 30+00.00
Match Point

N: 1,677,419.7370
E: 1,680,038.1690
138.44' Lt.=
WL 1, Sta. 40+00.00
Match Point

Doris M. Rishel Trust
D-1002-UP

House

Gravel

Jerry C., Jr. & Sally J. Goodwin
D-1052-UP

Cage

1/4 Section Line

Proposed 16" Waterline

4 Strand Barb Wire

Cultivated Field

2 - Barb

8" KGS Gas (St.)

24"x48" CMP
Asphalt

MB

BM#14

RR Ties

US HIGHWAY 54 (KELLOGG)

Concrete

Section Line

RCB

1000.00'- 16" Pipe

Remove and replace
10 L.F. Gravel drive
in kind.

Remove Water Meters
and Salvage to the
City of Goddard.

WATERLINE NO. 1

Match Point

Existing Ground

Top Proposed 16" Water Main

Sta. 34+25.36 to Sta. 34+69.92
Place 44.56 L.F. Fill, Sand (Flushed
and Vibrated) from Top Pipe Bedding
to 2" below bottom of pavement.

Prop. 5'x4' RCB SWS
E= 1363.84

Proposed Ground

Protective fill to be placed
and compacted prior to
construction of waterline.

Match Point

1395 1390 1385 1380 1375 1370 1365 1360 1355

1382.11 1380.95 1380.03 1378.89 1377.73 1376.81 1376.58 1376.35 1374.29 1373.08 1372.75 1370.85 1369.00 1366.82 1364.11 1360.30 1360.30 1360.30 1362.50

30+00 +00.00
31+00 +20.00
32+00
33+00
34+00
35+00 +80.00 +20.00
36+00 +20.00 +60.00
37+00 +20.00
38+00 +60.00 +00.00
39+00 +80.00 +20.00
40+00 +00.00

Unless noted otherwise, elevations
shown are top of pipe

DATE | BY | CHECKED | CHECKED

Saved: 07-11-2014 4:09:13 PM by TDS
Plotted: 07-11-2014 4:10:51 PM by TDS
O:\2008\08313\001\PHASE 1 Waterlines - 15ht to 1.5ht\LINE 1 - 16 INCH\08313-001-B9-WLP903

MICHAEL D. KELSEY
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER
7/11/14

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 1
(16")
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

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303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 08313-001
Date March 27, 2009
Designed By MDK, SJD
Drawn By JAN

Sheet B9 of B17

N: 1,677,423.6581, E: 1,600,238.7365
℄ US-54, Sta. 503+97.90, 138.96' Lt.=
WL 1, Sta. 42+00.61
Horizontal Deflection
Defl.= 0°29'45"

N: 1,677,419.7370
E: 1,600,038.1690
℄ US-54, Sta. 501+97.29
138.44' Lt.=
WL 1, Sta. 40+00.00
Match Point

Rebah J. Hubbard Revocable Inter Vivos Trust
D-996-UP

CathyMark Colorado Investments, LLC, etal
D-997-UP

CAUTION !!!
Proposed 15" RCP SWS
(by others)

N: 1,677,432.1484, E: 1,601,018.0844 (at Tee)
℄ US-54, Sta. 511+77.28, 134.19' Lt.=
WL 1, Sta. 49+80.00
N: 1,677,444.3116, E: 1,601,018.1306 (℄ of Air Valve)
1- 2" Combination Air Valve Assembly (12' Lt.)
See detail, sheet no. B5
Top Elev. = 1376.0

N: 1,677,432.3663
E: 1,601,038.0832
℄ US-54, Sta. 511+97.28
134.07' Lt.=
WL 1, Sta. 50+00.00
Match Point

Proposed 16" Waterline

2 - Barb Wire
REC
8" KGS Gas (Stl.)
US HIGHWAY 54 (KELLOGG)
5 Strand Barb Wire
Stone Fence
20' GRE
Stone Covered Bar
AT&T
BM#15
24" Oak
30" Oak
13" Ced
Concrete
505
510

Remove and replace 15 L.F. Gravel drive in kind.

1000.00'- 16" Pipe

WATERLINE NO. 1

Unless noted otherwise, elevations shown are top of pipe

Match Point
Proposed Top of Curb
Proposed Ground
Existing Ground
Protective fill to be placed and compacted prior to construction of waterline.
Top Proposed 16" Water Main
Sta. 41+60.42 to Sta. 41+89.73
Place 29.31 L.F. Fill, Sand (Flushed & Vibrated) from Top Pipe Bedding to 2' below bottom of pavement.
Sta. 47+01.26 to Sta. 47+29.30
Place 28.04 L.F. Fill, Sand (Flushed & Vibrated) from Top Pipe Bedding to 2' below bottom of pavement.
Sta. 48+84.59 to Sta. 50+00.00
Place 115.41 L.F. Fill, Sand (Flushed & Vibrated) from Top Pipe Bedding to 2' below bottom of pavement.
15" RCP SWS
Flow 1370.37
2" Combination Air Valve Assembly
Match Point

1390
1385
1380
1375
1370
1365
1360
1355
1350

+00.00 +40.00 +45.00 +25.00 +00.00 +00.00 +80.00 +00.00
1362.50 1363.00 1363.00 1363.00 1364.37 1365.00 1365.00 1365.00 1365.17 1365.33 1365.50 1368.28 1370.50 1370.50

40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 1
(16")
GARY JANZEN, P.E. CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

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

Job No. 08313-001
Date March 27, 2009
Designed By MDK, SAD
Drawn By JAN
Checked By

Sheet B10 of B17

MICHAEL D. KELSEY
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER
7/1/14

DATE | BY | CHECKED | CHECKED

Saved: 07-11-2014 4:00:15 PM by TDS
Plot: Scale 1:40 07-11-2014 4:21:16 PM by TED SCRIPTER
Q:\2008\08313\001\PHASE 1 Waterlines- 1St st to 135th\LINE 1 - 16 INCH\08313-001-B10-WLPP04

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT.

N: 1,677,435.0992, E: 1,601,288.9428
℄ US-54, Sta. 514+48.15, 132.54' Lt.=
WL 1, Sta. 52+50.87
1- 16" CI CL MJ 11 1/4° Bend
Defl.= 11°15'00"

240.87'- 16" Pipe

Remove existing 2" Blowoff Assembly and approx. 7' existing 8" water main (N).

CAUTION !!!
Proposed 15" RCP SWS (by others)

N: 1,677,417.2610, E: 1,601,381.7859
℄ US-54, Sta. 515+40.99, 113.04' Lt.=
WL 1, Sta. 53+45.42
1- 16" CI CL MJ 11 1/4° Bend
Defl.= 11°15'00"

N: 1,677,422.8280, E: 1,601,892.7731
℄ US-54, Sta. 520+52.78, 105.33' Lt.=
WL 1, Sta. 58+56.43
Horizontal Deflection
Defl.= 2°30'00"

West Wichita Development, Inc.
D-59309

SE 1/4, Sec. 26, T27S, R2W

Proposed 16" Waterline

WL 1, Sta. 52+40.87 to WL 1, Sta. 52+50.87
Install 10.00' RJ DI Pipe

13.79'- 16" DI CL RJ Pipe

N: 1,677,432.4988, E: 1,601,302.4769
℄ US-54, Sta. 514+61.63, 129.71' Lt.=
WL 1, Sta. 52+64.66
1- 16" x 8" CI CL MJ Tee
Connect to existing pipe (N)*
See Sheet B5 for connection detail.
1- 16" Valve Assembly (W)
(MJ Butterfly Valve)
Top Valve Box El.= 1376.2

70.76'- 16" Pipe

WL 1, Sta. 53+35.42 to WL 1, Sta. 53+55.42
Install 20.00' RJ DI Pipe

*PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 8" WATERLINE AT STATION 52+64.66 TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

644.58'- 16" Pipe

Remove 598.86 L.F. paved surface. Replace with temporary asphalt patch.

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

20.00' RJ DI Pipe
11 1/4° Bend
8" Outlet (N)
Prop. 15" RCP SWS
Elev.= 1370.38
Exist.- 8" Waterline
Top of Pipe= 1371.44
Auburn Hills
Prop. 15" RCP SWS
El.= 1370.68
11 1/4° Bend
20.00' RJ DI Pipe
24" RCP SWS
El.= 1367.47
24" RCP SWS
El.= 1367.41
Match Point
Match Point

Proposed Ground
Proposed Frontage Rd
Existing Ground
Existing Frontage Road
Existing Ground
Future Frontage Road
Top Proposed 16" Water Main

Sta. 50+00.00 to Sta. 60+00.00
Place 1000 L.F. Fill, Sand (Flushed & Vibrated) from Top Pipe Bedding to 2' below bottom of pavement.

	50+00	51+00	52+00	53+00	54+00	55+00	56+00	57+00	58+00	59+00	60+00
	+00.00	+00.00	+50.87	+64.66	+45.42	+20.00	+80.00	+00.00	+60.00	+00.00	
	1370.50	1370.38	1370.25	1368.97	1368.62	1368.35	1368.00	1367.89	1367.85	1367.03	1366.58	1364.33	1363.19	1363.17	1363.11	1363.06	1363.00

1390 1385 1380 1375 1370 1365 1360 1355 1350

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 1
(16")
GARY JANZEN, P.E. CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

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

Job No. 08313-001
Date March 27, 2009
Designed By MDK, SAD
Drawn By JAN

Sheet B11 of B17

MICHAEL D. KEISER
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER

DATE | BY | CHECKED | CHECKED

Saved 07-11-2014 4:00:21 PM by TDS
Plot Scale 1:40 07-11-2014 4:22:04 PM by TED SCRIPTER
Q:\2008\08313\001\PHASE 1 Waterlines- 1St1st to 13Sth\LINE 1 - 16 INCH\08313-001-B11-WLP05

N: 1,677,435.9003, E: 1,602,132.2759
℄ US-54, Sta. 522+92.55, 111.88' Lt.=
WL 1, Sta. 60+96.29
Horizontal Deflection
Defl.= 2°30'00"

N: 1,677,436.7780, E: 1,602,212.8336
℄ US-54, Sta. 523+73.10, 110.56' Lt.=
WL 1, Sta. 61+76.85
1- 16" CI CL MJ 45° Bend
Defl.=45°27'46"

N: 1,677,501.6479, E: 1,602,275.2875
℄ US-54, Sta. 524+37.30, 173.71' Lt.=
WL 1, Sta. 62+66.90
1- 16" CI CL MJ 45° Bend
Defl.=45°27'42"

CAUTION !!!
Proposed 15" RCP
Storm Water Sewer
(by others)

N: 1,677,501.8690, E: 1,602,295.5463
WL1, Sta. 62+87.16 to
N: 1,677,503.3097, E: 1,602,427.5357
WL1, Sta. 64+19.16
Install 132 L.F. Steel
Casing by boring.
Min. I.D. = 28"

CAUTION !!!
4" Gas Line
(KGS)

LINE NO. 3
See Sheet no. B14

N: 1,677,503.3767, E: 1,602,433.6752
℄ US-54, Sta. 525+95.68, 171.13' Lt.=
WL 1, Sta. 64+25.30=
WL 3, Sta. 0+00.00
1- 16" x 16" CI CL RJ Tee
1- 16" Anchored Valve Assembly(N)
(MJ Butterfly Valve)
Top Valve Box El.= 1360.0
See Sheet B5 for Piping Detail.

N: 1,677,503.4422, E: 1,602,439.6827
℄ US-54, Sta. 526+01.68, 171.03' Lt.=
WL 1, Sta. 64+31.31
1- 16" CI CL MJ 45° Bend
(Defl. =47°00'00")
1- 16" Anchored Valve Assembly(SE)
(MJ Butterfly Valve)
Top Valve Box El.= 1360.0
See Sheet B5 for Piping Detail.

6.34'- 16" DI CL RJ Pipe

N: 1,677,498.8578, E: 1,602,444.0523
℄ US-54, Sta. 526+05.92, 166.33' Lt.=
WL 1, Sta. 64+37.64
1-Fire Hydrant Assembly
L=4'
Top Valve Box El.= 1360.0
FH Bury Line El.= 1360.0

PROPOSED 16" WATERLINE
See City of Wichita Proj.
448-90443

N: 1,677,430.6524
E: 1,602,036.1265
WL 1, Sta. 60+00.00
Match Point

SE 1/4, Sec. 26, T27S, R2W

Sedgwick County

SW 1/4, Sec. 25, T27S, R2W

Asphalt

Concrete

Traffic Camera

8" KGS Gas (Stl.)

4" KGS Gas (Stl.)

135th St. W.

US HIGHWAY 54 (KELLOGG)

24" RCP

30" RCP

Plugged & Filled

2-DM

3-DM

AT&T

Proposed 16" Waterline

BM#16D

WL 1, Sta. 61+46.85 to WL 1, Sta. 61+76.85
Install 30.00' RJ DI Pipe

146.85'- 16" Pipe

90.05'- 16" DI CL RJ Pipe

158.40'- 16" DI CL RJ Pipe

6.01'- 16" DI CL RJ Pipe

SCALE:
PLAN: LAT. & LONG. 0 40 80
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

290.79 L.F.
RJ DI Pipe

Match Point
45° Bend
Prop. 15" RCP SWS
℄= 1365.46
45° Bend
Prop. 15" RCP SWS
℄= 1362.23
Section Line 135th Street West
4" KGS Gas (Stl.)
16" Outlet (N)
END LINE NO. 1

Existing Ground
Proposed Ground
Proposed Top of Curb
Proposed Ground
Top Proposed 16" Water Main

Sta. 60+00.00 to Sta. 62+01.02
Place 201.02 L.F. Fill, Sand (Flushed & Vibrated) from Top Pipe Bedding to Elev. 1365.00

| | | |

N: 1,677,370.7602, E: 1,597,191.9322
℄ 151st. St. W., Sta. 18+61.55, 61' Lt.=
WL 2, Sta. 0+00.00=
WL 1, Sta. 11+53.02
1- 16" x 16" CI CL MJ Tee

N: 1,677,410.7590, E: 1,597,191.6321
℄ 151st. St. W., Sta. 18+21.55, 61' Lt.=
WL 2, Sta. 0+40.00
Horizontal Deflection
Defl.= 1°08'45"

N: 1,677,510.7412, E: 1,597,188.8819
℄ 151st. St. W., Sta. 17+21.55, 59' Lt.=
WL 2, Sta. 1+40.02
Horizontal Deflection
Defl.= 1°08'45"

N: 1,677,639.1993, E: 1,597,187.9180
℄ 151st. St. W., Sta. 15+93.09, 59' Lt.=
WL 2, Sta. 2+68.48
Horizontal Deflection
Defl.= 0°29'31"

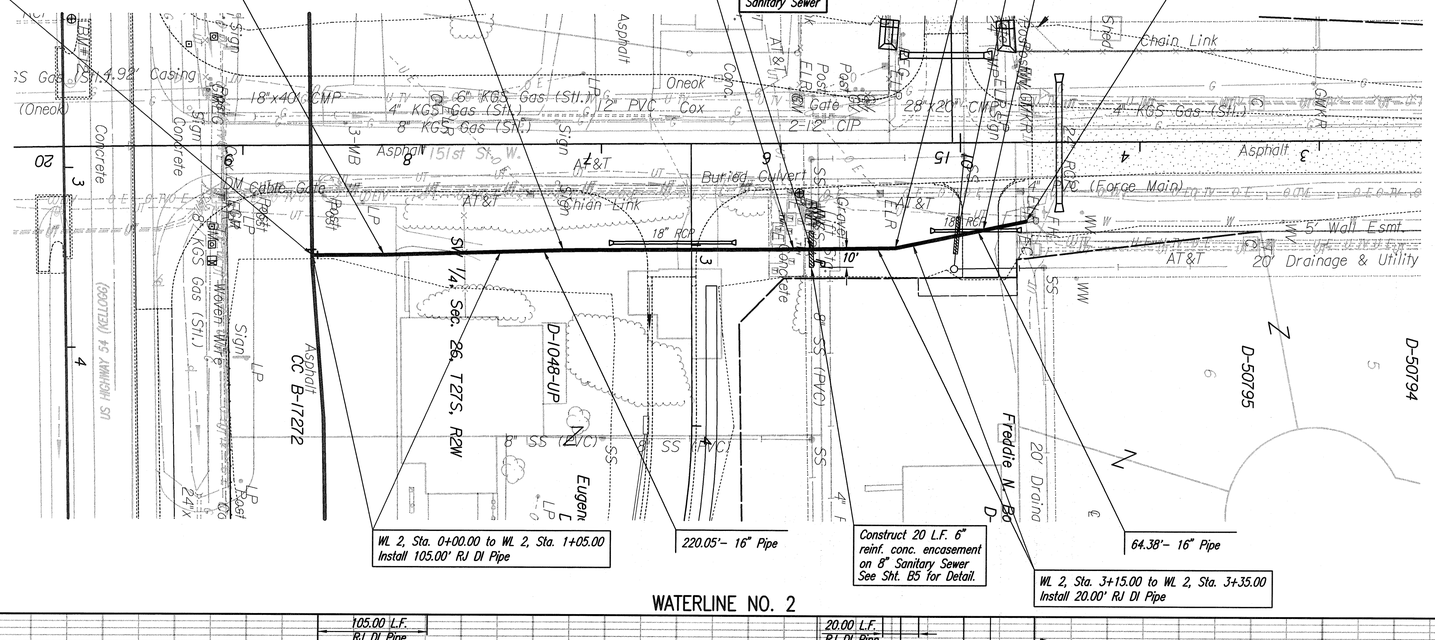
N: 1,677,695.7558, E: 1,597,187.0081
℄ 151st. St. W., Sta. 15+36.53, 58.51' Lt.=
WL 2, Sta. 3+25.05
1- 16" CI CL MJ 11 1/4° Bend
Defl.= 10°45'29"

CAUTION !!!
Existing 8"
Sanitary Sewer

CAUTION !!!
Proposed 8"
Sanitary Sewer

CAUTION !!!
Proposed 18" RCP
Storm Water Sewer

N: 1,677,768.5970, E: 1,597,171.9500
℄ 151st. St. W., Sta. 14+63.57, 44' Lt.=
WL 2, Sta. 3+99.43*
1- 16" CI CL MJ 11 1/4° Bend
Defl.= 11°15'00"
1- 20"x 16" CI CL MJ Reducer(N)
Connect to existing 20" Water Main (N)


151st St. W.
Asphalt
Concrete
Chain Link
Wood Fence
Barbed Wire
Fence
Buried Culvert
Asphalt Drive
Gravel Drive
Concrete Drive
Sign
Power Pole
Guy Wire
Fire Hydrant
Gate Valve
Cable Gate Valve
Water Meter
Mailbox
Utility Pedestal
Utility Vault
Utility Box
Telephone Pedestal
Telephone Manhole
Telephone Riser
Telephone Marker
Cable TV Pedestal
Cable TV Riser
Cable TV Marker
Cable TV Box
Gas Marker
Gas Valve
Gas Meter
Gas Riser
Electric Box
Electric Riser
Electric Marker
Electric Meter
Light Pole
Guy Anchor
Storm Sewer Manhole
Storm Sewer Inlet
Storm Sewer Flared End
Sanitary Sewer Manhole
Sanitary Sewer Cleanout
Water Valve
Water Well
Water Shut Off
Water Riser
Water Marker
Water Meter
Irrigation Control Valve
Irrigation Sprinkler
Irrigation Riser
Irrigation Quick Coupler
Irrigation Meter
Irrigation Backflow Preventer
Irrigation Timer
Irrigation Well
Irrigation Pump
Irrigation Pump Station
Irrigation Pump Station Control Box
Irrigation Pump Station Meter
Irrigation Pump Station Backflow Preventer
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Irrigation Pump Station

SCALE:
0 40 80
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.

N: 1,677,522.9733, E: 1,602,433.3098
℄ 135th. St., Sta. 27+30.40, 73.98' Lt.=
WL 3, Sta. 0+19.60
1–16" CI CL MJ 11 1/4° Bend(Vert.)

N: 1,677,536.7427, E: 1,602,433.1595
℄ 135th. St., Sta. 27+16.63, 73.98' Lt.=
WL 3, Sta. 0+33.37
1–16" CI CL MJ 11 1/4° Bend(Vert.)

N: 1,677,629.9245, E: 1,602,432.1424
℄ 135th. St., Sta. 26+23.44, 73.98' Lt.=
WL 3, Sta. 1+26.56
1– 16" CI CL MJ 11 1/4° Bend
Defl.= 11°15'00"

N: 1,677,664.9215, E: 1,602,424.7831
℄ 135th. St., Sta. 25+88.37, 67.00' Lt.=
WL 3, Sta. 1+62.32
1– 16" CI CL MJ 11 1/4° Bend
Defl.= 11°15'00"

N: 1,677,812.3801, E: 1,602,423.1736
℄ 135th. St., Sta. 24+40.90, 67.00' Lt.=
WL 3, Sta. 3+09.79
1– 16" CI CL MJ 11 1/4° Bend
Defl.= 10°45'00"

N: 1,677,933.3038, E: 1,602,398.8453
℄ 135th. St., Sta. 23+19.72, 44.00' Lt.=
WL 3, Sta. 4+33.13
1– 16" CI CL MJ 11 1/4° Bend
Defl.= 10°44'58"

N: 1,678,039.7329, E: 1,602,397.6825
℄ 135th St., Sta. 22+13.28, 43.99' Lt.=
WL 3, Sta. 5+39.57
Remove 16" Cap (N) and connect
new pipe to existing main.

N: 1,677,503.3767, E: 1,602,433.6752
℄ US–54, Sta. 525+95.67, 171.13' Lt.=
WL 1, Sta. 64+25.30=
℄ 135th. St., Sta. 27+50.00, 74.13' Lt.=
WL 3, Sta. 0+00.00
16" x 16" Tee
See Sheet B5 for Piping detail.

LINE NO. 1
See Sheet B12

CAUTION !!!
Proposed 30" RCP
Storm Water Sewer
(by others)

135th St. W.
Section Line
4" KGS Gas (Stl.)
AT&T
Concrete
Conc.
Sidewalk
Curb & Gutter
Seagwick County
SW 1/4, Sec. 25, T2
24" RCP
5' Utility Esmt
BM#16R
525
6
7
8
25
4
3
2

9.77'– 16" DI CL RJ Pipe

N: 1,677,513.1437, E: 1,602,433.4171
℄ 135th. St., Sta. 27+40.23, 73.98' Lt.=
WL 3, Sta. 0+09.77
1–16" x 16" CI CL MJ Tee
1–16" CI MJ Tee
See Sheet B5 for Piping detail.

14.04'– 16" DI CL RJ Pipe
9.83'– 16" DI CL RJ Pipe
93.19'– 16" DI CL RJ Pipe
35.76'– 16" DI CL RJ Pipe
147.47'– 16" DI CL RJ Pipe
103.35'– 16" DI CL RJ Pipe
96.44'– 16" Pipe
WL 3, Sta. 4+33.13 to WL 3, Sta. 4+43.13
Install 10.00' RJ DI Pipe

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 16" WATERLINE AT STATION 0+00.00 TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

MICHAEL D. KELSEY LICENSED 13944 7/14/14 KANSAS PROFESSIONAL ENGINEER

PLAN
DATE | BY | CHECKED | CHECKED

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 3

443.13 L.F.
RJ DI Pipe

16" x 16" Tee
BEGIN LINE NO. 3
16" x 16" Tee
16" 11 1/4° Bend (Vert.)
16" 11 1/4° Bend (Vert.)
Proposed 30" RCP SWS
E= 1351.83
11 1/4° Bend
11 1/4° Bend
11 1/4° Bend
END LINE NO. 3

Proposed Top of Curb
Proposed Ground over ℄ of Waterline
Existing Ground
Top of Proposed 16" Water Main

	+00.00	+09.77	+19.60	+33.37	+89.54	+26.56	+62.32	+82.32		+89.79	+09.79	+33.13		+19.57	
	1354.74	1354.74	1354.74	1352.00	1349.68	1349.49	1349.04	1348.04	1348.49	1350.57	1356.07	1356.70	1358.52	1359.19	1359.41	1359.55

1375 1370 1365 1360 1355 1350 1345 1340 1335 1330

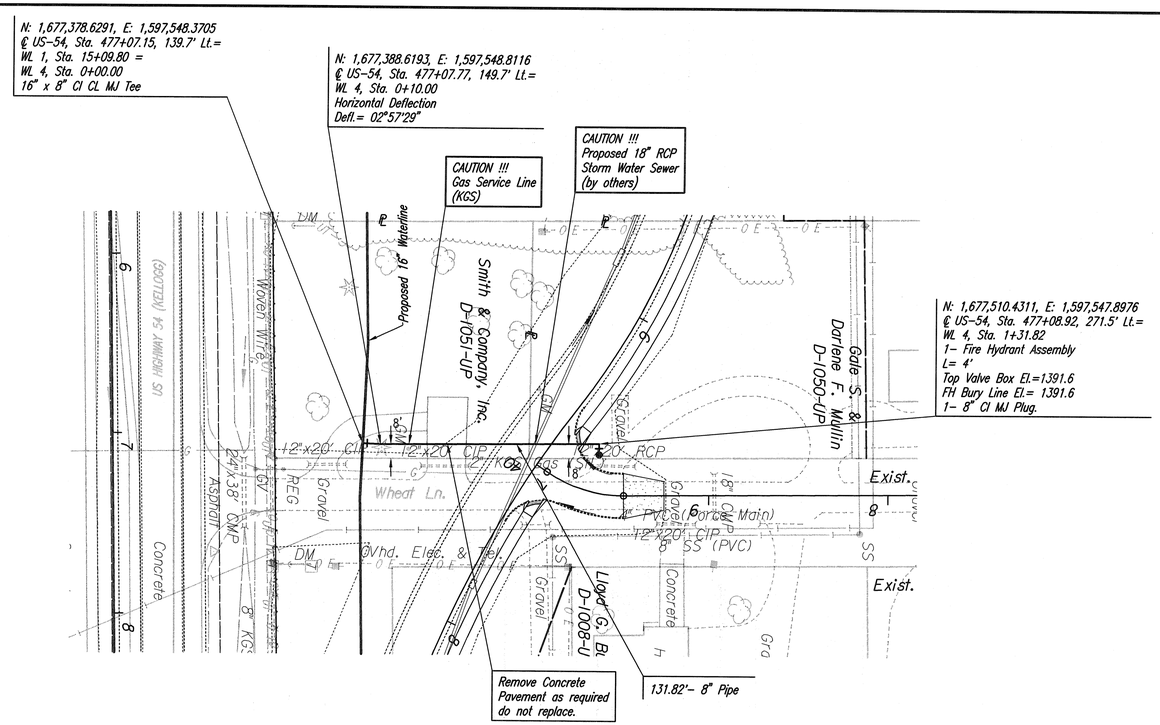
0+00 1+00 2+00 3+00 4+00 5+00

PROFILE
DATE | BY | CHECKED | CHECKED

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 3
(16")
GARY JANZEN, P.E.
CITY ENGINEER
CITY OF WICHITA PROJECT NO. 446-90578
PROJECT NO. 54-87 K-6657-03
SEDGWICK CO.

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com
Job No. 08313-001
Date March 27, 2009
Designed By MDK, SAD
Drawn By JAN

Saved 07-11-2014 4:00:20 PM by TDS
Plotted 07-11-2014 4:02:57 PM by TDS
Q:\2008\08313\001\PHASE 4 Waterlines- 51st to 135th\LINE 3 - 16 INCH\08313-001-B14-WLPP0B



SCALE:

PLAN: LAT. & LONG. 0 40 80

PROFILE: HORIZ. SAME AS ABOVE

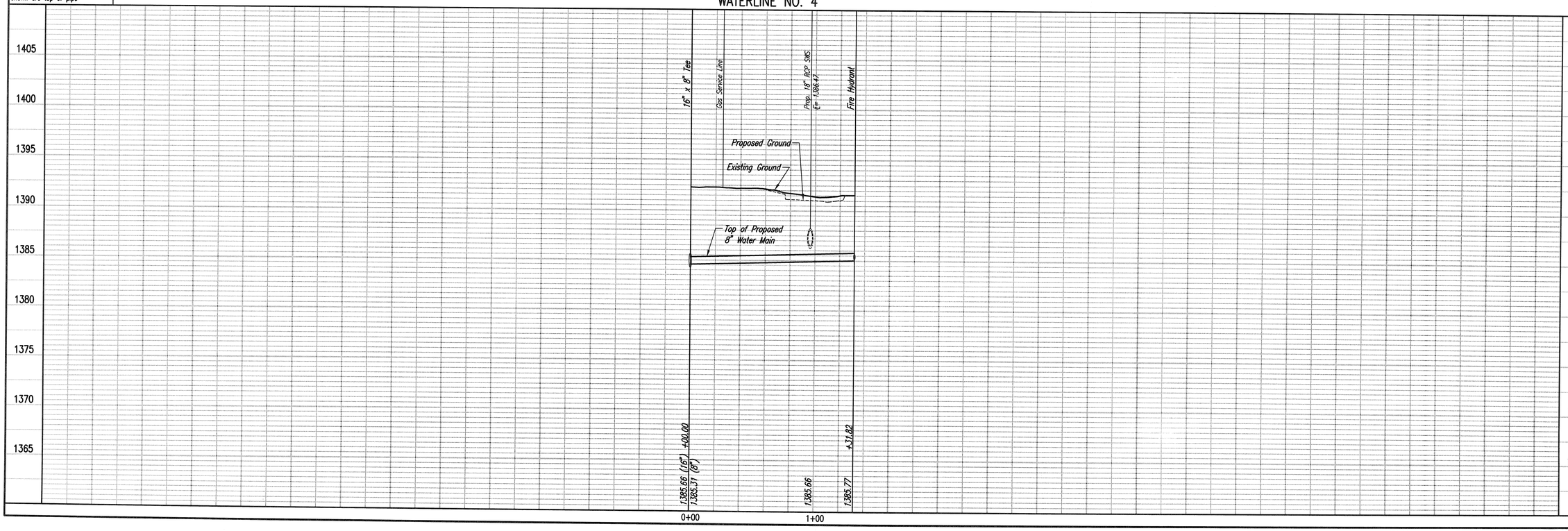
VERT. 0 5

PEC

PLAN	BY	DATE
CHECKED		
CHECKED		

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 4



PROFILE	BY	DATE
CHECKED		
CHECKED		

CITY OF WICHITA
WEST KELLOGG WATERLINE IMPROVEMENTS
WATERLINE NO. 4
(8")
GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90578
SEDGWICK CO.
PROJECT NO. 54-87 K-6657-03

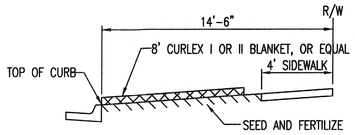
PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed By	MDK, SAD	Job No.	08313-001
Drawn By	JAN	Date	March 27, 2009

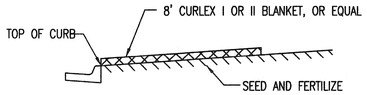
Sheet B15 of B17

MICHAEL D. KELSEY
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER

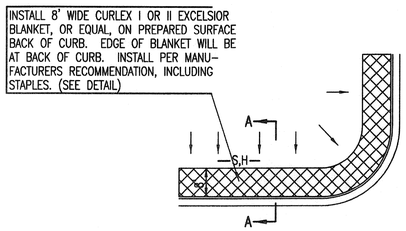
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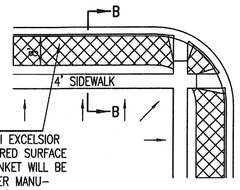
SECTION B-B



SECTION A-A



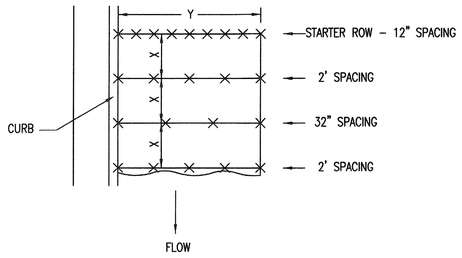
SOUTH STREET

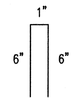


GENERAL NOTES

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





11 GA. WIRE

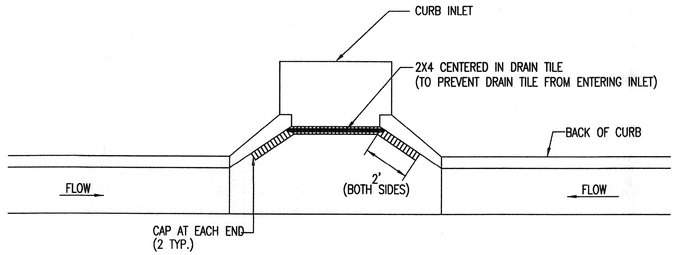
STAPLE

STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP

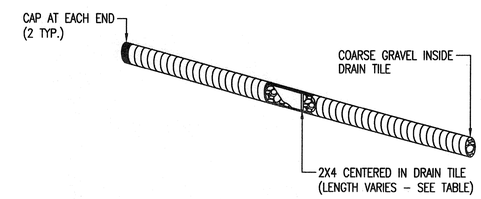
(X & Y = RECOMMENDED BY MANUFACTURE)

DETAILS FOR APPROVED EROSION CONTROL MAT



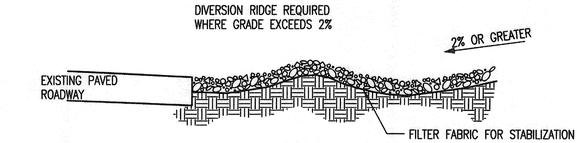
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

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

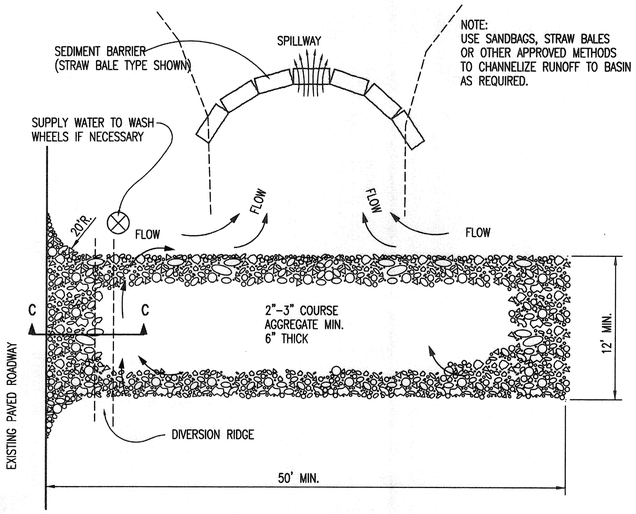


CURB INLET PROTECTION

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.

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16294 KANSAS PROFESSIONAL ENGINEER

05/30/13

CITY OF WICHITA

PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
GARY JANZEN, P.E.

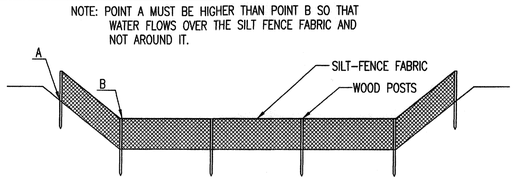
PROJECT NUMBER	OCA NUMBER	DATE
448-90578	635813	

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

SHEET
B16 of B17

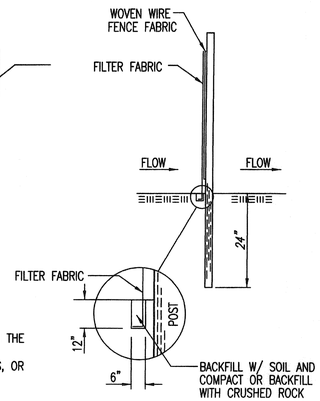
SW-501

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O:\2008\0831.3\001\PHASE 1 Waterlines- 151st. to 135th\08313-001-B16-SW-501-SEBMP DETAILS



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 (%)	DITCH 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.

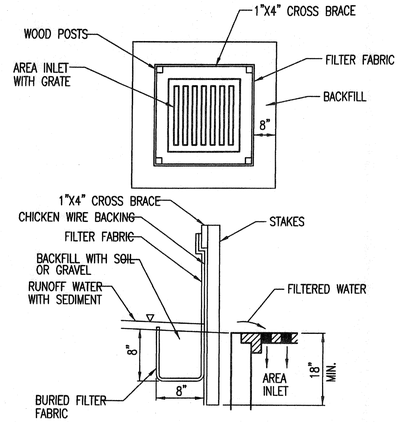
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

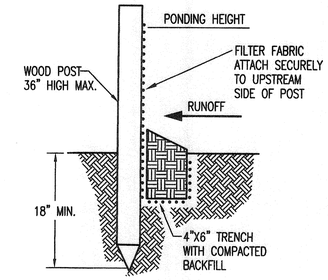
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16294 KANSAS PROFESSIONAL ENGINEER
05/31/13

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
448-90578	635813	

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

SHEET
B17 of B17

SW-502

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84860

LIFT STATION REMOVAL
AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS

IN CONJUNCTION WITH

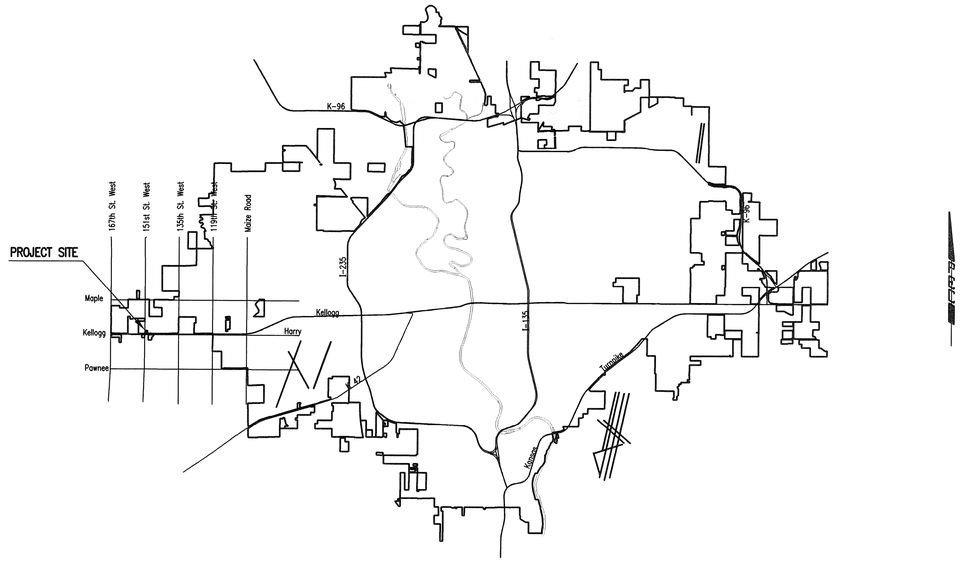
U.S. 54 IMPROVEMENTS - KDOT PROJ. NO. 54-87 K-6657-03 (CITY OF WICHITA PROJ. NO. 472-84842)

CITY OF WICHITA PROJECT NO. 468-84860

OCA NO. 652024

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E. - CITY ENGINEER



LOCATION MAP

PART C - INDEX OF SHEETS

SHEET NO. C1	SANITARY SEWER TITLE SHEET
SHEET NO. C2	SANITARY SEWER KEY MAP AND GENERAL NOTES
SHEET NO. C3	LIFT STATION/FORCE MAIN ABANDONMENT PLAN
SHEET NO. C4-C5	SANITARY SEWER PLAN/PROFILE
SHEET NO. C6	FORCE MAIN PLAN/PROFILE
SHEET NO. C7	FORCE MAIN CONNECTION
SHEET NO. C8	PRECAST SANITARY SEWER MANHOLE
SHEET NO. C9	MANHOLE FRAME AND COVER
SHEET NO. C10-C11	SOIL EROSION BMP DETAILS

JULY 2014

PLANS PREPARED BY

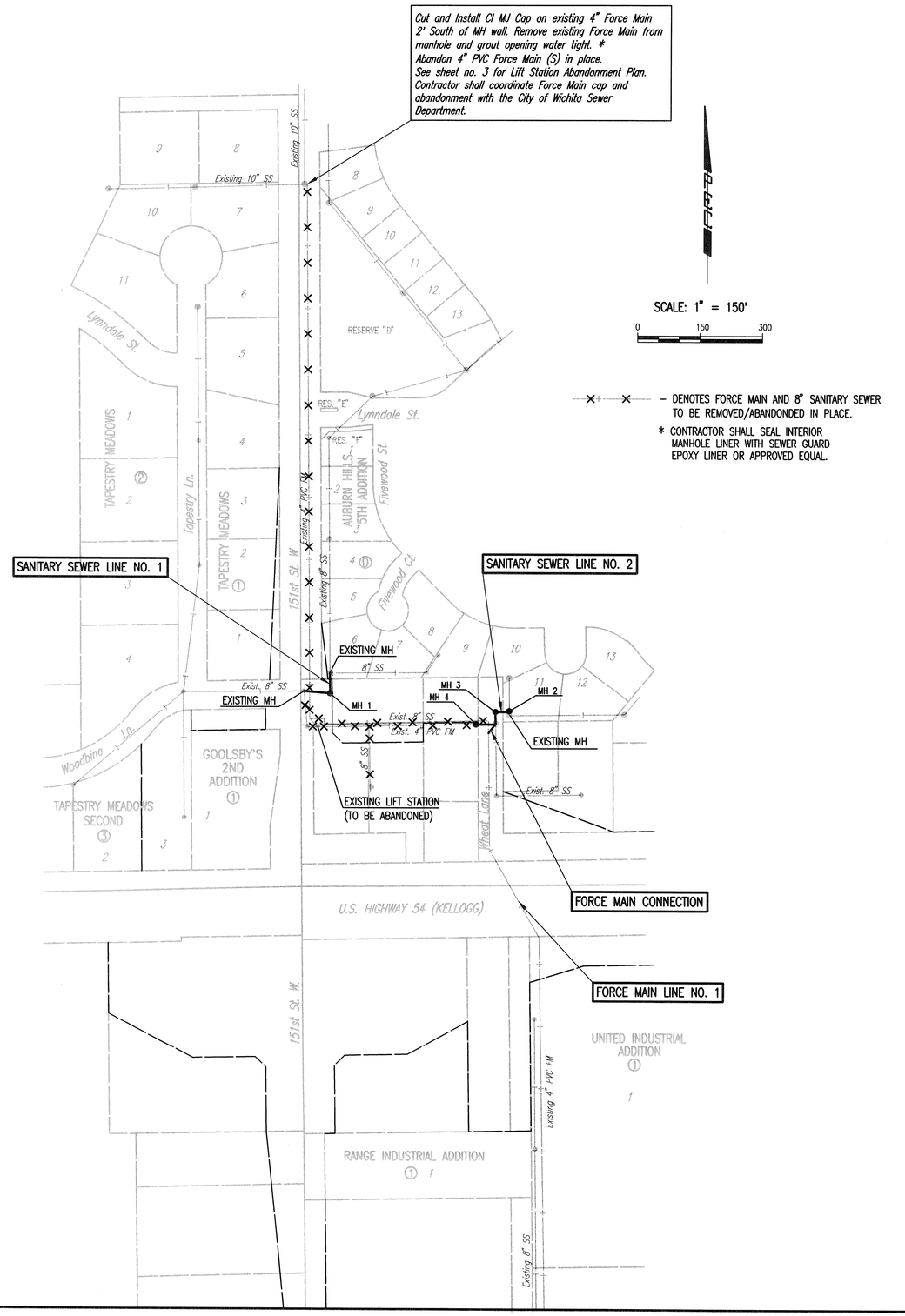
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

MICHAEL D. KELSEY LICENSED 13944 7/10/14 KANSAS PROFESSIONAL ENGINEER

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HORIZONTAL AND VERTICAL CONTROL SEE ROAD PLANS, SHEETS NO. 20– NO. 25.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.

2. ALL ELEVATIONS SHOWN ARE NGVD 29 DATUM.

3. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.

4. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY–TWO (72) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE–CALL	687–2470 OR 811
CITY OF GODDARD MR. RANDY BROOKS	794–8992

   THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

EMERGENCY DISPATCH	911
COX COMMUNICATIONS	800–778–9140
KANSAS GAS SERVICE	888–482–4950
WESTAR ENERGY	800–383–1183
BLACK HILLS ENERGY	800–694–8989
CITY OF WICHITA WATER DEPARTMENT	262–6000
CITY OF WICHITA SEWER MAINTENANCE	262–6000

5. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR THE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT–OF–WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

6. 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. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".

7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.

8. MANHOLES SHALL BE TYPE "P" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF WICHITA SPECIFICATIONS AND STANDARDS AND THE STANDARD DETAIL DRAWINGS.

9. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL 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 MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.

10. ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR6.5 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".

11. THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 11 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.

12. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER. COSTS FOR TREE/SHRUB REMOVAL AND TRIMMING REGARDLESS OF SIZE SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE CLEARING".

13. THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.

14. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING SEWAGE FLOW SHALL BE APPROVED BY THE ENGINEER. COST OF MAINTAINING FLOW OF SEWAGE THROUGH CONSTRUCTION WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE OTHER RELATED ITEMS OF WORK.

16. THE CONTRACTOR SHALL NOT BURY MANHOLES THAT HAVE RIM ELEVATIONS WHICH ARE LOWER THAN EXISTING GROUND AT THE MANHOLE. THE GROUND AROUND SUCH MANHOLES AND ALONG THE SEWER ALIGNMENT SHALL BE BACKFILLED TO THE APPROXIMATE ELEVATION OF THE PROPOSED GROUND ELEVATION SHOWN ON THE PLAN/PROFILE SHEETS. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THESE MANHOLES AND SEWER LINES BY CONSTRUCTION OF TEMPORARY DITCHES OR SLOPING THE GROUND AS REQUIRED. ALL COSTS FOR THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLED BID PRICE FOR MANHOLES OR PIPE.

17. THE CONTRACTOR SHALL PROVIDE MOUNDED EARTH AT MANHOLES AND CLEANOUTS THAT HAVE TOP ELEVATIONS GREATER THAN 1 FOOT ABOVE EXISTING GRADE, AS SHOWN ON THE PLANS. COSTS FOR MOUNDING SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID PER EACH FOR MANHOLES.

18. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL UTILIZE BARRICADES, SIGNS, GUARDS, AND FLAGMEN IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

19. WHERE INDICATED IN THE PLANS, THE SANITARY SEWER EXCAVATION 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. ALL COSTS FOR SAND FILLING AND FLUSHING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "JETTED SAND BACKFILL".

20. THE CONTRACTOR SHALL INSTALL AND/OR MAINTAIN EROSION CONTROL METHODS AS SPECIFIED ON SHEETS 10–11. THE FOLLOWING QUANTITIES ARE ESTIMATED, AND SHOULD BE CONSIDERED THE MINIMUM EFFORT REQUIRED. THE GENERAL LOCATION OF THE REQUIRED EROSION CONTROL IS ILLUSTRATED ON THE PLAN SHEETS. THE SANITARY SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL SHOWN THROUGH THE COMPLETION OF THIS PROJECT. INSTALLATION OF THESE BMP'S DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION.

    SILT FENCE BARRIER 170 L.F.
    DITCH CHECK 1 EA.
    CONSTRUCTION ENTRANCE 1 EA.

21. CONTRACTOR SHALL THOROUGHLY PIG AND FLUSH EXISTING FORCE MAINS TO BE ABANDONED IN PLACE PRIOR TO CUTTING AND INSTALLING CI MJ CAPS.

MICHAEL D. KELSEY LICENSED P.E. 13944 7/10/14 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS

SS KEY MAP AND GENERAL NOTES

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468–84860

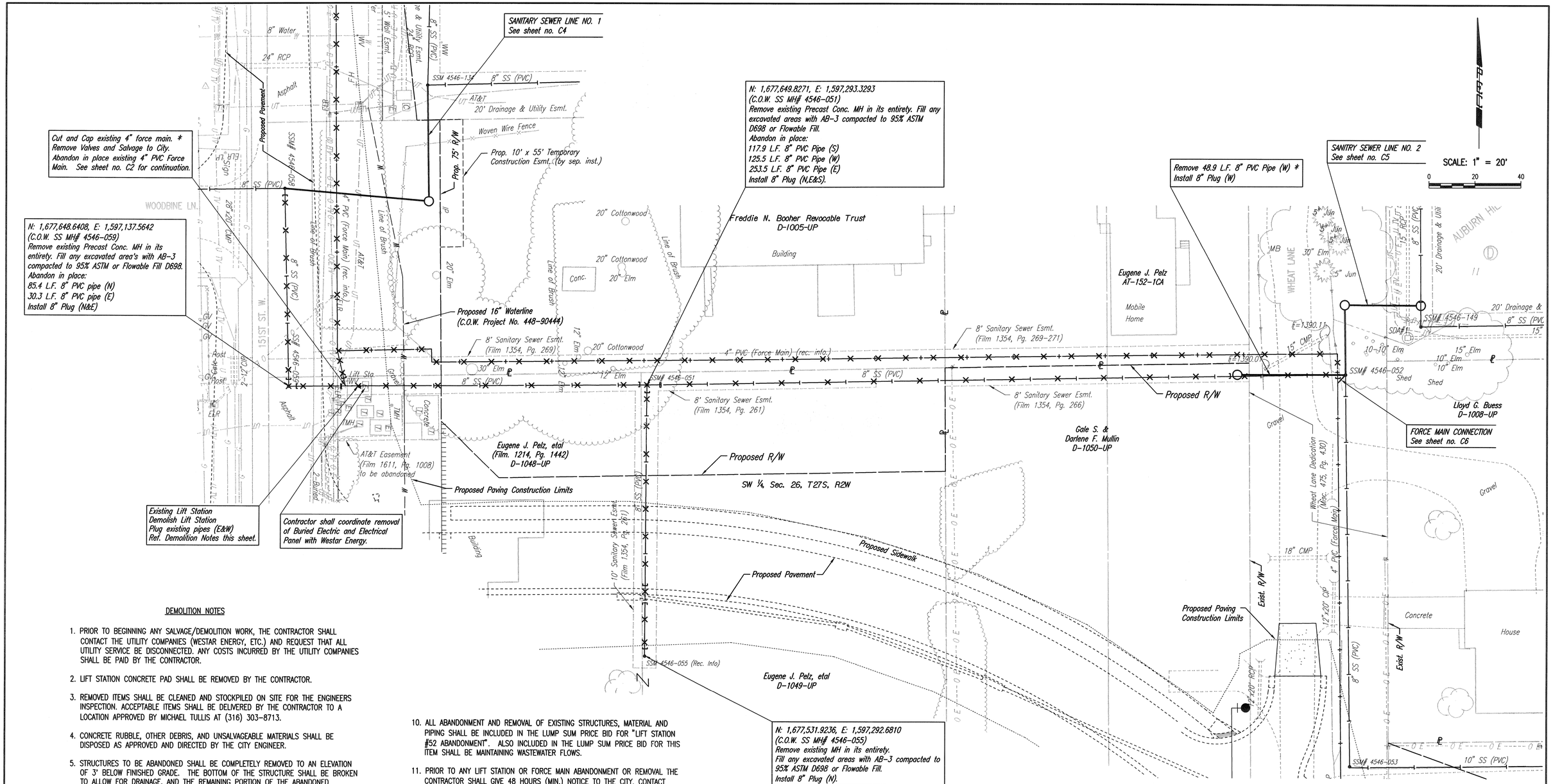
PROJECT NO. 54–87 K–6657–03 SEDGWICK CO.

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

Designed by	MDK, SAD	Job No.	08313–002–0042
Drawn by	CSL, JAN	Date	MARCH 2009

Sht. C2 of C11

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DEMOLITION NOTES

1. PRIOR TO BEGINNING ANY SALVAGE/DEMOLITION WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES (WESTAR ENERGY, ETC.) AND REQUEST THAT ALL UTILITY SERVICE BE DISCONNECTED. ANY COSTS INCURRED BY THE UTILITY COMPANIES SHALL BE PAID BY THE CONTRACTOR.
2. LIFT STATION CONCRETE PAD SHALL BE REMOVED BY THE CONTRACTOR.
3. REMOVED ITEMS SHALL BE CLEANED AND STOCKPILED ON SITE FOR THE ENGINEERS INSPECTION. ACCEPTABLE ITEMS SHALL BE DELIVERED BY THE CONTRACTOR TO A LOCATION APPROVED BY MICHAEL TULLIS AT (316) 303-8713.
4. CONCRETE RUBBLE, OTHER DEBRIS, AND UNSALVAGEABLE MATERIALS SHALL BE DISPOSED AS APPROVED AND DIRECTED BY THE CITY ENGINEER.
5. STRUCTURES TO BE ABANDONED SHALL BE COMPLETELY REMOVED TO AN ELEVATION OF 3' BELOW FINISHED GRADE. THE BOTTOM OF THE STRUCTURE SHALL BE BROKEN TO ALLOW FOR DRAINAGE, AND THE REMAINING PORTION OF THE ABANDONED STRUCTURES SHALL BE BACKFILLED WITH SAND OR FLOWABLE FILL TO AN ELEVATION OF 2' BELOW GRADE. THE TOP 2' OF THE EXCAVATION SHALL BE BACKFILLED WITH COMPACTED MATERIAL SIMILAR TO THE ADJACENT SURFACE TO 95% OF ASTM D698.
6. AFTER BACKFILLING, THE ENTIRE SITE DISTURBED BY DEMOLITION SHALL BE CLEARED OF ALL DEBRIS, CONCRETE RUBBLE, ETC., GRADED TO DRAIN, AND RESEEDED.
7. ALL WORK DESCRIBED ABOVE AND ANY INCIDENTAL WORK NECESSARY SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "LIFT STATION #52 ABANDONMENT".
8. PRIOR TO ABANDONING EXISTING FORCE MAINS, CONTRACTOR SHALL PIG AND FLUSH WITH CLEAN WATER. ONCE THE FORCE MAIN IS PIGGED AND FLUSHED, BOTH ENDS SHALL BE CUT AND CAPPED WITH CI MJ CAPS.
9. THE CONTRACTOR SHALL COORDINATE WITH MICHAEL TULLIS AT (316) 303-8713 CONCERNING ITEMS TO BE SALVAGED. ANY ITEMS TO BE SALVAGED SHALL BE CLEANED AND DELIVERED TO THE CITY. ITEMS TO BE DISPOSED OF AS DIRECTED BY THE CITY SHALL BE DISPOSED OF IN AN ACCEPTABLE LOCATION.
10. ALL ABANDONMENT AND REMOVAL OF EXISTING STRUCTURES, MATERIAL AND PIPING SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "LIFT STATION #52 ABANDONMENT". ALSO INCLUDED IN THE LUMP SUM PRICE BID FOR THIS ITEM SHALL BE MAINTAINING WASTEWATER FLOWS.
11. PRIOR TO ANY LIFT STATION OR FORCE MAIN ABANDONMENT OR REMOVAL THE CONTRACTOR SHALL GIVE 48 HOURS (MIN.) NOTICE TO THE CITY. CONTACT SHAWN MELLIES AT (316) 268-4632.
12. CONTRACTOR SHALL NOT DIVERT ANY SEWAGE FLOW THROUGH NEW PIPE OR MANHOLES UNTIL TESTING HAS BEEN COMPLETED AND ACCEPTED.
13. CONTRACTOR SHALL VISIT THE LIFT STATION SITE AND BECOME FAMILIAR WITH THE EXISTING LIFT STATION AND EQUIPMENT AND SUBSEQUENT DEMOLITION PRIOR TO BIDDING.
14. CONTRACTOR SHALL COORDINATE TRANSFORMER, UTILITY POLE REMOVAL WITH THE PROPER UTILITY.

WESTAR ENERGY:	AT&T:
ZACHARY LAWS	JASON EDWARDS
(316) 261-6264	(316) 268-2008

15. CONTRACTOR SHALL REIMBURSE THE UTILITY COMPANIES ANY COSTS ASSOCIATED WITH ABANDONMENT OR REMOVAL OF UTILITY SERVICES.

** Existing 4" Force Main to be Abandoned in place shall be sandfilled, remove where conflict with proposed improvements.*

C = CAPS OR MASONRY PLUGS TO BE INSTALLED.
SS = SANITARY SEWER MANHOLE TO BE REMOVED.
= SANITARY SEWER TO BE REMOVED/ABANDONED IN PLACE.
= FORCE MAIN TO BE REMOVED/ABANDONED IN PLACE.

MICHAEL D. KELSEY LICENSED 13944 10/31/09 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS

LIFT STATION/FORCE MAIN ABANDONMENT PLAN

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-84860

PROJECT NO. 54-87 K-6657-03 SEDGWICK CO.

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

Designed by	MDK, SAD	Job No.	08313-002-0042
Drawn by	CSL, JAN	Date	MARCH 2009

Sht. C3 of C11

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O:\2009\08313.002\08313-002-03-LS Abandonment

N: 1,677,778.4448, E: 1,597,197.6074
Sta. 0+00.0
Core existing concrete MH wall and Install New 8" Pipe. Seal new 8" Pipe to MH with an approved waterstop gasket and non-shrink grout. Reshape MH floor to provide smooth flow. This work shall be considered subsidiary to the price bid for pipe in place.

N: 1,677,728.6173, E: 1,597,198.2901
Sta. 0+49.8
Const. MH 1
Standard MH

CAUTION !!!
Buried Telephone (AT&T)

Install 50 L.F.
Silt Fence Barrier

Pavement Construction Limits

Remove and reset fence as required.

Install 49.8 L.F.
8" Pipe

Proposed 16" Waterline
(C.O.W. Project No. 448-90444)

IDENTICAL POINT

N: 1,677,728.6173, E: 1,597,198.2901
Sta. 0+49.83
MH 1

CAUTION !!!
Prop. 16" Waterline
(by others)

CAUTION !!!
Buried Telephone
(AT&T)

CAUTION !!!
4" PVC Force Main
(to be abandoned)

Remove and reset fence as required.

Install 40 L.F.
Silt Fence Barrier

Remove and replace
12 L.F. Asphalt
Pavement in kind.

Install 62.8 L.F.
8" Pipe

N: 1,677,733.9555, E: 1,597,135.7095
Sta. 1+12.6
Core existing concrete MH wall and Install New 8" Pipe. Seal new 8" Pipe to MH with an approved waterstop gasket and non-shrink grout. Reshape MH floor to provide smooth flow. This work shall be considered subsidiary to the price bid for pipe in place.
See sheet no. C3 for Lift Station Abandonment Plan.

SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

C = CAP OR MASONRY PLUG TO BE INSTALLED.
SS = SANITARY SEWER MANHOLE TO BE REMOVED.
= SANITARY SEWER TO BE REMOVED/ABANDONED IN PLACE.
= SILT FENCE BARRIER

MICHAEL D. KERR LICENSED 13944 KANSAS PROFESSIONAL ENGINEER 7/10/14

PLAN | BY | DATE | CHECKED | CHECKED

SANITARY SEWER LINE NO. 1

Existing MH
Top Elev = 1,389.82
Buried Telephone

MH 1
Top Elev = 1,383.14

Prop. 16" Waterline
Top of Pipe= 1,386.38

Buried Telephone

Exist. 4" PVC Force Main
(To be abandoned)

Existing MH
Top Elev = 1,393.36

Install 13 L.F.
Jetted Sand Backfill

Existing Ground

Proposed Ground

E In= 1,380.07
from Exist. 8" SS. Pipe (E)

E In= 1,382.56
from Exist. 8" SS. Pipe (W)

E Out= 1,380.03
E In= 1,380.16
49.8 L.F. L.F. 8" Pipe
@ 1.91%

E Out= 1,381.11
E In= 1,381.31

E Out= 1,382.51
E In= 1,382.51
62.8 L.F. 8" Pipe
@ 1.91%

0+00 1+00

1405 1400 1395 1390 1385 1380 1375 1370 1365

PROFILE | CHECKED | CHECKED

CITY OF WICHITA
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS
SANITARY SEWER LINE NO. 1
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA, PROJECT NO. 468-84860
PROJECT NO. 54-87 K-6657-03 SEDGWICK CO.

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

Job No. 08313-002-0042
Date MARCH 2009
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet C4 of C11

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N: 1,677,675.4669, E: 1,597,629.5319
Sta. 0+00.0
Existing MH (C.O.W. #4546-149)

N: 1,677,684.4668, E: 1,597,629.4932
Sta. 0+09.0 *
Construct MH 2 over existing 8" pipe.
Remove top half of 8" pipe thru MH.
Standard MH
Shape invert to provide smooth flow.
Install 1- MH Joint Wrap

N: 1,677,684.6399, E: 1,597,596.4325
Sta. 0+42.1
Const. MH 3
Standard MH

Install 30 L.F.
Silt Fence Barrier

N: 1,677,654.6431, E: 1,597,596.8641
Sta. 0+72.1
Core existing concrete MH wall and Install New 8" Pipe. Seal new 8" Pipe to MH with an approved waterstop gasket and non-shrink grout. Coat inside existing manhole with a City approved epoxy coating system such as Raven 405 Ultra High Build Epoxy coating, Sauereisen Sewerguard 210S, Zebron, Warren coating or and approved equal. Reshape MH floor to provide smooth flow. This work shall be considered subsidiary to the price bid for pipe in place.

FORCE MAIN CONNECTION
See sheet no. C7

CAUTION !!!
Existing 4" PVC
Force Main

N: 1,677,654.5669, E: 1,597,549.8162
Sta. 1+19.2
Const. MH 4
Standard MH

CAUTION !!!
15" RCP
Storm Water Sewer

CAUTION !!!
Buried Electric
(Westar)

CAUTION !!!
Buried Cable TV
(Cox)

CAUTION !!!
Buried Telephone
(AT&T)

Install 33.1 L.F.
8" Pipe

Install 30.0 L.F.
8" Pipe

Remove and replace
15 L.F. Gravel Drive
in kind.

Install 47.1 L.F.
8" Pipe

Owners: Brand Investments LLC

AUBURN HILLS 5TH ADDITION

WHEAT LANE

Eugene J. Peltz
AT-152-1CA

Mobile Home

20' Drainage & Utility Esmt.

10' Drainage & Utility Esmt.

10" Elm

10" Elm

15" Elm

Shed

Shed

SSMH 4546-149

SSMH 4546-050

SSMH 4546-10

SDMH2

Exist. R/W

Exist. R/W

Exist. R/W

8" SS (PVC)

Wheel Lane Dedication
(Misc. 475, Pg. 430)

Gravel

18.18°

5" CMP

30" Elm

5' Jog

5' Jog

5' Jog

5'

5'

30.0' PVC

8" SS (PVC)

8" Sanitary Sewer Esmt.
(Film 1354, Pg. 266)

8" Sanitary Sewer Esmt.
(Film 1354, Pg. 269-271)

Proposed R/W

SCALE:

0 20 40

PLAN: LAT. & LONG.

PROFILE: HORIZ. SAME AS ABOVE

VERT. 5 0

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 8" PVC PIPE AT SANITARY SEWER STATION 0+09.0 TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

℄ = CAP OR MASONRY PLUG TO BE INSTALLED.
= TREE TO BE REMOVED
SS = SANITARY SEWER MANHOLE TO BE REMOVED.
= SANITARY SEWER TO BE REMOVED/ABANDONED IN PLACE.
= SILT FENCE BARRIER

MICHAEL D. KELSEY
LICENSED
13944
7/10/14
KANSAS
PROFESSIONAL ENGINEER

SANITARY SEWER LINE NO. 2

Existing MH1 Top Elev = 1388.55
MH 2 Top Elev = 1391.1
15" RCP SWS ℄= 1385.58
Buried Elec.tric
Buried Cable TV
Buried Telephone
MH 3 Top Elev = 1391.3
Existing MH Top Elev = 1391.48
MH 4 Top Elev = 1391.48

Existing Ground

Top = 1386.5 from Prop. 4" Force Main (SW)

℄ = 1383.44 from Exist. 8" SS. Pipe (W)

℄ In = 1380.87 from Exist. 8" SS. Pipe (NNW)

℄ In = 1383.50 from Exist. 8" SS. Pipe (S)

	9.0 L.F. Existing 8" Pipe @ 0.46%	33.1 L.F. 8" Pipe @ 3.00%	30.0 L.F. 8" Pipe @ 3.00%	47.1 L.F. 8" Pipe @ 0.40%
℄ Out=	1380.74	1382.34	1381.44	
℄ In=	1380.83	1382.54	1383.50	
℄ Out=	1380.87			
℄ In=	1381.35			
℄ =				1383.69

1405 1400 1395 1390 1385 1380 1375 1370 1365

0+00 1+00

CITY OF WICHITA
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS

SANITARY SEWER LINE NO. 2

GARY JANZEN, P.E. CITY ENGINEER
CITY PROJECT NO. 468-84660
PROJECT NO. 54-97 K-6657-03

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

Job No. 08313-002-0042
Date MARCH 2009
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet C5 of C11

PLAN: BY | DATE | CHECKED | CHECKED

PROFILE: CHECKED | CHECKED

Saved 07-10-2014 2:41:17 PM by CSL
Plot Scale 1:20 07-10-2014 2:41:33 PM by CSL
Q:\2008\08313\002\08313-002-005-SSLine2

N: 1,677,483.8719, E: 1,597,595.3198
FM 1, Sta. 0+00.00
Begin Force Main Line No. 1

N: 1,677,473.8725, E: 1,597,595.4311
FM 1, Sta. 0+10.00
Cut in 1- 4" CI CL 22 1/2° Bend (Vert.)
Defl.= 24°56'18"

N: 1,677,463.8731, E: 1,597,595.5424
FM 1, Sta. 0+10.00
1- 4" CI CL 22 1/2° Bend (Vert.)
Defl.= 24°56'18"

CAUTION !!!
Proposed 18" RCP
Storm Water Sewer
(by others)

N: 1,677,443.8743, E: 1,597,595.7650
FM 1, Sta. 0+40.00
1- 4" CI CL 22 1/2° Bend (Vert.)
Defl.= 24°56'18"

N: 1,677,433.8750, E: 1,597,595.8763
FM 1, Sta. 0+50.00
Cut in 1- 4" CI CL 22 1/2° Bend (Vert.)
Defl.= 24°56'18"

N: 1,677,085.6090, E: 1,597,679.9910
FM 1, Sta. 4+15.00
Cut in 1- 4" CI CL 11 1/4° Bend (Vert.)
Defl.= 16°10'20"

N: 1,677,075.6095, E: 1,597,680.0835
FM 1, Sta. 4+25.00
1- 4" CI CL 11 1/4° Bend (Vert.)
Defl.= 16°10'20"

CAUTION !!!
Proposed 15" RCP
Storm Water Sewer
(by others)

N: 1,677,055.6103, E: 1,597,680.2685
FM 1, Sta. 4+45.00
1- 4" CI CL 11 1/4° Bend (Vert.)
Defl.= 16°10'20"

N: 1,677,045.6107, E: 1,597,680.3610
FM 1, Sta. 4+55.00
Cut in 1- 4" CI CL 11 1/4° Bend (Vert.)
Defl.= 16°10'20"

SCALE:
0 20 40
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.

20.00'- 4" Pipe
11.03'- 4" Pipe
11.03'- 4" Pipe
10.41'- 4" Pipe
20.00'- 4" Pipe
10.41'- 4" Pipe

WHEAT LANE
4" PVC (Force Main)
US HIGHWAY 54 (KELLOGG)
8" KGS Gas (SW)
24"x38" CMP
2-24"x45" CMP
AT&T
Concrete
Asphalt
Gravel
Cond
REG
GV
Chain Link
Ditch Elev. & Tie
MH #45-105
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MH #45-998
MH #45-999
MH #45-1000

MICHAEL D. KELLOGG
LICENSED
13944
7/10/14
KANSAS
PROFESSIONAL ENGINEER

PLAN | CHECKED | CHECKED | BY | DATE

PROFILE | CHECKED | CHECKED | BY | DATE

FORCE MAIN LINE NO. 1

BEGIN LINE NO. 1
22 1/2° Bend (Vert.)
22 1/2° Bend (Vert.)
Prop. 18" RCP SWS
El= 1,382.02
22 1/2° Bend (Vert.)
22 1/4° Bend (Vert.)
11 1/4° Bend (Vert.)
11 1/4° Bend (Vert.)
Prop. 15" RCP SWS
El= 1,388.88
11 1/4° Bend (Vert.)
11 1/4° Bend (Vert.)

Proposed Ground
Existing Ground
Top of Existing 4" Force Main
Top of Proposed 4" Force Main

1405 1400 1395 1390 1385 1380 1375 1370 1365

+00.00 +10.00 +20.00 +40.00 +50.00 +15.00 +25.00 +45.00 +55.00
1387.44 1387.44 1382.75 1382.75 1387.44 1390.44 1387.50 1387.50 1390.44

0+00 1+00 2+00 3+00 4+00

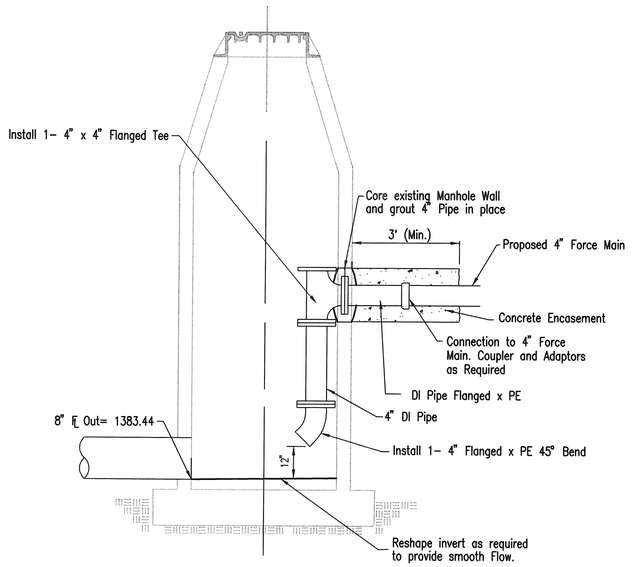
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS
FORCE MAIN LINE NO. 1
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-84860
CITY OF WICHITA PROJECT NO. 54-87 K-6657-03
SEDGWICK CO.

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

Job No. 08313-002-0042
Date MARCH 2009
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet C6 of C11

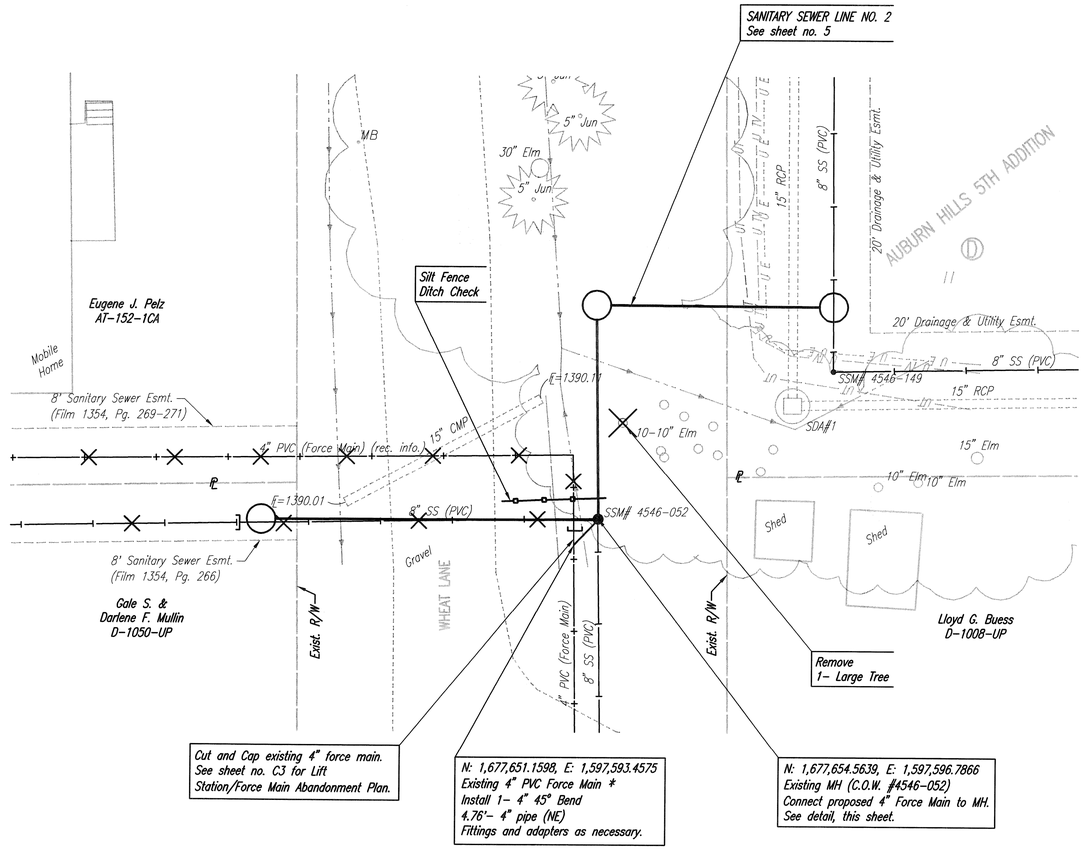
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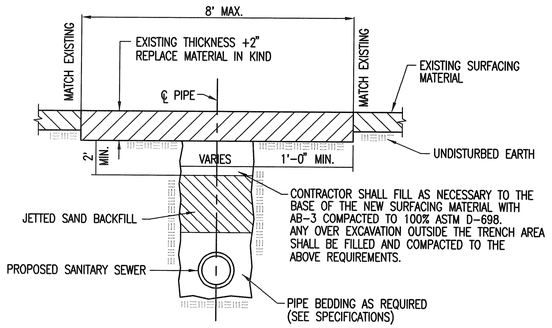
FORCE MAIN CONNECTION DETAIL

EXISTING MH #4546–052
SS LINE NO. 2, STA. 0+72.1

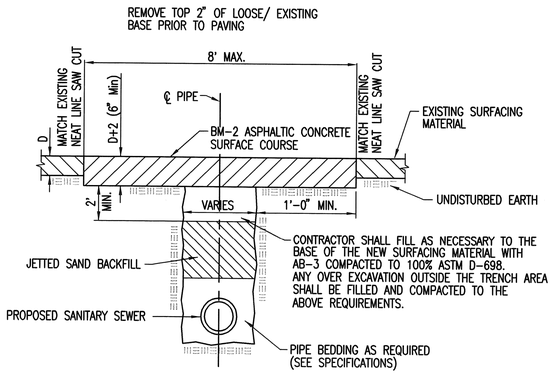
ALL INTERIOR FITTINGS SHALL BE FLANGED OR RESTRAINED JOINT. COST SUBSIDIARY TO 4" FORCE MAIN. ALL INTERIOR DI PIPE SHALL HAVE AN APPROVED EXTERIOR EPOXY COATING PER CITY OF WICHITA REQUIREMENTS.



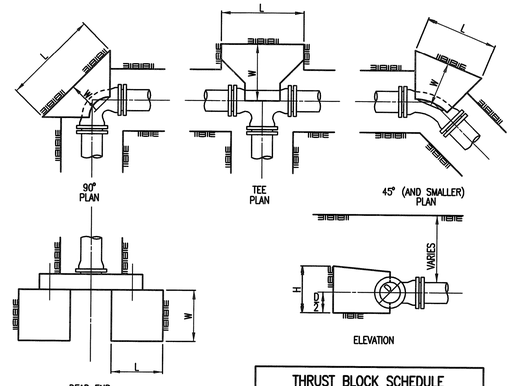
FORCE MAIN CONNECTION PLAN



GRAVEL DRIVE REMOVAL AND REPLACEMENT DETAIL

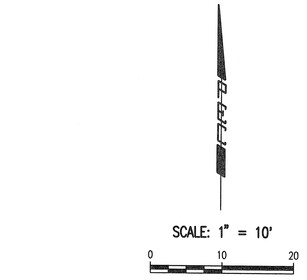


PAVEMENT REMOVAL AND REPLACEMENT DETAIL



THRUST BLOCK SCHEDULE

LINE SIZE	FITTINGS & ANGLE	DIM. H	DIM. W	DIM. L
4"	45°	1.2'	1.2'	1.2'
4"	11 1/4°	0.5'	0.5'	0.5'
4"	22 1/2°	0.8'	0.8'	0.8'



* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 4" PVC PIPE TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

℄ = CAP OR MASONRY PLUG TO BE INSTALLED.
= TREE TO BE REMOVED
SS = SANITARY SEWER MANHOLE TO BE REMOVED.
= SANITARY SEWER TO BE REMOVED/ABANDONED IN PLACE.
= SILTI FENCE BARRIER

MICHAEL D. KELSEY LICENSE NO. 13944 7/01/14 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA
LIFT STATION REMOVAL AT KELLOGG AND 151ST STREET WEST
SANITARY SEWER IMPROVEMENTS

FORCE MAIN CONNECTION

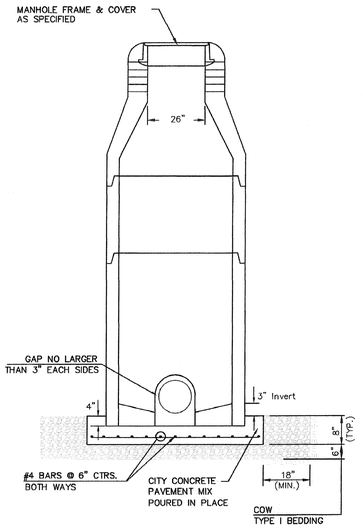
GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468–84860
PROJECT NO. 54–87 K–6657–03 SEDGWICK CO.

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

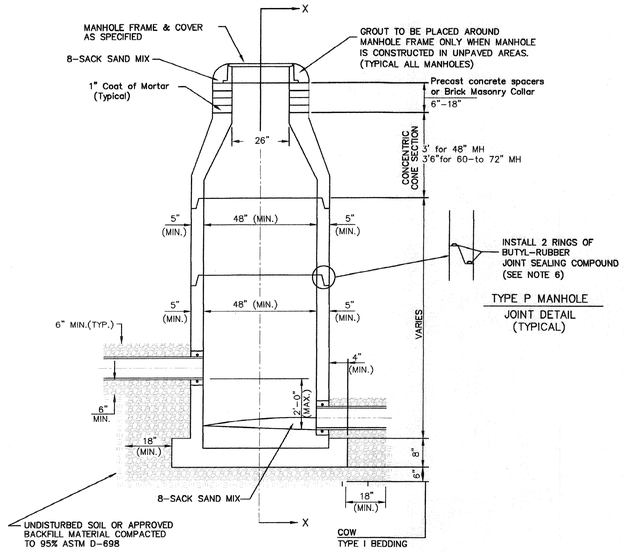
Designed by	MDK, SAD	Job No.	08313–002–0042
Drawn by	CSL, JAN	Date	MARCH 2009

Sht. C7 of C11

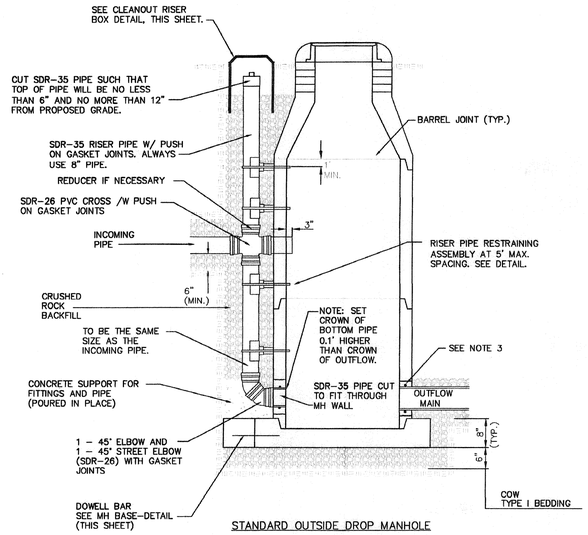
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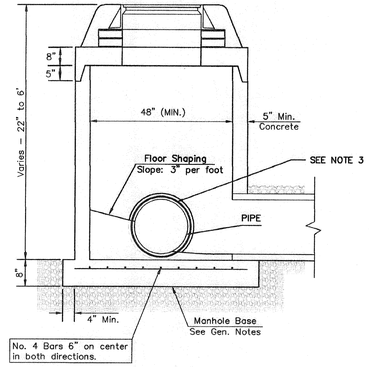
DOG HOUSE MANHOLE
(OVER EXISTING PIPE)
Not to Scale



STANDARD MANHOLE
Not to Scale



STANDARD OUTSIDE DROP MANHOLE
Not to Scale

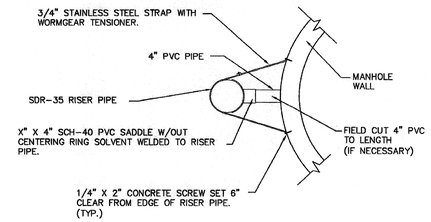


SHALLOW MANHOLE
Not to Scale

= COW TYPE I BEDDING = UNDISTURBED SOIL

PRECAST MANHOLE GENERAL NOTES

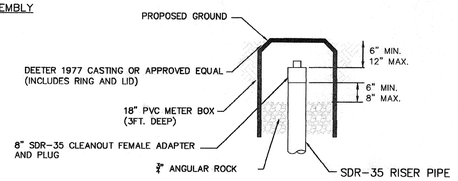
1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP SHALL BE INSTALLED TO JOIN THE SEWER PIPE TO THE MANHOLE WALL. THE SEWER PIPE SHALL BE SUPPORTED WITH CRUSHED ROCK A MINIMUM OF 3 FEET FROM THE FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED PER SECTION 804.4 OF STANDARD SPECIFICATIONS.
5. EXTERIOR MANHOLE WALLS SHALL BE COATED PER SECTION 804.4 OF STANDARD SPECIFICATIONS.
6. JOINT SEALING COMPOUND SHALL BE PER 804.4 OF STANDARD SPECIFICATIONS.
7. ALL MANHOLE SECTION JOINTS THAT WILL BE IN GROUNDWATER OR GREATER THAN 12' DEEP SHALL BE WRAPPED WITH AN EXTERNAL JOINT SEAL PER SECTION 804.4 OF STANDARD SPECIFICATIONS. AS INDICATED BY THE PLANS.
8. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE FOR DOG HOUSE MANHOLES.
9. 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.
10. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
11. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACE AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
12. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO.4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
13. WALL THICKNESS SHALL BE 1" GREATER THAN MANHOLE DIAMETER IN FEET.
14. OPENINGS SHALL BE CORE DRILLED INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS DRILLED INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
15. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
16. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
17. THE VERTICAL DROP IN STANDARD MANHOLES SHALL NOT EXCEED 2' REGARDLESS OF PIPE SIZE. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
18. STANDARD MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
19. PRECAST CONCRETE SPACERS OR BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.
20. THE FULL DIAMETER OF THE MANHOLE SHALL EXTEND THE ENTIRE DEPTH OF THE MANHOLE TO THE CONE SECTION. NO REDUCTION IN MANHOLE DIAMETER WILL BE ALLOWED.
21. REFER TO PLANS FOR SIZE OF OUTSIDE DROP RISER, SADDLES AND CROSS.



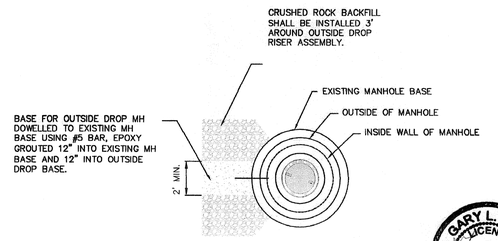
RISER PIPE RESTRAINING ASSEMBLY
Not to Scale

SANITARY SEWER MANHOLE DIAMETERS

DIAMETER	DEPTH	PIPE SIZE
4'	0'-15'	8"-18"
5'	15'-30'	21"-30"
6'	>30'	36"-60"



CLEANOUT RISER BOX DETAIL
Not to Scale



MH BASE DETAIL
Not to Scale

GARY L. JANZEN LICENSED 16294 KANSAS PROFESSIONAL ENGINEER 04/16/13

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

PRECAST SANITARY SEWER MANHOLE

CITY ENGINEER
GARY JANZEN, P.E.

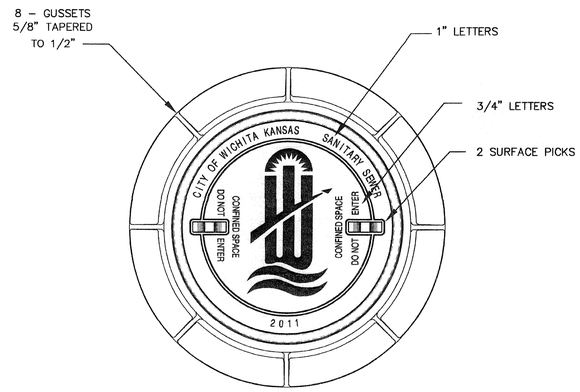
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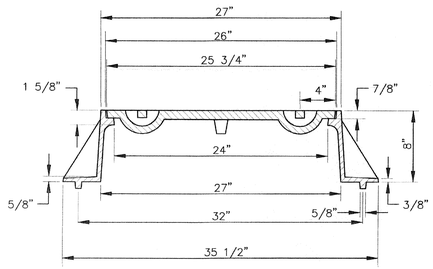
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
C8 of C11

SS-101

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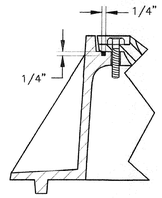


STANDARD MANHOLE FRAME & COVER

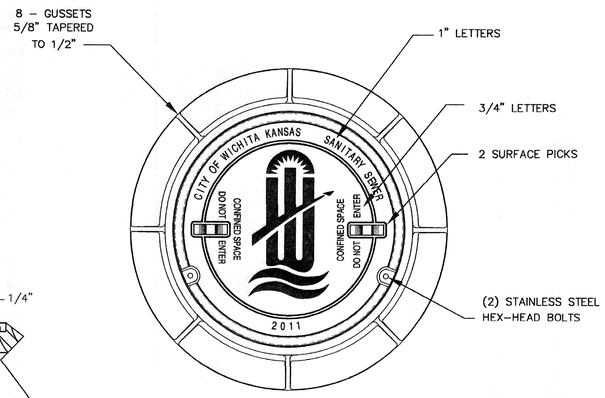
DEETER #1261 OR EJIW #1936–Z1

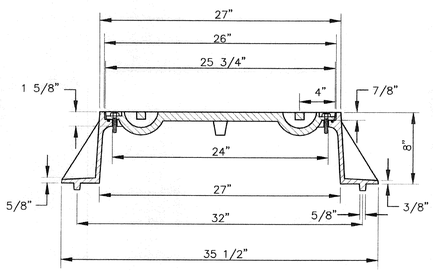
NOTE:

1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.



DETAIL OF T–GASKET



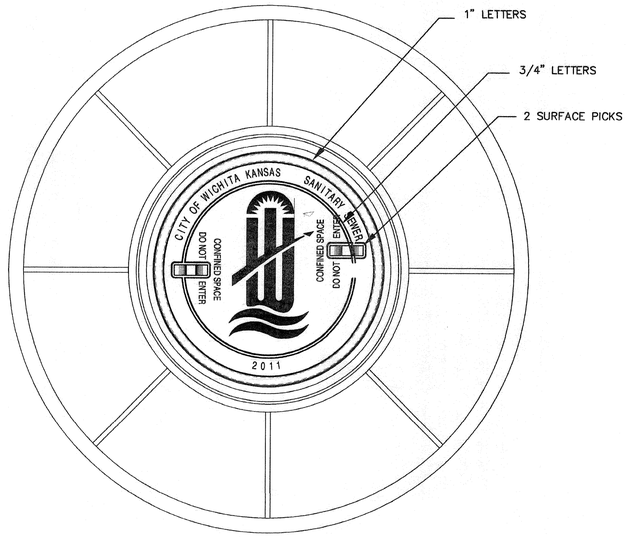


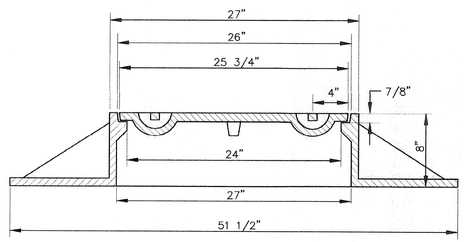
BOLT DOWN MANHOLE FRAME & COVER

DEETER #1261 OR EJIW #1936–Z1

NOTE:

1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. FURNISHED WITH A T–GASKET IN THE FRAME.





WIDE FLANGED FRAME & COVER

DEETER #1261A

NOTE:

1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A–48. DIMENSIONS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDARY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON–ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

3. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUM–FERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

4. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SANITARY SEWER".
THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN WITH CITY OF WICHITA DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.



CITY OF WICHITA

PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

MANHOLE FRAME AND COVER (SANITARY SEWER)

CITY ENGINEER

GARY JANZEN, P.E

PROJECT NUMBER	OCA NUMBER	DATE
468-84860	624106	12/2011

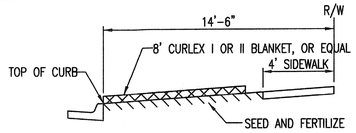
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

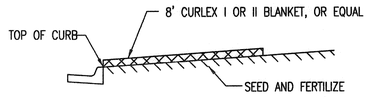
C9 of C11

SS-102

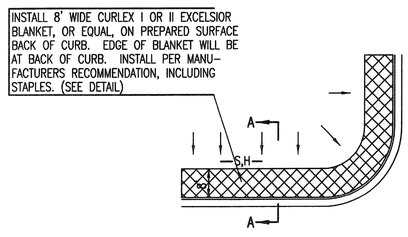
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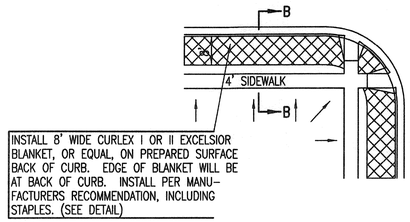
SECTION B-B



SECTION A-A



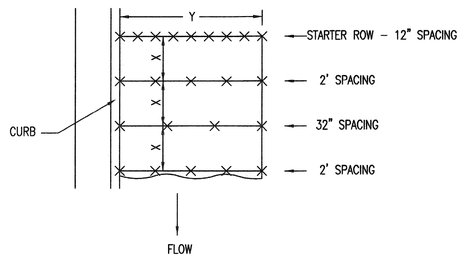
SOUTH STREET



GENERAL NOTES

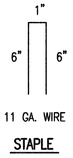
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE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

BACK OF CURB PROTECTION DETAIL



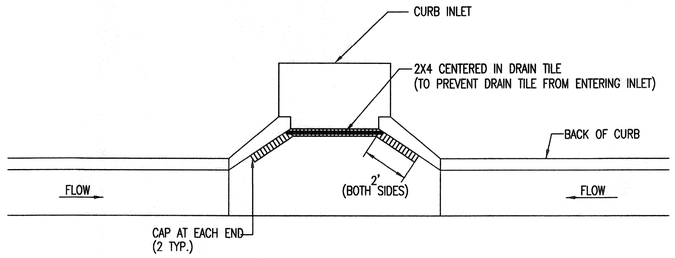
STAPLE PATTERN

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



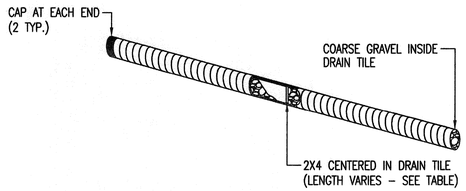
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT

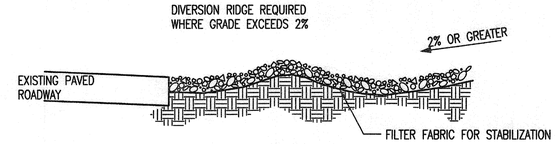


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

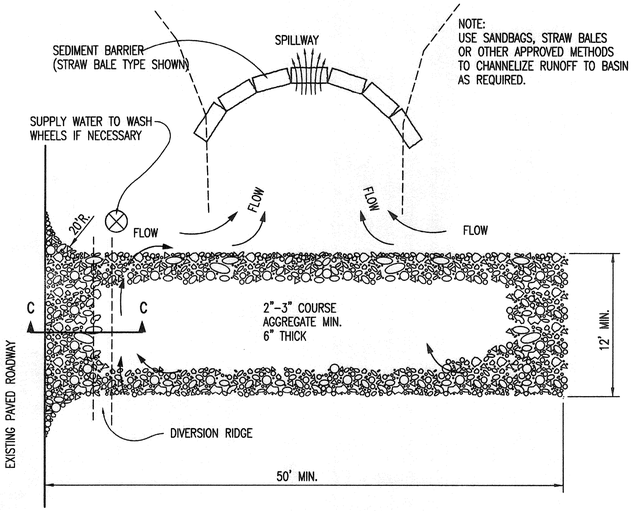
2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



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.

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16204 KANSAS PROFESSIONAL ENGINEER
05/30/13

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
468-84860	624106	

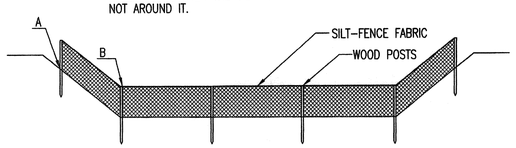
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
C10 of C11

SW-501

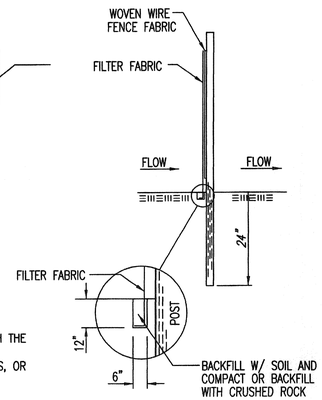
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Q:\2008\08313\002\08313-002-C10-Back of Curb Prot, Curb Inlet Prot and Const. Entr

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 CHECK DITCH GRADE (%)	SPACING 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.

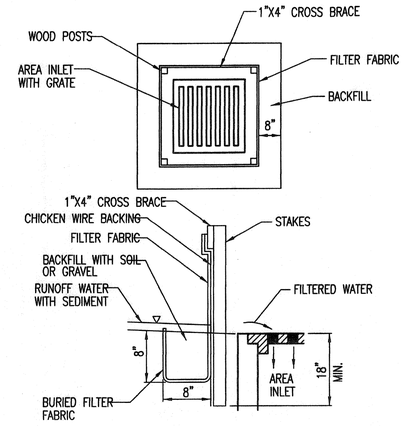
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

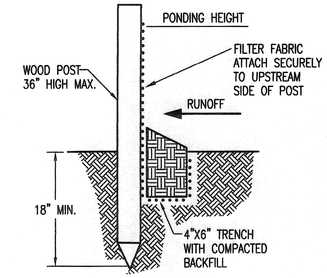
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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?

REVISION DATE: MAY 2013

GARY L. JANZEN LICENSED 16294 KANSAS PROFESSIONAL ENGINEER
05/30/13

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
468-84860	624106	

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

SHEET
C11 of C11

SW-502

Saved: 05-01-2014 4:38:52 PM by RPT
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O:\2008\08313\002\08313-002-C11-Silt Fc-DI Check and Barr Dtls