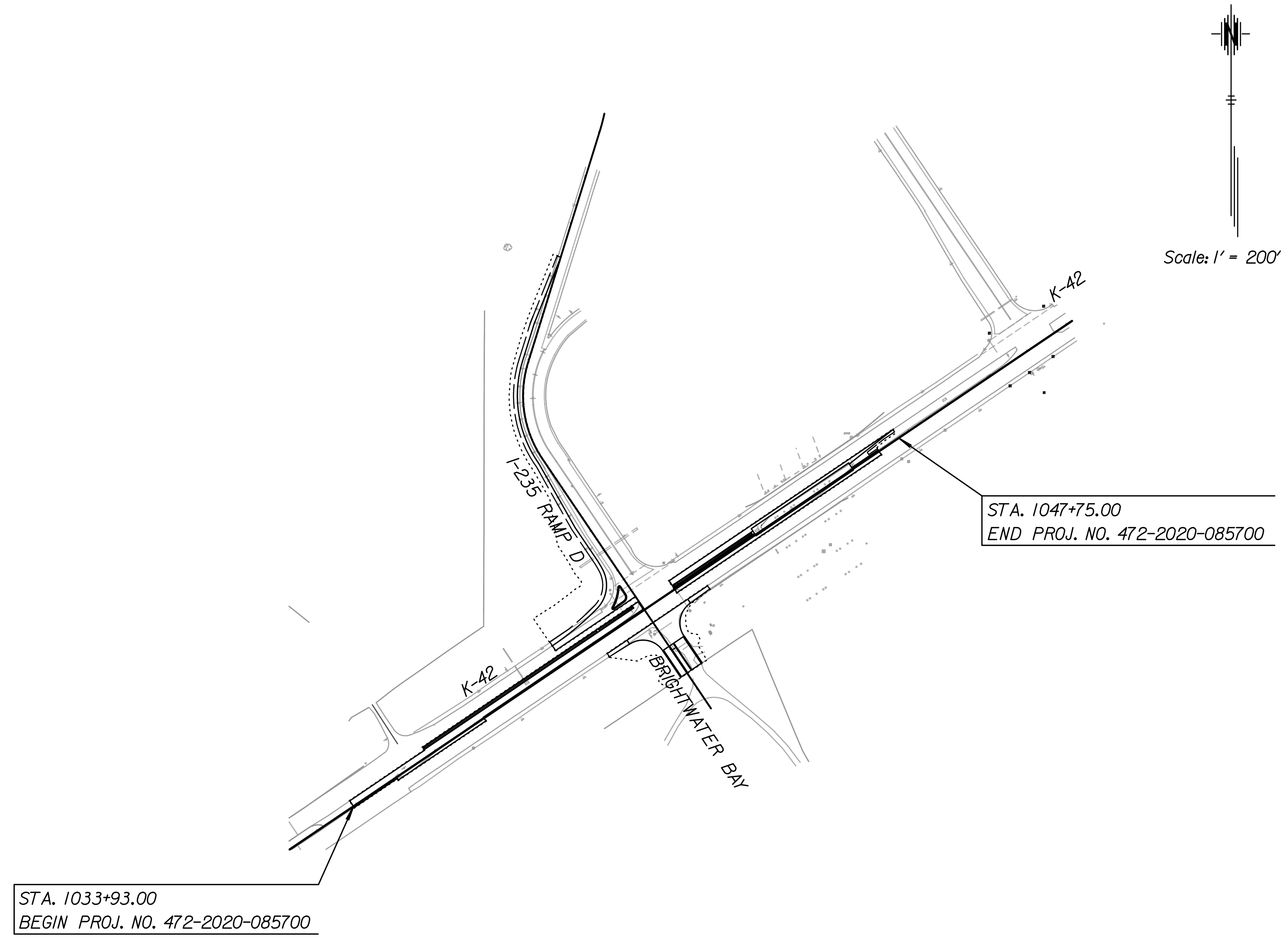
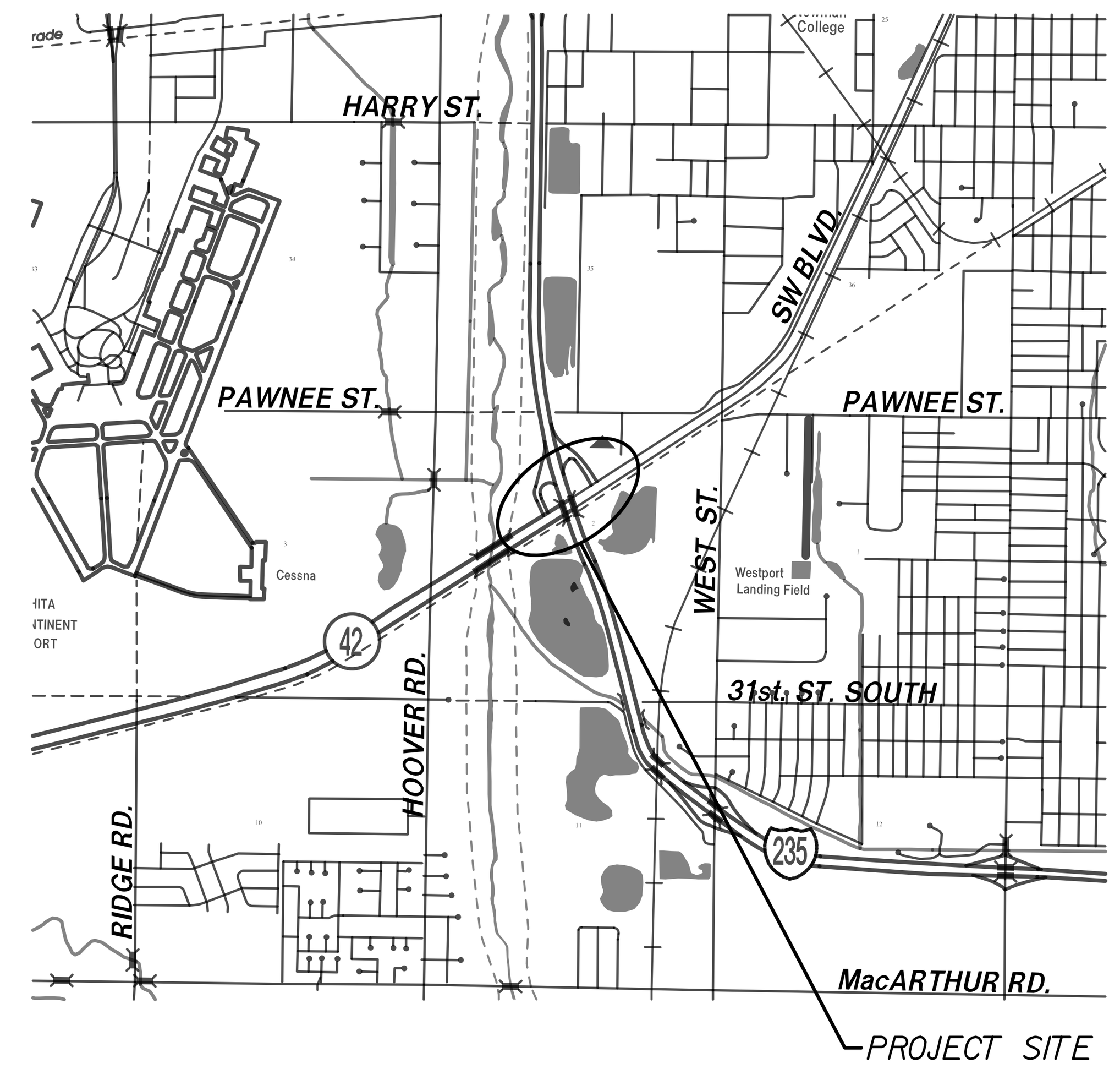
CITY OF WICHITA, KANSAS
PLAN AND PROFILE OF PROPOSED
K–42 IMPROVEMENTS
AT I–235 INTERCHANGE
C.O.W. PROJECT NO. 472–2020–085700
O.C.A. NO. 707106
MUNIS NO. E1022 ORG CODE 40106121

GRADING
CONCRETE PAVEMENT
STORM SEWER
PAVEMENT MARKING
SIGNING
LIGHTING
TRAFFIC SIGNALIZATION
SEEDING

INDEX OF SHEETS





LOCATION MAP

DESIGN DESIGNATION

AADT (2019)	= 18,500
AADT (2045)	= 26,900
V	= 50 MPH
C of A	= PARTIAL
CLEAR ZONE	= 24 FT

TRAFFIC SHALL BE CARRIED THROUGH CONSTRUCTION ON EXISTING ALIGNMENTS.

EXISTING ALIGNMENTS ARE TO BE SIGNED AND MAINTAINED BY THE CONTRACTOR.

CONVENTIONAL SIGNS

COUNTY LINE
CITY LIMITS
STATE OR NATIONAL LINE
TOWNSHIP, SECTION or GRANT LINE
PROPERTY LINE
HIGHWAY FENCE
EXISTING FENCE
GUARD FENCE
CONSTRUCTION LIMITS
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS
CENTER LINE OF PROJECT (50, 1)
TERRACE
CULVERTS
DROP INLET & STORM SEWER
ACCESS CONTROL
POWER POLE
TELEPHONE POLE
MARSH
HEDGE
TREES
PROFILE ELEVATION (1172.18, +50)
STREAM or CREEK

GROSS LENGTH OF PROJECT	1,382.00 FT.	
EXCEPTIONS	0.00 FT.	
NET LENGTH OF PROJECT	1,382.00 FT.	0.26 MILES
NET LENGTH OF BRIDGES	0.00 FT.	0.00 MILES
NET LENGTH OF ROAD	1,382.00 FT.	0.26 MILES

COLIN K. COSTLEY LICENSED PROFESSIONAL ENGINEER KANSAS

PREPARED BY:
TRANSYSTEMS
100 N. BROADWAY, SUITE 500
WICHITA, KANSAS 67202
MAIN: 316-303-3000

GENERAL NOTES

The Contractor shall erect and maintain traffic control devices in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) subject to the Engineer's approval.

Utility service lines, poles, valve boxes, gas meters, etc. 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 location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

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.

The Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to excavation or working adjacent to utilities.

A full depth saw cut of the existing pavement thickness shall be provided at locations where proposed construction abuts an existing surface course of pavement where the existing pavement is to be removed. Sawed joint to facilitate removal within six (6) feet of existing joints will not be permitted and for such instances the limits of removal shall extend to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered SUBSIDIARY to the removal of the surface or pavement.

All project waste including any trees, milled asphalt, rubble from miscellaneous structures, abandoned pipes, excess excavation, etc. shall be disposed of on sites to be provided by the Contractor. These sites shall 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 floodplain 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 archaeological investigations unless buried in a previously approved borrow location.

The Contractor shall be responsible for preserving existing property irons and quarter section corners. The Contractor will be required to re-establish any existing property irons or quarter section corners 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. This work will not be paid for directly, but shall be considered SUBSIDIARY to other pay items of work in the contract.

Existing underground utilities are shown at estimated depths. The Contractor shall verify the exact depths of underground utilities that are critical to the construction before beginning work. The cost for this shall be SUBSIDIARY to the project.

The Contractor shall give all property owners and/or tenants of developed property abutting the project limits a minimum of 10 days advance notice prior to the start of construction.

The Contractor shall comply with all applicable safety regulations.

Areas over-excavated in pavement removal shall be filled to subgrade elevation and compacted to 95% Std. Density.

Prior to bidding the project, each bidder shall visit the site and satisfy himself of surface and subsurface conditions. Each bidder shall also fully inform himself as to the extent of Site Clearing and Site Restoration to be performed.

The lump sum bid item "Removal of Existing Structures" shall INCLUDE all costs for the removal of retaining walls, signs, foundations, light pole bases, abandoned water meters, manholes, pole bases, fences, traffic service boxes, planter boxes, stumps, traffic signal appurtenances, sprinkler heads, irrigation control devices, drain pipes (≤10"), aprons, flumes, valve boxes, pavement markings, guard posts, wheelchair ramps, concrete barriers, monitoring wells, abandoned pipes, parking blocks, and any other item(s) slated for removal for which a pay item is not provided for in the proposal.

The Contractor shall provide an on-site office trailer or building as specified in the Special Provisions, during all phases of project construction or unless otherwise approved by the Engineer. The on-site office shall be equipped with a telephone and electrical service. This item shall be bid as "Field Office and Laboratory (Type A)".

The Contractor shall be responsible for implementing and maintaining erosion control methods during construction to prevent unnecessary silt/sediment discharge through downstream properties and/or storm sewer systems. The Contractor shall install and maintain erosion controls as directed by the Engineer. These controls may include but not be limited to: silt fences, gravel sediment traps, temporary mulching or other controls necessary to inhibit sediment runoff during construction. Sidewalk grades shall match existing grades at the property line unless specified otherwise in the plans.

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.

The Contractor is to provide all safety barriers, fencing, etc. around construction activities as required by local regulations as a minimum safety standard. All construction activity must be contained within the limits of the project where no limits are shown a minimum of two linear feet from paving.

The existing facilities shall remain open to the public during construction activity. The Contractor shall make very effort to minimize disruption impacts during construction and protect the project site, and the general public, during work.

The Contractor shall restore to the original condition, disturbed areas by construction operations, and shall be responsible for all damages and associated costs at no additional expense to the owner. This includes, but is not limited to, damage to existing pavements, landscaping and irrigation systems.

Where pavement is identified to be removed, the Contractor shall remove pavement to the extents indicated on the plans or to the nearest existing joint. Where pavement is to removed without joints, saw cut existing pavements and remove carefully so as to not damage pavements to remain.

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.

Any dewatering, trench boxes, etc. required during construction necessary to complete the project shall be considered SUBSIDIARY to other items on the contract.

Any work shown in the plans which is not specifically assigned a line item shall be considered SUBSIDIARY to other items of the contract.

Median Concrete to be colorized dark grey with a stamped herringbone pattern. The color and stamp pattern of concrete shall be approved by the engineer prior to construction. See note below for approved colors.

Approved colors for colorized red concrete are:
Davis Colors
*8084 Dark Gray

or an approved equal

UTILITY OWNERS

AT&T
Shannon Brinkmeyer
154 N. Broadway, Room 210
Wichita, KS 67202
Phone: 316-573-7243

Cox Communications
Matt Bortz
901 George Washington Blvd.
Wichita, KS 67211
Phone: 620-272-2081

Evergy
Shane Price
Wichita, KS
Phone: 316-706-6702

KDOT-Power
Nate Stahly
3200 E. 45th St. N
Wichita, KS 67220
Phone: 316-744-1271

Storm Water
City of Wichita Storm Water
Kelly Fleming
City Hall, 455 N. Main, 7th Floor
Wichita, KS 67202
Phone: 316-268-4326

Traffic Signals
City of Wichita, Traffic Dept.
Michael Armour
City Hall, 455 N. Main, 7th Floor
Wichita, KS 67202
Phone: 316-268-4598

Utility Notes:

Visual indications of utilities are as shown. Underground locations shown, as furnished by their lessors, are approximate and should be verified in the field at the time of construction. For actual field locations of underground utilities, call 1-800-344-7233. Verification of utilities is the Contractor's responsibility.

TRANSYSTEMS
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PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS
WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=1'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:
GENERAL NOTES

SHEET NO.
2
SHEET 2 OF 105

dmmckee
1/22/2025 - 3:45:52 PM - c:\transystems\pw_bca\transyscorp-pw1\ia-e_dmmckee\d0970074\C-GEN-M01-101.DGN

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

Chain BRIGHTWATER_BAY contains:
1003 1004

Beginning chain BRIGHTWATER_BAY description
==========

Point 1003 N 1,670,619.1855 E 1,630,965.5698 Sta. 97+50.00

Course from 1003 to 1004 N 34°01' 50.87" W Dist 250.0000

Point 1004 N 1,670,826.3697 E 1,630,825.6601 Sta. 100+00.00

==========
Ending chain BRIGHTWATER_BAY description

Chain RAMP_D contains:
1004 CUR C201 CUR C202

Beginning chain RAMP_D description
==========

Course from 1004 to PC C201 N 34°01' 50.87" W Dist 383.3200

Curve Data

Curve C201
P.I. Station 104+96.38 N 1,671,237.7340 E 1,630,547.8696
Delta = 51°15' 10.30" (RT)
Degree = 24°18' 37.15"
Tangent = 113.0550
Length = 210.8276
Radius = 235.6850
External = 25.7129
Long Chord = 203.8683
Mid. Ord. = 23.1836
P.C. Station 103+83.32 N 1,671,144.0411 E 1,630,611.1395
P.T. Station 105+94.15 N 1,671,345.7201 E 1,630,581.3425
C.C. N 1,671,275.9395 E 1,630,806.4604
Back = N 34°01' 50.87" W
Ahead = N 17°13' 19.43" E
Chord Bear = N 8°24' 15.72" W

Course from PT C201 to PC C202 N 17°13' 19.43" E Dist 508.3900

Curve Data

Curve C202
P.I. Station 111+49.37 N 1,671,876.0507 E 1,630,745.7310
Delta = 11°11' 02.60" (LT)
Degree = 11°58' 41.05"
Tangent = 46.8344
Length = 93.3711
Radius = 478.3390
External = 2.2873
Long Chord = 93.2229
Mid. Ord. = 2.2764
P.C. Station 111+02.54 N 1,671,831.3162 E 1,630,731.8645
P.T. Station 111+95.91 N 1,671,922.6252 E 1,630,750.6574
C.C. N 1,671,972.9408 E 1,630,274.9721
Back = N 17°13' 19.43" E
Ahead = N 6°02' 16.83" E
Chord Bear = N 11°37' 48.13" E

==========
Ending chain RAMP_D description

Chain K42 contains:
1001 1002

Beginning chain K42 description
==========

Point 1001 N 1,669,386.7493 E 1,628,693.8078 Sta 1015+58.00

Course from 1001 to 1002 N 55°58' 09.13" E Dist 3,656.1432

Point 1002 N 1,671,432.8675 E 1,631,723.7885 Sta 1052+14.14

==========
Ending chain K42 description

Beginning profile BRIGHTWATER description:
==========

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	197+50.00	1,300.3200				
VPC	98+50.00	1,303.3200	3.0000	K = 50.0	SSD = 589.5	
VPI 2	99+00.00	1,304.8200		100.0000	50.0000	50.0000
VPT	99+50.00	1,305.3200	1.0000			
VPI 3	99+67.50	1,305.4950	1.0000			

==========
Ending profile BRIGHTWATER description

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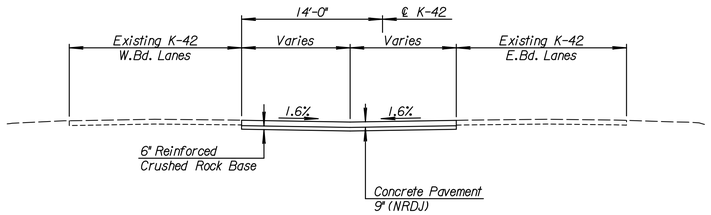
CHECKED BY: MDB

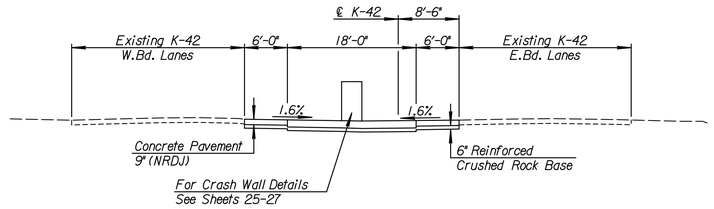
SHEET TITLE:
GEOMETRIC DETAILS

SHEET NO.
3
SHEET 3 OF 105



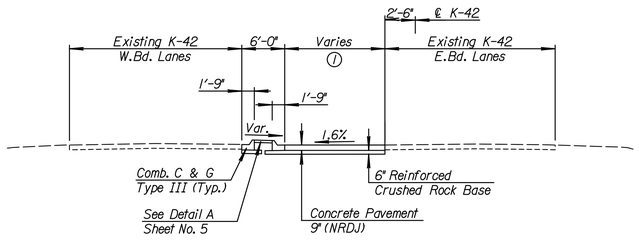
K-42/SW BLVD. TYPICAL SECTION

Sta. 1033+93.00 to Sta. 1035+83.00
Sta. 1041+14.00 to Sta. 1041+29.00



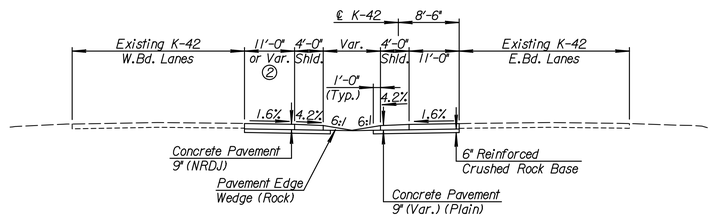
K-42/SW BLVD. TYPICAL SECTION

Sta. 1044+11.75 to Sta. 1046+58.59



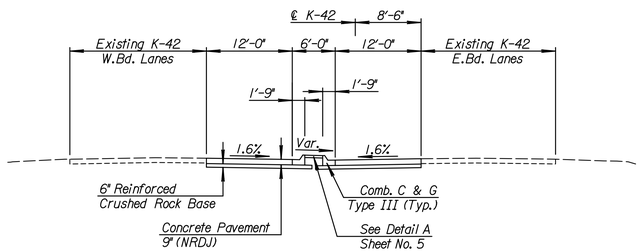
K-42/SW BLVD. TYPICAL SECTION

Sta. 1035+83.00 to Sta. 1041+14.00



K-42/SW BLVD. TYPICAL SECTION

Sta. 1046+58.59 to Sta. 1047+75.00



K-42/SW BLVD. TYPICAL SECTION

Sta. 1042+07.25 to Sta. 1044+11.75

① Varies from 22'-6" at Sta. 1035+02.00 to Sta. 1037+24.00 to 13'-0" at Sta. 1037+27.00 to Sta. 1041+14.00

② Varies from 11'-0" at Sta. 1046+25.00 to 0'-0" at Sta. 1047+75.00.

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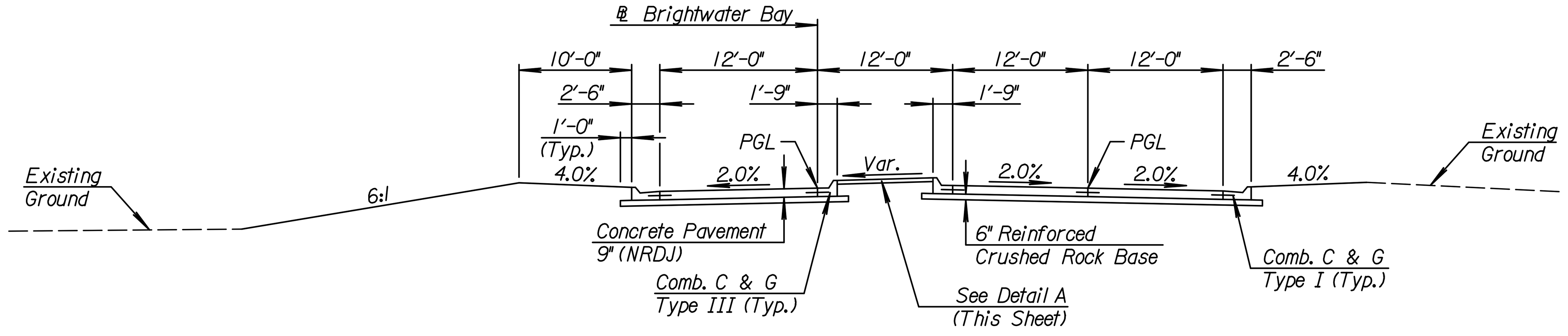
SHEET TITLE:

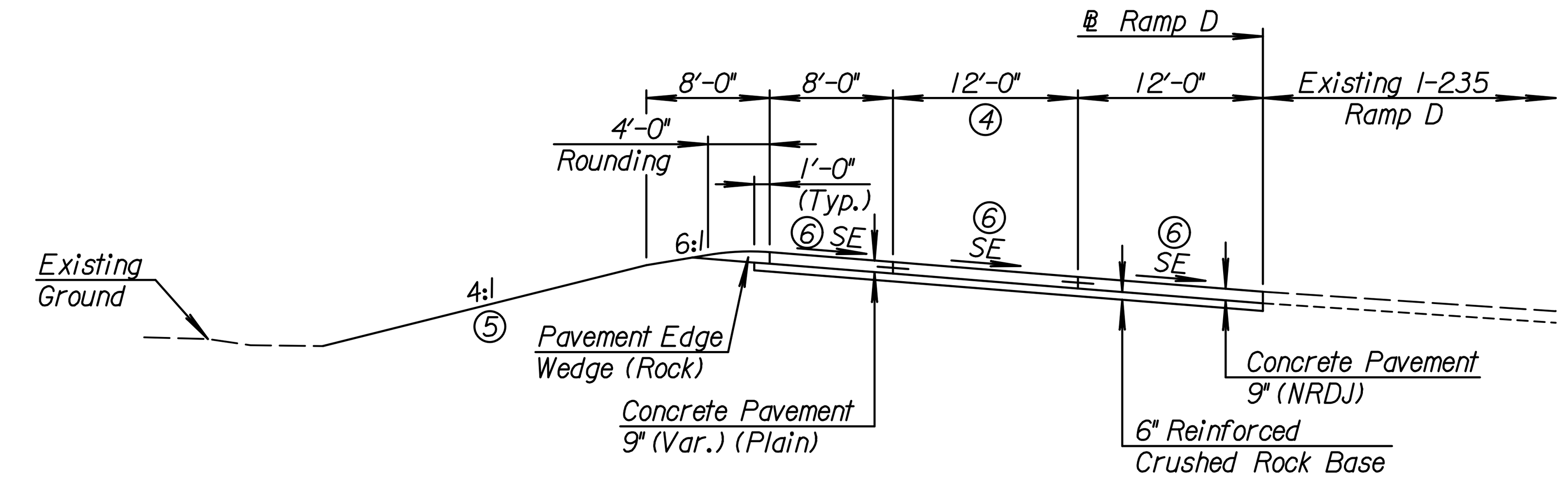
TYPICAL SECTIONS

SHEET NO.
4
SHEET 4 OF 105



SIDEROAD TYPICAL SECTION

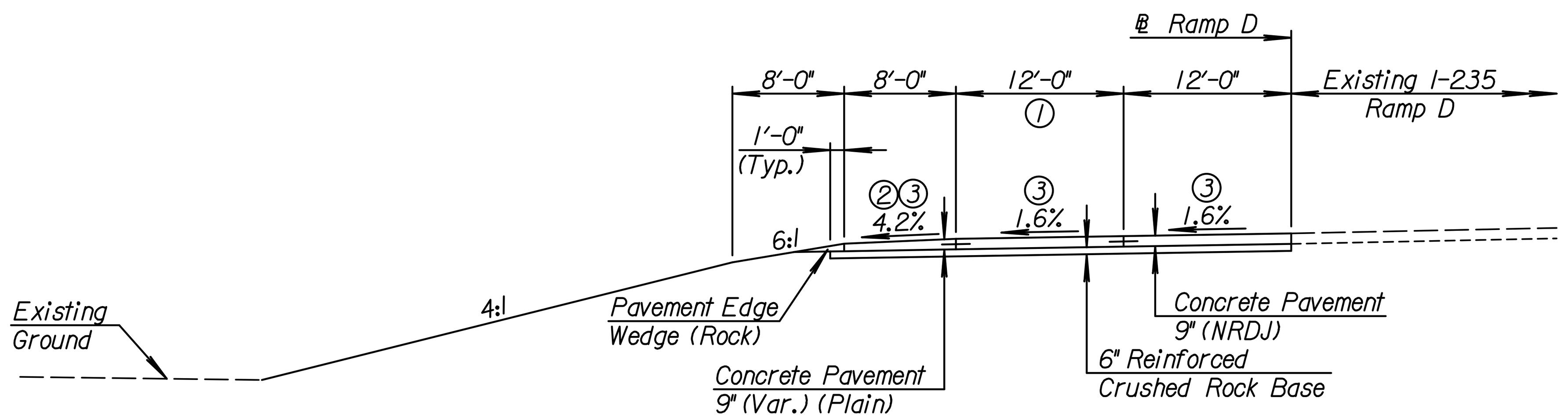
Sta. 98+40.00 to Sta. 99+07.50



RAMP D TYPICAL SECTION

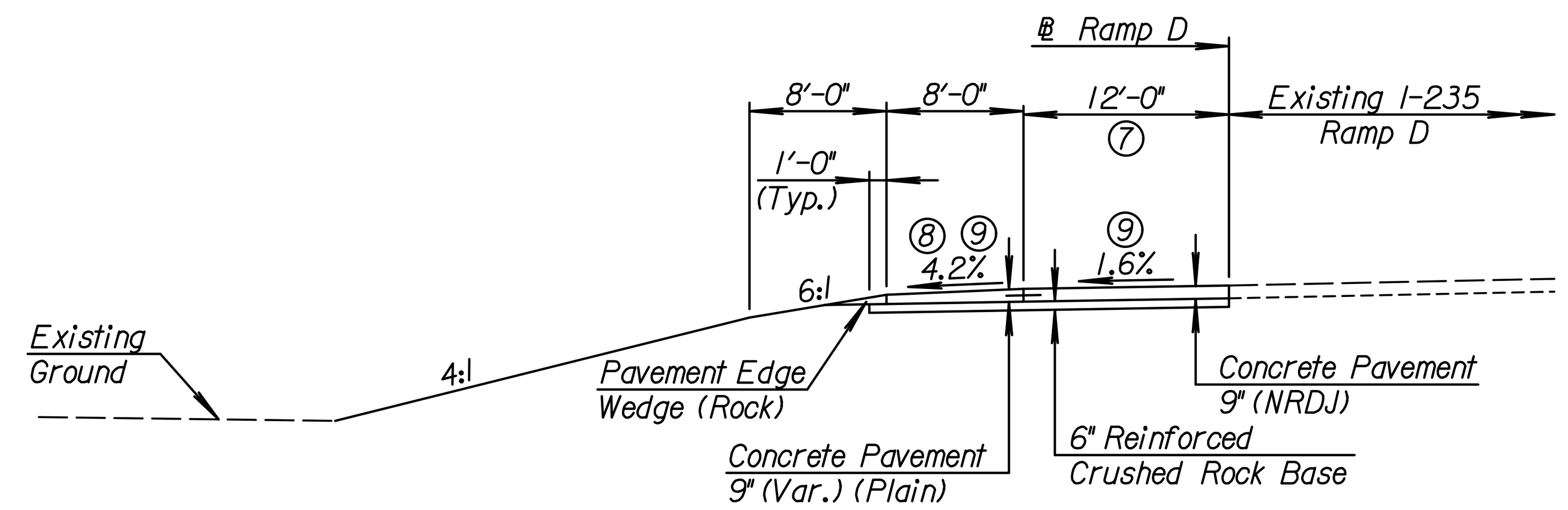
Superelevated

Sta. 102+79.17 to Sta. 106+95.83



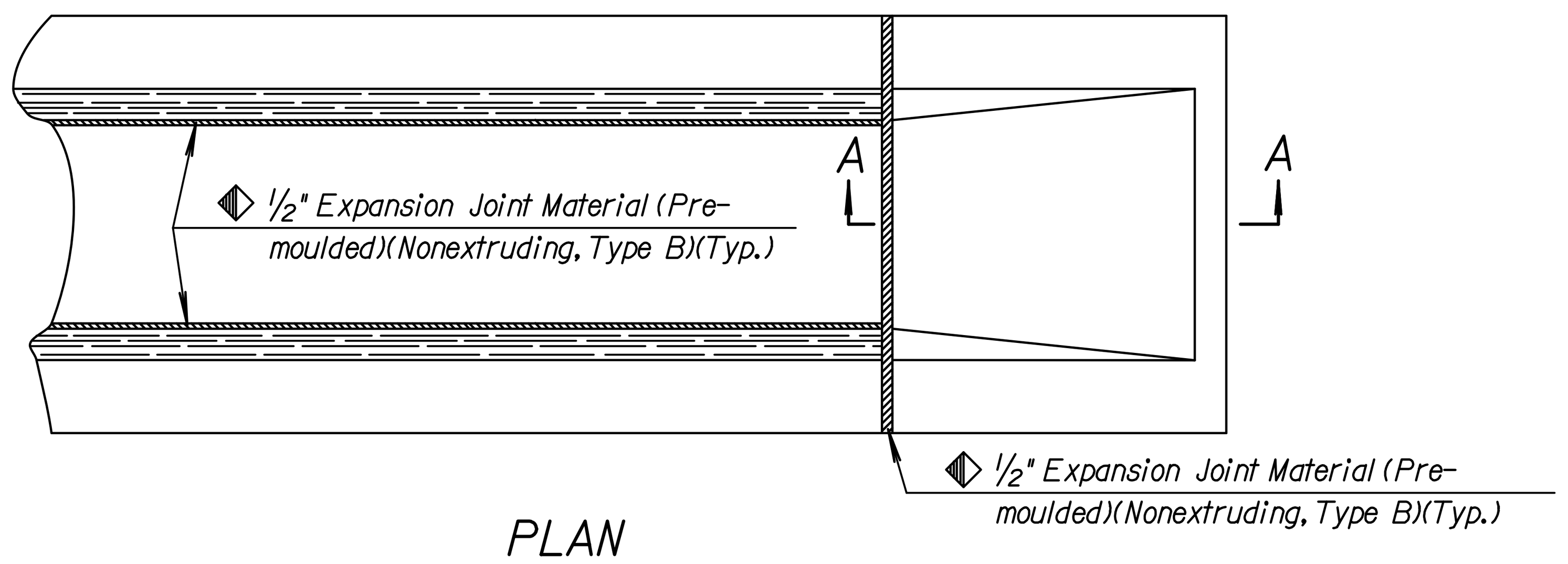
RAMP D TYPICAL SECTION

Sta. 100+00.00 to Sta. 102+79.17

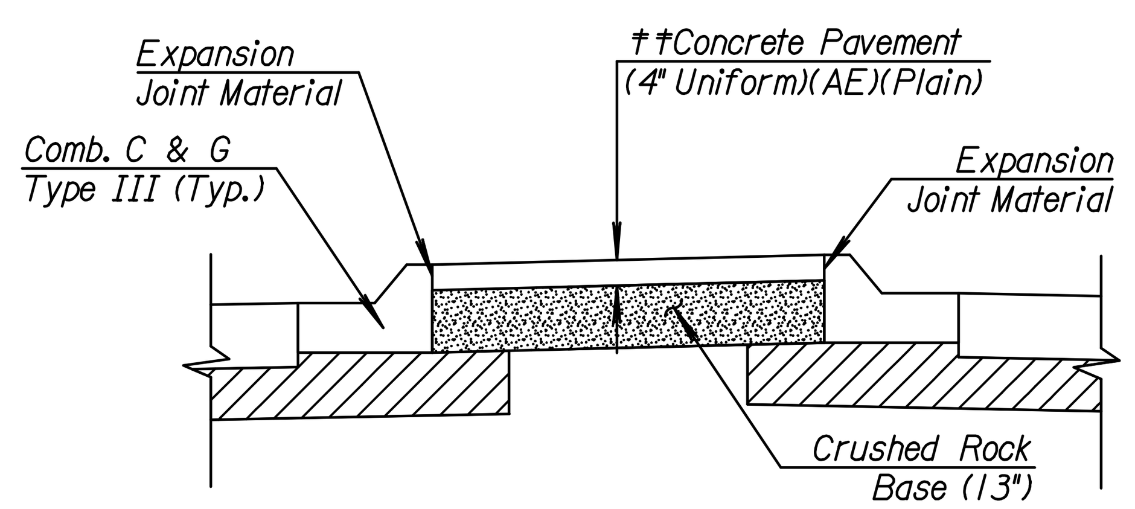


RAMP D TYPICAL SECTION

Sta. 106+95.83 to Sta. 108+25.50



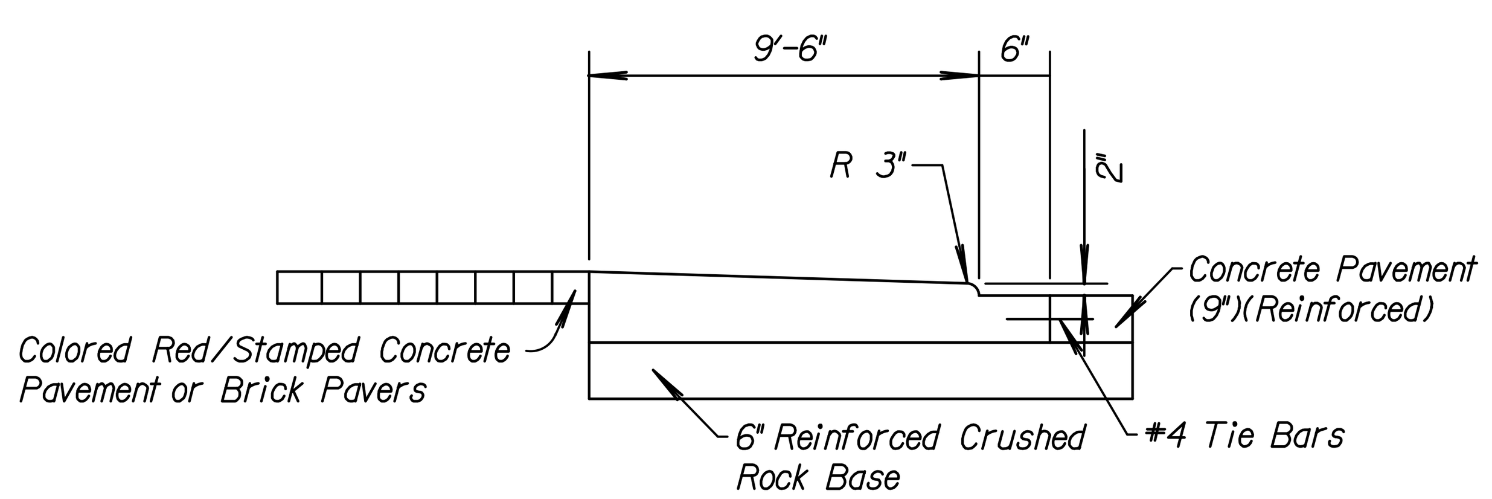
PLAN



Detail A

Not to Scale

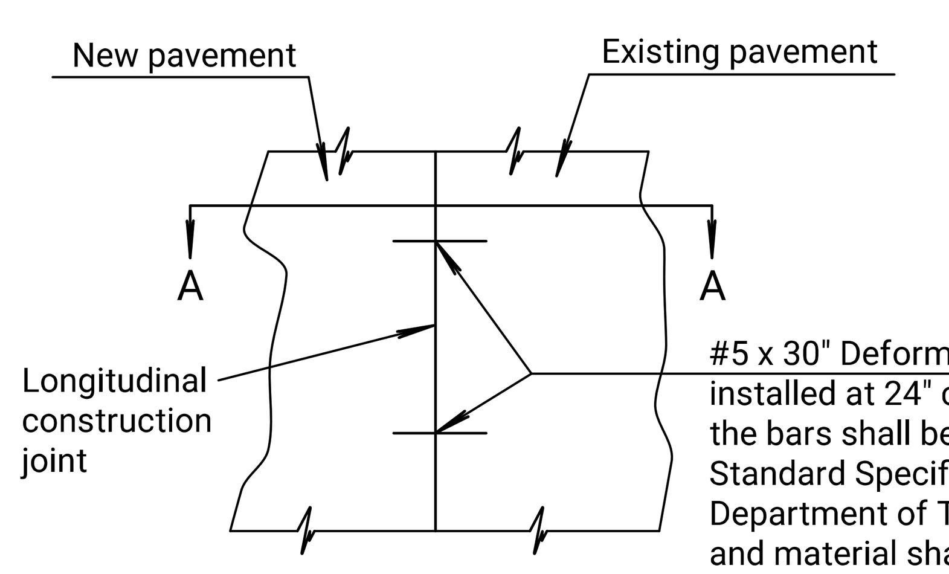
††Median Concrete to be Colorized Red with a Stamped Running Bond Pattern and Jointed to Match Joints in Adjacent Curb. See General Notes for Approved Colors.

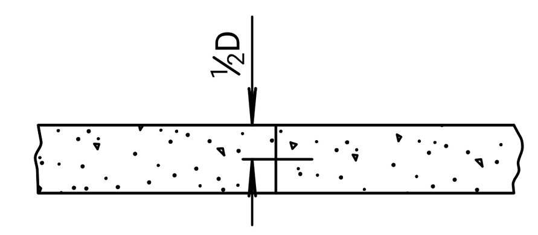


SECTION A-A

Note:
Expansion Joints shall be placed in concrete median as follows. In long runs expansion Joints shall be 1/2" expansion joint material (Nonextruding, Type B) flush with the surface. Expansion joints in the median shall match expansion joints in the curb and gutter with a maximum spacing of 125'. Plane of weakness in median shall match plane of weakness in curb & gutter.

The concrete ramp nose shall be paid for by the bid item "Concrete Ramp Nose Section (Median)".





SECTION A-A

METHOD OF TYING PAVEMENT TO EXISTING PAVEMENT

PAVEMENT WIDENING

① Varies from 12'-0" at Sta. 102+25 to 7'-8" at Sta. 102+79.17.

② Varies from -4.2% at Sta. 102+15 to -1.6% at Sta. 102+50.

③ Varies from -1.6% at Sta. 102+50 to 0.0% at Sta. 102+79.17.

④ Varies from 7'-8" at Sta. 102+79.17 to 0'-0" at Sta. 103+75.

⑤ Varies from 4:1 at Sta. 104+00 to 3:1 at Sta. 105+00.
Varies from 3:1 at Sta. 105+50 to 4:1 at Sta. 106+50.

⑥ Varies from 0.0% at Sta. 102+79.17 to 8.0% at Sta. 104+25.
Varies from 8.0% at Sta. 105+50 to 0.0% at Sta. 107+25.

⑦ Varies from 12'-0" at Sta. 108+50 to 0'-0" at Sta. 110+00.

⑧ Varies from 0.0% at Sta. 106+95.83 to -1.6% at Sta. 107+25.

⑨ Varies from -1.6% at Sta. 107+25 to -4.2% at Sta. 107+60.

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SHEET TITLE:

TYPICAL SECTIONS

SHEET NO.
5

SHEET 4 OF 105

LEGEND

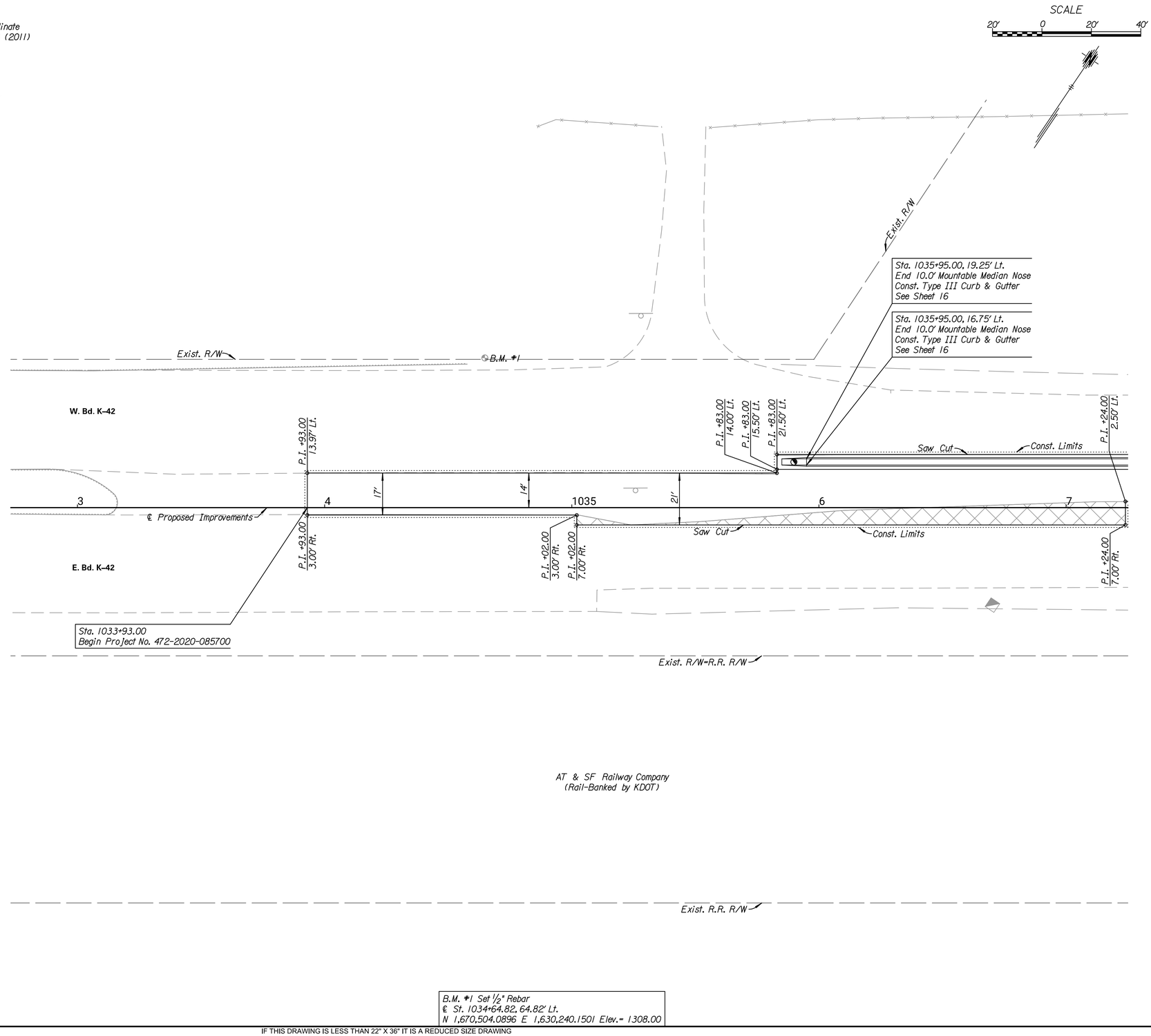
Pavement Removal

PROJECT SURVEY CONTROL

Horizontal - Kansas State Plane Coordinate
KS South Zone Project Datum: NAD83 (2011)

Vertical - B.M. #2
1/2" Rebar
N: 1,670,982.030
E: 1,630,783.514
Datum: NAVD88 - Elevation = 1302.77

10.0' Mountable Concrete Median Nose, See Sheet c-det-m01-503



Utility Owners

Communications	AT&T
Communications	Cox
Power	Evergy
Storm Sewer	City of Wichita

B.M. #1 Set 1/2" Rebar
℄ St. 1034+64.82, 64.82' Lt.
N 1,670,504.0896 E 1,630,240.1501 Elev.= 1308.00

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

dmmckee
1/22/2025 - 3:46:05 PM - c:\transystems\pw_local\transystcorp-pw1\a-e_dmmckee\d0970074C-RDW-M01-101.DGN

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SHEET TITLE:

K-42
PLAN & PROFILE
STA. 1033+93.00 TO
STA. 1037+25.00

SHEET NO.

6

SHEET 6 OF 105

LEGEND

Pavement Removal

Gravel

REMOVALS		
Station	Offset	Description
1038+40	11' Lt.	Exist. Storm Inlet
1040+68	57' Lt.	Exist. Light Pole
1040+90	68' Lt.	Exist. Signal Pole
1040+94	75' Lt.	Exist. Traffic Box
1041+07	14' Lt.	Exist. Sign
1041+09	97' Lt.	Exist. Light Pole
1041+11	53' Rt.	Exist. Sign
1041+13	43' Rt.	Exist. Light Pole
1041+16	44' Rt.	Exist. Sign
1041+19	54' Rt.	Exist. Signal Pole
1041+27	50' Rt.	Exist. Sign
1042+09	55' Rt.	Exist. Signal Pole
1042+12	7' Lt.	Exist. Sign

10.0' Mountable Concrete Median Nose, See Sheet c-det-m01-503

SCALE
20' 0 20' 40'

Sta. 1040+28.25, 19.75' Lt.
Const. Type III Curb & Gutter
See Sheet 16

Sta. 1040+28.25, 19.25' Lt.
Const. Type III Curb & Gutter
See Sheet 16

Sta. 1040+21.75, 19.25' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1040+21.75, 16.75' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1041+02.00, 19.25' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1041+02.00, 16.75' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1042+19.25, 7.75' Lt.
Begin Type III Curb & Gutter
See Sheet 16

Sta. 1042+19.25, 5.25' Lt.
Begin Type III Curb & Gutter
See Sheet 16

B.M. #2

℄ Ramp D

S. Bd. I-235 RAMP D EXIT

S. Bd. I-235 RAMP C ENTRANCE

Const. Limits

L.P.

W. Bd. K-42

E. Bd. K-42

Saw Cut

12'

13'

15.5'

8.5'

P.I. +27.99
45.50' Lt.

P.I. +27.99
55.50' Lt.

P.I. +76.61
55.50' Lt.

P.I. +47.98
65.79' Lt.

P.I. +49.60
57.95' Lt.

P.I. +30.41
33.50' Lt.

P.I. +14.00
21.50' Lt.

P.I. +29.00
21.50' Lt.

P.I. +07.25
3.50' Lt.

P.I. +07.25
9.50' Lt.

P.I. +07.25
21.50' Lt.

P.I. +27.99
33.50' Lt.

P.I. +29.00
2.50' Lt.

P.I. +14.00
15.50' Lt.

P.I. +07.25
8.50' Rt.

P.I. +18.41
32.50' Lt.

P.I. +68.41
32.50' Rt.

P.I. +14.41
32.50' Rt.

P.I. +64.41
32.50' Rt.

P.I. +27.99
40.50' Rt.

P.I. +64.41
42.50' Rt.

P.I. +18.41
42.50' Rt.

P.I. +68.41
40.50' Rt.

1040

℄ Proposed Improvements

Exist. R/W=R.R. R/W

Exist. R.R. R/W

Sta. 1041+30.41 ℄ K-42=
Sta. 100+00.00 ℄ Brightwater Bay=
Sta. 100+00.00 ℄ Ramp D

℄ Brightwater Bay

AT & SF Railway Company
(Rail-Banked by KDOT)

B.M. #3

Utility Owners

Communications	AT&T
Communications	Cox
Power	Evergy
Power	KDOT
Storm Sewer	City of Wichita
Traffic Signals	City of Wichita

B.M. #2 Set 1/2" Rebar
℄ St. 1041+82.60, 152.59' Lt.
℄ Ramp D Sta. 101+52.59, 52.19' Rt.
N 1,670,982.0302 E 1,630,783.5141 Elev.= 1302.77

B.M. #3 Set 1/2" Rebar
℄ St. 1043+06.71, 110.36' Rt.
N 1,670,833.5757 E 1,631,033.5254 Elev.= 1304.56

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

REVISIONS:

MARK	DATE	DESCRIPTION

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

PROJ NO:	472-2020-085700
SCALE:	1"=20'
DATE:	1/22/2025
DESIGNED BY:	CKC
DRAWN BY:	CKC
CHECKED BY:	MDB

SHEET TITLE:

K-42
PLAN & PROFILE
STA. 1037+25.00 TO
STA. 1043+25.00

SHEET NO.
7

SHEET 7 OF 105

dmmckee
1/22/2025 - 3:46:08 PM - c:\transystems\pw_local\transystemscorp-pw1\e-e_dmmckee\d0970074C-RDW-M01-102.DGN

LEGEND

Pavement Removal

REMOVALS		
Station	Offset	Description
1044+20	7' Lt.	Exist. Storm Inlet

SCALE
20' 0 20' 40'

N Qtr. Corner
Sec. 2, T28S, R1W

Sec. Line

S. Bd. I-235

N. Bd. I-235

Sta. 1044+11.75, 6.50' Lt.
Const. Pier Protection
See Sheet 25-27

Sta. 1044+06.25, 7.75' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1044+06.25, 5.25' Lt.
End Type III Curb & Gutter
See Sheet 16

Sta. 1046+58.59, 6.50' Lt.
End Pier Protection
See Sheet 25-27

(AT&T)

L.P.

P.I. +11.75 9.50' Lt.
P.I. +11.75 15.50' Lt.
P.I. +58.59 15.50' Lt.
P.I. +58.59 12.96' Lt.
P.I. +03.50 12.25' Lt.
P.I. +03.50 6.50' Lt.
P.I. +25.00 6.50' Lt.
P.I. +25.00 2.50' Rt.
P.I. +47.87 15.50' Lt.
P.I. +75.00 21.50' Lt.
P.I. +75.00 15.50' Lt.

W. Bd. K-42

Const. Limits
12'
Saw Cut
4
1045
6
7
8
9
℄ Proposed Improvements

P.I. +11.75 3.50' Lt.
P.I. +11.75 2.50' Rt.
P.I. +58.59 2.50' Rt.
P.I. +58.59 3.50' Lt.
P.I. +25.00 8.50' Rt.

E. Bd. K-42

Exist. R/W=R.R. R/W

Station 1044+30.32 to Station 1046+63.00
Remove Existing Guardrail

Sta. 1047+75.00
End Project No. 472-2020-085700

AT & SF Railway Company
(Rail-Banked by KDOT)

EB

B.M. #4

Sec. Line

S Qtr. Corner
Sec. 2, T28S, R1W

Utility Owners

Communications	AT&T
Communications	Cox
Power	Evergy
Power	KDOT
Storm Sewer	City of Wichita
Traffic Signals	City of Wichita

S Quarter Corner Sec. 2-T28S-R1W
3"x4" Stone with bar on the North side - 20" Deep
Northing = 1,667,459.2884
Easting = 1,631,334.3741

1. "X" on a manhole rim	10.57' NE
2. 60D Nail in East face of Power Pole	27.50' N
3. MAG Nail in West end of Corrugated Metal Pipe	35.60' WNW
4. MAG Nail in Top of 6" Diameter Wood Post	8.10' WSW

B.M. #4 Set 1/2" Rebar
℄ St. 1045+95.09, 145.76' Rt.
N 1,670,965.6212 E 1,631,292.3264 Elev.= 1303.04

N Quarter Corner Sec. 2-T28S-R1W
3"x4" Iron Pipe, 6" below surface
Northing = 1,672,707.3303
Easting = 1,631,294.8790

1. South Gate Post of a Chain Link Fence	57.68' W
2. MAG Nail in East face of Hedge Post	29.78' S
3. Nail and Washer in Southeast face of Telephone Pole	49.12' NE
4. 60D Nail in South face of Power Pole	40.05' NW

B.M. #5 Set 1/2" Rebar
℄ St. 1052+66.85, 42.31' Rt.
N 1,671,427.2961 E 1,631,791.1466 Elev.= 1299.87

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:

K-42 PLAN
STA. 1043.25.00 TO
STA. 1047+75.00

SHEET NO.
8
SHEET 8 OF 105

dtmckee
1/22/2025 - 3:46:11 P.M. - c:\transystems\ow_local\transystcorp-pw1\e-e_dtmckee\d0970074C-RDWM01-103.DGN

LEGEND

Removal

Gravel

10.0' Mountable Concrete Median Nose, See Sheet c-det-m01-503

REMOVALS		
Station	Offset	Description
101+69	21' Lt.	Exist. Sign
101+74	30' Lt.	Exist. Sign

SCALE

20' 0 20' 40'

Const. Limits

Sta. 99+07.50
Start Concrete Pavement 9" (Reinforced)

Sta. 99+07.50
End Full Depth NRDJ Concrete Pavement
Start Concrete Pavement 9" (Reinforced)

+07.50
66.00' Lt.

R=50'

Sta. 98+97.50, 16.50' Lt.
End Type I Curb & Gutter
Sta. 98+97.50, 16.50' Lt. to
Sta. 99+07.50, 16.50' Lt.
Transition Curb & Gutter
See Sheet 16

Sta. 98+40.00, 16.50' Lt.
Begin Type I Curb & Gutter
See Sheet 16

Sta. 98+40.00, 0.00' Lt. and 12.00' Rt.
Begin Full Depth NRDJ Concrete Pavement
See Sheet 18

P.C.C. +07.50
16.00' Lt.

8.25' BOC to BOC

8.5'

28.25' BOC to BOC

Sta. 98+40.00, 1.75' Rt.
Begin Type III Curb & Gutter
See Sheet 16

Sta. 98+40.00, 10.25' Rt.
Begin Type III Curb & Gutter
See Sheet 16

Sta. 98+40.00, 38.50' Rt.
Begin Type I Curb & Gutter
See Sheet 16

Sta. 98+97.50, 10.25' Rt.
End Type III Curb & Gutter
See Sheet 16

Sta. 98+97.50, 10.25' Rt.
End Type I Curb & Gutter
See Sheet 16

Sta. 98+97.50, 16.50' Rt.
End Type I Curb & Gutter
Sta. 98+97.50, 16.50' Rt. to
Sta. 99+07.50, 16.50' Rt.
Transition Curb & Gutter
See Sheet 16

P.C.C. +07.50
38.00' Rt.

R=50'

+07.50
88.00' Rt.

Const. Limits

℄ Brightwater Bay

8 9

E. Bd. K-42

W. Bd. K-42

℄ Proposed Improvement

1040

1

100

1 2

℄ Ramp D

S. Bd. I-235 RAMP D EXIT

S. Bd. I-235 RAMP C ENTRANCE

+26.50
95.00' Lt.

R=50'

Const. Limits

P.C.C. +18.82
33.40' Lt.

P.C.C. +17.83
25.54' Lt.

P.T. +42.59
32.00' Lt.

P.T. +42.59
24.00' Lt.

P.I. +25.00
32.00' Lt.

P.I. +25.00
24.00' Lt.

B.M. #2

Sta. 100+00.00 ℄ Brightwater Bay=
Sta. 100+00.00 ℄ Ramp D=
Sta. 1041+30.41 ℄ K-42

B.M. #1 Set 1/2" Rebar
℄ St. 1034+64.82, 64.82' Lt.
N 1,670,504.0896 E 1,630,240.1501 Elev.= 1308.00

B.M. #2 Set 1/2" Rebar
Ramp D ℄ Sta. 101+52.59, 52.19' Rt.
℄ St. 1041+82.60, 152.59' Lt.
N 1,670,982.0302 E 1,630,783.5141 Elev.= 1302.77

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:

SIDEROAD &
RAMP D PLAN
STA. 98+40.00 TO
STA. 102+50.00

SHEET NO.

9

SHEET 9 OF 105

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

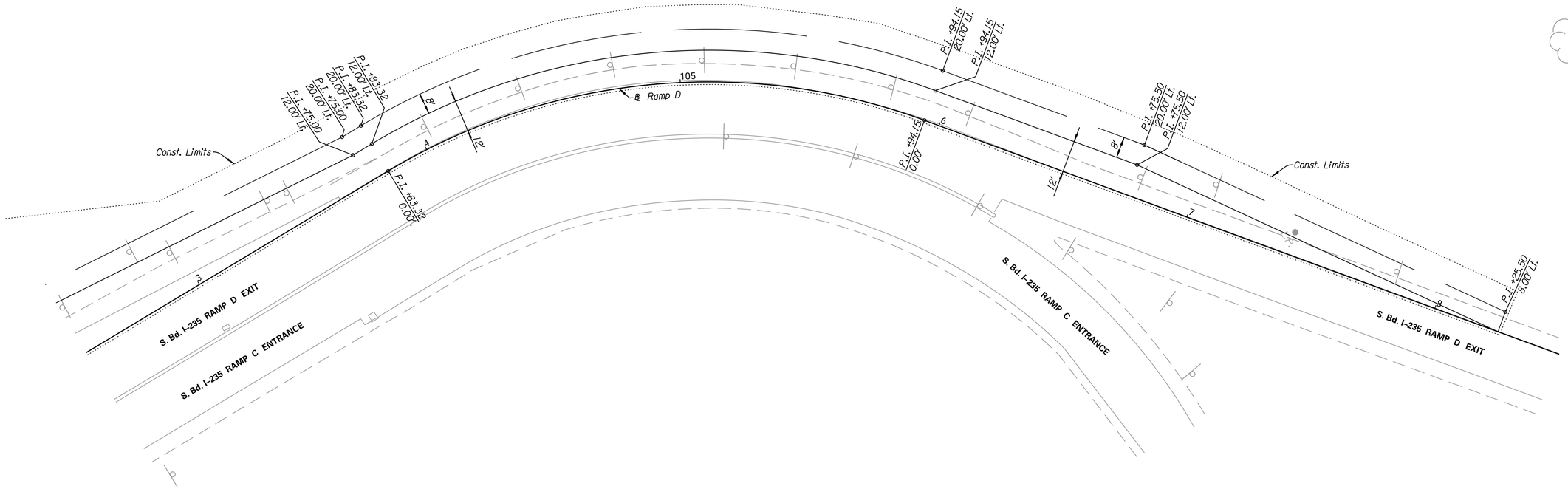
LEGEND

Removal

REMOVALS		
Station	Offset	Description
102+51	19' Lt.	Exist. Sign
102+84	24' Lt.	Exist. Sign
102+96	16' Lt.	Exist. Sign
103+38	14' Lt.	Exist. Sign
103+46	13' Lt.	Exist. Sign
104+03	8' Lt.	Exist. Sign
104+40	9' Lt.	Exist. Sign
104+75	9' Lt.	Exist. Sign
105+08	8' Lt.	Exist. Sign
105+42	8' Lt.	Exist. Sign
105+79	8' Lt.	Exist. Sign
106+09	8' Lt.	Exist. Sign
106+78	8' Lt.	Exist. Sign
107+06	15' Lt.	Exist. Sign
107+41	9' Lt.	Exist. Light Pole
107+82	8' Lt.	Exist. Sign

SCALE

20' 0 20' 40'



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:

RAMP D PLAN
STA. 102+50.00 TO
STA. 108+50.00

SHEET NO.

10

SHEET 10 OF 105

dmmckee
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IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

SCALE

50' 0 50' 100'

PAVEMENT POINTS

Point Number	Coordinates		Station	Offset	Description
	Northing	Easting			
7001	1670425.2880	1630206.7048	1033+93.00	14.00' Lt.	Edge of Pavement
7002	1670411.1995	1630216.2187	1033+93.00	3.00' Rt.	Edge of Pavement
7003	1670472.2002	1630306.5512	1035+02.00	3.00' Rt.	Edge of Pavement
7004	1670468.8853	1630308.7898	1035+02.00	7.00' Rt.	Edge of Pavement
7005	1670537.8350	1630359.9678	1035+83.00	21.50' Lt.	Edge of Pavement
7006	1670532.8626	1630363.3256	1035+83.00	15.50' Lt.	Edge of Pavement
7007	1670531.6195	1630364.1650	1035+83.00	14.00' Lt.	Edge of Pavement
7008	1670600.9980	1630487.4528	1037+24.00	2.50' Lt.	Edge of Pavement
7009	1670593.1250	1630492.7694	1037+24.00	7.00' Rt.	Edge of Pavement
7010	1670759.0827	1630626.8475	1039+27.99	55.50' Lt.	Edge of Shoulder
7011	1670740.8505	1630639.1596	1039+27.99	33.50' Lt.	Edge of Pavement
7012	1670786.2929	1630667.1415	1039+76.61	55.50' Lt.	Edge of Shoulder
7013	1670734.5177	1630747.7149	1040+14.41	32.50' Rt.	Edge of Pavement
7014	1670727.8878	1630752.1920	1040+14.41	40.50' Rt.	Edge of Shoulder
7015	1670762.4996	1630789.1518	1040+64.41	32.50' Rt.	Edge of Pavement
7016	1670835.0030	1630800.0270	1041+14.00	21.50' Lt.	Edge of Pavement
7017	1670830.0306	1630803.3849	1041+14.00	15.50' Lt.	Edge of Pavement
7018	1670843.3976	1630812.4581	1041+29.00	21.50' Lt.	Edge of Pavement
7019	1670827.6516	1630823.0912	1041+29.00	2.50' Lt.	Edge of Pavement
7020	1670854.1324	1630806.9123	1041+30.41	33.50' Lt.	Edge of Pavement
7021	1670887.1893	1630877.3068	1042+07.25	21.50' Lt.	Edge of Pavement
7022	1670877.2444	1630884.0224	1042+07.25	9.50' Lt.	Edge of Pavement
7023	1670872.2720	1630887.3802	1042+07.25	3.50' Lt.	Edge of Pavement
7024	1670862.3272	1630894.0959	1042+07.25	8.50' Rt.	Edge of Pavement
7025	1670848.6839	1630916.7772	1042+18.41	32.50' Rt.	Edge of Pavement
7026	1670876.6658	1630958.2141	1042+68.41	32.50' Rt.	Edge of Pavement
7027	1670870.0360	1630962.6912	1042+68.41	40.50' Rt.	Edge of Shoulder
7028	1670996.6616	1631050.1393	1044+11.75	15.50' Lt.	Edge of Pavement
7029	1670991.6889	1631053.4967	1044+11.75	9.50' Lt.	Edge of Pavement
7030	1670986.7161	1631056.8540	1044+11.75	3.5' Lt.	Edge of Pavement
7031	1670981.7434	1631060.2115	1044+11.75	2.50' Rt.	Edge of Pavement
7032	1671134.8063	1631254.7100	1046+58.59	15.50' Lt.	Edge of Pavement
7033	1671132.7041	1631256.1293	1046+58.59	12.96' Lt.	Edge of Pavement
7034	1671124.8609	1631261.4248	1046+58.59	3.50' Lt.	Edge of Pavement
7035	1671119.8882	1631264.7822	1046+58.59	2.50' Rt.	Edge of Pavement
7036	1671157.2406	1631293.7464	1047+03.50	12.25' Lt.	Edge of Shoulder
7037	1671152.4788	1631296.9620	1047+03.50	6.50' Lt.	Edge of Shoulder
7038	1671164.5110	1631314.7799	1047+25.00	6.50' Lt.	Edge of Shoulder
7039	1671161.1961	1631317.0184	1047+25.00	2.50' Lt.	Edge of Pavement
7040	1671152.0800	1631323.1744	1047+25.00	8.50' Rt.	Edge of Pavement
7041	1671184.7707	1631328.6994	1047+47.87	15.50' Lt.	Edge of Shoulder P.I.
7042	1671204.9240	1631347.8221	1047+75.00	21.50' Lt.	Edge of Pavement P.I.
7043	1671199.9516	1631351.1800	1047+75.00	15.50' Lt.	Edge of Shoulder
7044	1670685.9369	1630903.6000	98+40.00	14.00' Lt.	Edge of Pavement
7045	1670693.7718	1630915.2023	98+40.00	0.00' Rt.	Edge of Pavement
7046	1670700.4875	1630925.1471	98+40.00	12.00' Rt.	Edge of Pavement
7047	1670713.9188	1630945.0368	98+40.00	36.00' Rt.	Edge of Pavement
7048	1670741.8766	1630865.8244	99+07.50	14.00' Lt.	Edge of Pavement
7049	1670749.7115	1630877.4267	99+07.50	0.00' Rt.	Edge of Pavement
7050	1670756.4272	1630887.3715	99+07.50	12.00' Rt.	Edge of Pavement
7051	1670769.8585	1630907.2612	99+07.50	36.00' Rt.	Edge of Pavement
7052	1670994.9271	1630673.2219	102+25.00	32.00' Lt.	Edge of Shoulder P.I.
7053	1670999.4042	1630679.8518	102+25.00	24.00' Lt.	Edge of Pavement P.I.

CURVE DATA

No.	Δ	R	T	L	E	P.C. Coordinates		P.I. Coordinates		P.T. Coordinates		C.C Coordinates	
						Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting
C101	11°41'37.14"	600.00'	61.44'	122.46'	3.14'	1670750.7954	1630632.4439	1670785.1802	1630683.3625	1670829.1716	1630726.2552	1671248.0375	1630296.6608
C102	71°11'42.43"	70.00'	50.11'	86.98'	16.09'	1670829.1716	1630726.2552	1670865.0503	1630761.2379	1670909.7310	1630738.5509	1670878.0393	1630676.1359
C103	7°06'40.43"	200.00'	12.43'	24.82'	0.39'	1670909.7310	1630738.5509	1670920.8118	1630732.9245	1670931.1108	1630725.9697	1670819.1832	1630560.2223
C201	51°18'37.15"	235.69'	113.06'	210.83'	25.71'	1671144.0411	1630611.1395	1671237.7340	1630547.8696	1671345.7201	1630581.3425	1671275.9395	1630806.4604

PAVEMENT POINTS

Point Number	Coordinates		Station	Offset	Description
	Northing	Easting			
7054	1671125.9533	1630599.2210	103+75.00	20.00' Lt.	Edge of Shoulder P.I.
7055	1671130.4304	1630605.8509	103+75.00	12.00' Lt.	Edge of Pavement P.I.
7056	1671429.3466	1630586.3257	106+75.50	20.00' Lt.	Edge of Shoulder P.I.
7057	1671426.9780	1630593.9670	106+75.50	12.00' Lt.	Edge of Pavement P.I.
7058	1671569.0683	1630642.1990	182+25.50	8.00' Lt.	Edge of Shoulder P.I.
7059	1671566.6997	1630649.8403	182+25.50	0.00' Rt.	Edge of Pavement P.I.
7060	1670831.4324	1630757.7680	1040+76.98	42.19' Lt.	Type III Curb & Gutter, Begin 3' Radius
7061	1670827.5214	1630762.1414	1040+78.42	36.50' Lt.	Type III Curb & Gutter, End 3' Radius
7062	1670843.1102	1630783.5086	1041+04.85	37.46' Lt.	Type III Curb & Gutter, Begin 12' Radius
7063	1670859.2386	1630786.5652	100+49.12	14.00' Lt.	Type III Curb & Gutter, End 12' Radius
7064	1670875.5827	1630775.5339	100+68.84	14.00' Lt.	Type III Curb & Gutter, Begin 3' Radius
7065	1670874.0317	1630770.0504	100+70.62	19.41' Lt.	Type III Curb & Gutter, End 3' Radius

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:			
MARK	DATE	DESCRIPTION	

PROJ NO:	472-2020-085700
SCALE:	1"=20'
DATE:	1/22/2025
DESIGNED BY:	CKC
DRAWN BY:	CKC
CHECKED BY:	MDB

SHEET TITLE:

COORDINATE GEOMETRY

SHEET NO.

11

SHEET 11 OF 105

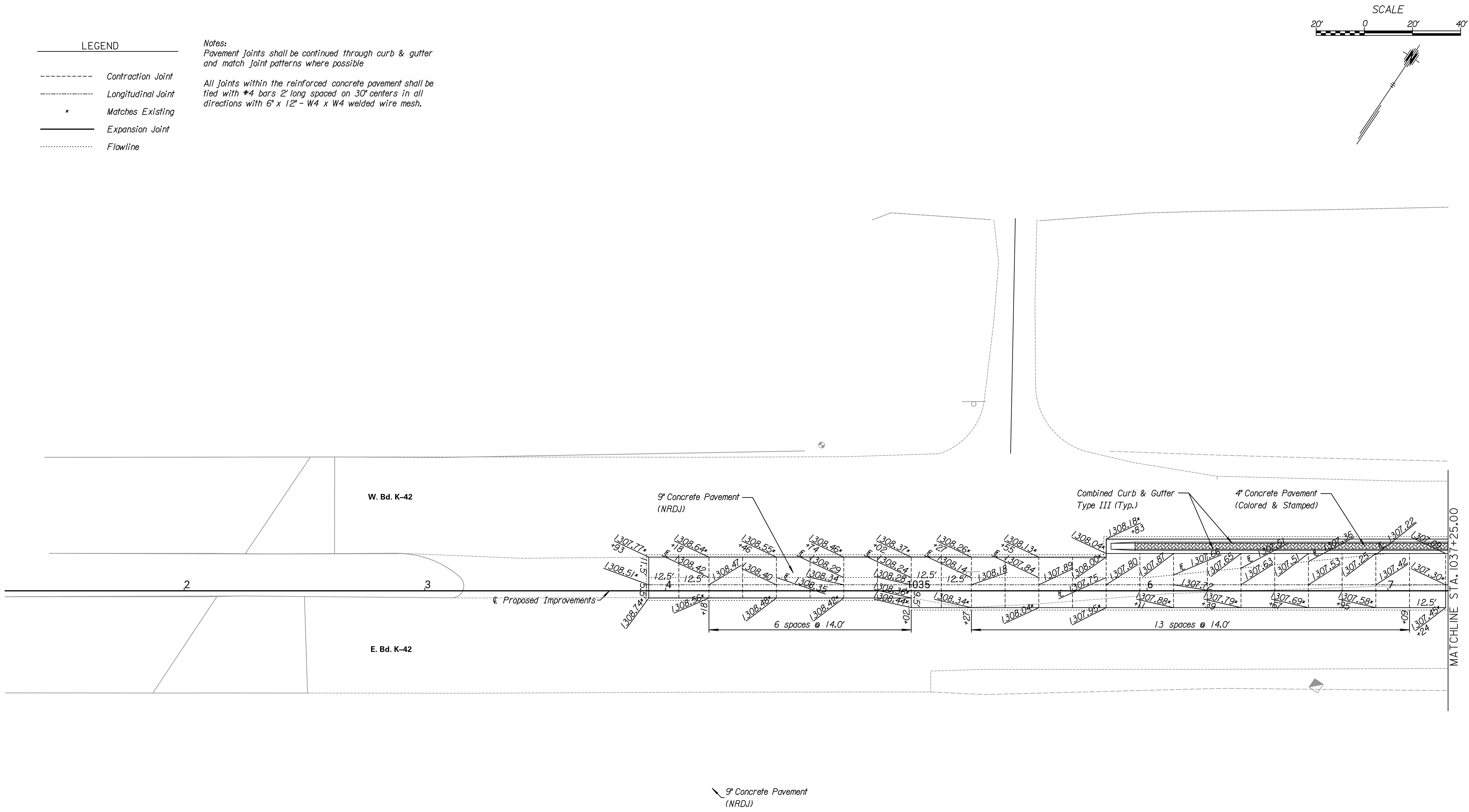
IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

LEGEND

------------	Contraction Joint
-·-·-·-·-·-	Longitudinal Joint
*	Matches Existing
———	Expansion Joint
············	Flowline

Notes:
Pavement Joints shall be continued through curb & gutter and match joint patterns where possible

All Joints within the reinforced concrete pavement shall be tied with #4 bars 2' long spaced on 30" centers in all directions with 6" x 12" - W4 x W4 welded wire mesh.



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS: MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:
K-42
JOINTING PLANS
STA. 1033+93.00 TO
STA. 1037+25.00

SHEET NO.
12

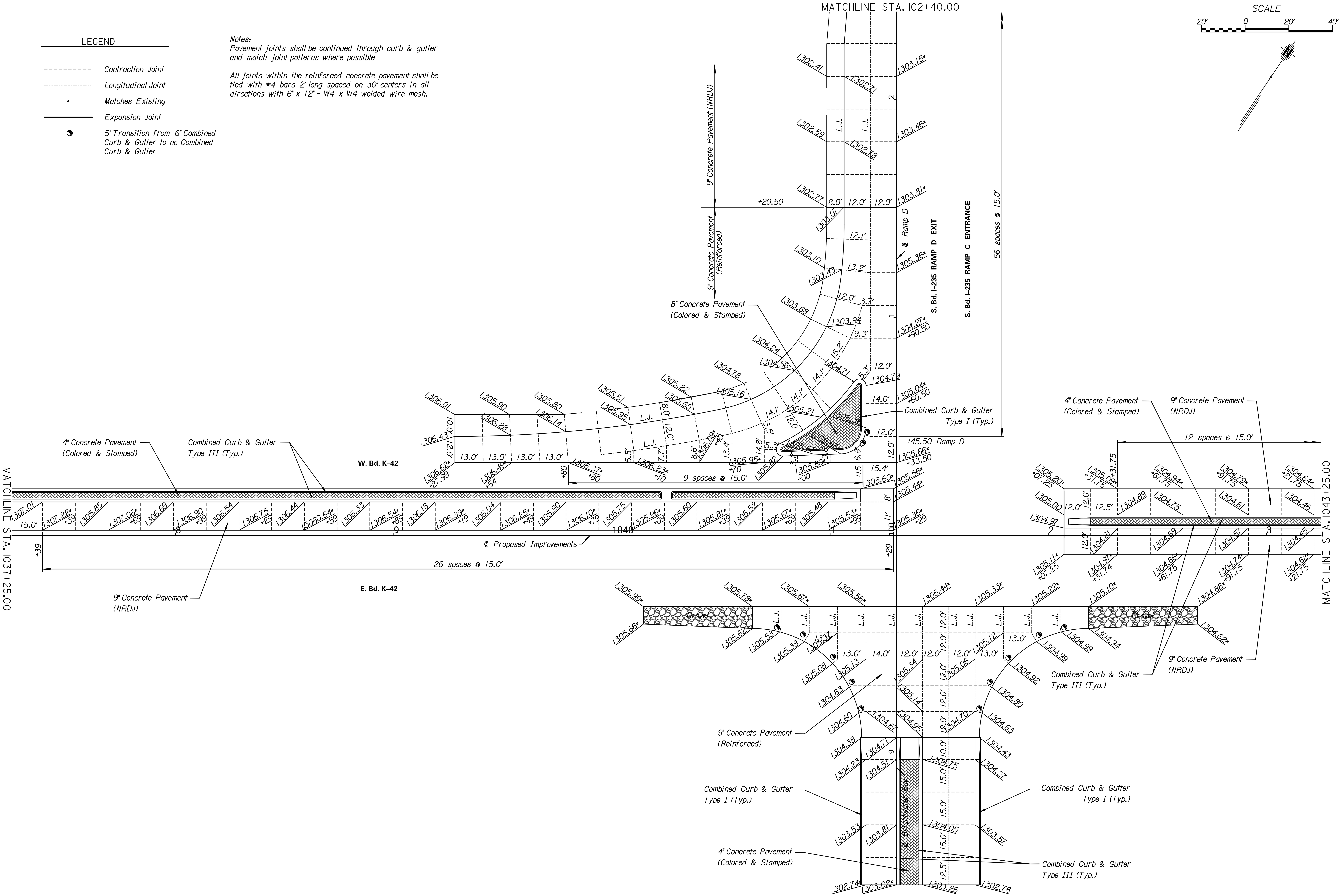
SHEET 12 OF 105

LEGEND

- Contraction Joint (dashed line)
- Longitudinal Joint (dash-dot line)
- * Matches Existing
- Expansion Joint (solid line)
- ◑ 5' Transition from 6" Combined Curb & Gutter to no Combined Curb & Gutter

Notes:
Pavement Joints shall be continued through curb & gutter and match Joint patterns where possible

All Joints within the reinforced concrete pavement shall be tied with #4 bars 2' long spaced on 30" centers in all directions with 6" x 12" - W4 x W4 welded wire mesh.



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:

K-42
JOINTING PLANS
STA. 1037+25.00 TO
STA. 1043+25.00

SHEET NO.
13

SHEET 13 OF 105

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

dmmckee 1/22/2025 - 3:46:26 PM - c:\transystems\pw_local\transyscorp-pw1\e_dmmckee\d0970074\C-JNT-M01-101.DGN

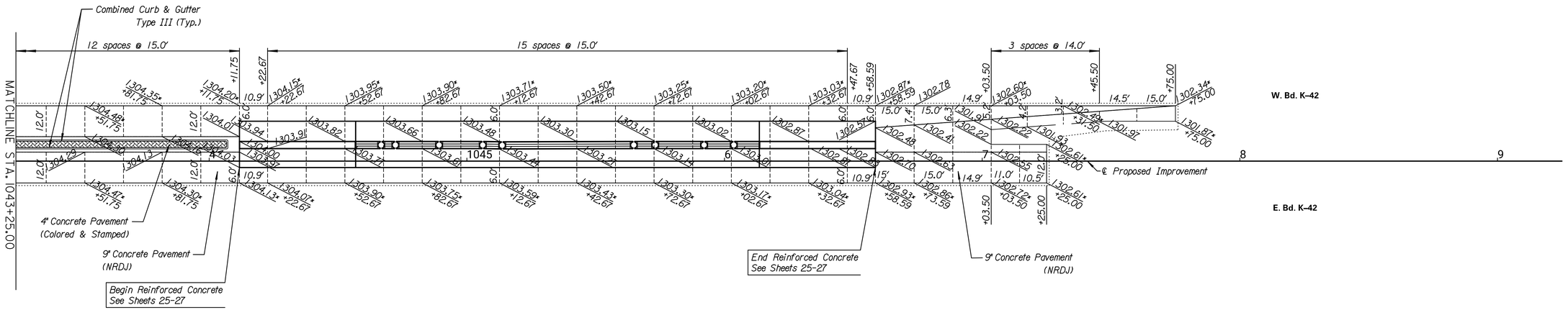
LEGEND

- Contraction Joint
- Longitudinal Joint
- x Matches Existing
- Expansion Joint

Notes:
Pavement joints shall be continued through curb & gutter and match joint patterns where possible

All joints within the reinforced concrete pavement shall be tied with #4 bars 2' long spaced on 30" centers in all directions with 6" x 12" - W4 x W4 welded wire mesh.

SCALE
20' 0 20' 40'



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO:	472-2020-085700
SCALE:	1"=20'
DATE:	1/22/2025
DESIGNED BY:	CKC
DRAWN BY:	CKC
CHECKED BY:	MDB

SHEET TITLE:

K-42
JOINTING PLANS
STA. 1043+25.00 TO
STA. 1047+75.00

SHEET NO.
14
SHEET 14 OF 105

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IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

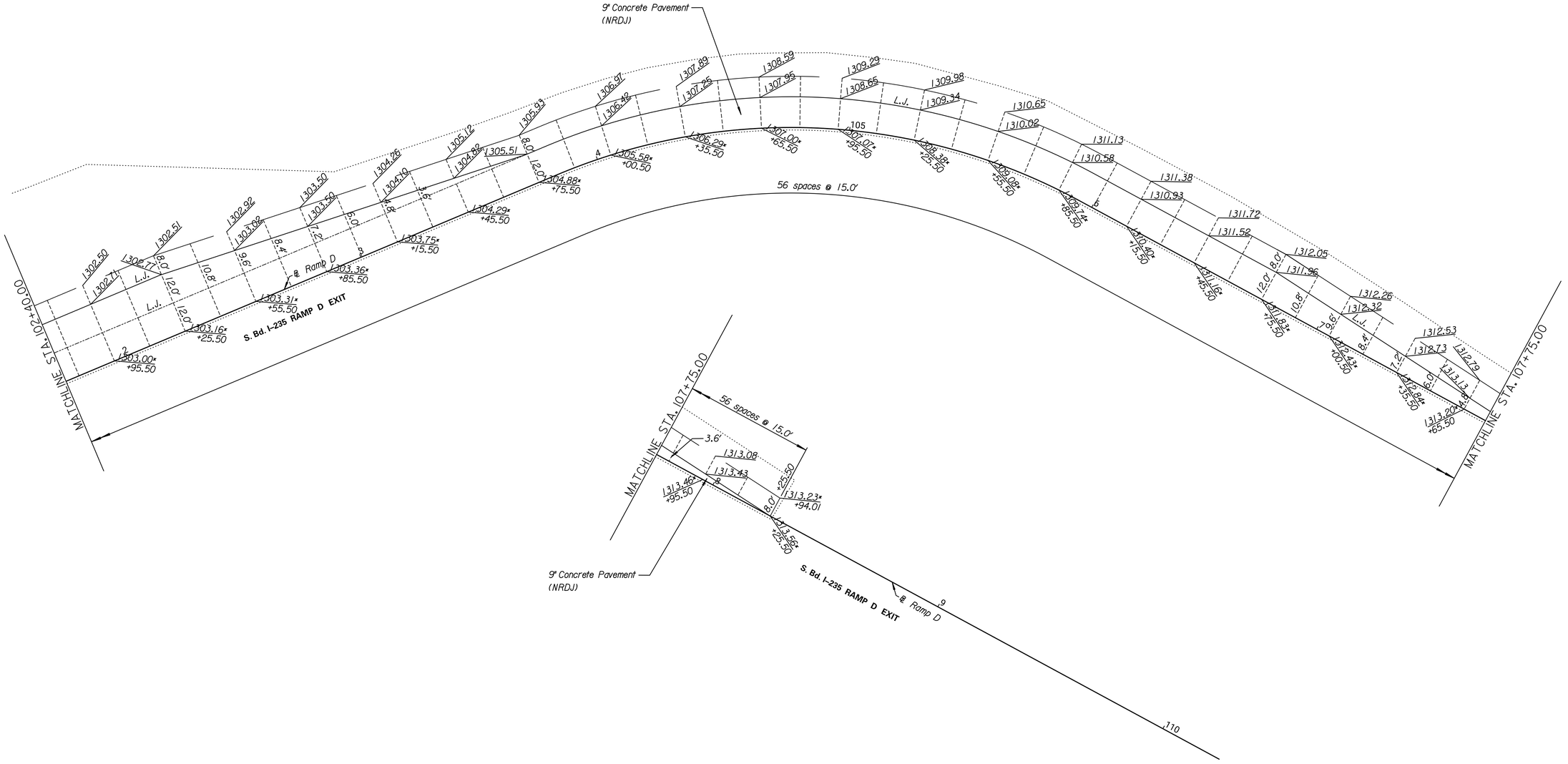
LEGEND

- Contraction Joint
- Longitudinal Joint
- x Matches Existing
- Expansion Joint

Notes:
Pavement joints shall be continued through curb & gutter and match joint patterns where possible

All joints within the reinforced concrete pavement shall be tied with #4 bars 2' long spaced on 30" centers in all directions with 6" x 12" - W4 x W4 welded wire mesh.

SCALE
20' 0 20' 40'



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

SHEET TITLE:

RAMP D
JOINTING
STA. 101+75.00 TO
STA. 110+00.00

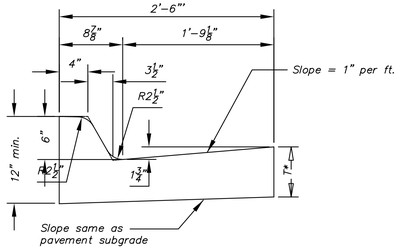
SHEET NO.
15

SHEET 15 OF 105

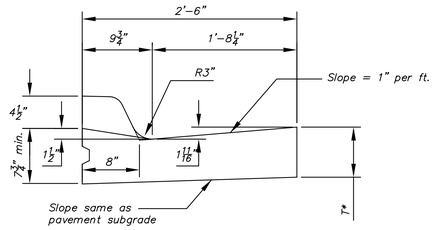
dmmckee
1/22/2025 - 3:46:36 PM - c:\transystems\pw_local\transyscorp.pw1la-e_dmmckee\d097007 4\C-JNT-M02-101.DGN

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

TYPE 1
(Arterial curb)

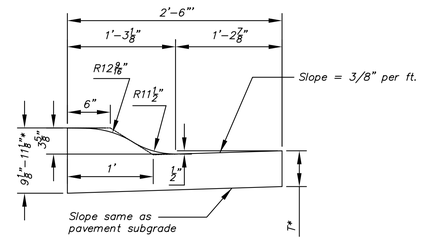


Combined Curb & Gutter (6")

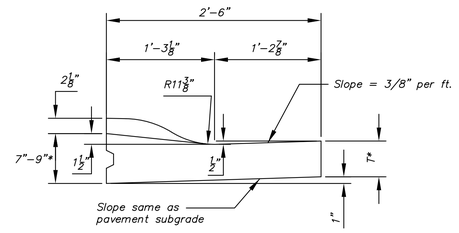


Combined Curb & Gutter (1 1/2")

TYPE 2
(Roll curb)

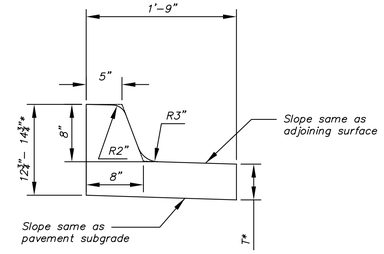


Combined Curb & Gutter (3 5/8")

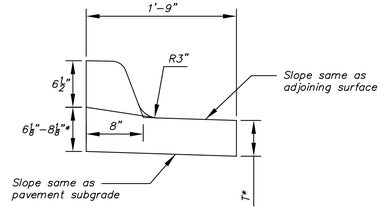


Combined Curb & Gutter (1 1/2")

TYPE 3
(Median curb)

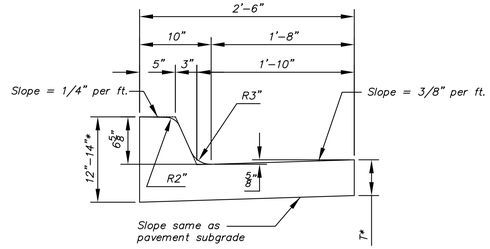


Combined Curb & Gutter (8")

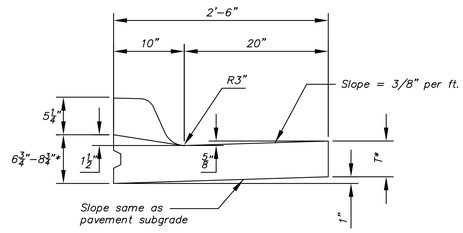


Combined Curb & Gutter (1 1/2")

TYPE 4
(Residential curb)

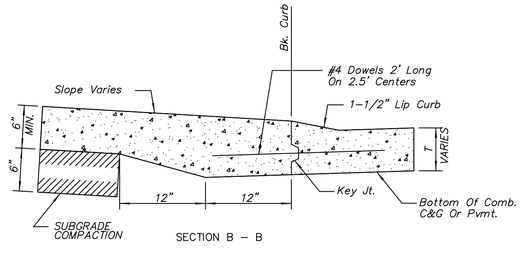


Combined Curb & Gutter (6 5/8")

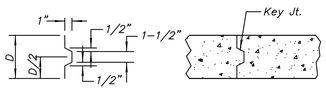


Combined Curb & Gutter (1 1/2")

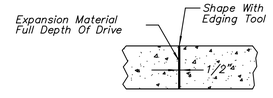
T* = Thickness of curb to adjust with pavement thickness



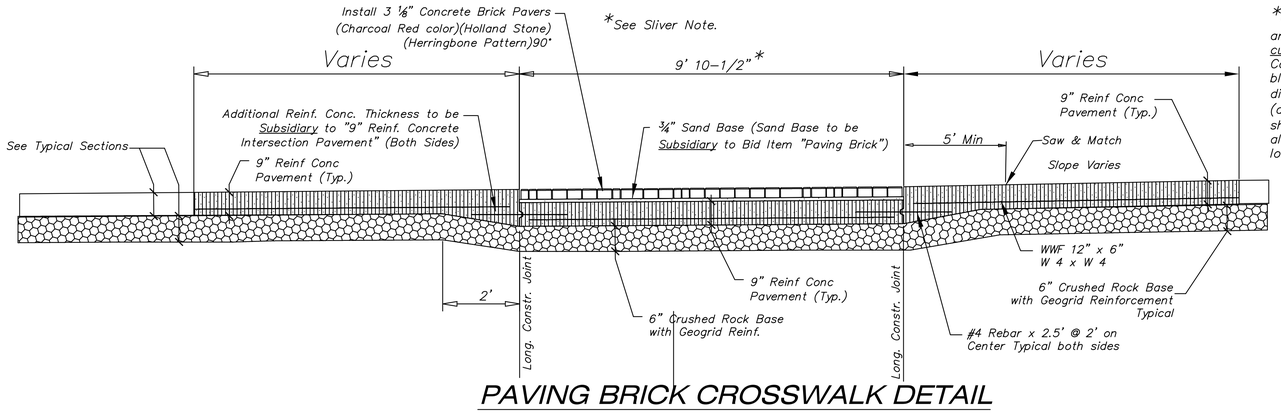
BACK OF CURB DETAIL



ALT. LONGITUDINAL CONSTRUCTION JOINT



EXPANSION JOINT (E.J.)



PAVING BRICK CROSSWALK DETAIL

*Brick Pavers to be installed in crosswalk and/or median locations shall be custom cut to match final concrete dimensions. Contractor shall construct crosswalk blockouts to match nominal paver width dimensions. Fill in with "brick slivers" (defined as pieces smaller than 1/2 of the shortest paver dimension) shall not be allowed, except at the end of crosswalk locations.

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.

REVISED: OCTOBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

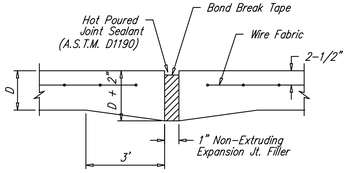
CURB & GUTTER & PAVING BRICK CROSSWALK DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

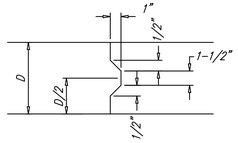
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
16 OF 105

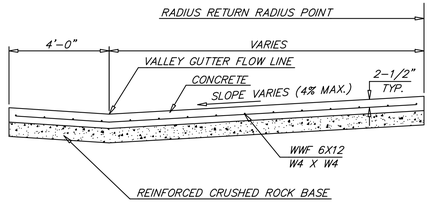


EXPANSION JOINT

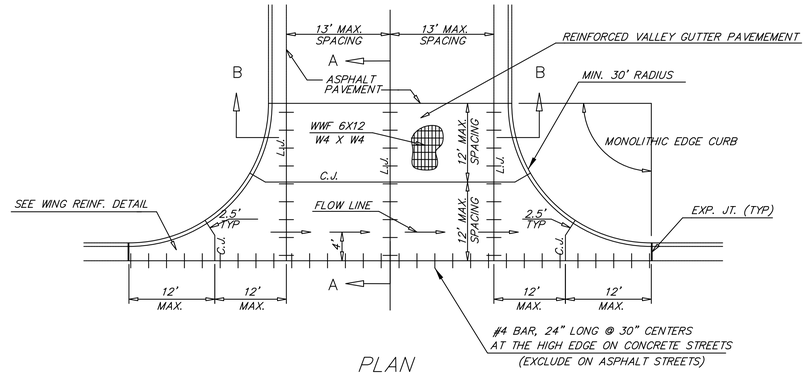
NOTE: Extra Thickness to be Subsidiary to Price of Square Yards Pavement



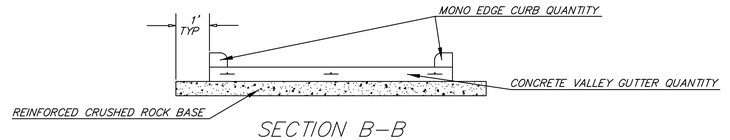
KEYWAY DETAIL



SECTION A-A

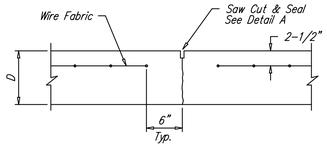


PLAN

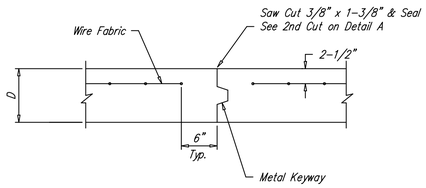


SECTION B-B

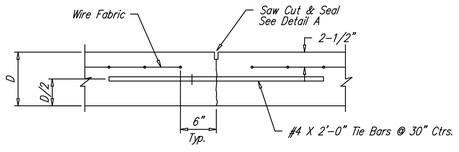
REINFORCED VALLEY GUTTER DETAIL



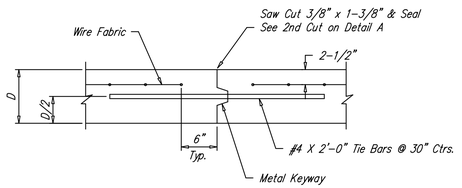
CONTRACTION JOINT DETAIL (C.J.)



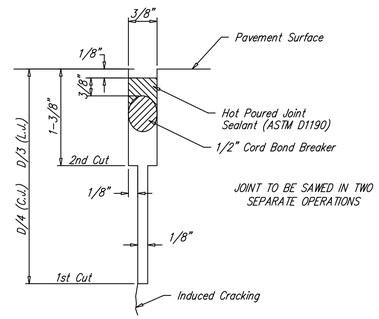
OPTIONAL CONTRACTION JOINT



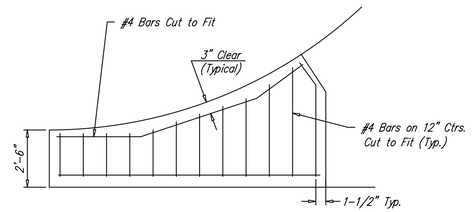
LONGITUDINAL JOINT DETAIL (L.J.)



OPTIONAL LONGITUDINAL JOINT DETAIL (L.J.)



SAW JOINT DETAIL
(DETAIL A)



WING REINFORCING DETAIL

REVISION MAY 2017	SECTION B-B, ROCK EXTENDED ONE FOOT BEYOND PAVEMENT

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

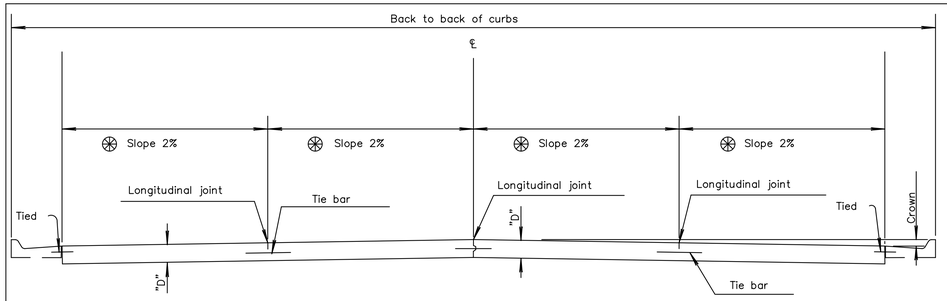
VALLEY GUTTER DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

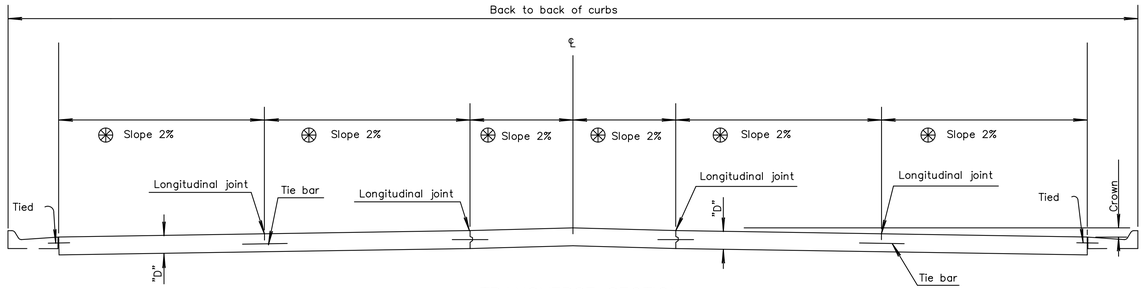
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
17 OF 105



For Curb & Gutter details
See Standard Drawing PV–101.

TRANSVERSE SECTION
(4 – LANE WITH CURB & GUTTER)



TRANSVERSE SECTION
(5 – LANE WITH CURB & GUTTER)

✻ Normal cross slopes. See Typical Section or Cross Sections for variations.

GENERAL NOTE

Epoxy coat all deformed tie bars. Patch any damage to the epoxy coating in accordance with the Standard Specifications.

Use billet steel Grade 40 reinforcing for deformed tie bars THAT require bending, may or may not be epoxy coated.

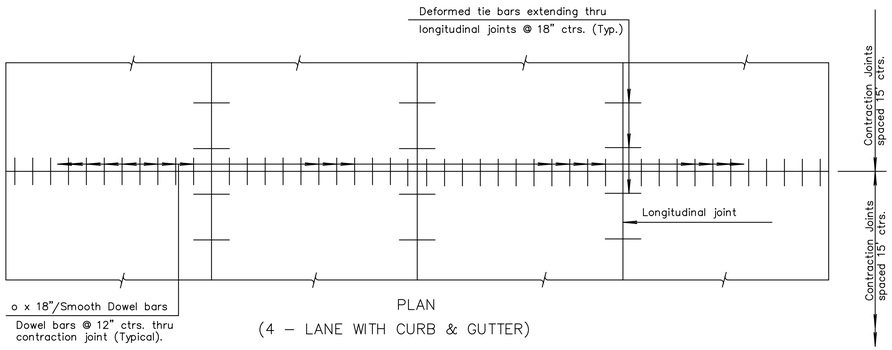
Place pressure relief joint at the end of the bridge approach pavement slab (no bars through joint). For details of pressure relief joint see KDOT Standard Drawing RD712.

Use load transfer devices as shown in details at all construction joints on mainline pavement unless otherwise noted.

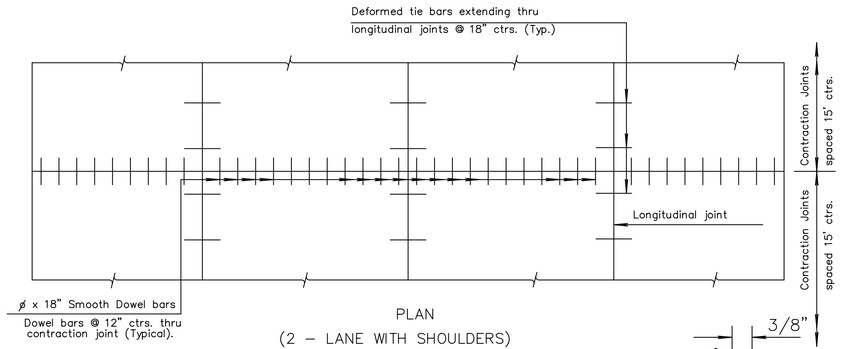
◇ Fill all sawed joints on the project in accordance with the Standard Specifications.

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

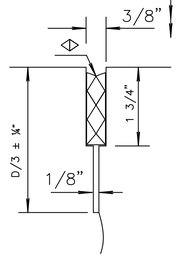
Evenly space tie bars along the length of slab with no tie bar within 12" of contraction joint. All longitudinal joints are tied.



PLAN
(4 – LANE WITH CURB & GUTTER)



PLAN
(2 – LANE WITH SHOULDERS)

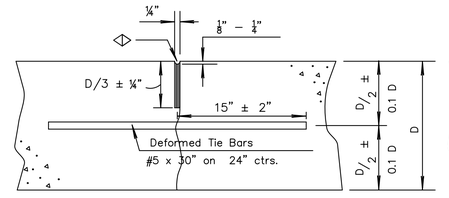


Ψ DETAIL OF SEALED CONTRACTION JOINT SAWCUT

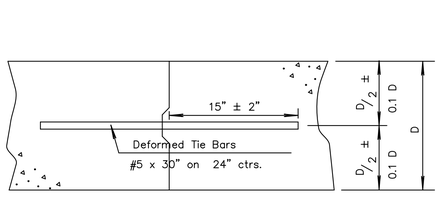
Make an initial $\frac{1}{8}$" saw cut(D/3 ± $\frac{1}{4}$" depth); the second $\frac{3}{8}$" saw cut is a separate operation done after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.

DOWEL SIZE	
D (in.)	Diameter
6 < D < 9	1"
9 ≤ D < 11	1 1/4"
D ≥ 11	1 1/2"

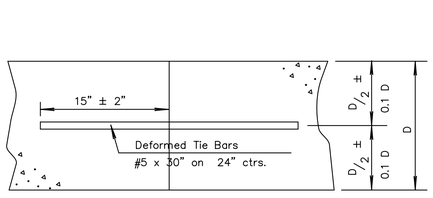
PAVEMENT DEPTH
D=9"



Tied Non–Keyed



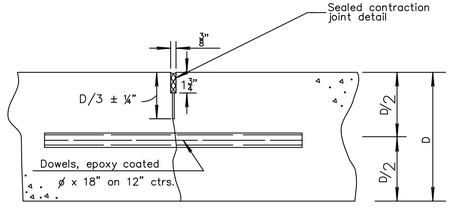
Tied Keyed Construction



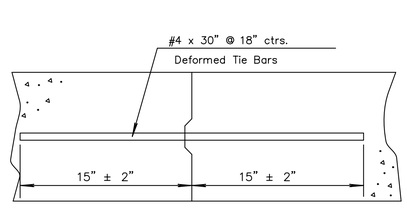
Tied Butt Construction

Note: For longitudinal construction joints the contractor has the option of using either the keyed or butt type. Place deformed tie bars mid–depth of the shoulder.

LONGITUDINAL JOINTS



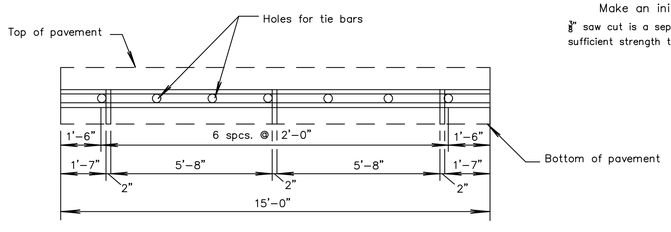
Ψ Contraction



Construction

TRANSVERSE JOINTS

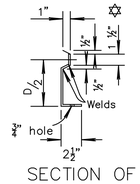
Note: Construct contraction joints at plan locations or at the Engineer's direction.
When necessary to interrupt continuous placement for a substantial length of time or at the end of a day's paving, the Contractor has the option of ending placement at a contraction joint or with a construction joint located a minimum of five (5) feet from a contraction joint. Construct either joint type by placing a header at the end of the pour or by paving past the joint location. After the concrete has hardened, saw joint and drill holes for tie bars or dowels.



METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT

To be used only against forms, do not extend through contraction joints. For automated placement tie bars are spaced at uniform 24" centers.

✡ Use snap–in leg or other approved design in lieu of welded leg.



SECTION OF
RECESSED
FORM LEG

REVISED: NOVEMBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

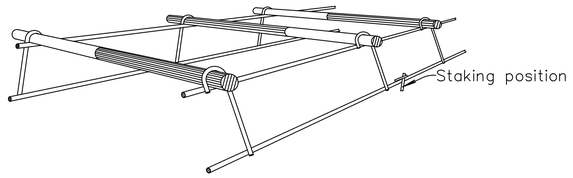
CONCRETE PAVEMENT DOWEL JOINTED NON-REINFORCED

CITY ENGINEER
PAUL GUNZELMAN, P.E.

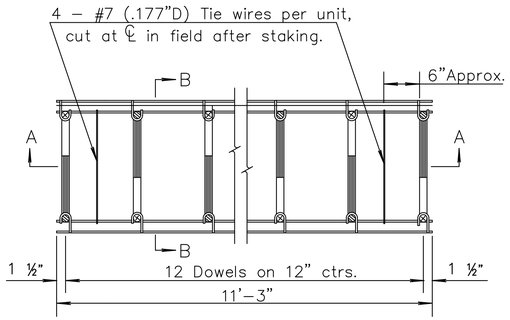
PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

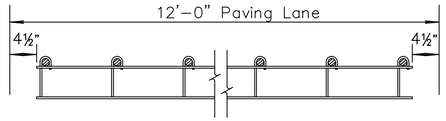
SHEET
18 OF 105



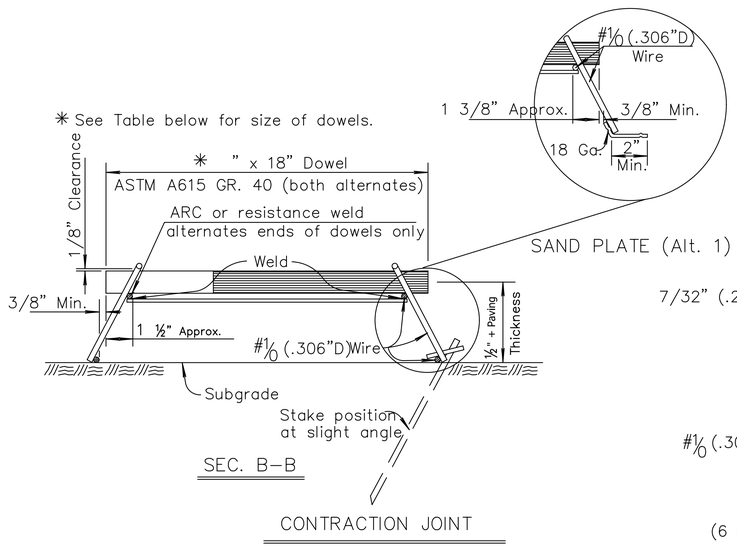
PERSPECTIVE VIEW



PLAN VIEW



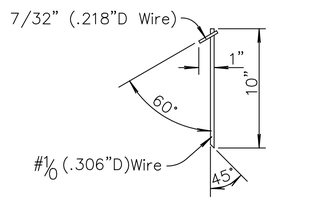
SEC. A–A



SEC. B–B

SAND PLATE (Alt. 1)

CONTRACTION JOINT



STAKE DETAIL

(6 Pieces minimum required)

DOWEL SIZE	
D (in.)	Diameter
6 < D < 9	1"
9 ≤ D < 11	1 1/4"
D ≥ 11	1 1/2"

PAVEMENT DEPTH

D=9"

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 City of Wichita and shall be uniformly applied according to accepted practiced and the resin manufacturer's recommendations. For Alt. 1 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 use when subgrade condition requires it.

A string line shall be stretched between the pavement forms along the center line of 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 to 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 joint will be perpendicular to 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 trans–verse location and within the range of depth of $D/2 \pm 0.1$ 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.

REVISED: NOVEMBER 2015

CITY OF WICHITA

PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CONTRACTION & EXPANSION JT. DOWEL ASSEMBLIES

CITY ENGINEER

PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET

19 OF 105

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

STORM SEWER POINTS					
Point Number	Coordinates		Station	Offset	Description
	Northing	Easting			
400	1670782.71	1630727.95	1040+25.00	18.50' Lt.	Inlet-Manhole, Special
401	1670860.20	1630675.62	1040+25.00	112.00' Lt.	18" End Section
402	1670911.40	1630684.12	1040+60.66	149.68' Lt.	42" End Section
403	1670987.94	1631053.31	1044+09.50	6.50' Lt.	Inlet-Manhole, Special
404	1670929.87	1631092.52	1043+83.75	63.50' Lt.	18" End Section

Line B

(402) Sta. 0+08.00 Line B =
Sta. 1040+60.66, 149.68' Lt.
Install 42" End Section, B1
See Sheet 22

Sta. 0+00.00 Line B =
Sta. 1040+68.66, 149.68' Lt.
Remove Existing End Section
Install 42" x 8.0' Storm Sewer
RCP (W)

(401) Sta. 0+93.50 Line A =
Sta. 1040+25.00, 112.00' Lt.
Install 18" End Section, A1
See Sheet 23

Line A

Sta. 1038+39.86, 10.69' Lt.
Remove Exist. Area Inlet
Abandon 85.7 L.F. 15" RCP
in place, plug both ends &
fill with Flowable Fill

S. Bd. I-235 RAMP D EXIT

S. Bd. I-235 RAMP C ENTRANCE

W. Bd. K-42

℄ Ramp D

Sta. 1044+19.89, 6.54' Lt.
Remove Exist. Area Inlet

(403) Sta. 0+00.00 Line C =
Sta. 1044+09.50, 6.50' Lt.
Const. Inlet-Manhole, Special, C1
L=4'-6", W=4'-6", H=6'-6"
Install 18" x 70.0' Storm Sewer RCP (SE)
(Bored/Jacked)
See Sheet 21

W. Bd. K-42

9 1040 1 100 2 3 4

℄ Proposed Improvements

E. Bd. K-42

(400) Sta. 0+00.00 Line A =
Sta. 1040+25.00, 18.50' Lt.
Const. Inlet-Manhole, Special, A1
L=4'-6", W=4'-6", H=5'-6"
Install 18" x 44.0' Storm Sewer RCP (NW)
(Bored/Jacked)
Install 18" x 46.6' Storm Sewer CMP (NW)
Brokenback
See Sheet 21

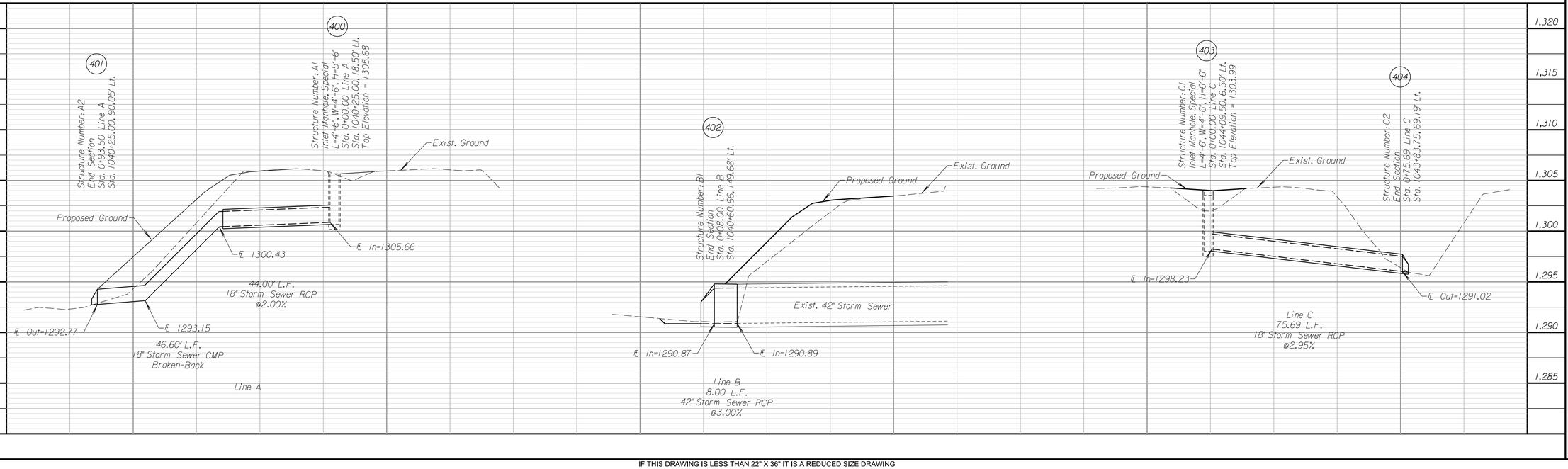
E. Bd. K-42

Line C

(404) Sta. 0+75.69 Line C =
Sta. 1043+83.75, 69.19' Lt.
Install 18" End Section, C2
See Sheet 22

℄ Sideroad

1



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:		
MARK	DATE	DESCRIPTION

PROJ NO:
SCALE: 1"=20'
DATE:
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

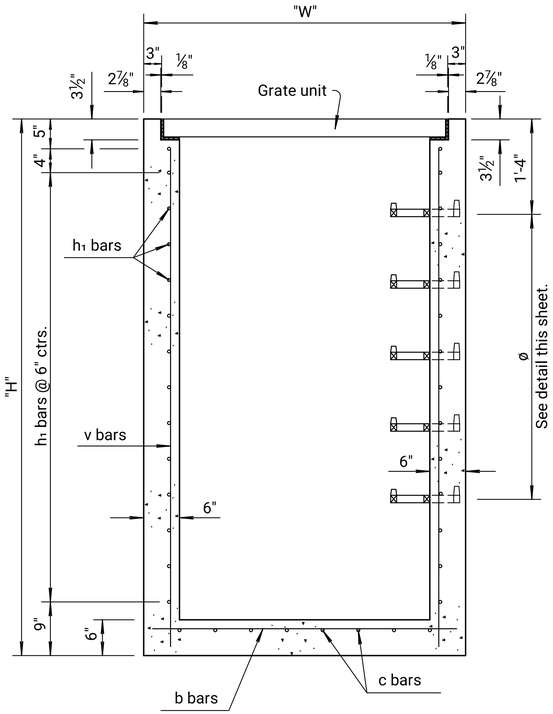
SHEET TITLE:
PROPOSED STORM SEWER

SHEET NO.
20
SHEET 20 OF 105

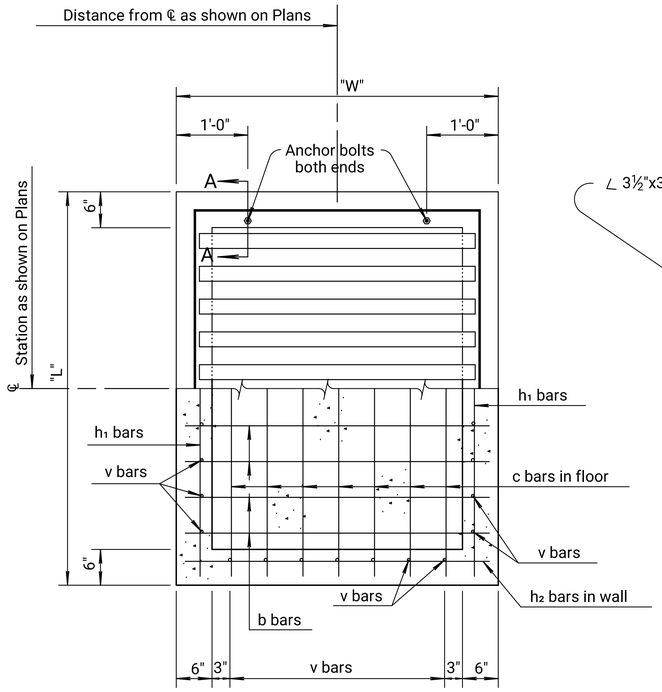
IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

dmnolen
1/22/2025 - 3:46:48 P.M. - c:\transystems\pw_local\transyscorp-pw1\ie-q_dmnolen\d0970074C-SDR-M01-101.DGN

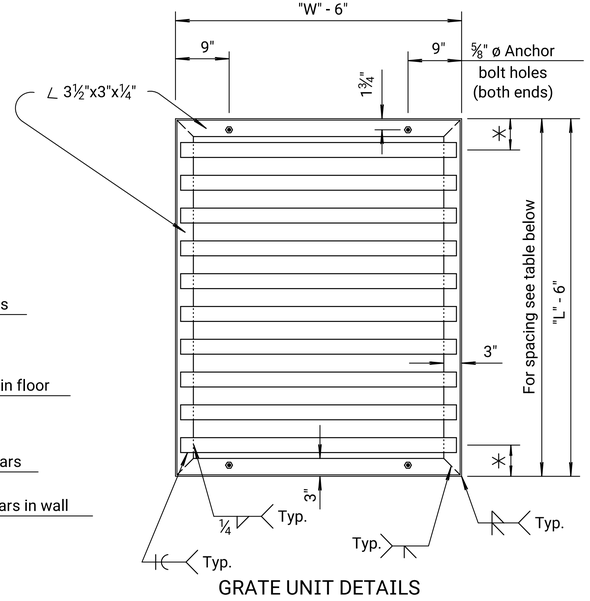
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	21	105



SECTION



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.

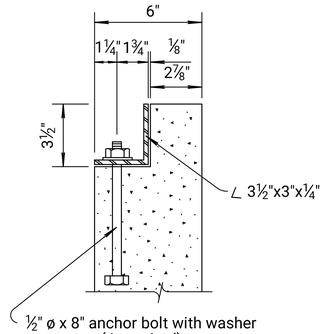
The grate shall be fabricated from standard or commercial grade structural steel and black steel pipe. The unit shall be hot dipped, galvanized after fabrication, in accordance with ASTM A123 except the weight of coating shall average not less than 2.0 ounces per square foot of actual surface and no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

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

BILL OF MATERIALS FOR INLET-MANHOLE (SPECIAL)

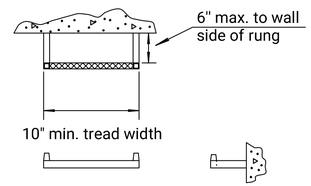
"L" "W" "H" 4'-6" x 4'-6" x 3'-6"				"L" "W" "H" 7'-6" x 4'-6" x 7'-6"				"L" "W" "H" 4'-6" x 4'-6" x 6'-6"				"L" "W" "H" 4'-6" x 4'-6" x 5'-6"							
Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length
v	28	#4	3'-0"	v	40	#4	7'-0"	v	28	#4	6"-0"	v	28	#4	5"-0"	v		#4	
c	7	#4	4'-3"	c	7	#4	7'-3"	c	7	#4	4'-3"	c	7	#4	4'-3"	c		#4	
b	7	#4	4'-3"	b	13	#4	4'-3"	b	7	#4	4'-3"	b	7	#4	4'-3"	b		#4	
h₁	12	#4	4'-3"	h₁	28	#4	7'-3"	h₁	24	#4	4'-3"	h₁	20	#4	4'-3"	h₁		#4	
h₂	12	#4	4'-3"	h₂	28	#4	4'-3"	h₂	24	#4	4'-3"	h₂	20	#4	4'-3"	h₂		#4	
Conc. Grade 3.0		1.23	Cu.Yd.	Conc. Grade 3.0		3.42	Cu.Yd.	Conc. Grade 3.0		2.12	Cu.Yd.	Conc. Grade 3.0		1.82	Cu.Yd.	Conc. Grade 3.0			Cu.Yd.
Reinf. steel		164	Lbs.	Reinf. steel		473	Lbs.	Reinf. steel		289	Lbs.	Reinf. steel		248	Lbs.	Reinf. steel			Lbs.
Struct. steel		260	Lbs.	Struct. steel		430	Lbs.	Struct. steel		260	Lbs.	Struct. steel		260	Lbs.	Struct. steel			Lbs.
Class III Excav.		5	Cu.Yd.	Class III Excav.		17	Cu.Yd.	Class III Excav.		9	Cu.Yd.	Class III Excav.		8	Cu.Yd.	Class III Excav.			Cu.Yd.

"L" "W" "H" 4'-6" x 4'-6" x 6'-0"				"L" "W" "H" 5'-6" x 4'-6" x 7'-6"				"L" "W" "H" 4'-0" x 4'-0" x 4'-6"				"L" "W" "H" 4'-6" x 4'-6" x 4'-0"				"L" "W" "H" 4'-6" x 4'-6" x 4'-6"				"L" "W" "H" 5'-6" x 4'-6" x 5'-0"			
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	28	#4	5'-6"	v	32	#4	7'-0"	v	24	#4	4'-0"	v	28	#4	3'-6"	v	28	#4	4'-0"	v	32	#4	4'-6"
c	7	#4	4'-3"	c	7	#4	5'-3"	c	6	#4	3'-9"	c	7	#4	4'-3"	c	7	#4	4'-3"	c	7	#4	5'-3"
b	7	#4	4'-3"	b	9	#4	4'-3"	b	6	#4	3'-9"	b	7	#4	4'-3"	b	7	#4	4'-3"	b	9	#4	4'-3"
h₁	22	#4	4'-3"	h₁	28	#4	5'-3"	h₁	16	#4	3'-9"	h₁	14	#4	4'-3"	h₁	16	#4	4'-3"	h₁	18	#4	5'-3"
h₂	22	#4	4'-3"	h₂	28	#4	4'-3"	h₂	16	#4	3'-9"	h₂	14	#4	4'-3"	h₂	16	#4	4'-3"	h₂	18	#4	4'-3"
Conc. Grade 3.0		1.95	Cu.Yd.	Conc. Grade 3.0		2.75	Cu.Yd.	Conc. Grade 3.0		1.30	Cu.Yd.	Conc. Grade 3.0		1.37	Cu.Yd.	Conc. Grade 3.0		1.52	Cu.Yd.	Conc. Grade 3.0		1.91	Cu.Yd.
Reinf. steel		268	Lbs.	Reinf. steel		377	Lbs.	Reinf. steel		174	Lbs.	Reinf. steel		185	Lbs.	Reinf. steel		205	Lbs.	Reinf. steel		261	Lbs.
Struct. steel		260	Lbs.	Struct. steel		315	Lbs.	Struct. steel		206	Lbs.	Struct. steel		260	Lbs.	Struct. steel		260	Lbs.	Struct. steel		315	Lbs.
Class III Excav.		9	Cu.Yd.	Class III Excav.		14	Cu.Yd.	Class III Excav.		6	Cu.Yd.	Class III Excav.		6	Cu.Yd.	Class III Excav.		7	Cu.Yd.	Class III Excav.		9	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	⌖
7'-6"x4'-6"	13	2½"ø x 3'-10¼" pipes @ 6" ctrs.	6"
5'-6"x4'-6"	10	2½"ø x 3'-10¼" pipes @ 5½" ctrs.	5¼"
4'-6"x4'-6"	8	2½"ø x 3'-10¼" pipes @ 5½" ctrs.	4¾"
4'-0"x4'-0"	7	2½"ø x 3'- 4¼" pipes @ 5½" ctrs.	4½"

NO.	DATE	REVISIONS	BY	APP'D
11	07-17-17	Revised step dimensions	A.L.R.	S.W.K.
10	06-13-12	Revised Concrete Quantity	S.W.K.	J.O.B.
09	01-28-05	Chaned Class to Grade Concrete	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

INLET-MANHOLE SPECIAL

RD648

FHWA APPROVAL		08-09-17	APP'D.	Scott W. King
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

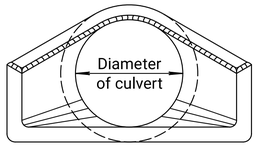
CADconform Certify This File

Sh. No. 21

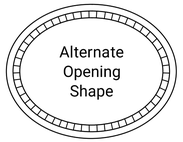
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0955680\rd648.dgn
Plotted :11/2222222225

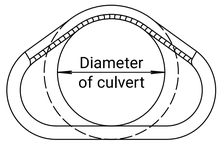
CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	22	105



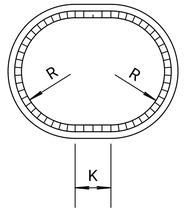
END ELEVATION (TYPE I)





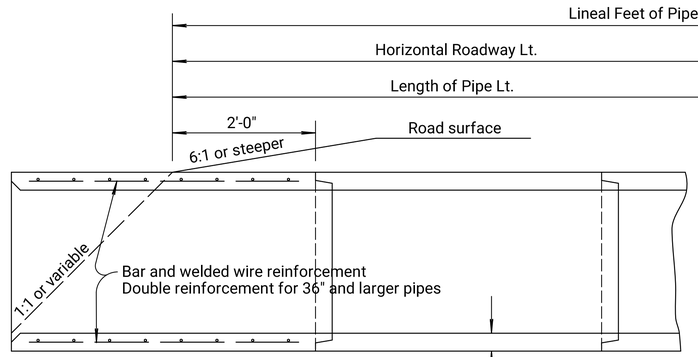
SECTION A-A

Showing rounding of inside edge of end section.

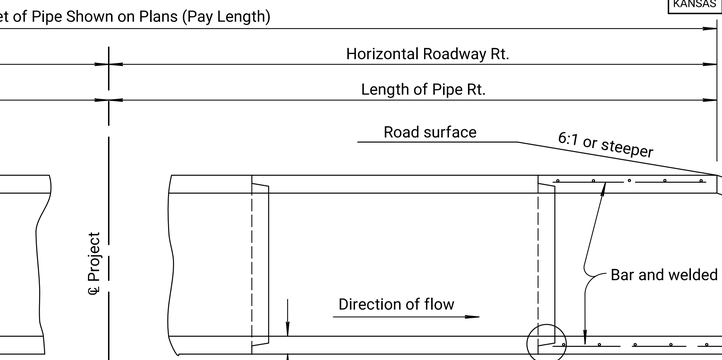


END ELEVATION
(TYPE III)

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.

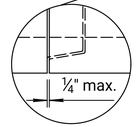


INLET END

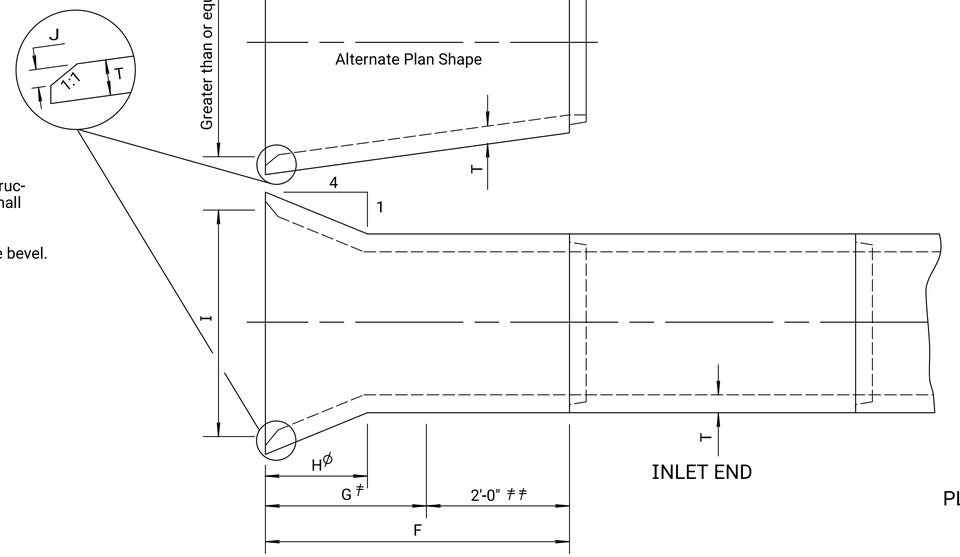


OUTLET END

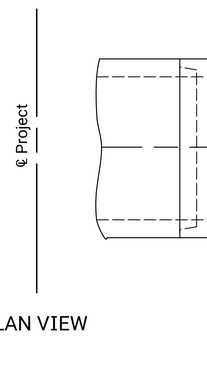
ELEVATION SECTION



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



INLET END



PLAN VIEW

OUTLET END

∅ Transition to round pipe.
≠ 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. ".
≠≠ 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≠≠	C≠	D	E	R_I	Slope	T
12"	6'-0 ⅞"	4'-0 ⅞"	2'-0"	2'-0"	4"	9	3:1	2"
15"	6'-1"	3'-10"	2'-3"	2'-6"	6"	11	3:1	2 ¼"
18"	6'-1"	3'-10"	2'-3"	3'-0"	9"	12	3:1	2 ½"
24"	6'-1 ½"	2'-6"	3'-7 ½"	4'-0"	9 ½"	14	3:1	3"
30"	6'-1 ¾"	1'-7 ¾"	4'-6"	5'-0"	1'-0"	15	3:1	3 ½"
36"	8'-1 ¾"	2'-10¾"	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 ½"
48"	8'-2"	2'-2"	6'-0"	7'-0"	2'-0"	22	3:1	5"
54"	8'-2 ¼"	2'-9 ¼"	5'-5"	7'-6"	2'-3"	24	2.4:1	5 ½"
60"	8'-3"	3'-3"	5'-0"	8'-0"	2'-11"	24	21	6"
72"	8'-3"	1'-9"	6'-6"	9'-0"	3'-0"	24	1.86:1	7"
84"	9'-3 ½"	1'-9"	7'-6 ½"	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 ⅛"	2'-8"	1 ½"	8"	1'-0"	3"
30"	7.0	4'-9 ½"	2'-9 ½"	1'-9 ½"	3'-4"	2"	10"	1'-3"	3 ½"
36"	10.1	5'-4"	3'-4"	2'-1 ½"	4'-0"	2"	1'-0"	1'-6"	4"
42"	13.7	5'-10 ½"	3'-10 ½"	2'-5 ⅞"	4'-8"	2 ½"	1'-2"	1'-9"	4 ½"
48"	17.9	6'-5"	4'-5"	2'-10 ⅛"	5'-4"	3"	1'-4"	2'-0"	5"
54"	22.7	6'-11 ½"	4'-11 ½"	3'-2 ½"	6'-0"	3 ½"	1'-6"	2'-3"	5 ½"
60"	28.0	7'-6"	5'-6"	3'-6 ⅞"	6'-8"	4"	1'-8"	2'-6"	6"
72"	40.3	8'-7"	6'-7"	4'-3 ⅝"	8'-0"	5"	2'-0"	3'-0"	7"
84"	54.8	9'-8"	7'-8"	5'-0 ⅜"	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	4-05-05	Revised reinforcement callout	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

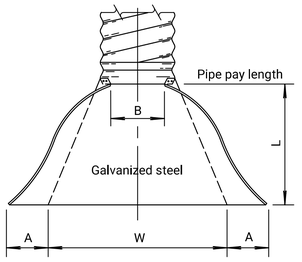
CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD662

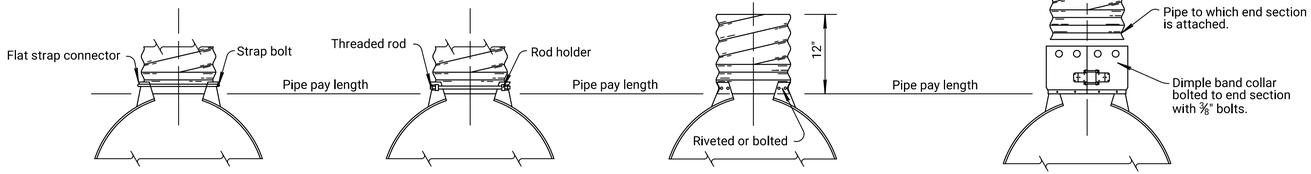
FHWA APPROVAL 6-27-08		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Drawn By : dmmckee Plotted :1/22/2025
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0955680\rd662.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	23	105



PLAN
(Illustrated with Type #3 Connection)



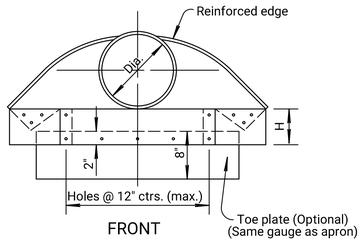
TYPE 1
Available in sizes 12" through 24" only.

TYPE 2
Available in sizes 30" and 36" Round and 17"x13" through 57"x38" Pipe-Arches.

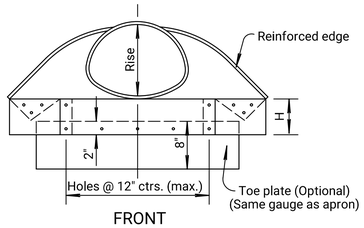
TYPE 3
Available in sizes 42" through 96" Round and 60"x46" through 81"x59" Pipe-Arches.

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).

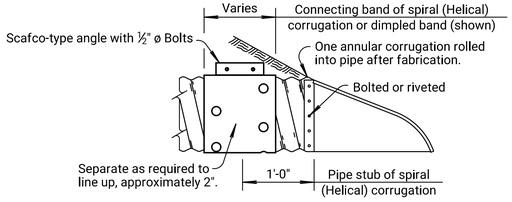
Note: Type 3 connection may be furnished instead of Type 1 or Type 2 for smaller round or arch pipe.



FRONT



FRONT



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.

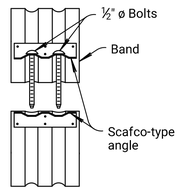
Toe plate extension, when specified, is an accessory and shall be the same gauge and metal as end section. Toe plate shall be punched to match holes in apron lip and attached with furnished 3#8" diameter nuts & bolts.

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.

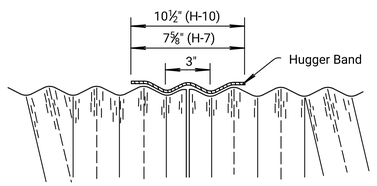
Multiple panel end sections may contain dual gauges of like metal and shall have lap seams which are tightly joined with rivets or bolts. For 60" and larger diameter round pipe end sections and 77"x52" arch pipe end sections, the reinforced edges are supplemented with stiffener angles. The angles are 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.

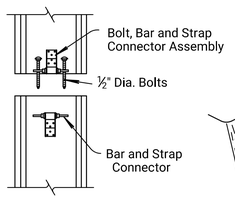


CONNECTION DETAIL
H-7 or H-10 BAND

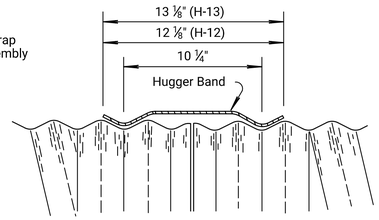


UNIVERSAL REFORMED END with
H-7 or H-10 HUGGER BAND

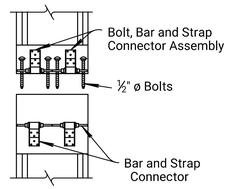
DETAILS FOR H-7 HUGGER BAND (12" thru 36")
or H-10 HUGGER BAND (12" thru 120")



CONNECTION DETAIL
SINGLE HARNESS



UNIVERSAL REFORMED END with
HUGGER BAND



CONNECTION DETAIL
DOUBLE HARNESS

DETAILS FOR H-12 or H-13 HUGGER BAND

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.

NO.	DATE	REVISIONS	BY	APP'D
04	09-10-09	Rev. Round and Arch tables, add. Alum.	S.W.K.	J.O.B.
03	01-20-09	Rev. Round and Arch tables, add. Alum.	S.W.K.	J.O.B.
02	04-18-08	Rev. layout, details, tables and notes	S.W.K.	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
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

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.

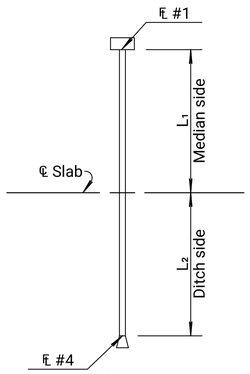
Drawn By : dmmckee Plotted : 1/22/2025
File : c:\transystems\pw_local\transysccorp-pw11a-e_dmmckee\d0955680\rd660.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	24	105

SCHEDULE OF STORM SEWER INSTALLATIONS

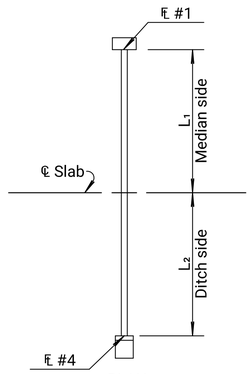
STATION	RIGHT or LEFT	DIST. ℄	CROWN GRADE ELEV.	"H"	⊛ TOP INLET OR HDWL.	FLOOR INLET OR HDWL.	FLOW LINES #1	#2	#3	#4	C.R.P. (LIN.FT.) 18" SWS	18" CMP	42" SWS	HEIGHT FILL (FEET)	CONC. AASHTO CLASS	INLET-MANHOLE SPECIAL	METAL END SECTION (NO.) 18"			CONCRETE END SECTION (NO.) 18"	42"		℄ LENGTH LIN. FT. L_1	L_2	L_3	℄ ANGLES "A"	"B"	FOR INFORMATION ONLY CLASS III EXC. (CU. YD.)	CAST IRON (LBS.)	CONC. GD. 3.0 (CU. YD.)	REINF. STEEL (LBS.)	STRUC. STEEL (LBS.)	REMARKS
1040+25.00	Lt.	18.50'		5.5	1305.68	1302.11	1305.66	1300.43	1293.15	1292.77	44	46.6				1	1						45.7	41.3	18.7	14°	14°						Broken-back Pipe Lt.
1040+68.66	Lt.	149.68'					1290.89			1290.87			8.0								1												
1044+09.50	Lt.	6.50'		6.5	1303.99	1300.23	1298.23			1291.02	75.7					1				1												
TOTALS											119.7	46.6	8.0			2	1			1	1											

Note: Top Elevation is located as follows:
1. Special Drop Inlet - Center of inlet
2. Manhole - Top of Manhole Ring
3. Type I Curb Inlet - Top of Curb
4. Double Drop Inlet - Center of Inlet
5. Type 2 Double Inlet - High Edge of Curb
6. Grated Driveway Inlet - High Edge of Gutter
7. Type 2 Special Inlet - High Edge of Curb



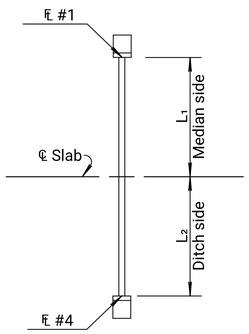
PLAN

CRP with Ditch Inlet and End Section Outlet (Not Broken Back)



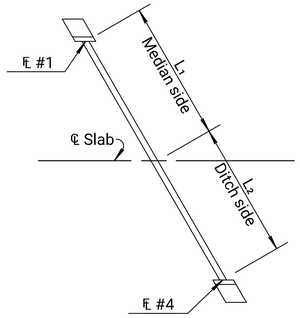
PLAN

CRP with Ditch Inlet and Headwall Outlet



PLAN

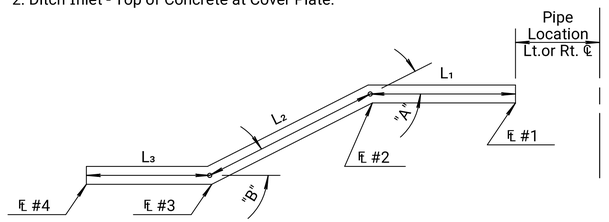
CRP with Headwalls Inlet & Outlet



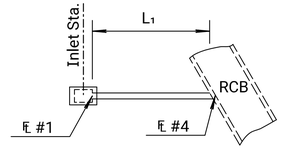
PLAN

30° Skew CRP with Headwalls Inlet & Outlet

⊛ Note: Top Elevation is located as follows:
1. Gutter Inlet - Top back of gutter.
2. Ditch Inlet - Top of Concrete at Cover Plate.



Sketch Along ℄ CRP (CMP) Broken-Back



PLAN

CRP with Ditch Inlet and Outlet into RCB

NO.	DATE	REVISIONS	BY	APP'D
03	01-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.
02	05-21-99	Added top elevation location note	R.J.S.	J.O.B.
01	10-08-90	Detailed on CADD	R.J.S.	J.O.B.

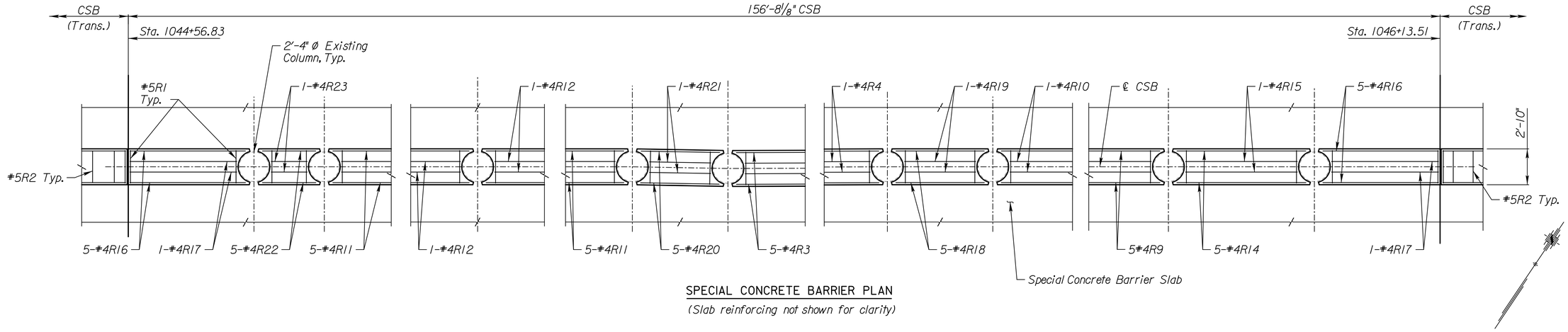
KANSAS DEPARTMENT OF TRANSPORTATION

SCHEDULE OF DITCH AND GUTTER INLETS

RD653I

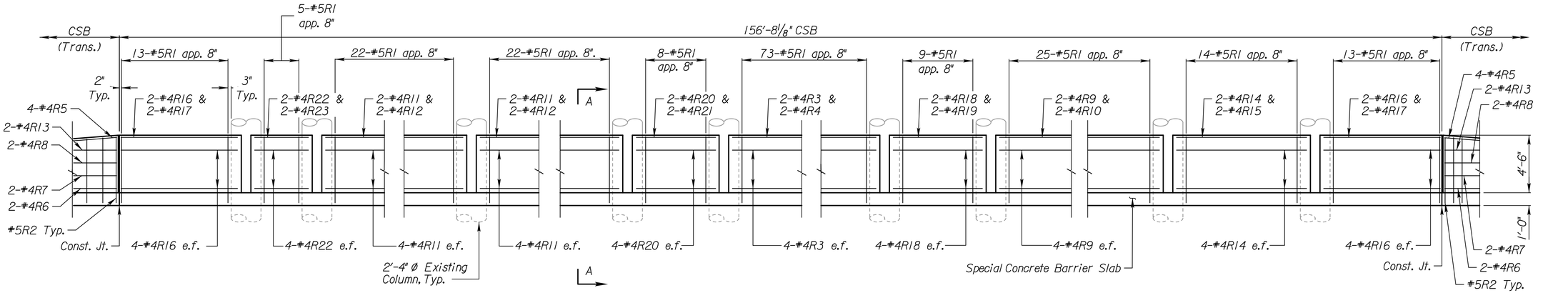
FHWA APPROVAL	06-10-05	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. R.J.S.

CADconform Certify This File



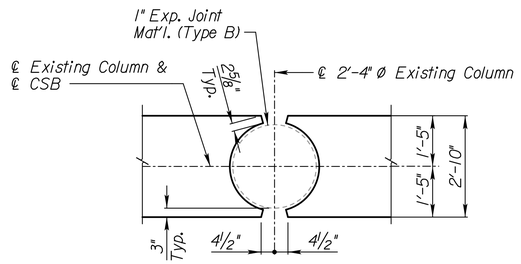
SPECIAL CONCRETE BARRIER PLAN

(Slab reinforcing not shown for clarity)

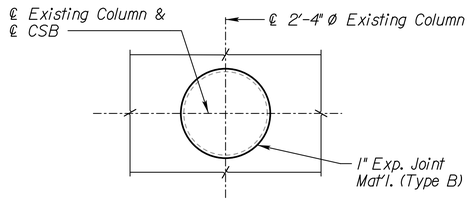


SPECIAL CONCRETE BARRIER ELEVATION

(Slab reinforcing not shown for clarity)



BARRIER AROUND EXISTING COLUMN DETAIL



SLAB AROUND EXISTING COLUMN DETAIL

GENERAL NOTES

Concrete shall be Grade 4.0 (AE) (SA).

Reinforcing steel shall be deformed bars that conform to ASTM A615 Grade 60 (Epoxy Coated)

All exposed edges shall be chamfered with a ¾" triangular molding. Exposed surfaces shall be given a rubbed finish.

Expansion joint material shall not be paid for directly but shall be subsidiary to other bid items.

For CSB Slab Plan, see Sheet 26.

For Section A-A & CSB Transition Details, see Sheet 27.

e.f. denotes each face.

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100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

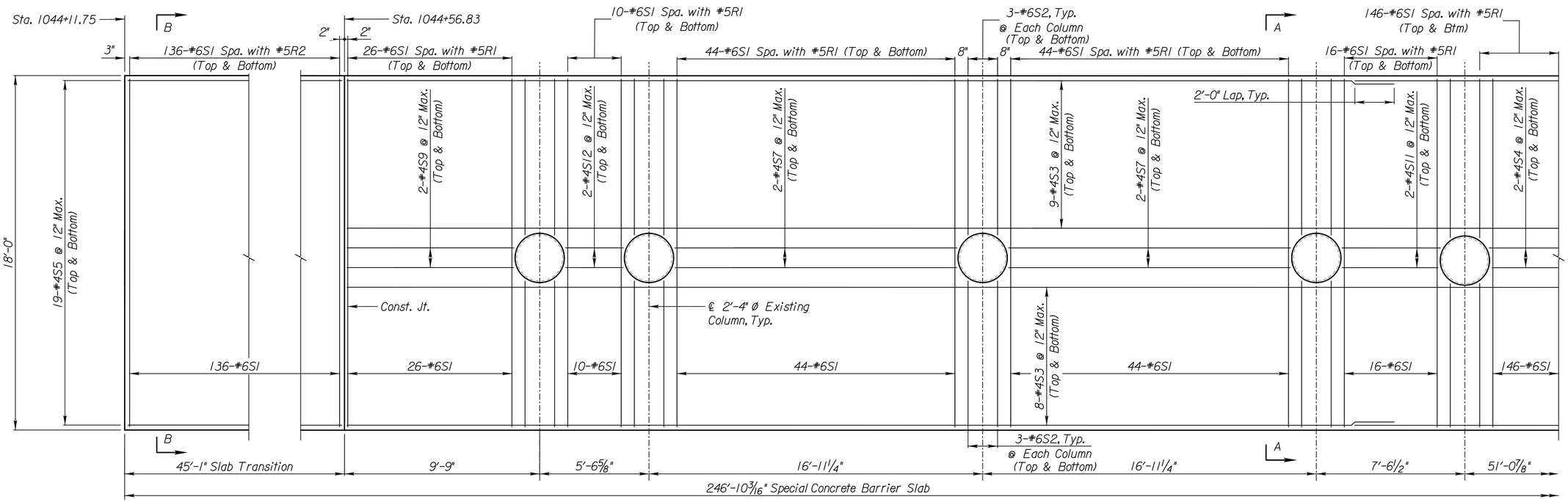
PROJ NO:
SCALE:
DATE:
DESIGNED BY: MJJ
DRAWN BY: NNR
CHECKED BY: MJJ

SHEET TITLE:

SPECIAL CONCRETE BARRIER DETAILS

SHEET NO. 25

SHEET 25 OF 105



SPECIAL CONCRETE BARRIER SLAB PLAN

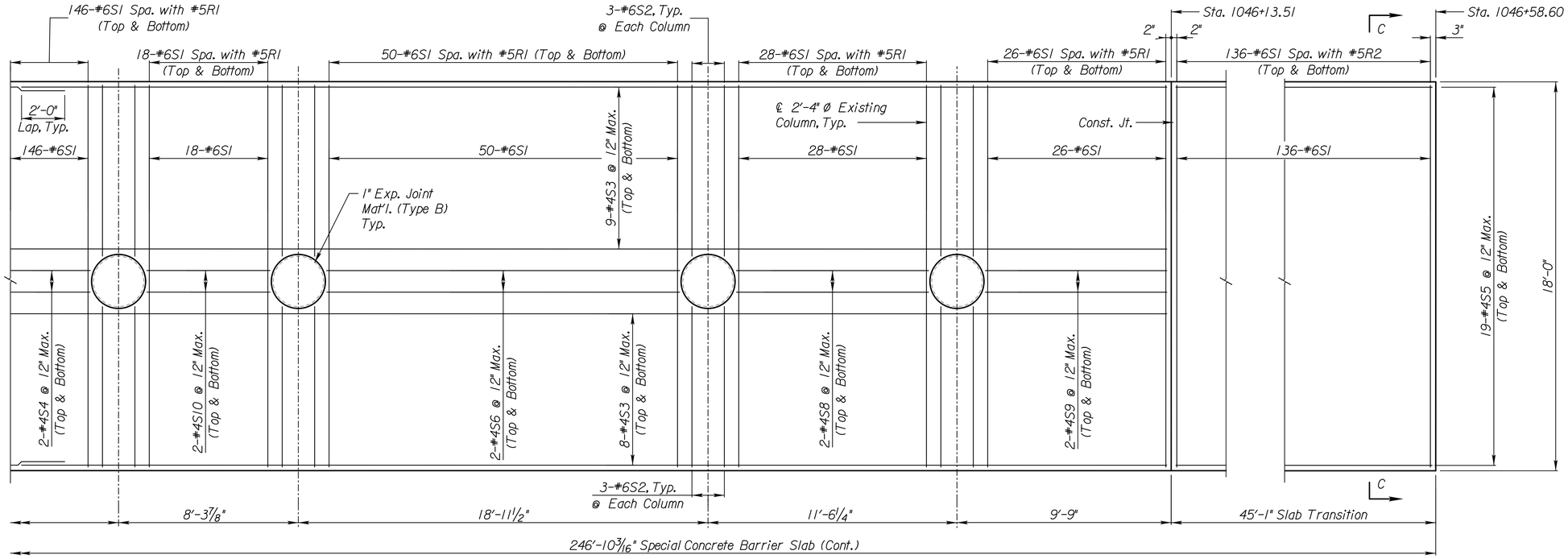
(CSB reinforcing not shown for clarity)

**Dimensions to ℄ Existing Columns are to be field verified*

Notes:

#6S2 bars shall be cut in field to provide 1½" clearance to edge of concrete at existing columns.

For Sections A-A, B-B & C-C, see Sheet 27.



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CITY OF WICHITA

REVISIONS:

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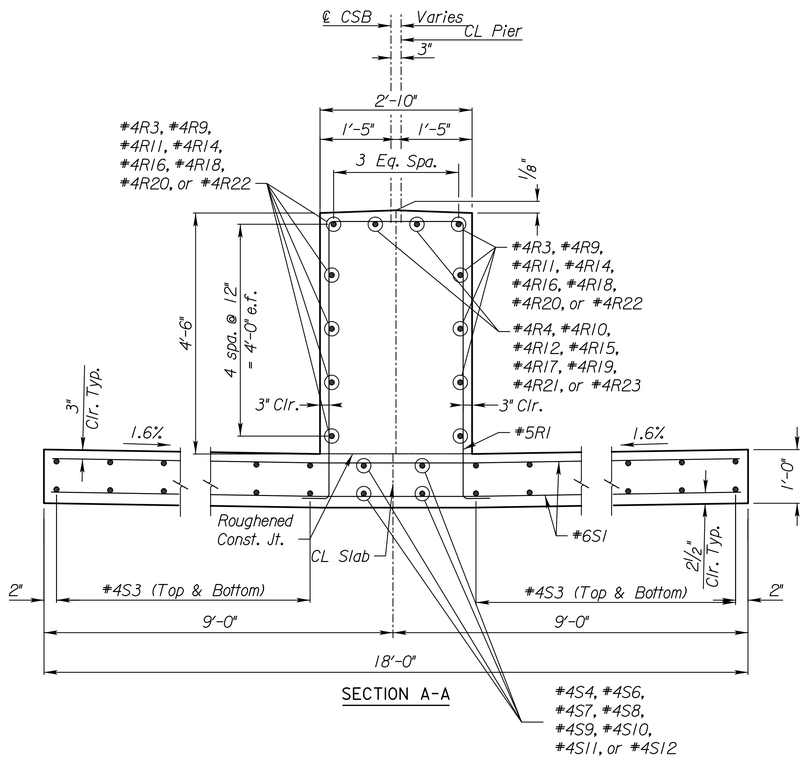
DESIGNED BY: MJJ
DRAWN BY: NNR
CHECKED BY: MJJ

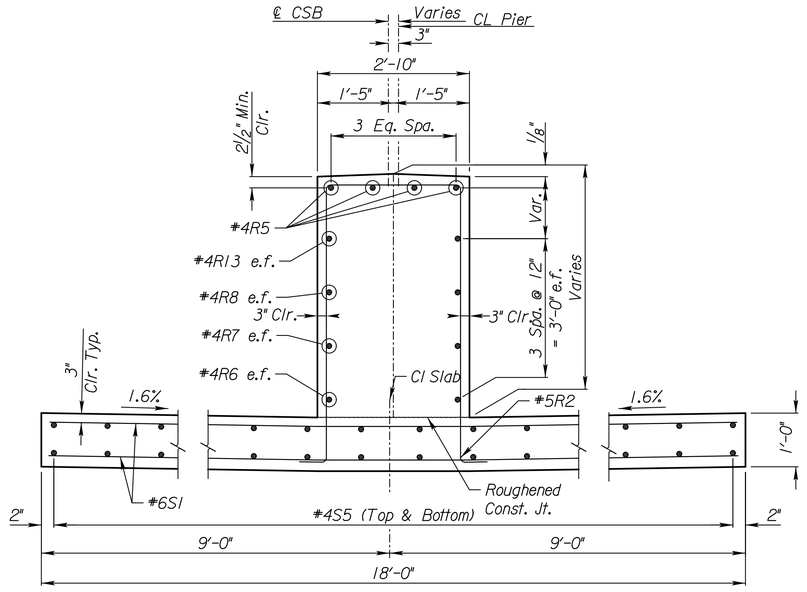
SHEET TITLE:

SPECIAL CONCRETE SLAB DETAILS

SHEET NO.
26
SHEET 26 OF 105



SECTION A-A



SECTION B-B

SECTION C-C

Notes:
For location of Sections A-A, B-B, & C-C, see Sheets 25 & 26.

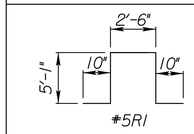
BILL OF MATERIALS

CONCRETE Grade 4.0 (AE)(SA) 92.2 yds.^{3}

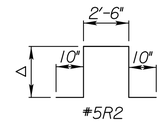
REINFORCING STEEL (GR. 60) (EPOXY COATED) 31,898 lbs.

MARK	SIZE	NO.	LENGTH
R1	5	204	14'-4"
R2	5	136	⊗
R3	4	10	49'-8"
R4	4	2	48'-4"
R5	4	8	44'-10"
R6	4	4	44'-8"
R7	4	4	38'-4"
R8	4	4	25'-5"
R9	4	10	17'-7"
R10	4	2	16'-3"
R11	4	20	15'-7"
R12	4	4	14-2"
R13	4	4	12'-6"
R14	4	10	10'-2"
R15	4	2	8'-9"
R16	4	20	9'-1"
R17	4	4	8'-5"
R18	4	10	7'-0"
R19	4	2	5'-7"
R20	4	10	6'-2"
R21	4	2	4'-10"
R22	4	10	4'-2"
R23	4	2	2'-10"
⊗ See Bending Diagram			
S1	6	680	17'-8"
S2	6	108	7'-11"
S3	4	102	53'-8"
S4	4	4	48'-5"
S5	4	76	44'-9"
S6	4	4	16'-4"
S7	4	8	14'-3"
S8	4	4	8'-10"
S9	4	8	8'-6"
S10	4	4	5'-8"
S11	4	4	5'-0"
S12	4	4	3'-0"

BAR BENDING DIAGRAMS



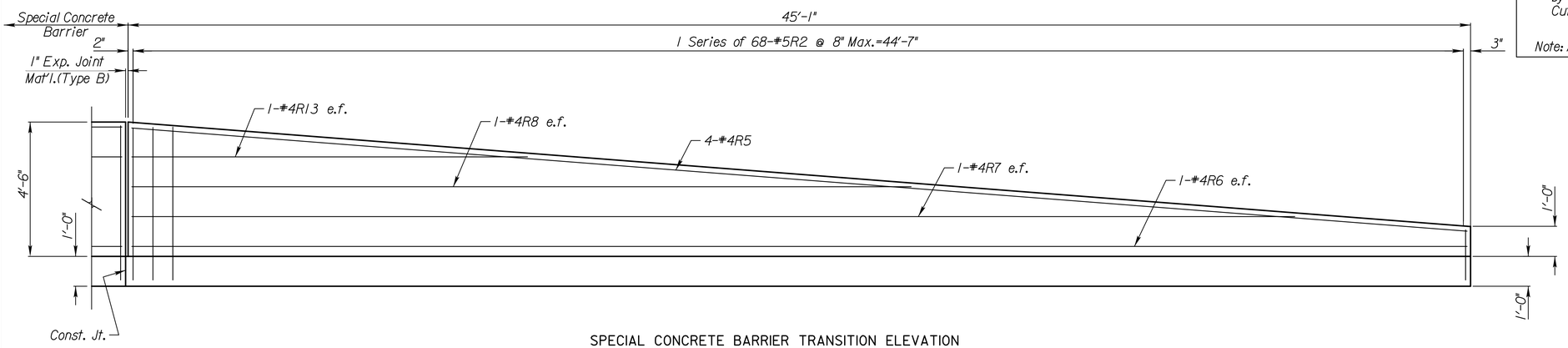
#5R1



#5R2

△ Varies 1'-7" to 5'-1" by 5/8" increments. Cut 2 each length.

Note: All dimensions are out to out of bars



SPECIAL CONCRETE BARRIER TRANSITION ELEVATION

(Slab reinforcing not shown for clarity)

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SUITE 500
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CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO:
SCALE:
DATE:
DESIGNED BY: MJJ
DRAWN BY: NNR
CHECKED BY: MJJ

SHEET TITLE:

SPECIAL CONCRETE BARRIER DETAILS

SHEET NO.
27
SHEET 27 OF 105

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IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

PAVEMENT EDGE WEDGE (ROCK)

STATION to STATION		SIDE	TONS
1047+03.50	1047+75.00	CL	11.8
100+55.50	108+25.50	Lt.	115.8
TOTALS (TONS)			127.6

CONCRETE PAVEMENT 4" (PLAIN)

STATION to STATION		WIDTH (FT)	S.Y.
1035+85.00	1040+22.25	2.5'	121.5
1040+27.75	1041+12.00	2.5'	23.4
1042+09.25	1044+06.75	2.5'	54.9
98+40.00	99+07.50	8.5'	63.8
TOTALS (S.Y.)			263.6

CONCRETE PAVEMENT 9" (NRDJ)

STATION to STATION		WIDTH (FT)	S.Y.
1033+93.00	1041+29.00	Varies	1,342.4
1042+07.25	1047+75.00	Varies	1,018.3
98+40.00	99+67.50	Varies	875.4
100+33.50	108+25.50	Varies	1,723.8
TOTALS (S.Y.)			4,959.9

CONCRETE PAVEMENT 9" (VAR.) (PLAIN)

STATION to STATION		WIDTH (FT)	S.Y.
1042+07.25	1047+75.00	Varies	97.5
100+33.50	108+25.50	Varies	829.6
TOTALS (S.Y.)			927.1

CRUSHED ROCK BASE, 6" REINFORCED

STATION to STATION		WIDTH (FT)	S.Y.
1033+93.00	1041+29.00	Varies	1,696.5
1042+07.25	1047+75.00	Varies	1,756.1
98+40.00	99+67.50	Varies	985.9
100+33.50	108+25.50	Varies	2,700.0
TOTALS (S.Y.)			7,138.5

CRUSHED ROCK BASE 13"

STATION to STATION		WIDTH (FT)	S.Y.
1035+85.00	1040+22.25	2.5'	120.1
1040+27.75	1041+12.00	2.5'	22.1
1042+09.25	1044+06.75	2.5'	53.5
98+40.00	99+07.50	8.5'	59.1
TOTALS (S.Y.)			254.8

CONCRETE C&G, TYPE I (6" & 1-1/2")

STATION to STATION		SIDE	L.F.
98+40.00	99+07.50	Lt.	67.5
98+40.00	99+07.50	Rt.	67.5
100+38.50	100+69.84	Rt.	112.1
TOTALS (L.F.)			247.1

CONCRETE C&G, TYPE III (8" & 1-1/2")

STATION to STATION		SIDE	L.F.
1035+83.00	1041+14.41	CL	1,062.8
1042+09.25	1043+93.00	CL	367.5
98+40.00	99+07.50	CL	135.0
TOTALS (L.F.)			1,565.3

EARTHWORK

STATION to STATION	EXCAVATION					COMPACTION	
	COMMON		ROCK		CONTR. FURN. CU.YDS.	FILL, 95% DENSITY C.Y.	
	CU.YDS.	VMF	CU.YDS.	VMF			
1033+93.00 - 1047+75.00	1,683.7	0.85	496.6			1066.0	
98+40.00 - 108+25.50	1,050.0	0.85	225.0			4,743.3	
TOTALS	2,733.7	0.85	721.6			5,809.3	

RECAPITULATION OF QUANTITIES

ITEM	QUANTITY	UNIT
Field Office & Laboratory (Type A)	1	EA.
Mobilization	1	LSUM
Removal of Existing Structures	1	LSUM
Site Clearing	1	LSUM
Concrete for Seal Course (Set Price)	1	LSUM
Excavation, Common	2,734	C.Y.
Pavement Removed	3,249	S.Y.
Fill, Compacted (95% Density)	5,809	C.Y.
Fill, Flowable	4	C.Y.
Concrete Pavement 4" (Uniform)(AE)(Plain)	264	S.Y.
Concrete Pavement 9" (NRDJ)	4,960	S.Y.
Concrete Pavement 9" (Variable)(Plain)	927	S.Y.
Crushed Rock Base 6", Reinforced	7,139	S.Y.
Crushed Rock Base (13")	255	S.Y.
Pavement Edge Wedge (Rock)	128	TN
Concrete C & G, Type I (6" & 1-1/2")	247	L.F.
Concrete C & G, Type 3 (8" & 1-1/2")(Median)	1,566	L.F.
Concrete Safety Barrier (Type I)	27	L.F.
Concrete Safety Barrier (Type II)(54")	523	L.F.
Pipe, SWS 18" (RCP)	120	L.F.
Pipe, SWS 18" (CMP)	47	L.F.
Pipe, SWS 42" (RCP)	8	L.F.
Pipe, End Section 18" (Concrete)	1	EA.
Pipe, End Section 18" (Metal)	1	EA.
Pipe, End Section 42" (Concrete)	1	EA.
Inlet-Manhole, Special	2	EA.
Traffic Control	1	LSUM
BMP, Drop Inlet Protection	2	EA.
BMP, Silt Fence	1,161	L.F.
Seeding	1	LSUM
Pavement Markings	1	LSUM
Traffic Signal	1	LSUM
Traffic Signal Controller	1	LSUM
Detection System	1	LSUM
Temporary Traffic Signal	1	LSUM
Electric Lighting System	1	LSUM
Signing	1	LSUM
Sign, Electronic Portable Message	100	DAYS
Transportaion of Salvaged Material	1	LSUM

See Sheet 24 for Storm Sewer Quantities
See Sheet 27 for Pier Protection Quantities
See Sheet 39 for Pavement Markings Quantities
See Sheet 41 - 42 for Signing Quantities
See Sheet 46 for Lighting Quantities
See Sheet 50 for Traffic Quantities
See Sheet 73 for Traffic Control Quantities

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CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

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MARK	DATE	DESCRIPTION

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SCALE: 1"=1'
DATE:
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DRAWN BY: CKC
CHECKED BY: MDB

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QUANTITIES

SHEET NO.
28
SHEET 28 OF

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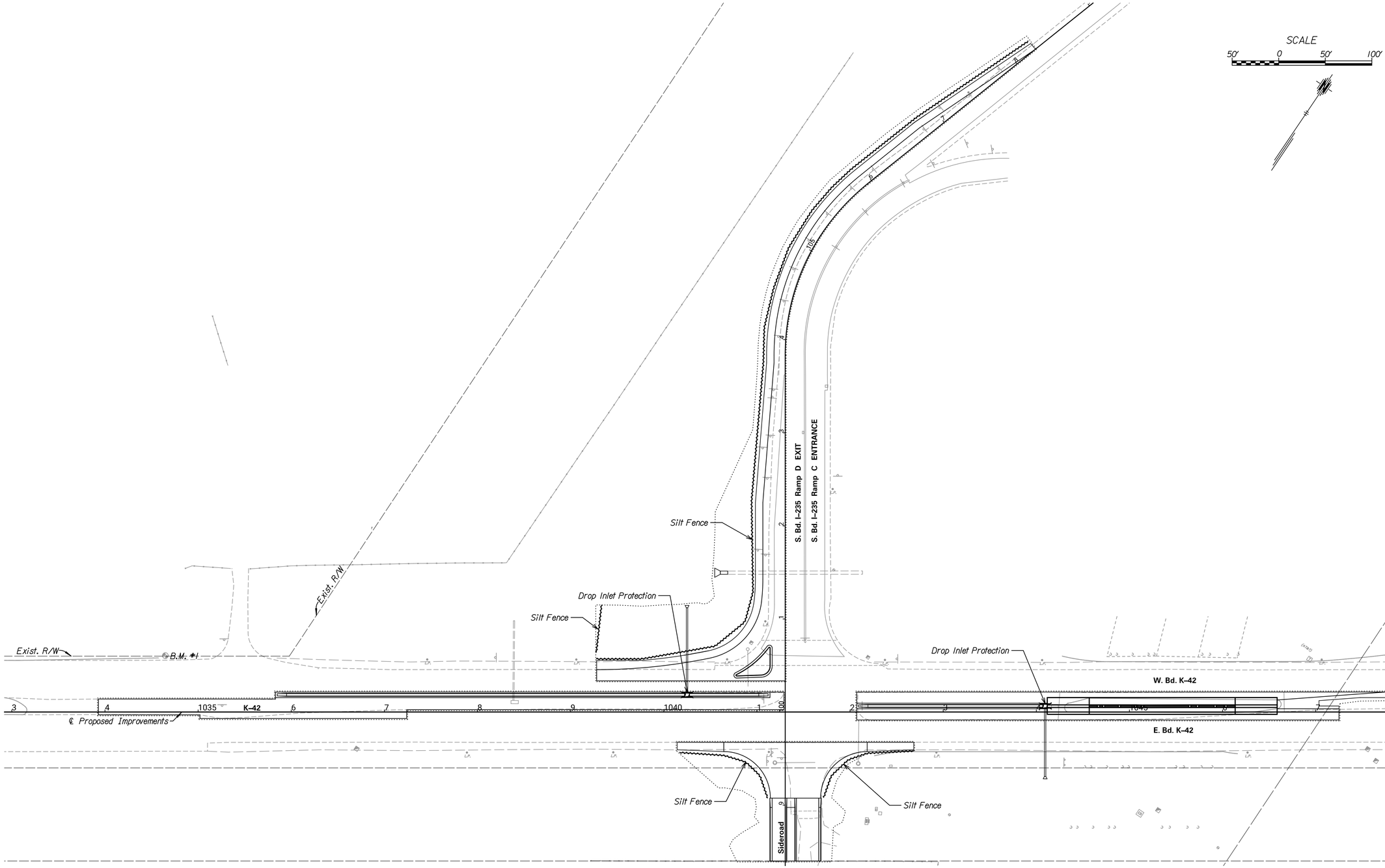

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CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

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PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: CKC
DRAWN BY: CKC
CHECKED BY: MDB

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K-42
EROSION CONTROL
PLAN

SHEET NO.
29
SHEET 29 OF 105

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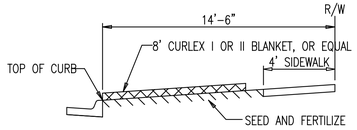
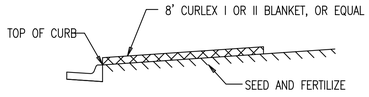
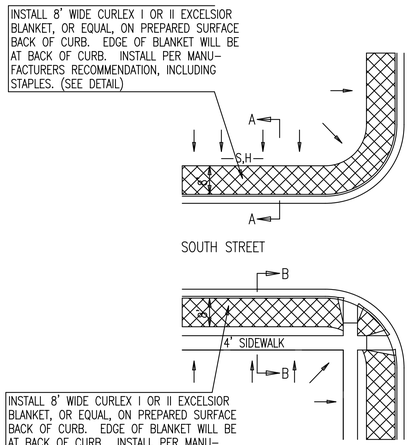


SECTION B–B



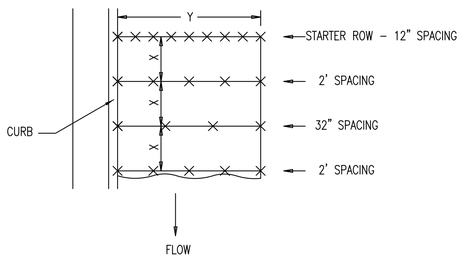
SECTION A–A



GENERAL NOTES

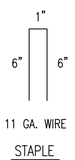
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE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

BACK OF CURB PROTECTION DETAIL



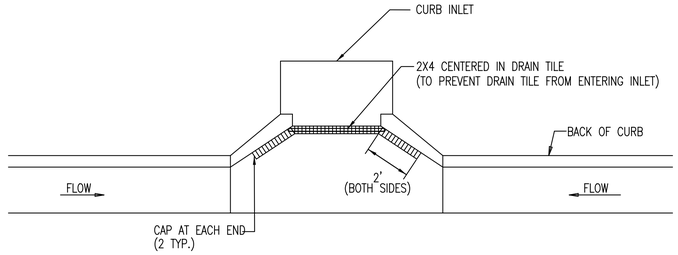
STAPLE PATTERN

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



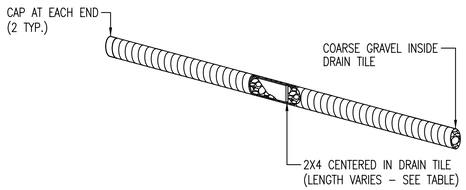
STAPLE

DETAILS FOR APPROVED EROSION CONTROL MAT



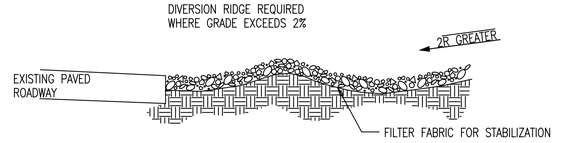
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"–1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

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

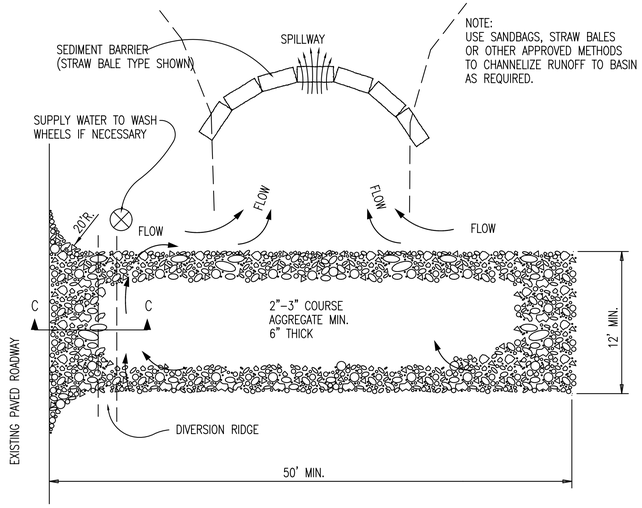


CURB INLET PROTECTION

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.

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

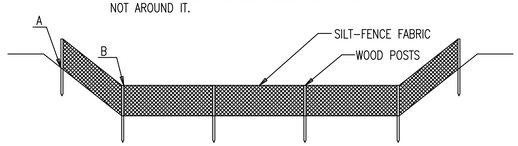
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

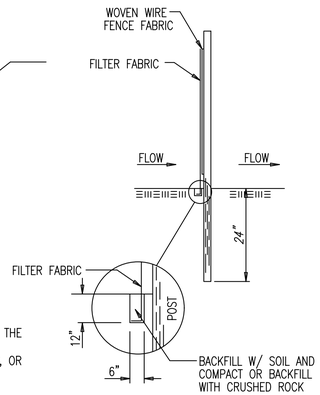
SHEET
30 OF 105

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.

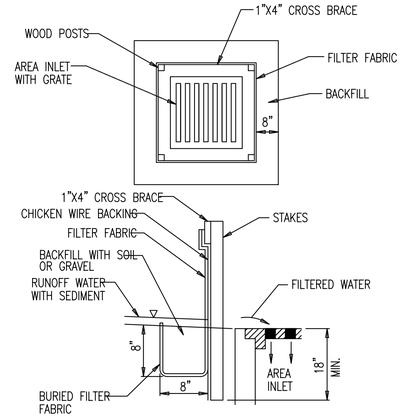
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

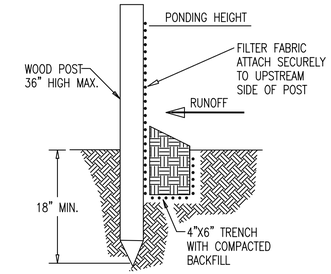
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

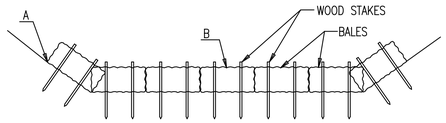
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET
31 OF 105

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



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

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

PROPER INSTALLATION METHOD:

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

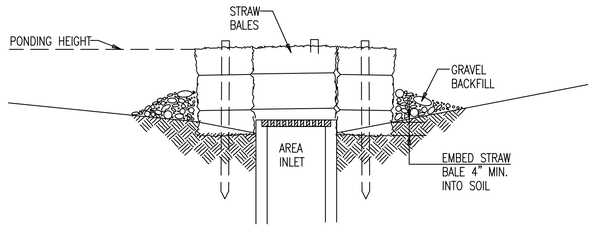
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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

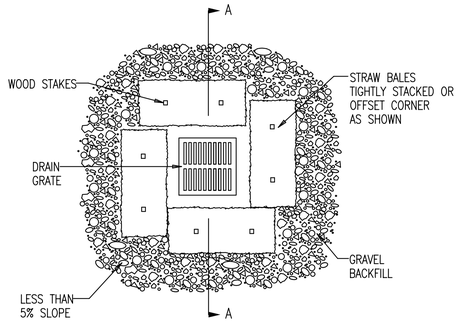
INSPECTION AND MAINTENANCE:

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

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



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

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

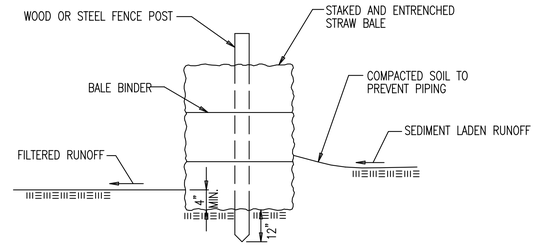
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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

INSPECTION AND MAINTENANCE:

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

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



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

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

PLACEMENT:

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

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

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

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET
32 OF 105

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.

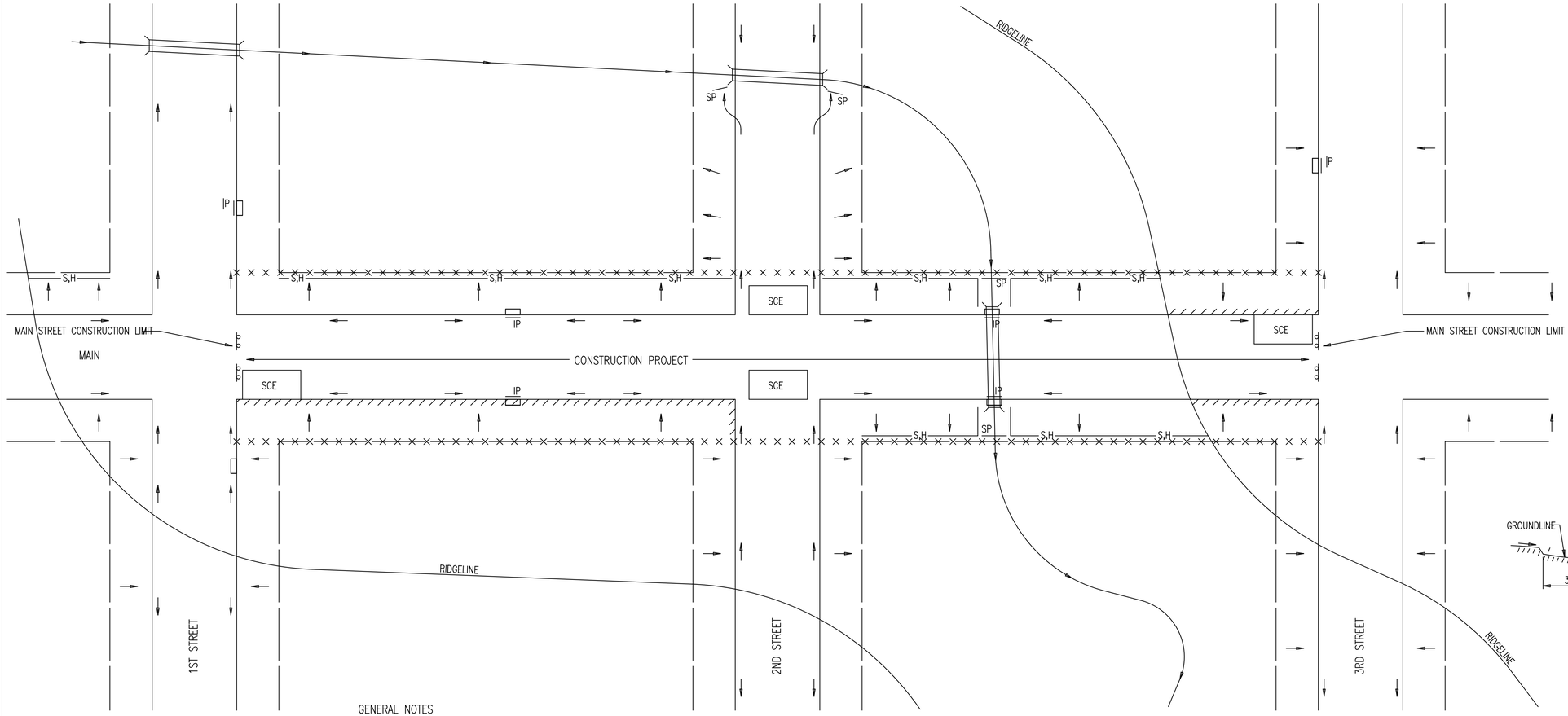
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.

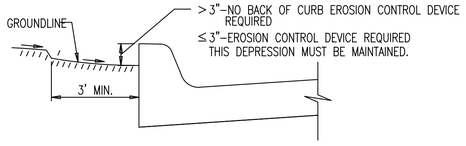
3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

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

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.

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)

REVISION: JUNE 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

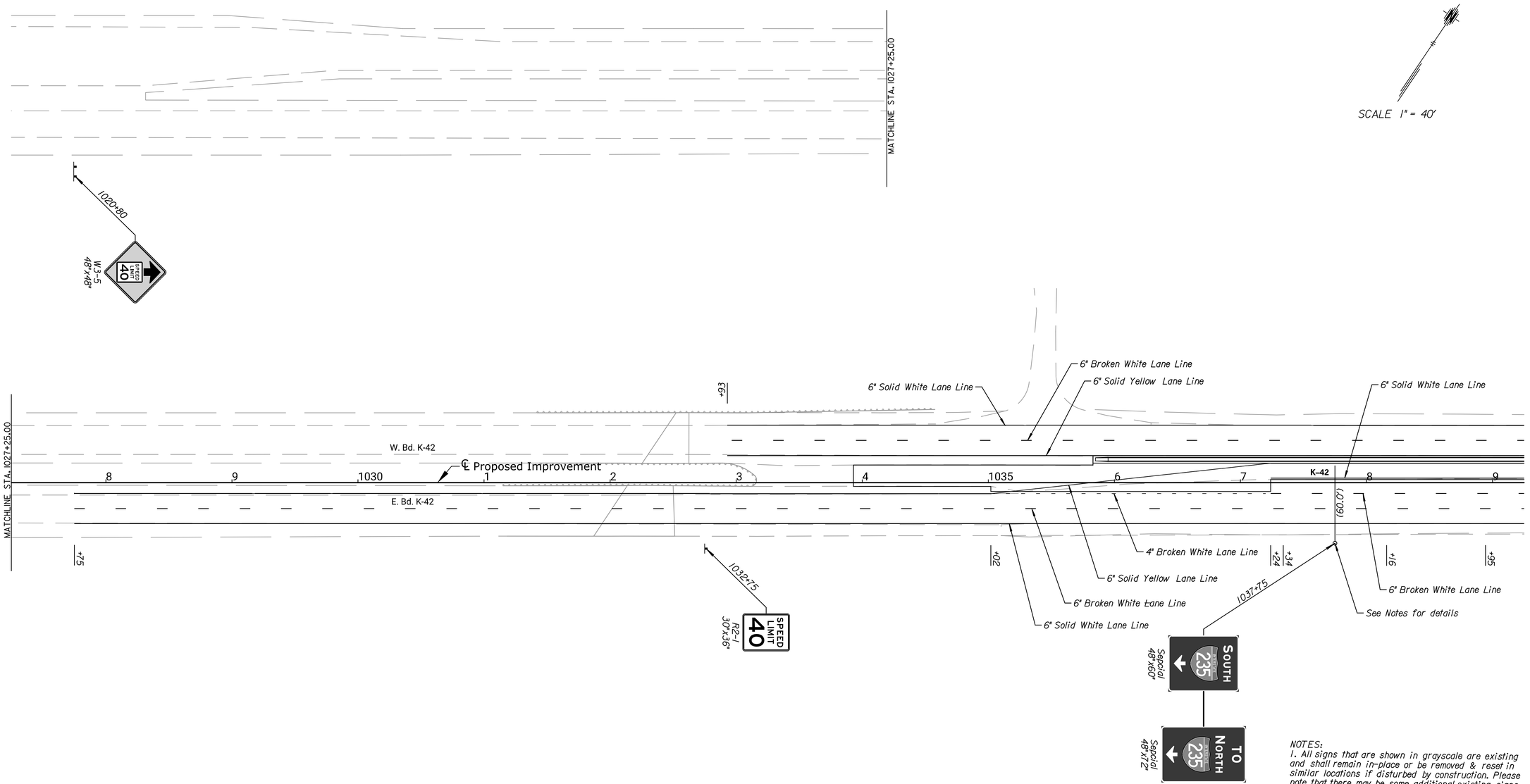
STREET IMPROVEMENT PROJECTS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET
33 OF 105



NOTES:

1. All signs that are shown in grayscale are existing and shall remain in-place or be removed & reset in similar locations if disturbed by construction. Please note that there may be some additional existing signs in the project area. Contractor shall coordinate with the Engineer for those signs that are not shown on plans. All removal and/or removal & reset work shall be subsidiary to the bid item "Signing".

2. All existing signs that are disturbed by construction shall be removed and reset in similar locations unless otherwise shown in the plans. The Contractor shall stake locations and coordinate with the Engineer prior to re-installing existing signs not shown on plans. Signs and posts that are not reset after removal shall be salvaged in good condition and returned to the City or KDOT as applicable. All work shall be subsidiary to the bid item "Signing".

3. Install new traffic signal pole and 60.0' mast arm for the proposed overhead sign installation. The City of Wichita Traffic Signal Standards and details shall be used for mast arm details and foundation design and construction.

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

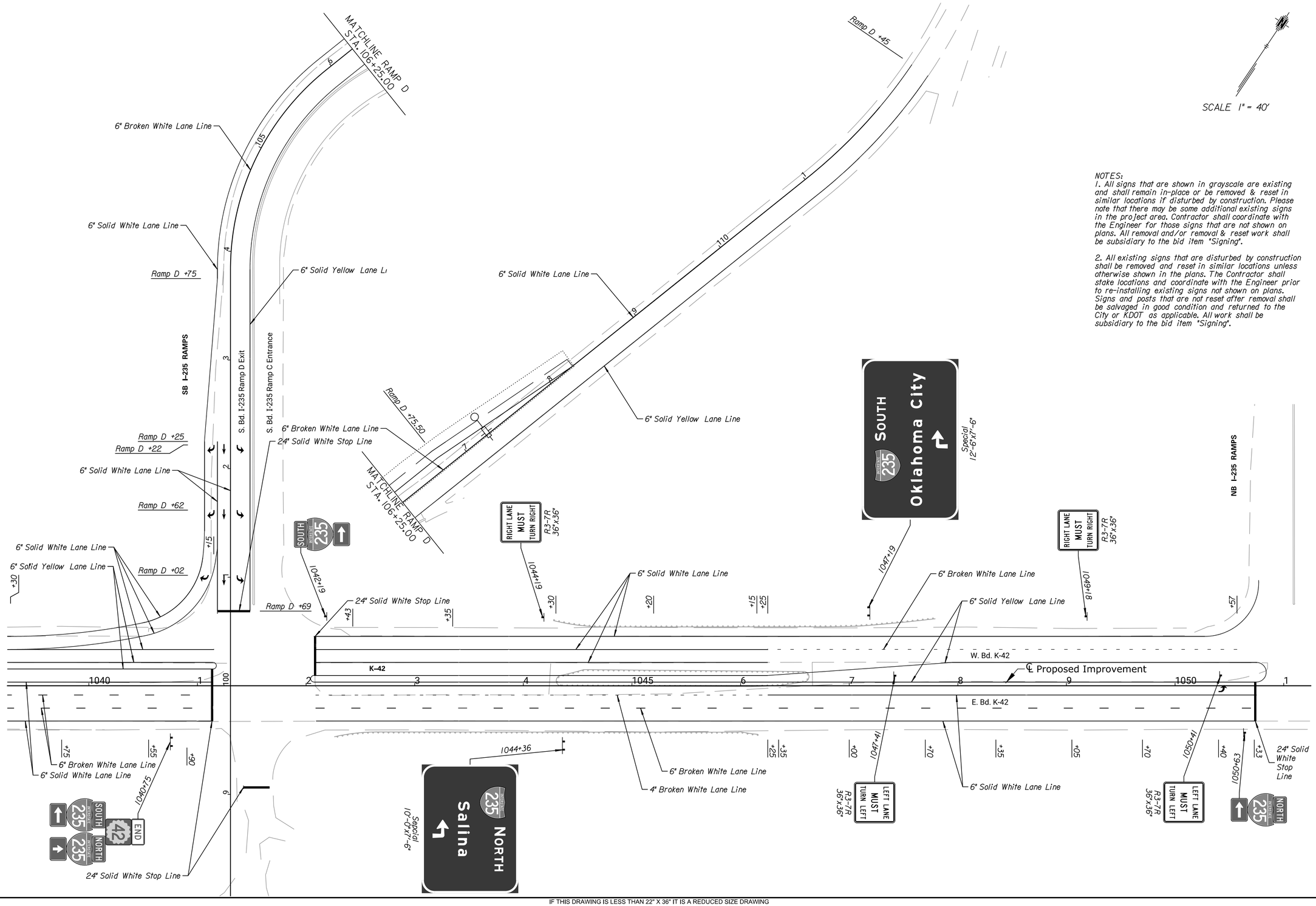
MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=40'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
K-42
PAVEMENT MARKING
& SIGNING
STA. 1027+25 TO
STA. 1039+25

SHEET NO.
34

SHEET 34 OF 105



SCALE 1" = 40'

NOTES:
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PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

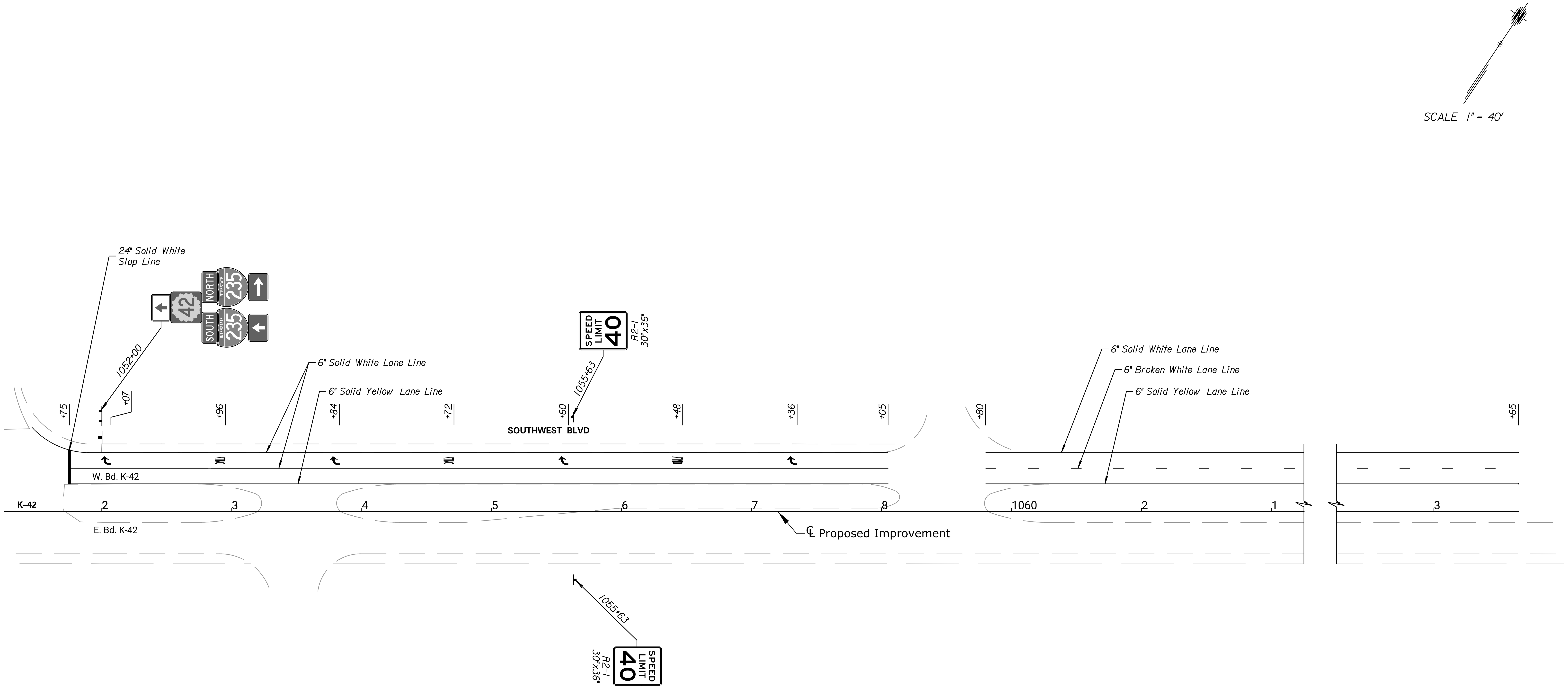
PROJ NO: 472-2020-085700
SCALE: 1"=40'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
K-42
PAVEMENT MARKING
& SIGNING
STA. 1039+25 TO
STA. 1051+25

SHEET NO.
35
SHEET 35 OF 105

dmnolan
1/22/2025 - 3:47:32 PM - c:\transystems\pw_local\transyscorp-pw1\sw_dmnolan\d0970074\C-PMK-M01-102.DGN

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING



NOTES:
1. All signs that are shown in grayscale are existing and shall remain in-place or be removed & reset in similar locations if disturbed by construction. Please note that there may be some additional existing signs in the project area. Contractor shall coordinate with the Engineer for those signs that are not shown on plans. All removal and/or removal & reset work shall be subsidiary to the bid item "Signing".

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TRANSYSTEMS
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SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

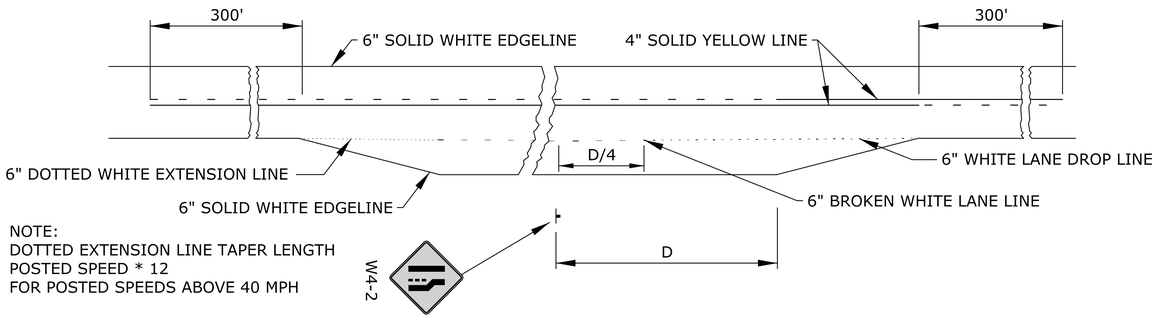
MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=40'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
K-42
PAVEMENT MARKING & SIGNING
STA. 1051+25 TO END

SHEET NO.
36

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	37	105

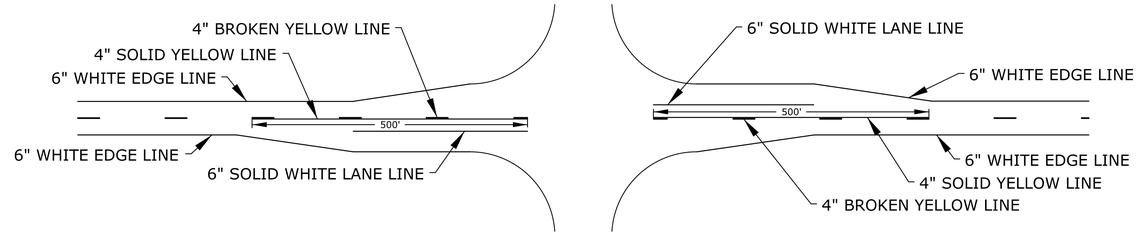


NOTE:
DOTTED EXTENSION LINE TAPER LENGTH
POSTED SPEED * 12
FOR POSTED SPEEDS ABOVE 40 MPH

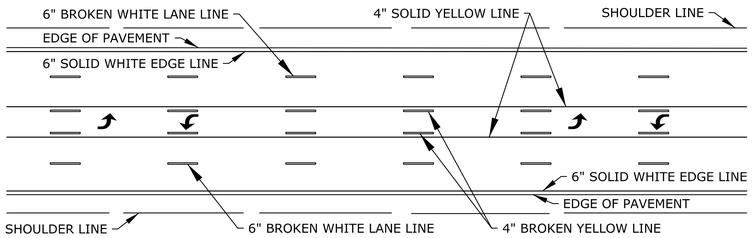
TYPICAL MARKING FOR AUXILIARY PASSING LANE

NOTE:
ALL PAVEMENT MARKINGS SHALL BE BROKEN AT CROSS ROADS.

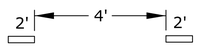
FOR HIGHWAY JUNCTIONS THE NO PASSING ZONE WILL EXTEND 1000' FROM INTERSECTION.



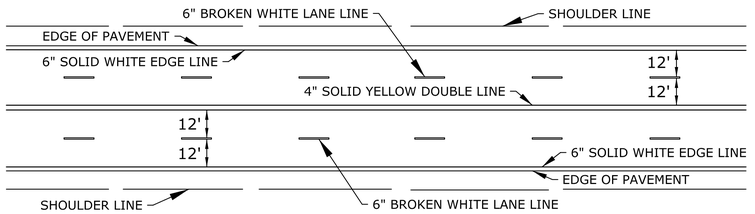
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



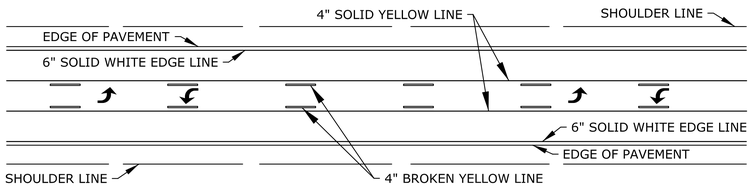
TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY



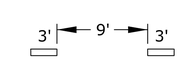
TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



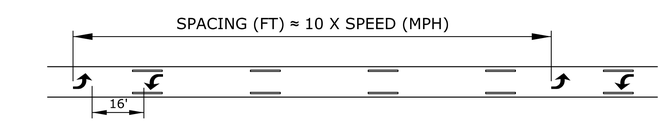
TYPICAL MARKINGS FOR FOUR LANE ROADWAY



TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

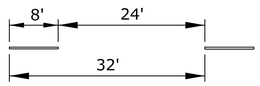


TYPICAL SPACING FOR LANE DROP. UNLESS OTHERWISE NOTED ON PLANS.

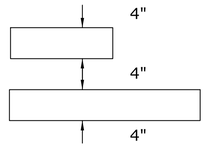


TWO-WAY LEFT TURN ARROW SPACING DETAIL

NOTE:
IF ARROWS ARE USED SPACE THE ARROWS AS SHOWN IN THE SPACING DETAIL.



TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS



TYPICAL SPACING FOR NO PASSING LINES UNLESS OTHERWISE NOTED ON PLANS

NOTE:
LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Added Dotted Extension and Lane Drop Lines	B.A.H.	B.D.G.
2	9/20/05	Removed Aux. Passing Lane Dotted Ext. Line	J.F.F.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKING DETAILS FOR UNDIVIDED ROADWAYS

TE308

FHWA APPROVAL		5/25/2012	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 07-17-2018

Sh. No. 37

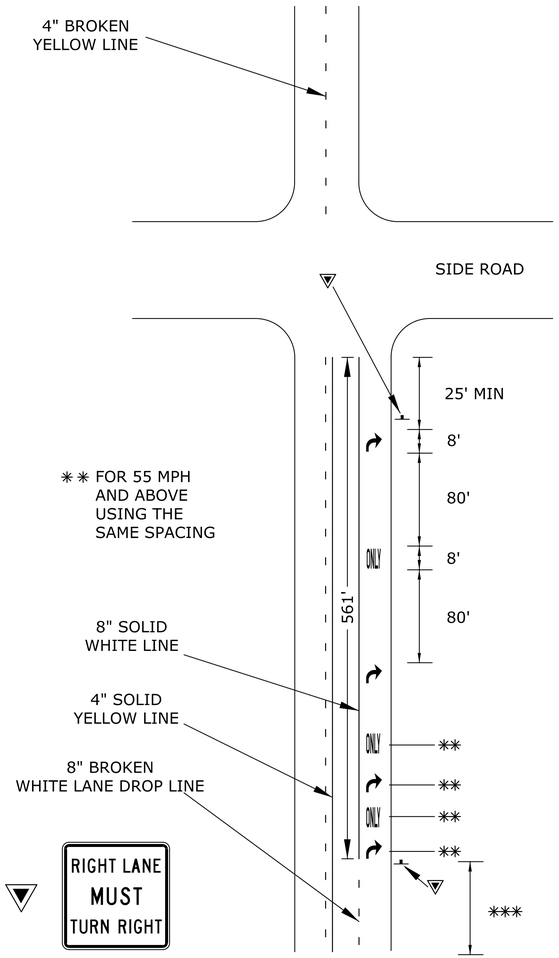
KDOT Graphics Certified

Plotted : 22-JAN-2025 15:47

Drawn By : dmmckee
File : te308.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	38	105

TYPICAL SIGNING AND MARKING FOR RIGHT LANE MUST TURN RIGHT



✳✳ FOR 55 MPH AND ABOVE USING THE SAME SPACING

✳✳✳ THE LANE DROP MARKINGS LENGTH IS A MINIMUM OF 100' AND A MAXIMUM OF 250' PRIOR TO THE 8"SOLID WHITE LINE

RAILROAD CROSSING MARKING

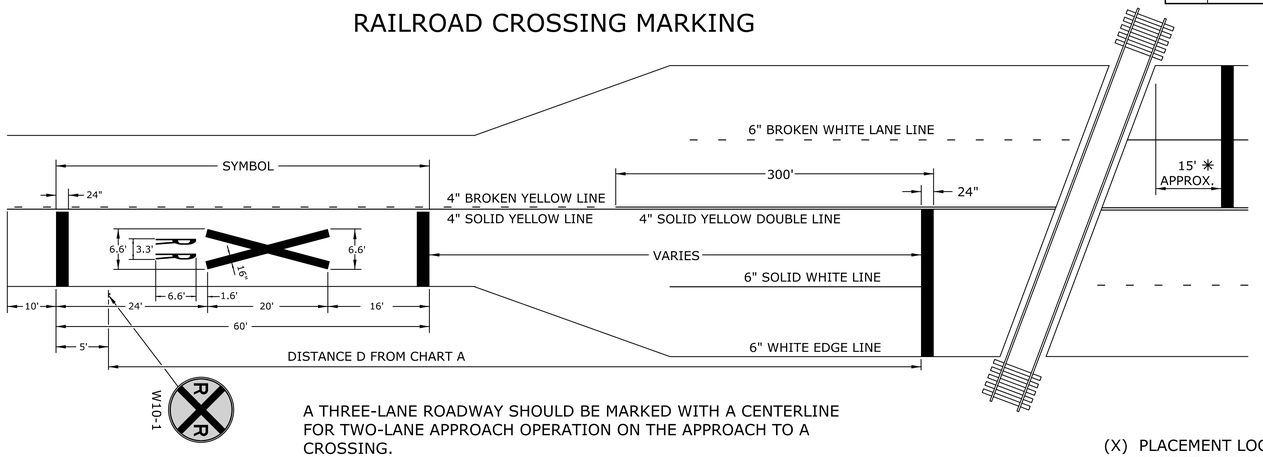


CHART "A"

SPEED MPH	DISTANCE D (feet)
75	850
70	750
65	650
60	550
55	450
50	375
45	300
40	225
35	150
30	(X)
25	(X)
20	(X)

ALL DISTANCES ARE MINIMUM.

A THREE-LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR R X R SYMBOLS DETAILS.

*STOP LINE 8' FROM NEAR EDGE OF GATE OR CANTILEVER, IF PRESENT.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

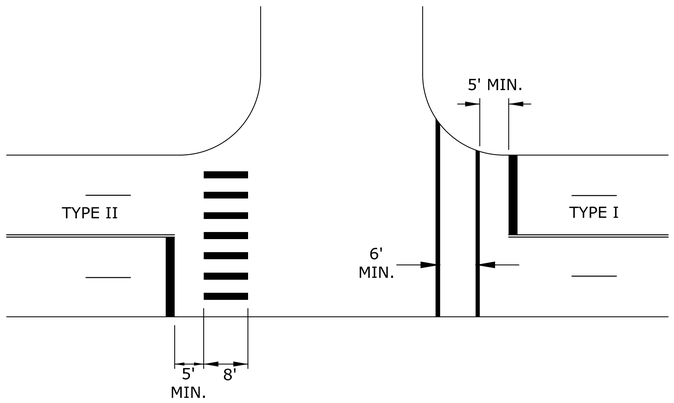
(X) PLACEMENT LOCATION IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING TO PROVIDE ADEQUATE ADVANCE WARNING TO THE DRIVER

TYPICAL CROSSWALKS

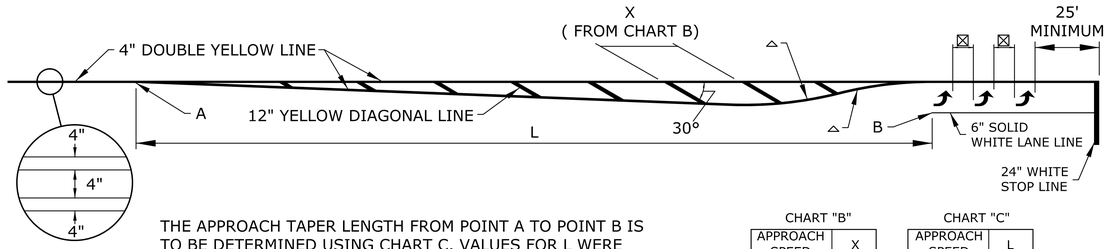
TYPE I: CROSSWALK LINES SHALL BE 12" SOLID WHITE LINES. THEY SHALL BE SPACED A MINIMUM OF 6' APART FROM INSIDE EDGE TO INSIDE EDGE.

TYPE II: THESE LINES SHOULD BE SOLID WHITE 24" WIDE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC FLOW. THE LINE PLACEMENT IS DETERMINED BY LANE LINE,CENTER LINE, AND WHEEL PATH IN SUCH A MANNER AS TO MINIMIZE TRAFFIC WEAR. THE CROSSWALK WIDTH SHOULD BE NOT LESS THAN 8'. THE TRANSVERSE CROSSWALK LINES MAY BE ADDED.

WHEN REQUIRED, STOP LINES SHALL BE INSTALLED A MINIMUM OF 5' FROM CROSSWALKS.



TYPICAL APPROACH TAPER DETAIL



THE APPROACH TAPER LENGTH FROM POINT A TO POINT B IS TO BE DETERMINED USING CHART C. VALUES FOR L WERE CALCULATED USING THE EQUATIONS BELOW AND INCREASED TO THE NEXT HIGHER 5 MPH INCREMENT.

- SPEEDS < 45 MPH $L = \frac{W*S^2}{60}$
- SPEEDS = 45 MPH $L = W*S$

IF ARROWS ARE USED AND UNLESS OTHERWISE SPECIFIED THE SPACE BETWEEN LINES SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW SPEED ROADS BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS, UNDER ANY CONDITIONS.

FOR SPEEDS LESS THAN OR EQUAL TO 40 MPH, R=150'.
FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH, R=300'.

CHART "B"

APPROACH SPEED	X
20 MPH	20'
25 MPH	25'
30 MPH	30'
35 MPH	35'
40 MPH	40'
45 MPH	45'
50 MPH	50'
55 MPH	55'
60 MPH	60'
65 MPH	65'
70 MPH	70'

CHART "C"

APPROACH SPEED	L
20 MPH	80'
25 MPH	125'
30 MPH	180'
35 MPH	245'
40 MPH	320'
45 MPH	540'
50 MPH	600'
55 MPH	660'
60 MPH	720'
65 MPH	780'
70 MPH	840'

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Updated Chart B and Lane Drop Lines	B.A.H.	B.D.G.
2	10/20/06	RR Xing Symbol Changed from 18° to 16°	T.L.H.	B.D.G.
1	9/20/05	Added 4' Solid Yellow Double Line to RRxing	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL MISCELLANEOUS PAVEMENT MARKING DETAIL SHEET

TE309

FHWA APPROVAL		7/26/2005	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

Plotted :22-JAN-2025 15:47
Drawn By : dmmckee
File : te309.dgn

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	39	105

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Broken WHITE Lane Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
K-42																					
Sta. 1027+75 to Sta. 1040+90	218	2,208	2,315				988								48					2,172	
Sta. 1042+09 to Sta. 1050+74	850	1,764	865				834								72					1,773	
Sta. 1051+75 to Sta. 1063+65		1,150	485				1,079								26					1,115	
Ramp D																					
Sta. 100+69 to Sta. 111+96		1,114	301				312								30					1,166	
Sideroad																					
Sta. 99+07.50															24						
TOTALS	267	6,213	992				3,190								176					6,255	

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION							STOP	ONLY	X-ING	SCHOOL												
K-42																					
Sta. 1027+75 to Sta. 1040+90			3		3			4													
Sta. 1042+09 to Sta. 1050+74				3	4			5													
Sta. 1051+75 to Sta. 1063+65				4																	
Ramp D																					
Sta. 100+69 to Sta. 111+96			3	3	3			3													
TOTALS			6	10	10			12													

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")	267	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	10,395	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")	6,255	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12')		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4')		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6')		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12')		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24')	176	FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(THRU ARROW)	6	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(RIGHT TURN ARROW)	10	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(LEFT TURN ARROW)	10	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(ONLY)	12	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL	10,789	FT

NOTE:
For specific pavement marking details and dimensions see plan sheets.

All totals reflect actual quantity of pavement marking materials required.

Prior to commencement of pavement marking work the Engineer will establish the limits for "no passing" zones. These limits shall be used for the location of "no passing" lines and for the computation of actual marking quantities for this line type.

Words & symbols shall conform to the latest edition of "Standard Alphabets for Highway Signs and Pavement Markings" printed by the U.S. Department of Transportation, Federal Highway Administration.

NO.	DATE	REVISIONS	BY	APP'D
02	05-25-12	Added Line Type, Symbols, and Shields	B.A.H.	B.D.G.
01	07-26-05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

FHWA APPROVAL		05-25-12	APP'D.	Brain D. Gower
DESIGNED	J.F.F.	DETAILED J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK. B.D.G.	QUAN.CK.	TRACE CK.

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Sh. No. 39

Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0955680\te311.dgn
Plotted : 1/22/2025

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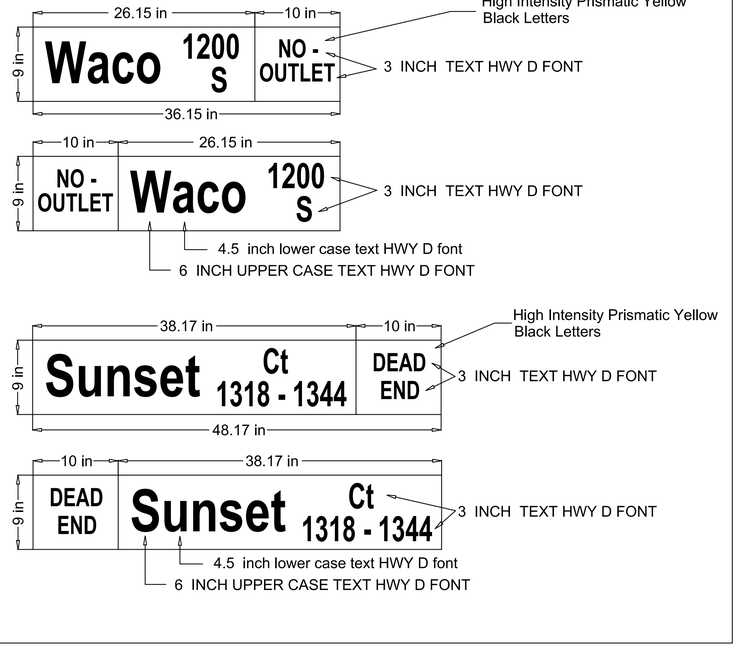
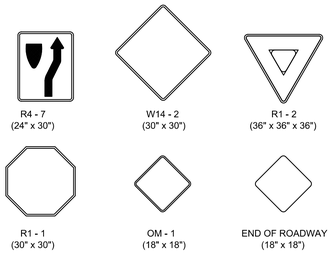
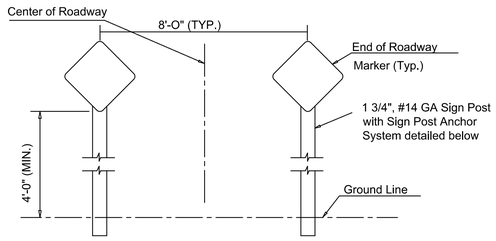
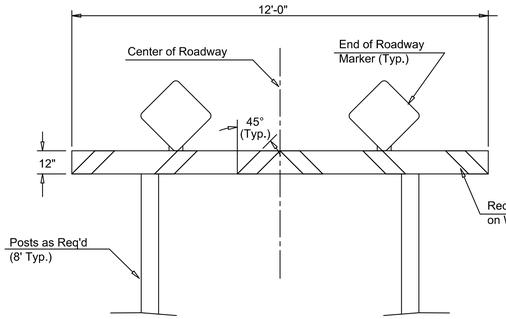




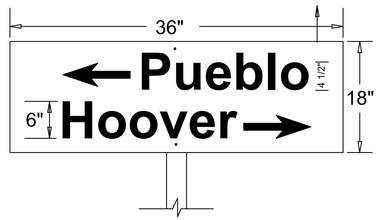
* IN NO CASE SHALL THE SPECIFICATIONS BE LESS THAN REQUIRED BY THE CURRENT MUTCD.



TYPICAL END OF ROADWAY SIGN MOUNTING INSTALLATION

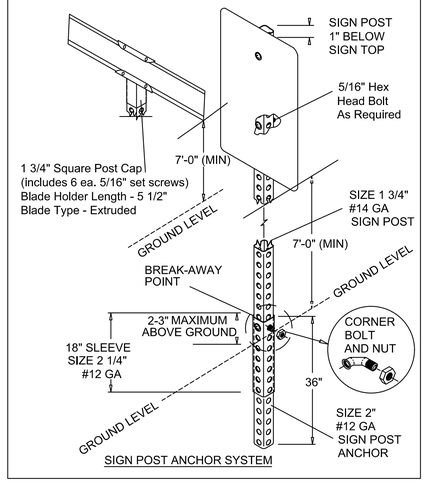


TYPE I BARRICADE DETAIL W/ E.O.R. MARKERS



FLAT PLATE STREET NAME SIGN

PERFORMED TUBE SIGN POST INSTALLATION



SIGN POST ANCHOR SYSTEM

SIGN ASSEMBLY TABLE

STATION	OFFSET	SIGN	QUANTITY*
1020+80	RT.	W3-5	1
1032+75	RT.	R2-1	1
1034+75	RT.	Special	2
1044+19	LT.	R3-7R	1
1044+36	RT.	Special	1
1047+19	LT.	Special	1
1047+41	RT.	R3-7R	1
1049+18	LT.	R3-7R	1
1050+41	LT.	R3-7R	1
1055+63	LT.	R2-1	1
1055+63	RT.	R2-1	1
TOTAL			12

NOTE: REFERENCES BELOW TO "STANDARD SPECIFICATIONS" DENOTE "STANDARD SPECIFICATION FOR STATE ROAD AND BRIDGE CONSTRUCTION EDITION 2015" BY THE KANSAS DEPARTMENT OF TRANSPORTATION.

1. ***FABRICATION AND INSTALLATION OF ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD.***

1a. 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 1627 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.

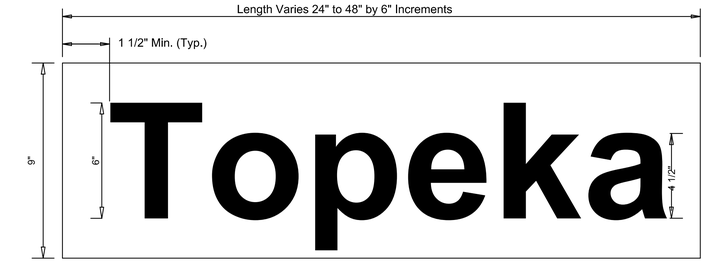
8. FASTENERS: ALL STEEL FASTENERS FOR TRAFFIC CONTROL SIGNS SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 1614 OF THE STANDARD SPECIFICATIONS.

9. REFLECTIVE SHEETING: REFLECTIVE SHEETING SHALL BE A MINIMUM OF HIGH INTENSITY PRISMATIC.

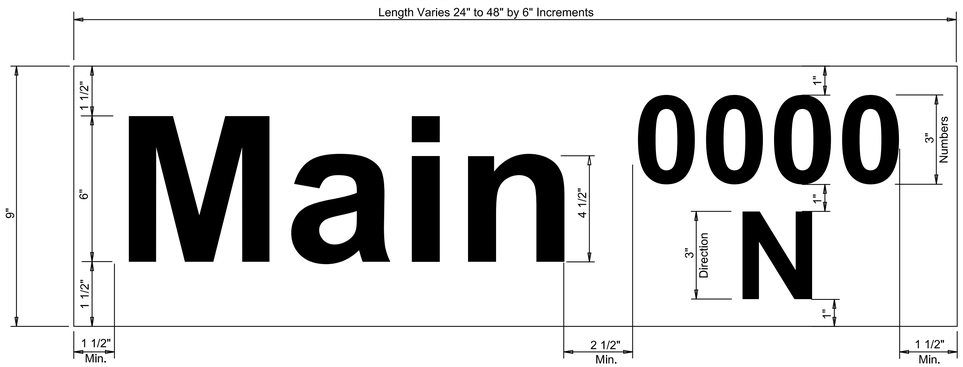
10. PROCESS INK: ALL PROCESS INK SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 2202 OF THE STANDARD SPECIFICATIONS.

11. 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.

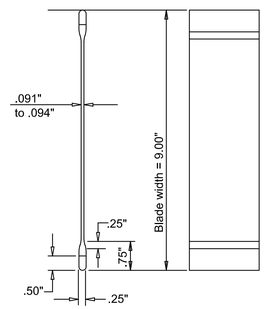
12. PERMANENT TRAFFIC CONTROL AND SNS: PERMANENT TRAFFIC CONTROL AND SNS SHALL BE MEASURED AND PAID FOR AT THE LUMP SUM PRICE FOR SIGNING. THE PAYMENT AS SET FORTH ABOVE SHALL BE CONSIDERED FULL COMPENSATION FOR ALL EXCAVATION, BACKFILLING. POSTS, ANCHORS, FASTENERS, MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.



DETAIL A
9" STANDARD



DETAIL B
9" METRO



STREET NAME SIGN
BLADE DETAILS

STREET NAME	NO. BLADES REQ'D	
	9" STD.	9" METRO

REVISED: December 2018	TM	Updated Edition year and Subsection Number in Notes

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

SIGN DETAILS

TRAFFIC ENGINEER
MIKE ARMOUR P.E.

PROJECT NUMBER	OCA NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET
40 OF 105

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	41	105

QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

PLAN SHEET NUMBER	PLAN STATION NUMBER	CENTERLINE LOCATION / INSTALL POSITION	SIGN DESIGNATION	SIGN SIZE	SIGN LAYOUT SHEET NUMBER	TYPE OF SIGN FABRICATION			4" X 6" POSTS			3|2.25 ALUMINUM BEAM	U-POSTS		GALVANIZED STEEL BEAM POSTS						PERFORATED SQUARE STEEL TUBE (PSST) POSTS										CONCRETE FOOTINGS					SIGN STRUCTURE TYPE						VERTICAL SUPPORT MOUNT	MOUNT ABOVE GUIDE SIGN DESIGNATION
									WOOD		STEEL				W6x9		W10x12		W10x22		1 3/4"			2"			2 1/4"		2 1/2"		WOOD POST	STEEL BEAM POST										
																																A36		A572 (ALT)									
						FLAT SHEET	REINFORCED PANEL	OVERLAY	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LB PER FT	3 LB PER FT	A36	A572 (ALT)	A36	A572 (ALT)	A36	A572 (ALT)	POST	FOOTING	BRACKET	POST	FOOTING	BRACKET	POST	FOOTING	POST	FOOTING	18" DIA.	24" DIA.	30" DIA.	24" DIA.	30" DIA.	OVERHEAD	CANTILEVER	BUTTERFLY	BRIDGE MOUNT ATTACHMENT	MAST ARM	SINGLE TAPERED TUBE		
34	1	1020+80	R/O	W3-5	48"x48"	X																					1	1														
34	2	1032+75	R/O	R2-1	30"x36"	X																					1	1														
35	3	1044+19	L/O	R3-7R	36"x36"	X																					1	1														
35	4	1044+36	R/O	Special	120"x90"	X									2																	2										
35	5	1047+19	L/O	Special	150"x90"	X											2															2										
35	6	1047+41	C/M	R3-7R	36"x36"	X																					1	1														
35	7	1050+47	R/O	R3-7R	36"x36"	X																																				
35	8	1050+41	R/O	R3-7R	36"x36"	X																					1	1														
36	9	1055+63	L/O	R2-1	30"x36"	X																					1	1														
36	10	1055+63	R/O	R2-1	30"x36"	X																					1	1														
Totals															2		2										**7**	**7**				**4**										

CENTERLINE LOCATION
L or LL - Left of Centerline
R or RR - Right of Centerline
C - On the Centerline

INSTALL POSITION
S - Shoulder Mount
O - Offset Mount
G - Gore Mount
M - Median Mount
OH - Overhead Mount

NOTE: See standard plan sheet TE590 for detailed specifications.

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Added Tapered Tube. Removed Couplers.	D.D.G.	E.W.N.
01	07-23-10	Added Coupler and Coupler/Footing Quantity	D.D.G.	D.B.

FHWA APPROVAL		10-01-19	APP'D.		Steven A. Buckley
DESIGNED	D.D.G.	DETAILED	K.S.	QUANTITIES	TRACED D.B.
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

TE430

07-01-03

Sh. No. 41

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Plotted : 1/22/2025
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	42	105

SUMMARY OF QUANTITIES

SIGNS

TYPE	NUMBER	SQUARE FEET
FLAT SHEET	25	323.5
REINFORCED PANEL		
OVERLAY		

DELINEATORS

TYPE	FLEXIBLE DELINEATOR		RIGID DELINEATOR	
	TYPE I ANCHOR	TYPE III ANCHOR	"U" POST	BRACKET MOUNT
TYPE 'A' WHITE				
TYPE 'A' YELLOW				
TYPE 'B' WHITE				
TYPE 'B' YELLOW				
TYPE 'A' WHITE (BACK TO BACK)				
TYPE 'A' YELLOW (BACK TO BACK)				

OBJECT MARKERS

TYPE		NUMBER
TYPE 2 ("U" POST)		
TYPE 3 ("U" POST)		
INFORMATION ONLY	OM3-L	
	OM3-R	
	OM3-C	
TYPE 3 ("U" POST) (BACK TO BACK)		

POSTS AND ALUMINUM BEAMS

	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
NUMBER							2		2						7	
FEET							40		40						74.5	

POST FOOTINGS AND BRACKETS

	CONCRETE FOOTING (DIA.)					PERFORATED SQUARE STEEL					
						TUBE FOOTING				BRACKET	
	WOOD	A36 STEEL		A572 STEEL (ALT)							
	18"	24"	30"	24"	30"	1-3/4"	2"	2-1/4"	2-1/2"	1-3/4"	2"
NUMBER		4						7			
FEET		28									

BASE PLATES AND STUB POSTS

	W6x9		W10x12		W10x22	
BREAKAWAY BASES	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)
BASE PLATE (TOP)	2	2				
STUB POST WITH BASE PLATE	2	2				
NON-BREAKAWAY BASES						
BASE PLATE						

REMOVALS

TYPE	NUMBER
SIGNS	3
POSTS	2
FOOTINGS	2
SIGN STRUCTURES	

NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)

LENGTH OF POST OR BEAM	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
2.1' - 4'																
4.1' - 6'																
6.1' - 8'																
8.1' - 10'																
10.1' - 12'															7	
12.1' - 14'																
14.1' - 16'																
16.1' - 18'																
18.1' - 20'							2		2							
20.1' - 22'																
22.1' - 24'																
24.1' - 26'																
26.1' - 28'																
28.1' - 30'																
30.1' - 32'																

SIGN STRUCTURES

TYPE	NEW	MODIFIED	REMOVE AND RESET	RESET
OVERHEAD STRUCTURE				
CANTILEVER STRUCTURE				
BUTTERFLY STRUCTURE				
BRIDGE MOUNT ATTACHMENT				
MAST ARM SIGN SUPPORT				
SINGLE TAPERED TUBE SIGN SUPPORT				

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Revised Tables	D.D.G.	E.W.N.
01	07-23-10	Revised Tables	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES FOR INSTALLATIONS AND REMOVALS

TE439 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

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Sh. No. 42

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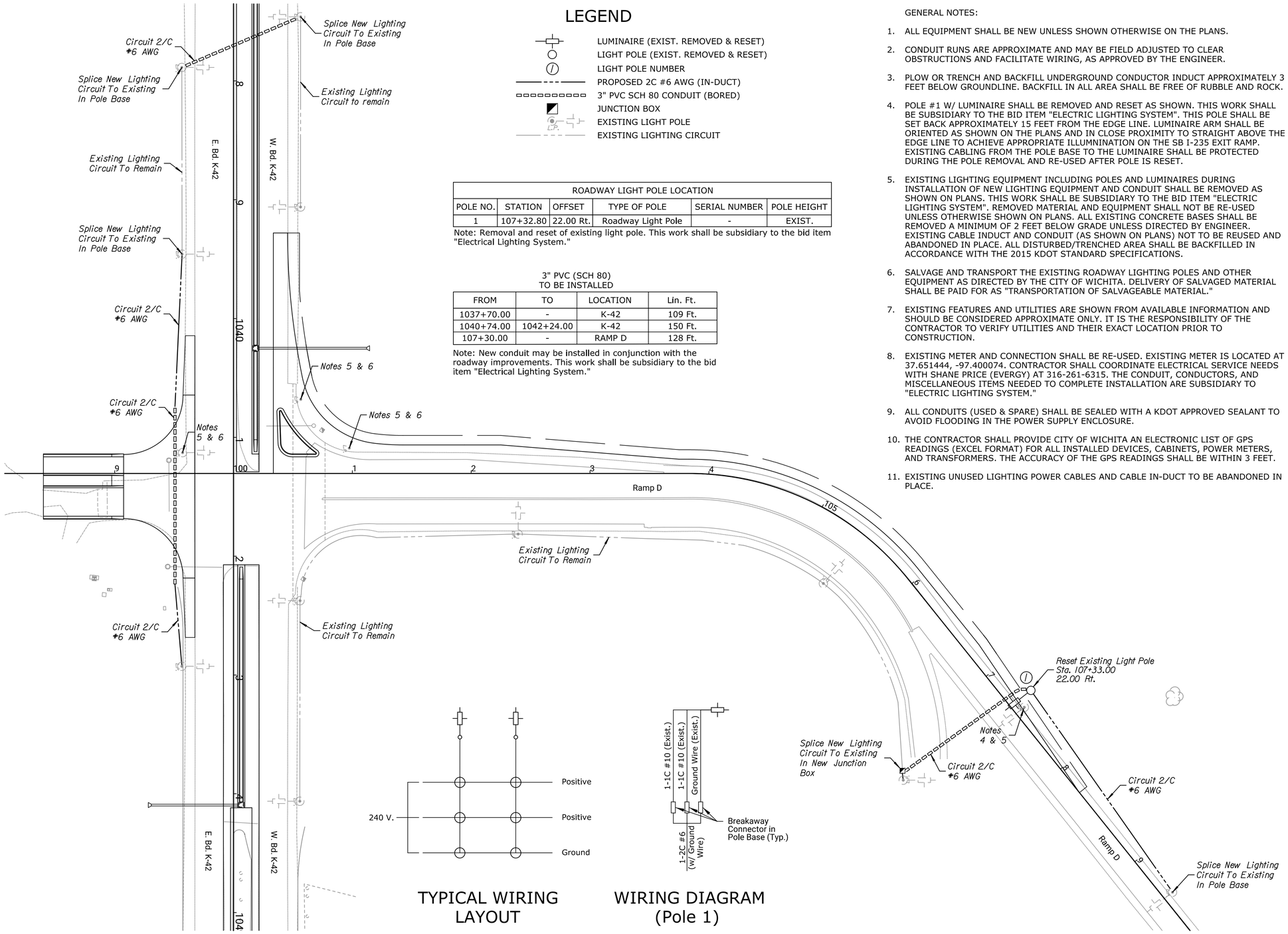
Plotted : 1/22/2025

CADconform Certify This File



LEGEND

- LUMINAIRE (EXIST. REMOVED & RESET)
- LIGHT POLE (EXIST. REMOVED & RESET)
- LIGHT POLE NUMBER
- PROPOSED 2C #6 AWG (IN-DUCT)
- 3" PVC SCH 80 CONDUIT (BORED)
- JUNCTION BOX
- EXISTING LIGHT POLE
- EXISTING LIGHTING CIRCUIT

ROADWAY LIGHT POLE LOCATION					
POLE NO.	STATION	OFFSET	TYPE OF POLE	SERIAL NUMBER	POLE HEIGHT
1	107+32.80	22.00 Rt.	Roadway Light Pole	-	EXIST.

Note: Removal and reset of existing light pole. This work shall be subsidiary to the bid item "Electrical Lighting System."

3" PVC (SCH 80)
TO BE INSTALLED

FROM	TO	LOCATION	Lin. Ft.
1037+70.00	-	K-42	109 Ft.
1040+74.00	1042+24.00	K-42	150 Ft.
107+30.00	-	RAMP D	128 Ft.

Note: New conduit may be installed in conjunction with the roadway improvements. This work shall be subsidiary to the bid item "Electrical Lighting System."

TYPICAL WIRING LAYOUT

WIRING DIAGRAM (Pole 1)

GENERAL NOTES:

1. ALL EQUIPMENT SHALL BE NEW UNLESS SHOWN OTHERWISE ON THE PLANS.
2. CONDUIT RUNS ARE APPROXIMATE AND MAY BE FIELD ADJUSTED TO CLEAR OBSTRUCTIONS AND FACILITATE WIRING, AS APPROVED BY THE ENGINEER.
3. PLOW OR TRENCH AND BACKFILL UNDERGROUND CONDUCTOR INDUCT APPROXIMATELY 3 FEET BELOW GROUNDLINE. BACKFILL IN ALL AREA SHALL BE FREE OF RUBBLE AND ROCK.
4. POLE #1 W/ LUMINAIRE SHALL BE REMOVED AND RESET AS SHOWN. THIS WORK SHALL BE SUBSIDIARY TO THE BID ITEM "ELECTRIC LIGHTING SYSTEM". THIS POLE SHALL BE SET BACK APPROXIMATELY 15 FEET FROM THE EDGE LINE. LUMINAIRE ARM SHALL BE ORIENTED AS SHOWN ON THE PLANS AND IN CLOSE PROXIMITY TO STRAIGHT ABOVE THE EDGE LINE TO ACHIEVE APPROPRIATE ILLUMNINATION ON THE SB I-235 EXIT RAMP. EXISTING CABLING FROM THE POLE BASE TO THE LUMINAIRE SHALL BE PROTECTED DURING THE POLE REMOVAL AND RE-USED AFTER POLE IS RESET.
5. EXISTING LIGHTING EQUIPMENT INCLUDING POLES AND LUMINAIRES DURING INSTALLATION OF NEW LIGHTING EQUIPMENT AND CONDUIT SHALL BE REMOVED AS SHOWN ON PLANS. THIS WORK SHALL BE SUBSIDIARY TO THE BID ITEM "ELECTRIC LIGHTING SYSTEM". REMOVED MATERIAL AND EQUIPMENT SHALL NOT BE RE-USED UNLESS OTHERWISE SHOWN ON PLANS. ALL EXISTING CONCRETE BASES SHALL BE REMOVED A MINIMUM OF 2 FEET BELOW GRADE UNLESS DIRECTED BY ENGINEER. EXISTING CABLE INDUCT AND CONDUIT (AS SHOWN ON PLANS) NOT TO BE REUSED AND ABANDONED IN PLACE. ALL DISTURBED/TRENCHED AREA SHALL BE BACKFILLED IN ACCORDANCE WITH THE 2015 KDOT STANDARD SPECIFICATIONS.
6. SALVAGE AND TRANSPORT THE EXISTING ROADWAY LIGHTING POLES AND OTHER EQUIPMENT AS DIRECTED BY THE CITY OF WICHITA. DELIVERY OF SALVAGED MATERIAL SHALL BE PAID FOR AS "TRANSPORTATION OF SALVAGEABLE MATERIAL."
7. EXISTING FEATURES AND UTILITIES ARE SHOWN FROM AVAILABLE INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY UTILITIES AND THEIR EXACT LOCATION PRIOR TO CONSTRUCTION.
8. EXISTING METER AND CONNECTION SHALL BE RE-USED. EXISTING METER IS LOCATED AT 37.651444, -97.400074. CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE NEEDS WITH SHANE PRICE (EVERGY) AT 316-261-6315. THE CONDUIT, CONDUCTORS, AND MISCELLANEOUS ITEMS NEEDED TO COMPLETE INSTALLATION ARE SUBSIDIARY TO "ELECTRIC LIGHTING SYSTEM."
9. ALL CONDUITS (USED & SPARE) SHALL BE SEALED WITH A KDOT APPROVED SEALANT TO AVOID FLOODING IN THE POWER SUPPLY ENCLOSURE.
10. THE CONTRACTOR SHALL PROVIDE CITY OF WICHITA AN ELECTRONIC LIST OF GPS READINGS (EXCEL FORMAT) FOR ALL INSTALLED DEVICES, CABINETS, POWER METERS, AND TRANSFORMERS. THE ACCURACY OF THE GPS READINGS SHALL BE WITHIN 3 FEET.
11. EXISTING UNUSED LIGHTING POWER CABLES AND CABLE IN-DUCT TO BE ABANDONED IN PLACE.

SCALE 1" = 40'

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=40'
DATE: 1/22/2025
DESIGNED BY: SSP
DRAWN BY: VG
CHECKED BY: SSP

SHEET TITLE:

K-42
LIGHTING DESIGN
PLAN SHEET

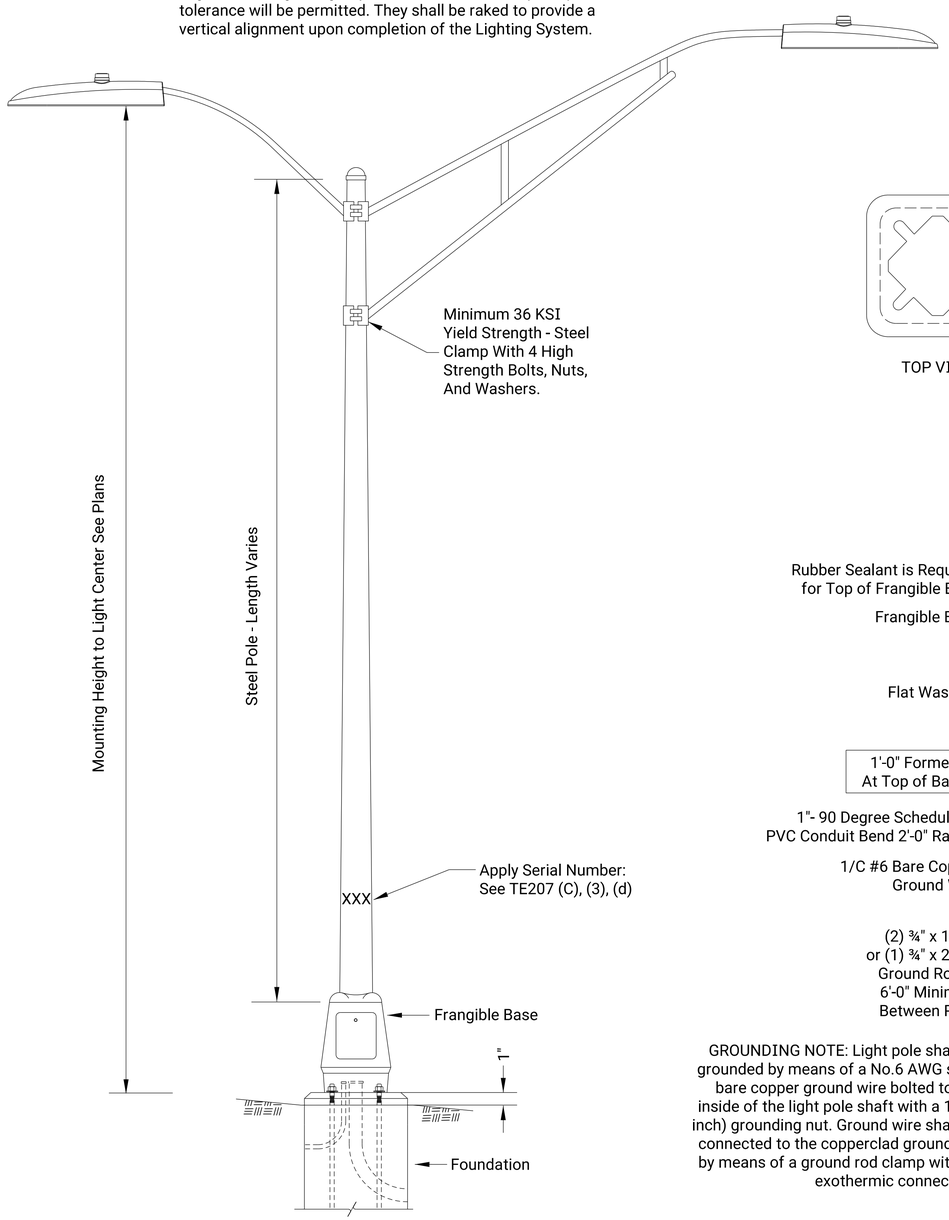
SHEET NO.
43

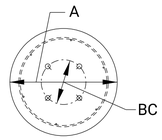
SHEET 43 OF 105

dtmrobe
1/22/2025 - 3:47:56 PM - c:\transystems\pw_local\transyscorp.pw1\e-e_dmrobe\d097007\4\C-LIT-M01-101.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	44	105

NOTE: Single member luminaire arms are 6 and 8 ft. in length. Truss arms are 10, 12, or 15 ft. in length. These are determined in the design and shall be shown in the plans and/or on the TE209 CONSTRUCTION QUANTITIES. All luminaires shall be supported with light centers up to 55 ft. above grade. The careful alignment and grading of pole is essential and no perceptible tolerance will be permitted. They shall be raked to provide a vertical alignment upon completion of the Lighting System.

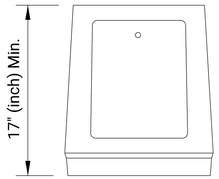




TOP VIEW FOUNDATION

MOUNTING HEIGHT	FRANGILBLE BASE	BC	A	B	C
40'	TB1-17	1'-3"	2'-6"	8 - #9	2'-0"
50'	TB3-17	1'-5 ¼"	3'-0"	8 - #10	2'-6"
55'	TB3-17	1'-5 ¼"	3'-0"	8 - #10	2'-6"

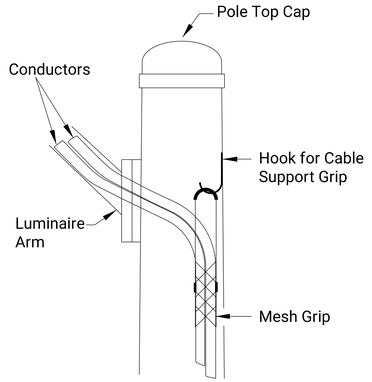
TOP VIEW



SIDE VIEW

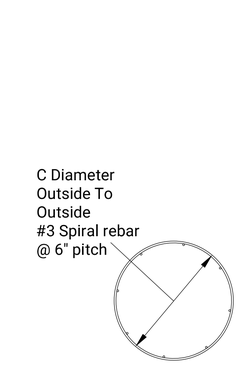
FRANGIBLE BASE

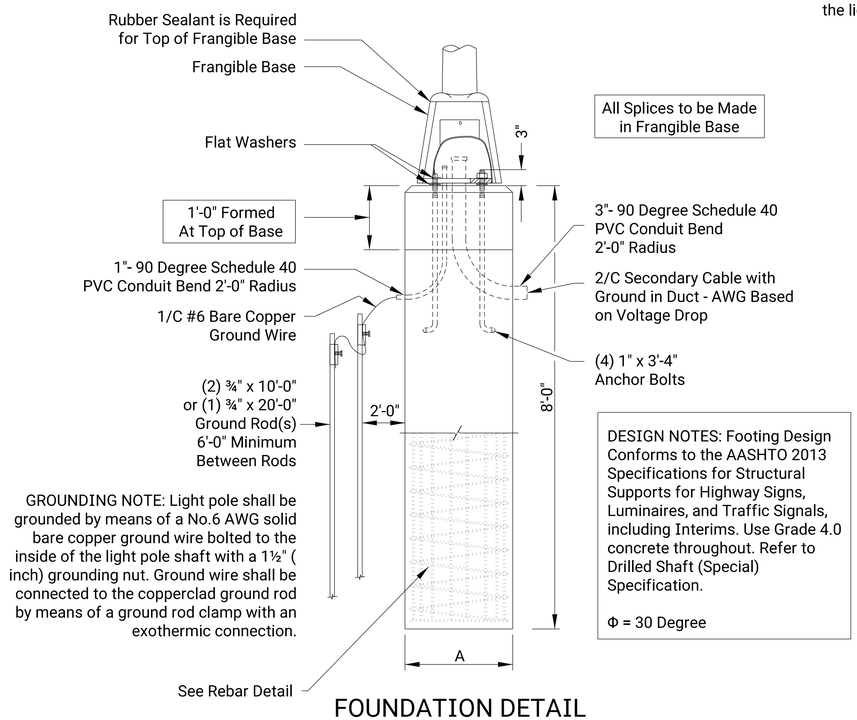
NOTE: The frangible base must accommodate up to a BC bottom bolt circle.



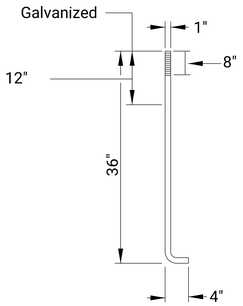
CABLE SUPPORT GRIP

NOTE: The cable support grip shall be installed on the hook supplied within the light pole as shown above.

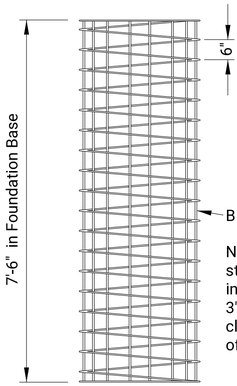




FOUNDATION DETAIL



ANCHOR BOLT DETAIL



NOTE: Reinforcing steel shall be installed to provide 3" (inch) minimum clearance from edge of foundation.

REBAR DETAIL

NO.	DATE	REVISIONS	BY	APP'D
02	05/23/23	Added 50' Pole/Serial Number/Bolt Clearance	J.A.P.	S.M.P.
01	05-05-21	Luminaire arm/grounding/andchor bolt/detail changes	J.A.P.	S.M.P.

KANSAS DEPARTMENT OF TRANSPORTATION

ROADWAY LIGHTING CONVENTIONAL POLE DETAIL WITH FRANGIBLE BASE

TE201A

FHWA APPROVAL			07-07-23	APP'D.	Karen M. Peterson
DESIGNED	J.A.P.	DETAILED	J.A.P.	QUANTITIES	TRACED
DESIGN CK.	K.M.P.	DETAIL CK.	K.M.P.	QUAN.CK.	TRACE CK.

Drawn By : dmmckee Plotted : 1/22/2025
File : c:\transystems\pw_local\transysscorp-pw1\a-e_dmmckee\d0955680\te201a.dgn

CADconform Certify This File

CADconform Certify This File

Sh. No. 44

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	45	105

(A) NOTE:

(1) TE Standards are intended to describe the equipment, material, and construction requirements for the Lump Sum Bid Item; ELECTRIC LIGHTING SYSTEM.

(2) PRE-QUALIFICATION. All construction items and materials shall be on the Roadway Lighting Systems and Equipment Prequalified List (PQL 24.2). The PQL is available on the KDOT website: www.ksdot.org, under "Doing Business as" - "Highway Contractors" - "Pre-Qualified Materials". A manufacturer or supplier intending to supply lighting materials under these specifications shall submit an original copy of any catalog cuts, drawings, and/or data sheets for the material(s). A manufacturer or fabricator shall submit shop drawings with supporting calculations meeting AASHTO and KDOT Standards. This information shall be submitted to the Bureau of Traffic Engineering for review and approval.

(B) CONSTRUCTION:

(1) See Standard Specifications, Latest Edition, Sections 814 (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS), & 1703 (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS EQUIPMENT). Locate all existing utilities prior to beginning work. Staking for controllers, poles, and junction boxes shall be done by the contractor, and approved by the engineer in charge.

(C) CONVENTIONAL STEEL LIGHT POLE:

(1) DESIGN. Design shall be in accordance with 2013 AASHTO Specifications for Structural Supports for the Highway Signs, Luminaries and Traffic Signals, including Interims, and KDOT Special Provision 744 (STRUCTURAL METALS FABRICATION). Pole design and shop drawings shall be sealed and signed by a professional engineer registered in the State of Kansas. Shop drawings shall reference the actual pole material to be used in the fabrication of poles for a specific Kansas Department of Transportation project. Shop drawings shall include weld details, referencing approved weld procedures and their given procedure numbers. Weld procedures shall be approved by KDOT prior to use. EPA shall be calculated at 0.86 sq. ft. and weight of 25 lbs.

(2) DESIGN for BRIDGE MOUNTED POLES. Design requirements for bridge mounted light poles shall include Fatigue Importance Category I with Limit State Pressure of 7.2 psf as defined in Section 11.7.2 of the AASHTO Standard Specifications. Assume the base of the light pole is 55 (feet) above finished groundline.

(3) MATERIAL and FABRICATION. Shall comply with the 2013 AASHTO Specifications for Structural Supports for the Highway Signs, Luminaries and Traffic Signals, including Interims, KDOT Special Provision 744 (STRUCTURAL METALS FABRICATION), and Section 1600 (STRUCTURAL STEEL TUBING). The pole shall be one section. The pole base shall have a CJP weld at the base plate, with a backing ring. The base plate shall be made of steel plate meeting the requirements of above or ASTM A-36. Field welds will not be allowed. Pole and foundations details are shown on the ROADWAY LIGHTING DETAIL SHEET TE201a/TE201b.

(a) FRANGIBLE BASE. Shall be cast aluminum and conform to the AASHTO Publication, Standard Specifications for Structural Supports for the Highway Signs, Luminaires, and Traffic Signals. 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. Contractor shall install per manufacturer's procedures. Fabricator shall provide high strength bolt installation procedure for top and bottom.

(b) LUMINAIRE ARM. Shall be fabricated from 2" (inch) standard pipe meeting the requirements of ASTM A53, ASTM A513, or ASTM A500.

(c) FINISH. The base, luminaire arm, and light pole shall be galvanized according to ASTM A123.

(d) SERIAL NUMBERS. Stencil 2 in. serial numbers in permanent black paint. This shall be ledgible from the pole's assigned route and 5-6 ft above ground level looking up station.

(D) ELECTRICAL MATERIAL:

(1) PHOTO CELL. Shall be solid state type, 1000 Watts, 1800 VA ballast, single pole, single throw, twist lock mounting. ANSI C136.10, ROHS compliant, UL listed, surge rated in excess of ANSI C136.10 to 20kV/10kA. Shall be made by the same manufacturer as the luminaire, and fail in the on mode.

(2) DISTRIBUTION WIRE. Shall be Type USE-2, stranded, annealed copper meeting the requirements of ASTM B8 and ASTM B33, and be the size specified in the plans.

(3) SECONDARY SERVICE CABLE IN CONDUIT (CIC). Shall be stranded copper single conductor cable for operation at 600 volts maximum. Material shall meet the applicable requirement of ICEA Standard S-105-692 and listed by UL as Type USE-2 for direct burial. Make splices in the secondary service cable inside of tower bases, pole bases, and junction boxes only. Contact the Bureau of Traffic Engineering for approval of other splice locations. The duct shall be polyethylene with minimum tensile strength of 3100 psi, sized to provide the correct fill based on NEC requirements, and shall meet ASTM D-3485 (Latest Revision).

(4) LED LUMINAIRES. Luminaires shall have a housing of aluminum alloy casting, capable of mounting to a 2" (inch) luminaire arm, and in compliance with ANSI C136-37. Shall be IP-66 rated for optical assembly and IP-65 rated for electrical components, and shall have the following: three-hole terminal blocks for incoming #10 AWG AC lines, minimum 20kV/10kA surge protection, a 7-pin photo control receptacle with electronic photocontrol or shorting cap, and an electronic dimmable driver (power supply, rated for 100,000 hours). Shall be fully tested in accordance with IESNA Standard LM-79, pre-wired for installation, and shall maintain 70% of initial lumen output after 100,000 hours of operation. LED luminaire criteria: (lumen output, luminaire wattage, lumens per watt, input voltage, bug rating, CCT (4000k +/- 300k), CRI (70), photometric requirements, and distribution), and the photometric performance criteria: (maintained horizontal illumination, avg/min and max/min uniformity ratios) shall be determined by the project designer. Designers shall conform to the IESNA Standard RP-8-18 and/or AASHTO Standard GL-7-2018 for required illumination, show the BASIS FOR DESIGN (ADDITIONAL CRITERIA) on the TE209, and submit a photometric report to the Bureau of Traffic Engineering for approval.

(5) CONTROLLER. The controller cabinet shall be constructed of 5052 alloy aluminum 0.125" (inch) 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 controller shall have 600 volt rated molded case main and secondary breakers, twist-lock photo-cell socket, and electrically held contactors. The equipment within the controller shall be wired prior to delivery. The controller shall have a meter view window and a glass to allow light to the photo-cell that faces NORTH. All conductors coming in to the controller shall be identified with a permanent label.

(a) The main and secondary breakers shall have a mounting dimension of 1 3/8" (inch) wide x 4 1/2" (inch) high mounting holes shall be positioned to accommodate a breaker 2 3/4" (inch) wide side by side. See CONTROLLER DETAIL SHEET TE202.

(b) The contractor shall contact the power company prior to acquiring the lighting controller. An exposed ringless meter design and cover, 200 AMP 5 terminal meter socket with horn bypass, is an approved option for remote access if required by the power company.

(E) GENERAL MATERIALS AND NOTES:

(1) MISCELLANEOUS HARDWARE. Hardware that requires galvanizing or electroplating shall conform to the Standard Kansas Department of Transportation Standard Specifications, Latest Edition, Section 1703.2 (c) (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS EQUIPMENT).

(2) CONDUIT INSTALLATION. Conduit shall be installed per Section 814.3 (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS) of the Standard Specifications and as noted. All electrical conduit above ground shall be metallic. Conduit attached to the bridge shall have expansion fittings installed at the ends of the bridge and at each expansion joint. 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 the current Kansas Department of Transportation Utility Accommodation Policy. When pulling wires through conduit, a pulling sock or other similar device shall be used to equalize pulling strain on the conductors.

(3) METALLIC CONDUIT. See Standard Specification 1703.2 (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS EQUIPMENT). Shall be rigid steel conduit meeting the requirements of American Standard Specification C-80.1. Metallic conduit fittings shall be zinc coated and shall meet the requirements of NEMA FB-1.

(4) NON-METALLIC CONDUIT. See Standard Specification 1703.2 (ELECTRIC LIGHTING SYSTEMS AND TRAFFIC SIGNALS EQUIPMENT).

(a) RIGID POLYVINYL CHLORIDE (PVC). Shall meet the requirements of NEMA TC-2, Federal Specifications No. WC 1094A and UL 651. Each length shall bear the Underwriters, Inc. Label. Non-metallic conduit fittings shall be fabricated from polyvinyl chloride meeting the requirements of NEMA TC-3, Federal Specifications No. WC 1094A and UL 514. Each shall bear the Underwriters, Inc. Label. The joints shall be made in accordance with the manufacturers recommendations.

(b) HIGH DENSITY POLYETHYLENE (HDPE). Shall meet the requirements of ASTM F 2160, ASTM F 2176, and NEMA Standard TC-7. Shall be coilable, smooth wall, Schedule 40 or Schedule 80. 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. Shall be continuous from outlet to outlet, with no splices allowed. Bend radii shall not exceed the manufacturer's recommendations. Cable filles should not exceed the values set by the NEC.

(5) GROUNDING. Ground all metal parts including poles, controllers, junction boxes, and conduit used above ground with a No. 6 bare wire. Ground wire shall be a #6 AWG Solid bare copper wire and arrangement shall be as noted on plans. Ground rods shall be copper clad 3/4" (inch) diameter by 20' (feet) long, or two ground rods at 10' (feet) each.

(6) ANCHOR BOLTS. Shall conform to the Standard Specification Section 1600 (FERROUS AND NON-FERROUS METALS) (Grade 55) with the following exception: Do not use cut threads, use rolled threads.

(7) 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 the 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. Connector installation shall be as directed by the manufacturer.

(a) Fuses for inline connectors shall be Class CC and sized in accordance with ampacity conductors in the pole.

(8) 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" (inch) 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. All conductors coming in to the junction box shall be identified with a permanent label.

(a) Enclosures, boxes and covers are required to conform to all test provisions of ANSI/SCTE 77 2017 "Specification for Underground Integrity" for TIER 15 applications.

(b) The cover shall bear the logo "LIGHTING" clearly and permanently molded or etched into the cover.

(9) JUNCTION BOXES (ABOVE-GROUND). Shall have the nominal dimensions of 12" (inch) by 12" (inch) by 6" (inch). 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. All conductors coming in to the junction box shall be identified with a permanent label.

(10) WEDGE TYPE STUD BOLT ANCHORS. The contractor shall install two 3/8" (inch) x 3" (inch) 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" (inch).

(11) CONDUIT CLAMPS WITH CLAMP BACKS. The contractor shall install 2" (inch) conduit clamps with a compatible clamp back. Clamps shall be heavy duty steel to secure the 2" (inch) rigid conduit to structure. Conduit clamps are to be spaced at 6' (foot) intervals.

(12) 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 TE201a and TE201b.

NO.	DATE	REVISIONS	BY	APP'D
03	05-23-23	Added design details/serial numbers/fuse detail	J.A.P.	S.M.P.
02	05-05-21	PQL/Frang. base/AASHTO GL-7-2018/grnd rod/fatigue	J.A.P.	C.P.A.
01	04-28-20	CJP weld/RP-8-18/mast arm requirement	J.A.P.	C.P.A.

KANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION AND MATERIAL REQUIREMENTS FOR HIGHWAY LIGHTING (CONVENTIONAL)

TE207

FHWA APPROVAL			07-07-23	APP'D.		Sara M. Peters	
DESIGNED	J.A.P.	DETAILED	J.A.P.	QUANTITIES		TRACED	
DESIGN CK.	S.M.P.	DETAIL CK.	S.M.P.	QUAN.CK.		TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	46	105

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (HARDWARE)

ID NO	Item	Unit	Quantity
____	Solid State Photo Cell	Each	____
____	Controller	Each	____
1	Junction Box	Each	1
2	Cable Support Grip	Each	1
____	Expansion Joint	Each	____
3	Breakaway Connectors	Each	3
____	600 Volt 2/C Secondary Cable with Ground Wire (CIC) #4 AWG	Lin Ft	____
4	600 Volt 2/C Secondary Cable with Ground Wire (CIC) #6 AWG	Lin Ft	805
____	600 Volt 2/C Secondary Cable with Ground Wire (CIC) #8 AWG	Lin Ft	____
____	600 Volt 2/C Secondary Cable with Ground Wire (CIC) #10 AWG	Lin Ft	____
____	600 Volt 1/C Secondary Cable with Ground Wire ___ AWG	Lin Ft	____
____	600 Volt 1/C Secondary Cable #10 AWG	Lin Ft	____
5	Groundwire, #6 AWG Solid Bare Copper	Lin Ft	10
____	1" Metallic Conduit	Lin Ft	____
____	2" Metallic Conduit	Lin Ft	____
____	3" Metallic Conduit	Lin Ft	____
____	2" Schedule 40 Conduit	Lin Ft	____
____	2" Schedule 80 Conduit	Lin Ft	____
6	3" Schedule 80 Conduit	Lin Ft	387
7	3" 90 Degree Sch 40 PVC Conduit Bends 24" Radius	Each	1
8	1" 90 Degree Sch 40 PVC Conduit Bends 24" Radius	Each	1
____	3/8" X 3" Wedge Type Anchor Bolts	Each	____
____	2" Conduit Clamps w/ Clamp Backs	Each	____
9	Ground Rods with Clamps 3/4" X 20'	Each	2

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (LIGHT POLES)

ID NO	Item	Unit	Quantity
____	40' Mounting Height Light Pole with XX' Luminaire Arm and Frangible Base	Each	____
____	40' LED Luminaire (See Basis of Design)	Each	____
____	55' Mounting Height Light Pole with XX' Luminaire Arm and Frangible Base	Each	____
____	55' LED Luminaire (See Basis of Design)	Each	____
____	30" Concrete Base (40' Pole)	Each	____
____	36" Concrete Base (55' Pole)	Each	____

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (MISCELLANEOUS ITEMS)

ID NO	Item	Unit	Quantity
10	Boring	Lin Ft	387
11	Trench and Backfill	Lin Ft	405
12	Removal of Concrete Base	Each	4

NOTES:

1. Linear quantities are approximate and included for information only. The contractor shall conduct all work, furnish and install all lighting equipment necessary, including towers, concrete bases for towers, anchor bolts, luminaires, lamps, wiring, conduit, conduit fittings, supports, interconnections, ground rods, and all incidentals necessary for the complete installation within the limits shown on the plans. To insure complete and satisfactory operation of the Electric Lighting System whether specifically mentioned or not.

2. The bid item "High Mast Light Tower" includes all work persons, tools, equipment and new hardware necessary to complete the work.

3. Items not specifically called out are subsidiary to other bid items.

4. For additional construction quantities, see the following sheets, as applicable:
   a. CONSTRUCTION AND MATERIAL REQUIREMENTS AND QUANTITIES FOR SIGN LIGHTING.
   b. UNDERDECK LIGHTING DETAIL.
   c. FOOTING DETAILS AND ENGINEERING GEOLOGY (for footing lengths).

SUMMARY OF ELECTRIC LIGHTING SYSTEM QUANTITIES (TOWER)

ID NO	Item	Unit	Quantity
____	LED Luminaire (See Basis of Design)	Each	____
____	Lowering 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')(48" Concrete Base)	Each	____
High Mast Light Tower (110')(48" Concrete Base)	Each	____
High Mast Light Tower (120')(48" Concrete Base)	Each	____
High Mast Light Tower (100')	Each	____
High Mast Light Tower (110')	Each	____
High Mast Light Tower (120')	Each	____

BASIS OF DESIGN (ADDITIONAL CRITERIA)

	Designed Lumens	_____
	Maximum Wattage	_____
	Distribution Type	_____
	Other	_____
	Designed Lumens	_____
	Maximum Wattage	_____
	Distribution Type	_____
	Other	_____

NO.	DATE	REVISIONS	BY	APP'D
03	05-25-23	Added boring	J.A.P.	S.M.P.
02	03-17-21	High mast footing to 48"/ground rod	J.A.P.	C.P.A.
01	04-28-20	Add 55' pole/change footing size	J.A.P.	C.P.A.

KANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION QUANTITIES
ELECTRIC LIGHTING SYSTEMS

TE209

FHWA APPROVAL			07-07-23	APP'D.	Sara M. Peters		
DESIGNED	J.A.P.	DETAILED	J.A.P.	QUANTITIES	___	TRACED	___
DESIGN CK.	S.M.P.	DETAIL CK.	S.M.P.	QUAN.CK.	___	TRACE CK.	___

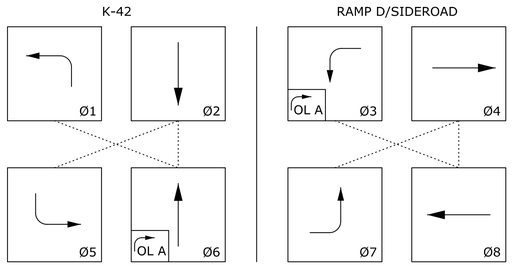
CADconform Certify This File

Sh. No. 46

Drawn By : dmmckee Plotted : 1/22/2025
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0955680\te209.dgn

CADconform Certify This File

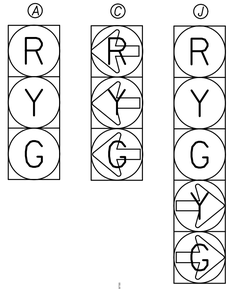
PHASE DIAGRAM



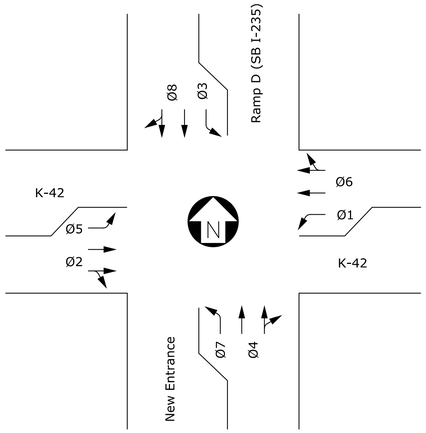
NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY. PEDESTRIAN PHASE TO ONLY OCCUR AFTER PUSH BUTTON ACTIVATION.

SIGNAL FACES

NOTE: ALL LENSES SHALL BE 12" L.E.D. PEDESTRIAN LENSES SHALL BE 16" AND BE COUNTDOWN SIGNALS.



SIGNAL PHASES



GENERAL NOTES:

1. CONDUIT RUNS ARE APPROXIMATE & MAY BE FIELD ADJUSTED TO CLEAR OBSTRUCTIONS & FACILITATE WIRING, AS APPROVED BY THE ENGINEER. ALL CONDUIT RUNS SHALL BE STRAIGHT BETWEEN BOXES AND/OR FOUNDATIONS.

2. EXISTING FEATURES & UTILITIES ARE SHOWN FROM AVAILABLE INFORMATION & SHOULD BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY UTILITIES & THEIR EXACT LOCATION PRIOR TO CONSTRUCTION.

3. SEE "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" (TR-105) FOR SIGN SPACING AND ADDITIONAL DETAILS.

4. SEE "PAVEMENT MARKING AND SIGNING SHEET" FOR NEW AND EXISTING PAVEMENT MARKING DETAILS.

5. CONTRACTOR SHALL REMOVE ALL EXISTING SIGNAL EQUIPMENT (POLES, CABINET, ETC.) AND COORDINATE WITH THE CITY OF WICHITA (KEVIN SHORE) FOR RETURN OR DISPOSAL.

6. CONTRACTOR SHALL PROVIDE AND INSTALL GPS CLOCKS FOR SYNCHRONIZATION WITH THE SIGNAL AT THE NB I-235 RAMP TERMINAL. GPS CLOCK WILL ALSO BE NEEDED AT THE NB I-235 RAMP TERMINAL SIGNAL.

7. TEMPORARY TRAFFIC SIGNAL SHALL BE IN-PLACE PRIOR TO THE REMOVAL OF THE EXISTING SIGNAL EQUIPMENT. ALL MATERIAL (SIGNAL HEADS, CONTROLLER, CABINET, DETECTION UNITS, CABLING, ETC.) REQUIRED FOR THE SATISFACTORY OPERATION OF THE TEMPORARY TRAFFIC SIGNAL SHALL BE PROVIDED BY THE CONTRACTOR AND PAID FOR UNDER THE BID ITEM "TEMPORARY TRAFFIC SIGNAL." THE CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR POWER-HOOKUP FOR TEMPORARY SIGNAL OPERATION. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND THE CITY FOR TEMPORARY POLE LOCATIONS AT LEAST 3 WEEKS PRIOR TO THE TEMPORARY SIGNAL WORK BEING STARTED. SIGNAL PHASING AND TIMING DURING CONTRUCTION WILL BE COORDINATED WITH THE ENGINEER AND THE CITY. DURING ALL PHASES OF CONSTRUCTION, ALL SIGNAL HEAD RELOCATIONS, DETECTION UNIT ADJUSTMENTS AND OTHER REQUIRED ITEMS FOR THE SATISFACTORY OPERATION OF THE TEMPORARY SIGNAL SHALL BE SUBSIDIARY TO THE BID ITEM "TEMPORARY TRAFFIC SIGNAL" AND BE THE CONTRACTOR'S RESPONSIBILITY. ALL ADJUSTMENTS MADE DURING CONSTRUCTION SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND THE CITY PRIOR TO DEPLOYMENT.

STRUCTURE LOCATIONS

POLE NO.	*TYPE	STATION	OFFSET	NORTHING	EASTING	**ELEV.
1	POLE	99+47.50	88.00 RT.	1670832.11	1630927.97	1303.57
2	POLE	99+34.56	35.39 LT.	1670752.33	1630832.95	1299.95
3	POLE	100+73.22	67.41 LT.	1670849.33	1630728.82	1301.58
4	POLE	100+66.60	73.17 RT.	1670922.51	1630849.03	1303.82
Meter	-	98+85.73	99.28 RT.	1670787.23	1630971.89	1304.80
Cont.	-	98+85.73	93.33 RT.	1670783.90	1630966.96	1304.82

SERVICE BOX LOCATIONS

BOX NO.	STATION	OFFSET	NORTHING	EASTING	**ELEV.
1	99+49.26	69.59 RT.	1670823.27	1630911.72	1304.62
2	99+49.26	47.30 LT.	1670757.85	1630814.85	1302.98
3	100+90.10	47.30 LT.	1670874.57	1630736.03	1304.65
4	100+69.36	69.60 RT.	1670922.80	1630844.52	1304.40
5	98+93.73	93.33 RT.	1670790.53	1630962.48	1305.28

*STRUCTURE TYPES: POLE - TRAFFIC SIGNAL POLE; PED - TRAFFIC SIGNAL PEDESTAL; PB STA - APS PUSHBUTTON STATION

**APPROXIMATE TOP OF FOUNDATION. SEE STANDARDS AND SPECS FOR ADDITIONAL INFORMATION. FOUNDATIONS SHALL NOT CREATE A "LOW AREA".

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS
WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=20'
DATE: 1/22/2025
DESIGNED BY: SSP
DRAWN BY: SSP
CHECKED BY: SGE

SHEET TITLE:

K-42 & I-235 TRAFFIC SIGNAL IMPROVEMENTS

SHEET NO.
47

SHEET 47 OF 105

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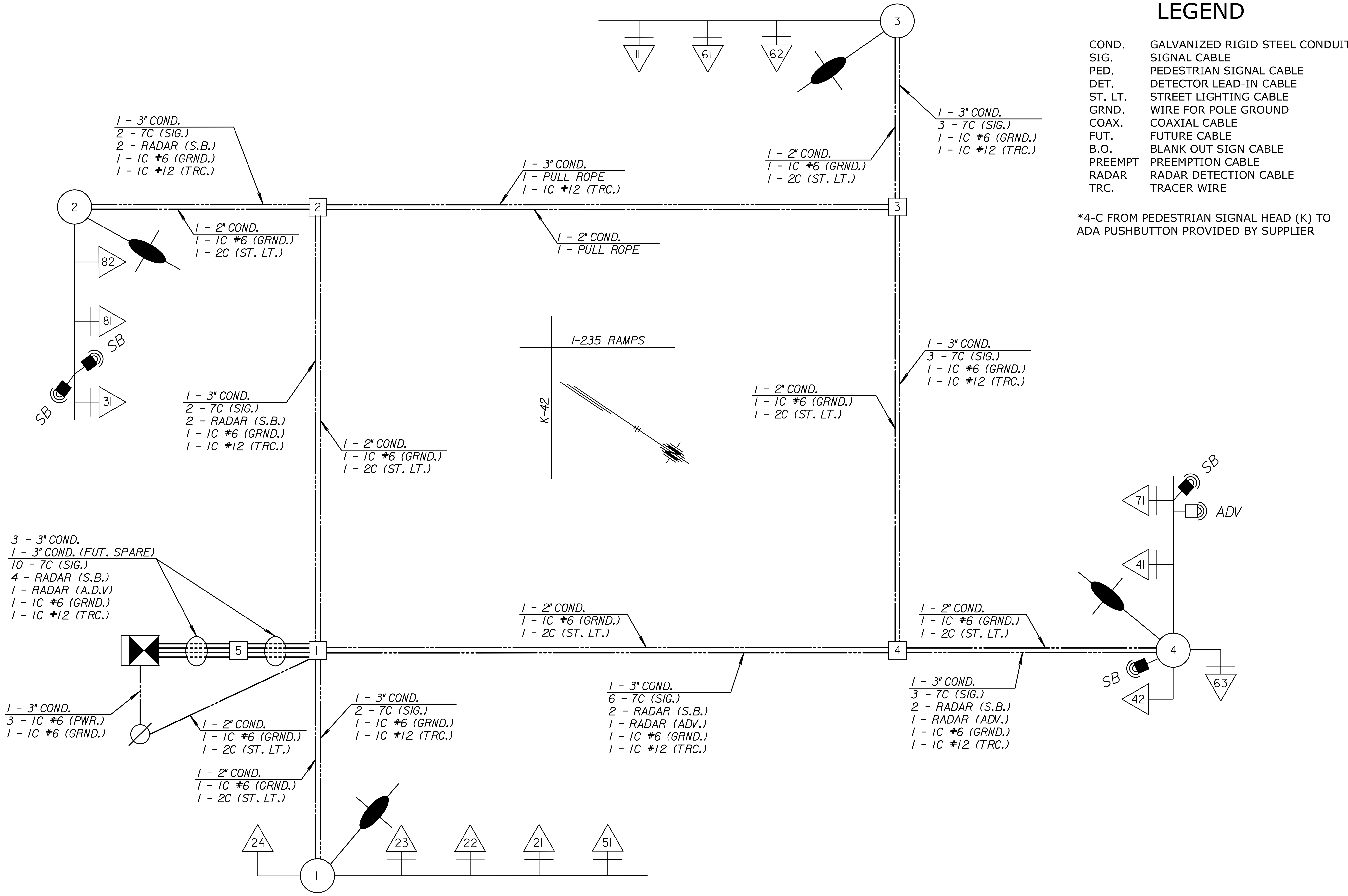


LEGEND

COND.	GALVANIZED RIGID STEEL CONDUIT
SIG.	SIGNAL CABLE
PED.	PEDESTRIAN SIGNAL CABLE
DET.	DETECTOR LEAD-IN CABLE
ST. LT.	STREET LIGHTING CABLE
GRND.	WIRE FOR POLE GROUND
COAX.	COAXIAL CABLE
FUT.	FUTURE CABLE
B.O.	BLANK OUT SIGN CABLE
PREEMPT	PREEMPTION CABLE
RADAR	RADAR DETECTION CABLE
TRC.	TRACER WIRE

*4-C FROM PEDESTRIAN SIGNAL HEAD (K) TO ADA PUSHBUTTON PROVIDED BY SUPPLIER

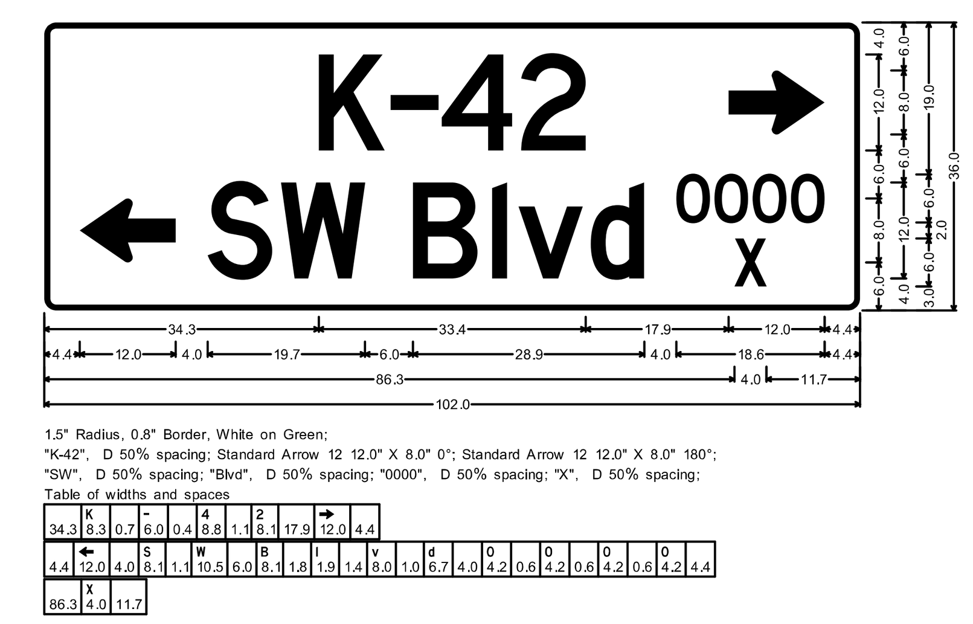
DETECTOR SUMMARY

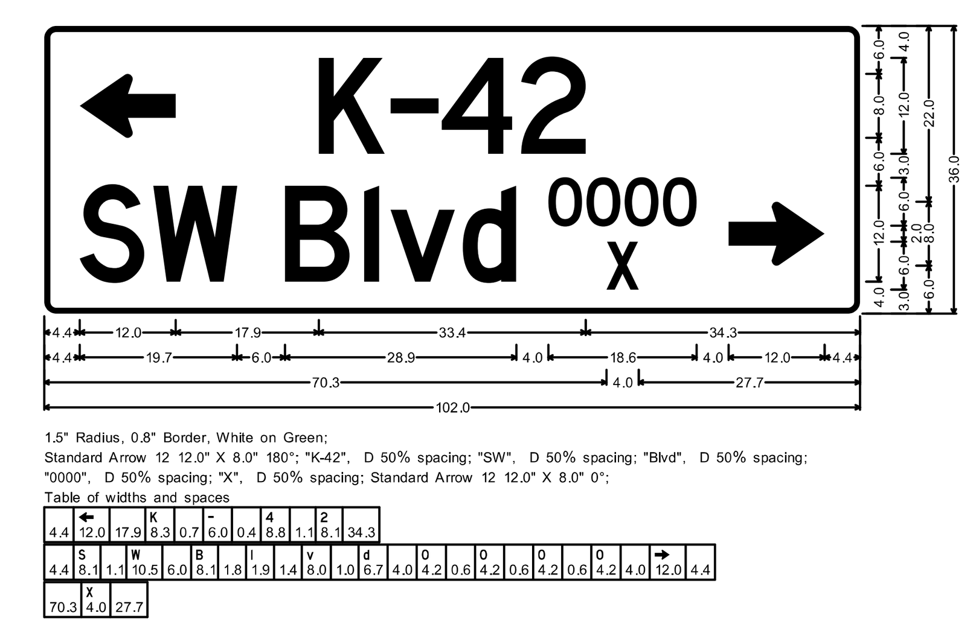
DETECTOR NUMBER	DETECTION ZONE SIZE	STOP BAR DETECTION	ADVANCED DETECTION	†TIMINGS (SEC)		MODE		PHASE CALLED	DISTANCE FROM STOP BAR
				TOTAL STRETCH + EXTENSION	DELAY	PRESENCE	PULSE		
11	6'x55'	X		2.0		X		1	-5
21,22,23	6'x55'	X		2.0		X		2	-5
31	6'X55'	X		2.0		X		3	-5
32	6'x6'		X	2.0			X	3	320
41	6'x55'	X		2.0		X		4	-5
51	6'x55'	X		2.0		X		5	-5
61, 62	6'x55'	X		2.0		X		6	-5
71	6'x55'	X		2.0		X		7	-5
81	6'x55'			2.0		X		8	-5
82	6'x6'		X	2.0			X	8	320

† TIMINGS SHOWN IN DETECTOR SUMMARY CHART INCLUDE THE TOTAL STRETCH + EXTENSION. DETECTOR TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER. SEE TRAFFIC SIGNAL GENERAL NOTES FOR ADVANCED DETECTION DISTANCE AND TIMING.

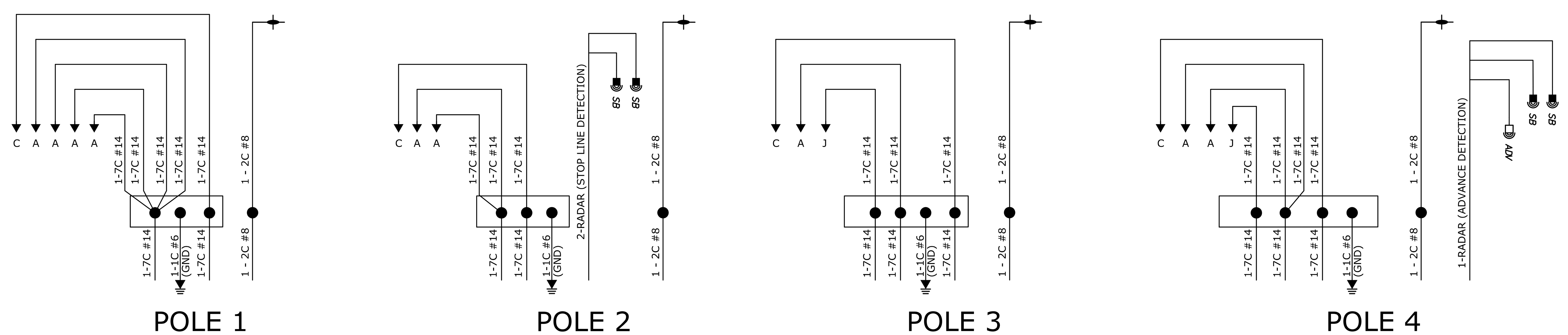
TRAFFIC SIGNAL TIMINGS SHALL BE PROVIDED BY THE ENGINEER AFTER CONSTRUCTION AND PRIOR TO SIGNAL TURN-ON. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AT LEAST 3 WEEKS PRIOR TO WHEN THE TIMING INFORMATION IS REQUIRED.

SIGN FACE BLOCK NUMBER ("0000" & "X") INFORMATION FOR OVERHEAD MAST ARM SIGNS SHALL BE PROVIDED TO THE CONTRACTOR AT THE TIME OF SHOP DRAWING REVIEW.





POLE WIRING DIAGRAM



LEGEND: SIGNAL HEAD · VIDEO DETECTOR · RADAR DETECTOR · PTZ CCTV · LUMINAIRE · PED. HEAD · PUSHBUTTON · GROUND · ST.LT. CONNECTOR KIT · SPLICE CONNECTION

NOTES:

1. ALL MULTI-CONDUCTOR WIRE SHALL BE AWG #14 SOLID UNLESS SPECIFIED OTHERWISE. LABEL EACH WIRE AS SHOWN IN PART 700 SPECIFICATIONS.

2. ALL GROUND WIRE SHALL BE #6 AWG COPPER WIRE IN ACCORDANCE WITH ATM B-3. SOLID BARE COPPER WIRE SHALL BE USED FOR ALL EXTERIOR INSTALLATIONS INCLUDING SERVICE AND GROUND ROD BONDING. OTHERWISE, GREEN INSULATED STRANDED WIRE TYPE "THHN/THWN" SHALL BE USED.

3. GROUND WIRE SHALL BE BONDED TO EACH GROUND ROD AT EVERY POLE, PEDESTAL, SERVICE BOX, AND CONTROLLER TO FORM ONE CONTINUOUS GROUND CIRCUIT.

4. DETECTOR CABLES SHOULD RUN CONTINUOUS. SPLICES, IF REQUIRED, SHALL ONLY OCCUR IN THE POLE BASE AND MUST BE APPROVED BY THE CITY OF WICHITA TRAFFIC ENGINEER.

5. IN NO CASE SHALL MORE THAN 60% OF ANY CONDUIT BE FILLED BY AREA.

6. STREET LIGHTING CABLE SHALL BE SPLICED IN SERVICE BOXES. THE SPLICE SHALL BE MADE WATERPROOF.

7. SPLICES AT POLE BASE SHALL BE LINEMAN SPLICES PER SECTION 702.21.11. TERMINAL BLOCKS WILL NOT BE USED.

8. ALL CONDUIT SHALL BE HOT DIPPED GALVANIZED RIGID STEEL CONDUIT (G.R.C.) AS SHOWN IN THE PROJECT SPECIFICATIONS.

9. DURING EMERGENCY FLASH OPERATIONS, ALL SIGNAL PHASES SHALL BE RED INDICATIONS. PEDESTRIAN PHASE SHALL BE DARK.

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS
WICHITA, KANSAS
CITY OF WICHITA

REVISIONS: MARK | DATE | DESCRIPTION

PROJ NO: 472-2020-085700
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DESIGNED BY: SSP
DRAWN BY: SSP
CHECKED BY: SGE

SHEET TITLE:
K-42 & I-235
WIRING DIAGRAM

SHEET NO.
48

NOTE TO DESIGNER: Designer shall identify any project specific changes to the standard sheets or specifications. All changes shall be approved by City of Wichita and identified on "MODIFICATIONS TO SIGNAL STANDARDS OR SPECS". Design shall update peak hour volumes for the design intersection(s).

GENERAL NOTES

1. TRAFFIC SIGNAL SPECIFICATIONS (PART 700), STANDARD DRAWINGS, CHECKLISTS, AND OTHER INFORMATION MAY BE FOUND ONLINE AT: HTTPS://WICHITA.GOV/PWU/PAGES/REGULATIONS.ASPX
   IF THERE IS A DISCREPANCY BETWEEN OR AMONG THE FOLLOWING CONTRACT DOCUMENTS, THE GOVERNING RANKING OR ORDER OF PRECEDENCE IS:
   A. INFORMATION RECEIVED AT PREBID / ADDENDUM(S)
   B. PLANS
   C. PROJECT SPECIAL PROVISIONS
   D. SPECIAL PROVISIONS
   E. STANDARD SPECIFICATIONS

   THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY RELATED TO THE WORK BEING PERFORMED.

2. ALL WORK WILL BE CONFINED WITHIN THE EXISTING ROADWAY RIGHT-OF-WAY OR RIGHT-OF-WAY SHOWN PER PLAN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND KEEP INSTALLATION OF ALL EQUIPMENT AND DEVICES WITHIN THE APPROVED RIGHT-OF-WAY.

3. CONTRACTOR SHALL MAINTAIN 2 FT CONDUIT CLEARANCE FROM ALL LANDSCAPED FEATURES AND IRRIGATION SYSTEMS EXISTING WITHIN THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED TO ANY EXISTING UNDERGROUND SPRINKLER SYSTEM DURING CONSTRUCTION. ANY LANDSCAPING OR IRRIGATION SYSTEMS DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION OR AS ACCEPTABLE BY THE ENGINEER AND OWNER THEREOF. NO ADDITIONAL PAYMENT WILL BE MADE.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL DISTURBED WORK AREAS. RESTORATION INCLUDES SEEDING, FERTILIZING, MULCHING, AND THE REMOVAL OF ALL UNUSED MATERIAL AND DEBRIS FROM THE WORK AREA ACCORDING TO THE STANDARD SPECIFICATIONS AND AS REQUIRED BY THE ENGINEER. ALL GRADING WORK SHALL SLOPE AWAY FROM FOUNDATIONS TO PREVENT PONDING. ADEQUATE TEMPORARY PROTECTION AGAINST EROSION SHALL BE PROVIDED ACCORDING TO CITY OF WICHITA SPECIFICATIONS.

5. THE CONTRACTOR SHALL DETERMINE ANY CONFLICTS WITH EXISTING UTILITIES PRIOR TO INITIATION OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE ENGINEER UPON DETERMINATION OF ANY UTILITY CONFLICTS.

6. LOCATING, TRACING, AND POTHOLING FOR EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. DISTURBED AREAS SHALL BE RESTORED WITH SIMILAR MATERIAL AND CONSTRUCTION METHODS. NO ADDITIONAL PAYMENT WILL BE MADE FOR LOCATING OR POTHOLING EXISTING UTILITIES, INCLUDING PAVEMENT RESTORATION. ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR LOCATING EXISTING UTILITIES SHALL NOT BE PAID FOR DIRECTLY BUT IS SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.

7. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CALL DIG SAFE AT 811 OR 1-800-344-7233 (1-800-DIG SAFE) TO REQUEST THE UTILITIES BE MARKED IN THAT AREA. THE CONTRACTOR SHALL ALSO CONTACT ANY AND ALL UTILITIES AND LOCAL GOVERNMENT AGENCIES NOT PARTICIPATING IN LOCATION SERVICES.

8. THE CITY WILL SURVEY AND STAKE LOCATIONS WHERE POLES, FOUNDATIONS, CABINETS, POWER SERVICES, AND SERVICE BOXES ARE TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE STAKING WITH THE CITY WITH ADVANCED NOTICE. STAKED LOCATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY EXCAVATION.

9. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. ALL TRAFFIC CONTROL PLANS AND LANE CLOSURES SHALL BE PRE-APPROVED BY THE ENGINEER IF NOT SPECIFICALLY PROVIDED IN THE CONTRACT DOCUMENTS.

10. THE PUBLIC PASSAGE ON THE EXISTING SIDEWALK OR PEDESTRIAN PATHWAY SHOULD BE SAFE, PROTECTED, AND ADA ACCESSIBLE. IF PUBLIC PASSAGE IS NOT POSSIBLE, A REROUTE AROUND THE WORK AREA IS REQUIRED. REROUTE MUST BE CLEARLY IDENTIFIED, ADA ACCESSIBLE, AND MEET ALL APPLICABLE REGULATIONS.

11. POWER COMPANY SHALL BE NOTIFIED AT LEAST TWO (2) WEEKS AND AGAIN AT 72 HOURS PRIOR TO THE ANTICIPATED SIGNAL TURN ON. THE CONTRACTOR SHALL NOTIFY THEM TO COORDINATE POWER HOOK-UP, INSTALLATION OF LUMINAIRES (IF APPLICABLE), AND ANY OTHER ITEMS REQUIRED FOR COMPLETION OF THE TRAFFIC SIGNAL. IF AVAILABLE, PROVIDE ENGINEER WITH ANY WORK ORDER/CASE NUMBERS.

12. HIGH VOLTAGE POWER LINES MAY BE WITHIN THE PROJECT LIMITS. ALL WORK IS TO BE PERFORMED IN CONFORMANCE WITH ALL STATE, LOCAL, FEDERAL, UTILITY, AND CONTRACT REQUIREMENTS. THE CITY HAS NO CONTROL OVER THE MEANS, METHODS, CHOICE OF EQUIPMENT, SEQUENCING OF WORK, AND SAFETY PRACTICES USED WHEN WORKING IN, ON, OR AROUND HIGH VOLTAGE LINES OR OTHER UTILITY STRUCTURES AS THESE ITEMS ARE THE RESPONSIBILITY OF THE PARTIES CONTROLLING THE PHYSICAL PERFORMANCE OF THE WORK.

13. ALL GROUNDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND MANUFACTURER SPECIFICATIONS. FOLLOW APPLICABLE NEC REQUIREMENTS FOR INSTALLATION OF ALL PROJECT MATERIALS. THE CONTRACTOR SHALL PROPERLY GROUND ALL EQUIPMENT, CABINET, AND GROUND RODS PER APPLICABLE STANDARDS OR AS DIRECTED BY ENGINEER.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ELECTRICAL SERVICE CONNECTION IN THE CITY'S NAME AT THE LOCATIONS SHOWN ON THE PLANS. DIRECT COSTS FOR PERMANENT ELECTRICAL SERVICES TO BE PAID BY CITY. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SERVICE (IF REQUIRED).

15. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT CATALOG CUTS OR SHOP DRAWINGS FOR ALL EQUIPMENT TO BE INSTALLED. IT IS THE PRIME CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL SHOP DRAWINGS, TESTING RESULTS, AND ALL OTHER REQUIRED SUBMITTALS PRIOR TO SUBMITTING FOR ENGINEER'S APPROVAL. THE ENGINEER WILL NOT REVIEW ANY SUBMITTED DOCUMENTATION OR BEGIN ANY TESTING PERIODS UNTIL THIS WORK IS COMPLETE.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND SALVAGING EXISTING EQUIPMENT AS NOTED. DAMAGE TO ANY EXISTING TRAFFIC SIGNAL EQUIPMENT DUE TO THE CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND THE CONTRACTOR SHALL REPORT ANY OPERATIONAL PROBLEMS TO THE TRAFFIC MAINTENANCE DEPARTMENT (316) 268-4013. THE EQUIPMENT SHALL BE REPLACED OR REPAIRED (AS DIRECTED BY THE CITY) WITH APPROVED MATERIALS IN CONFORMANCE WITH THE CURRENT STANDARD DETAILS, SPECIFICATIONS, PRACTICES AND POLICIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY STORED EXISTING MATERIALS (REMOVED FOR CONSTRUCTION) TO BE RE-INSTALLED.

17. WHEN SALVAGED EQUIPMENT IS NOT TO BE REINSTALLED, IT SHALL BE DELIVERED UNDAMAGED TO THE CITY OF WICHITA OR RESPECTIVE OWNER. IF NOT OTHERWISE IDENTIFIED ON THE PLANS, EQUIPMENT SHOULD BE DELIVERED TO CENTRAL MAINTENANCE FACILITY (CMF) AT 1801 S MCLEAN BLVD, WICHITA, KS 67213. THE CONTRACTOR SHALL SCHEDULE THE DELIVERY WITH TRAFFIC SIGNAL MAINTENANCE A MINIMUM OF 24 HOURS IN ADVANCE. THE STORED EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL REMOVED BY OWNER FROM THE WORK SITE OR DELIVERED TO THE OWNER.

18. THE TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE EXACT CONSTRUCTION SCHEDULE SO THAT INSPECTION OF THE TRAFFIC SIGNAL INSTALLATION CAN BE MADE OF ALL PHASES, INCLUDING CONDUIT INSTALLATIONS.

19. THE CONTRACTOR SHALL PROVIDE THE CITY AN ELECTRONIC LIST OF GPS READINGS (EXCEL FORMAT) FOR ALL INSTALLED DEVICES, PULL BOXES, SERVICE BOXES, CABINETS, POWER METERS, AND TRANSFORMERS. THE GPS READINGS SHALL MATCH THE CITY OF WICHITA'S CURRENT GEOGRAPHIC INFORMATION SYSTEM (GIS) WITH 'SUB-METER' ACCURACY. THE PROJECT SURVEY SHALL BE BASED ON NAD83, KANSAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. SURVEY FEET DEFINITION. THE VERTICAL DATUM SHALL BE NAVD88. GPS AND THREE TIE-POINT MEASUREMENTS SHALL BE OBTAINED FOR EACH BURIED ELECTRICAL PULL BOX PRIOR TO PLACING BACKFILL MATERIAL. CONDUITS WHICH ARE NOT PLACED IN A STRAIGHT LINE, SHALL BE LOCATED AS NEEDED IN ORDER TO ESTABLISH ITS EXACT LOCATION AND DEPTH.

TRAFFIC SIGNAL TURN-ON AND ACCEPTANCE PROCEDURE

1. AT LEAST TWO (2) WORKING DAYS PRIOR TO SCHEDULED SIGNAL ACTIVATION, ALL TESTING SHOULD BE COMPLETED AND SUCCESSFUL, ALL DEFECTS AND DEFICIENCIES CORRECTED, ALL INDICATIONS OPERATIONAL AND PROPERLY AIMED, CABLES TAGGED, CABINETS AND SURROUNDING AREAS CLEANED OF DEBRIS, CONTROLLER FULLY OPERATIONAL PERFORMING ALL TIMING FUNCTIONS REQUIRED, ALL OTHER ITEMS OF WORK ASSOCIATED WITH THE SIGNAL COMPLETED, AND ALL SIGNS AND PAVEMENT MARKINGS PROPERLY INSTALLED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

2. THE CONTRACTOR SHALL REVIEW AND SUBMIT TO THE ENGINEER A COMPLETED "CITY OF WICHITA TRAFFIC SIGNAL INSPECTION CHECKLIST" AVAILABLE ONLINE AT WWW.WICHITA.GOV. THE CHECKLIST MUST BE COMPLETED PRIOR TO CITY, TRAFFIC SIGNAL MAINTENANCE, OR ENGINEERING FULL INSPECTION.

3. THE ENGINEER AND CITY WILL CONDUCT A FULL INSPECTION OF THE SIGNAL SYSTEM. UPON SATISFACTORY CONDITIONS OF THE SIGNAL SYSTEM, THE TURN-ON SCHEDULE WILL BE CONFIRMED. THE CITY SHALL BE NOTIFIED AT LEAST ONE (1) WEEK IN ADVANCE OF THE ANTICIPATED SIGNAL TURN-ON DATE. ANY DEFICIENCIES FOUND DURING THE FINAL INSPECTION SHALL RESULT IN THE RESCHEDULING OF THE ACTIVATION.

4. ACTUAL ACTIVATION SHALL CONSIST OF THE FOLLOWING STEPS:
   A. INSTALLATION OF ALL REQUIRED EQUIPMENT IN THE CONTROLLER CABINET
   B. TESTING OF INSTALLED EQUIPMENT
   C. UNBAGGING OF ALL SIGNAL HEADS AND SIGNS (IF APPLICABLE)
   D. ACTIVATION OF THE SIGNAL WITH THE CONTRACTOR'S FLAGGER STOPPING ALL TRAFFIC MOMENTARILY AS THE SIGNAL IS TURNED ON.
   E. MINOR RE-AIMING OF SIGNAL HEADS, IF NECESSARY

5. ACTIVATION OF THE TRAFFIC SIGNAL SHALL NOT BE SCHEDULED FOR WEEKENDS, FRIDAYS OR DAYS RIGHT BEFORE PUBLIC HOLIDAYS. ENERGIZING OF SIGNAL (TURN-ON) TO OCCUR MONDAY - THURSDAY, 9:00 AM - 3:00 PM UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER.

6. TEST PERIOD - FOLLOWING COMPLETION OF ALL ELECTRICAL APPARATUS HOOKUPS AND THE SYSTEM TURN-ON, THE SIGNALS SHALL OPERATE SATISFACTORILY FOR 30 DAYS UNDER NORMAL OPERATION PRIOR TO ACCEPTANCE BY THE CITY. DURING THE TEST PERIOD, THE SIGNALS SHALL OPERATE TROUBLE-FREE WITH NO MAJOR OR MINOR FAILURES OF THE CONTROLLER OR ITS COMPONENTS AS DETERMINED BY THE TRAFFIC ENGINEER. SHOULD ANY DEFECT DEVELOP UNDER NORMAL AND PROPER OPERATING CONDITIONS DURING THE TESTING PERIOD AND PRIOR TO ACCEPTANCE BY THE CITY, THIS MALFUNCTION SHALL BE CORRECTED BY AND AT THE EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, MATERIALS AND ASSOCIATED COSTS. MINOR FAILURES SUCH AS LAMP FAILURES OR LOOP DETECTOR RE-TUNING WILL NOT BE THE BASIS FOR STARTING A NEW TEST PERIOD, PROVIDED THE FAILURES ARE REPAIRED IMMEDIATELY AND THE SAME FAILURES DO NOT RECUR DURING THE REMAINDER OF THE TEST PERIOD. A MAJOR MALFUNCTION OR FAILURE OF THE CONTROLLER AND ITS COMPONENTS WILL RESULT IN A NEW 30 DAY TEST PERIOD BEING IMPLEMENTED AFTER THE REPAIRS HAVE BEEN MADE. COMPLETION OF THE TEST PERIOD DOES NOT ABSOLVE THE CONTRACTOR OF ANY WARRANTY.

7. IF A TRAFFIC SIGNAL MALFUNCTION OCCURS BETWEEN SUCCESSFUL TURN-ON AND FINAL ACCEPTANCE AND THE SIGNAL MALFUNCTION IS DUE TO FAULTY WORK BY THE CONTRACTOR, THE CITY MAINTENANCE DIVISION MAY TAKE CORRECTIVE ACTION AND HAS THE DISCRETION TO BILL THE CONTRACTOR FOR ALL RELATED EXPENSE, INCLUDING OVERHEAD.

8. FINAL ACCEPTANCE BY THE CITY IS CONDITIONAL UNTIL THE CONTRACTOR HAS CORRECTED ALL DEFECTS AND PUNCH LIST ITEMS. FINAL ACCEPTANCE WILL BE BY WRITTEN NOTICE OF ENGINEER.

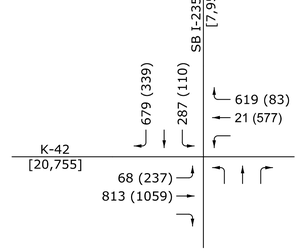
9. WARRANTY - THE WARRANTY PERIOD BEGINS ONCE THE FINAL ACCEPTANCE BY THE CITY HAS OCCURRED. CONFIRMATION OF THE ACCEPTANCE SHOULD BE PROVIDED IN WRITTEN DOCUMENTATION.

LEGEND

	LUMINAIRE		DETECTION ZONE
	TRAFFIC SIGNAL POLE		3" CONDUIT
	TRAFFIC SIGNAL PEDESTAL		2" CONDUIT
	APS PUSHBUTTON STATION		1 1/2" CONDUIT
	TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION		SIGN ON 1 BRACKET
	TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION & BACKPLATE		SIGN ON 2 BRACKETS
	PEDESTRIAN SIGNAL & PUSHBUTTON	SB / ADV	RADAR DETECTION (ADVANCE OR STOP BAR)
	PAD MOUNTED CONTROLLER		VIDEO DETECTOR
	SERVICE BOX		PTZ CCTV
	SECONDARY SERVICE POINT	23	DETECTOR NUMBER
P.B.	PEDESTRIAN PUSH BUTTON	6	POLE/PEDESTAL NUMBER
		2	SERVICE BOX NUMBER

PEAK HOUR VOLUMES

A.M. (P.M.) PEAK HOUR VOLUME
[XXX] 24-HOUR VOLUME (TWO-WAY ADT)



A.M. PEAK HOUR = 7:15 - 8:15 AM
P.M. PEAK HOUR = 4:30 - 5:30 PM
COUNTS CONDUCTED (2006)

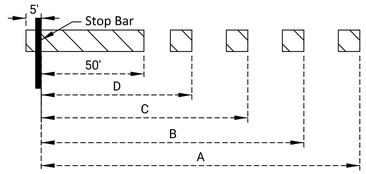
EXISTING EQUIPMENT REMOVAL SUMMARY

LOCATION	DESCRIPTION OF ITEM	QUANTITY
INTERSECTION	EXISTING SIGNAL CABINET, POLES, DETECTION, AND OTHER SIGNAL EQUIPMENT	1

ADVANCE DETECTION DISTANCE & TIMING CALCULATION

SPEED (MPH)	MIN. ADVANCE DETECTION ZONE DISTANCES (FEET)				*TOTAL EXT. (SEC.)
	A	B	C	D	
60	610	420	260	92	2.0
55	490	320	210	92	2.0
50	420	260	92	-	2.0
45	320	210	92	-	2.0
40	260	92	-	-	2.0
35	210	92	-	-	2.0
<35 MPH NO ADVANCE DETECTION. STOP BAR ZONE ONLY (55' TYP.)					

* DETECTOR EXTENSION TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER.



MODIFICATIONS TO SIGNAL STANDARDS OR SPECS

NO.	DESCRIPTION OF ITEM	SPEC. NO.	SHEET NO.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

NO.	DATE	BY	APP'D
3			
2			
1			

REVISIONS

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TRAFFIC SIGNAL GENERAL NOTES

TRAFFIC ENGINEER APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

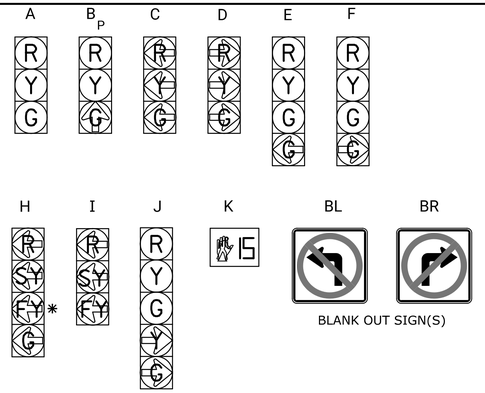
SHEET 49

TR-101

NOTE TO DESIGNER: Mast arm lengths shall be in 6' increments (18' to 60'). If a longer mast arm is required, signal pole foundation design calculations must be submitted to the City of Wichita for review. The pad mounted 332L cabinet is typically used unless approved otherwise by City of Wichita Traffic Engineer. 5-Sections heads for left turn phase must be approved by the City of Wichita Traffic Engineer.

CHART A SIGNAL SUMMARY

Signal Face Arrangement	No. Sections (Per Face)	Signal Mounting Type	Quantity
A	3	Mast Arm w/ Backplate	7
C	3	Mast Arm w/ Backplate	4
J	5	Mast Arm w/ Backplate	1
A	3	Side-of-Pole	2
C	3	Side-of-Pole	-
J	5	Side-of-Pole	1



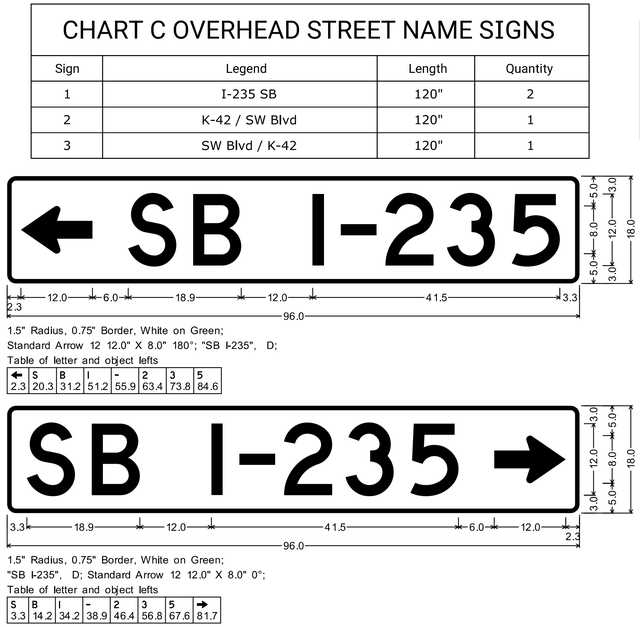
NOTES:
1. *SHALL NOT BE DISPLAYED WHEN OPERATING IN THE PROTECTED ONLY MODE.
2. ALL LENSES ARE L.E.D. UNLESS OTHERWISE NOTED.
3. SUBSCRIPT "P" INDICATED PROGRAMMED SIGNALS.
4. ALL LENSES SHALL BE 12" DIA. UNLESS OTHERWISE NOTED. PESDESTRIAN DISPLAY (K) SHALL BE RECTANGULAR WITH A WIDTH OF 18" AND HEIGHT OF 16".
5. BLANK OUT SIGN SIZE SHALL MEET MUTCD REQUIREMENTS FOR APPLICABLE STATIC VERSION OF THE SIGN.

CHART B TRAFFIC SIGNAL POLES

	Pole Height	Signal Arm Length	Signal Arm Mounting Height	No. of Signals on Arm	Signal Spacing	Luminaire Arm Length	Luminaire Mounting Height	Quantity
1	35.0'	60.0'	19.0'	4	24',36',48',59'	15.0'	40.0'	1
2	35.0'	48.0'	19.0'	3	16',28',43'	15.0'	40.0'	1
3	35.0'	60.0'	19.0'	3	32',44',55'	15.0'	40.0'	1
4	35.0'	60.0'	19.0'	2	42',54'	15.0'	40.0'	1

CHART C OVERHEAD STREET NAME SIGNS

Sign	Legend	Length	Quantity
1	I-235 SB	120"	2
2	K-42 / SW Blvd	120"	1
3	SW Blvd / K-42	120"	1



←	S	B	I	-	2	3	5
2.3	20.3	31.2	51.2	55.9	63.4	73.8	84.6

S	B	I	-	2	3	5	→
3.3	14.2	34.2	38.9	46.4	56.8	67.6	81.7

USE FONT SERIES D. SHEETING SHALL BE ASTM TYPE XI SHEETING. SEE SPECIFICATION 703.8

BILL OF MATERIALS
-Quantities for Information Only-

Item	Quantity	Unit	Spec. No.	Note
CONTROLLER UNIT	1	EACH	703.2.1	TRAFFICWARE 2070LX V85
CONFLICT MONITOR	1	EACH	703.2.2	
LOAD SWITCH	16	EACH	703.2.3	
FLASHER	2	EACH	703.2.4	
FLASH TRANSFER RELAY	6	EACH	703.2.5	
SURGE PROTECTOR	1	EACH	703.2.6	
DC ISOLATOR	3	EACH	703.2.7	
AC ISOLATOR		EACH	703.2.8	
GPS CLOCK	2	EACH	703.2.9	ADD GPS CLOCK TO THE NB RAMP SIGNAL
POWER STRIP	1	EACH	703.2.11	NOTE 7
AUXILLARY OUTPUT FILE	1	EACH	-	NOTE 6
POLE MOUNTED CABINET (336L)		EACH	703.2.11	
PAD MOUNTED CABINET (332L)	1	EACH	703.2.11	
PAD MOUNTED CABINET (342) (DOUBLE)		EACH	703.2.11	
BATTERY BACKUP (BBS/UPS)	1	EACH	703.2.14	
VIDEO DETECTION DEVICE & HARDWARE		EACH	703.3.1	
RADAR DETECTION DEVICE & HARDWARE	SEE TABLE	EACH	703.3.2	
TRAFFIC SIGNAL HEAD	Chart A	EACH	703.4.1	
SIGNAL HEAD MOUNTING BRACKET	Chart A	EACH	703.4.2	
RETROREFLECTIVE BACKPLATE	Chart A	EACH	703.4.3	
VEHICLE TRAFFIC SIGNAL LED MODULES	49	EACH	703.4.4	
PEDESTRIAN TRAFFIC SIGNAL LED MODULES	-	EACH	703.4.5	
APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")	-	EACH	703.4.6	
TRAFFIC SIGNAL POLE	Chart B	EACH	703.5.1	
TRAFFIC SIGNAL PEDESTAL (ALUMINUM)	-	EACH	703.5.2	
ADA PUSHBUTTON STATION (ALUMINUM)	-	EACH	703.5.3	
SERVICE BOX	5	EACH	703.6	
LUMINAIRE ARM	-	EACH	703.7.1	POWER COMPANY PROVIDED & INSTALLED
LED LUMINAIRE	-	EACH	703.7.2	POWER COMPANY PROVIDED & INSTALLED
PHOTOCELL	-	EACH	703.7.3	POWER COMPANY PROVIDED & INSTALLED
UNFUSED STREET LIGHT CONNECTOR KIT	4	EACH	703.7.4	
FUSED STREET LIGHT CONNECTOR KIT	4	EACH	703.7.5	
OVERHEAD STREET NAME SIGN	4	EACH	703.8.1	
R10-10 SIGN (30" X 36")	4	EACH	703.8.2	
R10-FYA SIGN (30" X 36")		EACH	703.8.2	
BLANK OUT SIGN (36" X 36")		EACH	703.8.3	
ENTRANCE HEAD		EACH	703.9.2	
SERVICE ENCLOSURE, 200 AMP.	1	EACH	703.9.3	
CIRCUIT BREAKER, TRAFFIC SIGNAL, 50 AMP.	1	EACH	703.9.4	
CIRCUIT BREAKER, LUMINAIRE, 15 AMP.	1	EACH	703.9.4	
SURGE ARRESTER CA 302R	1	EACH	703.9.5	
POWER SERVICE CONTROLLER CABINET	1	EACH	703.9.6	
GROUND ROD & CLAMP	11	EACH	703.10	
SERVICE WIRE NO. 6 AWG 1/C	45	LIN FT	703.11.1	
LIGHTING DISTRIBUTION WIRE NO. 8 AWG 2/C	525	LIN FT	703.11.2	
POLE & BRACKET WIRE NO. 10 AWG 1/C	420	LIN FT	703.11.3	
GROUND WIRE NO. 6 AWG 1/C BARE SOLID	1,000	LIN FT	703.11.4	
TRACER WIRE NO. 12 AWG (BLUE)	725	LIN FT	703.11.5	
TRACER WIRE CONNECTOR	1	EACH	703.11.6	
MULTI-CONDUCTOR CABLE NO. 14 AWG 5/C	-	LIN FT	703.11.7	
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/C	3,865	LIN FT	703.11.7	
DETECTION CABLE		LIN FT	703.11.9	
PRE-FORMED LOOP		EACH	703.11.10	
ETHERNET CABLE (CAT6)		LIN FT	703.11.11	
CONDUIT, 2" & FITTINGS	580	LIN FT	703.12	
CONDUIT, 3" & FITTINGS	870	LIN FT	703.12	
CONDUIT, __" & FITTINGS		LIN FT	703.12	

NOTES:

1. QUANTITIES SHOWN ARE FOR I-235 SB RAMP AND K-42 INTERSECTION SIGNAL.
2. REFER TO CITY OF WICHITA PART 700 TRAFFIC SIGNALIZATION SPECIFICATIONS.
3. ALL TRAFFIC SIGNAL POLES SHALL BE PAINTED BLACK PER LATEST EDITION OF PART 700 SPECIFICATIONS. SIGNAL CABINET SHALL BE NATURAL ALUMINUM.
4. CONFLICT MONITOR SHALL BE A 2010 ECL-IP UNIT WITH ETHERNET PORT.
5. A SEPARATE DETECTION CARD SHALL BE USED FOR EACH INTERSECTION LEG. THE DETECTION SYSTEM INCLUDES DETECTOR UNIT, PROCESSOR, CARD, AND INCIDENTAL ITEMS NECESSARY FOR THE SUCCESSFUL OPERATION OF THE DETECTION SYSTEM.
6. AUXILLARY OUTPUT FILE SHALL BE FULLY WIRED AND FUNCTIONAL AT THE TIME OF SIGNAL TURN-ON.
7. POWER STRIP TO BE TRIPP LITE POWER STRIP RACKMOUNT METAL 120V 5-15R 12 OUTLET 15' CORD, 19"RACKMOUNT 1U, NEMA 5-15P - 12 NEMA 5-15R - 15FT, OR APPROVED EQUAL. POWER STRIP IS TO BE MOUNTED IN REAR OF CABINET AT THE TOP OF THE RACK, AND PLUGGED INTO THE 2ND CONTROLLER PLUG IN PDA2.

BILL OF MATERIALS (contd.)
RADAR DETECTION DEVICE & HARDWARE
-Quantities for Information Only-

Item	Model	Quantity	Unit
STOP BAR DETECTION UNIT	WX-SS-225	4	EACH
ADVANCE DETECTION UNIT	WX-SS-200V	1	EACH
DETECTION UNIT HARNESS	WX-SS-704-080	5	EACH
DETECTION UNIT BRACKET	WX-SS-611	5	EACH
CABINET INTERFACE DEVICE	CLICK 600	2	EACH
CONTACT CLOSURE	CLICK 114	5	EACH
DETECTION UNIT CABLING	STOP BAR UNIT(S)	As Needed	LIN FT
	ADVANCE UNIT(S)	As Needed	LIN FT

BID ITEM

Item	Quantity	Unit
Traffic Signal	LSUM	LSUM
Traffic Signal Controller	1	EACH
Detection System	LSUM	LSUM
Temporary Traffic Signal	1	LSUM

TRAFFIC SIGNAL CONTROLLER ITEM INCLUDES THE UNIT COST FOR PERMANENT CONTROLLER ONLY. COST FOR INSTALLATION, PROGRAMMING, ETC. SHALL BE INCLUDED IN THE "TRAFFIC SIGNAL" QUANTITY.

CONTROLLERS FOR TEMPORARY SIGNAL(S) IS SUBSIDIARY TO THE BID ITEM "TEMPORARY TRAFFIC SIGNAL".

FOR MULTIPLE PROJECT INTERSECTIONS, QUANTITIES SHOULD BID SEPARATELY FOR EACH SIGNALIZED INTERSECTION (EXCLUDING CONTROLLERS).

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 COMPLETE OPERATION OF THE TRAFFIC SIGNAL SYSTEM WHETHER SPECIFICALLY MENTIONED OR NOT.

NO	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

TRAFFIC SIGNAL QUANTITY SHEET

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

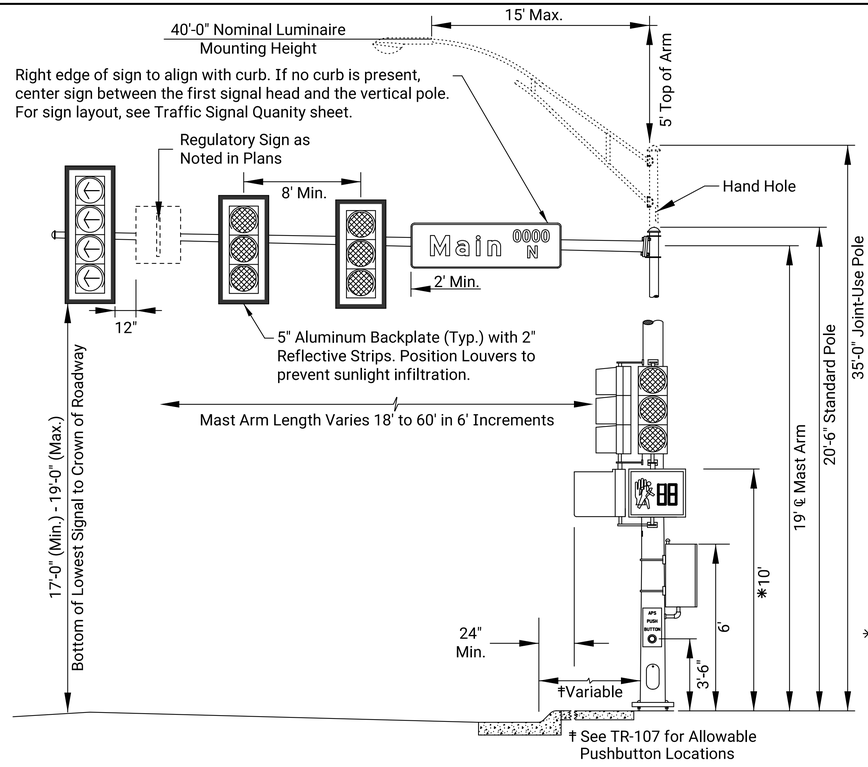
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

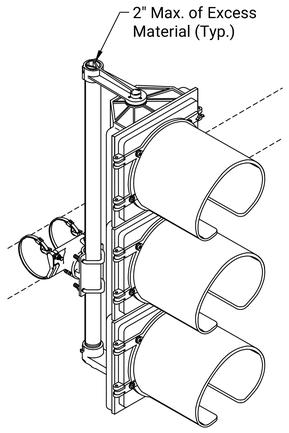
SHEET 50

TR-102

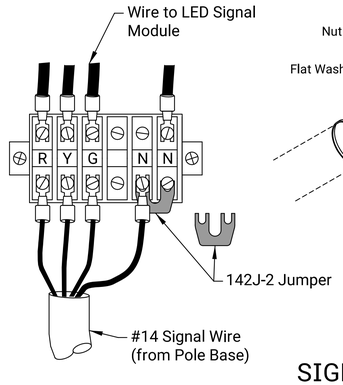
NOTE TO DESIGNER: Mast arm length shall be a minimum of 2 feet longer than last signal head. See "Signal Pole Data and Specification" for standard mast arm lengths and luminaire heights.



✳ NOTE:
Pedestrian signal heads shall be mounted so the top of signal head is at 10' above sidewalk level. Bottom of pedestrian head shall be 7' minimum from sidewalk level.

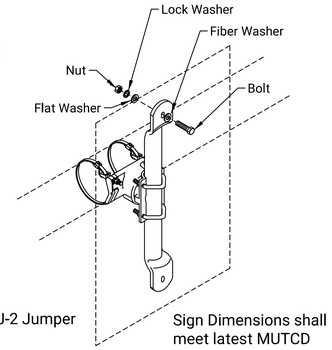


RIGID SIGNAL MOUNTING DETAIL

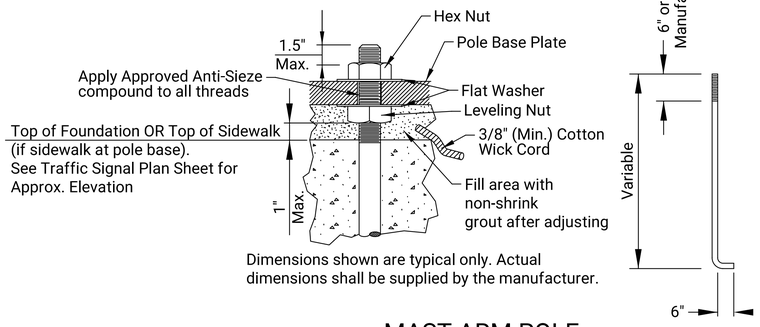


SIGNAL HEAD JUMPER DETAIL

Example for 3-Section Head Shown

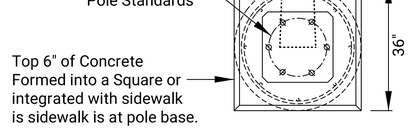


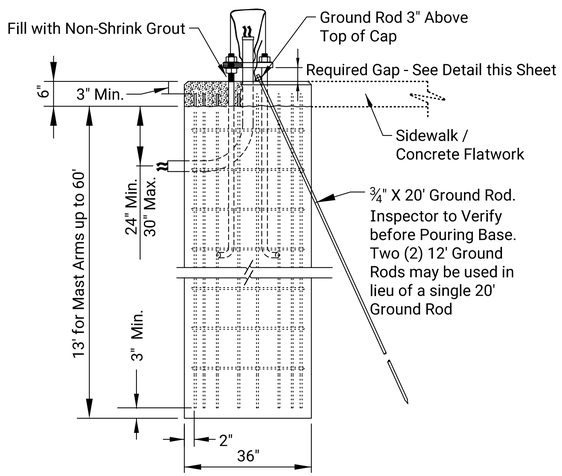
SIGN MOUNTING BRACKET DETAIL SIGNS OVER 18" TALL (R10 SERIES)



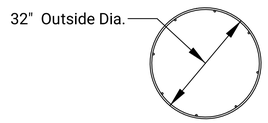
MAST ARM POLE ANCHOR BOLT DETAIL

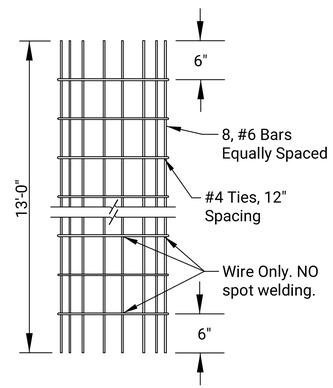
1. Under no circumstance shall the bolt-flange of the pole be recessed in concrete.
2. The space between Pole Base Plate and Top of Foundation shall not exceed the diameter of the anchor bolt.
3. The anchor bolt threads shall be protected from concrete fouling during concrete placement.





MAST ARM POLE & BASE DETAIL





MAST ARM POLE REBAR CAGE DETAIL

(FOR MAST ARMS UP TO 60')

NOTE:
1. THE CITY STANDARD TRAFFIC SIGNAL POLE FOUNDATION DESIGN IS ACCEPTABLE FOR A MAXIMUM MAST ARM SPAN OF UP TO 60 FEET WITH A 13'-0" DEEP FOOTING SHAFT. IF A LONGER MAST ARM IS REQUIRED, SIGNAL POLE FOUNDATION DESIGN CALCULATIONS MUST BE SUBMITTED TO THE CITY FOR REVIEW.
2. MINIMUM SOIL PROPERTIES FOR THESE LENGTHS ARE EITHER "PHI" OF 5° OR GREATER OR A MINIMUM "C" VALUE OF 500 PSF OR GREATER. SOILS HAVING PROPERTIES LESS THAN EITHER OF THESE MUST HAVE CALCULATIONS SUBMITTED TO THE CITY FOR REVIEW.
3. THE ANCHOR BOLTS FOR THE SIGNAL POLE MAY BE TACK WELDED TOGETHER IN BOLT PATTERN (ON CENTERS AS SHOWN) TO MAINTAIN REQUIRED BOLT CONFIGURATION PATTERN AND TO AID IN VERTICAL POSITIONING WHILE CONCRETE BASE IS POURED.
4. USE ANTI-SEIZE COMPOUND ON ALL THREADS.
5. GROUND RODS TO BE POSITIONED AND SHOWN TO INSPECTOR BEFORE POURING BASE.
6. GROUND RODS FOR TRAFFIC SIGNAL MAST ARM POLES AND 342 CABINETS SHOULD BE 3/4" X 20'. TWO (2) 3/4" X 12' GROUND RODS MAY BE USED IN LIEU OF A SINGLE 20' GROUND ROD. ALL OTHER GROUND RODS SHALL BE 3/4" X 12'.
7. CONCRETE SHALL MEET THE REQUIREMENTS OF GRADE 4.0 PER SPECIFICATIONS.
8. CONSTRUCT SQUARE CONCRETE CAP AFTER POLE HAS BEEN ERECTED & PLUMBED. CHAMFER EDGE 1". MUST BE APPROVED BY ENGINEER BEFORE POURED.
9. CONDUIT SHALL HAVE PLASTIC (OR METAL) BUSHING (ABOVE BASE) TO PREVENT CABLE CHAFING.
10. RUBBER GROMMETS SHALL BE INSTALLED FOR WIRE ENTRANCE HOLES AT EACH PENETRATION LOCATION. HOLES MAY BE FIELD DRILLED AS PER MANUFACTURE SIZE AND PROCEDURES.
11. HOLE(S) FOR WIRING SHOULD BE 7/8" MINIMUM DIAMETER AND MUST BE DEBURRED TO PREVENT DAMAGE. SPARE/EMPTY HOLES SHALL BE FILLED WITH TRADE-SIZE SMOOTH-FACE CONDUIT CLOSURE(S) OR AS DIRECTED BY CITY TRAFFIC SIGNAL MAINTENANCE.
12. USE #6 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.
13. IN THE EVENT SOUND BEDROCK IS ENCOUNTERED AT A DEPTH LESS THAN STANDARD, CONTRACTOR SHALL NOT PROCEED WITHOUT ENGINEER APPROVAL OF SOCKET DEPTH.
14. IT MAY BE NECESSARY TO USE A CONCRETE FORM/SONOTUBE FOR THE SIGNAL AND PEDESTRIAN POLE BASES WHERE PREVIOUS EXCAVATION MAY HAVE OCCURRED OR SANDY SOILS. IT IS EXPECTED THAT THE SIGNAL AND PEDESTRIAN POLES' LOCATIONS WILL NOT BE CHANGED AND IT IS UP TO THE CONTRACTOR TO ACCOUNT FOR CONCRETE FORMS WITHIN THEIR BID IF THEY ARE NEEDED FOR POSSIBLE UNSTABLE SOIL CONDITIONS.

NO	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TRAFFIC SIGNAL INSTALLATION DETAIL SHEET

TRAFFIC ENGINEER APP'D 01/27/22
MIKE ARMOUR, P.E.

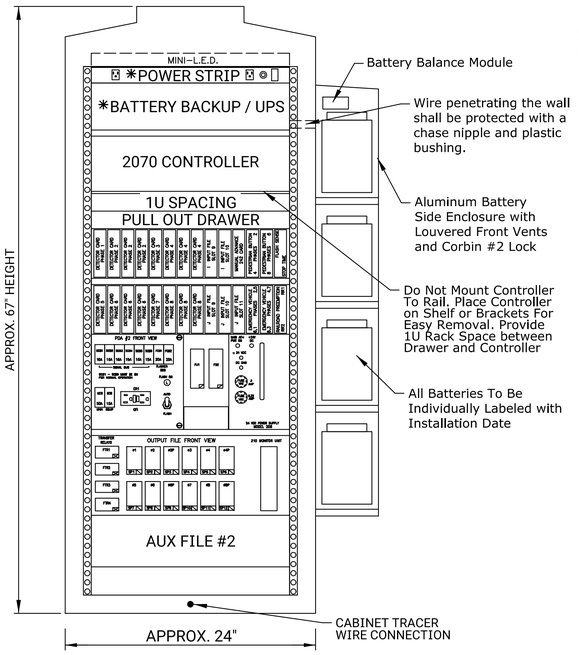
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET 51

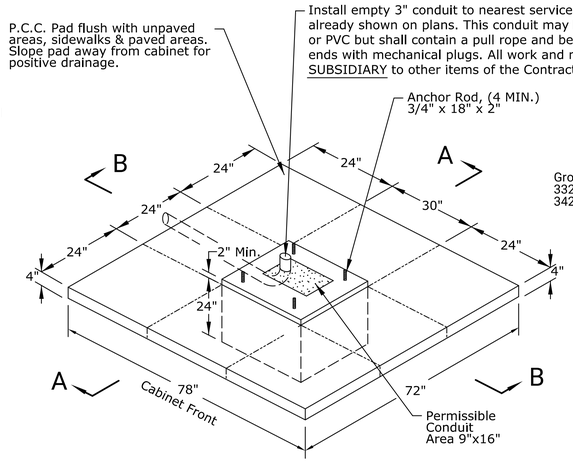
TR-105

NOTE TO DESIGNER: Design shall identify cabinet type on Traffic Signal Quantity Sheet. Typically, the Type 332L Cabinet shall be used unless intersection includes (or future) fiber connections or integration with transportation system.

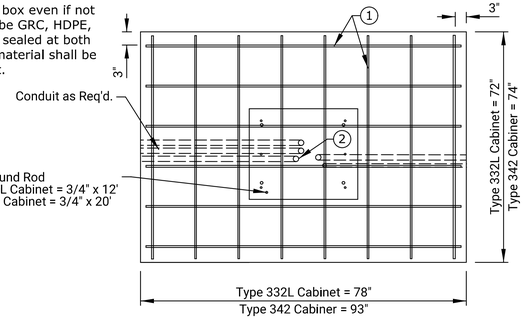


TYPICAL TYPE 332L CABINET (PAD MOUNT)

Approximate 67" H x 24" W x 30" D
*Locate Power Strip & BBS on Backside of Cabinet



TYPE 332L PAD



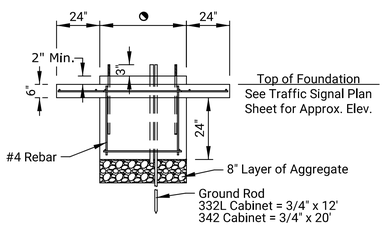
CABINET FOUNDATION NOTES:

1. ALL REINFORCING BAR USED IN THE CONSTRUCTION OF THE CABINET FOUNDATION SHALL BE NO. 4 BARS, EVENLY SPACED AT 12 IN SPACING, +/- 1.5 IN.

   6"x6"-W4xW4 WELDED WIRE FABRIC (WWF) MAY BE USED IN LIEU OF REINFORCING BAR.

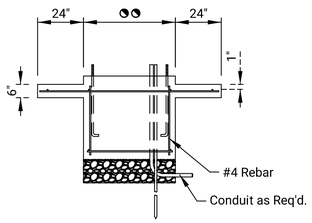
2. REINFORCEMENT SHALL BE ADJUSTED TO ACCOMMODATE CONDUIT.

3. MINIMUM NO. 4 COPPER GROUNDING CONDUCTOR FROM CABINET EQUIPMENT GROUND BUS TO GROUND ROD.



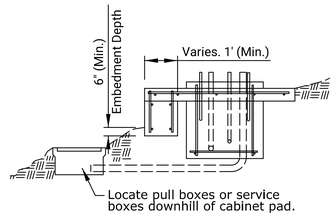
SECTION "A-A"

Type 332L Cabinet = 24"
Type 342 Cabinet = 26"



SECTION "B-B"

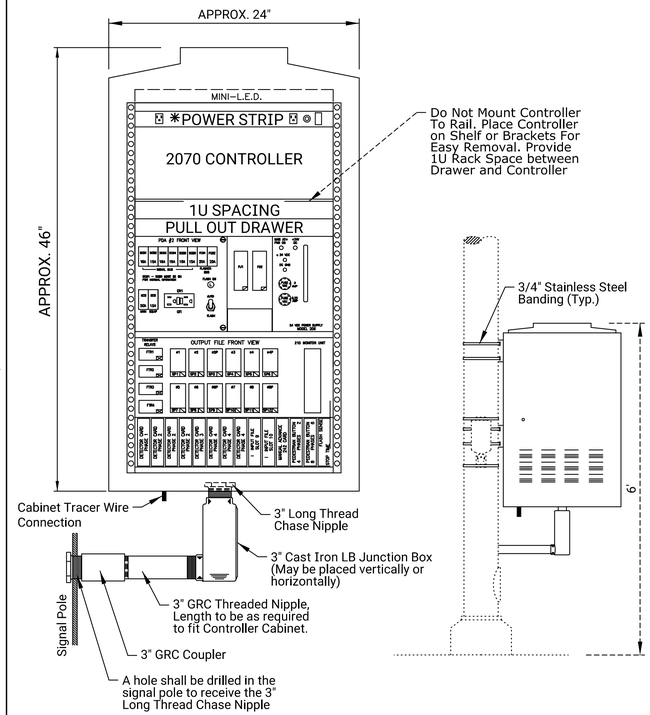
Type 332L Cabinet = 30"
Type 342 Cabinet = 45"



FOUNDATION ON SLOPE DETAIL

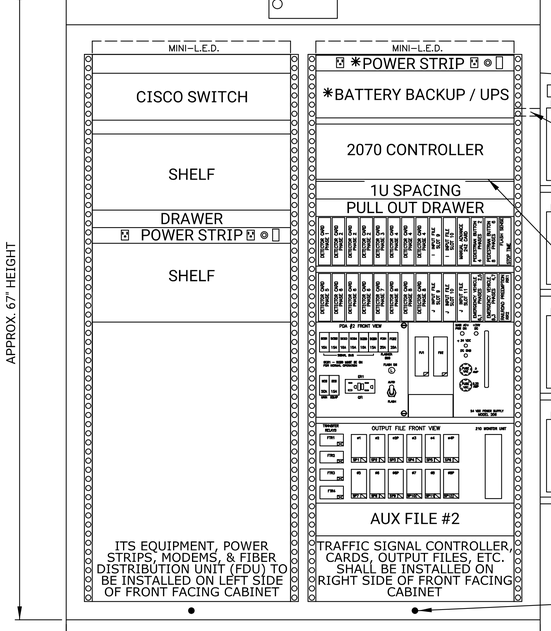
1. All reinforcing bar shall be No. 4 bars, evenly spaced at 12" spacing, +/- 1.5".

2. Additional concrete, material, and labor required for cabinet foundation on slope shall be SUBSIDIARY to other items of the contract.



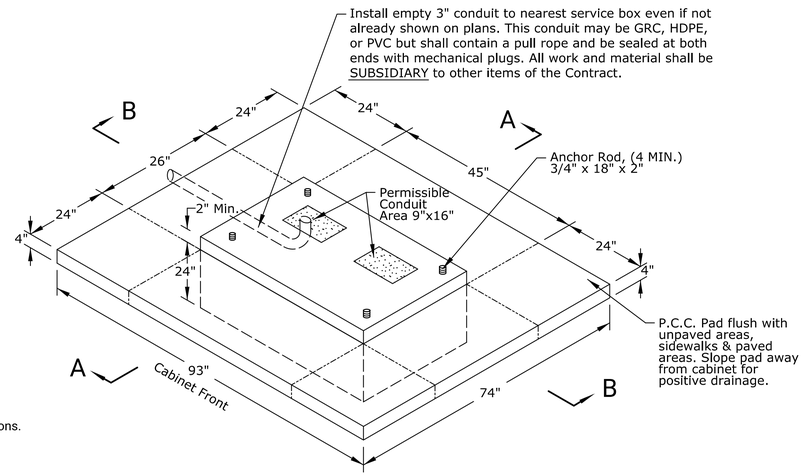
TYPICAL TYPE 336L CABINET (POLE MOUNT)

Approximate 46" H x 24" W x 22" D
*Locate Power Strip on Backside of Cabinet



TYPICAL TYPE 342 CABINET (PAD MOUNT)

Approximate 67" H x 45" W x 26" D
*Locate Power Strip & BBS on Backside of Cabinet



TYPE 342 PAD

NOTE:

1. CABINET BASE DIMENSIONS MAY VARY DEPENDING ON MANUFACTURER. CONTRACTOR SHALL VERIFY DIMENSIONS AND ANCHOR BOLT LOCATIONS FROM MANUFACTURER PRIOR TO CONSTRUCTING BASE.
2. All CABINETS SHALL BE A MINIMUM OF 0.125" NATURAL ALUMINUM AND INCLUDE A 19" EIA RACK.
3. ALL CABINETS SHALL INCLUDE A TRACER WIRE CONNECTION AND ANODES. SEE SIGNAL STANDARDS FOR DETAILS.
4. SIGNAL CONTROLLER SHALL NOT BE MOUNTED DIRECTLY TO 19" EIA RACK BUT SHALL SIT ON SHELF/BRACKETS TO ALLOW EASY REMOVAL.
5. ALL CONDUITS SHALL BE SEALED WITH APPROVED MATERIAL. EMPTY CONDUITS SHALL CONTAIN PULL ROPE AND SEALED WITH MECHANICAL PLUG.
6. ANTENNA(S) IF USED, SHALL BE PLACED WITHIN THE CABINET IF SIGNAL QUALITY IS ADEQUATE AS DETERMINED BY THE ENGINEER THROUGH SIGNAL STRENGTH TESTING BY THE CONTRACTOR.
7. GROUND RODS TO BE POSITIONED AND SHOWN TO INSPECTOR BEFORE POURING BASE.
8. GROUND RODS FOR 342 CABINETS SHOULD BE 3/4" X 20'. TWO (2) 3/4" X 12' GROUND RODS MAY BE USED IN LIEU OF A SINGLE 20' GROUND ROD. ALL OTHER CABINET GROUND RODS SHALL BE 3/4" X 12'.

NO	DATE	REVISIONS	BY	APP'D
3				
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1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

2070 SIGNAL CABINET & PAD DETAILS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

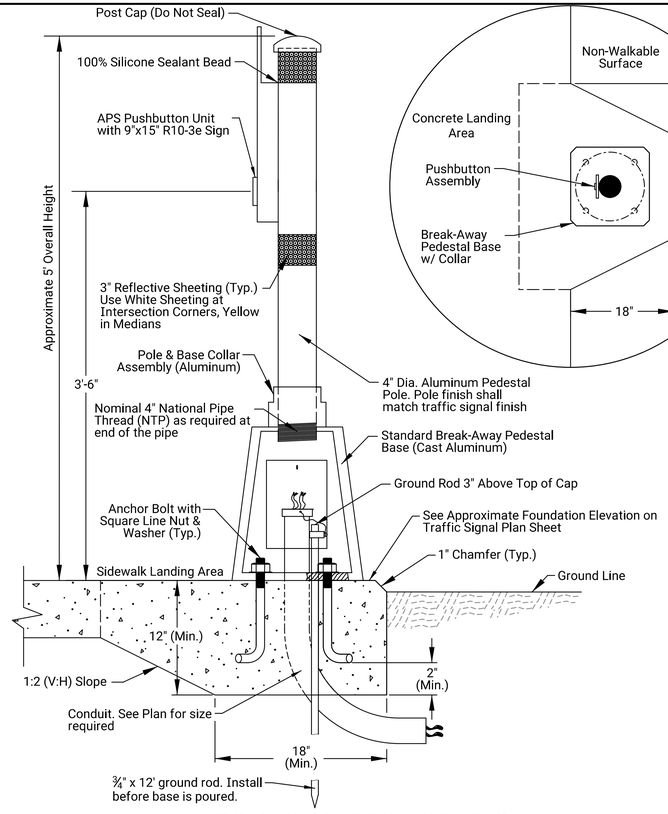
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET: 52

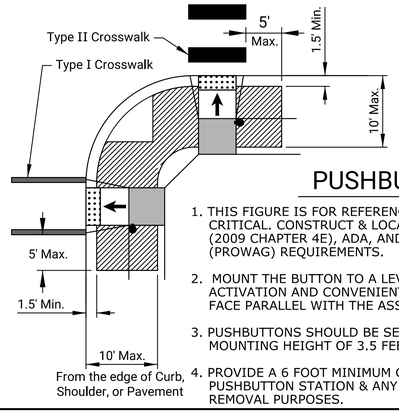
TR-106

NOTE TO DESIGNER: Designer shall verify that pedestrian features and locations meet MUTCD requirements (latest edition)



APS PUSHBUTTON STATION

1. PLUMB THE PUSHBUTTON STATION WITH GALVANIZED STEEL LEVELING SHIMS AS REQUIRED.
2. USE #6 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.
3. THE PUSHBUTTON STATION FOUNDATION HAS TWO (2) OPTIONS. BOTH OPTIONS ARE SUBSIDIARY TO THE APS PUSHBUTTON STATION AND NO ADDITIONAL PAYMENT WILL BE MADE REGARDLESS OF FOUNDATION TYPE.
   A. POURED MONOLITHIC WITH THE SIDEWALK (SHOWN ABOVE) - PROVIDE A 1:2 (V:H:) SLOPE GRADE WHERE THE SIDEWALK DEPTH TRANSITIONS TO THE 12" FOUNDATION DEPTH.
   B. ALTERNATIVE FOUNDATION DESIGN - PLACE FOUNDATION AS SHOWN ON STANDARD SHEET "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET". THIS 24" FOUNDATION WILL MATCH THE TRAFFIC SIGNAL PEDESTAL BASE. PROVIDE A BOND BREAKER OR EXPANSION JOINT TO SEPARATE FOUNDATION FROM SIDEWALK.

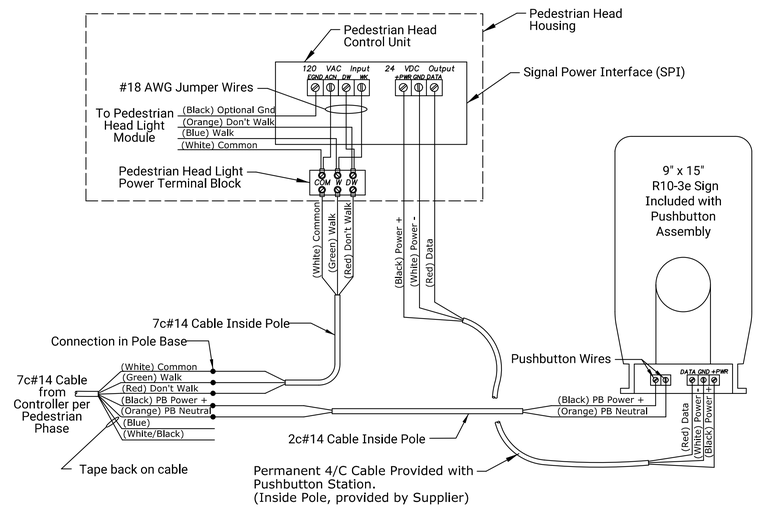


LEGEND

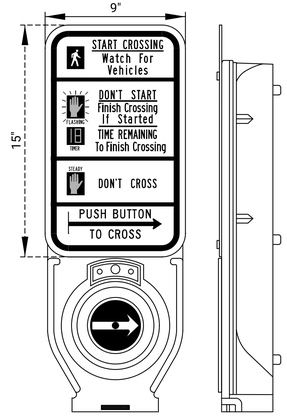
- Allowed Pushbutton Location (1.5'-10' Max)
- Landing Area (5' Min. & 2% Max Slope per ADA)
- Preferred Pushbutton Location (At back of Ramp)
- Detectable Warning (per ADA)
- Downward Slope (5% Max.)

PUSHBUTTON LOCATION AREA

1. THIS FIGURE IS FOR REFERENCE ONLY AND PLACEMENT OF THE PUSHBUTTON STATION IS CRITICAL. CONSTRUCT & LOCATE PUSHBUTTONS IN ACCORDANCE WITH CURRENT MUTCD (2009 CHAPTER 4E), ADA, AND PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) REQUIREMENTS.
2. MOUNT THE BUTTON TO A LEVEL, ALL-WEATHER SURFACE THAT IS CAPABLE OF EASY ACTIVATION AND CONVENIENTLY LOCATED NEAR EACH END OF THE CROSSWALK WITH THE FACE PARALLEL WITH THE ASSOCIATED CROSSWALK.
3. PUSHBUTTONS SHOULD BE SEPARATED BY A DISTANCE OF AT LEAST 10 FEET WITH A MOUNTING HEIGHT OF 3.5 FEET (42 INCHES), ABOVE THE SIDEWALK.
4. PROVIDE A 6 FOOT MINIMUM CLEAR DISTANCE WHEREVER POSSIBLE BETWEEN A PUSHBUTTON STATION & ANY VERTICAL OBSTRUCTIONS FOR MAINTENANCE & SNOW REMOVAL PURPOSES.



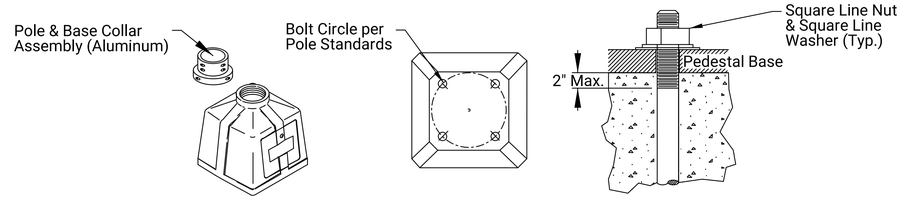
PEDESTRIAN PUSHBUTTON WIRING DIAGRAM



APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")

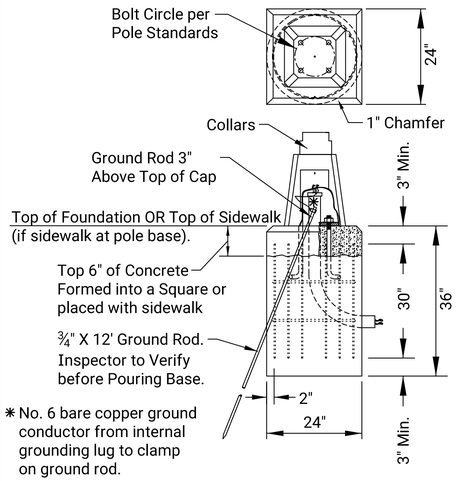
NOTE:

1. THE PUSHBUTTON SYSTEM AND SIGN SHALL MEET OR EXCEED CURRENT MUTCD AND ADA REQUIREMENTS.
2. PUSHBUTTON SYSTEM SHOULD INCLUDE INSTALLATION AND MOUNTING HARDWARE.
3. THE PUSHBUTTON SYSTEM SHOULD INCLUDE A FOUR CONDUCTOR (4/C) CABLE CONNECTING THE SIGNAL POWER INTERFACE (SPI) IN THE PEDESTRIAN SIGNAL HEAD TO THE PUSHBUTTON ASSEMBLY. THE CABLE IS NOT SPECIFICALLY QUANTIFIED OR INCLUDED IN THE TRAFFIC SIGNAL BILL OF MATERIALS. CABLE AND INSTALLATION IS SUBSIDIARY TO THE PUSHBUTTON SYSTEM.
4. SEE "TRAFFIC SIGNAL WIRING & TIMING DETAILS" FOR PEDESTRIAN TIMING AND EXTENSIONS.
5. THE PUSHBUTTON SYSTEM SHALL PROVIDE THE FOLLOWING MINIMUM STANDARD FEATURES:
   A. VANDAL RESISTANT HOUSING
   B. BOTH AUDIBLE AND VIBROTACTILE WALK INDICATIONS.
   C. THE AUDIBLE WALK INDICATION SHALL BE CAPABLE OF BOTH A PERCUSSIVE TONE & SPEECH WALK MESSAGE AS REQUIRED BY MUTCD
   D. LOCATOR TONE AND HIGH CONTRAST TACTILE ARROW(S) ALIGNED PARALLEL TO THE ASSOCIATED CROSSWALK DIRECTION OF TRAVEL.
   E. AUTOMATIC SOUND ADJUSTMENT IN RESPONSE TO AMBIENT SOUND LEVEL

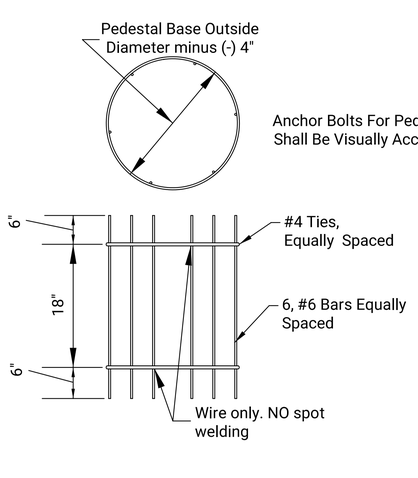


STANDARD BREAK-AWAY PEDESTAL BASE & ANCHOR BOLT DETAIL

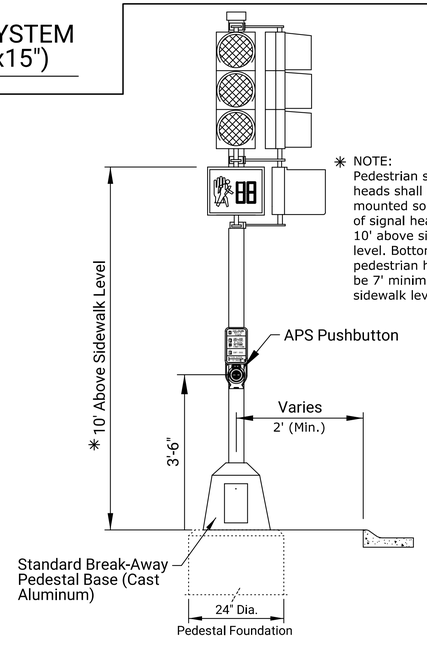
1. STANDARD BREAK-AWAY PEDESTAL BASE SHALL BE USED ON BOTH THE TRAFFIC SIGNAL PEDESTAL AND APS PUSHBUTTON STATION.
2. USE SQUARE LINE NUTS AND WASHERS ON PEDESTAL BASE.
3. ANCHOR BOLTS FOR PEDESTALS SHALL BE VISUALLY ACCEPTED.



PEDESTAL & APS PUSHBUTTON FOUNDATION DETAIL



PEDESTAL & APS PUSHBUTTON REBAR CAGE DETAIL



TRAFFIC SIGNAL PEDESTAL

SEE STANDARD SHEET "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" FOR PEDESTRIAN FOUNDATION DETAILS.

NO	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGNAL PEDESTAL, PUSHBUTTON STATION, & APS PUSHBUTTON DETAILS

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

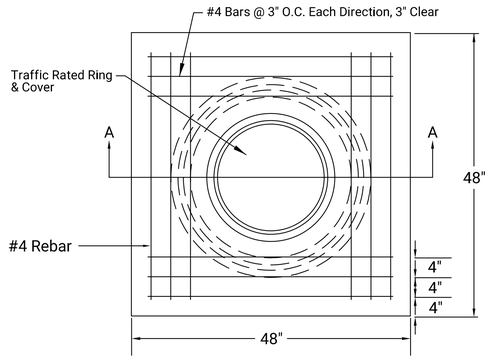
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET 53

TR-107

SERVICE BOX CONSTRUCTION/INSTALLATION DETAILS

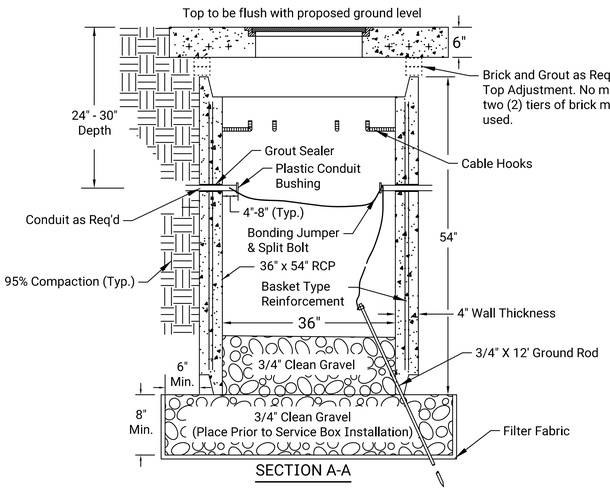


PRECAST CONCRETE SERVICE BOX
(36" I.D. X 54" RCP) with 6" cap

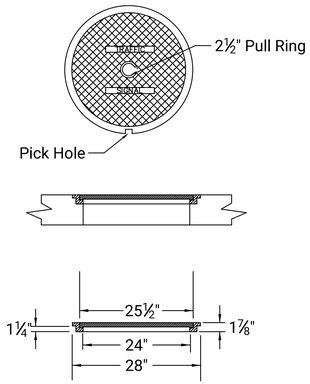
SERVICE BOX:
1. CONDUIT CONNECTION TO BE 4"-8" INSIDE FACE OF SIDE WALL, CONDUIT TO DRAIN INTO SERVICE BOX.
2. CONDUIT CONNECTIONS TO SERVICE BOX SHALL BE TERMINATED WITH PLASTIC CONDUIT BUSHING.
3. CONDUIT SHALL BE SEALED WITH APPROVED SEALER AT INSIDE WALL FACE.
4. ALL SERVICE BOXES TO HAVE 8" OF 3/4" CLEAN GRAVEL WITH FILTER FABRIC PLACED PRIOR TO SERVICE BOX INSTALLATION.
5. NO MORE THAN TWO (2) TEIRS OF BRICKS SHALL BE USED FOR TOP ADJUSTMENTS. BRICKS SHALL BE GROUTED.
6. SERVICE BOX AND LID SHALL BE TRAFFIC RATED.

CONDUIT:
1. SLOPE CONDUIT TO DRAIN AS DIRECTED BY THE ENGINEER.
2. ALL CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT (GRC) UNLESS APPROVED OTHERWISE BY ENGINEER.

NO 90 DEGREE ELBOWS UNLESS APPROVED BY TRAFFIC MAINTENANCE



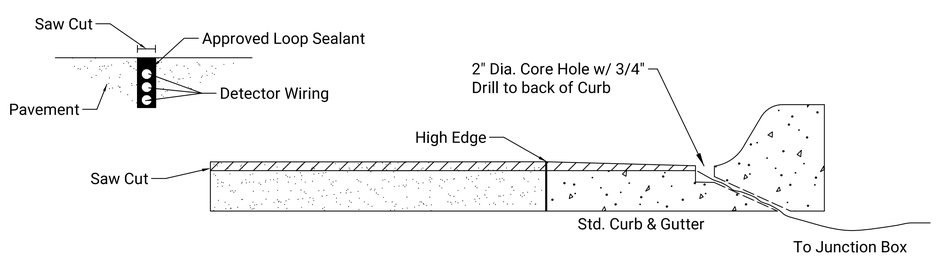
SECTION A-A



RING & COVER DETAIL

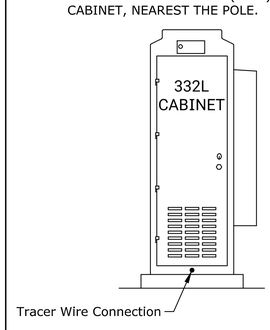
COVER SHALL INCLUDE "TRAFFIC SIGNAL"

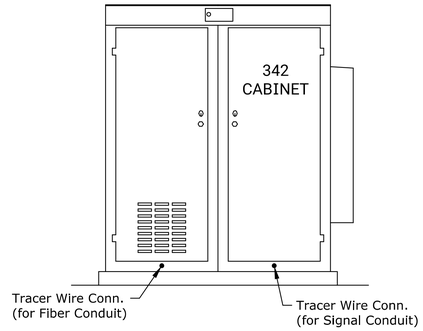
CONDUIT/DETECTOR WIRE INSTALLATION DETAILS

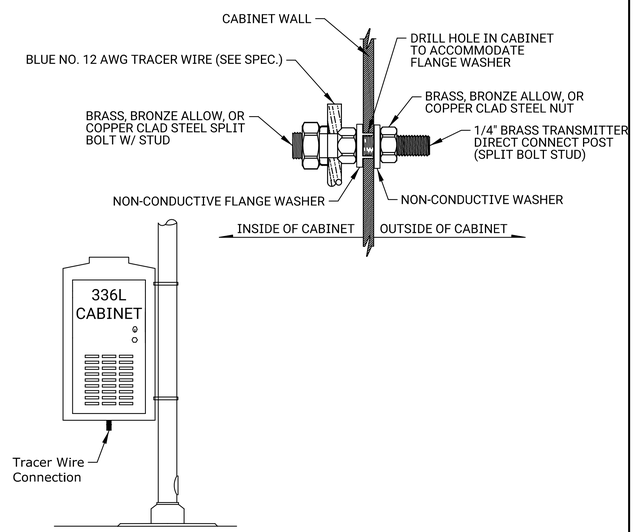


CABINET TRACER WIRE CONNECTION DETAIL

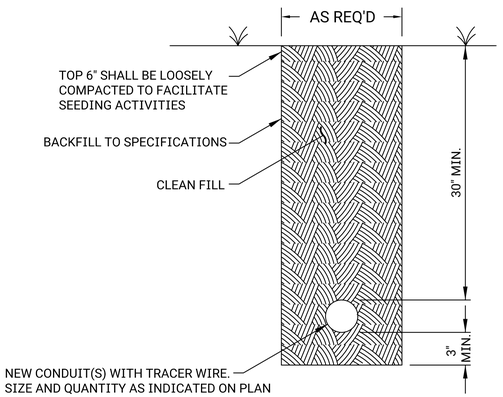
1. TRACER WIRE TERMINAL SHALL BE SOLID BRASS, BRONZE ALLOY, OR COPPER CLAD STEEL & ACCESSIBLE FROM THE OUTSIDE OF THE CABINET.
2. TERMINAL SHALL BE COMPLETELY ISOLATED FROM CABINET & GROUNDING. RUBBER ISOLATORS ARE NOT ALLOWED.
3. HOLE IN CABINET SHALL BE MADE WATER TIGHT.
4. MAINTAIN 1.5" MINIMUM CLEARANCE FOR TERMINAL.
5. APPLY THREAD LOCK SEALANT TO REDUCE TAMPERING.
6. CRIMP STYLE WIRE TERMINALS CONNECTING TRACER WIRE TO TRANSMITTER DIRECT CONNECT POST ARE NOT PERMITTED.
7. TERMINAL LOCATION - TERMINALS SHALL BE MOUNTED IN ORDER TO PREVENT ACCIDENTAL "SNAGGING". LOCATIONS SHOULD BE A MINIMUM OF 1.5" FROM CABINET EDGES.
   A. PAD MOUNTED CABINET (332L) - TERMINAL SHALL BE LOCATED IN THE BOTTOM LIP OF THE CABINET UNDER THE BACK CABINET DOOR, CENTERED.
   B. POLE MOUNTED CABINET (336L) - TERMINAL SHALL BE MOUNTED ON THE BOTTOM SIDE OF THE CABINET, NEAREST THE POLE.







CONDUIT BORING & TRENCH DETAILS



GENERAL:
1. ALL CROSSINGS UNDER ROADWAY SHOULD HAVE A MINIMUM OF 5 FT OF COVER BELOW CROWN GRADE OR 3 FT COVER BELOW DITCH GRADE.

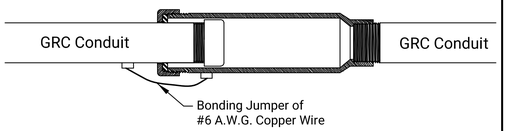
2. NO 90° ELBOWS UNLESS APPROVED BY TRAFFIC MAINTENANCE

3. INSTALL TRACER WIRE FOR LOCATING PURPOSES IN ALL CONDUIT RUNS. WHEN MULTIPLE CONDUITS SHARE THE SAME TRENCH OR BORE, TRACER WIRE TO BE LOCATED IN TOP CONDUIT ONLY.

4. BORING:
   A. INSTALL BORED CONDUIT WITHOUT DISTURBING THE EXISTING SURFACE. PLACE BORED CONDUIT BY BORING OR OTHER APPROVED MEANS. LOCATE ALL BORE PITS AND SPOIL PILES A MINIMUM OF 4 FEET FROM THE EDGE OF THE PAVED ROADWAY OR SHOULDER SURFACE AND BARRICADE, FENCE, OR PROTECT THE PITS BY SOME OTHER ACCEPTABLE METHOD FROM ERRANT VEHICLES OR PEDESTRIANS.

5. TRENCHING:
   A. DEPTH TO BE 30" MINIMUM WITH ROCK & RUBBLE FREE BACKFILL TO SERVE AS BEDDING MATERIAL. MAINTAIN MINIMUM CONDUIT DEPTH IN TRENCH.
   B. BACKFILL TO BE COMPACTED IN 6" LOOSE LIFTS BY HAND OR MECHANICAL TAMPING TO PREVENT SETTLEMENT.
   C. EXCAVATE TRENCHES TO THE WIDTH AND DEPTH NECESSARY FOR CONDUIT INSTALLATION AS SHOWN IN THE PLANS. DO NOT USE MATERIAL WHICH MIGHT CAUSE MECHANICAL DAMAGE TO THE CONDUIT FOR BACKFILLING BELOW AN ELEVATION 6 INCHES ABOVE THE CONDUIT. CLEAN THE BOTTOM OF THE TRENCH OF SUCH MATERIAL BEFORE THE CONDUIT IS PLACED. OBTAIN APPROVAL BY THE ENGINEER OF THE TRENCH PRIOR TO CONDUIT PLACEMENT. BACKFILL AND COMPACT ALL TRENCHES.

EXPANSION FITTING



THE CONTRACTOR SHALL INSTALL THE CONDUIT AND CONNECTOR ASSEMBLY TO PERMIT A 1" MINIMUM LONGITUDINAL TRAVEL IN EITHER DIRECTION.

NO	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

SERVICE BOX, CONDUIT, & TRACER WIRE CONNECTION CONSTRUCTION/INSTALLATION

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

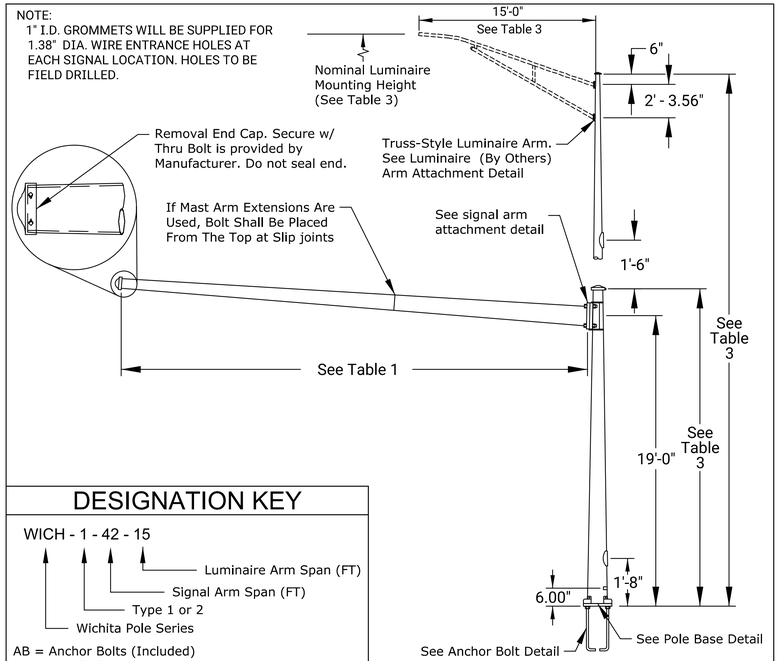
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET 54

TR-108

NOTE:
1" I.D. GROMMETS WILL BE SUPPLIED FOR 1.38" DIA. WIRE ENTRANCE HOLES AT EACH SIGNAL LOCATION. HOLES TO BE FIELD DRILLED.



DESIGNATION KEY

AB = Anchor Bolts (Included)
HH = Handhole
FPGV = Finish Paint over Galvanizing
TYPE 1 = No Luminaire Height (See Table 3)
TYPE 2 = Combo Pole (includes Height for Luminaire)

DESIGN CRITERIA

THE MAST ARM TRAFFIC STRUCTURES SHOWN ON THIS DRAWING SHALL BE DESIGNED IN ACCORDANCE WITH THE 2013 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", LATEST EDITION.

ASSEMBLY NOTE(S)

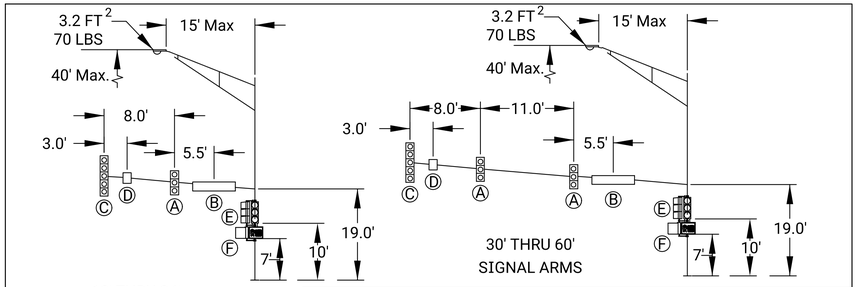
UPON INITIAL FIELD ASSEMBLY OF THE MAST-ARM'S FIRST SECTION'S BUTT PLATE TO THE MAST-ARM VERTICAL POLE'S BUTT PLATE, IF THE END USER DETERMINES THAT THERE IS A SUFFICIENT GAP AT A BOLT HOLE SUCH THAT THERE WILL NOT BE FACE-TO-FACE CONTACT BETWEEN THE TWO BUTT PLATES, THEN A WASHER SHALL BE INSERTED TO PROVIDE FACE-TO-FACE CONTACT BETWEEN THE TWO BUTT PLATES IN ACCORDANCE WITH SECTION 5.16 "BOLTED CONNECTIONS" OF THE 2013 EDITION OF AASHTO.

THE POLE SHOP DRAWING SUBMITTAL SHALL INCLUDE A FOUNDATION DIAGRAM INDICATING THE ORIENTATION OF BOLT PATTERNS FOR EACH POLE FOUNDATION. THE DRAWING SHALL INCLUDE A NORTH ARROW TO INSURE PROPER ORIENTATION OF POLE AND MAST ARM ON EACH FOUNDATION.

MANUFACTURER SHALL SHOP FIT COMPONENTS AND VERIFY CONNECTIONS PRIOR TO SHIPPING. FAILURE OF PROPER ALIGNMENT DURING ERECTION IN THE FIELD DUE TO MANUFACTURING SHALL BE THE RESPONSIBILITY OF THE MANUFACTURE AND MAY BE REPLACED AT NO COST IF DEEMED NECESSARY BY THE CITY TRAFFIC ENGINEER.

LUMINAIRE DIMENSIONS SHOWN ARE NOMINAL. CONTRACTOR AND SUPPLIER SHALL COORDINATE WITH LUMINAIRE ARM SUPPLIER TO INSURE PROPER MOUNTING PRIOR TO MANUFACTURING.

AASHTO 2013 SPECIFICATIONS



DEVICE	DESCRIPTION	PROJ. AREA (FT)	WEIGHT (LBS)
Ⓐ	12"- 3 SEC. SIGNAL WITH BACK PLATES	8.67	30
Ⓑ	36" X 96" STREET NAME SIGN	24.00	75
Ⓒ	12"- 5 SEC. SIGNAL WITH BACK PLATES	13.33	50
Ⓓ	30" X 36" SIGNAL ARM MOUNTED SIGN	7.50	25
Ⓔ	12"-3 SEC. SIGNAL WITH NO BACK PLATES	13.47	80
Ⓕ	SINGLE SECTION PEDESTRIAN SIGNAL	8.00	80

DESIGN LOADING INFORMATION

- For Design Information Only. Dimensions NOT for Construction -

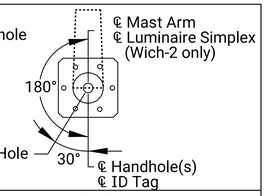
TABLE 2: MATERIAL DATA

COMPONENT	ASTM DESIGNATION
ALL TAPERED TUBES	A595 GR.A OR A572
BASE PLATE	A36
SIMPLEX PLATE	A36
ANCHOR BOLTS	F1554 GR.55
ARM CONNECTING BOLTS	A325
GALVANIZING-HARDWARE	HOT DIP ZINC

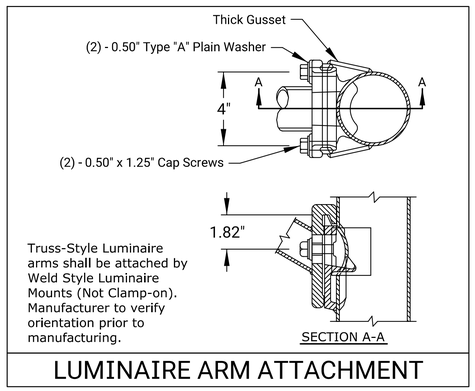
TABLE 3: LUMINAIRE MOUNTING HEIGHT

POLE TYPE	WICH-1	WICH-2
LUM. MOUNTING HEIGHT	------	40' - 0"
POLE LENGTH	20' - 6"	35' - 0"

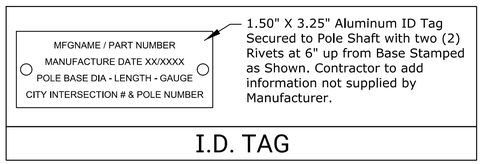
All angles measured clockwise from handhole as viewed from small end of pole



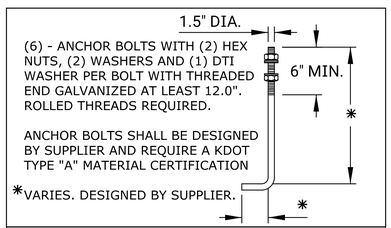
RADIAL INDEX



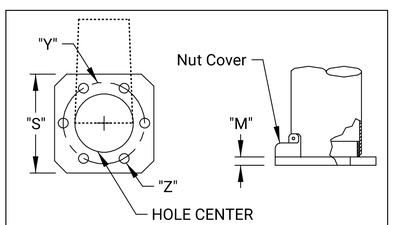
LUMINAIRE ARM ATTACHMENT



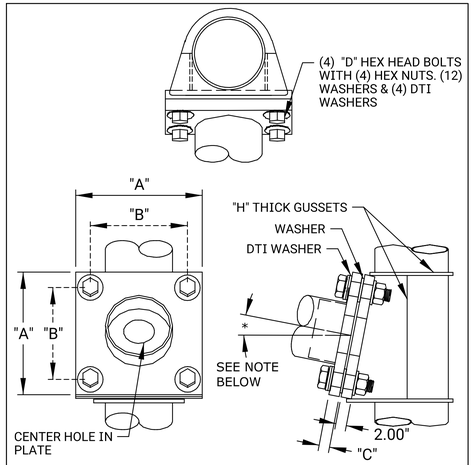
I.D. TAG



ANCHOR BOLT DETAIL



POLE BASE DETAIL



*RISE IN SIMPLEX PLATES VARIES PER POLE BASE DIA. & MAST ARM LOAD. SECURE PLATES TO STRUCTURE TO PREVENT FALLING.

SIGNAL POLE BASE BOLT CIRCLE "Y" (IN)	*"A" (IN)	"B" (IN)		"D" (IN)
18.00	17.75	14.50		1.25 X 6.75
21.50	22.25	18.50		1.50 X 7.25

SIGNAL ARM ATTACHEMENT DETAIL

*PREFERRED DIMENSION(S). DIMENSION MAY VARY SLIGHTLY BY MANUFACTURER

BASE COAT:	HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT:	POLYAMIDOAMINE OR POLAMIDE EPOXY
FINISH COAT:	ALIPHATIC ACRYLIC POLYURETHANE W/ UV PACKAGE
COLOR:	BLACK
SPEC:	F-604A

STANDARD POLE FINISH

IN THE EVENT THE POLE OR MASTARM FINISH IS DAMAGED, THE CONTRACTOR SHALL USE THE BASE PRIMER AND FINISH COAT MATERIALS FURNISHED BY THE MANUFACTURER AND INCLUDED WITH THE STRUCTURE. NO OTHER PRODUCTS WILL BE APPROVED UNLESS APPROVED BY THE ENGINEER.

IN THE EVENT SIGNAL STRUCTURE MODIFICATIONS ARE REQUIRED, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN PROCEDURES AND APPROVED MEANS AND METHODS FROM THE MANUFACTURE. MODIFICATIONS SHALL NOT AFFECT THE STRUCTURAL INTEGRITY OR WARRANTY OF THE STRUCTURE. ANY CHANGE SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO ACCEPTANCE. THE CITY HAS THE RIGHT TO REJECT MODIFICATIONS AND REQUIRE REPLACEMENT AT NO ADDITIONAL COST, INCLUDING LABOR AND MATERIAL.

THE CONTRACTOR SHALL INSTALL ALL REQUIRED COMPONENTS PROVIDED BY THE MANUFACTURE.

REPAIR & MODIFICATIONS

TABLE 1: POLE AND MAST ARM DATA

DESIGNATION KEY			POLE BASE			ANCHOR BOLT		
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	*SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	HOLE "Z" (IN)	DIAMETER (IN) "K"	QTY.
WICH	1 OR 2	18.0	23.00	18.00	2.00	1.50	6
		24.0					
		30.0					
		36.0					
		42.0	26.50	21.50			
		48.0					
		54.0					
		60.0					

TRAFFIC SIGNAL POLES SHALL INCLUDE TWO (2) POLE BASE PLATE AND CORRESPONDING MAST ARM ATTACHMENT SIZES.

POLE BASE SIZE AND MAST ARM ATTACHMENTS SHALL BE INTERCHANGEABLE, REGARDLESS OF MANUFACTURE.

DIMENSIONS SHOWN ON TABLE(S) SHALL REMAIN CONSTANT, REGARDLESS OF POLE MANUFACTURE TO INSURE INTERCHANGEABILITY.

DIMENSIONS AND THICKNESSES SHOWN ON DETAILS BUT NOT SHOWN IN TABLE(S) MAY VARY BY MANUFACTURE.

*PREFERRED DIMENSION(S). DIMENSION MAY VARY SLIGHTLY BY MANUFACTURER

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGNAL POLE DATA & SPECIFICATIONS

TRAFFIC ENGINEER: *MIKE ARMOUR, P.E.* APP'D 01/27/22

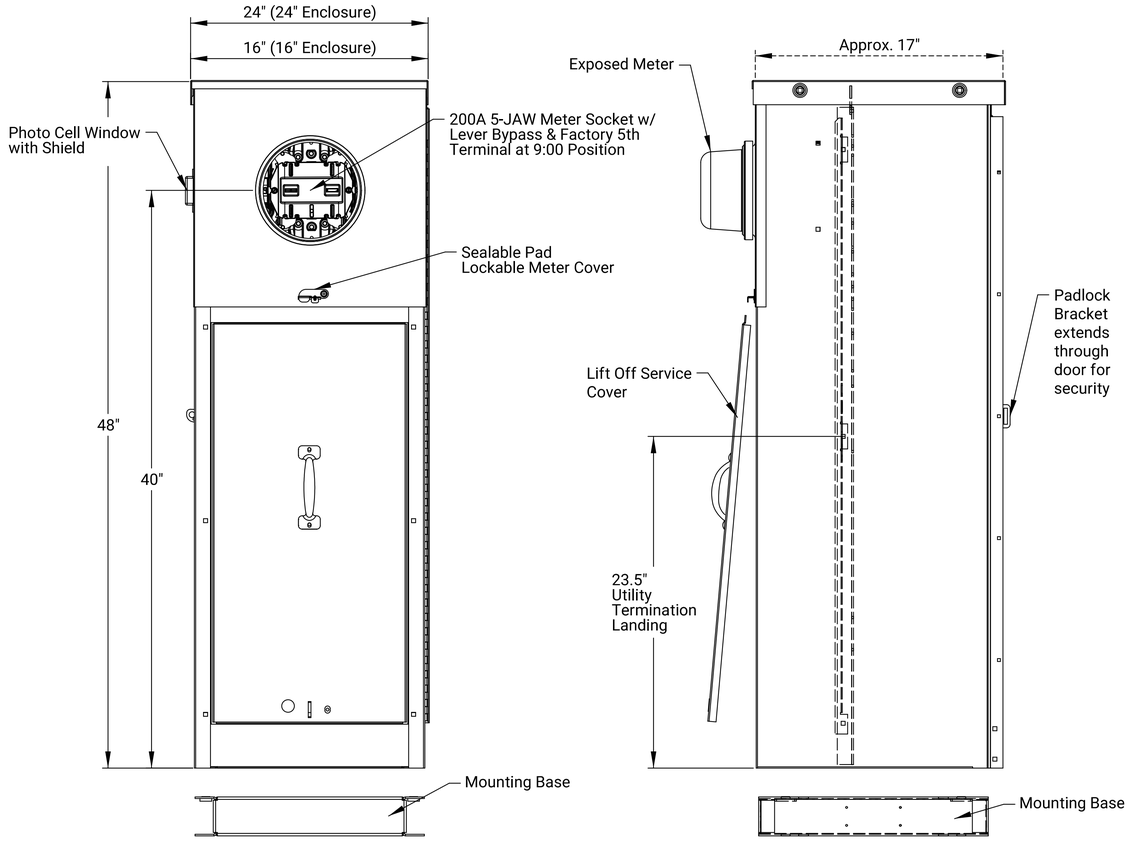
PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET: 55

TR-109

NOTE TO DESIGNER: Designer shall specifiy the 16" (single meter) or 24" (double meter) size in quantities.

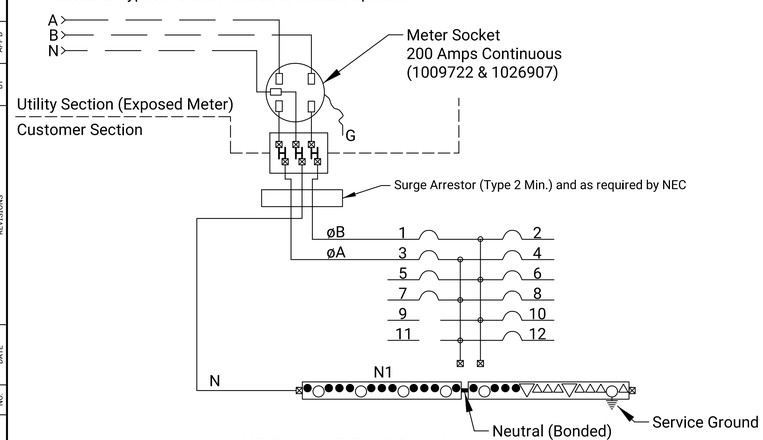


FRONT VIEW

SIDE VIEW

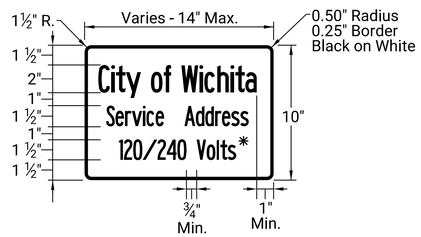
POWER SERVICE ENCLOSURE

CAUTION:
Lever By-pass. Circuit may be live with meter removed.
Meter is bypassed when handle is rotated upward.



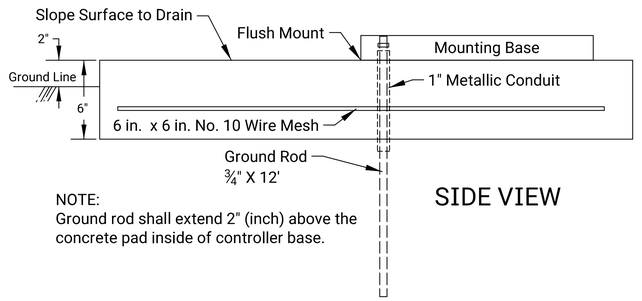
WIRING DIAGRAM

Lighting circuit not shown. See Manufacturer's Drawing for Additional Details.



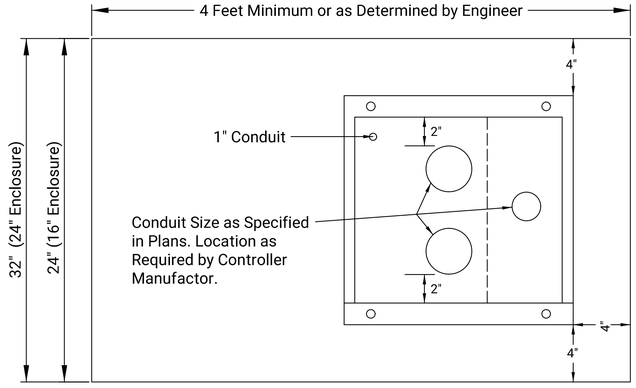
NAMEPLATE DETAIL

1. Apply on "street side" of enclosure facing the street referenced in the address
2. * Voltage as Provided by Electric Service
3. Nameplate shall match enclosure material type & be mechanically fastened (rivets) to enclosure



NOTE:
Ground rod shall extend 2" (inch) above the concrete pad inside of controller base.

SIDE VIEW



TOP VIEW

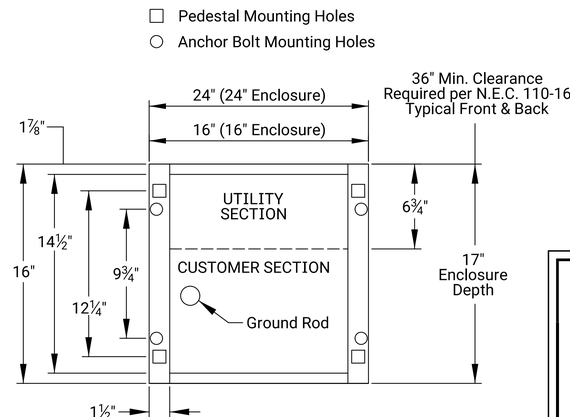
CONCRETE FOUNDATION PAD DETAIL

NOTES:

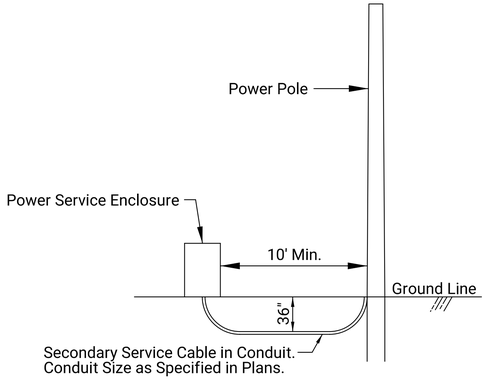
1. THE POWER ENCLOSURE SHALL BE CONSTRUCTED OF BARE 5052 ALLOY ALUMINUM 0.125" (INCH) THICK. THE ENCLOSURE SHALL BE OF CLEAN CUT DESIGN HAVING NO SHARP EDGES, CORNERS OR PROJECTIONS AND NEMA TYPE 3R CONSTRUCTION
2. THE ENCLOSURE SHALL INCREASE IN SIZE WITH THE NUMBER OF CIRCUITS.
3. ENCLOSURE SHALL BE MEET THE CURRENT ENERGY COMPANY REQUIREMENTS. THIS INCLUDES A EXPOSED METER ENCLOSURE, 200A, JAW-CLAMPING LEVER-BYPASS METER SOCKET WITH FACTORY INSTALLED FIFTH TERMINAL AT 9:00 POSITION.
4. SPLIT BUS LOAD CENTER. THE BUS LOAD CENTER SHOULD INCLUDE THE FOLLOWING UNLESS SHOWN OTHERWISE IN THE PLAN DOCUMENTS.
   A. UNSWITCHED (CONSTANT) LOAD CENTER WITH 50A 2P; 30A 1P AND 30A 2P BREAKERS
   B. SWITCHED LOAD CENTER WITH ELECTRICALLY-HELD CONTACTOR CONTROLLED BY PHOTO CELL RECEPTACLE AND HAND-OFF-AUTO SWITCH, 30A 1P AND 30A 2P BREAKERS.
5. THE SECONDARY BREAKER FOR THE PHOTO-CELL CIRCUIT SHALL BE 277 VOLT, 15 AMP SINGLE POLE.
6. THE WIRING FROM PB1 AND PB2 TO T1 THROUGH T4 SHALL BE NO. 6 AWG THW.

7 THE WIRING FOR THE LOAD AND LINE SIDE OF THE MAIN BREAKER SHALL BE THE SAME SIZE WITH THE WIRE.

8. THE WIRING FOR THE PHOTO ELECTRIC CONTROL CIRCUIT SHALL BE NO. 12 AWG THW.
9. ALL WIRING AND WIRING METHODS SHALL COMPLY WITH THE MOST CURRENT NATIONAL ELECTRIC CODE (NEC) STANDARDS. ANY CHANGES TO THESE STANDARDS SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
10. NO STEP DOWN TRANSFORMER SHALL BE LOCATED ON METER
11. USE MILBANK POWER SERVICE ENCLOSURES BELOW (OR APPROVED EQUAL):
    16" ENCLOSURE CATALOG #CP3B51C14PAOSL1
    24" ENCLOSURE CATALOG #CP3B51C14RAOSL1



MOUNTING BASE DETAIL



POWER ARRANGEMENT

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

POWER SERVICE ENCLOSURE (SINGLE METER)

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
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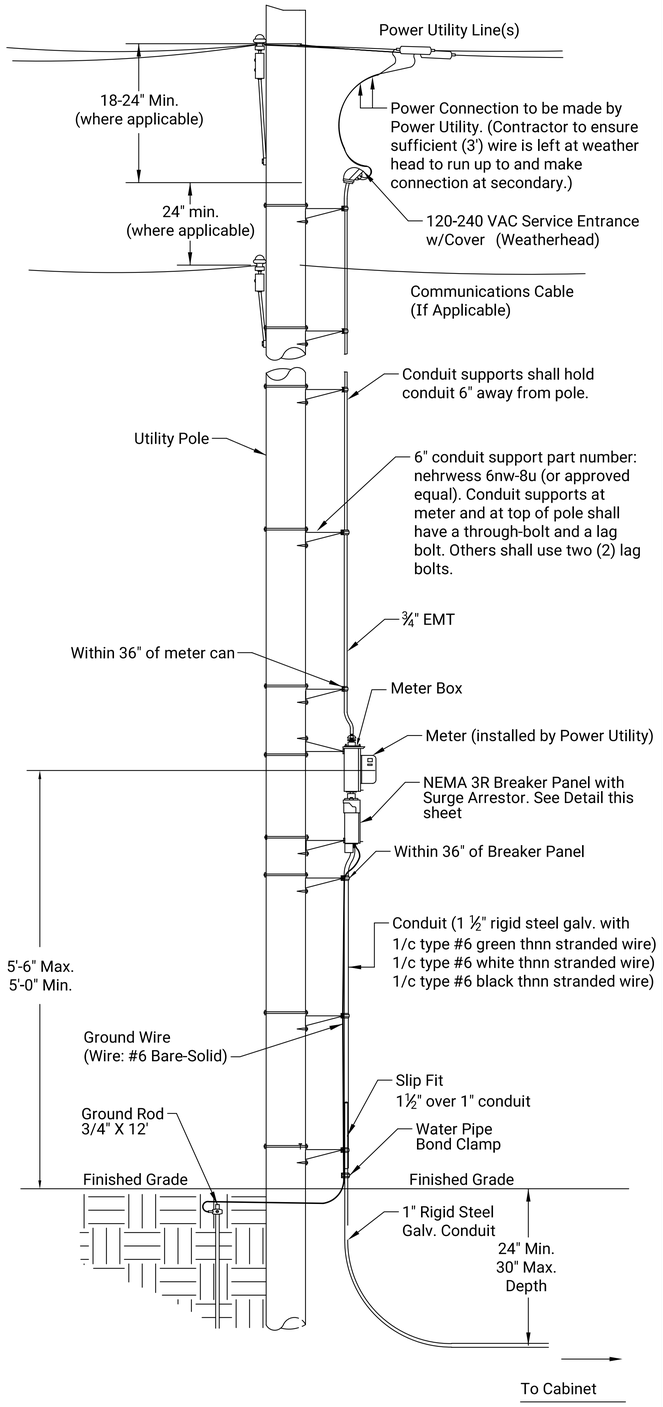
(316) 268-4501

SHEET: 56

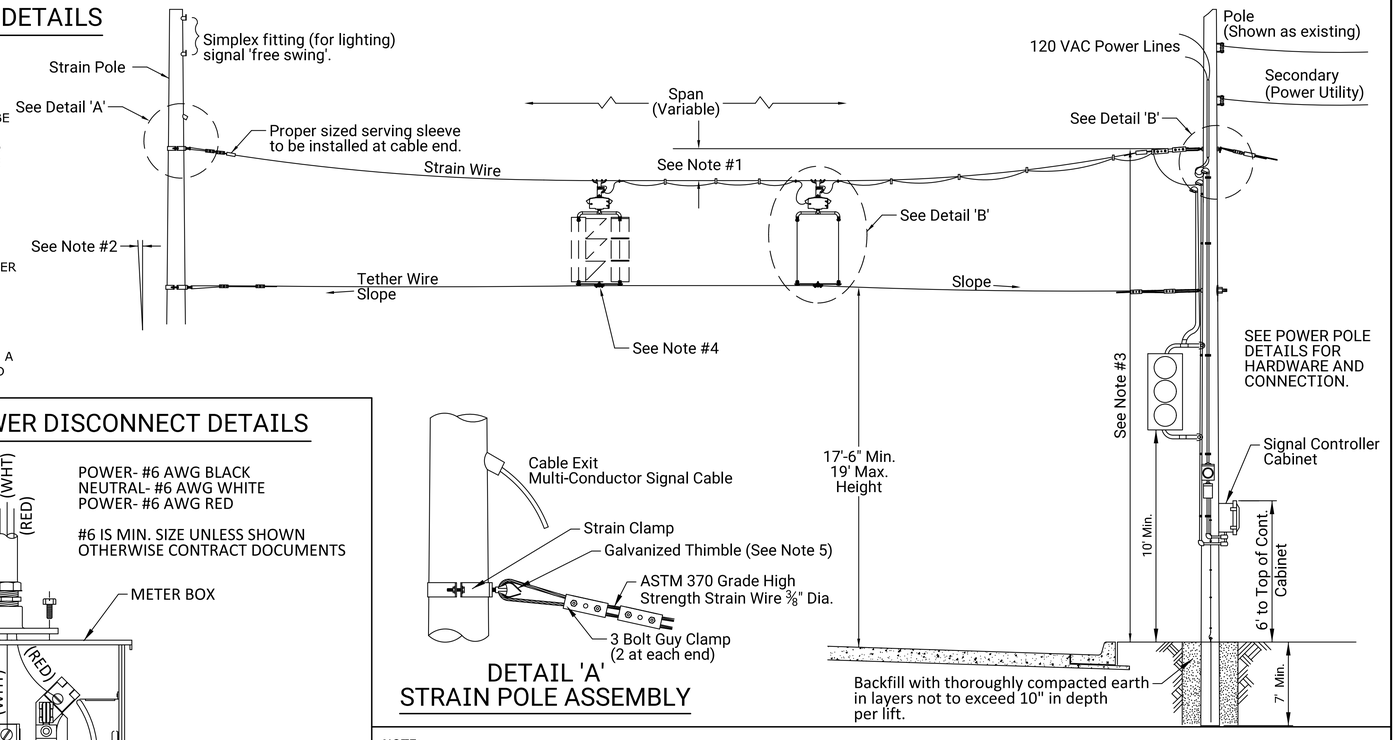
TR-110

TEMPORARY POWER POLE DETAILS

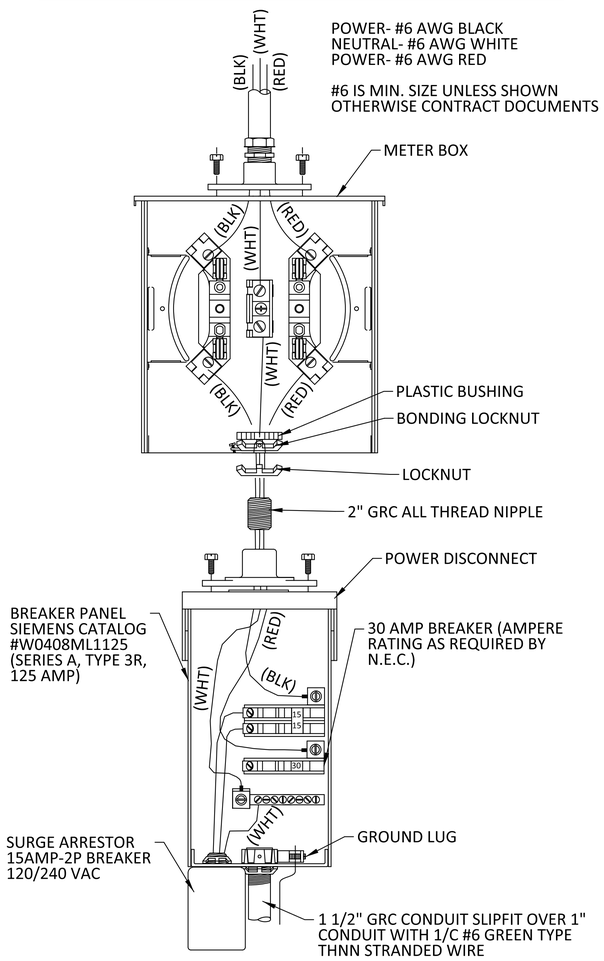


SPANWIRE ASSEMBLY DETAILS

1. MAX. SAG = 5% OF SPAN
2. STANDARD BACKRAKE = 1.5°
3. HEIGHT OF STRAIN WIRE HOOK-UP TO BE DETERMINED BY FIELD ENGINEER. TRAFFIC SIGNAL CABLE TO BE SECURED TO STRAIN (SPAN) WIRE WEATHERABLE NYLON CABLE HANGERS (12" CTR.)
4. TETHER CLAMP TO BE DESIGNED TO RELEASE UNDER 'HIGH WIND LOAD' TO PERMIT SIGNAL 'FREE SWING'.
5. STRAIN, TETHER, & GUY WIRES (WHETHER SPECIFICALLY SHOWN OR NOT) SHALL INCLUDE GALVANIZED THIMBLE(S) AT CONNECTIONS TO REDUCE STRAIN, ABRASION, AND KINKING OF WIRE.
6. IF WOOD POLE IS USED, POLE SHALL BE A MINIMUM 35' CLASS 4, OR AS REQUIRED TO PROVIDE MINIMUM CLEARANCES.



METER BOX & POWER DISCONNECT DETAILS



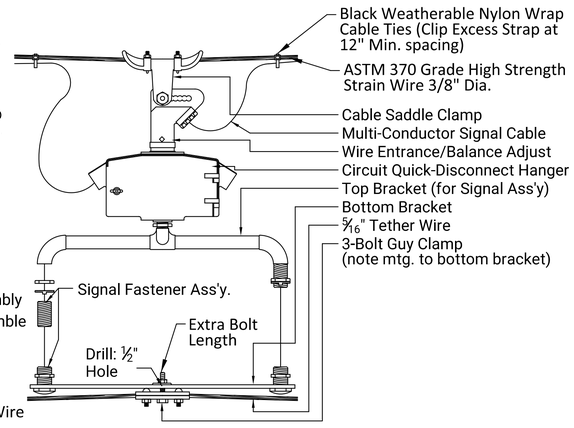
A SINGLE CONDUCTOR STRANDED #6 GREEN WIRE SHALL CARRY THE EQUIPMEN GROUND FROM THE GROUND LUG OF ALL SIGNAL POLES TO THE CONTROLLER CABINET AND THE POWER DISCONNECT BOX

DETAIL 'A' STRAIN POLE ASSEMBLY

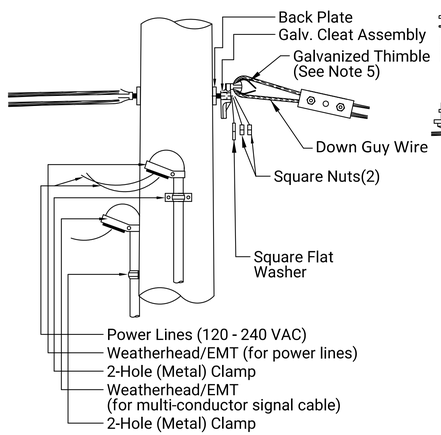
NOTE:

1. GALV. THIMBLE EYE ANCHOR BOLT AND EXPANDING ANCHOR (NOT SHOWN) TO STABILIZE POLE (WHERE APPLICABLE)
2. ANY COMBINATION OF ROUND/THIMBLE EYE BOLTS AND NUTS MAY BE UTILIZED AS APPLICATION MAY VARY. FIELD ENGINEER TO DETERMINE TYPE OF HARDWARE USED.
3. HARDWARE SHOWN IS FOR WOOD OR STEEL POLE. (POWER; SIGNAL CABLE; METER, ETC.)FIELD ENGINEER TO MAKE DETERMINATION. STRAIN POLE APPLICATIONS MAY VARY AS TO MOUNTING ON POLE: USE OF CLAMPS, BANDED BRACKETS, ETC. ARE STD. - FIELD ENIGNEER TO DETERMINE BEST TYPE APPLICATIONS.

SIGNAL BRACKET ASSEMBLY DETAILS



DETAIL 'B' POLE ASSEMBLY



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PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TEMPORARY SPAN POLE ASSEMBLY DETAILS

TRAFFIC ENGINEER: *MIKE ARMOUR, P.E.* APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE
472-2020-085700	707106	2025

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

SHEET: 57

TR-111

NO	DATE	REVISIONS	BY	APP'D
3				
2				
1				

TRAFFIC HANDLING AND CONSTRUCTION SEQUENCE

PHASE	MAJOR CONSTRUCTION ITEMS	HANDLING OF TRAFFIC	REMARKS
1	K-42: Construct Median Pavement and Pier Protection. Construct Temporary Pavement.	K-42: Eastbound One-Way, One-Lane Traffic on Outside Lane. Westbound One-Way, One-Lane Traffic on Outside Lane. Ramp D: Traffic on Existing Lanes.	
2A	Ramp D: Begin Widening Construction.	K-42: Eastbound One-Way, Two-Lane Traffic on Existing Lanes. Westbound One-Way, One-Lane Traffic on Inside Lane. Ramp D: Westbound and Eastbound Traffic on Existing Left Turn Lane.	
2B	Ramp D: Finish Widening Construction.	K-42: Traffic Remains on Roadway as in Previous Stage. Ramp D: Westbound Traffic on Right Turn Lane. Eastbound Traffic on Existing Left Turn Lane.	
3	Sideroad: Construct Entrance	K-42: Eastbound One-Way, One-Lane Traffic on Inside Lane. Westbound One-Way Two-Lane Traffic on Existing Lanes. Ramp D: Traffic on Existing Lanes.	

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 meet with the written approval of the Engineer.

The Engineer reserves the right to require installation of additional or supplemental Traffic Control Devices not shown on the Plans, but which may be necessary for effective traffic control.

Access shall be maintained to all properties throughout construction except as noted on the plans or as approved by the Engineer.

Contractor shall maintain positive drainage throughout construction. Labor, tools, material, and equipment required for plugging, slope protection, and connections to maintain positive drainage during construction shall be Subsidiary to other items.

Existing signs and intersection control not shown on the plans shall remain in place or be relocated as directed by the Engineer.

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

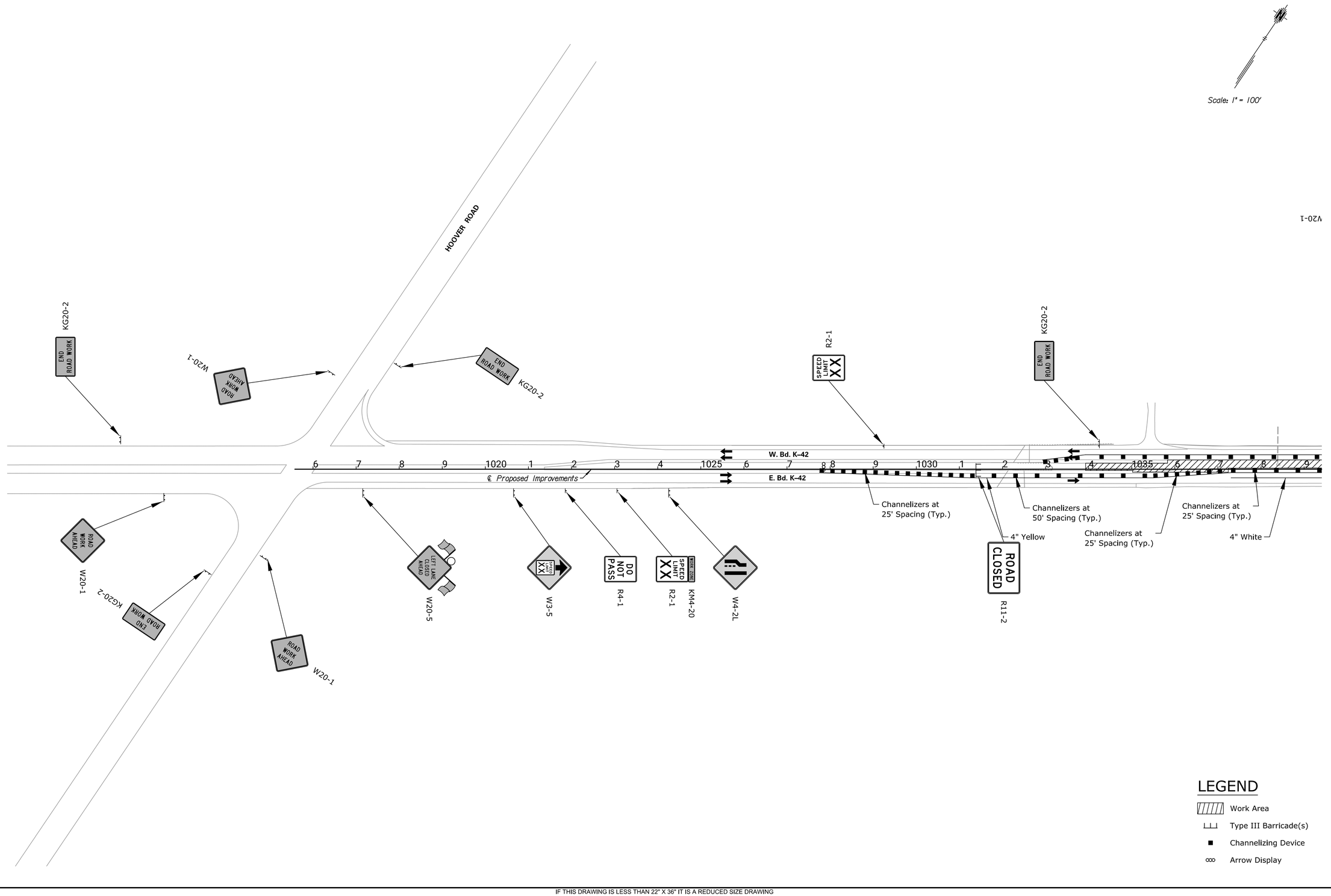
CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
I-235 & K-42
TRAFFIC HANDLING
AND
CONSTRUCTION
SEQUENCE



LEGEND

- Work Area
- Type III Barricade(s)
- Channelizing Device
- Arrow Display

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100 N BROADWAY AVE
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CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS
WICHITA, KANSAS

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
K-42
SEQUENCING PLAN
PHASE 1
(SHEET 1 OF 2)

SHEET NO.
59
SHEET 59 OF 105

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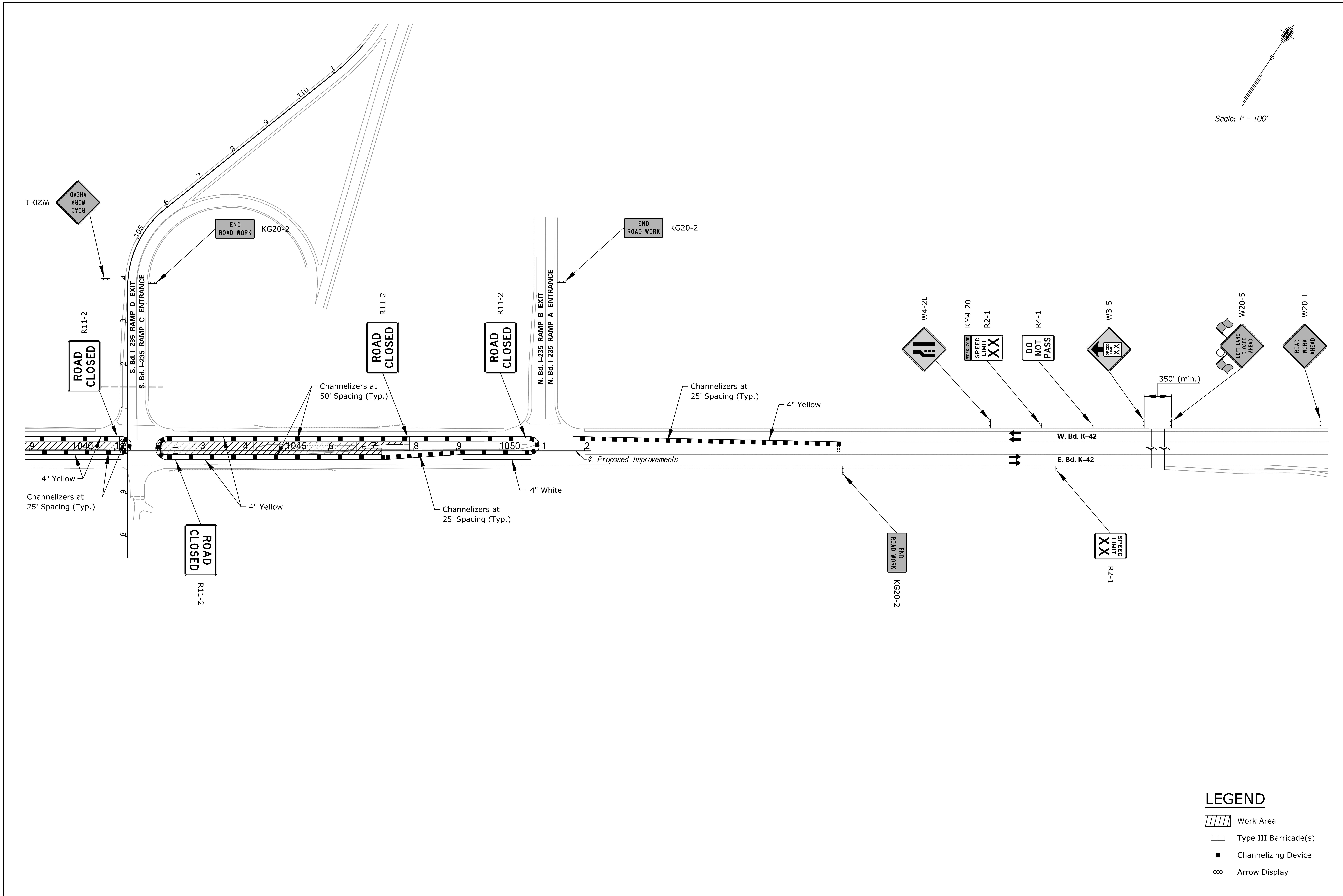

TRANSYSTEMS

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SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

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K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

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PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:

K-42
SEQUENCING PLAN
PHASE 1
(SHEET 2 OF 2)

SHEET NO.
60

SHEET 60 OF 105

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING

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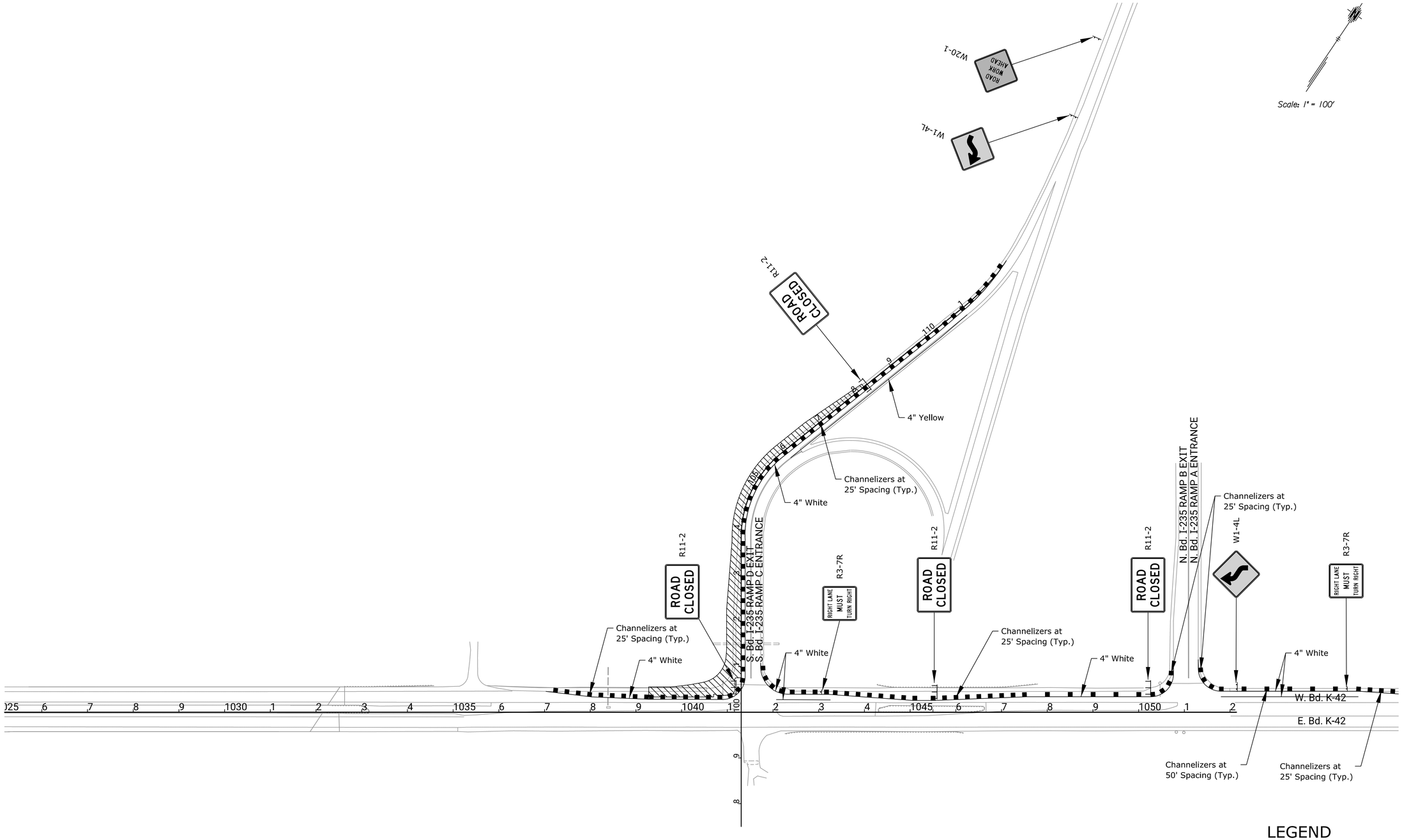

LEGEND

- Work Area
- Type III Barricade(s)
- Channelizing Device
- Arrow Display

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SUITE 500
WICHITA, KANSAS 67202
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K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:			
	MARK	DATE	DESCRIPTION

PROJ NO:	472-2020-085700
SCALE:	1"=100'
DATE:	1/22/2025
DESIGNED BY:	JAS
DRAWN BY:	JAS
CHECKED BY:	CKC

SHEET TITLE:

K-42
SEQUENCING PLAN
PHASE 2A
(SHEET 1 OF 2)

SHEET NO.
61
SHEET 61 OF 105

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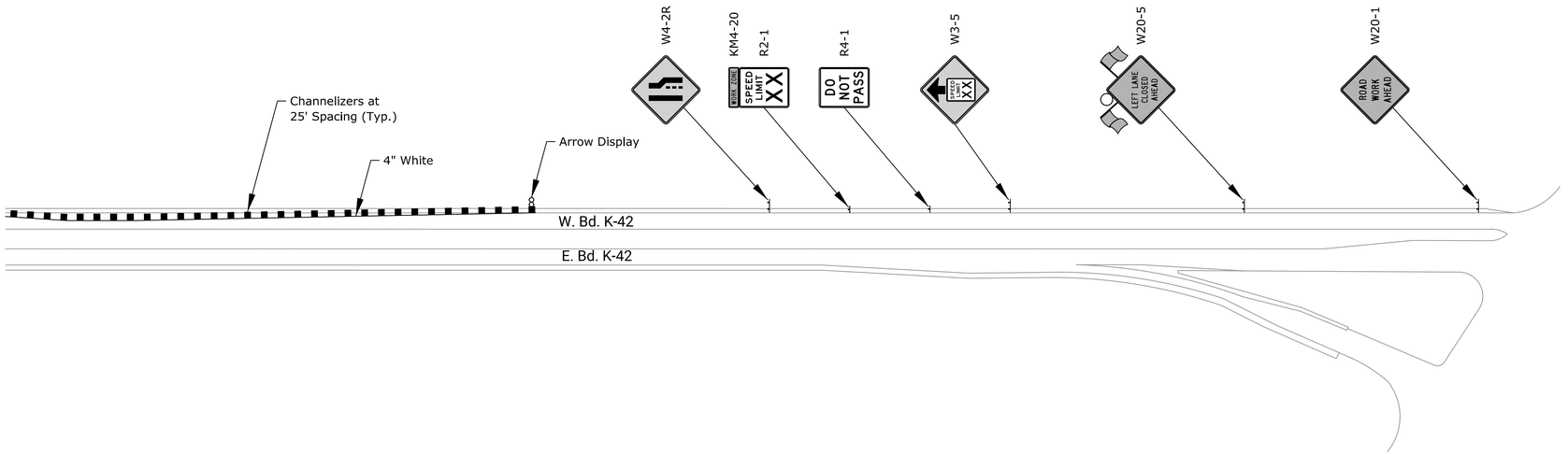

Scale: 1" = 100'

LEGEND

- Work Area
- Type III Barricade(s)
- ■ Channelizing Device
- ∞ Arrow Display

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100 N BROADWAY AVE
SUITE 500
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PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:

K-42
SEQUENCING PLAN
PHASE 2A
(SHEET 2 OF 2)

SHEET NO.
62

SHEET 62 OF 105

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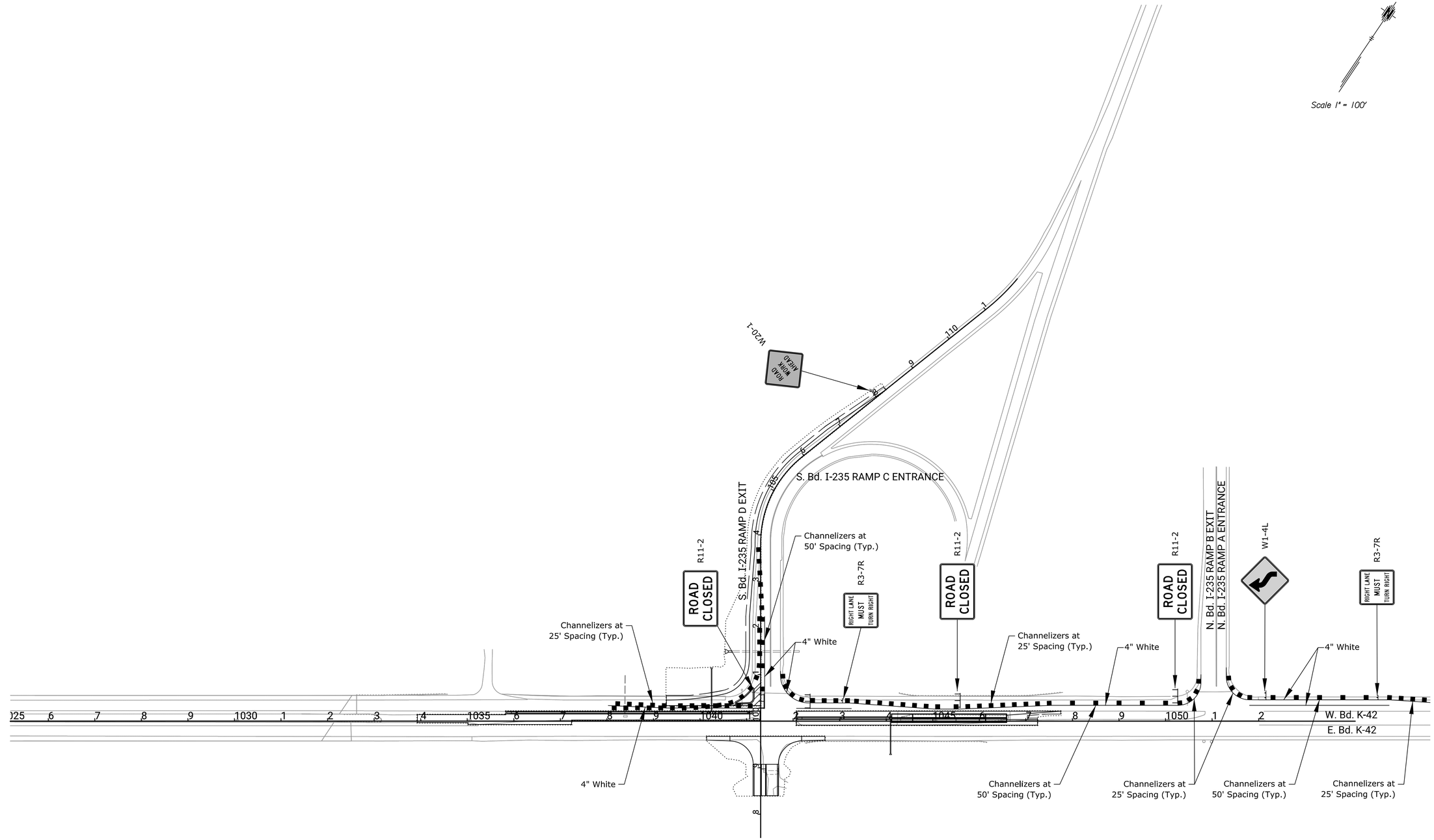
Scale 1" = 100'



See Standard Drawing No. TE 736 for additional Traffic Control on Existing US-54.

LEGEND

- Work Area
- Type III Barricade(s)
- Channelizing Device
- Arrow Display

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CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

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PROJ NO: 472-2020-085700
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DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

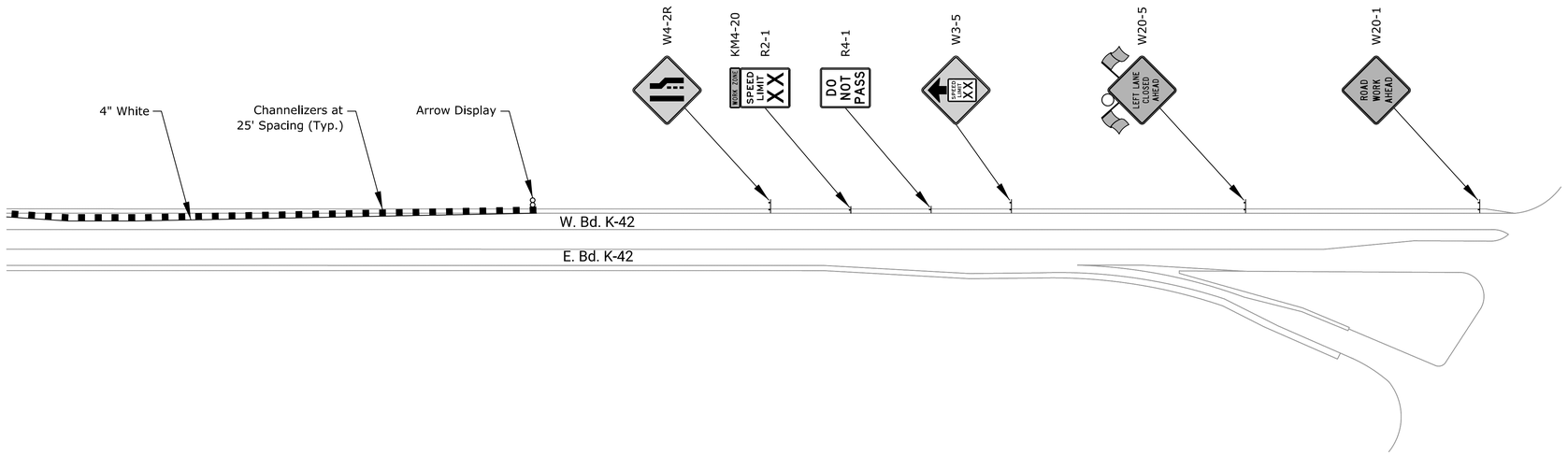
SHEET TITLE:

K-42
SEQUENCING PLAN
PHASE 2B
(SHEET 1 OF 2)

SHEET NO.
63

SHEET 63 OF 105

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING



Scale 1" = 100'

LEGEND

- Work Area
- Type III Barricade(s)
- ■ Channelizing Device
- ∞ Arrow Display

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS
WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

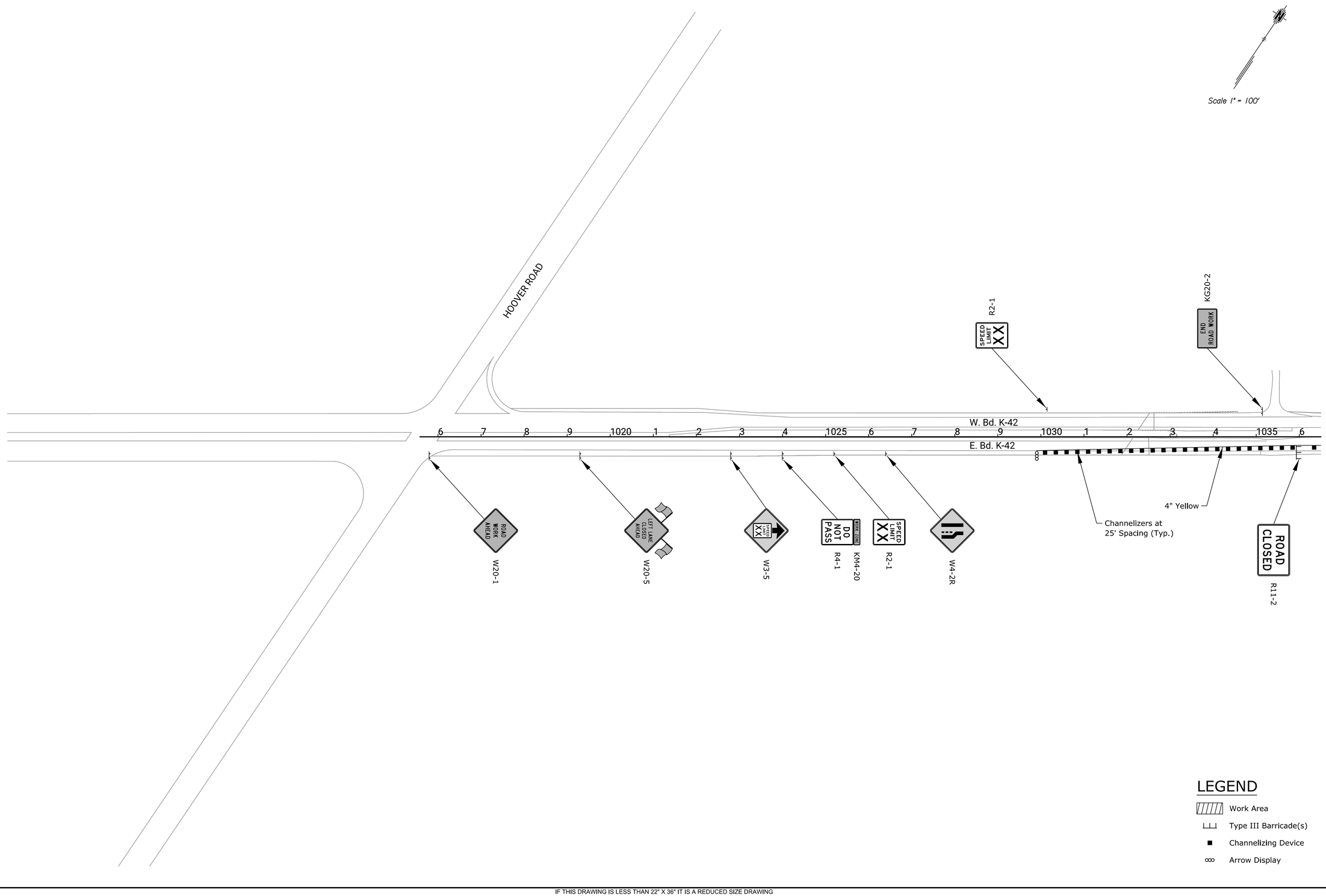
SHEET TITLE:
K-42
SEQUENCING PLAN
PHASE 2B
(SHEET 2 OF 2)

SHEET NO.
64

SHEET 64 OF 105

dmmohas
1/22/2025 - 3:48:50 PM - c:\transystems\row_local\transyscorp-pw1\w-e_dmmckee\d0970074\C-CPP-M01-204.dgn

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING



TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:

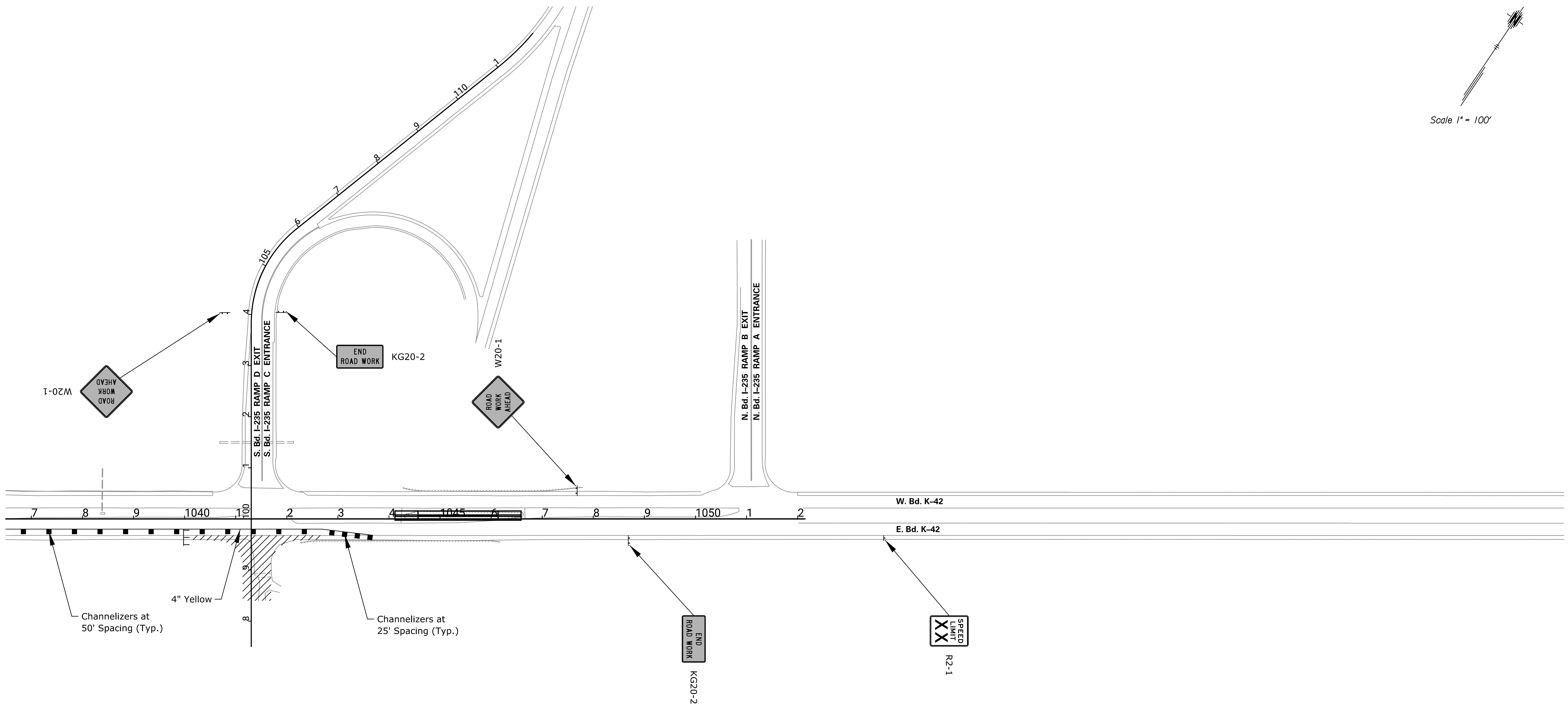
K-42
SEQUENCING PLAN
PHASE 3
(SHEET 1 OF 2)

SHEET NO.
65

SHEET 65 OF 105

dmmckee
1/22/2025 - 3:48:56 PM - c:\transystems\pw_bca\transyscorp-pw1\a-e_dmmckee\d0970074\C-CPP-M01-S01.dgn

IF THIS DRAWING IS LESS THAN 22" X 36" IT IS A REDUCED SIZE DRAWING



LEGEND

- Work Area
- Type III Barricade(s)
- Channelizing Device
- Arrow Display

TRANSYSTEMS
100 N BROADWAY AVE
SUITE 500
WICHITA, KANSAS 67202
PHONE: 316-303-3000

CONSULTANTS:

ROAD IMPROVEMENTS
K-42 AND I-235 INTERCHANGE RAMPS

WICHITA, KANSAS

CITY OF WICHITA

REVISIONS:

MARK	DATE	DESCRIPTION

PROJ NO: 472-2020-085700
SCALE: 1"=100'
DATE: 1/22/2025
DESIGNED BY: JAS
DRAWN BY: JAS
CHECKED BY: CKC

SHEET TITLE:
K-42
SEQUENCING PLAN
PHASE 3
(SHEET 2 OF 2)

SHEET NO.
66

1) 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.

2) Minimum Lane Width: 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.

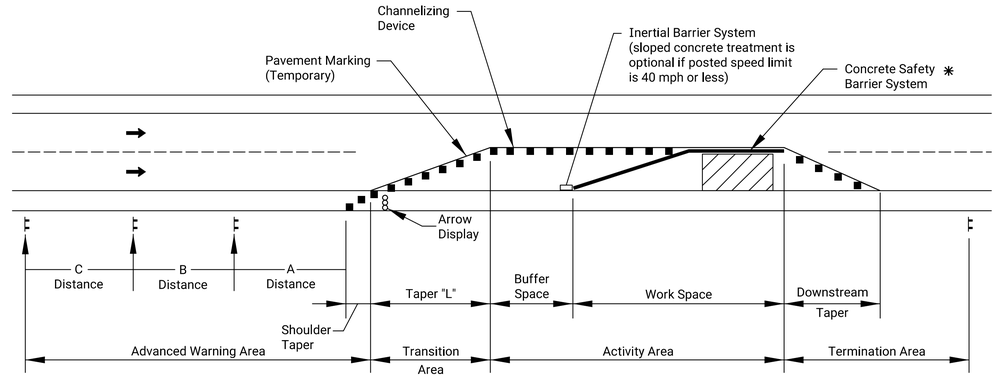
3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that 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 are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) 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.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches. This sign should be placed a "C" distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	67	105



TYPICAL WORK ZONE COMPONENTS

✳ When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*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*

✳ Posted speed prior to work starting

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.

Taper Formulas:

L = WS for speeds of 45 MPH or more

L = WS²/60 for speeds of 40 MPH or less

Where: L = Minimum length of taper in feet
S = Numericial value of posted speed prior to work starting in MPH
W = Width in offset feet

Shifting Taper=1/2 L
Shoulder Taper=1/3 L

Channelizer Placement:

(1) 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.

(2) 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.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

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 above.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	03/13/18	W8-15p usage changed to Shall	R.W.B.	E.G.K.
1	08/18/15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

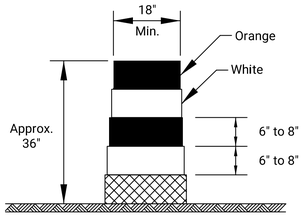
TRAFFIC CONTROL GENERAL NOTES

TE700

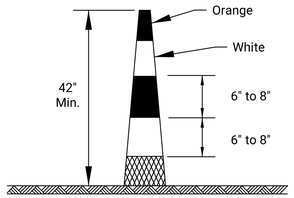
FHWA APPROVAL 03/13/18		APP'D Eric Kocher	
DESIGNED B.A.H.	DETAILED R.W.B	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

Plotted :22-JAN-2025 15:49
Drawn By : dmmckee
File : te700.dgn

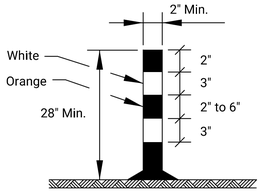
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	68	105



DRUM

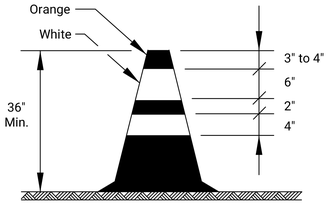


CONICAL DELINEATOR

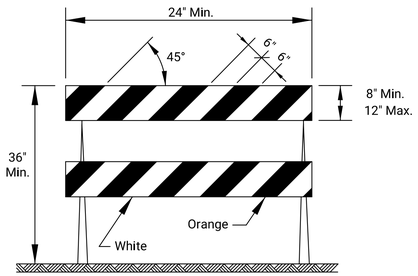


TUBULAR MARKER

Striping as shown for up to 42".

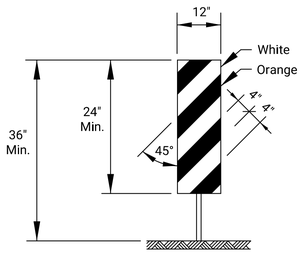


TRAFFIC CONE



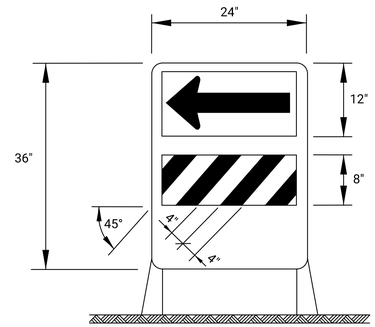
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



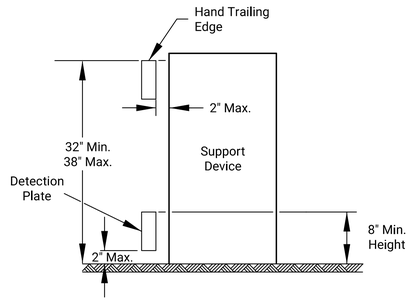
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope 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.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

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 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
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.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
CHANNELIZING DEVICES

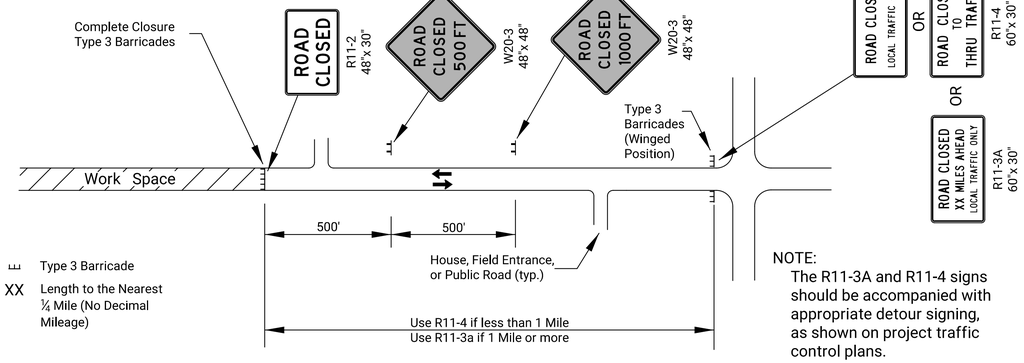
TE702

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 22-JAN-2025 15:49
Drawn By : dmmckee
File : te702.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	69	105

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 (MAINLINE OR SIDE ROAD)

Note: Sign shown for one approach to intersection (work zone).

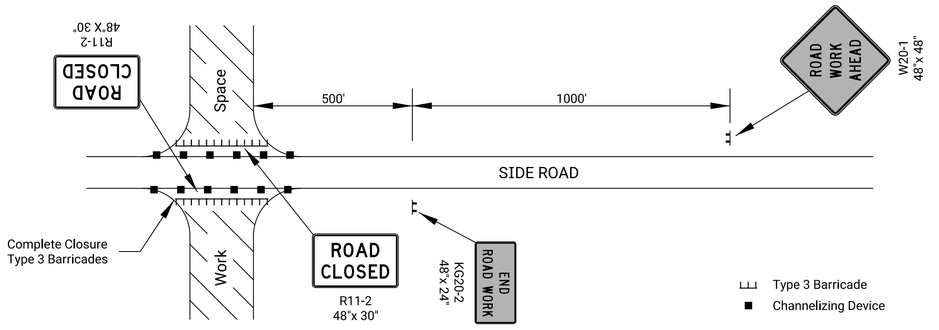


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

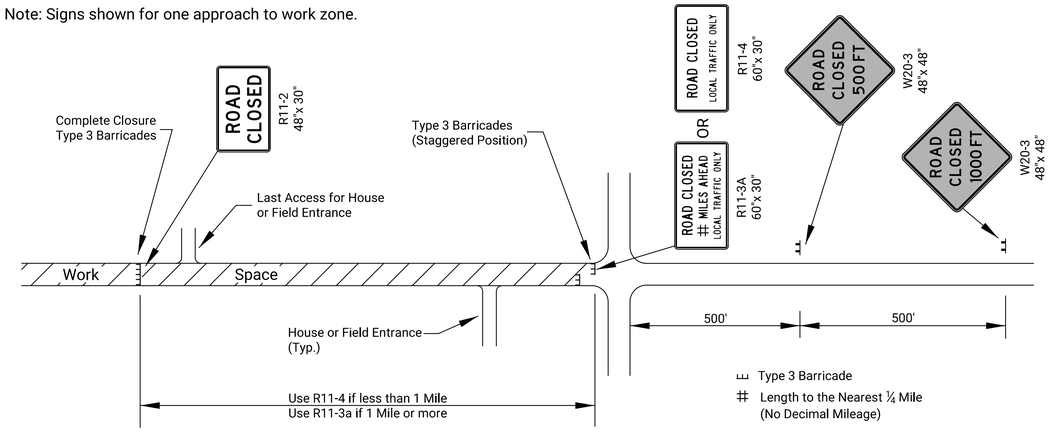


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

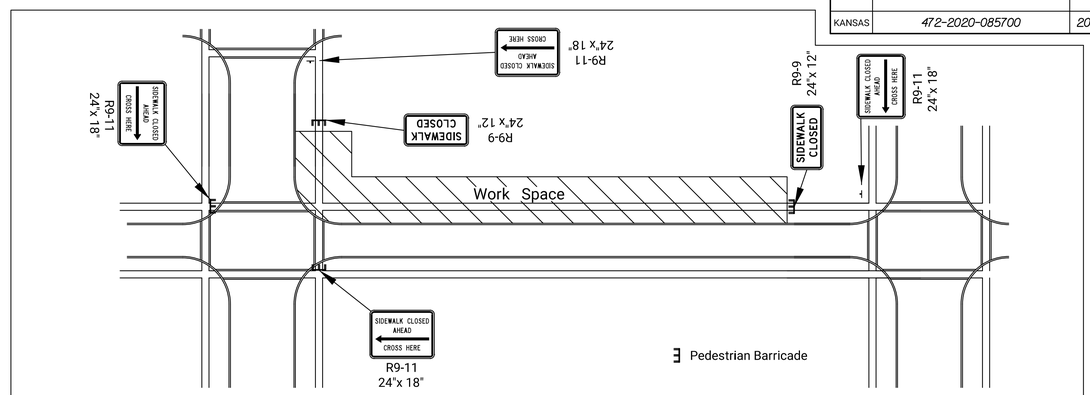
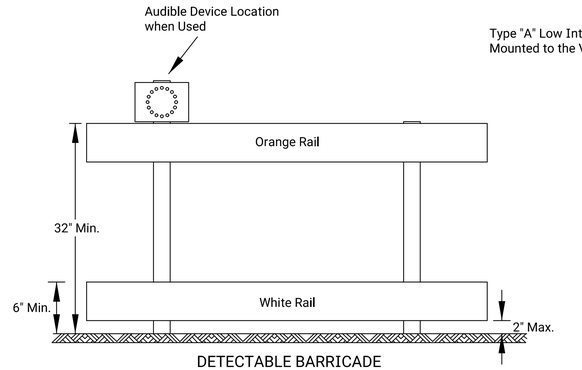
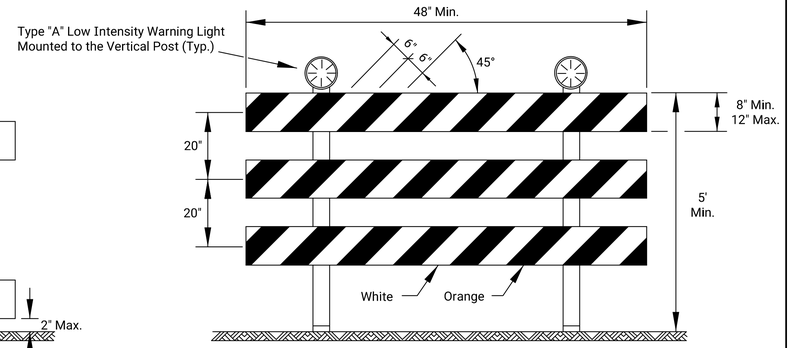


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 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.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, 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 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

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.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 22-JAN-2025 15:49
Drawn By : dmmckee
File : te704.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	70	105

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"

KM4-20 — Std. Size: 3" C, 24"x 6" — Expwy/Freeway: 6" C, 48"x 12"

W7-3a — Mileage to be Determined by the Engineer.

W8-17 — Std. Size Expwy/Freeway: 48"x 48"

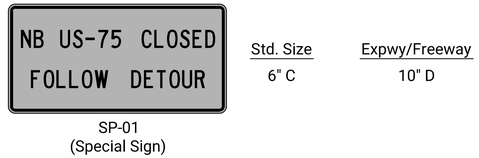
W8-17P (Optional) — Std. Size Expwy/Freeway: 30"x 24"

W8-15 — Std. Size Expwy/Freeway: 8" D, 48"x 48"

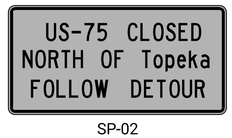
W8-7 — Std. Size Expwy/Freeway: 8" D, 48"x 48"

W8-15p — Std. Size Expwy/Freeway: 30"x 24"

W8-11 — Std. Size Expwy/Freeway: 8" D, 48"x 48"



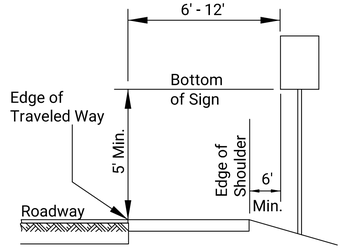
SP-01 (Special Sign) — Std. Size: 6" C — Expwy/Freeway: 10" D



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.

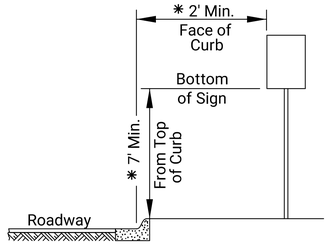


RURAL

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.



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.

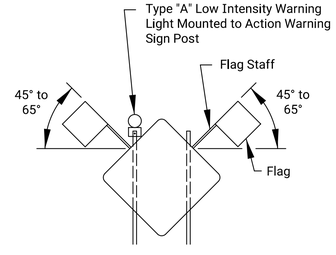
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

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.

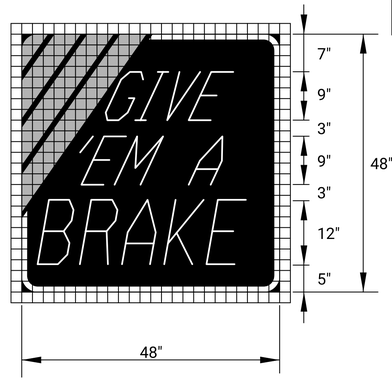
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

✱ 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



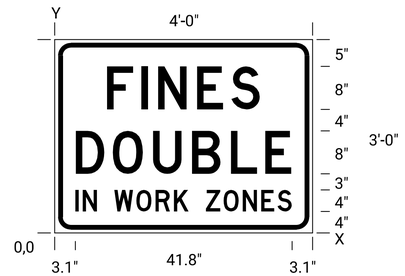
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

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.



KI-104a

Sign Number	GIVE EM A BRAKE
Width x Height	4'-0" x 4'-0"
Border Width	1.0"
Corner Radius	4.0"
Stripe Width	3.0"
Mounting	Ground
Background	Type: Non-Reflective
	Color: Black
Legend/Border	Type: Reflective
	Color: White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant
Stripes	Type: Reflective
	Color: Orange



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	X	F	I	N	E	S	X									8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D	X	D	O	U	B	L	E	X								8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D	X	I	N	X	W	O	R	K	X	Z	O	N	E	S	X	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

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' 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.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SIGN INFORMATION

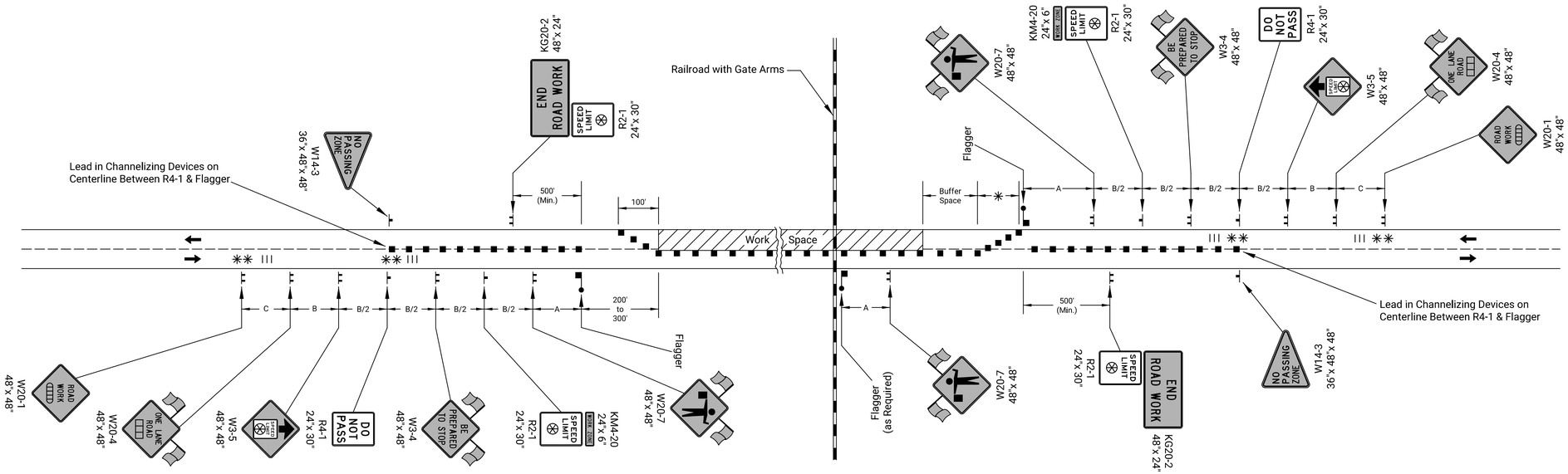
TE710

FHWA APPROVAL		06/01/15	APP'D	Kristina Pyle	
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted : 22-JAN-2025 15:49
Drawn By : dmmckee
File : te710.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	71	105

FLAGGER



USE TE731 FOR FLAGGER OR PILOT CAR ON ROADWAYS WITH CONCRETE SHOULDERS GREATER THAN 8 FT.

Notes:

Trucks hauling material to the project should STOP at the Flagger. After stopping, upon approval of the Engineer, trucks may be allowed to move around the Flagger.

Place a Flagger at all highway and major collector intersections and at-grade railroad intersections with lights and gates in the work space to control traffic crossing the tracks to the left of the gate arm. The need for a Flagger at minor side road intersections shall be determined by the Engineer. Place a W20-7 (Flagger symbol) sign on each side road that is controlled by a Flagger.

Existing signs shall not be covered or removed between Flagger stations.

Temporary rumble strips may be used in lieu of lead in channelizing devices when the roadway is less than or equal to 30' including paved shoulders. When extenuating circumstances exist, the Area Engineer may elect to eliminate both the lead in channelizers and the rumble strips.

∗ Minimum six (6) channelizers spaced at 20' intervals.

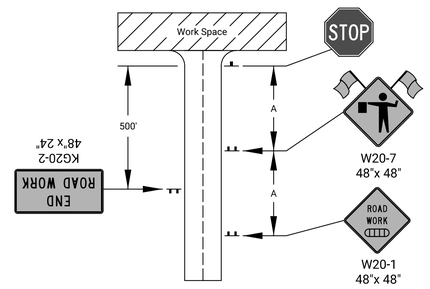
∗∗ Optional rumble strips may be placed: One set between the W20-1 and W20-4, and one set between the R4-1 and W3-4, on each approach.

△ Not required on substantial maintenance projects (1R).

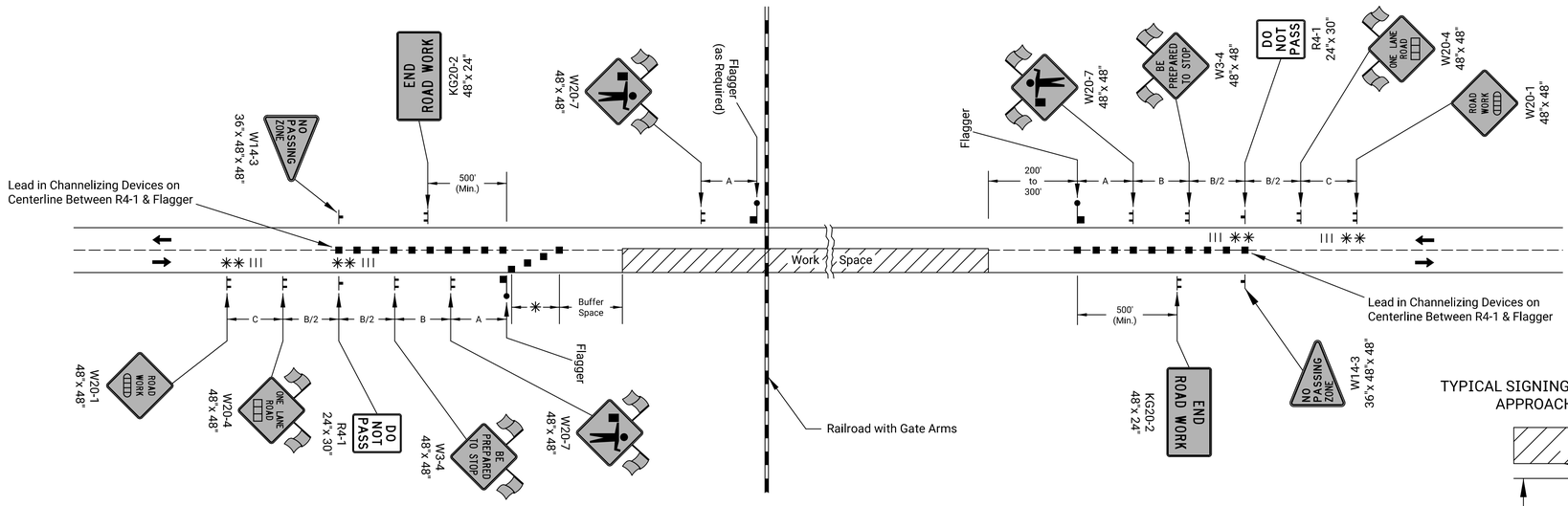
△△ The KG20-5 (WAIT FOR PILOT CAR) sign shall be mounted on an approved portable support and not attached to the existing stop sign post.

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 HIGHWAY OR MAJOR COLLECTOR APPROACH TO WORK SPACE

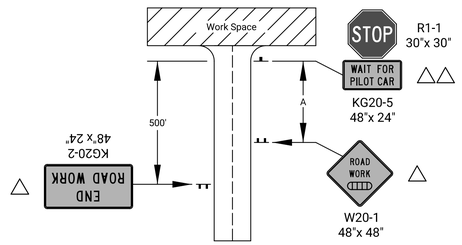


FLAGGER AND PILOT CAR



- ■ Channelizing Device
- Ahead, 1500 ft, or 1 Mile
- Ahead, 1000 ft, 1500 ft, or ½ Mile
- Speed to be Determined by the Engineer
- ○ Type "A" Low Intensity Warning Light
- ||| Temporary Portable Rumble Strips

TYPICAL SIGNING FOR A MINOR SIDE ROAD APPROACH TO WORK SPACE



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL FLAGGER OR PILOT CAR

TE730

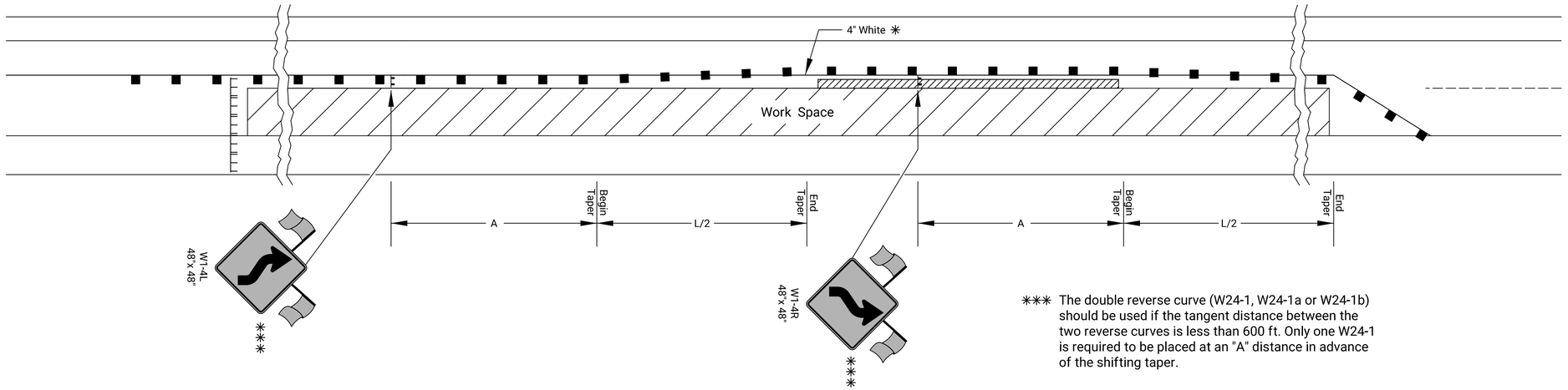
FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0955680\te730.dgn
Plotted : 1/22/2025

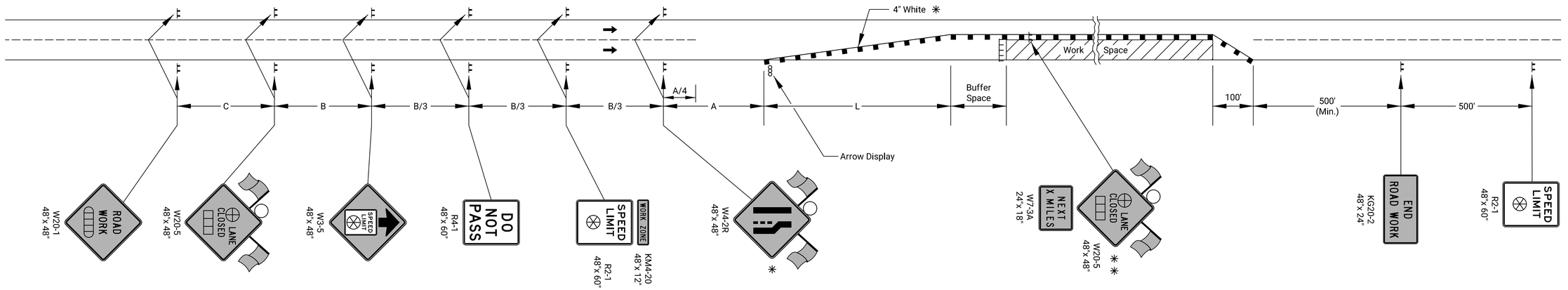
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	72	105

SHIFTING TAPER DETAIL

Add signs and devices as shown for work inside a closed lane that extends near to (or into) the open traffic lane.



✳✳✳ The double reverse curve (W24-1, W24-1a or W24-1b) should be used if the tangent distance between the two reverse curves is less than 600 ft. Only one W24-1 is required to be placed at an "A" distance in advance of the shifting taper.



- Type 3 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

✳ 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.

Left-side signs shall be omitted for a four-lane undivided highway.

One flagger should be stationed within each multi-lane roadway activity area where work is in a closed lane adjacent to traffic and not separated a concrete safety barrier system.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	03/13/18	W24-1 usage changed to Should	R.W.B.	E.G.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
LANE CLOSURE ON MULTI LANE HWY

TE744

FHWA APPROVAL		03/13/18	APP'D	Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Drawn By : dmmckee
File : te744.dgn
Plotted : 22-JAN-2025 15:49

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	73	105

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

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	7		
KM4-20	2		
R2-1	3		
R3-7R	2		
R4-1	2		
R11-2		5	
W1-4L		2	
W3-5		2	
W4-2L		2	
W4-2R		1	
W20-1		5	
W20-5		2	

Barricades ✳	
Type 3 (4' to 12')	Pedestrian

Channelizing Devices ✳		
Fixed	Portable	Pedestrian
	153	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	
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 (0 to 9.25 Sq.Ft.)	14	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	19	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')		Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	153	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)		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)	146	Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal	10,789	Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)		Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

FOR INFORMATION ONLY

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

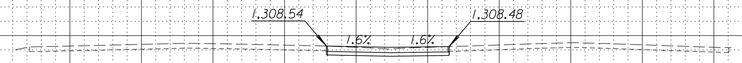
TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES

TE795

FHWA APPROVAL 06/01/15		APP'D Kristina Ericksen	
DESIGNED B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

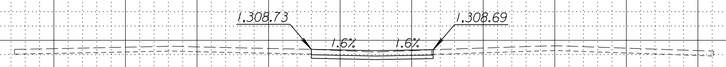
Drawn By : dmmckee
File : te795.dgn
Plotted : 22-JAN-2025 15:49

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	74	105



1034+50.00

C = 19.54 S.F. R = 0.12 S.F. F = 0.00 S.F.



1034+00.00

C = 19.43 S.F. R = 0.14 S.F. F = 0.00 S.F.

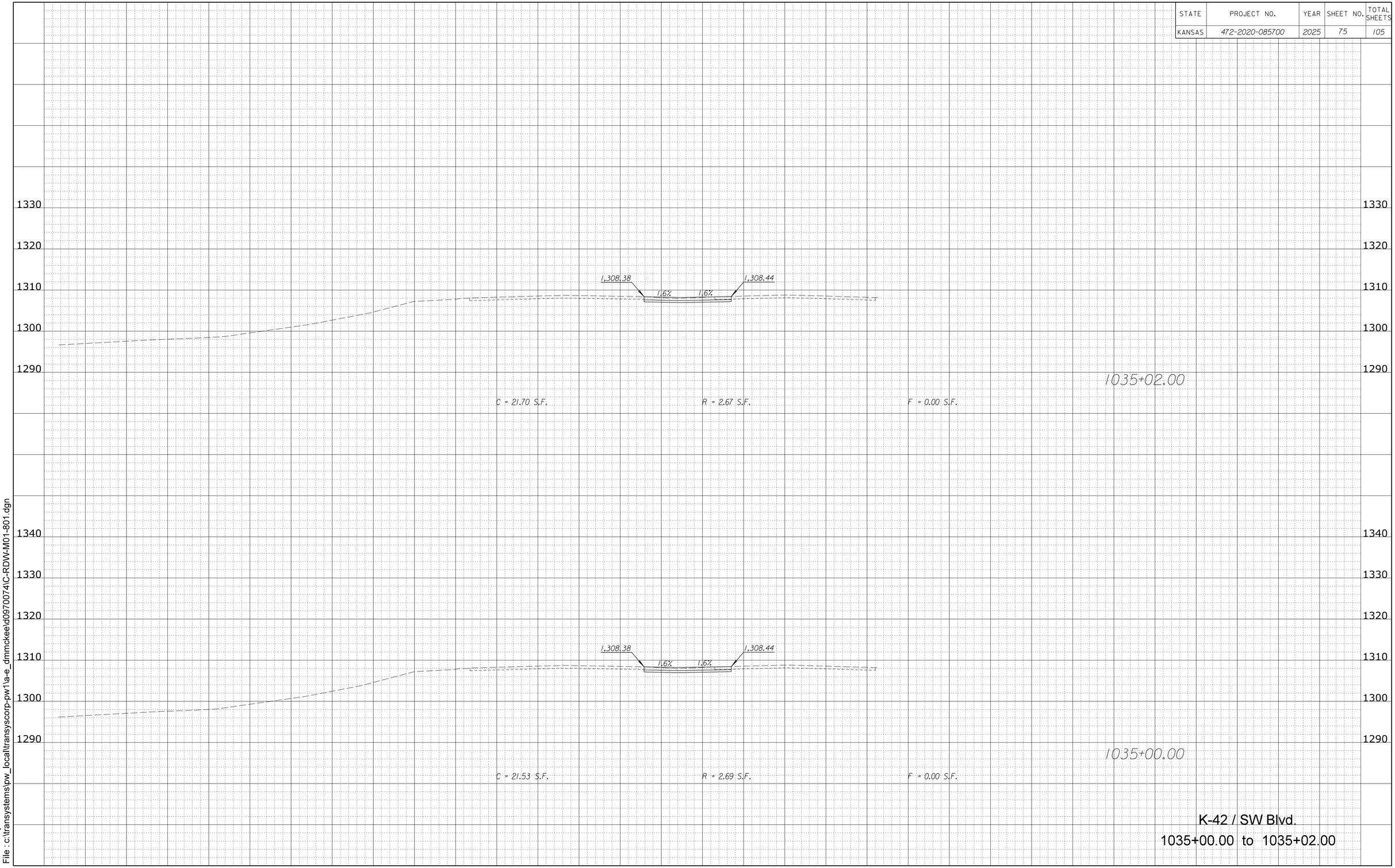
1033+93.00

C = 19.45 S.F. R = 0.13 S.F. F = 0.00 S.F.

K-42 / SW Blvd.
1033+93.00 to 1034+50.00

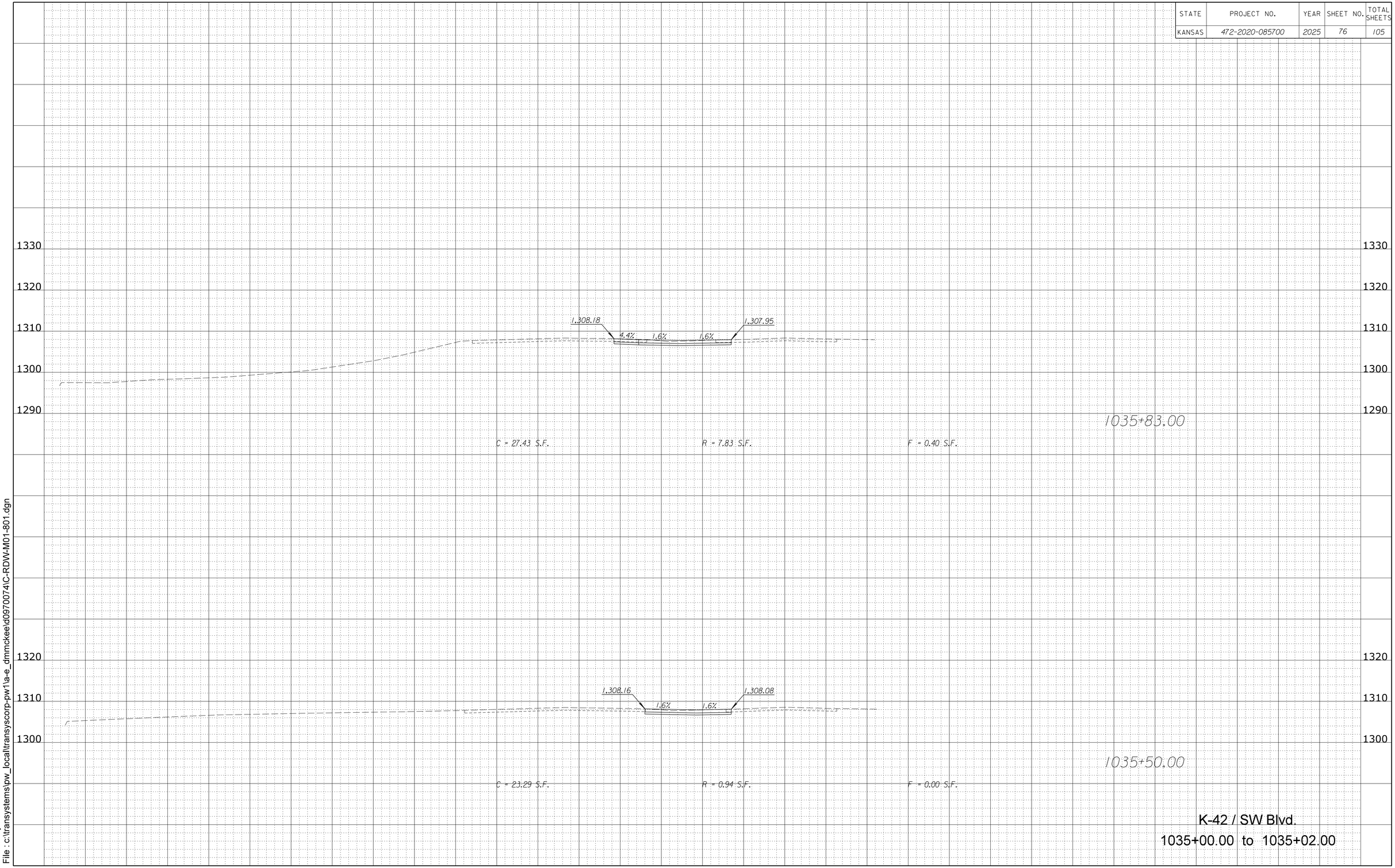
Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn
Plotted: 1/22/2025

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	75	105



Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\C-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	76	105

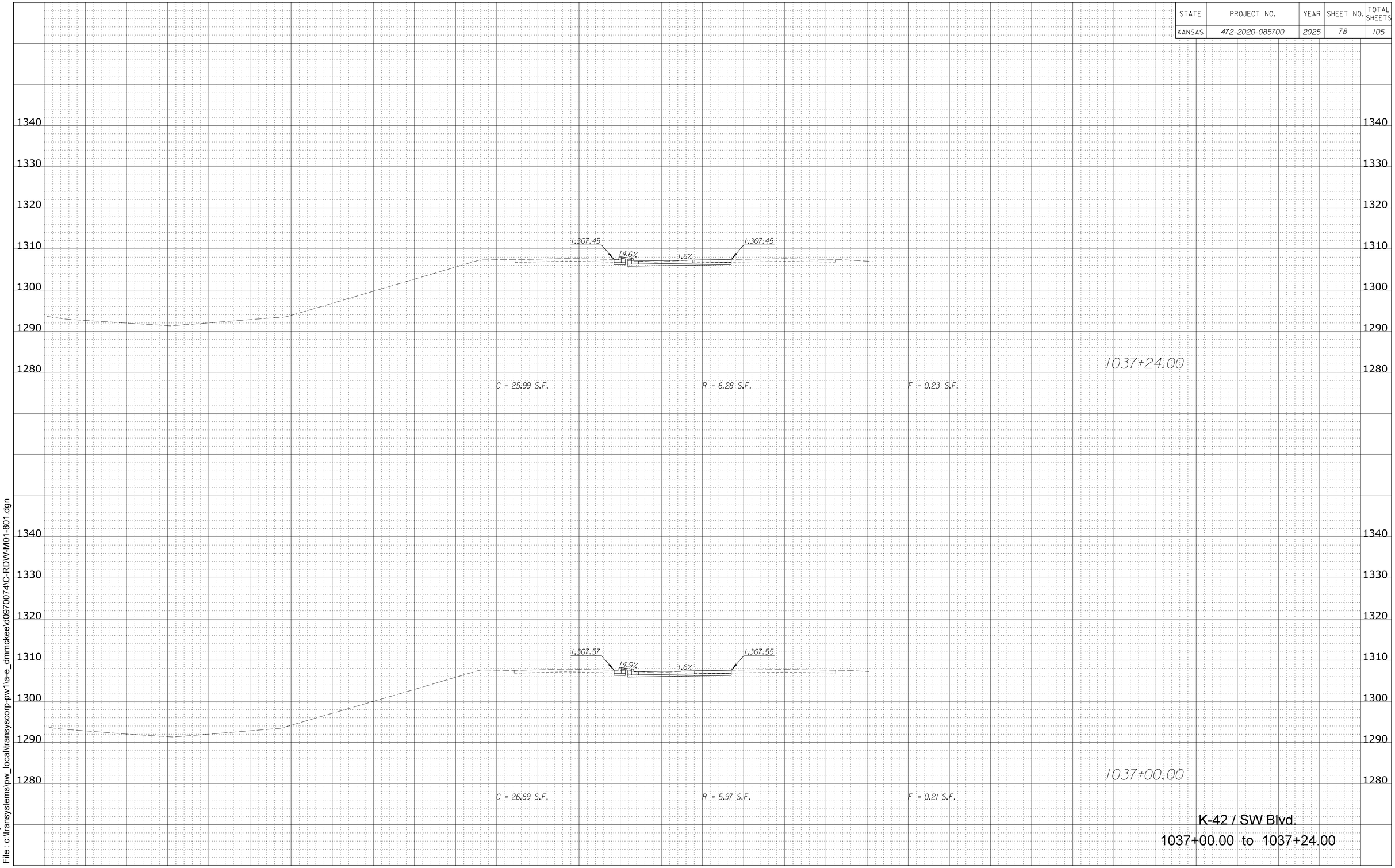


Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\e_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	77	105

Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	78	105

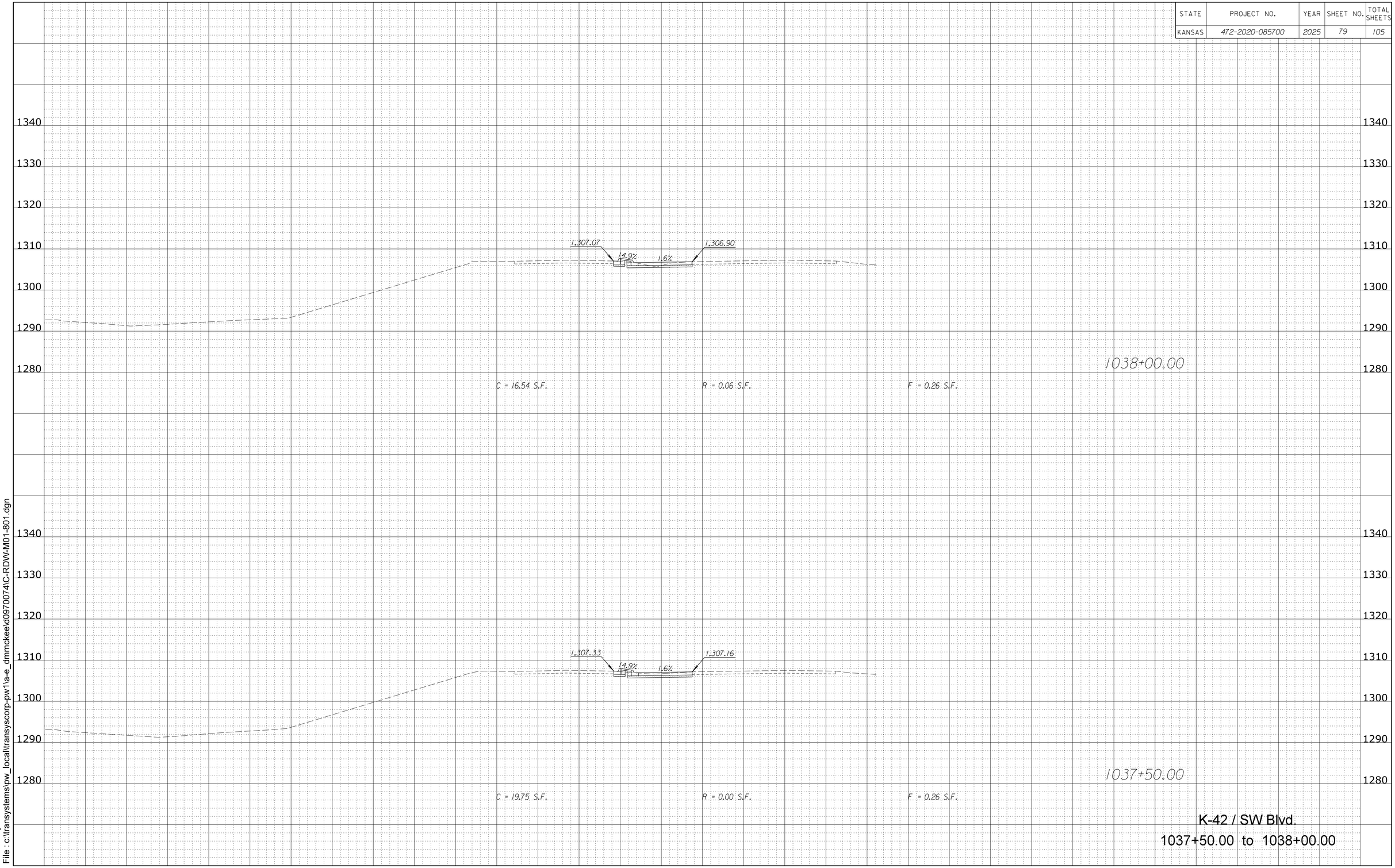


K-42 / SW Blvd.

1037+00.00 to 1037+24.00

Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\C-RDW-M01-801.dgn

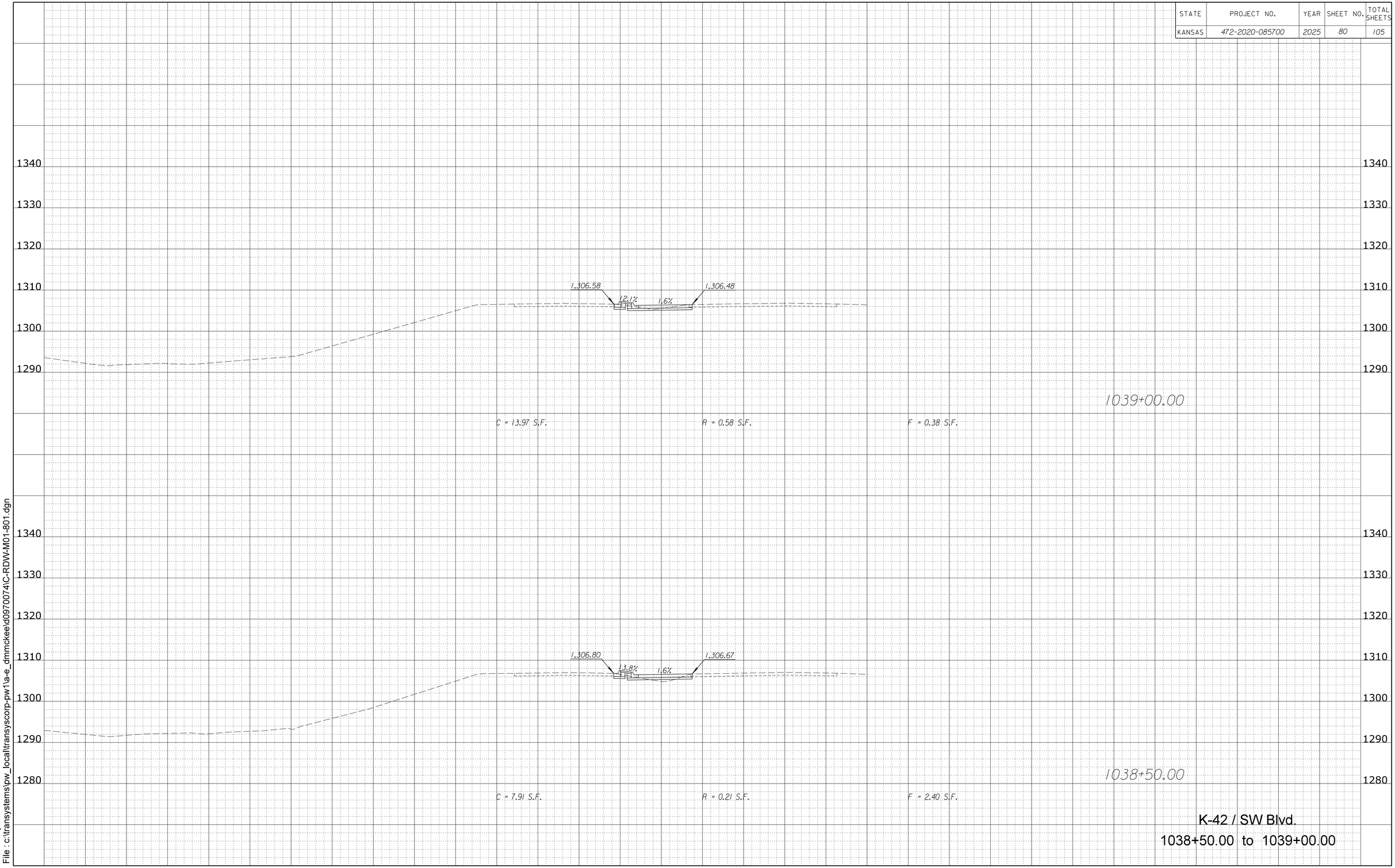
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	79	105



K-42 / SW Blvd.
1037+50.00 to 1038+00.00

Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\C-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	80	105



Plotted : 1/22/2025
Drawn By: : dmmckee
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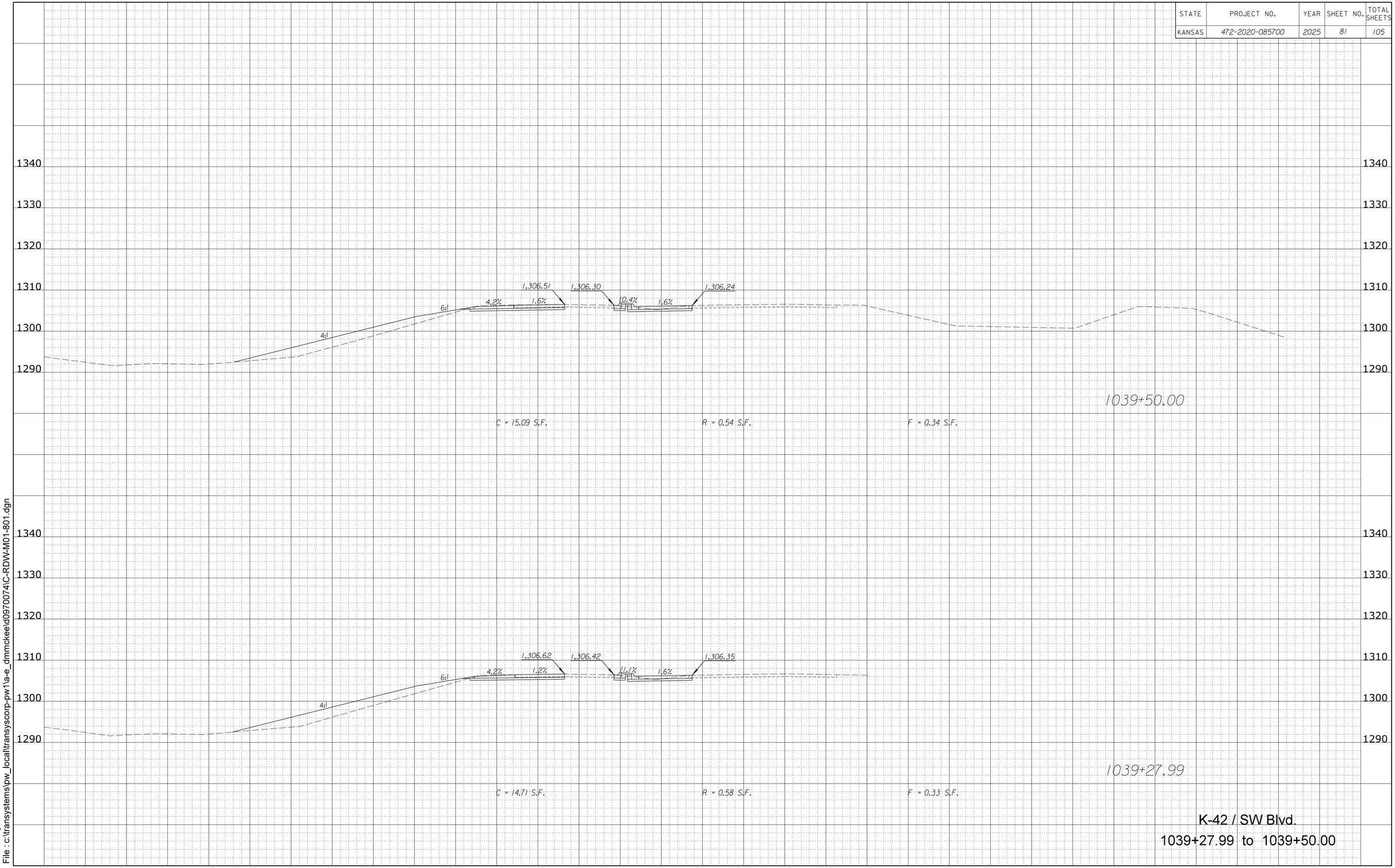
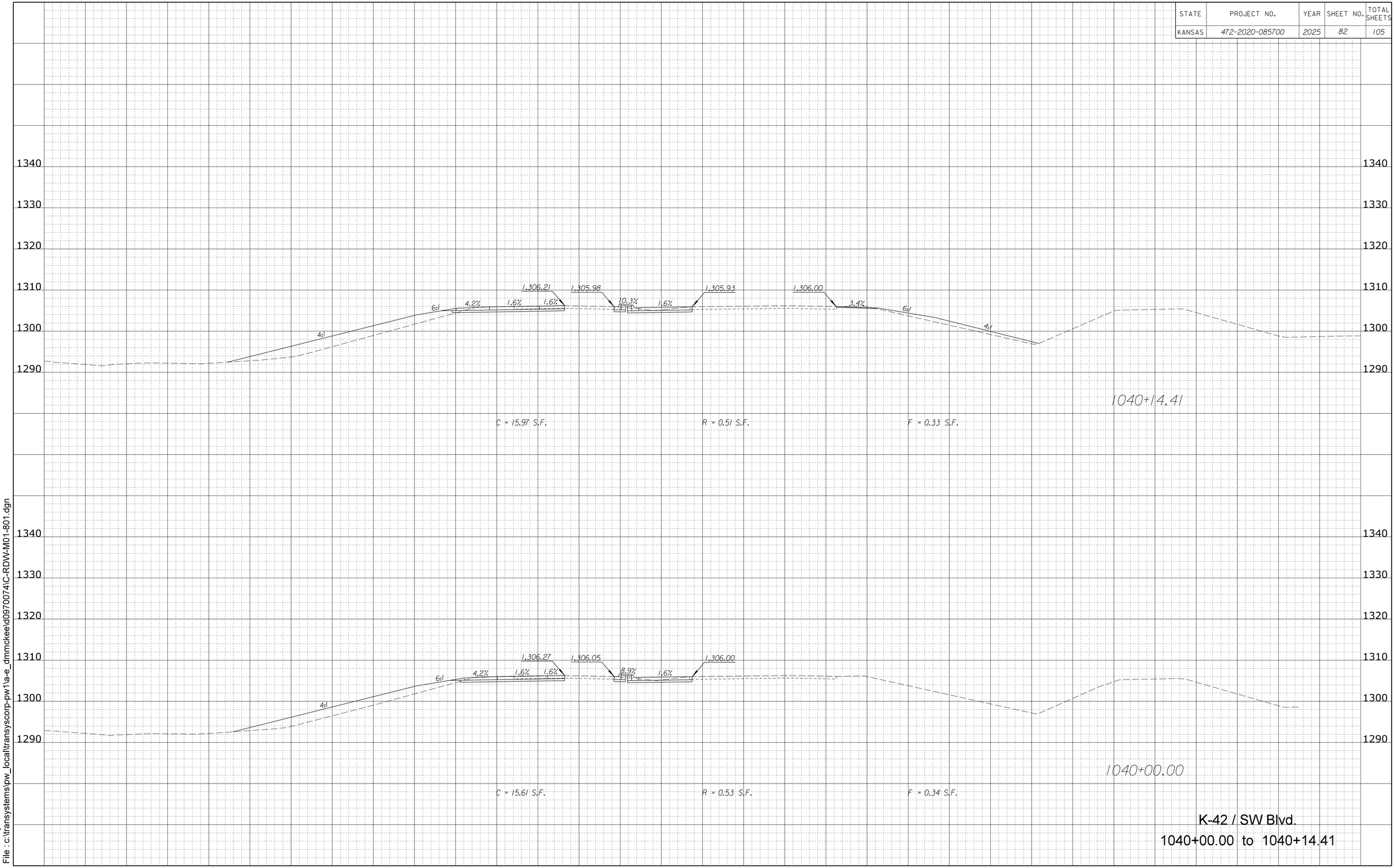
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	81	105



K-42 / SW Blvd.
1039+27.99 to 1039+50.00

Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

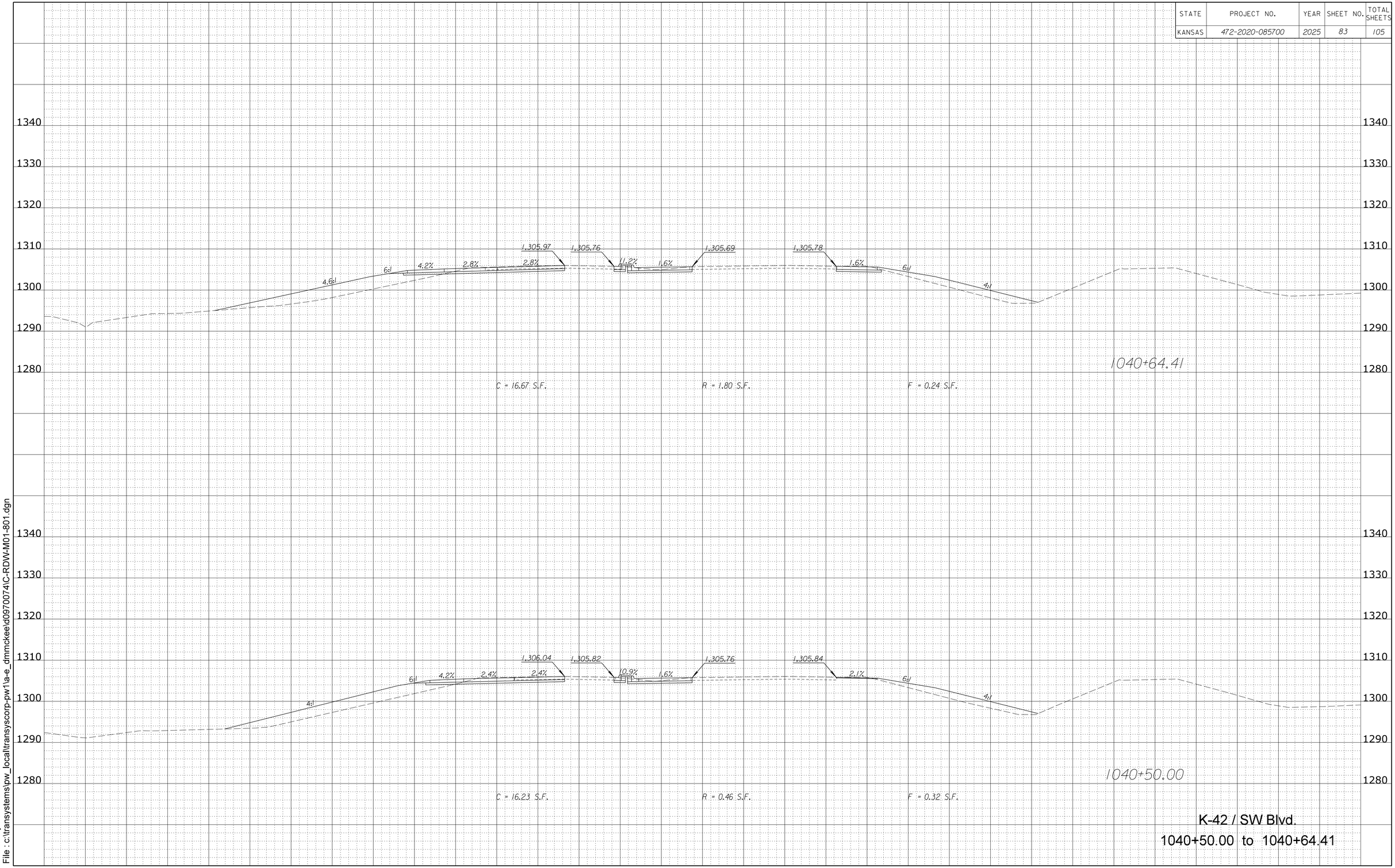
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	82	105



K-42 / SW Blvd.
1040+00.00 to 1040+14.41

Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	83	105



K-42 / SW Blvd.

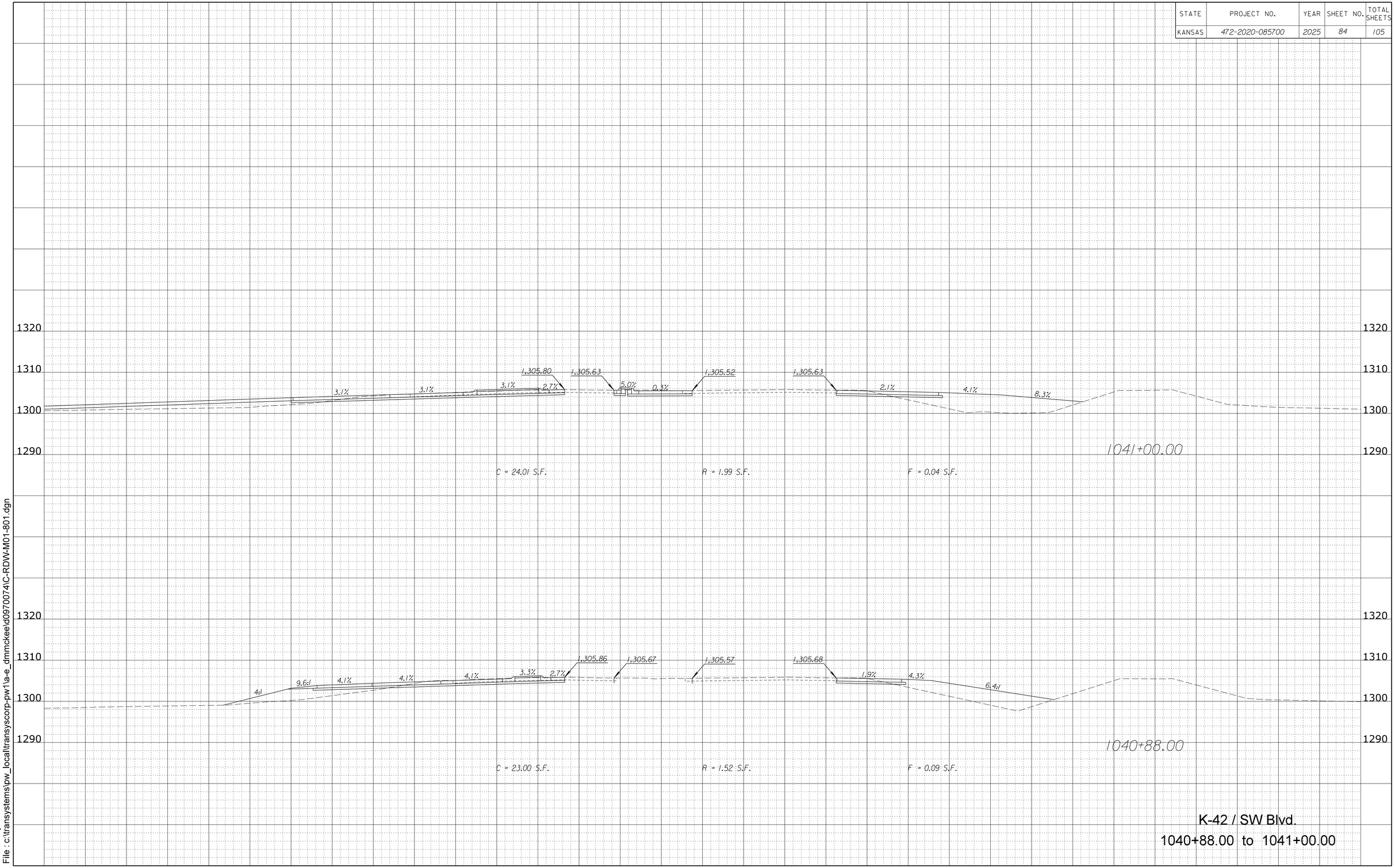
1040+50.00 to 1040+64.41

Plotted : 1/22/2025

Drawn By: : dmmckee

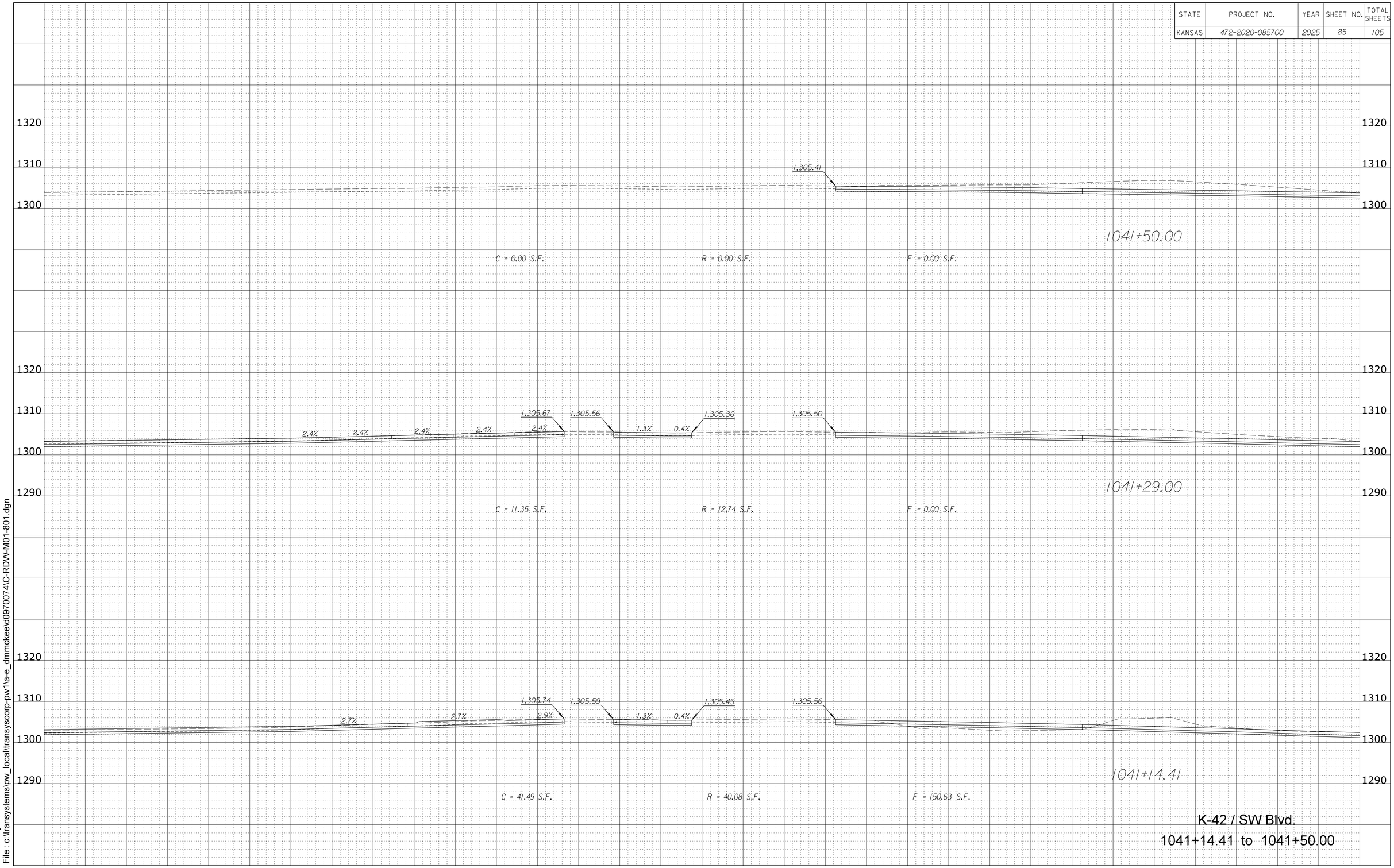
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\C-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	84	105



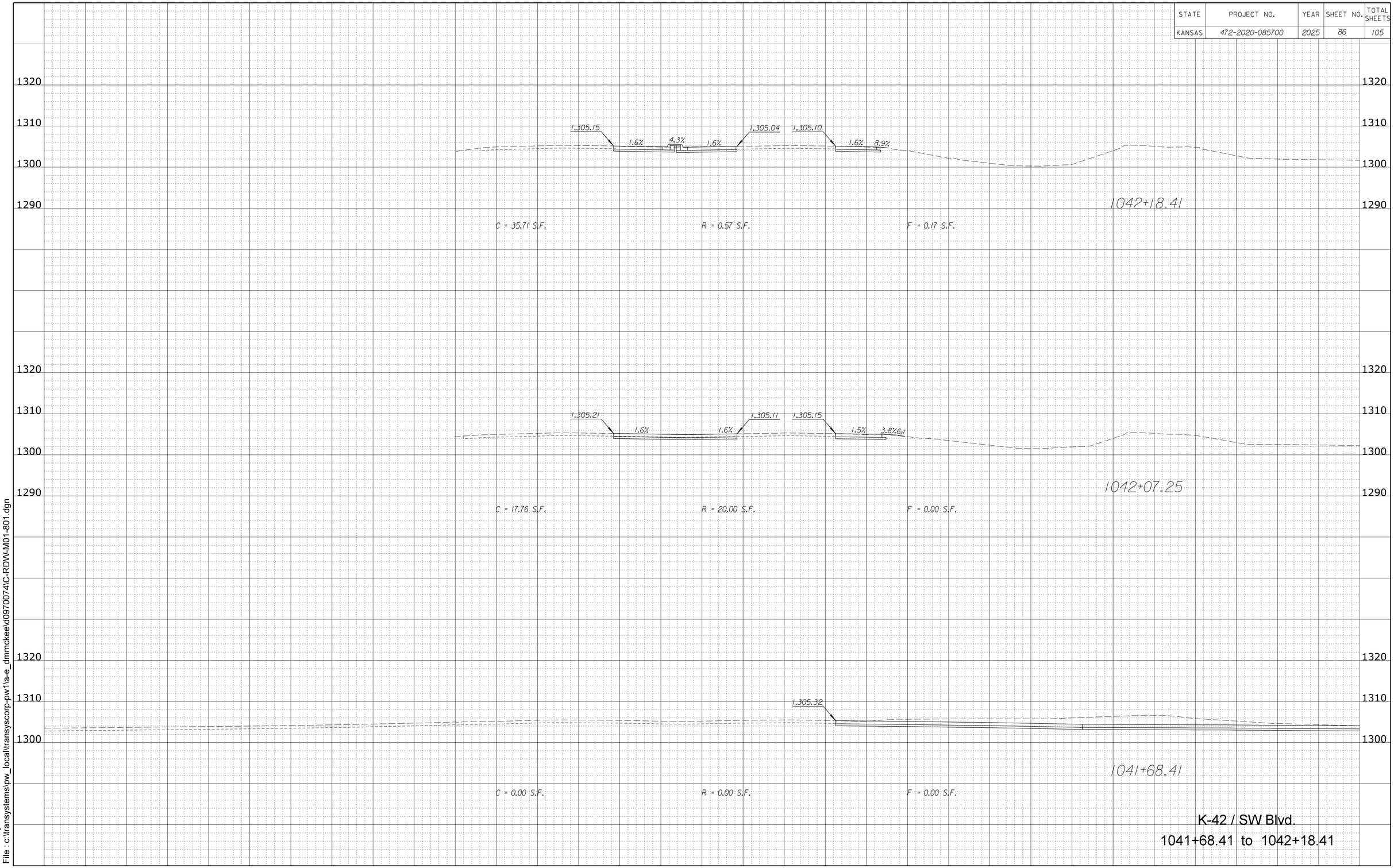
Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ia-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	85	105



Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

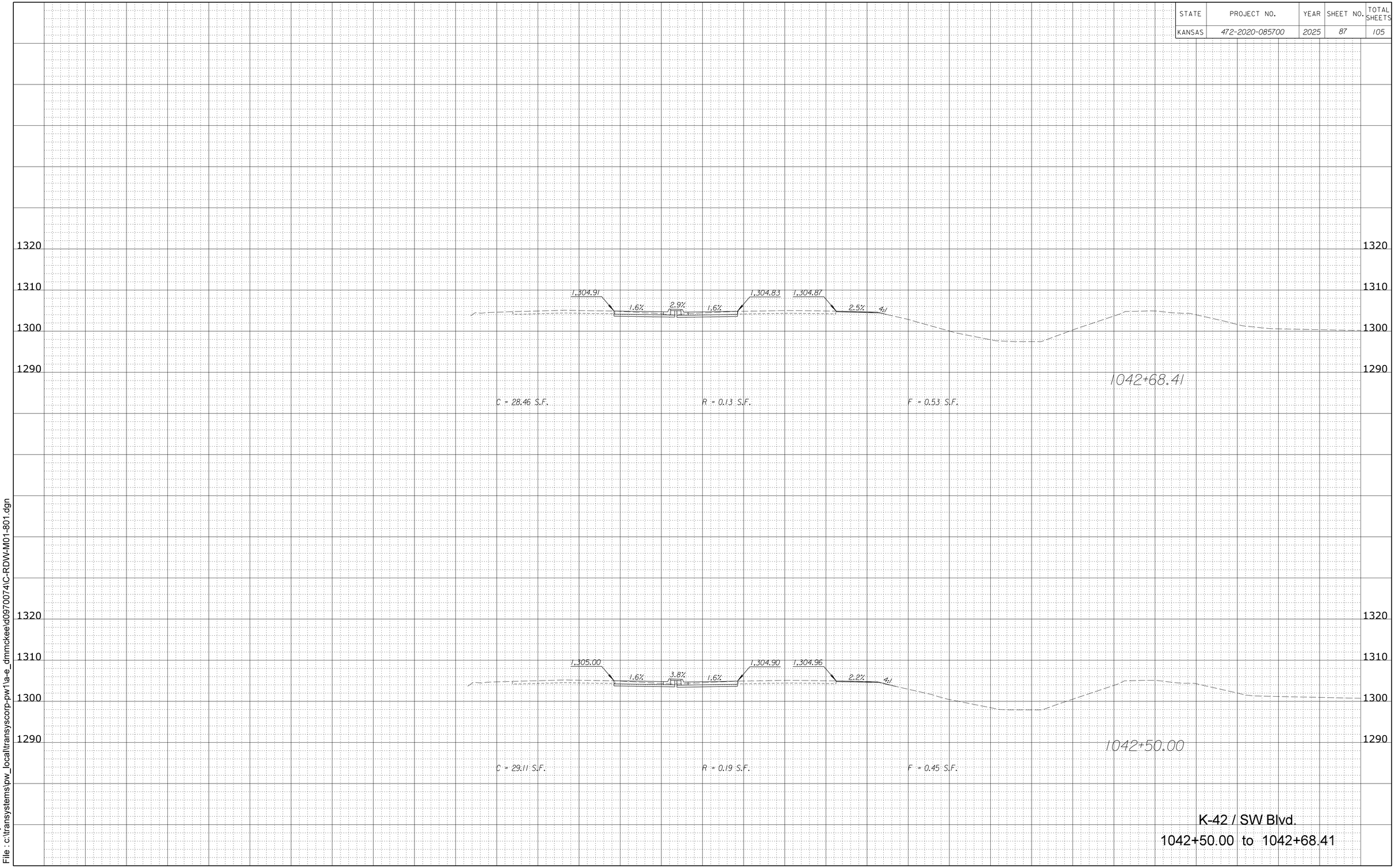
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	86	105



K-42 / SW Blvd.
1041+68.41 to 1042+18.41

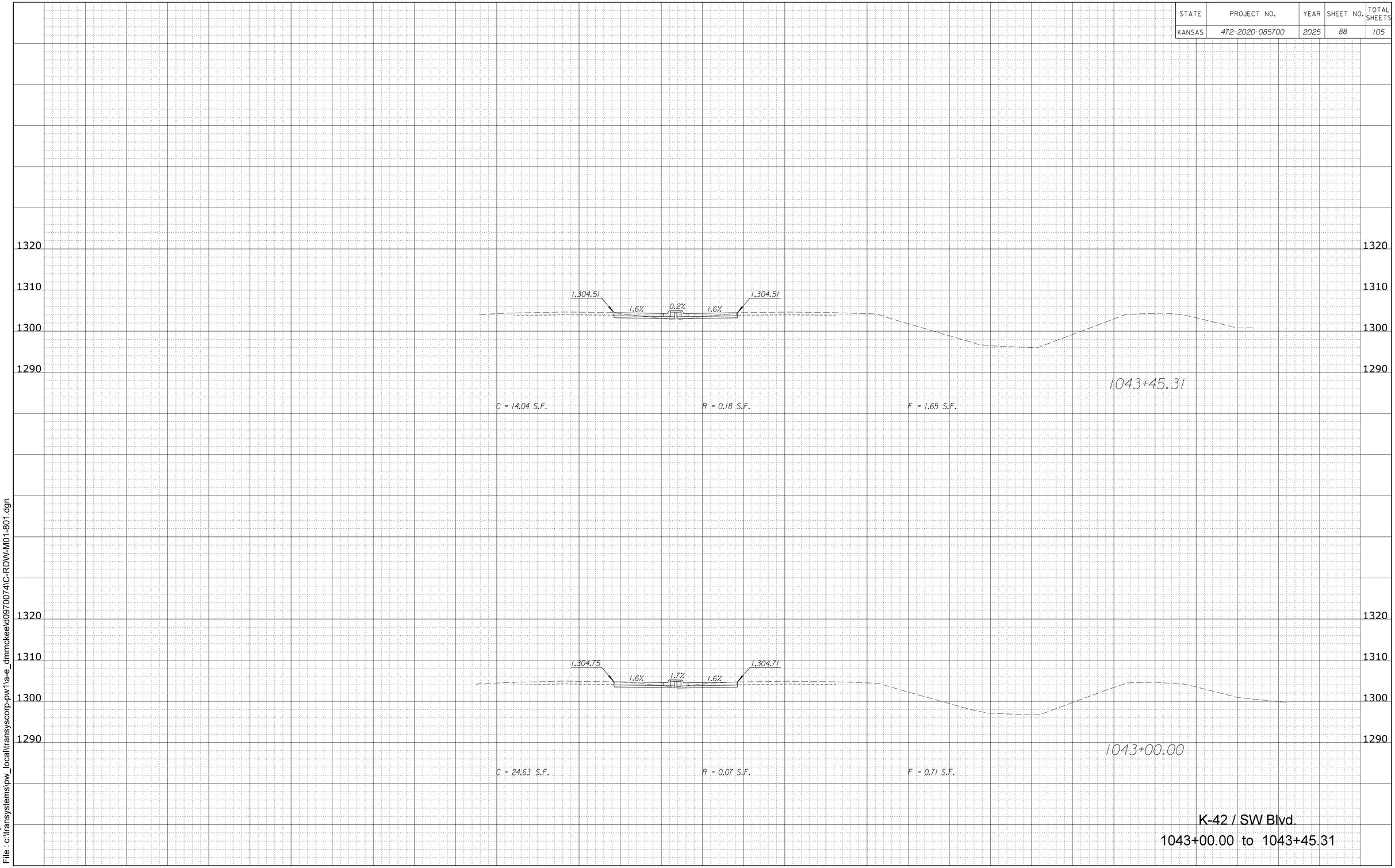
Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	87	105



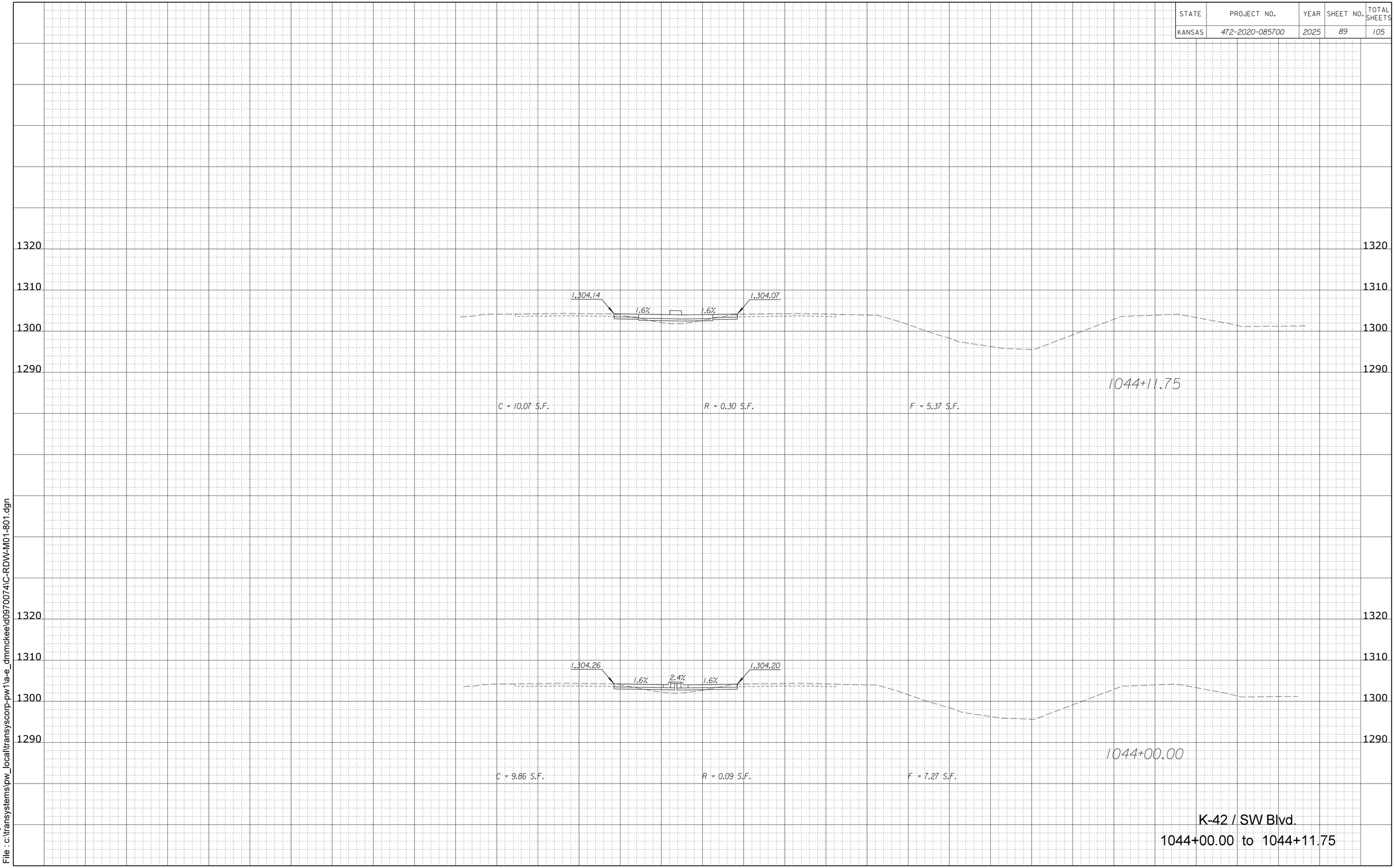
Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	88	105



Plotted : 1/22/2025
Drawn By : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

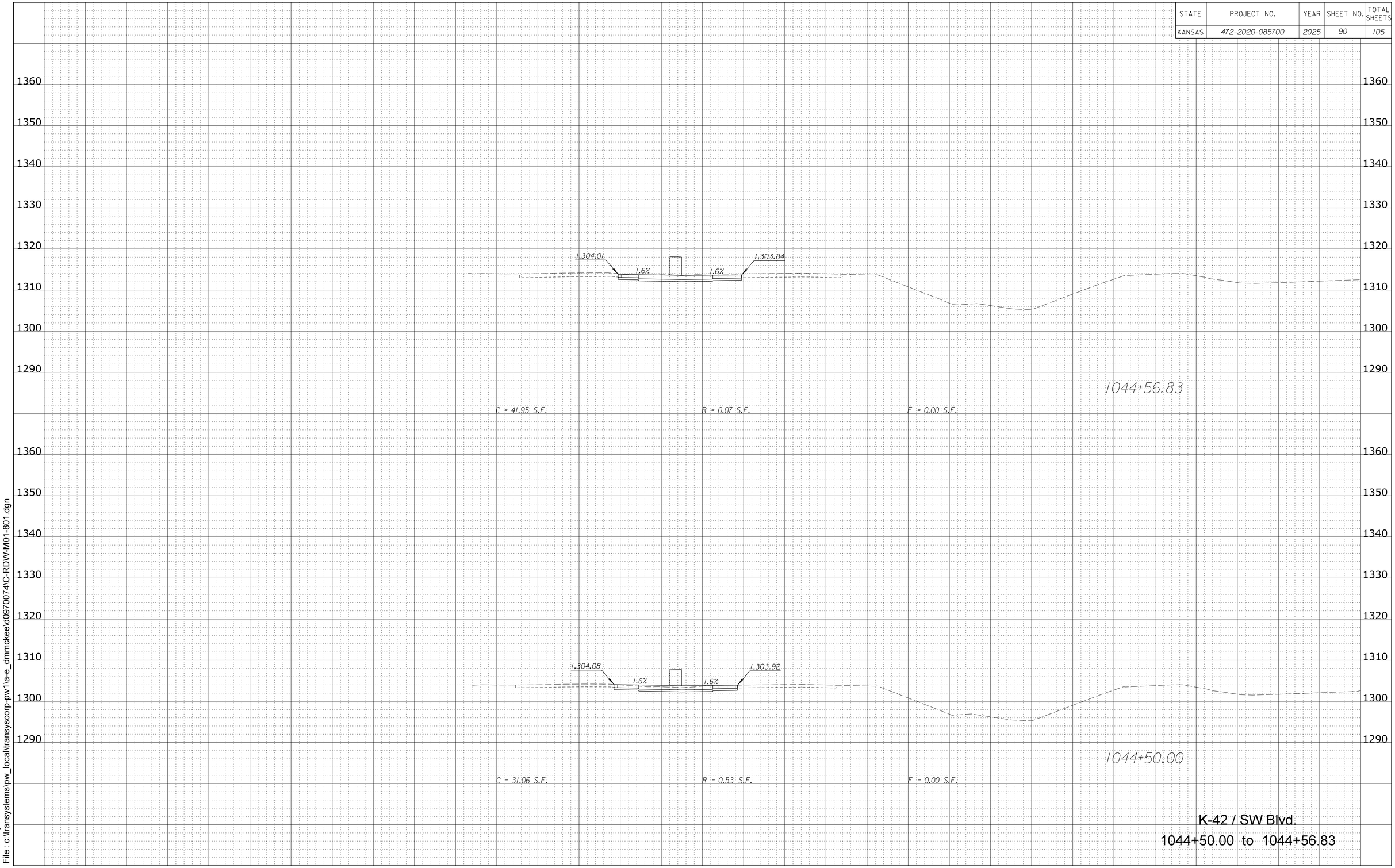
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	89	105



K-42 / SW Blvd.
1044+00.00 to 1044+11.75

Plotted : 1/22/2025
Drawn By: dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn

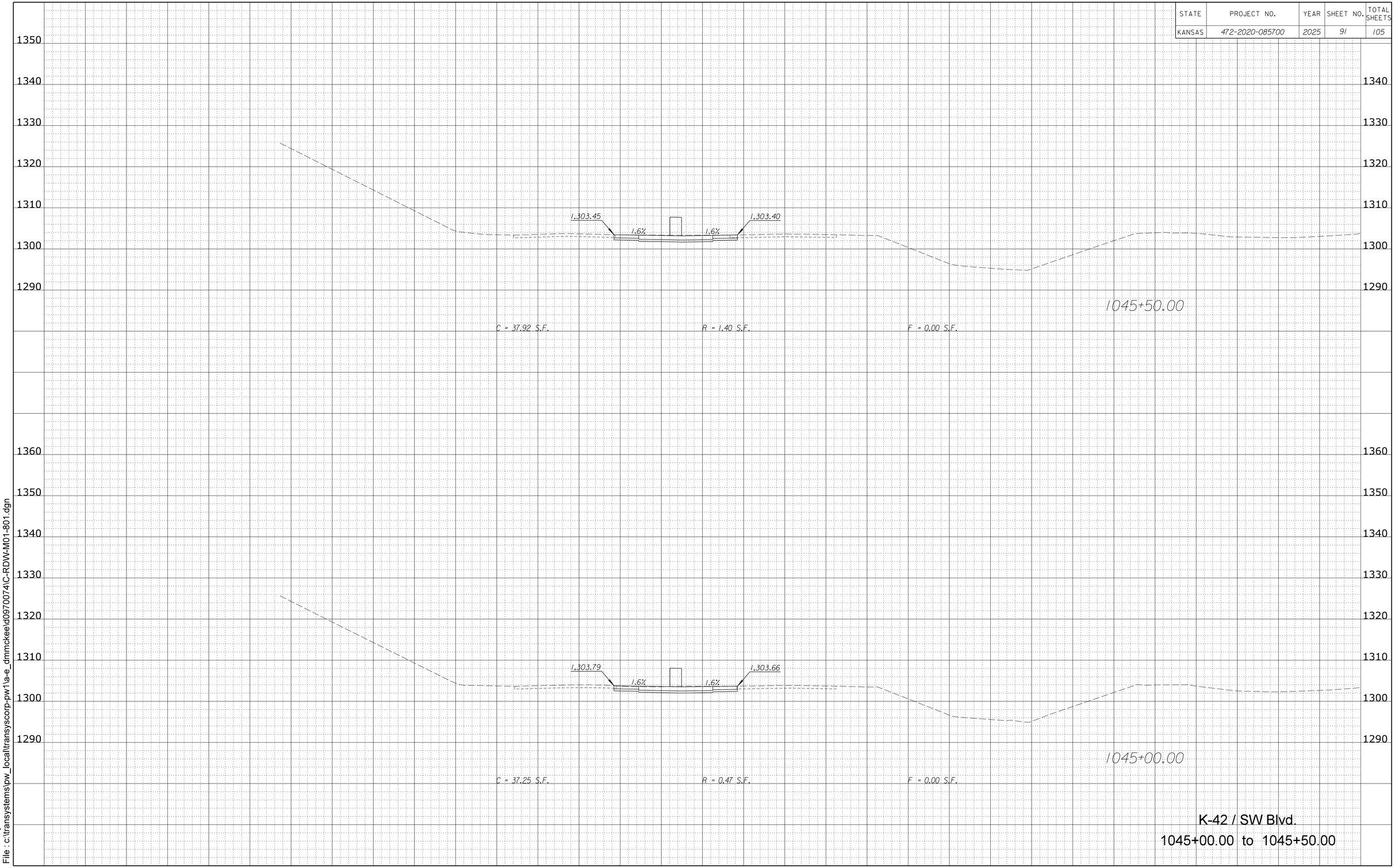
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	90	105



K-42 / SW Blvd.
1044+50.00 to 1044+56.83

Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\C-RDW-M01-801.dgn

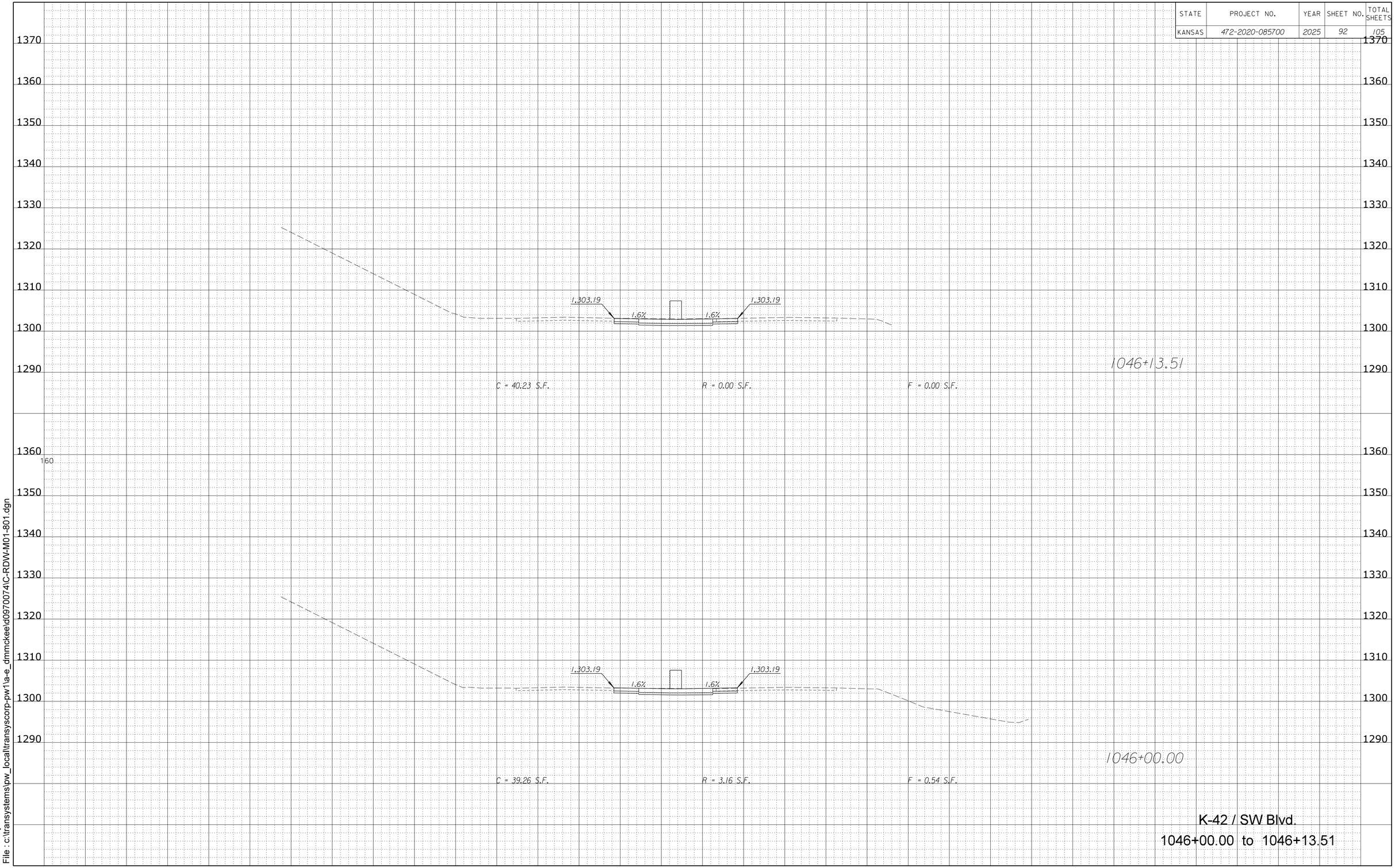
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	91	105



Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\e_dmmckee\d0970074\IC-RDW-M01-801.dgn

K-42 / SW Blvd.
1045+00.00 to 1045+50.00

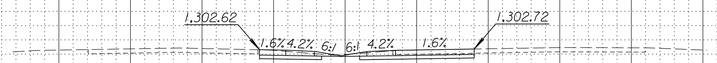
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	92	105



K-42 / SW Blvd.
1046+00.00 to 1046+13.51

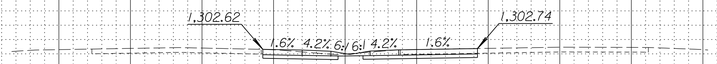
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M01-801.dgn
Plotted : 1/22/2025

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	93	105



1047+03.50

C = 20.66 S.F. R = 6.69 S.F. F = 0.74 S.F.

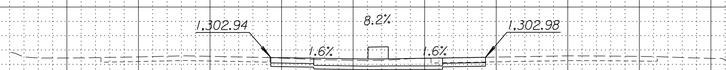


1047+00.00

C = 21.84 S.F. R = 7.18 S.F. F = 0.56 S.F.

1046+58.59

C = 35.74 S.F. R = 7.60 S.F. F = 0.00 S.F.



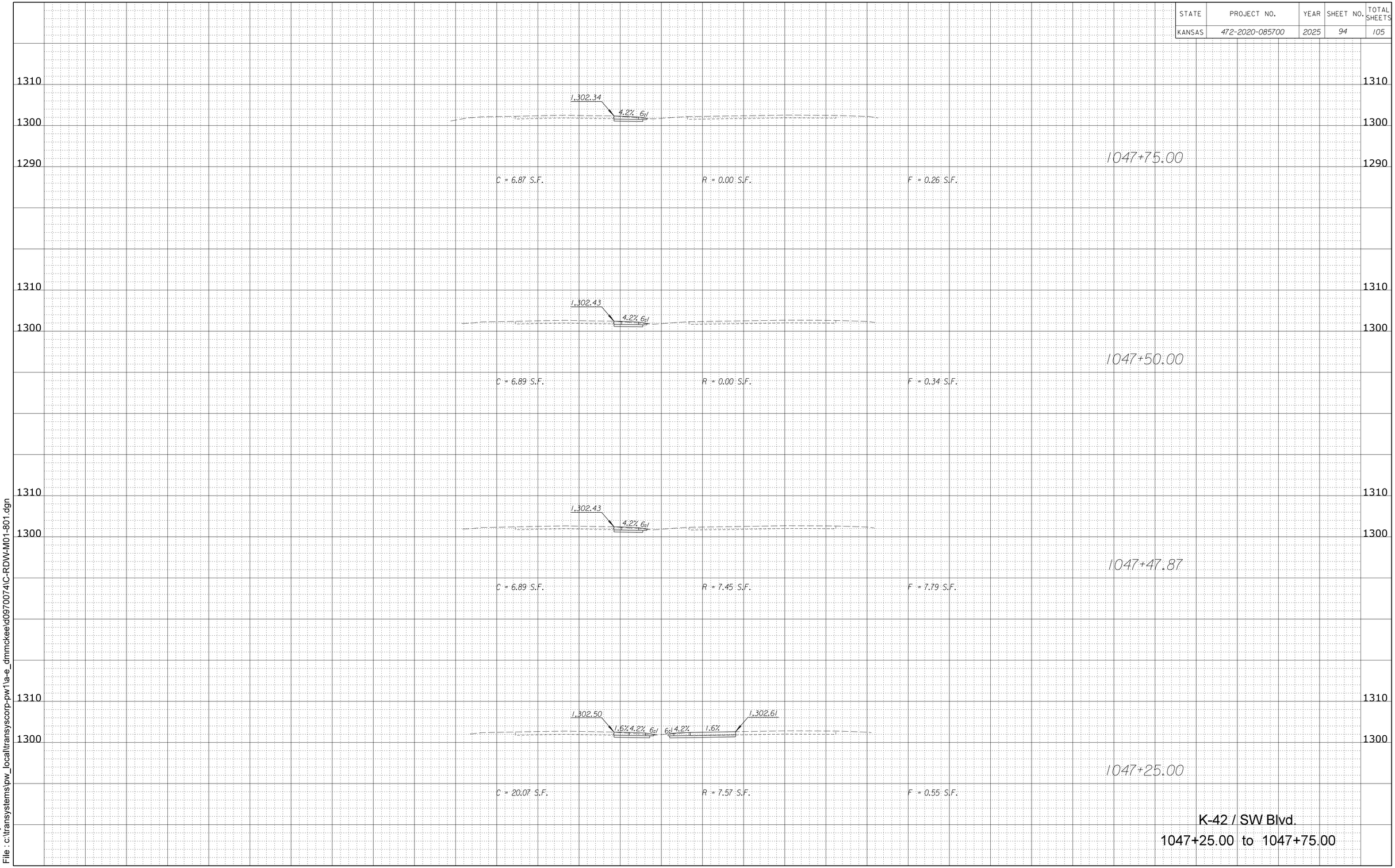
1046+50.00

C = 34.25 S.F. R = 4.99 S.F. F = 0.00 S.F.

K-42 / SW Blvd.
1046+50.00 to 1047+03.50

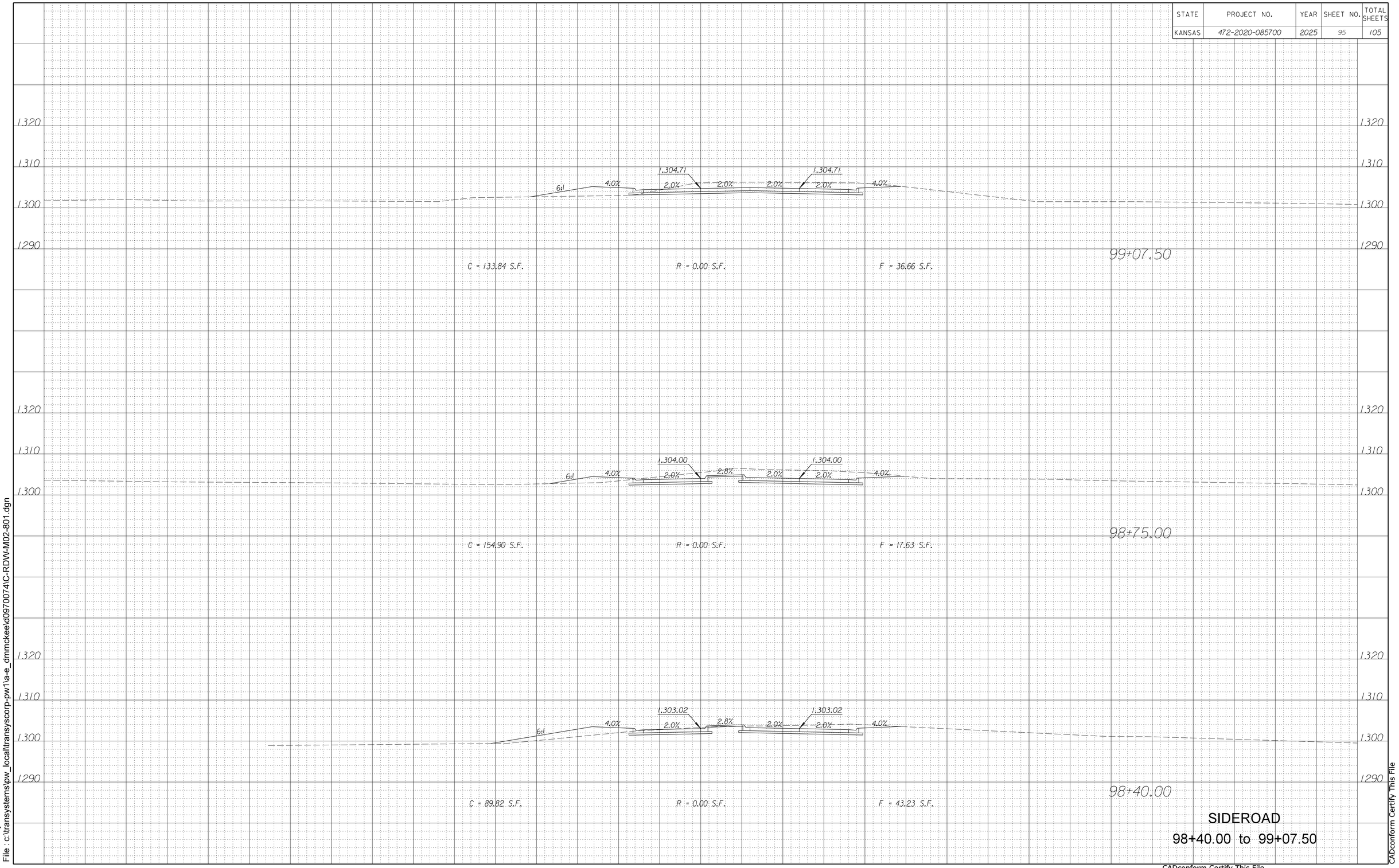
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M01-801.dgn
Plotted : 1/22/2025

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	94	105



Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M01-801.dgn
Plotted : 1/22/2025

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	95	105



SIDEROAD

98+40.00 to 99+07.50

Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\C-RDW-M02-801.dgn
Plotted : 1/22/2025

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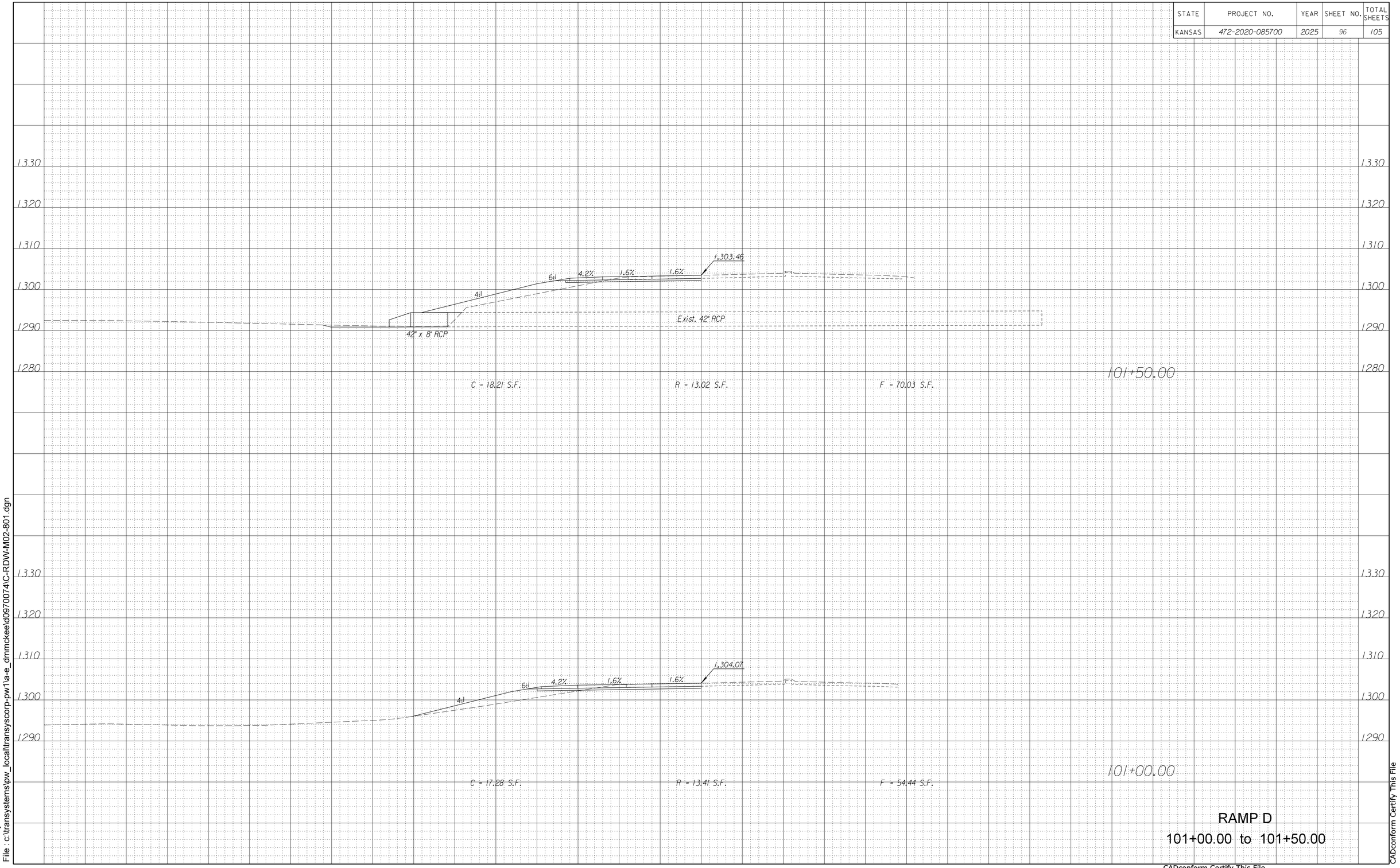
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	96	105



RAMP D

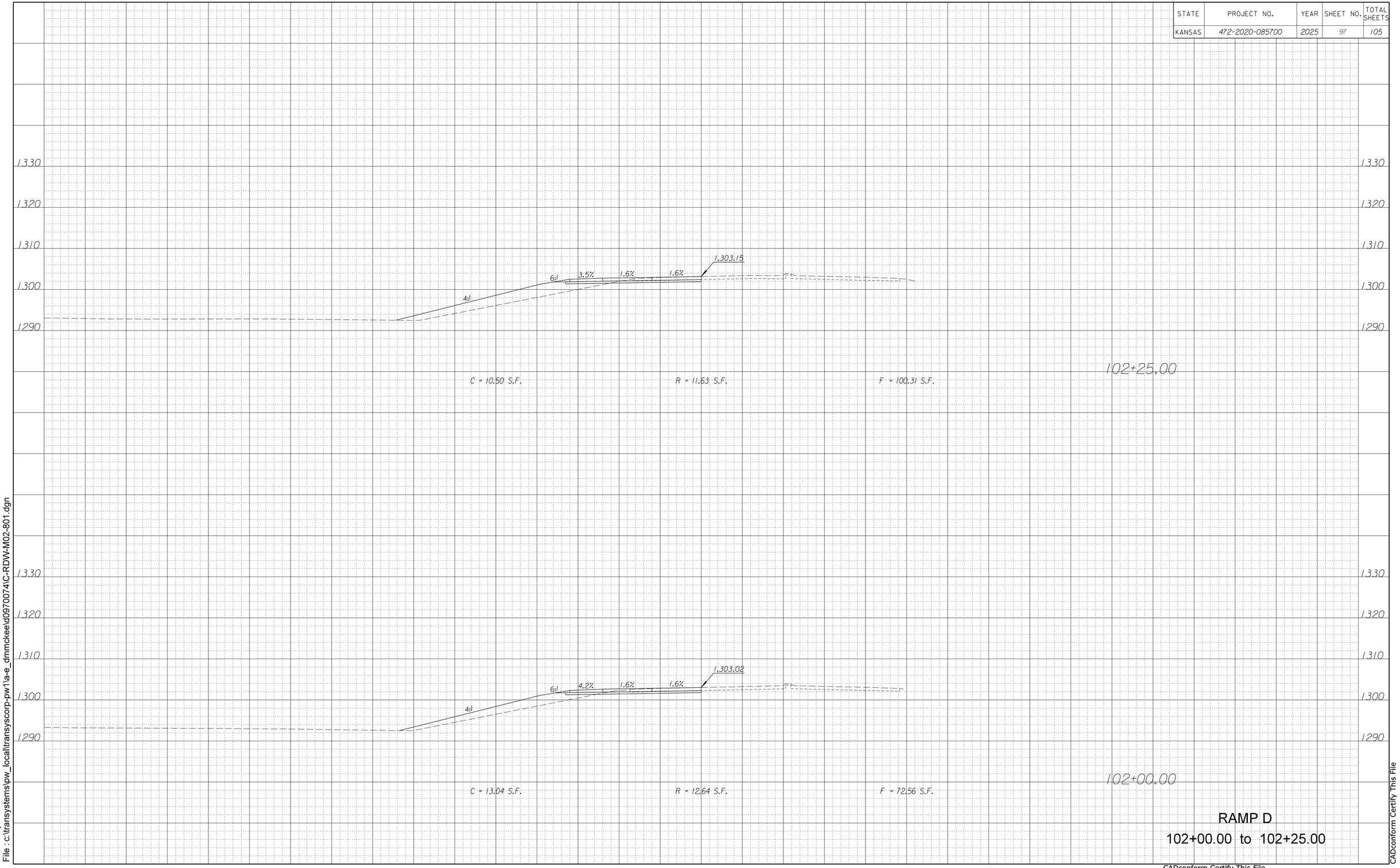
101+00.00 to 101+50.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

CADconform Certify This File

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	97	105



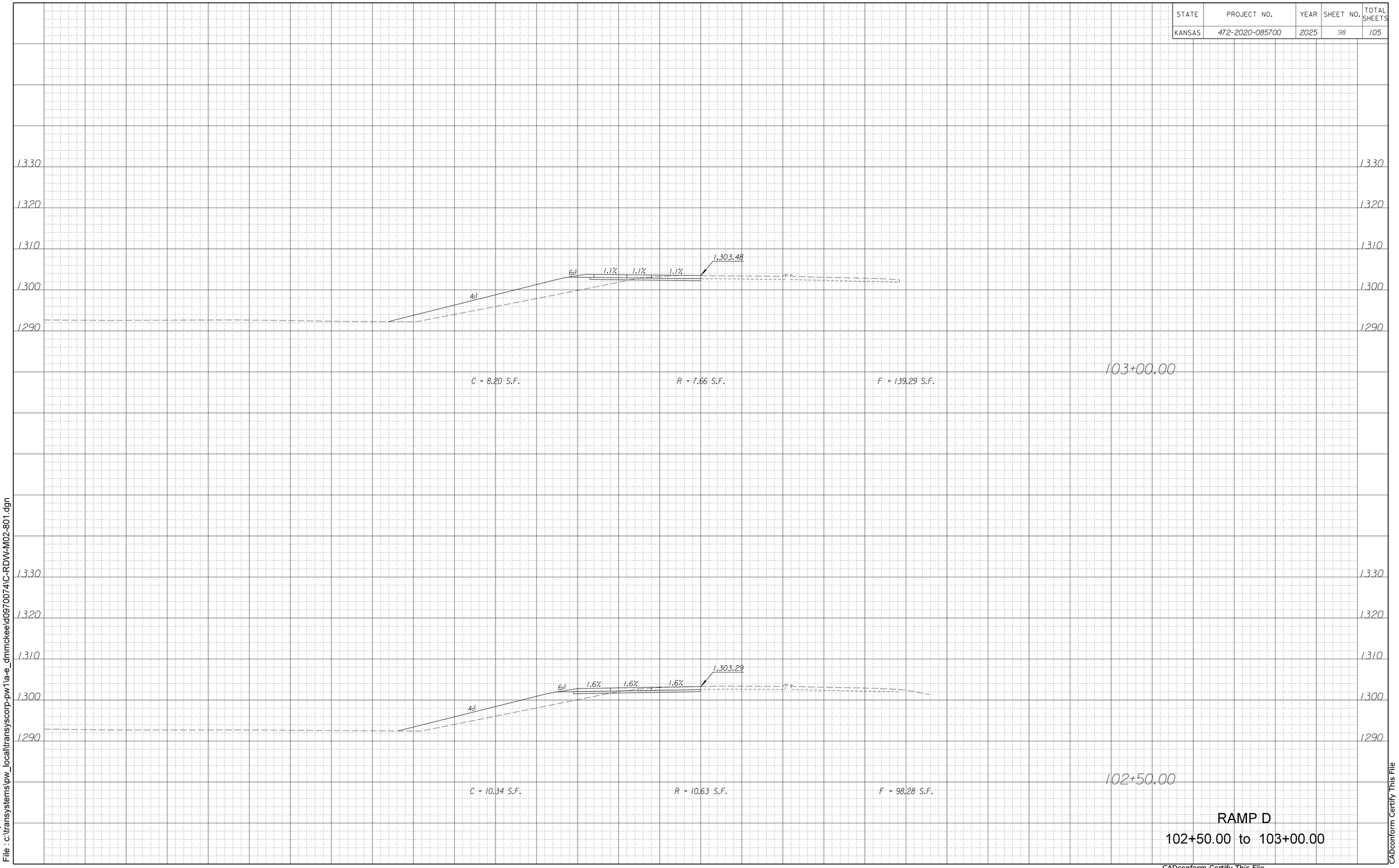
RAMP D

102+00.00 to 102+25.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	98	105



RAMP D

102+50.00 to 103+00.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	99	105

RAMP D

103+50.00 to 103+75.00

Drawn By: dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted :1/22/2025

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	100	105

RAMP D

104+00.00 to 104+50.00

Drawn By: dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted : 1/22/2025

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	101	105

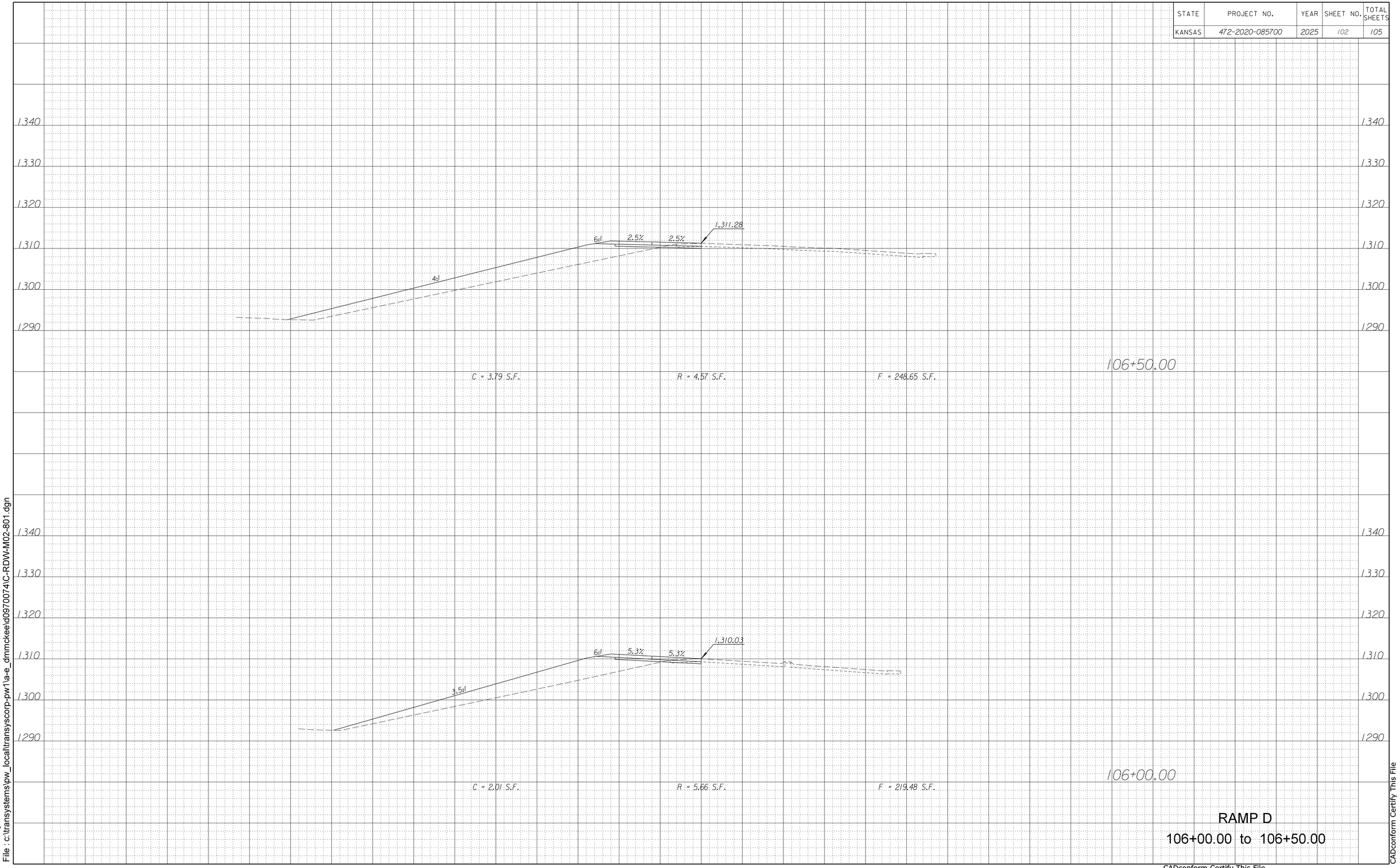
RAMP D

105+00.00 to 105+50.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	102	105



RAMP D

106+00.00 to 106+50.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\ae_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	103	105

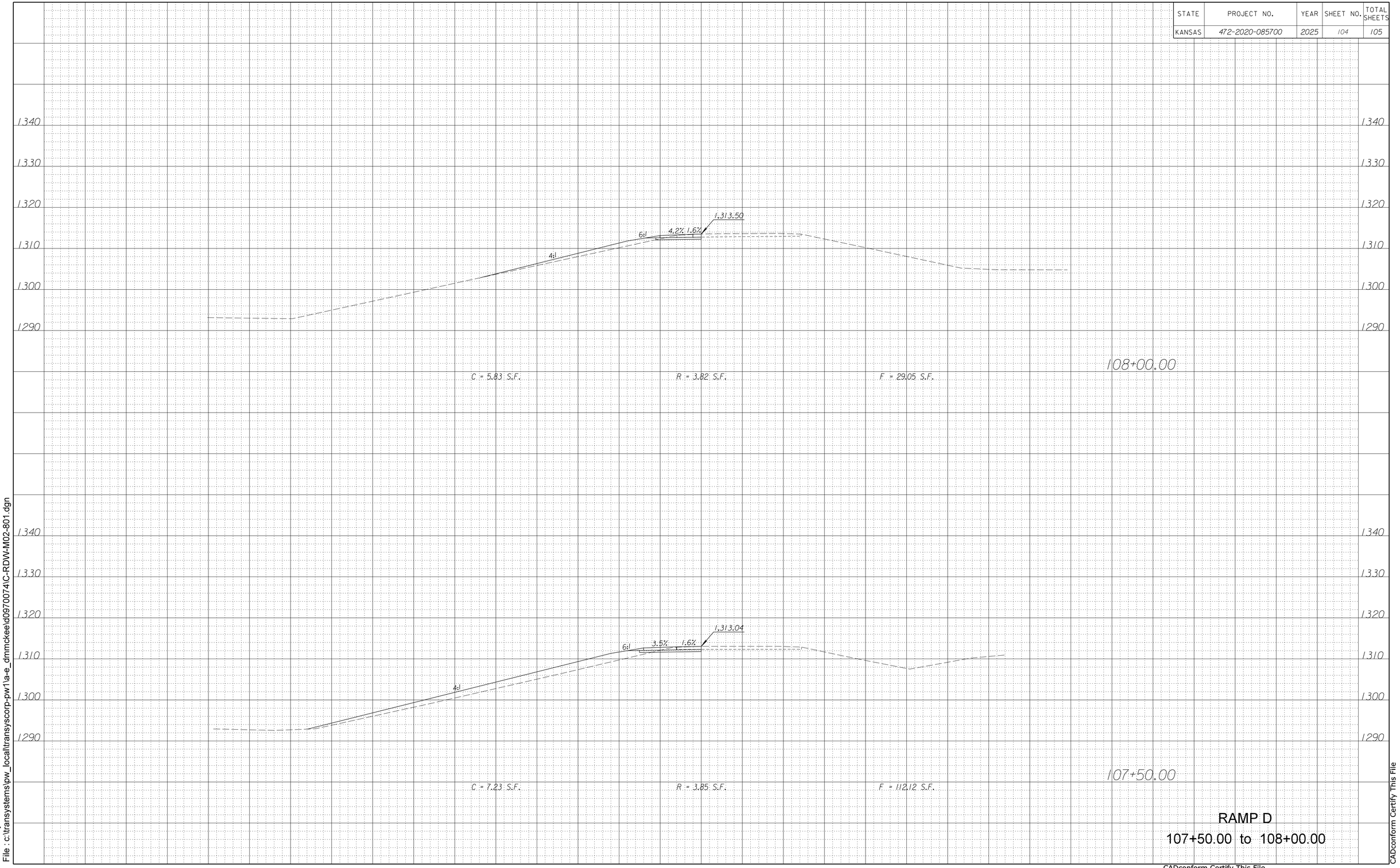
RAMP D

106+75.50 to 107+00.00

Plotted : 1/22/2025
Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	104	105



RAMP D

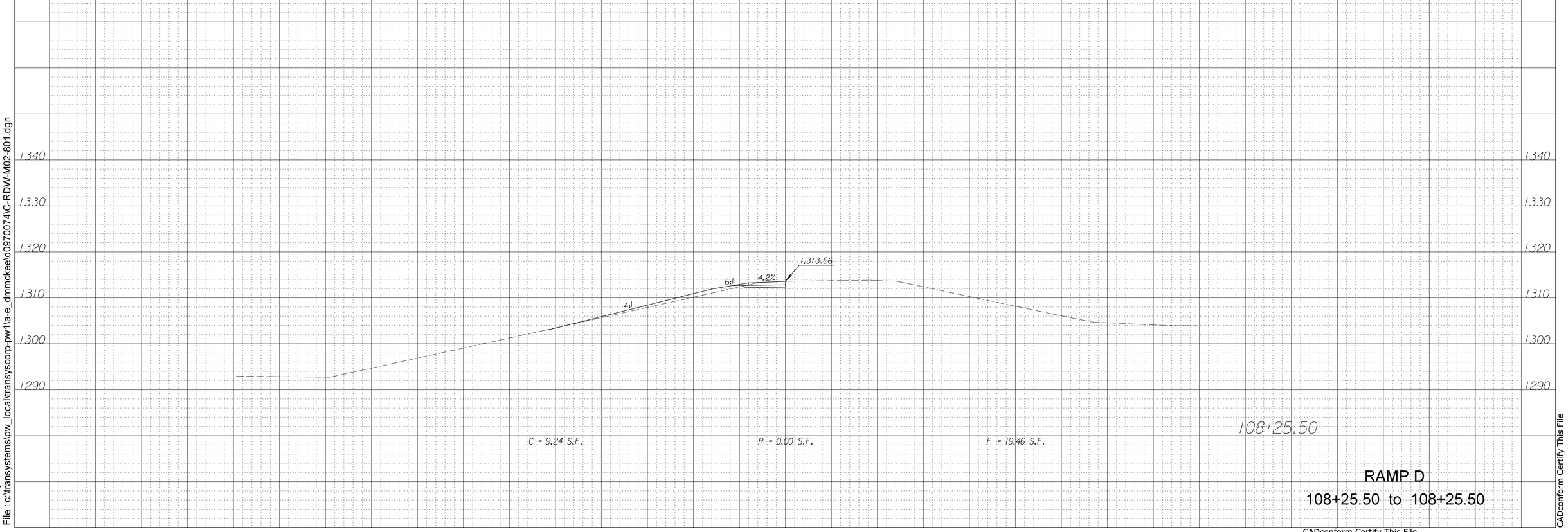
107+50.00 to 108+00.00

Drawn By: dmmckee
File: c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted: 1/22/2025

CADconform Certify This File

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-2020-085700	2025	105	105



RAMP D

108+25.50 to 108+25.50

Drawn By: : dmmckee
File : c:\transystems\pw_local\transyscorp-pw1\a-e_dmmckee\d0970074\IC-RDW-M02-801.dgn
Plotted : 1/22/2025

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