US Army Corps of Engineers®

PUBLIC NOTICE

Applicant:
Kansas Department of Transportation

Published: July 18, 2025
Expires: August 8, 2025

Kansas City District
Permit Application No. NWK- 2024- 00705

This Public Notice has been updated with additional information and a map of jurisdictional waters to provide clearer details regarding impacts to Waters of the U.S.

TO WHOM IT MAY CONCERN: The Kansas City District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) **and/or** Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403). The purpose of this public notice is to solicit comments from the public regarding the work described below:

APPLICANT: Kansas Department of Transportation (KDOT)
700 Southwest Harrison Avenue
Topeka, KS 66033

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Posey Creek. The project/review area is located at the junction of US-77 and 22nd Road in Section 30, Township 33 South, Range 4 East; Cowley County, Kansas.

USGS Quad: Hackney
Latitude: 37.1578 --- Longitude: -97.0301

EXISTING CONDITIONS: Current conditions in the project area include tributaries that exhibit relatively permanent flows and emergent wetlands. The current highway overtops frequently by flood waters and has impaired clear zone sight distances.

PROJECT PURPOSE: The purpose of this project is to change the right-of-way of the current US-77 Highway in Cowley County, Kansas as well as improve and restore three channels of Posey Creek. The stream realignment, wetland fill, and proposed structures will improve drainage and stabilization of the existing roadway.

Basic: Linear transportation project

Overall: Road realignment and bridge replacements will improve public safety and functionality of Posey Creek tributaries.

PROPOSED WORK: The applicant requests authorization to change the current right-of-way for the realignment of highway US-77, which would include the construction/replacement/relocation of five RCBs. The road realignment would add permanent fill to 2,915 linear feet of stream channel (1.018 acres below ordinary highwater mark) and 3.967 acres of wetlands. Please note that there is also a stream located to the west of US-77 impacted by the proposed work, however it is not jurisdictional under the Clean Water Act.

AVOIDANCE AND MINIMIZATION: The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment: The clearing of vegetation is restricted to the minimum required to accomplish the activity. All temporary fills will be removed in their entirety and any temporary impacts within stream channels that are not filled/rerouted will be restored to pre-existing elevations. Vegetation will be re-established in disturbed areas and the riparian buffer zone, in accordance with KDOT special Provisions.

COMPENSATORY MITIGATION: The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment: A mitigation plan has been provided for the onsite portion of the proposed mitigation. The proposed mitigation plan includes onsite permittee responsible stream mitigation through the construction of new stream channel. The applicant has completed Kansas Stream Mitigation Method (KSMM) worksheets for the proposed channel relocation. The impacts to wetlands would be offset through the purchase of wetland mitigation credits from an approved Mitigation Bank or In-Lieu Fee provider.

STATE AUTHORIZATION: The applicant should contact the Kansas Department of Agriculture to determine if a state permit is required pursuant to Kansas Statutes Annotated 82-301 to 305a and 24-126.

CULTURAL RESOURCES: The Corps evaluated the undertaking pursuant to Section 106 of the National Historic Preservation Act (NHPA) utilizing its existing program-specific regulations and procedures along with 36 CFR Part 800. The Corps' program-specific procedures include 33 CFR 325, Appendix C, and revised interim guidance issued in 2005 and 2007, respectively. The District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that:

No historic properties (i.e., properties listed in or eligible for inclusion in the National Register of Historic Places) are present within the Corps' permit area; therefore, there will be no historic properties affected. KDOT is the lead Federal agency for Section 106 consultation for the proposed action. A Phase II archeological survey of the permit area was conducted to check for unknown historic properties and cultural resources. Based on the results of these investigations, a finding of no effect was reached. This is the extent of our knowledge about historic properties in the permit area. Any further consultation will be completed by KDOT.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

ENDANGERED SPECIES: The Corps has performed an initial review of the application, utilizing the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), to determine if any threatened, endangered, proposed, or candidate species, as well as the proposed and final designated critical habitat may occur in the vicinity of the proposed project. Based on this initial review, the Corps has made a preliminary determination that the proposed project will not affect any listed species or critical habitat.

The official species list generated by IPaC identified one listed species and one proposed species. No critical habitats were identified within the project area.

- Peppered Chub (*Macrhybopsis tetranema*) – Endangered
- Monarch Butterfly (*Danaus plexippus*) – Proposed Threatened

Pursuant to Section 7 ESA, any required consultation with the Service(s) will be conducted in accordance with 50 CFR part 402. The Kansas Department of Transportation, acting on behalf of the Federal Highway Administration, is the lead federal agency for ESA consultation for this proposed action.

This notice serves as request to the USFWS for any additional information on whether any listed or proposed to be listed endangered or threatened species or critical habitat may be present in the area which would be affected by the proposed activity.

NAVIGATION: The proposed structure or activity is not located in the vicinity of a federal navigation channel.

SECTION 408: The applicant will not require permission under Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408) because the activity, in whole or in part, would not alter, occupy, or use a Corps Civil Works project.

WATER QUALITY CERTIFICATION: Water Quality Certification may be required from the Kansas Department of Health and Environment.

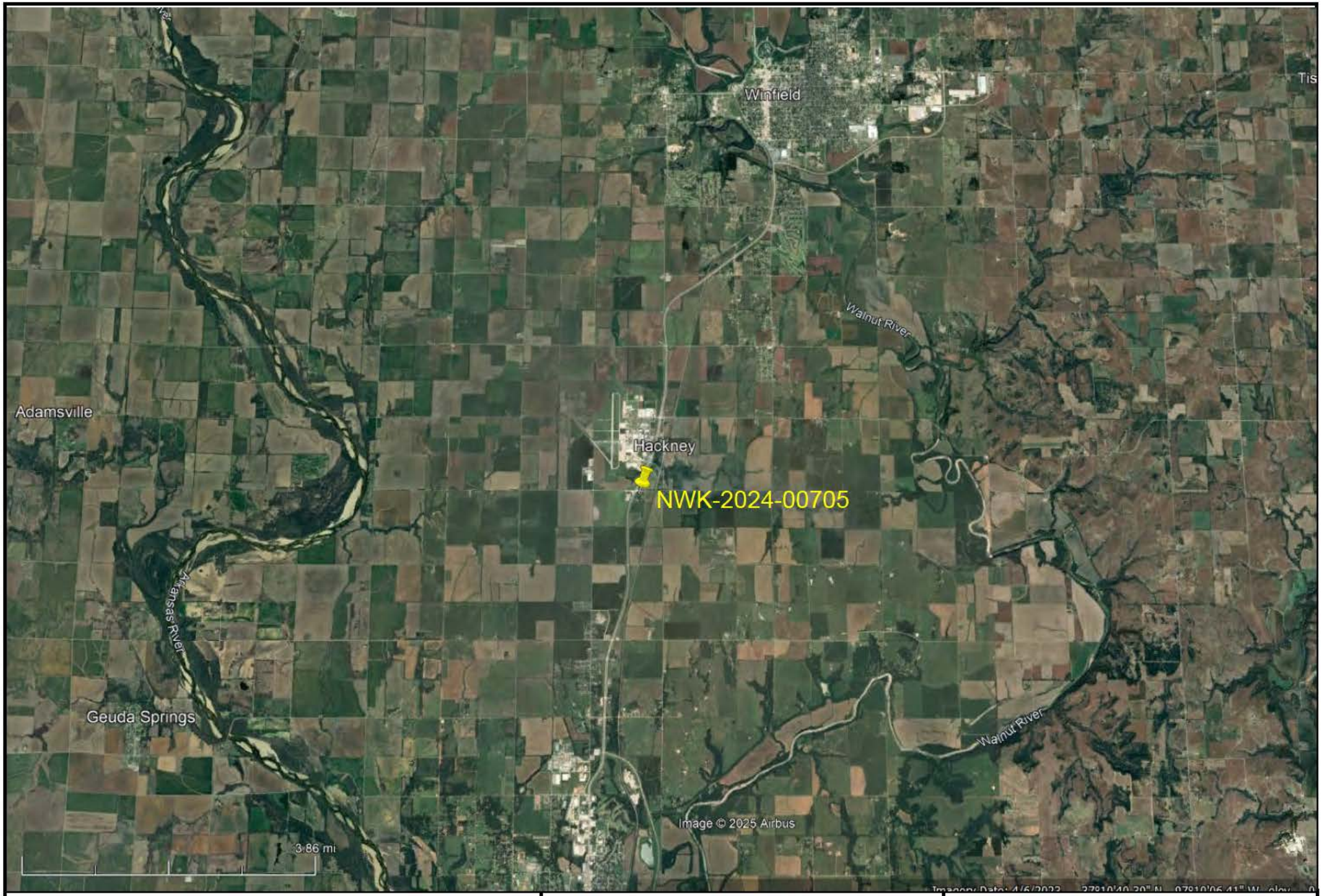
NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The geographic extent of aquatic resources within the proposed project area that either are, or are presumed to be, within the Corps jurisdiction has been verified by Corps personnel.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

COMMENTS: The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The Kansas City District will receive written comments on the proposed work, as outlined above, until August 8, 2025. Comments should be submitted electronically Via the Regulatory Request System (RRS) at https://rrs.usace.army.mil/rrs or to Regulatory.KansasState@usace.army.mil. Please refer to the permit application number NWK-2024-00705 in your comments. Additional information may be obtained by contacting Ms. Dorothy Stimac, 816-389-3372, dorothy.m.stimac@usace.army.mil.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.



Permit No. NWK-2024-00705
Kansas Department of Transportation
Road/Stream Realignment
Posey Creek
Cowley County, KS
Sheet 1 of 9
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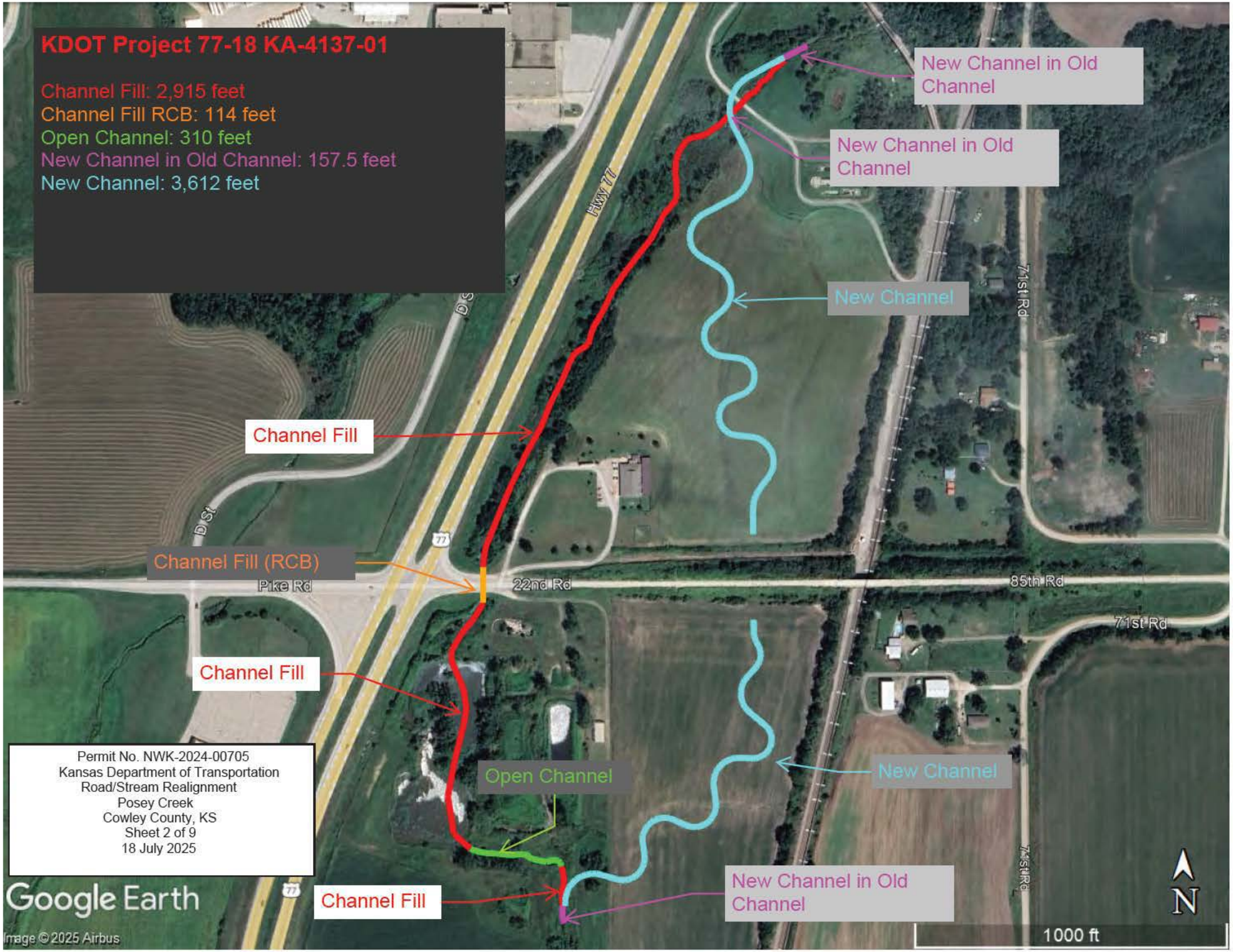
LOCATION MAP

S30-T33S-R04E
Cowley County, KS


KDOT Project 77-18 KA-4137-01
Channel Fill: 2,915 feet
Channel Fill RCB: 114 feet
Open Channel: 310 feet
New Channel in Old Channel: 157.5 feet
New Channel: 3,612 feet
New Channel in Old Channel
New Channel in Old Channel
New Channel
Channel Fill
Channel Fill (RCB)
Channel Fill
Open Channel
New Channel
Channel Fill
New Channel in Old Channel
Hwy 77
D St
Pike Rd
22nd Rd
85th Rd
71st Rd
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Road/Stream Realignment
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Google Earth
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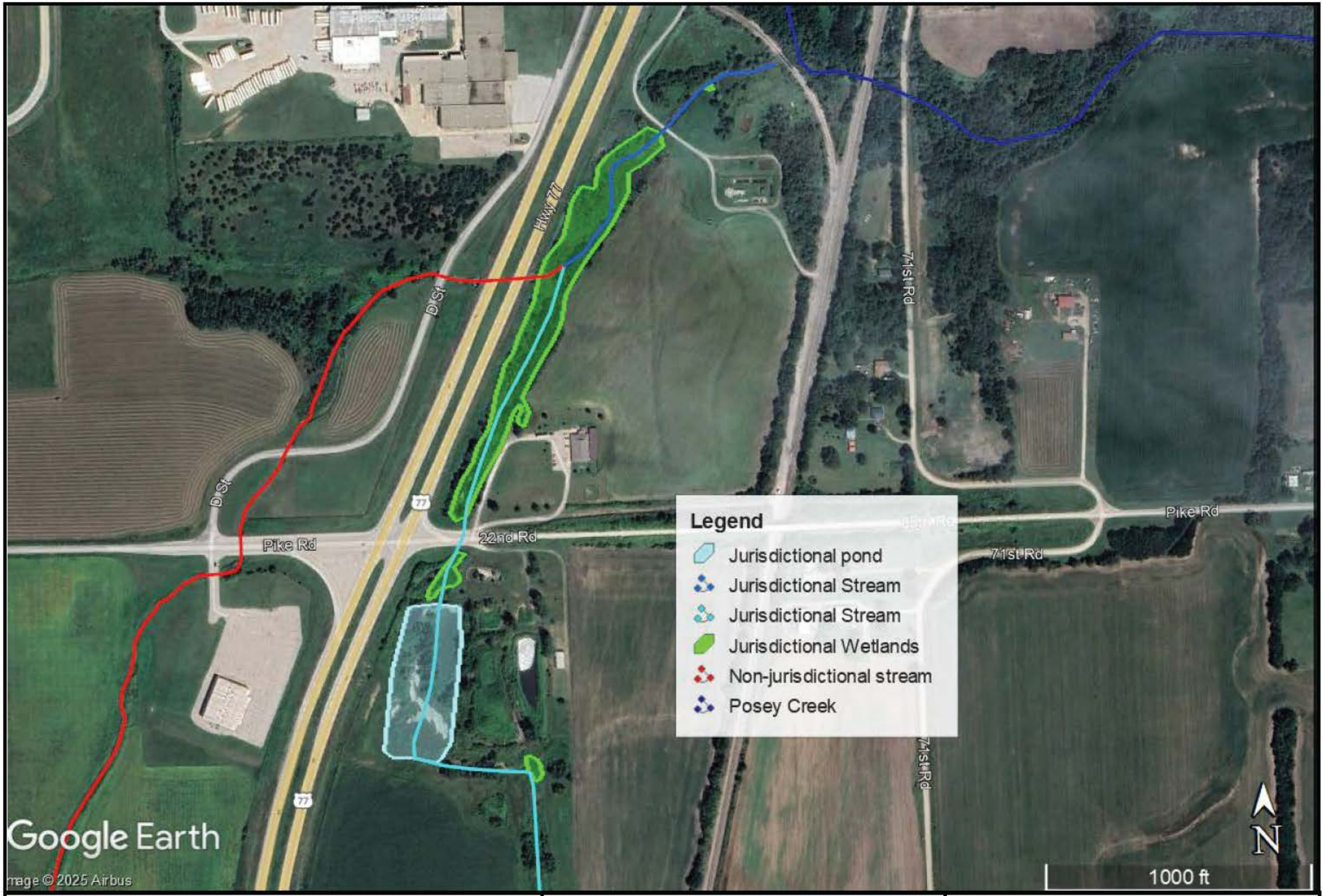

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Cowley County, KS
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JURISDICTIONAL WATERS MAP

S30-T33S-R04E
Cowley County, KS

POSEY CREEK

Sec. Line

PROPOSED REACH 1
TO MATCH EXISTING

PROPOSED REACH 1
DOWNSTREAM OF
CONFLUENCE

Environmental Mitigation
(E.M.) Area

EXISTING UNNAMED
TRIBUTARY TO
POSEY CREEK

Proj. R/W & A/C

PROPOSED REACH 3

R/W & A/C

BNSF RR

PROPOSED REACH 2

Environmental Mitigation
(E.M.) Area

R/W & A/C

Exist. R/W

PROPOSED REACH 2
TO MATCH EXISTING

Exist. R/W

Proj. R/W & A/C

SCALE

PLAN: Lat. & Long. 150' 0 150' 300'

NOTES:

1. SEE CHANNEL DETAIL SHEETS FOR TYPICAL RIFFLE, POOL SECTIONS, AND ROCK KEY.
2. CHANNEL BOTTOM WIDTH AND SIDE SLOPES VARY AS THE CHANNEL TRANSITIONS THROUGH THE RIFFLE AND POOL.
3. ALL DISTURBED AREAS TO BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS.
4. CHANNEL IMPROVEMENTS TO BE BUILT IN DRY CONDITIONS.

EXISTING CHANNEL
TO BE FILLED

REACH 1, 2, AND 3
CONFLUENCE

Exist. R/W

Proj. R/W & A/C

PROPOSED CHANNEL
SPECIAL DITCH

BNSF RR

E.M.

PROPOSED REACH 3

Environmental Mitigation
(E.M.) Area

EXISTING CHANNEL
TO BE FILLED

Exist. R/W

Proj. R/W & A/C

Sec. Line

Ex. R/W & A/C

E.M.

Exist. R/W

PROPOSED REACH 3
TO MATCH EXISTING

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Posey Creek
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KANSAS DEPARTMENT OF TRANSPORTATION

PROPOSED REACHES
1, 2, AND 3
OVERALL PLAN

REACH 1
FLOW LINE AND CHANNEL ℄
LINE AND CURVE TABLES

ALIGNMENT LINE TABLE						
TANGENT NO.	START STATION	END STATION	LENGTH	DIRECTION	NORTHING	EASTING
L1	100+00.00	100+02.00	2.00	N 11°29'48.22" W	1495693.82	1741654.32
L2	101+10.40	102+10.40	100.00	N 61°34'29.88" E	1495787.47	1741696.75
L3	103+80.40	104+78.69	98.28	N 26°58'23.00" W	1495981.70	1741830.37
L4	106+58.83	107+48.39	89.56	N 60°29'50.07" E	1496225.52	1741832.85
L5	107+51.61	109+54.48	202.87	N 62°20'48.58" E	1496271.16	1741913.62

ALIGNMENT CURVE TABLE								
CURVE NO.	START STATION	END STATION	RADIUS	DELTA	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	100+02.00	101+10.40	85.00	73°04'18.10"	62.98	108.40	N 25°02'20.83" E	101.21
C2	102+10.40	103+80.40	110.00	88°32'52.88"	107.25	170.00	N 17°18'03.44" E	153.58
C3	104+78.69	106+58.83	118.00	87°28'13.07"	112.90	180.14	N 16°45'43.53" E	163.15
C4	107+48.39	107+51.61	100.00	1°50'58.51"	1.61	3.23	N 61°25'19.32" E	3.23

CHANNEL SPECIAL DITCH
FLOW LINE
LINE AND CURVE TABLES

ALIGNMENT LINE TABLE						
TANGENT NO.	START STATION	END STATION	LENGTH	DIRECTION	NORTHING	EASTING
L50	42+45.45	44+26.45	181.00	S 64°°48'32.23" W	1495393.67	1740526.89
L51	44+29.70	45+40.49	110.79	S 63°°39'57.14" W	1495444.23	1740629.11
L52	46+56.15	47+19.68	63.53	S 49°°45'54.77" W	1495548.58	1740774.06
L53	47+30.59	48+19.07	88.48	S 57°°34'45.89" W	1495602.47	1740857.53
L54	48+82.88	49+22.56	39.68	N 76°°43'08.63" W	1495603.68	1740957.42
L55	49+76.50	50+00.00	23.50	N 20°°31'42.26" W	1495547.43	1741004.53

ALIGNMENT CURVE TABLE								
CURVE NO.	START STATION	END STATION	RADIUS	DELTA	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C50	44+26.45	44+29.70	162.91	1°°08'35.09"	1.63	3.25	S 64°°14'14.69" W	3.25
C51	45+40.49	46+56.15	476.70	13°°54'02.37"	58.11	115.65	S 56°°42'55.96" W	115.37
C52	47+19.68	47+30.59	80.00	7°°48'51.12"	5.46	10.91	S 53°°40'20.33" W	10.90
C53	48+19.07	48+82.88	80.00	45°°42'05.49"	33.71	63.81	S 80°°25'48.63" W	62.13
C54	49+22.56	49+76.50	55.00	56°°11'24.92"	29.36	53.94	N 48°°37'26.16" W	51.80

REACH 2
FLOW LINE AND CHANNEL ℄
LINE AND CURVE TABLES

ALIGNMENT LINE TABLE						
TANGENT NO.	START STATION	END STATION	LENGTH	DIRECTION	NORTHING	EASTING
L10	66+12.61	69+14.32	301.71	N 0°56'48.83" W	1493290.22	1741292.71
L11	70+81.95	71+31.95	50.00	S 74°13'33.68" E	1493679.98	1741402.18
L12	72+71.95	73+11.95	40.00	N 8°49'03.29" W	1493744.48	1741538.5
L13	74+61.95	75+01.95	40.00	S 66°02'27.28" E	1493858.71	1741629.97
L14	76+51.95	77+01.95	50.00	N 8°49'03.29" W	1493917.17	1741764.12
L15	78+41.95	78+81.95	40.00	S 88°32'59.88" E	1494058.81	1741837.53
L16	80+31.95	80+91.95	60.00	N 51°47'21.90" W	1494164.93	1741916.15
L17	82+21.95	82+61.95	40.00	N 41°18'58.41" E	1494317.72	1741858.41
L18	83+82.91	87+68.69	385.78	N 1°18'21.83" W	1494460.2	1741876.25
L19	88+48.69	88+88.69	40.00	N 36°53'28.04" E	1494920.65	1741891.45
L20	90+58.69	91+08.69	50.00	N 84°51'44.68" W	1495080.35	1741858.64
L21	92+68.69	93+08.69	40.00	N 67°55'34.81" E	1495200.19	1741791.67
L22	94+68.69	95+18.69	50.00	N 84°51'44.68" W	1495330.58	1741811.56
L23	96+68.69	97+18.69	50.00	N 47°21'31.03" E	1495447.61	1741723.55
L24	98+78.69	99+38.69	60.00	N 60°29'32.13" W	1495617.98	1741744.62

ALIGNMENT CURVE TABLE								
CURVE NO.	START STATION	END STATION	RADIUS	DELTA	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C10	69+14.32	70+81.95	90.00	106°43'15.15"	121.01	167.64	N 52°24'48.75" E	144.43
C11	71+31.95	72+71.95	70.00	114°35'29.61"	109.02	140.00	N 48°28'41.51" E	117.81
C12	73+11.95	74+61.95	70.00	122°46'36.01"	128.33	150.00	N 52°34'14.71" E	122.90
C13	75+01.95	76+51.95	70.00	122°46'36.01"	128.33	150.00	N 52°34'14.71" E	122.90
C14	77+01.95	78+41.95	80.00	100°16'03.41"	95.79	140.00	N 41°18'58.41" E	122.81
C15	78+81.95	80+31.95	60.00	143°14'22.02"	180.57	150.00	N 19°49'49.11" E	113.88
C16	80+91.95	82+21.95	80.00	93°06'20.31"	84.46	130.00	N 5°14'11.74" W	116.16
C17	82+61.95	83+41.95	60.00	76°23'39.74"	47.21	80.00	N 3°07'08.54" E	74.20
C18	83+41.95	83+82.91	69.49	33°46'19.50"	21.09	40.96	N 18°11'31.58" W	40.37
C19	87+68.69	88+48.69	120.00	38°11'49.87"	41.55	80.00	N 17°47'33.10" E	78.53
C20	88+88.69	90+58.69	80.00	121°45'12.71"	143.59	170.00	N 23°59'08.32" W	139.77
C21	91+08.69	92+68.69	60.00	152°47'19.48"	247.9	160.00	N 8°28'04.93" W	116.63
C22	93+08.69	94+68.69	60.00	152°47'19.48"	247.9	160.00	N 8°28'04.93" W	116.63
C23	95+18.69	96+68.69	65.00	132°13'15.71"	146.75	150.00	N 18°45'06.82" W	118.86
C24	97+18.69	98+78.69	85.00	107°51'03.16"	116.67	160.00	N 6°34'00.55" W	137.40
C25	99+38.69	100+00.00	83.46	42°05'20.51"	32.11	61.31	N 39°26'51.88" W	59.94

REACH 3
FLOW LINE AND CHANNEL ℄
LINE AND CURVE TABLES

ALIGNMENT LINE TABLE						
TANGENT NO.	START STATION	END STATION	LENGTH	DIRECTION	NORTHING	EASTING
L30	0+00.00	1+28.40	128.40	N 41°17'52" E	1494303.49	1739840.87
L31	2+07.13	4+01.45	194.32	N 0°17'35" E	1494471.99	1739952.97
L32	4+47.36	5+04.06	56.70	N 40°10'29" W	1494708.58	1739938.63
L33	6+07.28	6+74.59	67.31	N 67°21'10" E	1494838.14	1739922.89
L34	7+45.95	8+10.93	64.98	N 16°14'59" E	1494915.51	1740031.01
L35	9+09.21	9+64.21	55.00	N 86°38'14" E	1495035.37	1740121.31
L36	10+69.21	11+20.53	51.32	N 0°41'37" E	1495107.63	1740242.1
L37	12+67.26	13+23.58	56.32	S 59°12'08" E	1495218.23	1740348.56
L38	14+52.43	15+12.43	60.00	N 15°20'03" E	1495231.01	1740500.28
L39	16+28.01	16+93.01	65.00	S 62°47'25" E	1495329.49	1740608.56
L40	18+31.55	19+01.55	70.00	N 4°54'32" W	1495363.14	1740760.85
L41	20+32.73	20+87.73	55.00	S 77°32'11" E	1495507.22	1740839.71
L42	21+44.70	21+93.61	48.91	N 52°14'48" E	1495507.42	1740947.24
L43	22+29.67	25+03.95	274.28	N 84°02'16" E	1495550.63	1741018.96
L44	25+08.29	27+79.88	271.59	N 80°55'39" E	1495579.69	1741296.05
L45	28+98.62	28+99.92	1.30	N 22°58'05" E	1495692.62	1741653.81

ALIGNMENT CURVE TABLE								
CURVE NO.	START STATION	END STATION	RADIUS	DELTA	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C30	1+28.40	2+07.13	110.00	41°00'16.86"	41.13	78.72	N 20°47'43.34" E	77.05
C31	4+01.45	4+47.36	65.00	40°28'04.24"	23.96	45.91	N 19°56'27.21" W	44.96
C32	5+04.06	6+07.28	55.00	107°31'38.93"	75.05	103.22	N 13°35'20.13" E	88.72
C33	6+74.59	7+45.95	80.00	51°06'10.39"	38.25	71.35	N 41°48'04.40" E	69.01
C34	8+10.93	9+09.21	80.00	70°23'14.90"	56.42	98.28	N 51°26'36.65" E	92.21
C35	9+64.21	10+69.21	70.00	85°56'37.21"	65.21	105.00	N 43°39'55.49" E	95.43
C36	11+20.53	12+67.26	70.00	120°06'15.06"	121.50	146.73	N 60°44'44.42" E	121.31
C37	13+23.58	14+52.43	70.00	105°27'48.78"	91.99	128.85	N 68°03'57.56" E	111.41
C38	15+12.43	16+28.01	65.00	101°52'31.49"	80.09	115.57	N 66°16'18.91" E	100.94
C39	16+93.01	18+31.55	65.00	122°07'07.16"	117.55	138.54	N 56°09'01.08" E	113.77
C40	19+01.55	20+32.73	70.00	107°22'21.06"	95.25	131.18	N 48°46'38.03" E	112.81
C41	20+87.73	21+44.70	65.00	50°13'00.30"	30.46	56.97	N 77°21'18.41" E	55.16
C42	21+93.61	22+29.67	65.00	31°47'27.45"	18.51	36.07	N 68°08'31.99" E	35.60
C43	25+03.95	25+08.29	80.00	3°06'36.66"	2.17	4.34	N 82°28'57.38" E	4.34
C44	27+79.88	28+98.62	117.39	57°57'33.96"	65.01	118.75	N 51°56'52.07" E	113.75

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Kansas Department of Transportation
Road/Stream Realignment
Posey Creek
Cowley County, KS
Sheet 5 of 9
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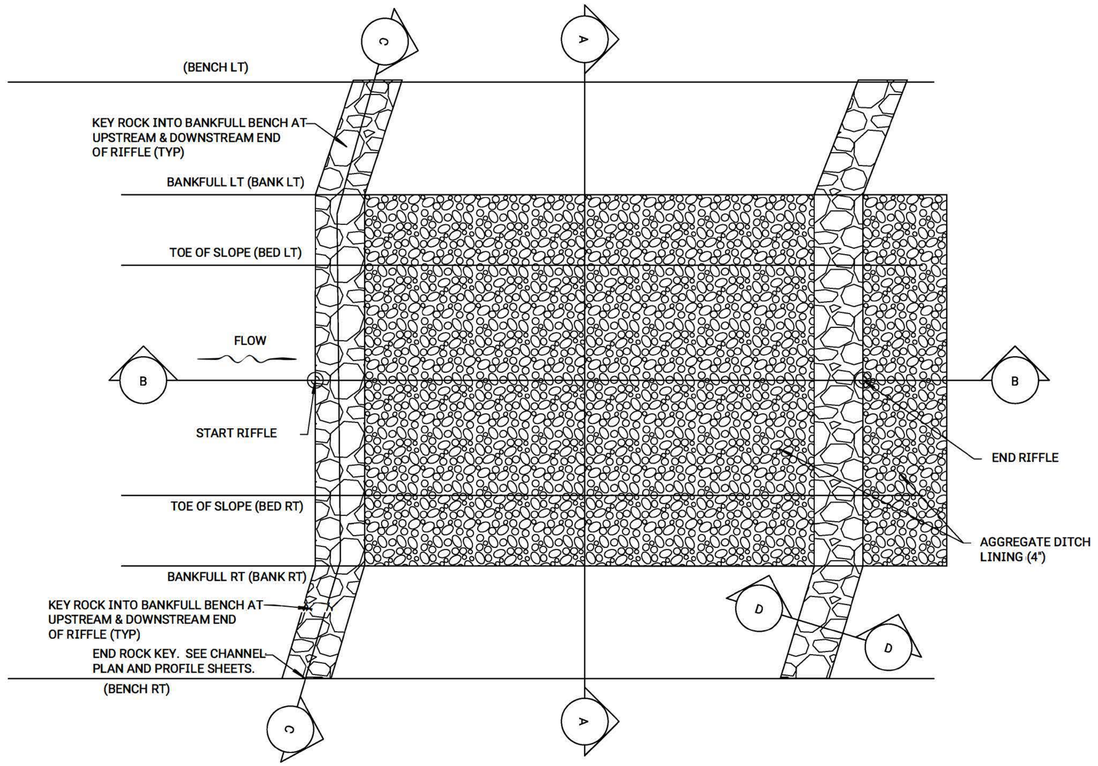
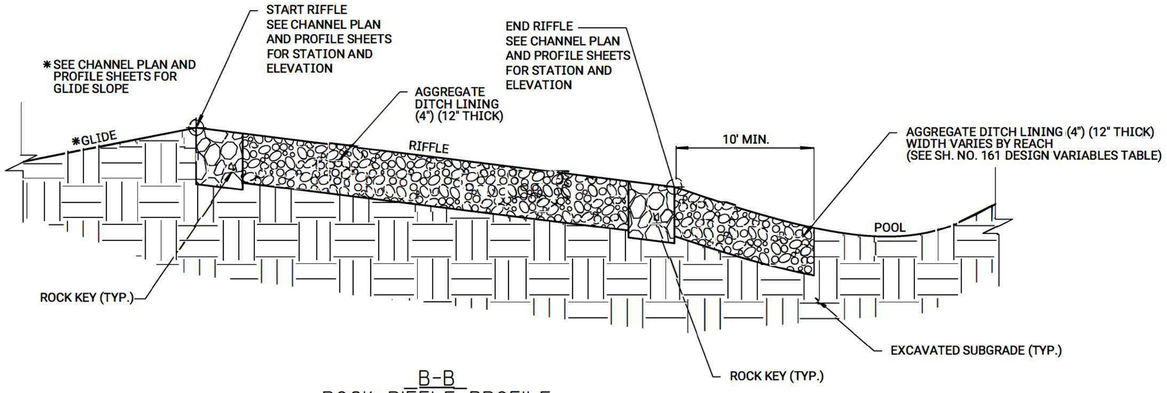
KANSAS DEPARTMENT OF TRANSPORTATION

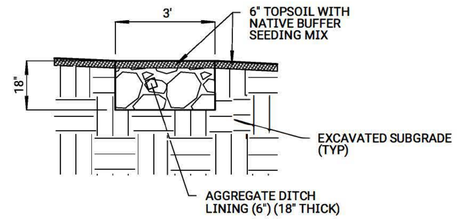
ALIGNMENT DATA TABLES



PLAN VIEW
CONSTRUCTED RIFFLE DETAIL
N.T.S.

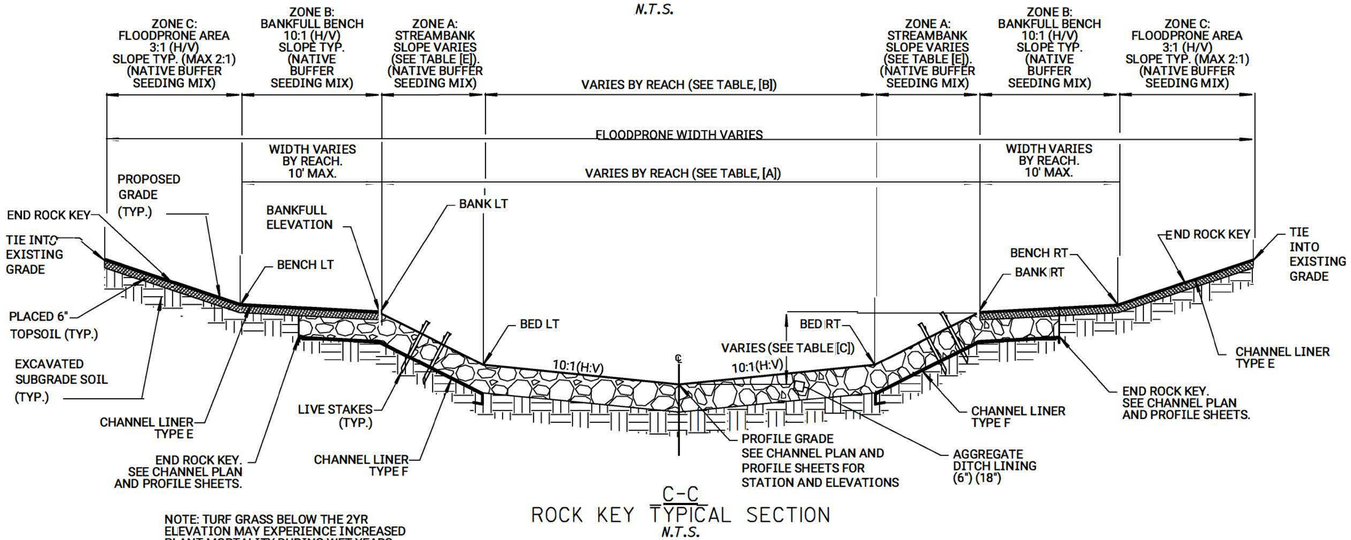


B-B
ROCK RIFFLE PROFILE
N.T.S.



D-D
ROCK KEY TYPICAL SECTION
N.T.S.

NOTE:
1. SEE SH. NO. 159 FOR PLAN VIEW CONSTRUCTED RIFFLE DETAIL FOR TYPICAL SECTION LOCATIONS.
2. SEE REACH DESIGN TABLE ON SH. NO. 160 FOR CHANNEL DIMENSIONS FOR EACH PROPOSED REACH
3. SEE SH. NO. 161 FOR LIVESTAKE DETAIL



C-C
ROCK KEY TYPICAL SECTION
N.T.S.

NOTE: TURF GRASS BELOW THE 2YR ELEVATION MAY EXPERIENCE INCREASED PLANT MORTALITY DURING WET YEARS AND MAY REQUIRE ADDITIONAL MAINTENANCE

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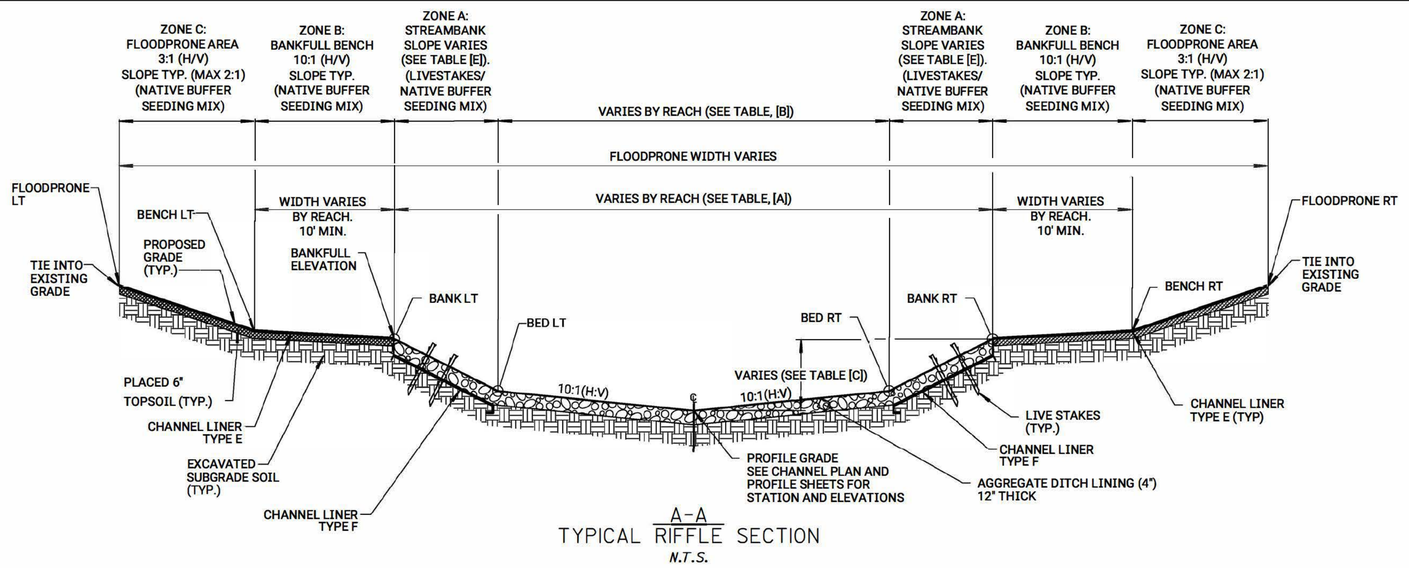
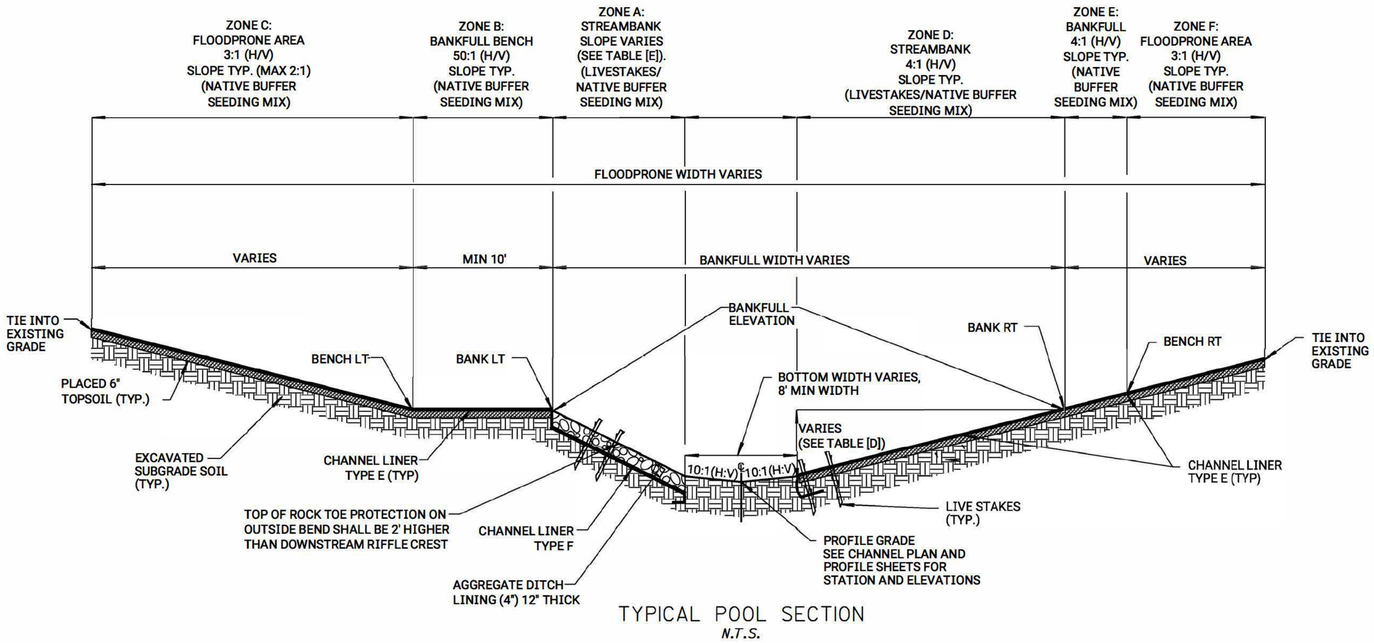


A-A
TYPICAL RIFFLE SECTION
N.T.S.

REACH DESIGN TABLE

Reach	BKF WIDTH @ RIFFLE (FT)[A]	BOTTOM WIDTH @ RIFFLE (FT)[B]	BKF MAX DEPTH @ RIFFLE (FT)[C]	BKF MAX DEPTH @ POOL (FT)[D]	STREAMBANK SLOPE [E]
1	38	28	3.7	5.2	3:1
2	28	18	2.6	3.9	3:1
3	26	16	2.5	3.8	2:1

NOTE:
1. SEE SH. NO. 159 FOR PLAN VIEW CONSTRUCTED RIFFLE DETAIL FOR TYPICAL SECTION LOCATIONS.
2. SEE REACH DESIGN TABLE ON SH. NO. 160 FOR CHANNEL DIMENSIONS FOR EACH PROPOSED REACH
3. SEE SH. NO. 161 FOR LIVESTAKE DETAIL



TYPICAL POOL SECTION
N.T.S.

NOTE:
1. DETAIL REPRESENTS TYPICAL POOL FOR A LEFT MEANDER BEND. RIGHT MEANDER BEND IS A MIRROR IMAGE.
2. REFER TO PLANS FOR EXTENT OF ROCK PLACEMENT FOR TRANSITIONS BETWEEN POOLS AND RIFFLES.

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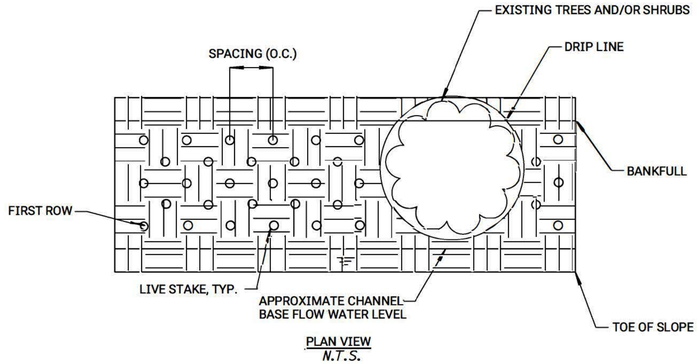
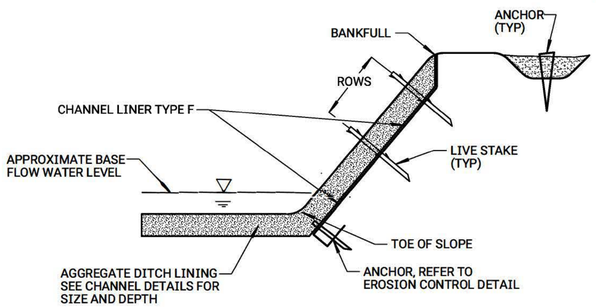
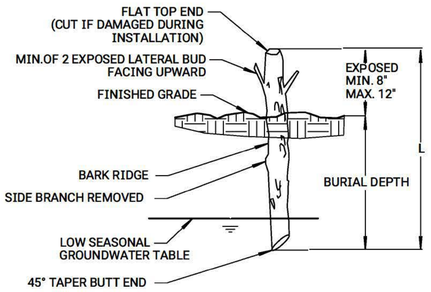


PLAN VIEW
N.T.S.



TYPICAL SECTION
N.T.S.

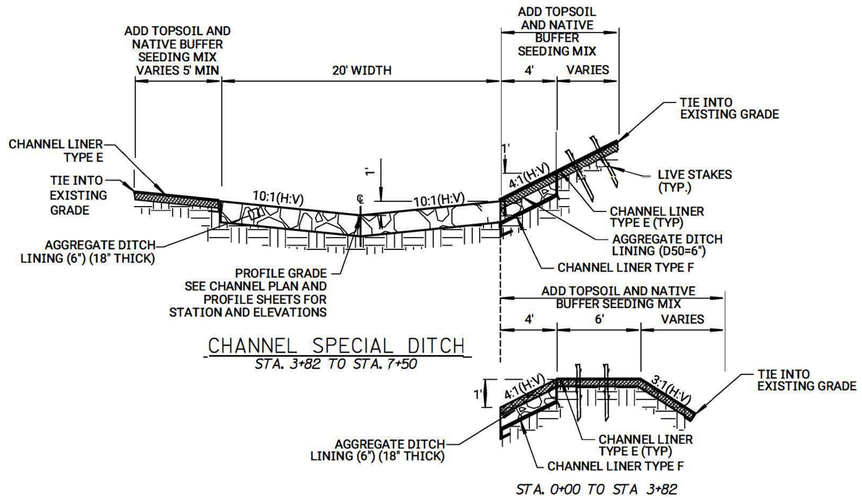


LIVE STAKE DETAIL
N.T.S.

LIVESTAKE DETAIL
N.T.S.

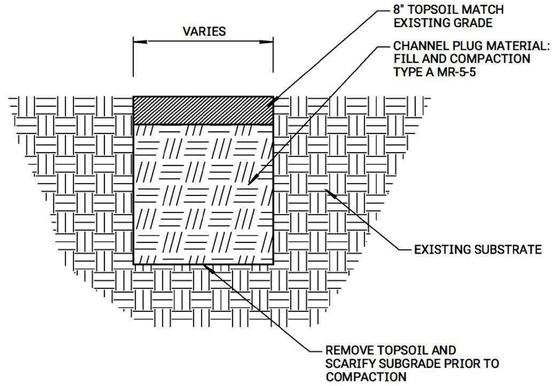
DESIGN VARIABLES				
	REACH 1	REACH 2	REACH 3	CHANNEL Sp. Dt.
DIAMETER	1"-2"	1"-2"	1"-2"	1"-2"
LENGTH (L)	3'-5'	3'-5'	3'-5'	3'-5'
MINIMUM BURIAL DEPTH (INTO SOIL)	2'	2'	2'	2'
SPACING (O.C.)	3'	3'	3'	3'
ROWS [1]	2	2	2	2
PLACEMENT OF 1ST ROW FROM TOE OF SLOPE	16"	12"	12"	48"

[1] ROWS SHOULD BE EQUALLY SPACED BETWEEN APPROXIMATE BASEFLOW WATER LEVEL AND BANKFULL.



CHANNEL SPECIAL DITCH
STA. 3+82 TO STA. 7+50

STA. 0+00 TO STA 3+82



EXISTING CHANNEL PLUG TYPICAL SECTION
N.T.S.

NOTES:
1. CHANNEL PLUGS SHALL BE INSTALLED AT LOCATIONS WHERE THE PROPOSED CHANNEL ALIGNMENT DIVERGES FROM THE EXISTING CHANNEL ALIGNMENT.

2. THE REMAINING EXISTING CHANNEL (OUTSIDE OF THE CHANNEL PLUG) MAY BE ABANDONED OR IT MAY BE PARTIALLY OR COMPLETELY BACKFILLED.

DESCRIPTION
1. LIVE CUTTINGS AND LIVE STAKES CONSIST OF BRANCH CUTTINGS FROM FRESHLY CUT DORMANT PLANTS. UNDER THIS ITEM THE CONTRACTOR SHALL FURNISH AND INSTALL LIVE CUTTINGS AND/OR LIVE STAKES IN SOIL, IN JOINT PLANTINGS (PLANTINGS LOCATED IN JOINTS IN RIPRAP AND STONE FILL), AND IN OTHER EROSION CONTROL APPLICATIONS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. LIVE STAKES SHALL BE INSTALLED ON FINISHED STREAM BANKS. "FINISHED" GENERALLY REFERTS TO ANY AND/OR ALL OF THE FOLLOWING:
   a.GRADED
   b.PREPARED (ROTO-TILLED, RAKED, AND AMENDED)
   c.SEEDED
   d.MULCHED, AND
   e.COVERED WITH EROSION CONTROL FABRIC

MATERIALS
1. LIVE STAKES SHALL BE 1" TO 2" IN DIAMETER AND 3' TO 5' LONG.
2. PLANT MATERIALS SHALL BE LIVE, VIABLE WOODY VEGETATION FREE OF INSECTS AND DISEASES. THE PLANTS SHALL CONSIST OF THE SPECIES WHICH WILL ROOT, SUCH AS SALIX SPECIES (WILLOW), CORNUS SPECIES (DOGWOOD), OR ALNUS SPECIES (ALDER),
3. NO LEAF BUDS SHALL HAVE INITIATED GROWTH BEYOND ¼" AND THE CAMBIUM LAYER SHALL BE MOIST, GREEN, AND HEALTHY. ALL MATERIAL SHALL BE MAINTAINED IN A CONTINUOUSLY COOL, COVERED, AND MOIST STATE. ALL PLANT MATERIAL SHALL BE IN GOOD CONDITION WHEN INSTALLED. LIVE STAKES MY BE STORED UP TO 10 DAYS IN WATER.
4. THE LIVE CUTTINGS/LIVE STAKES SHALL HAVE SIDE BRANCHES CLEANLY REMOVED AND WITH THE BARK INTACT. THE BASAL ENDS SHALL BE CUT AT AN ANGLE FOR EASY INSERTION INTO THE SOIL AND THE TOP CUT SQUARE.
5. PLANT MATERIAL SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO DELIVERY TO THE PROJECT SITE.

CONSTRUCTION DETAILS
1. LIVE CUTTING/LIVE STAKES SHALL BE PLANTED WITH THE POINTED END IN THE GROUND.
2. LIVE CUTTINGS SHALL BE INSERTED BY HAND INTO A PILOT HOLE. USE A DEAD-BLOW PLASTIC HAMMER TO DRIVE LIVE STAKES INTO THE GROUND. CARE SHALL BE TAKEN NOT TO DAMAGE LIVE STAKES DURING INSTALLATION. USE OF A DIBBLE, A BAR, OR SIMILAR TOOL FOR PREFORMING HOLES AND TO WORK AN ACCESS POINT THROUGH ANY ROCK LAYER IS REQUIRED TO PREVENT DAMAGE TO PLANT MATERIAL DURING INSTALLATION. DAMAGED PLANT MATERIAL SHALL BE LEFT IN PLACE AND SUPPLEMENTED WITH AN INTACT LIVE STAKE.
3. LIVE CUTTINGS/LIVE STAKES SHALL BE INSERTED AT LEAST TWO-THIRDS THEIR LENGTH INTO SOIL. FOR JOINT PLANTINGS, LIVE CUTTINGS/LIVE STAKES SHALL BE INSERTED TO ONE-HALF THEIR LENGTH INTO SOIL BELOW TOP OF STONE FILL WITH A MINIMUM 2 TWO BUDS EXPOSED ABOVE THE STONE FILL. WHEN POSSIBLE, UPON INSERTION THE SOIL AROUND THE LIVE CUTTING/STAKE SHALL BE TAMPED TO INSURE CONTACT WITH THE SOIL.
4. LIVE STAKES SHALL NOT BE PLACED WITHIN THE DRIP LINE OF ANY EXISTING TREES AND/OR SHRUBS THAT REMAIN ON THE BANKS.
5. LIVE STAKES SHALL NOT BE PLANTED WITHIN 5 FEET OF HEADWALL, WINGWALL OR OTHER PERMANENT INFRASTRUCTURE.
6. LIVE STAKES SHALL BE INSTALLED DURING THE DORMANT SEASON, DURING LATE WINTER OR EARLY SPRING.

CARE OF PLANTED MATERIALS DURING CONSTRUCTION
1. THE CONTRACTOR SHALL CARE FOR THE PLANTED MATERIALS UNTIL FINAL ACCEPTANCE OF THE CONTRACT. CARE OF PLANTED MATERIAL SHALL CONSIST OF KEEPING PLANT MATERIAL IN A HEALTHY GROWING CONDITION BY WATERING.

2. WHEN THE ENGINEER DETERMINES THAT ANY AREA WITHIN THE INSTALLATION HAS FAILED, FOR ANY REASON, TO PRODUCE APPROXIMATELY 75% VEGETATIVE GROWTH AFTER A SUITABLE PERIOD OF TIME THE CONTRACTOR SHALL REPEAT OR RECTIFY ALL THE WORK REQUIRED BY THE SPECIFICATION UNTIL THE GROWTH OF VEGETATION HAS BEEN ESTABLISHED AT NO ADDITIONAL COST TO THE STATE.

BASIS OF PAYMENT
1.THE UNIT PRICE BID PER LIVE CUTTINGS/LIVE STAKES SHALL INCLUDE THE COST OF FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK INCLUDING EXCAVATION, BACKFILL AND WATERING SHALL BE SUBSIDIARY TO COMMON EXCAVATION.

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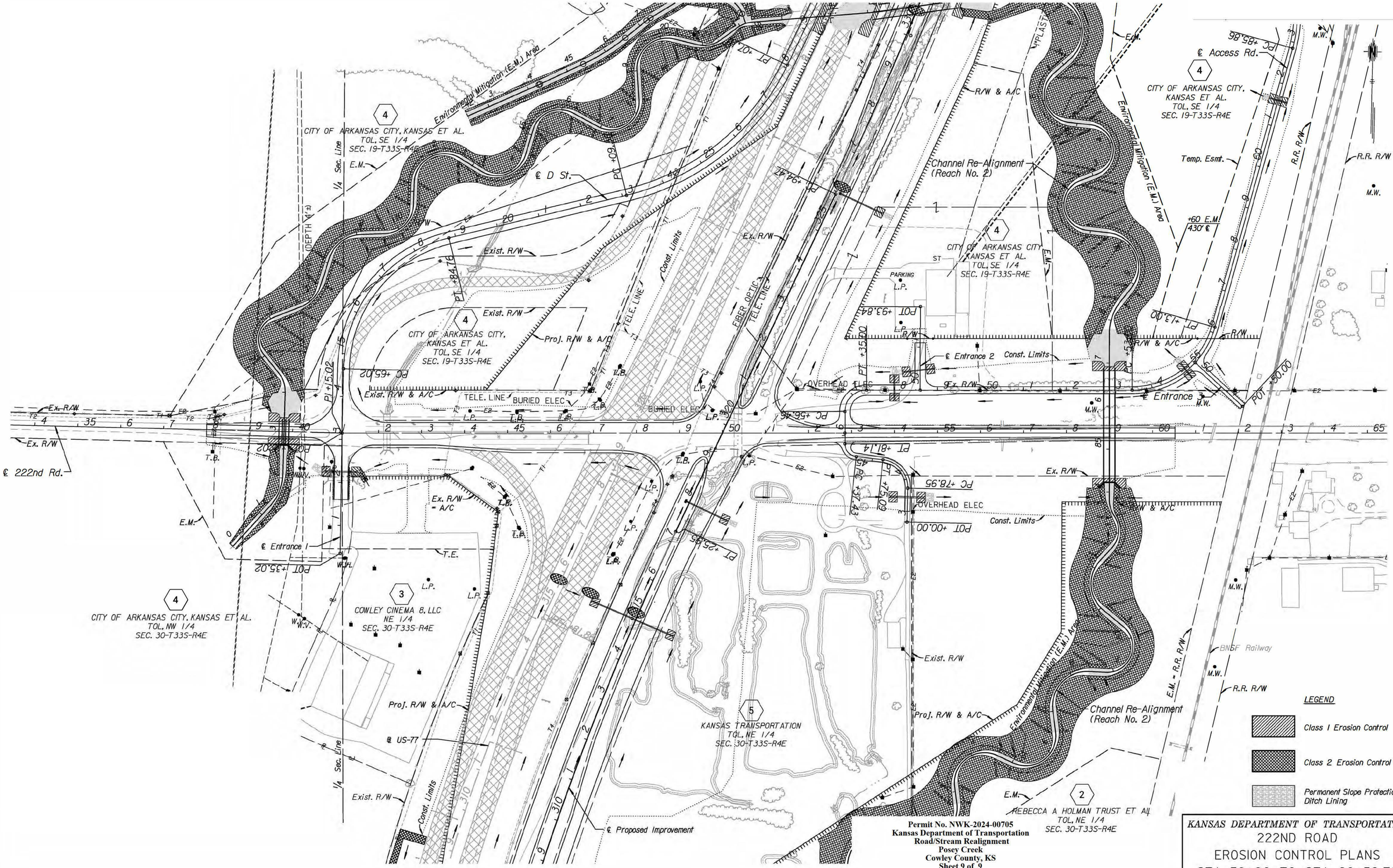

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222ND ROAD

EROSION CONTROL PLANS

STA. 38+00 TO STA. 60+52.72