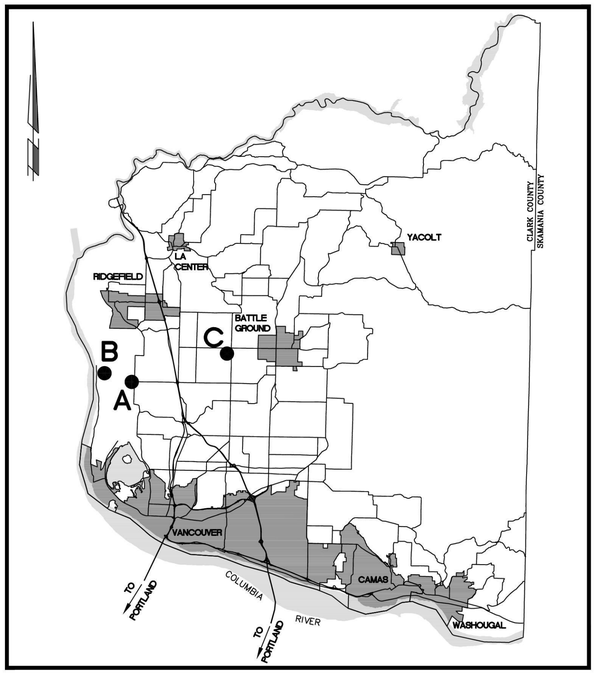
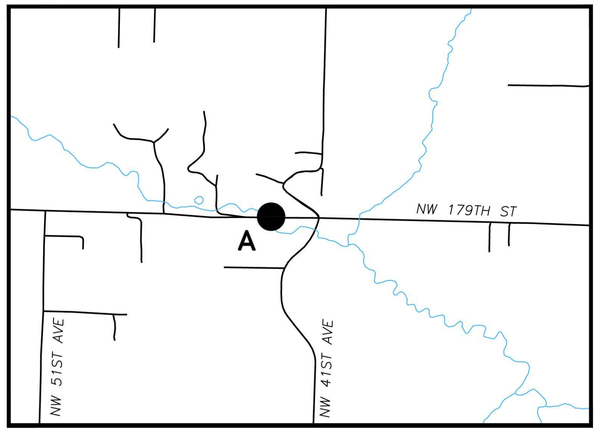
CAPITAL IMPROVEMENT PROJECT #320322 (PRJ0001799)

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

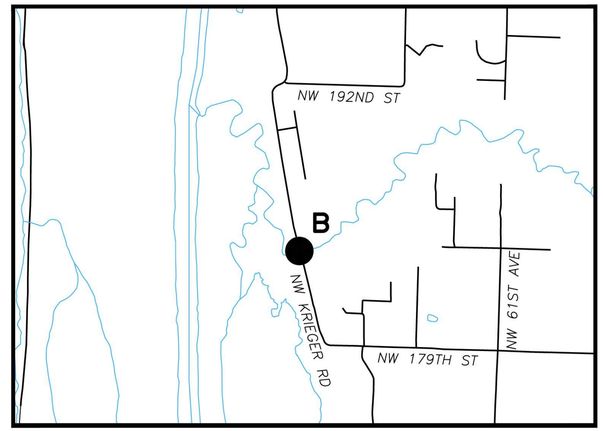
VARIOUS LOCATIONS IN CLARK COUNTY

PLANS FOR CONSTRUCTION OF BRIDGE STRENGTHENING



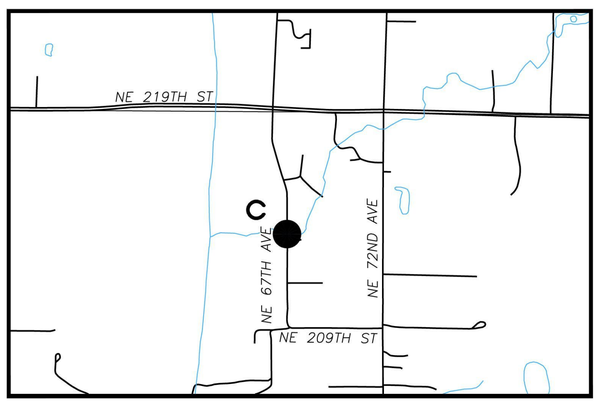


A–WHIPPLE CREEK BRIDGE NO.11



B–KNAPPS STATION BRIDGE NO.12

Federal Aid No.
BHS–Z906(004)
TA#TA7424



C–CARSON BRIDGE NO.63

CLARK COUNTY COUNCIL

SUE MARSHALL, Chair
GLEN YUNG, Councilor
MICHELLE BELKOT, Councilor
WIL FUENTES, Councilor
MATT LITTLE, Councilor

CLARK COUNTY, WASHINGTON

PUBLIC WORKS

ENGINEERING AND CONSTRUCTION DIVISION

100% DESIGN PLAN SET
AUGUST 2026

Quality Assurance Drainage	*Quality Assurance Roadway*	*Project Manager*
9/4/2026	9/4/2026	09/08/2026
DATE:	DATE:	DATE:
Rose Horton, P.E.	*Kristen Ballou, P.E.*	*Elizabeth Gregg, P.E.*

Approved By: _____ 09/08/2026
Jeremy Provenzola, P.E.
County Engineer
Date

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GENERAL LINETYPES

LINETYPE	DESCRIPTION
— ( ) — ( ) — ( ) —	UTILITY LINE (FIELD VERIFIED)
— ()-ABN — ()-ABN — ()-ABN —	ABANDONED UTILITY LINE
— ()-ASB — ()-ASB — ()-ASB —	ASBUILT UTILITY LINE
EXAMPLE	
— E — E — E —	ELECTRIC LINE (FIELD VERIFIED)
— E-ABN — E-ABN — E-ABN —	ABANDONED ELECTRIC LINE
— E-ASB — E-ASB — E-ASB —	ASBUILT ELECTRIC LINE
— E — E — E —	ELECTRIC LINE
— GAS — GAS — GAS —	GAS LINE
— T — T — T —	TELEPHONE LINE
— OHE — OHE — OHE —	OVERHEAD ELECTRIC LINE
— OHT — OHT — OHT —	OVERHEAD TELEPHONE LINE
— GUY — GUY — GUY —	GUY WIRE
— W — W — W —	WATER LINE
— S-FM — S-FM — S-FM —	SANITARY SEWER FORCE MAIN
— S — S — S —	SANITARY SEWER
— STM — STM —	STORM LINE
	CULVERT
— TV — TV — TV —	TELEVISION LINE
— FIBER — FIBER — FIBER —	FIBER OPTIC
— CND — CND — CND —	CONDUIT
— PVC — PVC —	PVC
—WALL—WALL—WALL—WALL—	WALL
	BUILDING
	DITCH
	SAWCUT
	CURB
	SIDEWALK
	EDGE OF PAVEMENT
	GRAVEL
	EXISTING GUARDRAIL

GENERAL LINETYPES

LINETYPE	DESCRIPTION
— WB — WB — WB —	WETLAND BOUNDARY
— BUFF — BUFF —	WETLAND BUFFER
— RH — RH — RH —	RIPARIAN AREA BOUNDARY
— OHW — OHW — OHW —	ORDINARY HIGH WATER
— RW — RW —	RIGHT-OF-WAY
— — PL — — PL — — PL — — PL —	PROPERTY LINE
— ESMT— ESMT— ESMT— ESMT—	EASEMENT
— TCE — TCE — TCE —	TEMPORARY CONSTRUCTION EASEMENT
—C —C —C —C —C —C —	CUTSLOPE GRADING LIMITS
· · ·F · · · ·F · · · ·F · · · ·F · · ·	FILLSLOPE GRADING LIMITS
— X — X — X — X — X — X —	FENCE LINE
	TEMPORARY FENCE
· · ·> · · ·> · · ·> · · ·> · · ·> · · ·>	FLOW LINE
— ◻ — ◻ — ◻ — ◻ — ◻ —	EXISTING GUARDRAIL
— WL — WL — WL —	WORK LIMITS
— SF — SF — SF — SF — SF — SF —	SILT FENCE
— HVF — HVF — HVF —	HIGH VISIBILITY FENCE
— HVSF — HVSF — HVSF —	HIGH VISIBILITY SILT FENCE
— SDL — SDL —	SIGHT DISTANCE
— IC — IC — IC —	INTERCONNECT
—GATE—GATE—GATE—GATE—	GATE
	CONCRETE BARRIER
	HEDGE
	GUARDRAIL
	PROPOSED STORM LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED EDGE OF PAVEMENT
	PROPOSED CURB
	PROPOSED SIDEWALK
	PROPOSED WALL
	PROPOSED UNDERDRAIN STORMLINE
— — — — — — —	SHORELINE BOUNDARY
— — — — — — —	FLOODPLAIN BUFFER

ABBREVIATIONS

ABANDON	AB
ADJUST	A
ANGLE POINT	AP
ASPHALT CEMENT PAVEMENT	A/C
BACK OF WALK	BW
BACK OF CURB	BC
BIORETENTION CELL	BRC
BEGINNING OF PROJECT	BOP
CATCH BASIN	CB
CONCRETE	CONC
CRUSHED SURFACING BASE COURSE	CSBC
CRUSHED SURFACING TOP COURSE	CSTC
CURB INLET	CI
COMBINATION CURB INLET	CCI
CLEANOUT	CO
CEMENT	CEM
CENTER LINE	CL
DRIVEWAY	DWY
DELTA, DEFLECTION ANGLE	Δ, D
DITCH INLET	DI
DUCTILE IRON	D.I.
EDGE OF PAVEMENT	EOP
EDGE OF GRAVEL	EOG
ELEVATION	EL, ELEV
END OF PROJECT	EOP
EROSION CONTROL	EC
EXISTING	EX, EXIST
EXISTING GROUND	EG
EASEMENT	EASE
ELECTRIC	E, ELEC
FINISH GROUND (GRADE)	FG
FIBER	FIBER
FINISH GRADE	FG
FRONT OF WALK	FW
GAS	G, GAS
GRADE BREAK	GB
GUTTER	GUT
INVERT ELEVATION	I.E., INV
INLET PROTECTION	IP
LENGTH	L
LINEAL FOOT	LF
LEFT	LT
MANHOLE	MH
OFFSET	OFF
PERMANENT	PERM
POINT	PNT
POINT OF CURVE	PC
POINT OF TANGENT	PT
POINT OF REVERSE CURVE	PRC
POLYVINYL CHLORIDE	PVC
PROPERTY LINE	PL
PROTECT	P
PERFORATED	PERF
RADIUS	R
RIGHT	RT
RIGHT OF WAY	ROW, RW
RELOCATE	RL
REMOVE	RM
REPLACE	RP
RESET	RS
SAWCUT	S
SIDEWALK	SW
SLOPE	SL
STORM	STM
SANITARY	S,SAN
SECTION	SEC
STORMWATER FACILITY	SWF
TELEPHONE	T, TELE
TEMPORARY	TEMP
TOP OF CURB	TC
TOP FACE OF CURB	TFC
TRIM	T
TYPICAL	TYP
WATER	W, WAT

UTILITY SYMBOLS

SYMBOLS	DESCRIPTION
SAN	EXISTING SANITARY MANHOLE
S	PROPOSED SANITARY MANHOLE
	VAULT – RECT. STRUCTURE
CL	EXISTING CLEANOUT
	FIRE HYDRANT
	WATER METER
W	WATER VALVE
	SPRINKLER HEAD (IRRIGATION)
	WATER WELL
	WATER TEE
	WATER CROSS
	WATER THRUST BLOCK
	WATER THRUST BLOCK
	WATER PLUG
FG	GATE POST
	TRANSFORMER
	ELECTRIC TOWER
	LIGHT
	UTILITY POLE ANCHOR
	POWER POLE
	SIGNAL POLE
J	JUNCTION BOX
T	TELEPHONE PEDESTAL
T	TELELPHONE VAULT
tv	TELEVISION PEDESTAL
T	TELEPHONE MANHOLE
	TELEPHONE PLUG
G	GAS VALVE

SHEET INDEX

GENERAL PROJECT INFORMATION		
1	COV1	COVER SHEET
2	LGN1	SHEET INDEX, SYMBOLS, LINETYPES
RIGHT OF WAY–EXISTING CONDITIONS–MONUMENTATION		
3	SV1	WHIPPLE CREEK BRIDGE NO. 011
4	SV2	KNAPPS STATION BRIDGE NO. 012
5	SV3	CARSON BRIDGE NO. 063
TRAFFIC CONTROL AND DETOUR PLANS		
6	TCP1	ONE–LANE, TWO–WAY TRAFFIC CONTROL WITH FLAGGERS
7	DET1	ROAD CLOSURE PLAN– WHIPPLE CREEK BRIDGE NO. 11
8	DET2	ROAD CLOSURE DETAILS– WHIPPLE CREEK BRIDGE NO. 11
9	DET3	ROAD CLOSURE PLAN– KNAPPS STATION BRIDGE NO. 12
10	DET4	ROAD CLOSURE DETAILS– KNAPPS STATION BRIDGE NO. 12
11	DET5	ROAD CLOSURE PLAN– CARSON BRIDGE NO. 63
12	DET6	ROAD CLOSURE DETAILS– CARSON BRIDGE NO. 63
WHIPPLE CREEK BRIDGE NO. 11		
13	S1	LAYOUT
14	S2	DETAILS
15	S3	CONTRACTOR ACCESS AND EROSION CONTROL PLAN
KNAPPS STATION BRIDGE NO. 12		
16	S4	LAYOUT
17	S5	FRP STRENGTHENING DETAILS
18	S6	CONTRACTOR ACCESS AND EROSION CONTROL PLAN
CARSON BRIDGE NO. 63		
19	S7	LAYOUT
20	S8	DETAILS
21	S9	CONTRACTOR ACCESS AND EROSION CONTROL PLAN

STORMWATER/EROSION CONTROL SYMBOLS

SYMBOLS	DESCRIPTION
S	EXISTING MANHOLE DRYWELL
	MANHOLE TYPE 1, 2 & DRYWELL
	MANHOLE TYPE 3 CATCH BASIN TYPE 2 SEDIMENTATION, BAFFLE, AND/OR TEE
	CATCH BASIN TYPE 1 & ROLLED CURB DRAIN
	CATCH BASIN TYPE 2
	CURB INLET
	COMBINATION INLET
	COMBINATION CURB INLET
	CURB CUT INLET
	DITCH INLET

SYMBOLS	DESCRIPTION
	STORMWATER FILTER CATCH BASIN (TYPICAL)
	ADJUSTABLE VAULT – RECT. STRUCTURE
	FLARED END SECTION
	RECTANGULAR HEADWALL
	PROPOSED CLEANOUT
	AREA INLET
IP	INLET PROTECTION
OP	OUTLET PROTECTION
XX	EROSION CONTROL FENCE STAKING POINTS
CD x	TEMPORARY BIODEGRADABLE CHECK DAM ("x" DESIGNATES O.C. DISTANCE OTHER THAN 20')
	WATTLE

GENERAL NOTES

- IF ANY CULTURAL RESOURCES AND/OR HUMAN REMAINS ARE DISCOVERED IN THE COURSE OF UNDERTAKING THE DEVELOPMENT ACTIVITY, THE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION IN OLYMPIA AND THE CLARK COUNTY DEPARTMENT OF PUBLIC WORKS SHALL BE NOTIFIED. FAILURE TO COMPLY WITH THESE STATE REQUIREMENTS MAY CONSTITUTE A CLASS C FELONY, SUBJECT TO IMPRISONMENT AND/OR FINES.
- THE CONTRACTOR SHALL REPLACE ANY SURVEY MONUMENTS DISTURBED PER DEPARTMENT OF NATURAL RESOURCES MONUMENT DESTRUCTION PERMIT REQUIREMENTS.
- CHECK ALL UTILITY CROSSINGS

EROSION CONTROL NOTES

1. CLEARING AND GRUBBING LIMITS WILL APPROXIMATE THE CUT/FILL LINES UNLESS NOTED IN THE PLANS.
2. ALL SILT FENCE SHALL BE PLACED NO MORE THAN 1 FOOT BEYOND FILL LIMITS UNLESS OTHERWISE NOTED.
3. ALL HIGH VISIBILITY SILT FENCE SHALL BE PLACED 1 FOOT INSIDE TCE LIMITS.
4. SEED AND MULCH ALL FINAL SLOPES AND DISTURBED AREAS.
5. EXISTING AND PROPOSED CONTOURS SHOWN AT 1 FT INTERVALS.

MISCELLANEOUS SYMBOLS

SYMBOLS	DESCRIPTION
	SHRUB
	EVERGREEN TREE
	DECIDUOUS TREE
	STUMP W/ROOTWAD AND BRUSHPILE
	LOG W/ROOTWAD, TYPE 2
	SNAG
	CONSERVATION AREA DEMARCATION LOGS
	SIGN
	EXISTING MAILBOX
STA	PROPOSED MAILBOX LOCATION
	POST/BOLLARD
	SURVEY TRAVERSE POINT
	TEST HOLE
	FLOW ARROW

GENERAL HATCH PATTERNS ON INDIVIDUAL SHEETS

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555 "It's the Law" NORTHWEST UTILITIES NOTIFICATION CENTER

CLARK COUNTY, WASHINGTON

PUBLIC WORKS
ENGINEERING & CONSTRUCTION DIVISION

Otak

NICHOLAS JOEL BROWN STATE OF WASHINGTON 24008381 REGISTERED PROFESSIONAL ENGINEER
9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

GENERAL PROJECT INFORMATION
SYMBOLS, LINETYPES, GENERAL NOTES, AND INDEX

CRP # **320322**
PRJ # **0001799**

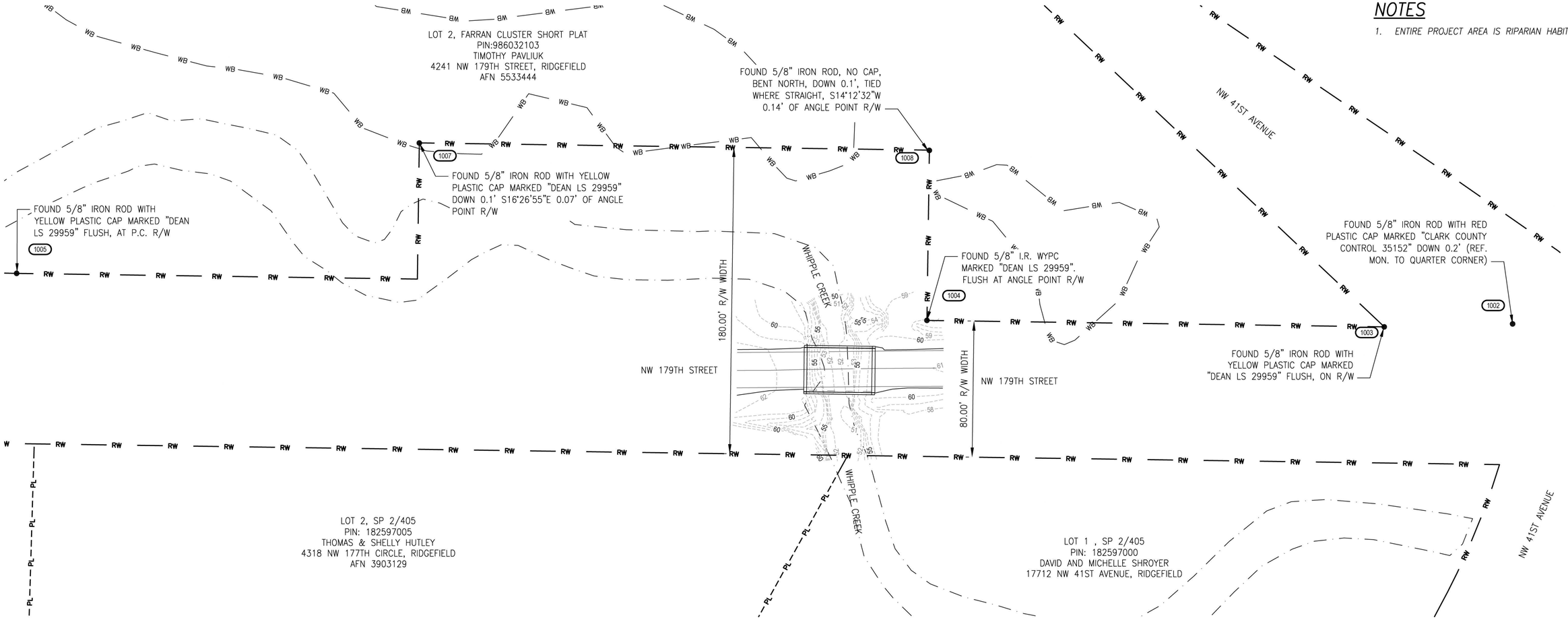
DATE AUG 2026
LGN1
2 OF 21

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NOTES

1. ENTIRE PROJECT AREA IS RIPARIAN HABITAT.



MONUMENTS FOUND PRIOR TO CONSTRUCTION			
PT#	Northing	Easting	Elevation
1000	159988.7400	1075556.2930	68.691
1001	159967.9600	1075574.8060	68.363
1002	160022.3140	1075501.1440	67.602
1003	160020.5600	1075425.6720	65.721
1004	160024.3670	1075156.8360	58.750
1005	160051.9970	1074621.6800	57.454
1006	160017.6340	1074580.7400	65.035
1007	160128.5670	1074858.4210	56.499
1008	160124.2490	1075158.2480	70.509

LEGEND

- FOUND SURVEY MONUMENT AS NOTED
- SECTION LINE
- RW — RIGHT OF WAY
- PL — PROPERTY LINE
- I.R — IRON ROD
- WYPC — WITH YELLOW PLASTIC CAP

0 30 60
SCALE IN FEET

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

RIGHT OF WAY-EXISTING CONDITIONS-MONUMENTATION
WHIPPLE CREEK BRIDGE NO. 011

CRP # ***320322***

PRJ # ***0001799***

DATE AUG 2026

SV1

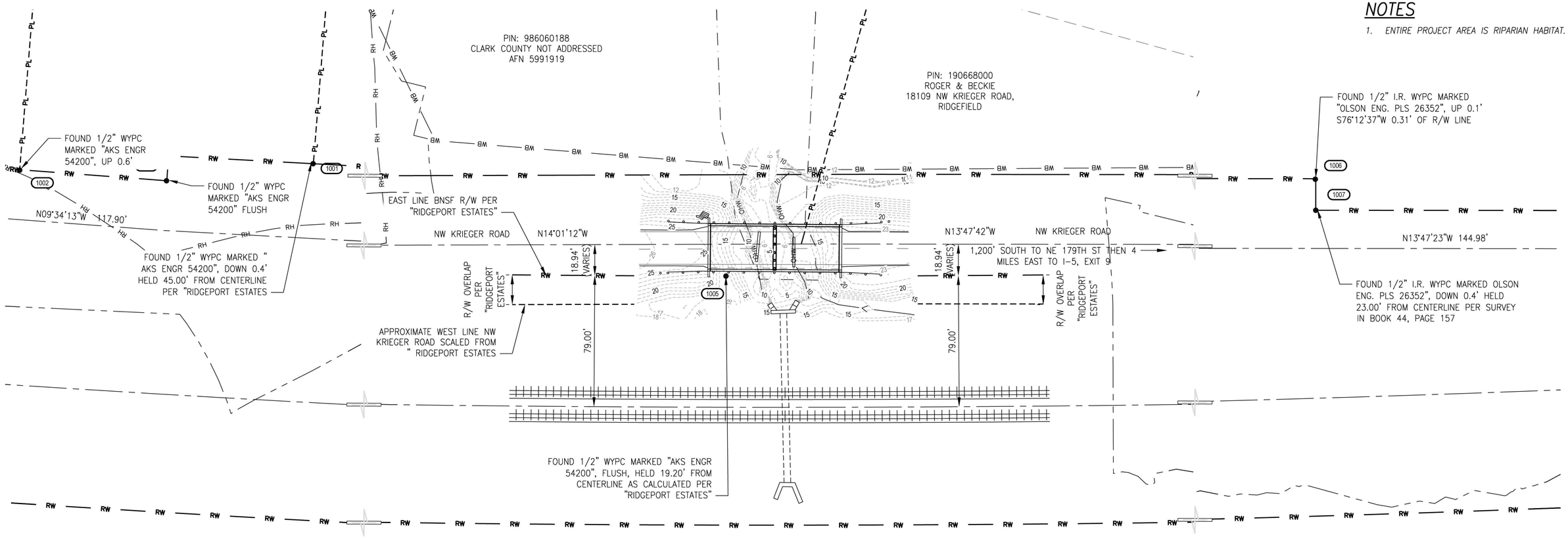
3 OF 21

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NOTES

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LEGEND

●	FOUND SURVEY MONUMENT AS NOTED
— — —	SECTION LINE
RW	RIGHT OF WAY
PL	PROPERTY LINE
I.R	IRON ROD
WYPC	WITH YELLOW PLASTIC CAP

0 30 60
SCALE IN FEET

MONUMENTS FOUND PRIOR TO CONSTRUCTION			
PT#	Northing	Easting	Elevation
1000	162366.4600	1067820.4120	99.811
1001	162328.3130	1067585.8240	82.471
1002	162498.9530	1067539.7590	83.010
1003	162411.5770	1067554.7280	75.050
1004	161391.9970	1068054.5000	11.662
1005	161440.2550	1067712.1840	17.021
1006	160925.0730	1067901.5640	36.728
1007	160920.3320	1067883.4830	26.485

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STATE OF WASHINGTON
24008381
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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

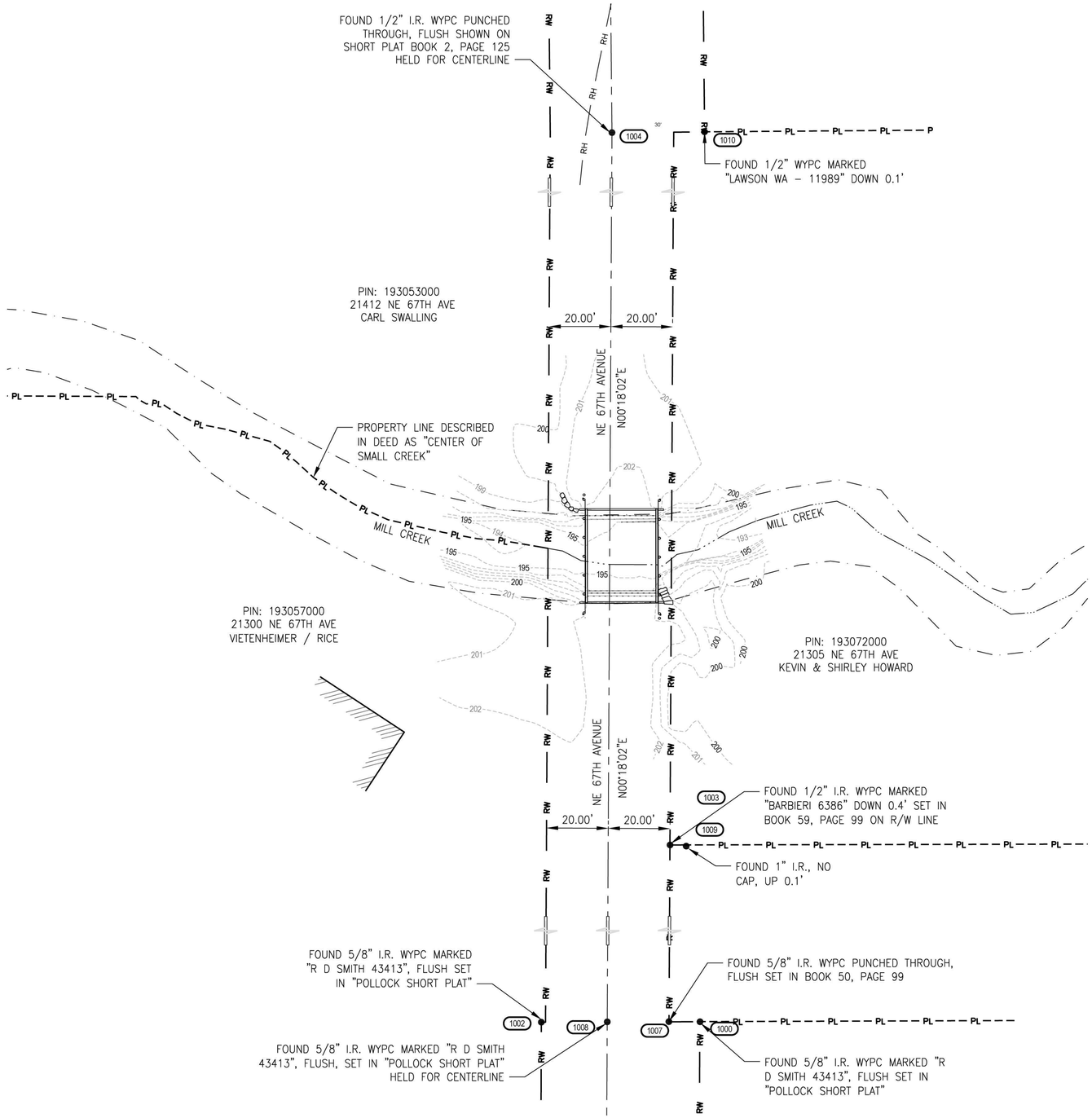
RIGHT OF WAY-EXISTING CONDITIONS-MONUMENTATION
KNAPPS STATION BRIDGE NO. 012

CRP # **320322**
PRJ # **0001799**

DATE AUG 2026
SV2
4 OF 21

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NOTES

1. ENTIRE PROJECT AREA IS RIPARIAN HABITAT.

MONUMENTS FOUND PRIOR TO CONSTRUCTION			
PT#	Northing	Easting	Elevation
1000	168148.2240	1103490.1310	203.325
1001	167987.6410	1103489.2410	203.272
1002	168148.0830	1103438.7290	203.385
1003	168519.3940	1103482.0740	201.106
1004	168893.0830	1103463.9960	199.868
1005	169250.7760	1103421.7150	199.570
1006	168037.9960	1103489.5810	203.633
1007	168148.2600	1103480.0490	203.338
1008	168148.1910	1103460.0900	203.178
1009	168519.0210	1103487.2990	201.119
1010	168893.3390	1103493.9770	199.061
1011	169054.7220	1103492.4170	199.400
1012	169321.4550	1103431.0690	201.053

LEGEND

- FOUND SURVEY MONUMENT AS NOTED
- SECTION LINE
- RW — RIGHT OF WAY
- PL — PROPERTY LINE
- I.R — IRON ROD
- WYPC — WITH YELLOW PLASTIC CAP

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

RIGHT OF WAY-EXISTING CONDITIONS-MONUMENTATION
CARSON BRIDGE NO. 063

CRP # **320322**
PRJ # **0001799**

DATE AUG 2026
SV3
5 OF 21

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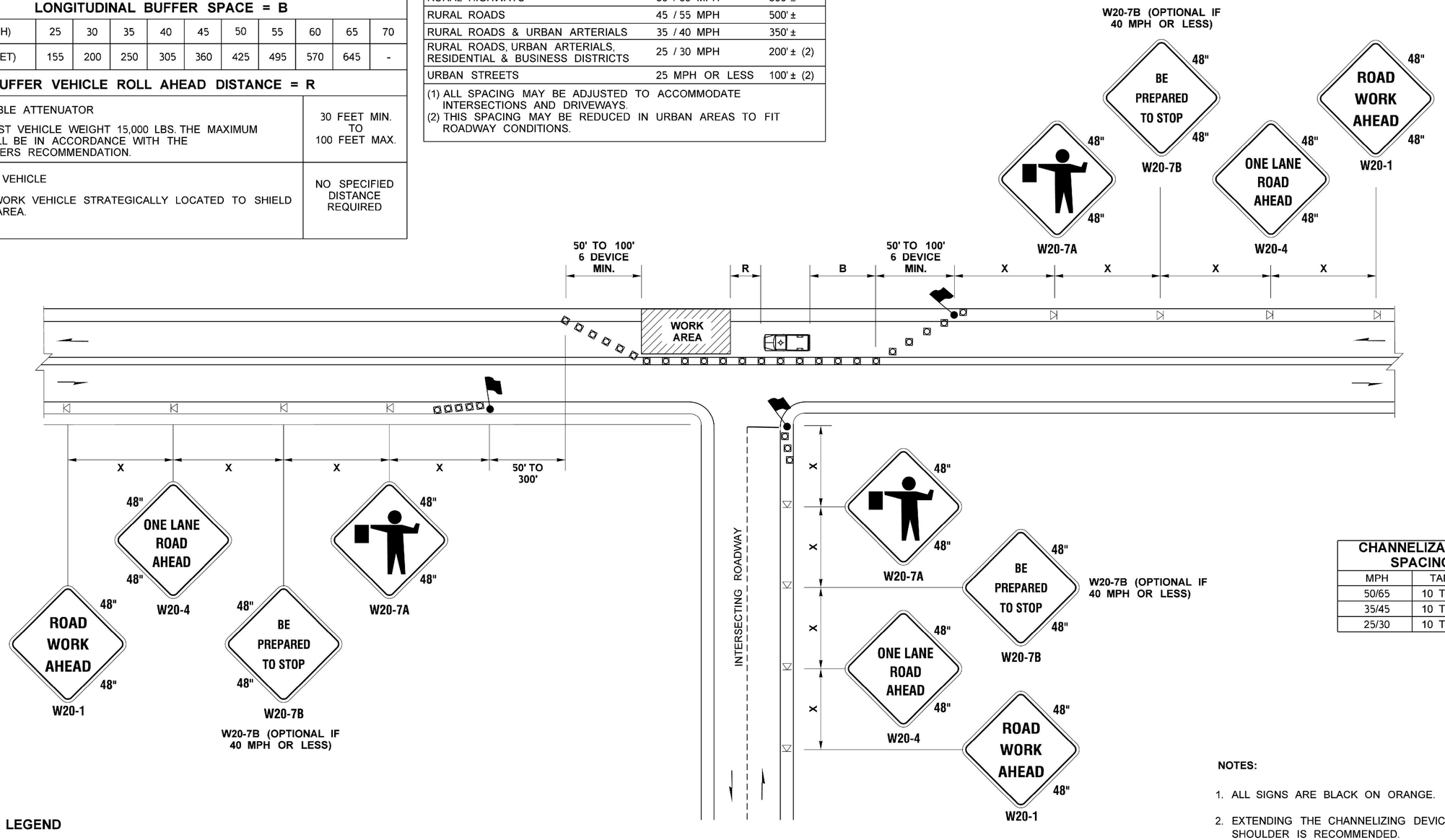
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BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (FEET)	155	200	250	305	360	425	495	570	645	-

BUFFER VEHICLE ROLL AHEAD DISTANCE = R	
TRANSPORTABLE ATTENUATOR MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.	30 FEET MIN. TO 100 FEET MAX.
PROTECTIVE VEHICLE MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA.	NO SPECIFIED DISTANCE REQUIRED

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
50/65	10 TO 20	80
35/45	10 TO 20	60
25/30	10 TO 20	40

LEGEND

- FLAGGING STATION
- TEMPORARY SIGN LOCATION
- CHANNELIZING DEVICES
- PROTECTIVE VEHICLE

ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS

NOT TO SCALE

NOTES:

1. ALL SIGNS ARE BLACK ON ORANGE.
2. EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
3. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS. SEE THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555 "It's the Law" NORTHWEST UTILITIES NOTIFICATION CENTER

CLARK COUNTY, WASHINGTON

PUBLIC WORKS ENGINEERING & CONSTRUCTION DIVISION

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NICHOLAS JOEL BROWN STATE OF WASHINGTON 24006381 REGISTERED PROFESSIONAL ENGINEER
9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

TRAFFIC CONTROL AND DETOUR PLANS
ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS

CRP # **320322**

PRJ # **0001799**

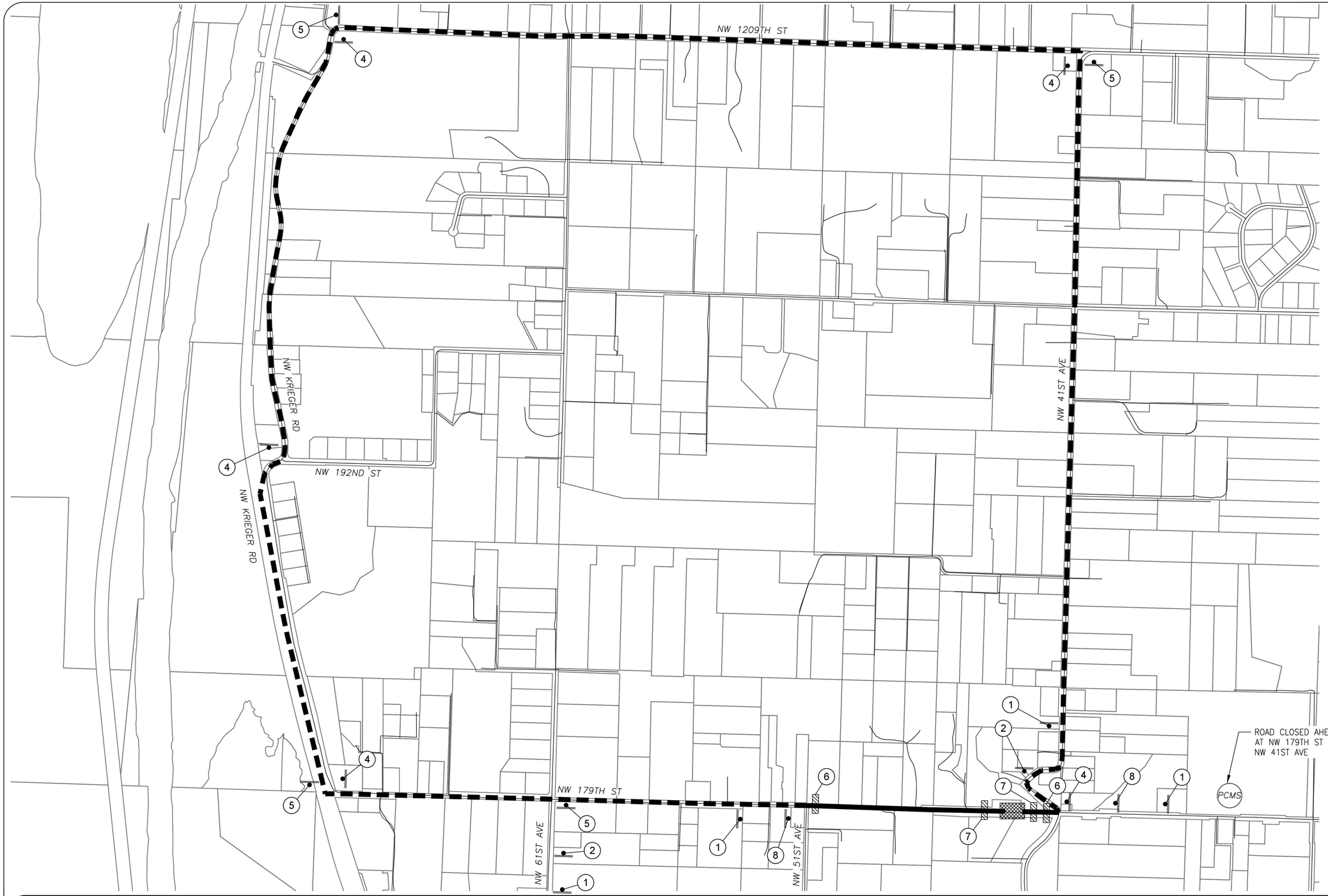
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TCP1

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LEGEND

- WORK ZONE
- ROAD CLOSED
- DETOUR ROUTE
- SIGN
- TYPE 3 BARRICADE
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

NOTES:

1. DETOUR AND CLOSURES FOR WHIPPLE CREEK BRIDGE WORK TO BE COORDINATED WITH KNAPPS STATION BRIDGE SITE WORK.

N

300 0 300 600 HORIZ

SCALE IN FEET

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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CLARK COUNTY, WASHINGTON

PUBLIC WORKS
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NICHOLAS JOEL BROWN
STATE OF WASHINGTON
24008381
REGISTERED
PROFESSIONAL ENGINEER
9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

TRAFFIC CONTROL AND DETOUR PLANS
ROAD CLOSURE PLAN - WHIPPLE CREEK BRIDGE NO.11

CRP # 320322

PRJ # 0001799

DATE AUG 2026

DET1

7 OF 21

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1 — ROAD WORK AHEAD — W20-1, 36"X36"

2 — ROAD CLOSED NEXT RIGHT / LOCAL TRAFFIC ONLY — W20-3, 36"X36"; 60"X10"

3 — ROAD CLOSED NEXT LEFT / LOCAL TRAFFIC ONLY — W20-3, 36"X36"; 60"X10"

4 — NW 179TH ST / DETOUR — 30"X9"; M4-9R, 30"X24"

5 — NW 179TH ST / DETOUR — 30"X9"; M4-9L, 30"X24"

6 — ROAD CLOSED LOCAL TRAFFIC ONLY — R11-4, 60"X30" (INSTALLED ON TYPE III TEMPORARY BARRICADE) SEE NOTE 3 ON THIS SHEET

7 — ROAD CLOSED — R11-2, 48"X30" (INSTALLED ON TYPE III TEMPORARY BARRICADE) SEE NOTE 2 ON THIS SHEET

8 — ROAD CLOSED AHEAD — W20-3, 36"X36"

9 — END DETOUR — R11-2, 48"X30"

PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE INSTALLED 14 DAYS PRIOR TO AND DURING ROAD CLOSURES.

NOTES:

1. TRAFFIC CONTROL SIGNS ARE IN ADDITION TO THE DETOUR SIGNS ILLUSTRATED ON THIS SHEET. SIGN SPACING AND PLACEMENT TO BE ADJUSTED TO ACCOMMODATE TRAFFIC CONTROL SIGNS.
2. ROAD CLOSED R11-2 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.). ONE BARRICADE REQUIRED FOR EACH LANE.
3. ROAD CLOSED TO THRU TRAFFIC R11-4 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.).

DETOUR SIGN DETAILS

SIGN ASSEMBLY DESIGNATION	QUANTITY	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE (IN)		SIGN AREA (SF)		SIGN SHEETING TYPE	POST MATERIAL	POST SIZE (TRADE SIZE)	NUMBER OF POST	REMARKS
				X	Y	SINGLE SIGN	TOTAL					
1	3	W20-1	ROAD WORK AHEAD	36	36	9.00	27.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
2	1	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	4.17	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	1	W20-3	ROAD CLOSED NEXT RIGHT	36	36	9.00	9.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
3	1	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	4.17	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	1	W20-3	ROAD CLOSED NEXT LEFT	36	36	9.00	9.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
4	3	CUSTOM	NW 179TH ST	30	9	1.88	5.63	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	3	M4-9R	DETOUR WITH ARROW RIGHT	30	24	5.00	15.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
5	3	CUSTOM	NW 179TH ST	30	9	1.88	5.63	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	3	M4-9L	DETOUR WITH ARROW LEFT	30	30	6.25	18.75	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
6	2	R11-4	ROAD CLOSED LOCAL TRAFFIC ONLY	60	30	12.50	25.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
7	2	R11-2	ROAD CLOSED	48	30	10.00	20.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
8	2	W20-3	ROAD CLOSED AHEAD	36	36	9.00	18.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
9	2	R11-2	ROAD CLOSED	48	30	10.00	20.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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CLARK COUNTY, WASHINGTON

PUBLIC WORKS ENGINEERING & CONSTRUCTION DIVISION

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NICHOLAS JOEL BROWN — STATE OF WASHINGTON — 24008381 — REGISTERED PROFESSIONAL ENGINEER

9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

TRAFFIC CONTROL AND DETOUR PLANS

ROAD CLOSURE DETAILS - WHIPPLE CREEK BRIDGE NO.11

CRP # **320322**

PRJ # **0001799**

DATE AUG 2026

DET2

8 OF 21

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NW 209TH ST

NW KRIEGER RD

NW 192ND ST

NW 41ST AVE

NW 179TH ST

NW 61ST AVE

ROAD CLOSED AHEAD
AT NW KRIEGER RD

PCMS

LEGEND

- WORK ZONE
- ROAD CLOSED
- DETOUR ROUTE
- SIGN
- TYPE 3 BARRICADE
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

N

500 0 500 1000 HORIZ

SCALE IN FEET

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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ENGINEERING & CONSTRUCTION DIVISION

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NICHOLAS JOEL BROWN
STATE OF WASHINGTON
24008381
REGISTERED PROFESSIONAL ENGINEER
9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

TRAFFIC CONTROL AND DETOUR PLANS
ROAD CLOSURE PLAN - KNAPPS STATION BRIDGE NO.12

CRP # 320322

PRJ # 0001799

DATE AUG 2026

DET3

9 OF 21

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1



W20-1
36"X36"

2



W20-3
36"X36"



60"X10"

3



W20-3
36"X36"



60"X10"



30"X9"

4



M4-9R
30"X24"



30"X9"

5



M4-9L
30"X24"

6



R11-4
60"X30"
(INSTALLED ON TYPE III TEMPORARY BARRICADE)
SEE NOTE 3 ON THIS SHEET

7



R11-2
48"X30"
(INSTALLED ON TYPE III TEMPORARY BARRICADE)
SEE NOTE 2 ON THIS SHEET

8



W20-3
36"X36"

9



W20-3
36"X36"

10



R11-3a
60"X30"

PCMS *PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE INSTALLED 14 DAYS PRIOR TO AND DURING ROAD CLOSURES.*

NOTES:

1. *TRAFFIC CONTROL SIGNS ARE IN ADDITION TO THE DETOUR SIGNS ILLUSTRATED ON THIS SHEET. SIGN SPACING AND PLACEMENT TO BE ADJUSTED TO ACCOMMODATE TRAFFIC CONTROL SIGNS.*
2. *ROAD CLOSED R11-2 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.). ONE BARRICADE REQUIRED FOR EACH LANE.*
3. *ROAD CLOSED TO THRU TRAFFIC R11-4 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.).*

DETOUR SIGN DETAILS

SIGN ASSEMBLY DESIGNATION	QUANTITY	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE (IN)		SIGN AREA (SF)		SIGN SHEETING TYPE	POST MATERIAL	POST SIZE (TRADE SIZE)	NUMBER OF POST	REMARKS
				X	Y	SINGLE SIGN	TOTAL					
1	5	W20-1	ROAD WORK AHEAD	36	36	9.00	45.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
2	1	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	4.17	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	1	W20-3	ROAD CLOSED NEXT RIGHT	36	36	9.00	9.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
3	2	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	8.33	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	2	W20-3	ROAD CLOSED NEXT LEFT	36	36	9.00	18.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
4	6	CUSTOM	NW KRIEGER RD	30	9	1.88	11.25	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	6	M4-9R	DETOUR WITH ARROW RIGHT	30	24	5.00	30.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
5	3	CUSTOM	NW KRIEGER RD	30	9	1.88	5.63	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	3	M4-9L	DETOUR WITH ARROW LEFT	30	30	6.25	18.75	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
6	2	R11-4	ROAD CLOSED LOCAL TRAFFIC ONLY	60	30	12.50	25.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
7	2	R11-2	ROAD CLOSED	48	30	10.00	20.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
8	1	W20-3	ROAD CLOSED AHEAD	36	36	9.00	9.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
9	1	W20-1	DETOUR AHEAD	36	36	9.00	9.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
10	1	R11-3A	KRIEGER ROAD CLOSED NORTH OF 179TH STREET	60	30	12.50	12.50	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

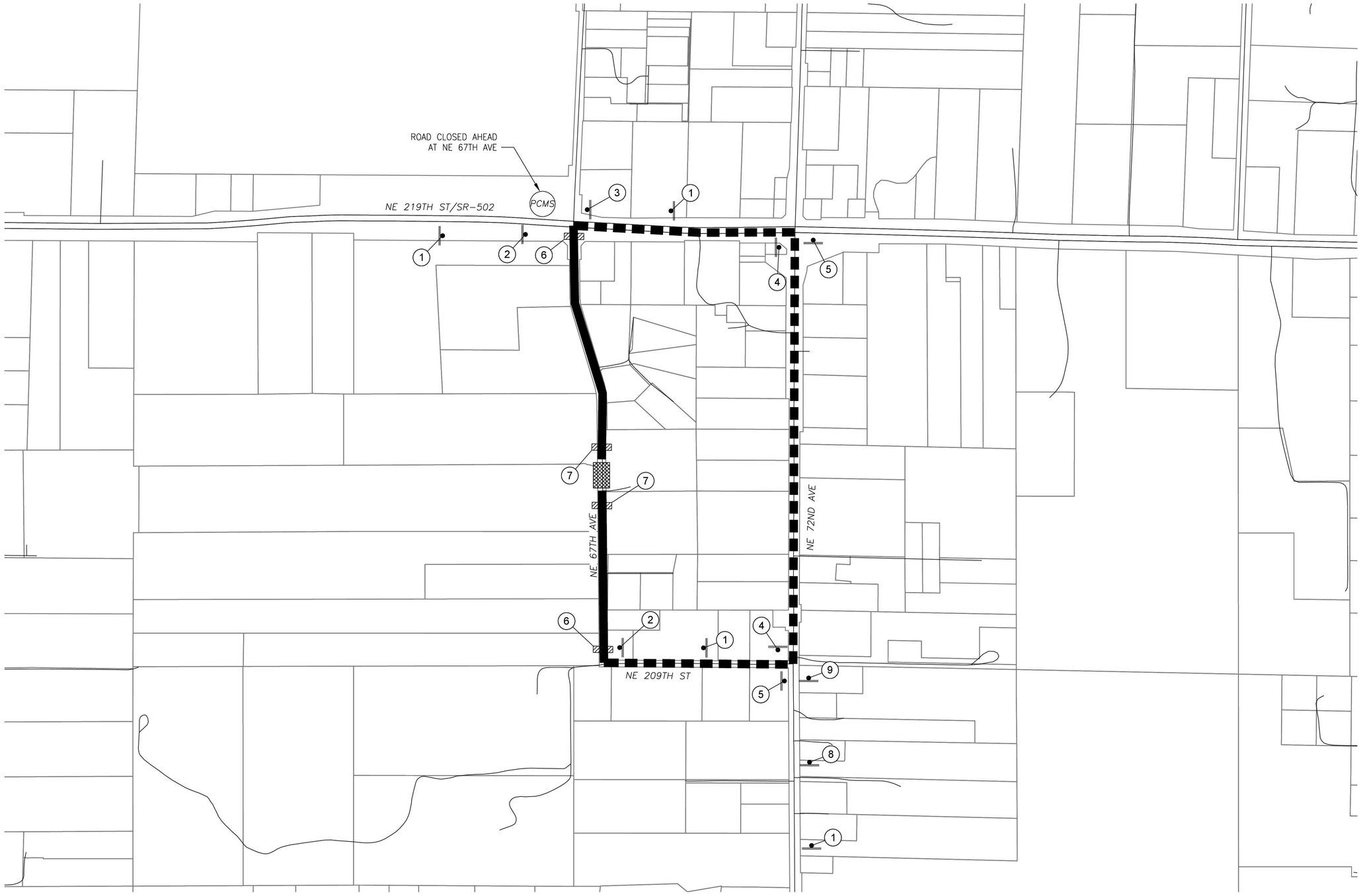
TRAFFIC CONTROL AND DETOUR PLANS
ROAD CLOSURE DETAILS - KNAPPS STATION BRIDGE NO.12

CRP # **320322**
PRJ # **0001799**

DATE AUG 2026
DET4
10 OF 21

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LEGEND

- WORK ZONE
- ROAD CLOSED
- DETOUR ROUTE
- SIGN
- TYPE 3 BARRICADE
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

NOTES:

1. CONTRACTOR TO ACQUIRE WSDOT GENERAL PERMIT FOR SIGNS ON NE 219TH STREET.

300 0 300 600 HORIZ

SCALE IN FEET

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

TRAFFIC CONTROL AND DETOUR PLANS
ROAD CLOSURE PLAN - CARSON BRIDGE NO.63

CRP # **320322**
PRJ # **0001799**

DATE AUG 2026
DET5
11 OF 21

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1 

W20-1
36"X36"

2 

W20-3
36"X36"
60"X10"

3 

W20-3
36"X36"
60"X10"

4 

30"X9"
M4-9R
30"X24"

5 

30"X9"
M4-9L
30"X24"

6 

R11-4
60"X30"
(INSTALLED ON TYPE III
TEMPORARY BARRICADE)
SEE NOTE 3 ON THIS SHEET

7 

R11-2
48"X30"
(INSTALLED ON TYPE III
TEMPORARY BARRICADE)
SEE NOTE 2 ON THIS SHEET

8 

W20-3
36"X36"

9 

M4-9
(MODIFIED)
30"X30"

PCMS PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE INSTALLED 14 DAYS PRIOR TO AND DURING ROAD CLOSURES.

NOTES:

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2. ROAD CLOSED R11-2 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.). ONE BARRICADE REQUIRED FOR EACH LANE.
3. ROAD CLOSED TO THRU TRAFFIC R11-4 SIGNS SHALL BE INSTALLED ON TEMPORARY TYPE III BARRICADES (8.0' WIDE MIN.).

DETOUR SIGN DETAILS

SIGN ASSEMBLY DESIGNATION	QUANTITY	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE (IN)		SIGN AREA (SF)		SIGN SHEETING TYPE	POST MATERIAL	POST SIZE (TRADE SIZE)	NUMBER OF POST	REMARKS
				X	Y	SINGLE SIGN	TOTAL					
1	4	W20-1	ROAD WORK AHEAD	36	36	9.00	36.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
2	2	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	8.33	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	2	W20-3	ROAD CLOSED NEXT RIGHT	36	36	9.00	18.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
3	1	CUSTOM	LOCAL TRAFFIC ONLY	60	10	4.17	4.17	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	1	W20-3	ROAD CLOSED NEXT LEFT	36	36	9.00	9.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
4	2	CUSTOM	NE 67TH AVE	30	9	1.88	3.75	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	2	M4-9R	DETOUR WITH ARROW RIGHT	30	24	5.00	10.00	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
5	2	CUSTOM	NE 67TH AVE	30	9	1.88	3.75	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	5-IN D LETTERS
	2	M4-9L	DETOUR WITH ARROW LEFT	30	30	6.25	12.50	FLUORESCENT ORANGE				BOTTOM SIGN 7-FT ABOVE GRADE
6	2	R11-4	ROAD CLOSED LOCAL TRAFFIC ONLY	60	30	12.50	25.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
7	2	R11-2	ROAD CLOSED	48	30	10.00	20.00	BLACK ON WHITE TYPE IV	TYPE III BARRICADE SKIDS			
8	1	W20-1	DETOUR AHEAD	36	36	9.00	9.00	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE
9	1	M4-9L	DETOUR WITH ARROW UP	30	30	6.25	6.25	FLUORESCENT ORANGE	WOOD POST	4-IN X 4-IN	1	BOTTOM SIGN 7-FT ABOVE GRADE

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

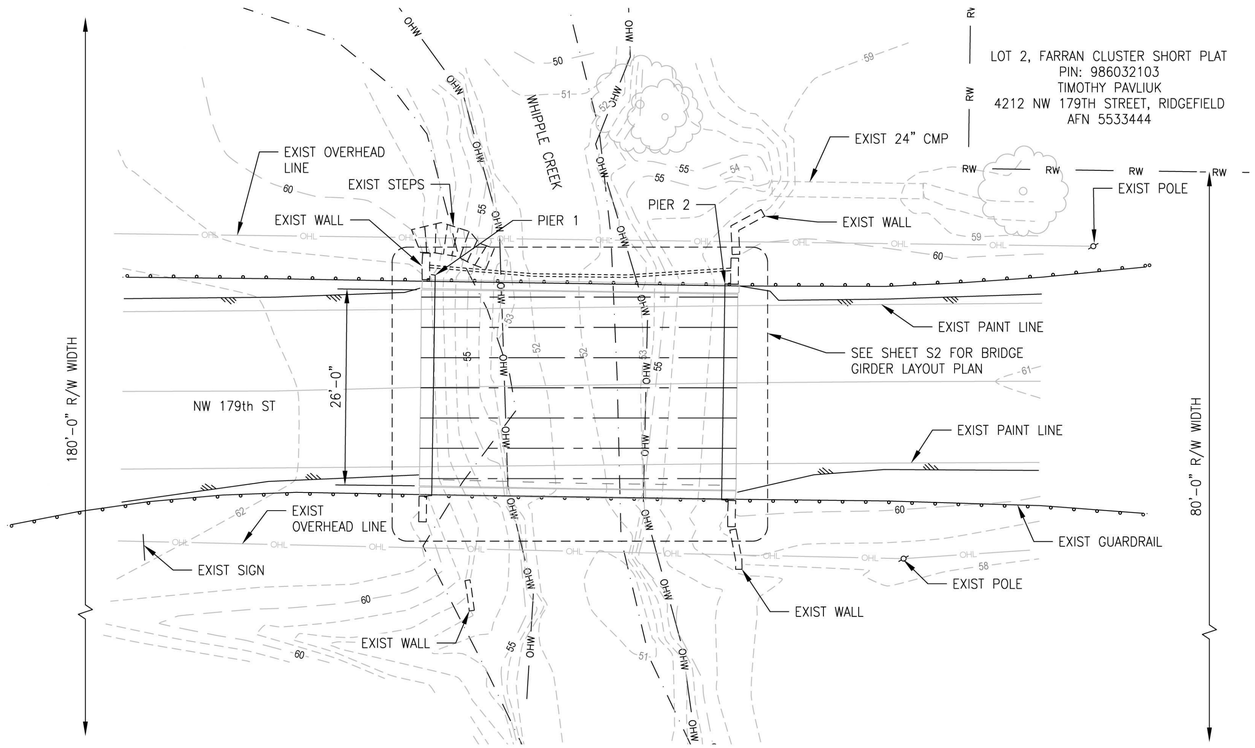
TRAFFIC CONTROL AND DETOUR PLANS
ROAD CLOSURE DETAILS - CARSON BRIDGE NO.63

CRP # **320322**
PRJ # **0001799**

DATE AUG 2026
DET6
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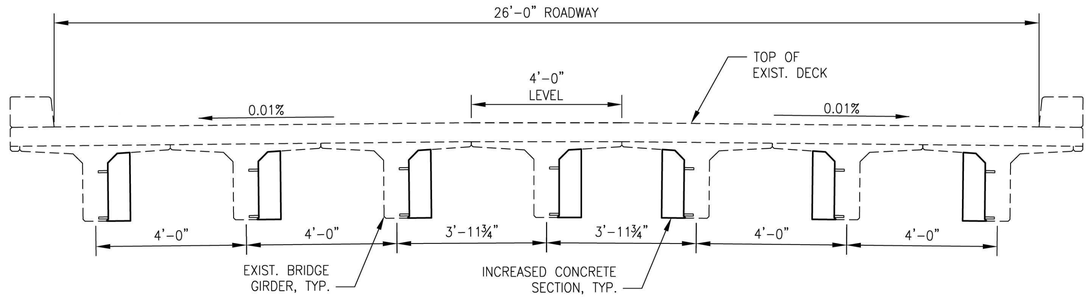
SITE PLAN

1" = 10'-0"

GENERAL NOTES

1. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" 2026 EDITION AND SPECIAL PROVISIONS.
2. THIS STRUCTURE HAS BEEN STRENGTHENED IN ACCORDANCE WITH THE REQUIREMENTS FOR LOAD & RESISTANCE FACTOR DESIGN PER "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS" 2020, NINTH EDITION AND THE WSDOT BRIDGE DESIGN MANUAL.
3. UNLESS OTHERWISE SHOWN ON PLANS, CONCRETE COVER MEASURED FROM FACE OF CONCRETE TO THE FACE OF ANY REINFORCEMENT BAR SHALL BE 2".
4. ALL DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY OR VERTICALLY UNLESS NOTED OTHERWISE.
5. PROVIDE CONCRETE CLASS 4000 WITH MODIFICATIONS NOTED IN THE SPECIAL PROVISIONS.
6. PROVIDE REINFORCING STEEL ACCORDING TO ASTM A706 OR ASTM A615. FIELD BENT AND WELDED REINFORCING SHALL CONFORM TO ASTM A706. UNLESS NOTED OTHERWISE, MINIMUM LAP SPLICE LENGTHS SHALL BE AS FOLLOWS:

REINFORCING SPLICE LENGTHS (CLASS B) GRADE 60									f'c = 4.0 ksi	
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14 & #18
UNCOATED	1'-0"	2'-0"	2'-0"	2'-6"	2'-9"	3'-7"	4'-6"	5'-9"	7'-0"	NOT PERMITTED
COATED	N/A	2'-0"	2'-6"	3'-0"	3'-9"	N/A	N/A	N/A	N/A	NOT PERMITTED



TYPICAL SECTION

1/2" = 1'-0"

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9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

WHIPPLE CREEK BRIDGE NO. 011
LAYOUT

CRP # 320322

PRJ # 0001799

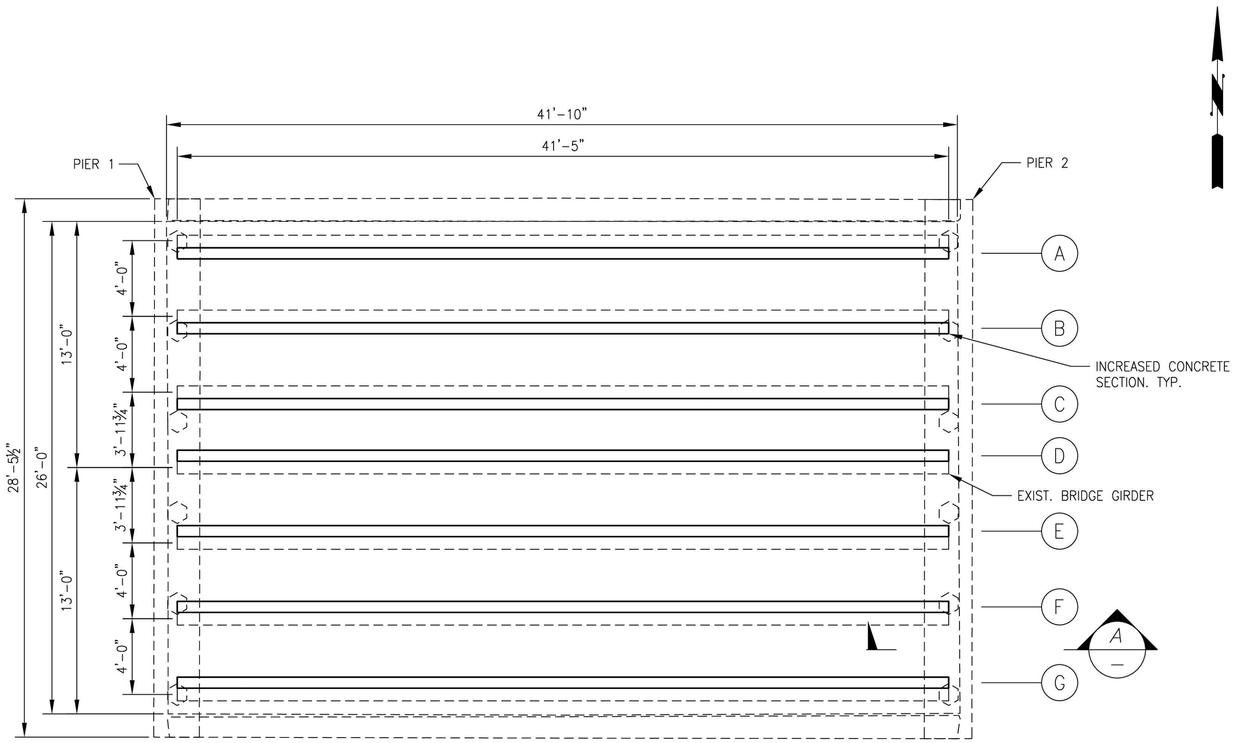
DATE AUG 2026

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13 OF 21

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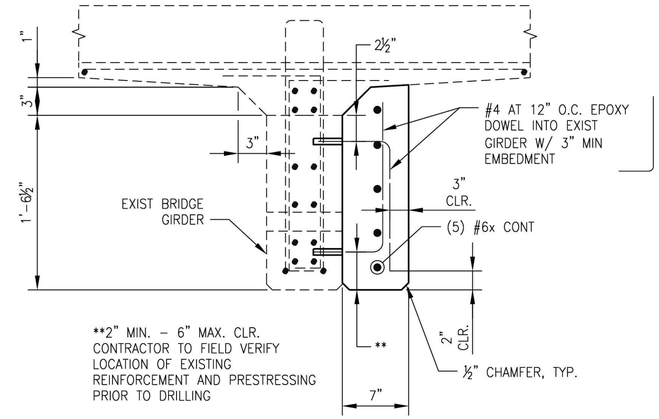


BRIDGE GIRDER LAYOUT PLAN

1/4" = 1'-0"

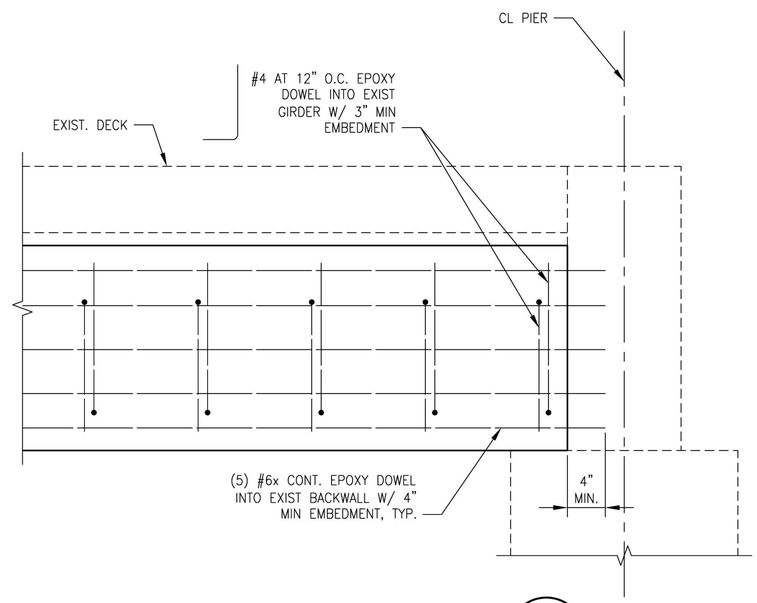
CONSTRUCTION NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING REINFORCEMENT AND EXISTING BRIDGE CONCRETE GIRDER DIMENSIONS PRIOR TO CORE DRILLING.
2. CONTRACTOR TO FIELD ADJUST THE SPACING OF THE DOWEL LOCATIONS ± 3 INCHES TO AVOID A CONFLICT WITH EXISTING REINFORCEMENT.



TYPICAL INTERIOR/EXTERIOR GIRDER SECTION

1 1/2" = 1'-0"



TYPICAL GIRDER DETAIL AT ENDS

A

1 1/2" = 1'-0"

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

WHIPPLE CREEK BRIDGE NO. 011
DETAILS

CRP # **320322**

PRJ # **0001799**

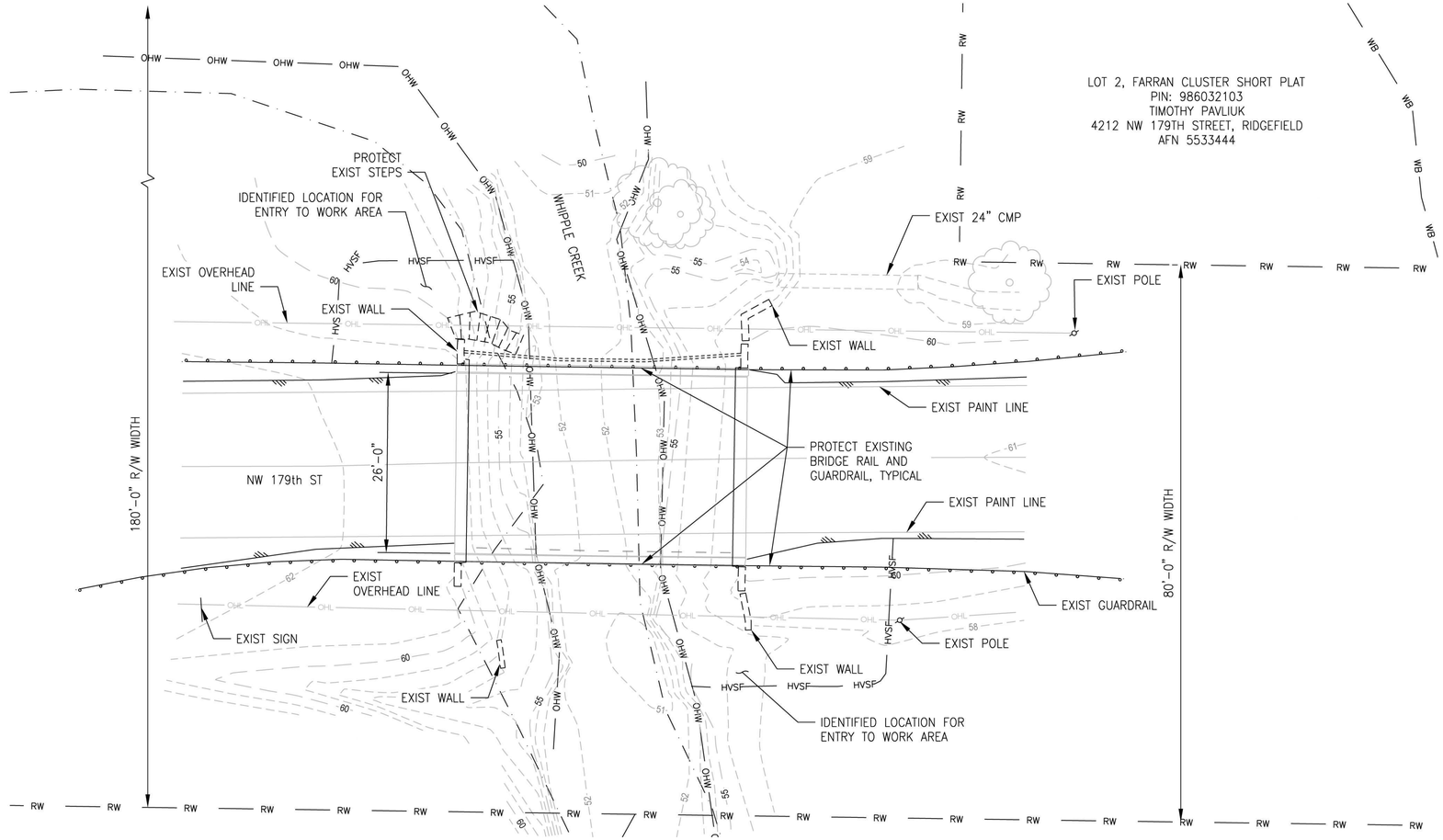
DATE AUG 2026

S2

14 OF 21

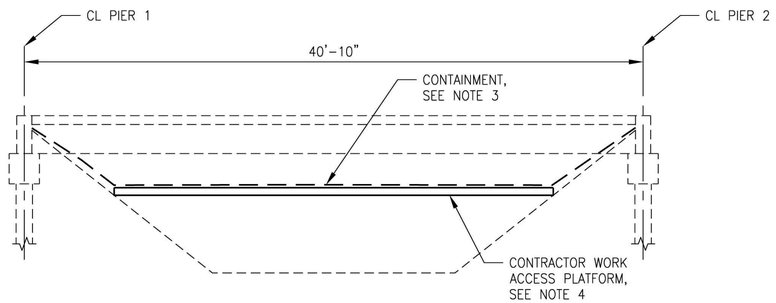
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ACCESS AND EROSION CONTROL PLAN

1" = 10'-0"



BRIDGE ELEVATION

1" = 5'-0"

EROSION CONTROL NOTES

1. *SEED AND MULCH ALL FINAL SLOPES AND DISTURBED AREAS.*
2. *INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT DETAIL I-30.17*
3. CONTAINMENT IN THE FORM OF A GEOFABRIC OR SIMILAR MATERIAL MUST BE UNDER THE WORK AREA TO ENSURE THAT NO WET CONCRETE OR DEBRIS ENTERS THE STREAM OR EDGES OF THE STREAM.
4. WORK ACCESS PLATFORMS ARE TO SPAN THE OHWM AND THE WETTED AREA OF THE STREAM WITH THE SUPPORTS CAREFULLY PLACED ON THE SURFACE TO NOT CAUSE EROSION AND ALLOW SEDIMENT TO ENTER INTO THE STREAM.
5. MINIMAL CUTTING OF VEGETATION IS ALLOWED TO ACCESS UNDER THE BRIDGE. NO CLEARING AND GRUBBING IS PERMITTED.

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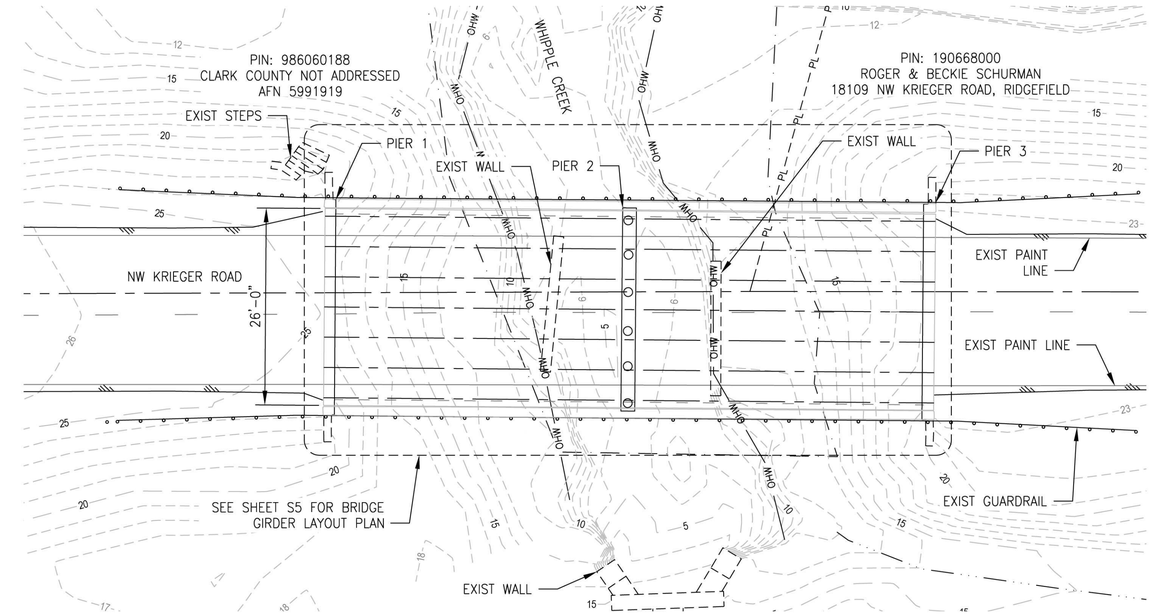
WHIPPLE CREEK BRIDGE NO. 011
CONTRACTOR ACCESS AND EROSION CONTROL PLAN

CRP # ***320322***
PRJ # ***0001799***

DATE AUG 2026
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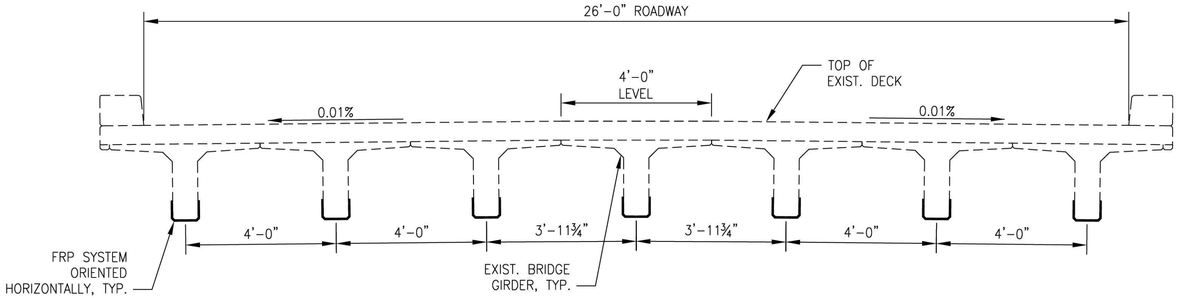
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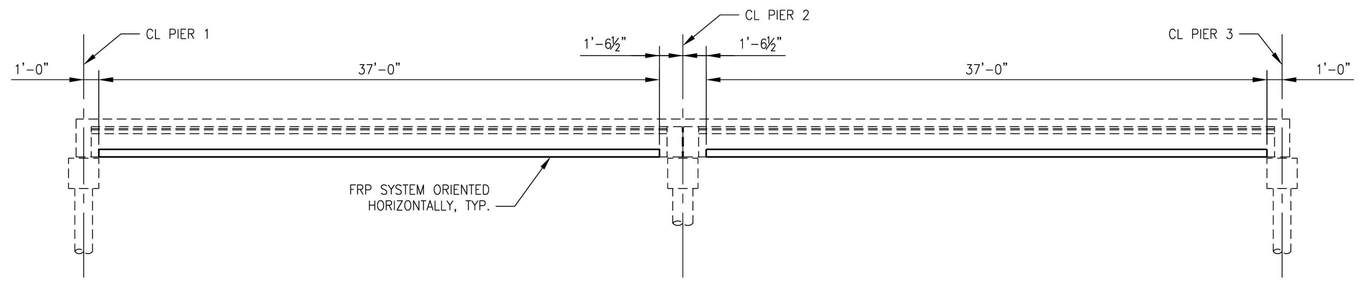
SITE PLAN
1" = 10'-0"

GENERAL NOTES

1. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" 2026 EDITION AND SPECIAL PROVISIONS.
2. THIS STRUCTURE HAS BEEN STRENGTHENED IN ACCORDANCE WITH THE REQUIREMENTS FOR LOAD & RESISTANCE FACTOR DESIGN PER "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS" 2020, NINTH EDITION AND THE WSDOT BRIDGE DESIGN MANUAL.
3. ALL DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY OR VERTICALLY UNLESS NOTED OTHERWISE.



TYPICAL SECTION
1/2" = 1'-0"



ELEVATION
1" = 5'-0"

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND MAY BE INCOMPLETE

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CLARK COUNTY, WASHINGTON

PUBLIC WORKS ENGINEERING & CONSTRUCTION DIVISION

Otak

NICHOLAS JOEL BROWN — STATE OF WASHINGTON — 24008381 — REGISTERED PROFESSIONAL ENGINEER
9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

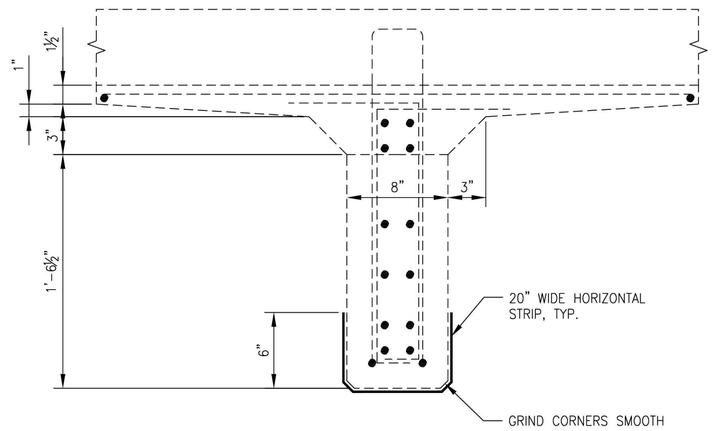
KNAPPS STATION BRIDGE NO. 012
LAYOUT

CRP # **320322**
PRJ # **0001799**

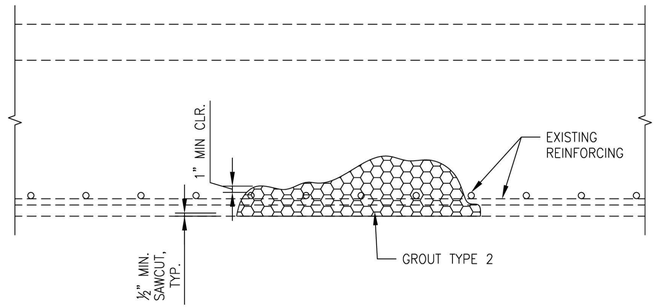
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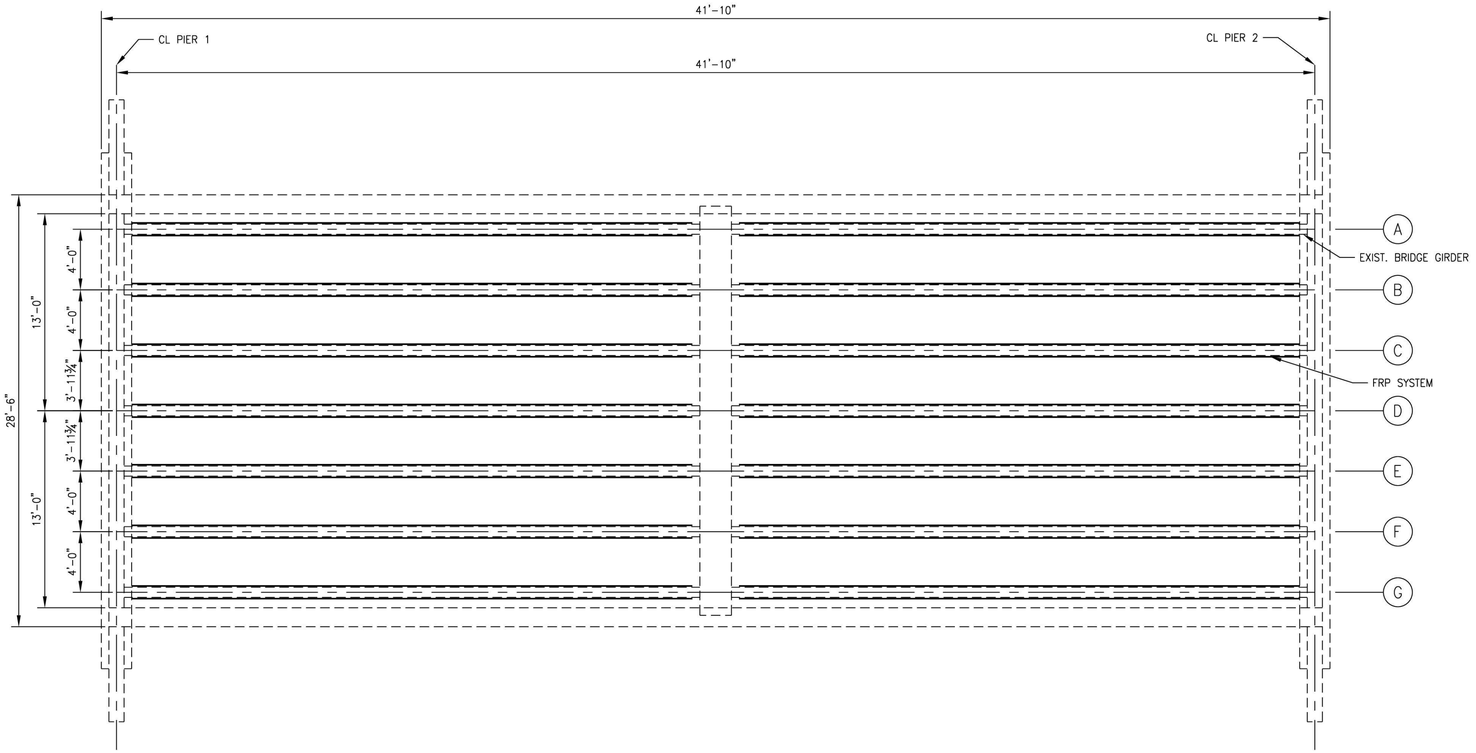


TYPICAL SECTION
2" = 1'-0"



SPALLED CONCRETE REPAIR DETAIL
1" = 1'-0"

CONCRETE (SPALL REPAIR)



BRIDGE GIRDER LAYOUT PLAN
1" = 5'-0"

FRP NOTES

1. PRIOR TO FRP INSTALLATION:
   - 1.1. SOUND EXISTING CONCRETE AND REPAIR ANY SPALLED OR DELAMINATED CONCRETE WITH GROUT TYPE 2.
   - 1.2. THE SURFACE SHALL BE PREPARED USING AN APPROVED ABRASIVE GRINDING TECHNIQUE. WATER BLASTING, SHOT BLASTING AND SAND BLASTING ARE PERMITTED. ALL DEFORMATIONS, HOLES OR VOIDS SHALL BE FILLED WITH A COMPATIBLE EPOXY PUTTY/PASTE.
   - 1.3. FOLLOWING THE SURFACE PREPARATION, ALL EXISTING CRACKS THAT ARE 0.015 INCHES AND WIDER SHALL BE PRESSURE INJECTED WITH EPOXY RESIN IN ACCORDANCE WITH 6-02 OF THE SPECIAL PROVISIONS.
2. FRP SYSTEMS PRIMERS SHALL BE APPLIED AND FRP RESINS AND PLY MATERIAL SHALL BE MIXED, INSTALLED AND CURED IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND APPROVED MANUFACTURER'S RECOMMENDATIONS.
3. THE FRP SHALL RECEIVE A FINAL SURFACE FINISH MATCHING THE COLOR OF EXISTING CONCRETE.

PROJECT DATA

1. THE CONTRACTOR SHALL NSTALL FIBER REINFORCED POLYMER (FRP) STRENGTHENING SYSTEMS MEETING REQUIREMENTS SPECIFIED IN THESE PLANS AND IN ACCORDANCE WITH:
   - 1.1. AASHTO GUIDE SPECIFICATION FOR DESIGN OF BONDED FRP SYSTEMS FOR REPAIR AND STRENGTHENING OF CONCRETE BRIDGE ELEMENTS, 2023.
   - 1.2. AASHTO 10TH EDITION, 2024, LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS
2. EXISTING MATERIALS:
   - REINFORCED CONCRETE DECK: F'c = 4000
   - PRESTRESS CONCRETE: F'c = 6,000
   - REINFORCED STEEL: F'y = 60,000
3. FRP MATERIALS:
   - ALL FRP MATERIALS SHALL MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS.
4. ALL FRP LAYERS SHALL BE CARBON FIBER
5. ALL COMPOSITE ANCHORS ARE 0.5 INCH DIAMETER MINIMUM

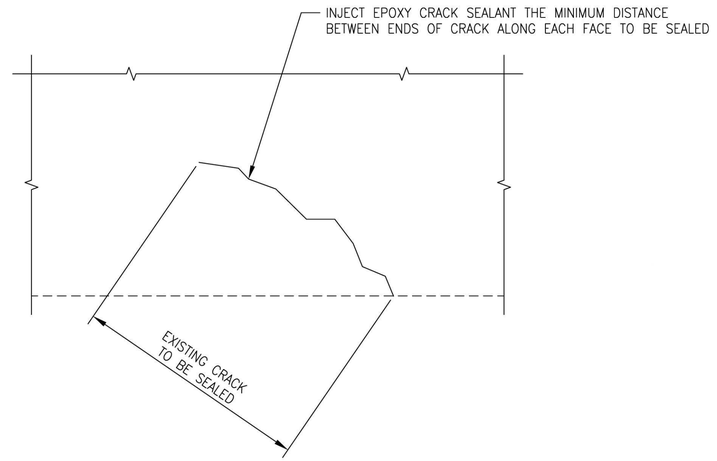
ESTIMATED QUANTITIES

FRP STRENGTHENING = 885 SF
FINAL SURFACE FINISH = 885 SF
EPOXY CRACK SEALING = 40 LF
CONCRETE SPALL REPAIR = 20 SF

1. QUANTITIES ARE FOR INFORMATION ONLY AND ARE ESTIMATE ONLY. ACTUAL QUANTITIES MAY VARY BASED ON THE CONTRACTORS DESIGN AND FIELD CONDITIONS ENCOUNTERED.
2. FRP AREA IS BASED ON PLAN AREA SHOWN IN PLAN WITHOUT DEVELOPMENT LENGTH AND DOES NOT INCLUDE SEPARATE MEASUREMENTS FOR MULTIPLE LAYERS.
3. CRACK REPAIR IS BASED ON OBSERVED CRACKS FROM 2024 FIELD OBSERVATIONS. ACTUAL QUANTITY TO BE DETERMINED BY THE ENGINEER.
4. SPALL REPAIR IS BASED ON 2024 FIELD OBSERVATION. ACTUAL QUANTITY TO BE DETERMINED BY CONTRACTOR BASED ON SOUNDING, ACTUAL SPALLS NOTED IN FIELD, AND AS DIRECTED BY THE ENGINEER.

LEGEND

FRP = FIBER REINFORCED POLYMER



EPOXY CRACK SEALING DETAIL
1" = 1'-0"

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NICHOLAS JOEL BROWN STATE OF WASHINGTON 24008381 REGISTERED PROFESSIONAL ENGINEER

9/04/2026

WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

KNAPPS STATION BRIDGE NO. 012
FRP STRENGTHENING DETAILS

CRP # 320322

PRJ # 0001799

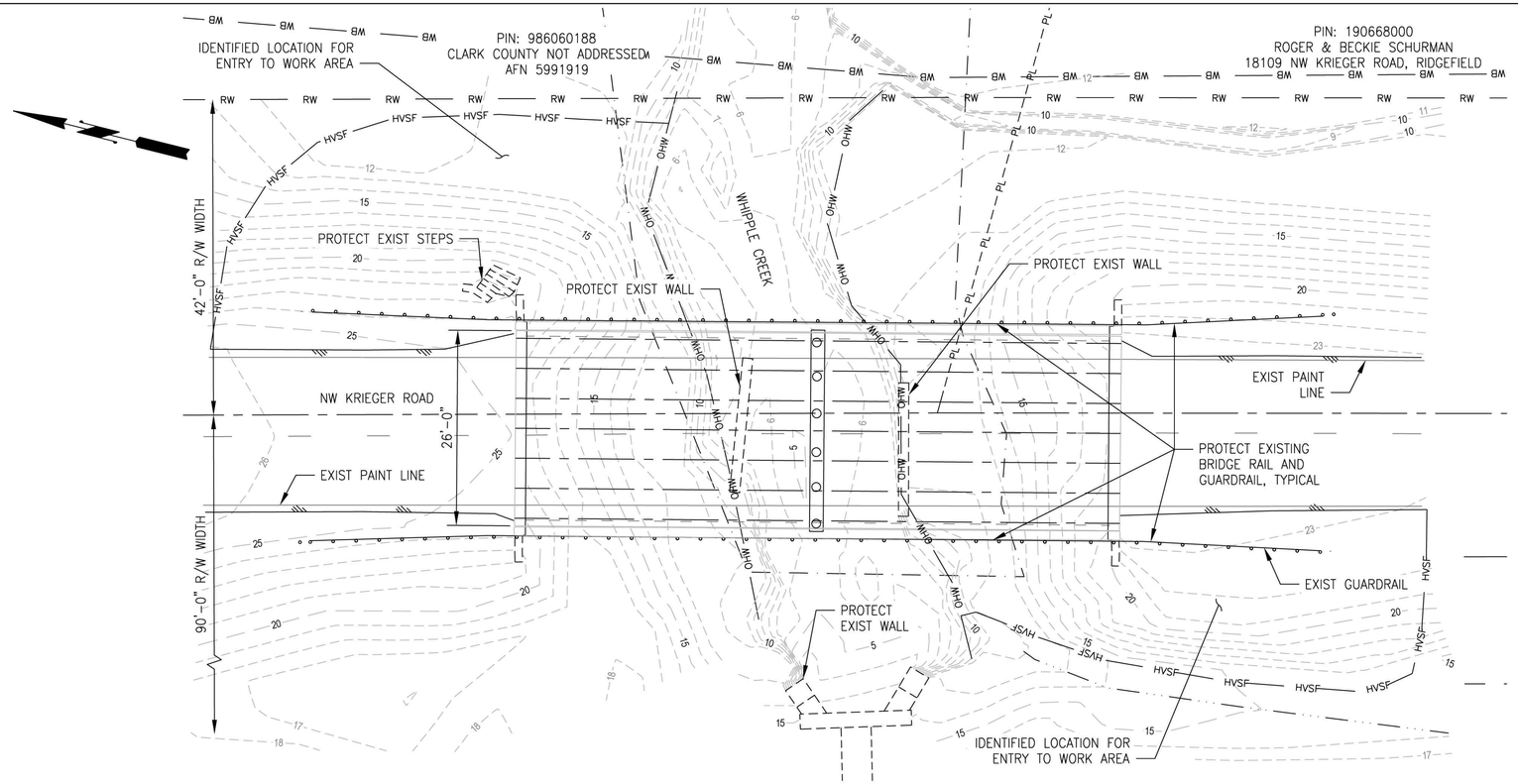
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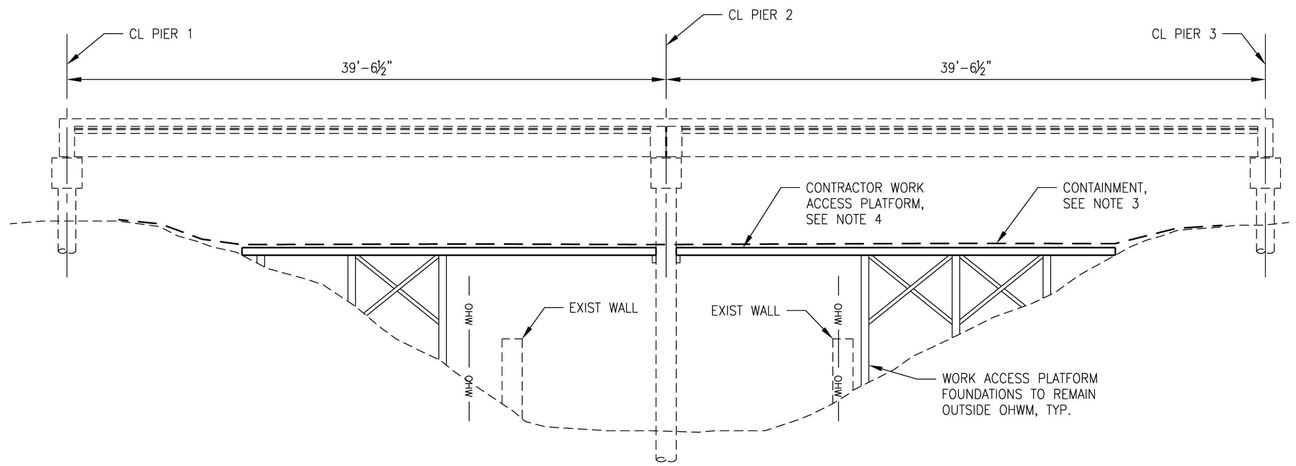
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ACCESS AND EROSION CONTROL PLAN

1" = 10'-0"



BRIDGE ELEVATION

1" = 5'-0"

EROSION CONTROL NOTES

1. *SEED AND MULCH ALL FINAL SLOPES AND DISTURBED AREAS.*
2. *INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT DETAIL I-30.17*
3. CONTAINMENT IN THE FORM OF A GEOFABRIC OR SIMILAR MATERIAL MUST BE UNDER THE WORK AREA TO ENSURE THAT NO WET CONCRETE OR DEBRIS ENTERS THE STREAM OR EDGES OF THE STREAM.
4. WORK ACCESS PLATFORMS ARE TO SPAN THE OHWM AND THE WETTED AREA OF THE STREAM WITH THE SUPPORTS CAREFULLY PLACED ON THE SURFACE TO NOT CAUSE EROSION AND ALLOW SEDIMENT TO ENTER INTO THE STREAM.
5. MINIMAL CUTTING OF VEGETATION IS ALLOWED TO ACCESS UNDER THE BRIDGE. NO CLEARING AND GRUBBING IS PERMITTED.

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WHIPPLE, KNAPPS, CARSON BRIDGE BUNDLE

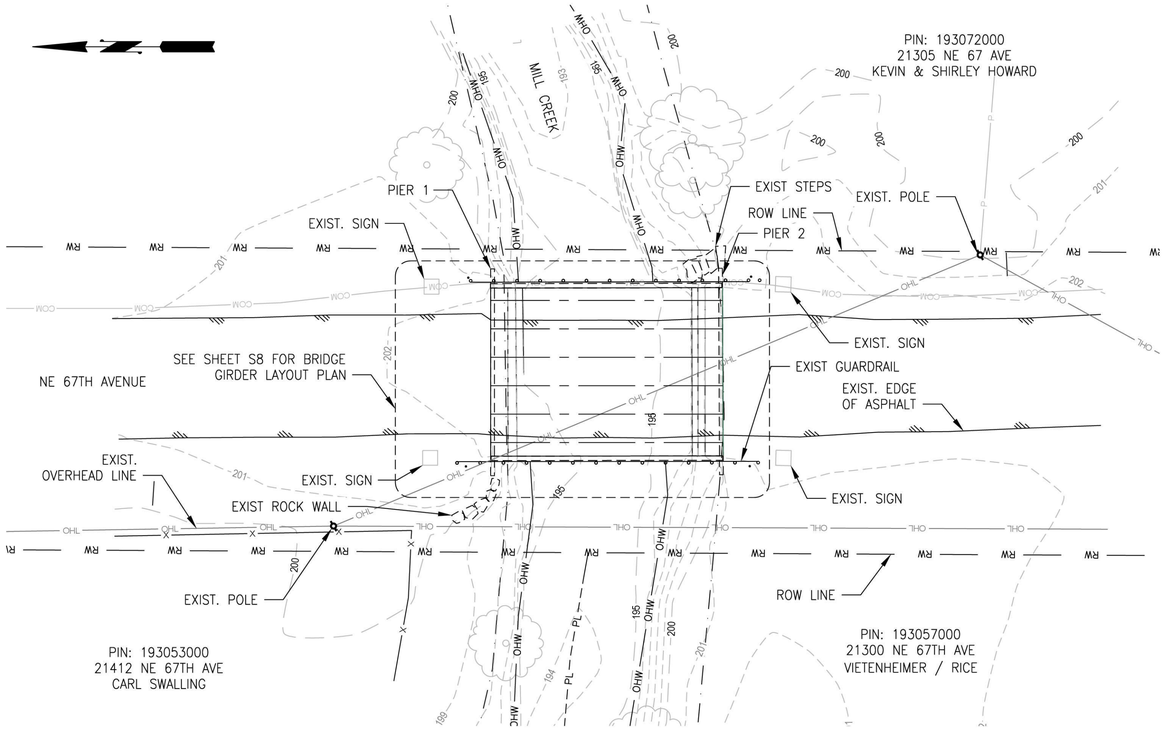
KNAPPS STATION BRIDGE NO. 012
CONTRACTOR ACCESS AND EROSION CONTROL PLAN

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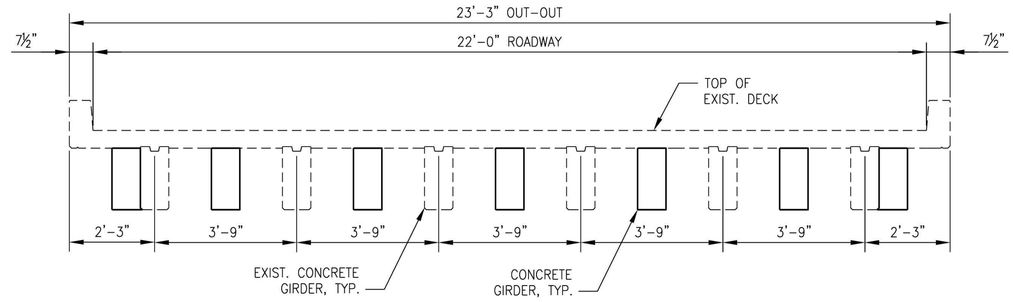
SITE PLAN

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3. UNLESS OTHERWISE SHOWN ON PLANS, CONCRETE COVER MEASURED FROM FACE OF CONCRETE TO THE FACE OF ANY REINFORCEMENT BAR SHALL BE 2".
4. ALL DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY OR VERTICALLY UNLESS NOTED OTHERWISE.
5. PROVIDE CONCRETE CLASS 4000 WITH MODIFICATIONS NOTED IN THE SPECIAL PROVISIONS.
6. PROVIDE REINFORCING STEEL ACCORDING TO ASTM A706 OR ASTM A615. FIELD BENT AND WELDED REINFORCING SHALL CONFORM TO ASTM A706. UNLESS NOTED OTHERWISE, MINIMUM LAP SPLICE LENGTHS SHALL BE AS FOLLOWS:

REINFORCING SPLICE LENGTHS (CLASS B) GRADE 60									f'c = 4.0 ksi	
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14 & #18
UNCOATED	1'-0"	2'-0"	2'-0"	2'-6"	2'-9"	3'-7"	4'-6"	5'-9"	7'-0"	NOT PERMITTED
COATED	N/A	2'-0"	2'-6"	3'-0"	3'-9"	N/A	N/A	N/A	N/A	NOT PERMITTED



TYPICAL SECTION

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STATE OF WASHINGTON
24008581
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9/04/2026

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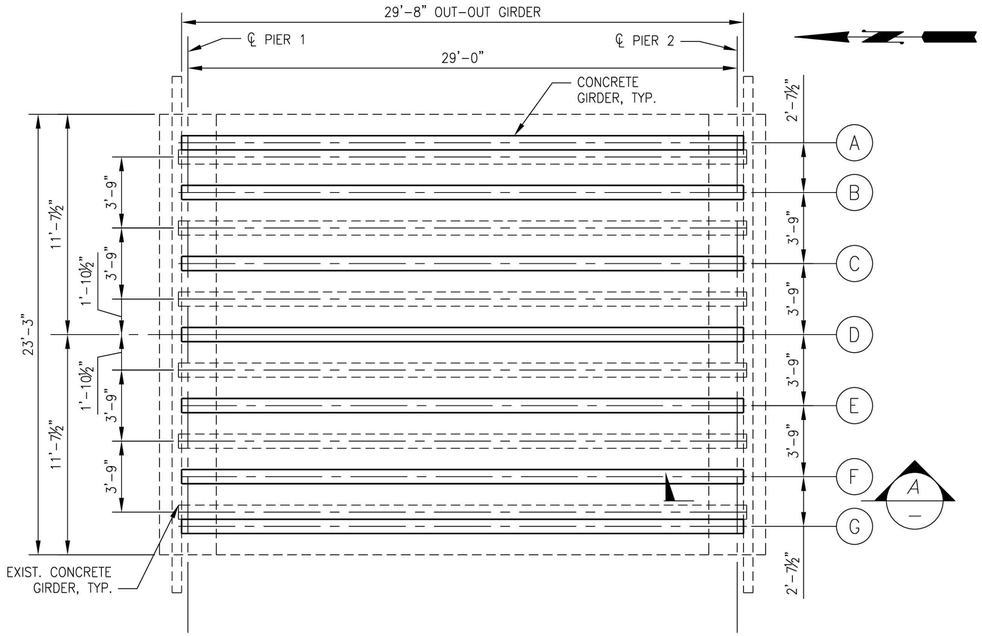
CARSON BRIDGE NO. 063
LAYOUT

CRP # **320322**
PRJ # **0001799**

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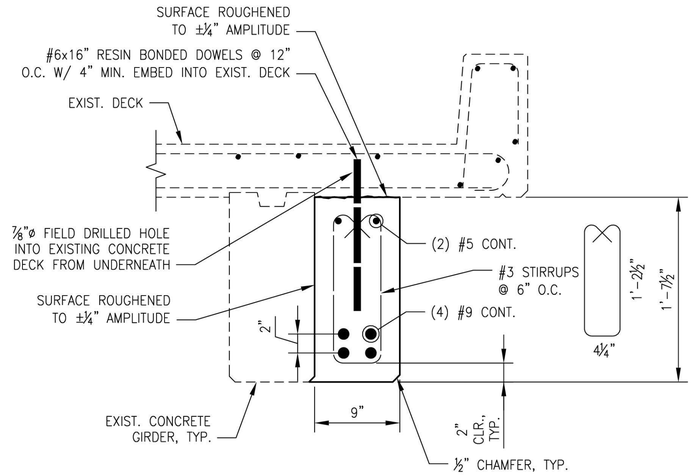


BRIDGE GIRDER LAYOUT PLAN

1/4" = 1'-0"

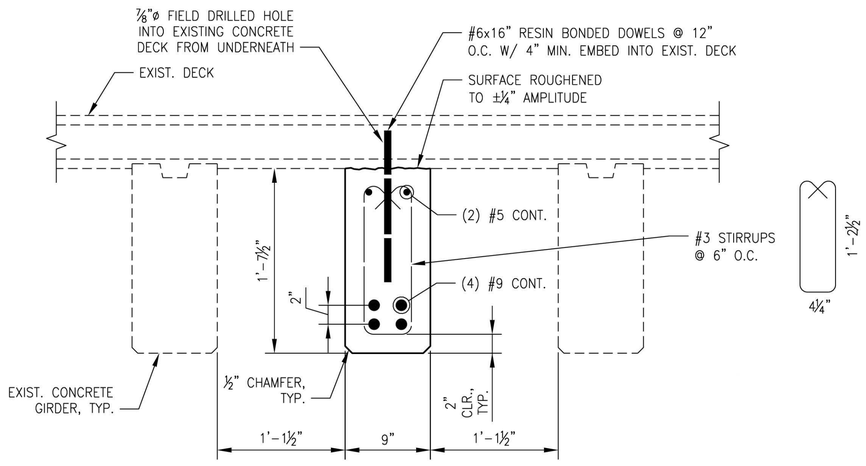
CONSTRUCTION NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING REINFORCEMENT AND EXISTING BRIDGE CONCRETE GIRDER DIMENSIONS PRIOR TO CORE DRILLING.
2. CONTRACTOR TO FIELD ADJUST THE SPACING OF THE DOWEL LOCATIONS ± 3 INCHES TO AVOID A CONFLICT WITH EXISTING REINFORCEMENT.



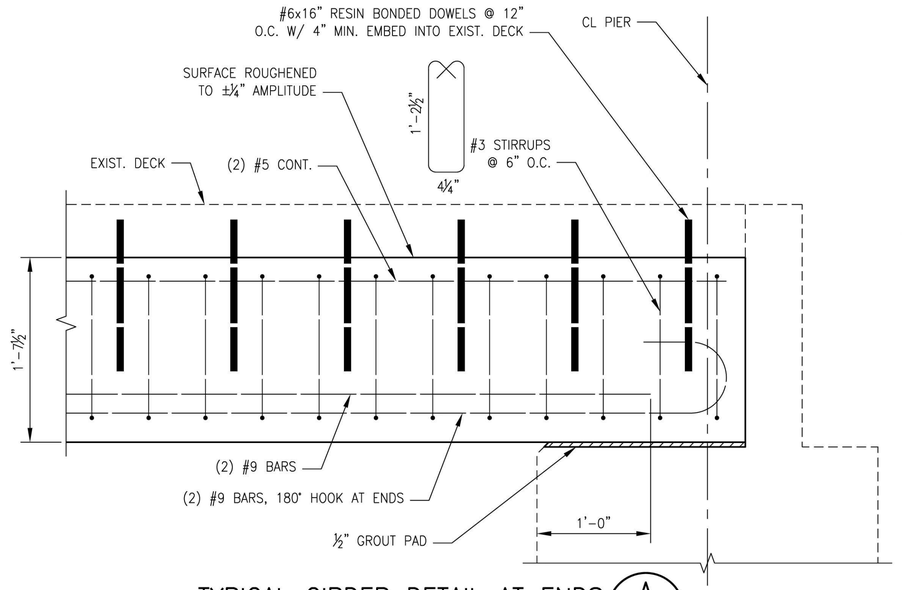
TYPICAL EXTERIOR GIRDER SECTION

1 1/2" = 1'-0"



TYPICAL INTERIOR GIRDER SECTION

1 1/2" = 1'-0"



TYPICAL GIRDER DETAIL AT ENDS

A

1 1/2" = 1'-0"

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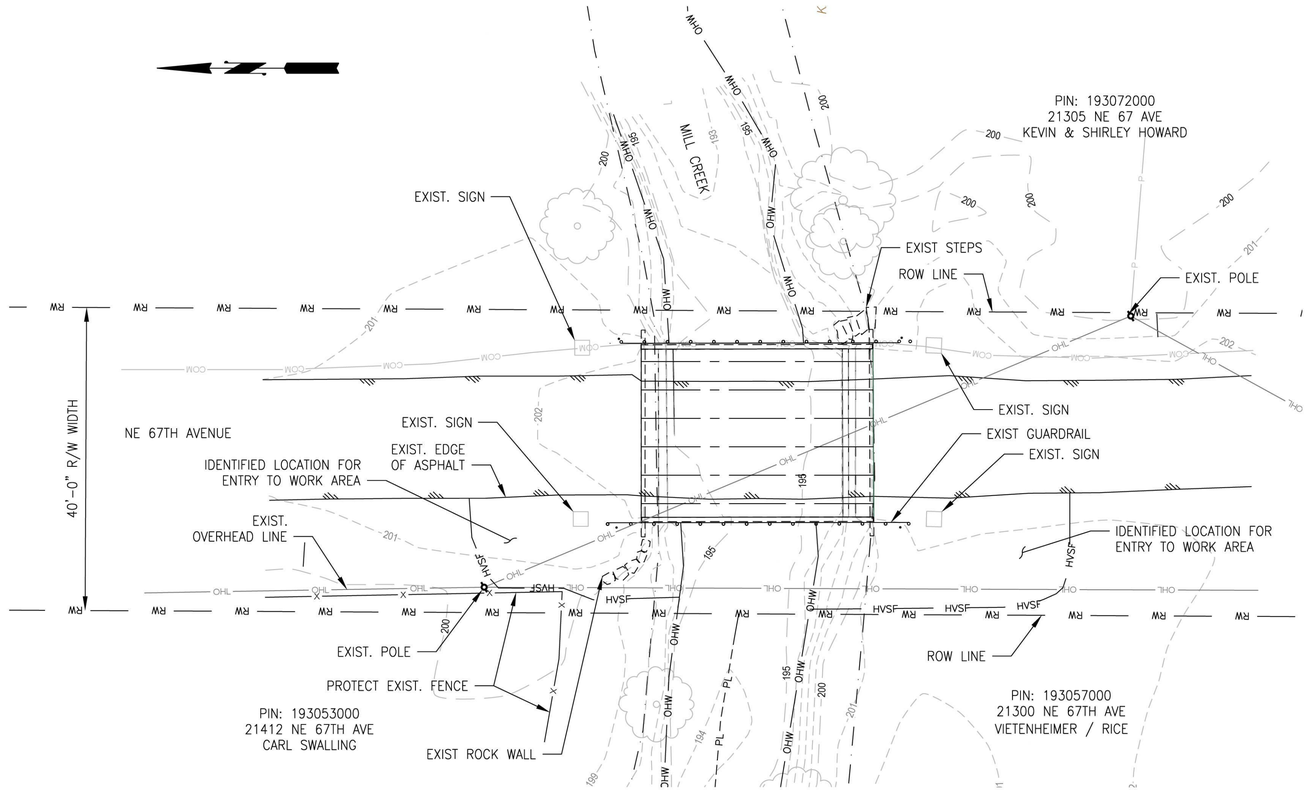
CARSON BRIDGE NO. 063
DETAILS

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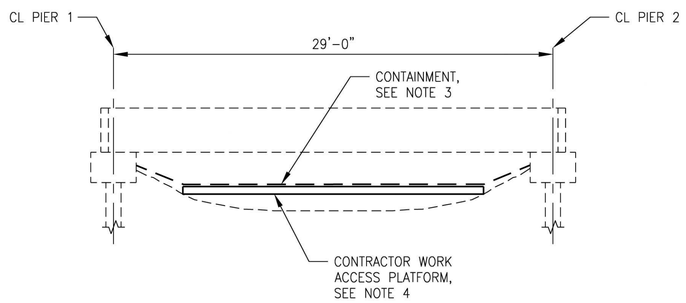
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ACCESS AND EROSION CONTROL PLAN

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