LETTING DATE
Jan. 21, 2015

PRODUCTION SCHEDULE			
EVENT		Proposed Date	Completed Date
D-1	Survey	09-14-2012	04-10-2012
D-2	Field Exam	05-15-2013	06-11-2013
D-3	To Prelim. Culverts	06-14-2013	09-04-2013
B-1	Structures Layout	11-01-2013	10-28-2013
D-5	To Right of Way	11-05-2013	11-05-2013
D-6	Final Grade Plans	11-14-2014	

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

WASHINGTON COUNTY

OVER DRAINAGE DITCH 0.3 MILES EAST OF IA 1 IN KALONA

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

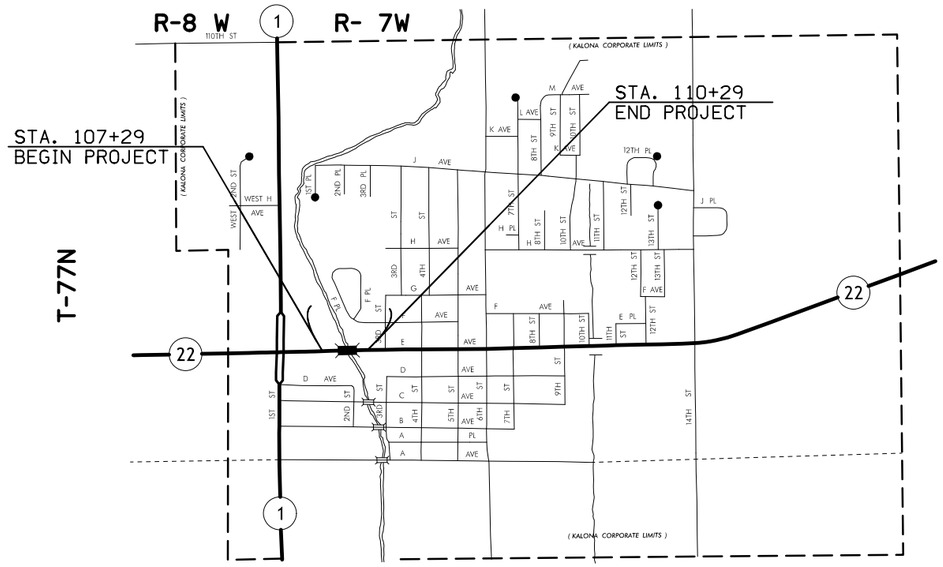
NO MILEAGE SUMMARY

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811
Know what's below. Call before you dig.

REVISIONS

TOTAL 19
PROJECT IDENTIFICATION NUMBER
10-92-022-010
PROJECT NUMBER
BRFN-022-2(48)--39-92
R.O.W. PROJECT NUMBER
STPN-22-2(50)--2J-92

INDEX OF SHEETS



EARTHWORK

CUT = 426
BORROW = 2542
2968

F+30% = 2968

DESIGN DATA RURAL		
2014 AADT	6200	V.P.D.
2034 AADT	8100	V.P.D.
2034 DHV	830	V.P.H.
TRUCKS	10	%
Total Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Primary Signature Block

LOCATION MAP SCALE
0 0.2 0.3 0.4 0.5
Miles

PRELIMINARY PLANS

Subject to change by final design.

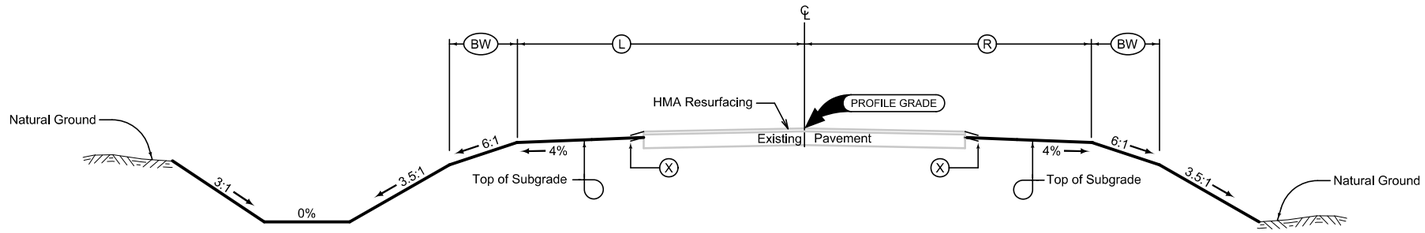
D5 PLAN – November 5, 2013

WASHINGTON Co.

ENGLISH | IOWA DOT | DESIGN TEAM Flattery\Carlson | WASHINGTON COUNTY | PROJECT NUMBER BRFN-022-2(48)--39-92 | SHEET NUMBER A.1

12:01:11 PM 2/26/2014 pcarls2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Current Projects\9202201010\Design\92022048_A01

Shldr
Modified

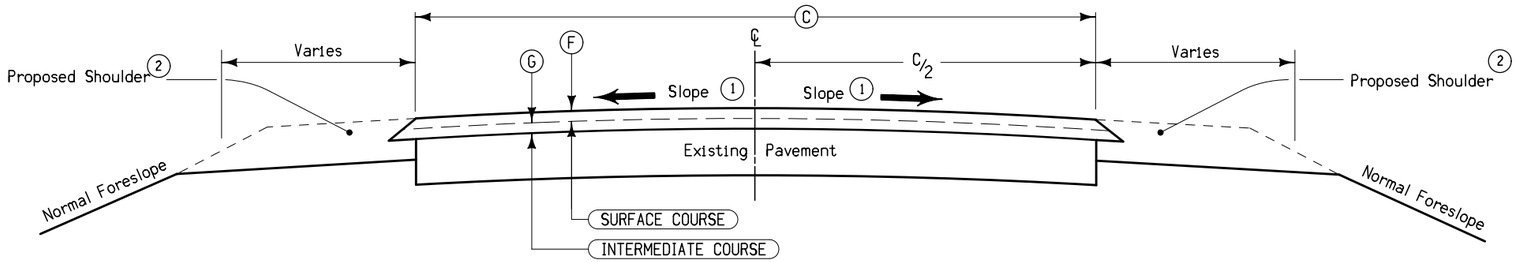


LOCATION				DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		SIDE	(L) Feet	(R) Feet	(G) Feet	(X) Inches	(BW) Feet
IA 22	107+50.00	108+45.82	LT	38.08		10	6	
IA 22	108+45.82	108+89.28	LT	40.04		10	9	
IA 22	108+89.28	110+00.00	LT	38.08		10	6	
IA 22	108+21.00	108+69.73	RT		38.08	10	6	
IA 22	108+69.73	109+12.38	RT		40.04	10	9	
IA 22	109+12.38	110+00.00	RT		38.08	10	6	

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

TYPICAL CROSS SECTION GRADING

2602
MOD 1



Notes:

(1) Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the Engineer through areas of special shaping.

Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.

(2) Shoulder material as specified elsewhere in these plans.

(3) Tack Coat estimated for ___ applications.

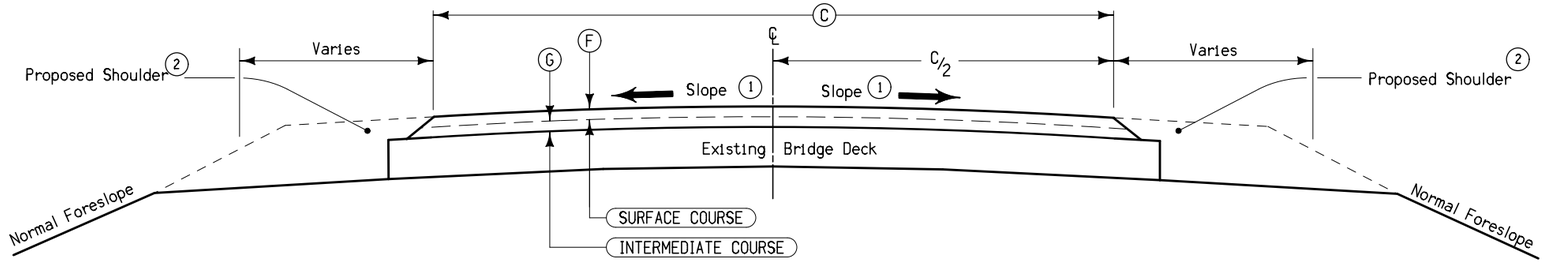
DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

TABLE OF DESIGN QUANTITIES Per Station

LOCATION			(F)	(G)	(C)	TACK COAT (3)	ASPHALT BINDER	HOT MIX ASPHALT (Tons)	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Gallons	Tons	SURFACE	INTERMEDIATE
IA 22	107+50.00	108+59.89	1.5	1.5	44				
IA 22	108+98.60	110+00.00	1.5	1.5	44				

TYPICAL CROSS SECTION HMA RESURFACING

2602
MOD 2



Notes:

(1) Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the Engineer through areas of special shaping.

Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.

(2) Shoulder material as specified elsewhere in these plans.

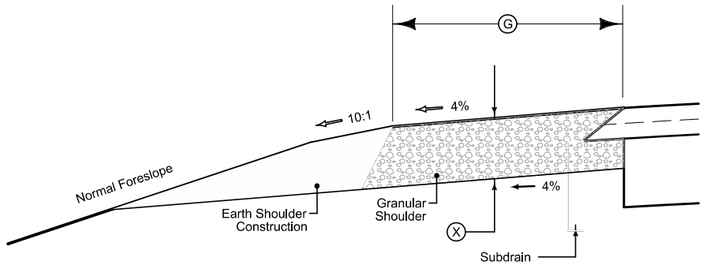
(3) Tack Coat estimated for ___ applications.

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

TABLE OF DESIGN QUANTITIES Per Station

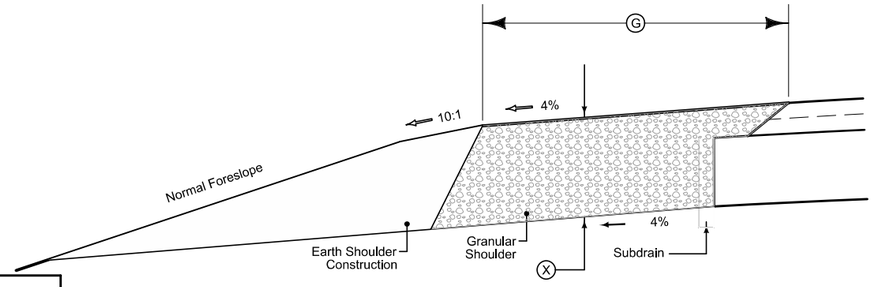
LOCATION			(F)	(G)	(C)	TACK COAT (3)	ASPHALT BINDER	HOT MIX ASPHALT (Tons)	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Gallons	Tons	SURFACE	INTERMEDIATE
IA 22	108+59.89	108+98.60	1.5	1.5	44				

TYPICAL CROSS SECTION HMA RESURFACING



Granular Shoulder				
STATION TO STATION		SIDE	(G) Feet	(X) Inches
107+29.0	108+45.7	LT	10	6
108+89.3	110+00.0	LT	10	6
108+22.0	108+69.7	RT	10	6
109+12.2	110+29.0	RT	10	6

TYPICAL CROSS SECTION
GRANULAR SHOULDER



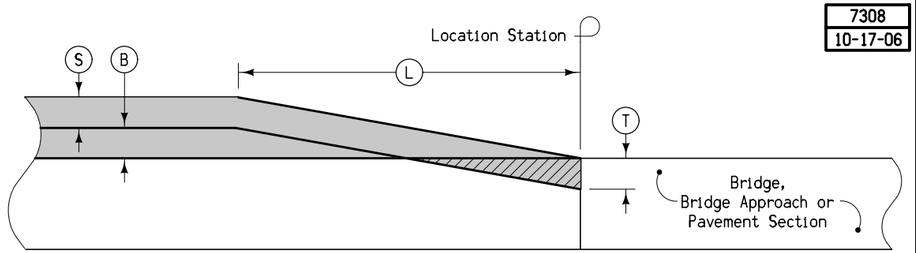
Granular Shoulder				
STATION TO STATION		SIDE	(G) Feet	(X) Inches
108+45.7	108+89.3	LT	10	6
108+69.7	109+12.2	RT	10	6

TYPICAL CROSS SECTION
GRANULAR SHOULDER

7308
10-17-06

Posted Speed Limit (mph)	Runout Ratio (ft per inch)
45 or More	50
20 to 45	25
Under 20	10 *

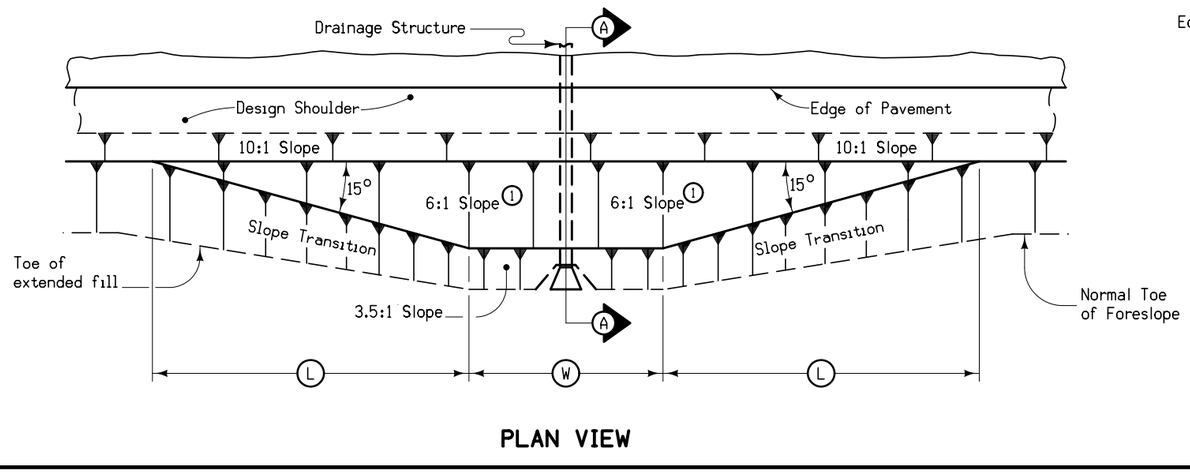
* Based on turning maneuvers at side roads and intersections.



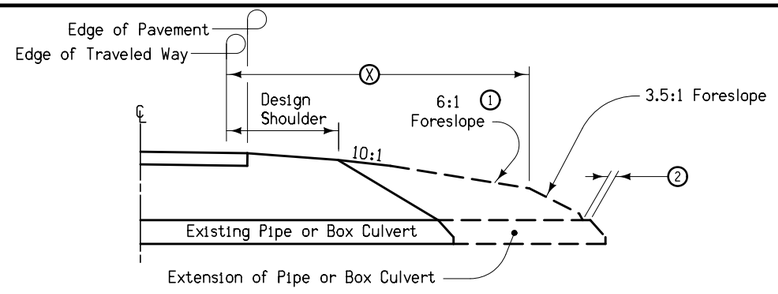
(S) Surface Course
(B) Intermediate Course
(T) Milling

Location Station	(L) Feet	(S) Inches	(B) Inches	(T) Inches	Remarks
107+50.00	75	1.5	1.5	1.5	
110+00.00	75	1.5	1.5	1.5	

SURFACE NOTCH - INTERMEDIATE
RUNOUT FOR DOUBLE COURSE RESURFACING



PLAN VIEW



SECTION A-A

STRUCTURE LOCATION		(W) Feet	(L) Feet	(X) Feet
STATION	SIDE			
108+79.32	BOTH	138	15	14

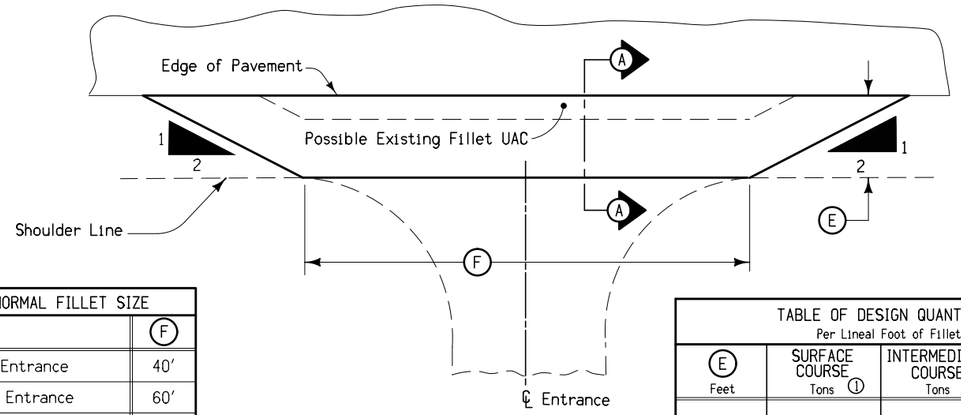
4311
04-17-12

Notes:

At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, the foreslope shall be flattened as indicated so as to cover the structure. Minimum earth cover is 6".

(1) 6:1 Maximum - Slope may be flatter.
(2) 6" Minimum for pipe installations or to top of headwall on R.C.B.
(W) = Pipe or R.C.B. width plus 20 feet each side.

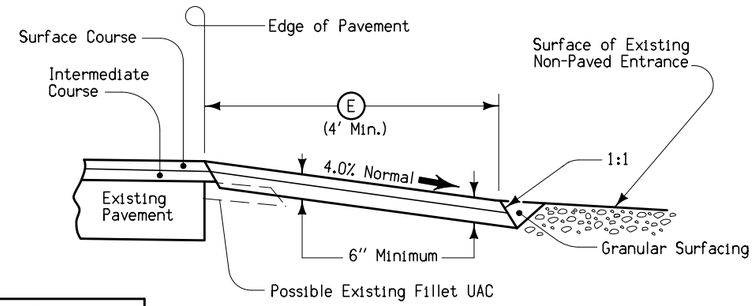
DETAILS OF
BARNROOF FORESLOPE
AT DRAINAGE STRUCTURE



PLAN

NORMAL FILLET SIZE	
Type	(F)
Res. Entrance	40′
Farm Entrance	60′
Commercial Ent.	80′

TABLE OF DESIGN QUANTITIES Per Lineal Foot of Fillet			
(E) Feet	SURFACE COURSE Tons (1)	INTERMEDIATE COURSE Tons (1)	TACK COAT Gal. (2)



SECTION A-A

Note:

Full thickness fillets of hot mix asphalt shall be constructed as non- paved entrances to farm dwellings and other residences where practical, and at commercial entrances.

Fillet sizes as listed in the table are recommended and shall be used for design and estimating purposes. The Engineer shall establish the size of each individual fillet to accommodate conditions at the site.

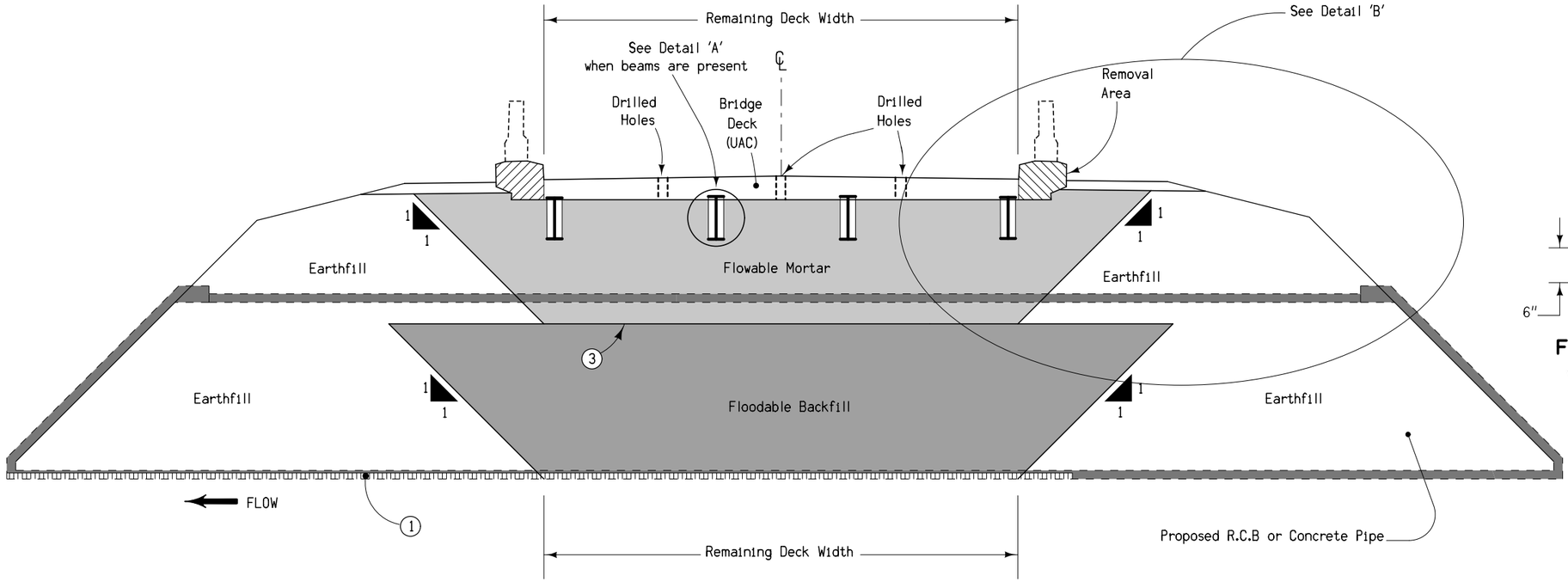
Special shaping of existing surface prior to placement of fillet may be required by the Engineer and shall be considered incidental to other work on the project.

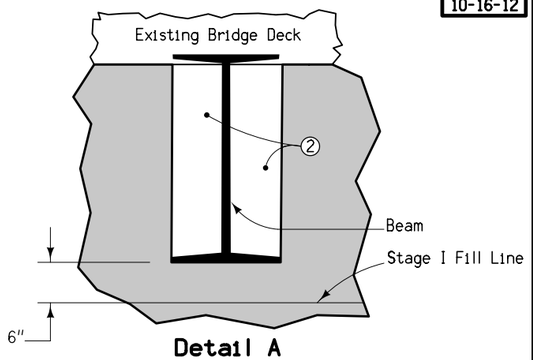
(1) Estimated at 145 lbs./cu. ft.

(2) Estimated for 2 applications at 0.05 gal./sq. yd. The tack coat for entrance fillets may be eliminated when so directed by the Engineer.

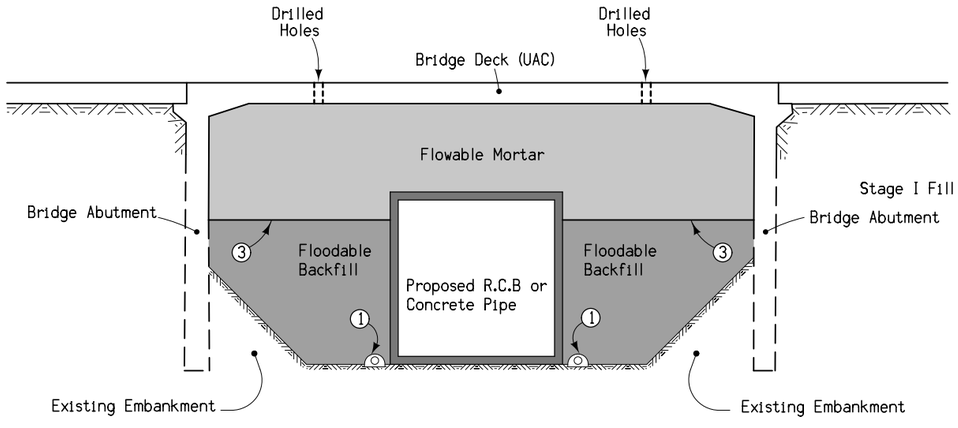
FILLET FOR NON- PAVED ENTRANCES
(HMA Resurfacing Project)

4317
10-16-12

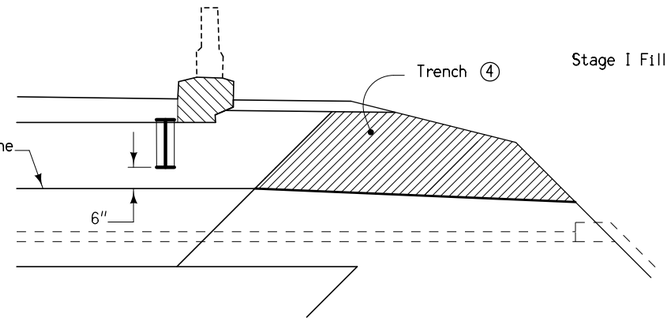




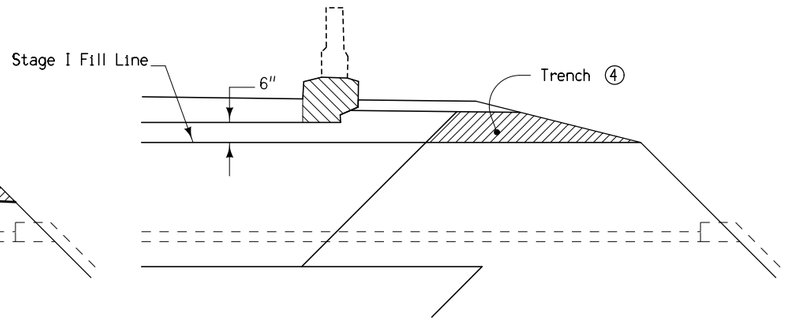
Detail A
Flange Filler Material Area when beams are present



Section along Centerline



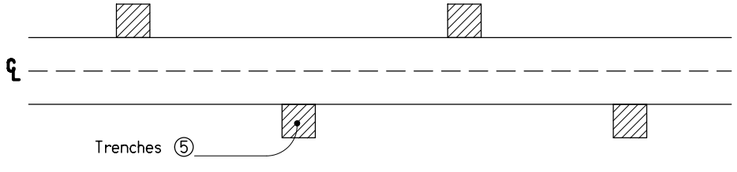
Detail B (Beam Bridge)



Detail B (Slab Bridge)

Denotes pay limits for flowable mortar

Denotes pay limits for flooded backfill



Trench Layout

① 4" Subdrain at flowline elevation of culvert with 4" cover of porous backfill.

② Place Flange Filler Material to fill pocket area between flanges to prevent flowable mortar from building up. Flange Filler Material is incidental to flowable mortar.

③ Fill void with the maximum amount of Floodable Backfill possible. Distance from Floodable Backfill to bridge beams (when present) or bridge deck shall not exceed 5'.

④ Cut trenches in the soil plug to provide drainage for the flowable mortar. Backfill the trenches with open graded crushed stone, gravel, or recycled PCC to allow water to drain. Backfill material is incidental to flowable mortar.

⑤ Place trenches at 20' spacing with a minimum of two trenches on each side of the roadway.

FILL FOR CULVERT USED IN BRIDGE REPLACEMENTS

ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER B.4

SURVEY SYMBOLS

- GDL Guard Rail Steel
- TIL Tile Line
- OUT Tile Outlet
- PR Electic Riser Pole
- SI Sign
- LUM Luminaire
- SL Speed Limit Sign
- FHD Fire Hydrants
- PIP Pipe Culvert
- IN Storm Sewer Intake
- UB Utility Box
- TPD Telephone Pedestal
- LC Lot Corner
- ENT Centerline BL of Entrance
- SNP Unpaved Shoulder
- ENU Edge Unpaved Entrance & Parking
- EW Edge of Water
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- DIK Centerline of Dike or Dam
- BNK Stream Bank
- RIP Rip-Rap
- TDC Tree Deciduous
- FWD Wood Fence
- TEV Evergeen Tree
- ENU Edge Unpaved Entrance & Parking
- BIN Grain Bin
- BL Topo Breakline

UTILITY LEGEND

- ALLIANT ENERGY / MEDIACOM
- IOWA DOT
- ALLIANT ENERGY
- KALONA COOP
- KALONA COOP
- CITY OF KALONA
- ALLIANT ENERGY
- ALLIANT ENERGY

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)	Existing Topographic Features and Labels	10-92-022-010
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation	
Magenta	(5)	Existing Utilities	BRFN-022-2(48)--39-92
SHADING	**Design Color No.**		
Yellow	(4)	Highlight for Critical Notes or Features	STPN-22-2(50)--2J-92
Red	(3)	Delineates Restricted Areas	
Lavender	(9)	Temporary Pavement Shading	
Gray, Light	(48)	Proposed Pavement Shading	
Gray, Med	(80)	Proposed Granular Shading	
Gray, Dark	(112)	Proposed Grade and Pave Shading	
Brown, Light	(236)	Grading Shading	
Tan	(8)	Proposed Sidewalk Shading	
Blue, Light	(230)	Proposed Sidewalk Landing Shading	
Pink	(11)	Proposed Sidewalk Ramp Shading	

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

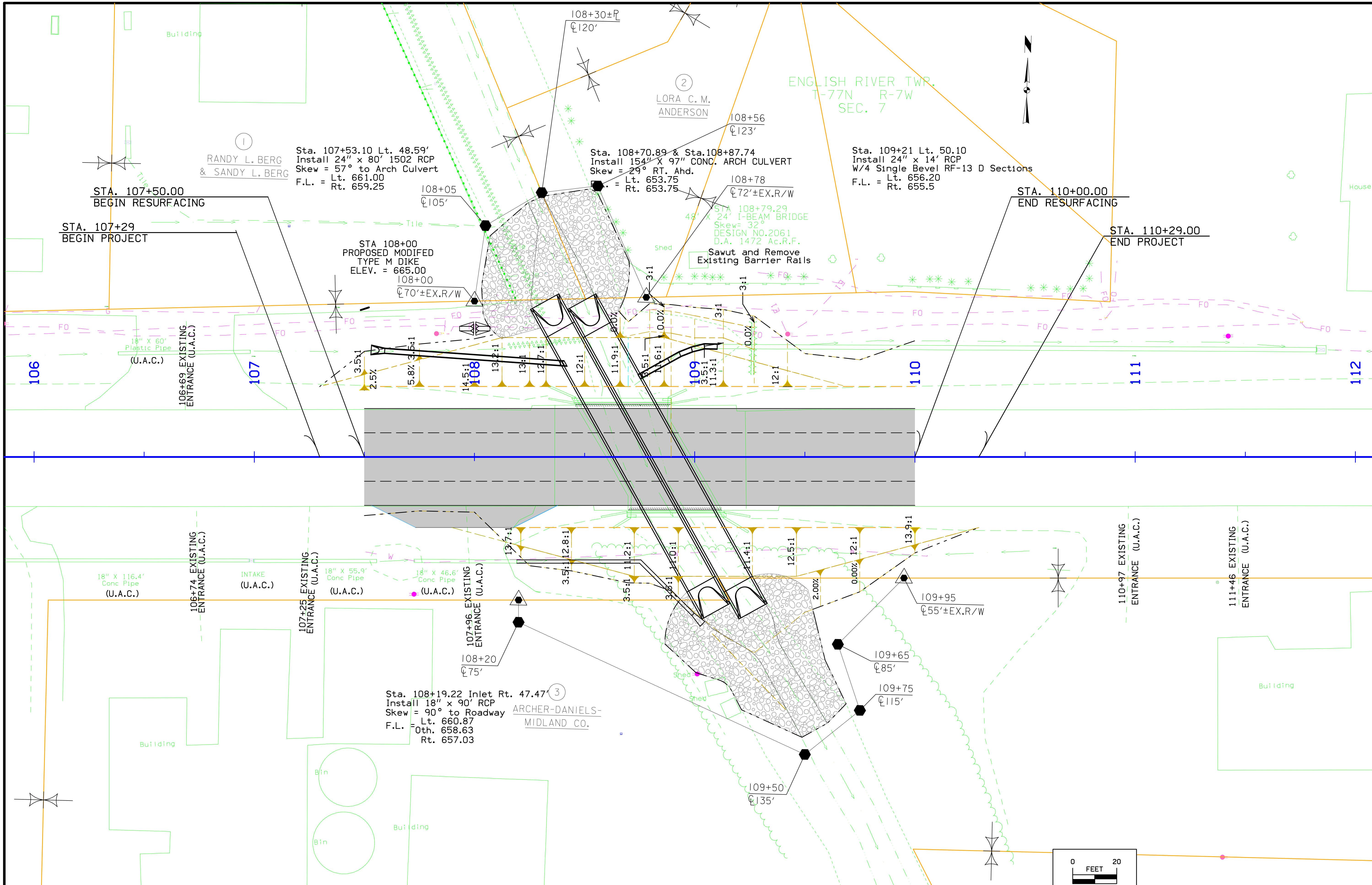
RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- A/C Access Control

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER D.1


STA. 107+29
BEGIN PROJECT
STA. 107+50.00
BEGIN RESURFACING
STA. 110+00.00
END RESURFACING
STA. 110+29.00
END PROJECT
1
RANDY L. BERG
& SANDY L. BERG
2
LORA C. M.
ANDERSON
3
ARCHER-DANIELS-
MIDLAND CO.
ENGLISH RIVER TWP.
T-77N R-7W
SEC. 7
Sta. 107+53.10 Lt. 48.59'
Install 24" x 80' 1502 RCP
Skew = 57° to Arch Culvert
F.L. = Lt. 661.00
Rt. 659.25
Sta. 108+70.89 & Sta.108+87.74
Install 154" X 97" CONC. ARCH CULVERT
Skew = 29° RT. Ahd.
F.L. = Lt. 653.75
Rt. 653.75
Sta. 109+21 Lt. 50.10
Install 24" x 14' RCP
W/4 Single Bevel RF-13 D Sections
F.L. = Lt. 656.20
Rt. 655.5
STA 108+00
PROPOSED MODIFED
TYPE M DIKE
ELEV. = 665.00
Sawut and Remove
Existing Barrier Rails
STA 108+79.29
48' X 24' I-BEAM BRIDGE
Skew= 32°
DESIGN NO.2061
D.A. 1472 Ac.R.F.
Sta. 108+19.22 Inlet Rt. 47.47'
Install 18" x 90' RCP
Skew = 90° to Roadway
F.L. = Lt. 660.87
Oth. 658.63
Rt. 657.03
108+30±℄
℄120'
108+56
℄123'
108+05
℄105'
108+78
℄72'±EX.R/W
108+00
℄70'±EX.R/W
108+20
℄75'
109+95
℄55'±EX.R/W
109+65
℄85'
109+75
℄115'
109+50
℄135'
106+69 EXISTING ENTRANCE (U.A.C.)
106+74 EXISTING ENTRANCE (U.A.C.)
107+25 EXISTING ENTRANCE (U.A.C.)
107+96 EXISTING ENTRANCE (U.A.C.)
110+97 EXISTING ENTRANCE (U.A.C.)
111+46 EXISTING ENTRANCE (U.A.C.)
18" x 60' Plastic Pipe
(U.A.C.)
18" x 116.4' Conc Pipe
(U.A.C.)
INTAKE
(U.A.C.)
18" x 55.9' Conc Pipe
(U.A.C.)
18" x 46.6' Conc Pipe
(U.A.C.)
106
107
108
109
110
111
112
Building
Shed
Bin
House
Tile
FO
3.5:1
2.5%
5.8%
14.5:1
13.2:1
13:1
12.7:1
12:1
11.9:1
0.0%
3.5:1
3.6:1
3.5:1
11.3:1
3:1
0.0%
12:1
13.7:1
12.8:1
3.5:1
11.2:1
11.0:1
11.4:1
12.5:1
2.00%
12:1
0.00%
13.9:1
0 FEET 20

ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER D.2	REVISED

2:16:29 PM 2/26/2014 pcarls2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Current Projects\9202201010\Design\92022048_D02

CUT = 426
BORROW = 2542
2968

F+30% = 2968

668
666
664
662
660
658
656

TIE-IN
STA. 107+50
ELEV 666.14

PROPOSED 3" HMA
LEVELING COURSE

TIE-IN
STA. 110+00
ELEV 666.09

+50 Rt.
662.82

+00 Rt.
663.32

+1.00% Rt.
Ditch Grade

+69
(U.A.C.)
+74
(U.A.C.)
+96
(U.A.C.)
+25
(U.A.C.)
+97
(U.A.C.)
+46
(U.A.C.)

Lt
Rt

U.A.C.
TOE DITCH
U.A.C.
U.A.C.
TOE DITCH
U.A.C.
U.A.C.
SEE X-SECTIONS
DITCH GRADE
U.A.C.

106 +20 +40 +60 +80 107 +20 +40 +60 +80 108 +20 +40 +60 +80 109 +20 +40 +60 +80 110 +20 +40 +60 +80 111 +20 +40 +60 +80 112

C	ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER D.3	REVISED

11:37:06 AM 2/26/2014 pcarls2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Current Projects\9202201010\Design\92022048_D02

Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction on IA 22 over ditch 0.3 miles East of IA 1. This project is a partial field survey for the digital terrain model. Photo Survey will be added and a surface tin created to complete the survey coverage. The survey request and this Index includes high water information. This survey was done out of sequence in project scheduling so that a hydrology study and a project concept (D0) could be completed after D1.

Vertical Control

NAVD88 height was computed at project at Pt. #92001 using post processed adjusted static observations applying Geoid 09. Remaining project control was established relative to Pt. #92001 using averaged base/rover RTK observations.

Washington County Control mark 106 relates to Survey datum as follows:
Published Elev. =665.62 (Local NAVD88)
Survey Elev. = 665.55 (NAVD88) (Geoid09)

BM 573 Sap158,STPN14(37)2j92 relates to Survey datum as follows:
Published Elev. = 786.14 (Local NAVD88)
Survey Elev. = 786.08 (NAVD88) (Geoid09)

Horizontal Control

Washington County Control markers were used to transfer NAD83 (1996) Iowa State Plane South Zone (US Survey Feet.) coordinates to Project Control. Redundant RTK observations were used to verify the published values. The project coordinates are scaled around Washington County Pt. 106 at N= 544956.961, E=2129657.952, 665.62 EL. Using a scale factor of 1.00006634. Additional control points were placed throughout the project using a GNSS Base-Rover setup relative to Pt. 106.

Alignment Information

Survey stationing originates at Sta. 100+00 at the intersection of Ia. 22 and Ia. 1 and run ahead without equation throughout the survey down the center of the pavement. There were no as built plan control points available to equate to on Ia 22. Plan control is missing in this area.

VERTICAL CONTROL

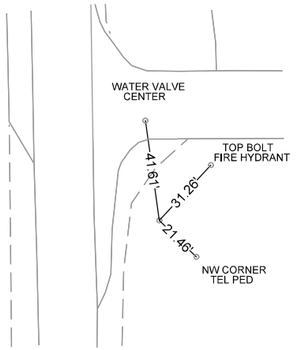
Point	North	East	Elevation	Station(SUR022)	Offset	Feature	Description
BM1	546430.1620	2130474.4320	666.2890	108+44.64	-27.2890	BM	FND IDOT BUTTOM ON TOP OF NW HANDRAIL OF BRIDGE

Point	North	East	Elevation	Station(SUR001)	Offset	Feature	Description
39	546879.1390	2129570.2130	665.7640	715+14.47	-67.9373	BM	FND USGS MONUMENT

CP STA "OFF CHAIN"

CP No. 38, WASHINGTON COUNTY GPS 106

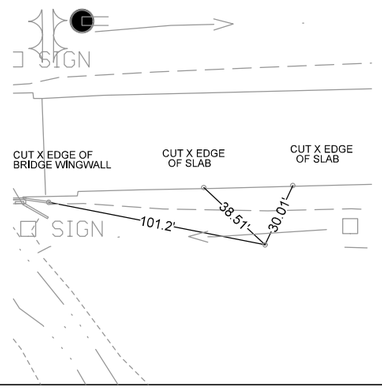
N= 544956.961, E=2129657.952



CP STA 110+23.59, 48.93 RT

CP No. 92001, SET FENO TYPE MONUMENT

N= 546358.458, E=2130655.233



Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: Gettings/Cuva/Richey
ROW #: STPN-22-2(50)--2J-92
Plan Date: 3/3/14
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition

(1) RANDY L. BERG & SANDY L. BERG

Sta. 107+53.10 Lt. 48.59'
Install 24" x 80' 1502 RCP
Skew = 57° to Arch Culvert
F.L. = Lt. 661.00
Rt. 659.25

STA. 107+50.00
BEGIN RESURFACING

STA. 107+29
BEGIN PROJECT

108+05
℄105'

STA 108+00
PROPOSED MODIFED
TYPE M DIKE
ELEV. = 665.00

108+00
℄70'±EX.R/W

(2) LORA C. M. ANDERSON

108+30±R
℄120'

108+56
℄123'

Sta. 108+70.89 & Sta.108+87.74
Install 154" X 97" CONC. ARCH CULVERT
Skew = 29° RT. Ahd.
F.L. = Lt. 653.75
Rt. 653.75

108+78
℄72'±EX.R/W

Sawut and Remove
Existing Barrier Rails

Sta. 109+21 Lt. 50.10
Install 24" x 14' RCP
W/4 Single Bevel RF-13 D Sections
F.L. = Lt. 656.20
Rt. 655.5

STA. 110+00.00
END RESURFACING

STA. 110+29.00
END PROJECT

106+69 EXISTING ENTRANCE (U.A.C.)

106+74 EXISTING ENTRANCE (U.A.C.)

107+25 EXISTING ENTRANCE (U.A.C.)

107+96 EXISTING ENTRANCE (U.A.C.)

110+97 EXISTING ENTRANCE (U.A.C.)

111+46 EXISTING ENTRANCE (U.A.C.)

108+60
℄65'

109+05
℄115'

109+50
℄135'

109+65
℄75'

109+75
℄115'

109+95
℄55'±EX.R/W

(3) ARCHER-DANIELS-MIDLAND CO.

Sta. 108+19.22 Inlet Rt. 47.47
Install 18" x 90' RCP
Skew = 90° to Roadway
F.L. = Lt. 660.87
Oth. 658.63
Rt. 657.03

0 20 FEET

ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER H.1

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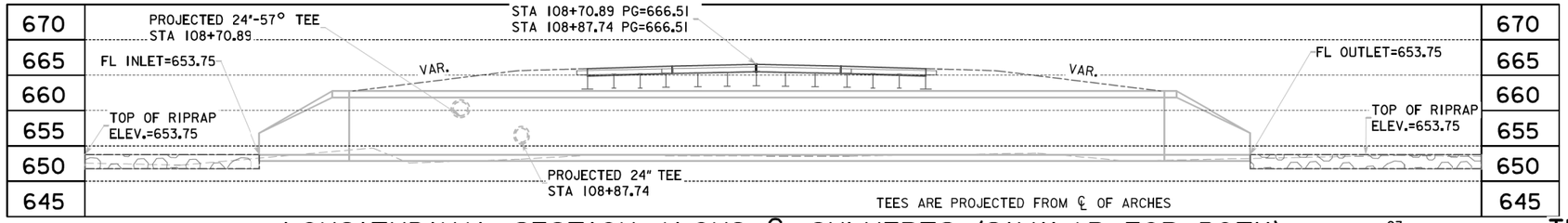
BENCH MARK NO.1 - STA 108+44.64, 27.29' LT., FND. IDOT BUTTON ON TOP OF NW HANDRAIL BRIDGE - ELEV.=666.29



0.3193% -0.4367%

PI STA 108+87.13 VC = 70'
PI ELEV 666.58

ESTIMATED PROFILE GRADE ON IA 22

U.A.C. EXISTING PLUS 3" FOR FUTURE SURFACING.
PROFILE GRADE LINE (PGL) IS AT ℄ OF LANES.

LONGITUDINAL SECTION ALONG ℄ CULVERTS (SIMILAR FOR BOTH)

STA 108+79.29
43' X 48' I-BEAM BRIDGE
SKEW= 30°
DESIGN NO. 3434/2061
D.A. 1472 AC. H-R-F

STA 108+70.89
154" X 97" X 132' 1101 RC LOW CLEARANCE CULVERT
SKEW=29° RA
24" 57° TEE AT G=128'-0 FROM OUTLET APRON
FL TEE=659.25
SHORT SIDE LENGTH OF TEE=0.47'
FL INLET=653.75
FL OUTLET=653.75
DO NOT IMPACT TILE LINES AT OUTLET BANK

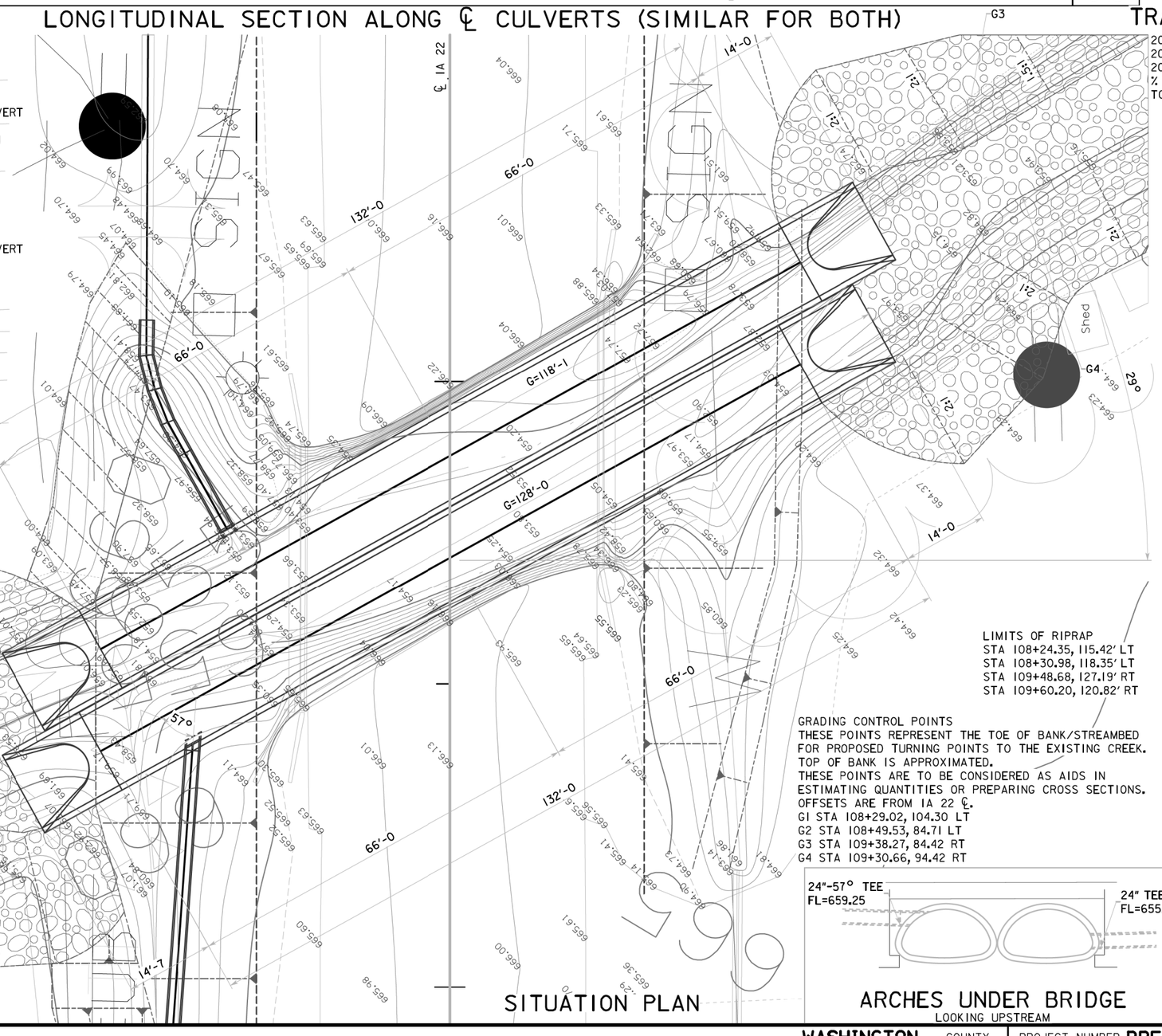
STA 108+87.74
154" X 97" X 132' 1101 RC LOW CLEARANCE CULVERT
SKEW=29° RA
24" 90° TEE AT G=118'-1 FROM OUTLET APRON
FL TEE=655.50
LENGTH OF TEE=0.41'
FL INLET=653.75
FL OUTLET=653.75

STA 109+00

STA 107+53.10, LT 48.59'
24" X 80' 1502 RCP
SKEW=57° TEE TO ARCH STA 108+70.89
FL INLET=662.00
FL OUTLET=659.25
STA 108+00, 58.12' LT.
MODIFIED TYPE M DIKE
TOP ELEV.=665.00 TOP WIDTH=7.5'

STA 109+10.21, LT 50.10'
24" X 14' [MODIFIED DETAIL] RCP
WITH 4 SINGLE BEVEL RF-13
D SECTIONS AT INLET CONNECTION
SKEW=0° TEE TO ARCH STA 108+87.74
FL INLET=656.20
FL OUTLET=655.50

STA 108+00



SITUATION PLAN

LIMITS OF RIPRAP
STA 108+24.35, 115.42' LT
STA 108+30.98, 118.35' LT
STA 109+48.68, 127.19' RT
STA 109+60.20, 120.82' RT

GRADING CONTROL POINTS
THESE POINTS REPRESENT THE TOE OF BANK/STREAMBED FOR PROPOSED TURNING POINTS TO THE EXISTING CREEK. TOP OF BANK IS APPROXIMATED.
THESE POINTS ARE TO BE CONSIDERED AS AIDS IN ESTIMATING QUANTITIES OR PREPARING CROSS SECTIONS.
OFFSETS ARE FROM IA 22 ℄.
G1 STA 108+29.02, 104.30 LT
G2 STA 108+49.53, 84.71 LT
G3 STA 109+38.27, 84.42 RT
G4 STA 109+30.66, 94.42 RT

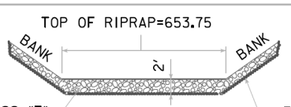
ARCHES UNDER BRIDGE
LOOKING UPSTREAM

TRAFFIC ESTIMATE

2014 A.A.D.T. = 6200 VPD
2034 A.A.D.T. = 8100 VPD
2034 D.H.V. = 830 VPH
% TRUCKS = 10 %
TOTAL DESIGN ESAL's= ?

UTILITY LEGEND

- ALLIANT ENERGY / MEDIACOM
- IOWA DOT
- UB ALLIANT ENERGY
- TP KALONA COOP
- FO KALONA COOP
- W CITY OF KALONA
- G ALLIANT ENERGY
- E1 ALLIANT ENERGY



TYPICAL DEFINED CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	410	380	250
OUTLET	450	420	280
TOTALS	860	800	530

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
ASSUMES CHANNEL AND BANKS TO BE GRADED TO GRADING SURFACE PRIOR TO EXCAVATION, THEN RIPRAP PLACED.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

0 ENGLISH 20
SCALE IN FEET

HYDRAULIC DATA

DRAINAGE AREA= 2.3 MI²
STREAM SLOPE= 23.2 FT./MI.

Q_{50}= 1352 CFS
CALC. HEADWATER= 663.06
AVG. OUTLET VELOCITY= 8.32 FT/SEC

Q_{100}= 1640 CFS
CALC. HEADWATER= 664.47
AVG. OUTLET VELOCITY= 10.09 FT/SEC

Q_{500}= 2200 CFS
Q OVERTOPPING > Q_{500}

EXTREME HW STAGE= 665.0
DATE= UNKNOWN

LOCATION

IA 22 OVER DRAINAGE DITCH
T-77N R-7W
SECTION 7
ENGLISH RIVER TOWNSHIP
WASHINGTON COUNTY
BRIDGE MAINT. NO. 9235.4SO22
FHWA NO. 51730
STA 108+70.89-
LATITUDE 41.485892° N
LONGITUDE 91.711150° W
STA 108+87.74-
LATITUDE 41.485892° N
LONGITUDE 91.711089° W

PRELIMINARY

DESIGN FOR 29° RA SKEW

TWIN 154" x 97" x 132' REINFORCED CONCRETE LOW CLEARANCE CULVERTS

WITH RF-42 APRONS

SITUATION PLAN

STATIONS: 108+70.89, 108+87.74 ?

WASHINGTON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. ____ OF ____ FILE NO. 30991 DESIGN NO. ____

DESIGN TEAM | WASHINGTON COUNTY | PROJECT NUMBER BRF-022-2(48)--39-92 | SHEET NUMBER V.1

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LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- Additional Topsoil Removal
- Subgrade Treatment
- Granular Shoulder
- Pavement
- Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS — Topsoil (Class 10)
- TS A — Topsoil (Type A Disposal)
- TS B — Topsoil (Type B Disposal)
- TS C — Topsoil (Type C Disposal)
- CL 10 — Class 10 Materials
- SEL LO — Select Loams And Clay-Loams
- SEL SA — Select Sand
- UNS A — Unsuitable Type A Disposal
- UNS B — Unsuitable Type B Disposal
- UNS C — Unsuitable Type C Disposal
- SHALE — Shale
- WASTE — Waste
- B&W LS — Broken and Weathered Rock
- ROCK — Solid Rock
- BLDRS — Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

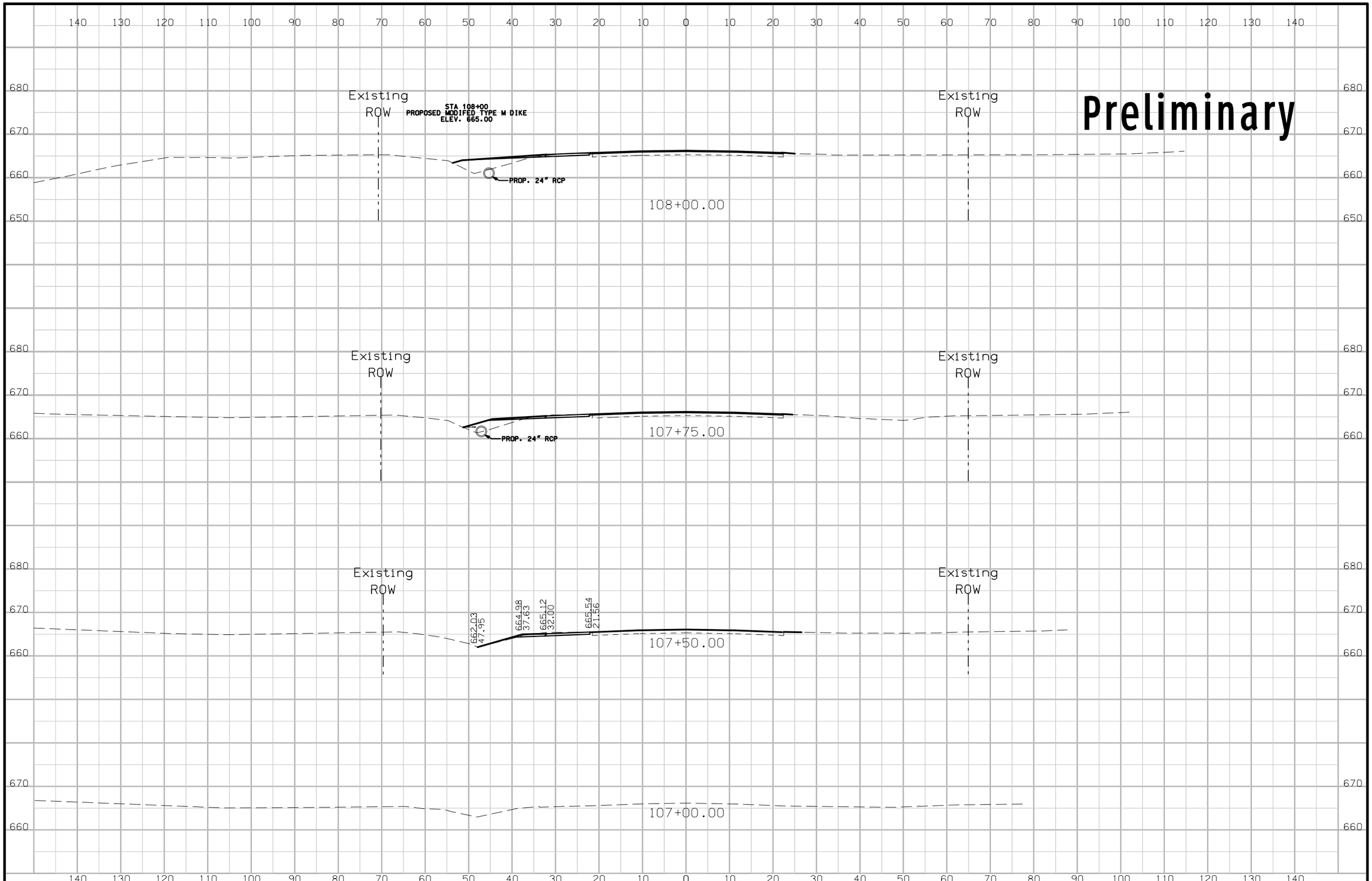
Existing ROW — Existing Right-of-Way Limit

Proposed ROW — Proposed Right-of-Way Limit

Temporary ROW — Temporary Right-of-Way Limit

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)



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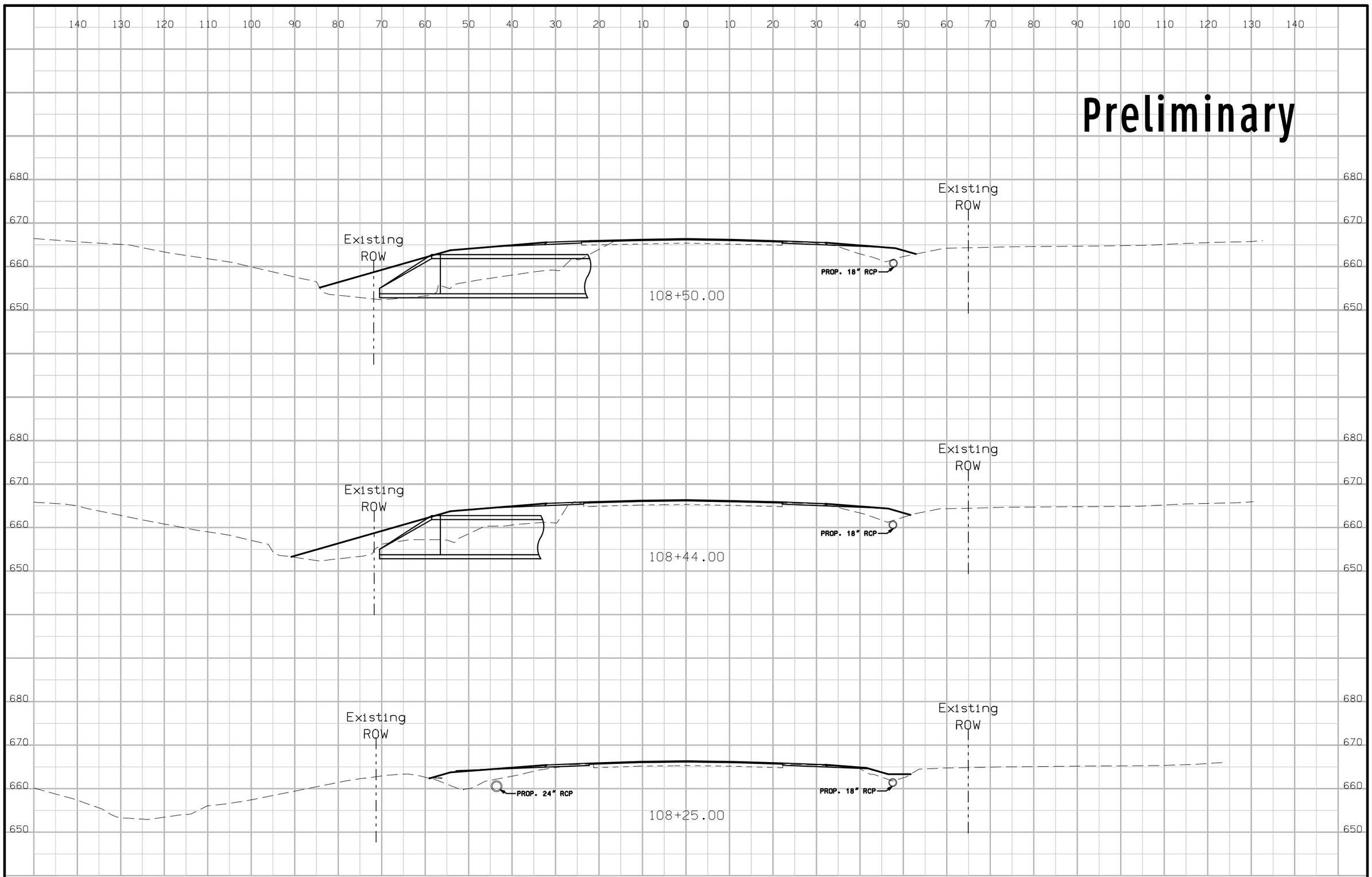

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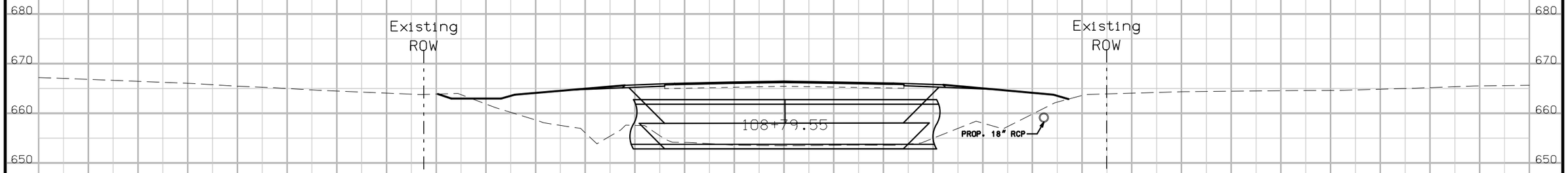
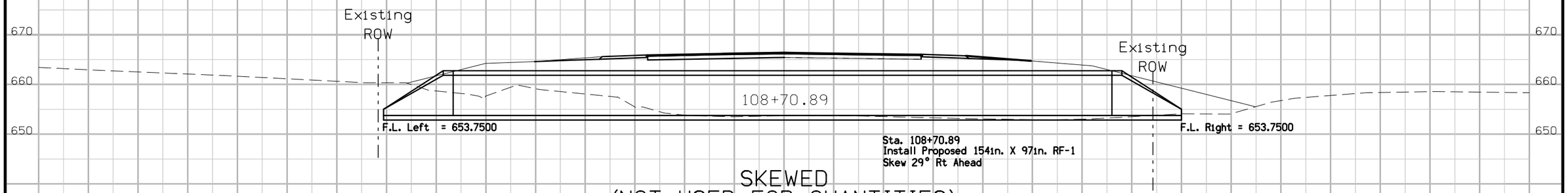
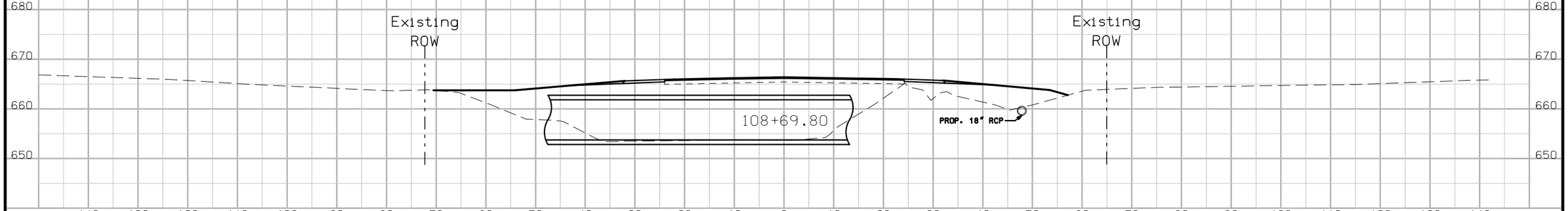
Preliminary





SKEWED
(NOT USED FOR QUANTITIES)



ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER W.4	REVISED

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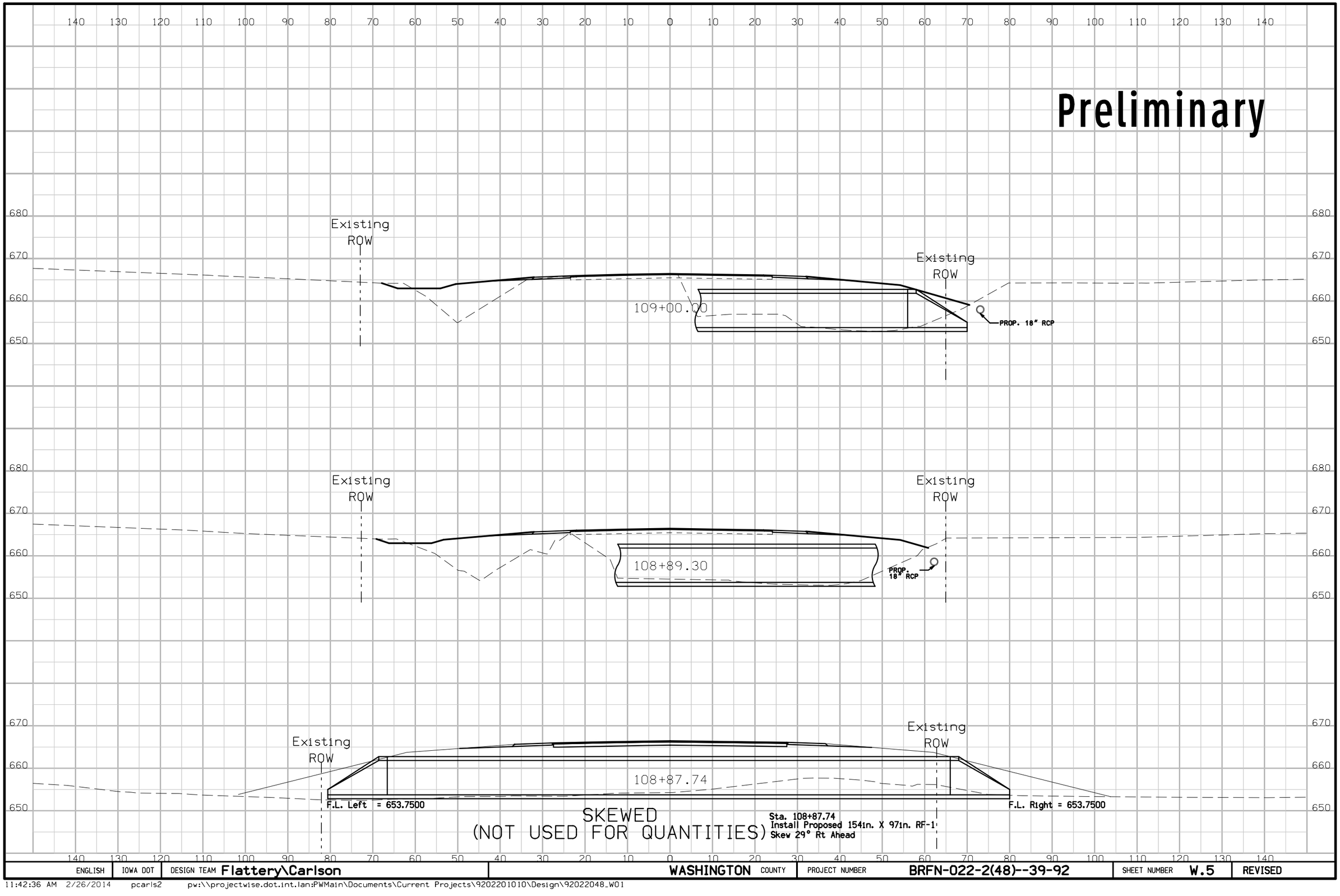

SKEWED
(NOT USED FOR QUANTITIES)

ENGLISH	IOWA DOT	DESIGN TEAM Flattery\Carlson	WASHINGTON COUNTY	PROJECT NUMBER BRFN-022-2(48)--39-92	SHEET NUMBER W.5	REVISED

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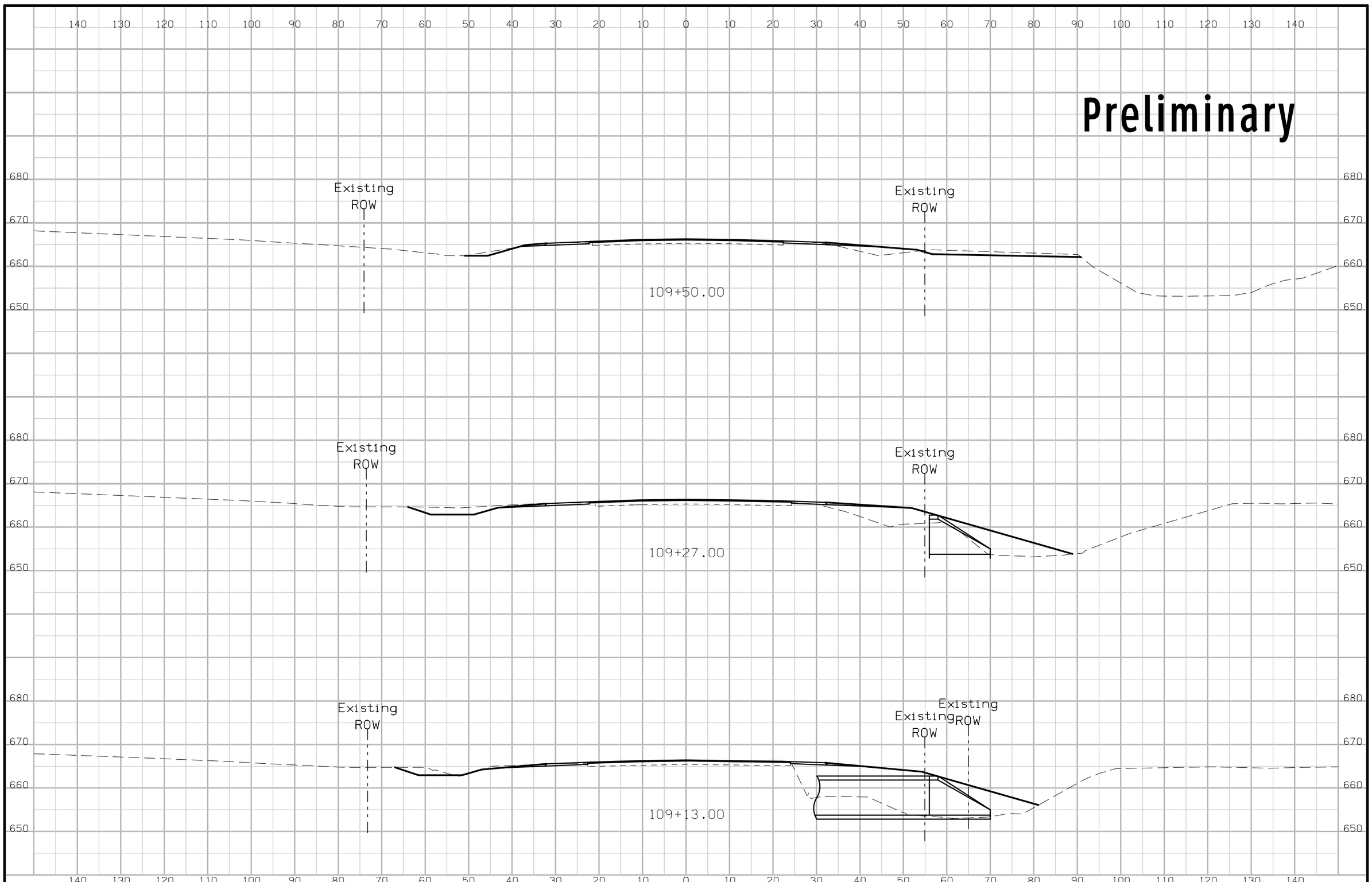
Preliminary



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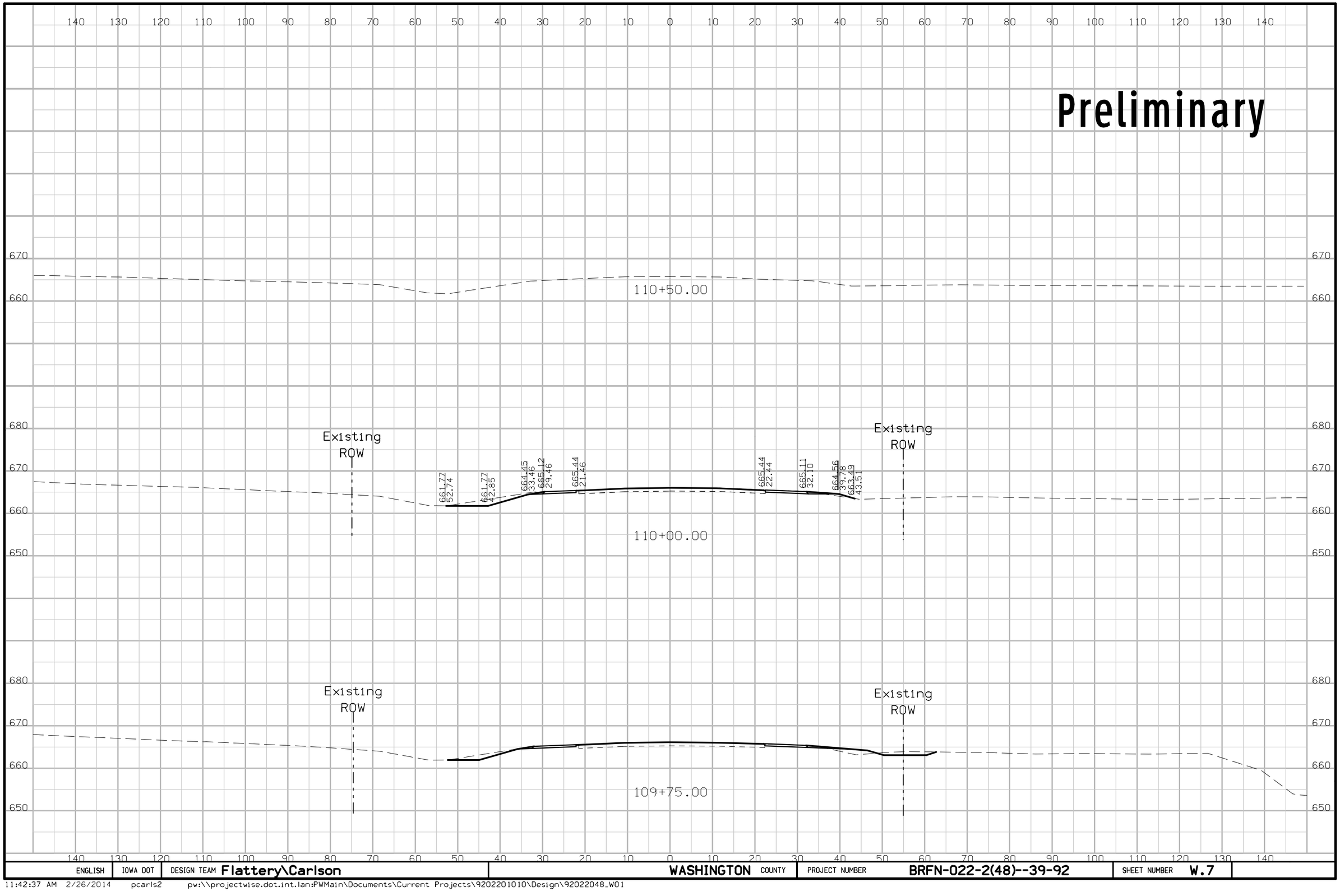
Preliminary



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