BRIDGE REPLACEMENT - PPCB LETTING DATE 12-20-2016
BRFIMX-035-2(423)44--14-91

WARREN COUNTY - DESIGN NO. 816

LEGEND

INTERSTATE HIGHWAY	
PRIMARY HIGHWAY-DIVIDED	
PRIMARY HIGHWAY	
PORTLAND CEMENT CONCRETE ROAD	
ASPHALT ROAD	
BITUMINOUS ROAD	
GRAVEL ROAD	
EARTHEN ROAD	
INTERSTATE HIGHWAY	80
UNITED STATES HIGHWAY	65
STATE HIGHWAY	175
COUNTY HIGHWAY	S27
RAILROAD	
PIPELINE	
AIRPORT	
HYDROLOGY	
BRIDGE	
STATE BOUNDARY	
COUNTY BOUNDARY	
CORPORATE BOUNDARY	
TOWNSHIP LINE	
SECTION LINE	
ROAD NAMES	ABBEY ROAD
UNINCORPORATED PLACE	ELWOOD

IOWA DOT
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

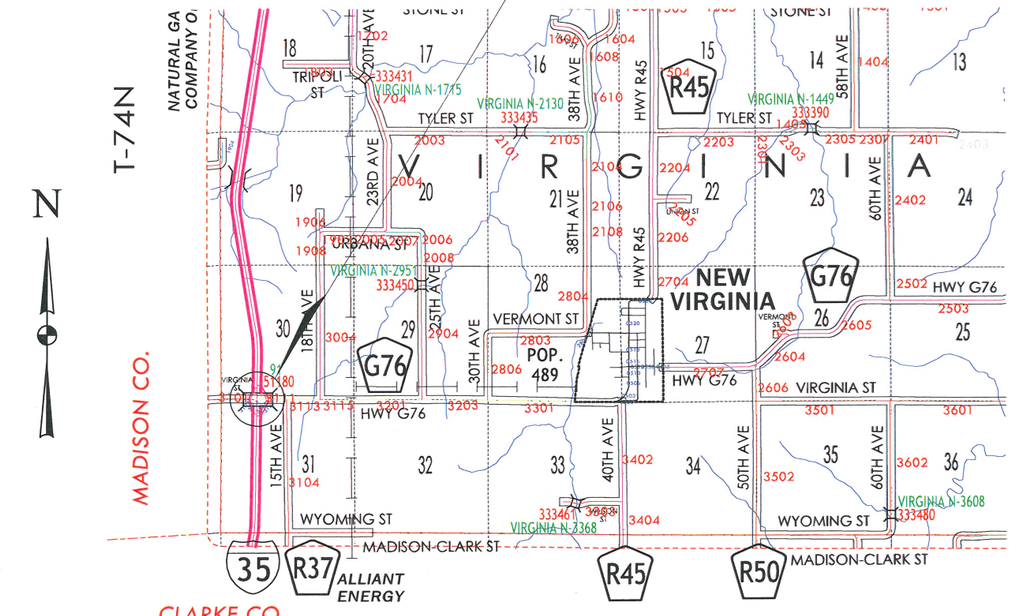
INTERSTATE ROAD SYSTEM

WARREN COUNTY

BRIDGE REPLACEMENT - PPCB
COUNTY ROAD G76 OVER I-35

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN NO. - 816



R-25W

LOCATION MAP

PROJECT DIRECTORY NAME: 9103502012

ENGLISH STANDARD BRIDGE PLANS

STANDARD	ISSUED	REVISED

REVISIONS

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

TOTAL SHEETS
256
PROJECT NUMBER
BRFIMX-035-2(423)44--14-91
R.O.W. PROJECT NUMBER
PROJECT IDENTIFICATION NUMBER
12-91-035-020

INDEX OF SHEETS

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER A.1

DESIGN DATA RURAL

		I-35	G76 EAST	G76 WEST	
2017	AADT	19,700	2,800	520	V.P.D.
2037	AADT	27,800	3,900	750	V.P.D.
202-	DHV				V.P.H.
TRUCKS 2017/2037		28/27	19	18	%
Total Design ESALs					

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	DARIN G. BROWN	STRUCTURAL DESIGN
SPS.1, CS.1	LORAS A. KLOSTERMANN	GEOTECHNICAL DESIGN
A.1	SHANE E. SWOPE	ROADWAY DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER Darin G. Brown 19640 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Darin G. Brown Date 10-17-2016

Darin G. Brown
Printed or Typed Name

My license renewal date is December 31, 2016

Pages or sheets covered by this seal: SHEETS 1 THRU 30

DESIGN TEAM SCHEMMER	ENGLISH	IOWA DOT * OFFICE OF BRIDGES AND STRUCTURES	FILE NO. - 30981	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER

10/17/2016 5:58:49 PM mrasmussen S:\Projects\06241003\9103502012\BRFinal\91035423.brg 910816s000 11x17_pdf.pltcfg

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1	
2	2402-2720000	EXCAVATION, CLASS 20	CY	298	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	435.4	
4	2404-7775000	REINFORCING STEEL	LB	12,262	
5	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	90,770	
6	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	3,472	
7	2407-0550000	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, SBTB105	EA	12	
8	2408-7800000	STRUCTURAL STEEL	LB	4,426	
9	2414-6424110	CONCRETE BARRIER RAILING	LF	458.0	
10	2501-0201057	PILES, STEEL, HP 10 X 57	LF	4,760	
11	2501-6335010	PREBORED HOLES	LF	330	
12	2507-2638620	MACADAM STONE SLOPE PROTECTION	SY	556.2	
13	2507-2638660	BRIDGE WING ARMORING - MACADAM STONE	SY	15.6	
14	2507-3250005	ENGINEERING FABRIC	SY	530.1	
15	2526-8285000	CONSTRUCTION SURVEY	LS	1	
16	2533-4980005	MOBILIZATION	LS	1	
17	2536-6745045	REMOVAL OF ASBESTOS	LS	1	
18	2590-0000020	PROJECT MANAGEMENT	LS	1	

ESTIMATED REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6745625	REMOVAL OF EXISTING BRIDGE INCLUDES REMOVAL AND DISPOSAL OF EXISTING CONCRETE SLOPE PROTECTION, EXISTING CONCRETE BARRIER NEAR OUTSIDE PIERS, AND EXISTING GUARDRAIL APPROACHING OUTSIDE PIERS.
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE) INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES FURNISING AND PLACING CONCRETE SEALER INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL, GEOTEXTILE FABRIC, WATER FLOODING, AND SUBDRAIN OUTLET AT ABUTMENTS AND TOE OF BERM. INCLUDES FURNISHING AND PLACING 3 INCH DIAMETER PVC PLASTIC PIPE AND EXPANDING FOAM IN THE ABUTMENT WINGS.
7	2407-0550000	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, SBTB105 INCLUDES PIER AND ABUTMENT BEARINGS AND BEARING MATERIAL. SPECIAL BEAM DESIGNATION DUE TO INCREASED STRAND PULL. COARSE AGGREGATES FOR PRESTRESSED CONCRETE BRIDGE UNITS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 4115 CLASS III DURABILITY. GRADATION OF COARSE AGGREGATE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICAL 2407.02, A, OF THE STANDARD SPECIFICATIONS.
8	2408-7800000	STRUCTURAL STEEL INCLUDES 2 DECK DRAINS.
9	2414-6424110	CONCRETE BARRIER RAILING INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. INCLUDES 450 FT. OF 2" DIA. RIGID STEEL CONDUIT. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIP FORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.
10	2501-0201057	PILES, STEEL, HP 10 X 57. INCLUDES DRIVING PILE INTO COMPETENT SHALE. SEE DESIGN SHEETS 8, 9 & 10 FOR PILE DRIVING REQUIREMENTS. INCLUDES PILE UPLIFT ANCHORS.
11	2501-6335010	PREBORED HOLES INCLUDES COST OF LABOR AND MATERIALS FOR BENTONITE SLURRY IN PREBORED HOLES.
12	2507-2638620	MACADAM STONE SLOPE PROTECTION INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC. MACADAMSTONE, 4" x 6" TREATED TIMBERS, $\frac{1}{2}$" DIAMETER STEEL PINS (OR REBARS), POROUS BACKFILL OR GRANULAR SUBASE AT FRONT FACE OF ABUNTMENT FOOTING, AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING.
13	2507-2638660	BRIDGE WING ARMORING - MACADAM STONE INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, 4" x 6" TREATED TIMBERS, $\frac{1}{2}$" DIAMETER STEEL PINS (OR REBARS), AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING FOR WING ARMORING.

ESTIMATED REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
14	2507-3250005	ENGINEERING FABRIC ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

BRIDGE QUANTITIES

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 29 FILE NO. 30981 DESIGN NO. 816

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GENERAL NOTES:

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING FOUR SPAN CONCRETE GIRDER BRIDGE DESIGN NO. 5156, WITH A YEAR OF CONSTRUCTION OF 1958. PLANS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE THE REMOVAL OF ABUTMENTS, SUPERSTRUCTURE, PIERS, AND CONCRETE SLOPE PROTECTION. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.

COPIES OF THE ORIGINAL DESIGN PLANS AND SHOP DRAWINGS WILL BE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (ORIGINAL DESIGN NO. 5156, 1886, 286, 392, AND 393).

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03, A, 2 OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

ALL COARSE AGGREGATE FOR STRUCTURAL CONCRETE SHALL BE CRUSHED LIMESTONE.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a| IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THE STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

BRIDGE DECK DIMENSIONS TABLE

NO.	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	215.0
2	MINIMUM DECK WIDTH	L.F.	44.2
3	MAXIMUM DECK WIDTH	L.F.	44.2
4	DECK AREA	S.F.	9,496

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

LABORATORY ANALYSIS HAS IDENTIFIED ASBESTOS AT THIS SITE. ASBESTOS SHALL BE REMOVED PRIOR TO BRIDGE DEMOLITION OPERATIONS. REMOVAL, TRANSPORT, AND DISPOSAL SHALL BE IN ACCORDANCE WITH SECTION 2536, OF THE STANDARD SPECIFICATIONS.

REQUIRED DNR INFORMATION INCLUDES:
YEAR CONSTRUCTED - 1958
ASBESTOS LOCATIONS - TAR SEALENT IN THE JOINTS OF THE CONCRETE SLOPE PROTECTION PADS; TAR SEALENT IN THE JOINTS BETWEEN THE PAVEMENT APPROACHES AND THE BRIDGE DECK
FHWA NUMBER - INFORMATION PROVIDED ELSEWHERE IN PLAN
ROAD/ROUTE (CITY) - INFORMATION PROVIDED ELSEWHERE IN PLAN
COUNTY - INFORMATION PROVIDED ELSEWHERE IN PLAN
DIRECTION TO BRIDGE - INFORMATION PROVIDED ELSEWHERE IN PLAN
BRIDGE SIZE - INFORMATION PROVIDED ELSEWHERE IN PLAN
NUMBER OF DECKS - 1 (TYP.)
ASBESTOS INSPECTOR/AMOUNTS - INFORMATION PROVIDED BY ENGINEER

SPECIFICATIONS:

DESIGN: AASHTO LRFD 7th Ed, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, (INCLUDING SS-15002) DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7th Ed, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.

CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI, EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 18.

STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03, OF THE STANDARD SPECIFICATIONS, FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

1	STEEL INTERMEDIATE DIAPHRAGMS
2	
3	
4	
X	

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN
NOTE: THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

DURING CONSTRUCTION OF THIS PROJECT THE BRIDGE CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITH THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF THE FOLLOWING PROJECTS:

IWX-035-2(438)44--02-91
IWX-035-2(439)44--02-91

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

GENERAL NOTES

STA. 99+68.25

SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 3

SUMMARY OF CONCRETE QUANTITIES

LOCATION	STRUCTURAL CONCRETE	HPC STRUCTURAL CONCRETE
WEST ABUT. FTG.	19.7	
EAST ABUT. FTG.	19.7	
BRIDGE DECK + ABUT. & PIER DIAPHAGMS	300.4	
ABUTMENT WINGS	4 AT 1.9	
PIER #1	88.0	
TOTAL (CU. YDS.)	435.4	

SUMMARY OF REINFORCING STEEL

LOCATION	NON-COATED REINFORCING STEEL	STAINLESS STEEL REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
BRIDGE DECK + ABUT. FTG. **	262		74,709
ABUTMENT WINGS			4 AT 198
BARRIER RAIL - 2'-10 RAIL		2,704	7,071
BARRIER RAIL END SECTION		4 AT 192	4 AT 266
PIER #1	12,000		7,134
** INCLUDES ABUTMENT AND PIER DIAPHRAGMS			
TOTAL (LBS.)	12,262	3,472	90,770

SUMMARY OF EXCAVATION

LOCATION	CLASS 20 EXCAVATION	CLASS ___ EXCAVATION
WEST ABUTMENT	78	
EAST ABUTMENT	78	
PIER #1	142	
TOTAL (CU. YDS.)	298	

SUMMARY OF FOUNDATIONS

LOCATION	SUBSTRUCTURE TYPE	FOUNDATION TYPE	NUMBER	LENGTH (LIN. FT.)	TOTAL (LIN. FT.)
WEST ABUTMENT	INTEGRAL ABUTMENT	HP10x57	11	105	1155
EAST ABUTMENT	INTEGRAL ABUTMENT	HP10x57	11	105	1155
PIER #1	TEE PIER	HP10x57	35	70	2450

SUMMARY OF STRUCTURAL STEEL

LOCATION	TOTAL (LBS.)
BRIDGE DECK DRAINS	184
DIAPHRAGMS	4242
TOTAL (LBS.)	4426

SUMMARY OF BEARINGS

LOCATION	BEARING TYPE	NUMBER	ASSOCIATED BID ITEM
WEST ABUTMENT	3 x 3 BAR	6	INCIDENTAL ITEM
EAST ABUTMENT	3 x 3 BAR	6	INCIDENTAL ITEM
PIER #1	PLAIN NEOPRENE 1"	12	INCIDENTAL ITEM

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

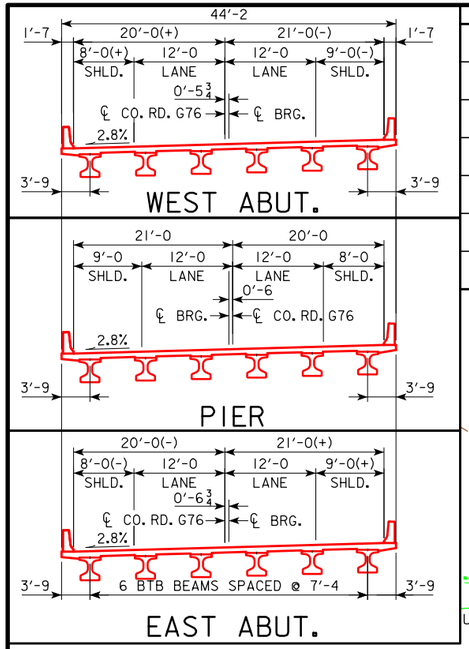
SUMMARY QUANTITIES SHEET

STA. 99+68.25 SEPTEMBER, 2016

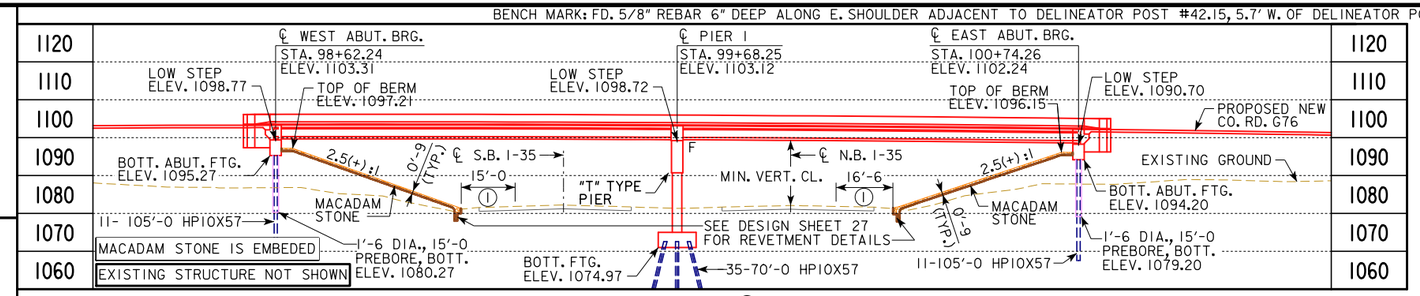
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 29 FILE NO. 30981 DESIGN NO. 816

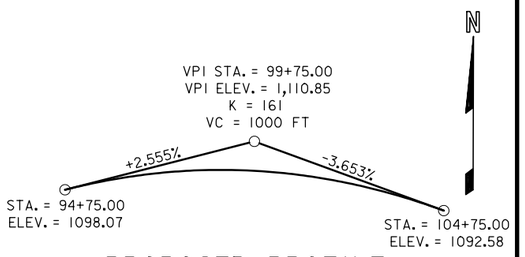


BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

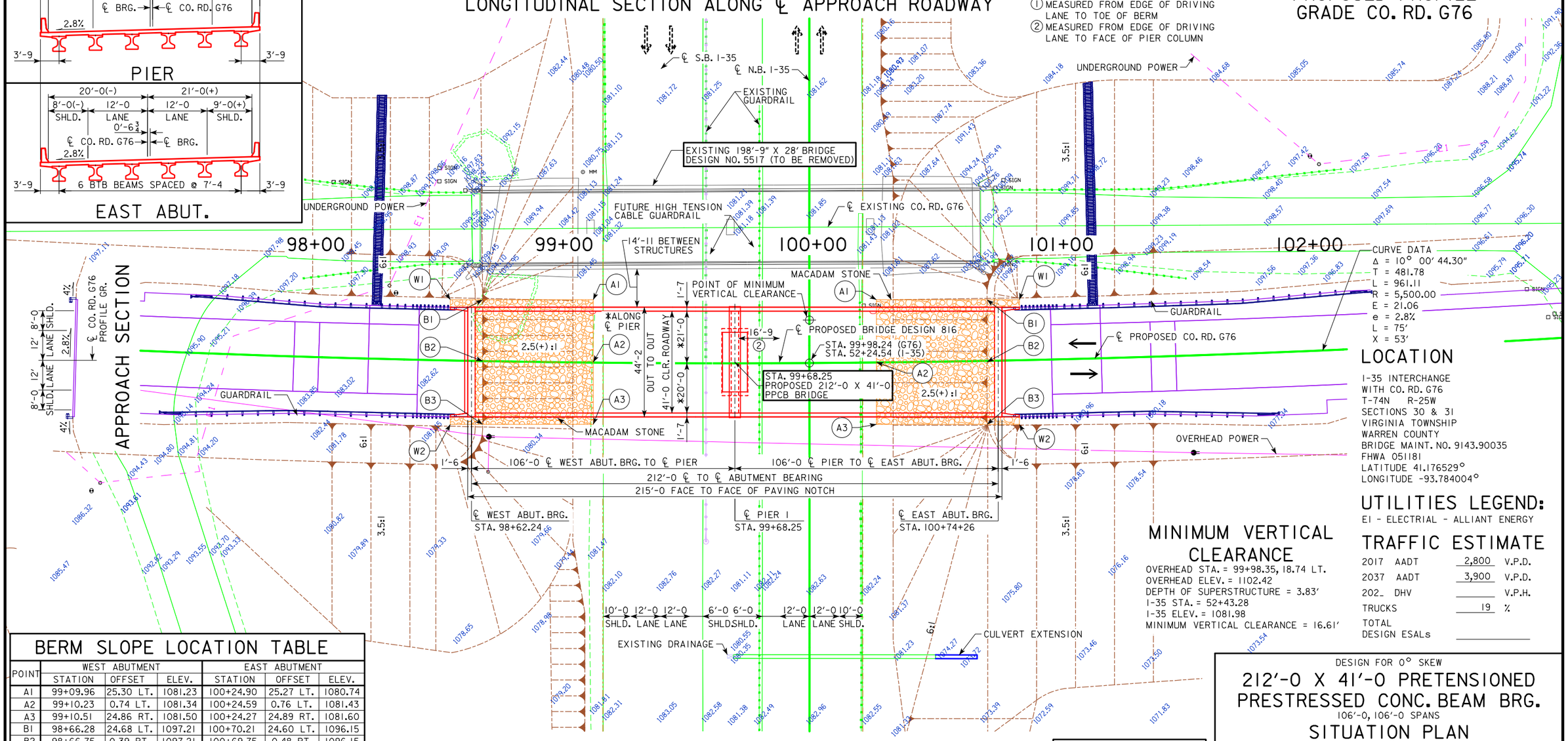


LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY

① MEASURED FROM EDGE OF DRIVING LANE TO TOE OF BERM
② MEASURED FROM EDGE OF DRIVING LANE TO FACE OF PIER COLUMN



PROPOSED PROFILE GRADE CO. RD. G76



CURVE DATA
Δ = 10° 00' 44.30"
T = 481.78
L = 961.11
R = 5,500.00
E = 21.06
e = 2.8%
L = 75'
X = 53'

LOCATION

I-35 INTERCHANGE
WITH CO. RD. G76
T-74N R-25W
SECTIONS 30 & 31
VIRGINIA TOWNSHIP
WARREN COUNTY
BRIDGE MAINT. NO. 9143.90035
FHWA 051181
LATITUDE 41.176529°
LONGITUDE -93.784004°

UTILITIES LEGEND:

EI - ELECTRIAL - ALLIANT ENERGY

TRAFFIC ESTIMATE

2017 AADT	2,800	V.P.D.
2037 AADT	3,900	V.P.D.
202_ DHV		V.P.H.
TRUCKS	19	%
TOTAL DESIGN ESALs		

MINIMUM VERTICAL CLEARANCE

OVERHEAD STA. = 99+98.35, 18.74 LT.
OVERHEAD ELEV. = 1102.42
DEPTH OF SUPERSTRUCTURE = 3.83'
I-35 STA. = 52+43.28
I-35 ELEV. = 1081.98
MINIMUM VERTICAL CLEARANCE = 16.61'

BERM SLOPE LOCATION TABLE

POINT	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	99+09.96	25.30 LT.	1081.23	100+24.90	25.27 LT.	1080.74
A2	99+10.23	0.74 LT.	1081.34	100+24.59	0.76 LT.	1081.43
A3	99+10.51	24.86 RT.	1081.50	100+24.27	24.89 RT.	1081.60
B1	98+66.28	24.68 LT.	1097.21	100+70.21	24.60 LT.	1096.15
B2	98+66.75	0.39 RT.	1097.21	100+69.75	0.48 RT.	1096.15
B3	98+66.19	25.47 RT.	1097.21	100+69.26	25.56 RT.	1096.15
W1	98+53.23	24.43 LT.	1102.70	100+83.26	24.34 LT.	1101.54
W2	98+54.25	25.72 RT.	1103.94	100+82.20	25.82 RT.	1102.78

ALL POINTS REFLECT GRADING SURFACE & ARE TAKEN FROM SURVEY ℄

NOTES:
ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.
TL-4 BARRIER RAIL.

SITUATION PLAN

NOTE: 2-SPAN GRADING SHOWN

0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SITUATION PLAN

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 5

10/3/2016 3:57:56 PM iplummer S:\Projects\06241003\9103502012\BRFinal\91035423.brg 910816s004p 11x17_pdf.pltcfg

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

S.B. OFF RAMP TRAFFIC ESTIMATE

2017 AADT	1030	V.P.D.
2037 AADT	2093	V.P.D.
202_ DHV		V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs		

N.B. ON RAMP TRAFFIC ESTIMATE

2017 AADT	767	V.P.D.
2037 AADT	1094	V.P.D.
202_ DHV		V.P.H.
TRUCKS	19	%
TOTAL DESIGN ESALs		

N

BASELINE PROPOSED S.B. OFF RAMP

EXISTING S.B. OFF RAMP

℄ S.B. I-35

℄ N.B. I-35

EXISTING N.B. ON RAMP

NOTE: 2-SPAN GRADING SHOWN

BASELINE PROPOSED N.B. ON RAMP

C3

C2

C1

95+00

100+00

105+00

UNDERGROUND POWER

EXISTING 198'-9" X 28' BRIDGE DESIGN NO. 5517 (TO BE REMOVED)

℄ EXISTING CO. RD. G76

STA. 95+45.84

STA. 103+97.04

℄ PROPOSED CO. RD. G76

B

VARIES 1'-7

44'-2 OUT TO OUT

1'-7

OVERHEAD POWER

STA. 99+68.25
PROPOSED 212'-0 X 41'-0 PPCB BRIDGE

UTILITY WATER

END OF FLOOR 1'-6

106'-0 ℄ WEST ABUT. BRG. TO ℄ PIER

106'-0 ℄ PIER TO ℄ EAST ABUT. BRG.

END OF FLOOR 1'-6

℄ WEST ABUT. BRG. STA. 98+62.24

℄ PIER I STA. 99+68.25

℄ EAST ABUT. BRG. STA. 100+74+26

EXISTING N.B. OFF RAMP

BASELINE PROPOSED N.B. OFF RAMP

N.B. OFF RAMP TRAFFIC ESTIMATE

2017 AADT	397	V.P.D.
2037 AADT	566	V.P.D.
202_ DHV		V.P.H.
TRUCKS	19	%
TOTAL DESIGN ESALs		

S.B. ON RAMP TRAFFIC ESTIMATE

2017 AADT	456	V.P.D.
2037 AADT	649	V.P.D.
202_ DHV		V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs		

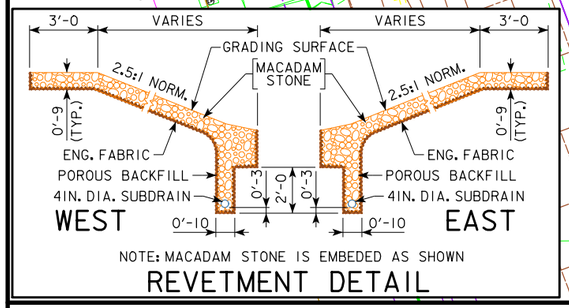
BASELINE PROPOSED S.B. ON RAMP

EXISTING S.B. ON RAMP

UTILITIES LEGEND:

EI - ELECTRIAL - ALLIANT ENERGY
W - WATER - WARREN WATER DISTRICT

UTILITY WATER



NOTE: MACADAM STONE IS EMBEDED AS SHOWN

REVETMENT DETAIL

RECOVERABLE BERM LOCATION TABLE

POINT	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
B	98+66.28	24.68 LT.	1097.21	100+69.26	25.56 RT.	1096.15
C1	99+01.69	114.69 LT.	1080.40	100+30.62	112.05 RT.	1081.22
C2	98+96.14	152.70 LT.	1080.01	100+35.08	150.79 RT.	1080.17
C3	99+05.78	190.89 LT.	1080.47	100+25.08	188.14 RT.	1081.18

SITE PLAN

PRELIMINARY

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SITUATION PLAN - SITE

STA. 99+68.25 SEPTEMBER, 2016

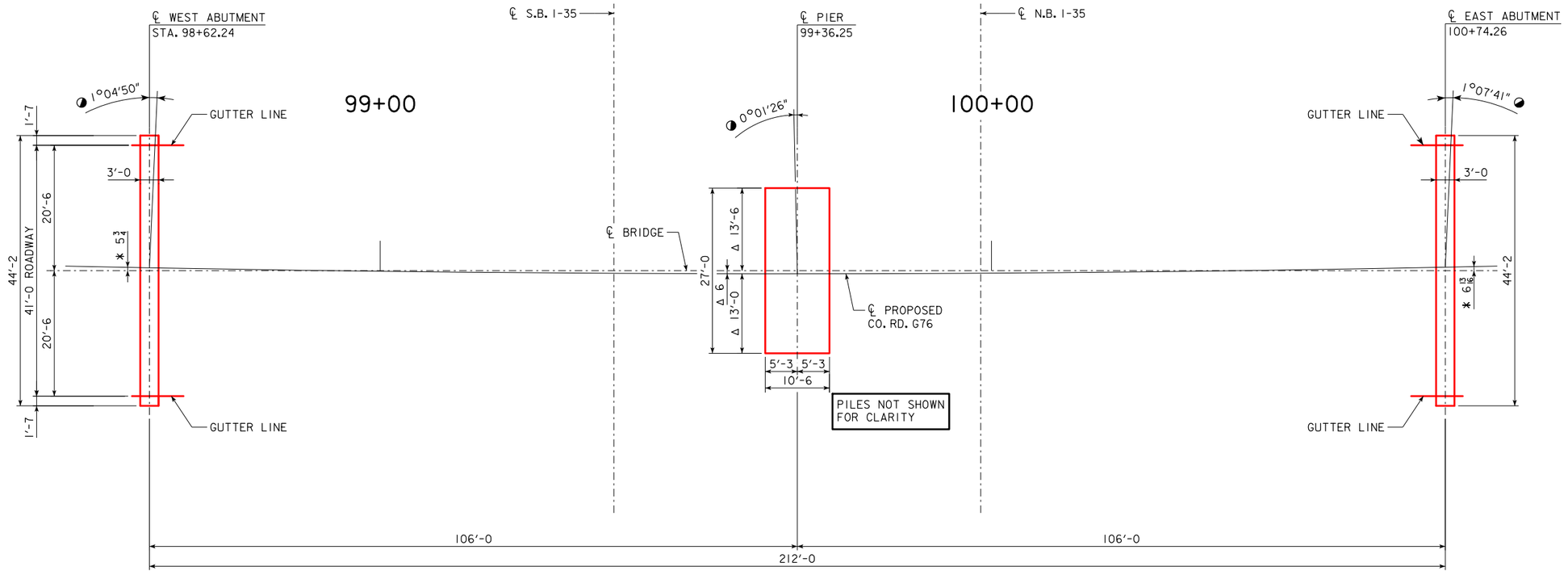
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 6

10/3/2016 3:57:58 PM iplummer S:\Projects\06241003\9103502012\BRFinal\91035423.brg 910816s005p 11x17_pdf.pltcfg



NOTES:
* MEASURED ALONG ℄ BEARING
Δ MEASURED ALONG ℄ PIER
◒ MEASURED WITH RESPECT TO LOCAL TANGENT OF ℄ CO. RD. G76 AND P.G.L.

STAKING DIAGRAM/SUBSTRUCTURE LAYOUT

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

STAKING DIA./SUBSTRUCTURE LYT.

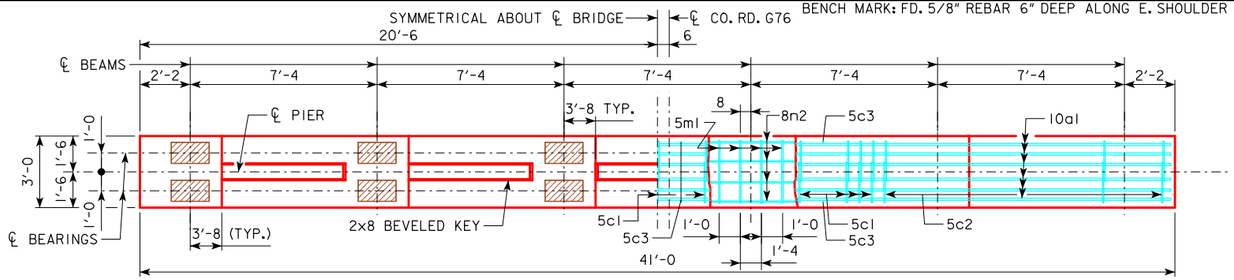
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

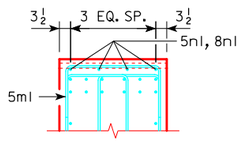
DESIGN SHEET NO. 6 OF 29 FILE NO. 30981 DESIGN NO. 816

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

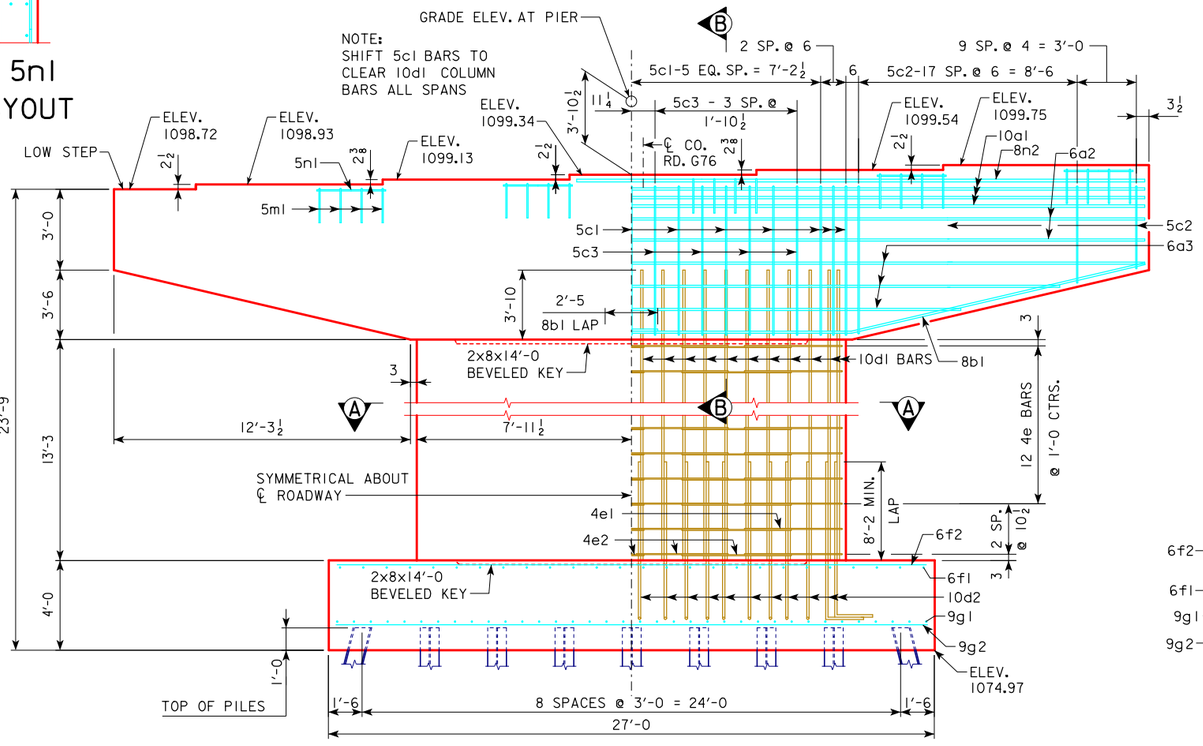


CAP PLAN

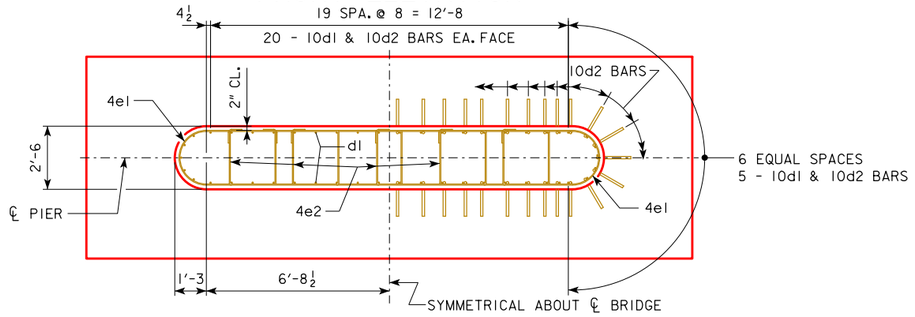
NOTE: 5m1 BARS NOT SHOWN FOR CLARITY



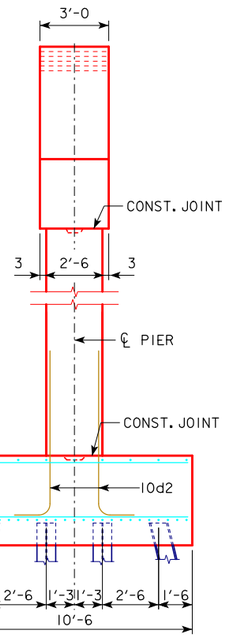
5m1 & 5n1
BAR LAYOUT

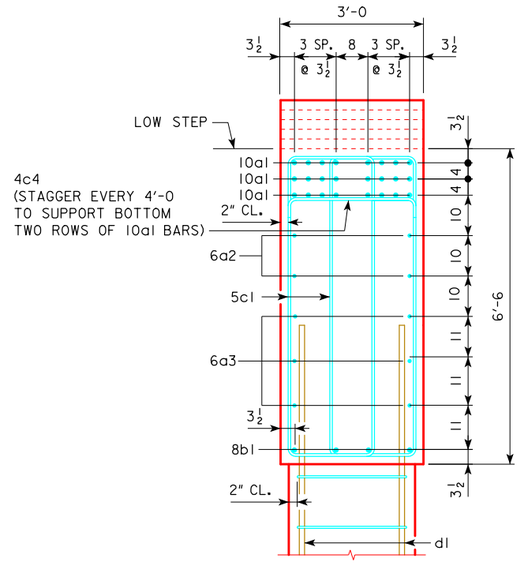


FRONT ELEVATION

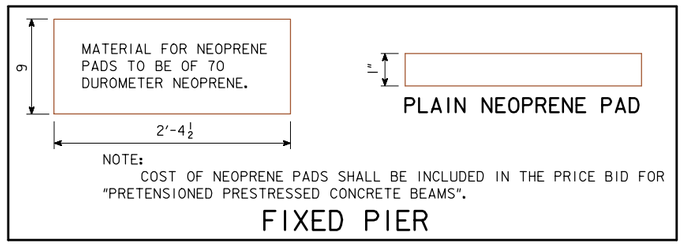


SECTION A-A





SECTION B-B



NOTE:
COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

FIXED PIER

PIER NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

PIER DETAILS

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 8

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REINFORCING BAR LIST-PIER

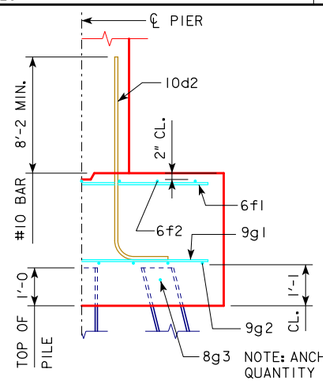
	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
EPOXY COATED	10d1	WALL VERTICAL		50	17'-1	3676
	10d2	WALL VERTICAL		50	13'-0	2797
	4e1	STEM HOOPS (END)		28	11'-1	208
	4e2	STEM HOOPS		56	12'-1	453
		REINFORCING STEEL EPOXY COATED - SUBTOTAL (LBS.)				7,134
NON-EPOXY COATED	10a1	CAP, TOP, LONGIT.		24	40'-8	4200
	6a2	CAP, TOP, LONGIT.		4	40'-8	245
	6a3	CAP, TOP, LONGIT.		6	VARIES	280
	8b1	CAP, BOTTOM, CANTILEVER		8	22'-0	470
	5c1	CAP, HOOPS		26	16'-8	452
	5c2	CAP, HOOPS, CANTILEVER		108	VARIES	1446
	5c3	CAP VERTICL SIDES		16	7'-0	117
	4c4	CAP BAR SEAT		22	3'-2	47
	6f1	FTG. TOP, TRANSV.		27	10'-2	413
	6f2	FTG. TOP, LONGIT.		13	26'-8	521
	9g1	FTG. BOTT. TRANSV.		46	10'-2	1591
	9g2	FTG. BOTT. LONGIT.		20	26'-8	1814
	5m1	CAP STEP, LONGIT.		20	6'-2	129
	5n1	CAP STEP, TRANSV.		16	3'-6	59
	8n2	CAP STEP, TRANSV.		4	20'-2	216
		REINFORCING STEEL NON-EPOXY COATED - SUBTOTAL (LBS.)				12,000

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
CAP AND STEPS	27.1
PIER STEM	18.9
FOOTING	42.0
TOTAL (CU. YDS.)	88.0

ESTIMATED QUANTITIES - PIER

LOCATION	UNITS	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	88.0
EPOXY REINFORCING STEEL	LBS.	7134
REINFORCING STEEL	LBS.	12000
EXCAVATION, CLASS 20	C.Y.	142



NOTE: ANCHOR BARS 8g3 SUBSIDIARY TO QUANTITY FOR HP 10x57 STEEL PILES

TYPICAL SECTION

FOOTING NOTES:

BATTER PILES IN EXTERIOR ROWS 4:1 IN THE DIRECTION SHOWN.

PIER PILES SHALL BE DRIVEN TO VALUES SHOWN IN DESIGN PLANS.

PILE CUTOFF FOR BATTERED PILING HORIZONTAL.

PIER PILE DESIGN NOTES:

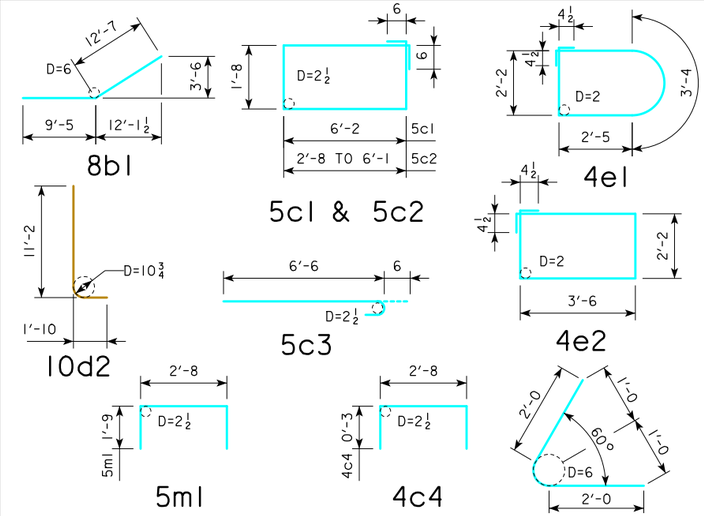
THE CONTRACT LENGTH OF 70 FEET FOR THE PIER 1 HP 10X57 PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 153 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL. PIER PILES ALSO WERE DESIGNED FOR A FACTORED TENSION FORCE OF 41 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76 FOR SOIL

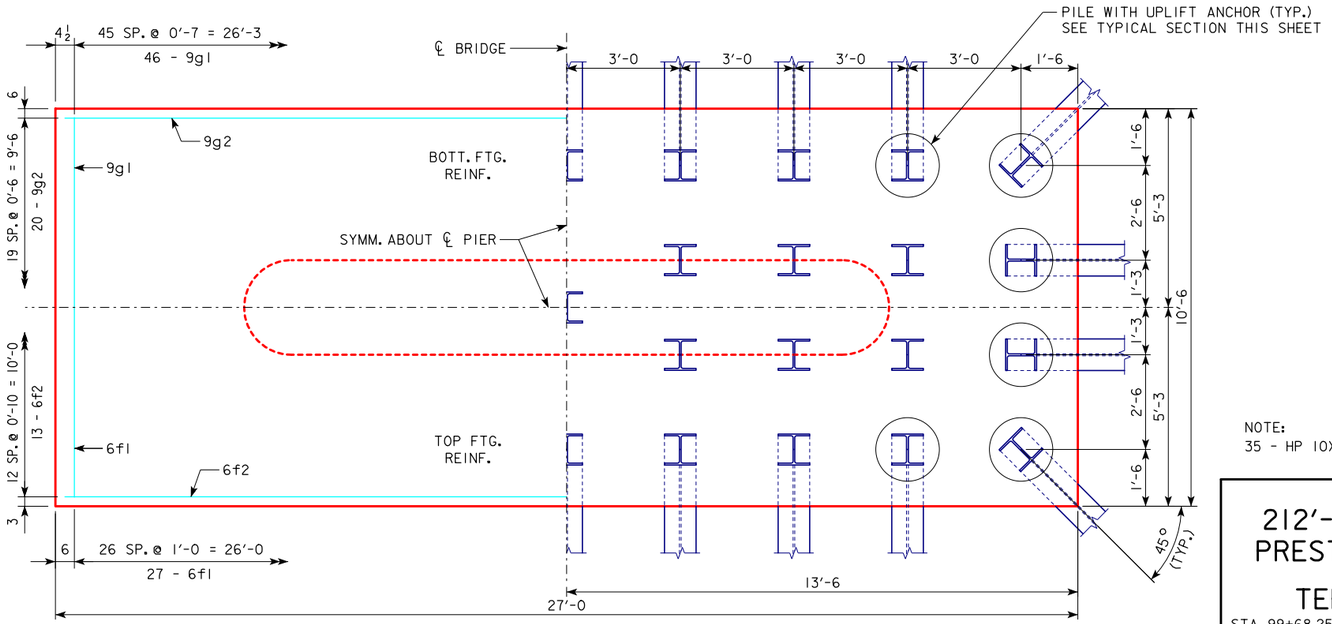
PIER PILE DRIVING NOTES:

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER 1 HP 10X57 PILES IS 91 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 107 TONS AT ONE-DAY RETAP, OR LATER RETAPS. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT .D = PIN DIAMETER.



PIER FOOTING PILE LAYOUT AND REINFORCING

NOTE:
35 - HP 10X57 STEEL BEARING PILING REQUIRED AT PIER

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

TEE PIER REINFORCEMENT

STA. 99+68.25 SEPTEMBER, 2016

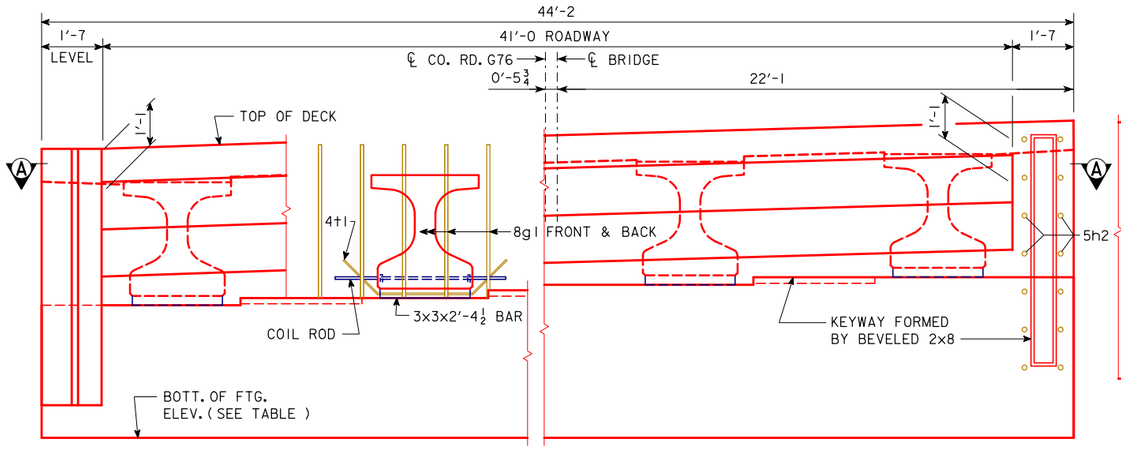
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

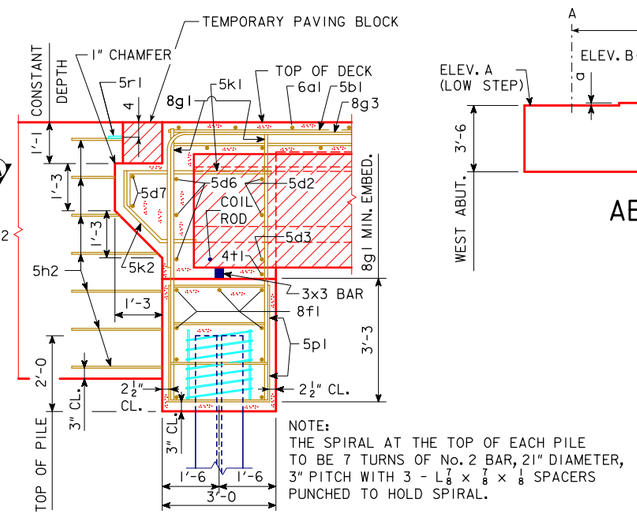
DESIGN SHEET NO. 8 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 9

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

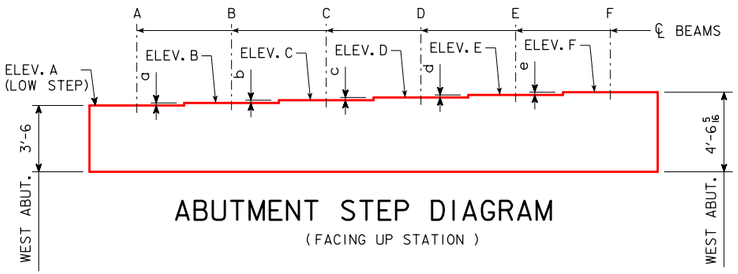


PART REAR ELEVATION AT ABUTMENT



NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L 7/8 x 7/8 x 1/8 SPACERS PUNCHED TO HOLD SPIRAL.

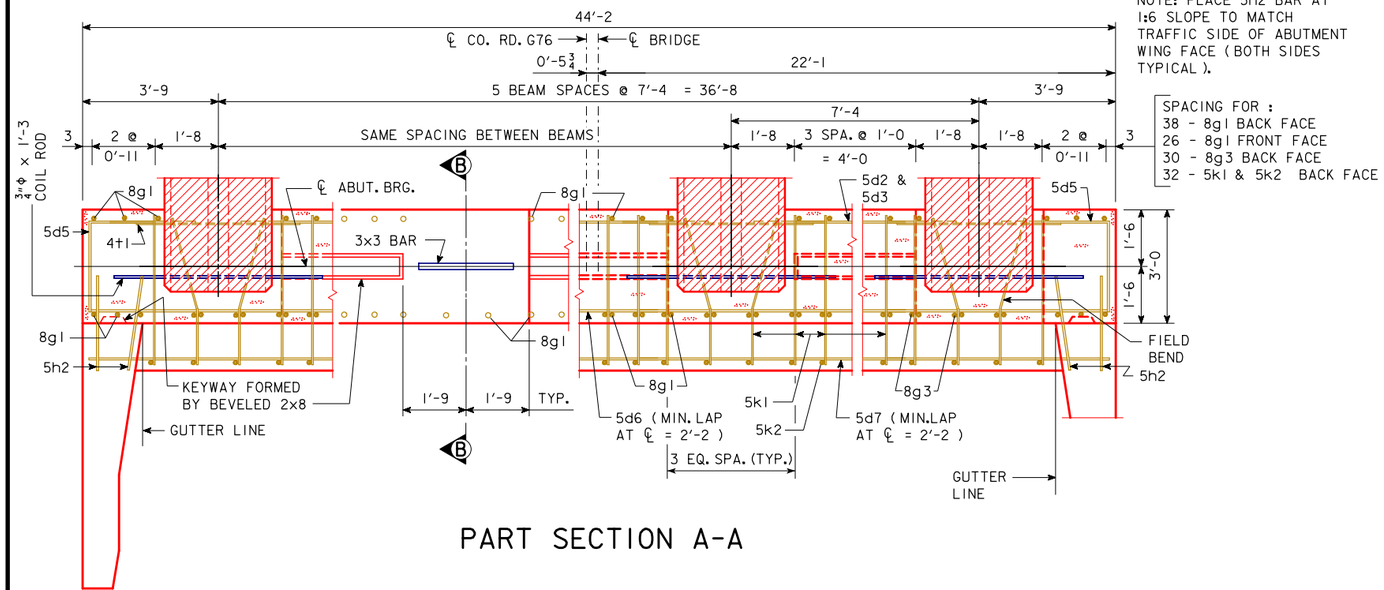
PART SECTION B-B



ABUTMENT STEP DIAGRAM
(FACING UP STATION)

TABLE OF ABUTMENT ELEVATIONS

POINT	WEST ABUT.
ELEV. A	1098.77
ELEV. B	1098.98
ELEV. C	1099.19
ELEV. D	1099.39
ELEV. E	1099.60
ELEV. F	1099.80
BOTT. FTG. ELEV.	1095.27



NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE (BOTH SIDES TYPICAL).

SPACING FOR :
38 - 8g1 BACK FACE
26 - 8g1 FRONT FACE
30 - 8g3 BACK FACE
32 - 5k1 & 5k2 BACK FACE

PART SECTION A-A

WEST ABUTMENT PILE DESIGN NOTES

THE CONTRACT LENGTH OF 105 FEET FOR THE WEST ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 159 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 25 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76 FOR SOIL.

WEST ABUTMENT PILE DRIVING NOTES

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR WEST ABUTMENT PILES IS 117 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 135 TONS AT ONE-DAY RETAP OR LATER RETAPS. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

TABLE OF ABUTMENT STEPS

STEP	WEST ABUT.
a	2 1/2
b	2 1/2
c	2 3/8
d	2 1/2
e	2 3/8

ABUTMENT CONCRETE QUANTITY

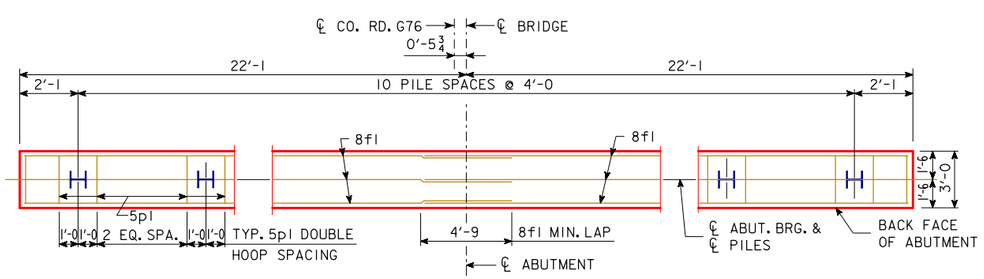
LOCATION	QUANTITY
WEST ABUTMENT FOOTING	19.7
TOTAL (CU. YDS.)	19.7

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE STATE.



ABUTMENT PILE PLAN

NOTE:
11 - HP 10 x 57 STEEL BEARING PILING REQUIRED AT EACH ABUTMENT.

BARRIER RAIL NOT SHOWN IN DETAILS.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

WEST ABUTMENT DETAILS

STA. 99+68.25 SEPTEMBER, 2016

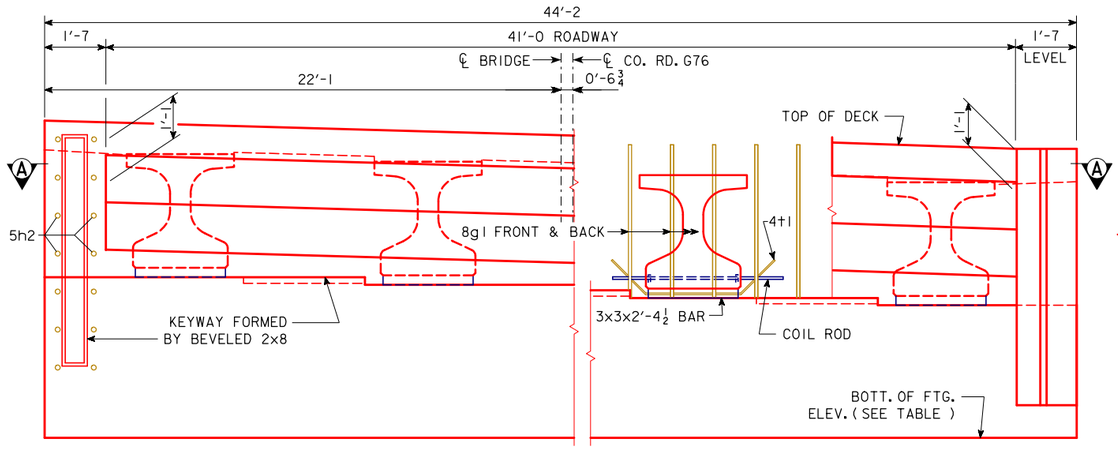
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

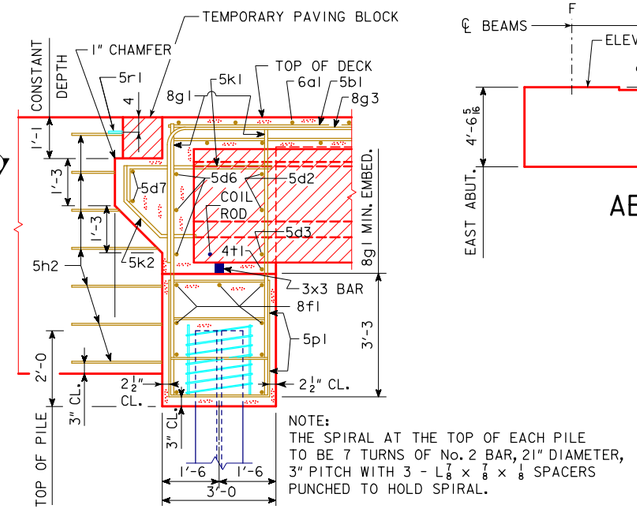
DESIGN SHEET NO. 9 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	"BTB" BEAMS - INTEGRAL ABUT. DETAILS - 0° SKEW	STANDARD SHEET 2078-BTB (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 10

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

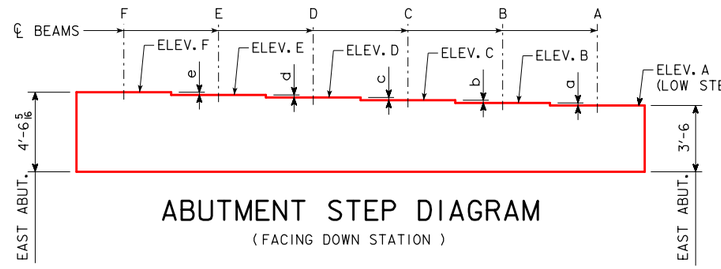


PART REAR ELEVATION AT ABUTMENT



PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L 7/8 x 7/8 x 1/8 SPACERS PUNCHED TO HOLD SPIRAL.

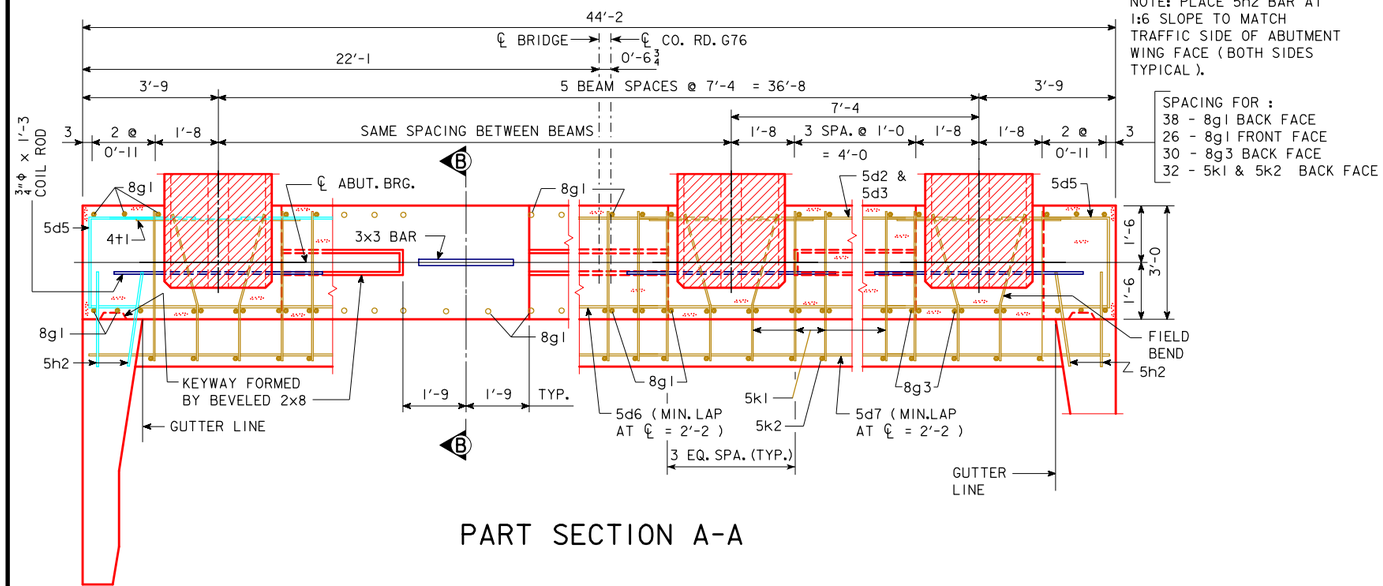


ABUTMENT STEP DIAGRAM

(FACING DOWN STATION)

TABLE OF ABUTMENT ELEVATIONS

POINT	EAST ABUT.
ELEV. A	1097.70
ELEV. B	1097.90
ELEV. C	1098.11
ELEV. D	1098.32
ELEV. E	1098.53
ELEV. F	1098.72
BOTT. FTG. ELEV.	1094.20



PART SECTION A-A

NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE (BOTH SIDES TYPICAL).

SPACING FOR :
38 - 8g1 BACK FACE
26 - 8g1 FRONT FACE
30 - 8g3 BACK FACE
32 - 5k1 & 5k2 BACK FACE

EAST ABUTMENT PILE DESIGN NOTES

THE CONTRACT LENGTH OF 105 FEET FOR THE EAST ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 164 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 30 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76 FOR SOIL.

EAST ABUTMENT PILE DRIVING NOTES

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR EAST ABUTMENT PILES IS 123 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 114 TONS AT ONE-DAY RETAP OR LATER RETAPS. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

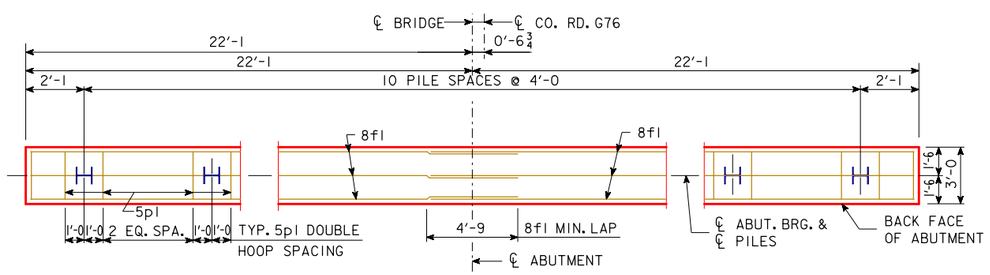
TABLE OF ABUTMENT STEPS

STEP	EAST ABUT.
a	2 3/8
b	2 1/2
c	2 1/2
d	2 1/2
e	2 3/8

ABUTMENT CONCRETE QUANTITY

LOCATION	QUANTITY
EAST ABUTMENT FOOTING	19.7
TOTAL (CU. YDS.)	19.7

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.



ABUTMENT PILE PLAN

NOTE:
11 - HP 10 x 57 STEEL BEARING PILING REQUIRED AT EACH ABUTMENT.

BARRIER RAIL NOT SHOWN IN DETAILS.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

EAST ABUTMENT DETAILS

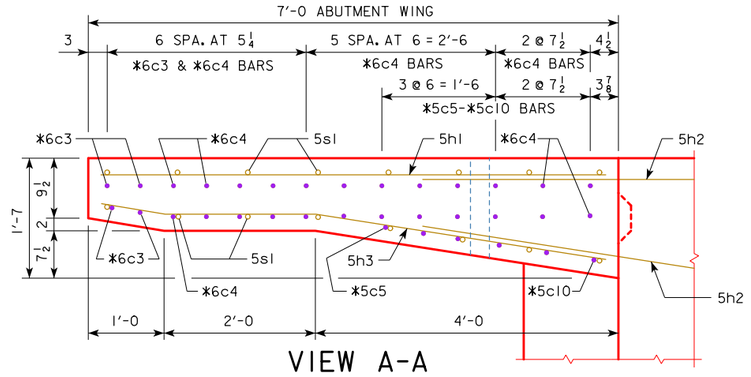
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

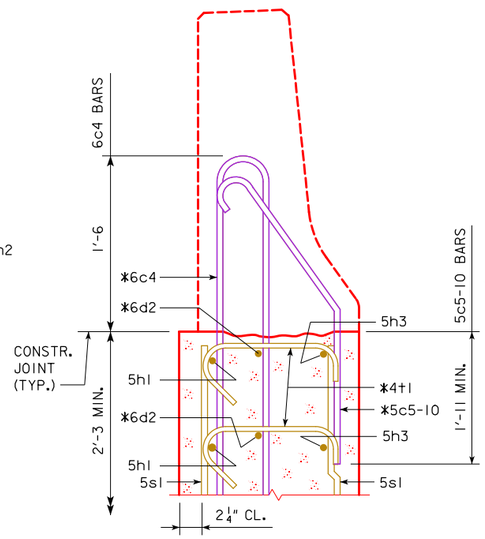
DESIGN SHEET NO. 10 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	"BTB" BEAMS - INTEGRAL ABUT. DETAILS - 0° SKEW	STANDARD SHEET 2078-BTB (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 11



VIEW A-A

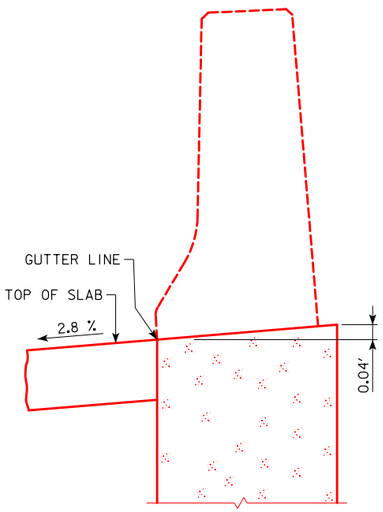
NOTE:
PLUG 3"Φ PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.



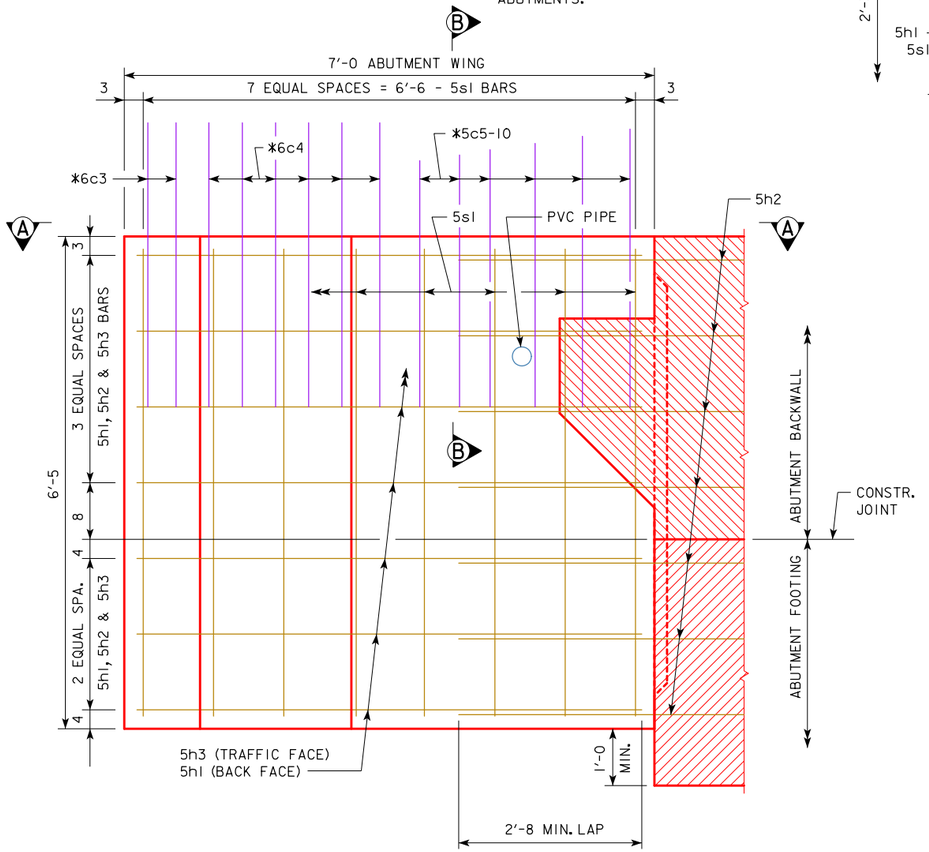
SECTION B-B
(NORTHWEST AND NORTHEAST)

* BARRIER RAIL END SECTION BARS TO BE PLACED WITH ABUTMENT WING.

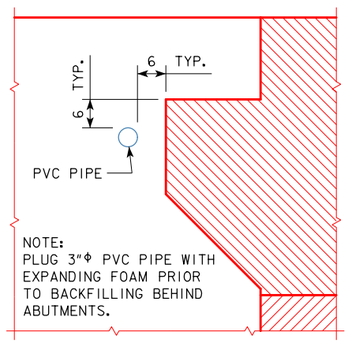
SEE BARRIER RAIL END SECTION SHEET IN THESE PLANS FOR DETAILS OF REINFORCING BARS 6c3, 6c4, 5c5-10, 6d2 & 4t1.



SECTION B-B
(SOUTHWEST AND SOUTHEAST LOOKING UPSTATION)



ABUTMENT WING - ELEVATION VIEW

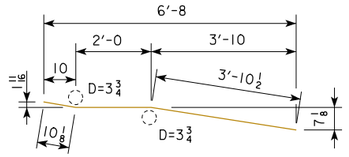


NOTE:
PLUG 3"Φ PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.

PVC PIPE LOCATION

REINFORCING BAR LIST - ONE ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BACK FACE		7	6'-8	49
5h3	HORIZONTAL TRAFFIC FACE		7	6'-9	49
5s1	VERTICAL BOTH FACES		16	6'-0	100
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				198



5h3

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

BENT BAR DETAILS

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
ONE ABUTMENT WING	1.9
TOTAL (CU. YDS.)	1.9

NOTE:

CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

SOUTH BARRIER TO BE PLACED PERPENDICULAR TO ROADWAY.

NORTH BARRIER TO BE LEVEL.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

ABUTMENT WING DETAILS

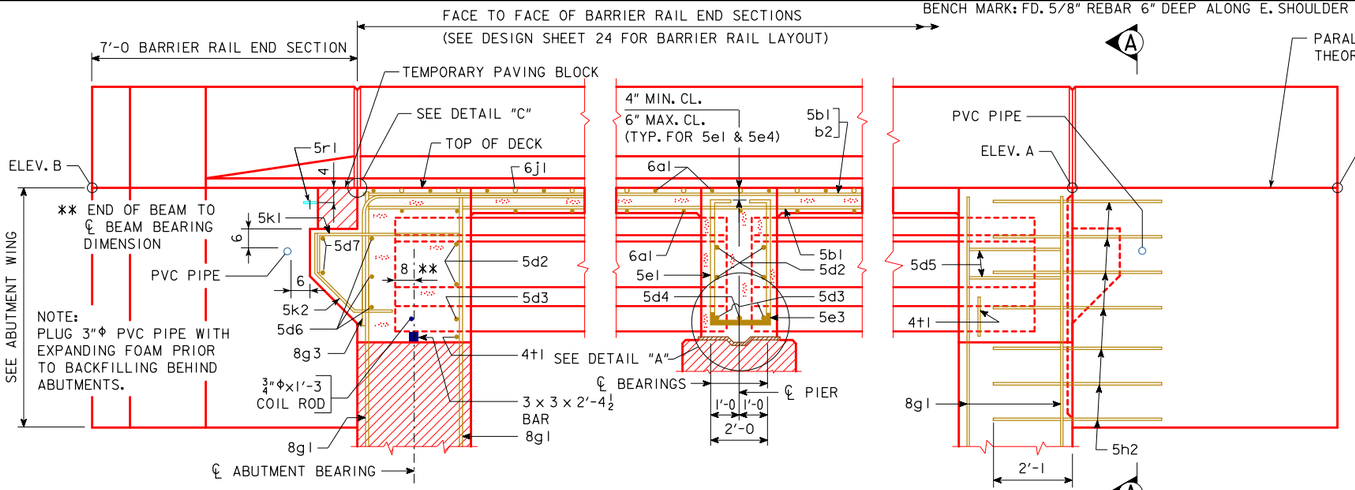
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 11 OF 29 FILE NO. 30981 DESIGN NO. 816

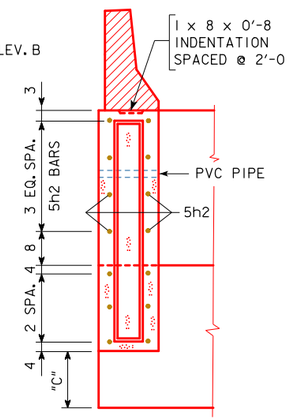
BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700



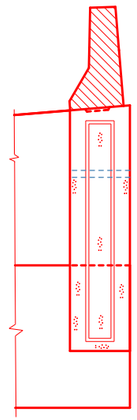
PART LONGITUDINAL SECTION NEAR GUTTER

(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEET 15)

PART END VIEW AT ABUTMENT

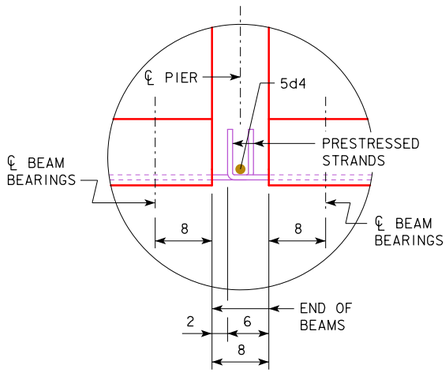


SECTION A-A

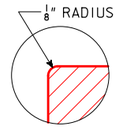


SECTION A-A

(SOUTHWEST AND SOUTHEAST LOOKING UPSTATION)



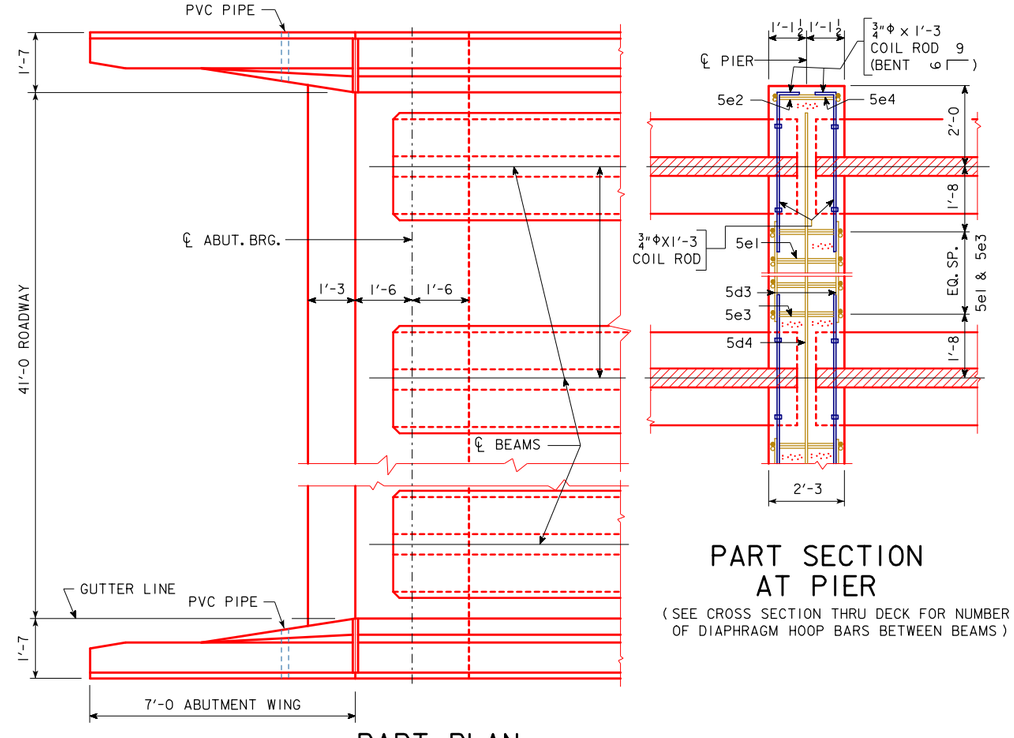
DETAIL "A"



DETAIL "C"

TABLE OF WING ELEVATIONS

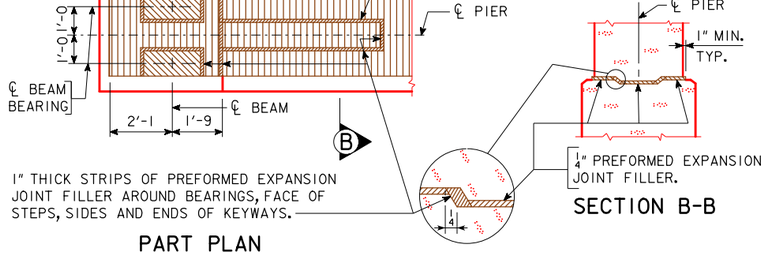
LOCATION	DIM "C"	ELEV. A	ELEV. B
S.W. CORNER	2'-2 9/16	1103.90	1103.89
N.W. CORNER	1'-0 3/4	1102.75	1102.74
S.E. CORNER	2'-2 5/16	1102.81	1102.73
N.E. CORNER	1'-0 5/16	1101.66	1101.58



PART PLAN

PART SECTION AT PIER

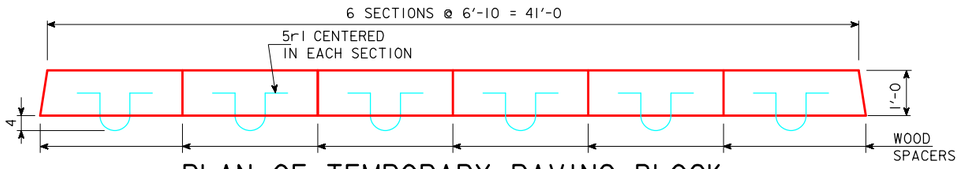
(SEE CROSS SECTION THRU DECK FOR NUMBER OF DIAPHRAGM HOOP BARS BETWEEN BEAMS)



PART PLAN

SECTION B-B

TOP OF PIER DETAILS



PLAN OF TEMPORARY PAVING BLOCK

NOTE:
BEFORE THE CONCRETE PAVING BLOCK IS PLACED, LINE THE NOTCH WITH TARPAPER TO PREVENT BOND. BLOCK IS TO BE REMOVED BEFORE PAVEMENT IS PLACED. PAVING BLOCK MAY BE MADE OF CLASS "C" OR CLASS "D" CONCRETE.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

BEAM PLAN & LONGITUDINAL

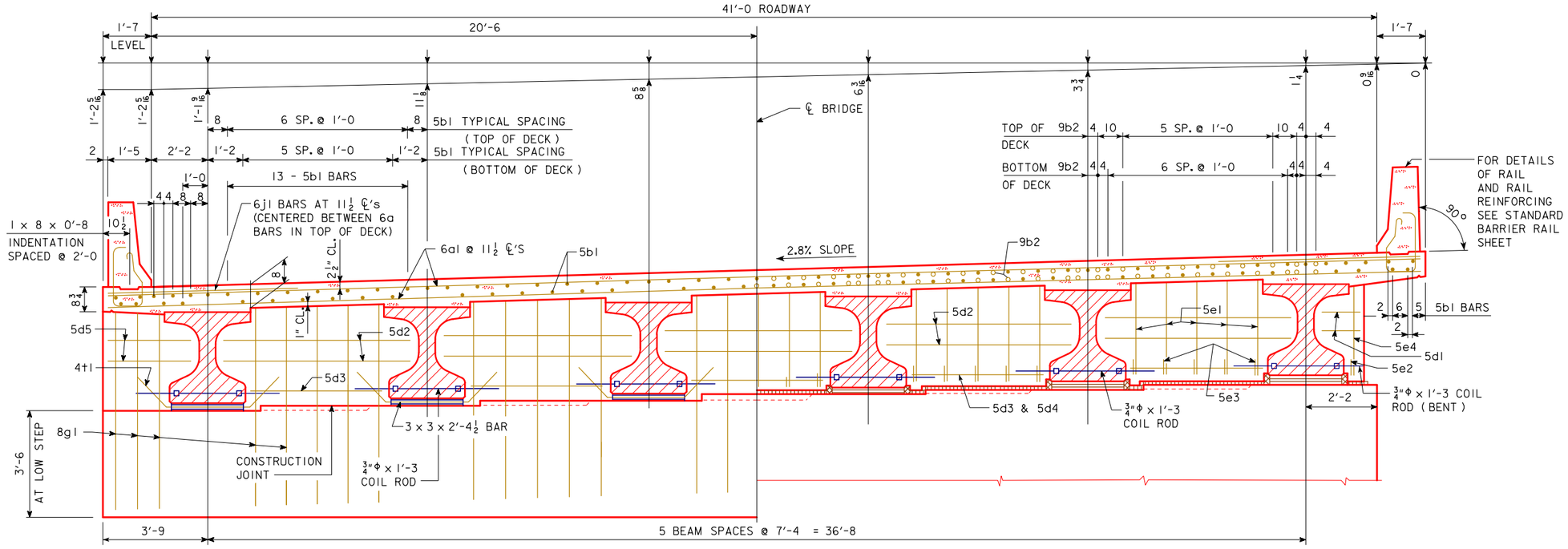
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	"BTB" BEAMS - PART PLAN & LONGIT. SECTION - 0° SKEW	STANDARD SHEET 4500-BTB (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 13

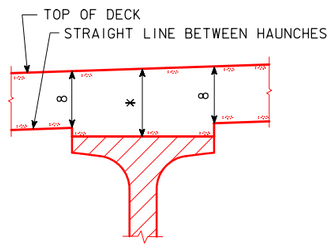


HALF SECTION NEAR ABUTMENT

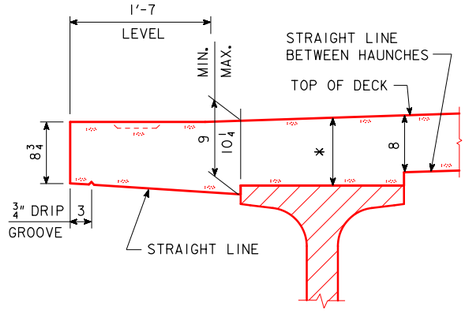
HALF SECTION NEAR PIER

(FIXED PIER SHOWN)

DECK AREA = 29.74 SQ. FT.
DECK AREA DOES NOT
INCLUDE THE HAUNCH.



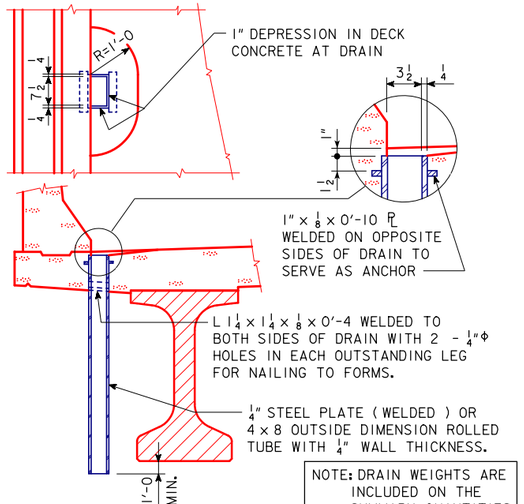
INTERIOR BEAMS



EXTERIOR BEAMS

TYPICAL DECK AND HAUNCH DETAIL

* FOR DECK THICKNESS OVER BEAMS SEE HAUNCH AND CAMBER DETAILS ON DESIGN SHEET 20.



NOTE: DRAIN WEIGHTS ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

DRAIN DETAILS

NOTE :
DRAINS ARE TO BE GALVANIZED. 2 DRAINS REQUIRED.
SEE "SITUATION PLAN" FOR LOCATION. WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL STEEL".
WEIGHT IS BASED ON ROLLED TUBE.

DATA FOR ONE DRAIN	
BEAM SIZE	BTB
DRAIN WEIGHT (LBS.)	92
DRAIN LENGTH (FT.)	4'-8¾

NOTE: FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET 15.

SUPERSTRUCTURE NOTES:

THE BRIDGE DECK AS SHOWN INCLUDES ½" INTEGRAL WEARING SURFACE.

THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE BRIDGE DECK.

COST OF ALL PREFORMED EXPANSION JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

ALL BEAMS ARE TO BE SET VERTICAL.

FORMS FOR THE DECK AND BARRIER RAIL ARE TO BE SUPPORTED BY THE PRESTRESSED CONCRETE BEAMS.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ALL DECK AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF DECK. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF DECK. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR DECK BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND DECK BOLSTERS.

COST OF BEARING MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

TRANSVERSE DECK REINFORCING MAY BE SPLICED WITH ONE LAP LOCATED AS FOLLOWS:

TOP BAR - LAP MIDWAY BETWEEN BEAMS (MIN. LAP = 1'-10).
BOTTOM BARS - LAP OVER BEAMS (MIN. LAP = 1'-10).

PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BAR REQUIRED FOR THE USE OF SPLICES.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

BRIDGE DECK CROSS SECTION

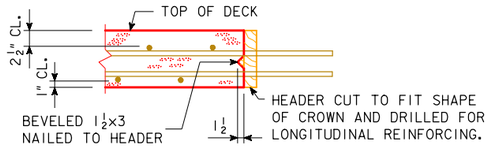
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

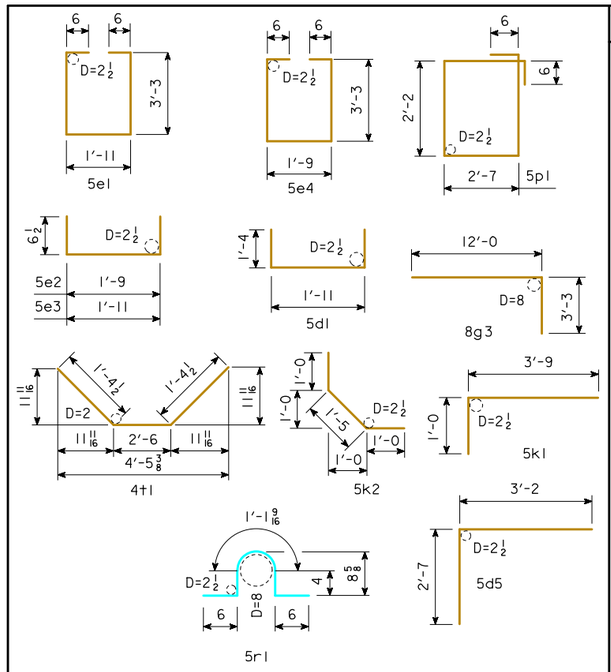
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 13 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	40' RDWY. PPCB (BTB BEAMS - INTEGRAL ABUT.) CROSS SECTION (SPANS 100' - 105')	STANDARD SHEET 4383-BTB-6 (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 14



PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D= PIN DIAMETER.

BENT BAR DETAILS

CONCRETE PLACEMENT QUANTITIES

LOCATION	QUANTITY
SECTION 1, DECK & ABUT. DIAPH.	113.2
SECTION 2, DECK & ABUT. DIAPH.	113.2
SECTION 3, DECK & PIER DIAPH.	70.9
PAVING BLOCKS	3.1
ABUTMENT FOOTINGS	39.4
WING WALLS, 4 AT 1.9	7.6
TOTAL (CU. YDS.)	347.4

NOTE:
CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

REINFORCING BAR LIST

EPOXY COATED REINFORCING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6g1	DECK TRANSV. TOP & BOTT.		451	43'-10	29693
5b1	DECK LONGIT. TOP & BOTT.		534	37'-7	20933
9b2	DECK LONGIT. TOP & BOTT. AT PIERS		89	26'-3	7944
5d1	PIER DIAPH. ENDS		4	4'-7	20
5d2	PIER & ABUT. DIAPH. LONGIT.		40	6'-8	279
5d3	PIER & ABUT. DIAPH. LONGIT.		20	4'-6	94
5d4	PIER DIAPH. LONGIT.		1	39'-6	42
5d5	ABUT. DIAPH. ENDS		8	5'-9	48
5d6	ABUT. DIAPH. LONGIT. B.F.		12	23'-0	288
5d7	PAVING NOTCH LONGIT.		8	23'-0	192
5e1	PIER DIAPH. HOOPS		25	9'-5	246
5e2	PIER DIAPH. TIES ENDS		2	2'-10	6
5e3	PIER DIAPH. TIES		25	3'-0	79
5e4	PIER DIAPH. HOOPS ENDS		2	9'-3	20
8f1	ABUT. FOOTING LONGIT. BOTH F.		36	24'-2	2323
8g1	ABUT. VERT. BOTH F.		128	7'-1	2421
8g3	ABUT. DIAPH. VERT. B.F.		60	15'-3	2444
5h2	ABUT. TO WING ANCHOR		56	4'-11	287
6j1	TOP OF DECK TRANSV. (AT RAIL)		448	7'-10	5271
5k1	PAVING NOTCH		64	4'-9	318
5k2	PAVING NOTCH		64	3'-5	229
5p1	ABUT. HOOPS		136	10'-6	1489
4t1	UNDER BEAMS AT ABUTMENTS		12	5'-3	43
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				74709

NON-COATED

#2	PILE SPIRAL		22	38'-6	142
	SPIRAL SPACERS, L 7/8 x 7/8 x 1/8 x 0.70		66	1'-10	85
5r1	PAVING BLOCK LIFTING HOOPS		12	2'-10	35
	REINFORCING STEEL - TOTAL (LBS.)				262

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

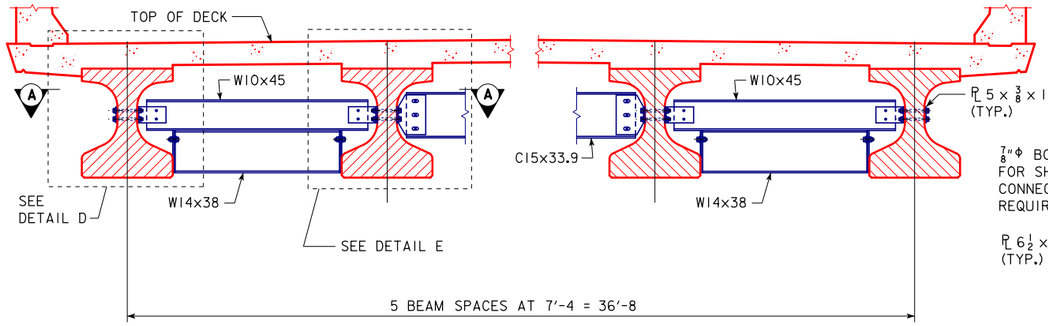
DECK, ABUT. & DIAPH. QUANTITIES

STA. 99+68.25 SEPTEMBER, 2016

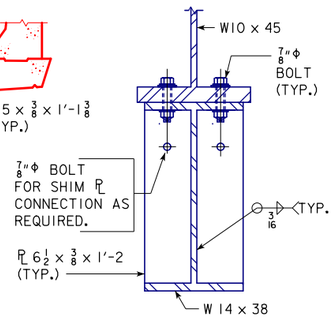
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

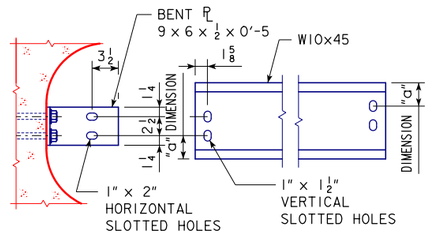
DESIGN SHEET NO. 14 OF 29 FILE NO. 30981 DESIGN NO. 816



SECTION SHOWING INTERMEDIATE DIAPHRAGM

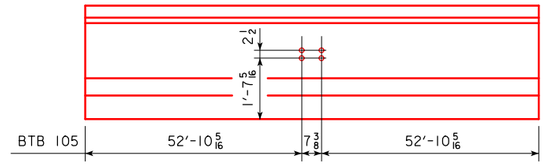


SECTION B-B

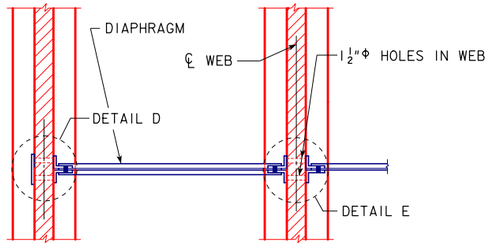


NOTE: "a" DIMENSION MUST BE EQUAL.

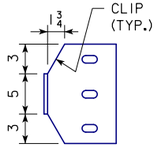
SLOTTED HOLE DETAILS



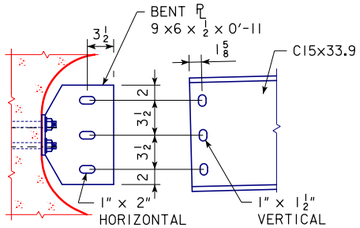
INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS



PART SECTION A-A



BENT ℄ DETAIL

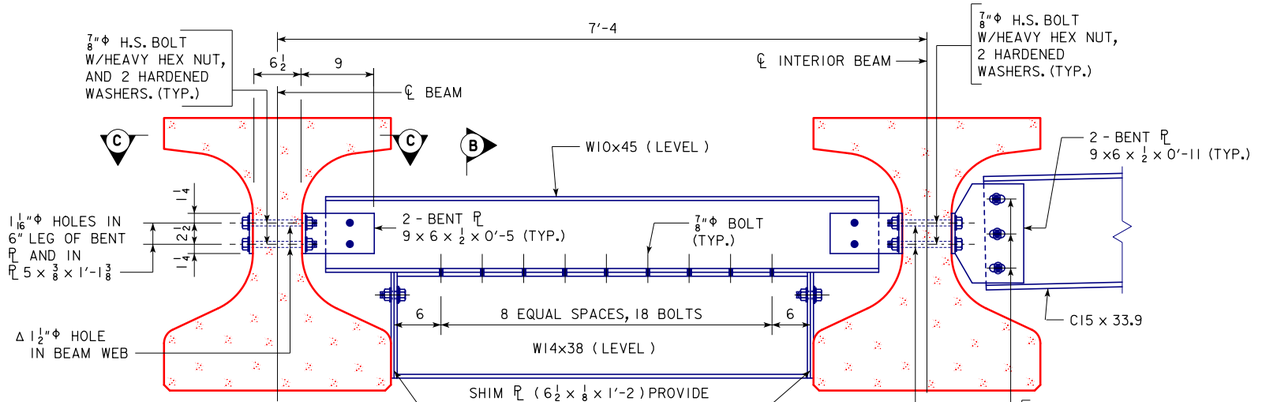


SLOTTED HOLE DETAILS

BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "D" AND/OR DETAIL "E")		NO. OF BEAM CONNECTIONS	WEIGHT
4 - 7/8"Φ x 9 1/4 H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		12	115.2
ONE DETAIL "E"	2 - BENT ℄ 9 x 6 x 1/2 x 0'-11 = 46.8 LBS.	12	561.6
	2 - BENT ℄ 9 x 6 x 1/2 x 0'-5 = 21.3 LBS.	4	85.2
ONE DETAIL "D"	1 - BACKING ℄ 5 x 3/8 x 1'-1 3/8 = 7.1 LBS.	4	28.4
	2 - BENT ℄ 9 x 6 x 1/2 x 0'-5 = 21.3 LBS.	4	85.2

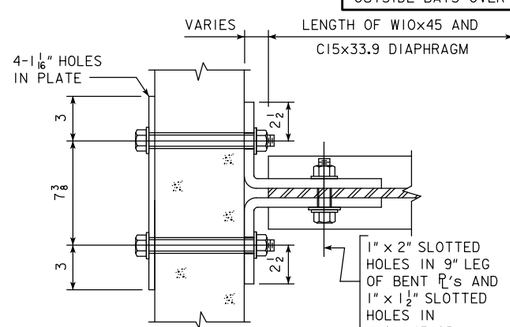
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
6 - 7/8"Φ x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS.		6	46.8
4 - 7/8"Φ x 3" H.S.BOLTS WITH NUTS & WASHERS = 5.2 LBS.		4	20.8
18 - 7/8"Φ x 2" H.S.BOLTS WITH NUTS & WASHERS = 16.8 LBS.		4	67.2
4 - 7/8"Φ x 2" H.S.BOLTS WITH NUTS & WASHERS = 4.0 LBS.		4	12.0
2 - ℄ 6 1/2 x 3/8 x 1'-2 = 19.3 LBS.		4	77.2
4 - ℄ 6 1/2 x 1/8 x 1'-2 = 12.9 LBS.		4	51.6
	LENGTH OF MEMBER		
1 - W10 x 45 = 45 LBS./FT.	6'-1 3/4	4	1106.4
1 - C15 x 33.9 = 33.9 LBS./FT.	6'-1 3/4	6	1250.1
1 - W14 x 38 = 38 LBS./FT.	4'-10	4	734.7
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			4242.4



DETAIL D

DETAIL E

NOTE: W10x45 AND W14x38 SHALL BE INSTALLED ONLY IN THE OUTSIDE BAYS OVER THE TRAVELED ROADWAY.



SECTION C-C

NOTES:

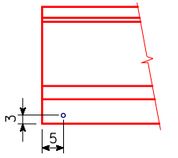
ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

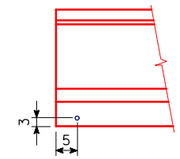
ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.

THE 1 1/2"Φ HOLES FOR THE 7/8"Φ H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

THE 7/8"Φ H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.



INTEGRAL ABUT.



FIXED PIER

BEAM COIL TIE LOCATIONS

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

INTERMEDIATE DIAPHRAGM

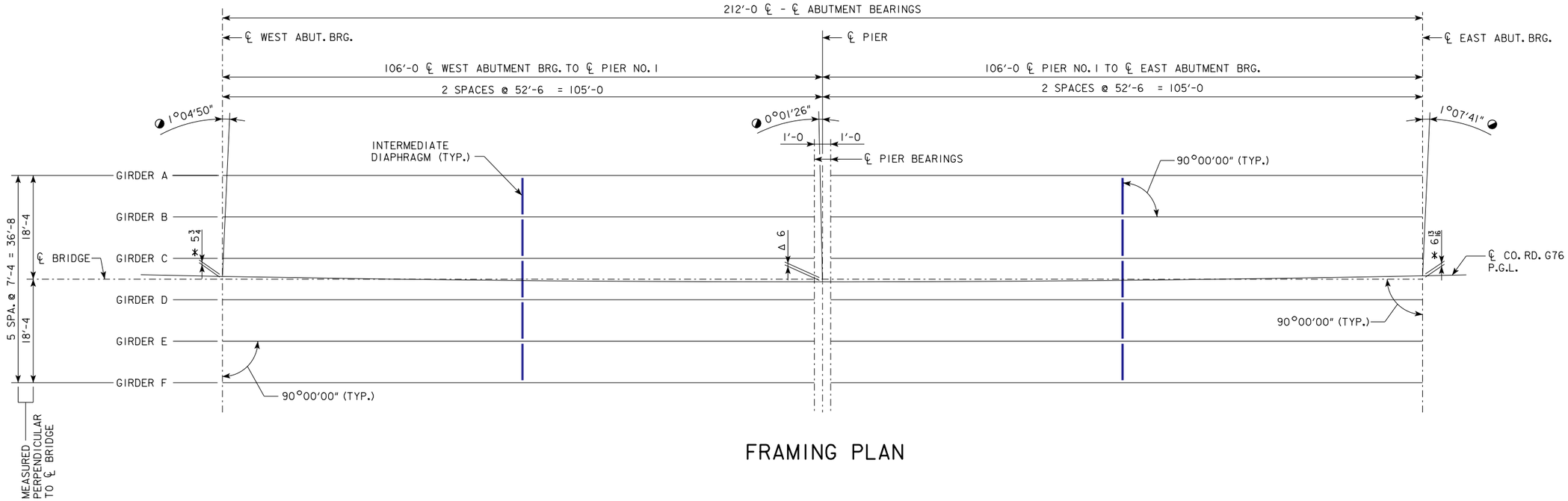
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	STEEL INTERM. DIAPHS. FOR "BTB" BEAM BRIDGES - SHT. 1 OF 2	STANDARD SHEET 1036-1-BTB (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 16



FRAMING PLAN

NOTES:
* MEASURED ALONG ℄ BEARING
Δ MEASURED ALONG ℄ PIER
◕ MEASURED WITH RESPECT TO LOCAL TANGENT OF ℄ CO. RD. G76 AND P.G.L.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

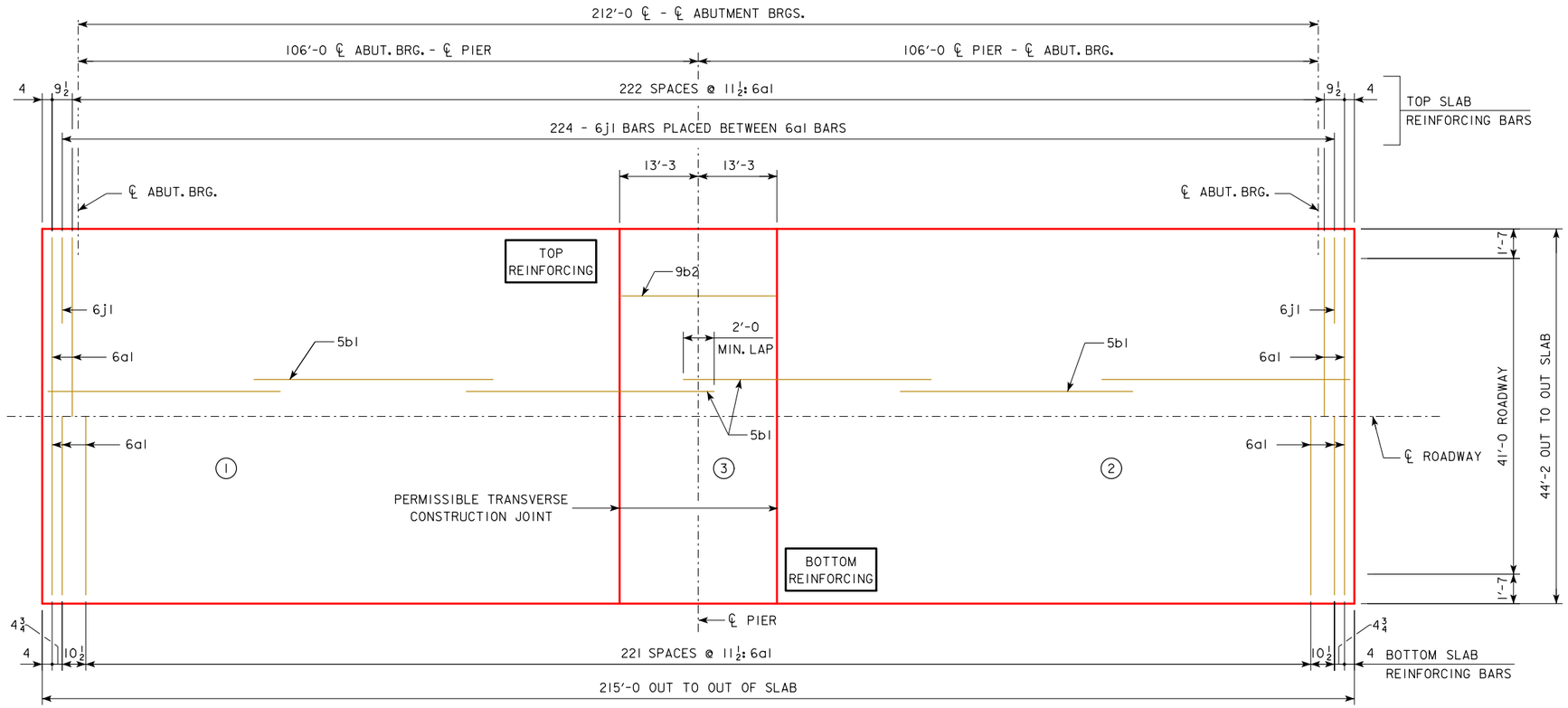
FRAMING PLAN

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 16 OF 29 FILE NO. 30981 DESIGN NO. 816



SLAB LAYOUT

NOTE: CONCRETE DECK SLAB SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING SLAB CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. FOR APPROVED ALTERNATE PROCEDURES THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SUPERSTRUCTURE DETAILS

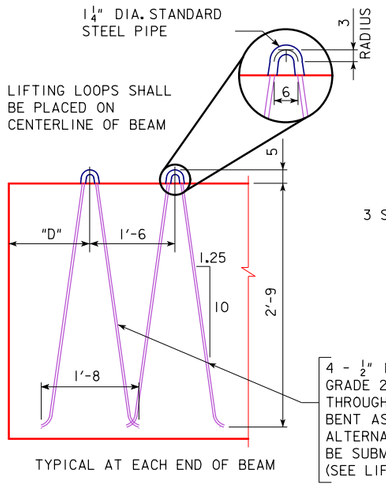
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

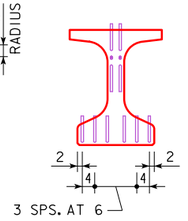
DESIGN SHEET NO. 17 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 18

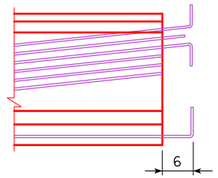


TYPICAL AT EACH END OF BEAM

LIFTING LOOP DETAIL



THE TOP AND 3rd ROWS OF THE DEFLECTED STRANDS ARE TO BE CUT WITH 1'-6 PROJECTIONS WHICH ARE TO BE SHOP BENT AS SHOWN. THE SECOND ROW IS TO BE CUT WITH A 5" PROJECTION AND THE REMAINING TOP DEFLECTED STRANDS IN ROWS 4 AND BELOW ARE TO BE CUT FLUSH WITH BEAM FACE. SIX BOTTOM STRANDS ARE TO BE CUT WITH 1'-6 PROJECTIONS WHICH ARE TO BE SHOP BENT AS SHOWN. THE REMAINING BOTTOM STRANDS ARE TO BE CUT OFF REASONABLY FLUSH WITH THE CONCRETE.



TYPICAL AT BOTH BEAM ENDS

STRAND PROJECTION AT BEAM ENDS WHEN EMBEDDED IN CONCRETE END DIAPHRAGMS

BTB BEAM DATA

	BTB BEAM	SPAN LENGTH ℄-℄ BEARING	OVERALL BEAM LENGTH (L)	CONCRETE STRENGTH f'ci (ksi)	CONCRETE STRENGTH f'c (ksi)	STRAND SIZE DIA. (in)	NO. OF STRAND STRAIGHT	NO. OF STRAND DEFLECTED	TOTAL INITIAL PRESTRESS ③ kips	HOLD DOWN FORCE-kips	CAMBER (in) AT RELEASE	CAMBER (in) AFTER LOSSES	DEFLECTION (in) Δ_D IMMEDIATE ① (ELASTIC) Δ_I STEEL DIAPHRAGM	DEFLECTION (in) Δ_D TIME ② (PLASTIC) Δ_T STEEL DIAPHRAGM	PERMISSIBLE MAXIMUM SPACING HL-93 LOADING STEEL DIAPHRAGM	WEIGHT (TONS)	CONCRETE (CU YD.)	REINFORCING STEEL (WEIGHT-LBS)
④	SBTB105	105'-0	106'-4	8.0	9.0	0.60	32	12	1933	20.6	3.74	5.98	3.63	0.91	7'-4	35.0	17.3	2391

① DEFLECTIONS AT MID-SPAN DUE TO WEIGHT OF SLAB AND DIAPHRAGM. THE DEFLECTIONS SHOWN ARE FOR A SLAB (8 in) AND HAUNCH (1.5 in) WEIGHT OF:
0.93 kips/ft FOR 8'-6 BEAM SPACING
0.80 kips/ft FOR 7'-4 BEAM SPACING
AND ONE STEEL DIAPHRAGM (0.500 kips) AT ℄ OF SPAN.
FOR DIFFERENT SLAB AND DIAPHRAGM WEIGHTS, DEFLECTIONS WILL BE DIRECTLY PROPORTIONAL.

② DEFLECTIONS DUE TO THE COMBINED EFFECT OF CREEP DUE TO WEIGHT OF SLAB AND SHRINKAGE OF SLAB.
TOTAL BEAM DEFLECTIONS AT ℄ OF SPAN, Δ_D , DUE TO WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:
(A) $\Delta_D = \Delta_I + \Delta_T$ FOR SIMPLE SPAN.
(B) $\Delta_D = \Delta_I + \frac{3}{4}\Delta_T$ FOR END SPANS OF CONTINUOUS BRIDGE.
(C) $\Delta_D = \Delta_I + \frac{1}{2}\Delta_T$ FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.

③ TOTAL INITIAL PRESTRESS IS BASED ON 75.0% f's, f's. = 270 ksi. AND As = 0.217 in^2.

④ REQUIRES 4000 psi COMPRESSIVE STRENGTH FOR CAST-IN-PLACE SLAB CONCRETE.

BEAM NOTES:

THESE BEAMS ARE DESIGNED FOR AASHTO LIVE LOADS AS INDICATED IN ABOVE TABLE WITH AN ALLOWANCE OF 20 LBS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

ALL PPC BEAMS SHALL USE HIGH PERFORMANCE CONCRETE (HPC) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

HOLD DOWN POINTS FOR DEFLECTED STRANDS MAY BE MOVED TOWARD ENDS OF BEAM A DISTANCE OF 0.05 L MAXIMUM AT PRODUCER'S OPTION.

ALL PRESTRESSING STRANDS EXCEPT LIFTING LOOP STRANDS SHALL BE 0.60 in. NOMINAL DIAMETER (NOMINAL STEEL AREA = 0.217 in^2) AND CONFORM TO ASTM A416 GRADE 270 LOW RELAXATION STRANDS. MINIMUM STRAND BREAKING STRENGTH SHALL BE 58.6 kips.

TOPS OF BEAMS ARE TO BE STRUCK OFF LEVEL AND FINISHED AS PER MATERIALS IM570.

BEARINGS SHALL BE AS DETAILED ON OTHER DESIGN SHEETS.

BEAMS TO BE USED IN BRIDGES MADE CONTINUOUS BY THE POURED IN PLACE FLOOR, ARE TO BE AT LEAST 28 DAYS OLD BEFORE THE FLOOR IS PLACED UNLESS A SHORTER CURING TIME IS APPROVED BY THE BRIDGE ENGINEER.

THE PORTIONS OF THE PRESTRESSED BEAMS THAT ARE TO BE EMBEDDED IN THE ABUTMENT AND PIER DIAPHRAGMS SHALL BE ROUGHENED FOR A DISTANCE OF 10" FROM THE BEAM END BY SANDBLASTING OR OTHER APPROVED METHODS TO PROVIDE SUITABLE BOND BETWEEN THE BEAM AND THE DIAPHRAGM IN ACCORDANCE WITH ARTICLE 2403.03, I, OF THE STANDARD SPECIFICATIONS.

ALL BEAMS ARE TO BE INCREASED IN LENGTH TO COMPENSATE FOR ELASTIC SHORTENING, CREEP AND SHRINKAGE.

FOR TRANSPORTING, THE ALLOWABLE OVERHANG IS SHOWN IN THE LIFTING LOOP AND OVERHANG TABLE.

THE CONTRACTOR SHALL ASSURE THE LATERAL STABILITY OF THE BEAMS DURING HANDLING, TRANSPORTING AND ERECTION BY PROVIDING TEMPORARY BRACING AS NEEDED.

HOLES MUST BE CAST IN THE WEB TO ACCOMMODATE THE STEEL DIAPHRAGM ATTACHMENTS AS DETAILED ON THE STEEL DIAPHRAGM DETAIL SHEET.

MINIMUM CONCRETE f'c (AT 28 DAYS) AND MINIMUM f'ci AT RELEASE ARE LOCATED IN THE BTB BEAM DATA TABLE ABOVE.

FOUR 0.60 IN. DIAMETER STRANDS STRESSED TO NOT MORE THAN 5000 lbs EACH MAY BE USED IN LIEU OF BARS 5a1 AND 5a2 IN THE TOP FLANGE.

LIFTING LOOP AND OVERHANG TABLE

BEAMS	LIFTING LOOPS EACH END	# OF STRANDS PER LOOP	D	BEAM OVERHANG (FT)
SBTB105	2	4	6'-3	12

LIFTING LOOPS SHALL CARRY LOADS EQUALLY.

DESIGN STRESSES:

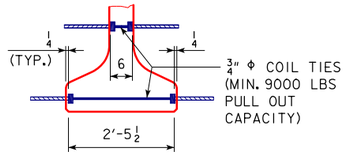
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE TO BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2007.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 5.
PRESTRESSING STEEL IN ACCORDANCE WITH SECTION 5, GRADE 270.

SPECIFICATIONS:

CONSTRUCTION: STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, CURRENT SERIES, WITH CURRENT APPLICABLE SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

DESIGN: AASHTO LRFD, SERIES OF 2007, WITH MINOR MODIFICATIONS.

NUMBER AND EXACT LOCATION OF COIL TIES TO BE AS DETAILED ON SPECIFIC BRIDGE DESIGN.



COIL TIE DETAIL

ALTERNATE BAR NOTES:

ALTERNATE BARS SHOWN IN BENT BAR DETAILS MAY BE USED IN LIEU OF REINFORCING BARS SHOWN IN BAR LIST. NO ADDITIONAL PAYMENT SHALL BE MADE FOR USE OF ALTERNATE BARS.

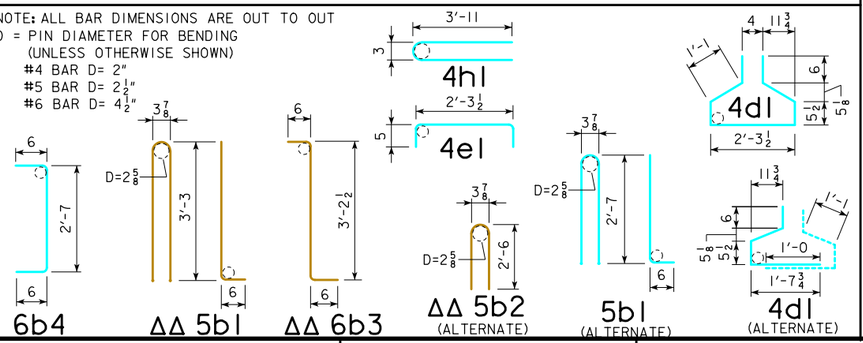
ΔΔ 5b1 AND 6b3 BARS TO BE EPOXY COATED
∗ 6b3 AND 6b4 BARS TO BE USED IN PAIRS

REINFORCING BAR LIST

BEAM BAR	SHAPE	BTB105 NO.	LENGTH	BEAM BAR
5a1		12	35'-3	5a1
5a2		6	40'-0	5a2
ΔΔ 5b1		83	7'-8	5b1
ΔΔ ∗ 6b3		32	4'-3	6b3
∗ 6b4		16	3'-7	6b4
4c1		127	2'-7	4c1
4d1		105	6'-5	4d1
4e1		26	3'-2	4e1
4h1		4	8'-0	4h1

BENT BAR DETAILS

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT
D = PIN DIAMETER FOR BENDING (UNLESS OTHERWISE SHOWN)
#4 BAR D= 2"
#5 BAR D= 2½"
#6 BAR D= 4½"



DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SBTB105 BEAM DETAILS

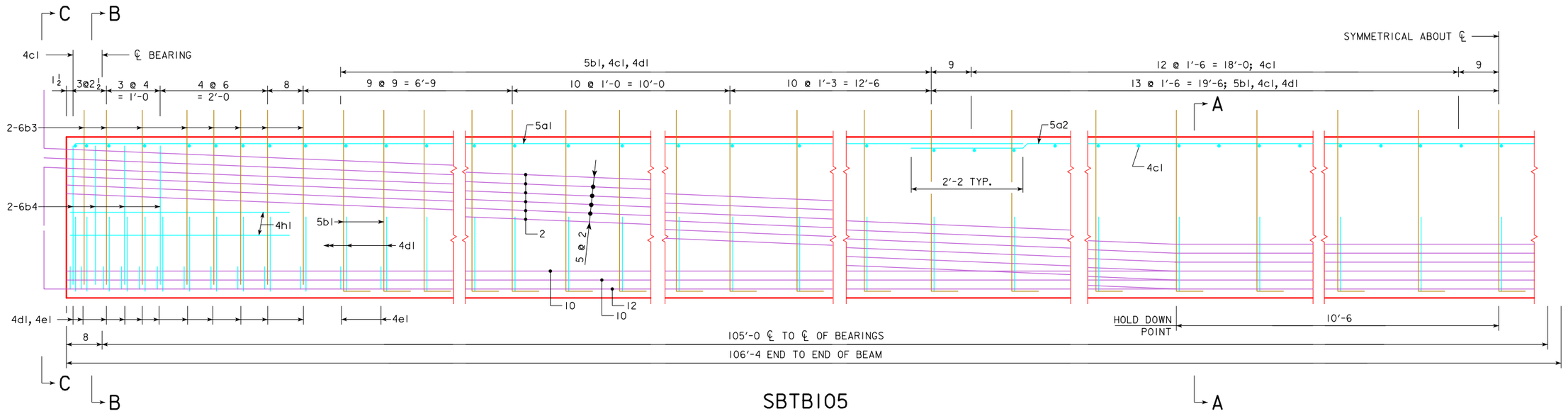
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

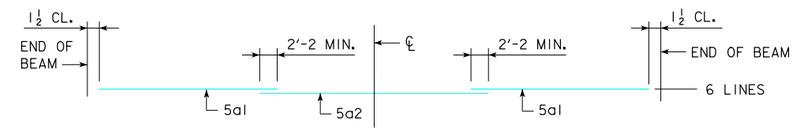
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 18 OF 29 FILE NO. 30981 DESIGN NO. 816

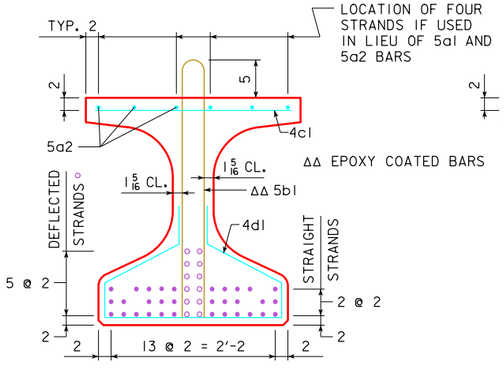
DESIGN TEAM: SCHEMMER	BULB TEE "B" BEAMS - 100'-0 AND 105'-0 SPANS	STANDARD SHEET 4765 (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 19



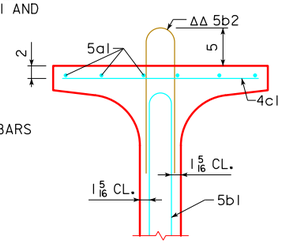
SBTB105



TOP FLANGE LONGITUDINAL BAR LAYOUT

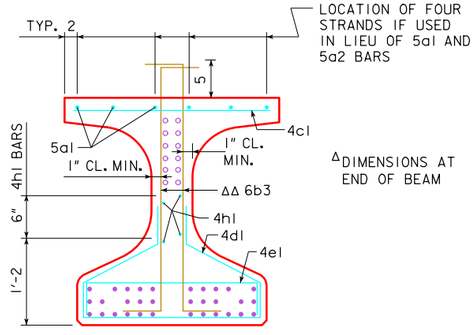


SECTION A-A



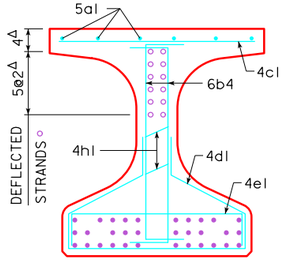
SECTION A-A
(ALTERNATE)

4765.

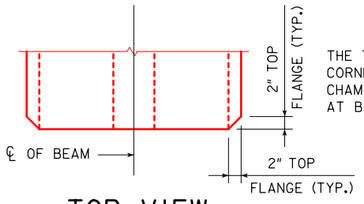


SECTION B-B

ΔDIMENSIONS AT
END OF BEAM



SECTION C-C

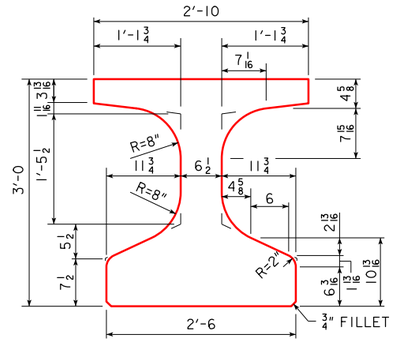


TOP VIEW

THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SBTB105 BEAM DETAILS

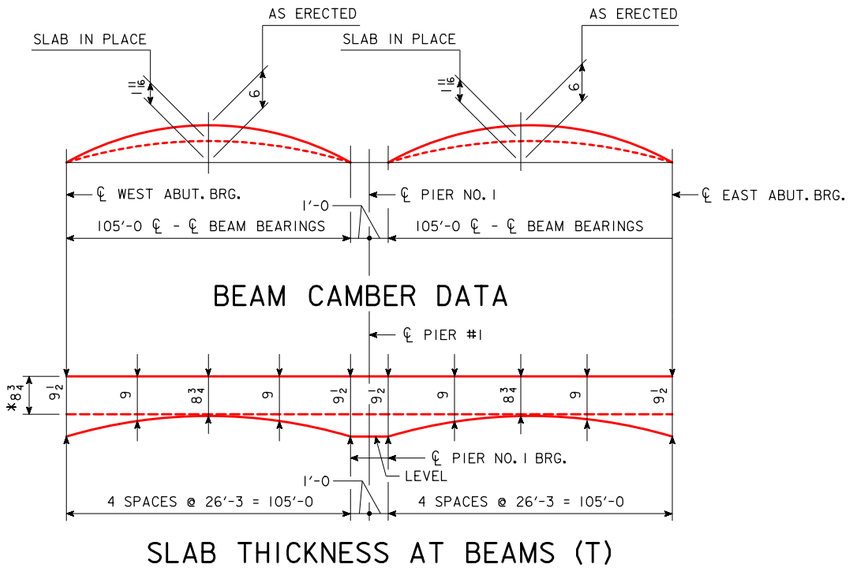
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 19 OF 29 FILE NO. 30981 DESIGN NO. 816

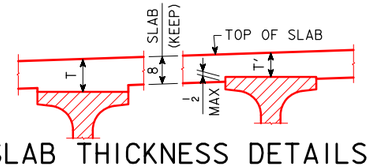
DESIGN TEAM: SCHEMMER	BULB TEE "B" BEAM - 105'-0 SPAN	STANDARD SHEET 4767 (MODIFIED)		WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 20



BEAM CAMBER DATA

SLAB THICKNESS AT BEAMS (T)

* NOMINAL SLAB THICKNESS AT BEAMS INCLUDES 8" SLAB + $\frac{3}{4}$" HAUNCH



SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER AND DEFLECTIONS. THESE VALUES ARE USED BY THE DESIGNER TO SET BEAM ELEVATIONS AND ESTIMATE CONCRETE QUANTITIES. REFER TO THE HAUNCH DATA DETAILS SHEET FOR ADDITIONAL INFORMATION TO AID THE CONTRACTOR IN SETTING THE FIELD HAUNCHES REQUIRED FOR CONSTRUCTION.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SLAB THICKNESS DETAILS

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

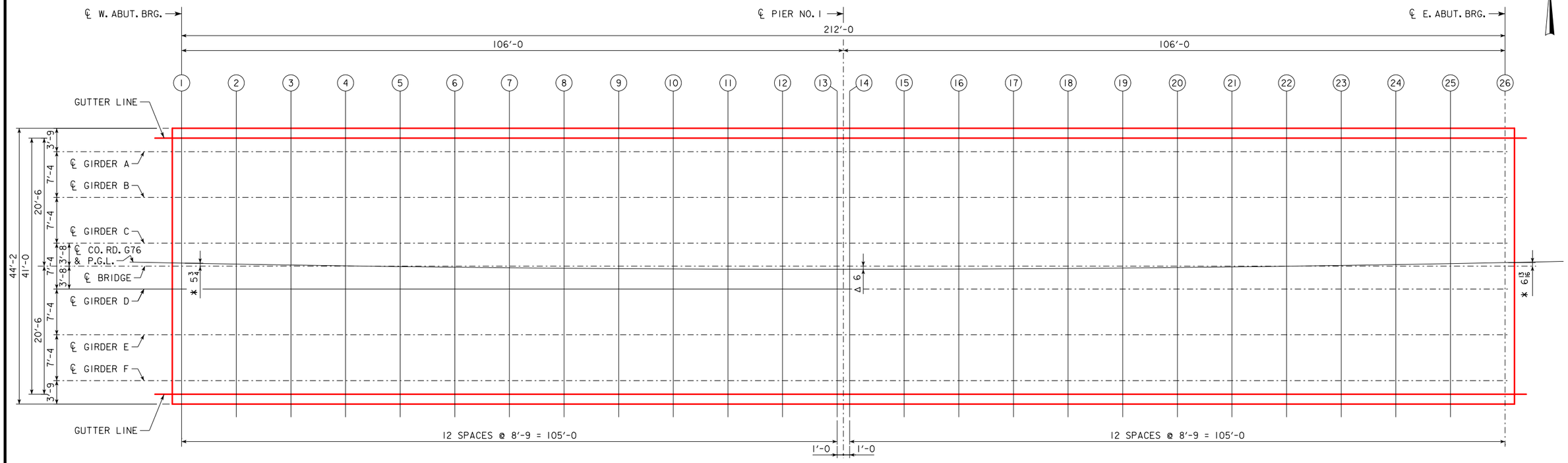
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 20 OF 29 FILE NO. 30981 DESIGN NO. 816

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

TOP OF SLAB ELEVATIONS

BEAM LINE	℄ W. ABUT. BEARING												℄ PIER NO. 1 BEARINGS												℄ E. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26
NORTH SLAB EDGE	1102.75	1102.76	1102.76	1102.76	1102.75	1102.74	1102.73	1102.71	1102.68	1102.65	1102.62	1102.58	1102.54	1102.53	1102.49	1102.43	1102.38	1102.32	1102.25	1102.19	1102.11	1102.03	1101.95	1101.86	1101.78	1101.68
NORTH GUTTER LINE	1102.75	1102.76	1102.76	1102.76	1102.75	1102.74	1102.73	1102.71	1102.68	1102.65	1102.62	1102.58	1102.54	1102.53	1102.49	1102.43	1102.38	1102.32	1102.25	1102.19	1102.11	1102.03	1101.95	1101.86	1101.78	1101.68
GIRDER A	1102.81	1102.82	1102.82	1102.82	1102.81	1102.80	1102.79	1102.77	1102.74	1102.72	1102.68	1102.64	1102.60	1102.59	1102.55	1102.49	1102.44	1102.38	1102.31	1102.25	1102.17	1102.09	1102.01	1101.92	1101.83	1101.74
GIRDER B	1103.02	1103.03	1103.03	1103.03	1103.02	1103.01	1102.99	1102.97	1102.95	1102.92	1102.89	1102.85	1102.81	1102.80	1102.75	1102.70	1102.64	1102.58	1102.52	1102.45	1102.38	1102.30	1102.22	1102.13	1102.04	1101.94
GIRDER C	1103.23	1103.23	1103.23	1103.23	1103.22	1103.21	1103.20	1103.18	1103.15	1103.13	1103.09	1103.06	1103.01	1103.00	1102.96	1102.91	1102.85	1102.79	1102.73	1102.66	1102.58	1102.51	1102.42	1102.34	1102.25	1102.15
℄ BRIDGE	1103.33	1103.33	1103.34	1103.33	1103.33	1103.32	1103.30	1103.28	1103.26	1103.23	1103.20	1103.16	1103.12	1103.11	1103.06	1103.01	1102.95	1102.89	1102.83	1102.76	1102.69	1102.61	1102.53	1102.44	1102.35	1102.26
GIRDER D	1103.43	1103.44	1103.44	1103.44	1103.43	1103.42	1103.40	1103.38	1103.36	1103.33	1103.30	1103.26	1103.22	1103.21	1103.16	1103.11	1103.06	1103.00	1102.93	1102.86	1102.79	1102.71	1102.63	1102.54	1102.45	1102.36
GIRDER E	1103.64	1103.64	1103.64	1103.64	1103.64	1103.62	1103.61	1103.59	1103.56	1103.54	1103.50	1103.47	1103.42	1103.41	1103.37	1103.32	1103.26	1103.20	1103.14	1103.07	1103.00	1102.92	1102.84	1102.75	1102.66	1102.57
GIRDER F	1103.84	1103.85	1103.85	1103.85	1103.84	1103.83	1103.81	1103.79	1103.77	1103.74	1103.71	1103.67	1103.63	1103.62	1103.57	1103.52	1103.47	1103.41	1103.34	1103.27	1103.20	1103.12	1103.04	1102.96	1102.86	1102.77
SOUTH GUTTER LINE	1103.90	1103.91	1103.91	1103.91	1103.90	1103.89	1103.87	1103.85	1103.83	1103.80	1103.77	1103.73	1103.69	1103.68	1103.63	1103.58	1103.53	1103.47	1103.40	1103.34	1103.26	1103.19	1103.10	1103.02	1102.93	1102.83
SOUTH EDGE SLAB	1103.95	1103.95	1103.95	1103.95	1103.95	1103.93	1103.92	1103.90	1103.87	1103.85	1103.81	1103.78	1103.74	1103.72	1103.68	1103.63	1103.57	1103.51	1103.45	1103.38	1103.31	1103.23	1103.15	1103.06	1102.97	1102.88



LOCATION OF TOP OF SLAB ELEVATIONS

NOTES:
* MEASURED ALONG ℄ BEARING
Δ MEASURED ALONG ℄ PIER

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

TOP OF SLAB ELEVATIONS

STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 21 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER 22

10/3/2016 3:58:05 PM iplummer S:\Projects\06241003\9103502012\BRFinal\91035423.brg 910816s021 11x17_pdf.pltcfg

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700

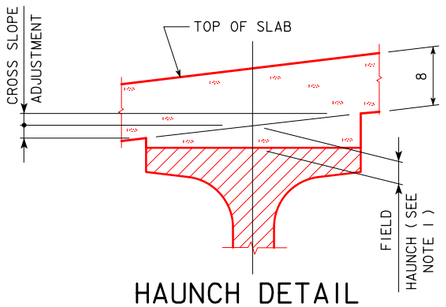
TABLE OF BEAM LINE SLAB HAUNCH ELEVATIONS

BEAM LINE	℄ W. ABUT. BEARING												℄ PIER BEARINGS												℄ E. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26
A	1102.15	1102.25	1102.34	1102.41	1102.46	1102.48	1102.48	1102.45	1102.39	1102.30	1102.20	1102.07	1101.94	1101.93	1102.97	1102.01	1102.03	1102.02	1101.99	1101.94	1101.85	1101.74	1101.60	1101.44	1101.26	1101.07
B	1102.35	1102.45	1102.54	1102.62	1102.66	1102.69	1102.69	1102.65	1102.59	1102.51	1102.40	1102.28	1102.14	1102.13	1102.18	1102.22	1102.23	1102.23	1102.20	1102.14	1102.06	1101.95	1101.81	1101.65	1101.47	1101.28
C	1102.56	1102.66	1102.75	1102.82	1102.87	1102.89	1102.89	1102.86	1102.80	1102.72	1102.61	1102.48	1102.35	1102.34	1102.38	1102.42	1102.44	1102.44	1102.41	1102.35	1102.26	1102.15	1102.01	1101.85	1101.67	1101.49
D	1102.76	1102.86	1102.95	1103.03	1103.08	1103.10	1103.10	1103.06	1103.01	1102.92	1102.81	1102.69	1102.55	1102.54	1102.59	1102.63	1102.64	1102.64	1102.61	1102.56	1102.47	1102.36	1102.22	1102.06	1101.88	1101.69
E	1102.97	1103.07	1103.16	1103.23	1103.28	1103.30	1103.30	1103.27	1103.21	1103.13	1103.02	1102.89	1102.76	1102.75	1102.80	1102.83	1102.85	1102.85	1102.82	1102.76	1102.68	1102.56	1102.43	1102.27	1102.09	1101.90
F	1103.17	1103.28	1103.36	1103.44	1103.49	1103.51	1103.51	1103.47	1103.42	1103.33	1103.22	1103.10	1102.96	1102.95	1103.00	1103.04	1103.06	1103.05	1103.02	1102.97	1102.88	1102.77	1102.63	1102.47	1102.29	1102.11

MISCELLANEOUS DATA TABLE

	BEAM LINE		℄ W. ABUT. BEARING												℄ PIER BEARINGS												℄ E. ABUT. BEARING
			LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26
ANTICIPATED DEFLECTION DUE TO SLAB (IN.)	ALL		0	$1\frac{1}{8}$	$2\frac{3}{16}$	$3\frac{1}{16}$	$3\frac{3}{4}$	$4\frac{3}{16}$	$4\frac{5}{16}$	$4\frac{3}{16}$	$3\frac{3}{4}$	$3\frac{1}{16}$	$2\frac{3}{16}$	$1\frac{1}{8}$	0	0	$1\frac{1}{8}$	$2\frac{3}{16}$	$3\frac{1}{16}$	$3\frac{3}{4}$	$4\frac{3}{16}$	$4\frac{5}{16}$	$4\frac{3}{16}$	$3\frac{3}{4}$	$3\frac{1}{16}$	$2\frac{3}{16}$	$1\frac{1}{8}$	0
CROSS SLOPE ADJUSTMENTS (IN.)	A, B, C, D, E & F		$\pm\frac{1}{2}$																								
ALLOWABLE FIELD HAUNCH (IN. & FT.)	MAX.	ALL	$2\frac{1}{2}$ (0.21)																								
	MIN.	ALL	0 (0.00)																								

NOTE:
HAUNCH LOCATIONS ARE AT THE SAME LOCATION AS THE ENCIRCLED LETTERS AND NUMBERS SHOWN ON SLAB ELEVATIONS SHEET.



HAUNCH DETAIL

NOTE:
BRIDGE SEAT ELEVATIONS ARE SET BASED ON THEORETICAL CAMBER AND BEAM DEFLECTIONS. THESE BRIDGE SEATS WILL PROVIDE A THEORETICAL BEAM HAUNCH WITHIN DESIGN PARAMETERS. FIELD HAUNCHES ARE DETERMINED USING SURVEYED TOP OF BEAM ELEVATIONS AND "BEAM LINE HAUNCH ELEVATION" DATA. ALLOWABLE MAXIMUM AND MINIMUM "FIELD HAUNCH" VALUES ARE GIVEN IN INCHES AND DECIMALS OF FEET IN THE "MISCELLANEOUS DATA" TABLE. "CROSS SLOPE ADJUSTMENT" VALUES WILL AID THE CONTRACTOR IN DETERMINING ACTUAL FORMED HAUNCH DIMENSIONS AT THE EDGES OF THE TOP FLANGE.

NOTE 1:
TO CALCULATE FIELD HAUNCH REQUIRED AT EACH LOCATION, SURVEY THE BEAM TOPS CONSISTENT WITH THE SPACINGS SHOWN ON THE "TOP OF SLAB ELEVATIONS LAYOUT". SUBTRACT THE SURVEYED BEAM SHOT FROM THE "BEAM LINE HAUNCH ELEVATION". THIS VALUE WILL BE THE HAUNCH NEEDED (SEE "FIELD HAUNCH" IN HAUNCH DETAIL). THE "BEAM LINE HAUNCH ELEVATION" INCLUDES ADJUSTMENTS FOR SLAB THICKNESSES AND ANTICIPATED DEFLECTIONS. NO ADDITIONAL CALCULATIONS ARE REQUIRED. IF THE FIELD HAUNCH EXCEEDS THE MAXIMUMS AND MINIMUMS SHOWN IN INCHES AND DECIMALS OF FEET IN THE MISCELLANEOUS DATA TABLE, ADJUSTMENTS TO THE GRADE OR ADDITIONAL HAUNCH REINFORCEMENT WILL BE REQUIRED.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

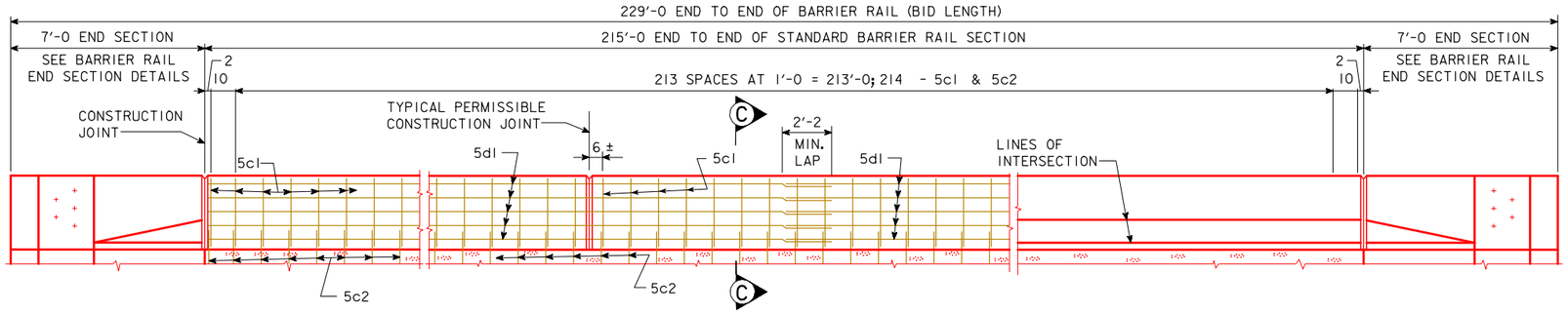
SLAB HAUNCH DATA DETAILS

STA. 99+68.25 SEPTEMBER, 2016

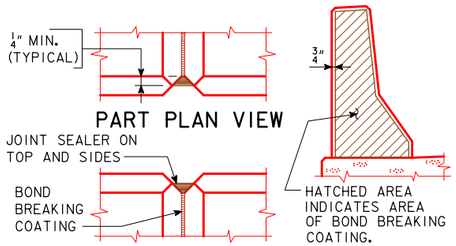
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 22 OF 29 FILE NO. 30981 DESIGN NO. 816



ELEVATION OF BARRIER RAIL LAYOUT



PART PLAN VIEW

PART ELEVATION VIEW

BARRIER RAIL JOINT DETAILS

NOTE:
NORTH BARRIER TO BE LEVEL. SOUTH BARRIER TO BE PERPENDICULAR TO DECK.

BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

COST OF THE JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

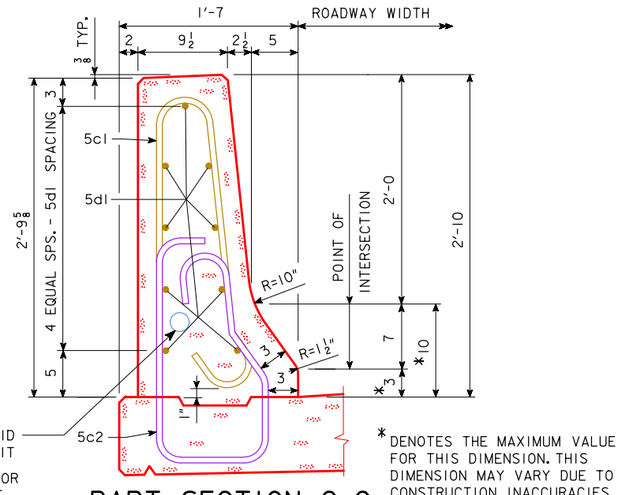
ALL BARRIER RAIL REINFORCING STEEL IS TO BE EPOXY COATED.

THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 2.84 SQUARE FEET.



PART SECTION C-C

NOTE: SEE DESIGN SHEET 25 FOR DETAILS OF CONDUIT SUPPORT BAR 4s1 AND ASSOCIATED QUANTITY (NOT SHOWN HERE)

* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

EPOXY REINF. STEEL-TWO BARRIER RAILS

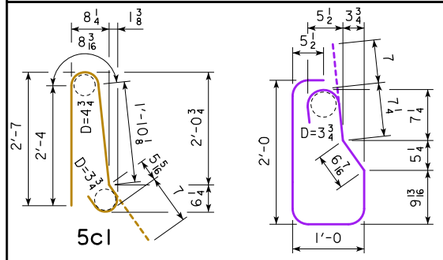
SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTION	5c1	VERTICAL		432	5'-11	2666
	5d1	LONGITUDINAL		108	37'-7	4234
					TOTAL (LBS)	6900

S. S. REINF. STEEL - TWO BARRIER RAILS

	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTION	5c2	VERTICAL		432	6'-0	2704
					STAINLESS STEEL TOTAL WEIGHT (LBS.)	2704

NOTE: REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

BENT BAR DETAILS



NOTE:
ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	430 @ 0.1052 CU.YD. PER FT.	45.2
	TOTAL (CU. YD.)	45.2

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING	L.F.	458

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

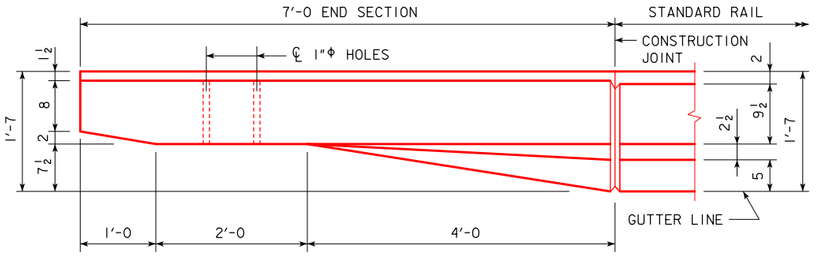
BARRIER RAIL DETAILS

STA. 99+68.25 SEPTEMBER, 2016

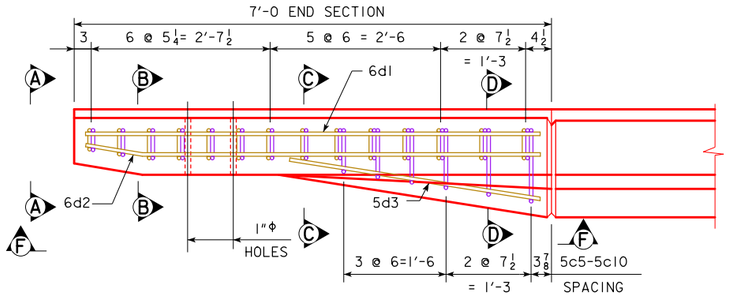
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

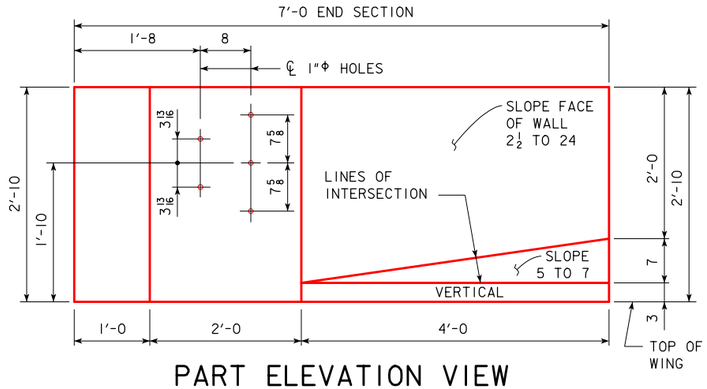
DESIGN SHEET NO. 23 OF 29 FILE NO. 30981 DESIGN NO. 816



PART PLAN VIEW

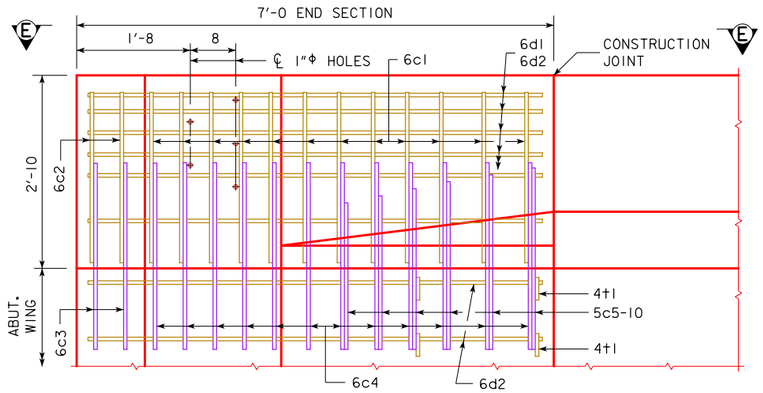


PART VIEW E-E

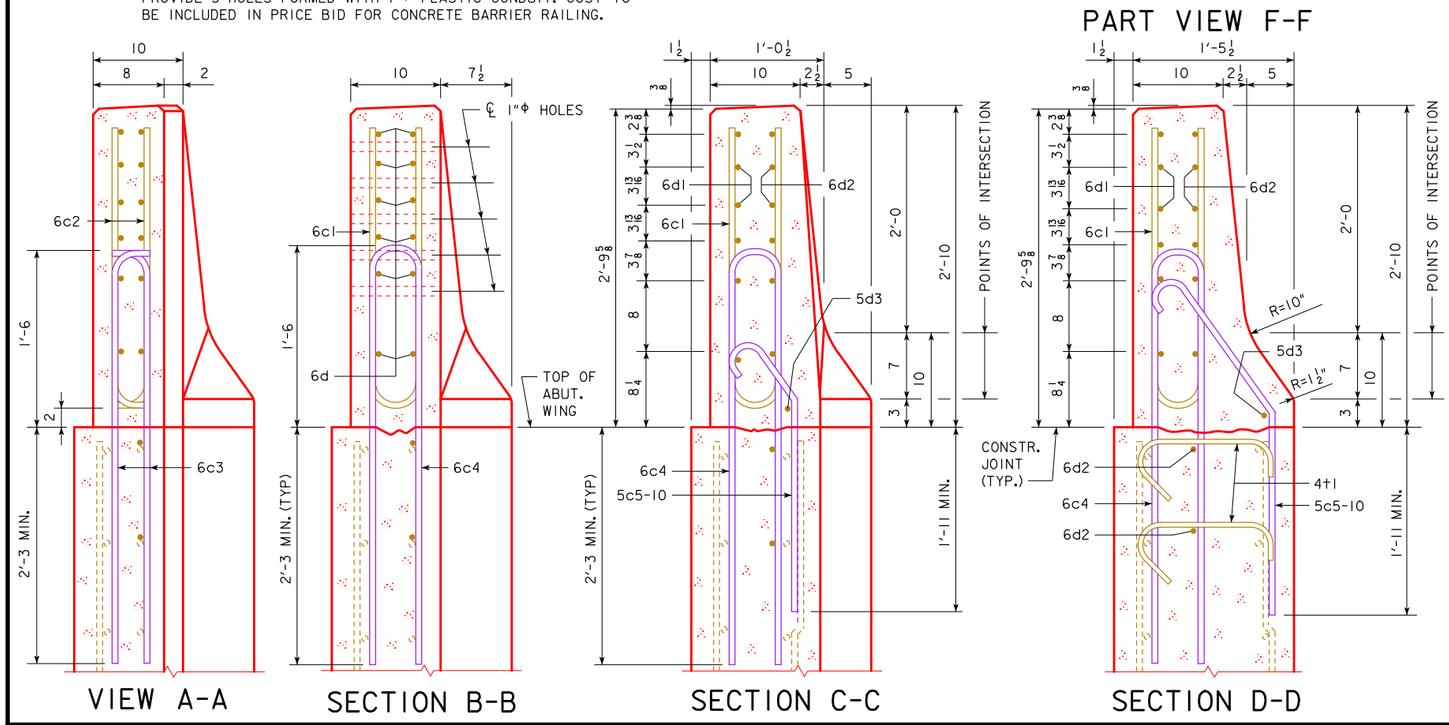


PART ELEVATION VIEW

PROVIDE 5 HOLES FORMED WITH 1"Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAILING.



PART VIEW F-F



NOTE:
4t1 PLACEMENT- 2 BARS EACH LEVEL OF 6d2 IN WING FOOTING.

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF WING AND BARRIER RAIL IS ROUGHENED CONCRETE.

NOTE:
THE 10" RADIUS AND 1½" RADIUS ARE TYPICAL AND SHALL BE USED WHEN CONSTRUCTING THE CORNERS FOR VIEW A-A, SECTION B-B, SECTION C-C AND SECTION D-D.

NOTE:
THE 6c4, 6c3, 5c5-10, 2 - 6d2 AND 4t1 BARS ARE TO BE PLACED WITH THE ABUTMENT WING. THE DETAILS FOR PLACEMENT ARE SHOWN ON THE WING ABUTMENT SHEET.

NOTE:
DASHED LINES BELOW THE TOP OF WING ARE THE ABUTMENT WING REINFORCING STEEL. SEE WING ABUTMENT SHEET FOR PLACEMENT.

EPOXY REINFORCING STEEL - ONE END SECTION

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	VERTICAL		12	5'-6	99
6c2	VERTICAL		4	2'-10	17
6d1	HORIZONTAL		6	6'-8	60
6d2	HORIZONTAL		8	6'-9	81
5d3	HORIZONTAL		1	3'-9	4
4t1	ABUTMENT WING TIE BARS		4	VARIES	5
(INCLUDE WITH BARRIER RAIL REINFORCING)			TOTAL WEIGHT (LBS.)		266

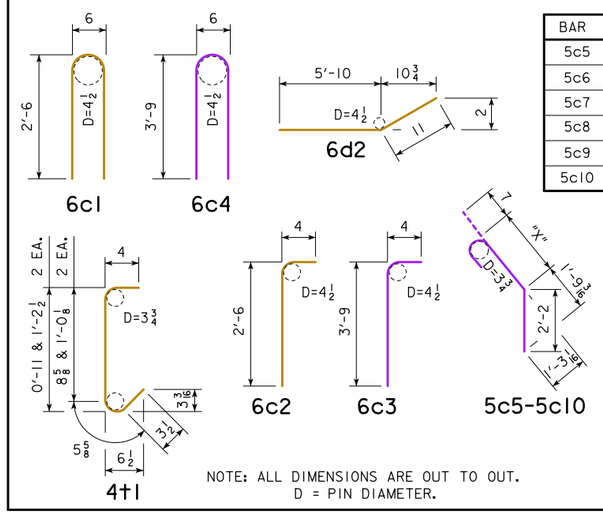
STAINLESS STEEL REINF. STEEL - ONE END SEC.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c3	VERTICAL		4	4'-1	25
6c4	VERTICAL		12	8'-0	144
5c5-10	VERTICAL		6	VARIES	23
			STAINLESS STEEL TOTAL WEIGHT (LBS.)		192

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.65 CU. YD.

BENT BAR DETAILS



BAR	"X"
5c5	0'-6½
5c6	0'-8½
5c7	0'-10¼
5c8	1'-0¼
5c9	1'-2
5c10	1'-4

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

BARRIER RAIL DETAILS

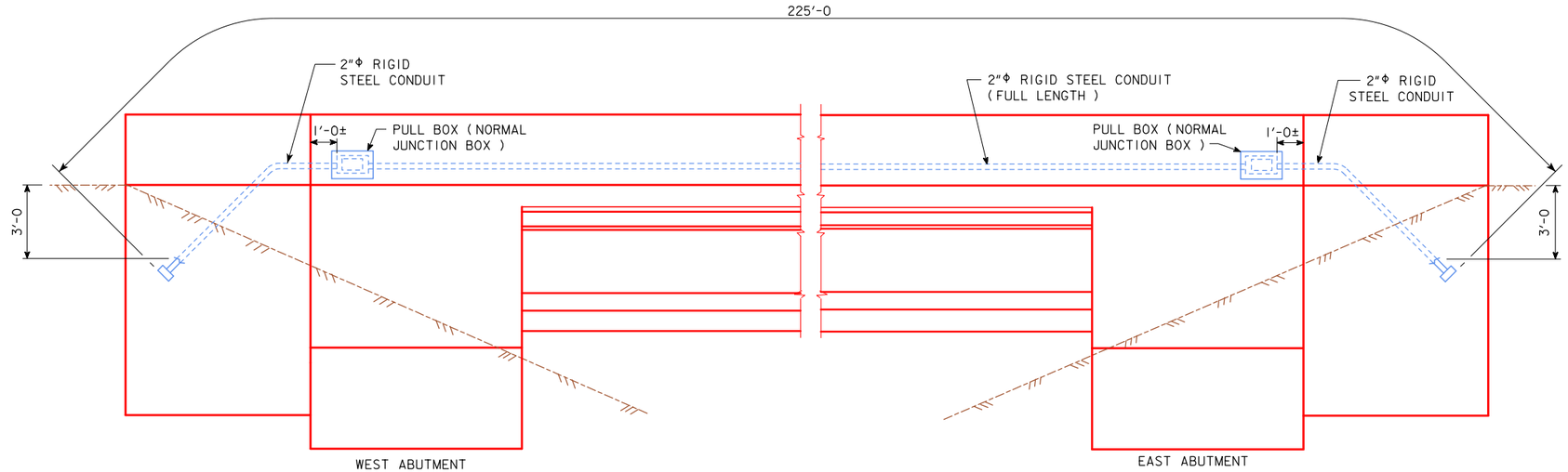
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 24 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	BARRIER RAIL END SECTION DETAILS WITH 7'-0 WING	STANDARD SHEET I017S	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER	25



EXTERIOR ELEVATION - SOUTH BARRIER RAIL - LOOKING NORTH

(SIMILAR OPPOSITE HAND)

LIGHTING & CONDUIT NOTES:

SEE LI-104 STANDARD ROAD PLAN FOR ADDITIONAL INFORMATION ON JUNCTION BOXES.

CONSTRUCTION SHALL CONFORM TO THE CURRENT IOWA D.O.T. STANDARD AND SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH ARTICLE 2523.03, N, OF THE STANDARD SPECIFICATIONS.

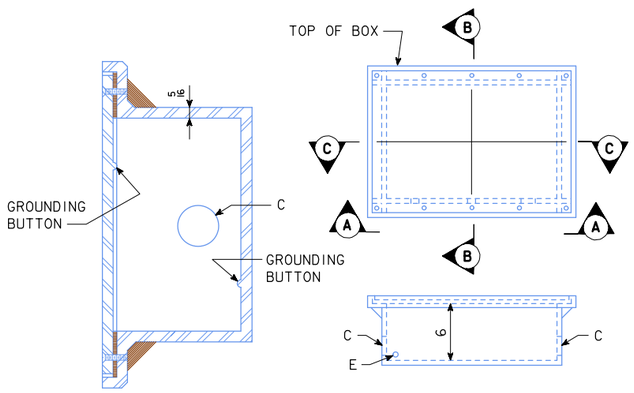
ALL "C" ENTRANCE HOLES IN JUNCTION BOXES SHALL BE DRILLED AND TAPPED FOR THE SPECIFIED CONDUIT SIZE. ALL OTHER HOLES SHALL HAVE A CONCRETE - TIGHT SLIP FIT. CONDUIT ENDS SHALL NOT PROTRUDE INTO JUNCTION BOX MORE THAN $\frac{1}{4}$". DRAIN PIPE END SHALL BE FLUSH WITH INSIDE SURFACE OF BOX. GROUNDING BUTTONS SHALL BE LOCATED APPROXIMATELY 3" FROM THE INSIDE SURFACE OF THE BOX WALL, AND NOT CLOSER THAN 3" TO THE EDGE OF ANY HOLE IN THE BOX FLOOR. HOLES FOR DRAIN PIPE SHALL BE PLACED IN THE LOW CORNER OF THE BOX, WITH A MINIMUM CLEARANCE OF 1" BETWEEN THE EDGE OF THE HOLE AND THE INSIDE SURFACE OF THE BOX WALL. TYPICAL DETAILS ARE SHOWN ON THIS SHEET.

THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

ALL REINFORCING STEEL IS TO BE EPOXY COATED AND GRADE 60.

STAINLESS-STEEL REINFORCEMENT SHALL NOT BE ALLOWED TO BE IN CONTACT WITH THE UNCOATED REINFORCEMENT BARE METAL FORMING HARDWARE, OR TO GALVANIZED ATTACHMENTS OR GALVANIZED CONDUIT.

CONDUIT CAN ONLY BE 2" DIAMETER.

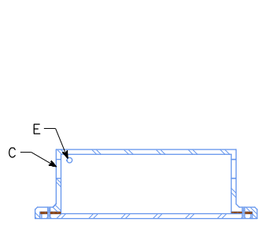


SECTION B-B

VIEW A-A

LI-104, TYPE I JUNCTION BOX

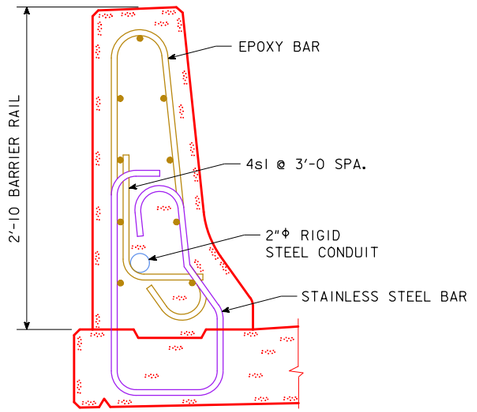
WATERTIGHT, CAST IRON - FLUSH MOUNT



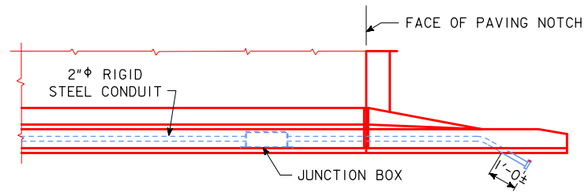
SECTION C-C

BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2"Φ RIGID STEEL
NONE	E	$\frac{1}{2}$"Φ COPPER PIPE

NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR $\frac{3}{8}$"Φ x 0'-0$\frac{3}{4}$ BOLTS.



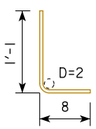
PART SECTION E-E - CONDUIT SUPPORT



PART PLAN AT WING

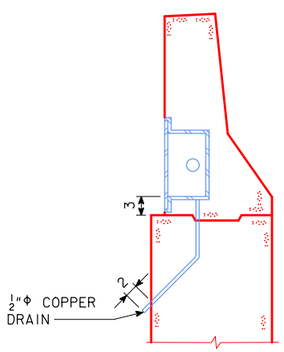
EPOXY REINF. STEEL-TWO RAILS

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4sl	RAIL CONDUIT	⌟	146	1'-9	171
				TOTAL WEIGHT (LBS.)	171

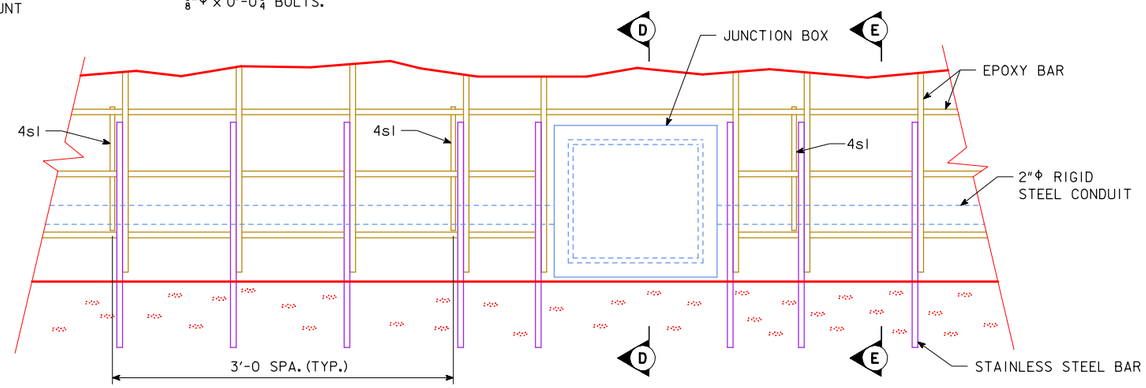


4sl

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.



SECTION D-D THRU JUNCTION BOX



CONDUIT SUPPORT - RAIL ELEVATION

NOTE: ADJUST REINFORCING TO CLEAR JUNCTION BOX.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

LIGHTING DETAILS

STA. 99+68.25

SEPTEMBER, 2016

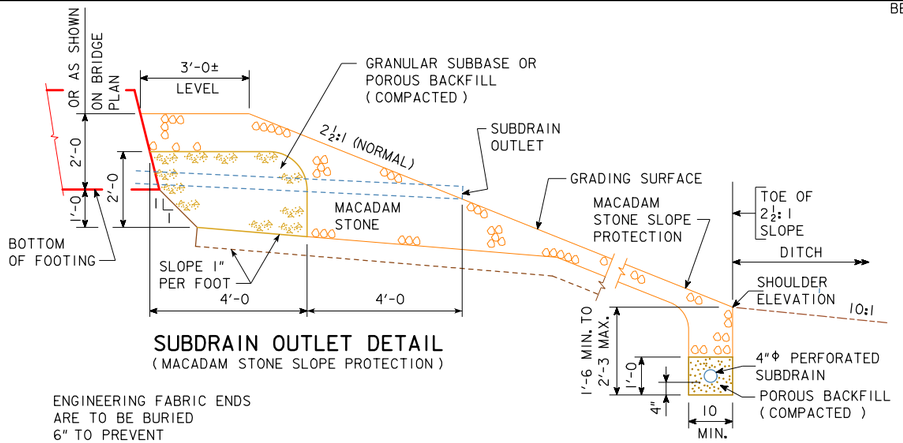
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 25 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	LIGHTING DETAILS (2 OF 2)	STANDARD SHEET 1030A (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 26

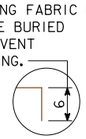
BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35, ELEV. 1101.7700



SUBDRAIN OUTLET DETAIL
(MACADAM STONE SLOPE PROTECTION)

SECTION B-B

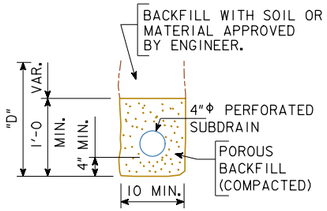
ENGINEERING FABRIC ENDS ARE TO BE BURIED 6" TO PREVENT UNDERMINING.



ENGINEERING FABRIC DETAIL

SUBDRAIN OUTLET ELEVATIONS

LOCATION		ELEVATION
WEST ABUTMENT	"A"	1080.06
WEST ABUTMENT	"B"	1079.32
EAST ABUTMENT	"C"	1080.74
EAST ABUTMENT	"D"	1074.09
WEST ABUTMENT	"E"	1095.55
WEST ABUTMENT	"F"	1095.55
EAST ABUTMENT	"G"	1094.62
EAST ABUTMENT	"H"	1094.61



SECTION C-C (TYPICAL)

"D" = DEPTH REQUIRED TO PROVIDE PROPER FLOW LINE FOR SUBDRAIN.

SUBDRAIN NOTES:

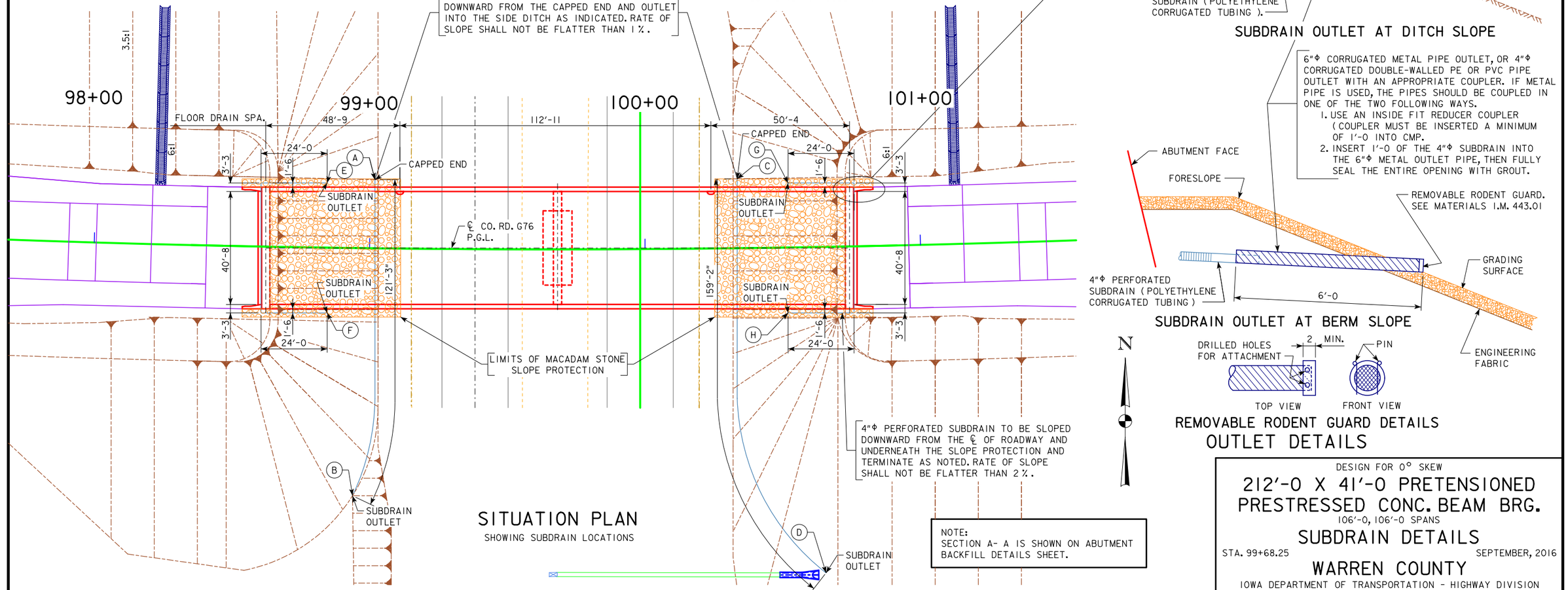
THIS PLAN SHEET SHOWS DETAILS FOR PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.

THE SUBDRAINS SHALL BE 4" IN DIAMETER AND SHALL BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.

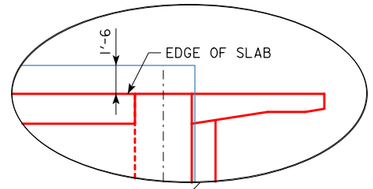
THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

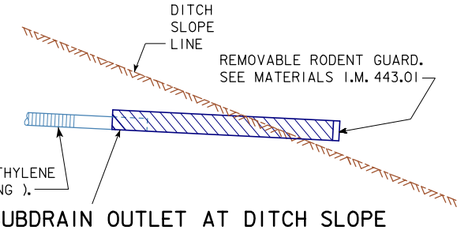
THE UPHILL END OF THE PERFORATED SUBDRAIN AT THE TOE OF SLOPE PROTECTION SHALL BE CAPPED AS APPROVED BY THE ENGINEER.



SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS

NOTE:
SECTION A- A IS SHOWN ON ABUTMENT BACKFILL DETAILS SHEET.





SUBDRAIN OUTLET AT DITCH SLOPE

6"Φ CORRUGATED METAL PIPE OUTLET, OR 4"Φ CORRUGATED DOUBLE-WALLED PE OR PVC PIPE OUTLET WITH AN APPROPRIATE COUPLER. IF METAL PIPE IS USED, THE PIPES SHOULD BE COUPLED IN ONE OF THE TWO FOLLOWING WAYS.

1. USE AN INSIDE FIT REDUCER COUPLER (COUPLER MUST BE INSERTED A MINIMUM OF 1'-0 INTO CMP.
2. INSERT 1'-0 OF THE 4"Φ SUBDRAIN INTO THE 6"Φ METAL OUTLET PIPE, THEN FULLY SEAL THE ENTIRE OPENING WITH GROUT.

SUBDRAIN OUTLET AT BERM SLOPE

REMOVABLE RODENT GUARD DETAILS

OUTLET DETAILS

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

SUBDRAIN DETAILS

STA. 99+68.25

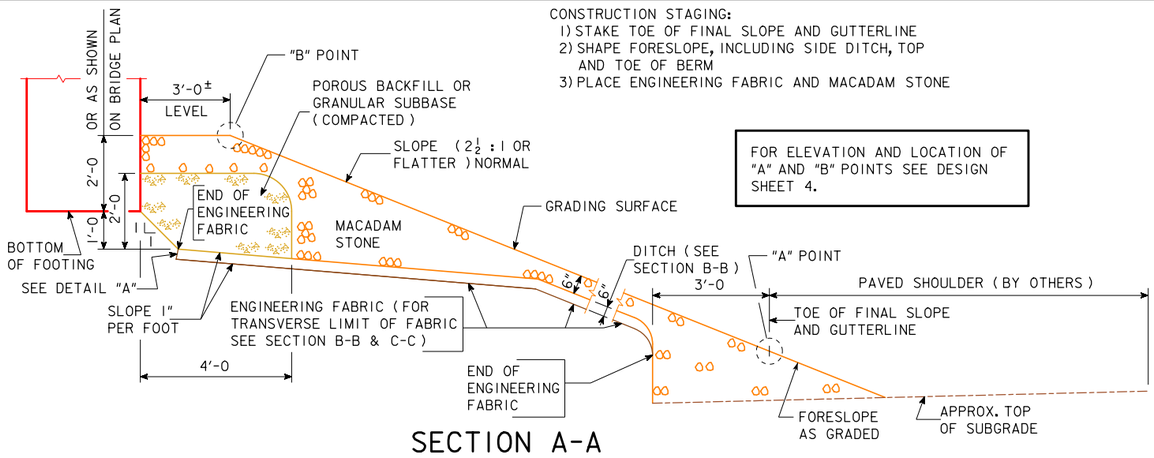
SEPTEMBER, 2016

WARREN COUNTY

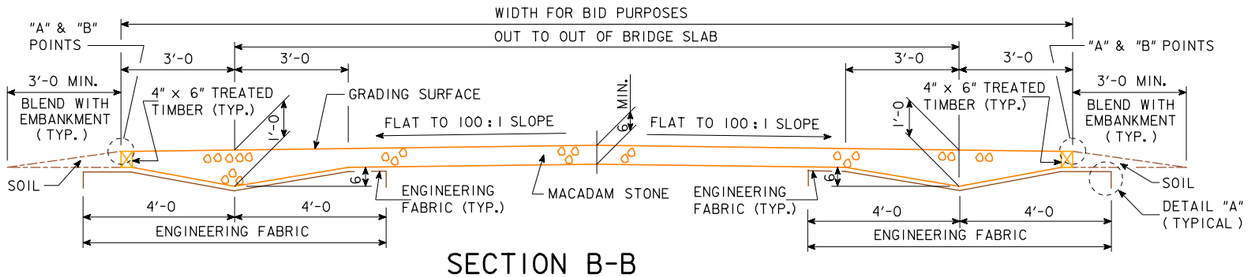
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 26 OF 29 FILE NO. 30981 DESIGN NO. 816

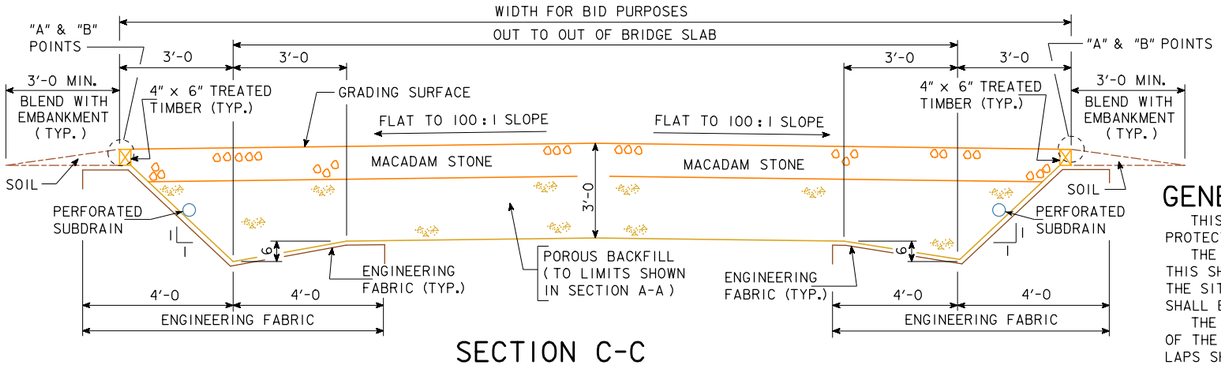
DESIGN TEAM: SCHEMMER	SUBDRAIN DETAILS FOR 3 OR MORE SPAN BRIDGES (MACADAM STONE SLOPE PROTECTION)	STANDARD SHEET 1007A (MODIFIED)	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 27



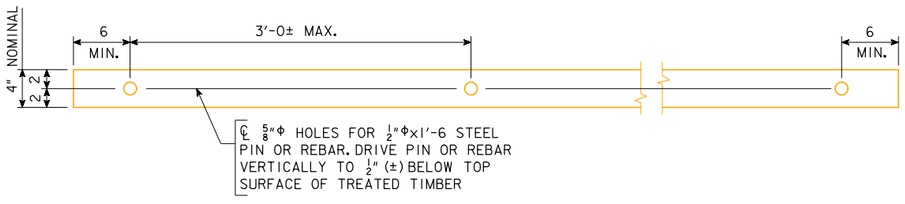
SECTION A-A



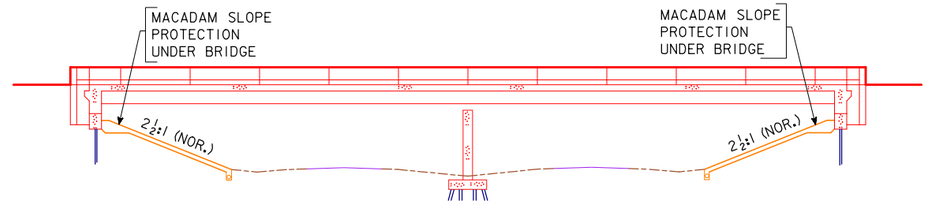
SECTION B-B



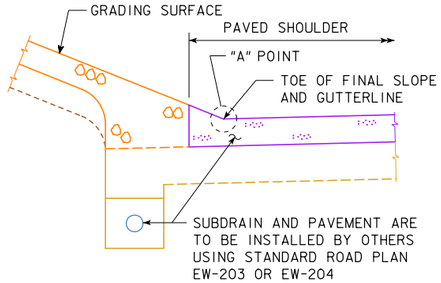
SECTION C-C



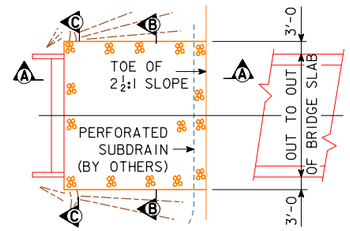
4 x 6 TREATED TIMBER EDGING DETAILS



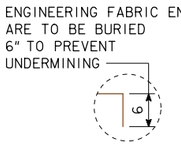
LONGITUDINAL SECTION ALONG ℄ ROADWAY



FINAL CONSTRUCTION SECTION A-A



SLOPE PROTECTION LAYOUT 0° SKEW



DETAIL "A"

GENERAL NOTES:

THIS PLAN SHEET SHOWS DETAILS FOR PLACING A "MACADAM STONE SLOPE PROTECTION" UNDER OVERHEAD STRUCTURES.

THE BRIDGE BERM FORESLOPE SHALL BE COMPACTED AND SHAPED AS SHOWN ON THIS SHEET, SHAPING WILL INCLUDE EXCAVATION, FROM THE GRADING SURFACE SHOWN, THE SITUATION PLAN, AND AS DIRECTED BY THE ENGINEER. THE BERM FORESLOPE SHALL BE FIRM WHEN THE ENGINEERING FABRIC AND MACADAM STONE ARE PLACED.

THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.

THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.

PAYMENT FOR "MACADAM STONE SLOPE PROTECTION" WILL BE MADE ON A SQUARE YARD BASIS FOR SLOPE PROTECTION CONSTRUCTED. THE UNIT PRICE BID PER SQUARE YARD SHALL INCLUDE ALL COSTS FOR MATERIAL AND LABOR REQUIRED TO CONSTRUCT THE SLOPE PROTECTION SHOWN ON THESE PLANS.

THE BERM FORESLOPE SHAPING AND COMPACTING AND THE DISPOSAL OF EXCESS SOIL FROM SHAPING OR TRENCHING SHALL BE CONSIDERED INCIDENTAL TO PLACING THE SLOPE PROTECTION. WHERE EROSION CONTROL WORK HAS BEEN COMPLETED THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLANT MATERIALS DESTROYED ADJACENT TO THE SLOPE PROTECTION AREA. THE CONTRACTOR SHALL REPLANT, RESEED AND REMULCH ALL DISTURBED AREAS, DESIGNATED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 2601, OF THE STANDARD SPECIFICATIONS, AT THE CONTRACTOR'S EXPENSE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS AS DETAILED ON THE SUBDRAIN DETAILS SHEET.

ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	WEST ABUT.	274.7 SQ. YDS.
MACADAM STONE SLOPE PROTECTION	EAST ABUT.	281.5 SQ. YDS.
	TOTAL	556.2 SQ. YDS.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
- EXCAVATING, SHAPING AND COMPACTING
- ENGINEERING FABRIC
- MACADAM STONE
- 4" x 6" TREATED TIMBER EDGING
- ½"Φ STEEL PINS (OR REBARS)
- POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

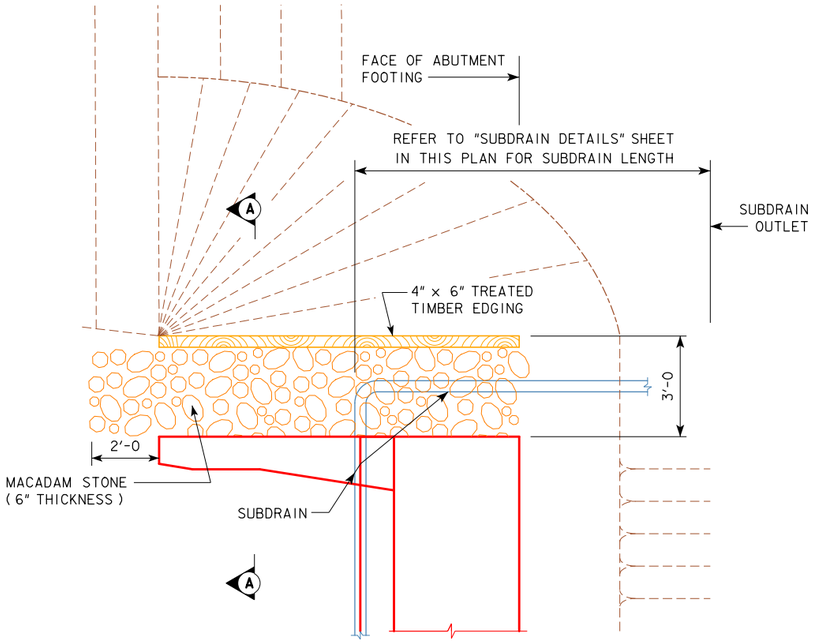
MACADAM STONE SLOPE PROTECTION

STA. 99+68.25 SEPTEMBER, 2016

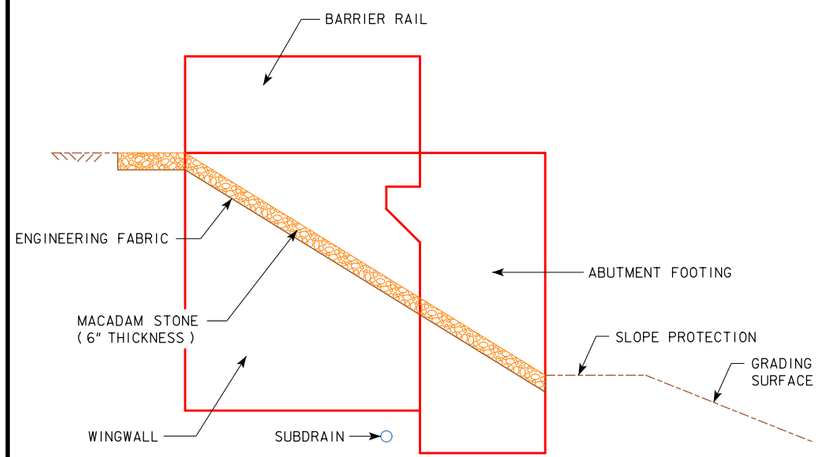
WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 27 OF 29 FILE NO. 30981 DESIGN NO. 816

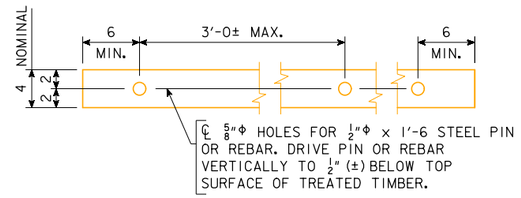


TOP VIEW OF WING ARMORING

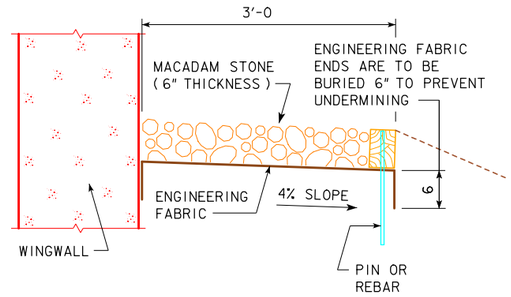


PROFILE VIEW OF WING ARMORING

(SHOWN FOR INTEGRAL ABUTMENT)



4" x 6" TREATED TIMBER EDGING DETAILS



SECTION A-A

GENERAL NOTES:

MACADAM STONE SHALL BE PLACED ALONG THE SIDE OF THE WING AND ABUTMENT FOOTING AS SHOWN IN SECTION A-A. THIS IS TYPICAL AT EACH CORNER OF THE BRIDGE UNLESS OTHERWISE NOTED IN THE PLANS. THE MACADAM STONE AT THESE LOCATIONS SHALL BE UNDERLAYED WITH ENGINEERING FABRIC IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM 6" DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.

PAYMENT FOR THE BRIDGE WING ARMORING WILL BE BID PER SQUARE YARD. COST WILL INCLUDE ENGINEERING FABRIC, MACADAM STONE, TREATED TIMBER EDGING, EXCAVATION, SHAPING, AND COMPACTION TO DIMENSIONS SHOWN IN THESE PLANS. BID ITEM SHALL BE "BRIDGE WING ARMORING - MACADAM STONE.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

BRIDGE WING ARMORING

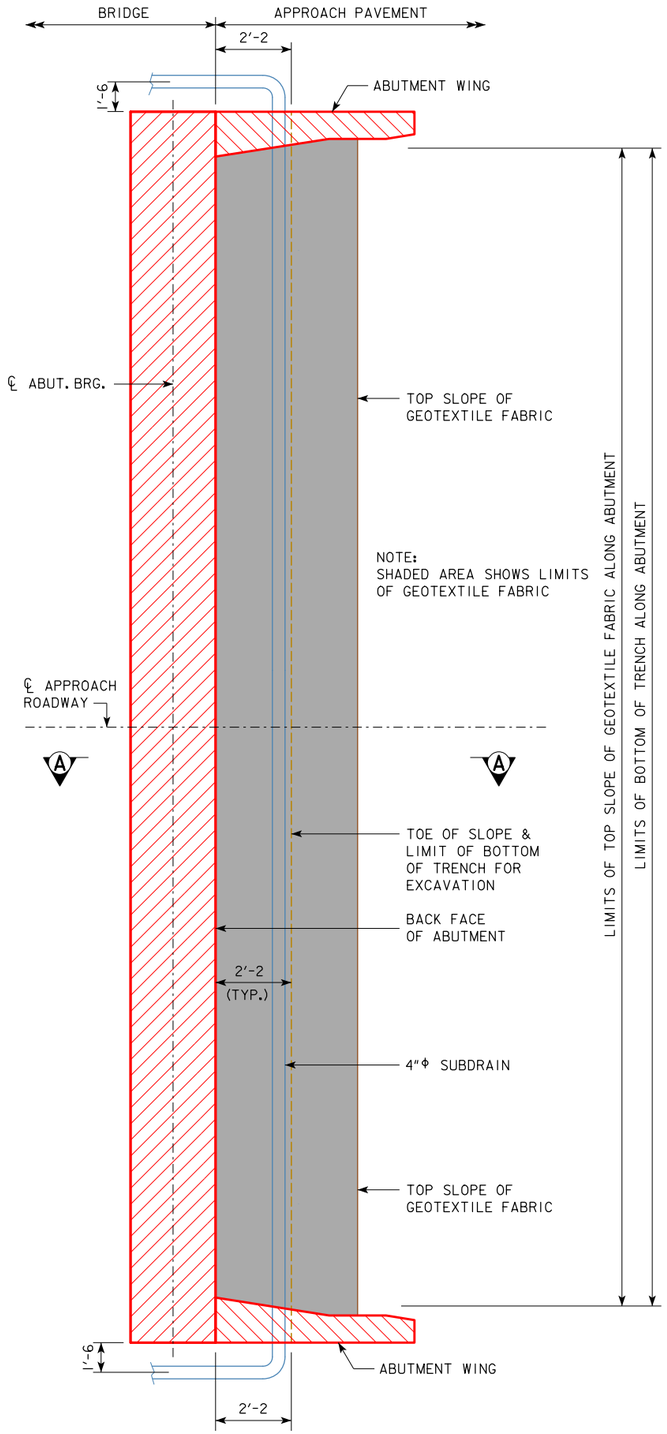
STA. 99+68.25 SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 28 OF 29 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM: SCHEMMER	STANDARD SHEET 1005	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 29



ABUTMENT PLAN WITHOUT WING EXTENSIONS

ABUTMENT BACKFILL PROCESS:

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

POROUS BACKFILL IS THEN PLACED AND LEVELED, NO COMPACTION IS REQUIRED.

THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FEET OF THICKNESS.

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 3 MINUTES WITHIN EACH INCREMENT.

FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.

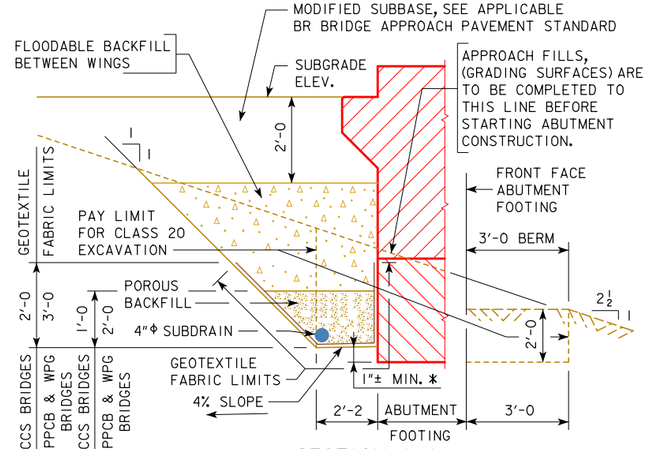
NOTE:
SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM ℄ APPROACH ROADWAY WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END WHEN OUTLETTING AT ONE END OF THE ABUTMENT.

THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 6 OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.



SECTION A-A

BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0, 106'-0 SPANS

ABUTMENT BACKFILL DETAILS

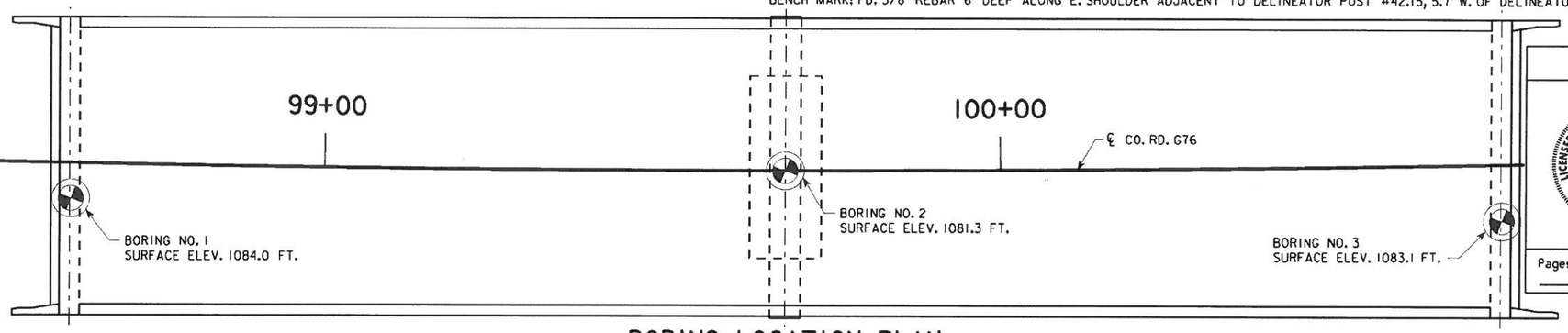
STA. 99+68.25 AT BACKFACE OF ABUTMENTS SEPTEMBER, 2016

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 29 OF 29 FILE NO. 30981 DESIGN NO. 816

BENCH MARK: FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35., ELEV. 1101.7700



BORING LOCATION PLAN

GEOTECHNICAL DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Licensed Professional Engineer — Loras A. Klostermann — 12171 — Iowa

Signature — Date: 3/4/2014

Loras A. Klostermann

Printed or Typed Name

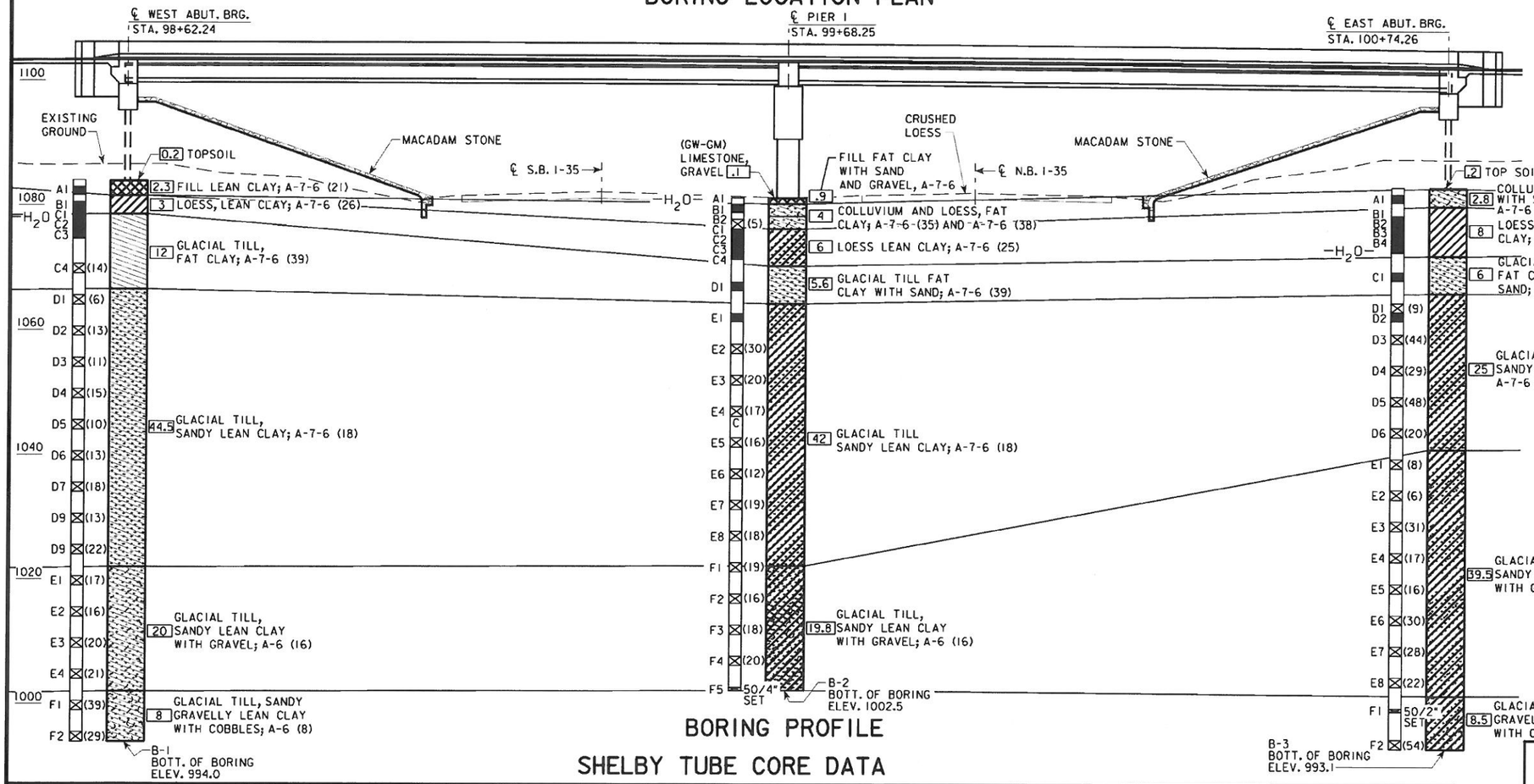
My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEET SPS.1

LEGEND

BORING LOCATION

$-H_2O-$ WATER	DENS. CORE	FILL SOIL	
— DRY	DRY	SAMPLE	LIMESTONE (LS.)
-◁	PLUGGED	DIAMOND CORE	SILT
M—	MOISTURE	SAND	LEAN CLAY
■	SHELBY	GRAVELLY SAND	FAT CLAY
⊠	BLOW COUNT	BOULDERS	SHALE



BORING PROFILE

BORING NO.	DATE DRILLED	STATION & OFFSET *	GROUND WATER LEVEL (FT.)
B-1	11-18-13	96+62.52 5.28' RT	6.0
B-2	11-19-13	99+68.23 0.05' RT	1.0
B-3	11-15-13	100+74.26 8.36' RT	10

BLOW COUNT
LAYER - NO. BLOWS
B2 (5)

0 ENGLISH 20
SCALE IN FEET

N

LOCATION

I-35 INTERCHANGE
WITH CO. RD. G76
T-74N R-25W
SECTIONS 30 & 31
VIRGINIA TOWNSHIP
WARREN COUNTY
BRIDGE MAINT. NO. 9143.90035
LATITUDE 41.1765292°
LONGITUDE -93.7840044°

SHELBY TUBE CORE DATA

CORE NO.	B-1,A1	B-1, B1	B-1, C1	B-1, C2	B-1, C3	B-2, B1	B-2, C1	B-2, C2	B-2, C3	B-2, C4	B-2, D1	B-2, E1	B-3, A1	B-3, B1	B-3, B2	B-3, B3	B-3, B4	B-3, C1	B-3, D2
CLASSIFICATION [AASHTO]	A-7-6 (21)	A-7-6 (26)	A-7-6 (39)	A-7-6 (39)	A-7-6 (39)	A-7-6 (35)	A-7-6 (38)	A-7-6 (25)	A-7-6 (25)	A-7-6 (25)	A-7-6 (39)	A-7-6 (18)	A-7-6 (39)	A-7-6 (26)	A-7-6 (26)	A-7-6 (26)	A-7-6 (19)	A-7-6 (39)	A-7-6 (18)
COEFF.CONSOL. SQ. FT/DAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMPRESSION TEST	UC	-	UU	UU	UU	UC	-	UC	-	UC	-	UC	UC	UU	UU	UU	-	UC	-
COHESION - PSF	2,430	-	1,720	1,380	1,010	718	-	2,074	-	1,625	-	1,050	3,040	1,530	1,170	860	-	2,200	-
FRICTION COEFF.	0	-	0	0	0	0	-	0	-	0	-	0	0	0	0	0	-	0	-
MOISTURE CONTENT %	23.5	-	20.0	22.8	25.2	31.6	-	25.9	-	25.0	18.6	19.4	19.6	23.6	26.4	23.6	22.6	22.8	16.4
DRY DENSITY - PCF	97.4	-	106.3	105.6	99.6	92.1	-	100.6	-	99.7	108.6	110.8	91.2	98.4	97.5	103.0	-	105.5	-

UU-UNCONSOLIDATED & UNDRAINED TRIAXIAL, CU-CONSOLIDATED & UNDRAINED TRIAXIAL, UC-UNCONFINED COMPRESSIVE STRENGTH

DESIGN FOR 0° SKEW

212'-0 X 41'-0 PRETENSIONED PRESTRESSED CONC. BEAM BRG.

106'-0 END SPANS BTB BEAMS

SOIL PROFILE

STA. 99+68.25 JUNE, 2014

WARREN COUNTY

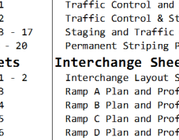
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

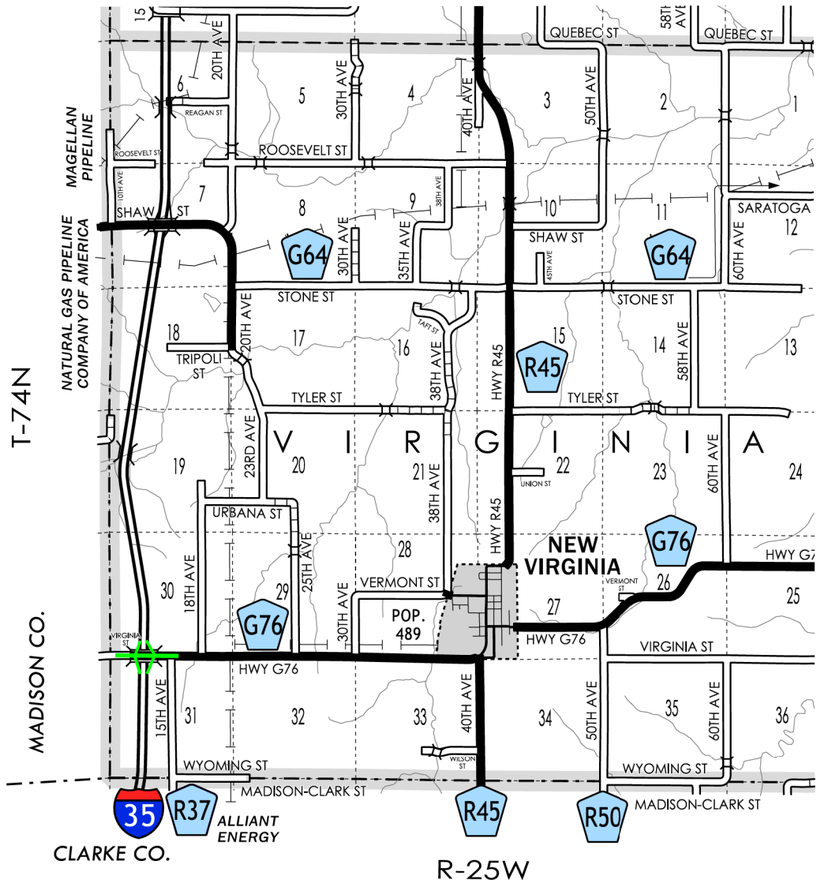
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER SPS.1

9:50:01 PM tnocita S:\Projects\06241003\910350201Z\Soils\91035423.brg

INDEX OF SHEETS





MILES 0 1 2

N

LEGEND

PROJECT LOCATION	
DIVIDED HIGHWAY	
PAVED ROAD	
BITUMINOUS ROAD	
GRAVEL ROAD	
EARTHEN ROAD	
INTERSTATE HIGHWAY	35
UNITED STATES HIGHWAY	65
STATE HIGHWAY	237
COUNTY HIGHWAY	S27
STATE BOUNDARY	
COUNTY BOUNDARY	
CORPORATE BOUNDARY	
TOWNSHIP LINE	
SECTION LINE	
ROAD NAMES	ABBEY ROAD
UNINCORPORATED PLACE	ELWOOD

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
SHANE E. SWOPE
22049
IOWA

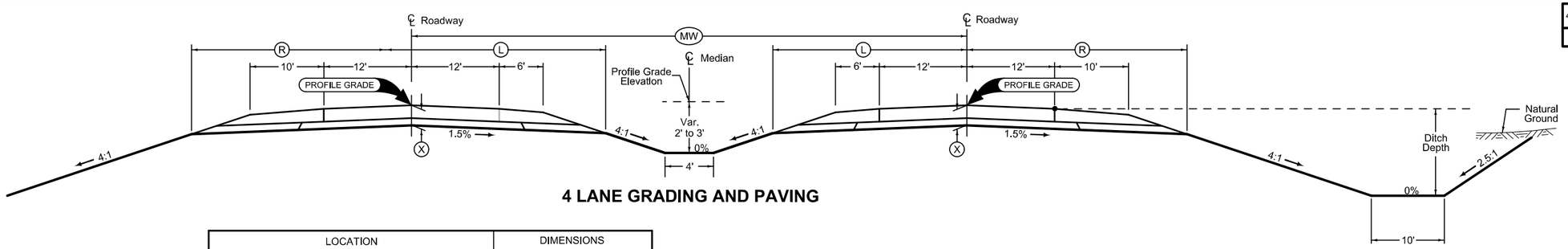
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Shane E Swope — 10/17/2016
Signature — Date
SHANE E. SWOPE
Printed or Typed Name

My license renewal date is December 31, 20 17

Pages or sheets covered by this seal: A.1, B.1-B.7, C.1-C.19, D.1-D.3, E1-E.2, F1, G.1-G.5, J.1-J.20, K.1-K.6, L.1-L.10, T.1-T.17, U.1-U.6, W.1-W.26, X.1-X.22, Y.1-Y.51

4D-_Modified
08-01-13



4 LANE GRADING AND PAVING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(MW) Feet
I-35	00+00.00	49+78.73	22.5	26.2	14	60
I-35	55+78.73	138+30.00	22.5	26.2	14	60

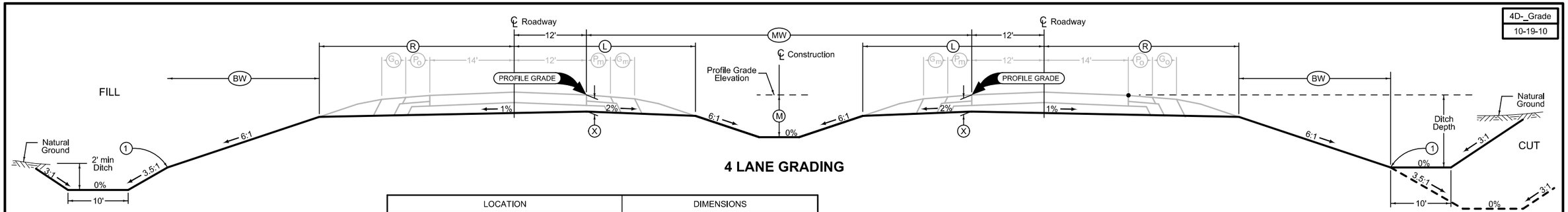
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

EXISTING I-35 AT RAMP A-D TIE INS

4D-_Grade
10-19-10



4 LANE GRADING

LOCATION			DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(MW) Feet	(M) Feet
I-35			28.1	32.1	18	13.9	36	

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

FUTURE I-35

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

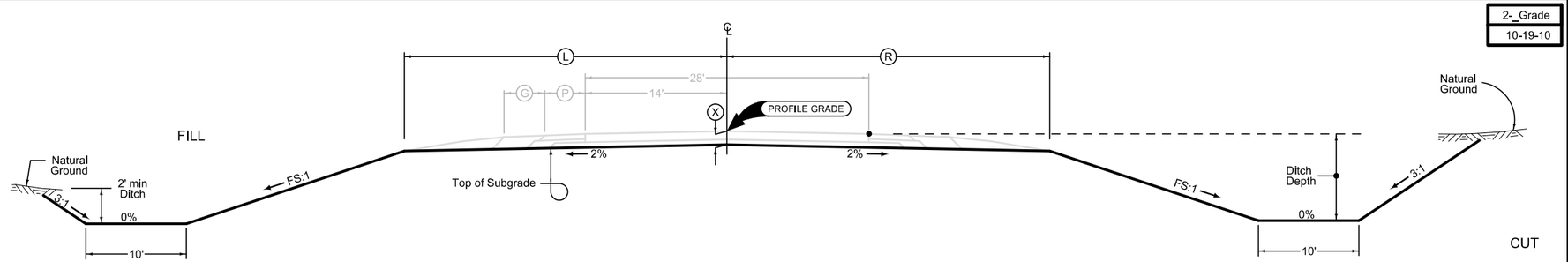
INTERSTATE 35
EXISTING 4 LANE GRADING AND PAVING

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER B.1

3:54:43 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtB01.sht

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
CO. RD. G76	91+84.39	95+46.39	26.3	26.3	14	3:1
CO. RD. G76	103+97.04	112+50.00	26.3	26.3	14	3:1

2-_Grade
10-19-10



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

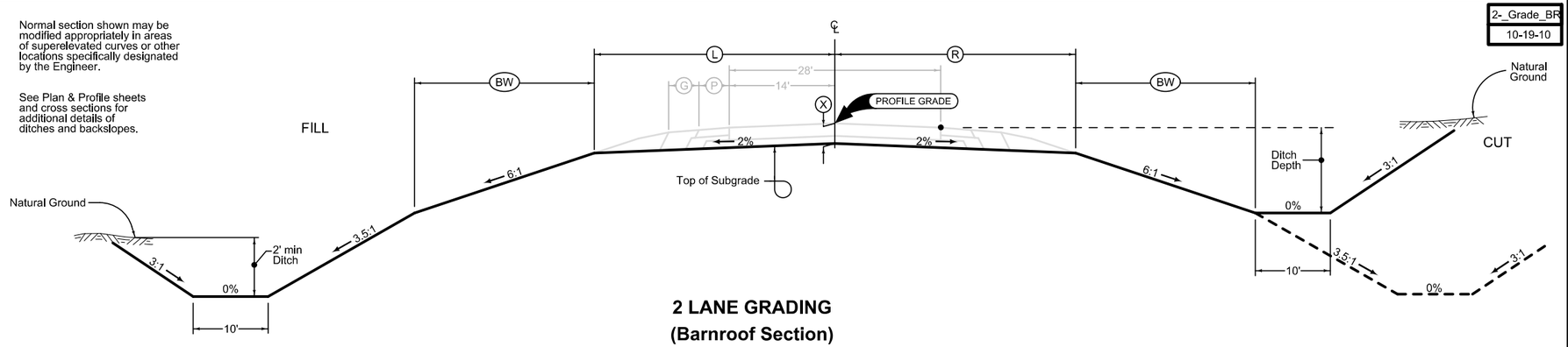
2 LANE GRADING

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	
CO. RD. G76	95+46.39	98+60.73	29	29	14	13	
CO. RD. G76	100+75.74	103+97.04	29	29	14	13	

2-_Grade_BR
10-19-10

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

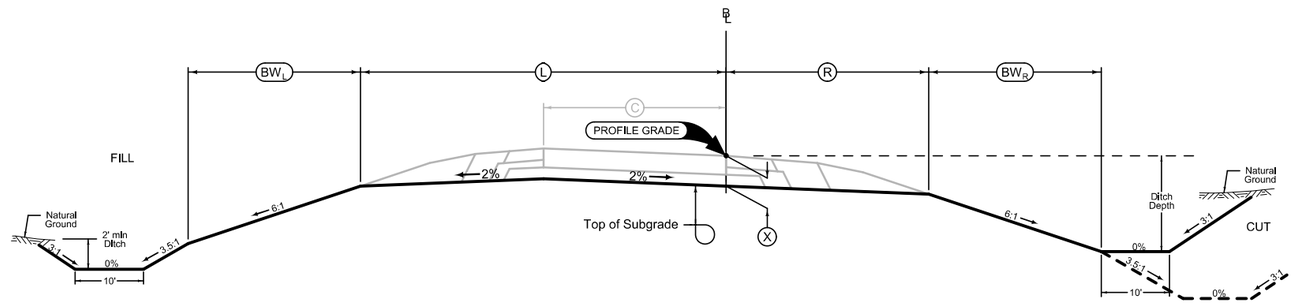
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



2 LANE GRADING
(Barnroof Section)

LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
I35 / CO. RD. G76	A	151+94.84	163+66.68	19.5	33.8	22	10.6	16.9
I35 / CO. RD. G76	B	240+12.53	252+81.29	33.8	19.5	22	16.9	10.6
I35 / CO. RD. G76	C	339+59.62	352+81.86	19.5	33.8	22	10.6	16.9
I35 / CO. RD. G76	D	451+95.99	465+12.23	33.8	19.5	22	16.9	10.6

1R_Grade
10-19-10



Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

RAMP GRADING

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER B.2

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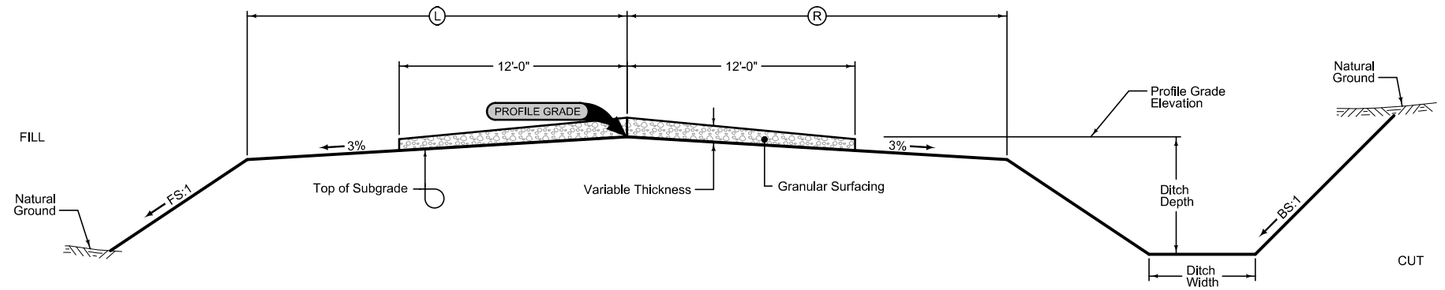
LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS	BS
CO. RD. G76	88+50.00	91+84.39	14	14	3:1	3:1

2-GradeGran
10-19-10



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

GRADING AND GRANULAR SURFACING

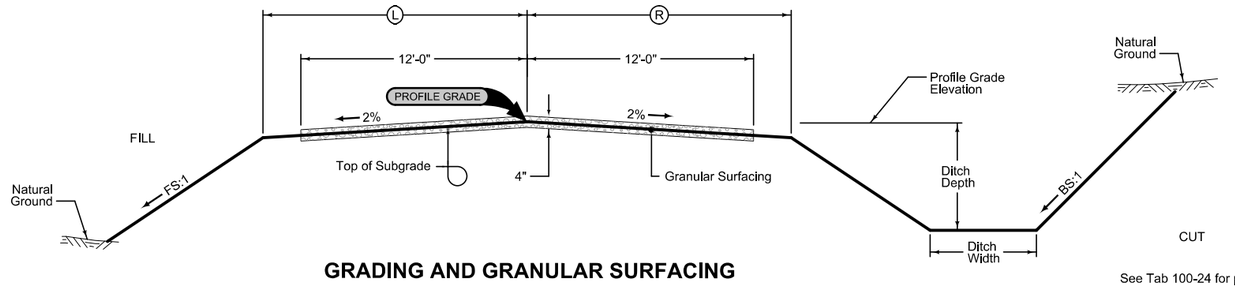
See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

COUNTY ROAD G76

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS	BS
FRONTAGE ROAD	541+00.00	554+46.72	14	14	3:1	3:1

Modified
10-22-13



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

GRADING AND GRANULAR SURFACING

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

FRONTAGE ROAD

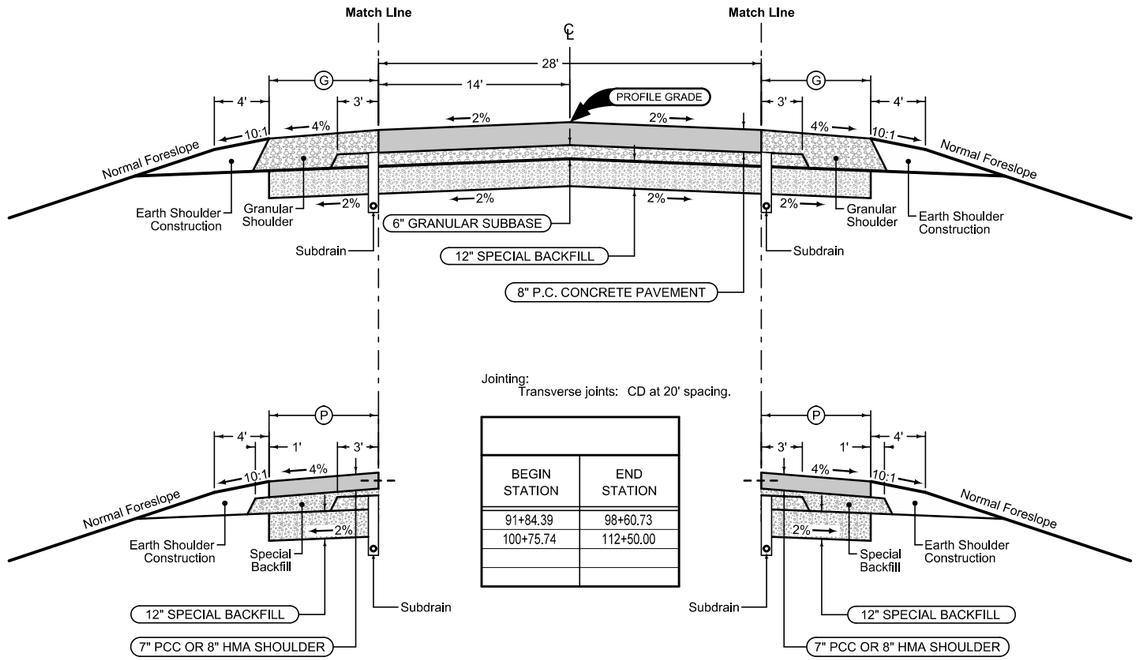
Granular Shoulder

		2_G_ 10-19-10
STATION TO STATION		(G) Feet
92+72.81	93+92.59	6
104+77.67	112+50.00	6

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

		2_P_ALT_ 10-19-10
STATION TO STATION		(P) Feet
93+92.59	98+60.46	6
100+76.14	104+77.67	6



Jointing:
Transverse joints: CD at 20' spacing.

BEGIN STATION	END STATION
91+84.39	98+60.73
100+75.74	112+50.00

Granular Shoulder

		2_G_ 10-19-10
STATION TO STATION		(G) Feet
92+97.87	94+27.79	6
105+38.54	112+50.00	6

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

		2_P_ALT_ 10-19-10
STATION TO STATION		(P) Feet
94+27.79	98+61.11	6
100+75.35	105+38.54	6

See Tab 100-24 for pavement quantities.

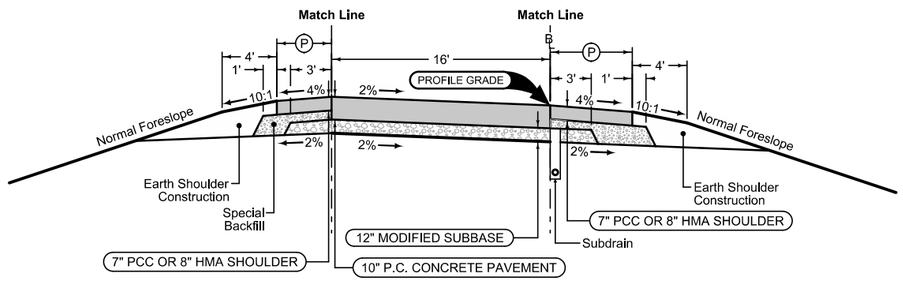
See Tab 112-9 for shoulder quantities.

COUNTY ROAD G76

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

		1R_P_ALT_ 10-19-10
BEGIN STATION	END STATION	(P) Feet
151+94.84	163+66.68	4
240+12.53	252+81.29	4
339+59.62	352+81.86	4
451+95.99	465+12.23	4



Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 20' spacing.

BEGIN STATION	END STATION	1RP_ 10-19-10
151+94.84	163+66.68	
240+12.53	252+81.29	
339+59.62	352+81.86	
451+95.99	465+12.23	

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

		1R_P_ALT_ 10-19-10
BEGIN STATION	END STATION	(P) Feet
151+94.84	163+66.68	6
240+12.53	252+81.29	6
339+59.62	352+81.86	6
451+95.99	465+12.23	6

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

INTERSTATE 35 RAMPS A-D

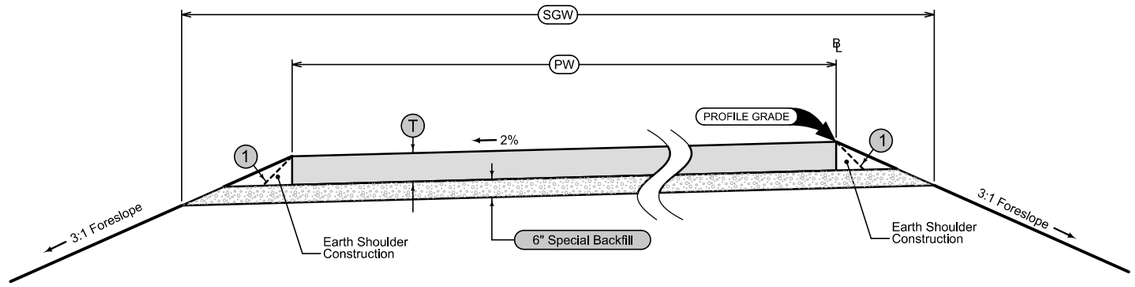
LOCATION			DIMENSIONS						6" Special Backfill	Earth Shoulder Construction
ROAD IDENTIFICATION	STATION TO STATION		HMA			PCC				
			(PW) Feet	(T) Inches	(SGW) Feet	(PW) Feet	(T) Inches	(SGW) Feet	Tons/Station	Station
EAST DETOUR	200+00.00	213+03.66	24	9	31.0	24	8	31.0	1095.1	
NORTHEAST DETOUR	300+00.00	303+15.46	16	9	23.0	24	8	23.0	176.7	

Quantity calculations based on vertical pavement edges.

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

(1) Possible HMA 1:1 slope

D_Detour
10-15-13



DETOUR PAVING

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

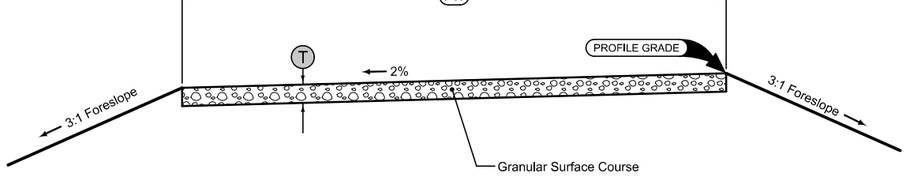
TEMPORARY PAVING

LOCATION			DIMENSIONS					6" Special Backfill	Earth Shoulder Construction
ROAD IDENTIFICATION	STATION TO STATION		GRANULAR			PCC			
			(PW) Feet	(T) Inches	(SGW) Feet	(PW) Feet	(T) Inches	Tons/Station	Station
WEST DETOUR	98+40.00	100+00.00	12	4	13.8	--	--		
	100+00.00	103+77.77	24	4	27.6	--	--		

Quantity calculations based on vertical pavement edges.

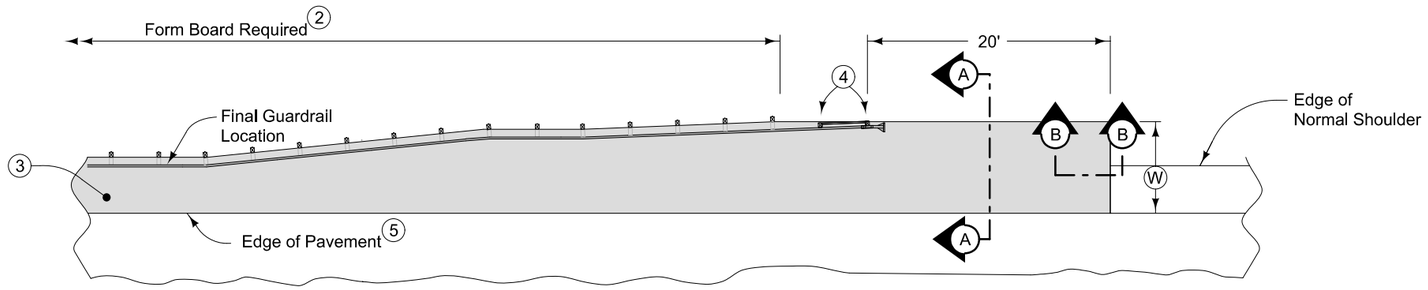
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

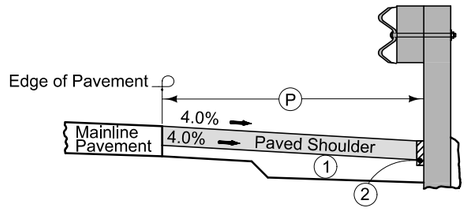
Modified
8-1-14



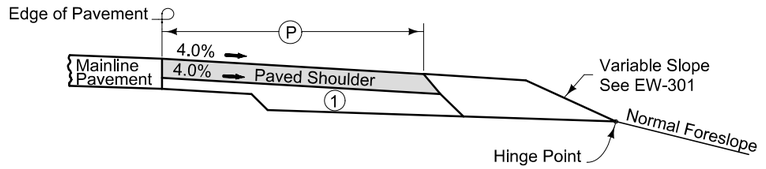
DETOUR GRANULAR SURFACING

TEMPORARY SURFACING

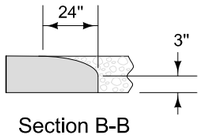




Typical Section with Form Board



Section A-A



Section B-B
Roll down at granular shoulder or earth.

6" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at W/2 from edge of mainline pavement when W is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal & reinstallation of guardrail will be allowed with no additional payment.

Refer to Shoulder tabulation (112-9) for quantities.

(1) 6" subgrade treatment.

(2) When guardrail posts are installed prior to construction of paved shoulder, nail 1" x 6" untreated form boards along the face of guardrail posts for the length shown. This board is to prevent shoulder material from contacting the sides of the posts and altering the function of the guardrail. Form board not required for final 2 posts.

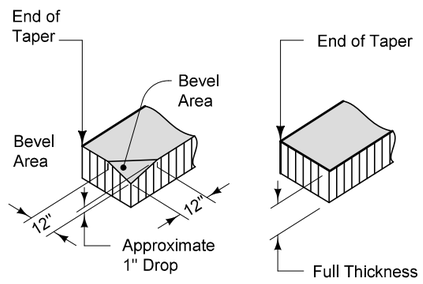
(3) Continue paved shoulder to existing paved shoulder or 20' beyond the end of guardrail.

(4) Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement.

(5) 'KT-1' joint for PCC shoulder.
'B' joint for HMA shoulder.

PAVED SHOULDER AT GUARDRAIL

7101
10-19-10

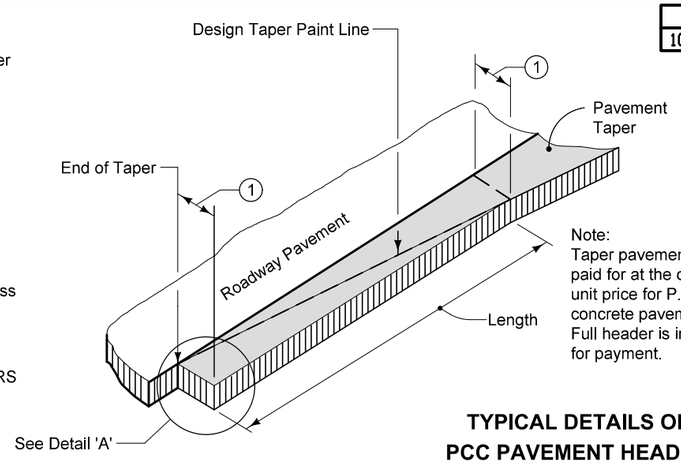


DETAIL 'A'

FOR GRANULAR SHOULDERS

DETAIL 'A'

FOR PAVED SHOULDERS

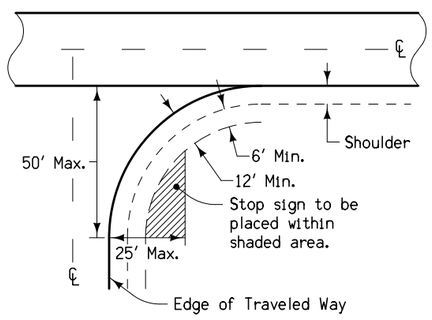


Note:
Taper pavement to be paid for at the contract unit price for P.C. concrete pavement. Full header is included for payment.

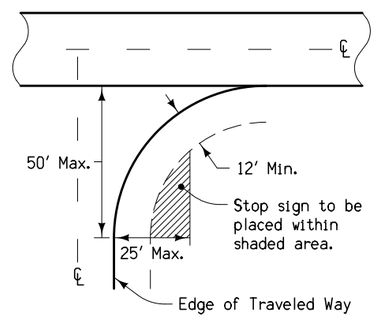
TYPICAL DETAILS OF PCC PAVEMENT HEADER

(1) Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

9503
07-15-97



CASE 'A' WITH SHOULDER



CASE 'B' WITHOUT SHOULDER

NOTES:

Stop signs should be confined to the shaded areas, but as close to the approach roadway as possible to provide the motorist with the best visual impact.

If possible, stop signs should be placed at the point where vehicles are to stop or as near as practical.

In rural areas, the lateral clearance should not be closer than 6' from the edge of a usable shoulder, or if none, 12' from edge of the traveled way.

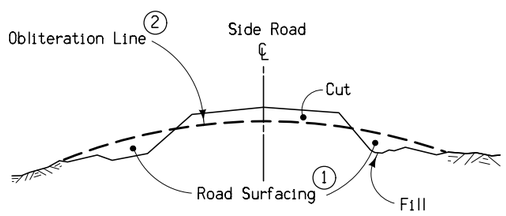
In urban areas, stop signs should be placed a minimum of 6' from the near edge of the intersected street or a minimum of 4' in advance of the near edge of a marked crosswalk. Lateral clearance may be reduced to a minimum of 2' from the face of a curb.

Where the approach roadway consists of two lanes of traffic, a second stop sign should be placed where it is visible to traffic in the inner lane.

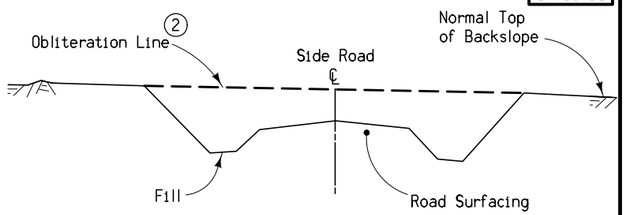
At channelized intersections, the additional stop sign may be placed on a channelized island or median.

STOP SIGN PLACEMENT

4302
04-03-01



Fill Section



Cut Section

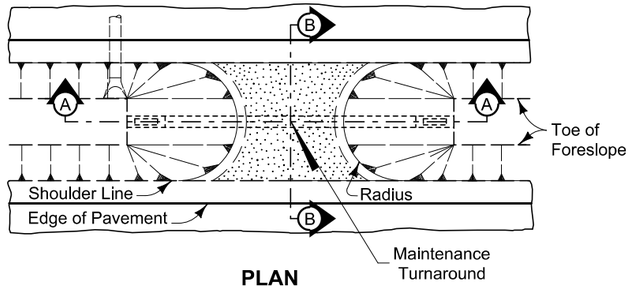
(1) Existing road surfacing (granular material) shall be placed as shown unless otherwise directed by the Engineer or provided for in the detail project plans.

(2) When specified, the upper 1' to be suitable for vegetation (grass or crops).

Note:
The work of obliterating or reshaping old roadbeds shall be done at the direction of the Engineer.

TYPICAL DETAILS FOR OBLITERATION EXISTING ROADBED

8101
04-21-15



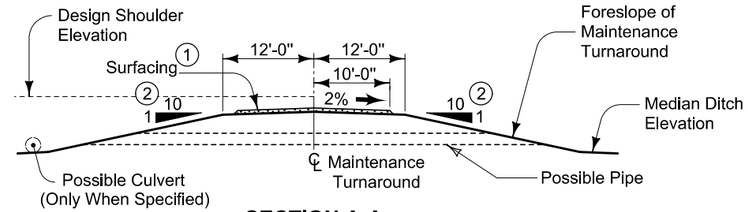
PLAN

(1) Surfacing quantities based on a 6 inch layer of Macadam Stone base and a 4 inch layer of Class 'A' Road Stone. Apply surfacing as directed by the Engineer.

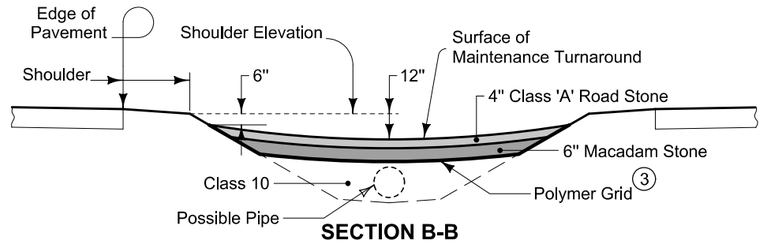
(2) Construct 8:1 foreslope when drainage pipe is incorporated into the maintenance turnaround.

(3) Install Polymer Grid between Class 10 and stone material.

(4) See Standard Road Plan DR-212.



SECTION A-A

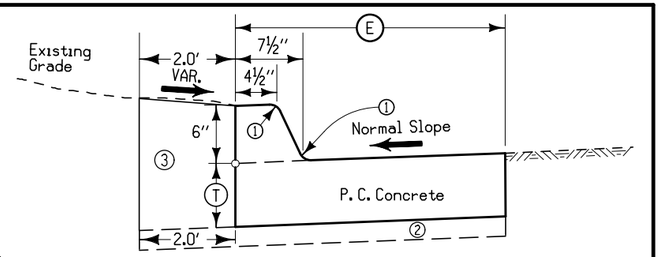


SECTION B-B

MAINTENANCE TURNAROUND

Location		Class 'A' Road Stone	Macadam Stone	Polymer Grid	Class 10	Pipe Length	Beveled Pipe & Guard (4)	Radius	Remarks
Road Identification	Station	TONS	TONS	SY	CY	LF	EACH	FT	
I-35	16+25	15	21	68	*	**	**	24	

* Add'l Class 10 not needed. Turnaround constructed at existing median dike. Contractor to remove vegetation and prepare grade for polymer grid placement subsidiary to other items for maintenance turnaround.
** Add'l longitudinal median pipe not needed. Turnaround constructed downstream of existing median drain.



(T) Thickness specified for Pavement
(1) 3" Radius
(2) Prepared Grade
(3) Backfill as necessary Subsidiary to Curb Construction

CURB AND GUTTER UNIT AND PAVEMENT PLACEMENT (STANDARD CURB)

P.C. Concrete Paid for as Item "CURB AND GUTTER, PCC"

Location		(T)	(E)	Shoulder Type
Road Identification	Station to Station	Inches	Feet	
Co. Rd. G76	See 'L' Sheets for location	8"	2.63'	As Shown

100-1D
10-18-05

PROJECT DESCRIPTION

This project involves the realignment of County Road G76, replacement of the bridge (Maintenance No. 9143.90035) over I-35 in Warren County, and the replacement of the interchange ramps.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	43.9	
2	2102-0425071	SPECIAL BACKFILL	CY	5751.6	
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	136049	
4	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	95679	
5	2102-2712015	EXCAVATION, CLASS 12, BOULDER/ROCK FRAGMENT	CY	250	
6	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	12014	
7	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	50713	
8	2107-0875100	COMPACTION W/MOISTURE CONTROL	CY	173400	
9	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	642.1	
10	2111-8174100	GRANULAR SUBBASE	SY	5321.9	
11	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	68	
12	2115-0100000	MODIFIED SUBBASE	CY	5805.7	
13	2121-7425010	GRANULAR SHOULDERS, TYPE A	TON	523.704	
14	2122-5190501	PAVED SHOULDER, PCC,(PAVED SHOULDER PANEL FOR BRIDGE END DRAIN)	SY	40	
15	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	168.6	
16	2210-0475290	MACADAM STONE BASE	TON	21	
17	2301-0690201	BRIDGE APPROACH, BR-201	SY	512.4	
18	2301-1033080	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	5321.9	
19	2301-1033100	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.	SY	10428.5	
20	2301-1033120	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 12 IN.	SY	7203.9	
21	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES	LS	1	
22	2304-0100000	DETOUR PAVEMENT	SY	4037.2	
23	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	15	
24	2312-8260201	GRANULAR SURFACING ON ROAD, CLASS C GRAVEL	TON	1449.8	
25	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	170.1	
26	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1	
27	2402-0425040	FLOODED BACKFILL	CY	327.1	
28	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	2268.5	
29	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE	SY	1308.5	
30	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	4	
31	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	7	
32	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	5	
33	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	2	
34	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.	LF	290	
35	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	340	
36	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	390	
37	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	43	
38	2416-1263030	CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 30 IN. DIA.	LF	243	
39	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	1	
40	2417-0225030	APRONS, METAL, 30 IN. DIA.	EACH	1	
41	2417-0225036	APRONS, METAL, 36 IN. DIA.	EACH	1	
42	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	312	
43	2417-1060018	CULVERT, CORRUGATED METAL ROADWAY PIPE, 18 IN. DIA.	LF	93	
44	2417-1060030	CULVERT, CORRUGATED METAL ROADWAY PIPE, 30 IN. DIA.	LF	157	
45	2417-1060036	CULVERT, CORRUGATED METAL ROADWAY PIPE, 36 IN. DIA.	LF	98	
46	2422-1723018	CULVERT, UNCLASSIFIED ROADWAY PIPE, 18 IN. DIA.	LF	148	
47	2422-1723024	CULVERT, UNCLASSIFIED ROADWAY PIPE, 24 IN. DIA.	LF	55	
48	2435-0251224	INTAKE, SW-512, 24 IN.	EACH	2	
49	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	10757.1	
50	2502-8221304	SUBDRAIN OUTLET, DR-304	EACH	55	
51	2503-0500402	BRIDGE END DRAIN, DR-402	EACH	2	
52	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	986	
53	2505-4008130	REMOVAL OF CABLE GUARDRAIL	LF	360	
54	2505-4008300	STEEL BEAM GUARDRAIL	LF	100	
55	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	4	
56	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4	
57	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	4	
58	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	260	
59	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	3	
60	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT	EACH	3	
61	2506-4984000	FLOWABLE MORTAR	CY	54.2	
62	2507-3250005	ENGINEERING FABRIC	SY	1614.5	
63	2507-6800061	REVETMENT, CLASS E	TON	1429.1	
64	2510-6745850	REMOVAL OF PAVEMENT	SY	23501.6	
65	2512-1750006	CURB AND GUTTER, PCC, AS PER PLAN	LF	243.2	

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
66	2515-2475008	DRIVEWAY, PCC, 8 IN.	SY	1033	
67	2515-6745600	REMOVAL OF PAVED DRIVEWAY	SY	834.6	
68	2518-6910000	SAFETY CLOSURE	EACH	12	
69	2519-2000010	FENCE, CHANNEL CROSSING, TYPE A	LF	223.4	
70	2519-3280000	FENCE, FIELD	LF	9407.6	
71	2519-3300400	FIELD FENCE BRACE PANELS	EACH	95	
72	2526-8285000	CONSTRUCTION SURVEY	LS	1	
73	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	502.87	
74	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	14.1	
75	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	40.1	
76	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1012.5	
77	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	3	
78	2528-8445110	TRAFFIC CONTROL	LS	1	
79	2528-8445113	FLAGGERS	EACH	See Proposal	
80	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	See Proposal	
81	2533-4980005	MOBILIZATION	LS	1	
82	2551-0000110	TEMP CRASH CUSHION	EACH	3	
83	2601-2634100	MULCHING	ACRE	33.9	
84	2601-2636015	NATIVE GRASS SEEDING	ACRE	30.26	
85	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	3.64	
86	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	890	
87	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	33.9	
88	2602-0000020	SILT FENCE	LF	7421	
89	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	7421	
90	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	742	
91	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE	LF	1000	
92	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	7642	
93	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	742	
94	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	1484	
95	2602-0010010	MOBILIZATION, EROSION CONTROL	EACH	1	
96	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL	EACH	1	
HMA ALTERNATE					
97	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	9525.5	
98	2102-0425070	SPECIAL BACKFILL	TON	5286.8	
PCC ALTERNATE					
99	2122-5190007	PAVED SHOULDER, P.C. CONCRETE, 7 IN.	SY	9525.5	
100	2102-0425070	SPECIAL BACKFILL	TON	5902.6	

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING
		Refer to contract documents and engineer in charge of construction for specific locations.
2	2102-0425071	SPECIAL BACKFILL
		Refer to Tab. 103-11 for locations of select subgrade treatment.
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED
		Refer to "T" Sheets. Embankment assumes weighted average shrink of 30% for estimating furnished quantity.
4	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW
		Refer to "T" Sheets. Overhaul shall not be measured or paid for, but shall be considered incidental to
		roadway excavation on the project. Quantity includes 89,373CY from template cut + 6,306CY for detour(s) removal
5	2102-2712015	EXCAVATION, CLASS 12, BOULDER/ROCK FRAGMENT
		Estimated quantity for size of project.
6	2102-2713090	EXCAVATION, CLASS 13, WASTE
		Includes 500 CY for the removal of revetment and approaches at existing bridge, and 11,514 CY of template waste
		Refer to "T" Sheets and cross sections for details and information.
7	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD
		Refer to Tab. 103-4 for locations and details.
8	2107-0875100	COMPACTION W/MOISTURE CONTROL
		Refer to "CS" Sheets.
9	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN
		Refer to Tab 104-5C on the "CS" Sheets.
10	2111-8174100	GRANULAR SUBBASE
		Refer to Tab. 100-24 for details.
11	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID
		Refer to Standard Detail 8101 on the "B" Sheets for information.
12	2115-0100000	MODIFIED SUBBASE
		Refer to Tab. 100-24 for details.
13	2121-7425010	GRANULAR SHOULDERS, TYPE A
		Refer to Tab. 112-9 for details.
14	2122-5190501	PAVED SHOULDER, PCC,(PAVED SHOULDER PANEL FOR BRIDGE END DRAIN)
		Refer to Tab. 104-8A for details.
15	2123-7450000	SHOULDER CONSTRUCTION, EARTH
		Refer to Tab. 112-9 and Sheet B.4.
16	2210-0475290	MACADAM STONE BASE
		Refer to Standard Detail 8101 on the "B" Sheets for information.
17	2301-0690201	BRIDGE APPROACH, BR-201
		Refer to Tab. 112-6 for details.
18	2301-1033080	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.
		Refer to Tab. 100-24 for details.
19	2301-1033100	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.
		Refer to Tab. 100-24 for details.
20	2301-1033120	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 12 IN.
		To be used on I-35 at the ramp acceleration and deceleration lanes. Refer to Tab. 100-24 for details.
21	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES
		See Standard Specification 2301.
22	2304-0100000	DETOUR PAVEMENT
		This item to be used for temporary paving between staged construction as shown in the plans or as directed
		by the Engineer. Refer to Tab. 100-24, F sheet, and J Sheets for details.
23	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE
		Refer to Standard Detail 8101 on the "B" Sheets for information.
24	2312-8260201	GRANULAR SURFACING ON ROAD, CLASS C GRAVEL
		This item to be used for surfacing County Road G76, the West Detour, and the Frontage Road.
		See Sheets B.3 and B.5.
25	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE
		Refer to Tab. 102-3 for locations and details.
26	2401-6745650	REMOVAL OF EXISTING STRUCTURES
		Refer to Tab. 110-2 for details.
27	2402-0425040	FLOODED BACKFILL
		Refer to Tab. 104-3 for details.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
28	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT Refer to Tab. 104-3 for details.
29	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE Refer to Tab. 100-28 for details.
30	2416-0100018	APRONS, CONCRETE, 18 IN. DIA. Refer to Tab. 104-3 for locations and details.
31	2416-0100024	APRONS, CONCRETE, 24 IN. DIA. Refer to Tab. 104-3 for locations and details.
32	2416-0100030	APRONS, CONCRETE, 30 IN. DIA. Refer to Tab. 104-3 for locations and details.
33	2416-0100036	APRONS, CONCRETE, 36 IN. DIA. Refer to Tab. 104-3 for locations and details.
34	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA. Refer to Tab. 104-3 for locations and details.
35	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA. Refer to Tab. 104-3 for locations and details.
36	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA. Refer to Tab. 104-3 for locations and details.
37	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA. Refer to Tab. 104-3 for locations and details.
38	2416-1263030	CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 30 IN. DIA. Refer to Tab. 104-3 for locations and details.
39	2417-0225018	APRONS, METAL, 18 IN. DIA. Refer to Tab. 104-3 for locations and details.
40	2417-0225030	APRONS, METAL, 30 IN. DIA. Refer to Tab. 104-3 for locations and details.
41	2417-0225036	APRONS, METAL, 36 IN. DIA. Refer to Tab. 104-3 for locations and details.
42	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA. Refer to Tab. 102-3 for locations and details.
43	2417-1060018	CULVERT, CORRUGATED METAL ROADWAY PIPE, 18 IN. DIA. Refer to Tab. 104-3 for locations and details.
44	2417-1060030	CULVERT, CORRUGATED METAL ROADWAY PIPE, 30 IN. DIA. Refer to Tab. 104-3 for locations and details.
45	2417-1060036	CULVERT, CORRUGATED METAL ROADWAY PIPE, 36 IN. DIA. Refer to Tab. 104-3 for locations and details.
46	2422-1723018	CULVERT, UNCLASSIFIED ROADWAY PIPE, 18 IN. DIA. Refer to Tab. 104-3 for locations and details.
47	2422-1723024	CULVERT, UNCLASSIFIED ROADWAY PIPE, 24 IN. DIA. Refer to Tab. 104-3 for locations and details.
48	2435-0251224	INTAKE, SW-512, 24 IN. Refer to Tab. 104-3 for locations and details.
49	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA. Refer to Tab. 104-9 on CS Sheets for details.
50	2502-8221304	SUBDRAIN OUTLET, DR-304 Refer to Tab. 104-9 and Standard Plan DR-304 for details.
51	2503-0500402	BRIDGE END DRAIN, DR-402 Refer to Tab. 104-8A for details.
52	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL Refer to Tab. 110-7A for locations and details.
53	2505-4008130	REMOVAL OF CABLE GUARDRAIL Refer to Tab. 110-7B for locations and details.
54	2505-4008300	STEEL BEAM GUARDRAIL Refer to Tab. 108-8A for locations and details.
55	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201 Refer to Tab. 108-8A for locations and details.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
56	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED Refer to Tab. 108-8A for locations and details.
57	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205 Refer to Tab. 108-8A for locations and details.
58	2505-6000111	HIGH TENSION CABLE GUARDRAIL Refer to Tab. 108-9A for locations and details.
59	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR Refer to Tab. 108-9A for locations and details.
60	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT Refer to Tab. 108-9A for locations and details.
61	2506-4984000	FLOWABLE MORTAR Refer to Tabs. 110-9 and 104-3 for details.
62	2507-3250005	ENGINEERING FABRIC Refer to Tab. 100-23 and the V Sheets for locations and details.
63	2507-6800061	REVETMENT, CLASS E Refer to Tab. 100-23 and the V Sheets for locations and details.
64	2510-6745850	REMOVAL OF PAVEMENT Includes quantity for removal of detours. Refer to Tabs 110-1 and 102-5.
65	2512-1750006	CURB AND GUTTER, PCC, AS PER PLAN For curb and gutter construction along the Kum & Go driveway. Refer to Tab. 112-4 & Sheet B.7.
66	2515-2475008	DRIVEWAY, PCC, 8 IN. Refer to Tab. 102-3 for locations and details.
67	2515-6745600	REMOVAL OF PAVED DRIVEWAY Refer to Tab. 110-8 for locations and details
68	2518-6910000	SAFETY CLOSURE Refer to J Sheets and Tab. 108-13A for details.
69	2519-2000010	FENCE, CHANNEL CROSSING, TYPE A Refer to Tab. 100-7 for details.
70	2519-3280000	FENCE, FIELD Refer to Tab. 100-7 for locations and details.
71	2519-3300400	FIELD FENCE BRACE PANELS Refer to Tab. 100-7 for details.
72	2526-8285000	CONSTRUCTION SURVEY
73	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED Refer to Tab. 108-22 for details.
74	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS Refer to Tab. 108-22 for details.
75	2527-9263180	PAVEMENT MARKINGS REMOVED Refer to Tab. 108-22 for details.
76	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE Refer to Standard Road Plan TC-61, Tab. 108-33 and the J sheets for locations and details.
77	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE For Temporary Traffic Control on G76 on-site detours.
78	2528-8445110	TRAFFIC CONTROL
79	2528-8445113	FLAGGERS
80	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS) The Changeable Message Sign will be provided by the Contractor. Contractor shall place, maintain, and adjust sign and message as directed by the Engineer.
81	2533-4980005	MOBILIZATION Payment will be based on the contract unit price per Standard Specification 2533.
82	2551-0000110	TEMP CRASH CUSHION Refer to Tab. 108-30 for details.
83	2601-2634100	MULCHING Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is Certified Noxious
		Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop
		Improvement Associations.
84	2601-2636015	NATIVE GRASS SEEDING
		Perform seeding and fertilizing according to Article 2601.03, C, 5, of the Standard Specifications.
		Seed and fertilize all areas except those covered by Rural Seeding.
85	2601-2636043	SEEDING AND FERTILIZING (RURAL)
		Perform seeding and fertilizing according to Article 2601.03, C, 3, of the Standard Specifications.
		Included for all disturbed areas following final construction, except those covered by Native Grass Seeding.
86	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT
		This item is to installed the entire length of the fill slope along Ramp A, See Tab 100-22.
		This item provides permanent stabilization of foreslope adjacent to pond and shall be installed as soon as
		final grades have been achieved.
87	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING
		Perform seeding and fertilizing according to Article 2601.03, C, 1, of the Standard Specifications.
		Item is included for disturbed areas within DOT right-of-way, temporary roadways and as directed by the Engineer.
88	2602-0000020	SILT FENCE
		Tab. 100-17 includes estimated locations for placement of "Silt Fence" to address erosion to be
		encountered during construction. Verify the specific locations with the Engineer prior to begininning
		placement. See Tab. 100-17 for other specific locations.
89	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
		This item is included for the removal of the silt fence and silt fence for ditch checks at the completion of
		the project.
90	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
		This item is included for clean-out and repair of the silt fence and silt fence for ditch
		checks during the grading and paving project.
		See Standard Specification 2602.
91	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE
		Item assumes 2 construction entrances per ramp for all four ramps (8 total) and 2 additional
		for G76 (one west and one east of I-35). See Sheet U.4.
		Method of Measurement: Stabilized Contruction Entrances will be in linear feet measured along the length of the
		entrance at the entrance centerline.
		Basis of Payment: Payment will be at the contract price per linear foot. Payment is full compensation for
		furnishing all materials and work necessary for the installation, maintenance, and removal of the
		stabilized construction entrance. Maintenance includes installing additional material or cleaning required
		to maintain the entrance in a functional condition.
92	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.
		Item included for tiered installation over Wood Excelsior Mat on Ramp A. Also tiered installation on Ramp B.
		This item also included for the temporary perimeter sediment control and water velocity reduction on slopes.
		These temporary erosion control devices can be used when weather, site conditions, or contractor staging do not
		lend themselves to silt fence placement. Prior to placement, the Engineer shall approve the placement of these
		devices in lieu of silt fence. See Tab 100-19 for details
		See Tab 100-19 for details
93	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.
		These temporary erosion control devices can be used when weather, site conditions, or contractor staging do not
		lend themselves to silt fence placement. Prior to placement, the Engineer shall approve the placement of these
		devices in lieu of silt fence. Should also be installed at all drainage culvert inlets and maintained.
		See Tab 100-19 for details
94	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
		Removal of temp install only. Payment will be based on the contract unit price per Standard Specification 2602
95	2602-0010010	MOBILIZATION, EROSION CONTROL
		Payment will be based on the contract unit price per Standard Specification 2602.
96	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL
		Payment will be based on the contract unit price per Standard Specification 2602.
HMA ALTERNATE		
97	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.
		Refer to C sheets, Tab 112-9.
98	2102-0425070	SPECIAL BACKFILL
		This item to be used for shoulder base and subbase as shown in the plans.
		Includes 4015.0 tons for shoulder construction, 1271.8 tons for detour pavement.
PCC ALTERNATE		
99	2122-5190007	PAVED SHOULDER, P.C. CONCRETE, 7 IN.
		Refer to C sheets, Tab 112-9.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
100	2102-0425070	SPECIAL BACKFILL
		This item to be used for shoulder base and subbase as shown in the plans.
		Includes 4630.8 tons for shoulder construction and 1271.8 tons for detour pavement.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-200	10-18-16	Steel Beam Guardrail Components
BA-201	10-18-16	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-203	10-18-11	Steel Beam Guardrail W-Beam End Anchor
BA-205	04-19-16	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-210	04-19-16	Guardrail Post Adaptor Unit
BA-250	10-18-16	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-351	04-20-10	High Tension Cable Guardrail
BA-401	04-16-13	Temporary Barrier Rail (Precast Concrete)
BR-201	04-21-15	Double Reinforced 10" Approach
BR-211	04-21-15	Bridge Approach (Abutting PCC or Composite Pavement)
DR-101	04-19-16	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	10-20-15	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-21-15	Pipe Bends and Half Pipe
DR-201	04-21-15	Concrete Aprons
DR-203	04-21-15	Metal Pipe Aprons and Beveled Ends
DR-213	04-21-15	Pipe Apron Guard
DR-303	10-18-16	Subdrains (Longitudinal)
DR-304	10-18-16	Outlets for Longitudinal, Transverse and Backslope Subdrains
DR-402	10-18-16	Rock Flume for Bridge End Drain
DR-601	10-20-15	Reinforced Concrete Pipe Culvert
DR-611	04-21-15	Reinforced Concrete Pipe Culvert Letdown Structure
DR-621	04-21-15	Pipe Extension
DR-625	04-21-15	Pipe Extension Letdown Structure with Metal Apron
DR-631	04-21-15	Corrugated Pipe Culvert Letdown Structure with Single Elbow
DR-641	10-18-16	Concrete/Corrugated Pipe Culvert Letdown Structure with Metal Apron
DR-651	10-20-15	Unclassified Pipe Culvert
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-201	10-18-16	Silt Fence
EC-204	04-19-16	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EW-101	10-20-15	Embankment and Rebuilding Embankments
EW-102	10-20-15	Allowable Placement of Unsuitable Soil in Embankments
EW-103	10-20-15	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-110	10-20-15	Ditch Blocks and Dikes
EW-204	04-21-15	Bridge Berm Grading with Recoverable Slope (Barnroof Section)
EW-301	10-20-15	Guardrail Grading
EW-501	10-20-15	Rural Entrance
EW-503	10-20-15	Side Road Grading
LI-130	10-21-14	Temporary Floodlighting Luminaires
MI-101	10-20-15	Fencing Layout
MI-103	10-20-15	Deer Fence and Field Fence Construction
MI-104	10-20-15	Fence Construction at Channel Crossings, Flood Plains, and Minor Ground Depressions
MI-210	10-20-15	PCC Driveways and Alleys
PM-110	04-16-13	Line Types
PM-120	10-21-14	Stop Lines and Islands
PM-310	04-19-16	Entrance and Exit Ramps
PM-420	04-19-11	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PV-101	04-19-16	Joints
PV-102	10-18-16	PCC Curb Details
PV-105	10-21-14	PCC Pavement Widening
PV-301	04-19-11	Superelevation Details Two Lane Roadway
PV-303	04-19-11	Superelevation Details Ramps
PV-410	10-18-11	Deceleration Taper for 16' Exit Ramp
PV-411	10-18-11	Acceleration Taper for 16' Entrance Ramp
PV-428	10-21-14	Two-Lane Detour Connection
SI-101	04-19-16	Locations - Type 'A' Signs
SI-102	04-19-16	Locations - Type 'B' Signs
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
SW-512	10-21-14	Circular Area Intake
SW-604	10-20-09	Castings for Area Intakes
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-213	04-17-12	Lane Closure with Flaggers
TC-233	10-21-14	Pavement Marking Operations Two-Lane
TC-251	04-17-12	Temporary Road Closure
TC-252	04-19-16	Routes Closed to Traffic
TC-253	10-18-16	Paved On-Site Detour
TC-272	10-18-16	Unsignalized Equipment Crossing
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-416	04-17-12	Partial Lane Closure on Ramps
TC-417	04-16-13	Ramp Closure
TC-418	10-15-13	Lane Closure on Divided Highway
TC-420	04-21-15	Lane Closure at Ramps
TC-433	10-21-14	Pavement Marking Operations
TC-454	10-16-12	Temporary Detour Using Ramps on Divided Highway

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title

111-25
10-18-11

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100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.2 - C.4
100-7	FENCING	C.8
100-17	TABULATION OF SILT FENCES	C.9
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.9
100-22	ROLLED EROSION CONTROL	C.9
100-23	ROCK EROSION CONTROL	C.9
100-24	PCC PAVEMENT	C.10
100-27	PAVEMENT SMOOTHNESS + PCC TEXTURE	C.10
100-28	LONGITUDINAL GROOVING	C.10
102-3	ACCESS POINTS AND SAFETY RAMPS	C.11
102-5	EXISTING PAVEMENT	C.11
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103-11	SELECT TREATMENT	C.13
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.14
104-8A	SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN	C.14
105-4	STANDARD ROAD PLANS	C.5
107-23	GRADING FOR GUARDRAIL INSTALLATIONS	C.15
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108-33	TEMPORARY BARRIER RAIL	C.17
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110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.18
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POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES
- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Signature authority on the Base PPP and NOI.
- B. Contractor/Subcontractor:
  1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Submit an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 and any additional plan notes.
  3. Install and maintain appropriate controls.
  4. Supervise and implement good housekeeping practices.
  5. Conduct joint required inspections of the site with inspection staff.
  6. Comply with training and certification requirements of Specifications Section 2602.
  7. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.
- C. RCE/Inspector:
  1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
  2. Maintain an up-to-date record that identifies contractors and subcontractors as co-permittees.
  3. Make these plans available to the DNR upon their request.
  4. Conduct joint required inspections of the site with the contractor/subcontractor.
  5. Complete an inspection report after each inspection.
  6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

II. PROJECT SITE DESCRIPTION
- A. This Pollution Prevention Plan (PPP) is for the realignment and replacement of bridge Maintenance No. 9143.90035 over I-35 on County Road G76 in Warren County, and the reconstruction of the interchange ramps.
- B. This PPP covers approximately 52.2 acres with an estimated 29.6 acres being disturbed. The portion of the PPP covered by this contract has 29.6 acres disturbed.
- C. The PPP is located in an area of 1 soil association Sharpsburg - Shelby - Adair. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.38.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage patterns – Plan and Profile sheets and Situation plans.
  2. Proposed Slopes – Cross Sections.
  3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls – Tabulations on C sheets.
  5. Locations of Non-structural Controls – Tabulations on C sheets.
  6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
  8. Locations where storm water is discharged – Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow into South River and its tributaries.

III. CONTROLS
- A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
  1. EROSION AND SEDIMENT CONTROLS
     a. Stabilization Practices
        1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
        2) Stabilization practices shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
        3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days.
        4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.
        5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
        6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.
     b. Structural Practices
        1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
        2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plans or are referenced in the Standard Road Plans Tabulation.
     c. Storm Water Management
        1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  2. OTHER CONTROLS
     a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
        1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
        2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
        3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
        4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
        5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
        6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
        7) Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
        8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onside fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water.
        9) Litter Management - Ensure employees properly dispose of litter.
        10) Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
  3. APPROVED STATE OR LOCAL PLANS
     During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES
The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS
- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES
This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS
- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and

110-12A
10-18-16

POLLUTION PREVENTION PLAN

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10-18-16

POLLUTION PREVENTION PLAN

fieldbook entries made by the inspector.

C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and bid item postings.

D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).

E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Shane E Swope
Signature

Shane E Swope
Printed or Typed Name

Signature

Printed or Typed Name

232-3A
10-20-15

EROSION CONTROL (RURAL SEEDING)

Following the completion of work in a disturbed area, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Use seed mix and fertilizer meeting the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Use mulch meeting the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

232-3C
10-20-15

EROSION CONTROL (NATIVE GRASS SEEDING)

Following the completion of work in a disturbed area, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (Andropogon geradii)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debearded or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.

Use seed meeting requirements of Article 4169.02 of the Standard Specifications.

Use mulch meeting the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

232-10
10-21-14

EMERALD ASH BORER

Dispose of all wood material generated as a result of clearing and/or grubbing according to the Iowa Department of Agriculture and Land Stewardship's Emerald Ash Borer (EAB) Quarantine Order. For more information refer to http://www.iowatreepests.com/eab_regulations.html.

232-11
Modified

EROSION CONTROL (STABILIZING CROP SEEDING)

Following the completion of work in a disturbed area, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Use seed mix and fertilizer meeting the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.

Use mulch meeting the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

252-1
10-16-12

TEMPORARY CROSSINGS AND DETOURS

Blading, shaping, and other work in preparation for maintaining temporary crossings or detours is incidental to other work. Furnish and spread additional granular surfacing needed for temporary crossings or detours during construction at the contract price.

254-1
10-02-01

INCIDENT MANAGEMENT

An incident management plan, provided by the District Office, will be discussed at the pre-construction conference.

262-6
10-18-05

UTILITIES (NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit 14, Permit No. 2014-1363. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

FENCING

* Bid Item

Refer to MI-101, MI-102, MI-103, MI-104, 510-3, and 510-5

Location				Side	Chain Link				Deer				Field				Channel Crossing		Remarks
From		To			Fence		Gate				Gate				Gate				
Station	Offset	Station	Offset		Length*	Type	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Length*	Type	
					LF		EACH		LF	EACH	EACH		LF	EACH	EACH		LF		
I-35																			
29+61.44	201.2	43+49.99	200.9	LT									1388.6	4					
43+49.99	200.8	44+76.37	260.4	LT									139.7	2					
44+76.37	260.4	49+83.47	446.0	LT									540.0	2					
49+83.47	446.0	51+78.82	502.0	LT									203.2	3					
51+78.82	502.0	51+96.30	680.0	LT									178.8	4					
53+25.45	725.3	53+26.67	490.0	LT									235.3	4					
53+26.67	490.0	56+79.00	395.0	LT									364.9	3					
56+79.00	395.0	59+15.00	300.0	LT									254.4	3					
59+15.00	300.0	60+95.00	370.0	LT									193.1	4					
60+95.00	370.0	61+65.00	200.0	LT									183.8	2					
61+65.00	200.0	62+50.00	200.0	LT									85.0	2					
62+50.00	200.0	63+45.00	295.0	LT									134.4	2					
63+45.00	295.0	64+00.00	280.0	LT													57.0	A	Contractor to install over top of culvert
64+00.00	280.0	64+80.00	215.0	LT									103.1	2					
64+80.00	215.0	66+30.00	225.0	LT									150.3	2					
66+30.00	225.0	66+50.00	200.0	LT									32.0	2					
66+50.00	200.0	68+70.00	200.0	LT									220.0	4					
68+70.00	200.0	69+60.00	310.0	LT									142.1	2					
69+60.00	310.0	69+95.00	315.0	LT													35.0	A	Contractor to install over top of culvert
69+95.00	315.0	70+70.00	200.0	LT									137.3	2					
70+70.00	200.0	74+87.36	200.0	LT									417.4	4					
29+56.72	113.7	38+53.76	113.2	RT									897.0	4					
38+53.76	113.2	44+20.00	220.0	RT									576.2	4					
44+20.00	220.0	46+24.08	300.0	RT									219.2	4					
46+24.08	300.0	47+07.72	337.4	RT													91.6	A	Contractor to install over top of culvert
47+07.72	337.4	49+00.00	423.2	RT									210.6	4					
49+00.00	423.2	49+37.00	439.7	RT													39.8	A	Contractor to install over top of culvert
49+37.00	439.7	49+60.00	450.0	RT									25.2	2					
49+60.00	450.0	51+20.00	500.0	RT									167.6	3					
53+81.75	485.0	54+60.00	415.0	RT									105.0	2					
54+60.00	415.0	56+20.00	370.0	RT									166.2	3					
56+20.00	370.0	58+71.67	270.0	RT									270.8	2					
58+71.67	270.0	61+13.08	158.3	RT									266.0	3					
61+13.08	158.3	61+95.39	147.3	RT									83.0	2					
61+95.39	147.3	66+43.87	147.3	RT									448.5	2					
66+43.87	147.3	70+11.19	181.5	RT									368.9	2					
70+11.19	181.5	72+95.34	179.9	RT									284.2	2					
72+95.34	179.9	75+10.99	181.3	RT									215.7	3					

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
I-35				
34+12.00	40+00.00	Rt.	588.0	
63+60.00	70+75.00	Lt.	715.0	Near toe of slope
Co. Rd. G76				
91+25.00	92+25.00	Rt.	100.0	
95+50.00	98+61.00	Lt.	311.0	
94+25.00	98+50.00	Rt.	425.0	
94+50.00	98+75.00	Lt.	425.0	
101+00.00	102+00.00	Rt.	100.0	
103+00.00	105+30.00	Rt.	230.0	
110+75.00	111+25.00	Rt.	50.0	
Ramp A				
161+00.00	164+00.00	Lt.	300.0	
Ramp B				
240+12.00	250+75.00	Rt.	1063.0	Near toe of slope
246+00.00	252+30.00	Lt.	630.0	Between prop/exist
Add'l for phasing and temp.			1000.0	
			5937.0	**Tab. Quantity**
			7421.0	**Bid Quantity**
			742.0	**Maintenance Quantity**
			7421.0	**Removal Quantity**

100-22
04-21-15

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104

Location				L	W	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103)	Special Ditch Control (EC-101)	Remarks
Road Identification	Begin Station	End Station	Side			Type 1	Type 2	Type 3	Type 4			
				FT	FT	Squares	Squares	Squares	Squares	Squares	Squares	
Ramp A	63+00.00	72+00.00	LT	900	99					890		See Estimate Reference Information

100-23
04-21-15

ROCK EROSION CONTROL

Refer to EC-301

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class E Revetment	Eng. Fabric	
			Lt./Rt.	FT	FT						TON	TON	SY	
Co. Rd. G76	107+40.00	107+70.00	LT.	30	8			X				28.8	40.0	
	109+23.00	109+43.00	LT.	20	8			X				19.3	26.7	
											Note: Refer to the V Sheets for additional revetment and engineering fabric quantities.			

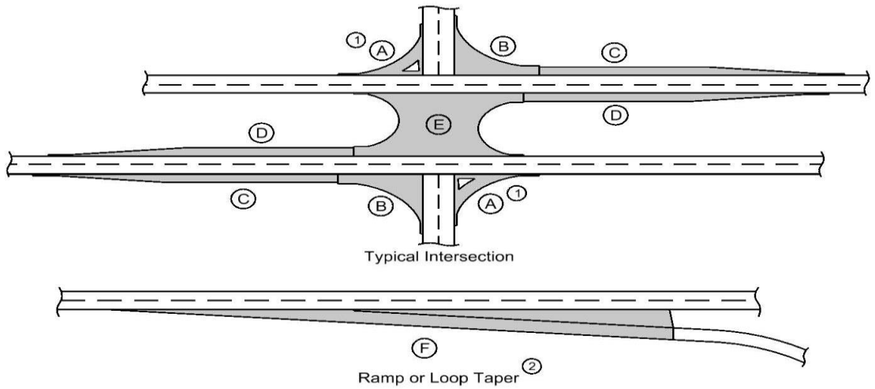
100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

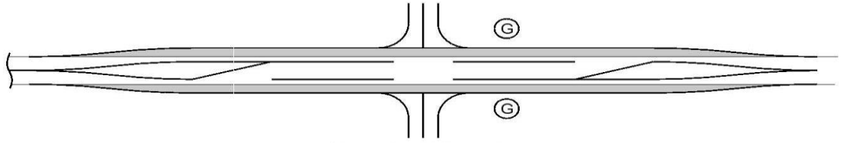
Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
Ramp A						
63+00.00	72+00.00	LT		3600.0		Install after excelsior mat is placed at 20' horizontal centers.
Ramp B						
241+00.00	252+00.00	RT		3300.0		Install at 30' horizontal centers.
Project Estimate		Both		742.0	742.0	Estimated quantity at 10% of Silt Fence. For temporary ditch checks, containment needs, and pipe inlet protection barrier.

PCC PAVEMENT

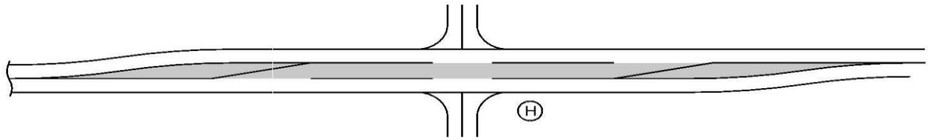


Typical Intersection

Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness			Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	SY						
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	8 IN	10 IN	12 IN	TONS	CY	SY	
I-35	NB	34+12.51	40+12.54	0.0	600.0	0.0						1469.2					1469.2		244.9		
I-35	NB	62+82.24	75+11.01	0.0	1228.8	0.0						2188.6					2188.6		364.8		
I-35	SB	29+59.21	41+89.61	0.0	1230.4	0.0						2076.6					2076.6		346.2		
I-35	SB	63+66.68	69+66.68	0.0	600.0	0.0						1469.5					1469.5		245.0		
Ramp A	SB	151+94.84	163+66.68	16.0	1171.8	2083.3	148.3	160.2								2391.7			1057.6		
Ramp B	NB	240+12.53	252+81.29	16.0	1268.8	2255.6	144.8	175.8								2576.1			1140.6		
Ramp C	SB	339+59.62	352+81.86	16.0	1322.2	2350.6	146.0	224.7								2721.4			1201.0		
Ramp D	NB	451+95.99	465+12.23	16.0	1316.2	2340.0	176.2	223.0								2739.2			1205.6		
Co. Rd. G76	EB & WB	91+84.39	97+90.73	28.0	606.3	1886.4									1886.4					1886.4	
Co. Rd. G76	EB & WB	101+45.74	112+50.00	28.0	1104.3	3435.5									3435.5					3435.5	
East Detour	EB & WB	200+00.00	213+03.66	24.0	1303.7	3476.4									3476.4			1095.1			Detour Pavement - 9" ACC also option. See B-5
Northeast Detour	NB	300+00.00	303+15.46	16.0	315.5	560.8									560.8			176.7			Detour Pavement - 9" ACC also option. See B-5

PAVEMENT SMOOTHNESS + PCC TEXTURE

Road Identification	Begin Station	End Station	Proposed Posted Speed			Remarks
			35 or less	40 - 45	over 45	
I-35	29+59.21	75+11.01			X	Ramps A, B, C, & D
Co. Rd. G76	91+84.39	112+50.00			X	

LONGITUDINAL GROOVING

Location	Total SY	Remarks
Co. Rd. G76		
East Approach	216.2	
Bridge	876.1	
West Approach	216.2	

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

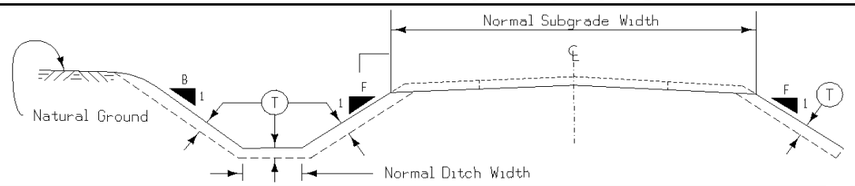
Length of unclassified pipe calculated is based on using Corrugated Metal Pipe.
(1) Refer to MI-210
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Location		Type	Length of Opening (1)			W	(1) (2) PR	(2) SR	Pipe Culvert (3)					Aprons	Driveway Surface Area		Driveway Surfacing Material	Remarks
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb				H	Size	Pipe Length	Lt.	Rt.		HMA	PCC		
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF	No.	SY	SY	TON	
Co. Rd. G76																		
90+55.00	RT.	C				16.0		15.0									11.800	
92+28.90	LT.	B				40.0		25.0		24.0	92.0	46.0	46.0				126.900	
92+28.90	RT.					24.0		50.0		24.0	90.0	45.0	45.0					Frontage Road
107+16.20	LT.	B				40.0		50.0								477.2		
108+98.60	LT.	B				40.0		50.0		24.0	86.0	43.0	43.0			555.8		
108+98.60	RT.	C				20.0		15.0		24.0	44.0	22.0	22.0				21.220	
111+69.60	LT.	C				48.0		0									10.180	

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Milepost	End Milepost				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
										IN		IN		IN		IN					
1	Warren	I-35	NB/SB	--	--	1959	PCC	IN-I-IG-35-2(8)43	PCC	10	--		Granular	4	--		--	--	--	--	
2	Warren	I-35	NB/SB	--	--	1970	ACC	I-35-2(93)43--01-91	ACC	0.75	Binder Coarse	2.25	--	--	--		--	--	--	--	
3	Warren	I-35	NB/SB	--	--	2009	ACC	ESIMX-035-2(337)43--1S-91	ACC	2	Intermediate	2	--	--	Mill	4	--	--	--	--	

TABULATION OF SPREADING TOPSOIL



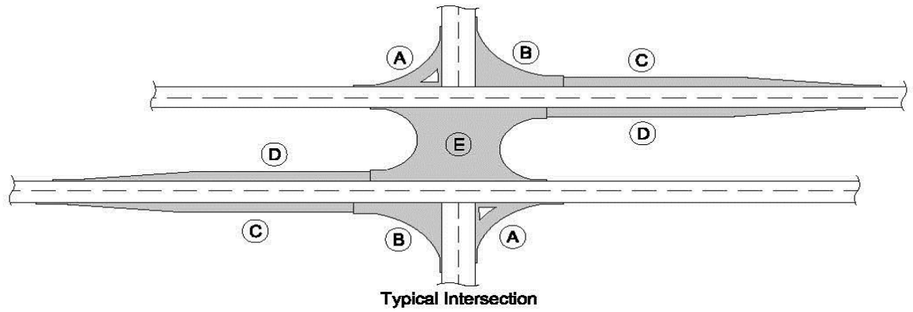
Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

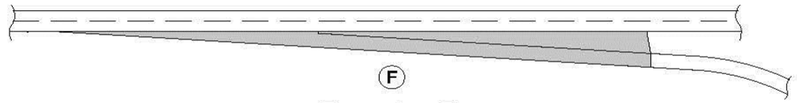
Placement Description								Topsoil Excavation Available From			
Area	Quantity	Location		Side	Slope	T	Remarks	Amount Reserved	Station to Station		Remarks
No.	CY	Station to Station		L. or R.	B. or F.	IN		CY			
I-35											
	1947.0	29+60.00	41+90.00	L.	Both	8.0		3176.0	29+60.00	41+90.00	
	707.0	34+12.62	40+12.44	R.	Both	8.0		1393.0	34+12.62	40+12.44	
	2663.0	62+82.34	75+10.91	R.	Both	8.0		4191.0	62+82.34	75+10.91	
	1949.0	63+66.78	69+66.58	L.	Both	8.0		3228.0	63+66.78	69+66.58	
Ramp A	4248.0	152+51.75	163+66.67	Both	Both	8.0		6837.0	152+51.75	163+66.67	
Ramp B	5915.0	240+12.53	252+30.00	Both	Both	8.0		8477.0	240+12.53	252+30.00	
Ramp C	3458.0	341+88.28	352+25.61	Both	Both	8.0		4989.0	341+88.28	352+25.61	
Ramp D	3381.0	452+51.31	462+83.57	Both	Both	8.0		5088.0	452+51.31	462+83.57	
Co. Rd. G76	5070.0	88+50.00	112+49.56	Both	Both	8.0		7442.0	88+50.00	112+49.56	
Frontage Rd.	1992.0	540+75.00	554+35.00	Both	Both	8.0		3702.0	540+75.00	554+35.00	
											Note: Topsoil stripping is included for East and West Detours on the T-Sheet. Detour topsoil to be replaced after detours are removed.

SELECT TREATMENT

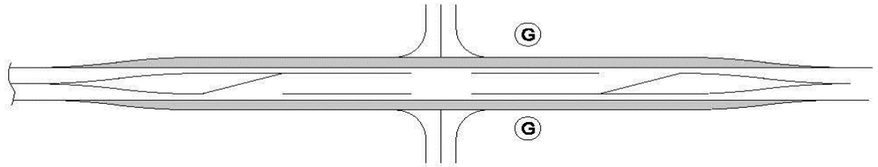
Possible Detail: G_4D_Grade_Delay_S



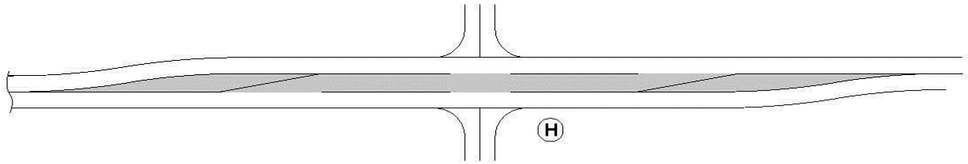
Typical Intersection



Ramp or Loop Taper



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

Location				Mainline								Section Area												
						Shoulder Width																		
						Median Side		Outside																
Road Identification	Direction of Travel	Station to Station		Length	Width	GM	PM	PO	GO	Pavement & Subgrade Thickness (X)	Area	A	B	C	D	E	F	G	H	Area	Total Area (Mainline + Section)	Select Treament Thickness (Y1)	Contractor Furnished Select Treatment	Remarks
				FT	FT	FT	FT	FT	FT	IN	SF	SF	SF	SF	SF	SF	SF	SF	SF	SF	SF	IN	CY	
I-35	NB	34+12.51	40+12.54	600.0													16918.0			16918.0	16918.0	12.0	626.6	Special Backfill
I-35	NB	62+82.24	75+11.01	1228.8													27072.0			27072.0	27072.0	12.0	1002.7	Special Backfill
I-35	SB	29+59.21	41+89.61	1230.4													25958.0			25958.0	25958.0	12.0	961.4	Special Backfill
I-35	SB	63+66.68	69+66.68	600.0													16920.0			16920.0	16920.0	12.0	626.7	Special Backfill
Co. Rd. G76	EB & WB	91+84.39	97+90.73	606.3	40.0						24253.6										24253.6	12.0	898.3	Special Backfill
Co. Rd. G76	EB & WB	101+45.74	112+50.00	1104.3	40.0						44170.4										44170.4	12.0	1635.9	Special Backfill

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
I-35																																							
19.5	30+75.00	DR-621	36	RCP	10	C	14.0		1								C-1	1	3		1076.87		1076.43				18.0			15				7.3			1.5	1.5	
1.2	36+80.00	DR-621	18	RCP	22	C	4.0			1							C-1	1	3			1083.06	1083.55					28.1						5.0			1.7	1.7	
1.3	46+40.00	DR-621	18	RCP	176	C	17.5			1							C-1	1	3			1063.83	1074.97					182.1						91.2			11.5	11.5	
10.3	46+80.00	DR-621	30	RCP	169	C	19.0			1							C-1	1	3			1064.18	1070.14					175.1						107.6			18.0	18.0	(1)
0.7	51+00.00	DR-621	18	RCP	8	C	5.5			1							C-1	1	3				1074.09	1074.36					14.1						5.0			0.9	0.9	
1.2	60+00.00	DR-625	18	RCP	52	C	8.5										C-1	1	3					1071.48	1070.33			52.0						5.0			8.5	8.5	(2)
1.2	60+00.00	DR-625	18	CMP	93	C	8.5			1	1	2					C-3	1			1052.59		1052.59	1070.33			99.1						55.7			5.1	5.1	B=71'C=2'E=20'
10.2	63+50.00	DR-641	30	RCP	202	C	7.5		1										3		1038.00	1070.00		1065.78	134.0	74.1								87.0		50.1	4.8	54.9	(3)
10.2	63+50.00	DR-641	30	CMP	111	C	7.5			1		2					C-3	1			1038.00		1038.00	1065.78	251.1									222.0			6.2	6.2	B=88'C=3'E=20'
1.1	68+00.00	DR-621	18	RCP	32	C	7.0			1							C-1	1	3		1059.84		1063.43				38.1						6.5			2.3	2.3	
10.3	70+50.00	DR-625	36	CMP	98	C	5.0			1		2					C-3	1			1012.43		1012.43	1037.12			106.0			14			44.6			9.3	9.3	B=75'C=3'E=20'
10.3	70+50.00	DR-625	36	RCP	33	C	5.0		1								C-2	2	3			1056.17	1054.35					35.0		14				33.6			4.0	4.0	(4)
1.8	74+75.00	DR-201	24	RCP	0	C	4.0		1								C-1	1				1067.52	1067.18					6.1						5.0			0.4	0.4	Apron Only
Co. Rd. G76																																							
3.9	105+30.00	DR-601	30	RCP	156	C	15.8		1	1									3		1076.36	1066.68			78.1	90.1								38.0			3.6	3.6	(5)
TMP	105+30.00	DR-651	30	CMP	46	C	15.8										C-4	1			1079.50	1076.36					46.0						18.0			3.1	3.1	Detour Ext. Temp
DETOUR																																							
TMP	201+50.00	DR-651	24	UNCL	55	C	3.3														1081.00	1084.79			33.0	22.0								5.0			3.1	3.1	Detour Pipe
TMP	204+00.00	DR-651	18	UNCL	38	C	3.3														As Needed				19.0	19.0													Detour Pipe
TMP	205+00.00	DR-651	18	UNCL	12	C	3.3										C-3	2									6.0	6.0	45	45									Ext.Ex.Dr.Pipe
TMP	206+50.00	DR-651	18	UNCL	38	C	3.3														As Needed				19.0	19.0													Detour Pipe
DETOUR																																							
TMP	100+25.00	DR-651	18	UNCL	60	C	3.3														As Needed				30.0	30.0				45									Detour Pipe
Ramp A																																							
4.3	158+75.00	DR-611	24	RCP	130	C	12.3		1	1		1							3		1065.00	1073.50	1065.27		76.1	66.1								291.0		52.5	10.3	62.8	(6), F=25'
Ramp B																																							
4.1	250+20.00	DR-621	30	RCP	106	C	25.3			1							C-1	1	3			1061.28	1065.53					112.1	5					80.1			8.4	8.4	
Ramp C																																							
24.4	346+65.00	DR-601	24	RCP	118	C	11.0		1	1									3		1078.00	1074.00			50.1	80.1								867.8		52.5	9.3	61.8	
Ramp D																																							
4.5	457+75.00	DR-601	24	RCP	92	C	7.0		1	1									3		1074.54	1073.50			58.1	46.1								293.1		52.5	7.5	60.0	

Notes:
(1) Inlet Elev.=1078.40, FL=1070.73, SW-512 Intake (24" Diameter) w/Casting 604 Type 3B, Sta. 46+79.91, Offset=97.59' Rt, 24-30 Inch Tee for Intake
(2) 1-13° and 1-14° Elbow
(3) 1-18° and 1-17° Elbow, Inlet Elev.=1076.00, FL=1066.68, SW-512 Intake (24" Diameter) w/Casting 604 Type 3B, Sta. 63+50.10, Offset=90.50' Lt, 140' trenchless RCP installation. , Tap Structure
(4) 1-19° and 1-15° Elbow. 6.0' of RCP on outlet side for Type C-2 connection to existing RCB
(5) 103' trenchless RCP Installation
(6) 1-3.5° Elbow

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

Refer to Standard Road Plan DR-401 and DR-402

Location			Bid Items		PCC Paved Shoulder			Scour Protection (DR-401)		Rock Flume (DR-402)			Remarks
Bridge Station	Bridge Corner	Distance DI-1 or DI-2	PCC Paved Shoulder	Bridge End Drain	Panels Required	Polymer Grid	Modified Subbase	Outlet or Channel Scour Protection	Turf Reinforced Mat (TRM), Type 2	Macadam Stone Base	Engineering Fabric	Erosion Stone	
		FT	SY	TYPE	A B C or D	SY	TONS	SF	SQ	TONS	SY	TONS	
Co. Rd. G76													
98+23.00	NW	28.5	20.0	DR-402	B	20.0	18.900			1.210	56.0	40.320	
101+13.00	NE	28.5	20.0	DR-402	A	20.0	18.900			1.210	58.7	42.240	

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
														CY	CY	
Co. Rd. G76																
1	EB	98+56.43	RT		65.0	5.0					115.4	6.6	41.9			
2	WB	98+55.52	LT		52.5	5.0					102.3	8.0	53.9			
3	EB	100+80.03	RT		52.5	5.0					102.9	7.0	44.6			
4	WB	100+80.98	LT		90.0	5.0					139.8	8.8	60.3			

108-8A
Modified

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Location					Layout Lengths BA-250, BA-260, LS-630, or LS-635				Long-Span System		Delineators and Object Markers (2)					Bid Items										Remarks
																			BA-250 or LS-630					BA-260 or LS-635		
No.	(1) Direction of Traffic	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET			SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	End Terminal				Barrier Transition Section	End Terminal	
													Type 1	Type 2	Type 3						Tangent	Flared	Tangent	Flared		Tangent	
									BA-211							BA-202		BA-210	BA-200	BA-201	BA-205	BA-206	LS-625	LS-626	BA-221	BA-225	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	TYPE	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
1	EB	O	98+54.17	21.9	40.625	0.00	25.00	47.7							1	A	1		25.0	1	1						
2	WB	O	98+53.31	-20.6	40.625	0.00	12.50	47.7						1		A	1		12.5	1	1						
3	EB	O	100+82.28	22.0	40.625	0.00	12.50	47.7							1	A	1		12.5	1	1						
4	WB	O	100+83.18	-20.6	40.625	0.00	50.00	47.7						1		A	1		50.0	1	1						

108-9A
04-20-10

HIGH TENSION CABLE GUARDRAIL

(1) Lane(s) to which the installation is adjacent. Refer to BA-351.

Location					Dimensions			Bid Items		Remarks
No.	Direction of (1) Traffic	Station	Side	Offset D_θ	Approach C_A	Obstacle C_O	Trailing C_T	Protection Length (C_A+C_θ+C_T)	End Anchor	
				FT	FT	FT	FT	FT	No.	
1	SB	52+25.00	LT					100.0	1	For replacement of the existing cable guardrail from Sta. 52+25.00 to Sta. 53+25.00
1	NB	15+95.00	LT						1	For construction of the maintenance turn-around at station. 16+25.00.
1	NB	16+55.00	LT						1	For construction of the maintenance turn-around at station. 16+25.00.
1	NB	28+40.00	LT					160.0		For closure of the maintenance turn-around at station 28+40.

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
Ramp A			
152+90.00	1		Stage 1, 2, 3
163+66.68	1		Stage 2, 3
Ramp B			
240+12.53	1		Stage 2
251+75.00	1		Stage 2, 3
Ramp D			
454+10.00	1		Stage 2
Co. Rd. G76			
93+05.00	1		Stage 2, 3
96+25.00	1		Stage 3
104+70.00	1		Stage 2
105+00.00	1		Stage 3
112+60.00	1		Stage 3
98+50		1	Stage 4
100+75		1	Stage 4

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25
DCY4: Double Centerline (Yellow) @ 2.00
NPY4: No Passing Zone Line (Yellow) @ 1.25
BLW4: Broken Lane Line (White) @ 0.25
ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00
CHW8: Channelizing Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.33
RLW4: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 1.00

Location								Length by Line Type (Unfactored)												
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	CHW8	DLW4	RLW4	RLY4			Remarks
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
I-35	33+12.55	34+12.55	NB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	75+11.01	76+11.01	NB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	28+59.62	29+59.62	SB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	69+66.66	70+66.66	SB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	40+12.54	62+82.25	NB	Waterborne/Solvent Paint			x					22.70								Restripe I-35 (at completion)
I-35	41+89.61	63+66.68	SB	Waterborne/Solvent Paint			x					21.77								Restripe I-35 (at completion)
I-35	33+12.50	76+11.01	NB	Waterborne/Solvent Paint		x					42.99									Restripe I-35 (at completion)
I-35	28+59.62	70+66.68	SB	Waterborne/Solvent Paint		x					42.07									Restripe I-35 (at completion)
I-35	33+12.50	76+11.01	NB	Waterborne/Solvent Paint	x								42.99							Restripe I-35 (at completion)
I-35	28+59.62	70+66.68	SB	Waterborne/Solvent Paint	x								42.07							Restripe I-35 (at completion)
I-35	33+12.55	34+12.55	NB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	75+11.01	76+11.01	NB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	28+59.62	29+59.62	SB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
I-35	69+66.66	70+66.66	SB	Waterborne/Solvent Paint			x					1.00								Restripe I-35 (at completion)
Ramp A	52+67.75	69+66.66	SB	Waterborne/Solvent Paint			x									16.99				
Ramp A	52+54.50	63+66.66	SB	Waterborne/Solvent Paint	x												11.12			
Ramp A	63+66.68	67+26.20	SB	Waterborne/Solvent Paint	x									3.60						
Ramp A	63+66.68	67+26.20	SB	Waterborne/Solvent Paint	x									3.60						
Ramp A	67+26.20	69+59.12	SB	Waterborne/Solvent Paint	x										2.33					
Ramp B	34+12.55	52+18.14	NB	Waterborne/Solvent Paint			x									18.06				
Ramp B	34+21.31	36+53.04	NB	Waterborne/Solvent Paint	x										2.32					
Ramp B	36+53.04	40+12.54	NB	Waterborne/Solvent Paint	x									3.60						
Ramp B	36+53.04	40+12.54	NB	Waterborne/Solvent Paint	x									3.60						
Ramp B	40+12.54	52+20.07	NB	Waterborne/Solvent Paint	x												12.08			
Ramp C	29+59.62	52+28.16	SB	Waterborne/Solvent Paint			x									22.69				
Ramp C	37+65.76	41+89.61	SB	Waterborne/Solvent Paint	x									4.24						
Ramp C	37+65.76	41+89.61	SB	Waterborne/Solvent Paint	x									4.24						
Ramp C	41+89.61	52+21.62	SB	Waterborne/Solvent Paint	x												10.32			
Ramp D	52+60.74	75+11.01	NB	Waterborne/Solvent Paint			x									22.50				
Ramp D	52+49.70	62+82.25	NB	Waterborne/Solvent Paint	x												10.33			
Ramp D	62+82.25	67+20.94	NB	Waterborne/Solvent Paint	x									4.39						
Ramp D	62+82.25	67+20.94	NB	Waterborne/Solvent Paint	x									4.39						
East Detour	200+00.00	211+66.54	EB	Waterborne/Solvent Paint	x				11.67											
East Detour	199+25.00	211+66.54	BOTH	Waterborne/Solvent Paint			x					24.83								
East Detour	198+71.48	200+11.48	BOTH	Waterborne/Solvent Paint			x								2.80					
Co. Rd. G76	96+23.08	103+24.96	BOTH	Waterborne/Solvent Paint			x					14.04								
Co. Rd. G76	91+84.39	119+00.00	EB	Waterborne/Solvent Paint	x				27.16											
Co. Rd. G76	91+84.39	95+03.41	EB	Waterborne/Solvent Paint			x					3.19								
Co. Rd. G76	91+84.39	95+10.14	WB	Waterborne/Solvent Paint			x					3.26								
Co. Rd. G76	104+21.23	108+73.46	EB	Waterborne/Solvent Paint			x					4.52								
Co. Rd. G76	109+23.66	110+94.73	EB	Waterborne/Solvent Paint			x					1.71								
Co. Rd. G76	112+19.69	119+00.00	EB	Waterborne/Solvent Paint			x					6.80								
Co. Rd. G76	104+51.85	106+46.67	WB	Waterborne/Solvent Paint			x					1.95								
Co. Rd. G76	107+85.69	108+29.05	WB	Waterborne/Solvent Paint			x					0.43								
Co. Rd. G76	109+68.07	111+35.66	WB	Waterborne/Solvent Paint			x					1.68								
Co. Rd. G76	112+03.51	119+00.00	WB	Waterborne/Solvent Paint			x					6.96								
Co. Rd. G76	115+00.00	119+00.00	EB	Wet Retroreflective Removable Tape	x				4.00											
Co. Rd. G76	115+64.44	119+00.00	WB	Wet Retroreflective Removable Tape			x					3.36								
Co. Rd. G76	116+22.31	119+00.00	EB	Wet Retroreflective Removable Tape			x					2.78								
Co. Rd. G76	112+50.00	119+00.00	BOTH	Removal of Paint			x					13.00								
Co. Rd. G76	112+50.00	119+00.00	EB	Removal of Paint	x				6.50											
Co. Rd. G76	115+00.00	119+00.00	EB	Removal of Paint			x		4.00											
Co. Rd. G76	115+64.44	119+00.00	WB	Removal of Paint			x					3.36								
Co. Rd. G76	116+22.31	119+00.00	EB	Removal of Paint	x							2.78								
Northeast Detour	300+00.00	303+15.23	NB	Waterborne/Solvent Paint	x								3.15							
Northeast Detour	300+00.00	304+08.77	NB	Waterborne/Solvent Paint			x					4.09								
				Factored Total: Waterborne/Solvent Paint				-	77.64	-	21.26	125.93	88.21	63.26	2.48	80.23	43.84	-	-	
				Factored Total: Wet Retroreflective Removable Tape				-	8.00	-	-	6.13	-	-	-	-	-	-	-	
				Factored Total: Removal of Paint				-	21.00	-	-	19.13	-	-	-	-	-	-	-	
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							502.87									
				Bid Quantity: Wet Retroreflective Removable Tape Markings							14.13									
				Bid Quantity: Pavement Markings Removed							40.13									

108-27
10-16-12

TEMPORARY FLOODLIGHTING LUMINAIRES

No.	Location Station	Offset	Number Lumin.	Remarks
	Detours		3	For temporary traffic control on G76 on-site detours.

108-30
04-16-13

CRASH CUSHIONS

* Bid Item
(1) Lane(s) to which the installation is adjacent.
(2) Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500

No.	(1) Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details (2)					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V Length	W Length	X Length	Y Length	Z Length	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
				FT						FT	FT	FT	FT	FT	CY	CY	EACH	EACH		
	SB	65+50.00	RT	2.70	1														End of TBR, SW-512 Intake Install	
	NB	45+80.00	RT	2.70	1														End of TBR, SW-512 Intake Install	
	SB	51+50.00	LT	2.70	1														End of TBR, Pier & Cable Guardrai	

108-33
04-19-16

TEMPORARY BARRIER RAIL

Possible Standards: BA-400, BA-401

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station		Length	(Select One) Steel BA-400	(Select One) Concrete BA-401	Anchored* (Y/N)	Modular Glare Screen System (Y/N)	Remarks
			LF					
I-35	45+80.00	46+80.00	100.0		X	No	No	Temp. Crash Cushion at 45+80. Intake install near exist. Ramp B Shoulder
I-35	63+25.00	65+50.00	225.0		X	No	No	Temp. Crash Cushion at 65+50. Pipe Jacking and Intake Installation
I-35	51+50.00	53+00.00	150.0		X	No	No	SB Temp. Crash Cushion at Bridge Pier Construction
I-35	51+12.50	53+00.00	187.5		X	No	No	NB Temp. Crash Cushion at Bridge Pier Construction. Approach end skewed away from cable to be 10' clear.
G76	97+35.00	98+60.00	125.0		X	No	No	Separate Exist/Prop G76 Construction Use slope tapered at 97+50
G76	100+70.00	102+95.00	225.0		X	No	No	Separate Exist/Prop G76 Construction Use slope tapered at 102+85

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
I-35						
153+22.12	159+17.97	Both	ACC/PCC	1765.6	165.0	Ramp A *
244+20.00	252+81.77	Both	ACC/PCC	2368.7	193.0	Ramp B *
345+21.77	352+97.28	Both	ACC/PCC	2086.9	149.0	Ramp C *
452+09.90	460+24.26	Both	ACC/PCC	2186.4	170.0	Ramp D *
34+12.51	44+33.00	RT	ACC/PCC	1158.0	1056.0	Existing shld at decel lane
60+10.00	75+11.01	RT	ACC/PCC	2136.0	1511.0	Existing shld at accel lane
29+59.21	45+41.00	LT	ACC/PCC	2334.0	1592.0	Existing shld at accel lane
59+00.00	69+66.68	LT	ACC/PCC	1358.0	1076.0	Existing shld at decel lane
Co. Rd. G76						
93+28.28	98+61.44	Both	PCC	1377.3		
100+73.68	112+50.03	Both	PCC	3257.7	24.0	
East Detour						
200+00.00	209+86.95	Both	PCC	2631.9		
Northeast Detour						
300+00.00	303+15.46	Both	PCC	841.2		
	* Sawcut existing accel. & decel. Lanes and Use In Place as 10-ft I-35 shoulder					

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
I-35		
Sta. 30+75, 122' LT	Remove existing 36" RCP culvert apron.	
Sta. 45+58, 70' RT	Remove existing 24'x15" RCP culvert	
Sta. 46+40, 94' RT	Remove existing 18" RCP culvert apron	
Sta. 46+80, 118' RT	Remove existing 64'x30" RCP culvert with apron	
Sta. 49+00, 174' LT	Remove existing 79' x 24" RCP culvert	
Sta. 52+49, 20' RT	Remove existing concrete barrier	
Sta. 52+74, 81' LT	Remove existing concrete barrier	
Sta. 56+70, 140' LT	Remove existing 60' x 24" RCP culvert	
Sta. 57+45, 88' RT	Remove existing 49' x 24" RCP culvert	
Sta. 60+00, 120' LT	Remove existing RCP culvert apron.	
Sta. 70+50, 175' LT	Remove existing concrete box culvert end section.	
Sta. 70+50, 62' RT	Remove existing concrete box culvert end section.	
Sta. 70+50, 175' LT	Remove 37' existing 3' concrete flume	
Sta. 70+50, 159' LT	Remove 15' of existing 2'x3' concrete box culvert.	
Sta. 58+37, 225' RT	Remove overhead sign and foundation (Kum and Go)	
Co. Rd. G76		
Sta. 91+85, 26' LT	Remove existing 18" x 28' entrance pipe	
Sta. 91+32, 32' LT	Remove existing 18" x 25' entrance pipe	
Sta. 93+82,52' LT	Remove existing 18" x 45' entrance pipe	
Sta. 95+97, 164' LT	Remove sign and post	
Sta. 109+00, 48' LT	Remove existing 18" x 80' entrance pipe	
Sta. 109+00, 30' RT	Remove existing 18" x 49' entrance pipe	

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Location					
No.	(1) Direction of Traffic	Station to Station		Side	Removal of Guardrail (2) LF
I-35	NB	49+44.00	52+49.00	RT	305.0
I-35	SB	53+10.00	56+14.00	LT	304.0
G76	EB	97+90.00	98+62.00	RT	72.0
	EB	100+67.00	101+51.00	RT	84.0
	WB	97+90.00	98+62.00	RT	72.0
	WB	100+67.00	102+16.00	RT	149.0

110-8
08-01-08

REMOVAL OF CONCRETE DRIVES

Location		Area	Remarks
Station	Side	SY	
Co. Rd. G76			
107+15.00	Lt	290.0	
108+90.00	Lt	414.2	
111+57.00	Rt	107.3	
111+72.00	Lt	23.0	

110-7B
10-19-10

REMOVAL OF CABLE GUARDRAIL

* Not a bid item
(1) Lane(s) to which the installation is adjacent

Location					Type	Cable	Post * Footings, Concrete	End Terminal*	Remarks
No.	(1) Direction of Traffic	Station to Station		Side	(High/Low Tension)	Remove	Remove	Remove	
						LF	Yes/No	No.	
1	SB	52+25.00	53+25.00	LT	High Tension	100.0	No	1	The 100 ft. length includes the end terminal section.
2	NB	15+45.00	17+05.00	LT	High Tension	160.0	Yes		
3	NB	27+60.00	28+10.00	LT	High Tension	50.0	Yes	1	The 50 ft. length includes the end terminal section.
4	NB	28+70.00	29+20.00	LT	High Tension	50.0	Yes	1	The 50 ft. length includes the end terminal section.

110-9
10-18-11

CULVERT ABANDONMENT

Refer to Details 4315 and 4316

* Not a bid item

Location Station	Description	Fill Material		4" Perforated Subdrain*	Remarks
		Flowable Mortar	Granular Backfill*		
		CY	TON	LF	
I-35					
62+39.70	30"x217' RCP Culvert	33.8	1.0	15.0	
Co. Rd. G76					
105+20.00	30"x117' RCP Culvert	20.4	1.0	15.0	

112-4
10-21-14

CURBS AND RAISED ISLANDS

Refer to PV-20, PV-102, and 6000s Detail Series.

(1) Bid Item

Point No.	Station	Offset	Island Interior Area (1)	Curb and Gutter			Remarks
				Curb Type	Gutter Width	Length (1)	
			SY		FT	LF	
Co. Rd. G7							
	106+91.71 to 106+96.39	42.84' Lt. to 94.00' Lt.		6" Standard PCC	1.5	51.8	Along gas station driveway.
	107+36.03 to 107+40.66	94.00' Lt. to 42.84' Lt.		6" Standard PCC	1.5	51.8	Along gas station driveway.
	108+74.08 to 108+78.80	42.84' Lt. to 112.00' Lt.		6" Standard PCC	1.5	69.8	Along gas station driveway.
	109+18.32 to 109+23.03	112.00' Lt. to 42.84' Lt.		6" Standard PCC	1.5	69.8	Along gas station driveway.

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain							
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	(T) Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet STA	* Subdrain Outlet Side	* Porous Backfill	* Class 'A' Crushed Stone Backfill	* Modified Subbase	* Polymer Grid	Remarks
				Inches	FT	SY	SY	SY				LF			CY	CY	TON	SY	
Co. Rd. G76																			
98+60.73	West		0	10.0	70.0	93.3	62.2	100.7	BR-201	Movable	BR-211	64.0	98+00.00	LT	11.0		267.700	288.2	
100+75.74	East		0	10.0	70.0	93.3	62.2	100.7	BR-201	Movable	BR-211	72.0	101+35.00	LT	12.0		267.700	288.2	

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) Bid Item
(3) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(4) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 145, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					(P) Width	(G) Width	(L) Length	Quantities															Remarks
Road Identification	(1) Direction Of Traffic	Station to Station		Side				(3) Class 13 Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	Reinforced Paved Shoulder	Special Backfill HMA Alternate		Special Backfill PCC Alternate		Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates STA	Earth Shoulder Construction Alternates HMA	Earth Shoulder Construction Alternates PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA	(2)	CY (4)	CY (4)	
I-35	NB	34+12.54	40+12.19	Rt.	6.0		599.7		173.9	29.0	10.4	399.8		169.2	28.2	196.4	32.8				6.0	136.9	134.8	
I-35	NB	40+12.19	40+37.19	Rt.	10.0		25.0		12.1	48.3	0.7	27.8		8.8	35.0	8.8	35.0				0.3	5.7	5.6	
I-35	NB	62+57.24	62+82.24	Rt.	10.0		25.0		12.1	48.3	0.7	27.8		8.8	35.0	8.8	35.0				0.3	5.7	5.6	
I-35	NB	62+84.38	75+11.01	Rt.	6.0		1226.6		355.7	29.0	21.3	817.8		346.0	28.2	401.8	32.8				12.3	280.0	275.7	
I-35	SB	29+59.62	41+87.47	Rt.	6.0		1227.9		356.1	29.0	21.4	818.6		346.4	28.2	402.2	32.8				12.3	280.3	276.0	
I-35	SB	41+87.47	42+12.47	Rt.	10.0		25.0		12.1	48.3	0.7	27.8		8.8	35.0	8.8	35.0				0.3	5.7	5.6	
I-35	SB	63+41.68	63+66.68	Rt.	10.0		25.0		12.1	48.3	0.7	27.8		8.8	35.0	8.8	35.0				0.3	5.7	5.6	
I-35	SB	63+67.03	69+66.68	Rt.	6.0		599.7		173.9	29.0	10.4	399.8		169.2	28.2	196.4	32.8				6.0	136.9	134.8	
Ramp A	SB	151+94.84	163+66.68	Rt.	6.0		1171.8		339.8	29.0	20.4	781.2		385.5	32.9	441.3	37.7				11.7	267.5	263.4	
Ramp B	NB	240+12.53	252+81.29	Rt.	6.0		1268.8		367.9	29.0	22.1	845.8		417.4	32.9	477.8	37.7				12.7	289.6	285.2	
Ramp C	SB	339+59.62	352+81.86	Rt.	6.0		1322.2		383.5	29.0	23.0	881.5		435.0	32.9	498.0	37.7				13.2	301.8	297.2	
Ramp D	NB	451+95.99	465+12.23	Rt.	6.0		1316.2		381.7	29.0	22.9	877.5		433.0	32.9	495.7	37.7				13.2	300.5	295.9	
Ramp A	SB	151+94.84	163+66.68	Lt.	4.0		1171.8		226.6	19.3	13.6	520.8		205.1	17.5	233.8	20.0				11.7	282.2	278.2	
Ramp B	NB	240+12.53	252+81.29	Lt.	4.0		1268.8		245.3	19.3	14.7	563.9		222.0	17.5	253.1	20.0				12.7	305.6	301.2	
Ramp C	SB	339+59.62	352+81.86	Lt.	4.0		1322.2		255.6	19.3	15.3	587.7		231.4	17.5	263.8	20.0				13.2	318.5	313.9	
Ramp D	NB	451+95.99	465+12.23	Lt.	4.0		1316.2		254.5	19.3	15.3	585.0		230.3	17.5	262.6	20.0				13.2	317.0	312.4	
Co. Rd. G76	EB	94+27.79	95+32.82	Rt.	6.0		105.0		30.5	29.0	1.8	70.0		20.4	19.4	24.8	23.6				1.1	25.3	24.9	
Co. Rd. G76	EB	96+08.44	97+20.67	Rt.	6.0		112.2		32.5	29.0	2.0	74.8		21.8	19.4	26.5	23.6				1.1	27.0	26.6	
Co. Rd. G76	EB	97+20.67	98+60.73	Rt.	12 to 9		140.1		71.1	50.8	4.3	163.4		47.6	34.0	57.8	41.3				1.4	59.0	58.2	Guardrail Surfacing
Co. Rd. G76	EB	100+75.74	102+05.72	Rt.	9 to 12		130.0		66.0	50.8	4.0	151.6		44.2	34.0	53.7	41.3				1.3	54.8	54.0	Guardrail Surfacing
Co. Rd. G76	EB	102+05.72	103+38.89	Rt.	6.0		133.2		38.6	29.0	2.3	88.8		25.9	19.4	31.4	23.6				1.3	32.1	31.6	
Co. Rd. G76	EB	103+70.15	105+38.54	Rt.	6.0		168.4		48.8	29.0	2.9	112.3		32.7	19.4	39.8	23.6				1.7	40.6	40.0	
Co. Rd. G76	WB	93+92.59	95+68.31	Rt.	6.0		175.7		51.0	29.0	3.1	117.1		34.2	19.4	41.5	23.6				1.8	42.3	41.7	
Co. Rd. G76	WB	96+00.54	97+29.68	Rt.	6.0		129.1		37.5	29.0	2.2	86.1		25.1	19.4	30.5	23.6				1.3	31.1	30.7	
Co. Rd. G76	WB	97+29.68	98+60.73	Rt.	12 to 9		131.0		66.5	50.8	4.0	152.9		44.6	34.0	54.1	41.3				1.3	55.2	54.4	Guardrail Surfacing
Co. Rd. G76	WB	100+75.74	102+44.36	Rt.	9 to 12		168.6		85.6	50.8	5.1	196.7		57.4	34.0	69.6	41.3				1.7	71.1	70.0	Guardrail Surfacing
Co. Rd. G76	WB	102+44.36	103+40.38	Rt.	6.0		96.0		27.8	29.0	1.7	64.0		18.7	19.4	22.7	23.6				1.0	23.1	22.8	
Co. Rd. G76	WB	103+91.69	104+77.67	Rt.	6.0		86.0		24.9	29.0	1.5	57.3		16.7	19.4	20.3	23.6				0.9	20.7	20.4	
Co. Rd. G76	EB	92+97.87	94+27.79	Rt.		6.0	129.9												49.7	38.2	1.3		16.8	
Co. Rd. G76	EB	105+38.54	108+73.46	Rt.		6.0	334.9												128.0	38.2	3.3		43.4	
Co. Rd. G76	EB	109+23.66	110+94.73	Rt.		6.0	171.1												65.4	38.2	1.7		22.2	
Co. Rd. G76	EB	112+19.69	112+50.00	Rt.		6.0	30.3												11.6	38.2	0.3		3.9	
Co. Rd. G76	WB	92+77.79	93+92.59	Rt.		6.0	114.8												43.9	38.2	1.1		14.9	
Co. Rd. G76	WB	104+77.67	106+70.31	Rt.		6.0	192.6												73.6	38.2	1.9		25.0	
Co. Rd. G76	WB	107+62.06	108+52.69	Rt.		6.0	90.6												34.6	38.2	0.9		11.7	
Co. Rd. G76	WB	109+44.43	112+50.05	Rt.		6.0	305.6												116.8	38.2	3.1		39.6	

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

(1) Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Location					Depth	Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
						Shoulder		Backslope		Bridge Berm (1)			DR-303, DR-304, or DR-305				
Line No.	Road or Lane Ident.	Station to Station		Side	(D)	Size	Length	Size	Length	Size	Type	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT	IN		FT			CY	CY	
1	I-35	34+12.00	39+12.00	RT	42.0	4.0	540.0						34+12.00	DR-304	48.6	0.2	
													39+12.00	DR-304		0.2	
2	I-35	39+12.00	241+63.00	RT	42.0	4.0	291.0						39+12.00	DR-304	26.2	0.2	Continue to Ramp B
													241+63.00	DR-304		0.2	
3	I-35	463+65.00	68+65.00	RT	42.0	4.0	540.0						463+65.00	DR-304	48.6	0.2	Continue from Ramp D
													68+65.00	DR-304		0.2	
4	I-35	68+65.00	73+65.00	RT	42.0	4.0	540.0						68+65.00	DR-304	48.6	0.2	
													73+65.00	DR-304		0.2	
5	I-35	73+65.00	75+00.00	RT	42.0	4.0	175.0						73+65.00	DR-304	15.8	0.2	
													75+00.00	DR-304		0.2	
6	I-35	29+59.62	34+59.60	LT	42.0	4.0	540.0						29+59.62	DR-304	48.6	0.2	
													34+59.60	DR-304		0.2	
7	I-35	34+59.60	39+59.62	LT	42.0	4.0	540.0						34+59.60	DR-304	48.6	0.2	Continue to Ramp C
													39+59.62	DR-304		0.2	
8	I-35	63+66.68	68+50.00	LT	42.0	4.0	523.3						63+66.68	DR-304	47.1	0.2	Coninue from Ramp A
													68+50.00	DR-304		0.2	
9	I-35	68+50.00	70+50.00	LT	42.0	4.0	240.0						68+50.00	DR-304	21.6	0.2	
													70+50.00	DR-304		0.2	
10	G76	94+78.00	348+30.00	RT	42.0	4.0	535.9						94+78.00	DR-304	48.2	0.2	Continue to Ramp C
													348+30.00	DR-304		0.2	
11	G76	249+10.00	105+40.00	RT	42.0	4.0	529.7						249+10.00	DR-304	47.7	0.2	Continue from Ramp B
													105+40.00	DR-304		0.2	
12	G76	110+40.00	112+50.00	RT	42.0	4.0	250.0						110+40.00	DR-304	22.5	0.2	
													112+50.00	DR-304		0.2	
13	G76	93+93.00	154+65.00	LT	42.0	4.0	426.8						93+93.00	DR-304	38.4	0.2	Continue to Ramp A
													154+65.00	DR-304		0.2	
14	G76	103+91.69	106+47.00	LT	42.0	4.0	295.3						103+91.69	DR-304	26.6	0.2	
													106+47.00	DR-304		0.2	
15	G76	106+47.00	110+00.00	LT	42.0	4.0	393.0						106+47.00	DR-304	35.4	0.2	
													110+00.00	DR-304		0.2	
16	G76	110+00.00	112+50.00	LT	42.0	4.0	290.0						110+00.00	DR-304	26.1	0.2	
													112+50.00	DR-304		0.2	
17	Ramp A	154+65.00	159+65.00	LT	42.0	4.0	540.0						154+65.00	DR-304	48.6	0.2	
													159+65.00	DR-304		0.2	
18	Ramp A	159+65.00	163+66.68	LT	42.0	4.0	441.7						159+65.00	DR-304	39.8	0.2	
													163+66.68	DR-304		0.2	
19	Ramp B	241+63.00	244+10.00	RT	42.0	4.0	287.0						241+63.00	DR-304	25.8	0.2	
													244+10.00	DR-304		0.2	
20	Ramp B	244+10.00	249+10.00	RT	42.0	4.0	540.0						244+10.00	DR-304	48.6	0.2	
													249+10.00	DR-304		0.2	
21	Ramp C	339+59.62	343+32.00	LT	42.0	4.0	412.4						339+59.62	DR-304	37.1	0.2	
													343+32.00	DR-304		0.2	
22	Ramp C	343+32.00	348+30.00	LT	42.0	4.0	538.0						343+32.00	DR-304	48.4	0.2	
													348+30.00	DR-304		0.2	
23	Ramp D	452+37.00	457+38.00	RT	42.0	4.0	541.0						452+37.00	DR-304	48.7	0.2	
													457+38.00	DR-304		0.2	
24	Ramp D	457+38.00	462+38.00	RT	42.0	4.0	540.0						457+38.00	DR-304	48.6	0.2	
													462+38.00	DR-304		0.2	
25	Ramp D	462+38.00	463+65.00	RT	42.0	4.0	167.0						462+38.00	DR-304	15.0	0.2	
													463+65.00	DR-304		0.2	
26	I-35	34+12.00	36+60.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
													36+60.00				Remove Existing 6" Type E Outlet
27	I-35	36+65.00	40+12.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
28	I-35	44+50.00	46+50.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
													46+50.00				Remove Existing 6" Type E Outlet
29	I-35	60+00.00	62+20.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
													62+20.00				Remove Existing 6" Type E Outlet
30	I-35	66+00.00	74+75.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
													74+75.00				Remove Existing 6" Type E Outlet
31	I-35	74+80.00	75+00.00	RT	48.0	4.0	0.0										Remove Existing Subdrain
32	I-35	29+60.00	41+00.00	LT	48.0	4.0	0.0										Remove Existing Subdrain
													41+00.00				Remove Existing 6" Type E Outlet
33	I-35	34+12.00		RT	48.0	4.0	20.0						34+12.00	DR-304	2.1	0.2	Install New outlet on Existing
34	I-35	44+50.00		RT	48.0	4.0	20.0						44+50.00	DR-304	2.1	0.2	Install New outlet on Existing
35	I-35	60+00.00		RT	48.0	4.0	20.0						60+00.00	DR-304	2.1	0.2	Install New outlet on Existing
36	I-35	75+00.00		RT	48.0	4.0	20.0						75+00.00	DR-304	2.1	0.2	Install New outlet on Existing
37	I-35	29+60.00		LT	48.0	4.0	20.0						29+60.00	DR-304	2.1	0.2	Install New outlet on Existing
Totals							10757.1		0.0					55	969.7	11.0	

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 7A WITH PCC UNLESS OTHERWISE NOTED IN REMARKS COLUMN.

NOTE:

(1) Protect all existing subdrains and subdrain outlets on I-35. Drains must remain in operational condition at all times. Field verify locations prior to beginning of project work.

(2) Abandon existing subdrains and subdrain outlets only at the time that existing drains are being replaced by the new subdrains and subdrain outlets.

(3) Repair existing 48" deep longitudinal subdrain to remain at locations of new culvert crossings, at Station 46+80 RT and Station 51+06.34 RT.

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
LORAS A. KLOSTERMANN
12171
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature 10/3/2016 Date

LORAS A. KLOSTERMANN
Printed or Typed Name
My license renewal date is December 31, 2016

Pages or sheets covered by this seal: CS.1-CS.2,Q.1-Q.7

104-9
04-21-15

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

(1) Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Location						Longitudinal Subdrain (DR-303)							Subdrain Outlet				
Line No.	Road or Lane Ident.	Station to Station		Side	Depth D	Shoulder		Backslope		Bridge Berm (1)			DR-303, DR-304, or DR-305		Porous* Backfill	Class "A"* Crushed Stone	Remarks
						Size	Length	Size	Length	Size	Type	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT	IN		FT			CY	CY	

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Class 10 Suitable Fill	30%	From on-site & off-site
Unsuitable B	30%	
Topsoil	40%	
Boulder Estimate		250 CY
Waste	0%	
Special Backfill	0%	

107-31
04-19-11

PLOWING AND SHAPING

Refer to Standard Road Plan EW-101

Station to Station		D	Remarks
		FT	
103+75.00	108+00.00	5.0	G76 East of Interchange
453+00.00	454+50.00	5.0	Ramp D near tie to G76

104-5C
04-21-15

LIST OF SUBDRAIN WORK

Refer to DR-121, DR-201, DR-203, DR-301, DR-302, DR-303, DR-304, and DR-305.

* Not a bid item

Location				Pipe			Aprons		Outlets			Connected Pipe Joints*		Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks
No.	Station to Station		Type of Installation	Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length	DR-201	DR-203	DR-304	DR-305		DR-121			Blanket			
			DR-301, DR-302, DR-303		IN	LF	No.	No.	No.	Type	No.	Type	No.	LF	CY	CY	CY	
1	159+86.00	160+82.00													113.6			Item included for ravine repair on Ramp A.
2	163+23.00	163+67.00													127.2			Item included for ravine repair on Ramp A.
3	69+79.00	70+04.00													101.4			Item included for ravine repair on Soundbound I-35.
4	246+74.00	247+29.00													173.4			Item included for ravine repair on Ramp B.
5	250+19.00	250+35.00													126.5			Item included for ravine repair on Ramp B.
															642.1			

SASF-1
01-07-15

SPECIAL ATTENTION-SLIVER FILL

Special attention should be given to Article 2107.03.C, of the current Standard Specification Series, on this project.

103-6
04-19-11

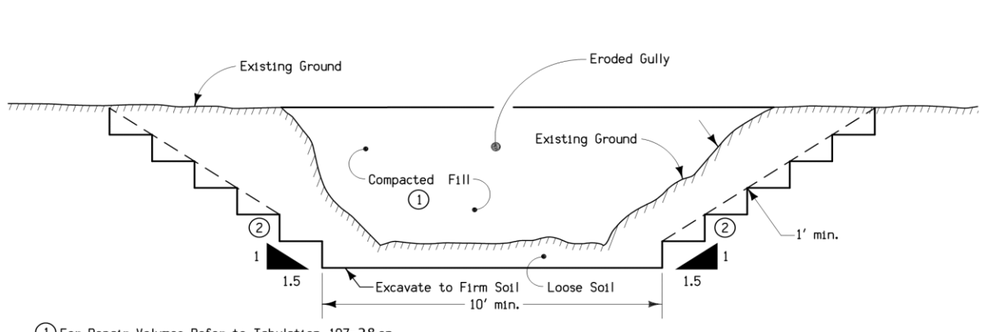
EMBANKMENT WITH MOISTURE CONTROL

Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require moisture control.

TSA 1
09-08-16

TYPICAL CROSS SECTION RAVINE REPAIR



(1) For Repair Volumes Refer to Tabulation 107-28 on Sheets T.01 to T.17.

(2) Backfill Erosion Ditches in 2' Max. Lifts.

TYPICAL CROSS SECTION
RAVINE REPAIR

SURVEY SYMBOLS

- PIP Pipe Culvert
- BLD Building or Foundation
- FWD Wood Fence
- FW Wire Fence
- TDC Tree Deciduous
- FCL Chain Link and Security Fence
- MM Mile Marker Post
- SL Speed Limit Sign
- TEV Evergeen Tree
- SHR Shrub
- SI Sign
- LUM Luminaire
- MH Utility Access (Manhole)
- WV Water Valve
- LP L.P. Tank
- PR Electic Riser Pole
- TV Satelite TV Dish
- EB Electrical Box
- MIS Miscellaneous
- GP Guard Post (Less Than 4 Posts)
- WEL Well
- SEP Septic Tank
- PPA Power Pole Co. 1
- TPD Telephone Pedestal
- CIS Cistern
- SLO Silo
- LIN Miscellaneous Line
- STP Stump
- WHU RV Water Hook Up
- TLNL Tree Line Left
- WM Wind Mill
- TFR Tree Fruit
- TLNR Tree Line Right
- BRG Bridge
- IN Storm Sewer Intake
- CUL Culvert
- LC Lot Corner
- HDG Hedge Row
- GDL Guard Rail Steel
- FLG Flag Poles
- UV Underground Utility Vault
- GPR Guard Post (4 or More Posts)
- TR Telephone Riser Pole
- RET Retaining Walls
- TLA Underground Telephone Line Co. 1
- EP Edge of Paved Roads (ML or SR)
- EG Edge of Gravel Road
- CU Back of Curb
- GU Gutter In Front of Curb
- SWK Sidewalk
- CON Concrete or A/C Slab
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- SNP Unpaved Shoulder
- RIP Rip-Rap
- EW Edge of Water
- DIK Centerline of Dike or Dam
- WLA Underground Water Line Co. 1
- GLA Underground Gas Line Co. 1
- ELA Underground Electric Line Co. 1
- FOA Underground Fiber Optic Line Co. 1

UTILITY LEGEND

Alliant Energy
Jason Hogan
4902 N. Biltmore
P.O. Box 77007
Madison, WI 53707-1007
608-458-4871
jasonhogan@alliantenergy.com

Alliant Energy
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P.O. Box 77007
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608-458-4871
jasonhogan@alliantenergy.com

Mediacom Telephone Pedestal
Shane Schrader
310 Commerce Drive
Red Oak, IA 51566-0129
712-314-1248
sschrader@mediacomcc.com

UV Underground Utility Vault

TR Telephone Riser Pole

Warren Water District (QLD2)
Stan Ripperger
Warren Water District
1204 E. Second Avenue
Indianola, IA 50125
515-962-1200
sripperger@warrenwaterdistrict.com

Alliant Energy (QLD2)
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Bonnie Clancy
Iowa Department of Transportation
307 W. Briggs
P.O. Box 587
Fairfield, IA 52556-0587
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Bonnie.Clancy@dot.iowa.gov

MediaCom Communications (QLD2)
Shane Schrader
310 Commerce Drive
Red Oak, IA 51566-0129
712-314-1248
sschrader@mediacomcc.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
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 "In conjunction with a paving project"
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
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER D.1

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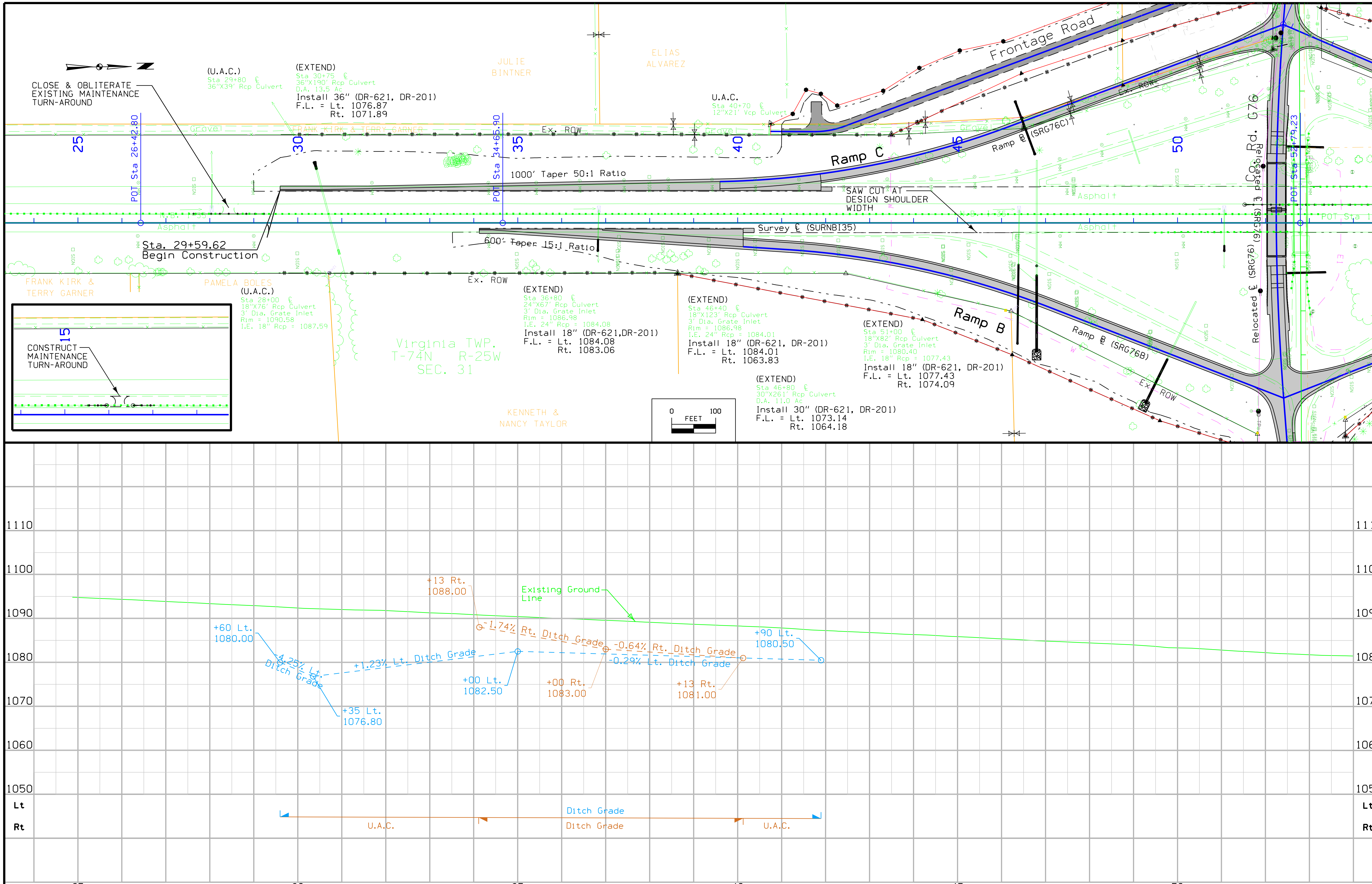
CLOSE & OBLITERATE EXISTING MAINTENANCE TURN-AROUND
(U.A.C.)
Sta 29+80 ℄
36"X39" Rcp Culvert
(EXTEND)
Sta 30+75 ℄
36"X190' Rcp Culvert
D.A. 13.5 Ac
Install 36" (DR-621, DR-201)
F.L. = Lt. 1076.87
Rt. 1071.89
JULIE BINTNER
ELIAS ALVAREZ
U.A.C.
Sta 40+70 ℄
12"X21' Vcp Culvert
Frontage Road
Ramp C
Ramp ℄ (SRG76C)
Co. Rd. G76
Relocated ℄ (SRG76)
POT Sta 26+42.80
POT Sta 34+65.90
POT Sta 52+79.23
1000' Taper 50:1 Ratio
SAW CUT AT DESIGN SHOULDER WIDTH
Ex. ROW
Gravel
Asphalt
Survey ℄ (SURNBI35)
Sta. 29+59.62
Begin Construction
600' Taper 15:1 Ratio
FRANK KIRK & TERRY GARNER
PAMELA BOLES
(U.A.C.)
Sta 28+00 ℄
18"X76' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1090.58
I.E. 18" Rcp = 1087.59
CONSTRUCT MAINTENANCE TURN-AROUND
Virginia TWP.
T-74N R-25W
SEC. 31
(EXTEND)
Sta 36+80 ℄
24"X67' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1086.98
I.E. 24" Rcp = 1084.08
Install 18" (DR-621,DR-201)
F.L. = Lt. 1084.08
Rt. 1083.06
(EXTEND)
Sta 46+40 ℄
18"X123' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1086.98
I.E. 24" Rcp = 1084.01
Install 18" (DR-621, DR-201)
F.L. = Lt. 1084.01
Rt. 1063.83
(EXTEND)
Sta 51+00 ℄
18"X82' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1080.40
I.E. 18" Rcp = 1077.43
Install 18" (DR-621, DR-201)
F.L. = Lt. 1077.43
Rt. 1074.09
Ramp B
Ramp ℄ (SRG76B)
KENNETH & NANCY TAYLOR
0 100 FEET
(EXTEND)
Sta 46+80 ℄
30"X261' Rcp Culvert
D.A. 11.0 Ac
Install 30" (DR-621, DR-201)
F.L. = Lt. 1073.14
Rt. 1064.18
+13 Rt.
1088.00
Existing Ground Line
+60 Lt.
1080.00
-1.74% Rt. Ditch Grade
-0.64% Rt. Ditch Grade
+90 Lt.
1080.50
-4.25% Lt. Ditch Grade
+1.23% Lt. Ditch Grade
-0.29% Lt. Ditch Grade
+00 Lt.
1082.50
+00 Rt.
1083.00
+13 Rt.
1081.00
+35 Lt.
1076.80
1110
1100
1090
1080
1070
1060
1050
Lt
Rt
Ditch Grade
U.A.C.
Ditch Grade
U.A.C.
25
30
35
40
45
50

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER D.2

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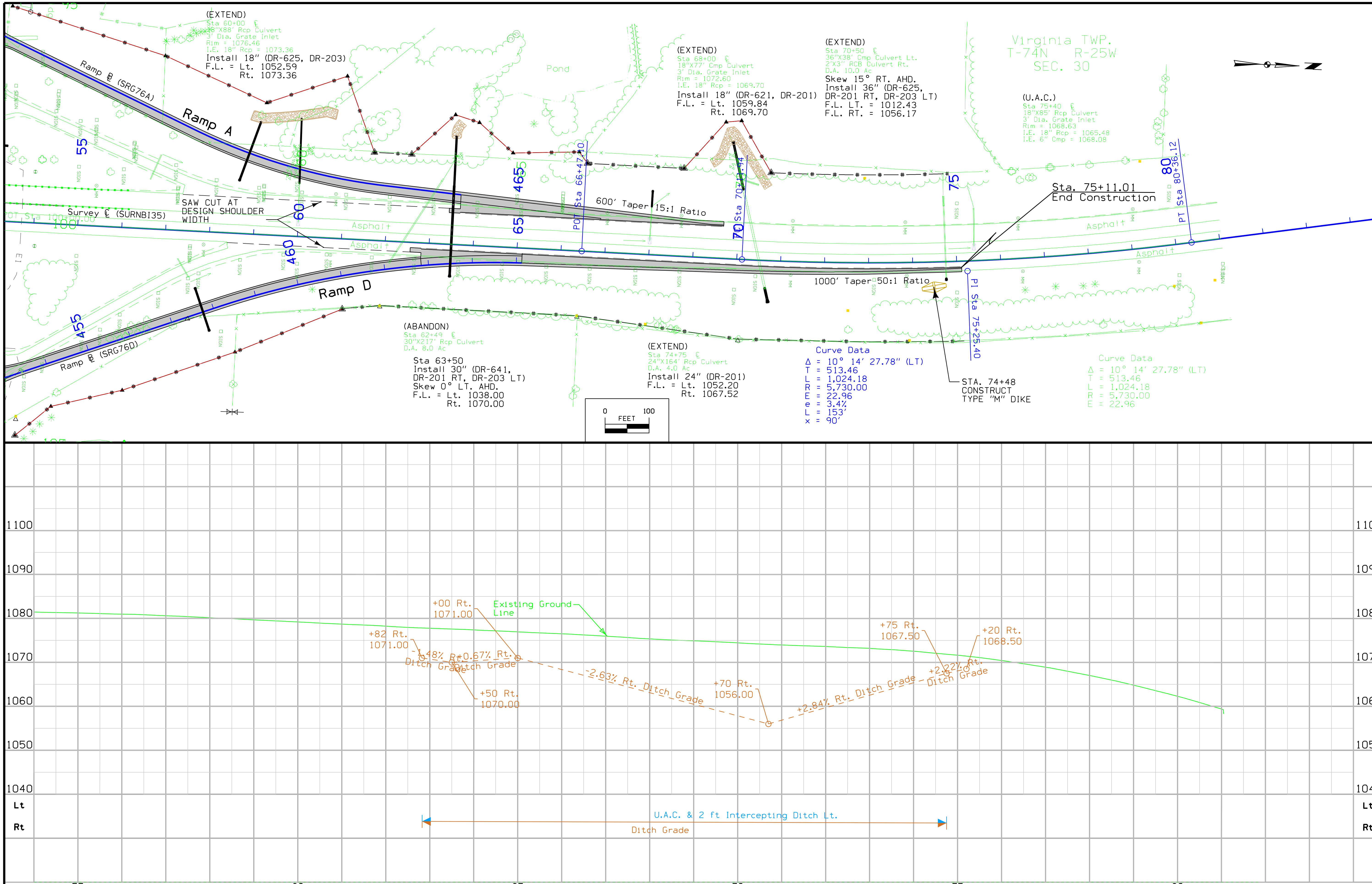

(EXTEND)
Install 18" (DR-625, DR-203)
F.L. = Lt. 1052.59
Rt. 1073.36
Ramp ℄ (SRG76A)
Ramp A
Pond
(EXTEND)
Sta 68+00 ℄
18"X77' Cmp Culvert
3' Dia. Grate Inlet
Install 18" (DR-621, DR-201)
F.L. = Lt. 1059.84
Rt. 1069.70
(EXTEND)
Sta 70+50 ℄
36"X38' Cmp Culvert Lt.
2'X3' RCB Culvert Rt.
D.A. 10.0 Ac
Skew 15° RT. AHD.
Install 36" (DR-625, DR-201 RT, DR-203 LT)
F.L. LT. = 1012.43
F.L. RT. = 1056.17
Virginia TWP.
T-74N R-25W
SEC. 30
(U.A.C.)
Sta 75+40 ℄
18"X85' Rcp Culvert
3' Dia. Grate Inlet
SAW CUT AT DESIGN SHOULDER WIDTH
Survey ℄ (SURNBI35)
POT Sta 66+47.10
600' Taper 15:1 Ratio
Asphalt
Sta. 75+11.01
End Construction
PT Sta 80+36.12
1000' Taper 50:1 Ratio
PI Sta 75+25.40
Ramp D
Ramp ℄ (SRG76D)
(ABANDON)
Sta 62+49 ℄
30"X217' Rcp Culvert
D.A. 8.0 Ac
Sta 63+50
Install 30" (DR-641, DR-201 RT, DR-203 LT)
Skew 0° LT. AHD.
F.L. = Lt. 1038.00
Rt. 1070.00
(EXTEND)
Sta 74+75 ℄
24"X164' Rcp Culvert
D.A. 4.0 Ac
Install 24" (DR-201)
F.L. = Lt. 1052.20
Rt. 1067.52
Curve Data
Δ = 10° 14' 27.78" (LT)
T = 513.46
L = 1,024.18
R = 5,730.00
E = 22.96
e = 3.4%
L = 153'
x = 90'
STA. 74+48
CONSTRUCT
TYPE "M" DIKE
Curve Data
Δ = 10° 14' 27.78" (LT)
T = 513.46
L = 1,024.18
R = 5,730.00
E = 22.96
0 100
FEET
55 60 65 70 75 80
455 460 465
1100 1090 1080 1070 1060 1050 1040
+00 Rt.
1071.00
Existing Ground Line
+82 Rt.
1071.00
-1.48% Rt. Ditch Grade
+0.67% Rt. Ditch Grade
+50 Rt.
1070.00
-2.63% Rt. Ditch Grade
+70 Rt.
1056.00
+2.84% Rt. Ditch Grade
+75 Rt.
1067.50
+20 Rt.
1068.50
+2.22% Rt. Ditch Grade
Lt
Rt
U.A.C. & 2 ft Intercepting Ditch Lt.
Ditch Grade

FILE NO. 30981 | ENGLISH | DESIGN TEAM IaDOT\SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER D.3

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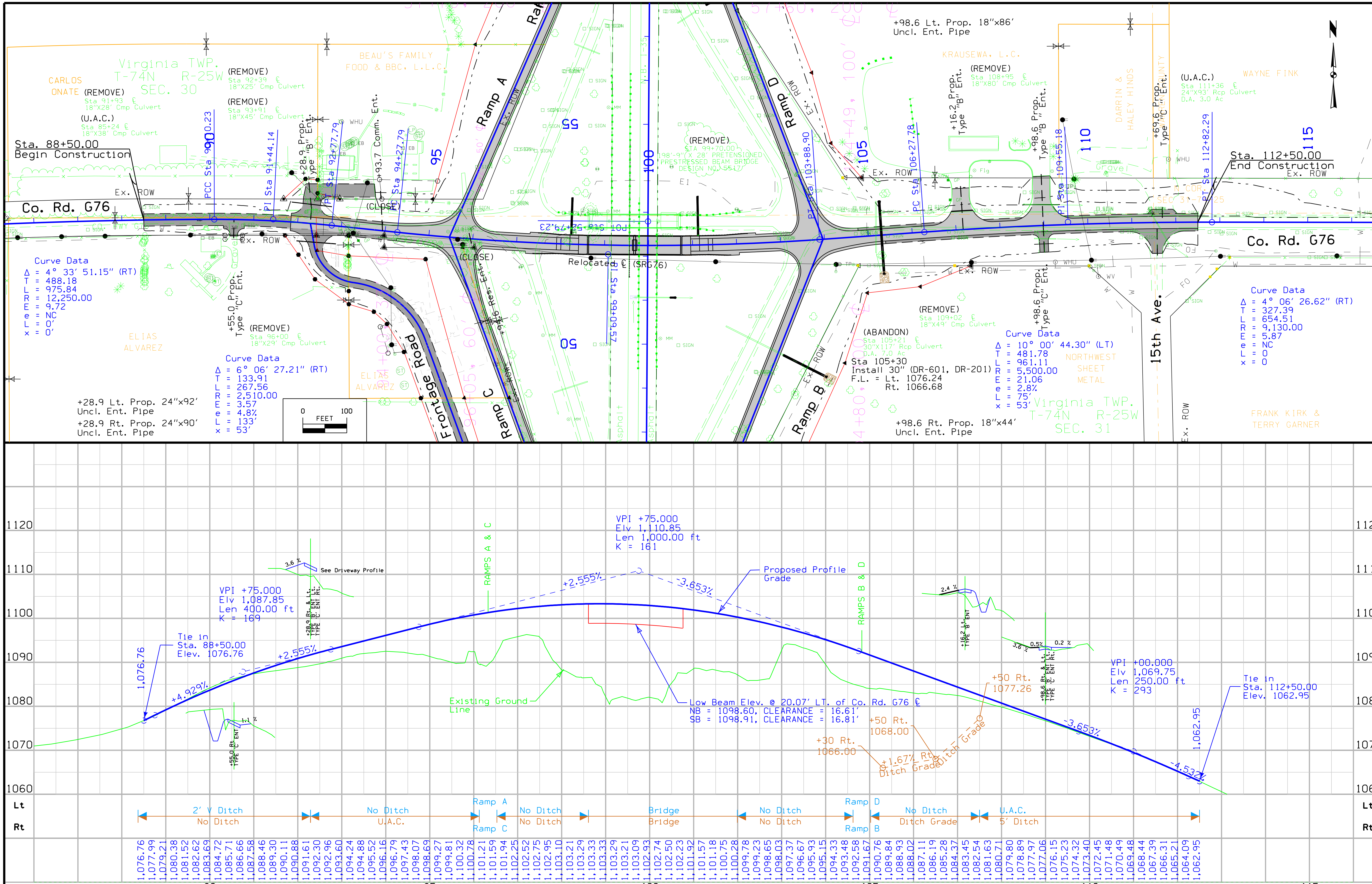

Sta. 88+50.00
Begin Construction
Co. Rd. G76
Ex. ROW
Virginia TWP.
T-74N R-25W
SEC. 30
CARLOS ONATE
(REMOVE)
(U.A.C.)
BEAU'S FAMILY FOOD & BBC. L.L.C.
Ramp A
Ramp D
Ramp C
Ramp B
Frontage Road
(CLOSE)
Relocated ℄ (SR676)
KRAUSEWA, L.C.
DARRIN & HALEY HINDS
WAYNE FINK
Sta. 112+50.00
End Construction
+98.6 Lt. Prop. 18"x86' Uncl. Ent. Pipe
+98.6 Rt. Prop. 18"x44' Uncl. Ent. Pipe
+28.9 Lt. Prop. 24"x92' Uncl. Ent. Pipe
+28.9 Rt. Prop. 24"x90' Uncl. Ent. Pipe
Curve Data
Δ = 4° 33' 51.15" (RT)
T = 488.18
L = 975.84
R = 12,250.00
E = 9.72
e = NC
L = 0'
x = 0'
Curve Data
Δ = 6° 06' 27.21" (RT)
T = 133.91
L = 267.56
R = 2,510.00
E = 3.57
e = 4.8%
L = 133'
x = 53'
Curve Data
Δ = 10° 00' 44.30" (LT)
T = 481.78
L = 961.11
R = 5,500.00
E = 21.06
e = 2.8%
L = 75'
x = 53'
Curve Data
Δ = 4° 06' 26.62" (RT)
T = 327.39
L = 654.51
R = 9,130.00
E = 5.87
e = NC
L = 0
x = 0
Sta 105+30
Install 30" (DR-601, DR-201)
F.L. = Lt. 1076.24
Rt. 1066.68
(ABANDON)
ELIAS ALVAREZ
NORTHWEST SHEET METAL
Virginia TWP.
T-74N R-25W
SEC. 31
15th Ave.
FRANK KIRK & TERRY GARNER
FEET
0 100
VPI +75.000
Elv 1,087.85
Len 400.00 ft
K = 169
VPI +75.000
Elv 1,110.85
Len 1,000.00 ft
K = 161
VPI +00.000
Elv 1,069.75
Len 250.00 ft
K = 293
Tie in
Sta. 88+50.00
Elev. 1076.76
Tie in
Sta. 112+50.00
Elev. 1062.95
+4.929%
+2.555%
-3.653%
-4.532%
Proposed Profile Grade
Existing Ground Line
Low Beam Elev. @ 20.07' LT. of Co. Rd. G76 ℄
NB = 1098.60, CLEARANCE = 16.61'
SB = 1098.91, CLEARANCE = 16.81'
RAMPS A & C
RAMPS B & D
See Driveway Profile
+50 Rt. 1077.26
+50 Rt. 1068.00
+30 Rt. 1066.00
+1.67% Rt. Ditch Grade
Ditch Grade
1120
1110
1100
1090
1080
1070
1060
Lt
Rt
2' V Ditch
No Ditch
U.A.C.
Bridge
Ditch Grade
5' Ditch
90
95
100
105
110
115

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER E.1

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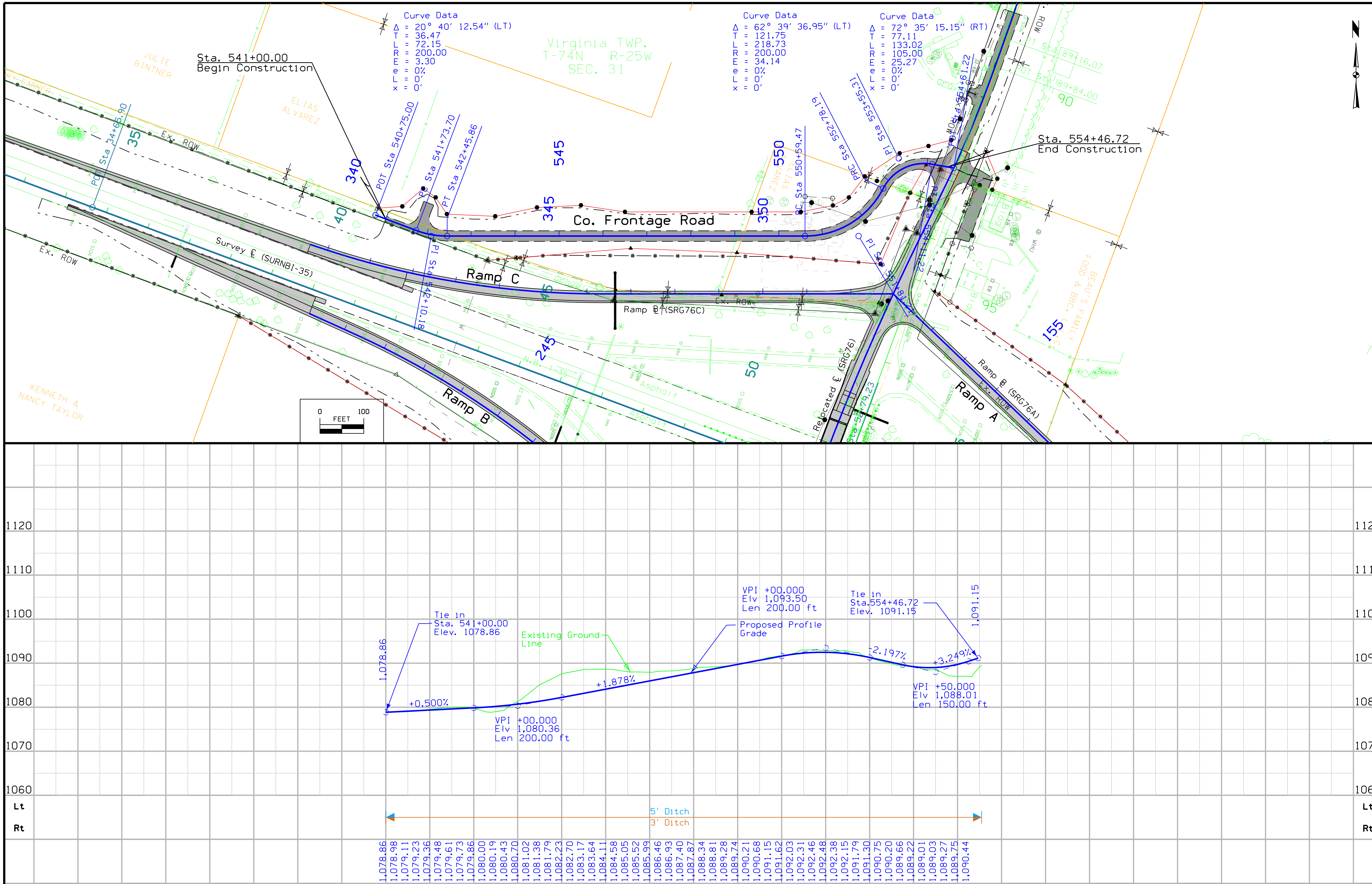
Curve Data
Δ = 20° 40' 12.54" (LT)
T = 36.47
L = 72.15
R = 200.00
E = 3.30
e = 0%
L = 0'
x = 0'
Curve Data
Δ = 62° 39' 36.95" (LT)
T = 121.75
L = 218.73
R = 200.00
E = 34.14
e = 0%
L = 0'
x = 0'
Curve Data
Δ = 72° 35' 15.15" (RT)
T = 77.11
L = 133.02
R = 105.00
E = 25.27
e = 0%
L = 0'
x = 0'
Virginia TWP.
T-74N R-25W
SEC. 31
Sta. 541+00.00
Begin Construction
Sta. 554+46.72
End Construction
Co. Frontage Road
Ramp C
Ramp B
Ramp A
Survey ℄ (SURNBI-35)
Ramp B ℄ (SRG76C)
Ramp B ℄ (SRG76A)
Relocated ℄ (SRG76)
Ex. ROW
JULIE BINTNER
ELIAS ALVAREZ
KENNETH & NANCY TAYLOR
BEAU'S FAMILY FOOD & BBQ
POT Sta 540+75.00
PC Sta 541+73.70
PT Sta 542+45.86
PC Sta 550+59.47
PI Sta 542+10.18
POT Sta 34+65.90
0 FEET 100
Tie in
Sta. 541+00.00
Elev. 1078.86
Existing Ground Line
VPI +00.000
Elv 1,080.36
Len 200.00 ft
VPI +00.000
Elv 1,093.50
Len 200.00 ft
Proposed Profile Grade
Tie in
Sta.554+46.72
Elev. 1091.15
VPI +50.000
Elv 1,088.01
Len 150.00 ft
+0.500%
+1.878%
-2.197%
+3.249%
1120
1110
1100
1090
1080
1070
1060
Lt
Rt
5' Ditch
3' Ditch
1,078.86
1,078.98
1,079.11
1,079.23
1,079.36
1,079.48
1,079.61
1,079.73
1,079.86
1,080.00
1,080.19
1,080.43
1,080.70
1,081.02
1,081.38
1,081.79
1,082.23
1,082.70
1,083.17
1,083.64
1,084.11
1,084.58
1,085.05
1,085.52
1,085.99
1,086.46
1,086.93
1,087.40
1,087.87
1,088.34
1,088.81
1,089.28
1,089.74
1,090.21
1,090.68
1,091.15
1,091.62
1,092.03
1,092.31
1,092.46
1,092.48
1,092.38
1,092.15
1,091.79
1,091.30
1,090.75
1,090.20
1,089.66
1,089.22
1,089.01
1,089.03
1,089.27
1,089.75
1,090.44
545
550
555

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER E.2

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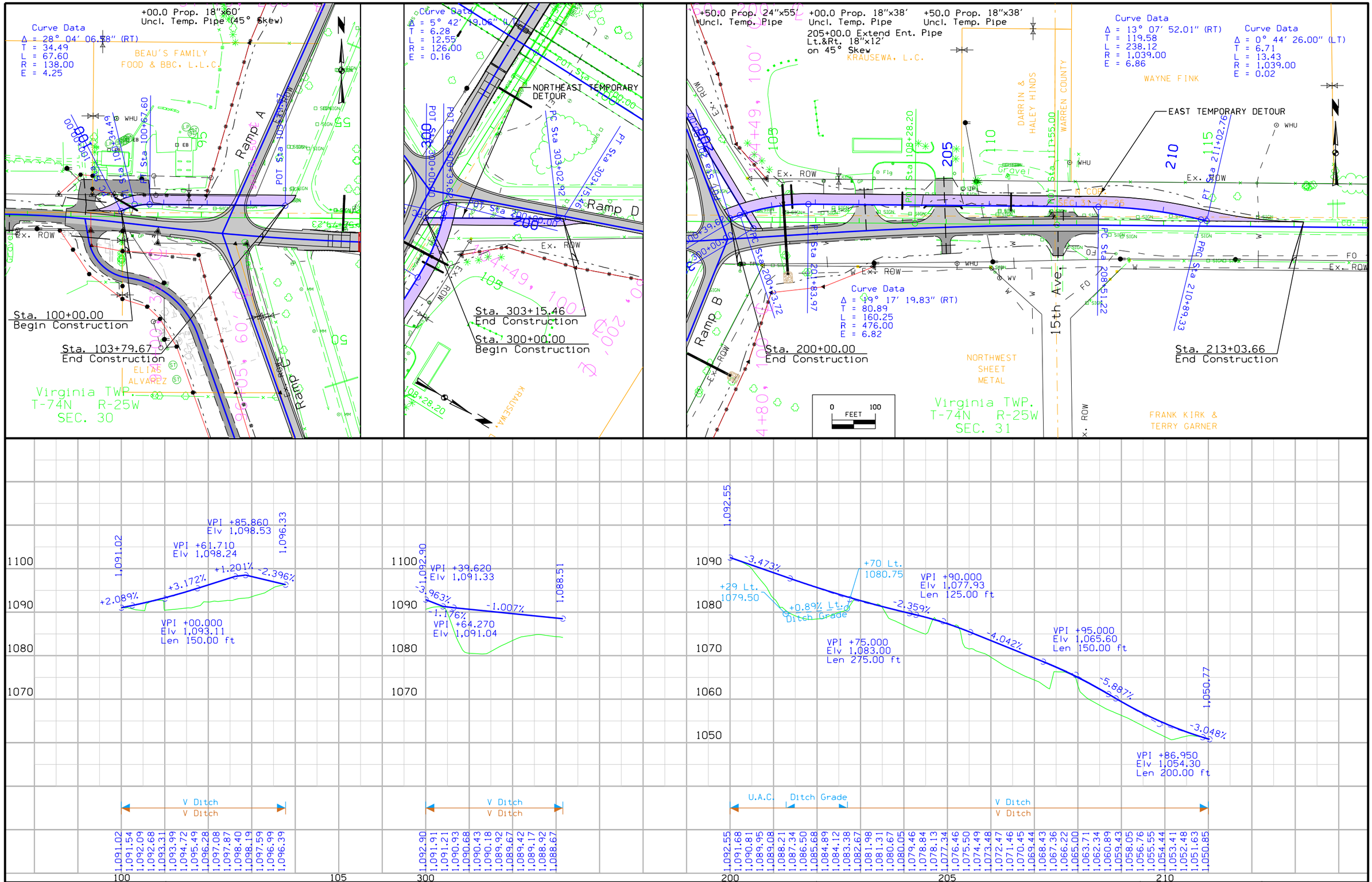

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER F.1

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Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge replacement. This project is a complete field survey for the digital terrain model.

Vertical Control

Vertical control for this survey is based on NAVD88 datum relative to a previous IDOT GPS control survey. Elevations were transferred to the project at Pt. 100 and 101 using Robotic Total Station observations from IDOT control points G036 and G037. Additional IDOT control points G034, G035, and G038 were used as checks along the project corridor.

Horizontal Control

The project coordinate system used for the survey is Modified Iowa State Plane South in US feet units. This survey control is relative to IDOT control points G034, G035, G036, G037, and G038. Schemmer control points 100 and 101 were set using Robotic Total Station off of IDOT G036 and G037. A GPS calibration was then performed holding Schemmer control points 100 and 101 and IDOT control points G036, G037, and G038. The calibration was based at control point 105, N=428919.151, E=1562868.089, Elevation=1085.23.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. IN-I-IG-35-2(8)43 and recovered IDOT control points G035 & G039. Survey stationing was held at P.I. Station 75+25.40 (G039) and stationed on tangent back to P.I. Station 0+00.26 this survey (G035), as-built P.I. Station 524+01.60. The horizontal alignment was stationed ahead and back of P.I. Station 75+25.40 without equation.

Survey stationing relates to plan stationing as follows:

POT Sta. 26+42.80 As-built Plans No. IN-I-IG-35-2(8)43
= Survey POT Sta. 26+42.80

POT Sta. 34+65.90 As-built Plans No. IN-I-IG-35-2(8)43
= Survey POT Sta. 34+65.90

POT Sta. 52+78.60 As-built Plans No. IN-I-IG-35-2(8)43
= Survey POT Sta. 52+79.23

POT Sta. 66+47.10 As-built Plans No. IN-I-IG-35-2(8)43
= Survey POT Sta. 66+47.10

PI Sta. 75+25.40 As-built Plans No. IN-I-IG-35-2(8)43
= Survey PI Sta. 75+25.40

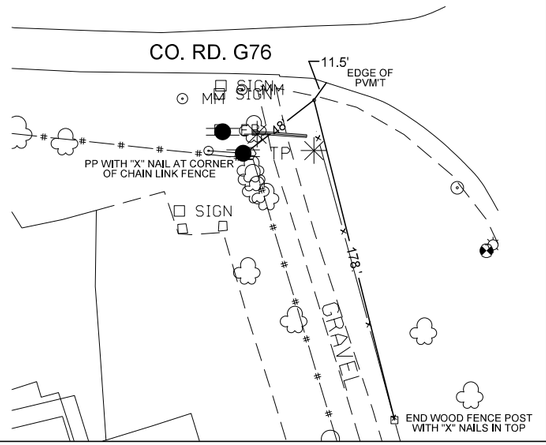
PI Sta. 87+84.60 As-built Plans No. IN-I-IG-35-2(8)43
= Survey PI Sta. 87+84.60

Geopak Alignment Chains created:
SURNBI35 INTERSTATE 35 NORTHBOUND
SURG76 COUNTY ROAD G76 MAINLINE
SURRMPB RAMP B
SURRMPC RAMP C
SURRMPD RAMP D
SURRMPE RAMP E

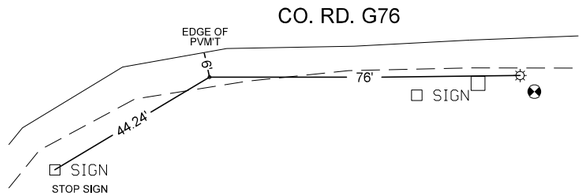
VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
G034	419944.1900	1561445.2400	1101.7700	Off Chain	Off Chain	BM	FD. 5/8" REBAR 6" DEEP ALONG E. SHOULDER ADJACENT TO DELINEATOR POST #42.15, 5.7' W. OF DELINEATOR POST #42.15, 3' E. OF E. SHOULDER OF NB LANES I-35.
G035	423550.1900	1562190.8600	1094.1000	Off Chain	Off Chain	BM	FD. 3/4" REBAR 2.0' DEEP. È20' AHEAD OF WARREN COUNTY SIGN, 6' E. OF E. SHOULDER OF NB LANES I-35, È13' BACK OF DELINEATOR POST # 42.85.
G036	426449.7000	1562256.0100	1091.1500	28+99.69	24.51	BM	FD. 5/8" REBAR 6" DEEP ALONG E SHOULDER AND ADJACENT TO DELINEATOR POST #43.40, 6" W. OF DELINEATOR POST #43.40, 2.5' E. OF E. SHOULDER OF NB LANES I-35.
G037	428282.2900	1562283.0300	1082.8200	47+32.48	25.20	BM	FD. 5/8" REBAR 6" DEEP ALONG E SHOULDER AND ADJACENT TO DELINEATOR POST #43.75, 5' W. OF DELINEATOR POST #43.75, 3.8' E. OF E. SHOULDER OF NB LANES I-35, 46.5' AHEAD OF EXIT #43 RAMP SIGN.
G038	430862.8000	1562350.5100	1073.4700	73+10.58	63.21	BM	FD. FENO MONUMENT 8" DEEP ALONG TOP OF E. BACKSLOPE, 3' AHEAD AND 22' E. OF SPEED LIMIT SIGN, 76' BACK OF DELINEATOR POST #44.25, 41' E. OF E. SHOULDER OF NB LANES I-35.

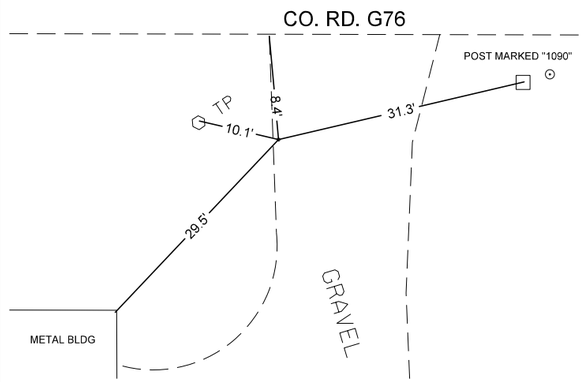
CP STA 52+53.08, -383.15 (SURNBI35)
CP No. 100, Set 5/8" REBAR, Set 250 FT WEST OF CO. RD. G76 BRIDGE
N=428807.9540, E=1561882.9400



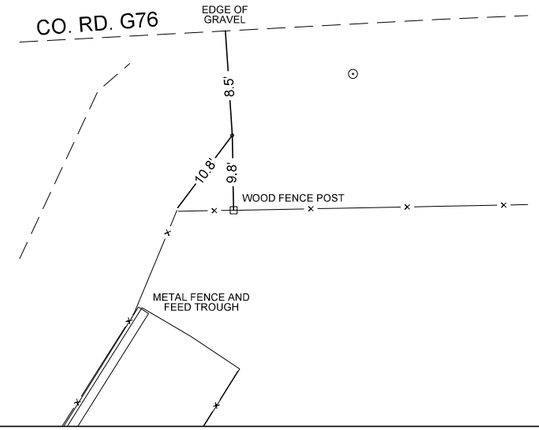
CP STA 52+57.85, 421.84 (SURNBI35)
CP No. 101, Set 5/8" REBAR, Set 350 FT EAST OF CO. RD. G76 BRIDGE
N=428801.1630, E=1562687.8830



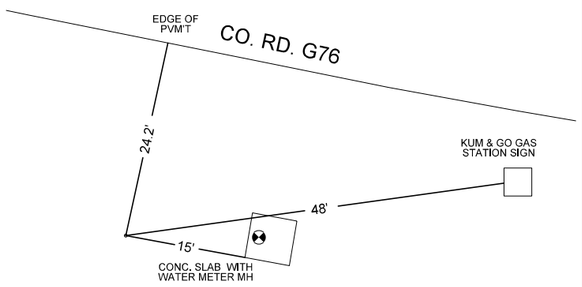
CP STA 52+56.21, -950.41 (SURNBI35)
CP No. 102, Set 5/8" REBAR, Set 818 FT WEST OF CO. RD. G76 BRIDGE
N=428819.1850, E=1561315.7420



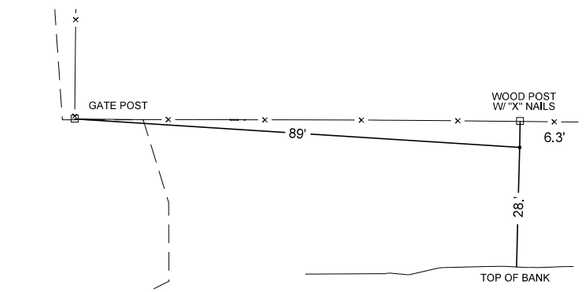
CP STA 52+33.78, -1608.02 (SURNBI35)
CP No. 103, Set 5/8" REBAR, Set 1,840 FT WEST OF CO. RD. G76 BRIDGE
N=428806.1880, E=1560657.9160



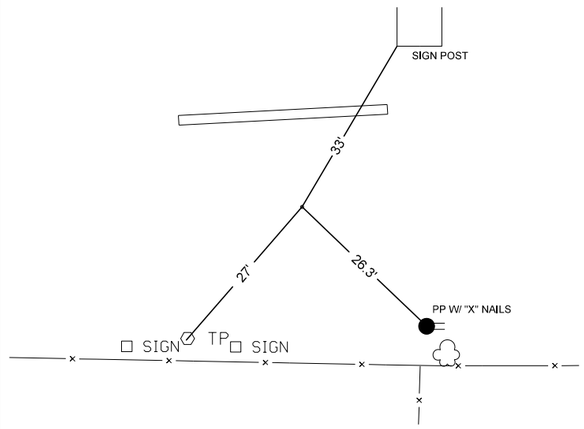
CP STA 53+78.37, 600.30 (SURNBI35)
CP No. 105, Set 5/8" REBAR, Set 540 FT EAST OF CO. RD. G76 BRIDGE
N=428919.1490, E=1562868.0890



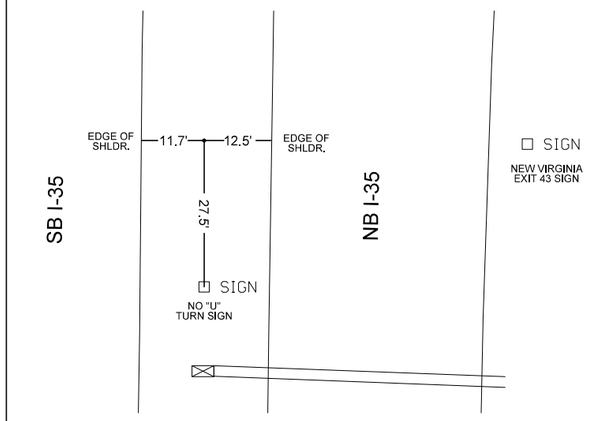
CP STA 53+79.56,1287.65 (SURNBI35)
CP No. 106, Set 5/8" REBAR, Set 1,220 FT EAST OF CO. RD. G76 BRIDGE
N=428910.5140, E=1563555.3780



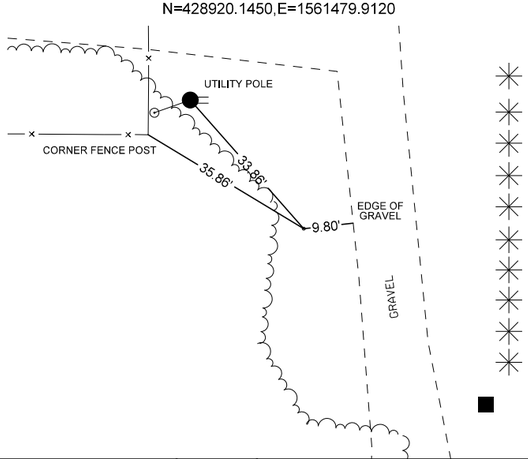
CP STA 52+33.66, 2466.62 (SURNBI35)
CP No. 107, Set 5/8" REBAR, Set 2,400 FT EAST OF CO. RD. G76 BRIDGE
N=428747.7190, E=1564732.1410



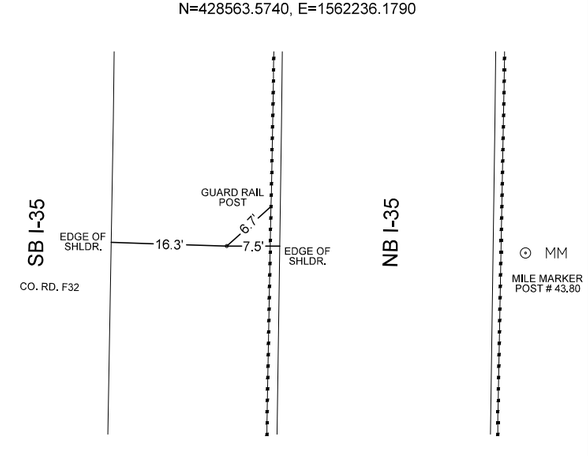
CP STA 37+27.81, -31.62 (SURNBI35)
CP No. 108, Set 5/8" REBAR, Set 1,554 FT SOUTH OF CO. RD. G76 BRIDGE
N=427277.8060, E=1562212.6070



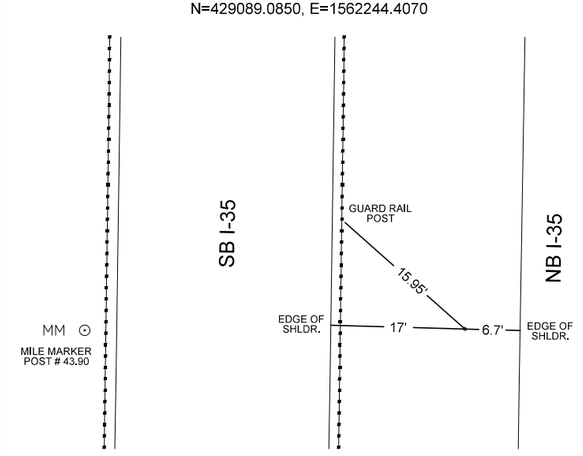
CP STA 53+59.50, -787.74 (SURNBI35)
CP No. 109, Set 5/8" REBAR, Set 650 FT WEST OF CO. RD. G76 BRIDGE
N=428920.1450,E=1561479.9120



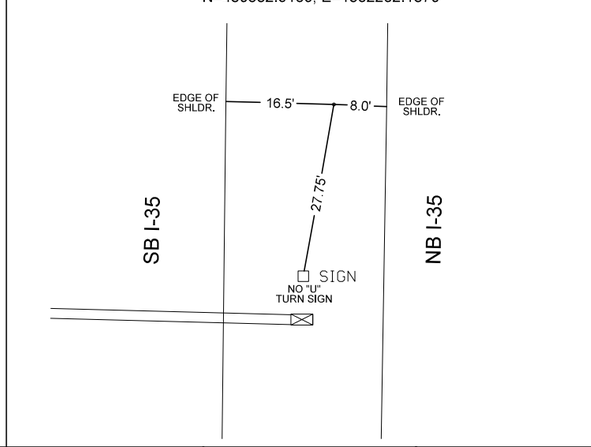
CP STA 50+13.78, -24.14 (SURNBI35)
CP No. 110, Set 5/8" REBAR, Set 265 FT SOUTH OF CO. RD. G76 BRIDGE
N=428563.5740, E=1562236.1790



CP STA 55+39.82, -25.90 (SURNBI35)
CP No. 111, Set 5/8" REBAR, Set 260 FT NORTH OF CO. RD. G76 BRIDGE
N=429089.0850, E=1562244.4070



CP STA 68+33.31, -26.49 (SURNBI35)
CP No. 112, Set 5/8" REBAR, Set 1,550 FT NORTH OF CO. RD. G76 BRIDGE
N=430382.9160, E=1562262.1870



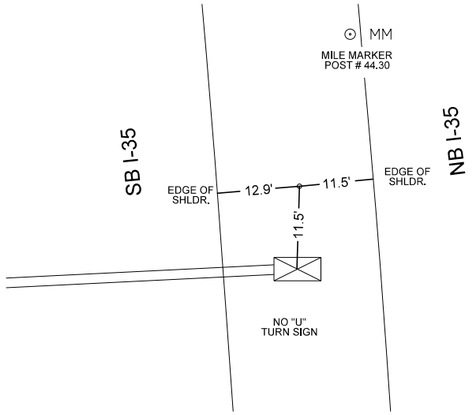
FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER G.2

3:54:46 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtG01.sht

CP STA 75+53.90, -29.62 (SURNBI35)

CP No. 113, Set 5/8" REBAR, Set 2,270 FT NORTH OF CO. RD. G76 BRIDGE

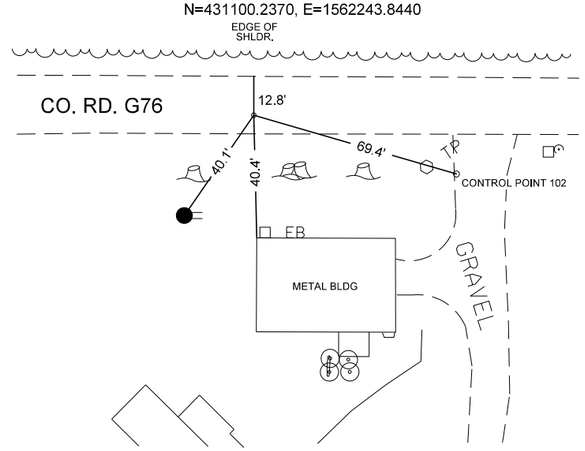
N=431100.2370, E=1562243.8440



CP STA 52+74.24, -1017.60 (SURNBI35)

CP No. 115061, Found 5/8" REBAR, Found 885' WEST OF CO. RD. G76 BRIDGE

N=431100.2370, E=1562243.8440



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER G.3

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ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
INTERSTATE 35																			
20000		0+00.26	423,550.19	1,562,190.86															
20001		26+42.80	426,192.46	1,562,228.69															
20002		34+65.90	427,015.47	1,562,240.47															
20003		52+79.23	428,828.61	1,562,266.43															
20004		66+47.10	430,196.35	1,562,286.01															
MLNBI35-1								70+11.94	430,561.15	1,562,291.23	75+25.40	431,074.56	1,562,298.58	80+36.12	431,581.09	1,562,214.53			
20005		87+84.60	432,319.47	1,562,092.02															
20006		132+62.23	436,736.71	1,561,359.10															
CO. RD. G76																			
30000		77+92.33	428,789.49	1,560,064.06															
SRG76-1								80+34.39	428,807.40	1,560,305.45	85+22.57	428,843.54	1,560,792.29	90+10.23	428,840.82	1,561,280.46			
SRG76-2								90+10.23	428,840.82	1,561,280.46	91+44.14	428,840.08	1,561,414.37	92+77.79	428,825.09	1,561,547.43			
SRG76-3								94+27.79	428,808.30	1,561,696.49	99+09.57	428,754.37	1,562,175.24	103+88.90	428,784.50	1,562,656.08			
SRG76-4								106+27.78	428,799.44	1,562,894.50	109+55.18	428,819.92	1,563,221.25	112+82.29	428,816.94	1,563,548.63			
30001		126+06.28	428,804.88	1,564,872.56															
RAMP A																			
34000		151+80.04	428,796.30	1,561,814.48															
SRG76A-1								157+36.44	429,304.25	1,562,041.55	159+66.11	429,513.93	1,562,135.28	161+91.37	429,742.85	1,562,153.84			
34001		163+66.68	429,917.59	1,562,168.00															
RAMP B																			
35000		240+12.53	427,561.28	1,562,302.29															
SRG76B-1								241+18.78	427,667.18	1,562,310.87	244+24.24	427,971.65	1,562,335.55	247+25.02	428,254.87	1,562,449.99			
35001		252+96.81	428,785.01	1,562,664.21															
RAMP C																			
SRG76C-1								339+59.62	427,510.49	1,562,153.55	342+99.54	427,850.41	1,562,151.62	346+33.02	428,170.59	1,562,037.49			
36000		352+97.28	428,796.30	1,561,814.48															
RAMP D																			
37000		451+81.36	428,785.01	1,562,664.21															
SRG76D-1								458+07.83	429,371.79	1,562,444.76	461+63.71	429,705.13	1,562,320.10	465+12.23	430,061.01	1,562,318.07			
PUBLIC ACCESS																			
3800		540+75.00	427,627.49	1,562,041.02															
SRG76AR-1								541+73.70	427,726.18	1,562,042.83	542+10.18	427,762.65	1,562,043.50	542+45.86	427,797.00	1,562,031.26			
SRG76AR-2								550+59.47	428,563.39	1,561,758.10	551+81.21	428,678.07	1,561,717.23	552+78.19	428,694.43	1,561,596.59			
SRG76AR-3								552+78.19	428,694.43	1,561,596.59	553+55.31	428,704.79	1,561,520.17	554+11.22	428,780.80	1,561,507.19			
3801		554+61.22	428,830.09	1,561,498.78															
WEST DETOUR																			
SRG76DTW-1								100+00.00	428,847.46	1,561,582.33	100+34.49	428,863.41	1,561,612.92	100+67.60	428,863.09	1,561,647.41			
39000		103+79.67	428,860.20	1,561,959.46															
EAST DETOUR																			
4000		200+00.00	428,833.21	1,562,669.40															
SRG76DTE-1								200+23.72	428,840.32	1,562,692.03	201+04.61	428,866.34	1,562,768.62	201+83.97	428,865.58	1,562,849.51			
SRG76DTE-2								208+51.22	428,859.40	1,563,516.73	209+70.80	428,858.29	1,563,636.31	210+89.33	428,830.04	1,563,752.51			
SRG76DTE-3								210+89.33	428,830.04	1,563,752.51	210+96.05	428,828.46	1,563,759.03	211+02.76	428,826.96	1,563,765.58			
NORTHEAST DETOUR																			
4100		300+00.00	428,809.90	1,562,723.27															
4101		300+39.62	428,843.86	1,562,702.87															
SRG76DTNE-1								303+02.92	429,069.57	1,562,567.28	303+09.20	429,074.95	1,562,564.05	303+15.46	429,079.98	1,562,560.30			
SRG76A_RET_1																			
SRG76A_RET_1-1								10+00.00	428,801.15	1,561,928.70	10+17.67	428,802.39	1,561,911.08	10+34.97	428,809.59	1,561,894.94			
SRG76A_RET_1-2								10+34.97	428,809.59	1,561,894.94	10+72.50	428,824.88	1,561,860.67	10+99.36	428,862.05	1,561,865.78			
SRG76A_RET_1-3								10+99.36	428,862.05	1,561,865.78	11+13.65	428,876.21	1,561,867.73	11+27.74	428,889.25	1,561,873.56			
SRG76A_RET_2																			
SRG76A_RET_2-1								20+00.00	428,826.15	1,561,663.08	20+59.12	428,819.53	1,561,721.83	21+17.86	428,824.51	1,561,780.74			
SRG76A_RET_2-2								21+17.86	428,824.51	1,561,780.74	21+58.34	428,827.92	1,561,821.08	21+92.82	428,862.44	1,561,842.22			
SRG76A_RET_2-3								21+92.82	428,862.44	1,561,842.22	22+05.75	428,873.47	1,561,848.98	22+18.65	428,885.28	1,561,854.26			
SRG76B_RET_3																			
SRG76B_RET_3-1								30+00.00	428,660.84	1,562,596.77	30+19.42	428,678.85	1,562,604.05	30+38.83	428,697.23	1,562,610.32			
SRG76B_RET_3-2								30+38.83	428,697.23	1,562,610.32	30+84.89	428,740.82	1,562,625.18	31+13.27	428,759.21	1,562,582.95			
SRG76B_RET_3-3								31+13.27	428,759.21	1,562,582.95	31+29.44	428,765.66	1,562,568.12	31+45.06	428,764.96	1,562,551.96			

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SRG76B_RET_4																			
SRG76B_RET_4-1								40+00.00	428,699.73	1,562,629.75	40+12.94	428,711.73	1,562,634.59	40+25.84	428,723.00	1,562,640.94			
SRG76B_RET_4-2								40+25.84	428,723.00	1,562,640.94	40+59.59	428,752.40	1,562,657.52	40+89.72	428,761.05	1,562,690.15			
SRG76B_RET_4-3								40+89.72	428,761.05	1,562,690.15	41+48.84	428,776.19	1,562,747.30	42+07.58	428,779.89	1,562,806.30			
SRG76C_RET_3																			
SRG76C_RET_3-1								30+00.00	428,641.19	1,561,869.76	30+59.12	428,696.87	1,561,849.92	31+17.86	428,747.62	1,561,819.58			
SRG76C_RET_3-2								31+17.86	428,747.62	1,561,819.58	31+51.24	428,776.27	1,561,802.45	31+81.11	428,784.25	1,561,770.04			
SRG76C_RET_3-3								31+81.11	428,784.25	1,561,770.04	31+94.05	428,787.34	1,561,757.47	32+06.95	428,788.79	1,561,744.62			
33031		32+56.96	428,794.39	1,561,694.92															
SRG76C_RET_4																			
SRG76C_RET_4-1								40+00.00	428,604.83	1,561,899.71	40+64.33	428,665.43	1,561,878.11	41+28.16	428,729.22	1,561,869.85			
SRG76C_RET_4-2								41+28.16	428,729.22	1,561,869.85	41+57.66	428,758.47	1,561,866.06	41+81.45	428,775.93	1,561,889.83			
SRG76D_RET_1																			
SRG76D_RET_1-1								10+00.00	428,804.03	1,562,743.81	10+12.94	428,803.22	1,562,730.89	10+25.84	428,804.08	1,562,717.99			
SRG76D_RET_1-2								10+25.84	428,804.08	1,562,717.99	10+66.97	428,806.82	1,562,676.94	11+01.83	428,841.79	1,562,655.29			
SRG76D_RET_1-3								11+01.83	428,841.79	1,562,655.29	11+60.95	428,892.06	1,562,624.17	12+19.69	428,947.44	1,562,603.46			
SRG76D_RET_2																			
SRG76D_RET_2-1								20+00.00	428,794.86	1,562,591.54	20+26.61	428,811.83	1,562,612.03	20+48.90	428,838.31	1,562,609.40			
SRG76D_RET_2-2								20+48.90	428,838.31	1,562,609.40	21+14.00	428,903.08	1,562,602.97	21+78.36	428,964.05	1,562,580.17			
SURNBI35																			
EA15000		0+00.26	423,550.19	1,562,190.86															
EA15001		26+42.80	426,192.46	1,562,228.69															
EA15002		34+65.90	427,015.47	1,562,240.47															
EA15003		52+79.23	428,828.61	1,562,266.43															
EA15004		66+47.10	430,196.35	1,562,286.01															
SURNBI35-1								70+11.94	430,561.15	1,562,291.23	75+25.40	431,074.56	1,562,298.58	80+36.12	431,581.09	1,562,214.53			
EA15005		87+84.60	432,319.47	1,562,092.02															
EA15006		132+62.23	436,736.71	1,561,359.10															
SURG76																			
EA15010		77+95.20	428,790.30	1,560,063.09															
SURG76-1								81+77.90	428,816.54	1,560,444.89	85+47.17	428,841.85	1,560,813.29	89+16.07	428,838.48	1,561,182.54			
EA15011		89+84.00	428,837.87	1,561,250.47															
EA15012		100+00.00	428,828.61	1,562,266.43															
EA15013		108+28.20	428,821.07	1,563,094.59															
EA15014		111+55.00	428,818.10	1,563,421.38															
EA15015		126+06.24	428,804.88	1,564,872.56															

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER G.5

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JULIE BINTNER RESIDUAL TRUST

FEE: JERET C. & CAROLINE E. KOENIG
C.P.: ELIAS ALVAREZ (2)

(U.A.C.)
Sta 29+80 ℄
36"X39' Rcp Culvert

(EXTEND)
Sta 30+75 ℄
36"X190' Rcp Culvert
D.A. 13.5 Ac
Install 36" 1301 RF-3
F.L. = Lt. 1076.87
Rt. 1071.89

U.A.C.
Sta 40+70 ℄
12"X21' Vcp Culvert

Ex. ROW

Gravel

POT Sta 26+42.90

POT Sta 34+65.90

1000' Taper 50:1 Ratio

Ramp C

Ramp B (SRG76C)

N.B. I-35
Asphalt

Sta. 29+59.62
Begin Construction

600' Taper 15:1 Ratio

SURVEY ℄ (SURNBI35)

(U.A.C.)
Sta 28+00 ℄
18"X76' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1090.58
I.E. 18" Rcp = 1087.59

(EXTEND)
Sta 36+80 ℄
24"X67' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1086.98
I.E. 24" Rcp = 1084.08
Install 18" 1301 RF-3
F.L. = Lt. 1084.08
Rt. 1083.06

38+63±P
℄115'

(EXTEND)
Sta 46+40 ℄
18"X123' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1086.98
I.E. 24" Rcp = 1084.01
Install 18" 1301 RF-3
F.L. = Lt. 1084.01
Rt. 1063.83

44+20
℄220'

(EXTEND)
Sta 46+80 ℄
30"X261' Rcp Culvert
D.A. 11.0 Ac
Install 30" 1301 RF-3
F.L. = Lt. 1073.14
Rt. 1064.18

(1) KENNETH E. & NANCY TAYLOR

46+24±P
℄300'

(EXTEND)
Sta 51+80 ℄
18"X82' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1080.40
I.E. 18" Rcp = 1077.43
Install 18" 1301 RF-3
F.L. = Lt. 1077.43
Rt. 1074.09

49+60
℄450'

(3) NORTHWEST SHEET METAL, INC.

+98.6 Rt. Prop. 18"x44' Uncl. Ent. Pipe

51+20
℄500'

51+35
℄620'

51+83±P
℄735'

RELOCATED ℄ (SRG76)

Ramp B (SRG76B)

Ex. ROW

POT Sta 52+79.23

POT Sta 100

46+45±P
℄240'

44+08±P
228'

46+45
℄340'

48+74±P
℄415'

52+17±P
℄420'

51+90
℄505'

550+60
℄90'

53+26±P
℄490'

0 FEET 100

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: GETTINGS/CUVA
ROW #: IMN-35-2(425)44- -0E-91
Plan Date: 3/27/2014
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition

C	ENGLISH	IOWA DOT	DESIGN TEAM IaDOT\Schemmer	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER H.1

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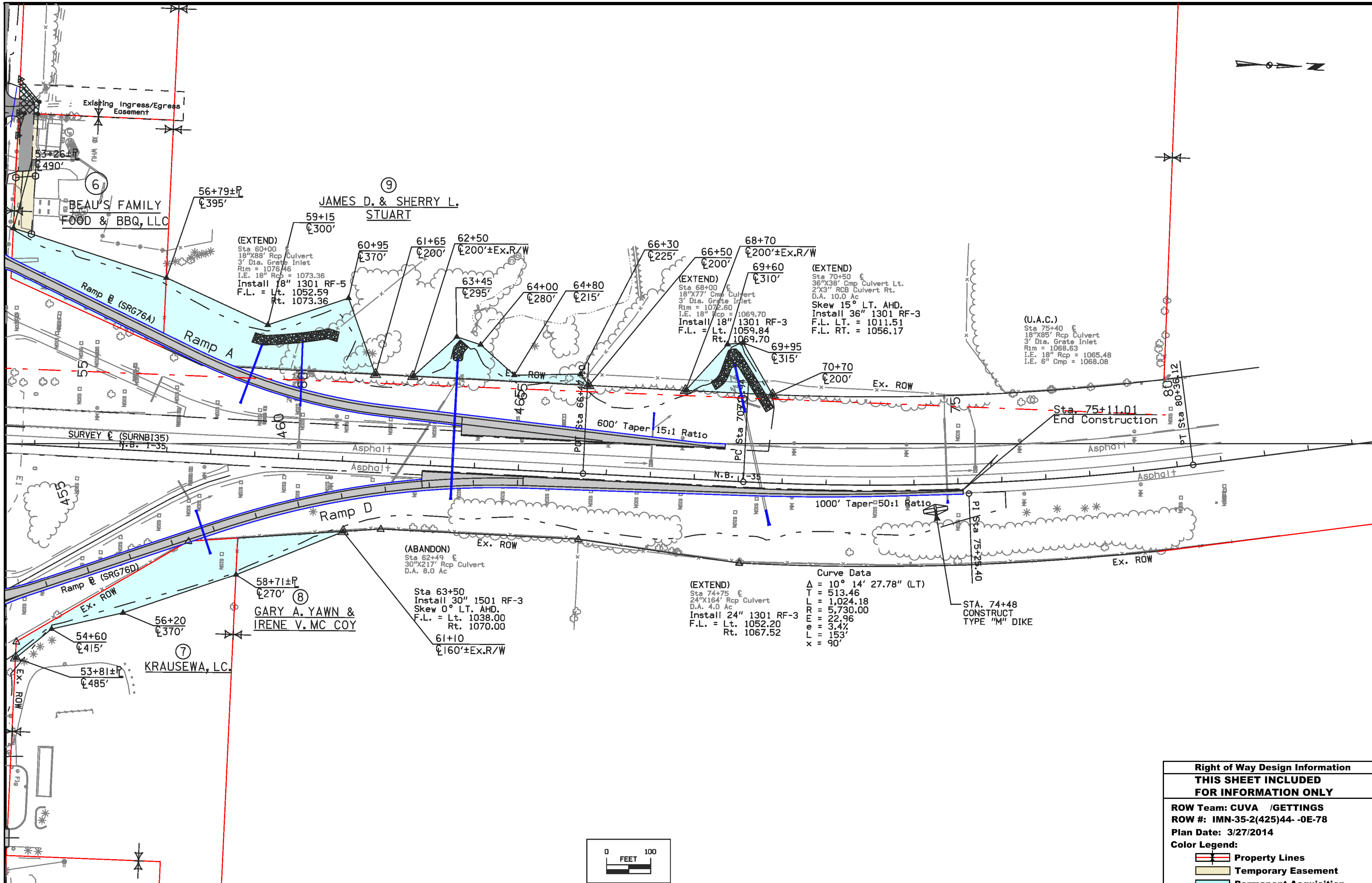

Existing Ingress/Egress Easement
53+26±P
℄490'
6
BEAU'S FAMILY FOOD & BBQ, LLC
56+79±P
℄395'
9
JAMES D. & SHERRY L. STUART
59+15
℄300'
(EXTEND)
Sta 60+00 ℄
18"X88' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1076.46
I.E. 18" Rcp = 1073.36
Install 18" 1301 RF-5
F.L. = Lt. 1052.59
Rt. 1073.36
60+95
℄370'
61+65
℄200'
62+50
℄200'±Ex.R/W
63+45
℄295'
64+00
℄280'
64+80
℄215'
66+30
℄225'
66+50
℄200'
68+70
℄200'±Ex.R/W
69+60
℄310'
(EXTEND)
Sta 68+00 ℄
18"X77' Cmp Culvert
3' Dia. Grate Inlet
Rim = 1072.60
I.E. 18" Rcp = 1069.70
Install 18" 1301 RF-3
F.L. = Lt. 1059.84
Rt. 1069.70
69+95
℄315'
(EXTEND)
Sta 70+50 ℄
36"X38' Cmp Culvert Lt.
2'X3" RCB Culvert Rt.
D.A. 10.0 Ac
Skew 15° LT. AHD.
Install 36" 1301 RF-3
F.L. LT. = 1011.51
F.L. RT. = 1056.17
70+70
℄200'
(U.A.C.)
Sta 75+40 ℄
18"X85' Rcp Culvert
3' Dia. Grate Inlet
Rim = 1068.63
I.E. 18" Rcp = 1065.48
I.E. 6" Cmp = 1068.08
Ramp B (SRG76A)
Ramp A
Ex. ROW
600' Taper 15:1 Ratio
Sta. 75+11.01
End Construction
SURVEY ℄ (SURNBI35)
N.B. I-35
Asphalt
POT Sta 66+44.40
PC Sta 70+74
PT Sta 80+36.12
N.B. I-35
Ramp D
1000' Taper 50:1 Ratio
PI Sta 75+25.40
(ABANDON)
Sta 62+49 ℄
30"X217' Rcp Culvert
D.A. 8.0 Ac
Sta 63+50
Install 30" 1501 RF-3
Skew 0° LT. AHD.
F.L. = Lt. 1038.00
Rt. 1070.00
61+10
℄160'±Ex.R/W
58+71±P
℄270'
8
GARY A. YAWN & IRENE V. MC COY
56+20
℄370'
54+60
℄415'
53+81±P
℄485'
7
KRAUSEWA, LC.
Ramp B (SRG76D)
Ex. ROW
(EXTEND)
Sta 74+75 ℄
24"X164' Rcp Culvert
D.A. 4.0 Ac
Install 24" 1301 RF-3
F.L. = Lt. 1052.20
Rt. 1067.52
Curve Data
Δ = 10° 14' 27.78" (LT)
T = 513.46
L = 1,024.18
R = 5,730.00
E = 22.96
e = 3.4%
L = 153'
x = 90'
STA. 74+48
CONSTRUCT
TYPE "M" DIKE
0 FEET 100

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: CUVA /GETTINGS
ROW #: IMN-35-2(425)44- -0E-78
Plan Date: 3/27/2014
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

C | ENGLISH | IOWA DOT | DESIGN TEAM IaDOT\Schemmer | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER H.2

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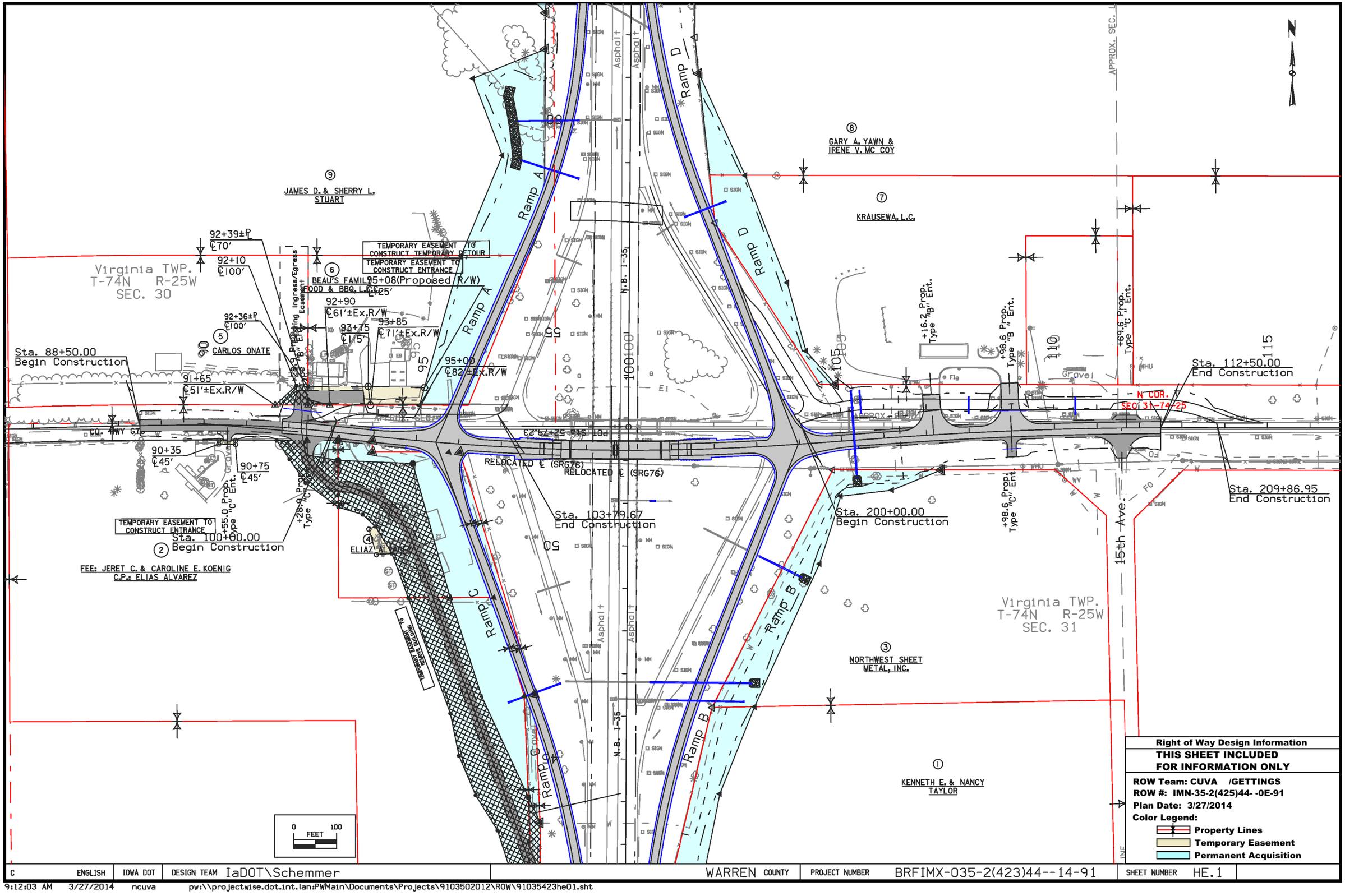

C	ENGLISH	IOWA DOT	DESIGN TEAM IaDOT\Schemmer	WARREN COUNTY	PROJECT NUMBER	BRFIMX-035-2(423)44--14-91	SHEET NUMBER HE.1

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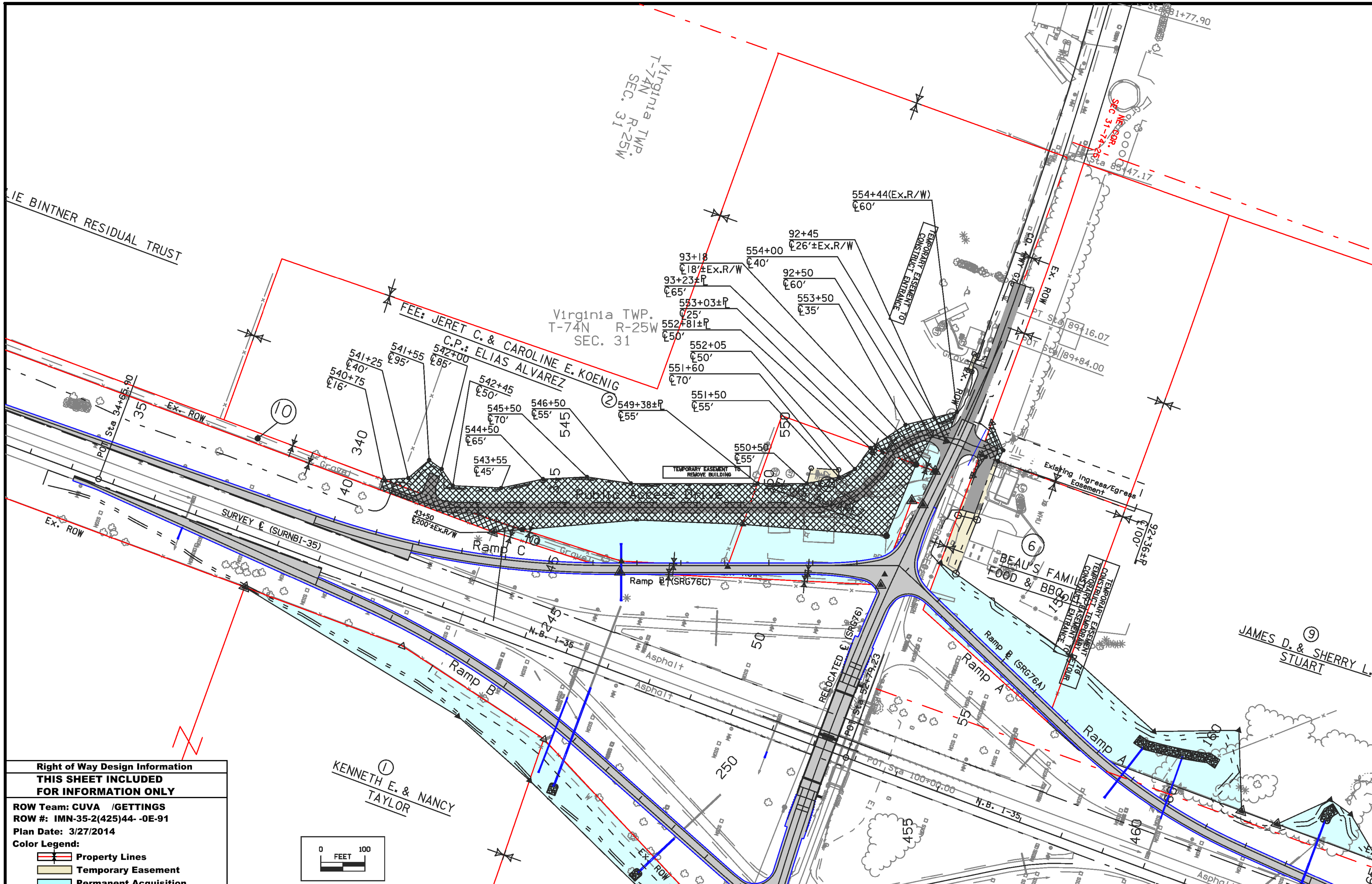

Virginia TWP.
T-74N R-25W
SEC. 31
LIE BINTNER RESIDUAL TRUST
FEE: JERET C. & CAROLINE E. KOENIG
C.P.: ELIAS ALVAREZ
554+44(Ex.R/W)
℄60'
92+45
℄26'±Ex.R/W
93+18
℄18'±Ex.R/W
554+00
℄40'
92+50
℄60'
93+23±℄
℄65'
553+50
℄35'
553+03±℄
℄25'
552+81±℄
℄50'
552+05
℄50'
551+60
℄70'
551+50
℄55'
550+50
℄55'
549+38±℄
℄55'
546+50
℄55'
545+50
℄70'
544+50
℄65'
543+55
℄45'
542+45
℄50'
542+00
℄85'
541+55
℄95'
541+25
℄40'
540+75
℄16'
43+50
℄200'±Ex.R/W
TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE
TEMPORARY EASEMENT TO REMOVE BUILDING
Public Access Drive
Ex. ROW
POT Sta 34+65.90
SURVEY ℄ (SURNBI-35)
Ramp C
Ramp B ℄(SRG76C)
Ramp B
Ramp A
Ramp B (SRG76A)
N.B. I-35
Asphalt
RELOCATED ℄ (SRG76)
POT Sta 52+79.23
POT Sta 100+00.00
POT Sta 89+16.07
POT Sta 89+84.00
Sta 85+47.17
Sta 81+77.90
SEC 31-74-25 NE COR.
Existing Ingress/Egress Easement
℄100'
92+36±℄
BEAU'S FAMILY FOOD & BBQ
TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE
TEMPORARY EASEMENT TO CONSTRUCT DETOUR
JAMES D. & SHERRY L. STUART
KENNETH E. & NANCY TAYLOR
Gravel
0 FEET 100

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: CUVA /GETTINGS
ROW #: IMN-35-2(425)44- -0E-91
Plan Date: 3/27/2014
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition

C	ENGLISH	IOWA DOT	DESIGN TEAM IaDOT\Schemmer	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER HE.2

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Refer to Tab. 108-26A for staging notes and traffic control specifiecs.

I-35
-Overnight short term closures of I-35 utilizing existing ramps as detours will be necessary for girder construction. See TC-454.
-Overnight short term closures of I-35 using the newly constructed ramps as detours will be necessary for bridge removal. See TC-454.

Co. Rd. G76
-Contractor to maintain one lane open with access to local traffic at all times during construction.

Ramps B and C
-A short term closure of Ramp B and Ramp C will be neccessary during construction.
-Access from Co. Rd. G76 to Southbound I-35 will detour via existing Ramp D and U-Turn at the Truro Interchange to access Southbound I-35. See Sheet J.3 for information.
-Access from Northbound I-35 to East and West bound Co. Rd. G76 will detour via a U-Turn at the Truro Interchange and Ramp A to access Co. Rd. G76. See Sheet J.3 for information.

Contractor will be responsible for installing and removing detour signing as various stages are needed.

108-26A
08-01-08

STAGING NOTES

It is not the intent of the sequence of construction to confine the contactors' activities to the areas of suggested stages alone. It is understood that some of the various steps may occur simultaneously. Therefore, the contractor may conduct several operations concurrently on the project, provided that traffic is maintained and that these operations do not conflict with the staging operations indicated herein.

It is recognized that as the various activities related to construction progress, certain situations may arise which will preclude adhering to the original construction sequence or which, in the opinion of the contractor, should result in more efficient staging operations. Should the contractor desire to deviate from the original plan, they shall submit a written alternate plan to the Resident Construction Engineer for approval.

Local access to all properties shall be maintained at all times during construction.

Stage 1 Traffic
-Maintain traffic on existing Co. Rd. G76 and bridge. Close right lanes at all proposed ramp tie-in locations along I-35 during ramp construction. Place Dynamic Message Sign at south end of project.

Stage 1 Construction
-Construct drainage items
-Construct proposed bridge and bridge approaches to the east and west of the bridge, construct roadway segment on east side of proposed bridge as shown on sheet J.5.
-Construct partial proposed Ramps A, B, C, and D, and tie in to existing I-35.
-Construct east and west temporary detours as shown on sheet J.5.
-Construct granular surface frontage road on west side of Ramp C.

Stage 2A Traffic
-Close existing Co. Rd. G76 to construct the westerly pavement from station 91+84 to 93+00. Traffic shall be maintained on existing Co. Rd. G76 via a one-lane detour. See Sheet J.7 for detour signing.
-Reopen right lanes along I-35. Interstate traffic to be maintained via existing ramps and temporary roads.

Stage 2A Construction
-Remove existing Co. Rd. G76 from station 91+84 to 93+00.
-Construct proposed pavement from station 91+84 to 93+00 on Co. Rd. G76.

Stage 2B Traffic
-Close existing Co. Rd. G76 to extents shown on sheet J.9 and move traffic to the east and west detours. Traffic shall be maintained on existing Co. Rd. G76 between the detour tie-ins, on existing bridge, and on existing ramps. Re-sign the westerly portion of G76 according to the detail shown on sheet U.3 to permit two-way traffic.

Stage 2B Construction
-Remove existing Co. Rd. G76 from tie-ins with existing road to the east and to the west of the ramp intersections as shown on sheet J.9.
-Construct proposed Co. Rd. G76 from tie-ins with existing road to locations of stage 3 tie-ins as shown on sheets J.9 and J.10.

Stage 3 Traffic
-Existing Ramps B and C to be closed to traffic.
-Access from Co. Rd. G76 to Southbound I-35 will detour via existing Ramp D and U-Turn at the Truro Interchange to access Southbound I-35. See Sheet J.3 for information.
-Access from Northbound I-35 to East and West bound Co. Rd. G76 will detour via a U-Turn at the Truro Interchange and Ramp A to access Co. Rd. G76. See Sheet J.3 for information.
-Co. Rd. G76 through Traffic, and access to existing ramps A and D to be maintained via temporary roads as shown on sheet J.13.

Stage 3 Construction
-Construct roadway segment from west bridge approach to newly constructed Co. Rd. G76 and construct intersection of Co. Rd. G76 and Ramp B on the the east side of bridge as shown on sheet J.13.

Stage 4 Traffic
-Open newly constructed Ramps A, B, C and D to traffic. Newly constructed Ramp D traffic to be maintained via the East and Northeast detour.

Stage 4 Construction
-Construct Northeast temporary road as shown on sheet J.16.
-Construct Ramp D tie-in to C. Rd. G76.

108-26A
08-01-08

STAGING NOTES

-Construct drives on Co. Rd. G76 and open to traffic as shown on sheet J.16.
-Construct granular shoulder on northeast side of Co. Rd. G76.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
IMN-035-1(173)24--0E-20	Pipe Culverts
IMN-035-1(144)0--0E-27	PCC Patching

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

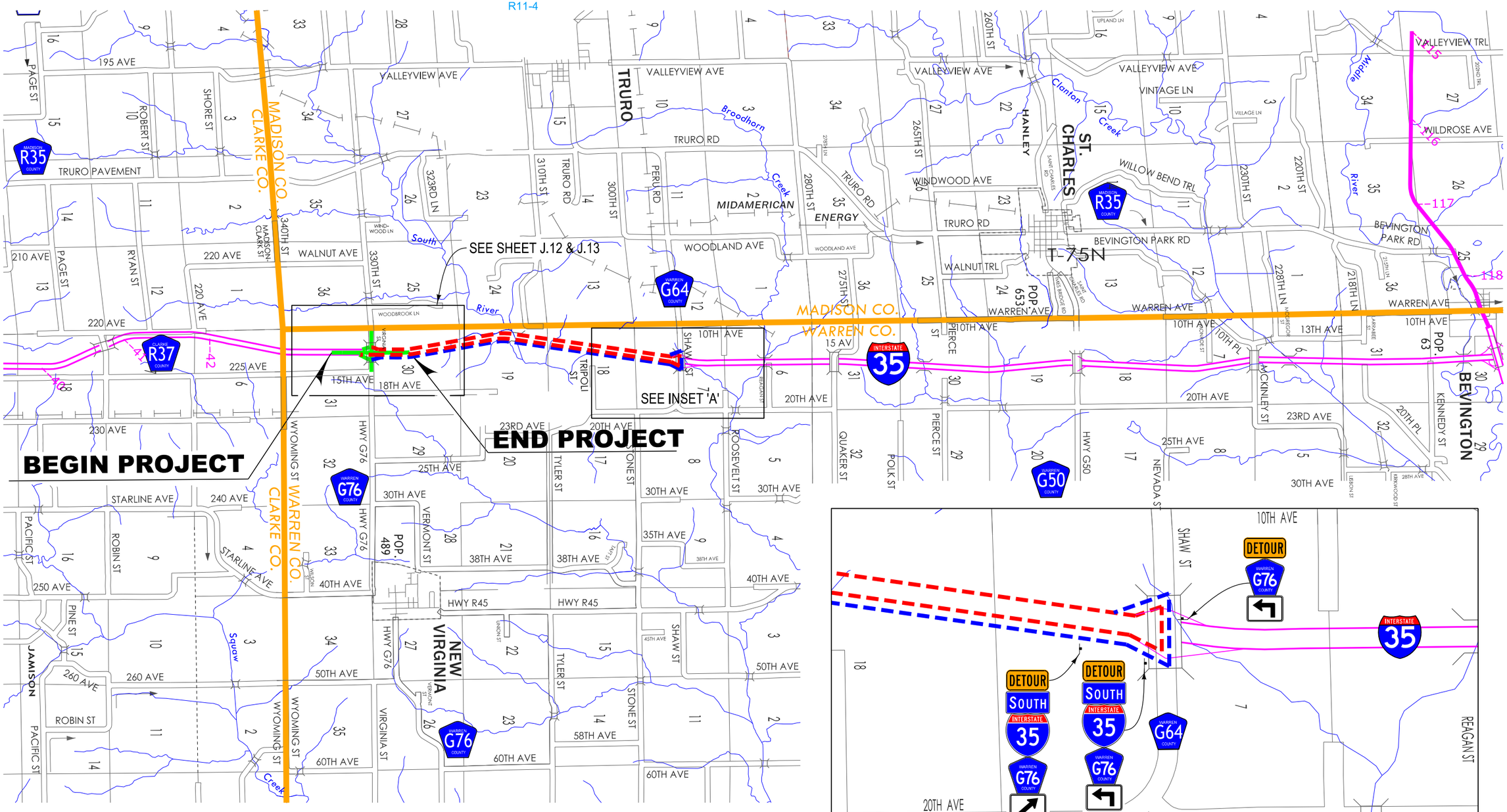
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

●	Channelizing Device		Crash Cushion (Temp or Perm)
✕	Drum		Traffic Signal
◘	Temporary Lane Separator		Flagger
◆	Tubular Marker		Temporary Floodlighting
♦	Channelizer Marker		Traffic Sign
△	Concrete Barrier Marker		Type III Barricade
‹	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout	1	Lane Identification

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)



INSET 'A'

LEGEND

- ALTERNATE ACCESS TO SB I-35
- ALTERNATE ACCESS TO CO. RD. G76
- PROPOSED PROJECT
- COUNTY LINE

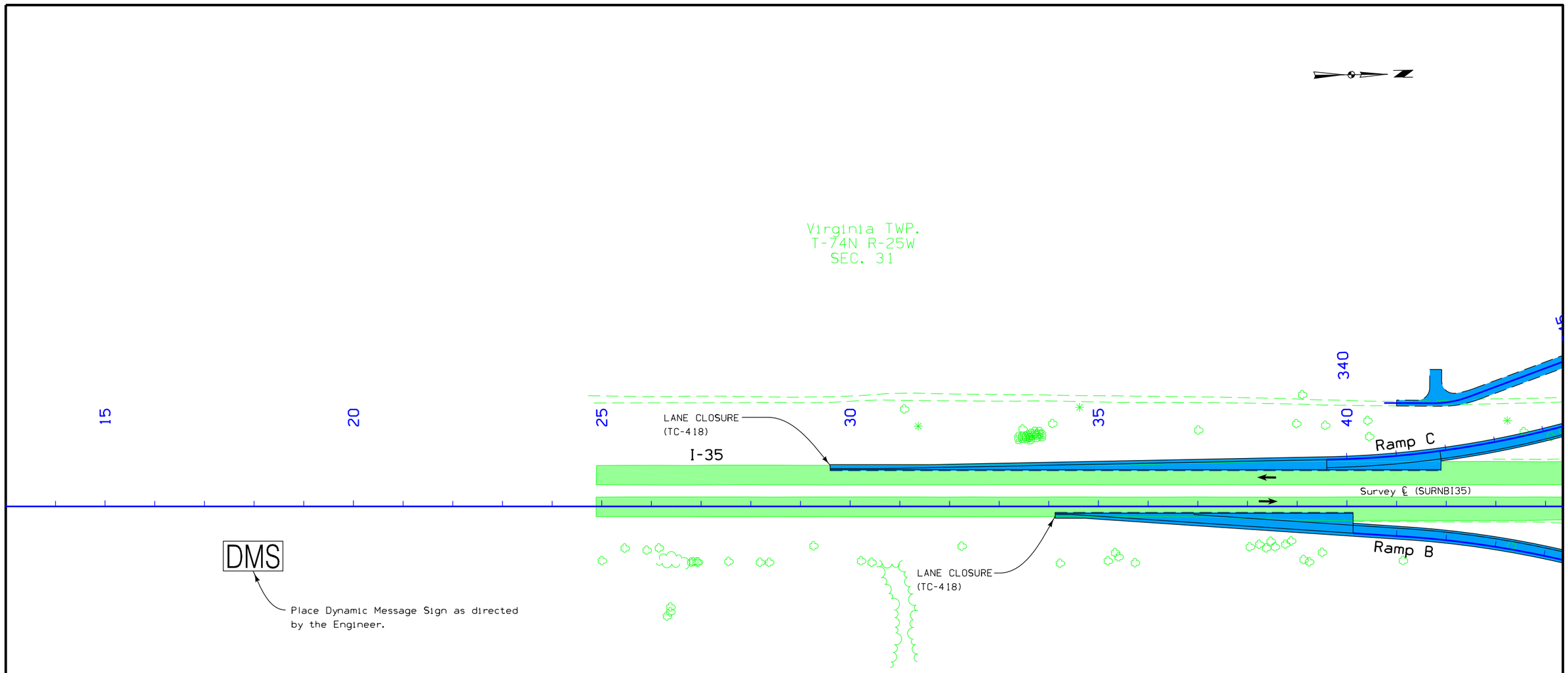
DETOUR NOTE:
THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION & REMOVAL OF ALL DETOUR SIGNING.

STAGE 3

DETOUR AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.3

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

(1) Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

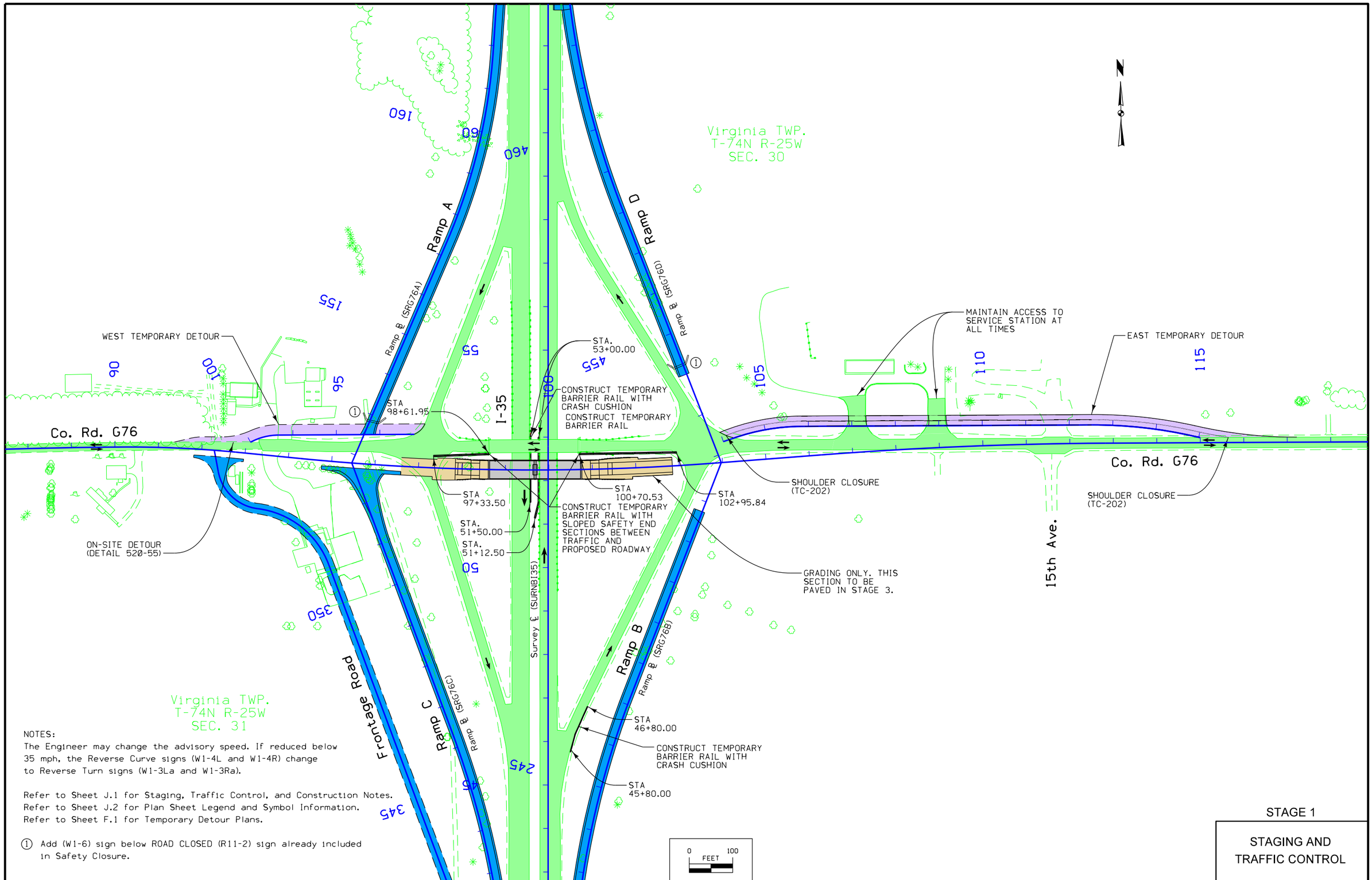
0 100
FEET

STAGE 1

STAGING AND
TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.4

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

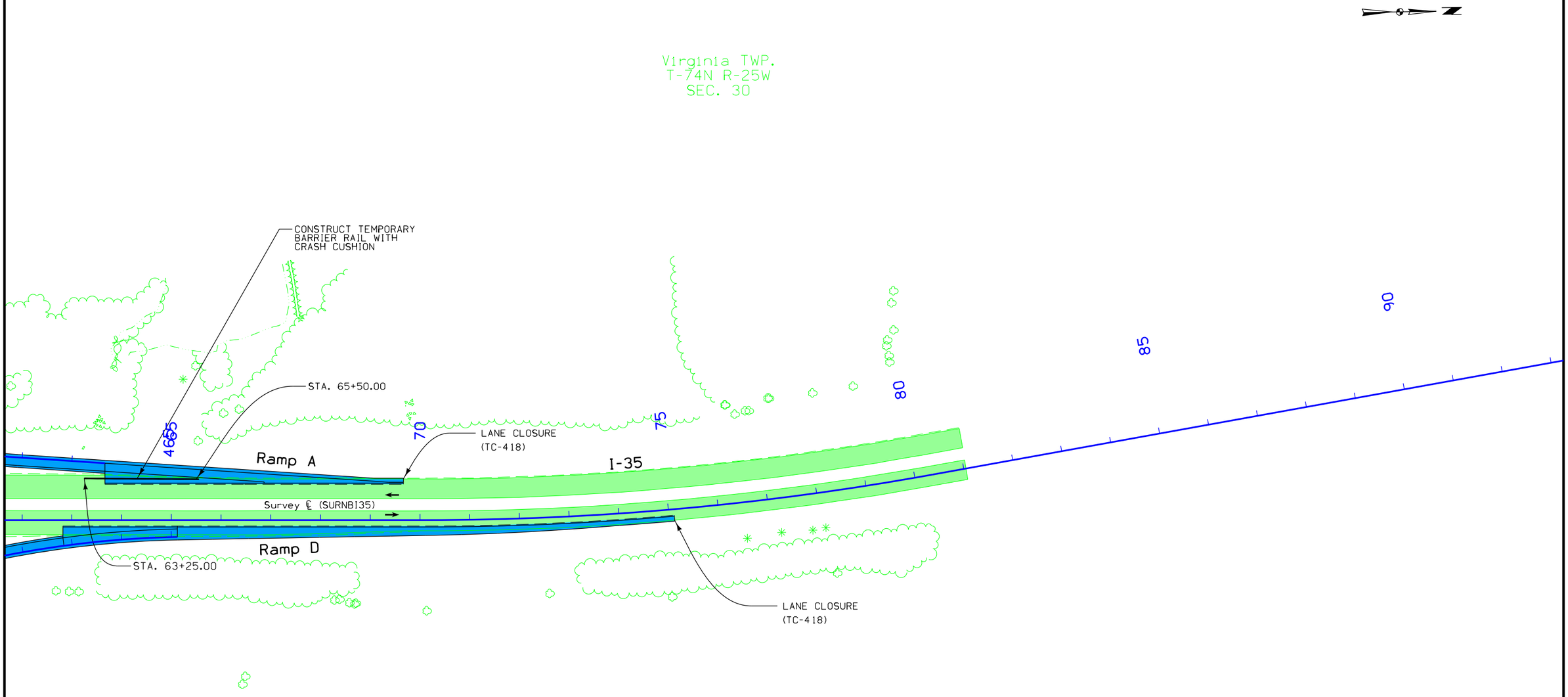
① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

STAGE 1

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.5

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

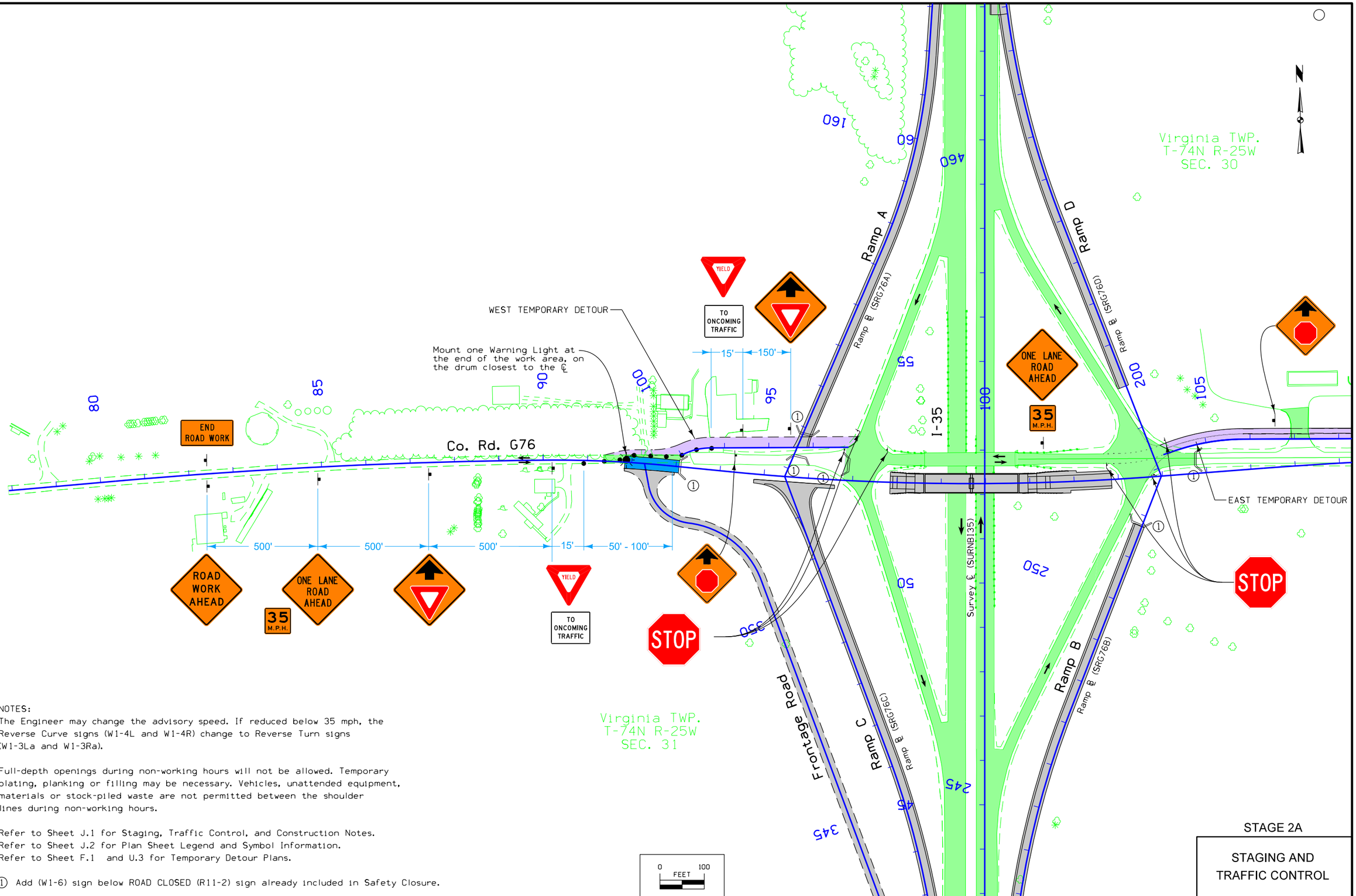
0 100 FEET

STAGE 1

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.6

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Full-depth openings during non-working hours will not be allowed. Temporary plating, planking or filling may be necessary. Vehicles, unattended equipment, materials or stock-piled waste are not permitted between the shoulder lines during non-working hours.

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 and U.3 for Temporary Detour Plans.

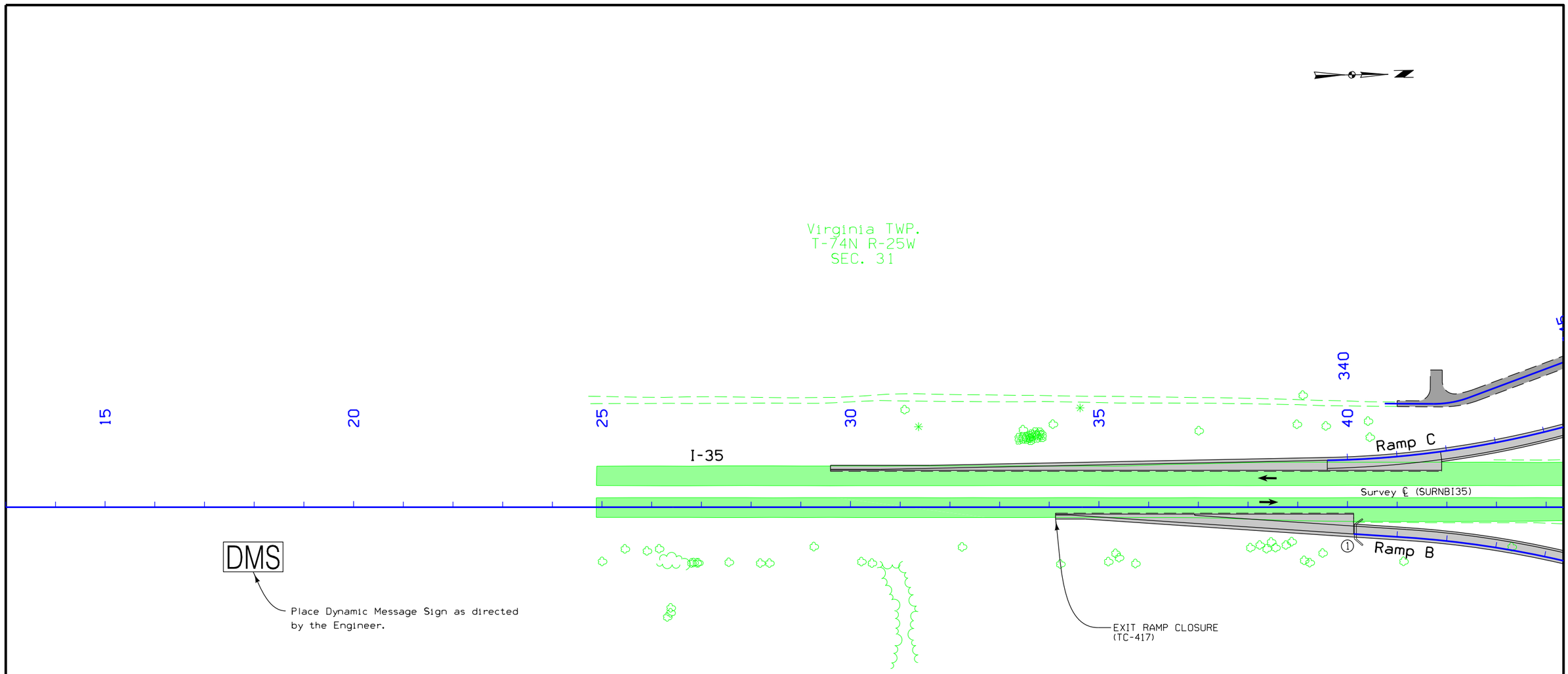
① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

STAGE 2A

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.7

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

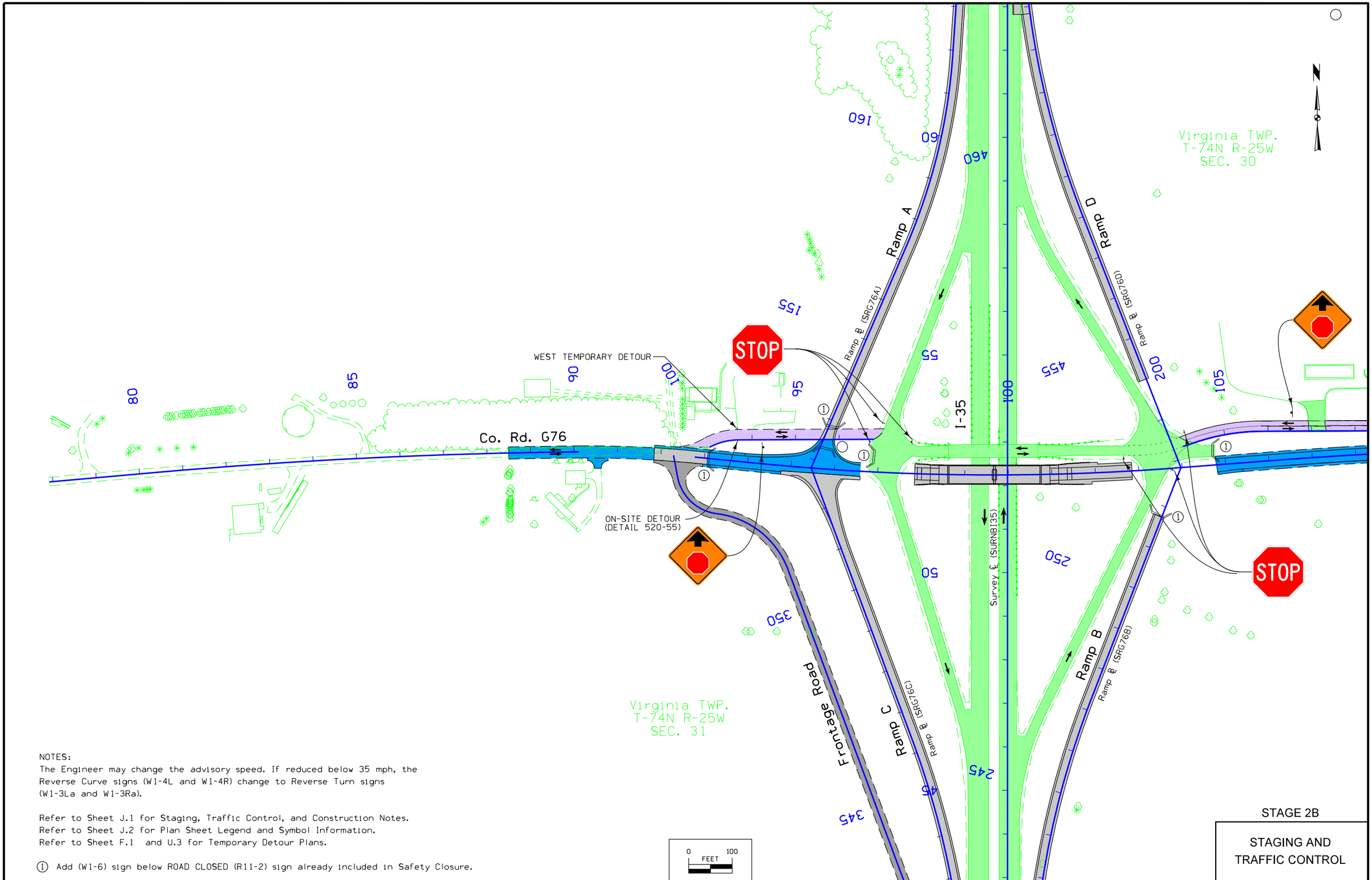
0 100 FEET

STAGE 2B

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.8

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 and U.3 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

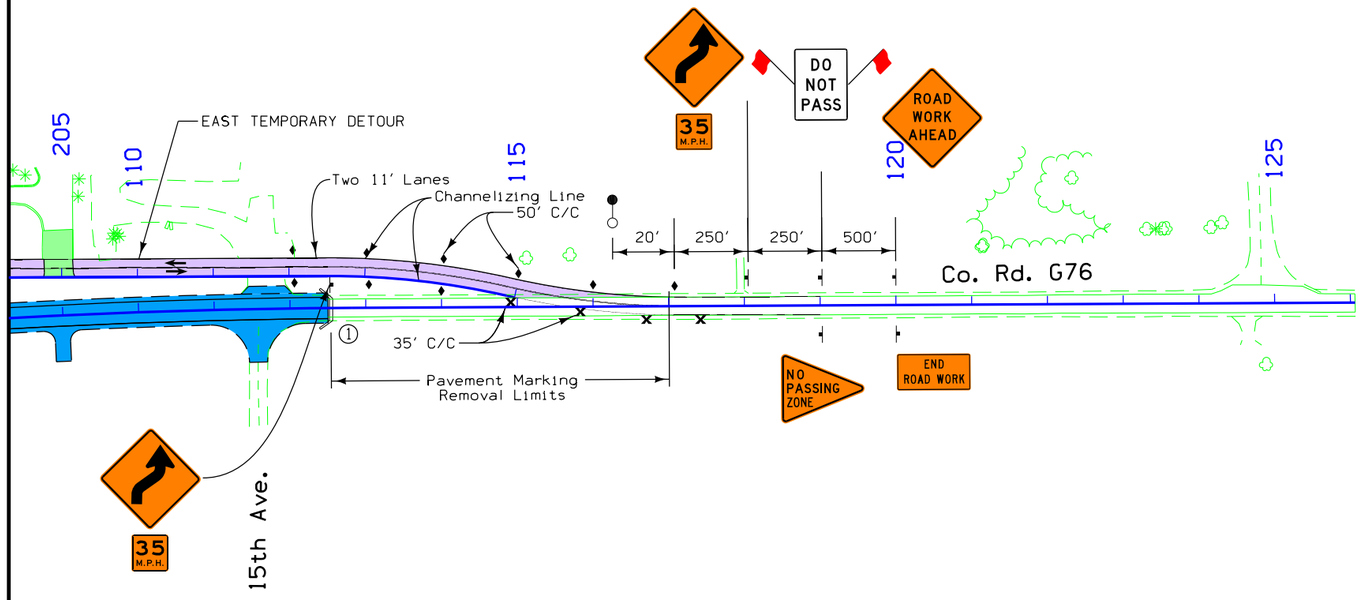
STAGE 2B

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.9

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 30



Virginia TWP.
T-74N R-25W
SEC. 31

NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

(1) Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

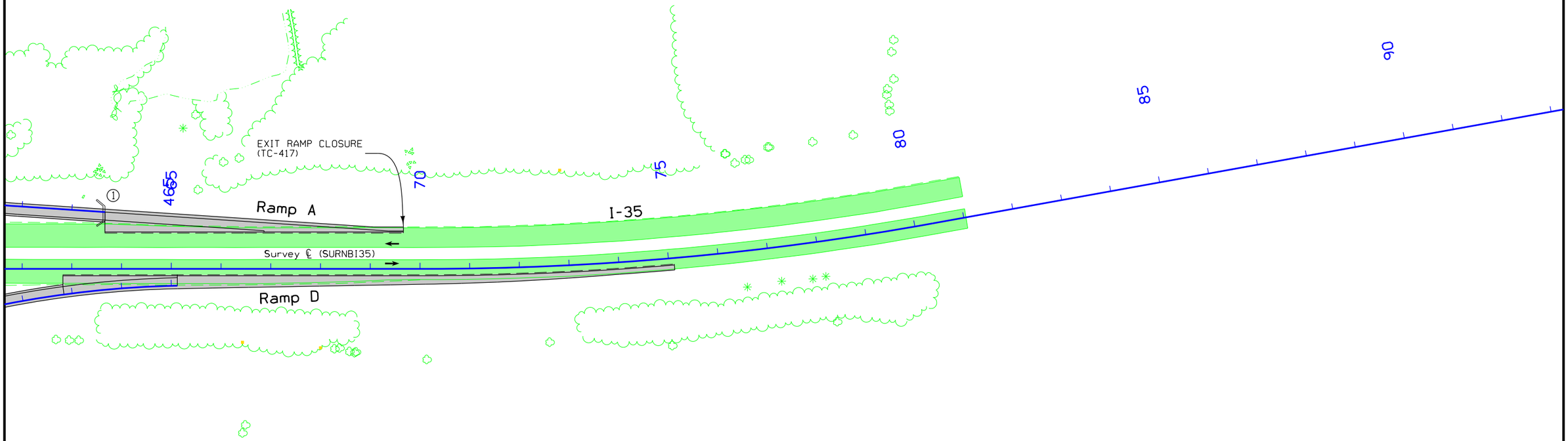
0 100 FEET

STAGE 2B

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.10

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

0 100 FEET

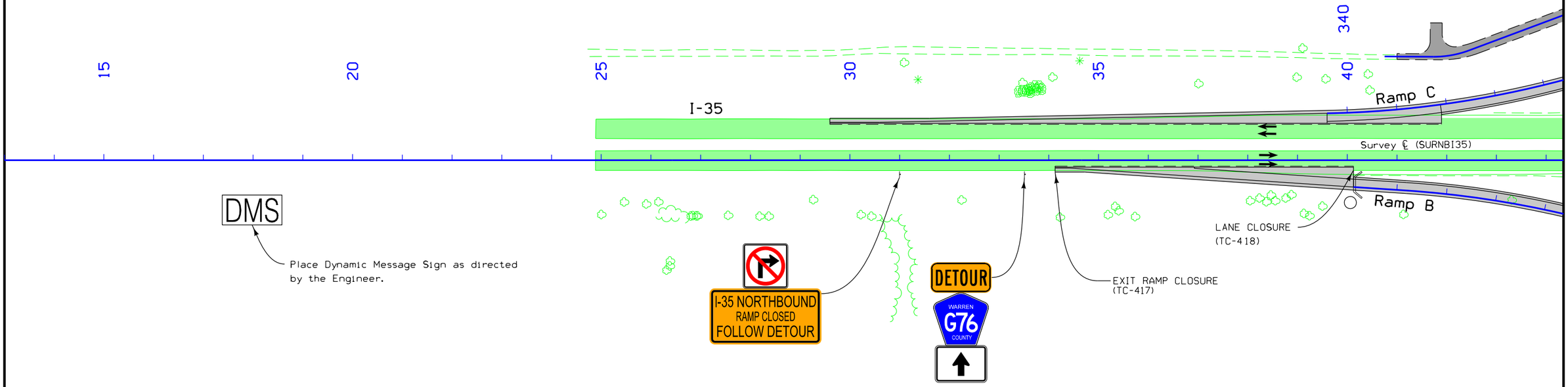
STAGE 2B

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.11

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 31



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 and U.3 for Temporary Detour Plans.

(1) Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

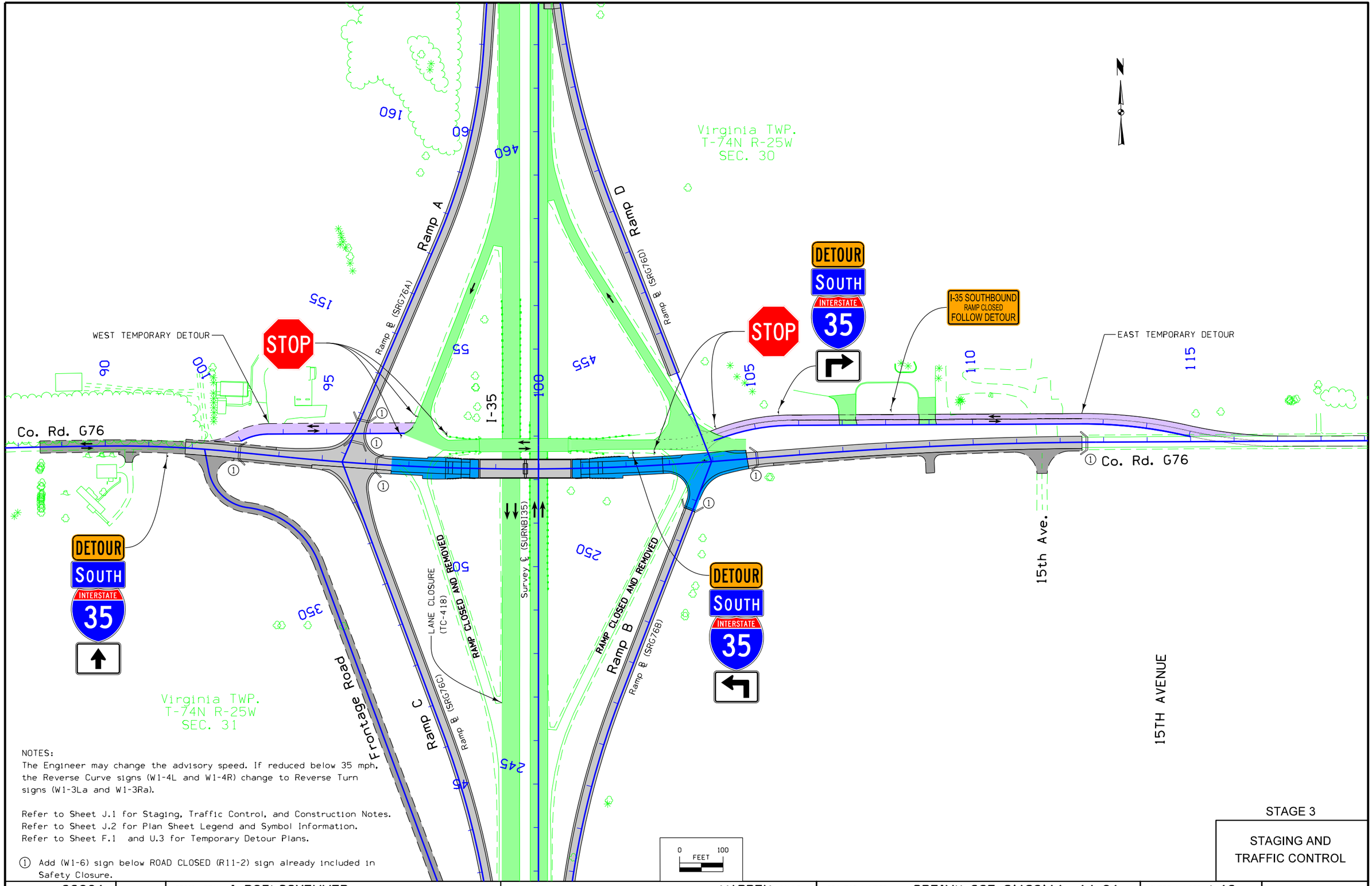
0 100
FEET

STAGE 3

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.12

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 and U.3 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

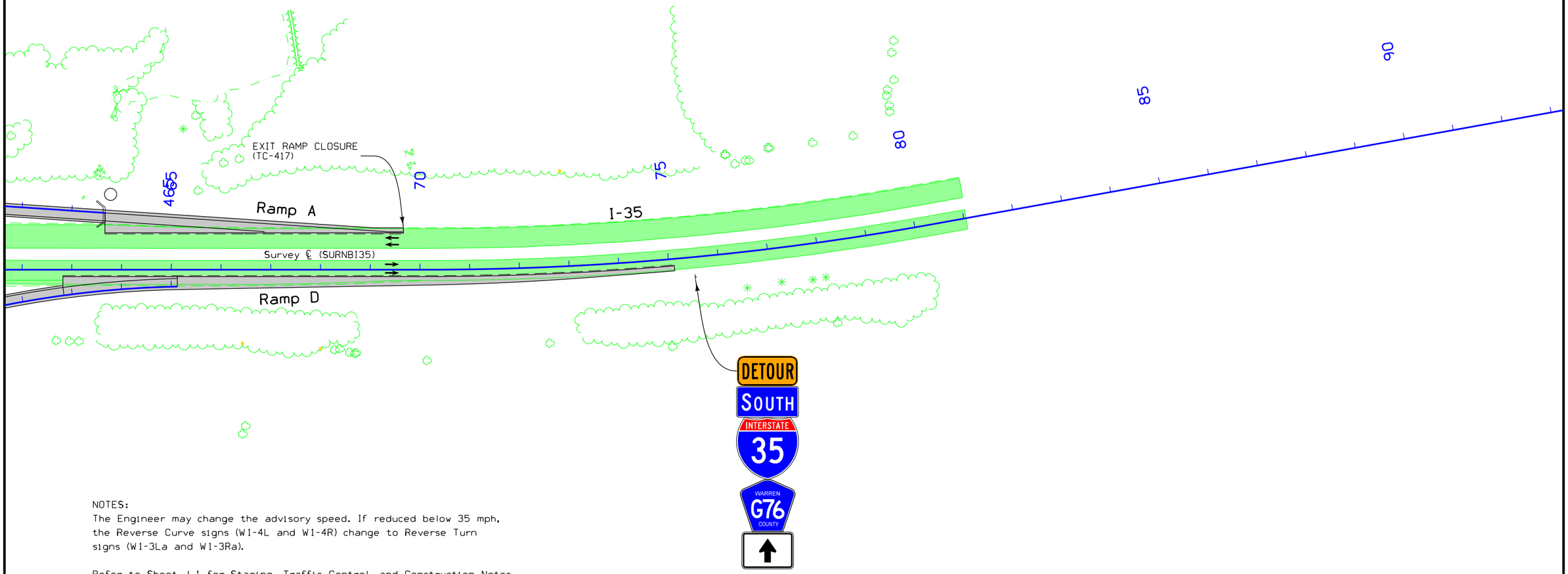
STAGE 3

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.13

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 30



NOTES:
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-3La and W1-3Ra).

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet J.3 for Detour Signing and Traffic Control at County Road G64.
Refer to Sheet F.1 and U.3 for Temporary Detour Plans.

① Add (W1-6) sign below ROAD CLOSED (R11-2) sign already included in Safety Closure.

0 100
FEET

STAGE 3

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.14

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 31

15 20 25 30 35 40 340

I-35

Ramp C

Survey ℄ (SURNBI35)

Ramp B

DMS

Place Dynamic Message Sign as directed by the Engineer.

NOTES:

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

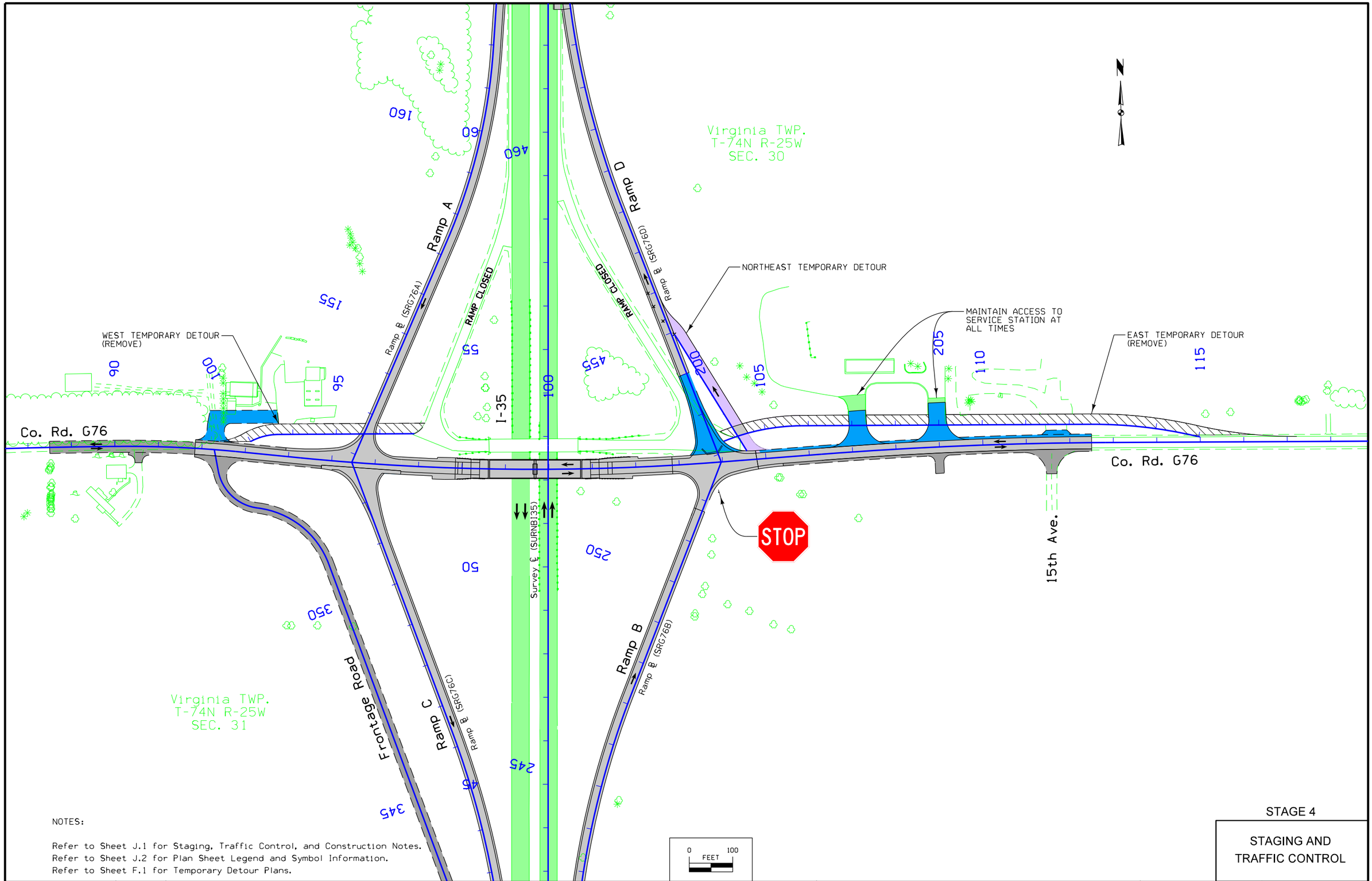
0 100 FEET

STAGE 4

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.15

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:

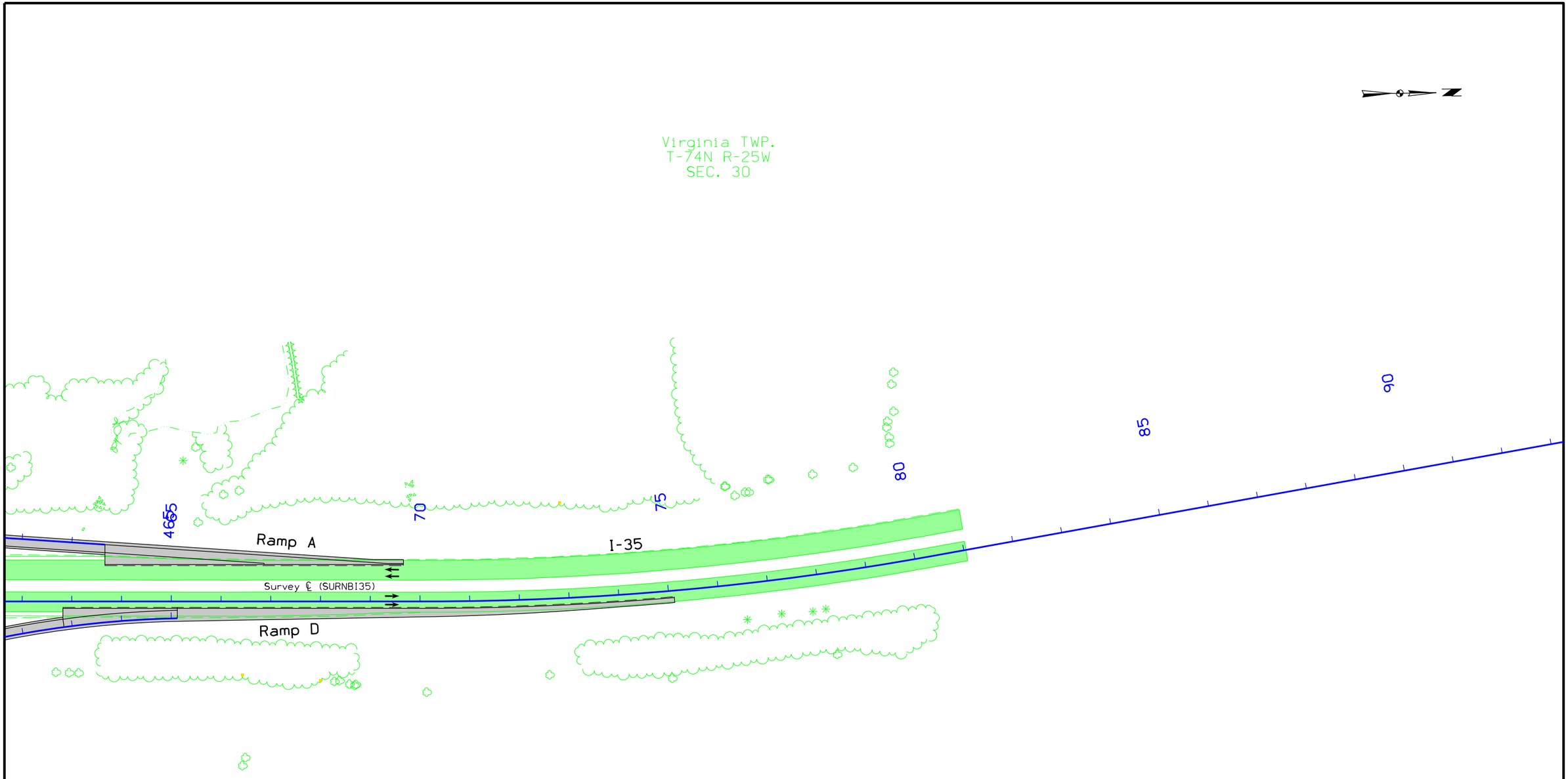
Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

STAGE 4

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.16

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



NOTES:

Refer to Sheet J.1 for Staging, Traffic Control, and Construction Notes.
Refer to Sheet J.2 for Plan Sheet Legend and Symbol Information.
Refer to Sheet F.1 for Temporary Detour Plans.

0 100 FEET

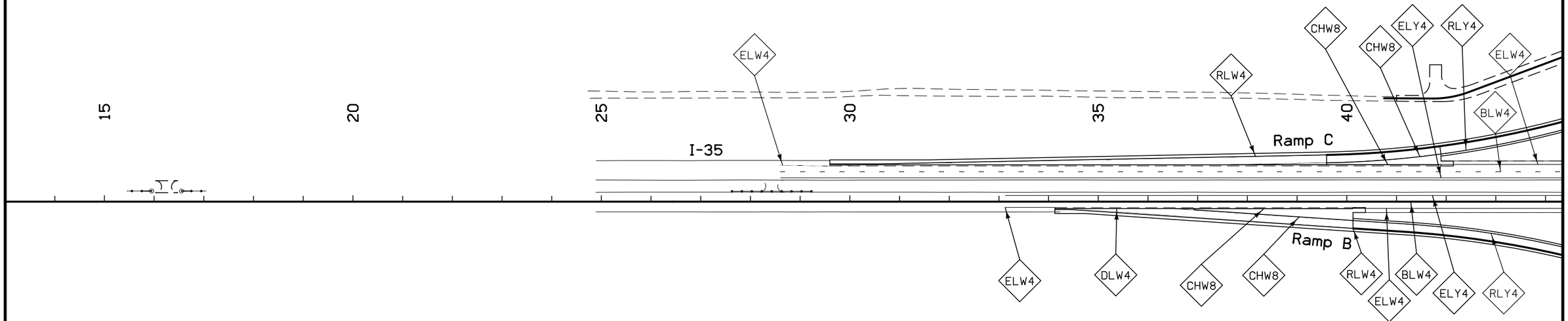
STAGE 4

STAGING AND TRAFFIC CONTROL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.17

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 31



0 100
FEET

PERMANENT
STRIPING

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.18	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 30

Virginia TWP.
T-74N R-25W
SEC. 31

Ramp A

Ramp B

Ramp C

Ramp D

I-35

Co. Rd. G76

Co. Rd. G76

85 90 95 100 105 110 115

60 55 50 45

RLW4 RLY4 ELW4 ELY4 BLW4 DCY4

0 100
FEET

PERMANENT
STRIPING

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.19

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Virginia TWP.
T-74N R-25W
SEC. 30

N

65
70
75
80
85
90

I-35

Ramp A

Ramp D

BLW4
RLY4
ELY4
CHW8
RLW4
DLW4
ELW4

0 FEET 100

PERMANENT
STRIPING

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER J.20

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

Curve Data (SRG76C-1)
Δ = 19° 17′ 29.67″ (LT)
T = 339.92
L = 673.40
R = 2,000.00
E = 22.68
e = 5.4%
L = 168′
x = 62′

Curve Data (SRG76AR-1)
Δ = 20° 40′ 12.54″ (LT)
T = 36.47
L = 72.15
R = 200.00
E = 3.30

Virginia TWP.
T-74N R-25W
SEC. 31

Curve Data (SRG76AR-3)
Δ = 72° 35′ 15.15″ (RT)
T = 77.11
L = 133.02
R = 105.00
E = 25.27

Curve Data (SRG76AR-2)
Δ = 62° 39′ 36.95″ (LT)
T = 121.75
L = 218.73
R = 200.00
E = 34.14

POT Sta 339+59.62 (SRG76C) =
POT Sta 39+59.62 94.0′ LT (MLNBI35)
Point 'G' Standard Road Plan PV-411

POT Sta 41+89.99 (MLNBI35)

POT Sta 34+65.90
PC Sta 339+59.62
POT Sta 540+75.00
PC Sta 541+73.70
PI Sta 542+10.18
PT Sta 542+45.86
SRG76AR-1
PC Sta 550+59.47
SRG76AR-3
SRG76AR-4
PRC Sta 552+78.19
PI Sta 553+55.31
PT Sta 554+11.22
PT Sta 554+61.22
CURVE SRG76-2
PCC Sta 90+10.23
Sta 91+44.14
PT Sta 92+77.79
POT Sta 95+46.39 (SRG76) =
POT Sta 151+80.04 (SRG76A)
POT Sta 352+97.28 (SRG76C)
PC Sta 94+27.79
PI Sta 151+80.04
PC Sta 157+36.44

Frontage Road
Ramp C
Ramp E (SRG76A)
Ramp A
CURVE SRG76C-1
Ramp E (SRG76C)
CURVE SRG76-3
16′ 6′
4′
65°11′30.48″
71°06′17.51″
20°26′14.42″
23°15′57.59″
PT Sta 346+33.02
1000′ Taper 50:1 Ratio
451.03′
PI Sta 244+24.24
60′
PI Sta 99+09.57
POT Sta 52+24.54 (MLNBI35) =
POT Sta 99+98.24 (SRG76)
POT Sta 52+79.23
44′-2″
Survey ℄ (SURNBI-35)
600′ Taper 15:1 Ratio
524.03′
CURVE SRG76B-1
Ramp B
Ramp E (SRG76B)
Relocated ℄ (SRG76)
21°10′54.22″
64°24′44.55″
73°04′49.92″
21°19′31.32″
16′ 4′
6′
Ramp D
Ramp E (SRG76D)
PC Sta 45
PI Sta 103+88.90
POT Sta 103+97.04 (SRG76) =
POT Sta 252+96.81 (SRG76B)
POT Sta 451+81.36 (SRG76D)
PC Sta 106+27.78
CURVE G76-4
14′
6′
PI Sta 109+55.18

Sta. 29+59.62
Begin Construction

POT Sta 240+12.53 (SRG76B) =
POT Sta 40+12.53 54.0′ RT (MLNBI35)
Point 'M' Standard Road Plan PV-410

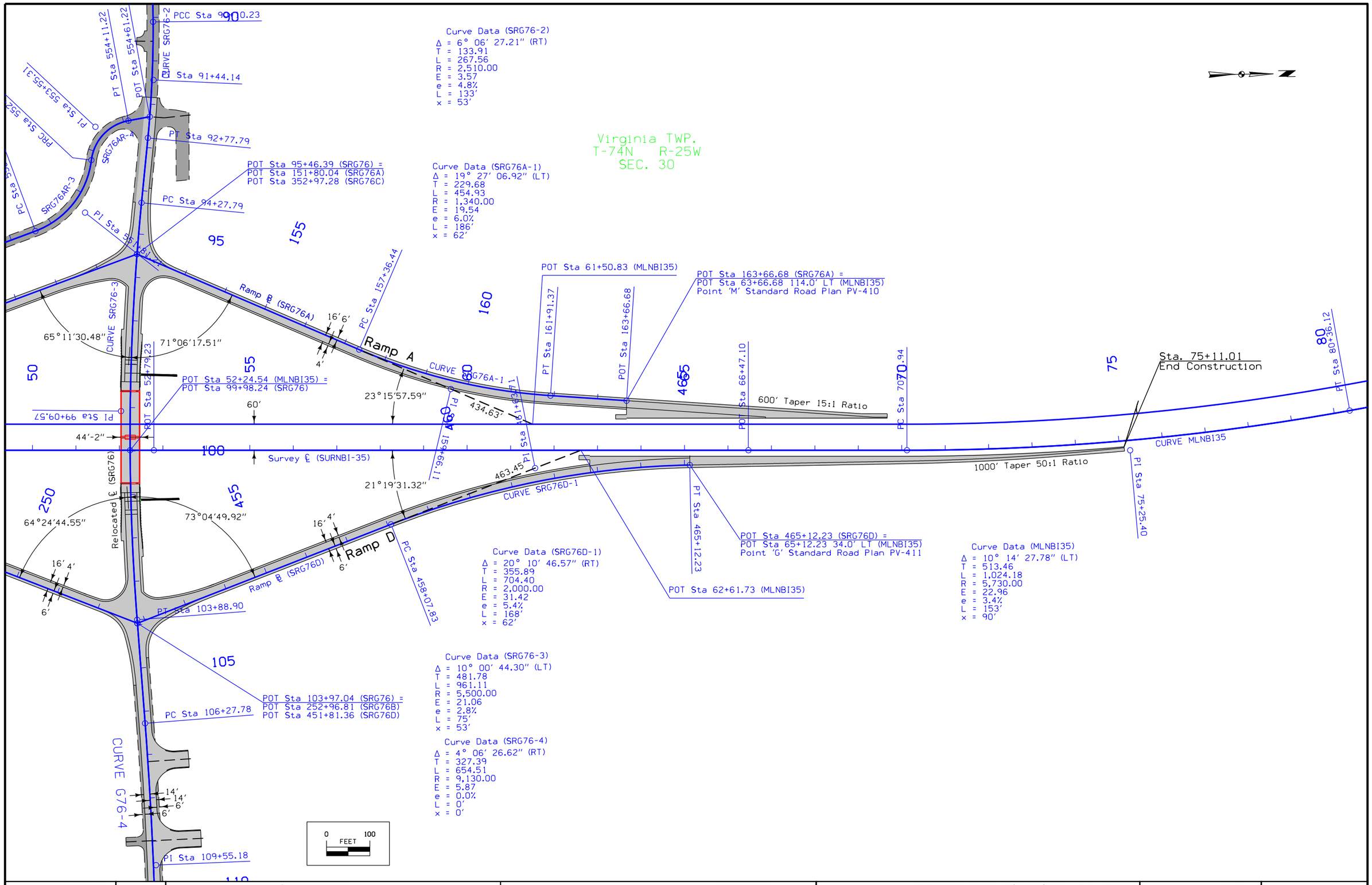
POT Sta 42+13.31 (MLNBI35)
POT Sta 240+12.53
PC Sta 241+18.78
PI Sta 247+25.02

Curve Data (SRG76B-1)
Δ = 17° 22′ 03.55″ (RT)
T = 305.47
L = 606.25
R = 2,000.00
E = 22.19
e = 5.4%
L = 168′
x = 62′

0 100
FEET

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER K.1

4:00:04 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtK01.sht



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER K.2

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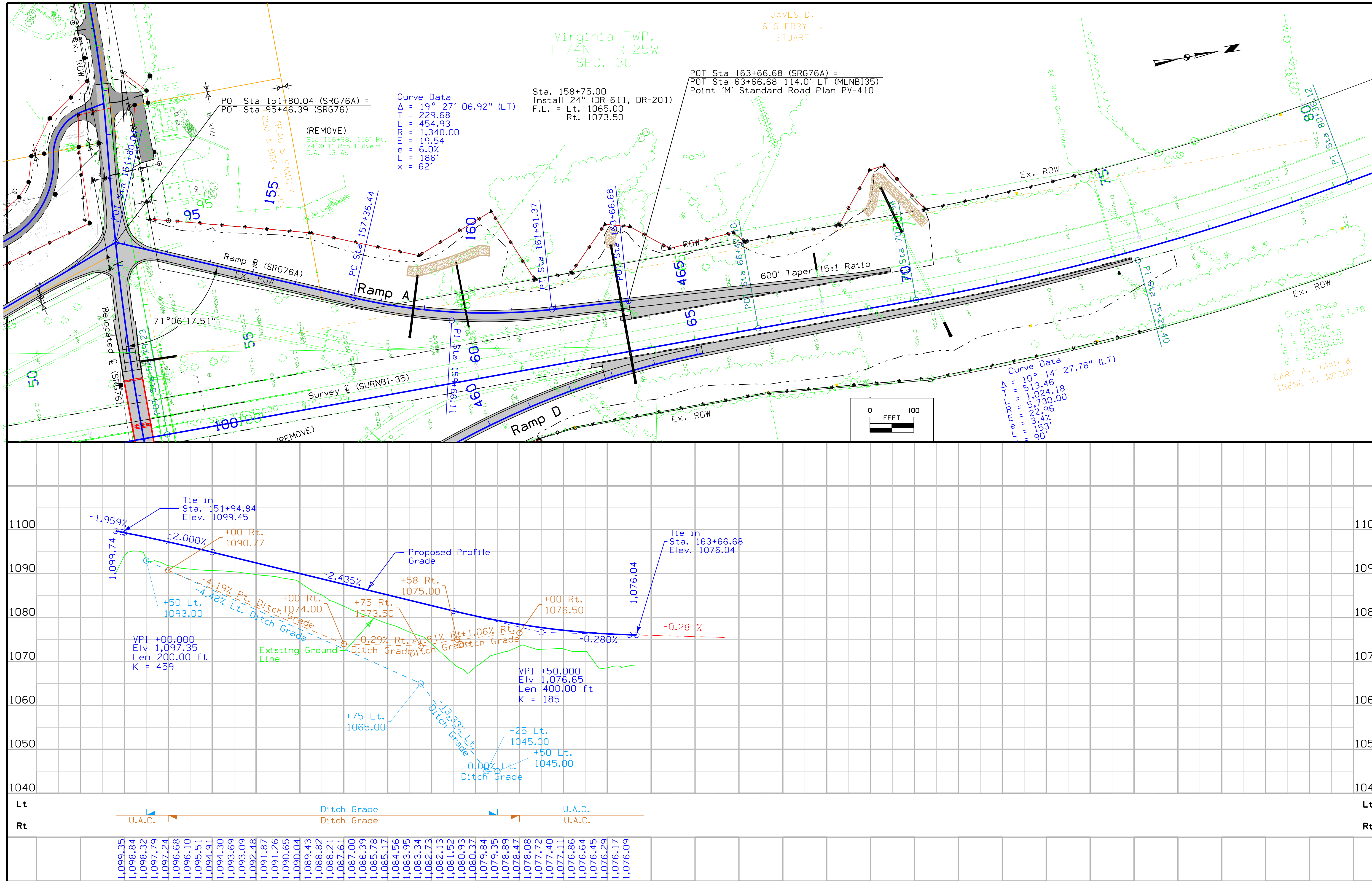
Virginia TWP.
T-74N R-25W
SEC. 30
JAMES D.
& SHERRY L.
STUART
POT Sta 151+80.04 (SRG76A) =
POT Sta 95+46.39 (SRG76)
Curve Data
Δ = 19° 27' 06.92" (LT)
T = 229.68
L = 454.93
R = 1,340.00
E = 19.54
e = 6.0%
L = 186'
x = 62'
(REMOVE)
Sta. 158+75.00
Install 24" (DR-611, DR-201)
F.L. = Lt. 1065.00
Rt. 1073.50
POT Sta 163+66.68 (SRG76A) =
POT Sta 63+66.68 114.0' LT (MLNBI35)
Point 'M' Standard Road Plan PV-410
Pond
Ex. ROW
Asphalt
600' Taper 15:1 Ratio
Ramp B (SRG76A)
Ramp A
Ramp D
Survey ℄ (SURNBI-35)
Relocated ℄ (SRG76)
71°06'17.51"
PC Sta 157+36.44
PT Sta 161+91.37
PI Sta 159+66.11
POT Sta 163+66.68
PI Sta 75+25.40
PT Sta 80+36.12
Curve Data
Δ = 10° 14' 27.78" (LT)
T = 513.46
L = 1,024.18
R = 5,730.00
E = 22.96
e = 3.4%
L = 153'
x = 90'
GARY A. YAWN &
IRENE V. MCCOY
0 FEET 100
Tie In
Sta. 151+94.84
Elev. 1099.45
-1.959%
-2.000%
+00 Rt.
1090.77
Proposed Profile
Grade
-2.435%
+58 Rt.
1075.00
+00 Rt.
1074.00
+75 Rt.
1073.50
+00 Rt.
1076.50
Tie In
Sta. 163+66.68
Elev. 1076.04
-0.28 %
-0.280%
-4.19% Rt. Ditch Grade
-4.48% Lt. Ditch Grade
+50 Lt.
1093.00
VPI +00.000
Elv 1,097.35
Len 200.00 ft
K = 459
Existing Ground
Line
-0.29% Rt. Ditch Grade
+1.81% Rt. Ditch Grade
+1.06% Rt. Ditch Grade
VPI +50.000
Elv 1,076.65
Len 400.00 ft
K = 185
+75 Lt.
1065.00
-13.33% Lt. Ditch Grade
+25 Lt.
1045.00
+50 Lt.
1045.00
0.00% Lt.
Ditch Grade
1,099.74
1,076.04
1100
1090
1080
1070
1060
1050
1040
Lt
Rt
U.A.C.
Ditch Grade
Ditch Grade
U.A.C.
U.A.C.
1,099.35 1,098.84 1,098.32 1,097.79 1,097.24 1,096.68 1,096.10 1,095.51 1,094.91 1,094.30 1,093.69 1,093.09 1,092.48 1,091.87 1,091.26 1,090.65 1,090.04 1,089.43 1,088.82 1,088.21 1,087.61 1,087.00 1,086.39 1,085.78 1,085.17 1,084.56 1,083.95 1,083.34 1,082.73 1,082.13 1,081.52 1,080.93 1,080.37 1,079.84 1,079.35 1,078.89 1,078.47 1,078.08 1,077.72 1,077.40 1,077.11 1,076.86 1,076.64 1,076.45 1,076.29 1,076.17 1,076.09
155
160

FILE NO. 30981 | ENGLISH | DESIGN TEAM IaDOT\SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER K.3

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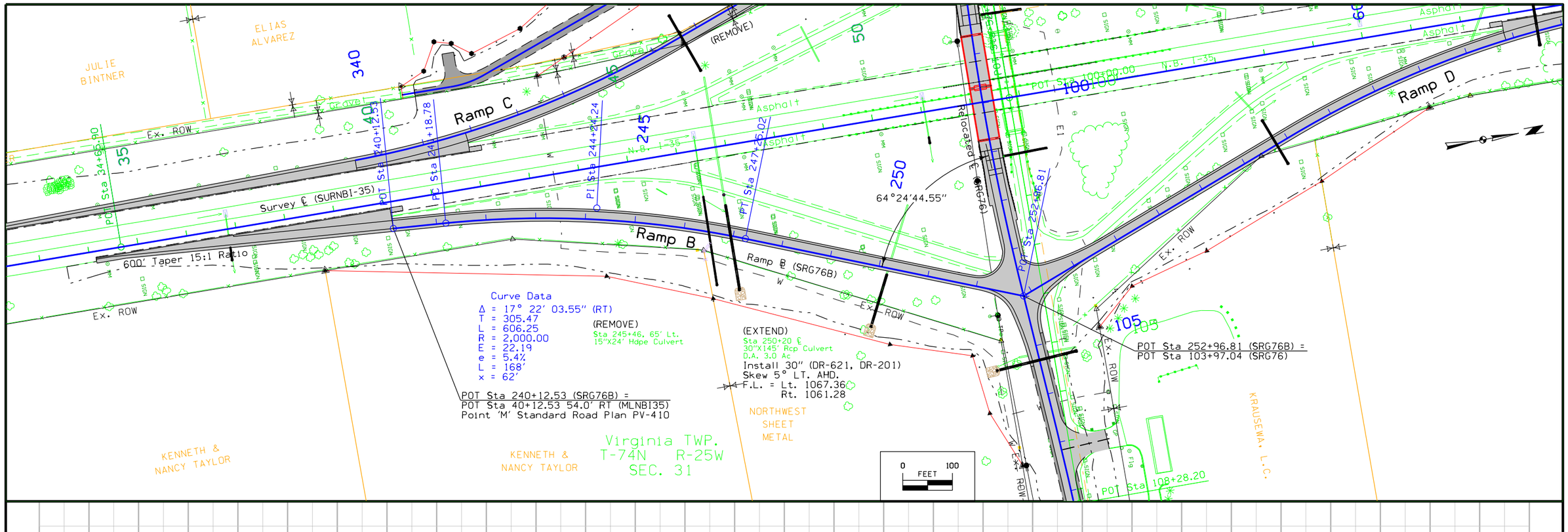

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER K.4	

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Virginia TWP.
T-74N R-25W
SEC. 31

Curve Data
Δ = 19° 17' 29.67" (LT)
T = 339.92
L = 673.40
R = 2,000.00
E = 22.68
e = 5.4%
L = 168'
x = 62'

JULIE BINTNER
FRANK KIRK & TERRY GARNER
ELIAS ALVAREZ

POT Sta 339+59.62 (SRG76C) =
POT Sta 39+59.62 94.0' LT (MLNBI35)
Point 'G' Standard Road Plan PV-411

POT Sta 352+97.28 (SRG76C) =
POT Sta 95+46.39 (SRG76)

Sta. 346+65
Install 24" (DR-601, DR-201)
F.L. = Lt. 1078.00
Rt. 1074.00

POT Sta 34+90.90
POT Sta 339+59.62
PC Sta 340+83.02
PT Sta 346+83.02
POT Sta 352+97.28
POT Sta 89+16.07
POT Sta 89+84.00

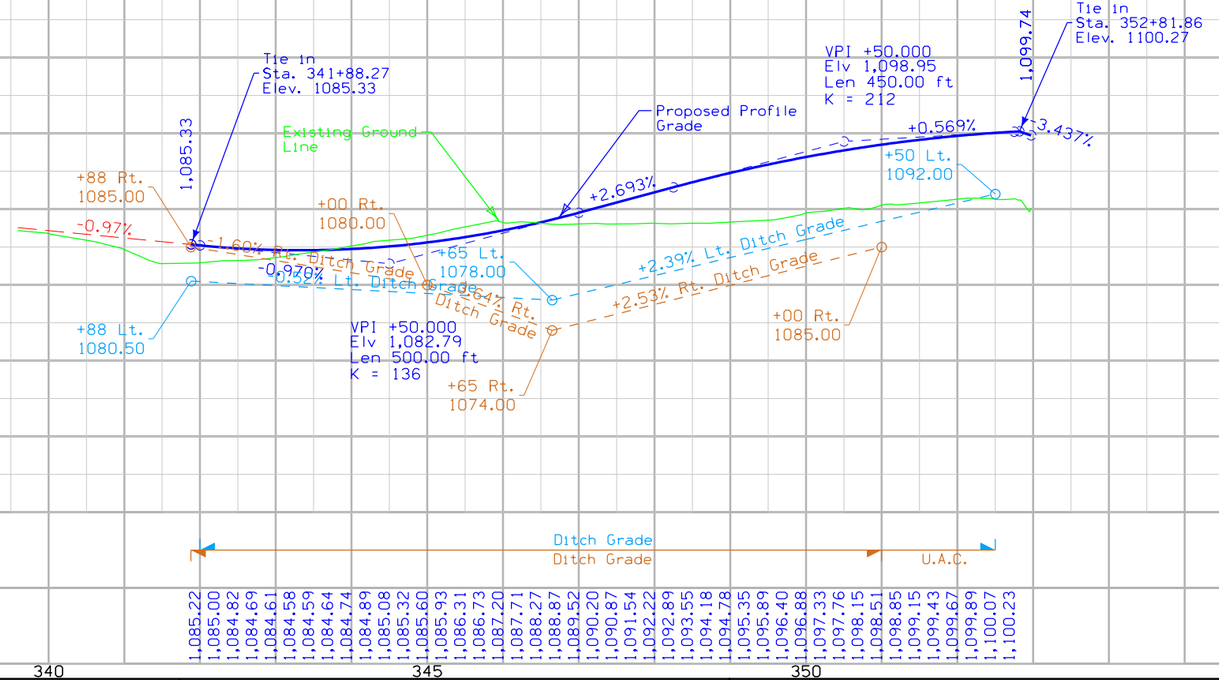
1000' Taper 50:1 Ratio
Survey ℄ (SURNBI-35)
Ramp C
Ramp B (SRG76C)
Ramp A
Co. Frontage Road
Ex. ROW
Gravel
Asphalt
N.B. I-35
Relocated ℄ (SRG76)
65°11'30.48"

(REMOVE)
Sta 348+82, 140' Rt.
24"X79' Rcp Culvert
D.A. 1.7 Ac

(REMOVE)
Sta 156+98, 116' Rt.
24"X61' Rcp Culvert
D.A. 1.3 Ac

BEAU'S FAMILY FOOD & BBC

0 100 FEET



1,085.22 1,085.00 1,084.82 1,084.69 1,084.61 1,084.58 1,084.59 1,084.64 1,084.74 1,084.89 1,085.08 1,085.32 1,085.60 1,085.93 1,086.31 1,086.73 1,087.20 1,087.71 1,088.27 1,088.87 1,089.52 1,090.20 1,090.87 1,091.54 1,092.22 1,092.89 1,093.55 1,094.18 1,094.78 1,095.35 1,095.89 1,096.40 1,096.88 1,097.33 1,097.76 1,098.15 1,098.51 1,098.85 1,099.15 1,099.43 1,099.67 1,099.89 1,100.07 1,100.23

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER K.5

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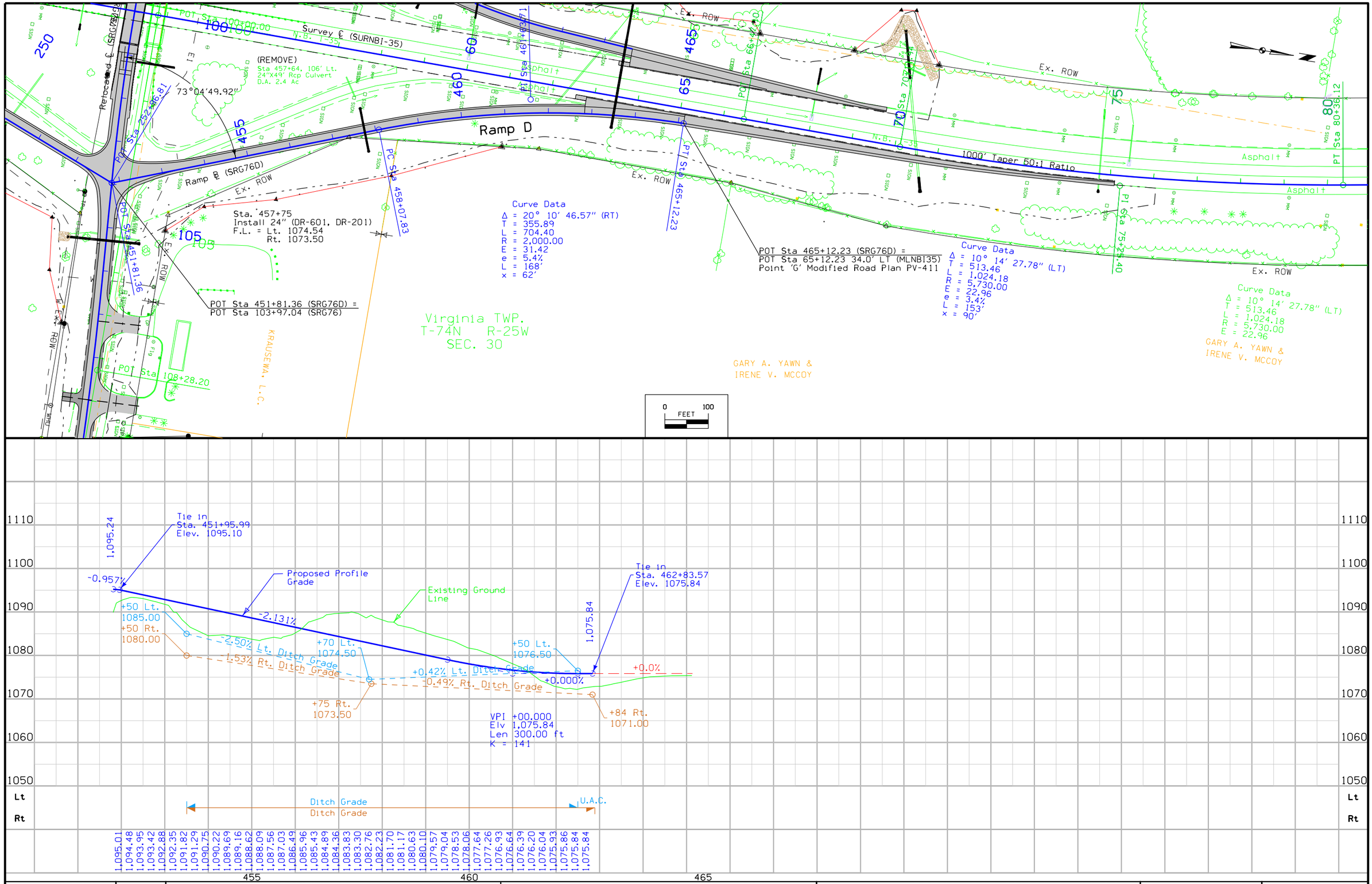

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER K.6

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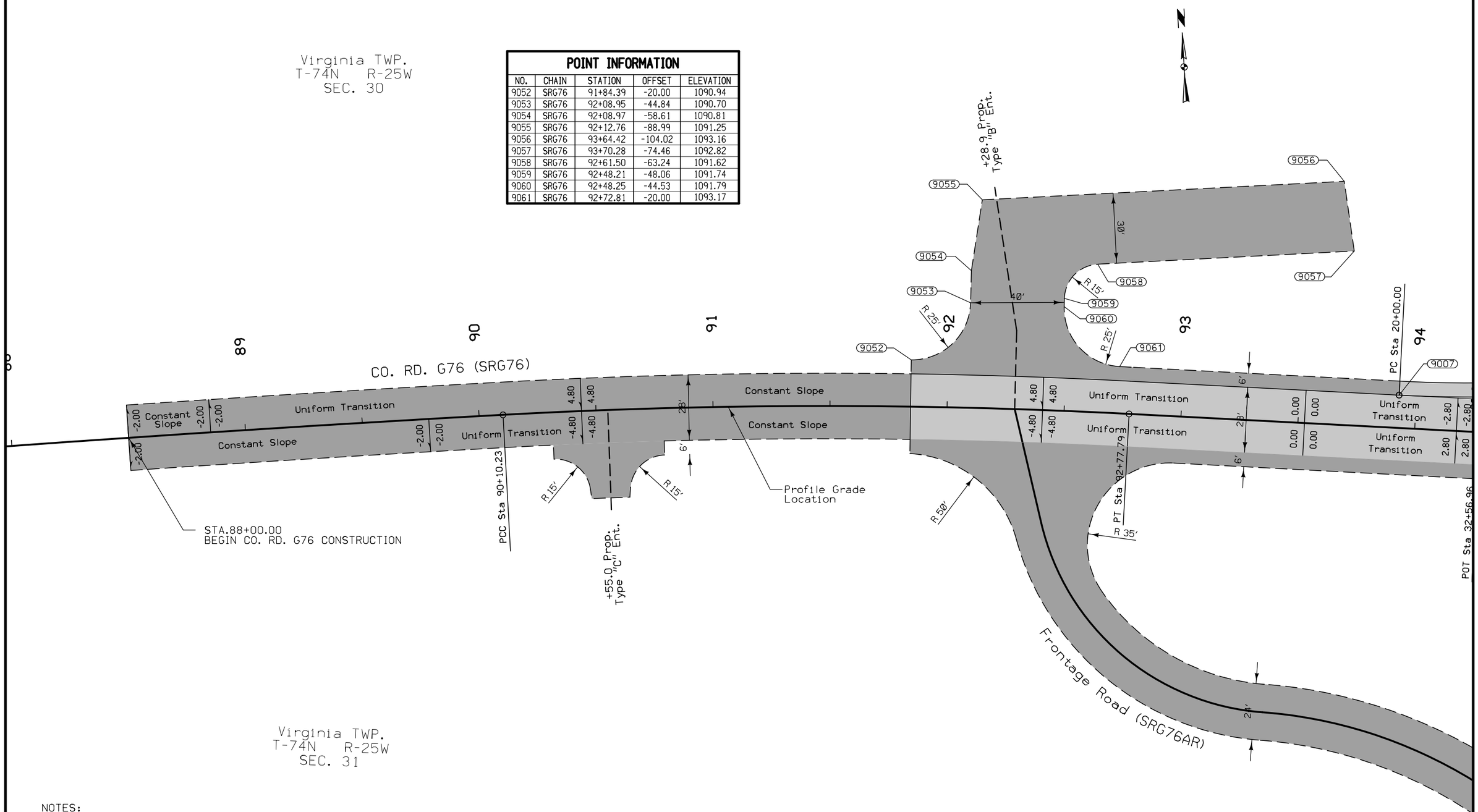
Virginia TWP.
T-74N R-25W
SEC. 30

POINT INFORMATION				
NO.	CHAIN	STATION	OFFSET	ELEVATION
9052	SRG76	91+84.39	-20.00	1090.94
9053	SRG76	92+08.95	-44.84	1090.70
9054	SRG76	92+08.97	-58.61	1090.81
9055	SRG76	92+12.76	-88.99	1091.25
9056	SRG76	93+64.42	-104.02	1093.16
9057	SRG76	93+70.28	-74.46	1092.82
9058	SRG76	92+61.50	-63.24	1091.62
9059	SRG76	92+48.21	-48.06	1091.74
9060	SRG76	92+48.25	-44.53	1091.79
9061	SRG76	92+72.81	-20.00	1093.17



Virginia TWP.
T-74N R-25W
SEC. 31

NOTES:

Refer to "G" sheets for horizontal alignment information.
Refer to Standard Road Plans for additional information, if applicable.

0 20
FEET

GEOMETRIC AND STAKING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.1

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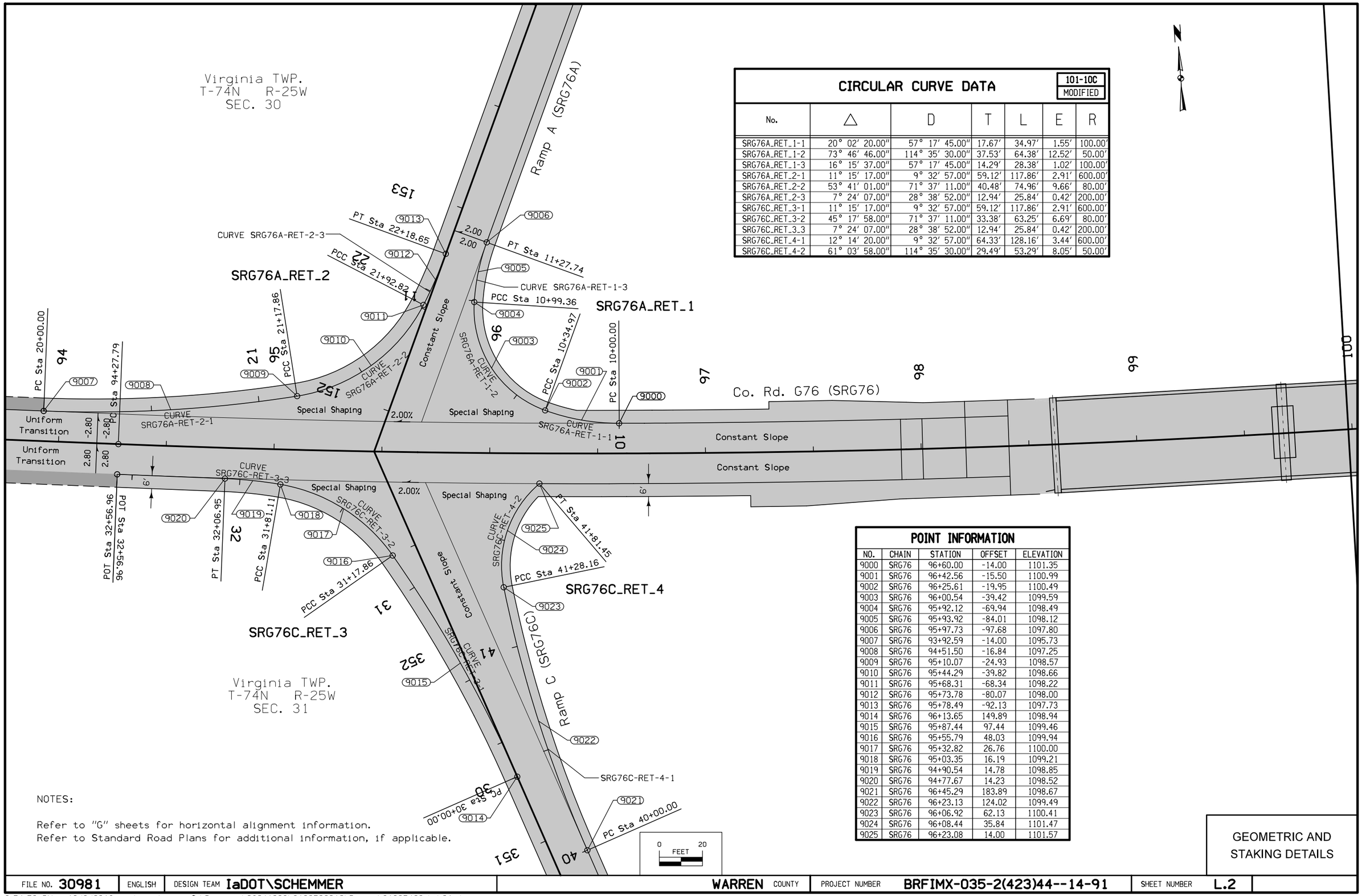

CIRCULAR CURVE DATA

101-10C MODIFIED

No.	△	D	T	L	E	R
SRG76A_RET_1-1	20° 02′ 20.00″	57° 17′ 45.00″	17.67′	34.97′	1.55′	100.00′
SRG76A_RET_1-2	73° 46′ 46.00″	114° 35′ 30.00″	37.53′	64.38′	12.52′	50.00′
SRG76A_RET_1-3	16° 15′ 37.00″	57° 17′ 45.00″	14.29′	28.38′	1.02′	100.00′
SRG76A_RET_2-1	11° 15′ 17.00″	9° 32′ 57.00″	59.12′	117.86′	2.91′	600.00′
SRG76A_RET_2-2	53° 41′ 01.00″	71° 37′ 11.00″	40.48′	74.96′	9.66′	80.00′
SRG76A_RET_2-3	7° 24′ 07.00″	28° 38′ 52.00″	12.94′	25.84′	0.42′	200.00′
SRG76C_RET_3-1	11° 15′ 17.00″	9° 32′ 57.00″	59.12′	117.86′	2.91′	600.00′
SRG76C_RET_3-2	45° 17′ 58.00″	71° 37′ 11.00″	33.38′	63.25′	6.69′	80.00′
SRG76C_RET_3_3	7° 24′ 07.00″	28° 38′ 52.00″	12.94′	25.84′	0.42′	200.00′
SRG76C_RET_4-1	12° 14′ 20.00″	9° 32′ 57.00″	64.33′	128.16′	3.44′	600.00′
SRG76C_RET_4-2	61° 03′ 58.00″	114° 35′ 30.00″	29.49′	53.29′	8.05′	50.00′

POINT INFORMATION

NO.	CHAIN	STATION	OFFSET	ELEVATION
9000	SRG76	96+60.00	-14.00	1101.35
9001	SRG76	96+42.56	-15.50	1100.99
9002	SRG76	96+25.61	-19.95	1100.49
9003	SRG76	96+00.54	-39.42	1099.59
9004	SRG76	95+92.12	-69.94	1098.49
9005	SRG76	95+93.92	-84.01	1098.12
9006	SRG76	95+97.73	-97.68	1097.80
9007	SRG76	93+92.59	-14.00	1095.73
9008	SRG76	94+51.50	-16.84	1097.25
9009	SRG76	95+10.07	-24.93	1098.57
9010	SRG76	95+44.29	-39.82	1098.66
9011	SRG76	95+68.31	-68.34	1098.22
9012	SRG76	95+73.78	-80.07	1098.00
9013	SRG76	95+78.49	-92.13	1097.73
9014	SRG76	96+13.65	149.89	1098.94
9015	SRG76	95+87.44	97.44	1099.46
9016	SRG76	95+55.79	48.03	1099.94
9017	SRG76	95+32.82	26.76	1100.00
9018	SRG76	95+03.35	16.19	1099.21
9019	SRG76	94+90.54	14.78	1098.85
9020	SRG76	94+77.67	14.23	1098.52
9021	SRG76	96+45.29	183.89	1098.67
9022	SRG76	96+23.13	124.02	1099.49
9023	SRG76	96+06.92	62.13	1100.41
9024	SRG76	96+08.44	35.84	1101.47
9025	SRG76	96+23.08	14.00	1101.57

NOTES:

Refer to "G" sheets for horizontal alignment information.
Refer to Standard Road Plans for additional information, if applicable.

GEOMETRIC AND STAKING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.2

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CIRCULAR CURVE DATA

101-10C MODIFIED

No.	△	D	T	L	E	R
SRG76D_RET_1-1	07° 24′ 07.00″	28° 38′ 52.00″	12.94′	25.84′	0.42′	200.00′
SRG76D_RET_1-2	54° 25′ 26.00″	71° 37′ 11.00″	41.14′	75.99′	9.96′	80.00′
SRG76D_RET_1-3	11° 15′ 17.00″	09° 32′ 57.00″	59.12′	117.86′	2.91′	600.00′
SRG76D_RET_2-1	56° 02′ 15.00″	114° 35′ 30.00″	26.61′	48.90′	6.64′	50.00′
SRG76D_RET_2-2	14° 50′ 06.00″	11° 27′ 33.00″	65.09′	129.46′	4.22′	500.00′
SRG76B_RET_3-1	03° 10′ 43.00″	08° 11′ 06.00″	19.42′	38.83′	0.27′	700.00′
SRG76B_RET_3-2	85° 18′ 01.00″	114° 35′ 30.00″	46.06′	74.44′	17.98′	50.00′
SRG76B_RET_3-3	26° 00′ 58.00″	81° 51′ 04.00″	16.17′	31.78′	1.84′	70.00′
SRG76B_RET_4-1	07° 24′ 07.00″	28° 38′ 52.00″	12.94′	25.84′	0.42′	200.00′
SRG76B_RET_4-2	45° 45′ 20.00″	71° 37′ 11.11″	33.76′	63.89′	6.83′	80.00′
SRG76B_RET_4-3	11° 15′ 17.00″	09° 32′ 57.00″	59.12′	117.86′	2.91	600.00′

Virginia TWP.
T-74N R-25W
SEC. 30

Virginia TWP.
T-74N R-25W
SEC. 31

Ramp D (SRG76D)

Ramp B (SRG76B)

Co. Rd. G76 (SRG76)

SRG76D_RET_1

SRG76D_RET_2

SRG76B_RET_3

SRG76B_RET_4

PT Sta 21+78.36

PT Sta 12+19.69

PCC Sta 11+01.83

PCC Sta 20+48.90

PC Sta 20+00.00

PC Sta 10+25.84

PC Sta 10+00.00

PT Sta 31+45.06

PCC Sta 31+13.27

PCC Sta 30+38.83

PC Sta 30+00.00

PCC Sta 40+89.72

PCC Sta 40+25.84

PC Sta 40+00.00

PT Sta 42+07.58

PC Sta 106+27.78

CURVE SRG76D-RET-2-2

CURVE SRG76D-RET-2-1

CURVE SRG76D-RET-1-3

CURVE SRG76D-RET-1-2

CURVE SRG76D-RET-1-1

CURVE SRG76B-RET-3-3

CURVE SRG76B-RET-3-2

CURVE SRG76B-RET-3-1

CURVE SRG76B-RET-4-3

CURVE SRG76B-RET-4-2

CURVE SRG76B-RET-4-1

Uniform Transition

Special Shaping

Constant Slope

+16.2 Prop. Type "B" Ent.

40′

R 50′

16′

14′

9′

2.00%

2.63%

3.27%

-2.80

2.80

-2.00

2.00

NOTES:

Refer to "G" sheets for horizontal alignment information.
Refer to Standard Road Plans for additional information, if applicable.

0 20 FEET

POINT INFORMATION

NO.	CHAIN	STATION	OFFSET	ELEVATION
9026	SRG76	104+77.67	-14.00	1092.21
9027	SRG76	104+64.76	-14.42	1092.66
9028	SRG76	104+51.91	-15.67	1093.06
9029	SRG76	104+16.77	-29.16	1093.82
9030	SRG76	103+91.69	-57.23	1093.72
9031	SRG76	103+66.00	-110.41	1092.78
9032	SRG76	103+45.26	-165.74	1091.72
9033	SRG76	103+24.96	-14.00	1096.97
9034	SRG76	103+40.38	-32.72	1095.87
9035	SRG76	103+45.22	-56.44	1094.91
9036	SRG76	103+38.03	-120.74	1093.04
9037	SRG76	103+22.13	-183.55	1091.53
9038	SRG76	103+23.40	120.11	1094.87
9039	SRG76	103+31.19	102.40	1095.08
9040	SRG76	103+38.54	84.48	1095.28
9041	SRG76	103+38.89	48.11	1096.26
9042	SRG76	103+14.61	21.18	1097.70
9043	SRG76	102+99.73	15.82	1098.33
9044	SRG76	102+84.02	14.00	1098.82
9045	SRG76	103+57.78	83.05	1095.00
9046	SRG76	103+63.59	71.56	1095.15
9047	SRG76	103+70.15	60.47	1095.30
9048	SRG76	103+92.16	37.78	1095.08
9049	SRG76	104+21.43	25.54	1093.85
9050	SRG76	104+79.70	16.89	1091.98
9051	SRG76	105+38.54	14.00	1089.98
9062	SRG76	106+91.71	-42.84	1083.70
9063	SRG76	106+96.32	-63.76	1083.40
9064	SRG76	106+96.34	-94.00	1083.03
9065	SRG76	107+36.03	-94.00	1082.73
9066	SRG76	107+36.05	-63.76	1082.29
9067	SRG76	107+40.66	-42.84	1082.08

GEOMETRIC AND STAKING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.3

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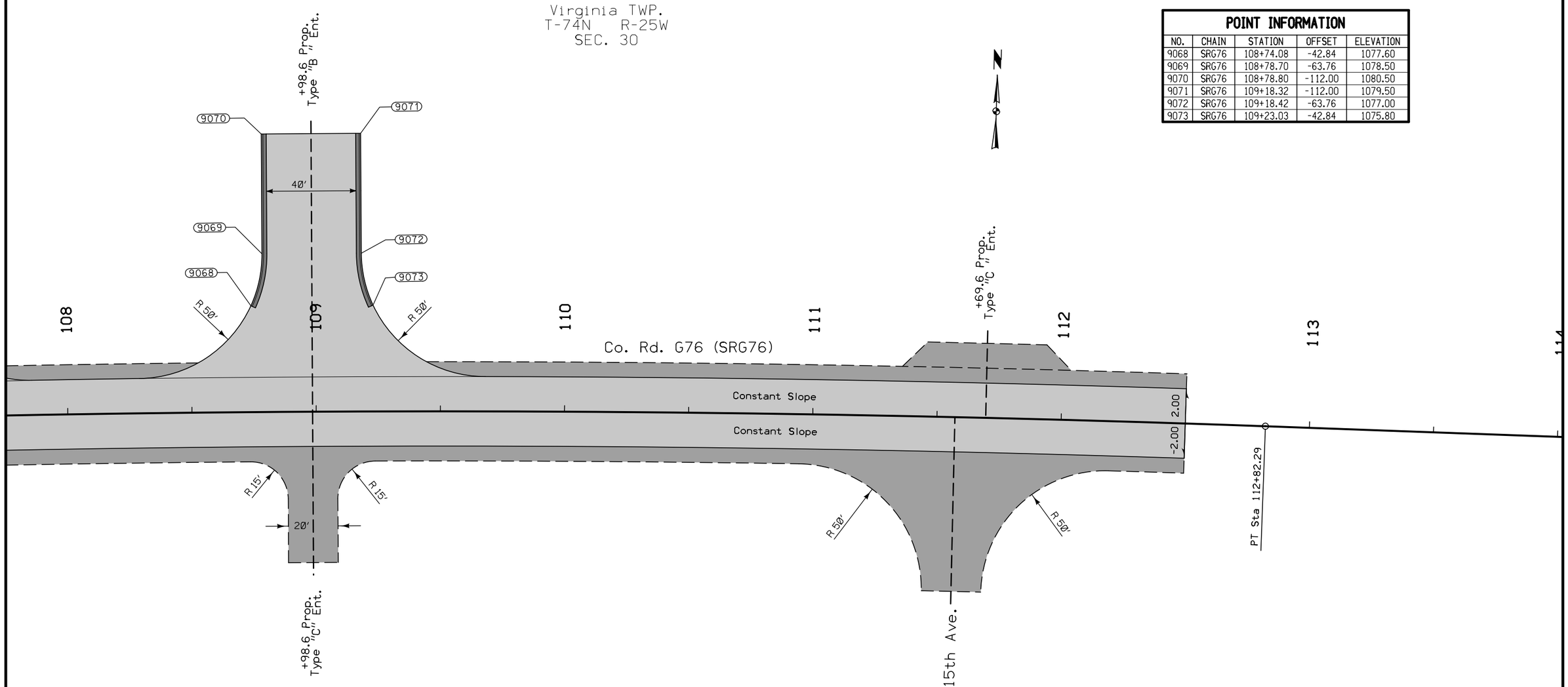
Virginia TWP.
T-74N R-25W
SEC. 30

POINT INFORMATION				
NO.	CHAIN	STATION	OFFSET	ELEVATION
9068	SRG76	108+74.08	-42.84	1077.60
9069	SRG76	108+78.70	-63.76	1078.50
9070	SRG76	108+78.80	-112.00	1080.50
9071	SRG76	109+18.32	-112.00	1079.50
9072	SRG76	109+18.42	-63.76	1077.00
9073	SRG76	109+23.03	-42.84	1075.80



Virginia TWP.
T-74N R-25W
SEC. 31

NOTES:

Refer to "G" sheets for horizontal alignment information.
Refer to Standard Road Plans for additional information, if applicable.

0 20
FEET

GEOMETRIC AND STAKING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.4

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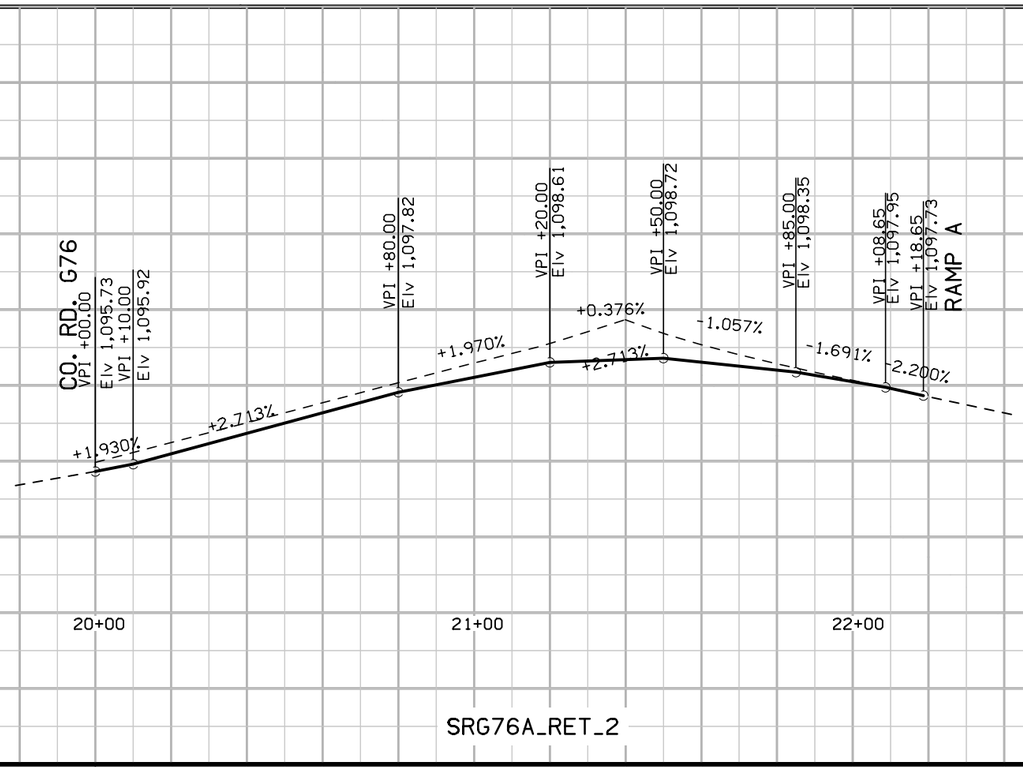

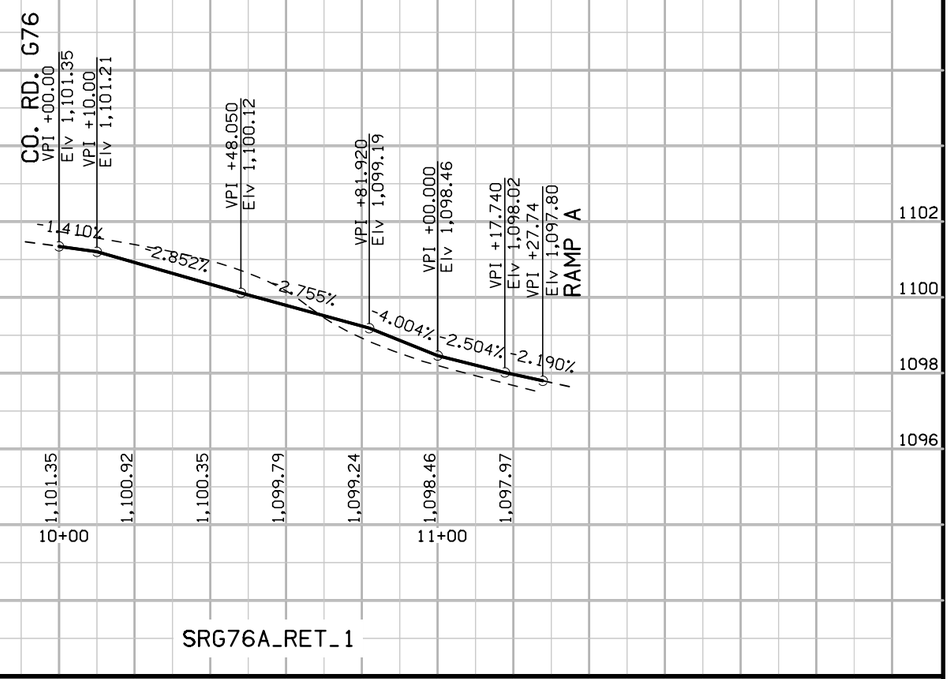

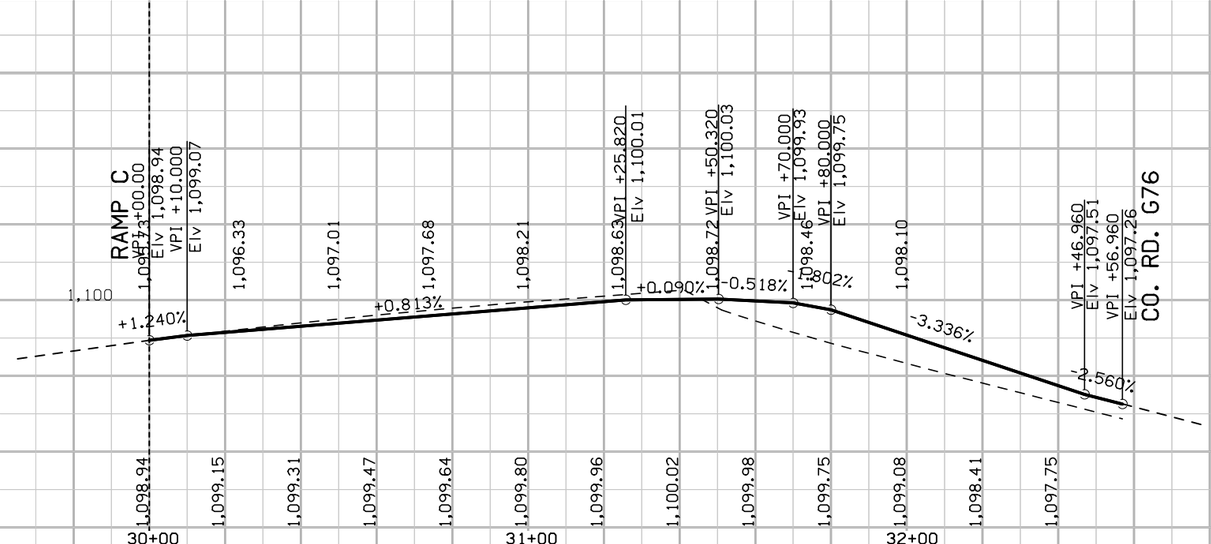

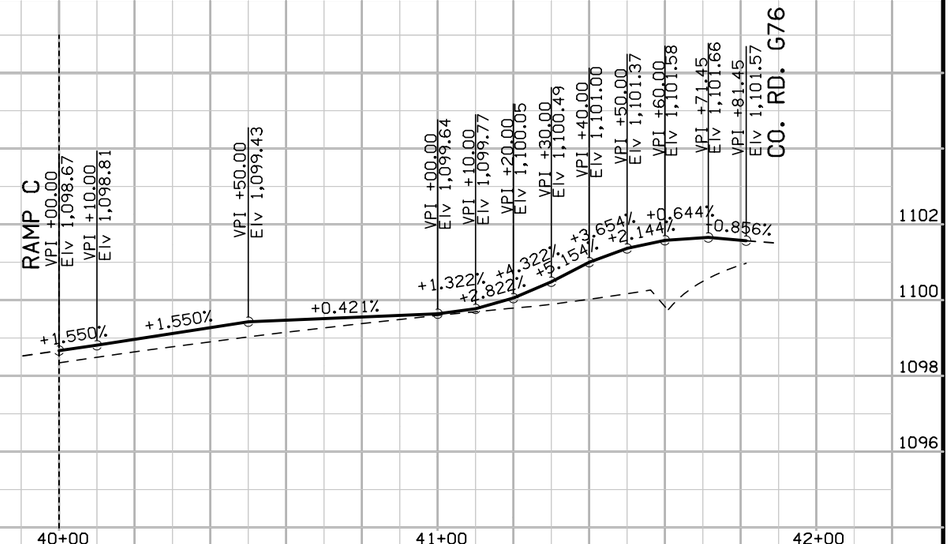

EDGE RETURN PROFILES
US I-35/CO. RD. G76

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.5

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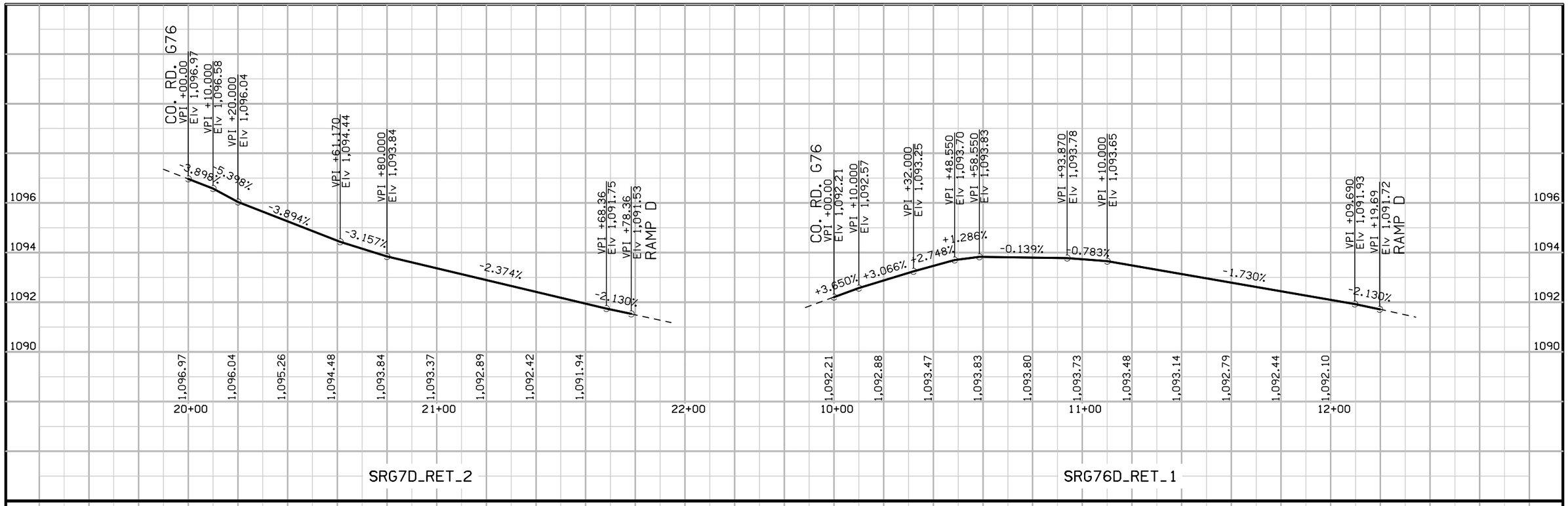

EDGE RETURN PROFILES
US I-35/CO. RD. G76

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.6

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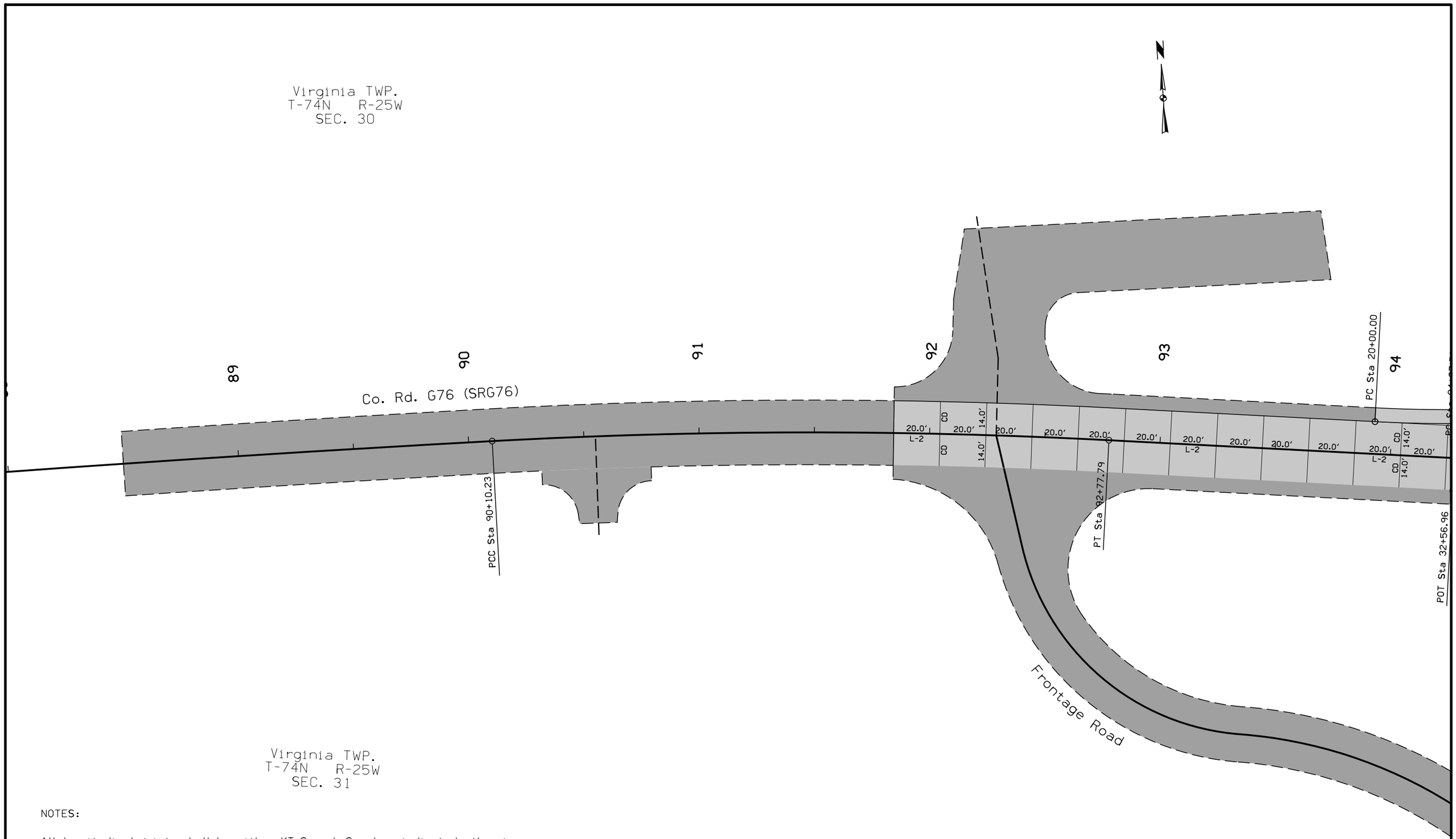

NOTES:

All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.
All traverse joints shall be CD joints with a maximum 20' spacing unless indicated otherwise.
If a joint length is 2', a C joint shall be used in place of a CD joint.
Refer to Standard Road Plans for paved header details, if applicable.
Refer to Standard Road Plan PV-1 for additional details.
Refer to Standard Road Plans for additional jointing details around physical features.

0 20
FEET

JOINTING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.7

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Virginia TWP.
T-74N R-25W
SEC. 30

Virginia TWP.
T-74N R-25W
SEC. 31

Ramp A (SRG76A)

Ramp B (SRG76B)

Co. Rd. G76 (SRG76)

PC Sta 20+00.00

PT Sta 22+18.65

PCC Sta 21+92.82

PCC Sta 21+17.86

PT Sta 11+27.74

PCC Sta 10+99.36

PCC Sta 10+34.97

PC Sta 10+00.00

PC Sta 94+27.79

POT Sta 32+56.96

PT Sta 32+06.95

PCC Sta 31+81.11

PCC Sta 31+17.86

PT Sta 41+81.45

PCC Sta 41+28.16

NOTES:

All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.
All traverse joints shall be CD joints with a maximum 20′ spacing unless indicated otherwise.
If a joint length is 2′, a C joint shall be used in place of a CD joint.
Refer to Standard Road Plans for paved header details, if applicable.
Refer to Standard Road Plan PV-1 for additional details.
Refer to Standard Road Plans for additional jointing details around physical features.

0 20 FEET

JOINTING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.8

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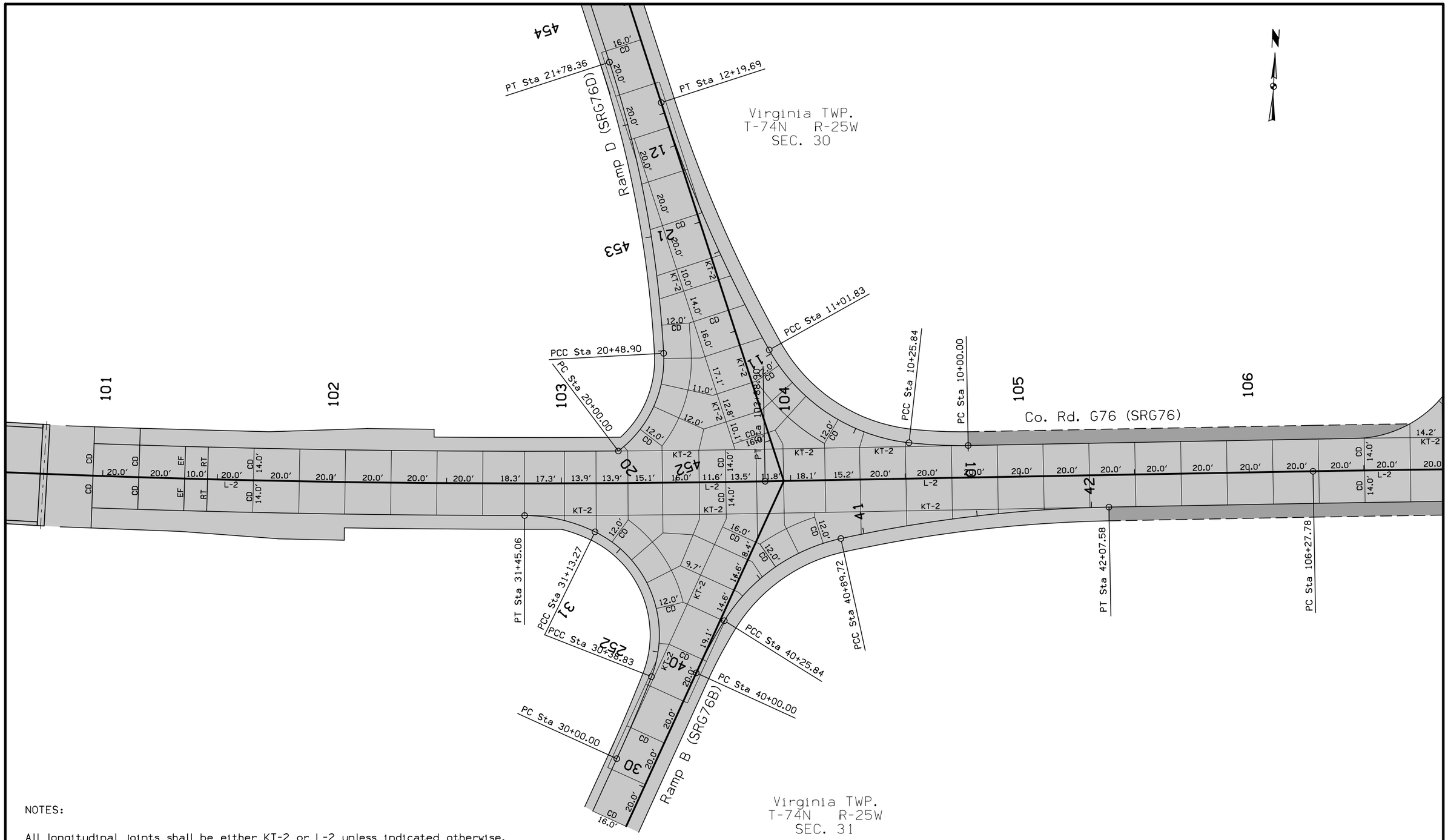

NOTES:

All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.
All traverse joints shall be CD joints with a maximum 20′ spacing unless indicated otherwise.
If a joint length is 2′, a C joint shall be used in place of a CD joint.
Refer to Standard Road Plans for paved header details, if applicable.
Refer to Standard Road Plan PV-1 for additional details.
Refer to Standard Road Plans for additional jointing details around physical features.

JOINTING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.9

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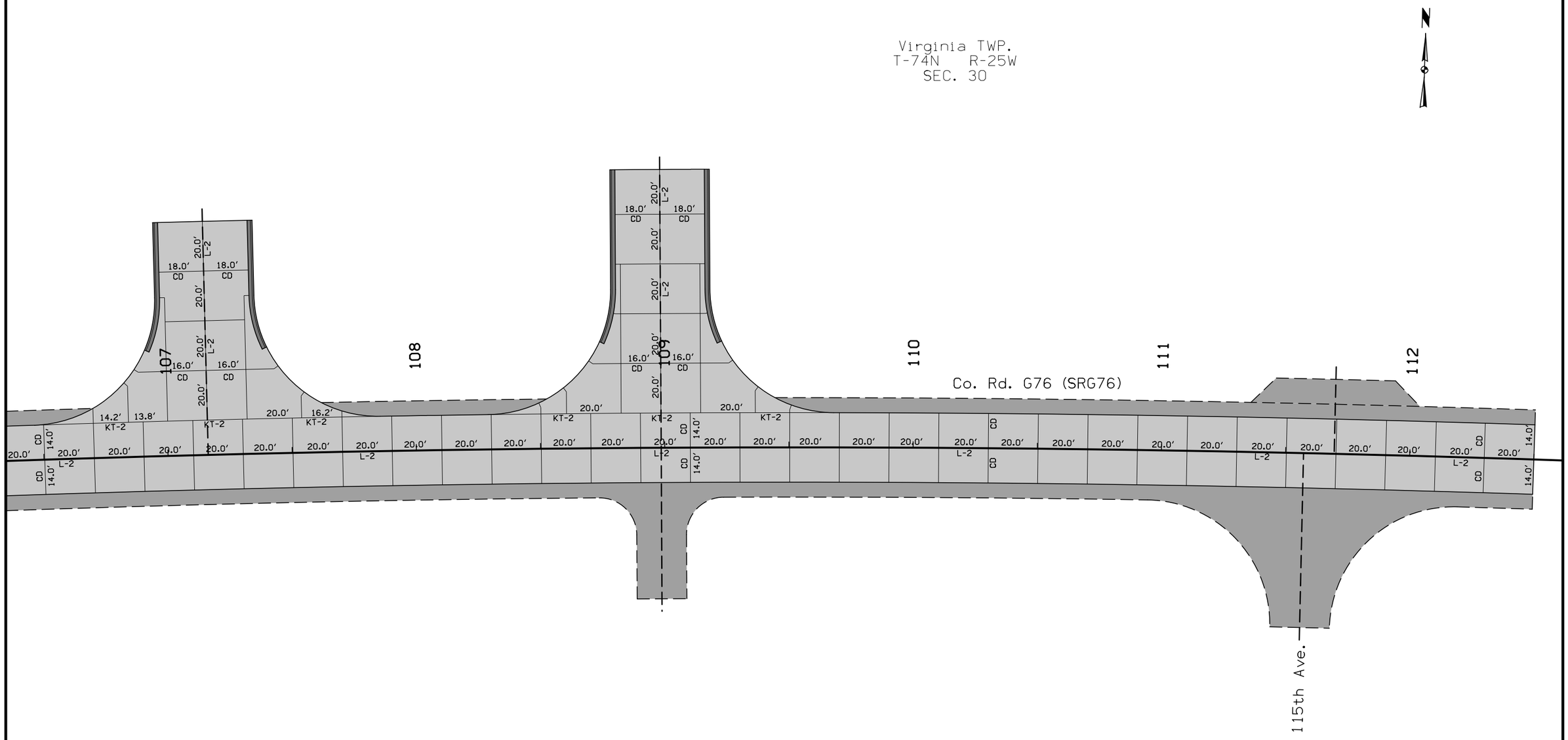

NOTES:

All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.
All traverse joints shall be CD joints with a maximum 20′ spacing unless indicated otherwise.
If a joint length is 2′, a C joint shall be used in place of a CD joint.
Refer to Standard Road Plans for paved header details, if applicable.
Refer to Standard Road Plan PV-1 for additional details.
Refer to Standard Road Plans for additional jointing details around physical features.

0 20 FEET

JOINTING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER L.10

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SURVEY SYMBOLS

- PIP Pipe Culvert
- BLD Building or Foundation
- FWD Wood Fence
- FW Wire Fence
- TDC Tree Deciduous
- FCL Chain Link and Security Fence
- MM Mile Marker Post
- SL Speed Limit Sign
- TEV Evergeen Tree
- SHR Shrub
- SI Sign
- LUM Luminaire
- MH Utility Access (Manhole)
- WV Water Valve
- LP L.P. Tank
- PR Electic Riser Pole
- TV Satelite TV Dish
- EB Electrical Box
- MIS Miscellaneous
- GP Guard Post (Less Than 4 Posts)
- WEL Well
- SEP Septic Tank
- PPA Power Pole Co. 1
- TPD Telephone Pedestal
- CIS Cistern
- SLO Silo
- LIN Miscellaneous Line
- STP Stump
- WHU RV Water Hook Up
- TLNL Tree Line Left
- WM Wind Mill
- TFR Tree Fruit
- TLNR Tree Line Right
- BRG Bridge
- IN Storm Sewer Intake
- CUL Culvert
- LC Lot Corner
- HDG Hedge Row
- GDL Guard Rail Steel
- FLG Flag Poles
- UV Underground Utility Vault
- GPR Guard Post (4 or More Posts)
- TR Telephone Riser Pole
- RET Retaining Walls
- TLA Underground Telephone Line Co. 1
- EP Edge of Paved Roads (ML or SR)
- EG Edge of Gravel Road
- CU Back of Curb
- GU Gutter In Front of Curb
- SWK Sidewalk
- CON Concrete or A/C Slab
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- SNP Unpaved Shoulder
- RIP Rip-Rap
- EW Edge of Water
- DIK Centerline of Dike or Dam
- WLA Underground Water Line Co. 1
- GLA Underground Gas Line Co. 1
- ELA Underground Electric Line Co. 1
- FOA Underground Fiber Optic Line Co. 1

UTILITY LEGEND

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Shane Schrader
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UV Underground Utility Vault

TR Telephone Riser Pole

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PLAN VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design	Color No.	
Green	(2)		Existing Topographic Features and Labels
Purple (Halo)	(15)		Backslope Drains
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	**Design**	**Color No.**	
Brown, Light	(236)		Core Out

PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design	Color No.	
Blue	(1)		Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)		Existing Ground Line Profile
Green, Med	(227)		Topsoil
Green, Med	(227)		Slope Dressing Only
Orange	(6)		Loam
Brown, Dark	(238)		Class 10
Brown, Med	(237)		Sand
Red	(3)		Unsuitable A
Pink, Dark	(13)		Unsuitable B
Pink	(11)		Unsuitable C
Red	(3)		Shale
Red	(3)		Waste
Gray, Light	(48)		Broken and Weathered Rock
Gray, Med	(80)		Rock
Gray, V.Dark	(128)		Boulders

PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

- Drill
- Dig/Core
- Water
- Treatment
- Dry
- Sand Blanket
- Sample
- Soil Overexcavation Area
- Plugged
- Select Soil
- Moisture
- Select Sand
- Shelby
- Slope Dressing Only
- Blow Count
- Broken and Weathered Rock
- Dens. Core
- Rock

Drilled By: GSI Engineering
Date(s) Drilled 11/7-11/18, 2013

- Sandstone
- Unsuitable A
- Unsuitable B
- Unsuitable C
- Sandy Soil
- Boulders
- Shale
- Waste

- Reference Point
- Survey Line
- Station
- 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

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

SOILS LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES Q & R)

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Q.1

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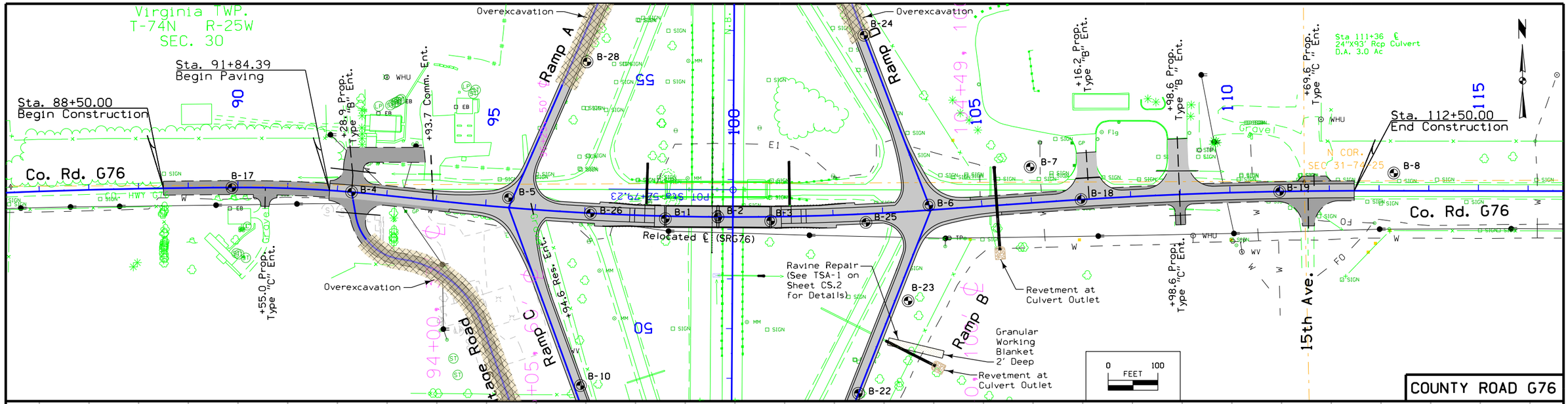
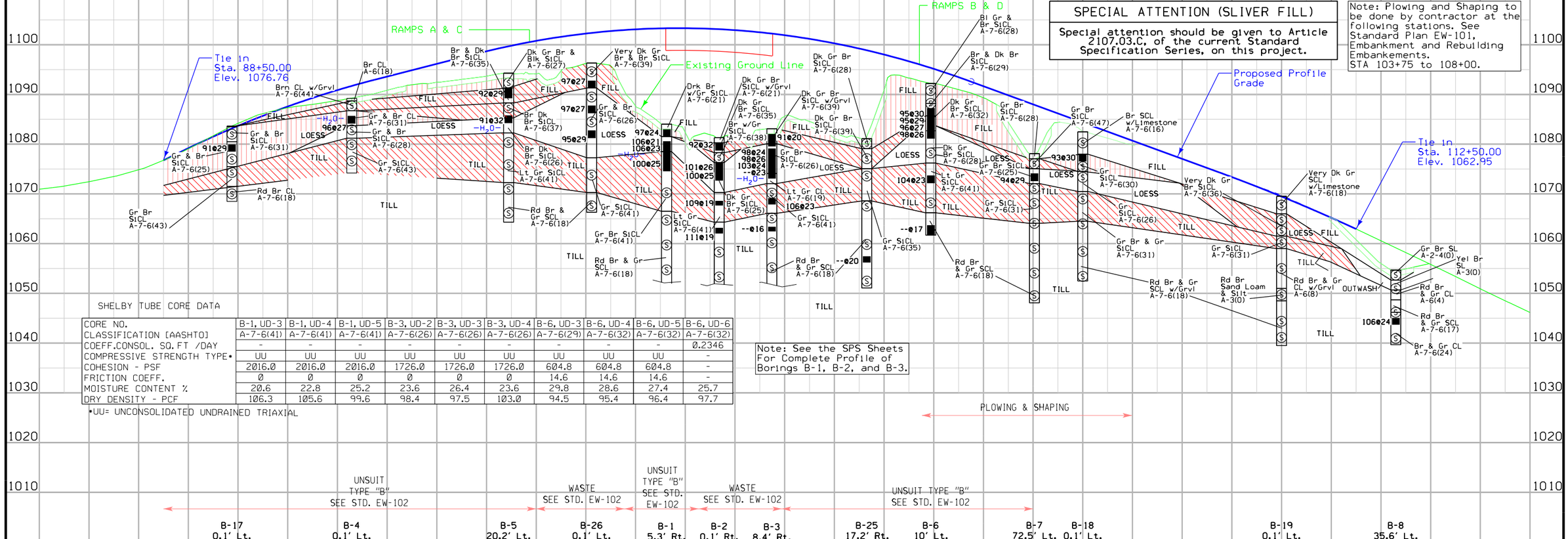


COUNTY ROAD G76

CUT MOISTURE	29		27		29, 32	27, 27, 29	24, 21, 23, 25	20, 24, 26, 24, 23, 23, 16	20	30, 29, 27, 26, 23, 17	29	30						24	
CUT DENSITY (lb/ft³)	91		96		92, 91	97, 97, 95	97, 106, 106, 100	91, 98, 98, 103, NA, 106, NA	NA	95, 95, 96, 98, 104, NA	94	93						106	
PLASTIC LIMIT	22		20		20, NA	20, NA, NA	26, 17, NA, NA	24, NA, 20, NA, 14, NA, NA	NA	NA, 19, NA, 19, NA, NA	18	24						17	



SHELBY TUBE CORE DATA

CORE NO.	B-1, UD-3	B-1, UD-4	B-1, UD-5	B-3, UD-2	B-3, UD-3	B-3, UD-4	B-6, UD-3	B-6, UD-4	B-6, UD-5	B-6, UD-6
CLASSIFICATION [AASHTO]	A-7-6(41)	A-7-6(41)	A-7-6(41)	A-7-6(26)	A-7-6(26)	A-7-6(26)	A-7-6(29)	A-7-6(32)	A-7-6(32)	A-7-6(32)
COEFF.CONSOL. SQ.FT /DAY	-	-	-	-	-	-	-	-	-	0.2346
COMPRESSIVE STRENGTH TYPE•	UU	UU	UU	UU	UU	UU	UU	UU	UU	-
COHESION - PSF	2016.0	2016.0	2016.0	1726.0	1726.0	1726.0	604.8	604.8	604.8	-
FRICTION COEFF.	0	0	0	0	0	0	14.6	14.6	14.6	-
MOISTURE CONTENT %	20.6	22.8	25.2	23.6	26.4	23.6	29.8	28.6	27.4	25.7
DRY DENSITY - PCF	106.3	105.6	99.6	98.4	97.5	103.0	94.5	95.4	96.4	97.7

•UU= UNCONSOLIDATED UNDRAINED TRIAXIAL

Note: See the SPS Sheets For Complete Profile of Borings B-1, B-2, and B-3.

SPECIAL ATTENTION (SLIVER FILL)

Special attention should be given to Article 2107.03.C, of the current Standard Specification Series, on this project.

Note: Plowing and Shaping to be done by contractor at the following stations. See Standard Plan EW-101, Embankment and Rebuilding Embankements.
STA 103+75 to 108+00.

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 0.2

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Virginia TWP.
T-74N R-25W
SEC. 30

POT Sta 151+80.04 (SRG76A) =
POT Sta 95+46.39 (SRG76)

POT Sta 163+66.68 (SRG76A) =
POT Sta 63+66.68 114.0' LT (MLNBI35)
Point 'M' Standard Road Plan PV-410

Revetment at Culvert Outlet

Ravine Repair (See TSA-1 on Sheet CS.2 for Details)

Granular Working Blanket 2' Deep

Overexcavation

Ramp B (SRG76A)

Ramp A

Ramp D

600' Taper 15:1 Ratio

71°06'17.51"

Relocated ℄ (SR76)

Survey ℄ (SURNBI-35)

N.B. I-35

Ex. ROW

Pond

24" Wide Conc. Flume

Asphalt

B-1 B-2 B-4 B-5 B-11 B-12 B-16 B-26 B-28 B-29

0 100 FEET

RAMP A

CUT MOISTURE	29, 32	26, 22, 26	22, 15	25, 24, 25	23
CUT DENSITY (lb/ft³)	92, 91	98,105, NA	104,120	NA,103, NA	105
PLASTIC LIMIT	20, NA	20, NA, NA	16, 16	NA, NA, NA	17

Tie in
Sta. 151+94.84
Elev. 1099.45

Tie in
Sta. 163+66.68
Elev. 1076.04

Overexcavation

Proposed Profile Grade

Existing Ground Line

Br Dk B SiCL A-7-6(35) 92@29
Dk Gr Br & Blk SiCL A-7-6(27)
FILL
Br Dk Br SiCL A-7-6(37) 91@32 -H2O-
Br Dk Br SiCL A-7-6(26)
LOESS
TILL
Lt Gr SiCL A-7-6(41)
Red Br & Gr SCL A-7-6(18)
Br SiCL A-7-6(35) 98@26
Gr & Br SiCL A-7-6(26) 105@22
-H2O- @26
Gr SiCL A-7-6(35)
Rd Br & Gr SCL A-7-6(18)
COLLUVIUM
Gr Br SiCL A-7-6(26) 104@22
Gr CL A-7-6(23)
Gr SCL A-7-6(17) 120@15
Rd Br & Gr CL A-6(8)
Br w/Dk Br & Gr CL & Grvl A-6(14)
Br w/Dk Br & Gr SiCL A-7-6(33) --@25
Dk Gr Br CL A-6(14) 103@24
Br w/Dk Br & Gr SiCL A-7-6(33) --@25
Very Dk Gr SiCL A-7-6(33)
Br w/Dk Br & Gr SCL A-7-6(19) 105@23
Very Dk Gr Br SiCL A-7-6(33)
Rd Br & Gr CL A-7-6(11)

OVEREXCAVATE

UNSUIT TYPE "B" SEE STD. EW-102

WASTE SEE STD EW-102

UNSUIT TYPE "B" SEE STD. EW-102

B-5 20.2' Lt.
B-28 26.9' Rt.
B-11 0' Lt.
B-12 25.9' Rt.
B-29 84.21 Lt.

155 160

Note: Overexcavation to Depth of 3' below Top of Subgrade shall be done by Contractor at the following Stations:
STA 154+50 to STA 156+50.

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 0.3

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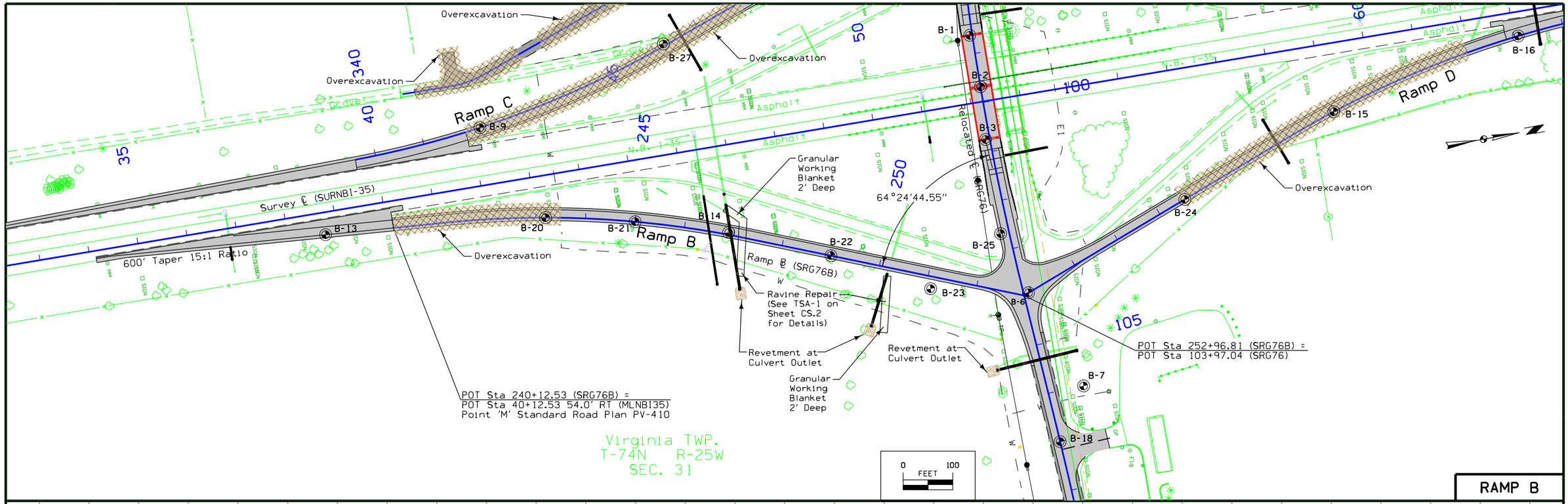
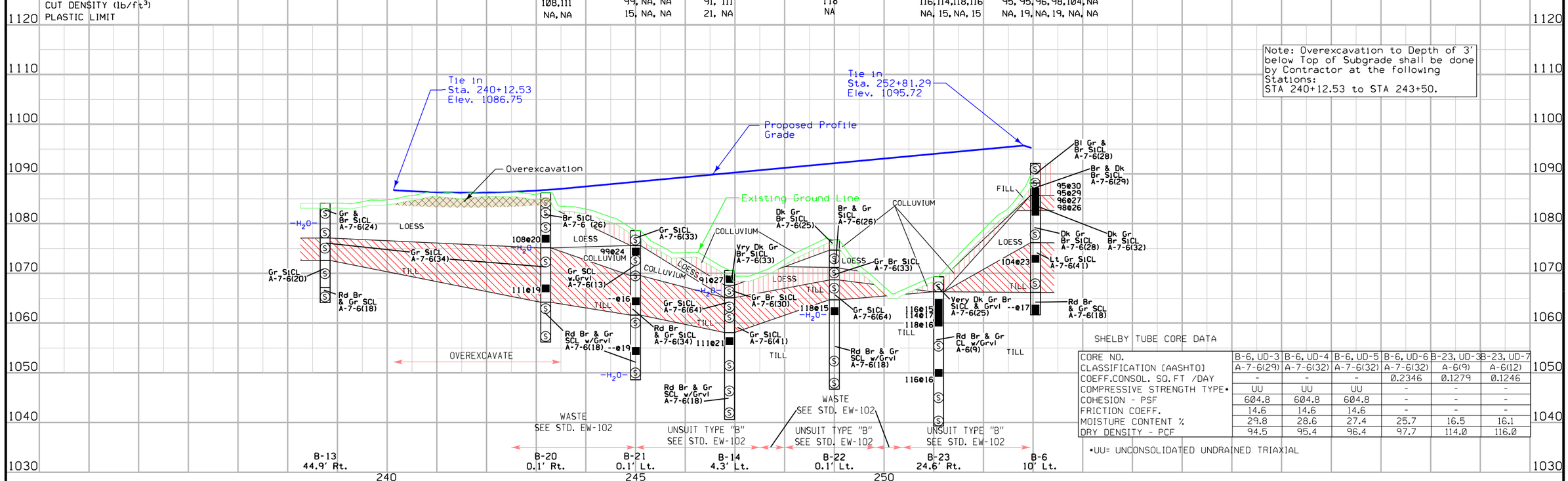


	CUT MOISTURE	20, 19	24, 16, 19	27, 21	15	15, 17, 16, 16	30, 29, 27, 26, 23, 17	
	CUT DENSITY (lb/ft³)	108,111	99, NA, NA	91, 111	118	116,114,118,116	95, 95, 96, 98, 104, NA	
1120	PLASTIC LIMIT	NA, NA	15, NA, NA	21, NA	NA	NA, 15, NA, 15	NA, 19, NA, 19, NA, NA	1120

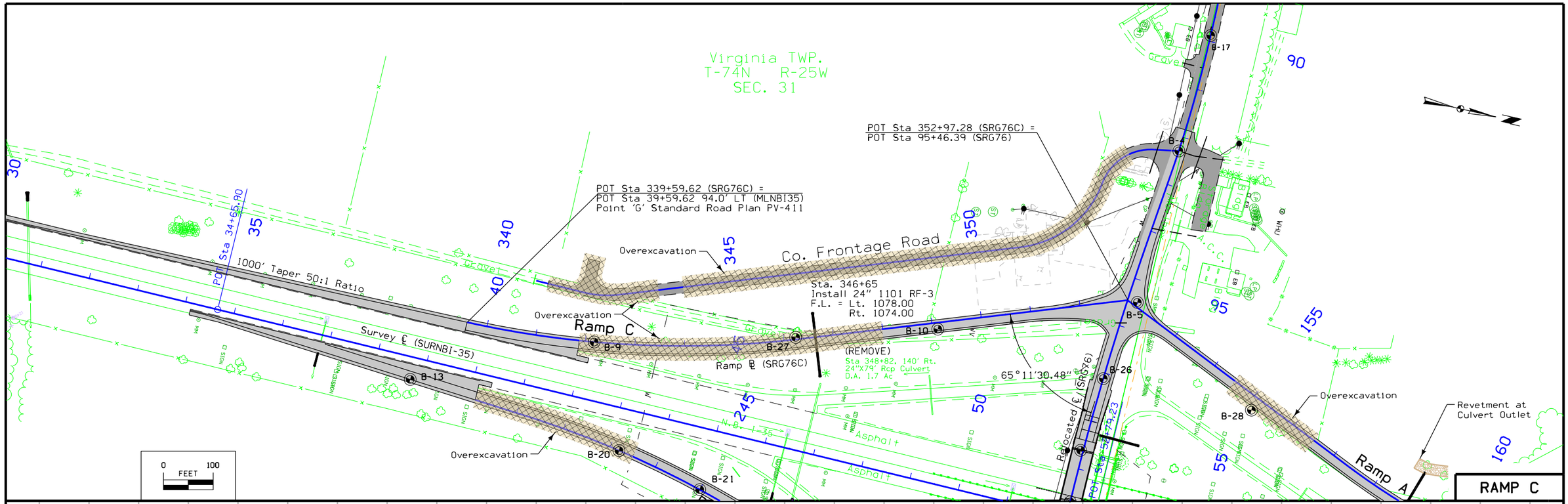


Note: Overexcavation to Depth of 3' below Top of Subgrade shall be done by Contractor at the following Stations:
STA 240+12.53 to STA 243+50.

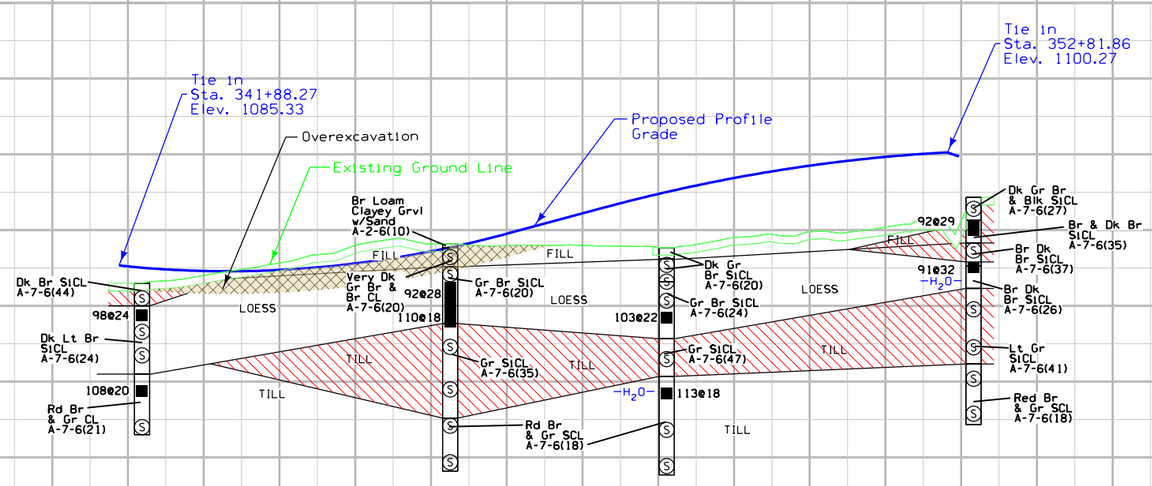
SHELBY TUBE CORE DATA

CORE NO.	B-6, UD-3	B-6, UD-4	B-6, UD-5	B-6, UD-6	B-23, UD-3	B-23, UD-7
CLASSIFICATION [AASHTO]	A-7-6(29)	A-7-6(32)	A-7-6(32)	A-7-6(32)	A-6(9)	A-6(12)
COEFF.CONSOL. SQ.FT /DAY	-	-	-	0.2346	0.1279	0.1246
COMPRESSIVE STRENGTH TYPE•	UU	UU	UU	-	-	-
COHESION - PSF	604.8	604.8	604.8	-	-	-
FRICTION COEFF.	14.6	14.6	14.6	-	-	-
MOISTURE CONTENT %	29.8	28.6	27.4	25.7	16.5	16.1
DRY DENSITY - PCF	94.5	95.4	96.4	97.7	114.0	116.0

•UU= UNCONSOLIDATED UNDRAINED TRIAXIAL



CUT MOISTURE		24, 20	28, 18	22, 18	29, 32
CUT DENSITY (lb/ft³)		98, 108	92, 110	103, 113	92, 91
PLASTIC LIMIT		22, 14	NA, NA	20, NA	20, NA



Note: Overexcavation to Depth of 3' below Top of Subgrade shall be done by Contractor at the following Stations:
STA 341+88.27 to STA 348+00.

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER		WARREN COUNTY	PROJECT NUMBER	BRFIMX-035-2(423)44--14-91	SHEET NUMBER 0.5	

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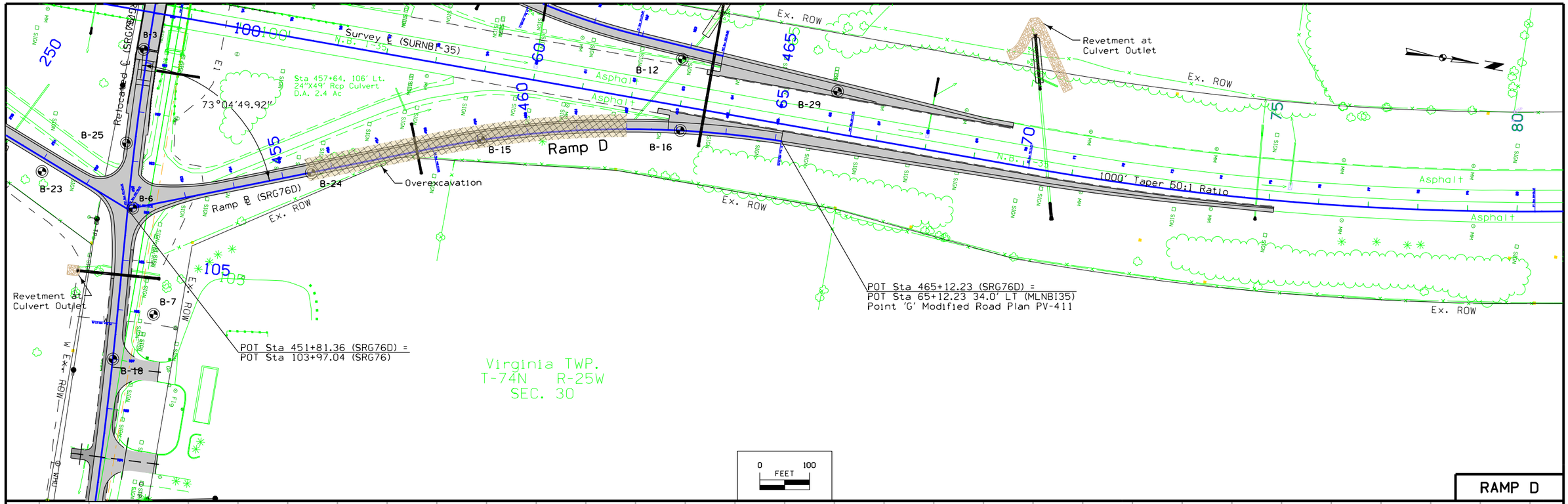
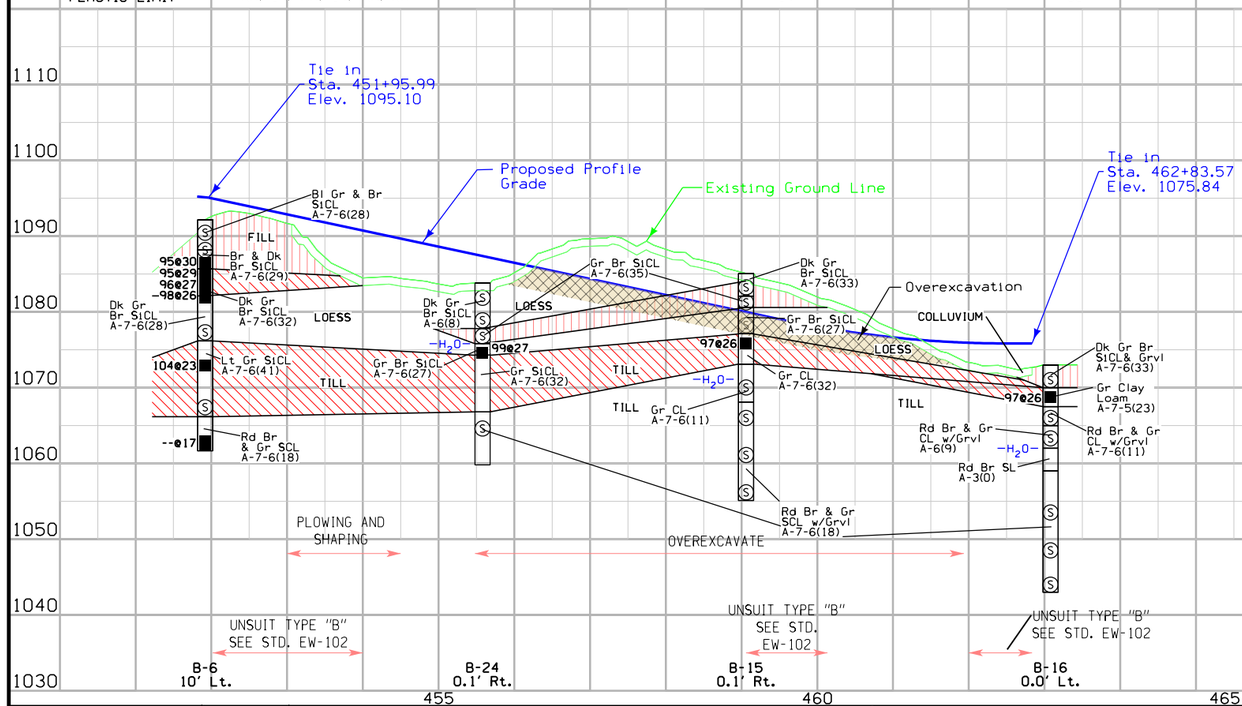


CUT MOISTURE	30, 29, 27, 26, 23, 17	27	26	26	
CUT DENSITY (lb/ft³)	95, 95, 96, 98, 104, NA	99	97	97	
PLASTIC LIMIT	NA, 19, NA, 19, NA, NA	NA	19	38	



Note: Overexcavation to Depth of 3' below Top of Subgrade shall be done by Contractor at the following Stations:
STA 455+50 to STA 462+00.

Note: Plowing and Shaping to be done by Contractor at the following Stations. See Standard Road Plan EW-101, Embankement and Rebuilding Embankments.
STA 453+00 to STA 454+50.

SHELBY TUBE CORE DATA

CORE NO.	B-6, UD-3	B-6, UD-4	B-6, UD-5	B-6, UD-6
CLASSIFICATION [AASHTO]	A-7-6(29)	A-7-6(32)	A-7-6(32)	A-7-6(32)
COEFF.CONSOL. SQ.FT /DAY	-	-	-	0.2346
COMPRESSIVE STRENGTH TYPE*	UU	UU	UU	-
COHESION - PSF	604.8	604.8	604.8	-
FRICTION COEFF.	14.6	14.6	14.6	-
MOISTURE CONTENT %	29.8	28.6	27.4	25.7
DRY DENSITY - PCF	94.5	95.4	96.4	97.7

*UU= UNCONSOLIDATED UNDRAINED TRIAXIAL

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER 0.6

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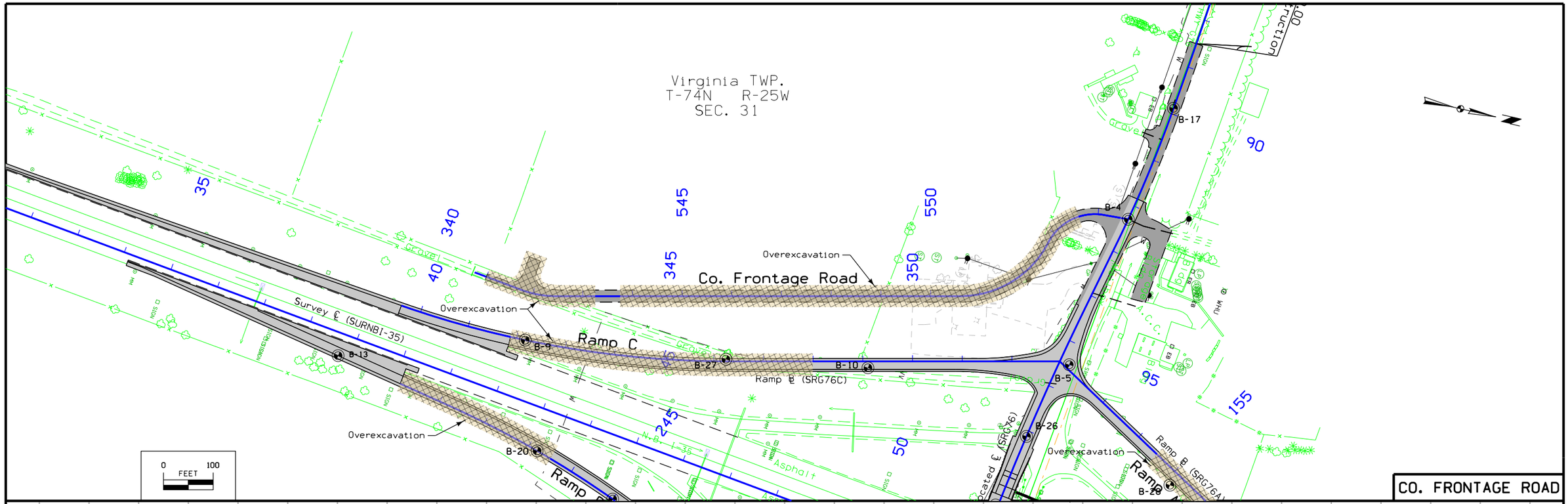
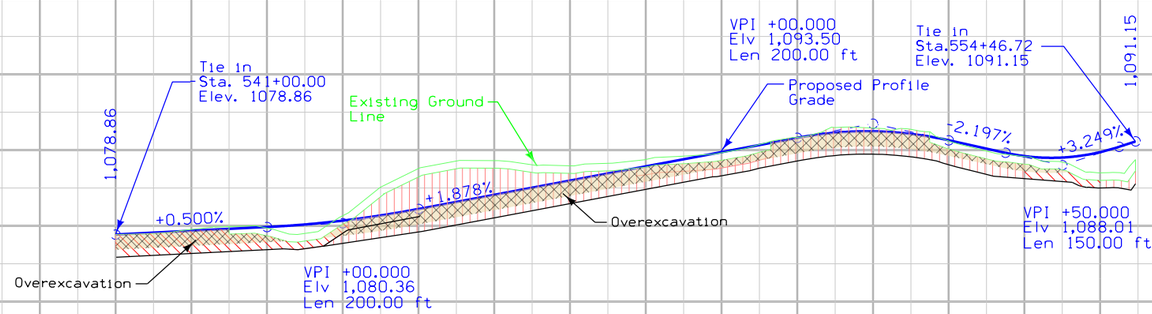


CUT MOISTURE
CUT DENSITY (lb/ft³)
PLASTIC LIMIT



Note: Overexcavation to Depth of 2' below Top of Subgrade shall be done by Contractor at the following Stations:
STA 541+00 to STA 543+25 and
STA 543+75 to STA 553+60.

OVEREXCAVATE
OVEREXCAVATE
UNSUIT TYPE "B" SEE STD. EW-102
WASTE SEE STD EW-102
UNSUIT TYPE "B" SEE STD. EW-102

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

541 545 550

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Q.7

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Stage 1																						
I-35 Northbound																						
34+00.00	11	6	6	0	0	0		6	1	0	4			5	7	-1	0	0	6	4	6	0
34+12.64	70	35	35	0	0	0		35	5	0	25			30	39	-4	0	0	35	22	31	4
34+50.00	93	48	45	0	0	0		48	6	0	31			37	48	0	0	0	45	27	38	7
35+00.00	104	51	54	0	0	0		51	15	0	37			52	68	-17	0	0	54	30	42	12
35+50.00	119	51	68	0	0	0		51	40	0	49			89	116	-65	0	0	68	36	50	18
36+00.00	131	50	81	0	0	0		50	74	0	62			136	177	-127	0	0	81	41	57	24
36+50.00	93	33	59	0	0	0		33	73	0	48			121	157	-124	0	0	59	28	39	20
36+83.53	51	17	33	0	0	0		17	36	0	24			60	78	-61	0	0	33	15	21	12
37+00.00	218	98	120	0	0	0		98	77	0	61			138	179	-81	0	0	120	59	83	37
37+50.00	335	198	137	0	0	0		198	55	0	53			108	140	58	0	0	137	69	97	40
38+00.00	425	277	148	0	0	0		277	39	0	49			88	114	163	0	0	148	75	105	43
38+50.00	495	339	157	0	0	0		339	23	0	45			68	88	251	0	0	157	78	109	48
39+00.00	578	412	167	0	0	0		412	13	0	39			52	68	344	0	0	167	82	115	52
39+50.00	656	481	175	0	0	0		481	11	0	34			45	59	423	0	0	175	85	119	56
40+00.00	170	126	44	0	0	0		126	3	0	10			13	17	109	0	0	44	22	31	13
40+12.44	251	188	64	0	0	0		188	5	0	15			20	26	162	0	0	64	34	48	16
40+50.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
62+82.34	89	0	27	61	0	0		61	4	0	8			12	16	45	0	0	27	14	20	7
63+00.00	591	0	158	425	0	8		425	23	0	39			62	81	344	0	0	158	83	116	42
63+50.00	1	0	0	1	0	0		1	0	0				0	0	1	0	0	0	0	0	0
63+50.10	230	0	54	175	0	1		175	7	0	11			18	23	152	0	0	54	30	42	12
63+66.78	475	0	105	368	0	2		368	14	0	19			33	43	325	0	0	105	60	84	21
64+00.00	721	0	150	568	0	3		568	18	0	27			45	59	510	0	0	150	89	125	25
64+50.00	681	0	141	481	0	59		481	17	0	28			45	59	423	0	0	141	87	122	19
65+00.00	746	0	145	536	0	65		536	18	0	29			47	61	475	0	0	145	85	119	26
65+50.00	937	0	159	737	0	42		737	17	0	29			46	60	677	0	0	159	96	134	25
66+00.00	1,143	4	175	868	0	96		872	21	0	31			52	68	804	0	0	175	114	160	15
66+50.00	1,271	10	186	906	0	169		916	31	0	35			66	86	830	0	0	186	122	171	15
67+00.00	1,278	46	192	827	0	214		873	39	0	38			77	100	773	0	0	192	127	178	14
67+50.00	1,249	180	199	627	0	243		807	50	0	42			92	120	687	0	0	199	132	185	14
67+99.89	3	1	0	1	0	1		2	0	0				0	0	2	0	0	0	0	0	0
68+00.00	1,162	418	203	257	0	284		675	74	0	50			124	161	514	0	0	203	135	189	14
68+50.00	914	349	197	0	0	368		349	109	0	63			172	224	125	0	0	197	130	182	15
69+00.00	575	93	186	0	0	295		93	227	0	86			313	407	-314	0	0	186	120	168	18
69+50.00	125	19	60	0	0	45		19	118	0	36			154	200	-181	284	0	60	38	53	7
69+66.58	219	36	124	0	0	59		36	307	0	80			387	503	-467	93	0	124	78	109	15
70+00.00	341	49	202	0	0	90		49	648	0	135			783	1,018	-969	0	0	202	124	174	28
70+49.93	0	0	0	0	0	0		0	1	0				1	1	-1	0	0	0	0	0	0
70+50.00	295	58	191	0	0	46		58	614	0	133			747	971	-913	0	0	191	119	167	24
71+00.00	267	48	177	0	0	42		48	543	0	125			668	868	-820	0	0	177	111	155	22
71+50.00	266	47	162	0	0	57		47	401	0	106			507	659	-612	0	0	162	103	144	18
72+00.00	420	94	160	0	0	167		94	179	0	72			251	326	-232	0	0	160	104	146	14
72+50.00	730	252	164	0	0	313		252	41	0	45			86	112	140	0	0	164	109	153	11
73+00.00	994	402	169	0	0	423		402	20	0	37			57	74	328	0	0	169	113	158	11
73+50.00	1,021	487	171	0	0	363		487	15	0	35			50	65	422	0	0	171	115	161	10
74+00.00	749	407	159	0	0	184		407	8	0	34			42	55	352	0	0	159	107	150	9
74+50.00	217	101	71	0	0	45		101	6	0	18			24	31	70	0	0	71	48	67	4
74+75.27	130	48	63	0	0	20		48	5	0	15			20	26	22	0	0	63	42	59	4
75+00.00	33	13	19	0	0	1		13	1	0	6			7	9	4	0	0	19	13	18	1
75+10.91	41	19	22	0	0	0		19	2	0	14			16	21	-2	0	0	22	15	21	1
75+50.00																						
I-35 Northbound Totals:	21,714	5,591	5,584	6,838	0	3,705	0	12,429	4,054	0	2,012	0	0	6,066	7,886	4,543	377	0	5,584	3,370	4,718	866

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
I-35 Southbound																						
29+50.00																						
29+59.72	18	6	12	0	0	0		6	10	0	8			18	23	-17	0	0	12	8	11	1
30+00.00	172	65	107	0	0	0		65	95	0	71			166	216	-151	0	0	107	72	101	6
30+50.00	250	103	147	0	0	0		103	137	0	92			229	298	-195	0	0	147	97	136	11
30+75.32	133	54	79	0	0	0		54	86	0	52			138	179	-125	0	0	79	52	73	6
31+00.00	138	62	76	0	0	0		62	77	0	48			125	163	-101	0	0	76	51	71	5
31+50.00	317	166	151	0	0	0		166	95	0	79			174	226	-60	0	0	151	103	144	7
32+00.00	364	213	150	0	0	0		213	66	0	67			133	173	40	0	0	150	103	144	6
32+50.00	419	269	149	0	0	0		269	47	0	57			104	135	134	0	0	149	101	141	8
33+00.00	443	298	146	0	0	0		298	38	0	50			88	114	184	0	0	146	98	137	9
33+50.00	444	300	144	0	0	0		300	30	0	46			76	99	201	0	0	144	94	132	12
34+00.00	417	278	138	0	0	0		278	22	0	43			65	85	194	0	0	138	89	125	13
34+12.64	97	64	33	0	0	0		64	5	0	10			15	20	45	0	0	33	21	29	4
34+50.00	270	173	96	0	0	0		173	16	0	31			47	61	112	0	0	96	61	85	11
35+00.00	321	198	123	0	0	0		198	24	0	41			65	85	114	0	0	123	76	106	17
35+50.00	304	183	121	0	0	0		183	28	0	40			68	88	95	0	0	121	74	104	17
36+00.00	309	186	122	0	0	0		186	32	0	41			73	95	91	0	0	122	74	104	18
36+50.00	313	194	120	0	0	0		194	31	0	39			70	91	103	0	0	120	74	104	16
36+83.53	216	136	80	0	0	0		136	19	0	25			44	57	79	0	0	80	50	70	10
37+00.00	107	68	39	0	0	0		68	9	0	12			21	27	41	0	0	39	24	34	5
37+50.00	328	203	125	0	0	0		203	27	0	42			69	90	113	0	0	125	74	104	21
38+00.00	321	197	123	0	0	0		197	26	0	43			69	90	107	0	0	123	72	101	22
38+50.00	301	186	114	0	0	0		186	30	0	41			71	92	94	0	0	114	70	98	16
39+00.00	284	172	112	0	0	0		172	37	0	44			81	105	67	0	0	112	68	95	17
39+50.00	277	166	111	0	0	0		166	37	0	43			80	104	62	0	0	111	67	94	17
40+00.00	289	178	110	0	0	0		178	30	0	38			68	88	90	0	0	110	64	90	20
40+12.44	74	47	27	0	0	0		47	6	0	8			14	18	29	0	0	27	15	21	6
40+50.00	223	113	82	0	0	28		113	18	0	24			42	55	58	0	0	82	45	63	19
41+00.00	294	109	111	0	0	74		109	22	0	33			55	72	38	0	0	111	58	81	30
41+50.00	296	107	117	0	0	72		107	15	0	37			52	68	39	0	0	117	49	69	48
41+89.51	241	85	98	0	0	57		85	5	0	31			36	47	38	0	0	98	37	52	46
42+00.00	33	12	13	0	0	8		12	0	0	4			4	5	7	0	0	13	6	8	5
46+00.00	0	0	0	0	0	0		0	0	0				360	468	-468	0	0	0	0	0	0
47+00.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
51+06.34	0	0	0	0	0	0		0	1	0				1	1	-1	0	0	0	0	0	0
60+00.00	0	0	0	0	0	0		0	1	0				1	1	-1	0	0	0	0	0	0
60+50.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
63+50.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
63+50.10	0	0	0	0	0	0		0	2	0				2	3	-3	0	0	0	0	0	0
63+66.78	123	23	100	0	0	0		23	696	0	91		360	787	1,023	-1,000	0	0	100	50	70	30
64+00.00	257	60	197	0	0	0		60	1,132	0	182			1,314	1,708	-1,648	0	0	197	105	147	50
64+50.00	359	89	269	0	0	2		89	1,083	0	228			1,311	1,704	-1,615	0	0	269	150	210	59
65+00.00	304	81	217	0	0	5		81	654	0	171			825	1,073	-992	0	0	217	118	165	52
65+50.00	287	75	208	0	0	4		75	583	0	165			748	972	-897	0	0	208	115	161	47
66+00.00	296	72	225	0	0	0		72	779	0	184			963	1,252	-1,180	0	0	225	130	182	43
66+50.00	283	64	213	0	0	6		64	686	0	170			856	1,113	-1,049	0	0	213	124	174	39
67+00.00	212	61	146	0	0	6		61	358	0	115			473	615	-554	0	0	146	82	115	31
67+50.00	196	80	115	0	0	0		80	200	0	83			283	368	-288	0	0	115	65	91	24
67+99.89	245	80	141	0	0	24		80	320	0	90			410	533	-453	0	0	141	86	120	21
68+00.00	0	0	0	0	0	0		0	1	0				1	1	-1	0	0	0	0	0	0
68+50.00	275	61	169	0	0	46		61	507	0	121			628	816	-755	0	0	169	109	153	16
69+00.00	302	68	213	0	0	22		68	704	0	171			875	1,138	-1,070	0	0	213	143	200	13
69+50.00	308	62	246	0	0	0		62	964	0	224			1,188	1,544	-1,482	0	0	246	167	234	12
69+66.58	119	17	102	0	0	0		17	415	0	99			514	668	-651	0	0	102	68	95	7
70+00.00	296	54	242	0	0	0		54	838	0	224		1,400	2,462	3,201	-3,147	0	0	242	157	220	22
70+49.93	454	82	372	0	0	0		82	1,439	0	349			1,788	2,324	-2,242	1,049	0	372	242	339	33
70+50.00	0	0	0	0	0	0		0	1	0				1	1	-1	0	0	0	0	0	0
71+00.00	79	26	53	0	0	0		26	0	0	40			40	52	-26	929	0	53	38	53	0
I-35 Southbound Totals:	12,408	5,646	6,404	0	0	354	0	5,646	12,484	0	3,947	0	1,760	18,191	23,649	-18,003	1,978	0	6,404	3,896	5,455	950

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
G76																						
97+50.00																						
98+00.00	118	0	118	0	0	0		0	1,345	0	117			1,462	1,901	-1,901	0	0	118	61	85	33
98+50.00	262	0	262	0	0	0		0	3,098	0	260			3,358	4,365	-4,365	1,652	0	262	135	189	73
98+56.00	35	0	35	0	0	0		0	423	0	35			458	595	-595	3,907	0	35	17	24	11
99+00.00	129	0	129	0	0	0		0	1,556	0	128			1,684	2,189	-2,189	543	0	129	62	87	42
100+00.00	0	0	0	0	0	0		0	0	0				0	0	0	2,004	0	0	0	0	0
100+25.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
100+50.00	47	0	47	0	0	0		0	166	0	47			213	277	-277	0	0	47	0	0	47
100+76.00	132	0	132	0	0	0		0	1,114	0	131			1,245	1,619	-1,619	232	0	132	44	62	70
101+00.00	155	0	155	0	0	0		0	1,703	0	153			1,856	2,413	-2,413	1,464	0	155	79	111	44
101+50.00	317	0	317	0	0	0		0	3,332	0	312			3,644	4,737	-4,737	2,210	0	317	160	224	93
102+00.00	306	0	306	0	0	0		0	3,194	0	301			3,495	4,544	-4,544	4,290	0	306	161	225	81
102+50.00	266	0	266	0	0	0		0	2,847	0	263			3,110	4,043	-4,043	4,070	0	266	140	196	70
103+00.00	115	0	115	0	0	0		0	1,246	0	114			1,360	1,768	-1,768	3,534	0	115	60	84	31
G76																	1,501					
Totals:	1,882	0	1,882	0	0	0	0	0	20,024	0	1,861	0	0	21,885	28,451	-28,451	25,407	0	1,882	919	1,287	596

FILE NO. 30981	ENGLISH	DESIGN TEAM IDOT\SCHEMMER	Warren COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER T.3

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp A																						
152+51.75																						
153+00.00	180	0	149	30	0	0		30	380	0	125			505	657	-627	0	0	149	93	130	19
153+50.00	350	0	230	119	0	0		119	424	0	155			579	753	-634	0	0	230	137	192	38
154+00.00	531	0	269	262	38	0		262	340	0	146	38		524	681	-419	0	0	269	163	228	41
154+50.00	797	10	299	488	29	0		498	258	0	113	29		400	520	-22	0	0	299	185	259	40
155+00.00	1,103	151	323	628	29	0		779	197	0	73	29		299	389	390	0	0	323	201	281	42
155+50.00	1,391	351	343	697	29	0		1,048	153	0	49	29		231	300	748	0	0	343	215	301	42
156+00.00	1,569	492	369	704	29	4		1,196	140	0	40	29		209	272	924	0	0	369	232	325	44
156+50.00	1,369	531	381	436	29	21		967	213	0	69	29		311	404	563	0	0	381	243	340	41
157+00.00	1,015	394	374	230	29	17		624	364	0	128	25		517	672	-48	0	0	374	247	346	28
157+50.00	772	202	369	201	29	0		403	490	0	191	25		706	918	-515	0	0	369	245	343	26
158+00.00	610	59	364	188	46	0		247	598	0	224	45		867	1,127	-880	0	0	364	236	330	34
158+50.00	523	31	355	136	52	0		167	748	0	237	52		1,037	1,348	-1,181	0	0	355	229	321	34
158+75.00	229	30	172	26	19	0		56	461	0	125	18		604	785	-729	0	0	172	112	157	15
159+00.00	249	16	177	56	16	0		72	565	0	128	15		708	920	-848	0	0	177	116	162	15
159+50.00	774	4	391	378	0	0		382	1,603	0	266			1,869	2,430	-2,048	0	0	391	255	357	34
160+00.00	1,210	4	439	766	0	0		770	2,089	0	295			2,384	3,099	-2,329	0	0	439	276	386	53
160+50.00	1,244	0	457	787	0	0		787	1,571	0	284			1,855	2,412	-1,625	0	0	457	285	399	58
161+00.00	627	8	315	304	0	0		312	659	0	209			868	1,128	-816	0	0	315	202	283	32
161+50.00	174	9	165	0	0	0		9	358	0	153			511	664	-655	0	0	165	98	137	28
162+00.00	151	1	150	0	0	0		1	313	0	138			451	586	-585	0	0	150	70	98	52
162+50.00	164	2	162	0	0	0		2	414	0	148			562	731	-729	0	0	162	78	109	53
163+00.00	206	2	205	0	0	0		2	982	0	194			1,176	1,529	-1,527	0	0	205	115	161	44
163+50.00	270	1	270	0	0	0		1	2,054	0	262			2,316	3,011	-3,010	0	0	270	153	214	56
163+66.67	109	0	109	0	0	0		0	873	0	106			979	1,273	-1,273	0	0	109	62	87	22
Ramp A																						
Totals:	15,617	2,298	6,837	6,436	374	42	0	8,734	16,247	0	3,858	363	0	20,468	26,609	-17,875	0	0	6,837	4,248	5,948	890

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp B																						
240+12.53																						
240+50.00	575	441	135	0	0	0		441	103	0				103	134	307	0	0	135	72	101	34
241+00.00	944	751	193	0	0	0		751	138	0	2			140	182	569	0	0	193	106	148	45
241+50.00	1,114	906	208	0	0	0		906	139	0	7			146	190	716	0	0	208	121	169	39
242+00.00	1,252	1,029	222	0	0	0		1,029	145	0	17			162	211	818	0	0	222	121	169	53
242+50.00	1,291	1,050	234	0	0	8		1,050	164	0	26			190	247	803	0	0	234	130	182	52
243+00.00	1,155	869	245	0	0	41		869	185	0	35			220	286	583	0	0	245	147	206	39
243+50.00	897	545	256	0	0	96		545	206	0	62			268	348	197	0	0	256	154	216	40
244+00.00	756	400	286	0	0	70		400	264	0	125			389	506	-106	0	0	286	178	249	37
244+50.00	756	287	318	117	0	33		404	455	0	178			633	823	-419	0	0	318	200	280	38
245+00.00	700	184	324	168	0	25		352	881	0	206			1,087	1,413	-1,061	52	0	324	201	281	43
245+50.00	579	146	334	99	0	0		245	1,536	0	241			1,777	2,310	-2,065	686	0	334	208	291	43
246+00.00	476	33	347	96	0	0		129	2,225	0	274			2,499	3,249	-3,120	1,653	0	347	217	304	43
246+50.00	458	4	363	56	0	35		60	2,792	0	301			3,093	4,021	-3,961	2,664	0	363	230	322	41
247+00.00	450	3	369	43	0	35		46	3,317	0	311			3,628	4,716	-4,670	3,515	0	369	235	329	40
247+50.00	426	0	361	64	0	0		64	3,664	0	311			3,975	5,168	-5,104	2,401	0	361	227	318	43
248+00.00	429	0	355	32	0	42		32	3,424	0	302			3,726	4,844	-4,812	0	0	355	223	312	43
248+50.00	471	55	343	29	0	44		84	2,799	0	277			3,076	3,999	-3,915	0	0	343	215	301	42
249+00.00	491	90	334	65	0	2		155	2,458	0	260			2,718	3,533	-3,378	0	0	334	208	291	43
249+50.00	439	36	334	69	0	1		105	2,871	0	272			3,143	4,086	-3,981	0	0	334	208	291	43
250+00.00	374	1	341	30	0	2		31	3,739	0	303			4,042	5,255	-5,224	0	0	341	211	295	46
250+19.61	140	3	137	0	0	0		3	1,669	0	126			1,795	2,334	-2,331	0	0	137	84	118	19
250+50.00	216	4	212	0	0	0		4	2,589	0	196			2,785	3,621	-3,617	0	0	212	131	183	29
251+00.00	348	12	335	1	0	0		13	3,772	0	307			4,079	5,303	-5,290	0	0	335	210	294	41
251+50.00	386	33	324	1	0	28		34	2,962	0	277			3,239	4,211	-4,177	0	0	324	189	265	59
252+00.00	208	22	159	0	0	28		22	1,274	0	130			1,404	1,825	-1,803	0	0	159	86	120	39
252+30.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
Ramp B																						
Totals:	15,331	6,904	7,069	870	0	490	0	7,774	43,771	0	4,546	0	0	48,317	62,813	-55,039	10,971	0	7,069	4,312	6,037	1,033

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp C																						
341+88.28	69	10	29	0	0	30		10	33	0	1			34	44	-34	0	0	29	14	20	9
342+00.00	321	19	132	0	0	170		19	138	0	8			146	190	-171	0	0	132	64	90	42
342+50.00	414	4	149	0	0	260		4	144	0	13			157	204	-200	0	0	149	79	111	38
343+00.00	877	12	486	0	0	379		12	153	0	342			495	644	-632	0	0	486	93	130	356
343+50.00	517	18	0	0	0	499		18	152	0				152	198	-180	0	0	0	103	144	-144
344+00.00	637	360	0	0	76	277		360	143	0		76		219	285	75	0	0	0	95	133	-133
344+50.00	983	785	198	0	0	0		785	138	0	16			154	200	585	0	0	198	116	162	36
345+00.00	1,197	948	249	0	0	0		948	138	0	23			161	209	739	0	0	249	161	225	24
345+50.00	1,347	1,058	285	0	0	4		1,058	139	0	28			167	217	841	0	0	285	186	260	25
346+00.00	1,422	1,083	333	0	0	7		1,083	138	0	34			172	224	859	0	0	333	222	311	22
346+50.00	429	323	105	0	0	1		323	41	0	19			60	78	245	0	0	105	70	98	7
346+65.00	910	673	237	0	20	0		673	106	0	73	20		199	259	414	0	0	237	156	218	19
347+00.00	1,066	729	337	0	29	0		729	210	0	148	29		387	503	226	0	0	337	222	311	26
347+50.00	850	518	332	0	29	0		518	333	0	191	29		553	719	-201	0	0	332	219	307	25
348+00.00	708	372	336	0	29	0		372	524	0	226	29		779	1,013	-641	0	0	336	222	311	25
348+50.00	617	279	338	0	29	0		279	720	0	249	29		998	1,297	-1,018	0	0	338	223	312	26
349+00.00	557	218	339	0	29	0		218	836	0	239	29		1,104	1,435	-1,217	0	0	339	223	312	27
349+50.00	533	253	280	0	29	0		253	865	0	192	29		1,086	1,412	-1,159	0	0	280	222	311	-31
350+00.00	503	287	216	0	29	0		287	904	0	160	29		1,093	1,421	-1,134	0	0	216	221	309	-93
350+50.00	428	245	183	0	29	0		245	1,003	0	142	29		1,174	1,526	-1,281	0	0	183	204	286	-103
351+00.00	288	111	176	0	29	0		111	1,130	0	161	29		1,320	1,716	-1,605	0	0	176	154	216	-40
351+50.00	173	0	172	0	37	1		0	1,310	0	170	37		1,517	1,972	-1,972	0	0	172	124	174	-2
352+00.00	77	0	77	0	32	1		0	774	0	76	32		882	1,147	-1,147	0	0	77	65	91	-14
352+25.61																						
Ramp C																						
Totals:	14,923	8,305	4,989	0	426	1,629	0	8,305	10,072	0	2,511	426	0	13,009	16,912	-8,607	0	0	4,989	3,458	4,842	148

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp D																						
453+50.00																						
454+00.00	258	156	102	0	0	0		156	139	0	52			191	248	-92	0	0	102	58	81	21
454+50.00	675	461	214	0	29	0		461	267	41	109	29		446	580	-119	0	0	214	123	172	42
455+00.00	866	601	231	34	29	0		635	274	0	112	29		415	540	96	0	0	231	137	192	39
455+50.00	1,090	787	247	55	29	0		842	291	0	99	29		419	545	297	0	0	247	148	207	40
456+00.00	1,362	1,021	265	76	29	0		1,097	273	0	71	29		373	485	612	0	0	265	160	224	41
456+50.00	1,769	1,371	282	113	29	3		1,484	228	0	53	29		310	403	1,081	0	0	282	172	241	41
457+00.00	2,205	1,698	296	187	29	24		1,885	169	0	36	29		234	304	1,581	0	0	296	181	253	43
457+50.00	2,532	1,768	321	354	29	89		2,122	138	0	11	29		178	231	1,891	0	0	321	198	277	44
457+75.00	1,352	840	168	271	15	74		1,111	69	0		15		84	109	1,002	0	0	168	104	146	22
458+00.00	1,388	798	170	336	14	84		1,134	69	0	1	14		84	109	1,025	0	0	170	105	147	23
458+50.00	2,699	1,409	344	733	29	212		2,142	138	0	7	29		174	226	1,916	0	0	344	212	297	47
459+00.00	2,455	983	334	818	40	320		1,801	139	0	12	40		191	248	1,553	0	0	334	207	290	44
459+50.00	2,187	717	318	771	41	380		1,488	140	0	19	41		200	260	1,228	0	0	318	195	273	45
460+00.00	1,801	724	288	433	29	356		1,157	146	0	23	29		198	257	900	0	0	288	164	230	58
460+50.00	1,372	726	251	103	25	292		829	155	0	28	25		208	270	559	0	0	251	127	178	73
461+00.00	972	545	216	0	24	211		545	176	0	38	24		238	309	236	0	0	216	114	160	56
461+50.00	603	190	188	0	24	224		190	184	0	40	24		248	322	-132	0	0	188	105	147	41
462+00.00	383	3	167	46	24	167		49	160	0	41	24		225	293	-244	0	0	167	93	130	37
462+50.00	321	0	155	127	24	39		127	101	0	56	24		181	235	-108	0	0	155	83	116	39
462+83.57	237	0	103	131	16	4		131	32	0	40	16		88	114	17	0	0	103	52	73	30
Ramp D																						
Totals:	26,527	14,798	4,660	4,588	508	2,479	0	19,386	3,288	41	848	508	0	4,685	6,091	13,296	0	0	4,660	2,738	3,834	827

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Frontage Road																						
541+00.00																						
541+25.00	44	0	26	0	0	17		0	37	0	14			51	66	-66	0	0	26	11	15	11
541+50.00	47	0	24	0	0	23		0	35	0	12			47	61	-61	0	0	24	12	17	7
541+75.00	77	0	53	0	0	24		0	137	0	40			177	230	-230	0	0	53	12	17	36
542+00.00	98	0	65	0	0	33		0	155	0	44			199	259	-259	0	0	65	14	20	45
542+25.00	113	0	49	0	0	64		0	60	0	9			69	90	-90	0	0	49	20	28	21
542+50.00	140	0	49	0	0	92		0	49	0				49	64	-64	0	0	49	24	34	15
542+75.00	142	0	52	0	0	90		0	48	0	1			49	64	-64	0	0	52	24	34	18
543+00.00	189	0	63	0	0	125		0	48	0	3			51	66	-66	0	0	63	31	43	20
543+50.00	462	0	154	0	0	308		0	100	0	20			120	156	-156	0	0	154	83	116	38
544+00.00	592	0	179	0	0	413		0	100	0	17			117	152	-152	0	0	179	94	132	47
544+50.00	1,018	0	204	541	0	273		541	97	0				97	126	415	0	0	204	106	148	56
545+00.00	1,432	0	211	1,221	0	0		1,221	97	0	1			98	127	1,094	0	0	211	111	155	56
545+50.00	1,536	0	205	1,331	0	0		1,331	97	0	1			98	127	1,204	0	0	205	107	150	55
546+00.00	1,356	0	189	1,167	0	0		1,167	97	0				97	126	1,041	0	0	189	97	136	53
546+50.00	1,047	0	172	875	0	0		875	97	0				97	126	749	0	0	172	85	119	53
547+00.00	818	0	166	651	0	0		651	97	0	1			98	127	524	0	0	166	80	112	54
547+50.00	717	0	169	549	0	0		549	97	0				97	126	423	0	0	169	82	115	54
548+00.00	660	0	173	488	0	0		488	97	0				97	126	362	0	0	173	85	119	54
548+50.00	595	0	172	423	0	0		423	97	0				97	126	297	0	0	172	85	119	53
549+00.00	511	0	168	343	0	0		343	97	0	2			99	129	214	0	0	168	82	115	53
549+50.00	469	0	166	303	0	0		303	97	0	4			101	131	172	0	0	166	80	112	54
550+00.00	483	0	97	386	0	0		386	97	0	3			100	130	256	0	0	97	80	112	-15
550+50.00	540	0	30	510	0	0		510	97	0				97	126	384	0	0	30	81	113	-83
551+00.00	682	0	130	553	0	0		553	97	0	113			210	273	280	0	0	130	84	118	12
551+50.00	503	0	0	503	0	0		503	97	0				97	126	377	0	0	0	82	115	-115
552+00.00	510	0	119	391	0	0		391	97	0	2			99	129	262	0	0	119	78	109	10
552+50.00	447	0	151	296	0	0		296	97	0	2			99	129	167	0	0	151	77	108	43
553+00.00	352	0	133	170	0	49		170	98	0	1			99	129	41	0	0	133	57	80	53
553+50.00	273	0	112	76	0	85		76	100	0	10			110	143	-67	0	0	112	42	59	53
554+00.00	259	0	129	64	0	66		64	138	0	69			207	269	-205	0	0	129	51	71	58
554+35.00	131	0	92	17	0	22		17	184	0	84			268	348	-331	0	0	92	29	41	51
Frontage Road Totals:	16,243	0	3,702	10,858	0	1,684	0	10,858	2,938	0	453	0	0	3,391	4,409	6,450	0	0	3,702	1,986	2,781	922

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
East Detour																						
200+00.00																						
200+50.00	184	80	104	0	0	0		80	219	0	104			323	420	-340	0	0	104	0	0	104
201+00.00	78	13	65	0	0	0		13	500	0	65			565	735	-722	306	0	65	0	0	65
201+50.00	95	26	69	0	0	0		26	543	0	69			612	796	-770	700	0	69	0	0	69
202+00.00	172	41	131	0	0	0		41	437	0	131			568	738	-697	760	0	131	0	0	131
202+50.00	138	26	112	0	0	0		26	216	0	112			328	426	-400	611	0	112	0	0	112
203+00.00	263	93	170	0	0	0		93	42	0	170			212	276	-183	302	0	170	0	0	170
203+50.00	176	176	0	0	0	0		176	0	0				0	0	176	58	0	0	0	0	0
204+00.00	207	132	75	0	0	0		132	15	0	75			90	117	15	0	0	75	0	0	75
204+50.00	144	66	78	0	0	0		66	48	0	78			126	164	-98	21	0	78	0	0	78
205+00.00	260	125	135	0	0	0		125	33	0	135			168	218	-93	67	0	135	0	0	135
205+50.00	115	115	0	0	0	0		115	29	0				29	38	77	46	0	0	0	0	0
206+00.00	71	18	53	0	0	0		18	75	0	53			128	166	-148	40	0	53	0	0	53
206+50.00	50	0	50	0	0	0		0	111	0	50			161	209	-209	105	0	50	0	0	50
207+00.00	53	0	53	0	0	0		0	142	0	53			195	254	-254	155	0	53	0	0	53
207+50.00	322	51	271	0	0	0		51	78	0	271			349	454	-403	198	0	271	0	0	271
208+00.00	140	140	0	0	0	0		140	0	0				0	0	140	107	0	0	0	0	0
208+50.00	223	223	0	0	0	0		223	20	0				20	26	197	0	0	0	0	0	0
209+00.00	441	320	121	0	0	0		320	32	0	121			153	199	121	28	0	121	0	0	121
209+50.00	477	364	113	0	0	0		364	22	0	113			135	176	189	44	0	113	0	0	113
210+00.00	409	301	108	0	0	0		301	23	0	108			131	170	131	30	0	108	0	0	108
210+50.00	286	185	101	0	0	0		185	24	0	101			125	163	23	32	0	101	0	0	101
211+00.00	165	90	75	0	0	0		90	37	0	75			112	146	-56	33	0	75	0	0	75
213+20.00	330	180	150	0	0	0		180	74	0	150			224	291	-111	66	0	150	0	0	150
East Detour																	4					
Totals:	4,799	2,765	2,034	0	0	0	0	2,765	2,720	0	2,034	0	0	4,754	6,180	-3,415	3,709	0	2,034	0	0	2,034

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
West Detour																						
100+00.00																						
100+50.00	67	67	0	0	0	0		67	27	0				27	35	32	0	0	0	0	0	0
101+00.00	45	45	0	0	0	0		45	37	0				37	48	-3	37	0	0	0	0	0
101+50.00	77	6	71	0	0	0		6	89	0	59			148	192	-186	51	0	71	0	0	71
102+00.00	47	0	47	0	0	0		0	157	0	45			202	263	-263	124	0	47	0	0	47
102+50.00	38	0	38	0	0	0		0	246	0	38			284	369	-369	219	0	38	0	0	38
103+00.00	0	0	0	0	0	0		0	165	0				165	215	-215	344	0	0	0	0	0
103+50.00	3	3	0	0	0	0		3	163	0				163	212	-209	231	0	0	0	0	0
103+79.67	2	2	0	0	0	0		2	91	0				91	118	-116	228	0	0	0	0	0
West Detour Totals:	279	123	156	0	0	0	0	123	975	0	142	0	0	1,117	1,453	-1,330	1,234	0	156	0	0	156

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Stage 2																						
G76																						
88+00.00	575	0	573	2	0	0		2	3	0	573			576	749	-747	0	0	573	0	0	573
88+50.00	4	0	0	4	0	0		4	8	0				8	10	-6	0	0	0	0	0	0
88+85.16	2	0	0	2	0	0		2	4	0				4	5	-3	0	0	0	0	0	0
89+00.00	19	0	0	19	0	0		19	11	0				11	14	5	0	0	0	0	0	0
89+50.00	32	0	0	32	0	0		32	3	0				3	4	28	0	0	0	0	0	0
89+78.50	38	0	0	38	0	0		38	2	0				2	3	35	0	0	0	0	0	0
90+00.00	76	0	0	76	0	0		76	6	0				6	8	68	0	0	0	0	0	0
90+43.83	9	0	0	9	0	0		9	1	0				1	1	8	0	0	0	0	0	0
90+50.00	6	0	0	6	0	0		6	1	0			38	39	51	-45	0	0	0	0	0	0
90+55.02	32	0	0	32	0	0		32	19	0				19	25	7	53	0	0	0	0	0
91+00.00	5	0	0	5	0	0		5	75	0				75	98	-93	0	0	0	0	0	0
91+50.00	54	0	0	33	0	21		33	100	0				100	130	-97	0	0	0	37	52	-52
92+00.00	137	0	68	40	0	29		40	94	0	53			147	191	-151	0	0	68	34	48	20
92+27.96	57	0	32	13	0	13		13	66	0	25			91	118	-105	0	0	32	11	15	17
92+40.79	41	0	30	5	0	6		5	46	0	22			68	88	-83	0	0	30	8	11	19
92+50.00	242	0	171	36	0	34		36	146	0	107			253	329	-293	0	0	171	69	97	74
93+00.00	235	0	154	59	0	22		59	54	0	79			133	173	-114	0	0	154	85	119	35
93+50.00	12	0	8	4	2	0		4	4	0	4	2		10	13	-9	0	0	8	4	6	2
93+52.79	193	0	130	63	36	0		63	102	0	77	25		204	265	-202	0	0	130	77	108	22
94+00.00	71	0	48	22	13	1		22	64	0	33	8		105	137	-115	0	0	48	29	41	7
94+17.79	124	0	82	40	21	2		40	167	0	65	12		244	317	-277	0	0	82	50	70	12
94+50.00	181	0	131	48	31	2		48	417	0	121	24		562	731	-683	0	0	131	72	101	30
95+00.00	98	0	88	9	15	1		9	358	0	86	15		459	597	-588	0	0	88	47	66	22
95+25.00	109	0	109	0	16	0		0	576	0	108	16		700	910	-910	235	0	109	45	63	46
95+50.00	182	0	182	0	35	0		0	1,284	0	182	35		1,501	1,951	-1,951	325	0	182	32	45	137
96+00.00	82	0	63	0	21	19		0	566	0	63	18		647	841	-841	1,303	0	63	25	35	28
96+25.00	129	0	83	0	26	46		0	633	0	71	17		721	937	-937	509	0	83	68	95	-12
96+50.00	165	0	111	0	30	55		0	722	0	86	19		827	1,075	-1,075	616	0	111	86	120	-10
97+00.00	0	0	0	0	0	0		0	0	0				0	0	0	358	0	0	0	0	0
104+50.00	116	0	74	42	12	0		42	505	0	60	4		569	740	-698	0	0	74	53	74	0
104+80.83	161	0	88	72	14	0		72	625	26	75	4		730	949	-877	603	0	88	63	88	0
105+00.00	176	0	97	79	15	0		79	702	35	86	4		827	1,075	-996	710	0	97	69	97	1
105+22.38	225	0	123	98	18	3		98	781	50	103	3		937	1,218	-1,120	795	0	123	87	122	1
105+50.00	458	0	225	186	34	46		186	1,075	111	164	3		1,353	1,759	-1,573	389	0	225	158	221	4
106+00.00	570	135	211	90	31	134		225	580	136	121			837	1,088	-863	723	0	211	145	203	8
106+46.38	56	24	17	0	2	15		24	29	12	8			49	64	-40	272	0	17	11	15	2
106+50.00	851	445	195	107	41	104		552	230	209	88			527	685	-133	229	0	195	147	206	-11
107+00.00	289	172	47	69	20	0		241	21	84	20			125	163	79	19	0	47	43	60	-13
107+16.19	569	390	95	84	41	0		474	32	192	36			260	338	136	323	0	95	80	112	-17
107+50.00	766	578	146	43	41	0		621	40	306	47			393	511	110	133	0	146	108	151	-5
108+00.00	439	265	141	33	36	0		298	30	0	41			71	92	206	302	0	141	102	143	-2
108+50.00	569	429	114	26	65	0		455	11	0	67		52	130	169	286	0	0	114	105	147	-33
108+98.56	18	17	0	0	2	1		17	0	0				0	0	17	213	0	0	3	4	-4
109+00.00	507	351	110	0	42	46		351	10	0	17	1		28	36	315	0	0	110	102	143	-33
109+50.00	314	160	119	0	34	34		160	22	0	42	1		65	85	76	0	0	119	84	118	2
110+00.00	273	143	112	0	34	18		143	21	0	43	1		65	85	59	0	0	112	79	111	2
110+50.00	227	117	102	0	34	7		117	18	0	43	1		62	81	36	0	0	102	70	98	4
111+00.00	542	276	203	0	44	64		276	8	0	182	1		191	248	28	0	0	203	84	118	85
111+50.00	239	191	0	0	21	47		191	0	0			217	217	282	-91	0	0	0	42	59	-59
111+69.59	300	259	0	0	30	41		259	0	0		1		1	1	258	303	0	0	59	83	-83
112+00.00	424	247	168	0	39	9		247	14	0	34	1		49	64	183	0	0	168	99	139	29
112+50.00	204	91	113	0	17	0		91	14	0	34			48	62	29	1	0	113	57	80	33
113+00.00																						
G76																						
Totals:	11,203	4,290	4,563	1,526	913	820	0	5,816	10,300	1,161	3,066	216	307	15,050	19,565	-13,749	8,414	0	4,563	2,629	3,681	882

FILE NO. 30981	ENGLISH	DESIGN TEAM IDOT\SCHEMMER	Warren COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER T.11

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Stage 3																						
G76																						
96+50.00	56	0	56	0	0	0		0	521	0	55			576	749	-749	0	0	56	66	92	-36
97+00.00	112	0	112	0	184	0		0	550	0	111	182		843	1,096	-1,096	507	0	112	73	102	10
97+32.65	0	0	0	0	59	0		0	139	0		58		197	256	-256	429	0	0	18	25	-25
97+42.86	0	0	0	0	25	0		0	108	0		24		132	172	-172	82	0	0	12	17	-17
97+50.00	0	0	0	0	91	0		0	394	0		89		483	628	-628	77	0	0	41	57	-57
98+00.00	0	0	0	0	342	0		0	0	0		342		342	445	-445	0	0	0	0	0	0
99+00.00	0	0	0	0	0	0		0	0	0				0	0	0	0	0	0	0	0	0
100+50.00	171	0	171	0	0	0		0	0	0	171			171	222	-222	0	0	171	0	0	171
102+50.00	0	0	0	0	57	0		0	168	0		55		223	290	-290	0	0	0	4	6	-6
103+00.00	61	0	46	15	79	0		15	279	0	46	53		378	491	-476	354	0	46	4	6	40
103+50.00	95	0	70	25	55	0		25	571	0	70	19		660	858	-833	176	0	70	11	15	55
103+87.97	44	0	38	6	16	0		6	355	0	38	6		399	519	-513	414	0	38	13	18	20
104+00.00	120	0	79	41	30	0		41	871	0	79	10		960	1,248	-1,207	455	0	79	53	74	5
104+25.00	129	0	92	37	22	0		37	980	0	92	11		1,083	1,408	-1,371	1,072	0	92	58	81	11
104+50.00	65	0	65	0	0	0		0	647	0	65			712	926	-926	1,169	0	65	32	45	20
104+80.83																	778					
G76 Totals:	853	0	729	124	960	0	0	124	5,583	0	727	849	0	7,159	9,307	-9,183	5,513	0	729	385	539	190

FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER
30981		IDOT\SCHEMMER	Warren	BRFIMX-035-2(423)44--14-91	T.12

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Stage 4																						
G76																						
92+27.96	0	0	0	0	0	0	157	157	0	0			189	189	246	-89	0	0	0	0	0	0
95+25.00	140	0	65	0	60	75		0	12	0	65	47		124	161	-161	0	0	65	52	73	-8
96+25.00	46	0	0	0	0	46		0	10	0				10	13	-13	39	0	0	31	43	-43
96+50.00	163	0	109	0	46	55		0	27	0	83	35		145	189	-189	26	0	109	47	66	43
97+00.00	0	0	0	0	36	0		0	23	0		34		57	74	-74	81	0	0	13	18	-18
97+32.65	0	0	0	0	11	0		0	7	0		11		18	23	-23	71	0	0	4	6	-6
97+42.86	0	0	0	0	6	0		0	4	0		6		10	13	-13	22	0	0	3	4	-4
97+50.00	102	0	0	102	47	0		102	27	0		25		52	68	34	12	0	0	46	64	-64
98+00.00	223	0	0	223	52	0		223	23	0		13		36	47	176	71	0	0	73	102	-102
98+50.00	30	0	1	29	6	0		29	3	0	1	1		5	7	23	44	0	1	9	13	-12
98+56.00	110	0	3	107	23	0		107	12	0	3	6		21	27	80	5	0	3	35	49	-46
99+00.00	0	0	0	0	0	0		0	0	0				0	0	0	22	0	0	0	0	0
100+50.00	141	0	3	138	11	0		138	7	0	3			10	13	125	0	0	3	26	36	-33
100+76.00	243	0	8	234	20	0		234	12	0	8			20	26	208	26	0	8	45	63	-55
101+00.00	443	0	16	428	41	0		428	14	0	14			28	36	392	28	0	16	85	119	-103
101+50.00	369	0	9	360	33	0		360	2	0	8			10	13	347	39	0	9	72	101	-92
101+91.98	73	0	1	72	7	0		72	0	0	1	1		2	3	69	12	0	1	15	21	-20
102+00.00	194	0	4	190	21	0		190	3	0	4	1		8	10	180	2	0	4	38	53	-49
102+18.90	344	0	8	336	35	0		336	8	0	8	2		18	23	313	12	0	8	61	85	-77
102+50.00	304	0	41	263	62	0		263	176	0	41	37		254	330	-67	25	0	41	47	66	-25
103+00.00	0	0	0	0	0	0		0	0	0			237	237	308	-308	21	0	0	0	0	0
107+16.19	0	0	0	0	0	0		0	0	0			331	331	430	-430	331	0	0	0	0	0
G76																	463					
Totals:	2,925	0	268	2,482	517	176	157	2,639	370	0	239	219	757	1,585	2,061	579	1,352	0	268	702	983	-715

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp B																						
247+00.00																						
247+50.00	182	0	20	162	29	0		162	122	0	11	6		139	181	-19	70	0	20	90	126	-106
248+00.00	388	0	34	353	29	0		353	108	0	9			117	152	201	148	0	34	106	148	-114
248+50.00	493	59	68	367	29	0		426	120	0	7	6		133	173	253	151	0	68	124	174	-106
249+00.00	403	59	114	205	29	25		264	119	0	7	11		137	178	86	170	0	114	148	207	-93
249+50.00	310	3	137	110	29	60		113	85	0	6	9		100	130	-17	158	0	137	159	223	-86
250+00.00	319	43	135	94	29	46		137	59	0	9	8		76	99	38	91	0	135	154	216	-81
250+19.61	105	16	50	35	11	4		51	17	0	14	3		34	44	7	70	0	50	56	78	-28
250+50.00	177	9	81	86	18	0		95	21	0	20	5		46	60	35	47	0	81	88	123	-42
251+00.00	385	15	149	221	29	0		236	23	0	4	8		35	46	191	64	0	149	153	214	-65
251+50.00	345	0	178	167	29	0		167	70	0	65	8		143	186	-19	46	0	178	175	245	-67
252+00.00	350	34	257	60	29	0		94	1,117	0	186	11		1,314	1,708	-1,614	189	0	257	215	301	-44
252+30.00	214	20	185	9	20	0		29	1,302	0	161	16		1,479	1,923	-1,894	625	0	185	132	185	0
Ramp B																	287					
Totals:	3,671	258	1,408	1,869	310	135	0	2,127	3,163	0	499	91	0	3,753	4,879	-2,752	2,116	0	1,408	1,600	2,240	-832

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Ramp D																						
452+51.31																						
453+00.00	301	0	93	209	116	0		209	211	0	82	28		321	417	-208	0	0	93	124	174	-81
453+50.00	654	0	130	523	51	0		523	387	264	110			761	989	-466	407	0	130	130	182	-52
454+00.00	349	164	84	101	30	0		265	195	0	53			248	322	-57	340	0	84	94	132	-48
454+50.00	383	351	32	0	29	0		351	0	0				0	0	351	0	0	32	64	90	-58
455+00.00	393	369	24	0	29	0		369	0	0				0	0	369	0	0	24	58	81	-57
455+50.00	362	345	17	0	29	0		345	0	0				0	0	345	0	0	17	56	78	-61
456+00.00	303	280	15	8	29	0		288	0	0				0	0	288	0	0	15	51	71	-56
456+50.00	229	170	21	38	29	0		208	0	0		7		7	9	199	0	0	21	45	63	-42
457+00.00	96	53	12	30	29	0		83	0	0		22		22	29	54	11	0	12	21	29	-17
Ramp D																	32					
Totals:	3,070	1,732	428	909	371	0	0	2,641	793	264	245	57	0	1,359	1,767	875	812	0	428	643	901	-473

FILE NO. 30981	ENGLISH	DESIGN TEAM IDOT\SCHEMMER	Warren COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER T.15

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
NorthEast Detour																						
300+00.00	3	3	0	0	0	0		3	180	0				180	234	-231	0	0	0	0	0	0
300+50.00	3	3	0	0	0	0		3	609	0				609	792	-789	252	0	0	0	0	0
301+00.00	0	0	0	0	0	0		0	770	0				770	1,001	-1,001	852	0	0	0	0	0
301+50.00	0	0	0	0	0	0		0	494	0				494	642	-642	1,078	0	0	0	0	0
302+00.00	0	0	0	0	0	0		0	243	0				243	316	-316	691	0	0	0	0	0
302+50.00	0	0	0	0	0	0		0	140	0				140	182	-182	340	0	0	0	0	0
303+00.00	0	0	0	0	0	0		0	175	0	0	0	0	175	228	-228	425	0	0	0	0	0
303+75.00																	51					
NorthEast Detour Totals:	6	6	0	0	0	0	0	6	2,611	0	0	0	0	2,611	3,394	-3,388	3,638	0	0	0	0	0

FILE NO.	ENGLISH	DESIGN TEAM			PROJECT NUMBER	SHEET NUMBER
30981		IDOT\SCHEMMER	Warren	COUNTY	BRFIMX-035-2(423)44--14-91	T.16

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill								Checks (EW-102)		Topsoil			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Waste Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Existing Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink
Summary:																						
Stage 1																						
I-35 Northbound	21,714	5,591	5,584	6,838	0	3,705	0	12,429	4,054	0	2,012	0	0	6,066	7,886	4,544	377	0	5,584	3,370	4,718	867
I-35 Southbound	12,408	5,646	6,404	0	0	354	0	5,646	12,484	0	3,947	0	1,760	18,191	23,649	-18,003	1,978	0	6,404	3,896	5,455	950
G76	1,882	0	1,882	0	0	0	0	0	20,024	0	1,861	0	0	21,885	28,451	-28,451	25,407	0	1,882	919	1,287	596
Ramp A	15,617	2,298	6,837	6,436	374	42	0	8,734	16,247	0	3,858	363	0	20,468	26,609	-17,875	0	0	6,837	4,248	5,948	890
Ramp B	15,331	6,904	7,069	870	0	490	0	7,774	43,771	0	4,546	0	0	48,317	62,813	-55,039	10,971	0	7,069	4,312	6,037	1,033
Ramp C	14,923	8,305	4,989	0	426	1,629	0	8,305	10,072	0	2,511	426	0	13,009	16,912	-8,607	0	0	4,989	3,458	4,842	148
Ramp D	26,527	14,798	4,660	4,588	508	2,479	0	19,386	3,288	41	848	508	0	4,685	6,091	13,296	0	0	4,660	2,738	3,834	827
Frontage Road	16,243	0	3,702	10,858	0	1,684	0	10,858	2,938	0	453	0	0	3,391	4,409	6,450	0	0	3,702	1,986	2,781	922
East Detour	4,799	2,765	2,034	0	0	0	0	2,765	2,720	0	2,034	0	0	4,754	6,180	-3,415	3,709	0	2,034	0	0	2,034
West Detour	279	123	156	0	0	0	0	123	975	0	142	0	0	1,117	1,453	-1,330	1,234	0	156	0	0	156
Stage 1 Subtotals:	129,723	46,430	43,317	29,590	1,308	10,383	0	76,020	116,573	41	22,212	1,297	1,760	141,883	184,453	-108,430	43,676	0	43,317	24,927	34,902	8,423
Stage 2																						
G76	11,203	4,290	4,563	1,526	913	820	0	5,816	10,300	1,161	3,066	216	307	15,050	19,565	-13,749	8,414	0	4,563	2,629	3,681	883
Stage 3																						
G76	853	0	729	124	960	0	0	124	5,583	0	727	849	0	7,159	9,307	-9,183	5,513	0	729	385	539	190
Stage 4																						
G76	2,925	0	268	2,482	517	176	157	2,639	370	0	239	219	757	1,585	2,061	579	1,352	0	268	702	983	-715
Ramp B	3,671	258	1,408	1,869	310	135	0	2,127	3,163	0	499	91	0	3,753	4,879	-2,752	2,116	0	1,408	1,600	2,240	-832
Ramp D	3,070	1,732	428	909	371	0	0	2,641	793	264	245	57	0	1,359	1,767	875	812	0	428	643	901	-473
NorthEast Detour	6	6	0	0	0	0	0	6	2,611	0	0	0	0	2,611	3,394	-3,388	3,638	0	0	0	0	0
Stage 4 Subtotals:	9,672	1,996	2,104	5,260	1,198	311	157	7,413	6,937	264	983	367	757	9,308	12,101	-4,686	7,918	0	2,104	2,945	4,124	-2,020
Project Totals:	151,451	52,716	50,713	36,500	4,379	11,514	157	89,373	139,393	1,466	26,988	2,729	2,824	173,400	225,427	-136,049	65,521	0	50,713	30,886	43,246	7,476
Detour Removal																						
East Detour								2,720	4,799						6,239							
West Detour								975	279						363							
NorthEast Detour								2,611	6						8							
Detour Removal Totals:								6,306	5,084						6,609	-303						

FILE NO. 30981	ENGLISH	DESIGN TEAM IDOT\SCHEMMER	Warren COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER T.17	

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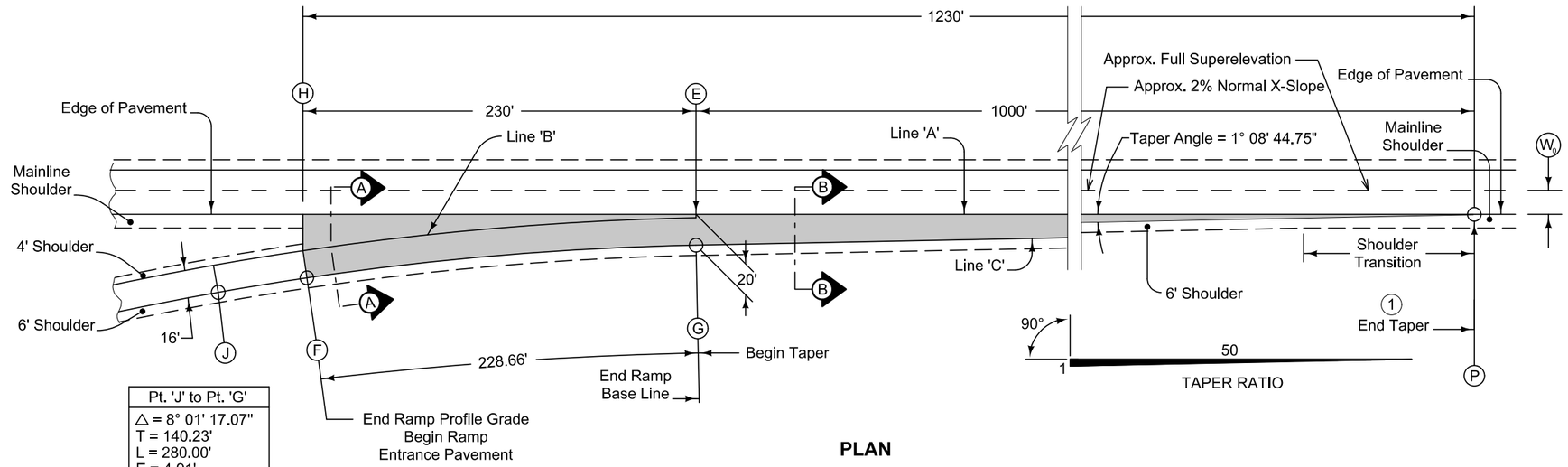


Pt. 'J' to Pt. 'G'
△ = 8° 01' 17.07"
T = 140.23'
L = 280.00'
E = 4.91'
R = 2000.00'

Construct ramp entrance pavement the same thickness as mainline pavement.

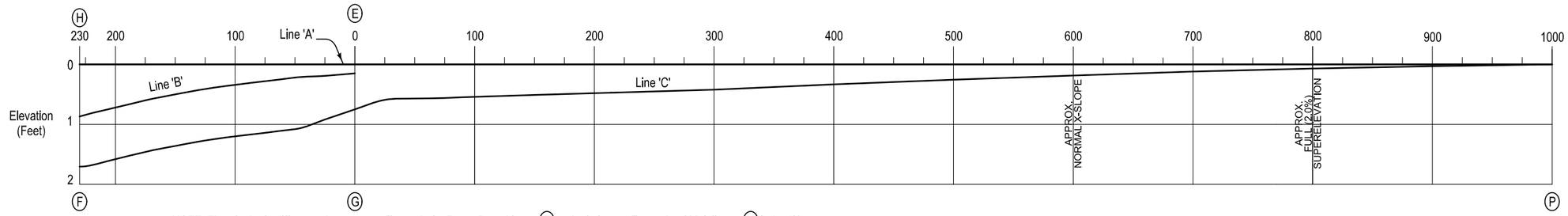
Ramp entrance pavement shown by shaded area is 1793 square yards.

For joint details, see PV-101

(1) For header construction details at the end of taper, see Typical 7101 or Typical 7102.

(2) Construct subbase for ramp entrance pavement the same thickness as mainline subbase.

PLAN

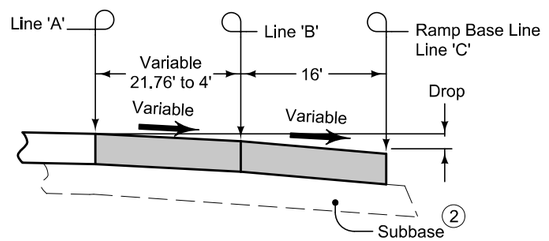


NOTE: The algebraic difference between profile grade for Ramp Base Line at (F) and relative profile grade of Mainline at (H) is 0.54%.

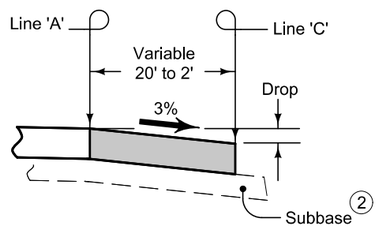
PROFILE

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																									
Distance From Point (E) Along Line 'A' (Ft.)		230	225	200	175	150	125	100	75	50	25	0	25	50	75	100	200	300	400	500	600	700	800	900	1000
From Line 'A' To Line 'B'	Offset (Ft.)	21.76	21.10	17.95	15.11	12.59	10.38	8.48	6.90	5.62	4.66	4.0													
	Slope (%)	← Constant 4.0% Slope →										3.78													
	Drop (Ft.)	0.87	0.84	0.72	0.60	0.50	0.42	0.34	0.28	0.22	0.19	0.15													
From Line 'B' To Line 'C'	Offset (Ft.)	← Constant 16.0' Offset →																							
	Slope (%)	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	4.58	3.78													
	Drop (Ft.)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.73	0.60													
From Line 'A' To Line 'C'	Offset (Ft.)												19.5	19.0	18.5	18.0	16.0	14.0	12.0	10.0	8.0	6.0	4.0	2.0	0.0
	Slope (%)												← Constant 3.0% Slope →						2.76	2.51	2.27	2.03	1.79	1.54	1.30
	Drop (Ft.)	1.73	1.70	1.58	1.46	1.36	1.28	1.20	1.14	1.08	0.92	0.75	0.59	0.57	0.56	0.54	0.48	0.42	0.33	0.25	0.18	0.12	0.07	0.03	0.0
Distance From Point (G) Along Line 'C' (Ft.)		228.66	223.66	198.66	173.70	148.77	123.87	99.00	74.15	49.31	24.49	0.00													

(F) (G) (P)



SECTION A-A



SECTION B-B

TABLE OF SHOULDER TRANSITION LENGTHS			
W_0	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	200'	300'
14'	100'	200'	NA

NOTE: W_0 is the width of the outside lane to the Edge of Pavement.

MODIFIED STANDARD ROAD PLAN

REVISION 2 10-18-11

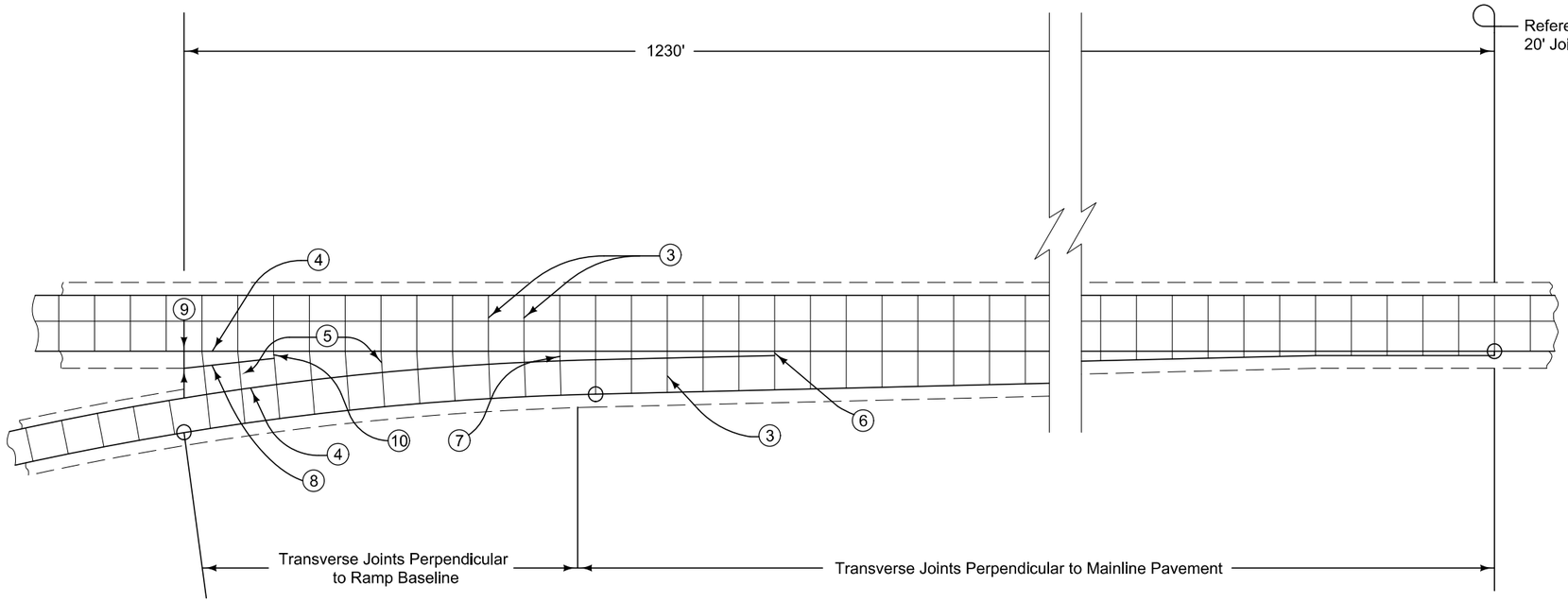
PV-411

SHEET 1 of 2

REVISIONS: Added 'C' Joint and circle notes 8, 9, and 10. Renumbered circle notes.

APPROVED BY DESIGN METHODS ENGINEER

ACCELERATION TAPER FOR 16' ENTRANCE RAMP



③ 'CD' Joints at 20' spacing.

④ 'BT-2' or 'KT-2' Joint.

⑤ 'C' Joint.

⑥ 'B' Joint. 2' minimum, 4' maximum.

⑦ Construct transverse joints on the exit ramp taper perpendicular to the tapered edge where the gore area is greater than 4 feet.

⑧ 'C' Joint parallel to ramp baseline.

⑨ 10' minimum, or equal to mainline shoulder width.

⑩ 'B' or 'C' Joint. 2' minimum. 4' maximum.

16' ENTRANCE RAMP

MODIFIED

STANDARD ROAD PLAN

REVISION 2 10-18-11

PV-411

SHEET 2 of 2

REVISIONS: Added 'C' Joint and circle notes 8, 9, and 10. Renumbered circle notes.

APPROVED BY DESIGN METHODS ENGINEER

ACCELERATION TAPER FOR 16' ENTRANCE RAMP

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER U.2

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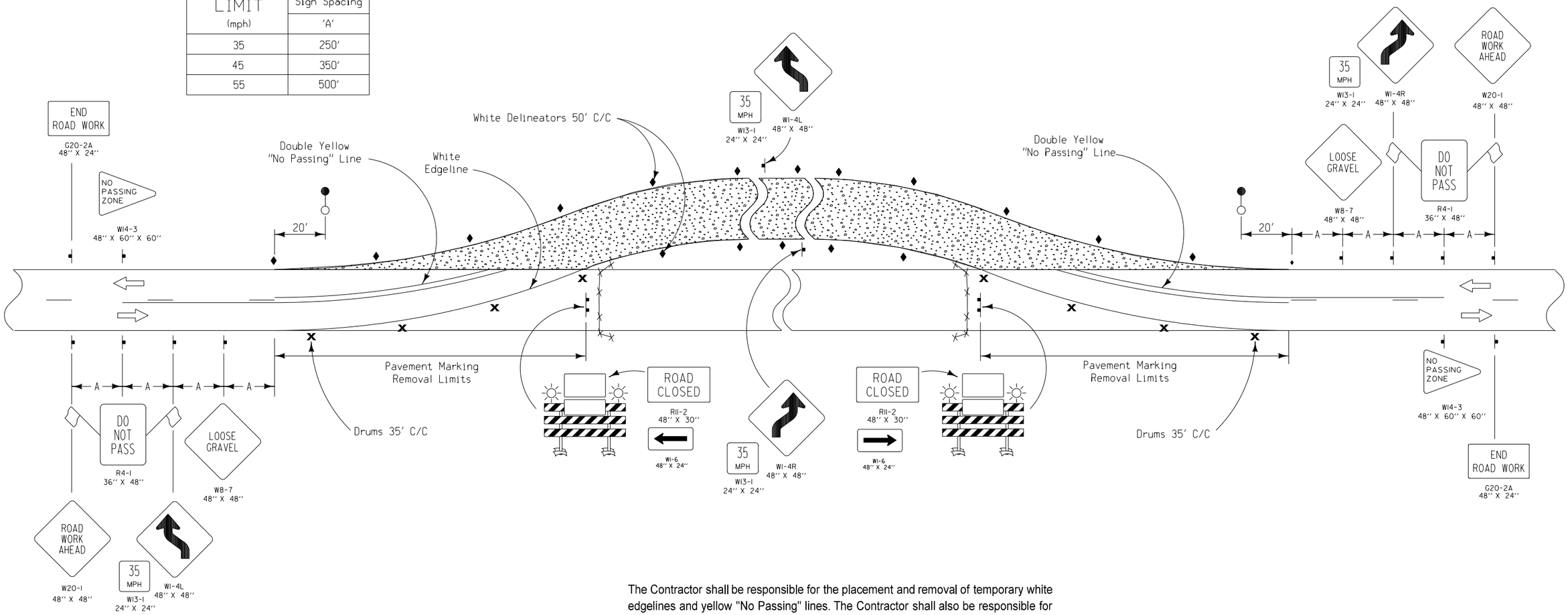
TWO-LANE ROADWAY

SPEED LIMIT (mph)	Approximate Sign Spacing 'A'
35	250'
45	350'
55	500'



The Contractor shall be responsible for the placement and removal of temporary white edgelines and yellow "No Passing" lines. The Contractor shall also be responsible for the removal and replacement of the existing dashed yellow centerline and white edgelines as required be the Traffic Control Layout.

The Engineer may change the advisory speed if deemed appropriate. If reduced below 35 mph, the Reverse Curve signs shall be changed to Reverse Turn signs (W1-3LA or W1-3RA).

LEGEND

- Traffic Sign
- Drum
- Type III Barricade
- Orange Plastic Safety Fence
- Traffic Signal
- Single White Delineators (mount back to back)
- Temporary Floodlighting
- Type 'A' Low-Intensity Flashing Warning Light
- Type 'B' High-Intensity Flashing Warning Light

Highway Division

DETAIL SHEET 520-55

REVISION: Replaced RS-9, as it is rarely used.	REVISION NO.	REVISION DATE
	NEW	10-17-06

TRAFFIC CONTROL LAYOUT
FOR UNPAVED ON SITE DETOUR
WITH TWO-WAY TRAFFIC

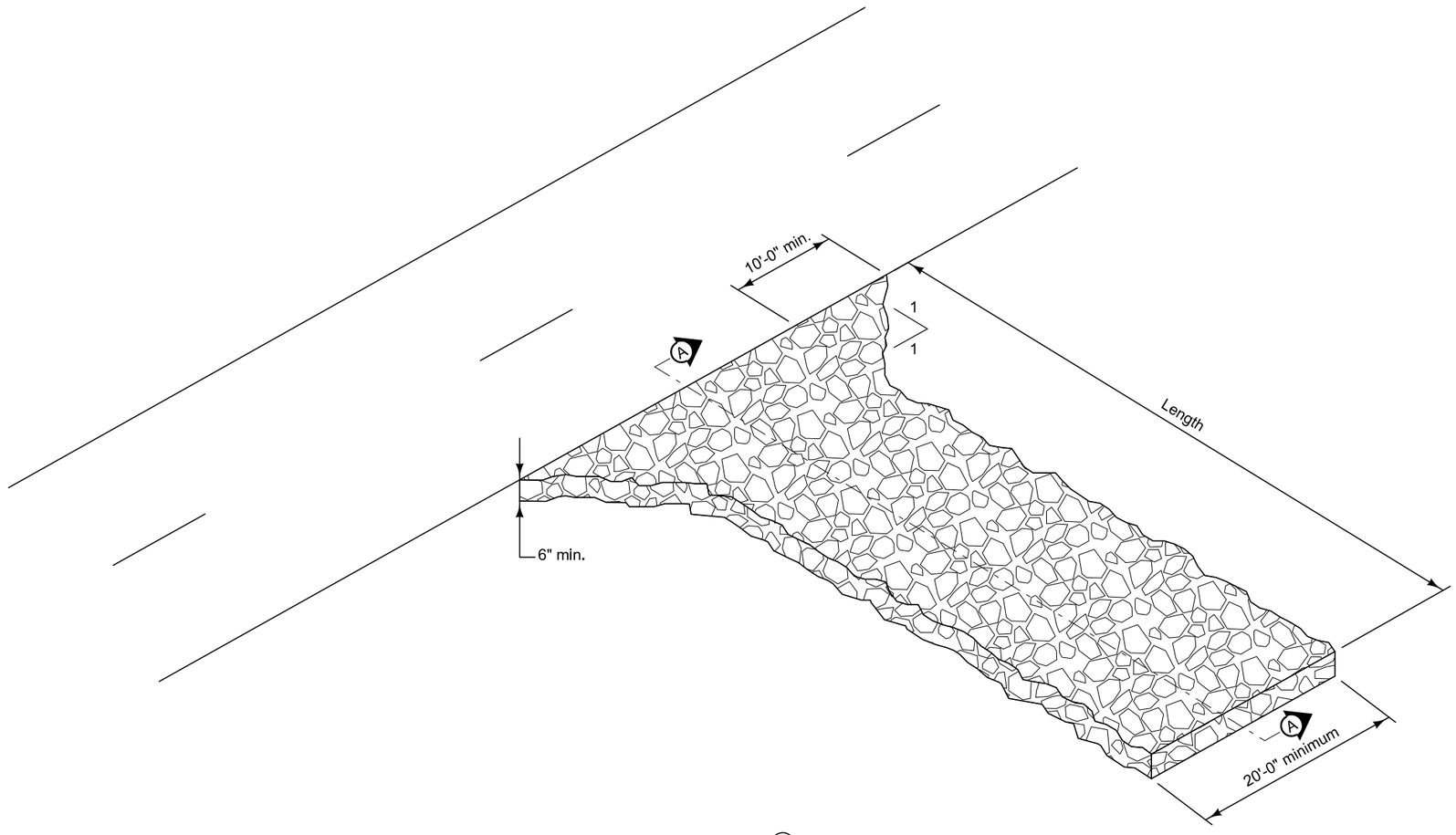
Obtain the Engineer's approval for location and length of stabilized entrances prior to constructing.

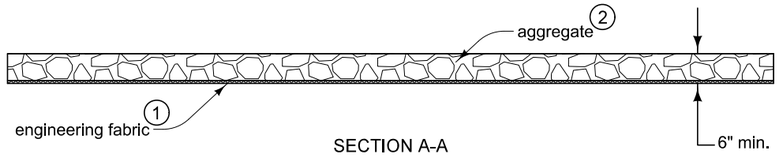
Method of Measurement for Stabilized Construction Entrance will be in linear feet measured along the length of the entrance at the entrance centerline.

Basis of Payment for Stabilized Construction Entrance will be at the contract unit price per linear foot. Payment is full compensation for furnishing all materials and work necessary for installation, maintenance, and removal of stabilized construction entrance. Maintenance includes installing additional material or cleaning required to maintain the entrance in a functional condition.

(1) Place engineering fabric prior to placing aggregate. Use fabric for Embankment Erosion Control complying with Section 4196 of the Standard Specifications.

(2) Use aggregate meeting Gradation No. 13 of Section 4109 of the Standard Specificaitons.





SECTION A-A

Possible Contract Item:
Stabilized Construction Entrance

STABILIZED CONSTRUCTION ENTRANCE

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER U.4

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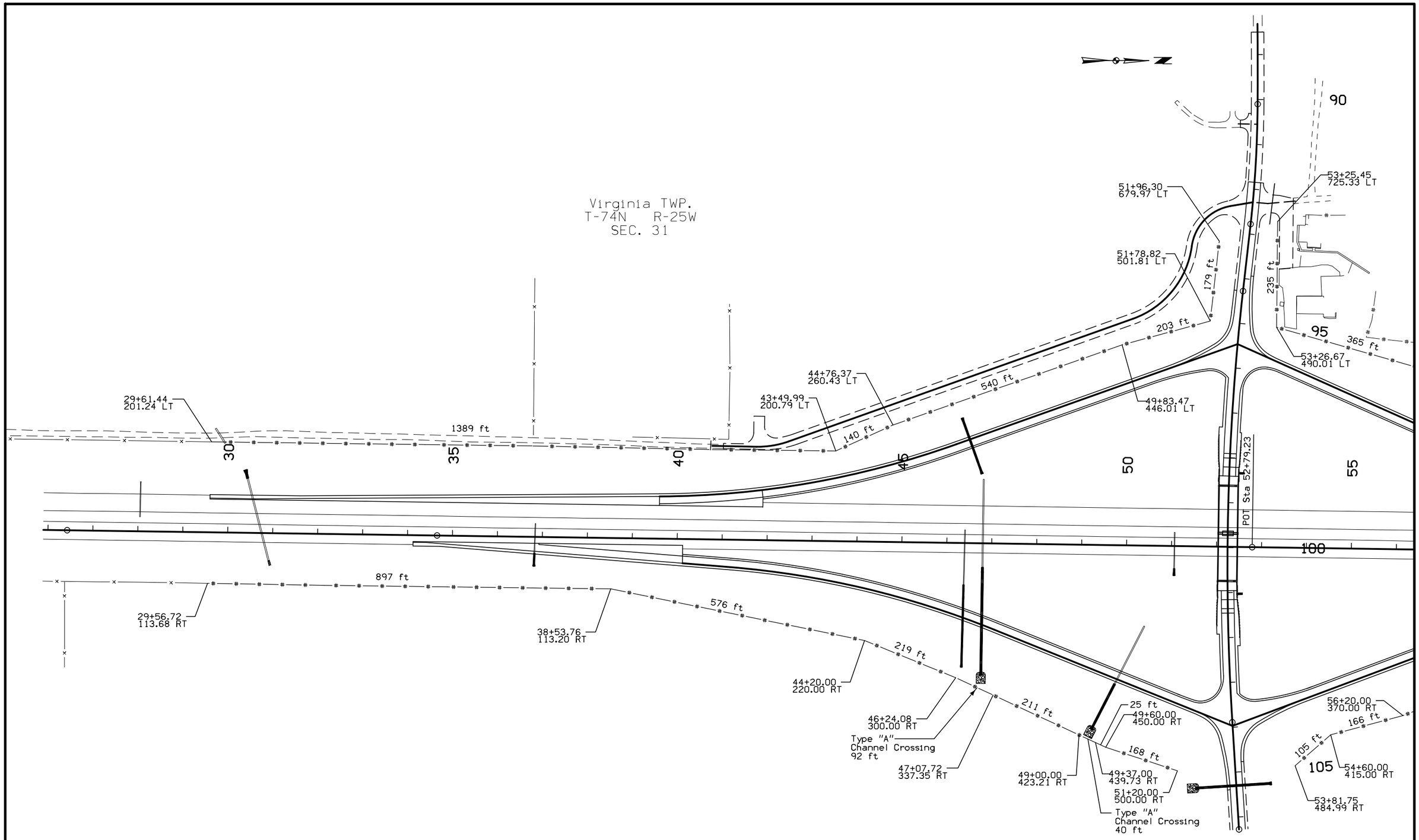


NOTES:

Refer to Standard Road Plans MI-101, MI-102 and MI-103 for fencing layout and details.

0 100
FEET

FENCING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER U.5

10/12/2016 SYSTEM DATE/TIME ksnook S:\Projects\06241003\9103502012\Design\91035423shtU03.dgn U3_0100_PL 11x17bw_pdf.plt

Virginia TWP.
T-74N R-25W
SEC. 30

51+96.30
679.97 LT

53+25.45
725.33 LT

51+78.82
501.81 LT

179 ft

235 ft

203 ft

49+83.47
446.01 LT

53+26.67
490.01 LT

365 ft

56+79.18
395.00 LT

254 ft

59+15.00
300.00 LT

193 ft

60+95.00
370.00 LT

Type "A"
Channel Crossing
57 ft

184 ft

63+45.00
295.00 LT

134 ft

85 ft

61+65.00
200.00 LT

62+50.00
200.00 LT

103 ft

64+00.00
280.00 LT

64+80.00
215.00 LT

66+30.00
225.00 LT

150 ft

Type "A"
Channel Crossing
35 ft

32 ft

220 ft

66+50.00
200.00 LT

142 ft

69+60.00
310.00 LT

69+95.00
315.00 LT

136 ft

68+70.00
200.00 LT

70+70.00
200.00 LT

74+87.36
200.00 LT

417 ft

90
95
50
55
60
65
70
75
100

POT Sta 52+79.23

61+95.39
147.33 RT

83 ft

448 ft

369 ft

284 ft

216 ft

61+13.08
158.34 RT

66+43.87
147.27 RT

70+11.19
181.50 RT

72+95.34
179.91 RT

75+10.99
181.33 RT

266 ft

271 ft

56+20.00
370.00 RT

58+71.67
269.99 RT

166 ft

105 ft

105

54+60.00
415.00 RT

53+81.75
484.99 RT

211 ft

25 ft
49+60.00
450.00 RT

168 ft

49+00.00
423.21 RT

49+37.00
439.73 RT

51+20.00
500.00 RT

Type "A"
Channel Crossing
40 ft

NOTES:

Refer to Standard Road Plans MI-101, MI-102 and MI-103 for fencing layout and details.

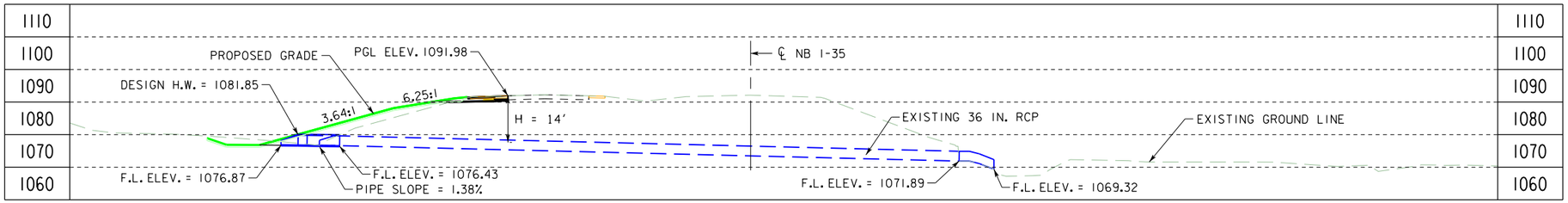
0 100
FEET

FENCING DETAILS

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER U.6

10/12/2016 SYSTEM\ATM ksnook S:\Projects\06241003\9103502012\Design\91035423shtU03.dgn U6_0100_PL 11x17bw_pdf.plt

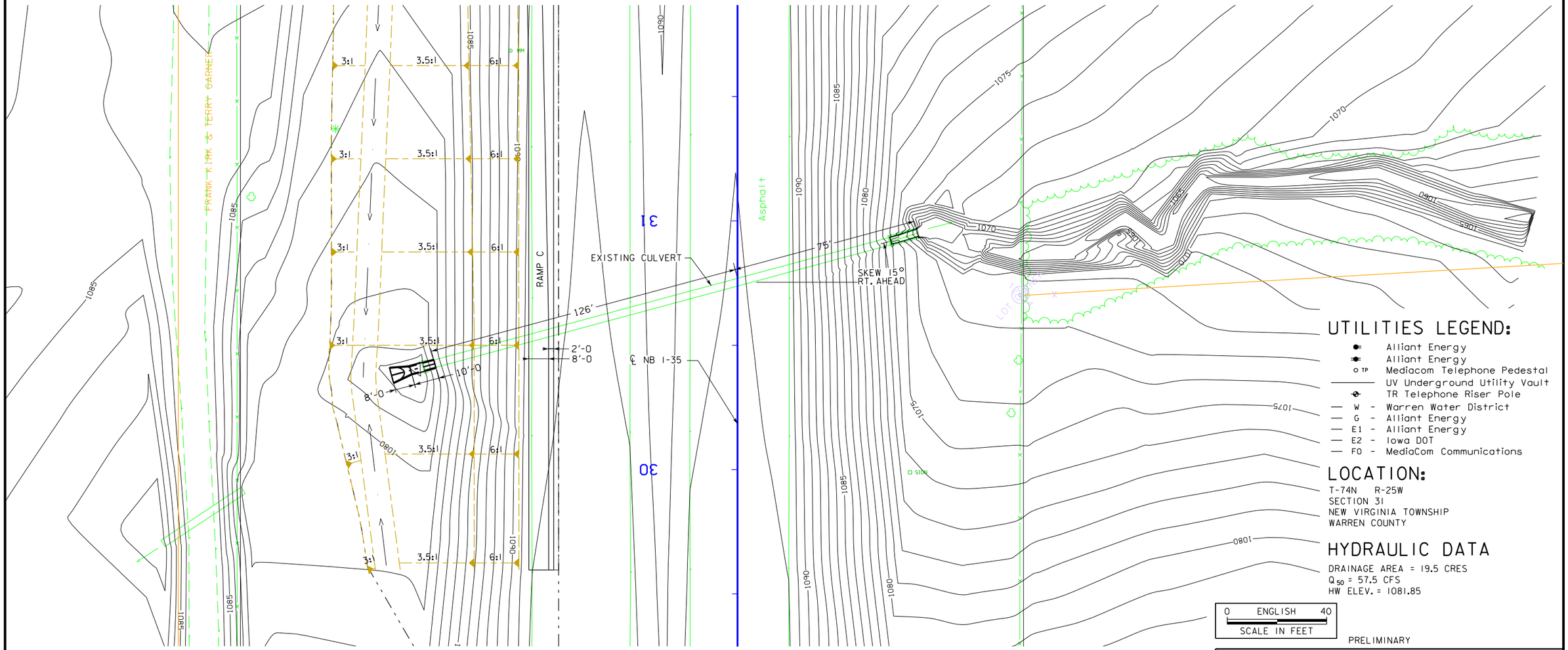
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK G036
Sta. 29+00, 24' Rt. Elev. 1091.15
5/8" REBAR 6" DEEP
Note: Station and Offset Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 19.5 CRES
Q_{50} = 57.5 CFS
HW ELEV. = 1081.85

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

PLAT PLAN

"For Information Only"

STA. 30+75
EXTEND 36 IN. RCP
SKEW 15°
F.L. LT 1076.87
F.L. RT 1071.89
DA 19.5 ACRES (Hilly)

DESIGN FOR 15° SKEW
EXISTING 36" X 190'
REINFORCED CONCRETE PIPE
EXTEND 10' LT.
PLAT PLAN
STA. 30+75.00 OCTOBER, 2013
WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.1

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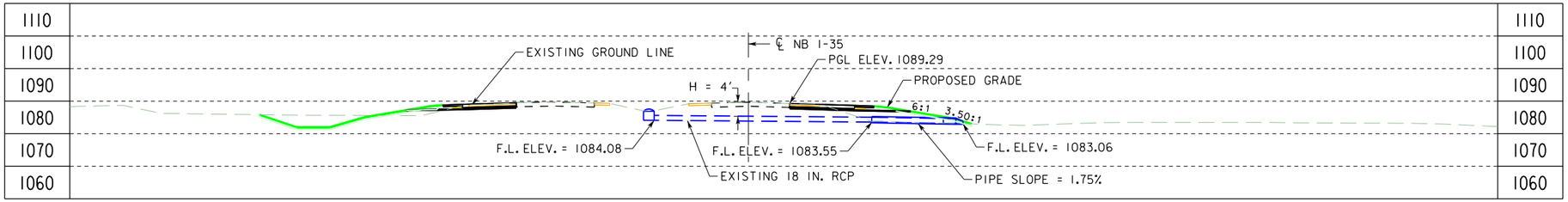
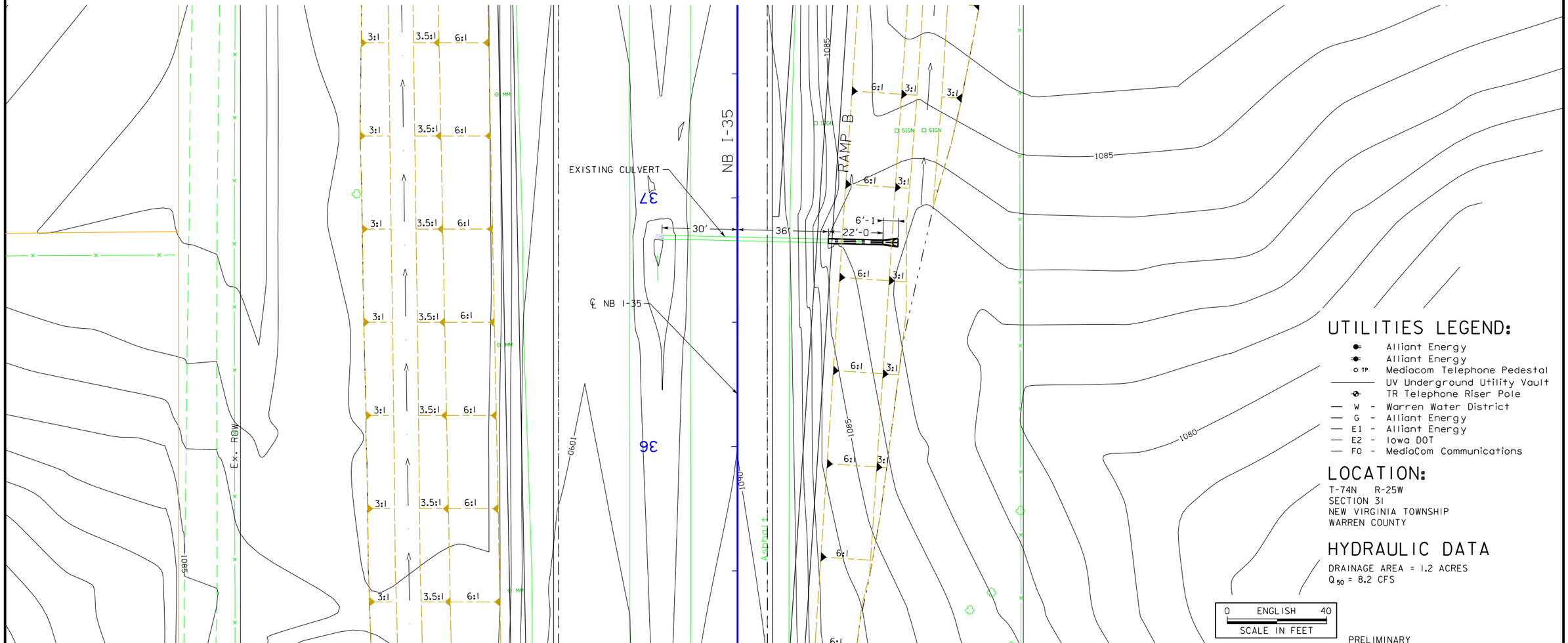
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK G036
Sta. 29+00, 24' Rt. Elev. 1091.15
5/8" REBAR 6" DEEP
Note: Station and Offset Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.2 ACRES
Q_{50} = 8.2 CFS

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 36+80
EXTEND 18 IN. RCP
SKEW 0°
F.L. LT 1084.08
F.L. RT 1083.06
DA 1.2 ACRES (Hilly)

DESIGN FOR 0° SKEW

EXISTING 18" X 62'
REINFORCED CONCRETE PIPE
EXTEND 22' RT.
PLAT PLAN
WARREN COUNTY

STA. 36+80.00 OCTOBER, 2013

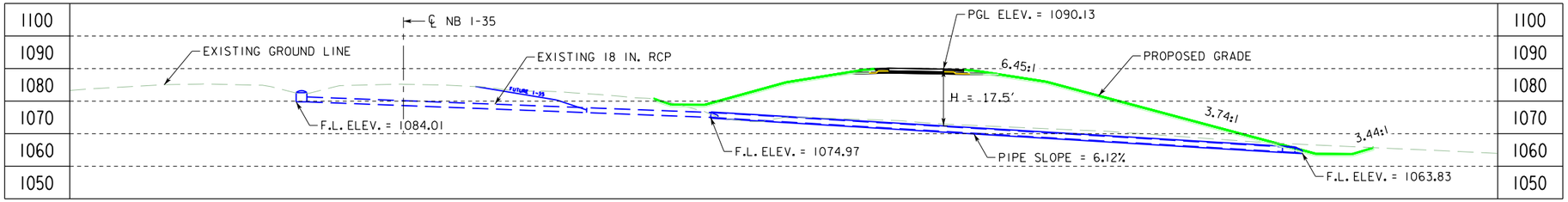
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.2

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

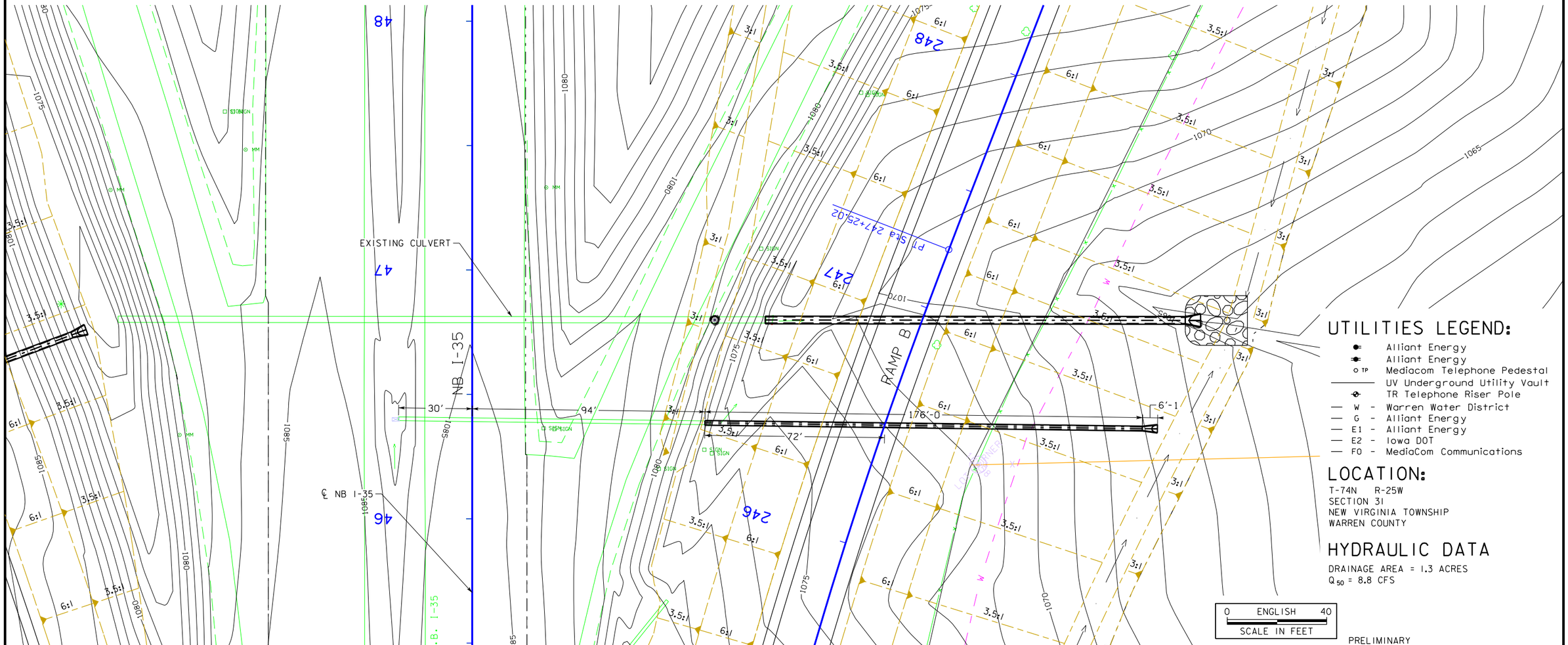
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK GO37
Sta. 47+33, 24' Rt. Elev. 1082.82
5/8" REBAR 6" DEEP
Note: Station and Offset Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.3 ACRES
Q_{50} = 8.8 CFS

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 46+40
EXTEND 18 IN. RCP
SKEW 0°
F.L. LT 1084.01
F.L. RT 1063.83
DA 1.3 ACRES (Hilly)

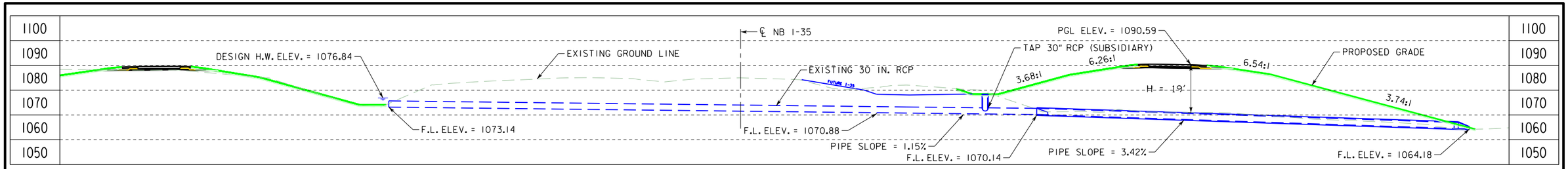
DESIGN FOR 0° SKEW
EXISTING 18" X 123'
REINFORCED CONCRETE PIPE
EXTEND 176' RT.
PLAT PLAN
WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

STA. 46+40.00 OCTOBER, 2013

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.3

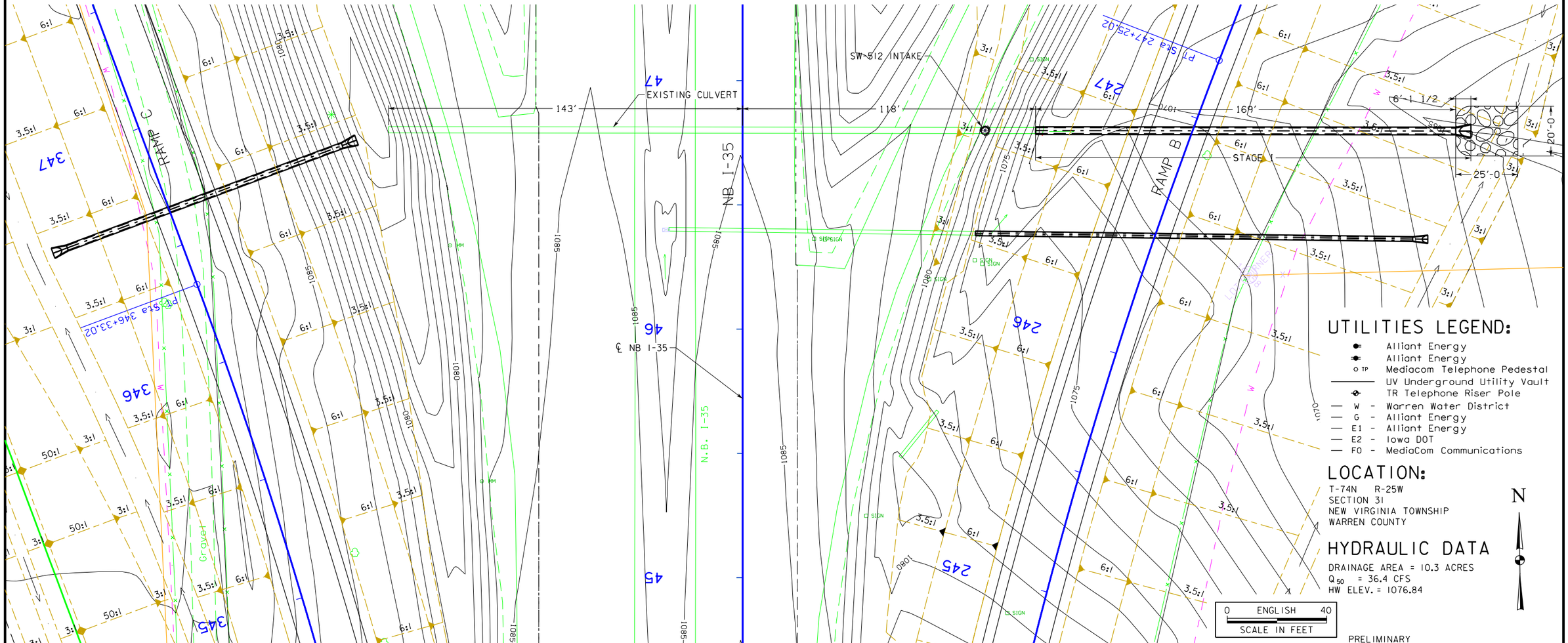
XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht



NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.

LONGITUDINAL SECTION ALONG ℄ CULVERT

BENCH MARK GO37, Sta. 47+33, 24' Rt. Elev. 1082.82, 5/8" REBAR 6" DEEP
Note: Station and Offset Based on I-35 Survey Centerline



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 10.3 ACRES
Q_{50} = 36.4 CFS
HW ELEV. = 1076.84

N

0 ENGLISH 40
SCALE IN FEET

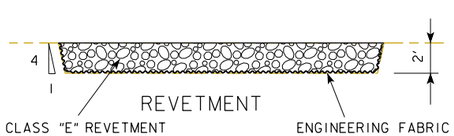
PRELIMINARY

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	60	65.6	37.1
TOTALS	60	65.6	37.1

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

PLAT PLAN



"For Information Only"

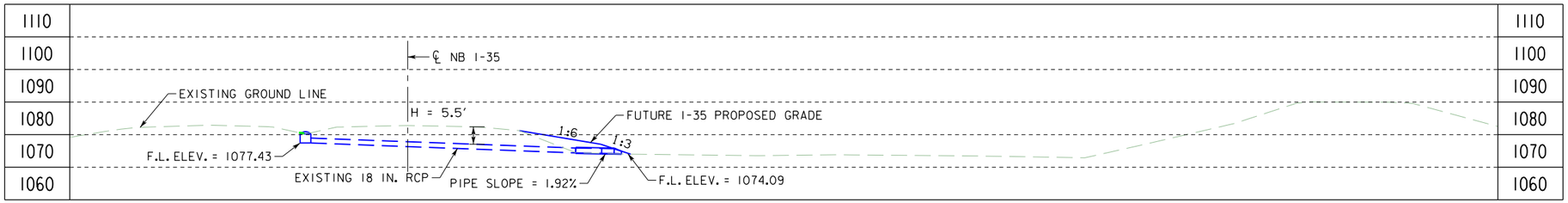
STA. 46+80
EXTEND 30 IN. RCP
SKEW 0°
F.L. LT 1073.14
F.L. RT 1064.18
DA 10.3 ACRES (Hilly)

DESIGN FOR 0° SKEW
EXISTING 30" X 230'
REINFORCED CONCRETE PIPE
EXTEND 169' RT.
PLAT PLAN
STA. 46+80.00 OCTOBER, 2013
WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.4

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

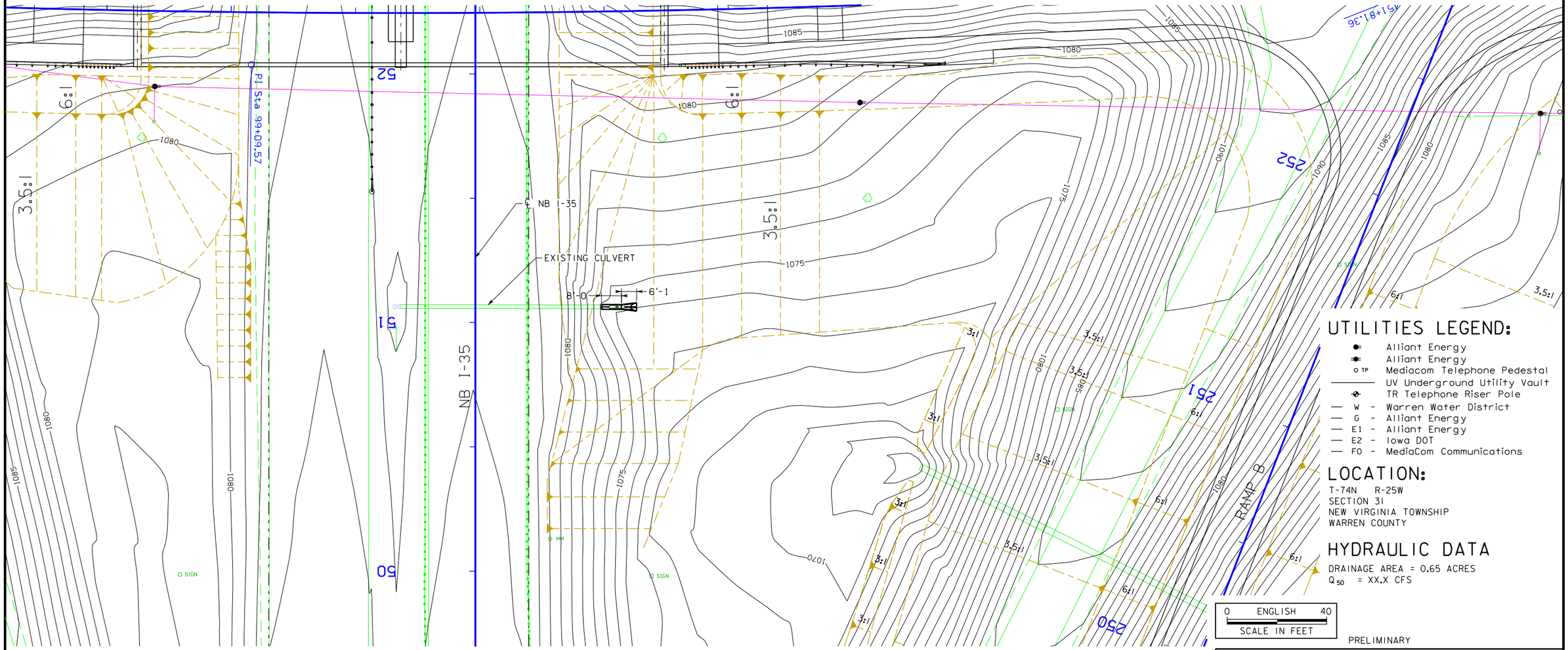
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK G037
Sta. 47+33, 24' Rt. Elev. 1082.82
5/8" REBAR 6" DEEP
Note: Station and Offset Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 0.65 ACRES
Q_{50} = XX.X CFS

0 ENGLISH 40
SCALE IN FEET

PLAT PLAN

PRELIMINARY

"For Information Only"

STA. 51+00
EXTEND 18 IN. RCP
SKEW 0°
F.L. LT 1077.43
F.L. RT 1074.09
DA 0.65 ACRES (Hilly)

DESIGN FOR 0° SKEW

EXISTING 18" X 82' REINFORCED CONCRETE PIPE CULVERT EXTEND 8' RT.

PLAT PLAN

STA. 51+00.00 OCTOBER, 2013

WARREN COUNTY

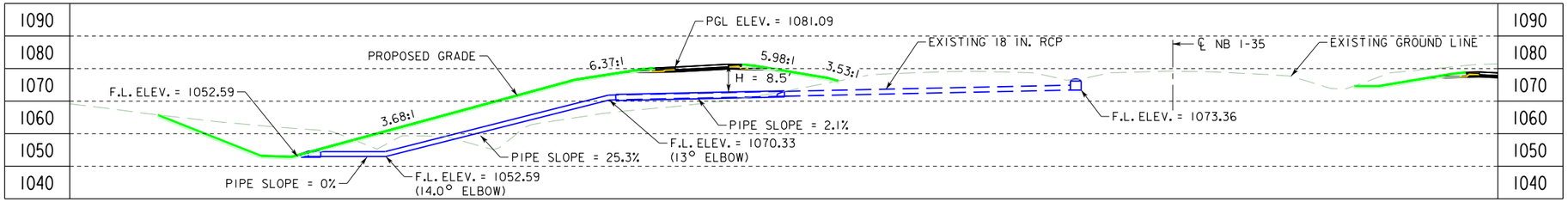
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.5

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

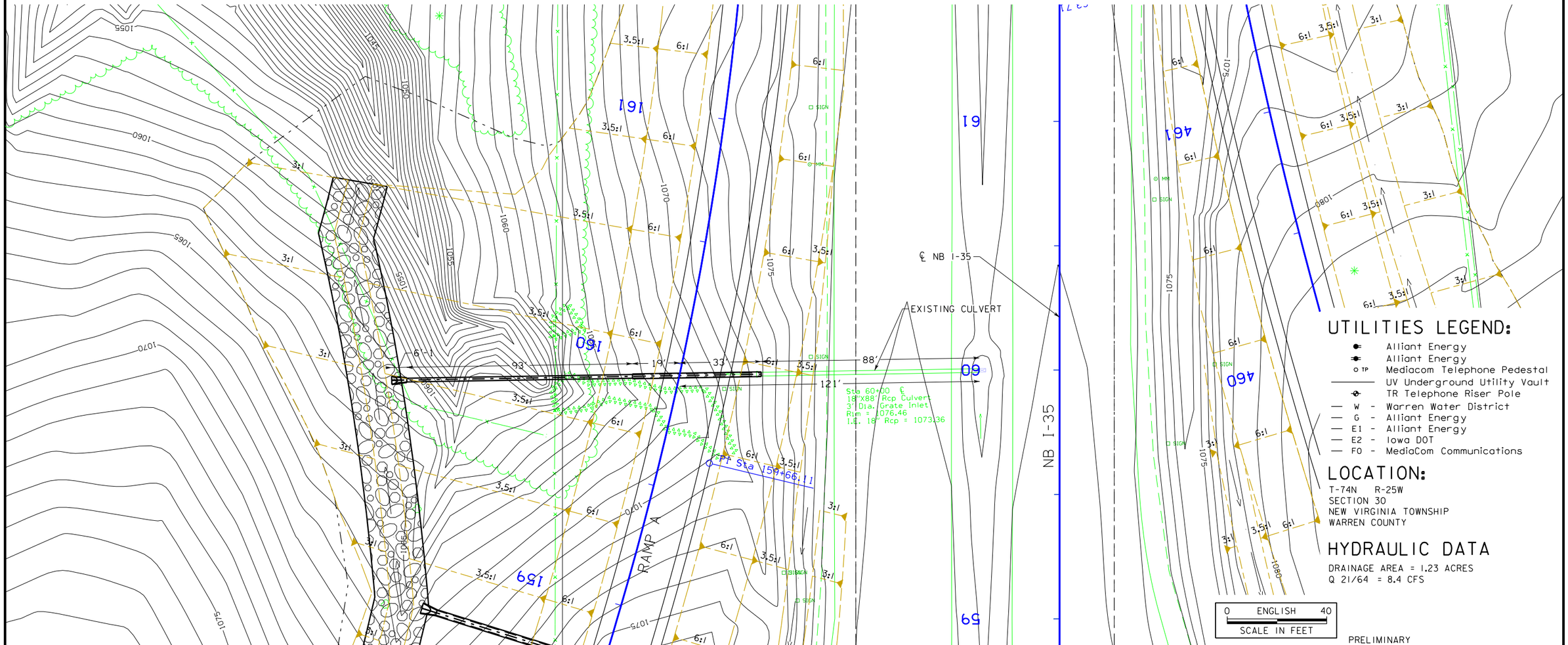
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK GO38
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.23 ACRES
Q 21/64 = 8.4 CFS

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 60+00
EXTEND 18 IN. RCP
SKEW 0°
F.L. LT 1052.59
F.L. RT 1073.36
DA 1.23 ACRES (Hilly)

DESIGN FOR 0° SKEW

EXISTING 18" X 88' REINFORCED CONCRETE & CORRUGATED METAL PIPE EXTEND 145' LT.

STA. 60+00.00

PLAT PLAN

OCTOBER, 2013

WARREN COUNTY

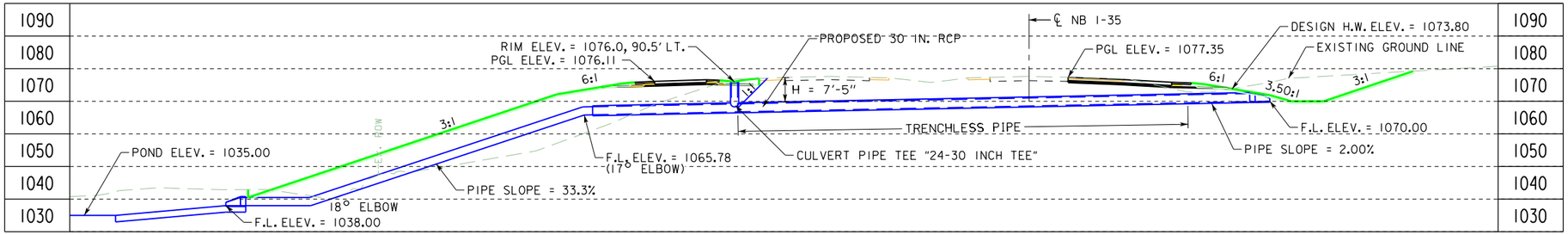
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.6

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

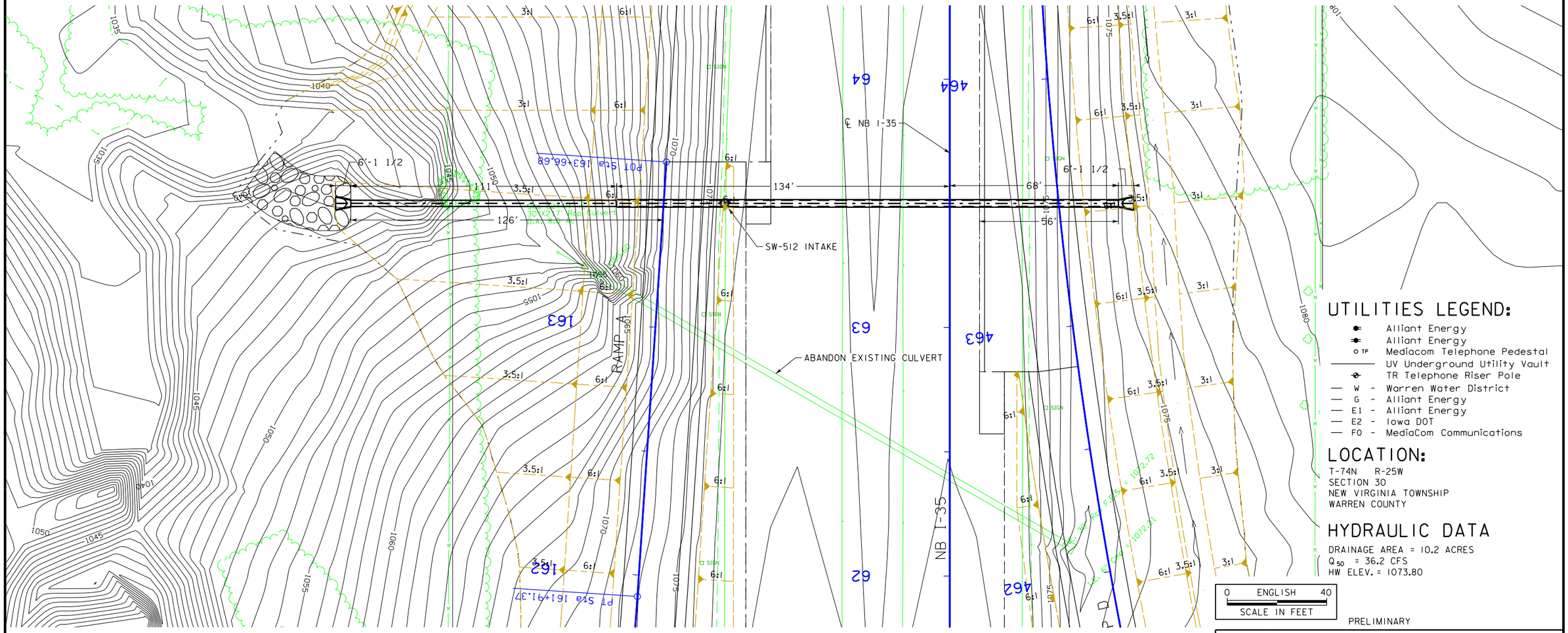
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



LONGITUDINAL SECTION ALONG ℄ CULVERT

BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 10.2 ACRES
Q_{50} = 36.2 CFS
HW ELEV. = 1073.80

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	106	127	66
TOTALS	106	127	66

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

STA. 63+50
INSTALL 30 IN. X 313'
SKEW 0°
F.L. LT 1038.00
F.L. RT 1070.00
DA 10.2 ACRES (Hilly)

DESIGN FOR 0° SKEW
INSTALL 30" X 202' TRENCHLESS RCP
AND 30" X 111' CMP

STA. 63+50.00

PLAT PLAN
WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

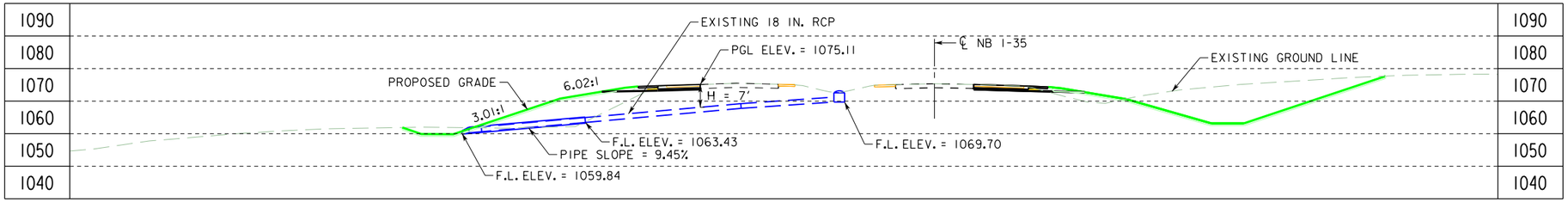
OCTOBER, 2013

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.7

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

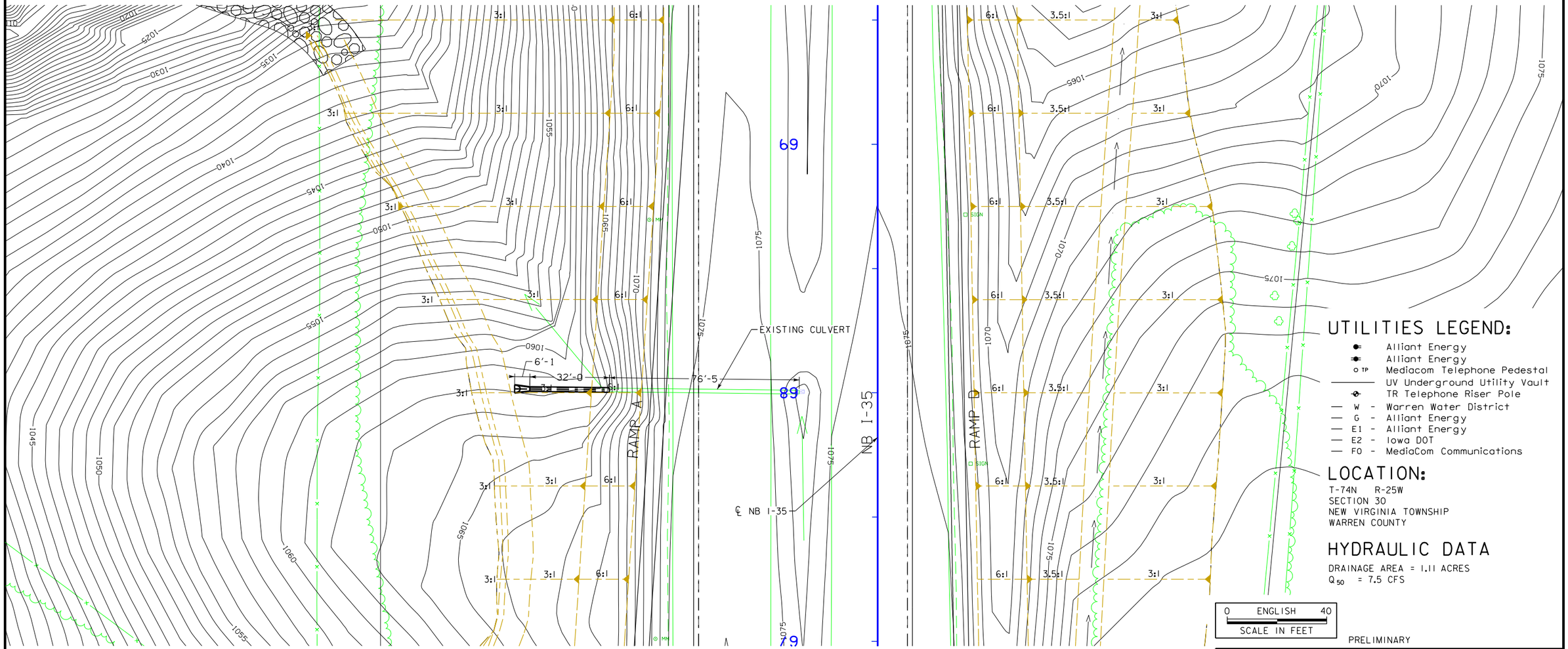
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



LONGITUDINAL SECTION ALONG ℄ CULVERT

BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.11 ACRES
Q_{50} = 7.5 CFS

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 68+00
EXTEND 18 IN. RCP
SKEW 0°
F.L. LT 1059.84
F.L. RT 1069.70
DA 1.11 ACRES (Hilly)

DESIGN FOR 0° SKEW

EXISTING 18" X 76' REINFORCED CONCRETE PIPE CULVERT EXTEND 32' LT.

PLAT PLAN

STA. 68+00.00

OCTOBER, 2013

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

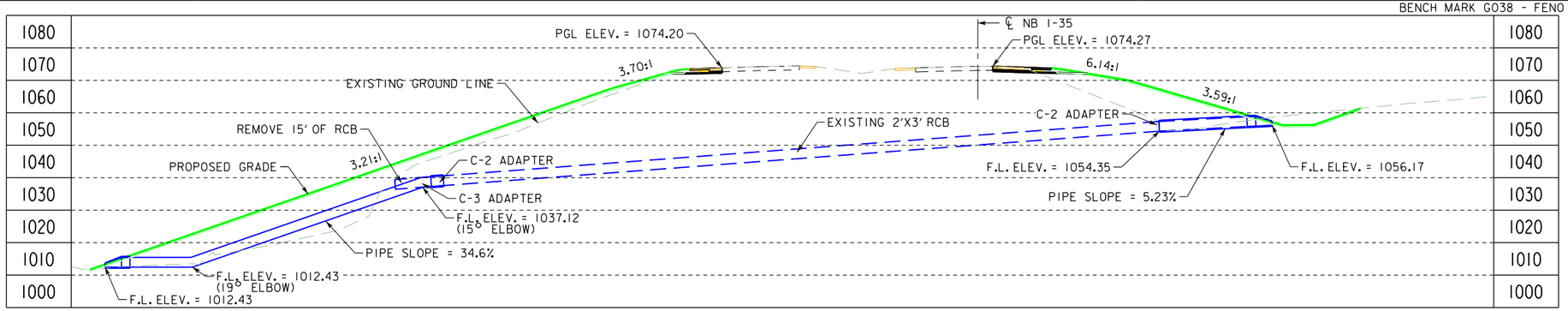
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.8

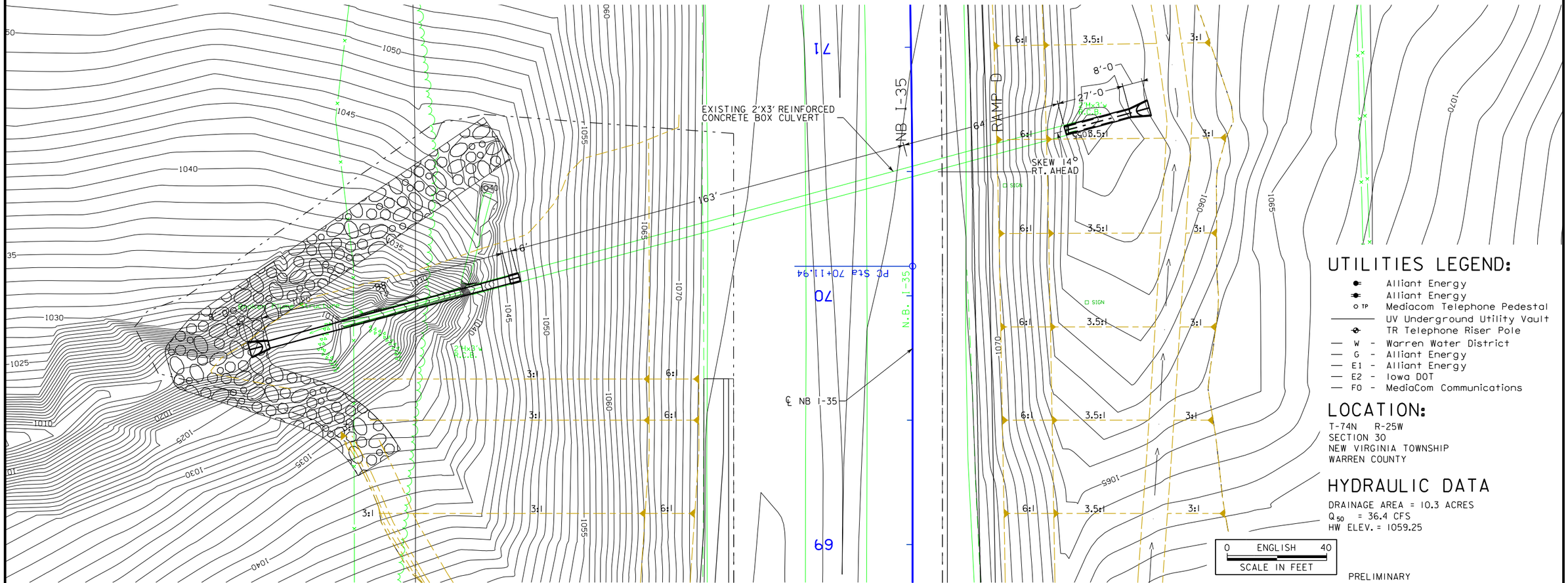
XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.

BENCH MARK G038 - FENO MONUMENT 8" DEEP, ELEVATION 1073.47



LONGITUDINAL SECTION ALONG ℄ CULVERT



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 10.3 ACRES
Q_{50} = 36.4 CFS
HW ELEV. = 1059.25

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	595	663	367
TOTALS	595	663	367

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

SITUATION PLAN

"For Information Only"

STA. 70+50
EXTEND 2'X3' RCB
SKEW 14° RT. AHD.
F.L. LT 1011.51
F.L. RT 1056.17
DA 10.3 ACRES (Hilly)

DESIGN FOR 15° SKEW

EXISTING 2' X 3' REINFORCED CONCRETE BOX CULVERT EXTEND 36"X104' LT. CMP & 36"X27' RT. RCP

STA. 70+50.00

SITUATION PLAN

OCTOBER, 2013

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

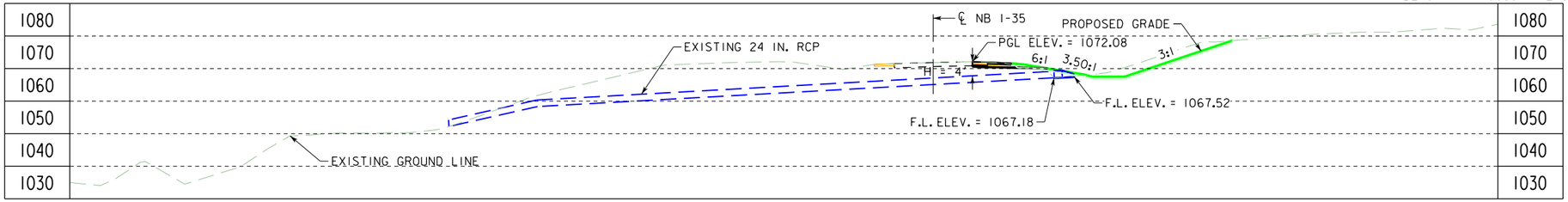
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.9

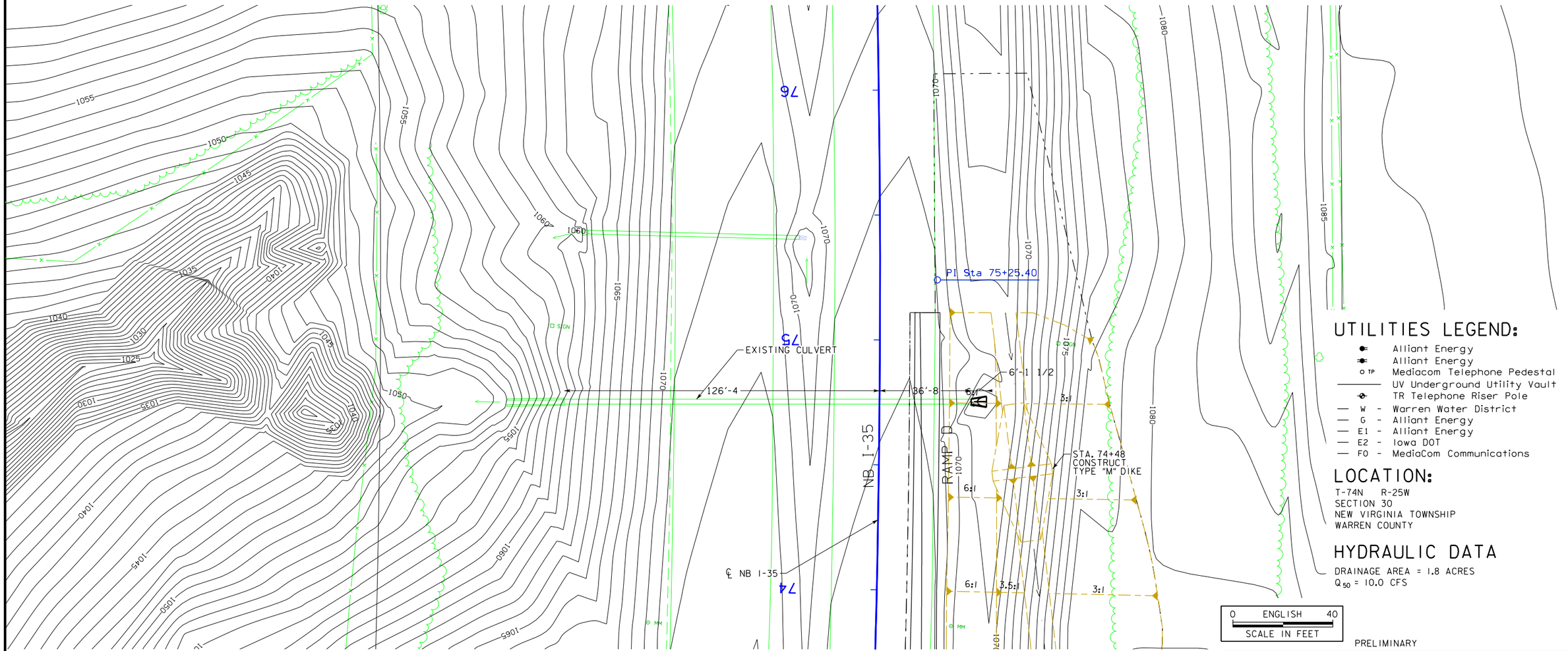
XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.

BENCH MARK G038 - FENO MONUMENT 8" DEEP, ELEVATION 1073.47



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.8 ACRES
Q_{50} = 10.0 CFS

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 74+75
EXTEND 24 IN. RCP
SKEW 0°
F.L. LT 1052.20
F.L. RT 1067.52
DA 1.8 ACRES (Hilly)

DESIGN FOR 0° SKEW

EXISTING 24" X 164' REINFORCED CONCRETE PIPE CULVERT INSTALL RF-3 APRON

PLAT PLAN

STA. 74+75.00 OCTOBER, 2013

WARREN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

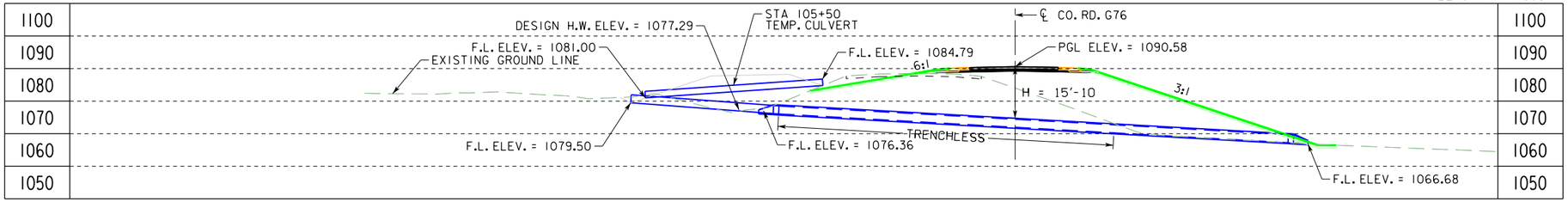
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.10

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

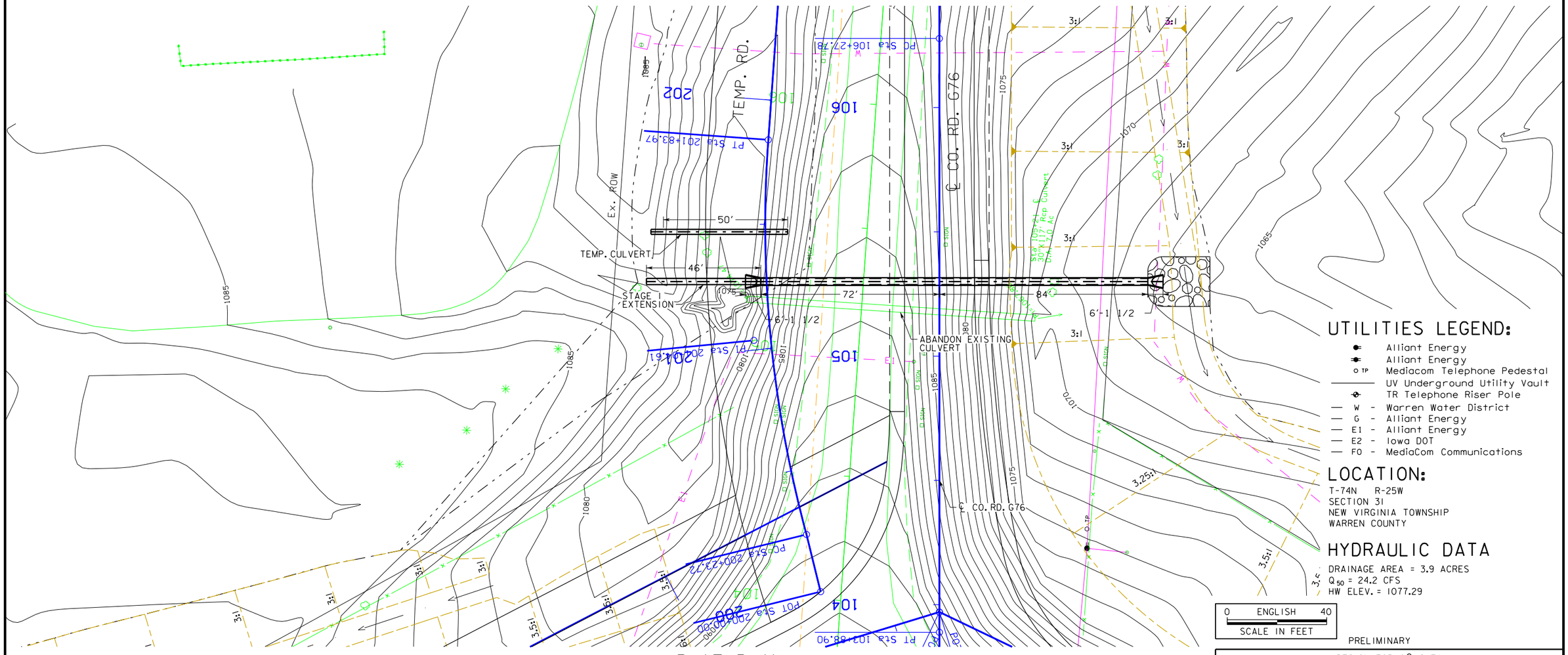
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.

BENCH MARK G037 - 5/8" REBAR 6" DEEP, ELEVATION 1082.82



N

LONGITUDINAL SECTION ALONG ℄ CULVERT



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 3.9 ACRES
Q_{50} = 24.2 CFS
HW ELEV. = 1077.29

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	60	65.6	37.1
TOTALS	60	65.6	37.1

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

PLAT PLAN

"For Information Only"

STA. 105+50
24" UNCL. TEMP
CULVERT

STA. 105+30
30 IN. RCP
SKEW 0°
F.L. LT 1076.24
F.L. RT 1066.68
DA 3.9 ACRES (Hilly)

DESIGN FOR 0° SKEW

INSTALL 30" X 156' TRENCHLESS REINFORCED CONCRETE PIPE

STA. 105+30.00

PLAT PLAN

WARREN COUNTY

OCTOBER, 2013

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

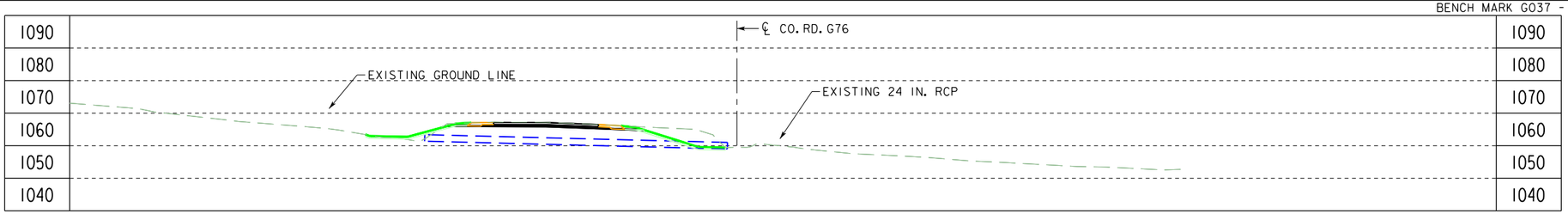
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.11

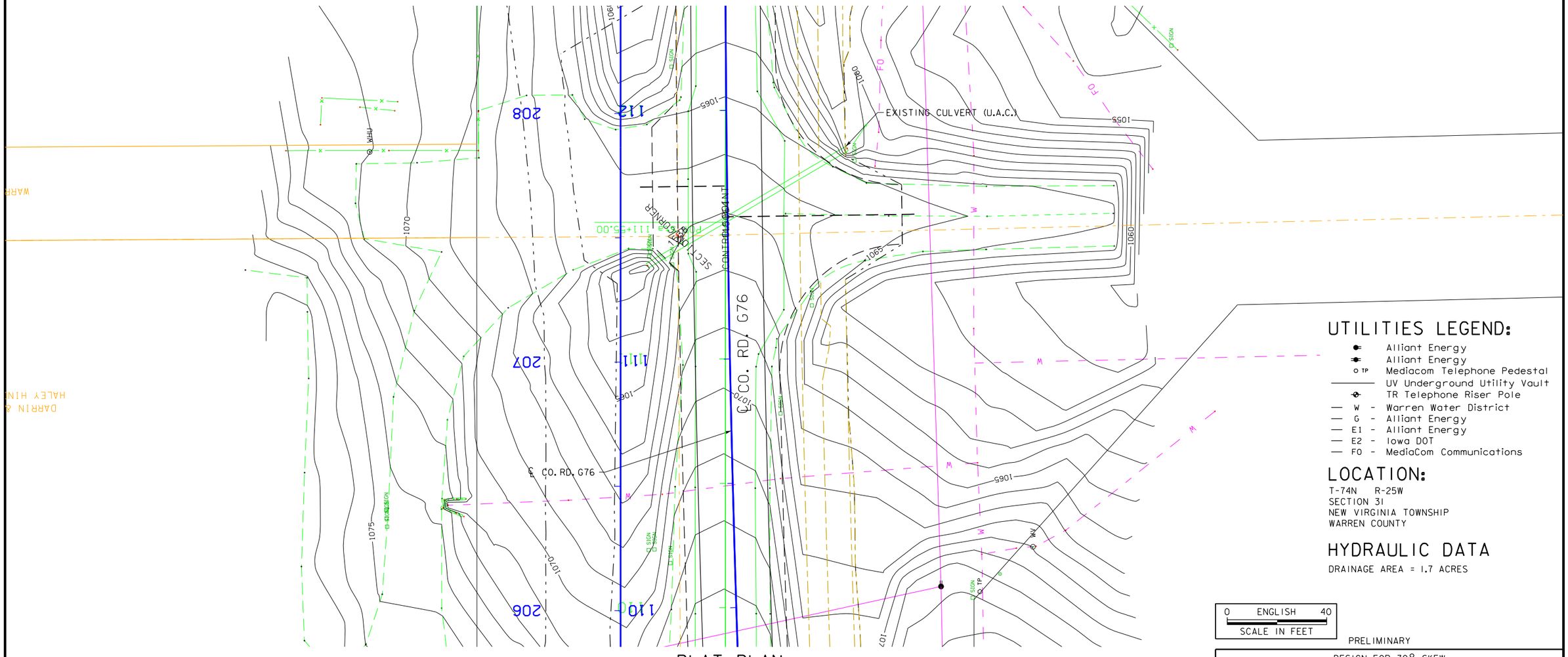
XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

BENCH MARK G037 - 5/8" REBAR 6" DEEP, ELEVATION 1082.82

NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



LONGITUDINAL SECTION ALONG ℄ CULVERT



UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 31
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 1.7 ACRES

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 111+36
U.A.C. 24 IN. RCP
SKEW 30° RT. AHD.
F.L. LT 1061.41
F.L. RT 1059.00
DA 1.7 ACRES (Hilly)

DESIGN FOR 30° SKEW

EXISTING 24" X 93' REINFORCED CONCRETE PIPE CULVERT USE AS CONSTRUCTED

PLAT PLAN

STA. 111+36.00 OCTOBER, 2013

WARREN COUNTY

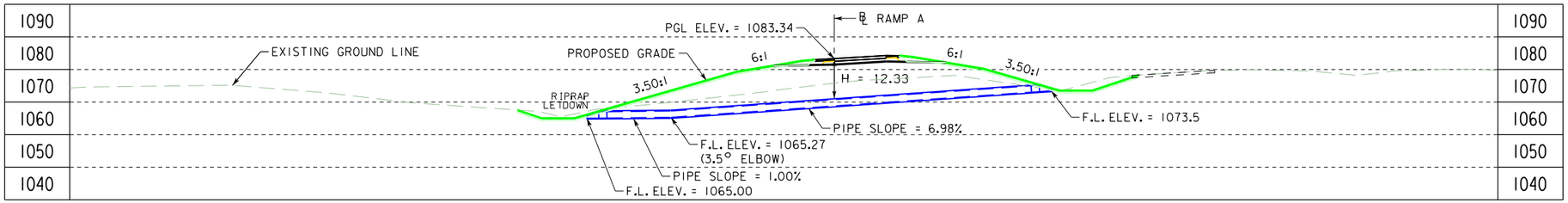
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.12

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

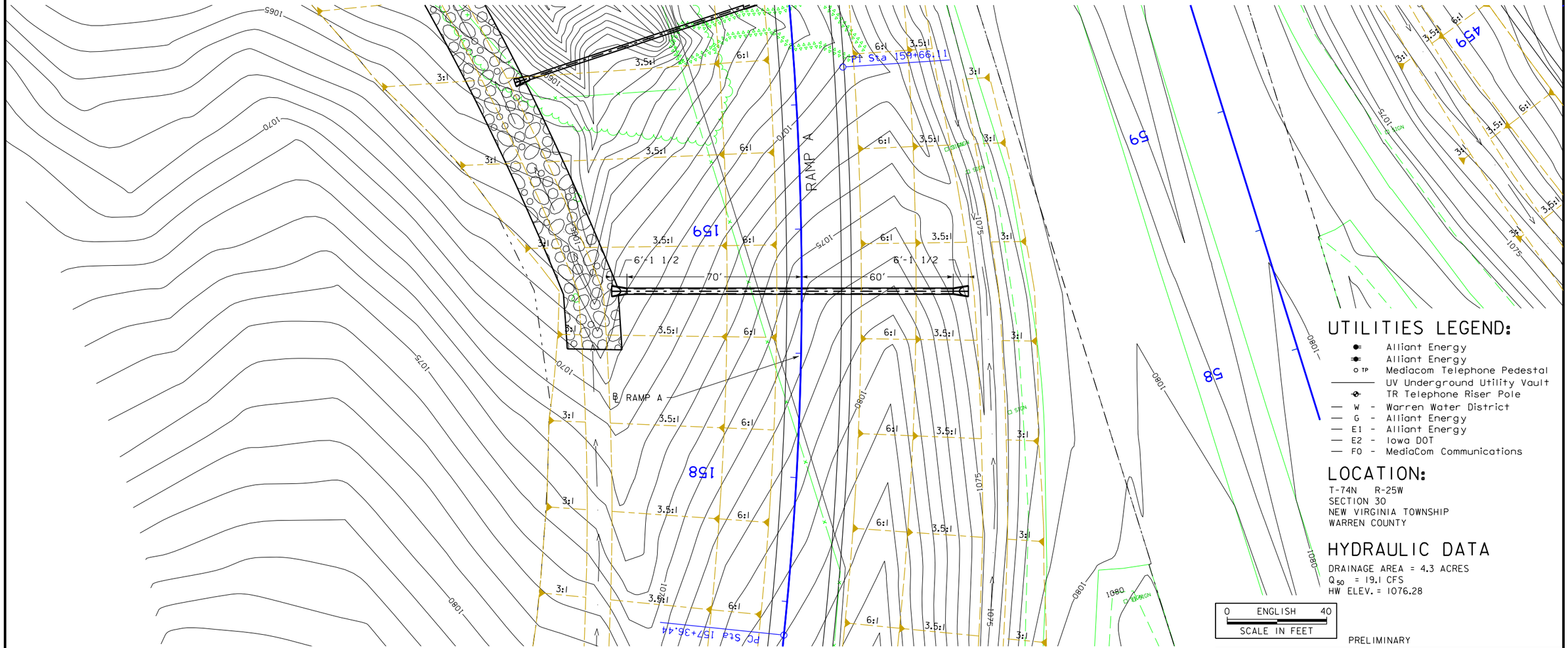
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



LONGITUDINAL SECTION ALONG ℄ CULVERT

BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 4.3 ACRES
Q_{50} = 19.1 CFS
HW ELEV. = 1076.28

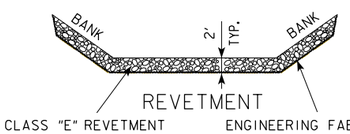
0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	500	561	309
TOTALS	500	561	309

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



"For Information Only"

STA. 158+75
INSTALL 24 IN. RCP
SKEW 0°
F.L. LT 1065.00
F.L. RT 1073.50
DA 4.3 ACRES (Hilly)

DESIGN FOR 0° SKEW
INSTALL 24" X 130'
REINFORCED CONCRETE PIPE

STA. 158+75.00

PLAT PLAN

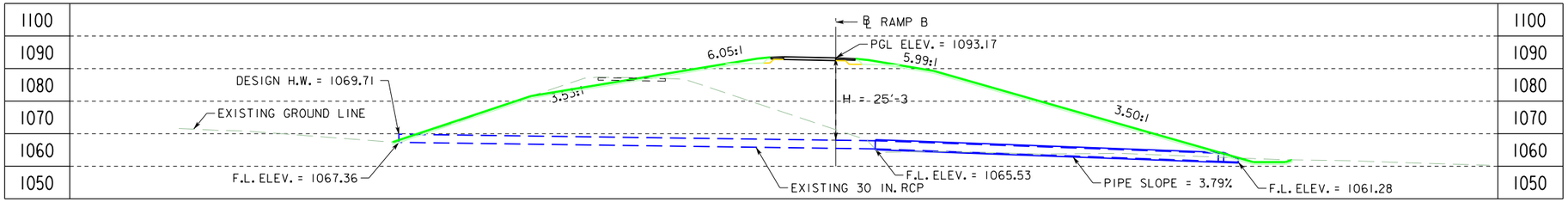
OCTOBER, 2013

WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.13

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

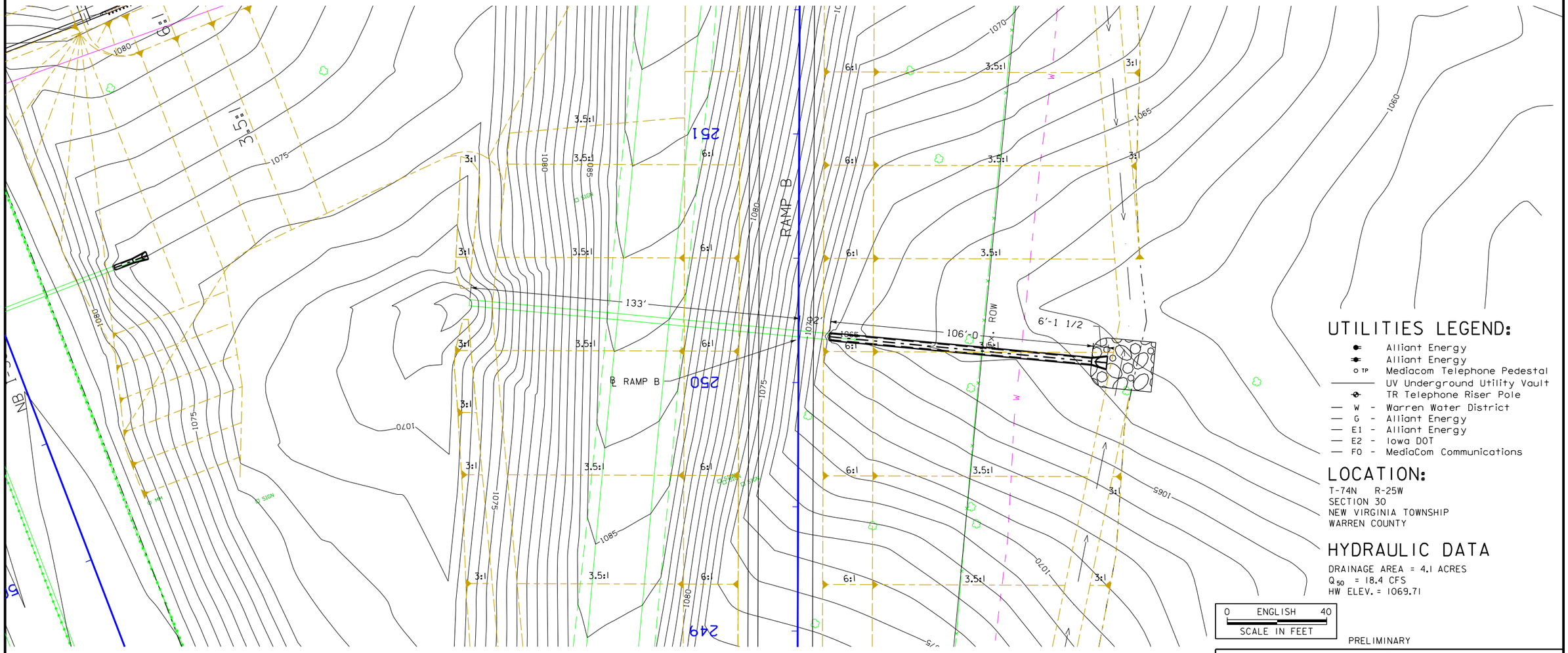
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 4.1 ACRES
Q_{50} = 18.4 CFS
HW ELEV. = 1069.71

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	60	65.6	37.1
TOTALS	60	65.6	37.1

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

"For Information Only"

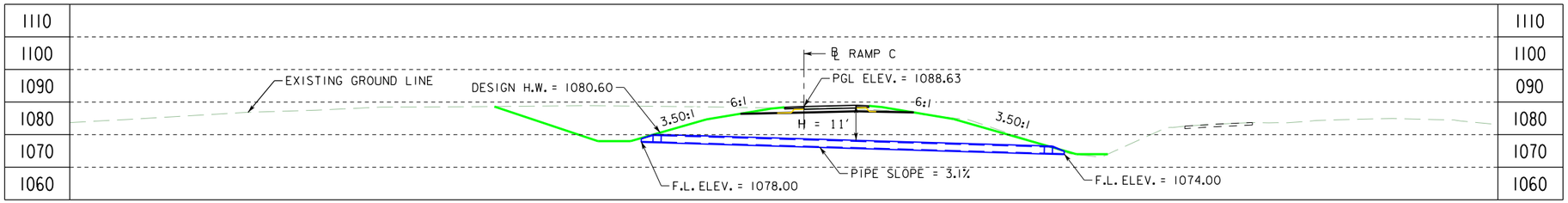
STA. 250+20
EXTEND 30 IN. RCP
SKEW 5° LT. AHD.
F.L. LT 1067.36
F.L. RT 1061.28
DA 4.1 ACRES (Hilly)

DESIGN FOR 5° LT. AHD. SKEW
EXISTING 30" X 145'
REINFORCED CONCRETE PIPE
EXTEND 106' RT.
PLAT PLAN
STA. 250+20.00 OCTOBER, 2013
WARREN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER | WARREN COUNTY | PROJECT NUMBER BRFIMX-035-2(423)44--14-91 | SHEET NUMBER V.14

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

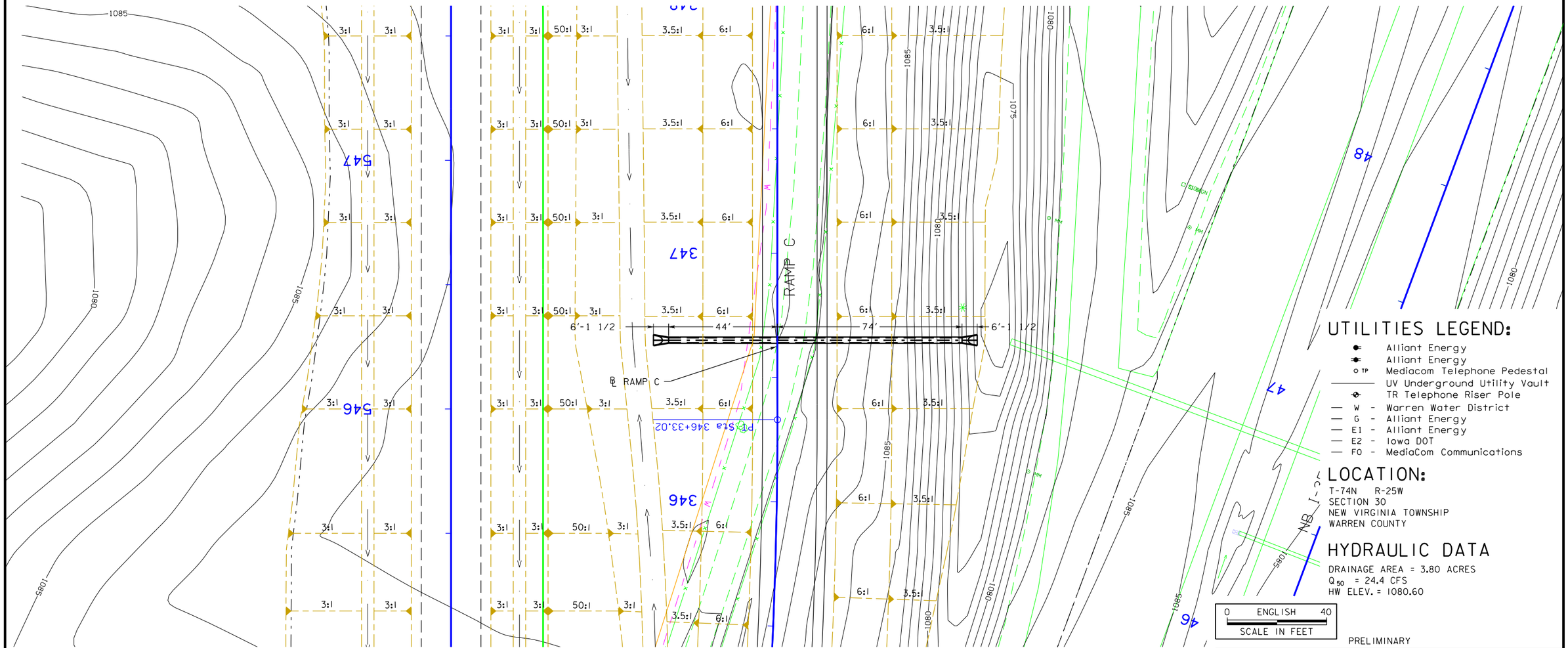
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



LONGITUDINAL SECTION ALONG ℄ CULVERT

BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:
T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA
DRAINAGE AREA = 3.80 ACRES
Q_{50} = 24.4 CFS
HW ELEV. = 1080.60

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 346+65
INSTALL 24 IN. RCP
SKEW 0°
F.L. LT 1078.00
F.L. RT 1074.00
DA 3.8 ACRES (Hilly)

DESIGN FOR 0° SKEW
INSTALL 24" X 118'
REINFORCED CONCRETE PIPE

STA. 346+65.00

PLAT PLAN
WARREN COUNTY

OCTOBER, 2013

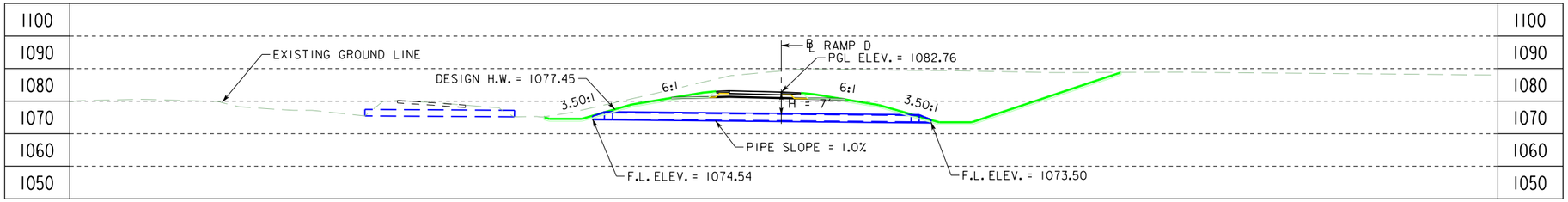
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.15

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

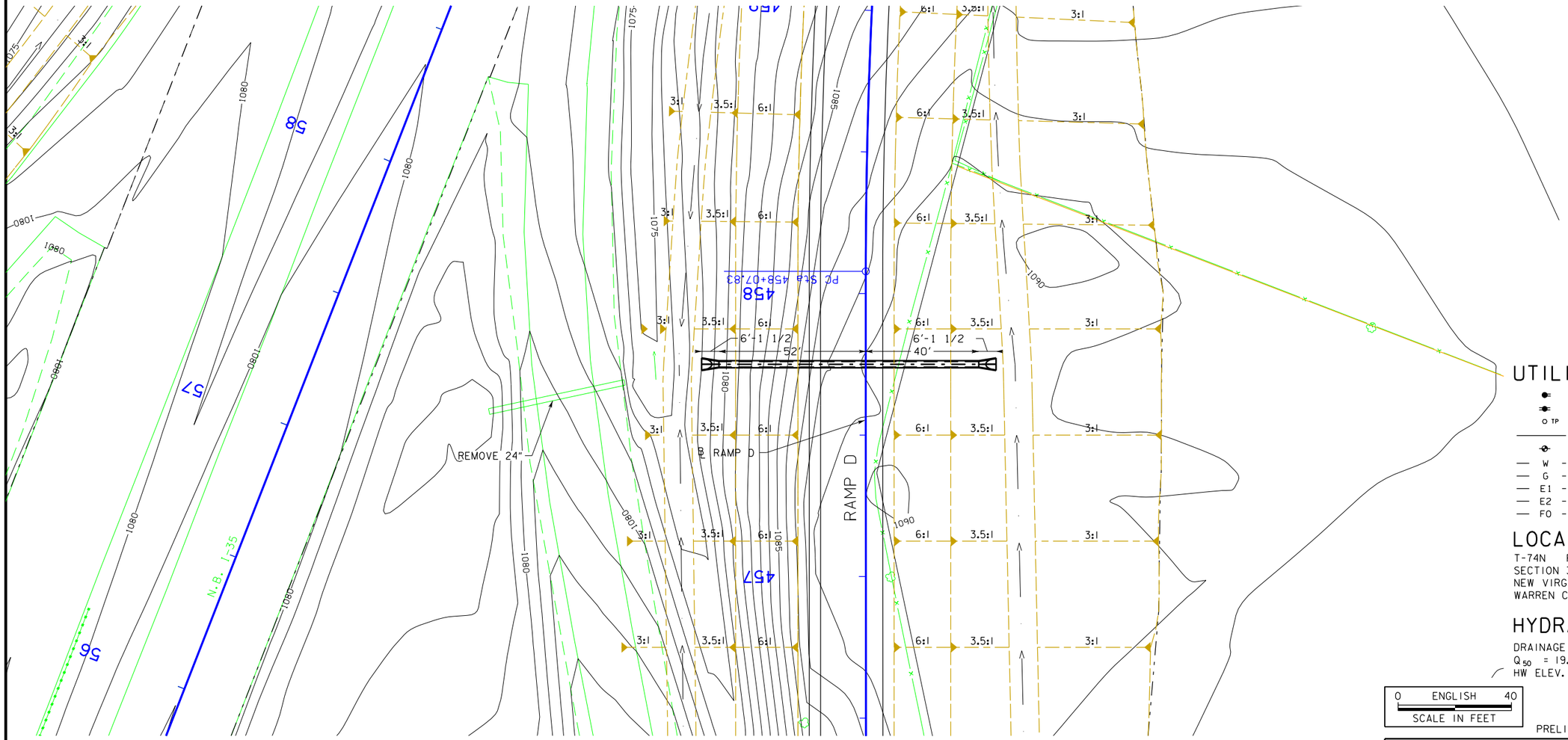
NOTES:
ALL UNITS ARE IN FEET
UNLESS OTHERWISE NOTED.



BENCH MARK G038
Sta. 73+11, 63' Rt. Elev. 1073.47
FENO MONUMENT 8" DEEP
Note: Station and Offset
Based on I-35 Survey Centerline

N

LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

UTILITIES LEGEND:

- Alliant Energy
- Alliant Energy
- TP Mediacom Telephone Pedestal
- UV Underground Utility Vault
- TR Telephone Riser Pole
- W - Warren Water District
- G - Alliant Energy
- E1 - Alliant Energy
- E2 - Iowa DOT
- FO - MediaCom Communications

LOCATION:

T-74N R-25W
SECTION 30
NEW VIRGINIA TOWNSHIP
WARREN COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 4.5 ACRES
Q_{50} = 19.8 CFS
HW ELEV. = 1077.45

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

"For Information Only"

STA. 457+75
INSTALL 24 IN. RCP
SKEW 0°
F.L. LT 1074.54
F.L. RT 1073.50
DA 4.5 ACRES (Hilly)

DESIGN FOR 0° SKEW

INSTALL 24" X 92'
REINFORCED CONCRETE PIPE

STA. 457+75.00

PLAT PLAN
WARREN COUNTY

OCTOBER, 2013

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30981 DESIGN NO. 816

DESIGN TEAM : SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER V.16

XXXXXXXXXXSYSTEMTIME 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtV01.sht

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)
- Slope Dressing Only
- 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)

I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1100
1080
1060

Ex. ROW

1080.19
156.71

1078.29
151.00

1078.29
141.00

1088.29
106.00

1090.13
94.95

1091.29
88.00

1091.69
84.00

PCL 1092.13
72.00

3.50:1
6:1
TS
4.00%
3.00%
CL 10

Ex. ROW

30+00.00

1088.49
106.00

1090.33
94.95

1091.49
88.00

1091.89
84.00

PCL 1092.33
72.00

1081.00
148.72

1080.00
145.72

1080.00
135.72

29+59.72

29+50.00

29+00.00

28+50.00

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.2

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1100
1080
1060

Ex. ROW

1082.47
163.18

1078.21
150.40

1078.21
140.40

1087.52
107.81

1089.62
95.20

1090.82
88.00

1091.22
84.00

PGL 1091.64
72.00

3.50:1
TS
6:1
4.00%
3.00%
CL 10

Ex. ROW

31+50.00

1081.17
163.37

1077.60
152.65

1077.60
142.65

1087.84
106.81

1089.80
95.06

1090.97
88.00

1091.37
84.00

PGL 1091.81
72.00

3.50:1
TS
6:1
4.00%
3.00%
CL 10

Ex. ROW

31+00.00

1079.43
165.26

1076.80
160.89

1076.80
150.89

1088.11
109.71

1089.94
98.33

1091.09
91.13

1091.49
86.98

PGL 1091.92
74.56

3.64:1
TS
6:1
4.00%
3.00%
CL 10
CL 10
CL 10

Ex. ROW

30+75.32

1080.05
164.10

1076.88
154.90

1076.88
144.90

1088.10
106.00

1089.94
94.95

1091.10
88.00

1091.50
84.00

PGL 1091.94
72.00

3.50:1
TS
6:1
4.00%
3.00%
CL 10
CL

Ex. ROW

30+50.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.3

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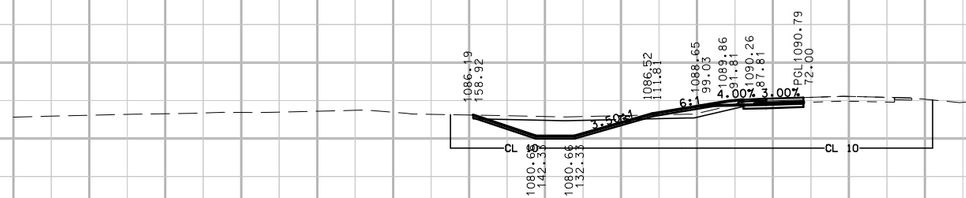
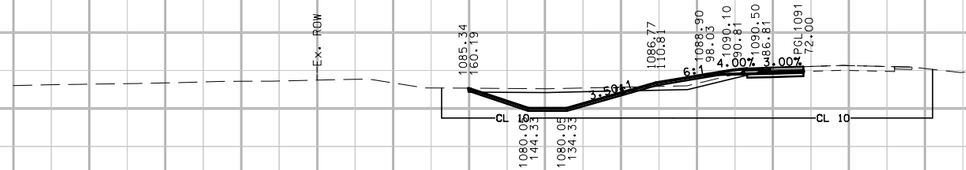
I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

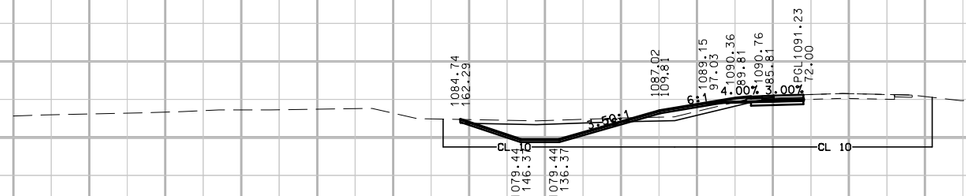
1100
1080
1060



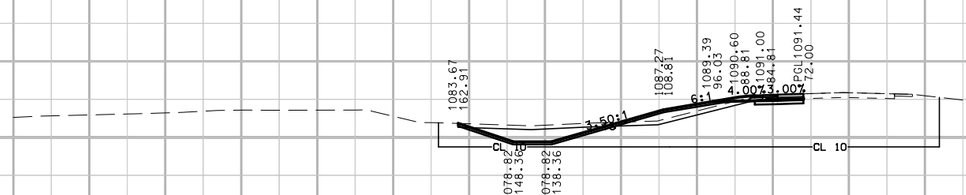
33+50.00



33+00.00



32+50.00



32+00.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.4

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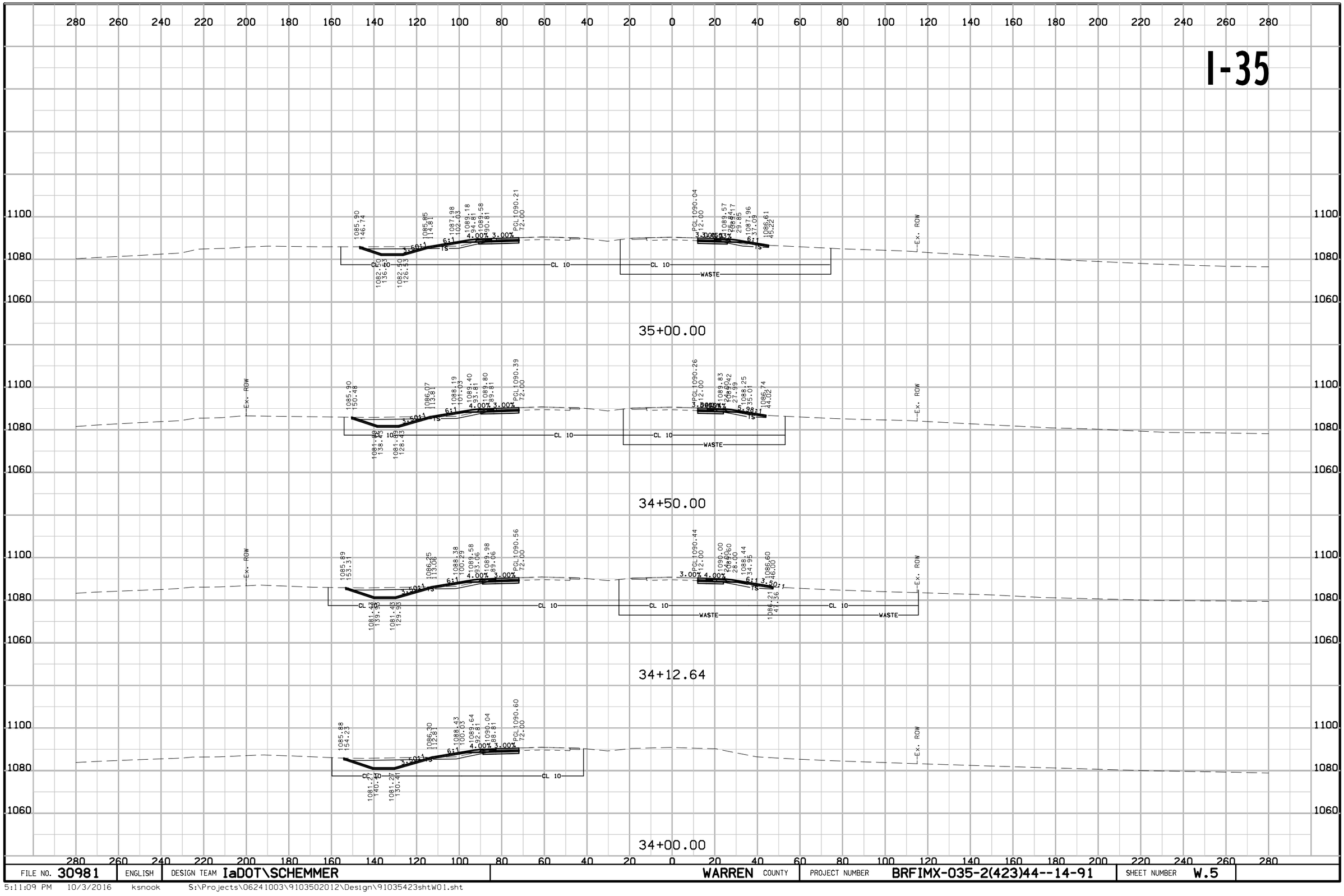
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.5

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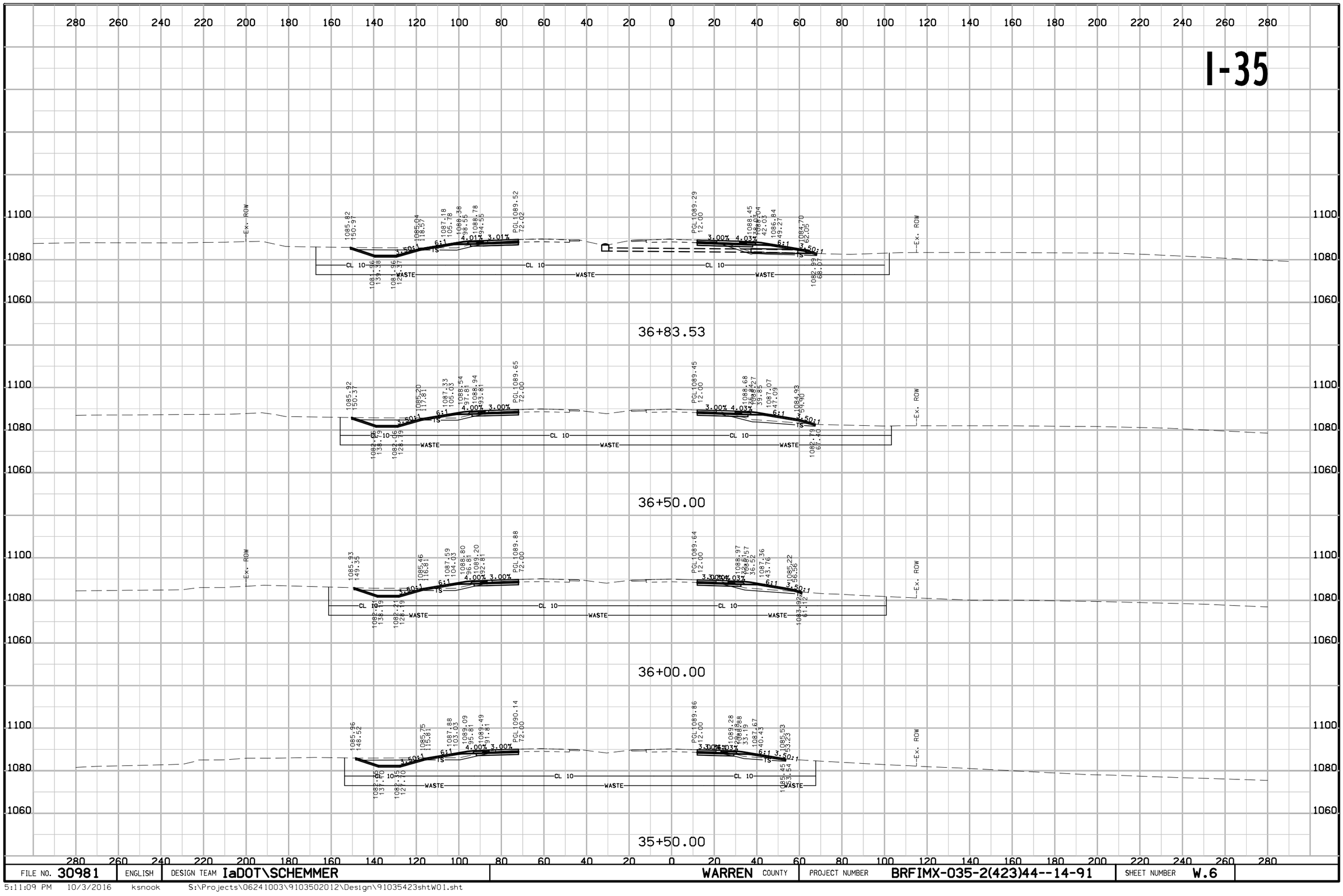
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.6

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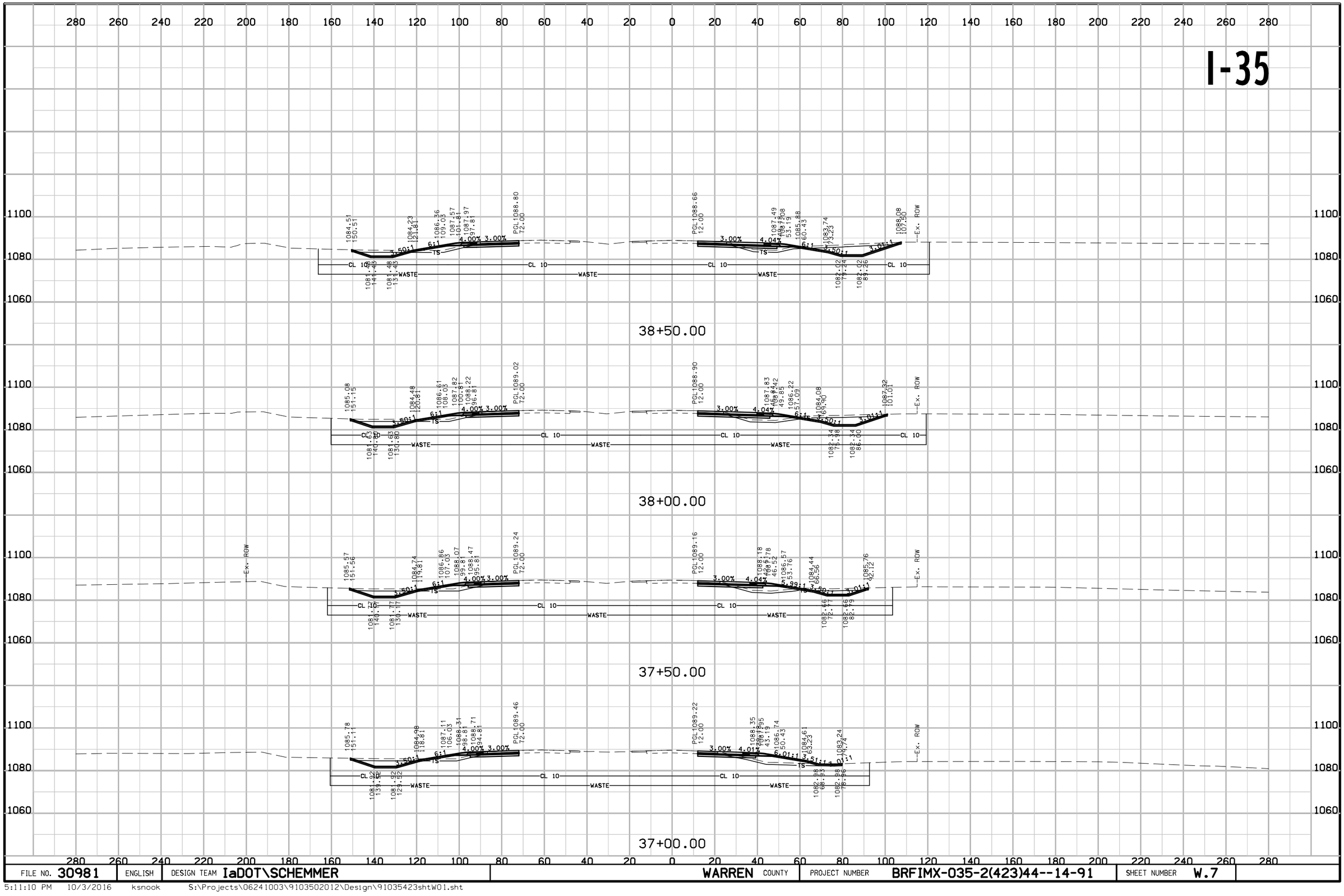
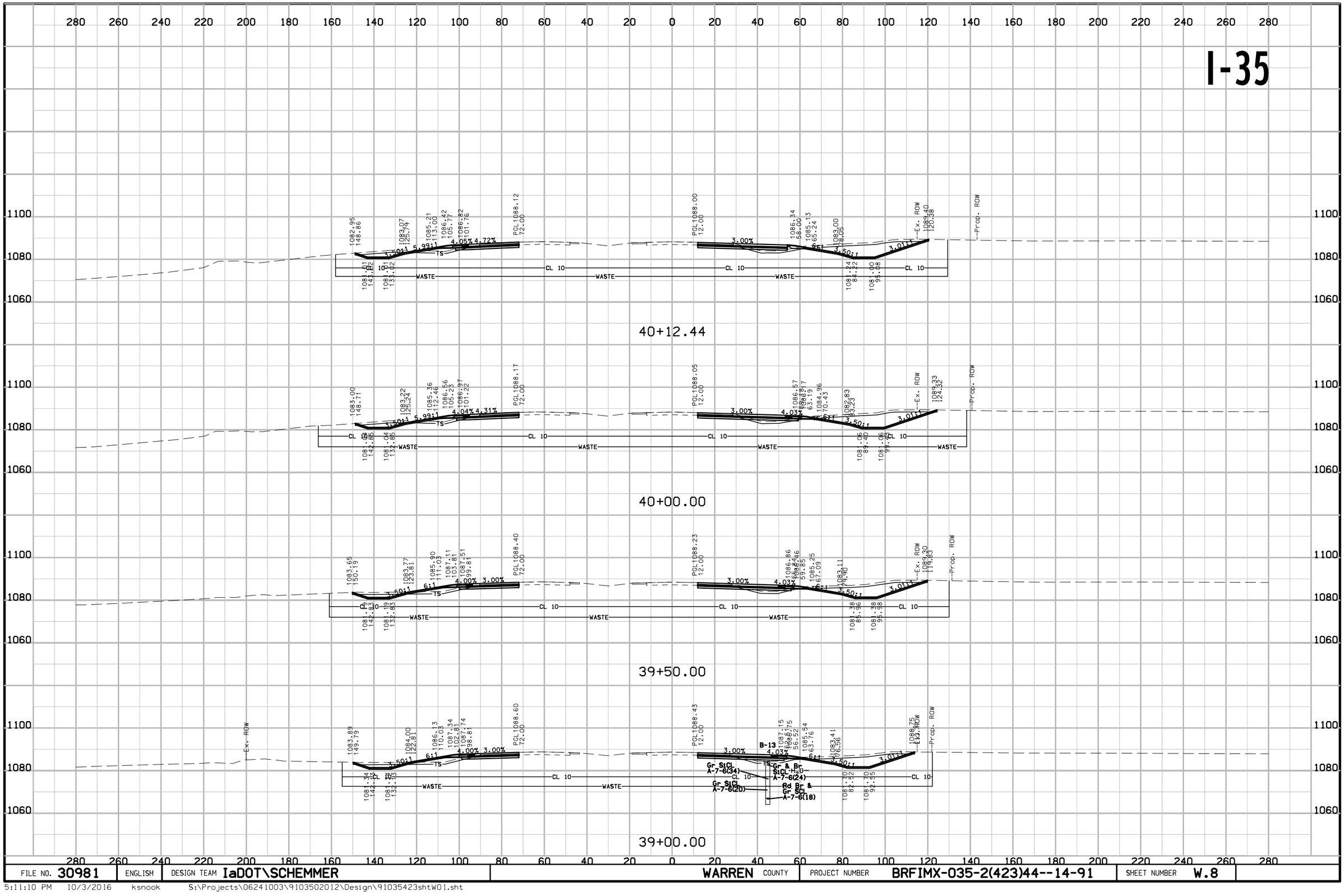
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER	BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.7

5:11:10 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtW01.sht

I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.8

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080 1060 1100

Ex. ROW

B-9

Dk Br SICL A-7-6(44)

Dk Lt Br SICL A-7-6(24)

Rd Br & Gr CL A-7-6(21)

Ex. ROW

Prop. ROW

42+00.00

1081.74 158.45

1081.25 142.08

1083.40 129.20

1084.61 121.92

1085.02 117.90

PGL 1087.10 72.00

4.12% 5.51%

3:1 5:1 5.99:1

TS

WASTE

CL 1D

1080.50 154.71

1080.50 144.68

Ex. ROW

Prop. ROW

41+89.51

1081.79 154.59

1081.69 137.12

1083.84 124.26

1085.06 116.98

1085.46 112.95

PGL 1087.34 72.00

4.12% 5.51%

3:1 5:1 5.99:1

TS

WASTE

CL 1D

1080.59 150.99

1080.60 140.96

Ex. ROW

Prop. ROW

41+50.00

1082.04 151.16

1082.28 131.88

1084.42 119.05

1085.63 111.79

1086.03 107.78

PGL 1087.69 72.00

4.07% 5.46%

3:1 5:1 5.99:1

TS

WASTE

CL 1D

1080.74 147.27

1080.75 137.25

Prop. ROW

Ex. ROW

Prop. ROW

41+00.00

1082.26 148.45

1082.72 127.92

1084.86 115.12

1086.07 107.88

1086.47 103.87

PGL 1087.96 72.00

4.04% 5.43%

3:1 6:1 5.99:1

TS

WASTE

CL 1D

1080.89 144.34

1080.89 134.33

Ex. ROW

Ex. ROW

Prop. ROW

40+50.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.9

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080 — P — Ex. ROW — Prop. ROW — 1080

45+00.00

1080 — Prop — Ex. ROW — Prop. ROW — 1080

44+50.00

1080 — Prop. — Ex. ROW — Prop. ROW — 1080

44+00.00

1080 — Prop. — Ex. ROW — Prop. ROW — 1080

43+50.00

1100 — Ex. ROW — Ex. ROW — Prop. ROW — 1100
1080 — 1080

43+00.00

1100 — Prop. ROW — Ex. ROW — Prop. ROW — 1100
1080 — 1080

42+50.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.10

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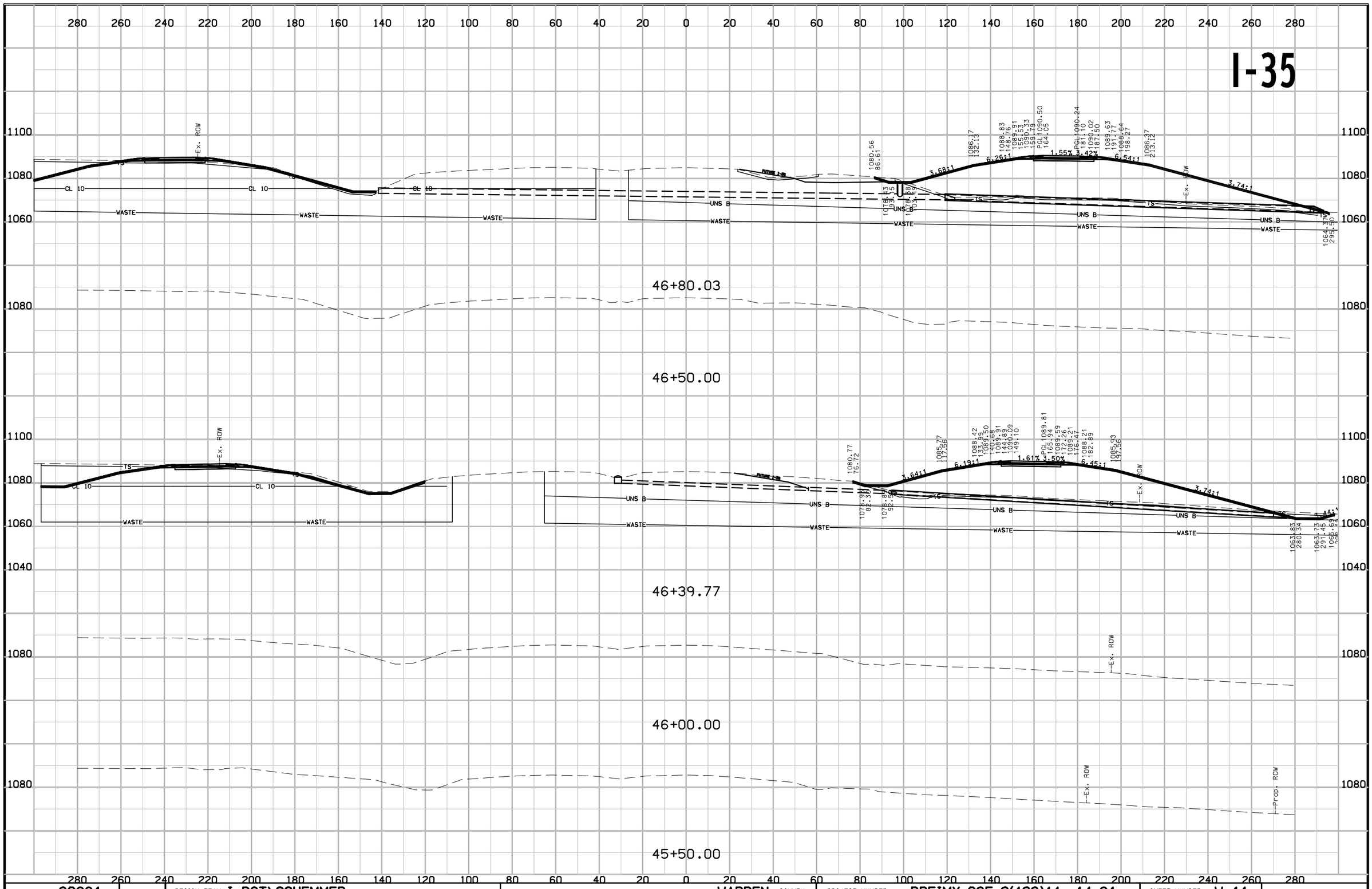

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.11

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280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

I-35

1080

50+50.00

1080

50+00.00

1080

49+50.00

1080

49+00.00

1080

48+50.00

1080

48+00.00

1080

47+50.00

1080

47+00.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.12

5:11:11 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtW01.sht

I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080

54+50.00

54+00.00

53+50.00

53+00.00

52+50.00

52+00.00

51+50.00

CL 10

51+06.34

51+00.00

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.13

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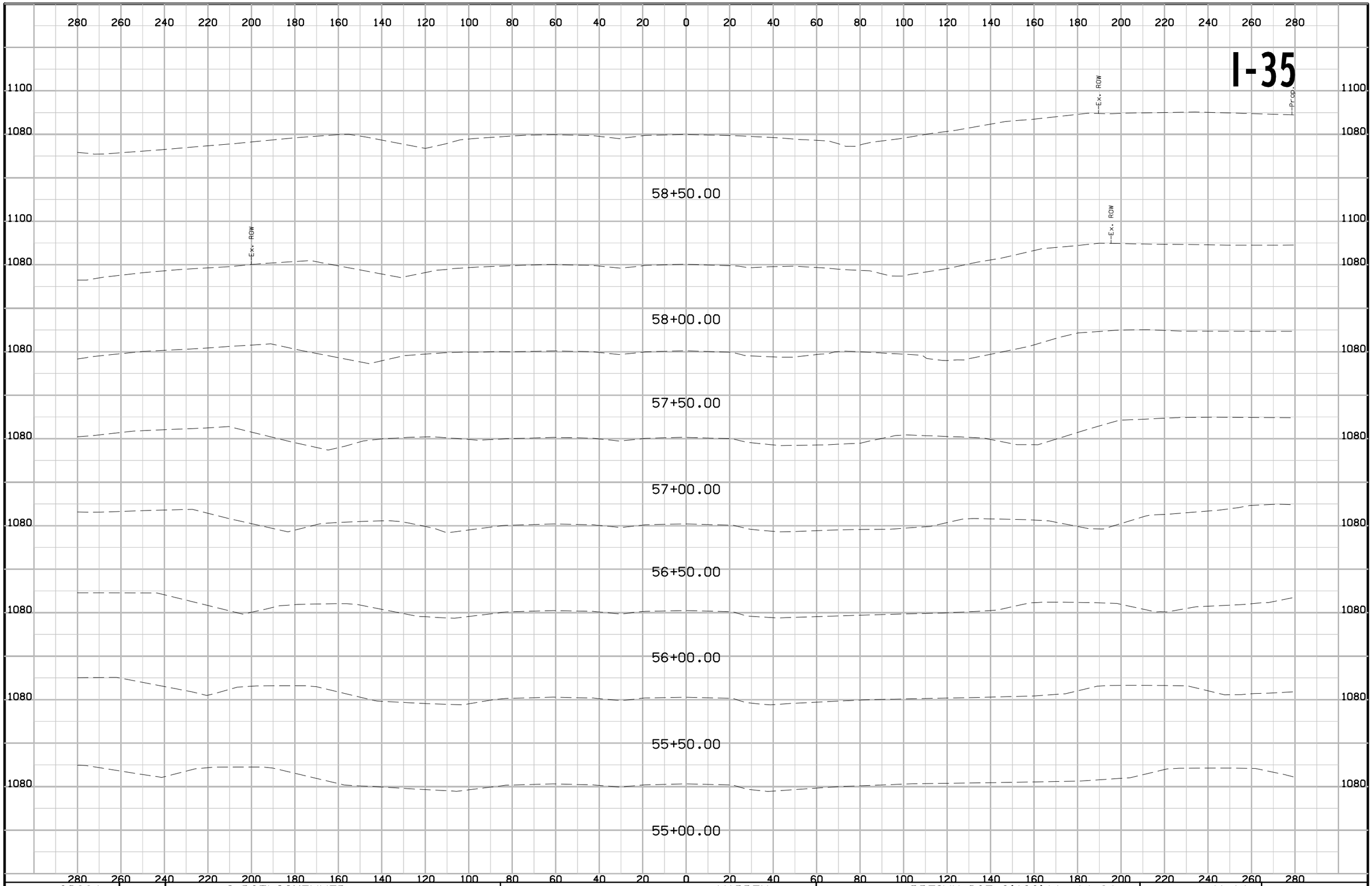

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I-35

60+00.32

60+00.00

59+50.00

59+00.00

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.15

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080
1060

Ex. ROW

62+00.00

1080
1060

Prop. ROW

Ex. ROW

61+50.00

1080
1060

Ex. ROW

Prop. R

61+00.00

1080
1060

Ex. ROW

Prop. R

60+50.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.16

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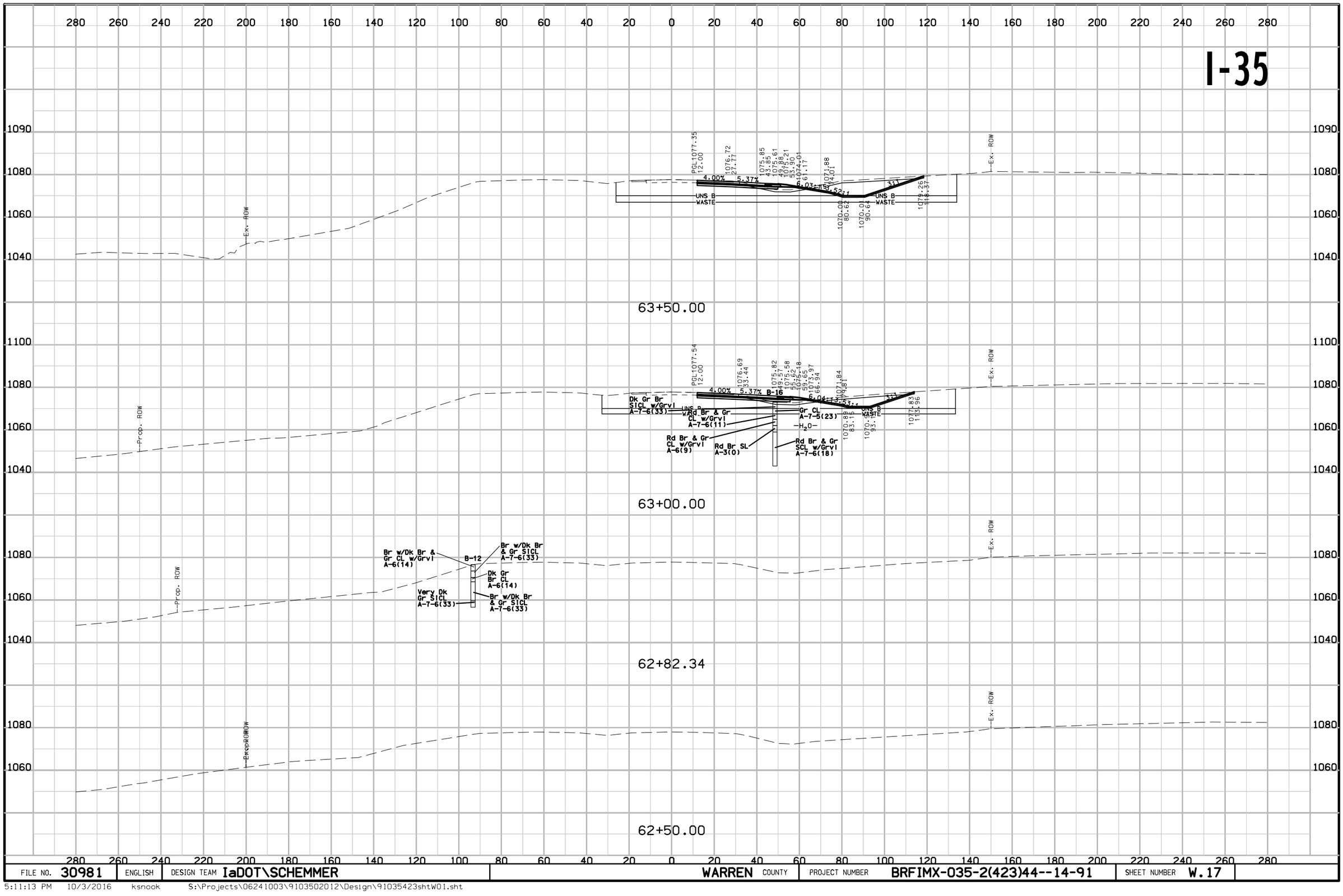
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.17

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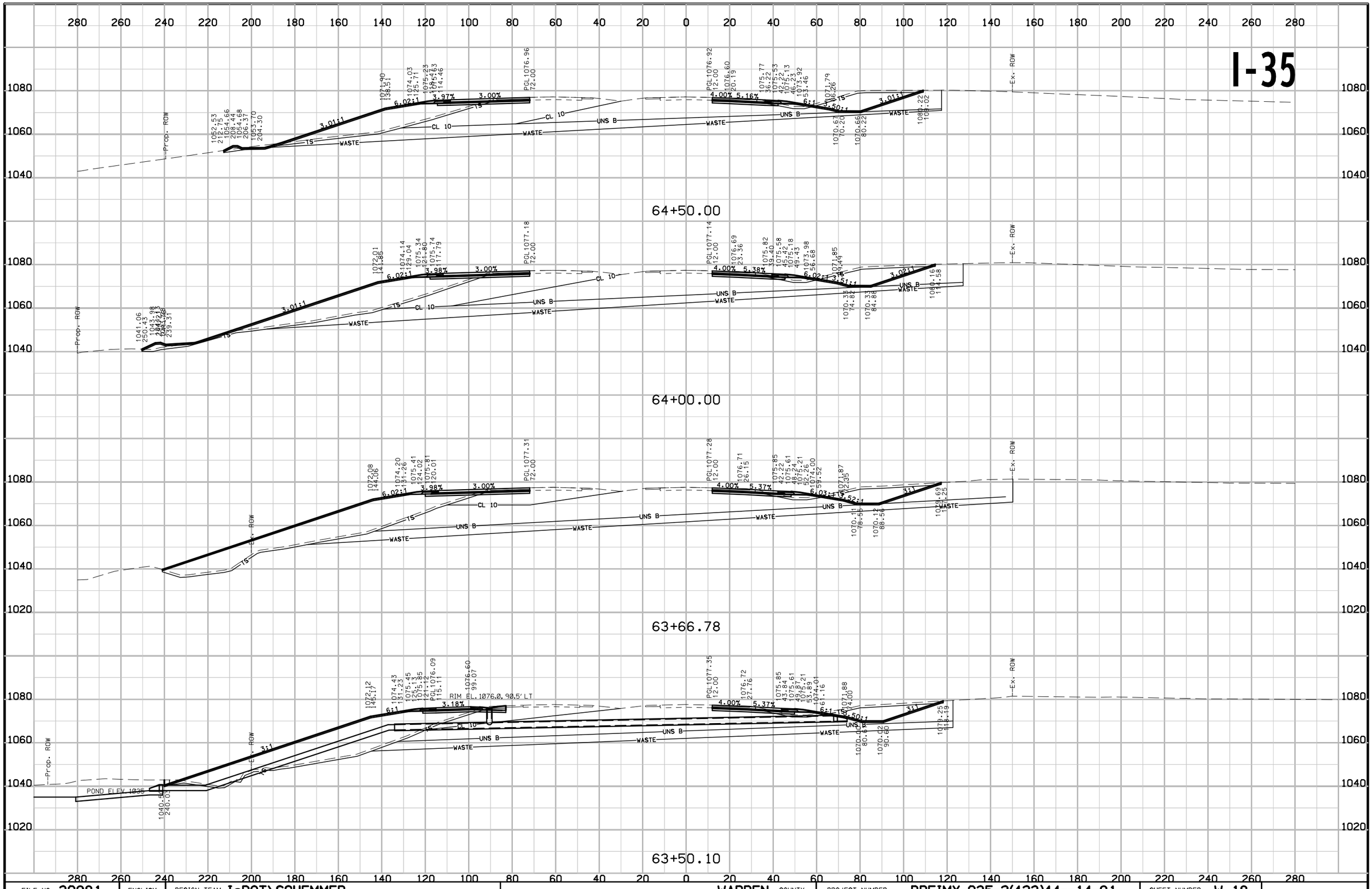
I-35



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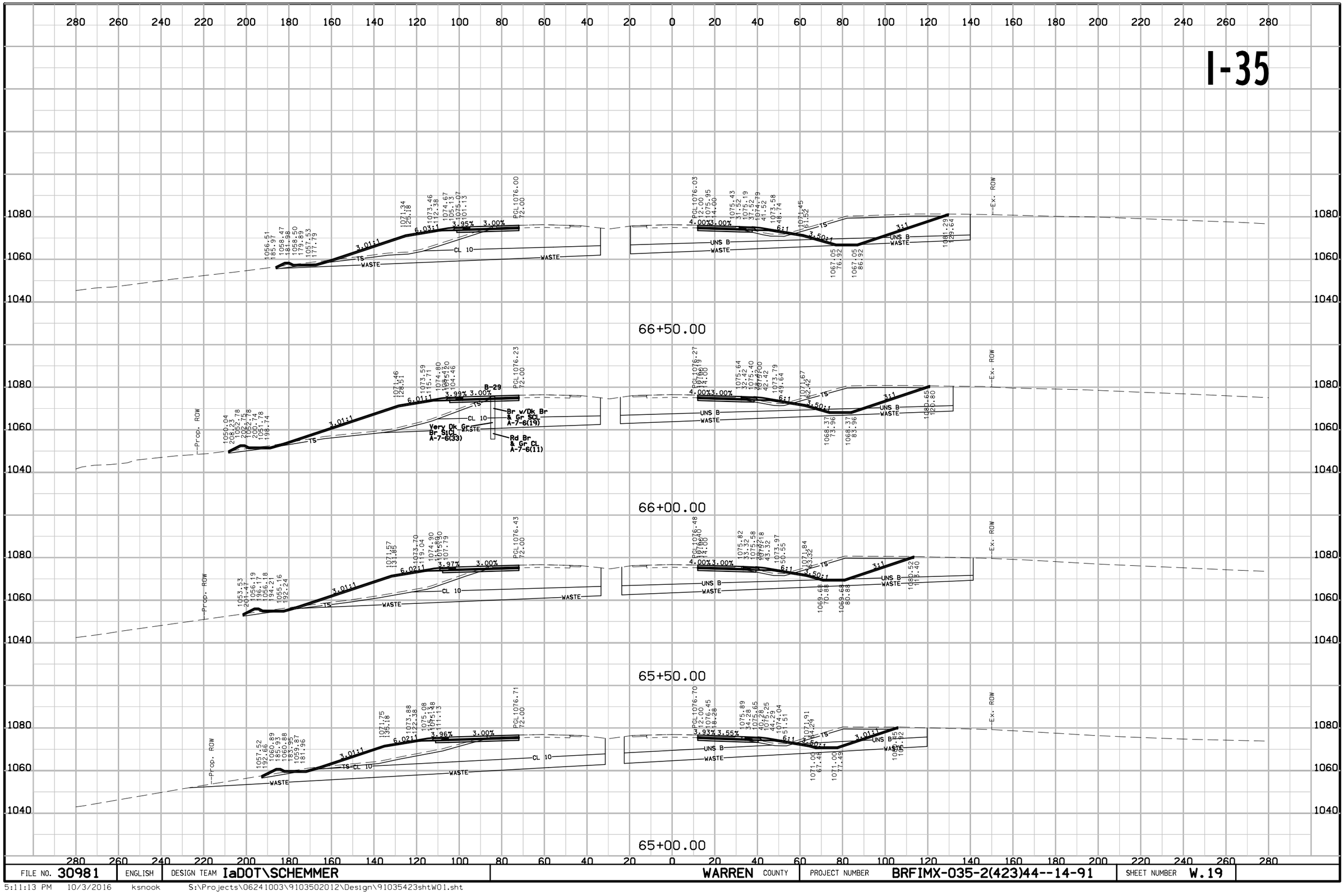
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER	BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.19

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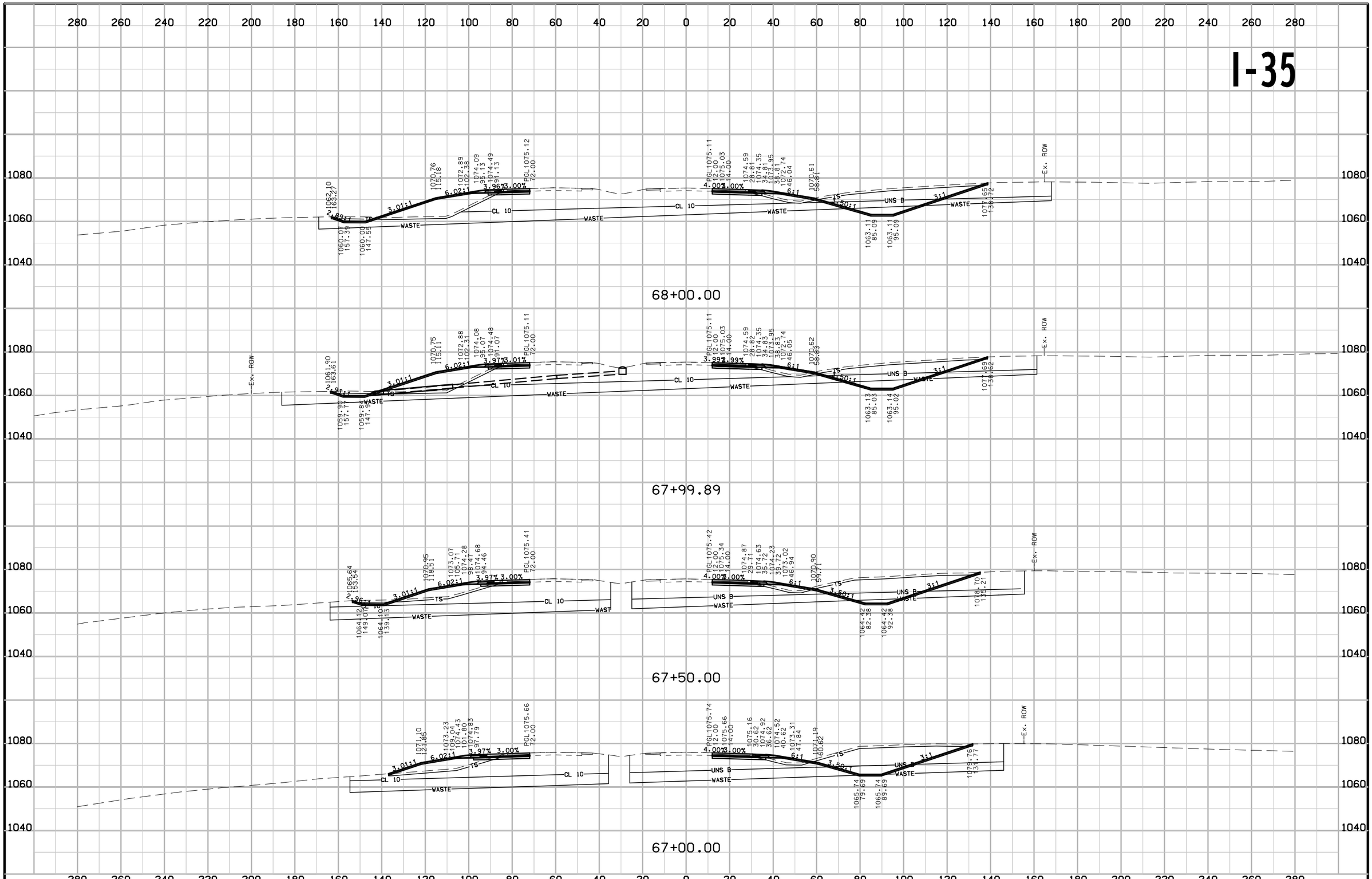
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER	BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.20

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080 1060 1040 1020

1030.31 240.55

1034.79 212.61

1070.32 106.00

1072.45 93.23

1073.66 86.00

1074.06 82.00

PGL 1074.42 72.00

3:1

6:1

4.00%

TS

CL 10

WASTE

PGL 1074.72 12.00

1074.64 14.00

1074.28 26.11

1074.04 30.11

1073.64 36.11

1072.43 43.34

1070.30 56.11

3.50:1

1059.16 95.12

1059.16 105.12

1064.42 120.90

EX. ROW

69+50.00

Prop. ROW

1042.88 205.65

1070.49 108.51

6.02:1

3.98%

1072.62 95.71

1073.83 88.47

1074.22 84.46

PGL 1074.66 72.00

3.01:1

3.00%

PGL 1074.81 12.00

1074.73 14.00

1074.34 27.01

1074.10 33.01

1073.70 39.01

1072.50 44.24

1070.37 57.01

1060.47 91.65

1060.47 101.65

1069.35 128.29

69+00.00

1054.09 181.76

1070.59 111.65

1072.72 99.04

1073.92 91.80

1074.32 87.79

PGL 1074.85 72.00

3.97%

PGL 1074.90 12.00

1074.82 14.00

1074.41 27.01

1074.17 33.01

1073.77 39.01

1072.56 45.14

1070.43 57.91

1061.79 88.16

1061.79 98.16

1074.80 137.40

1052.32 176.83

1052.20 167.18

68+50.00

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.21

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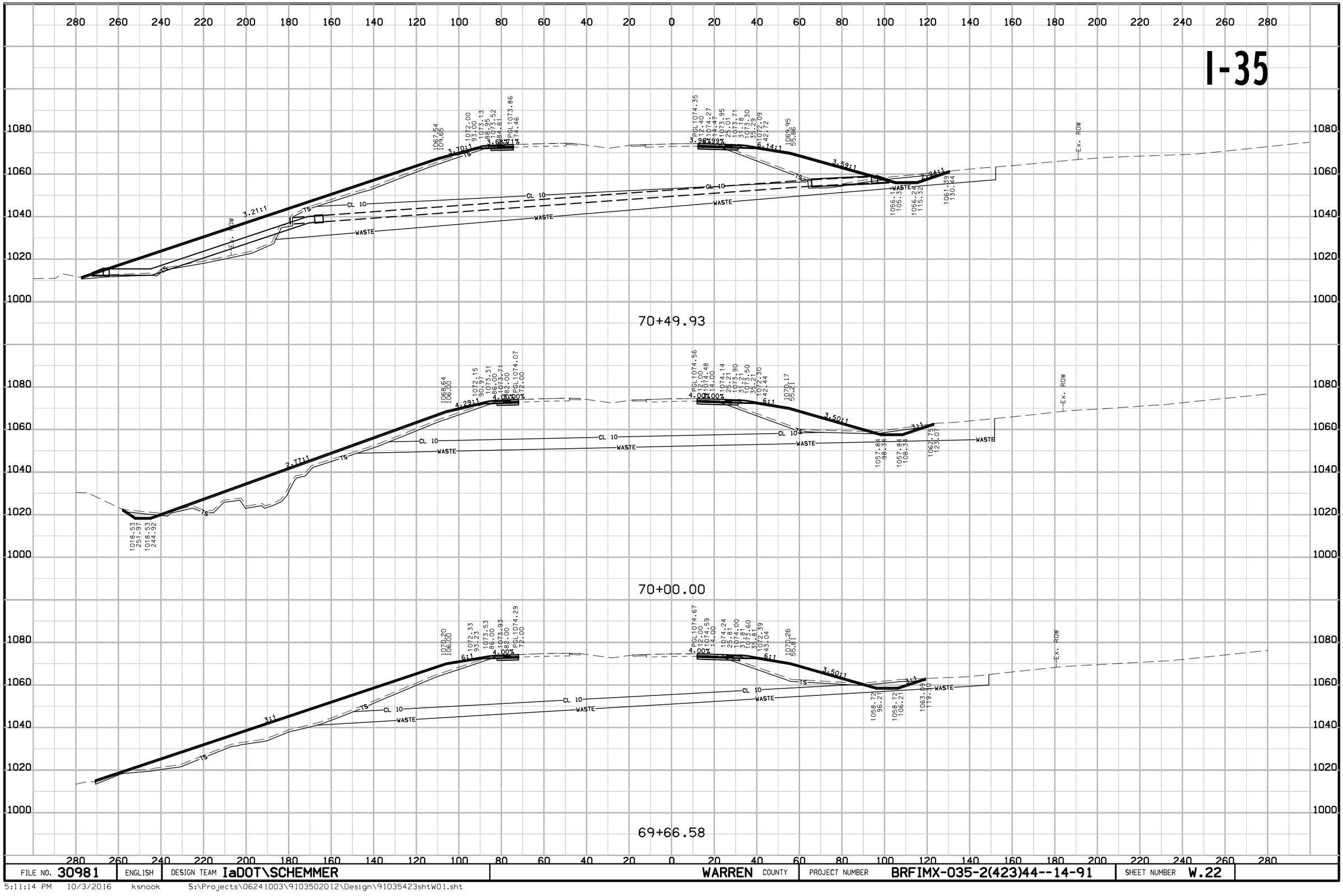
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.22

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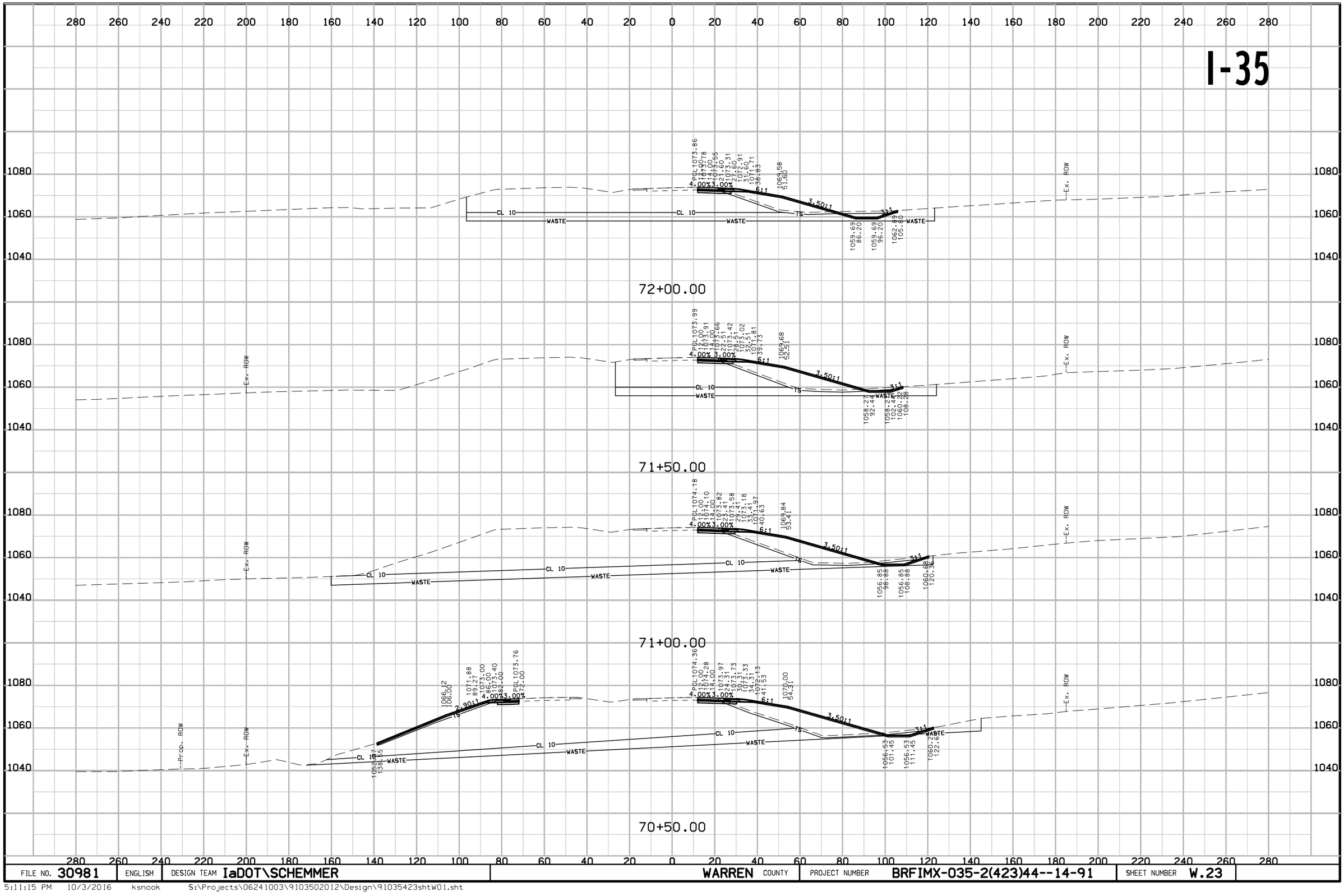
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.23

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1080
1060

PGL 1072.73
12.00
1072.65
14.00
1072.53
18.00
1072.29
24.20
1071.89
28.00
1070.69
35.23
1068.56
48.00
4.00% 3.00%
6:1
4:1
3.50:1
1065.37
59.16
1065.37
69.16
WASTE
1079.63
112.51
Ex. ROW

74+00.00

PGL 1073.11
12.00
1073.03
14.00
1072.88
18.90
1072.64
24.20
1072.24
28.90
1071.04
36.13
1068.91
48.90
4.00% 3.00%
6:1
4:1
3.50:1
1063.95
66.26
1063.95
76.26
WASTE
1076.18
112.94
Ex. ROW

73+50.00

PGL 1073.41
12.00
1073.33
14.00
1073.16
18.80
1072.92
25.80
1072.52
29.80
1071.31
37.03
1068.19
49.80
CL 10
WASTE
4.00% 3.00%
6:1
4:1
3.50:1
1062.53
73.09
1062.53
83.09
WASTE
1072.03
111.58
Ex. ROW

73+00.00

PGL 1073.61
12.00
1073.53
14.00
1073.33
18.70
1073.09
26.70
1072.69
30.70
1071.49
37.93
1069.36
50.70
CL 10
WASTE
4.00% 3.00%
6:1
4:1
3.50:1
1061.11
79.57
1061.11
89.57
1067.35
108.28
Ex. ROW

72+50.00

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.24

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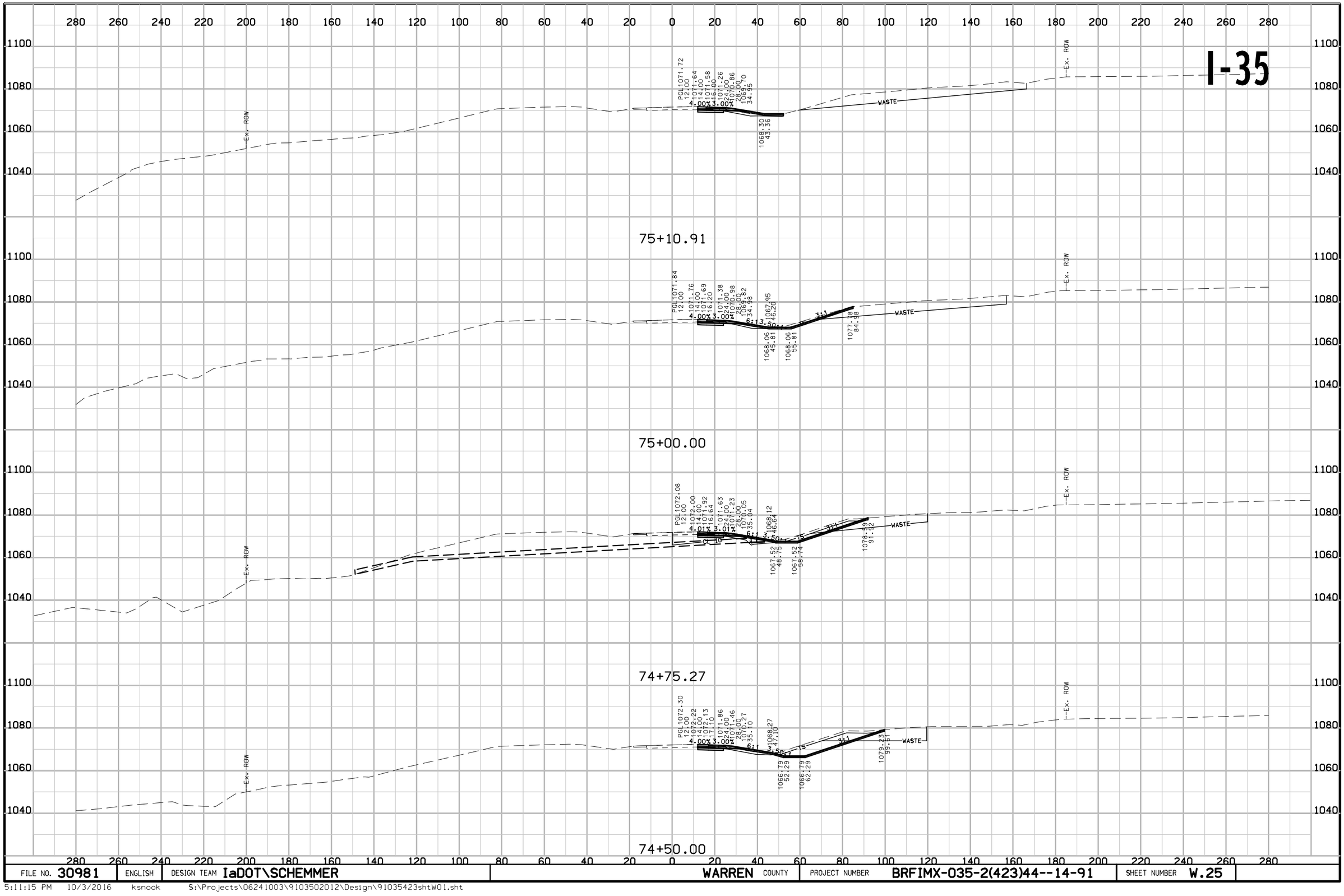
I-35



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.25

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I-35

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1100
1080
1060
1040

Ex. ROW

76+00.00

75+50.00

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER W.26	

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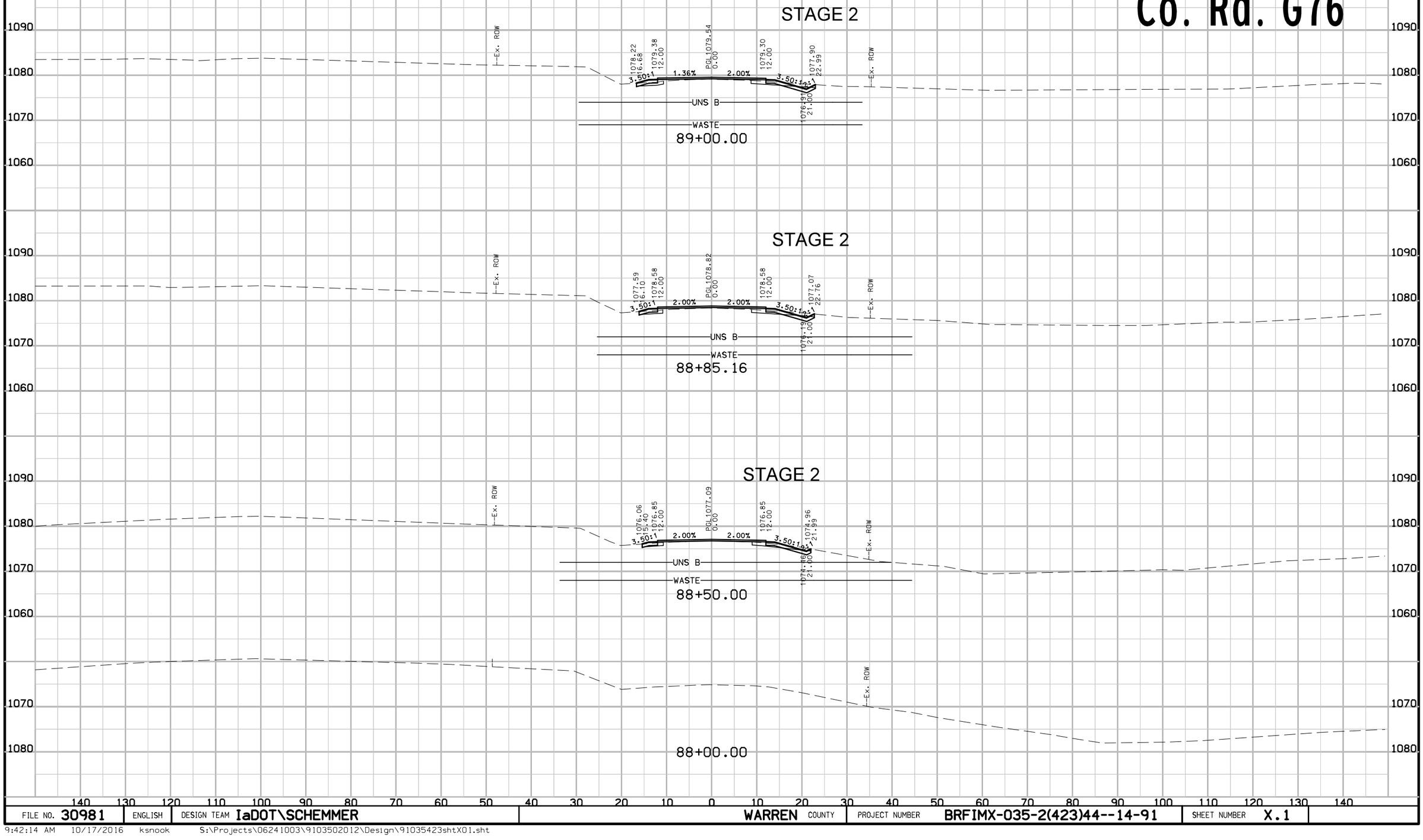
Co. Rd. G76



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER X.1

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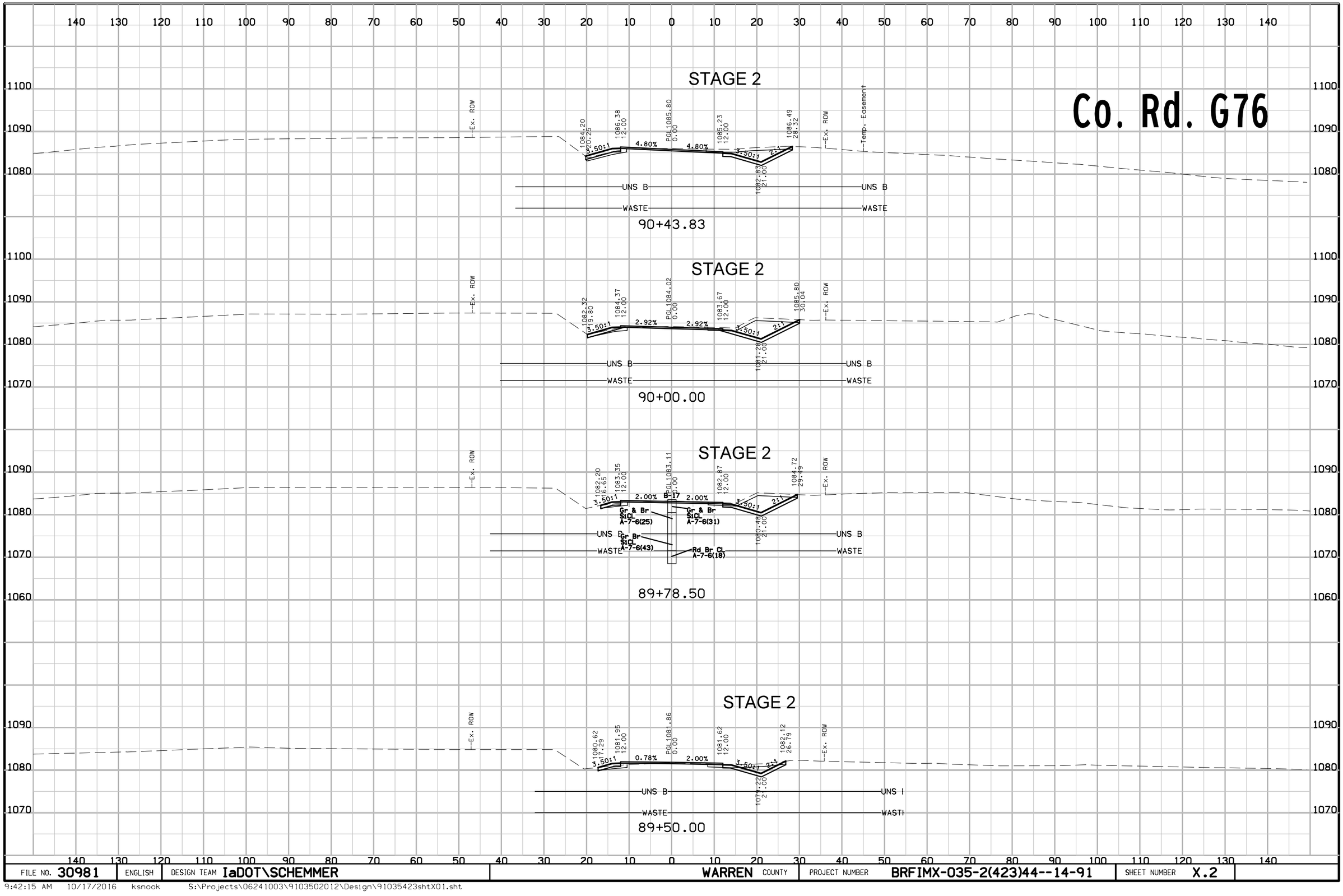
Co. Rd. G76



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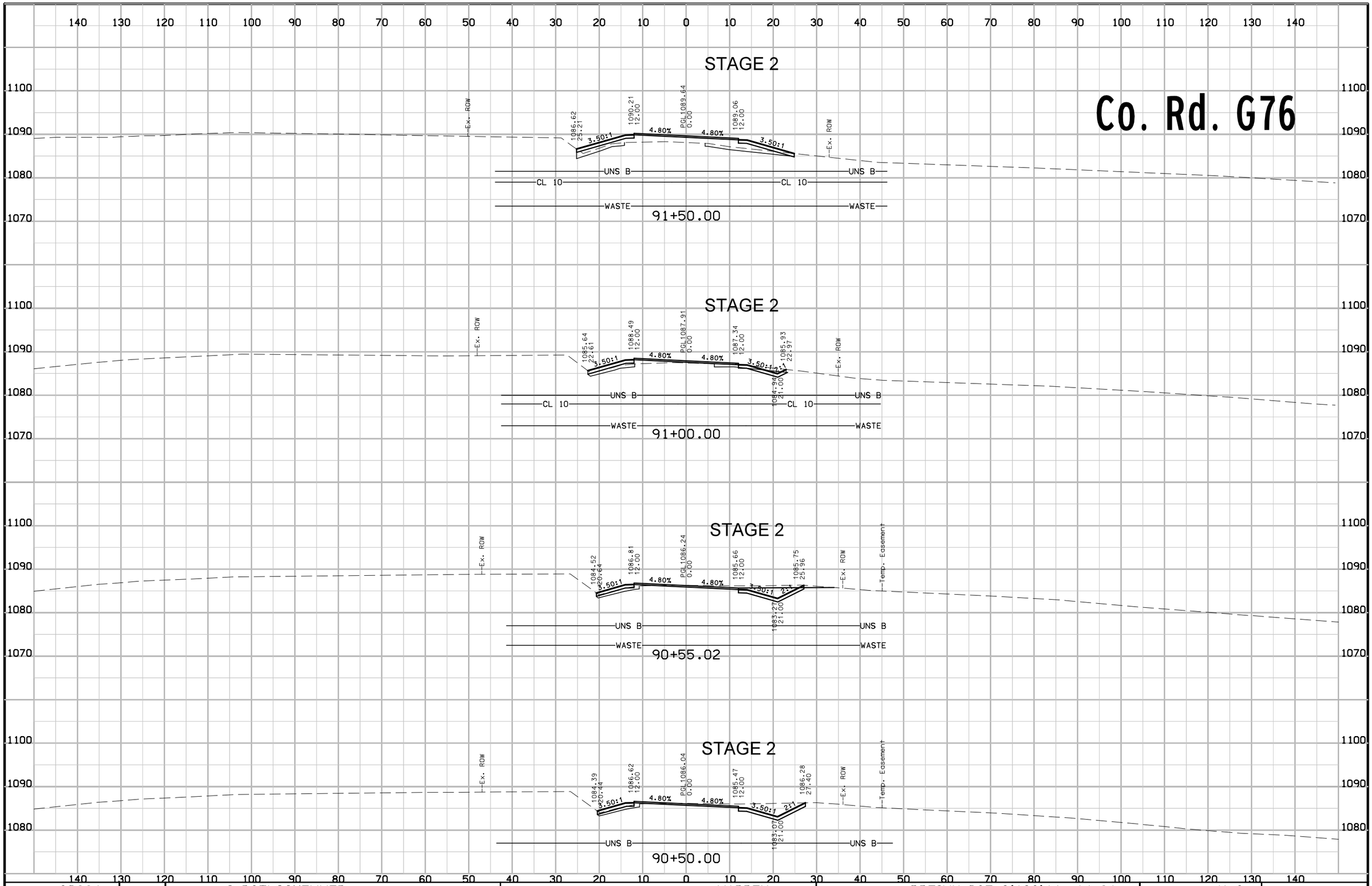
Co. Rd. G76



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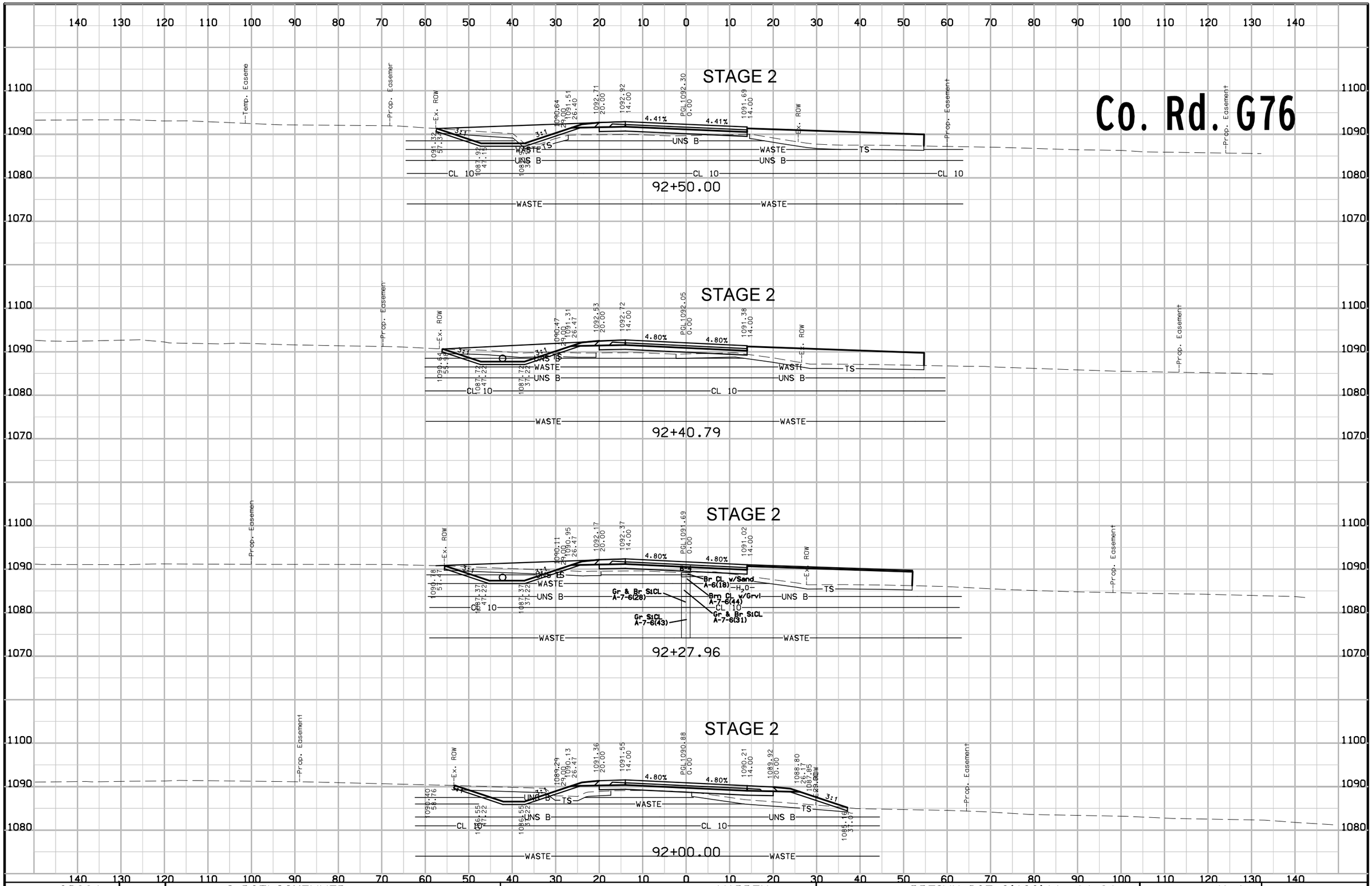
Co. Rd. G76



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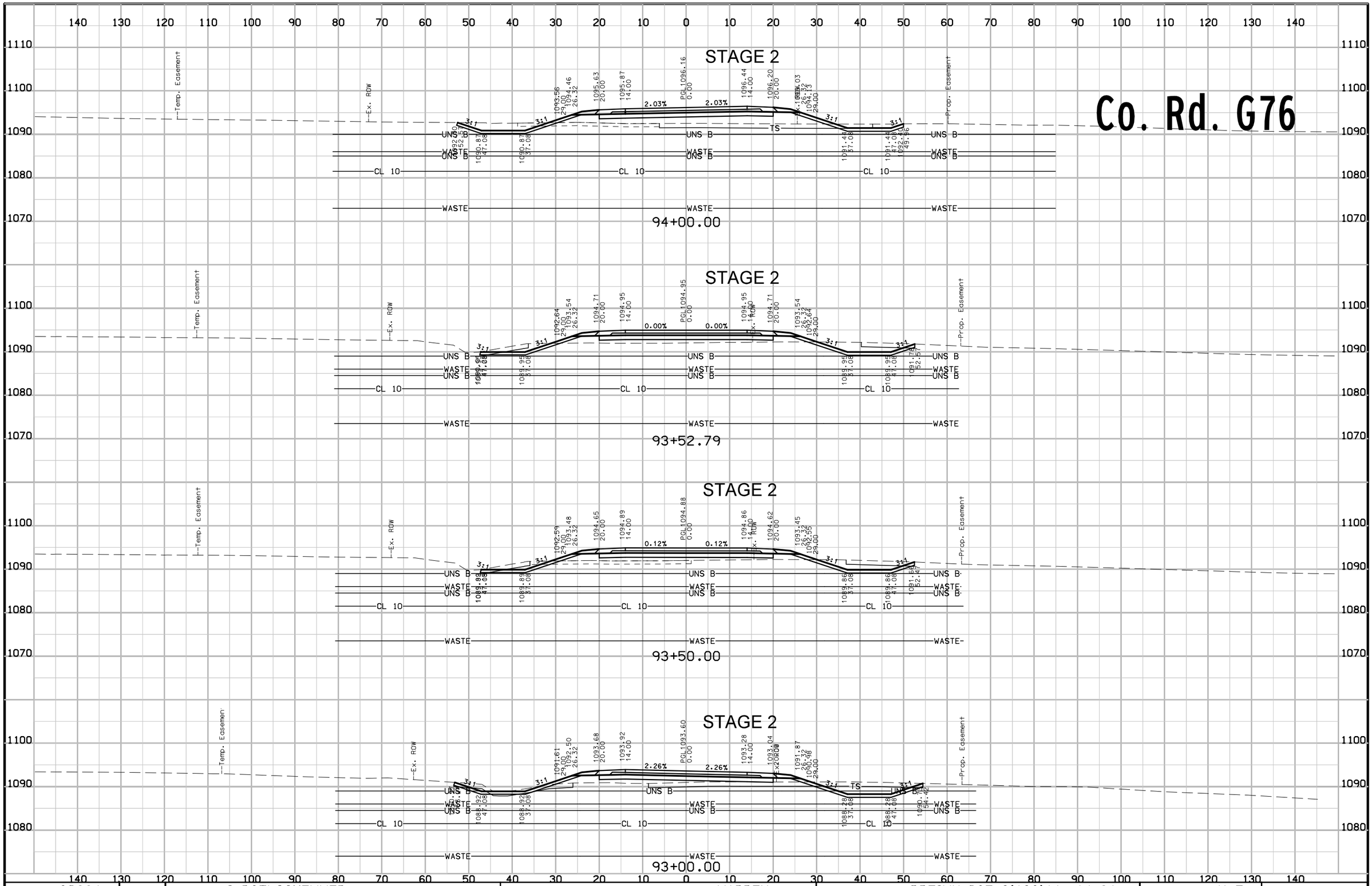
Co. Rd. G76



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER X.5

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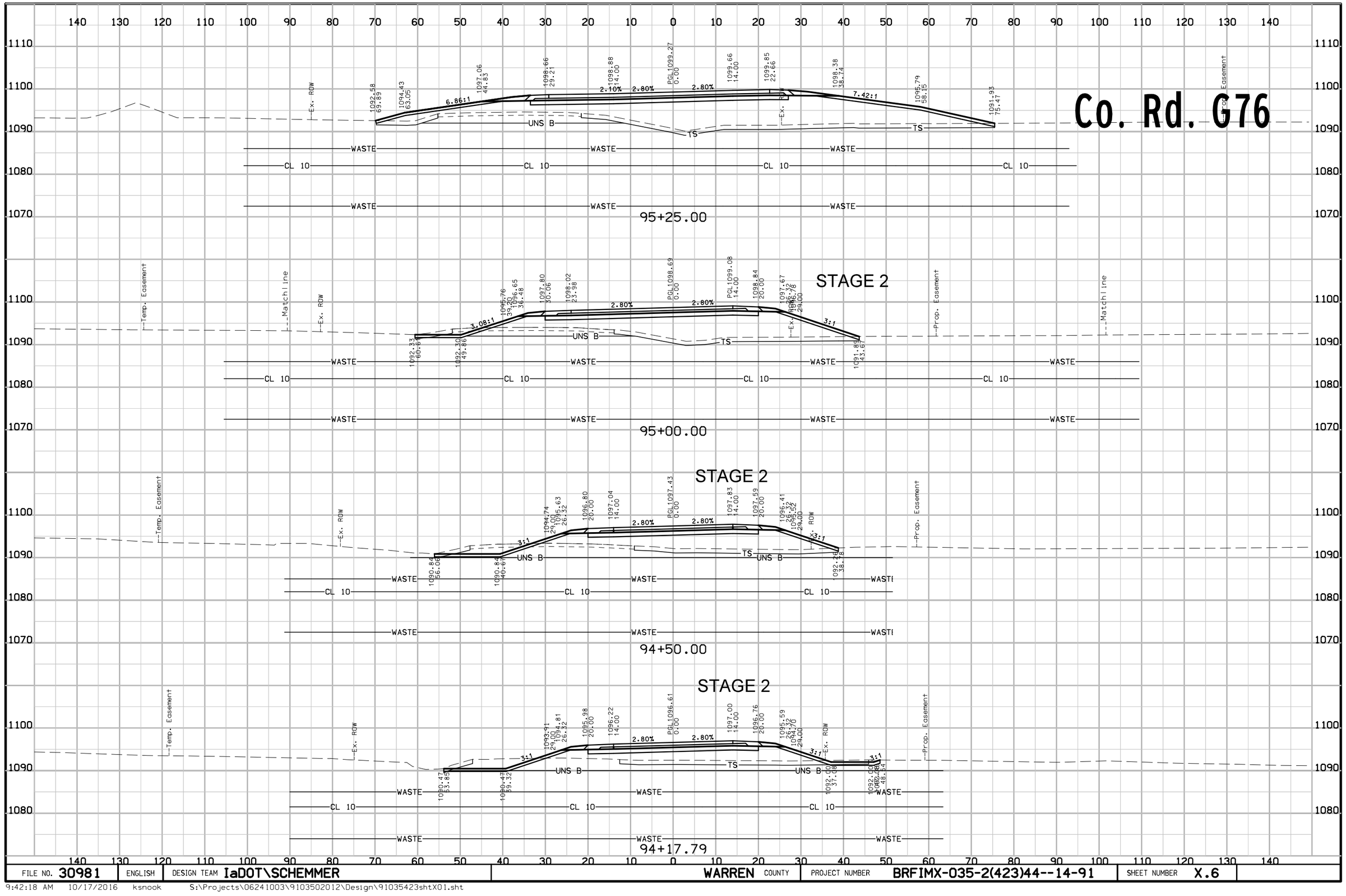
Co. Rd. G76



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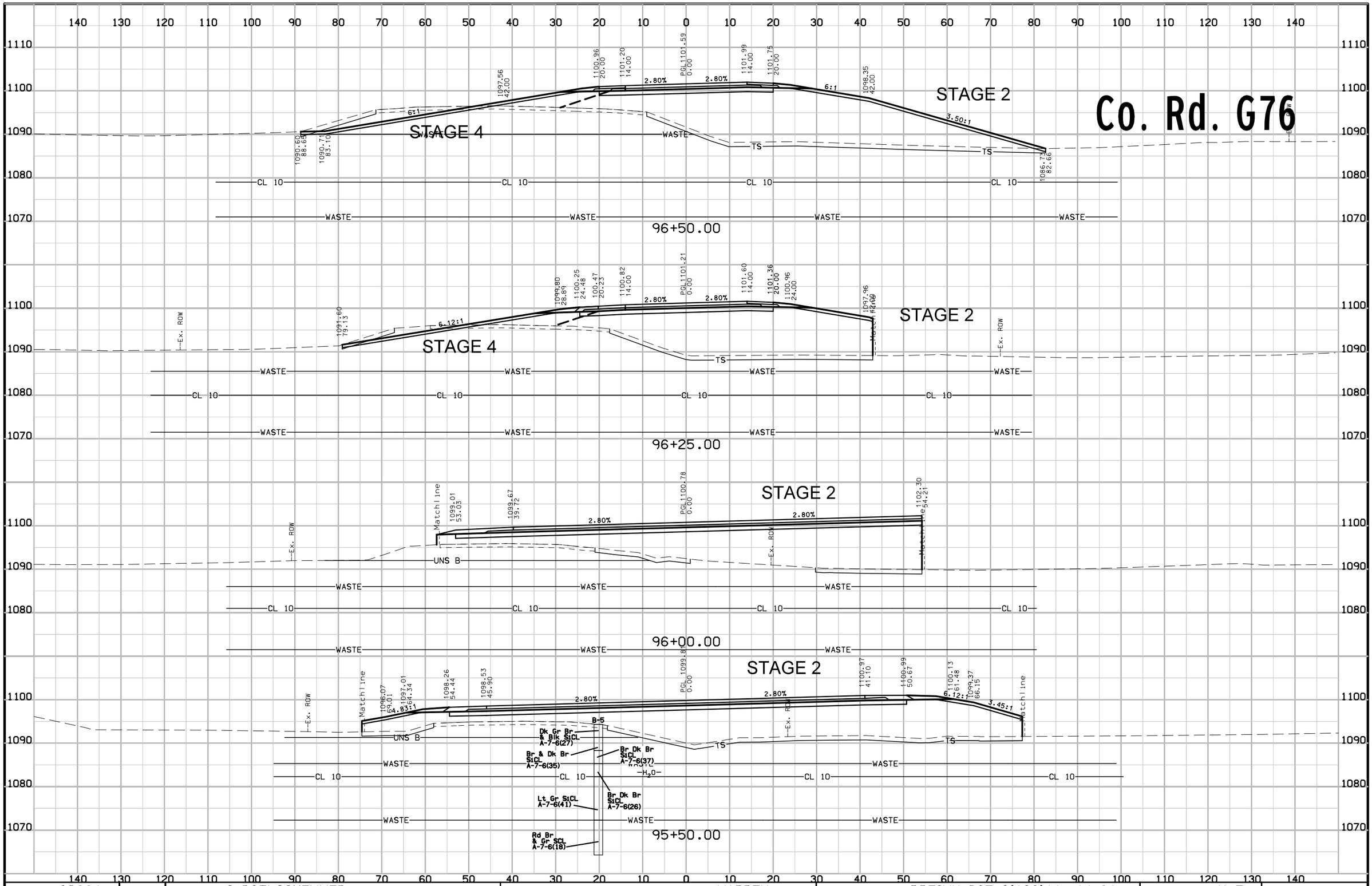
Co. Rd. G76



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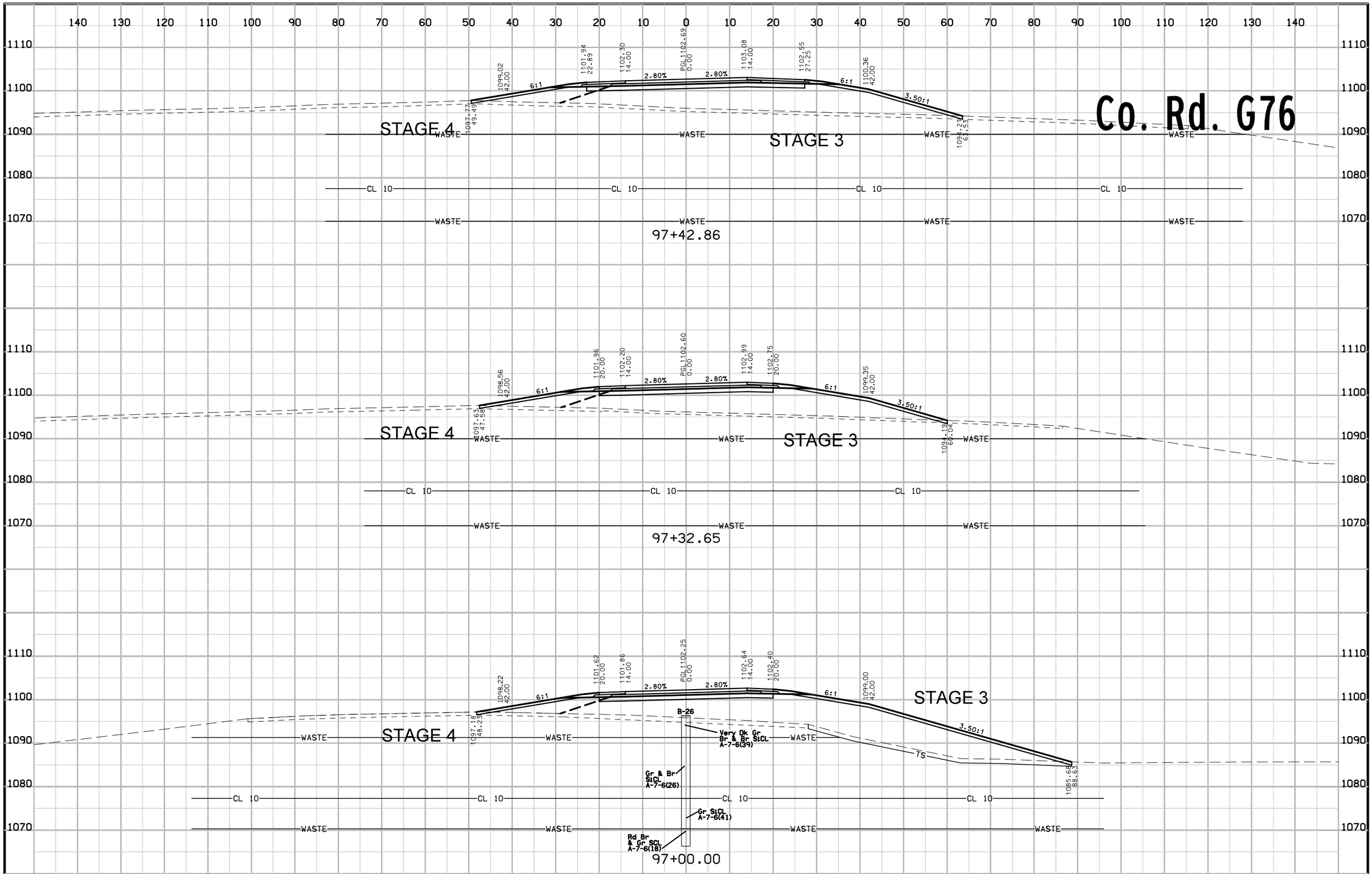
Co. Rd. G76



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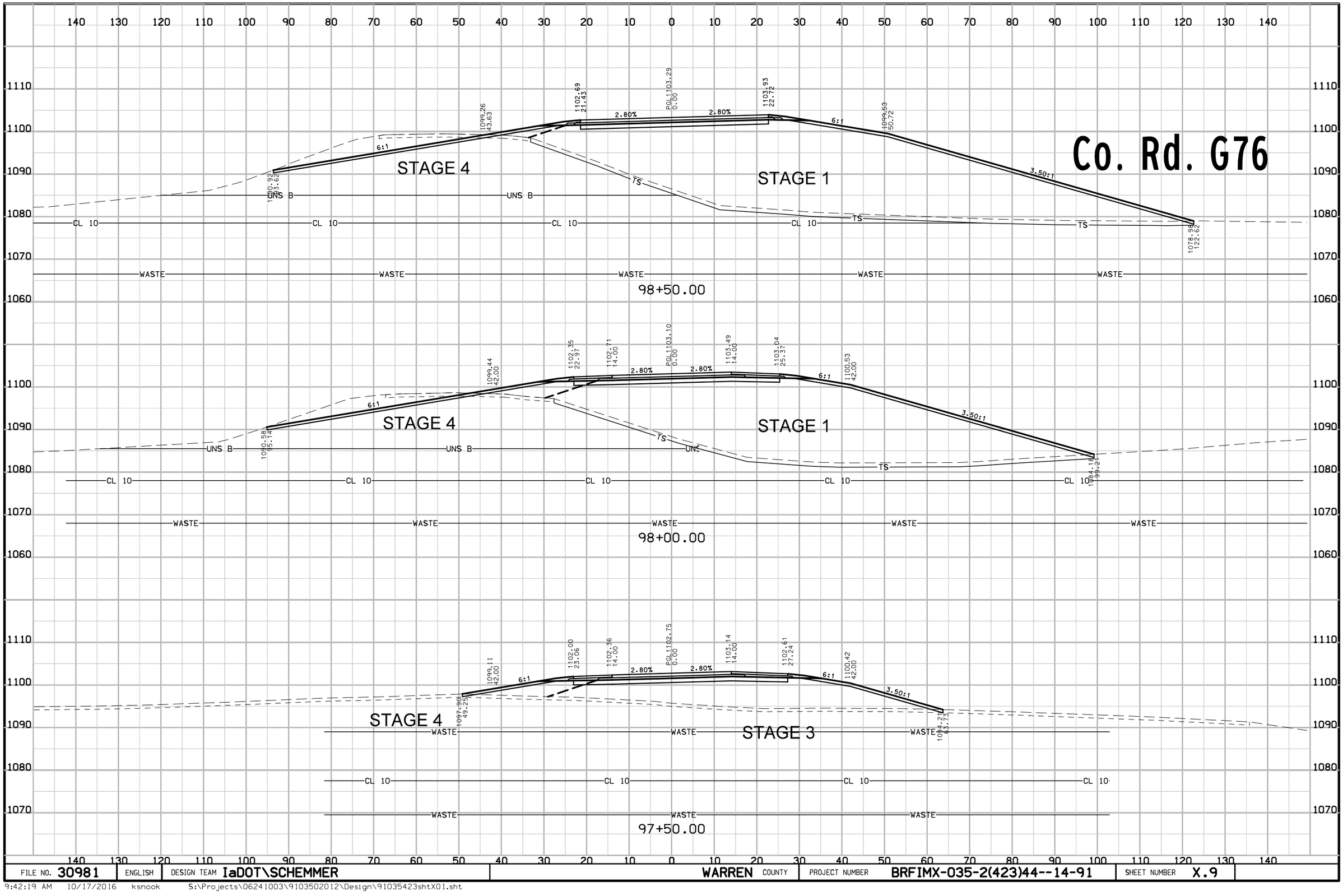
Co. Rd. G76



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER X.9

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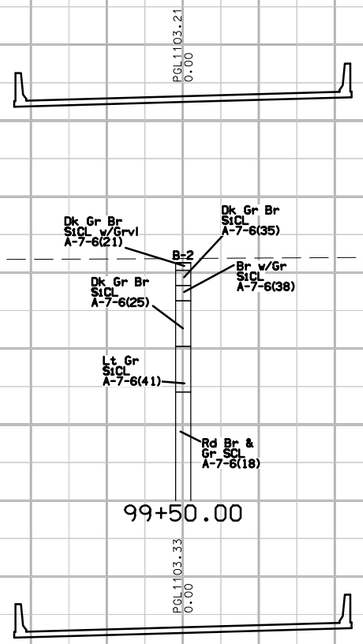
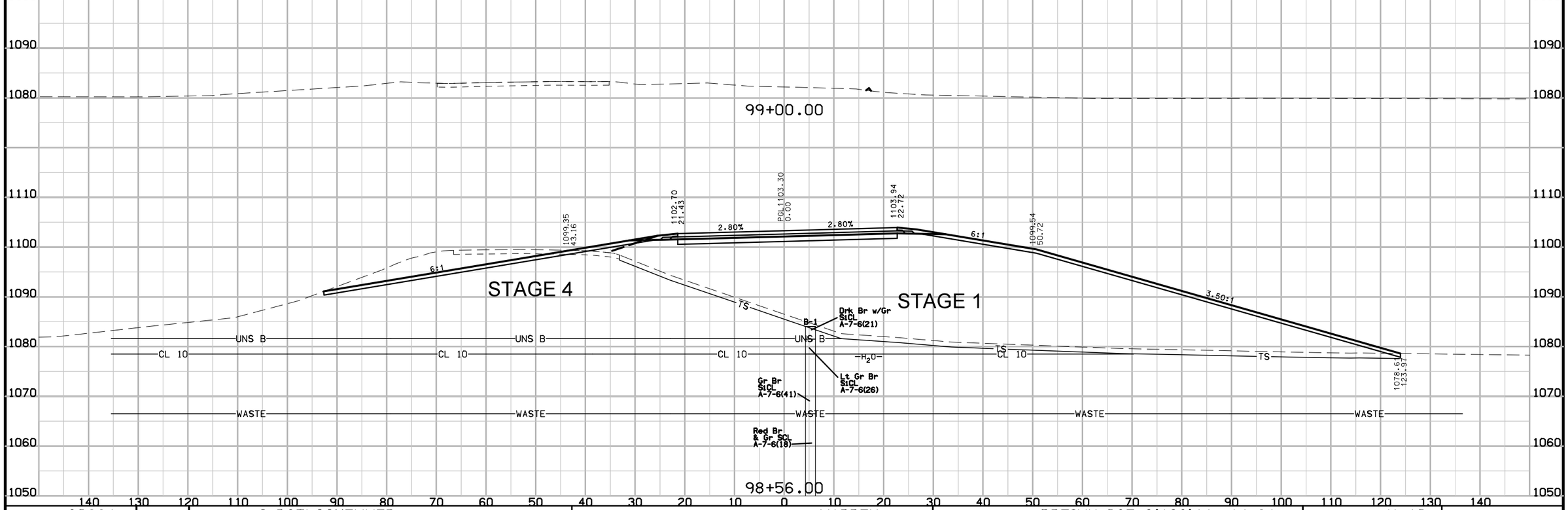
Co. Rd. G76





FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER X.10

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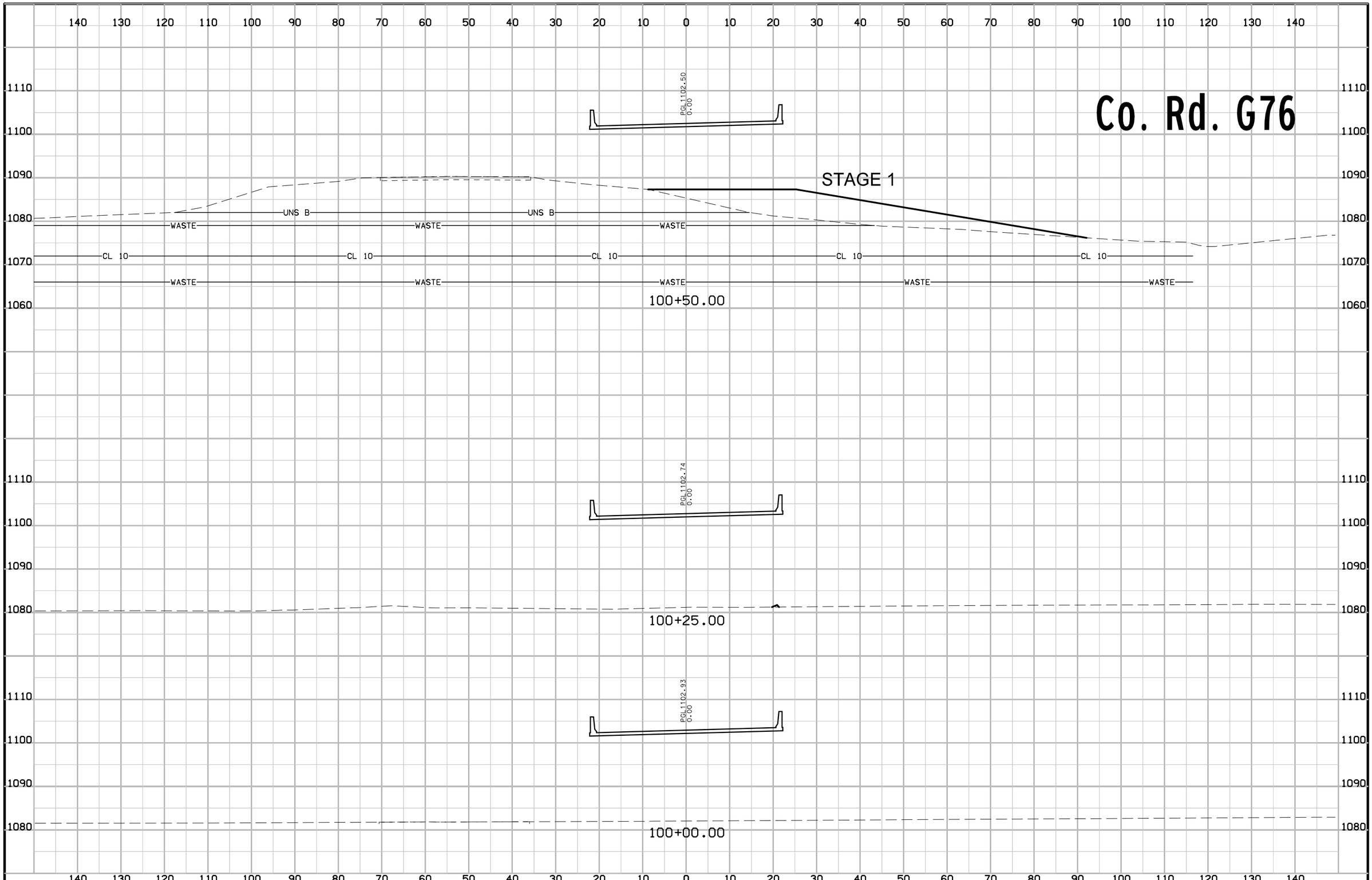
Co. Rd. G76



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER X.11

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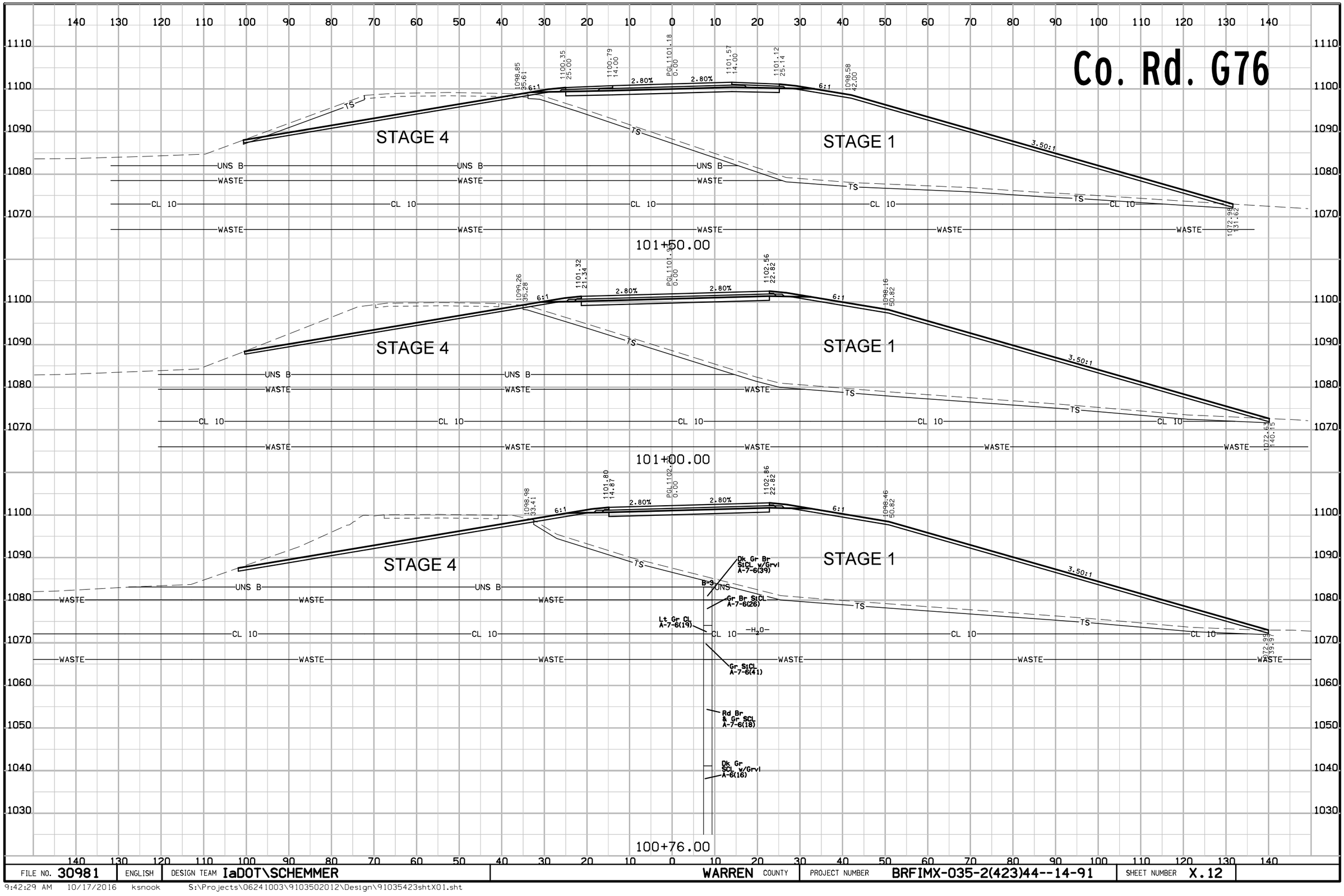
Co. Rd. G76



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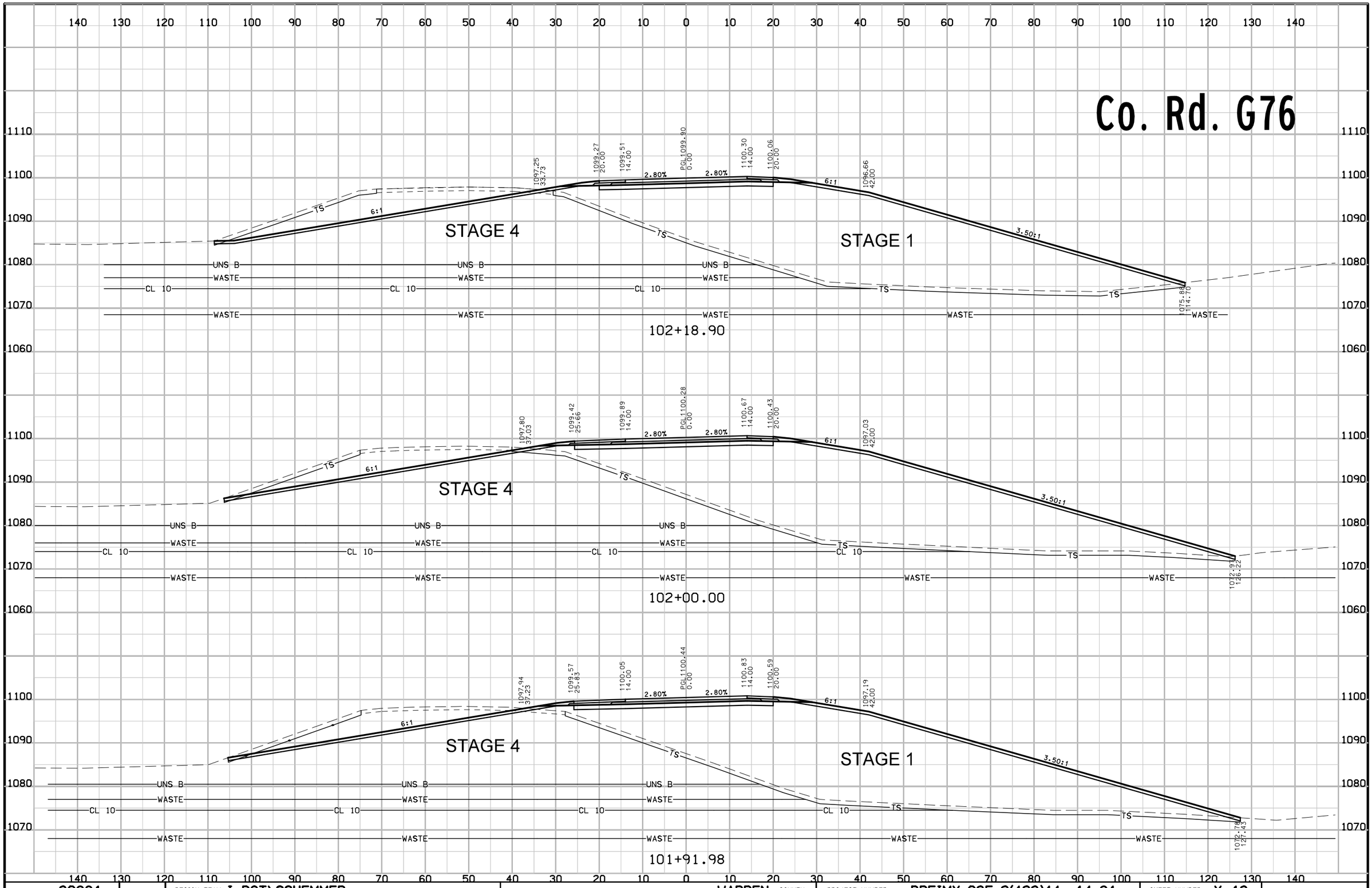

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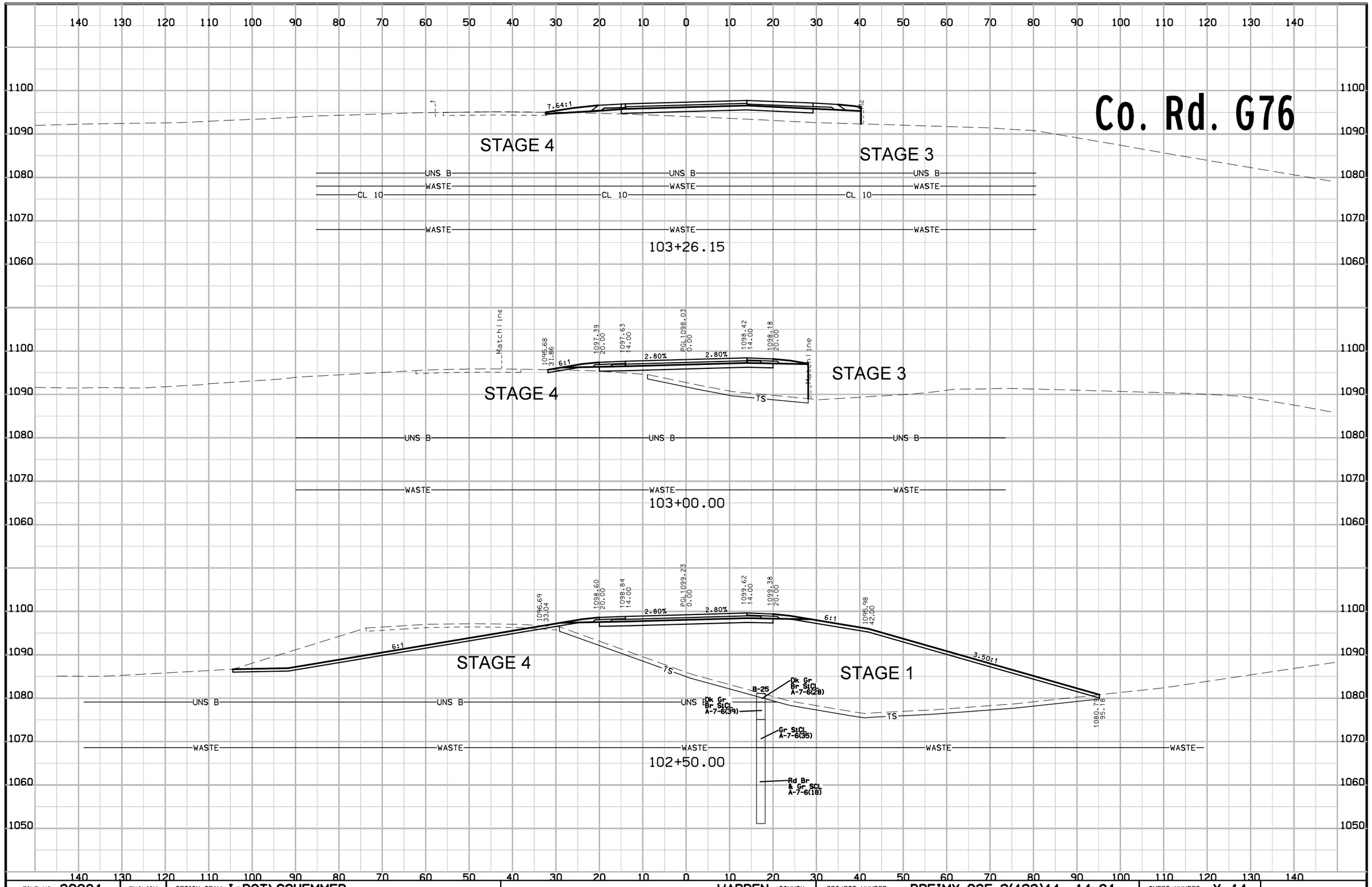

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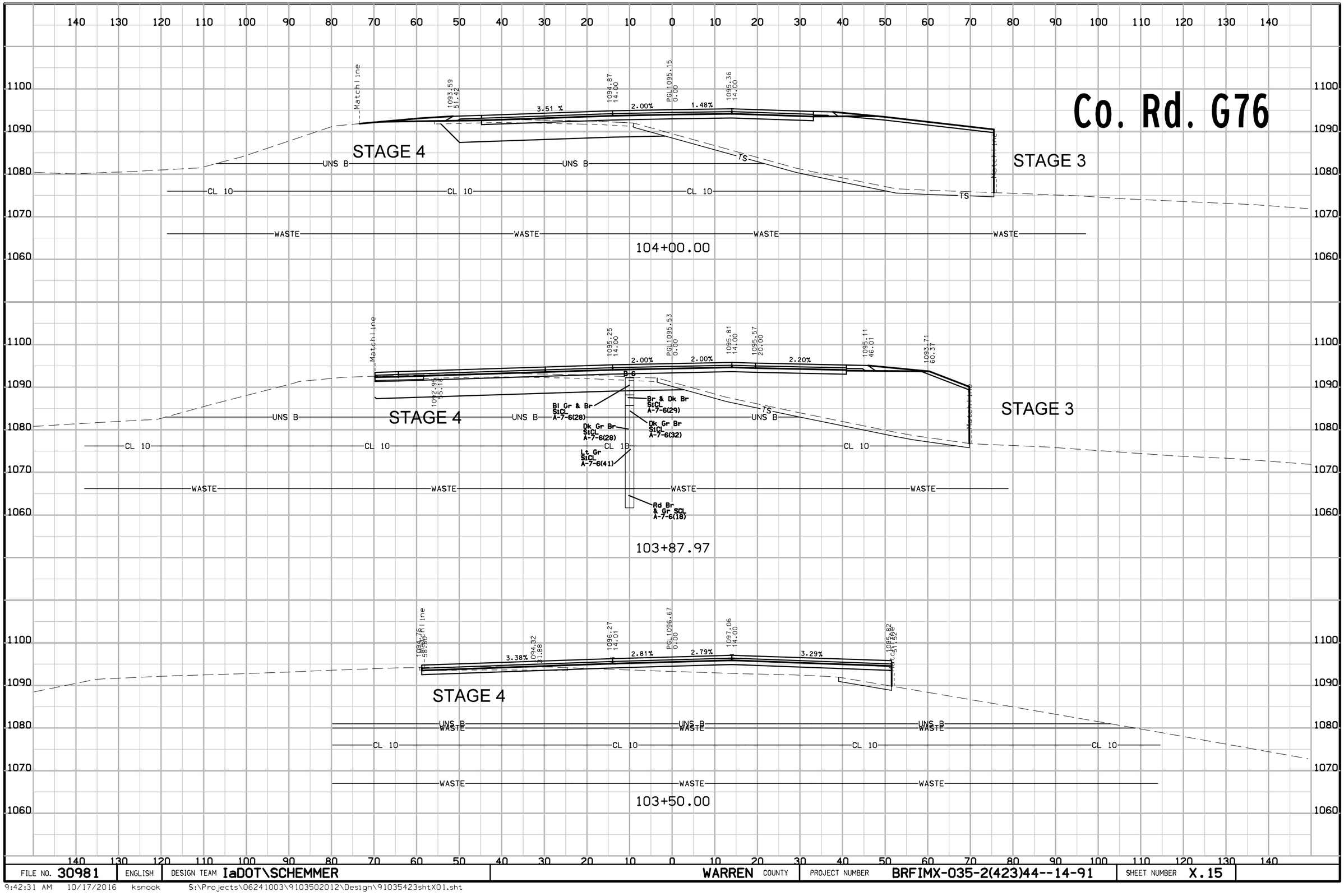

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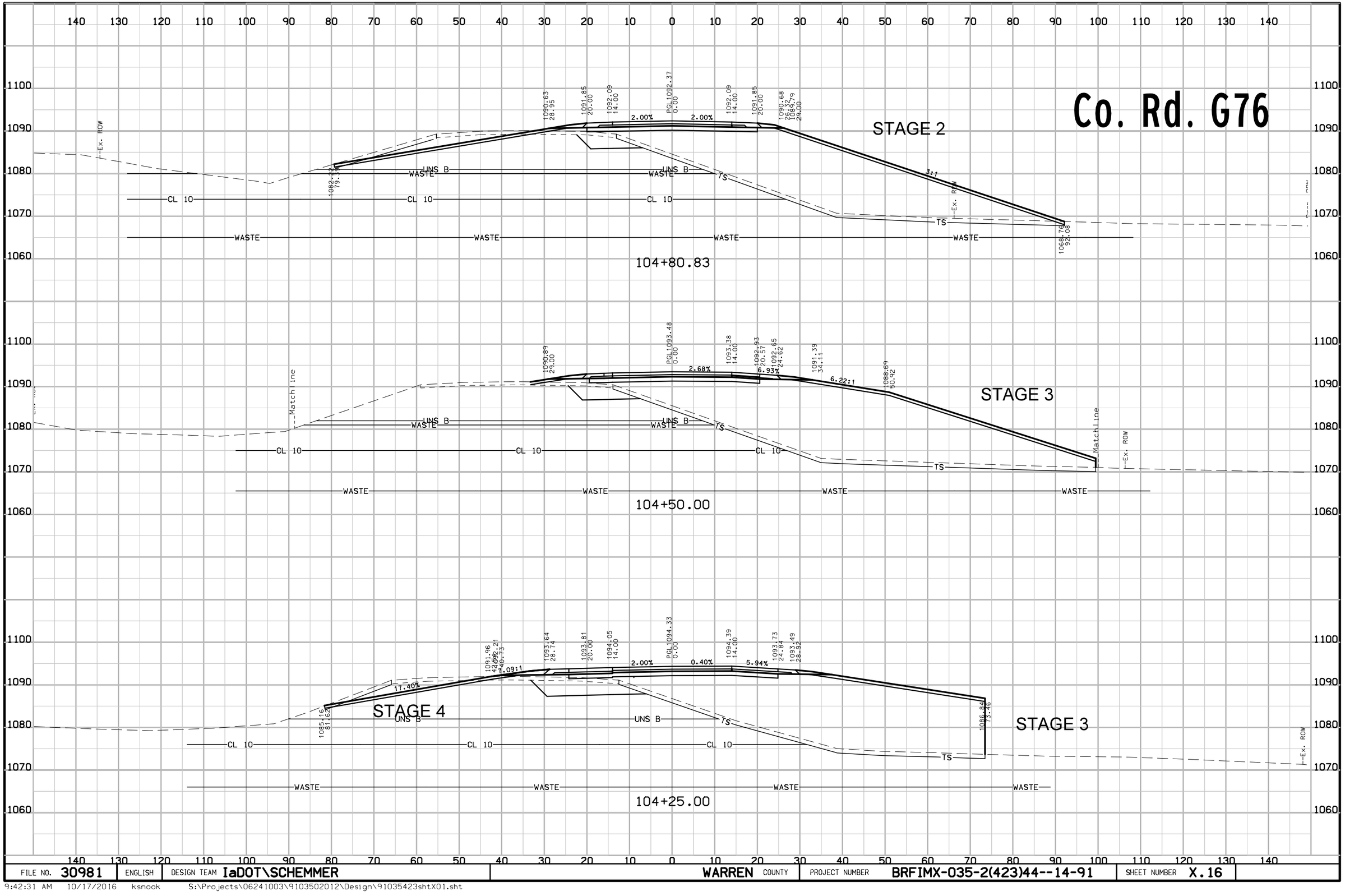

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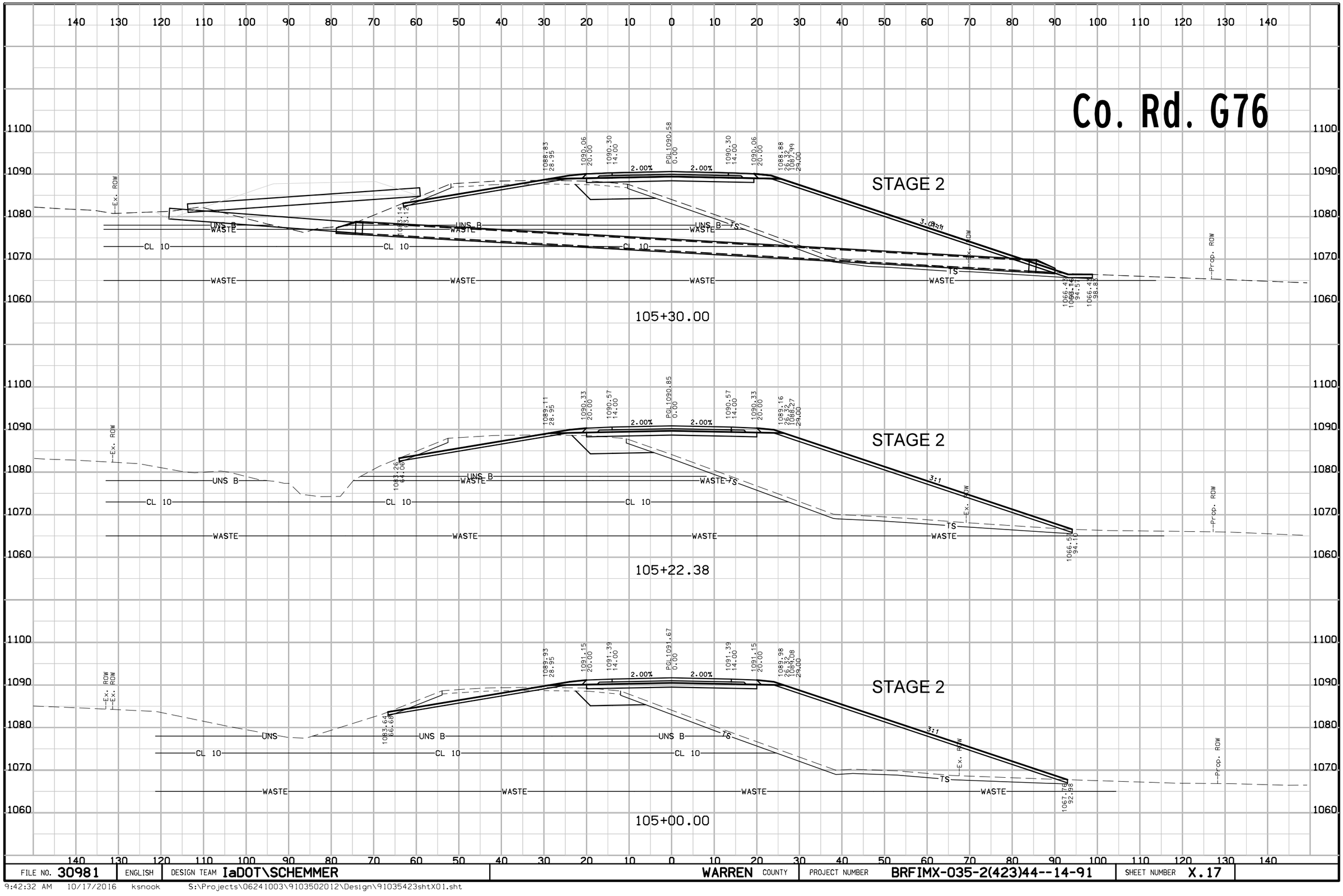

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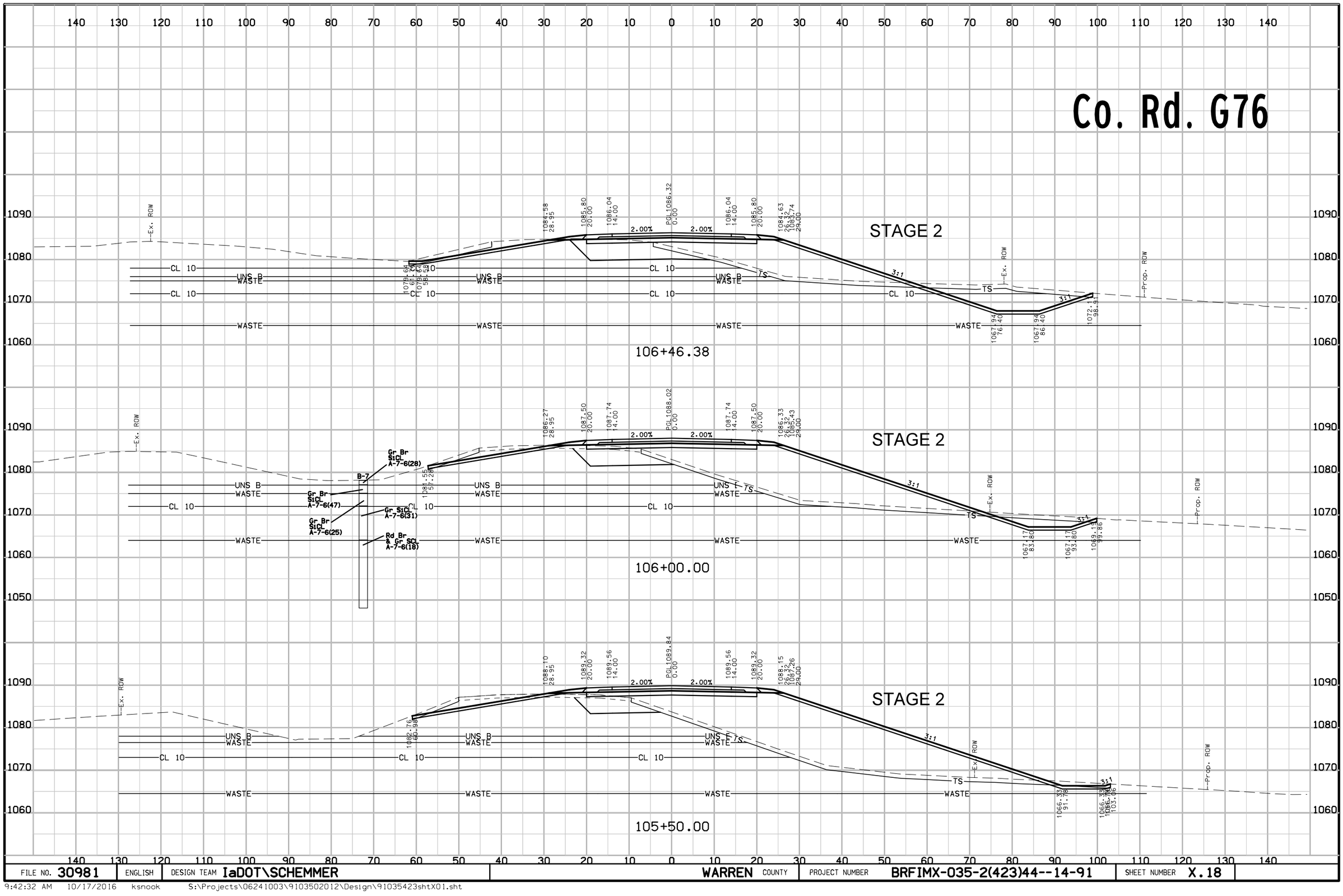

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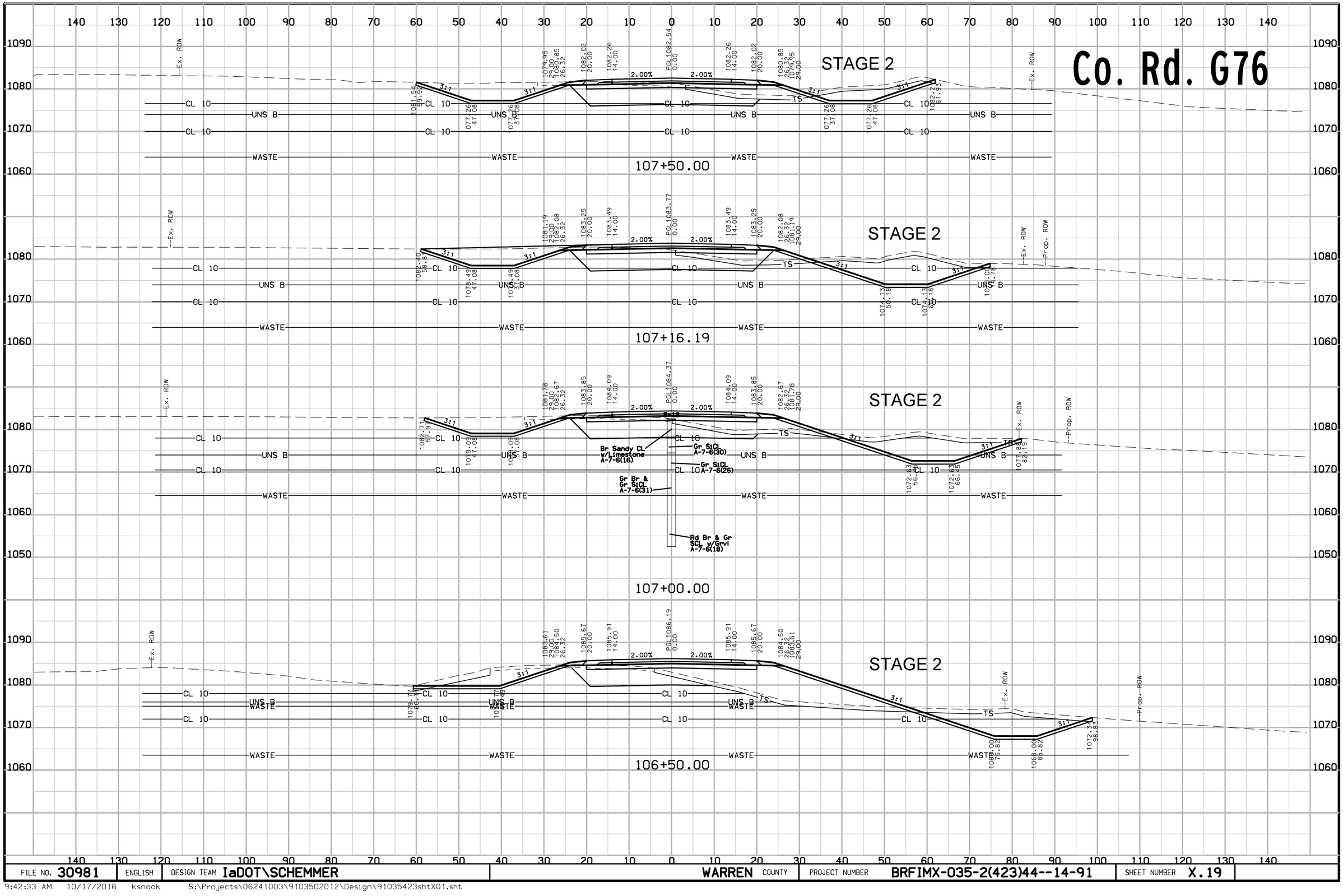

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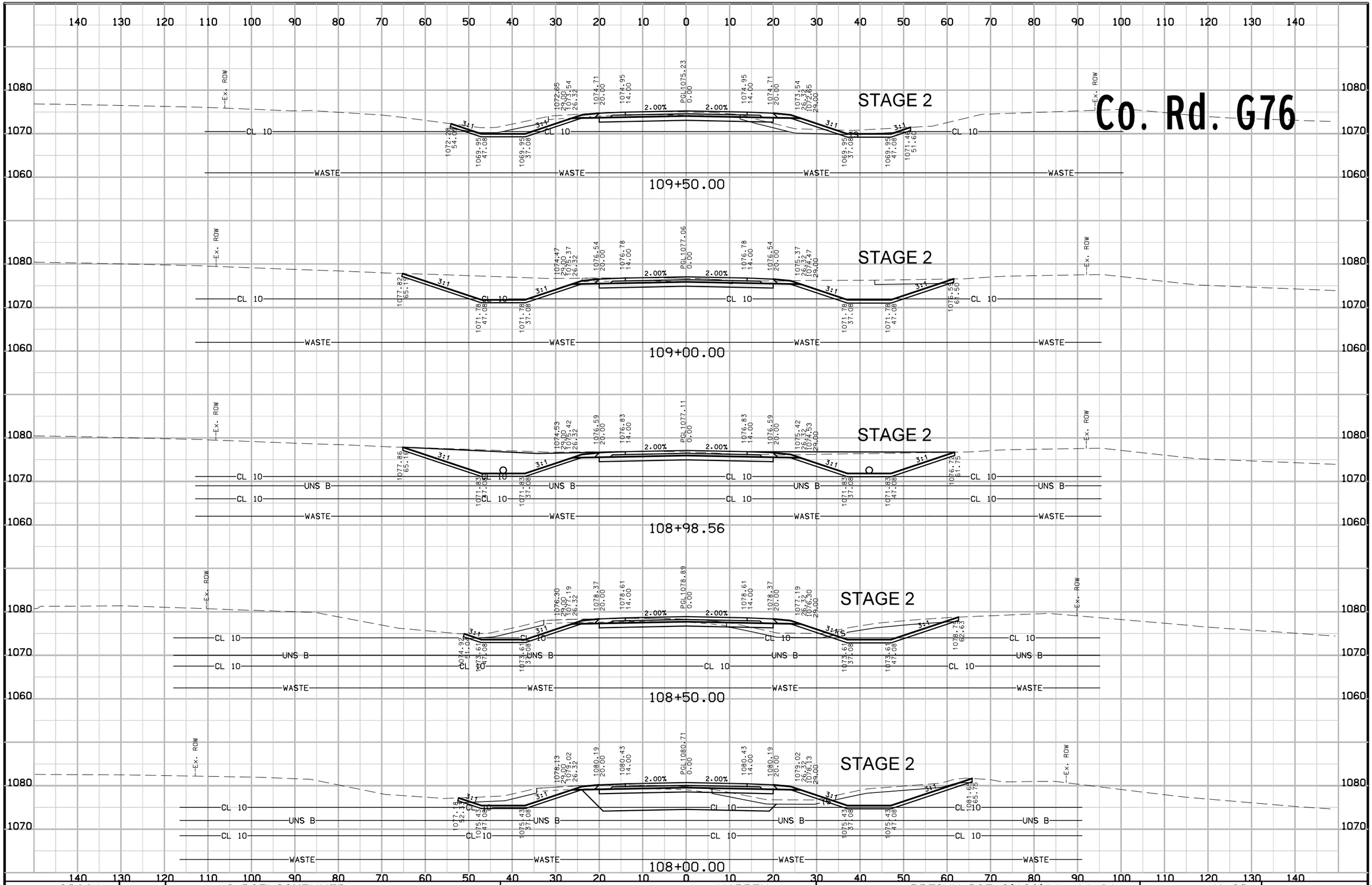

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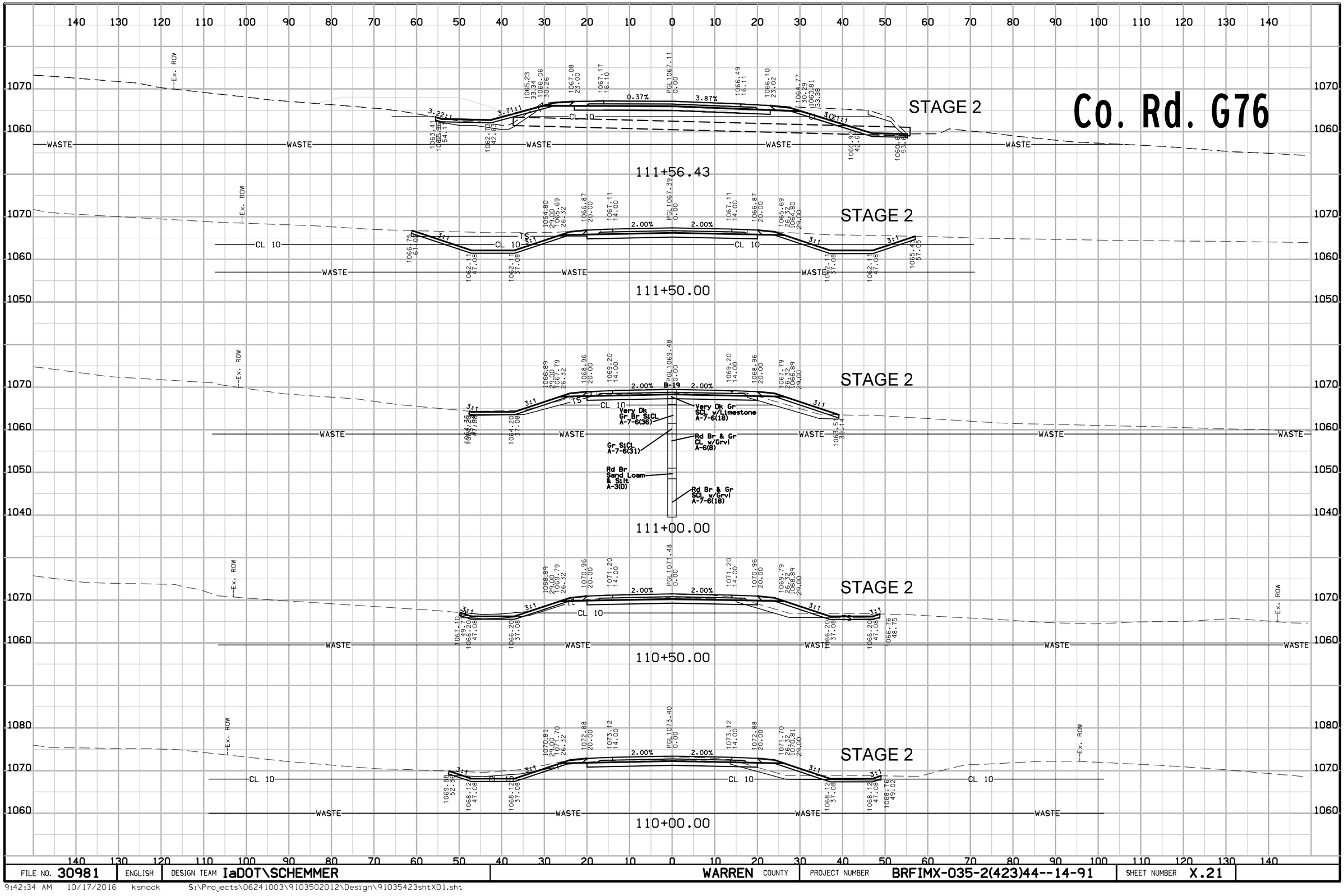
Co. Rd. G76



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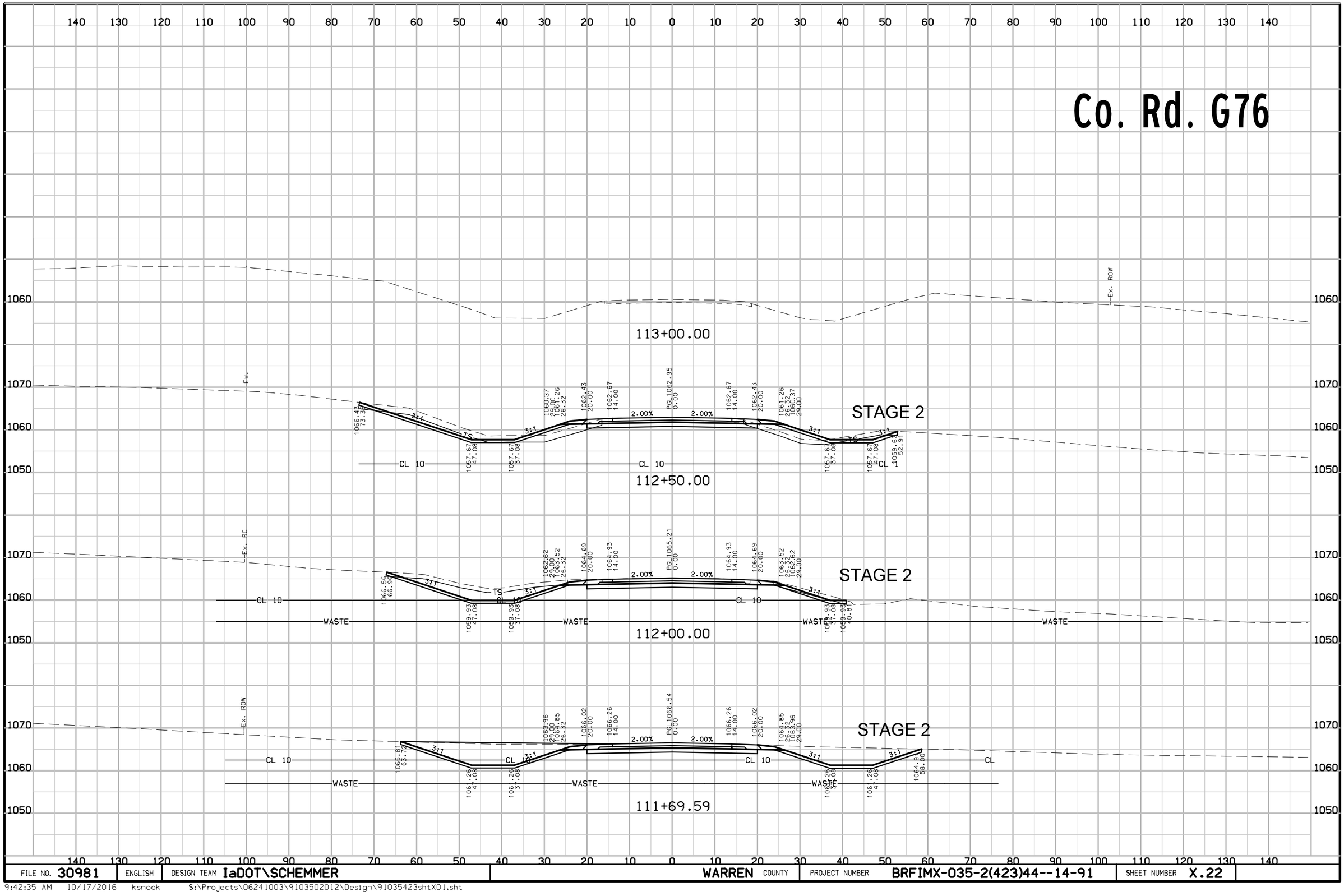
Co. Rd. G76



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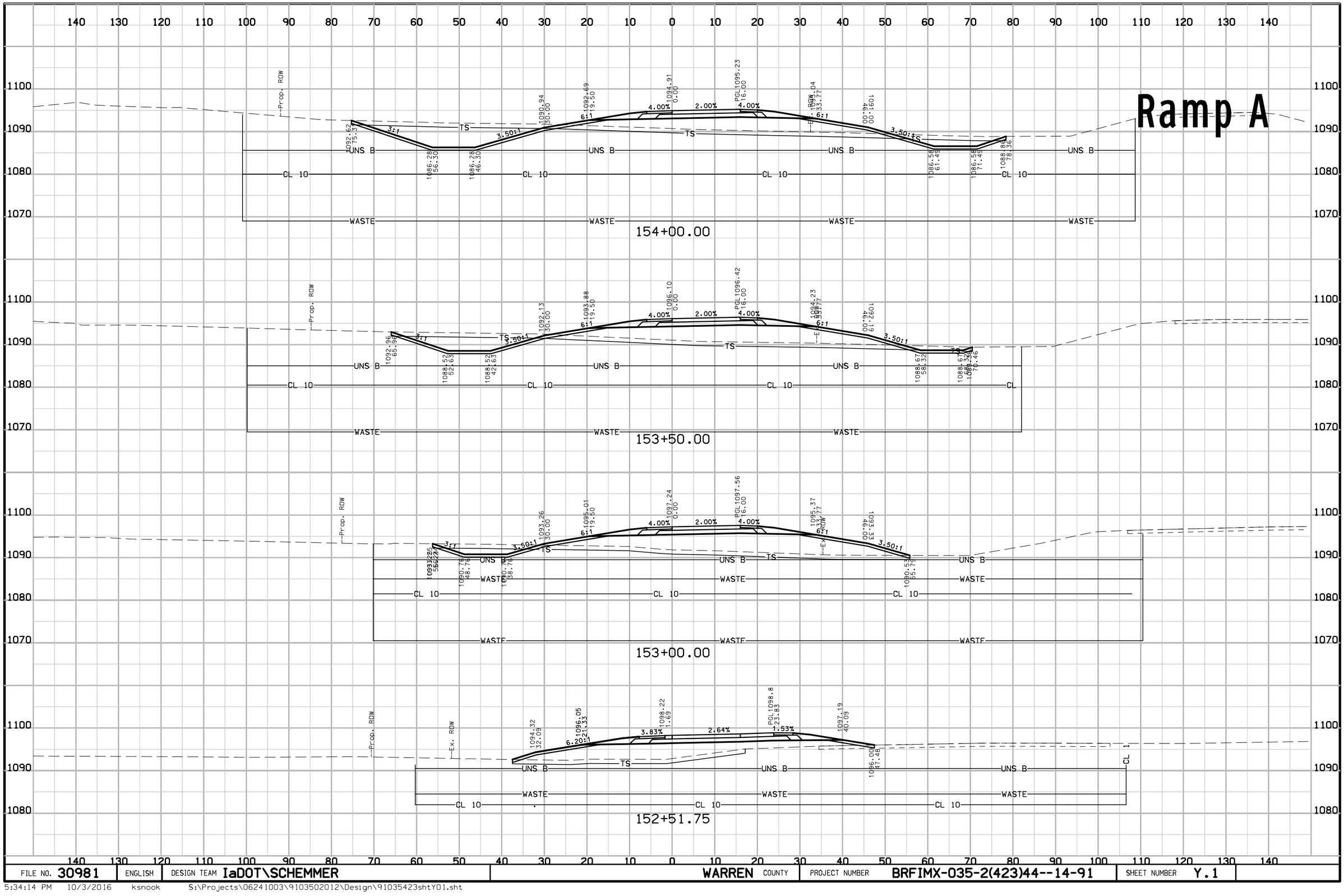

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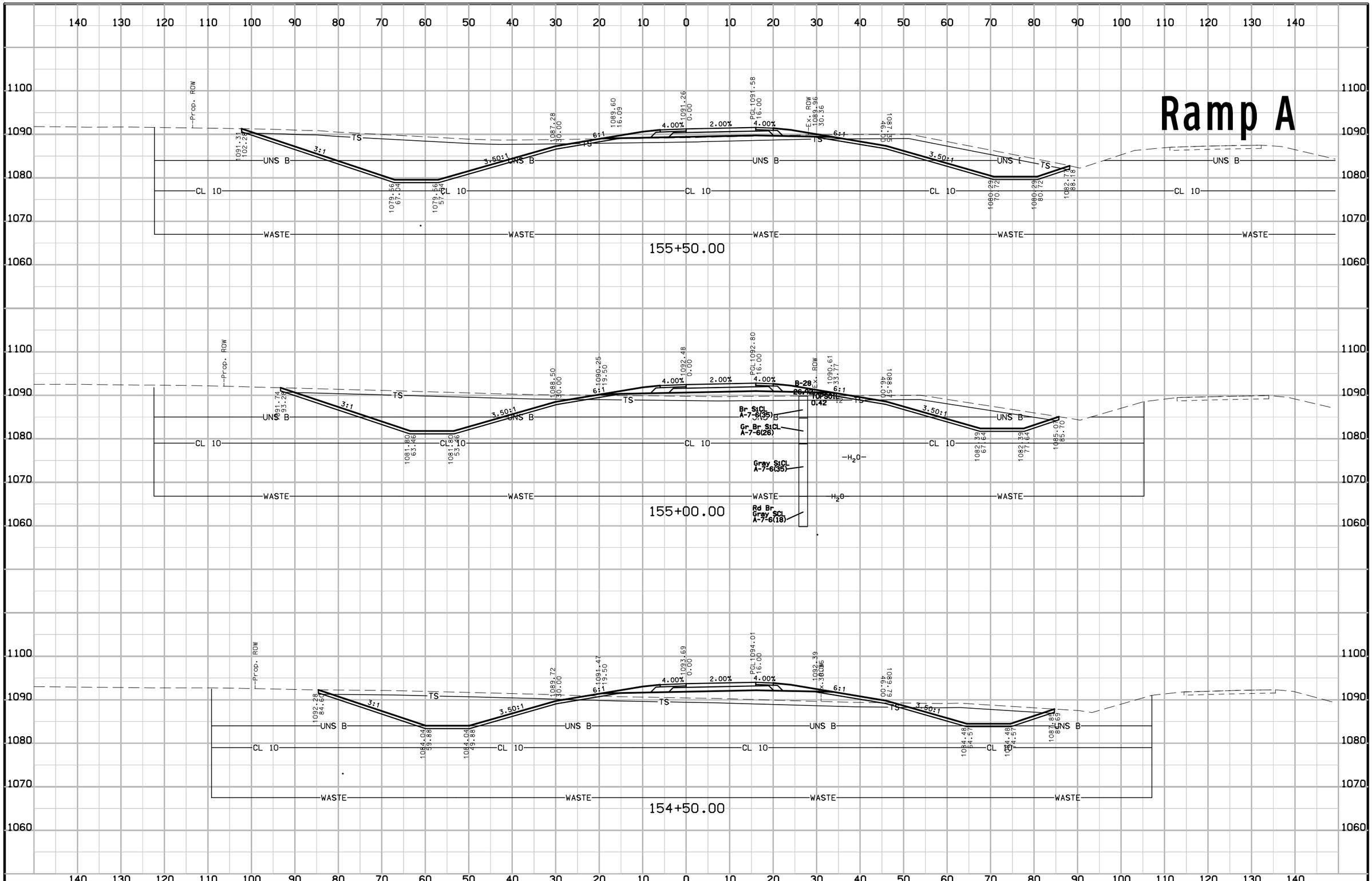

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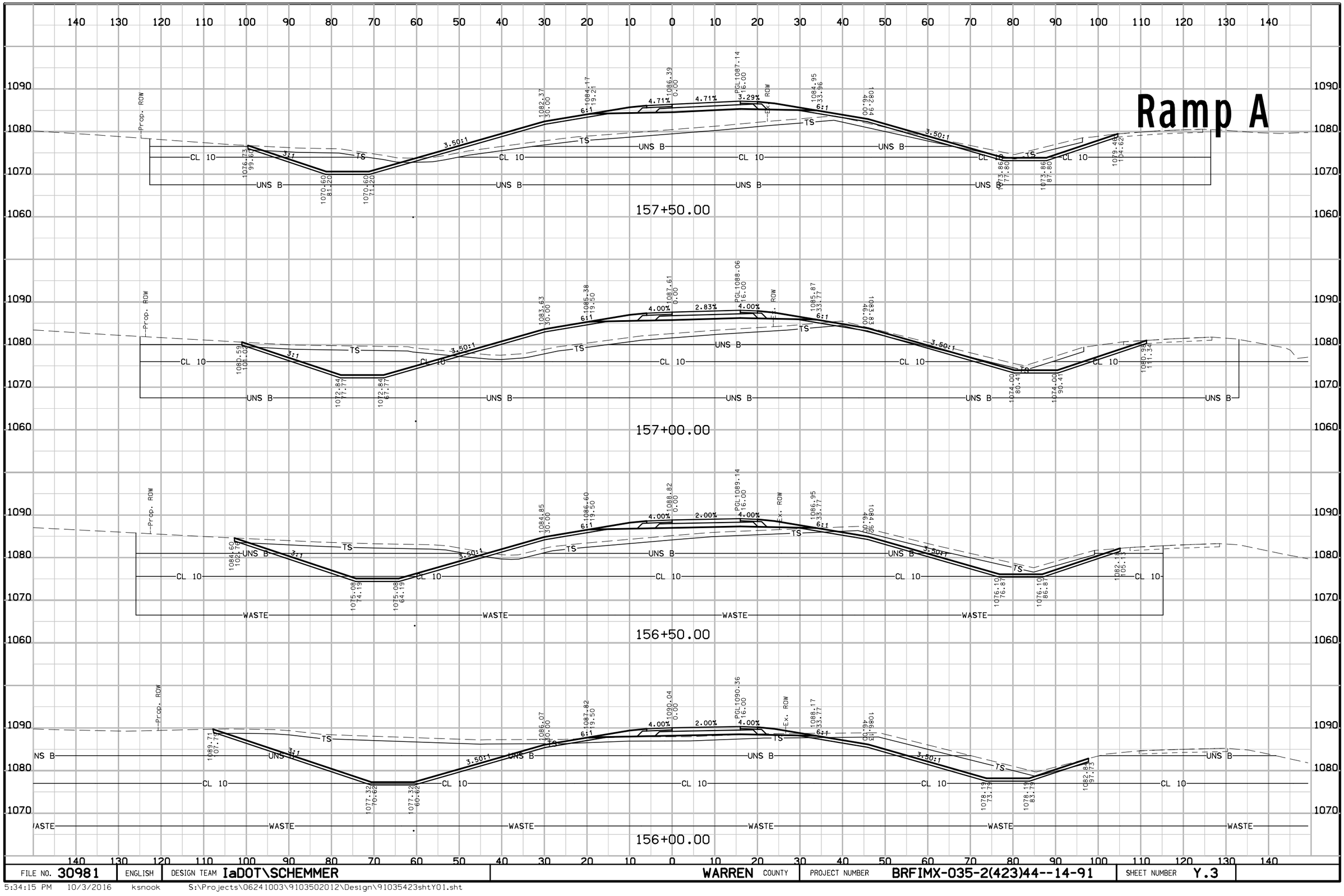

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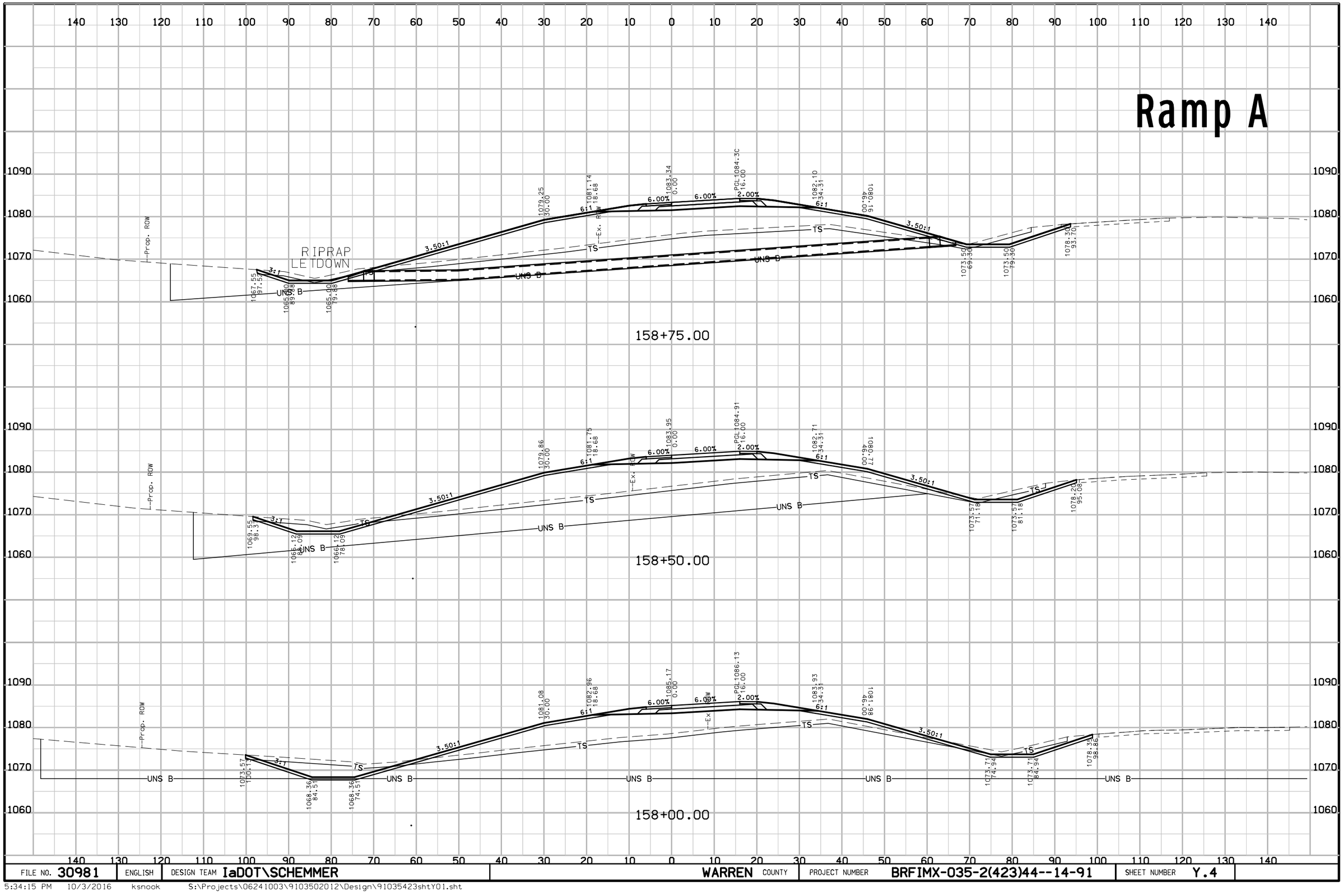

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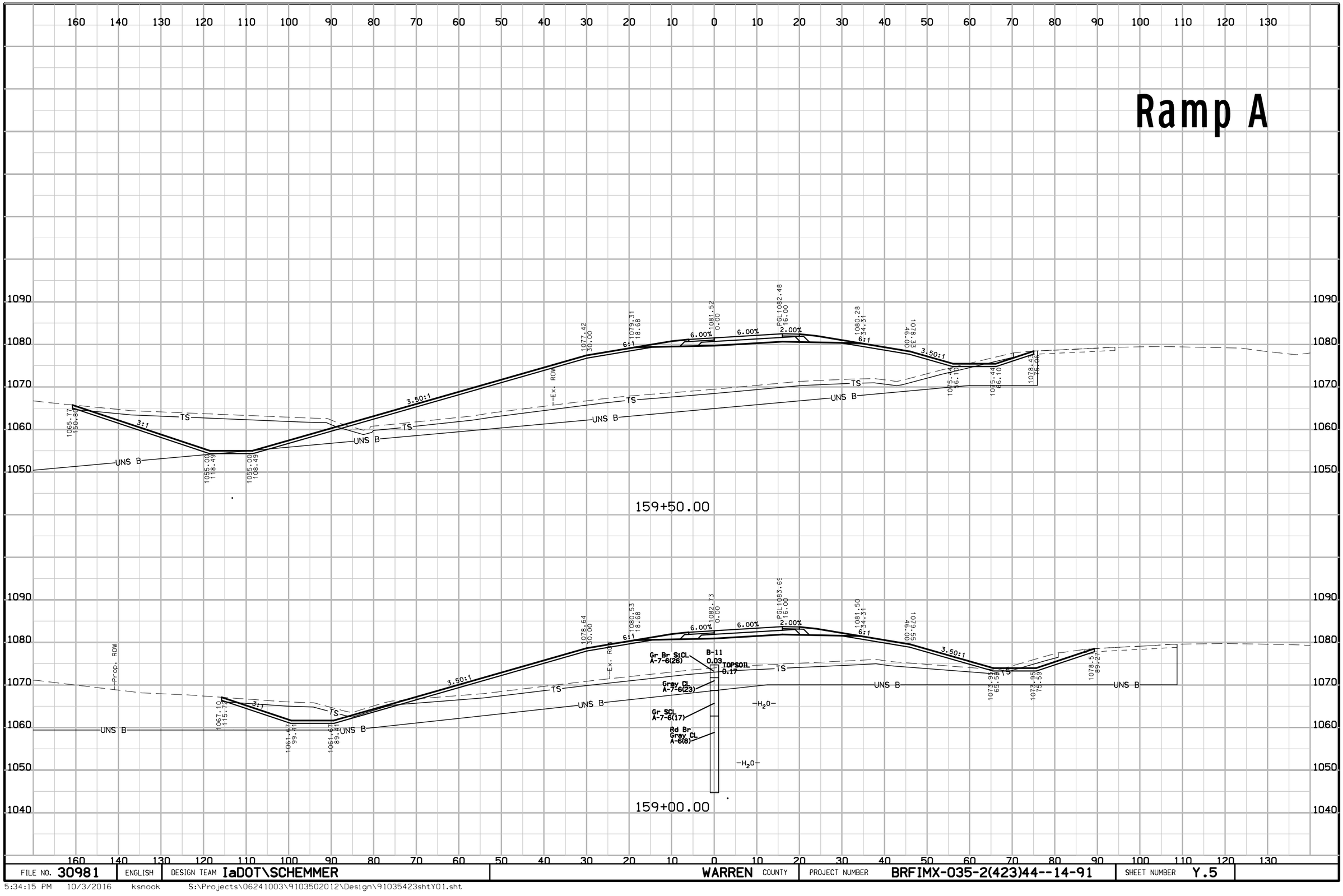

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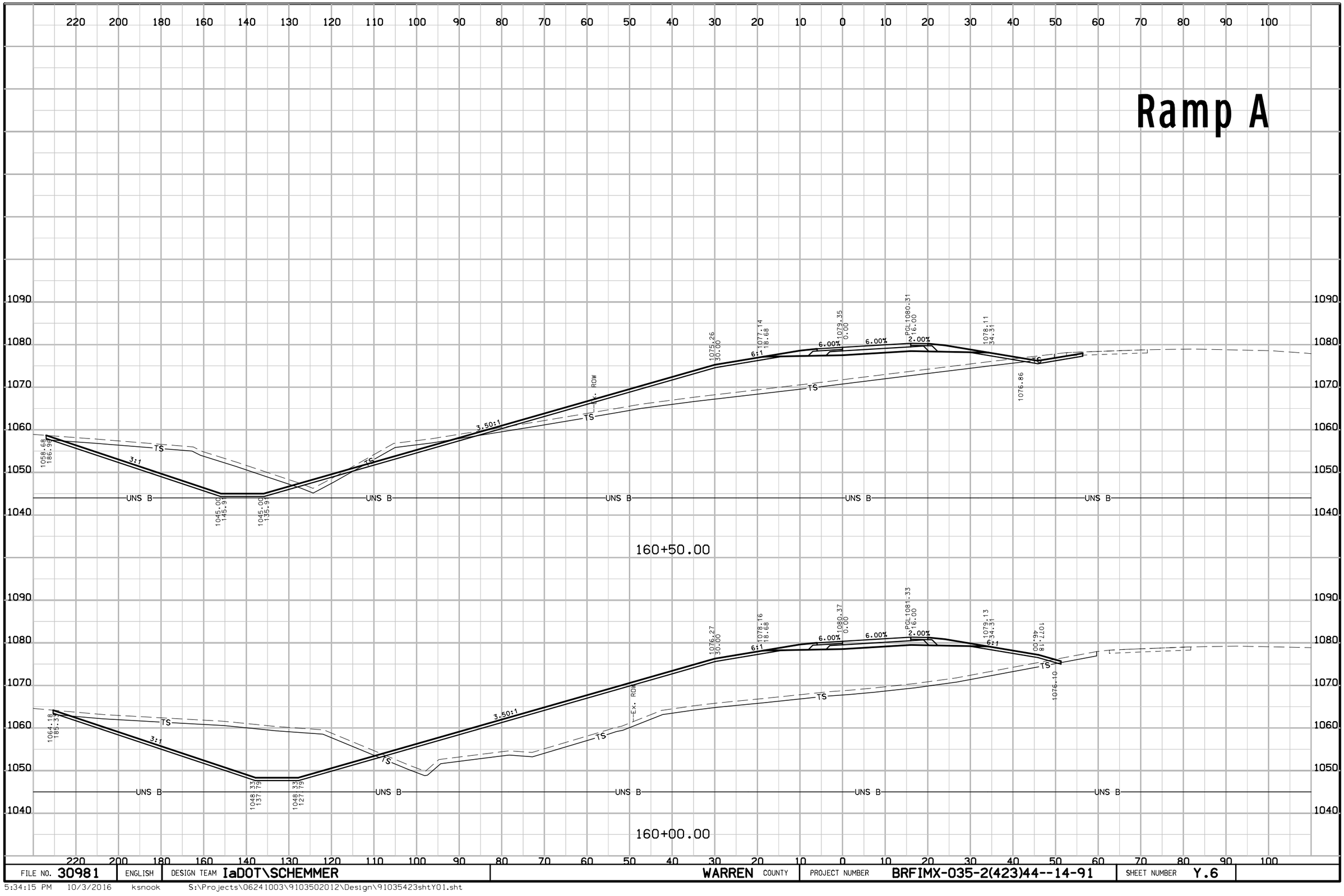

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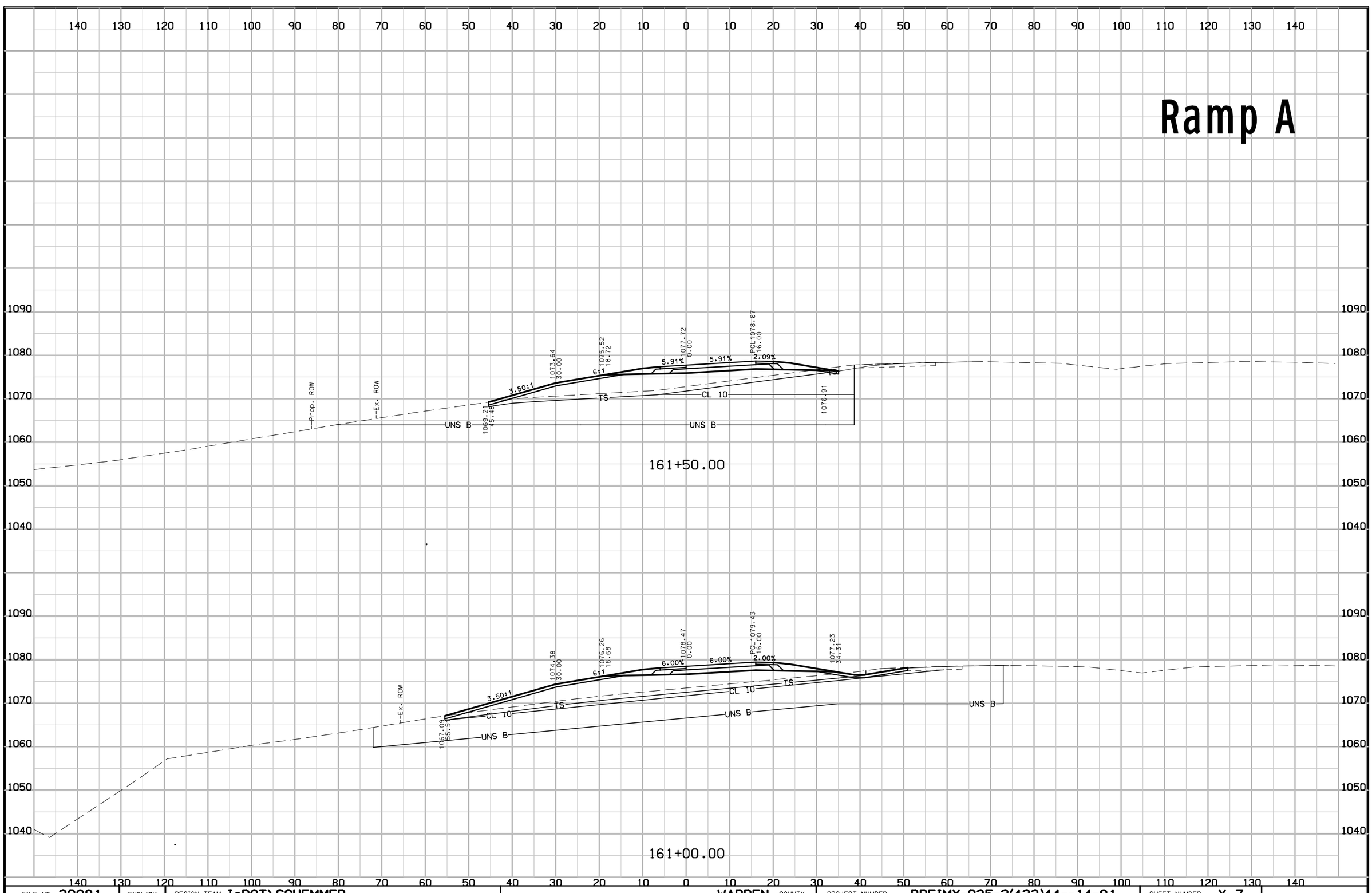

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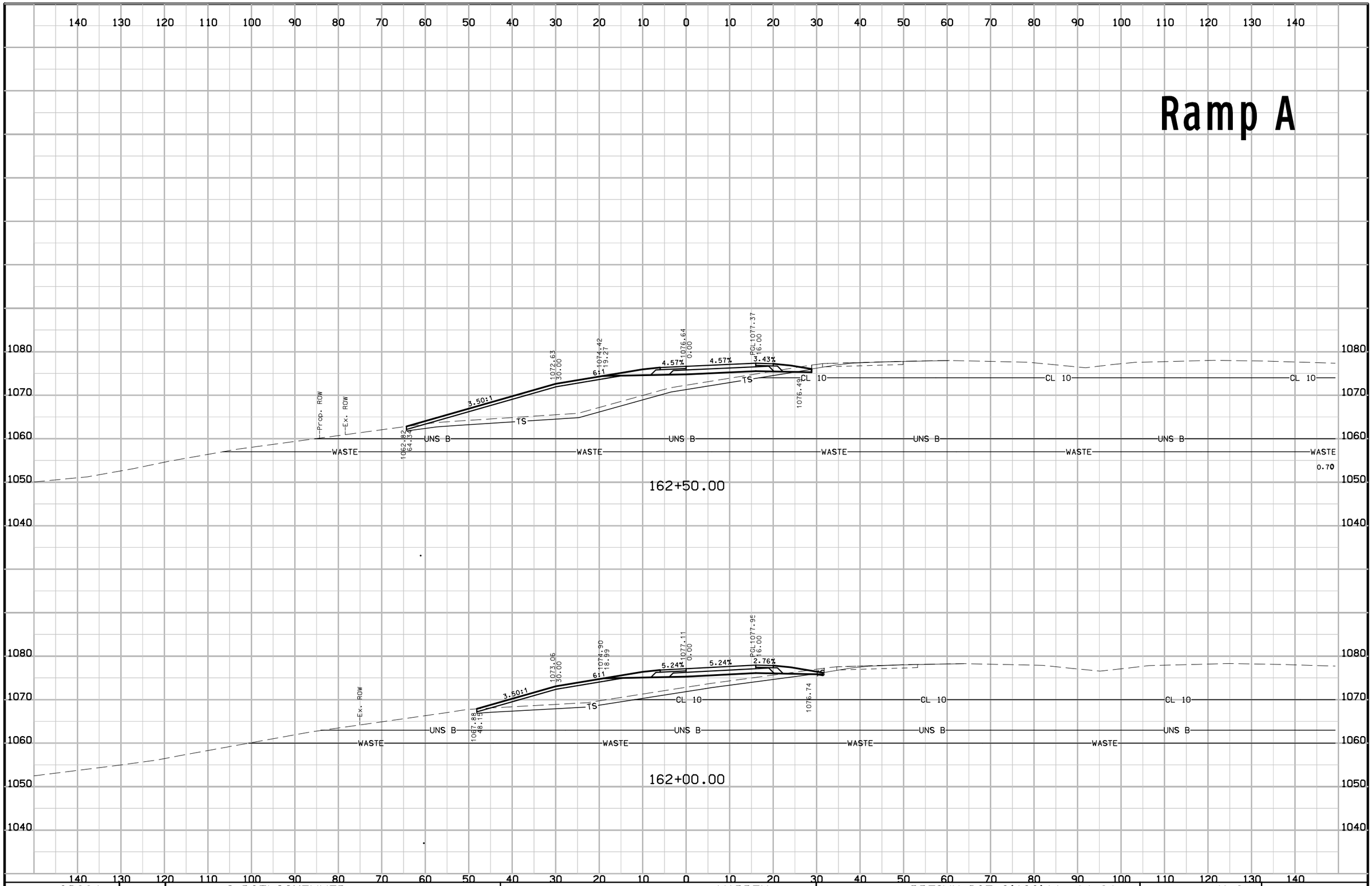

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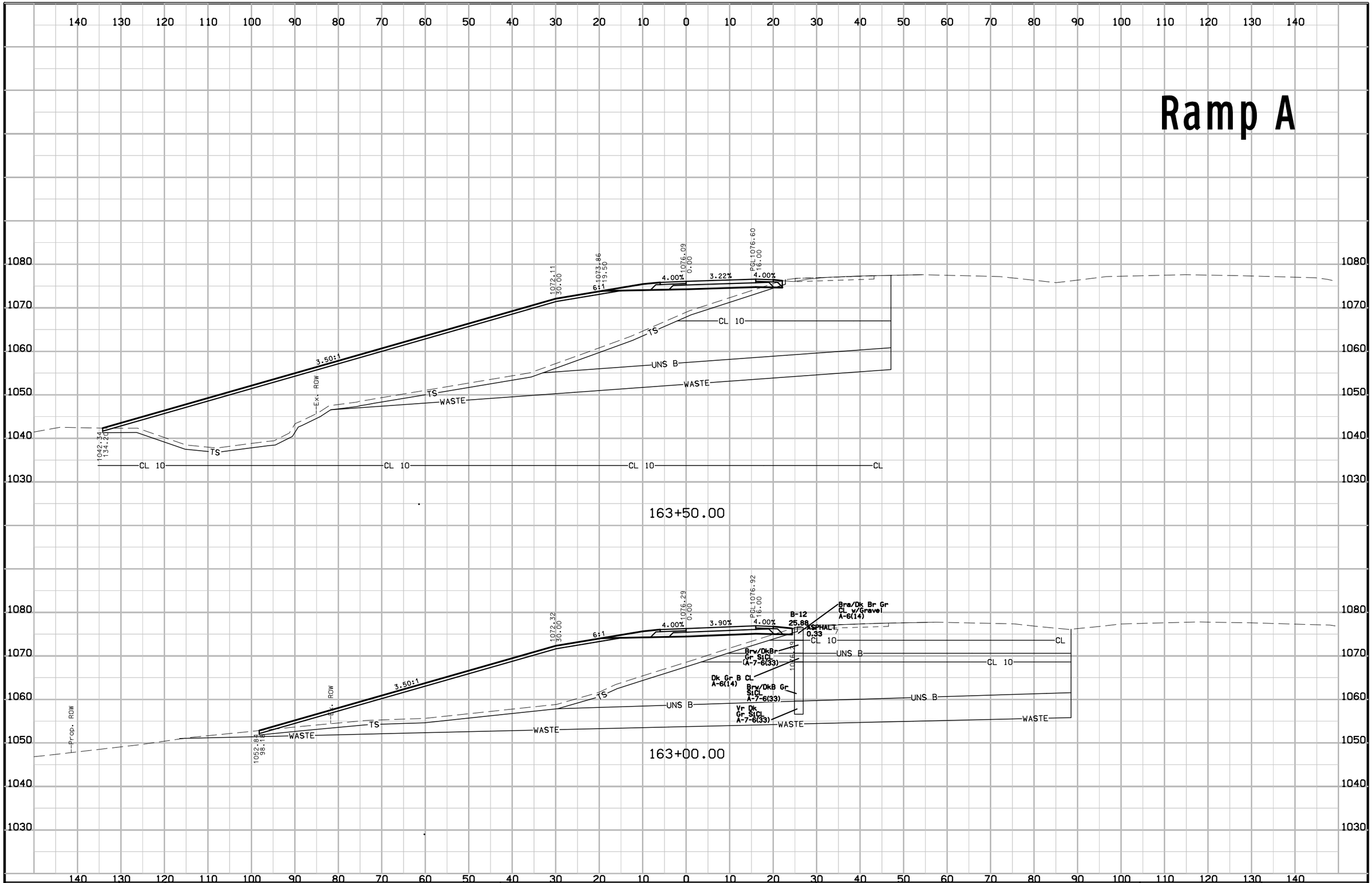

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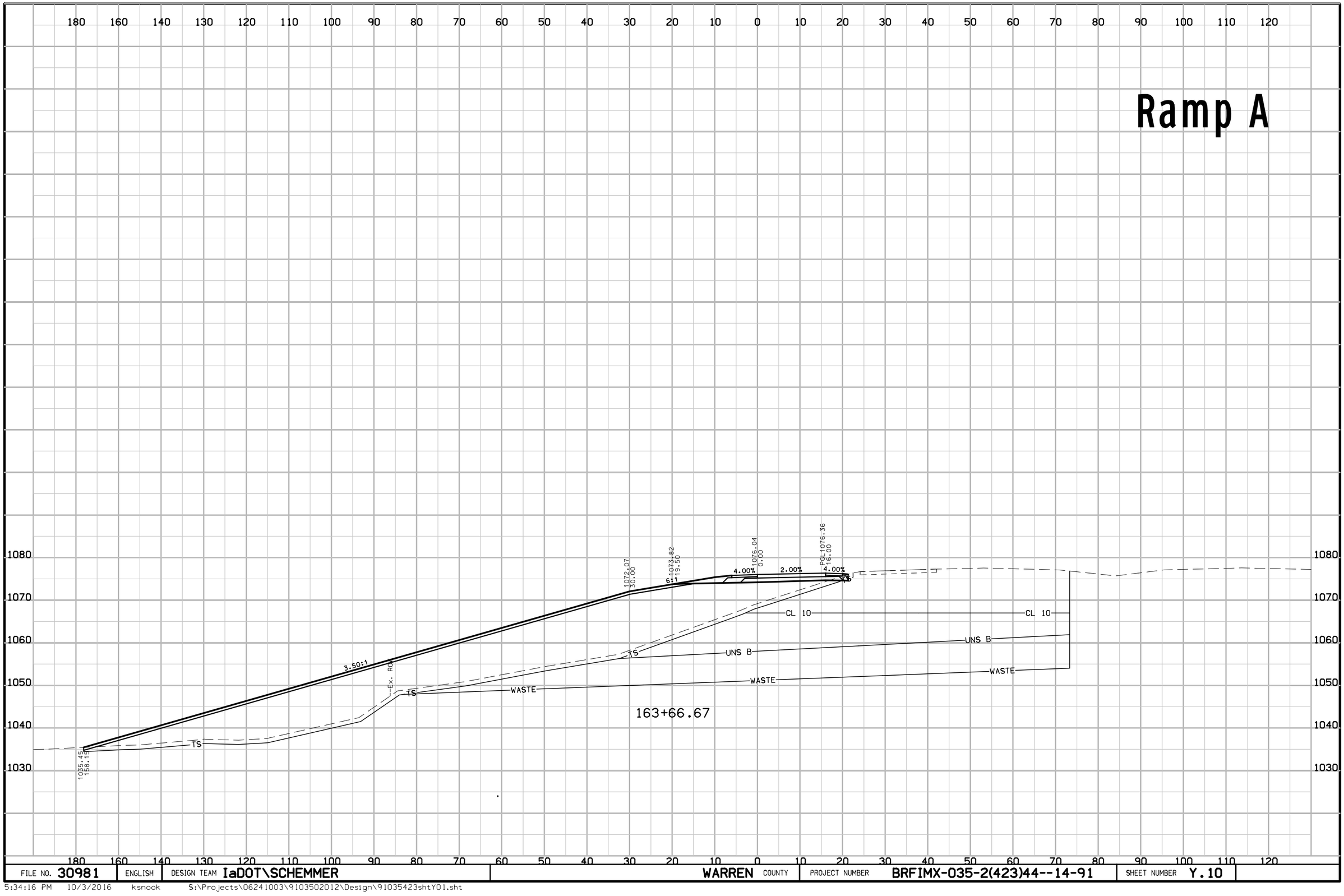

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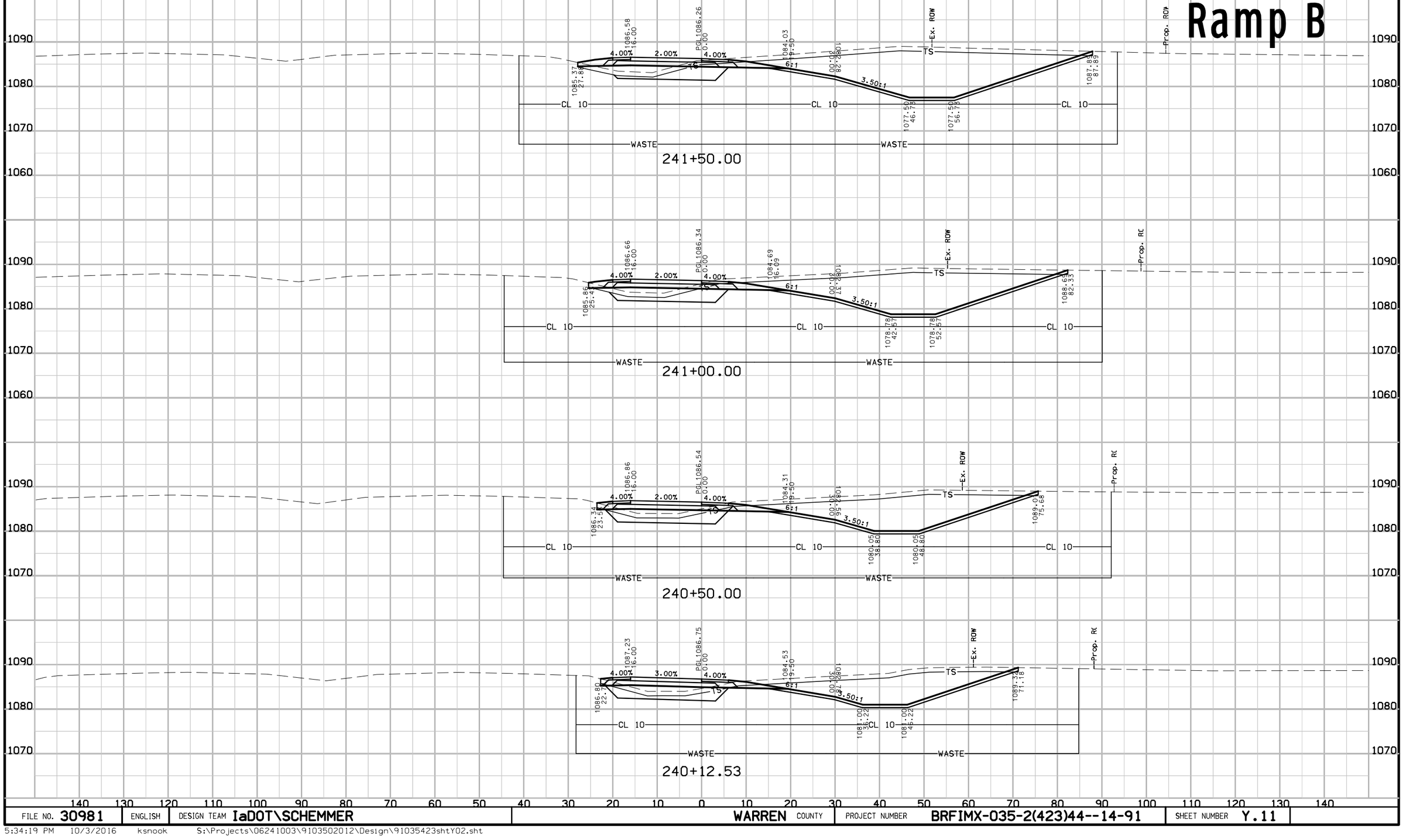

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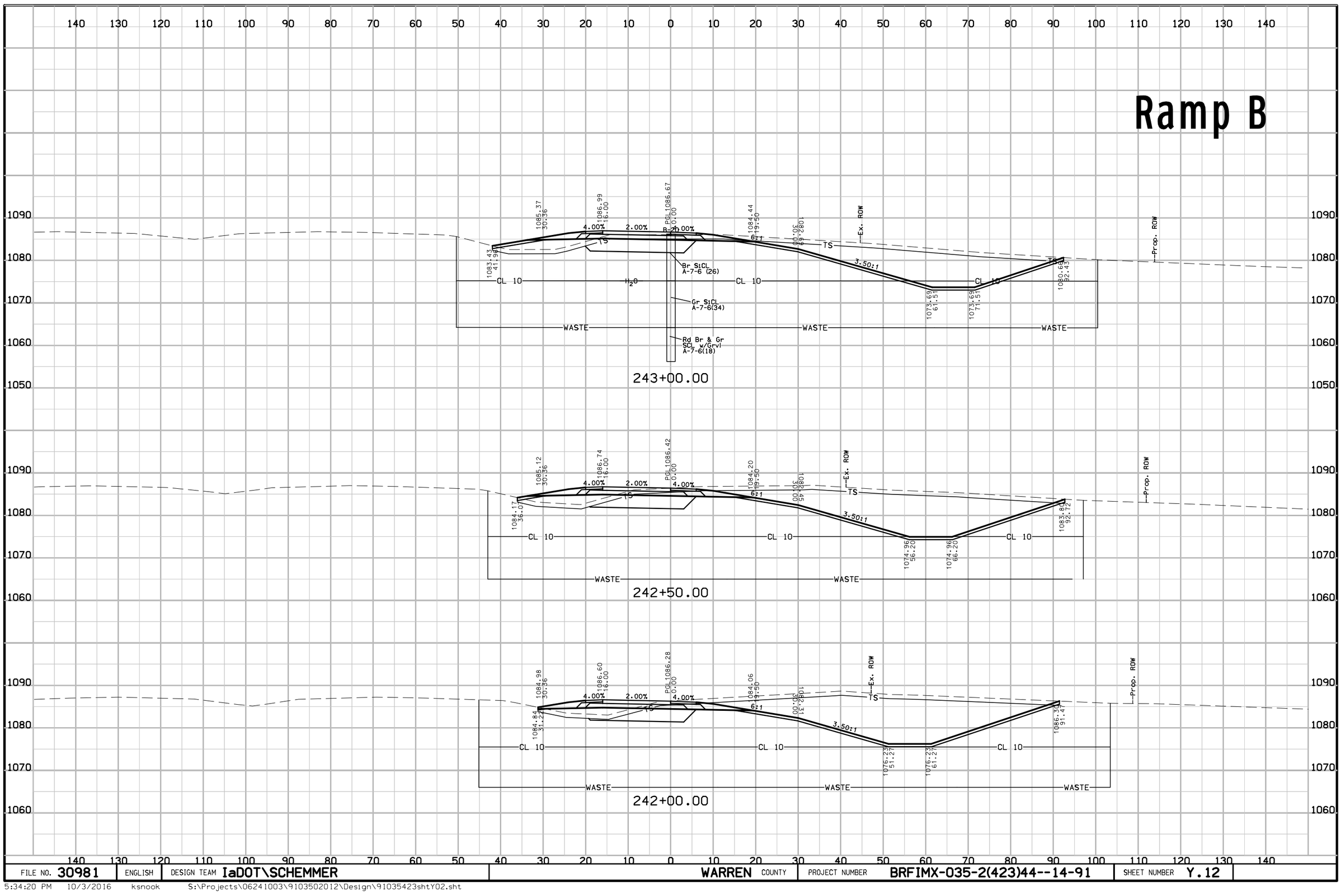

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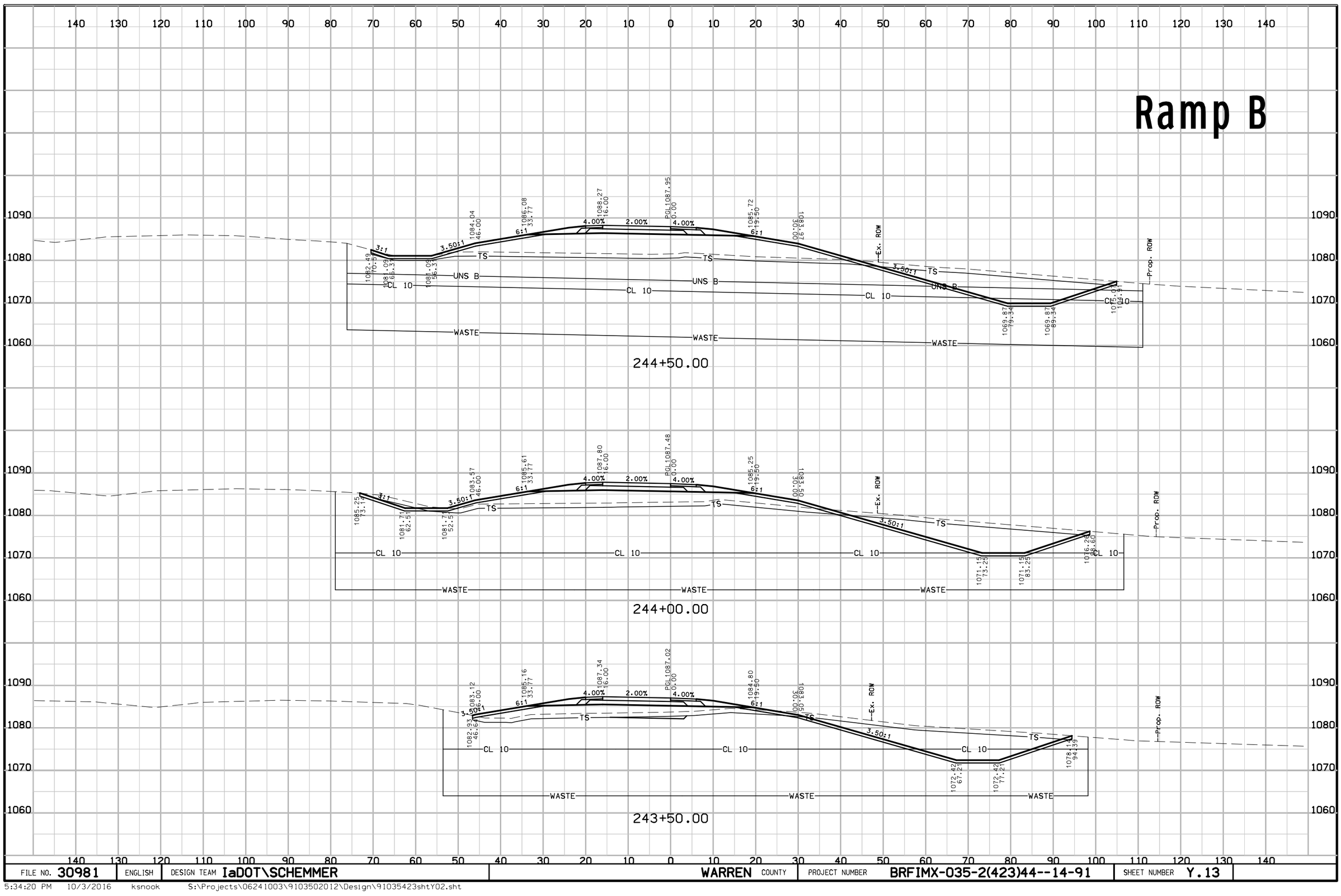

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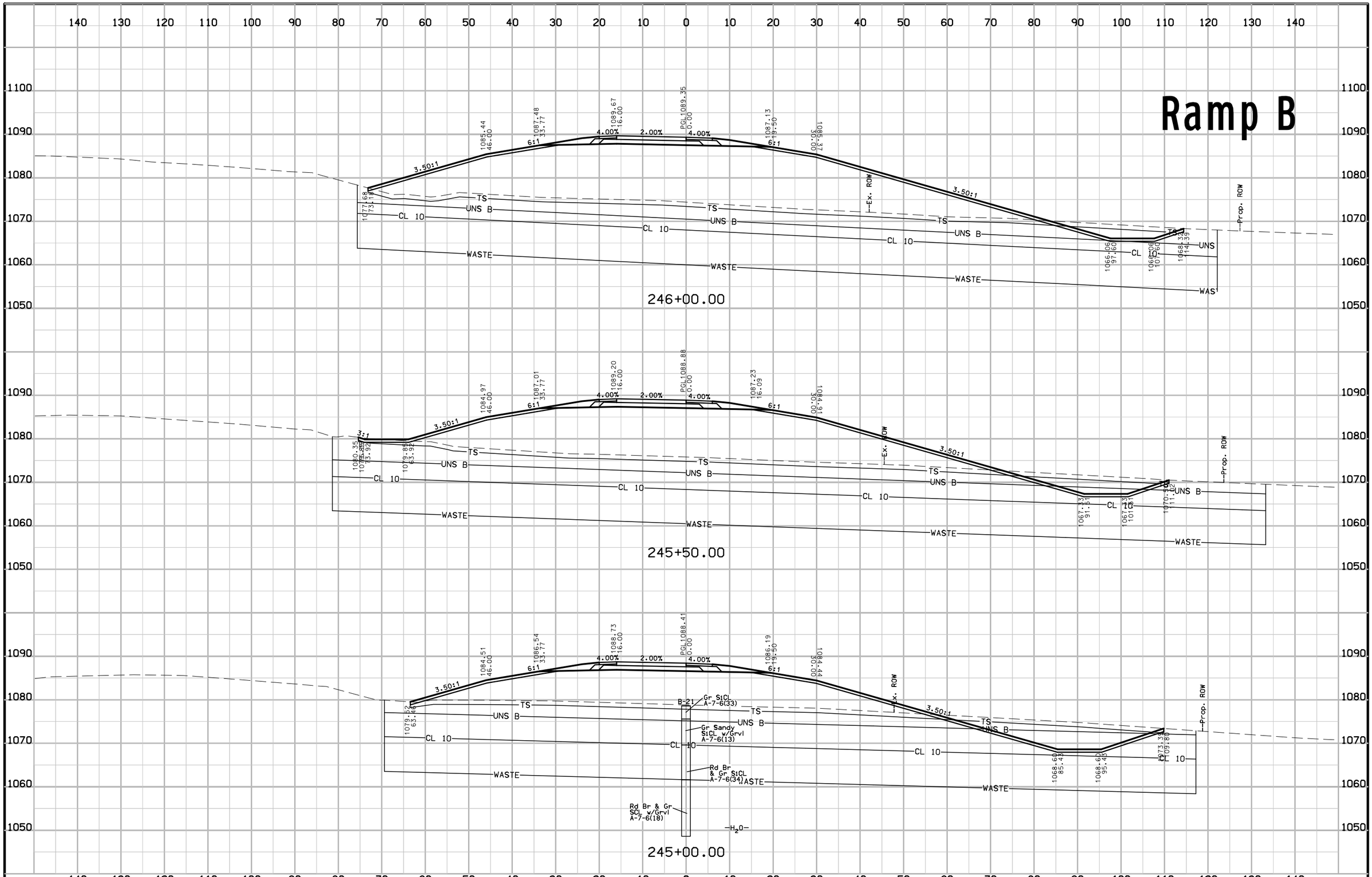

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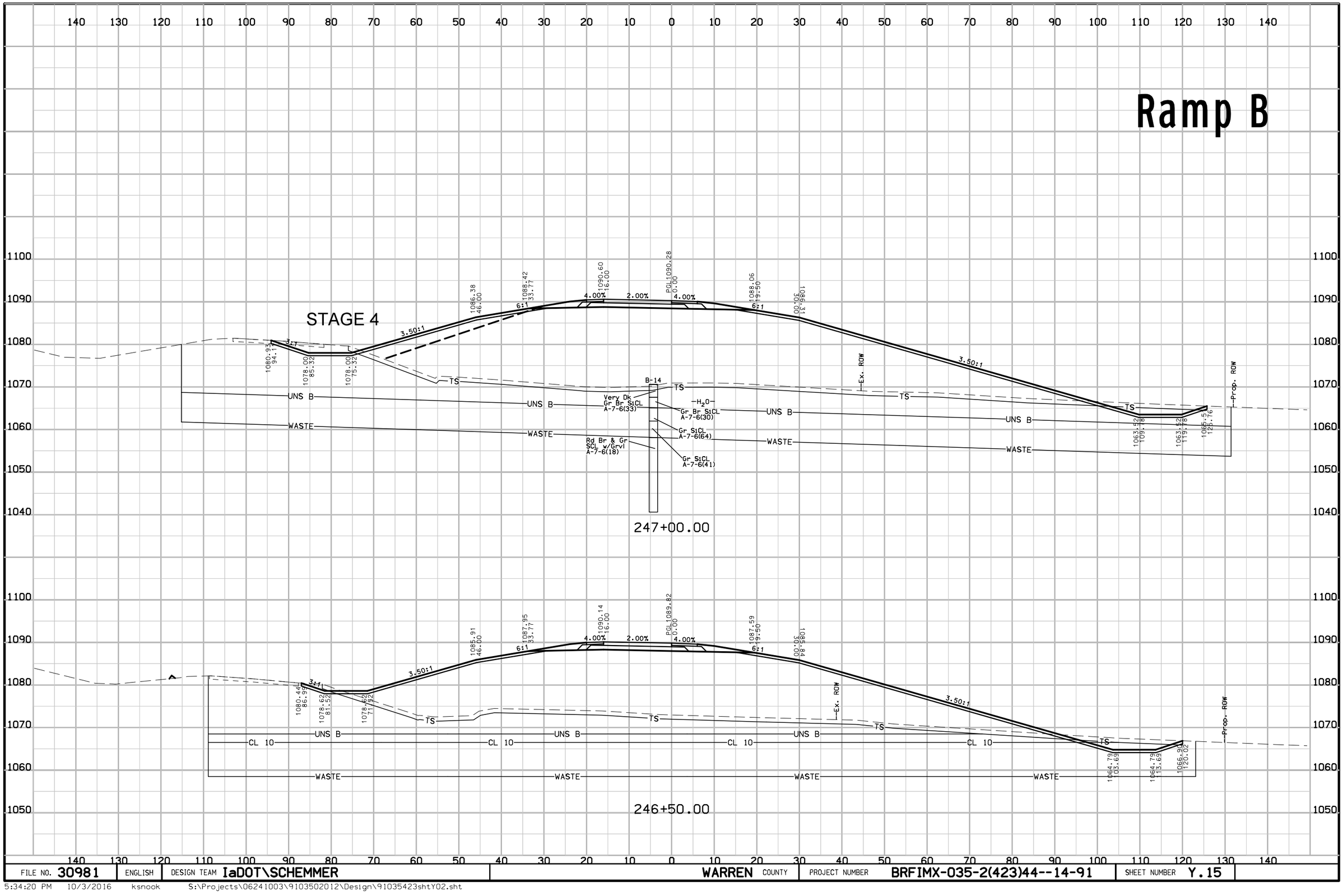

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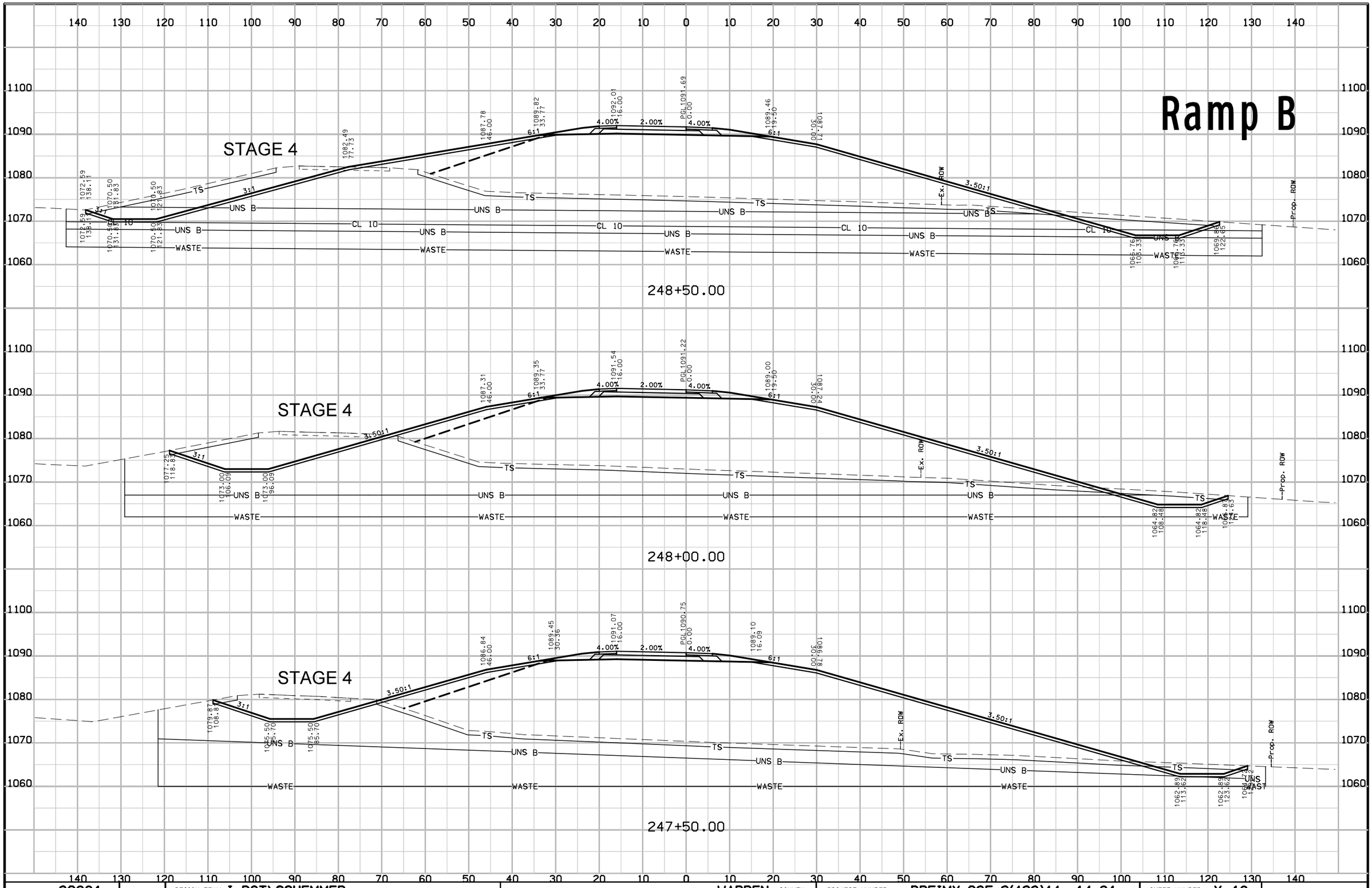

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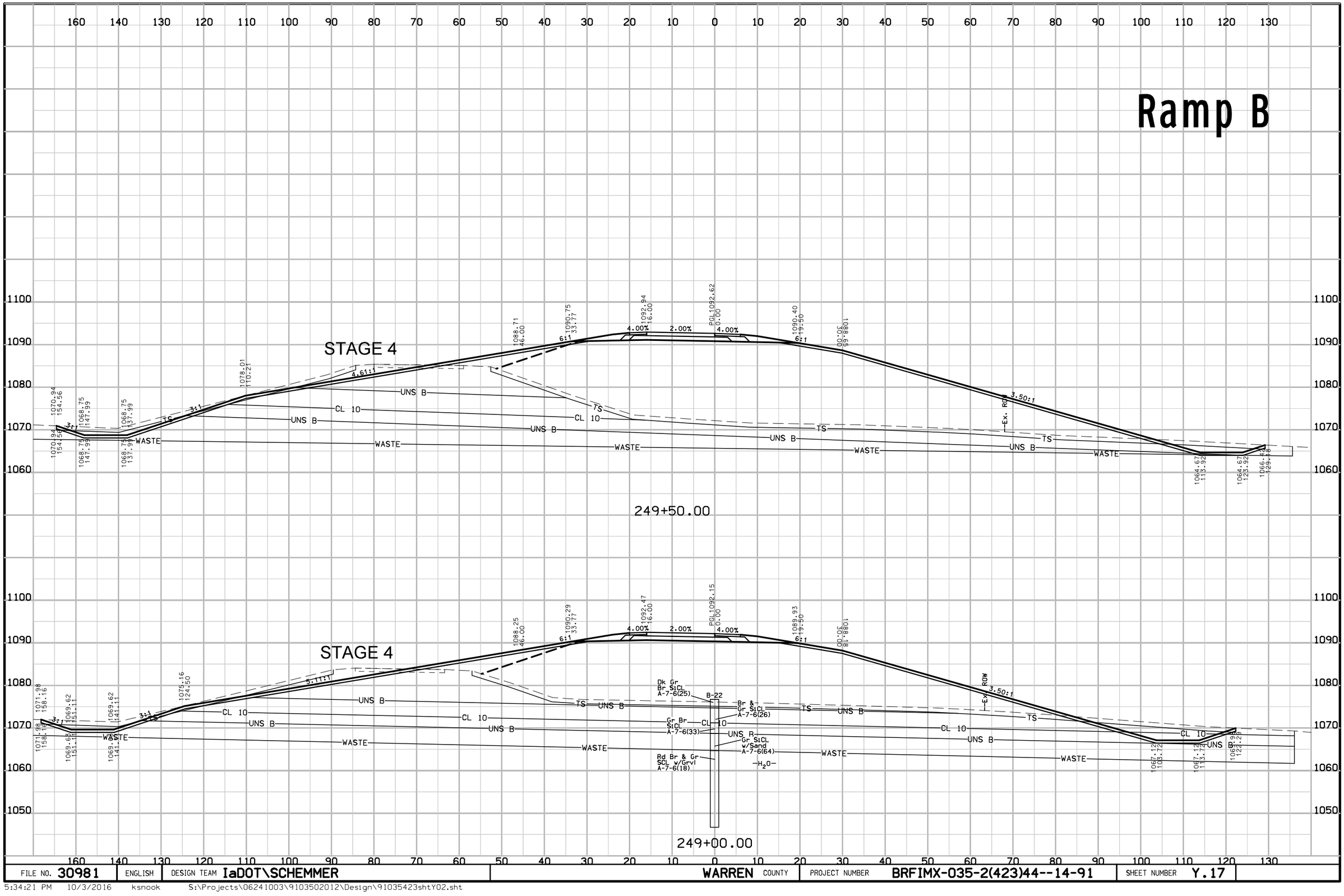

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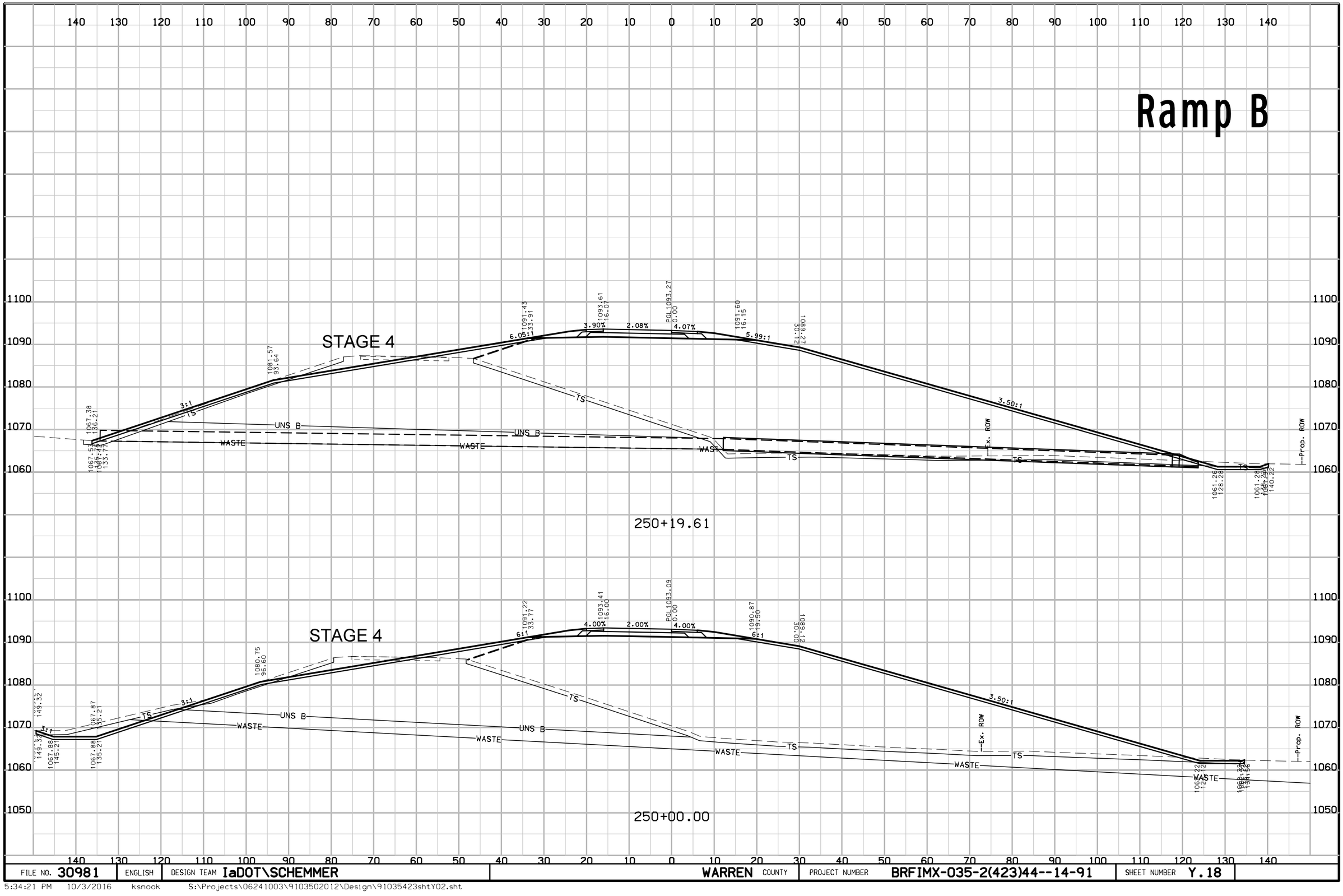

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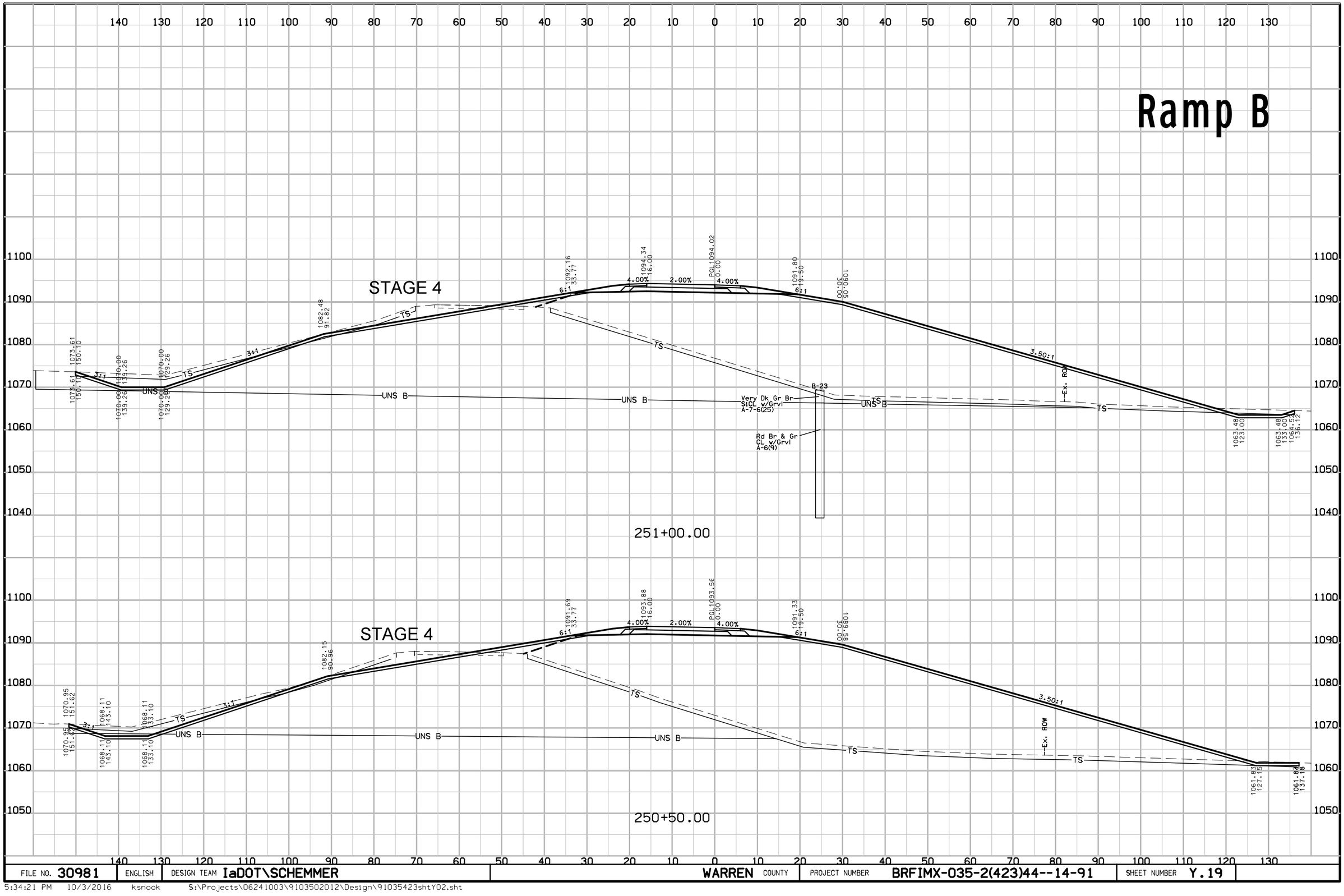

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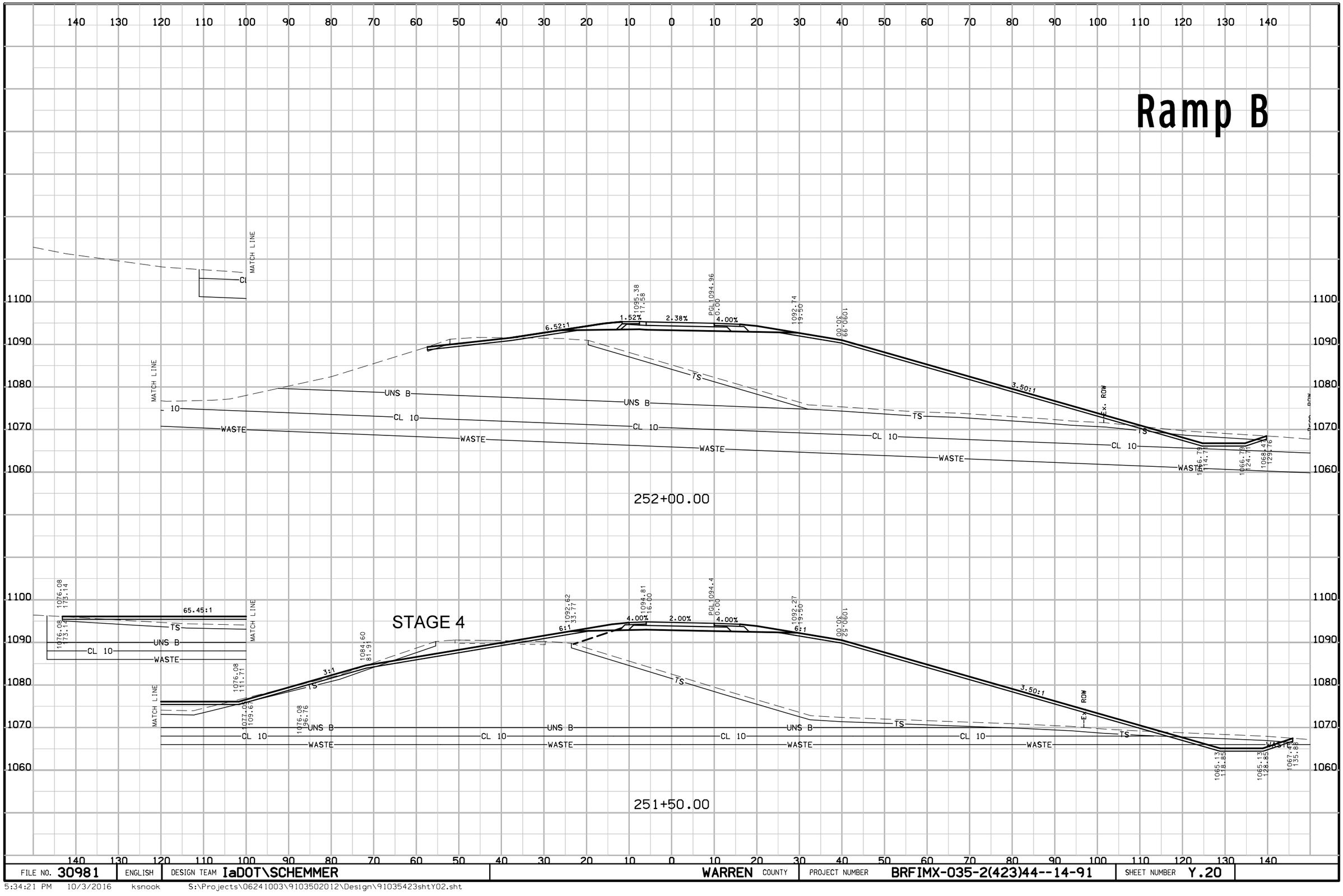

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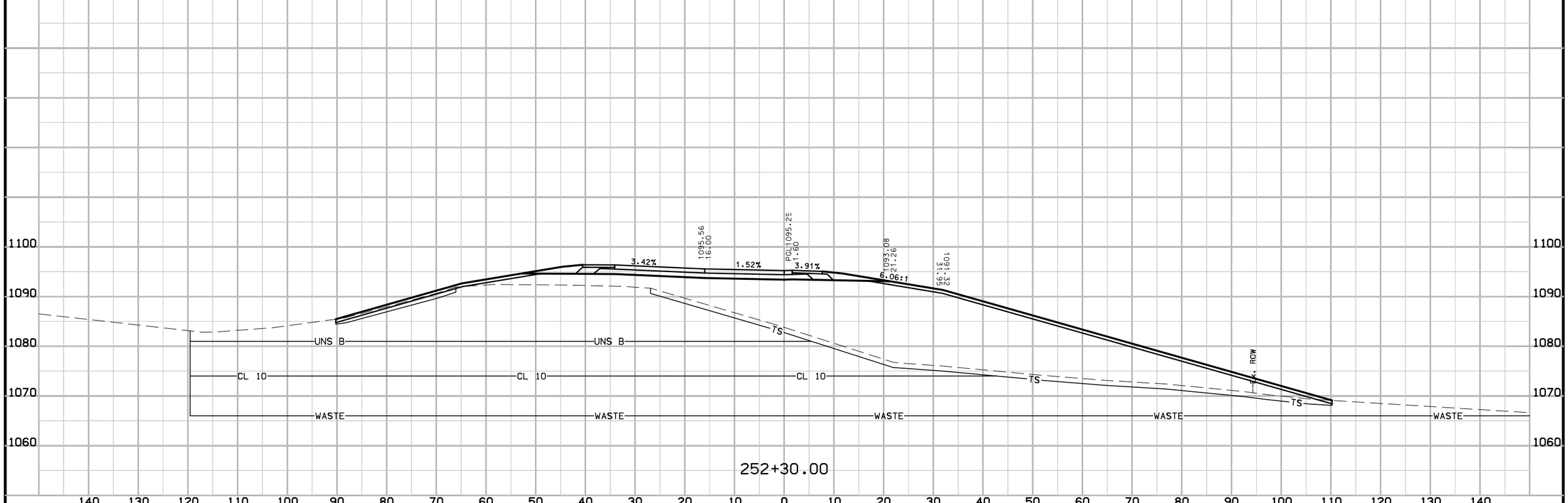

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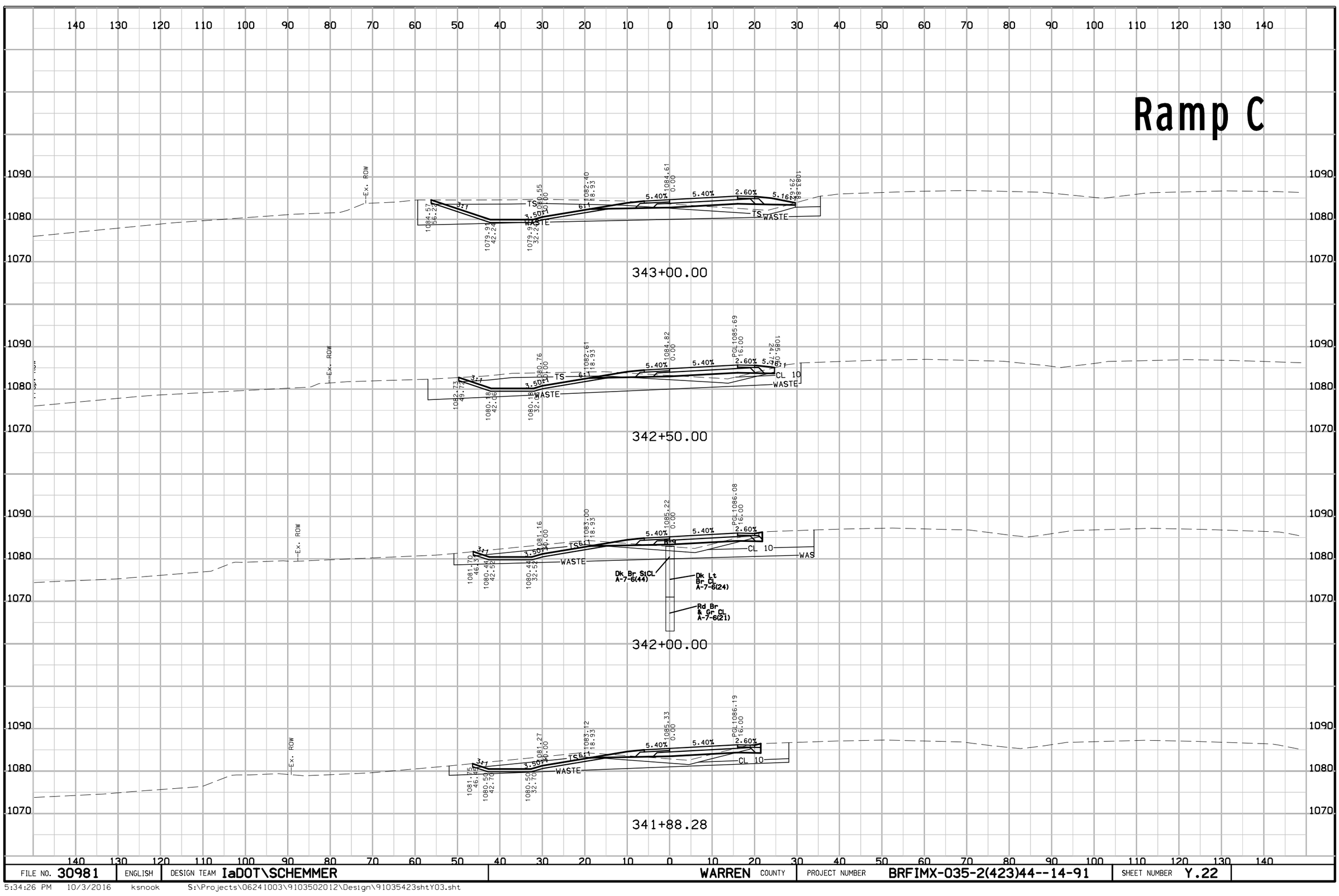

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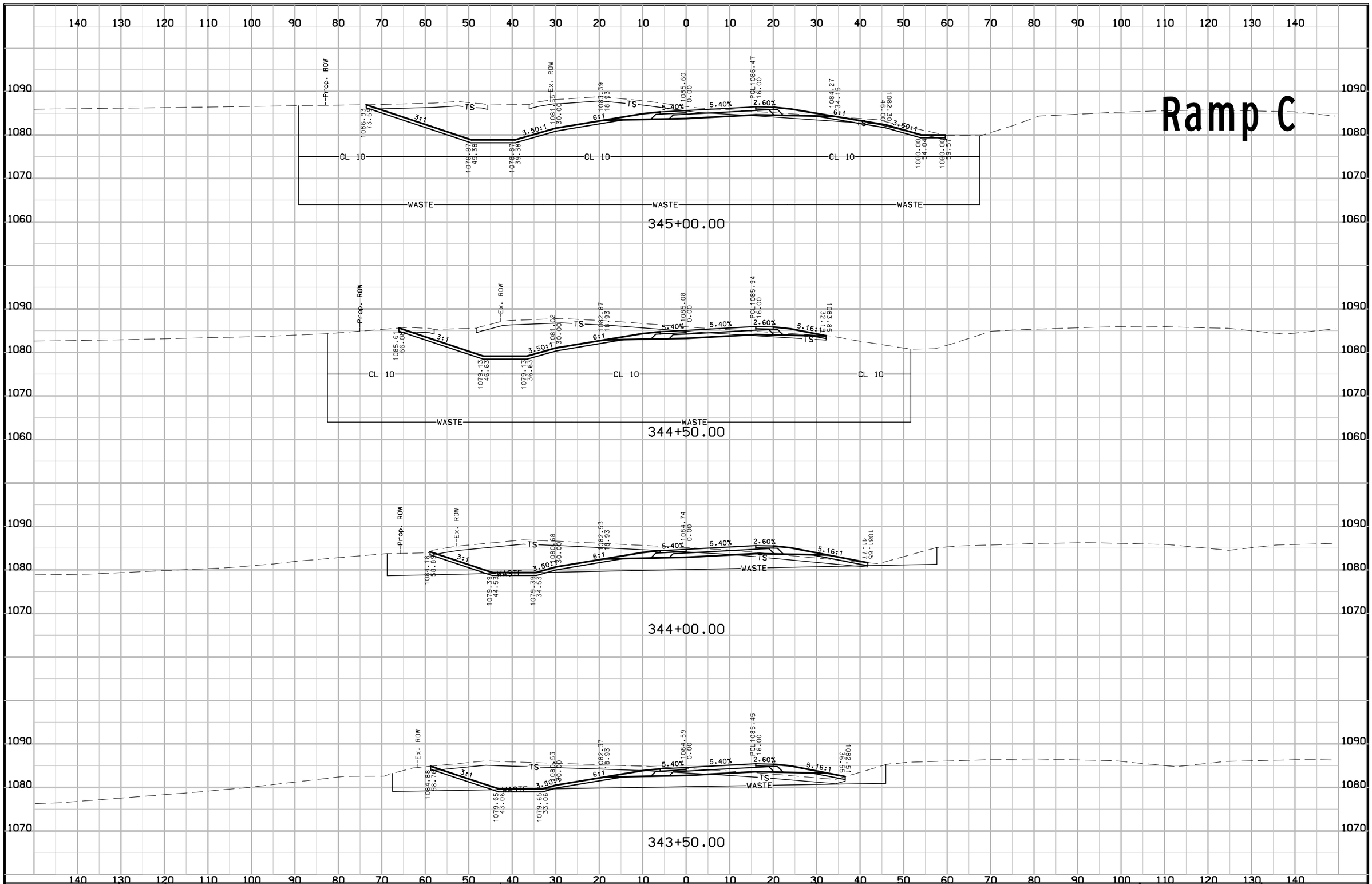

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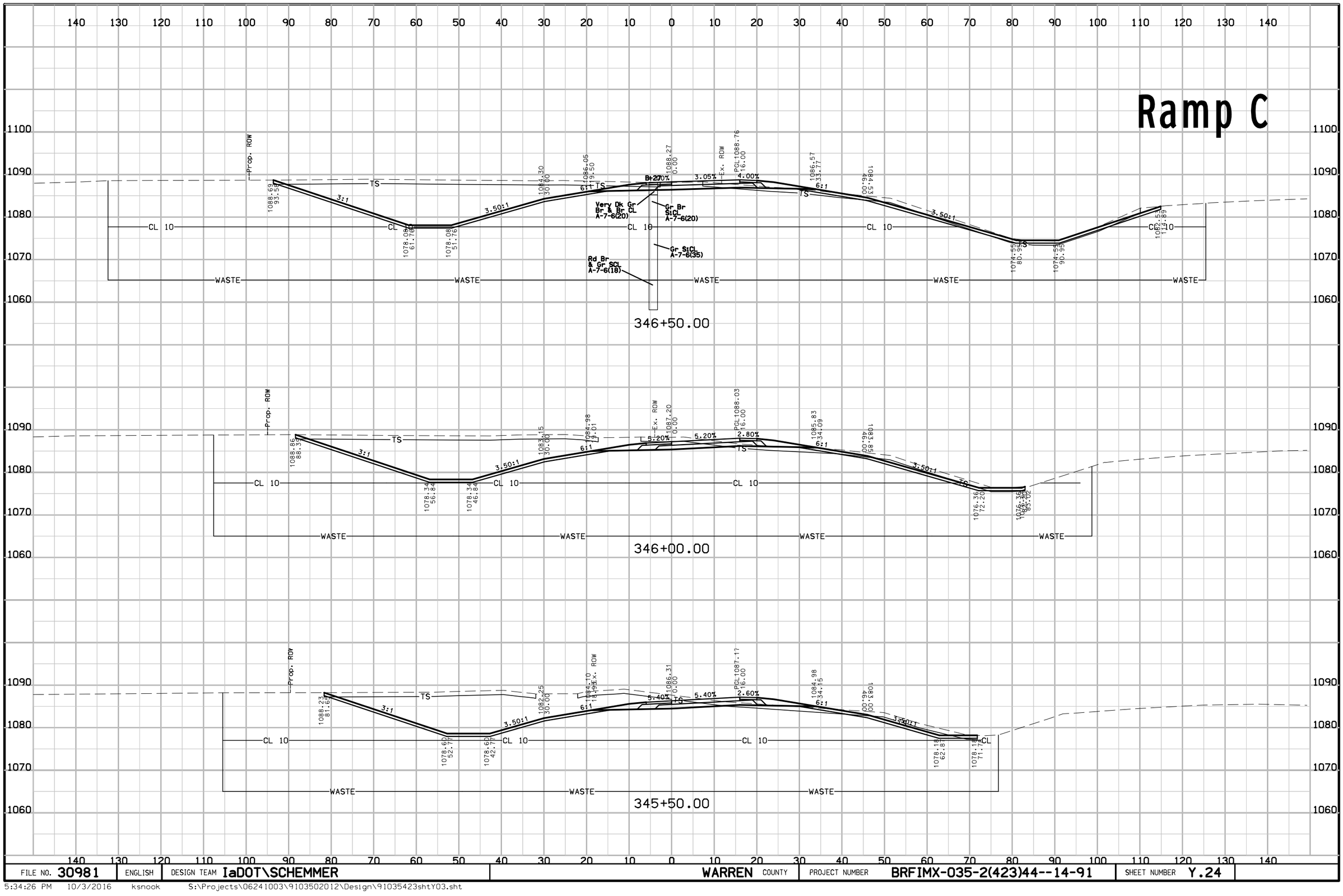
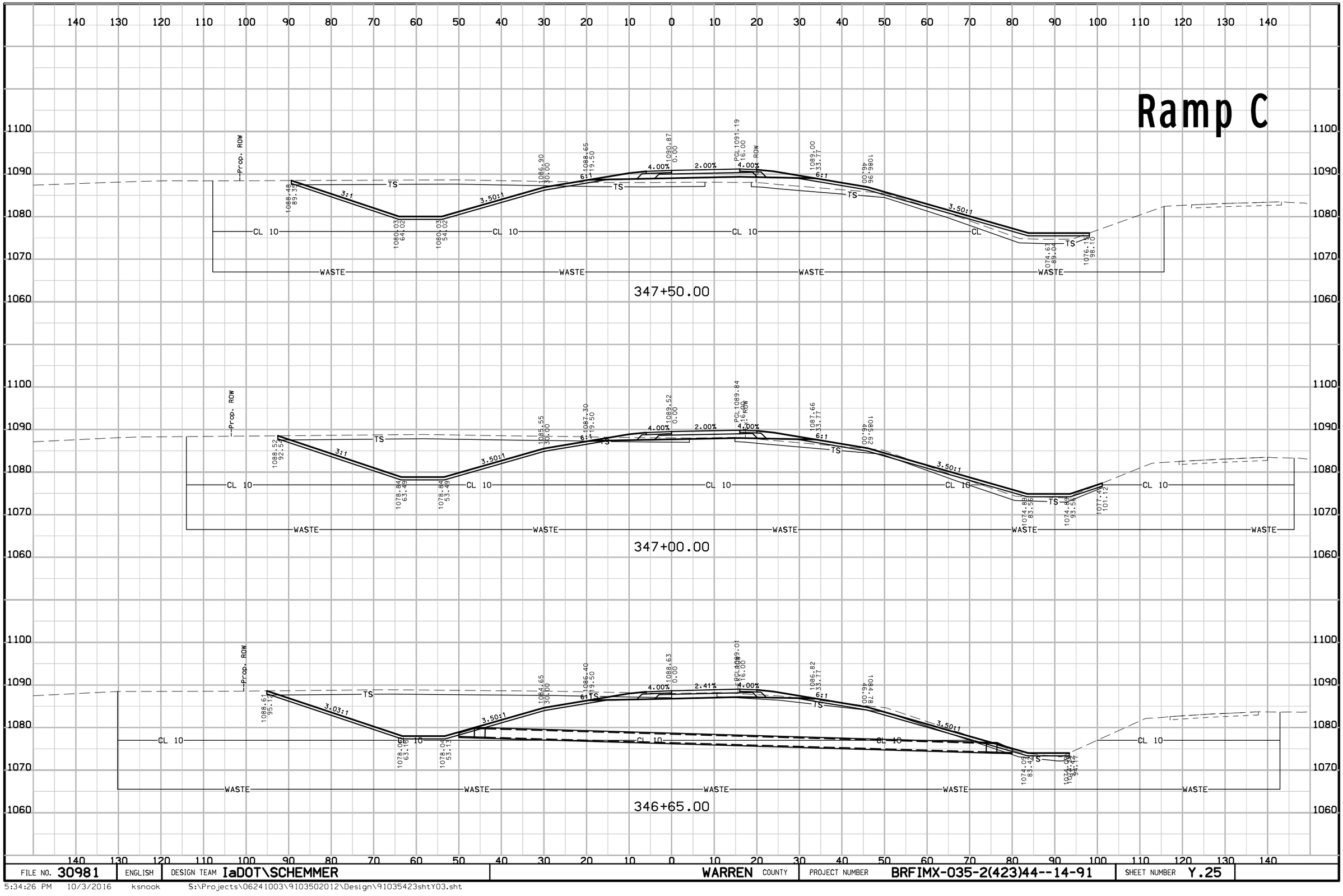


FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.24

5:34:26 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY03.sht

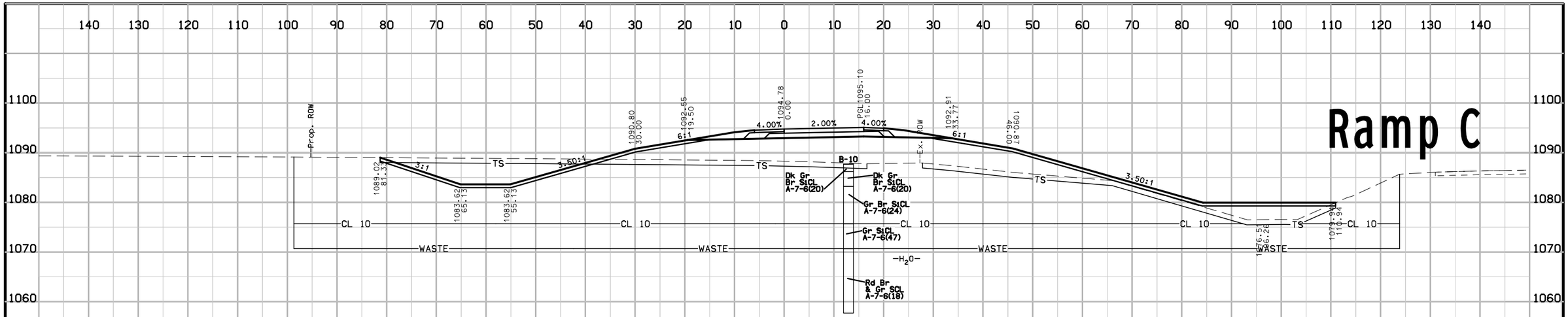
Ramp C

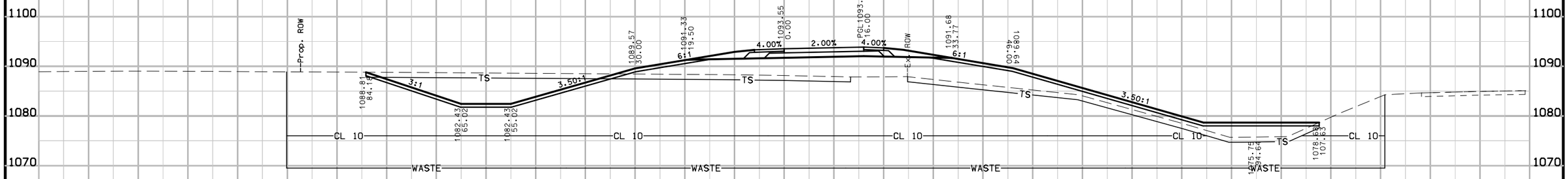


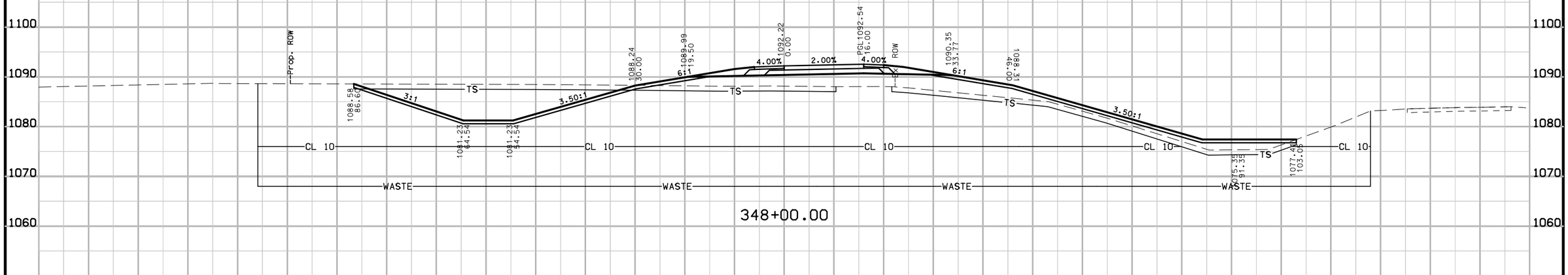
FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.25

5:34:26 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY03.sht

Ramp C



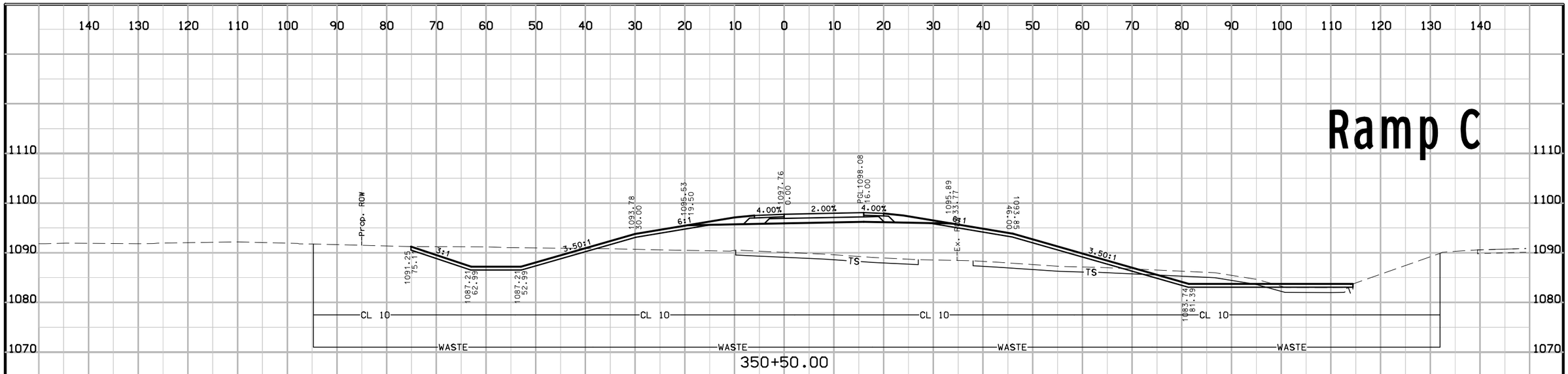


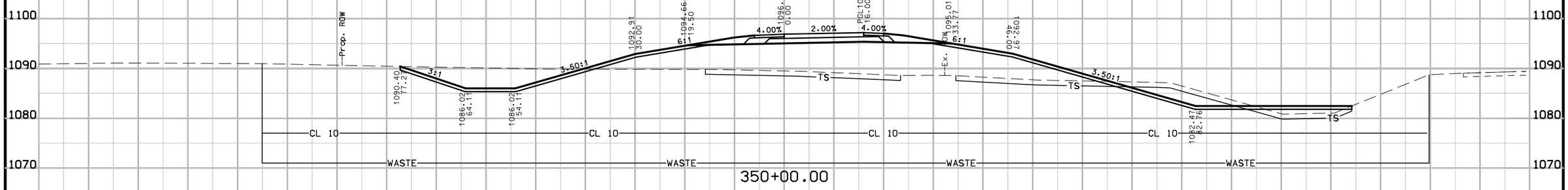


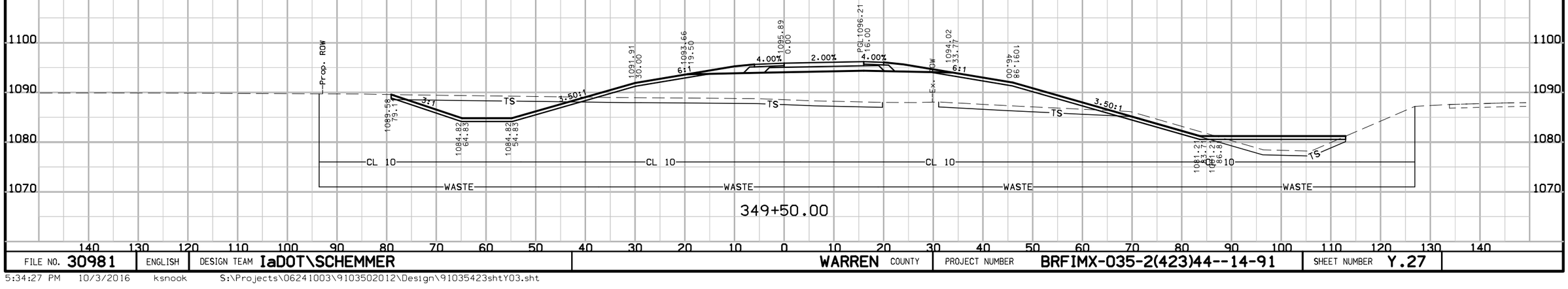
FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.26

5:34:26 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY03.sht

Ramp C





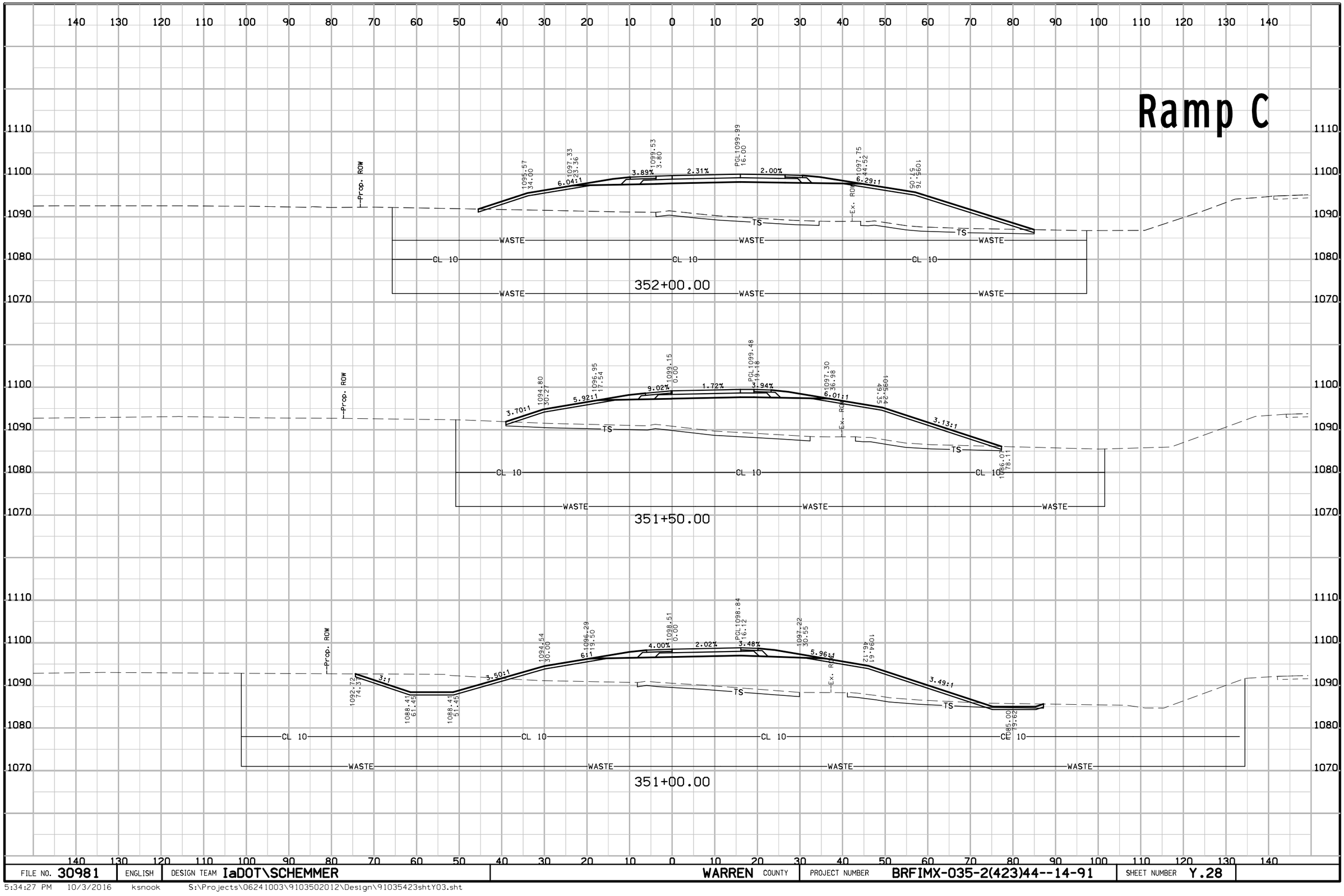


140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.27

5:34:27 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY03.sht

Ramp C



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.28

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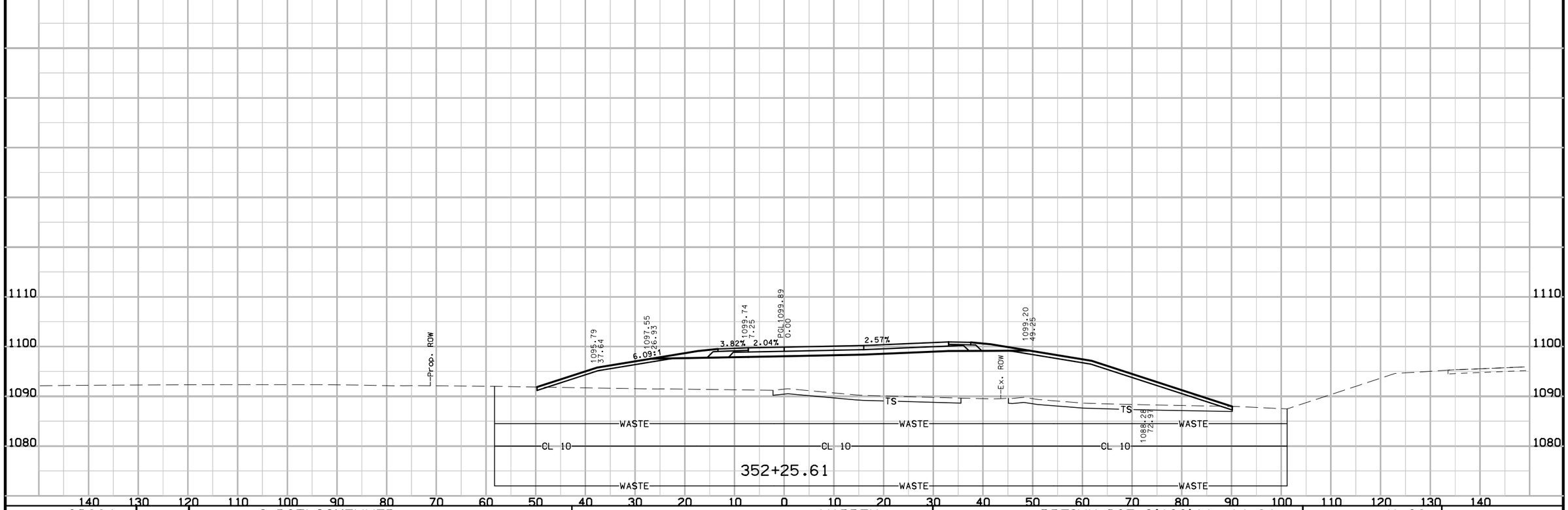
Ramp C



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.29

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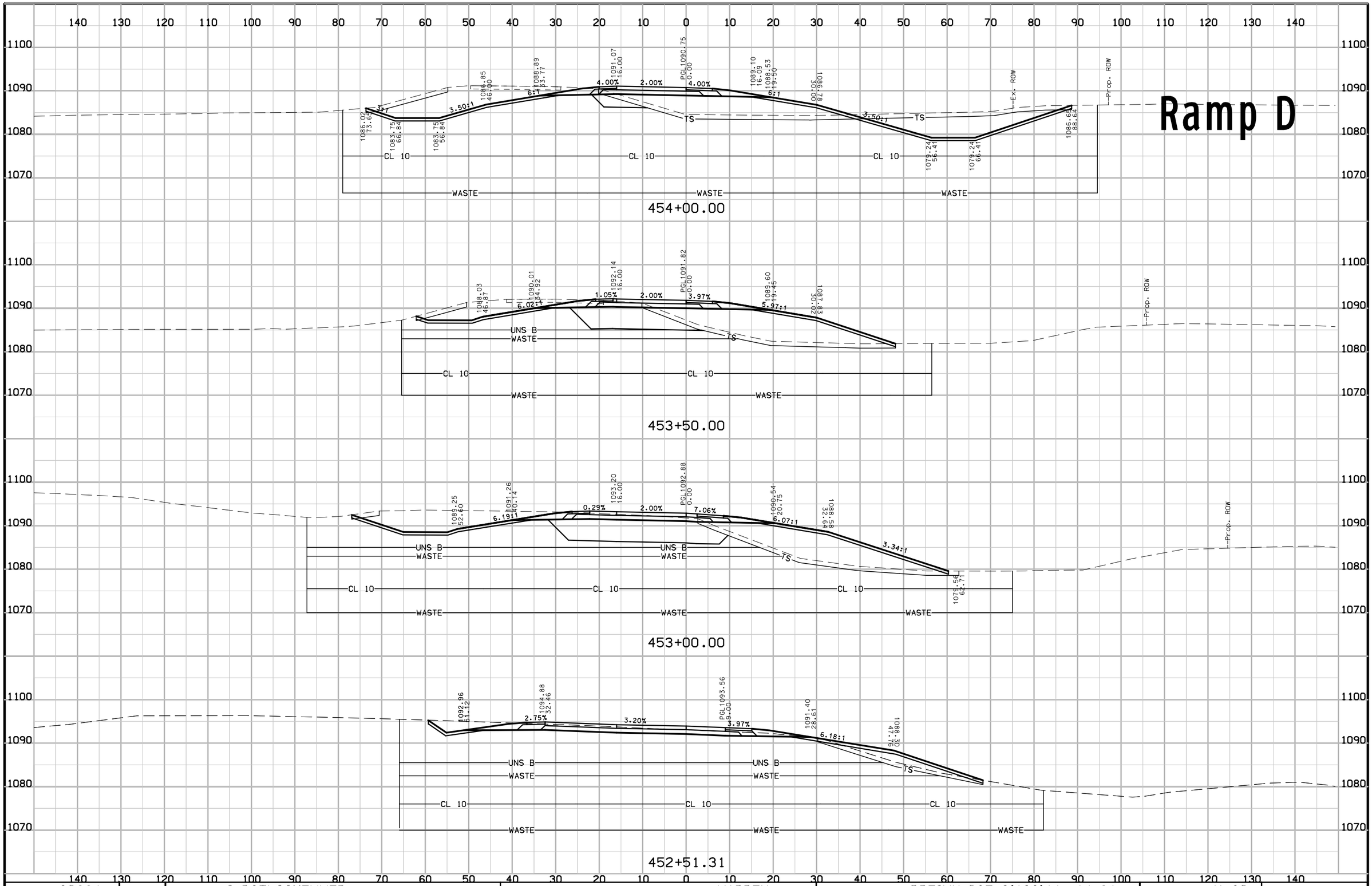
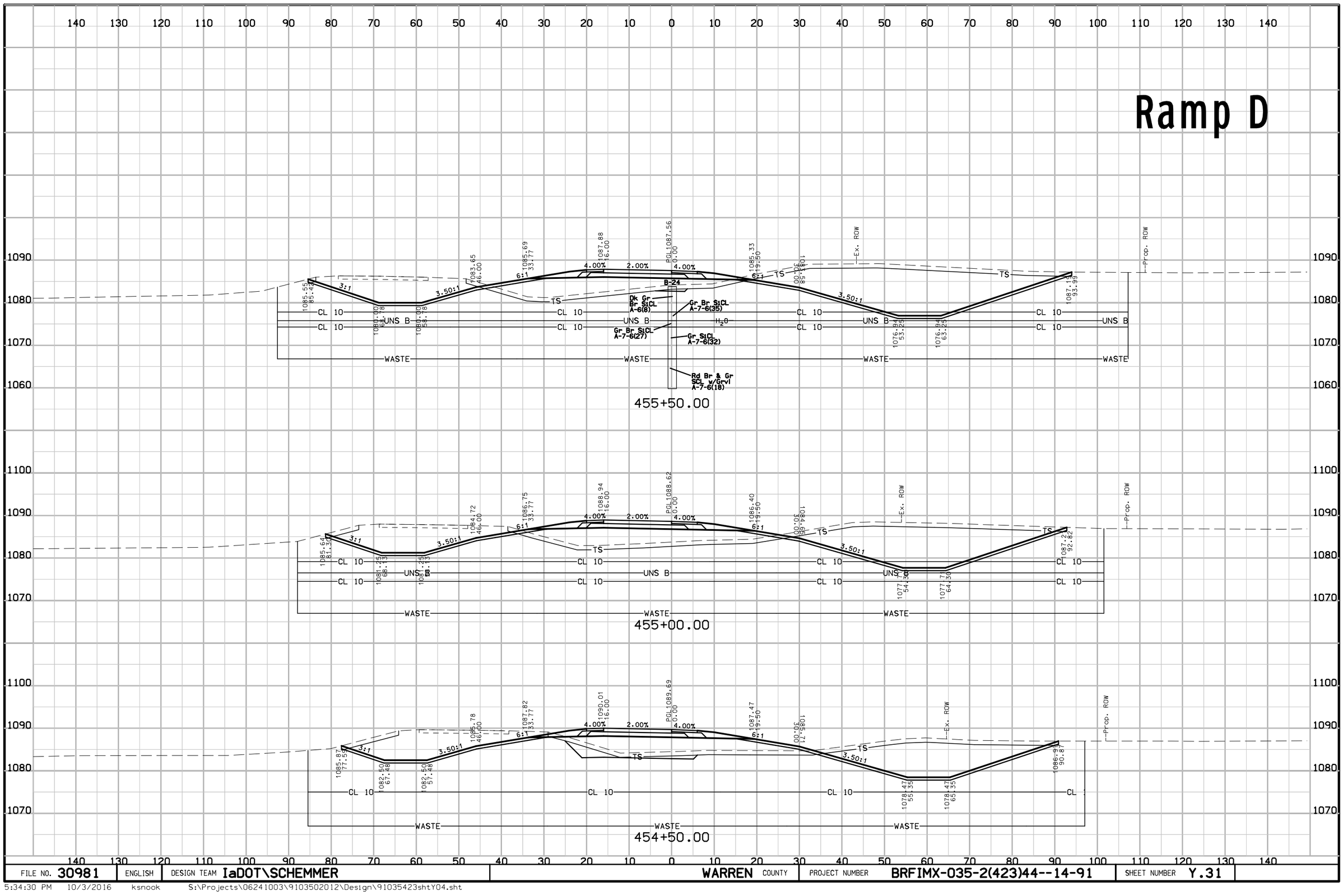
Ramp D



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.30

5:34:30 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY04.sht

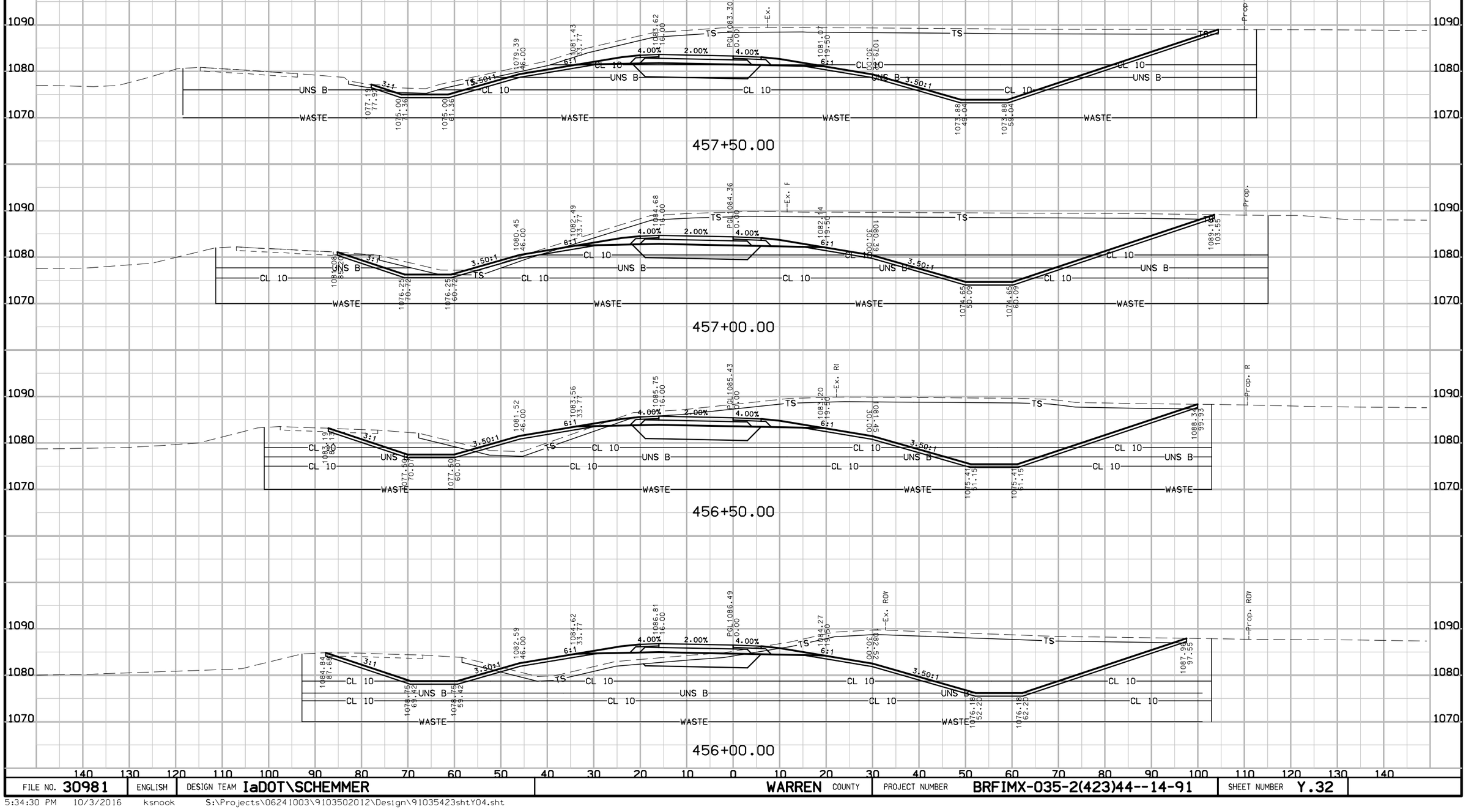
Ramp D



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.31

5:34:30 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY04.sht

Ramp D



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.32

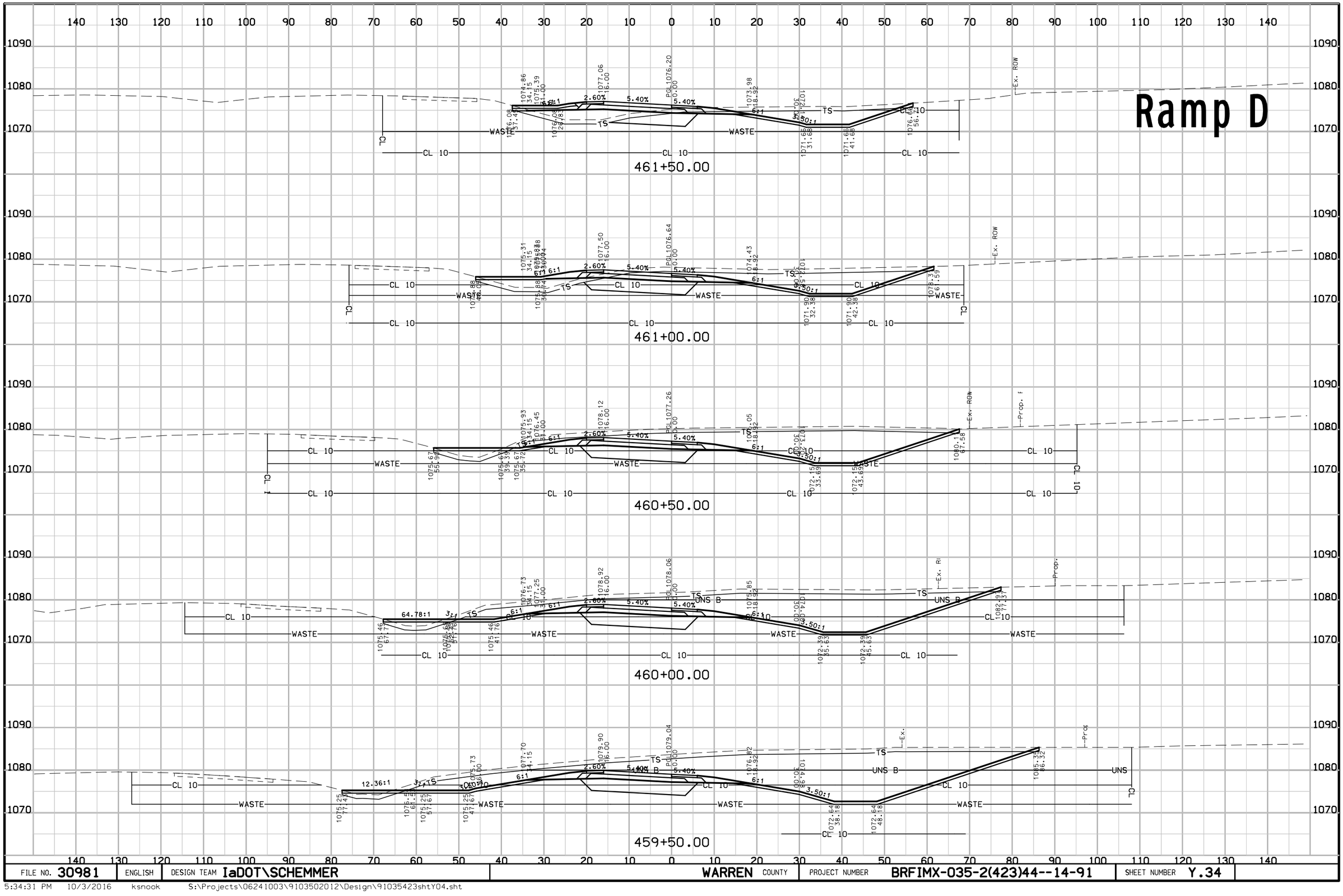
5:34:30 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY04.sht

Ramp D

FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.33

5:34:31 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY04.sht

Ramp D



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.34

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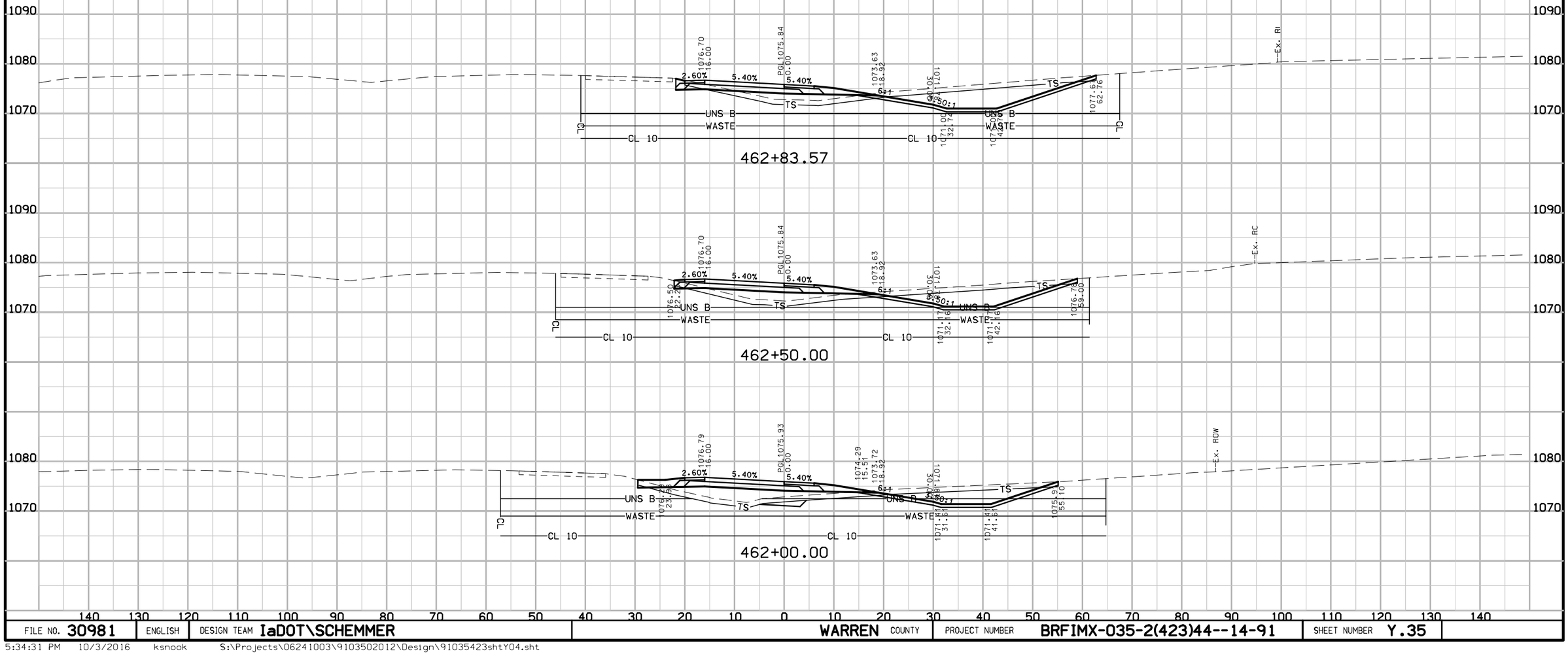
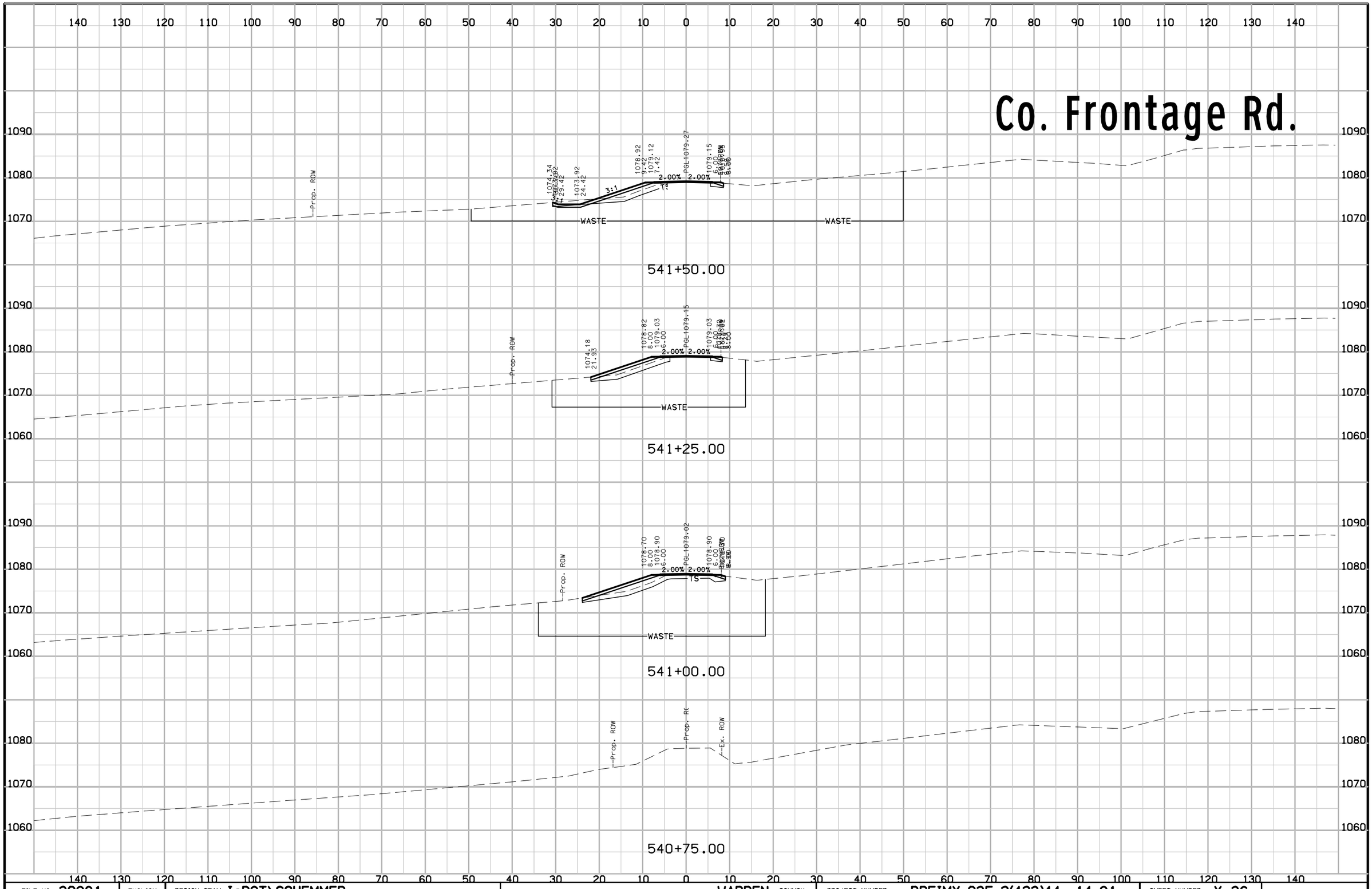
Ramp D


140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140
1090
1080
1070
2.60%
5.40%
5.40%
6:1
50:1
TS
UNS B
WASTE
CL 10
CL
Ex. RI
Ex. RC
Ex. ROW
462+83.57
462+50.00
462+00.00

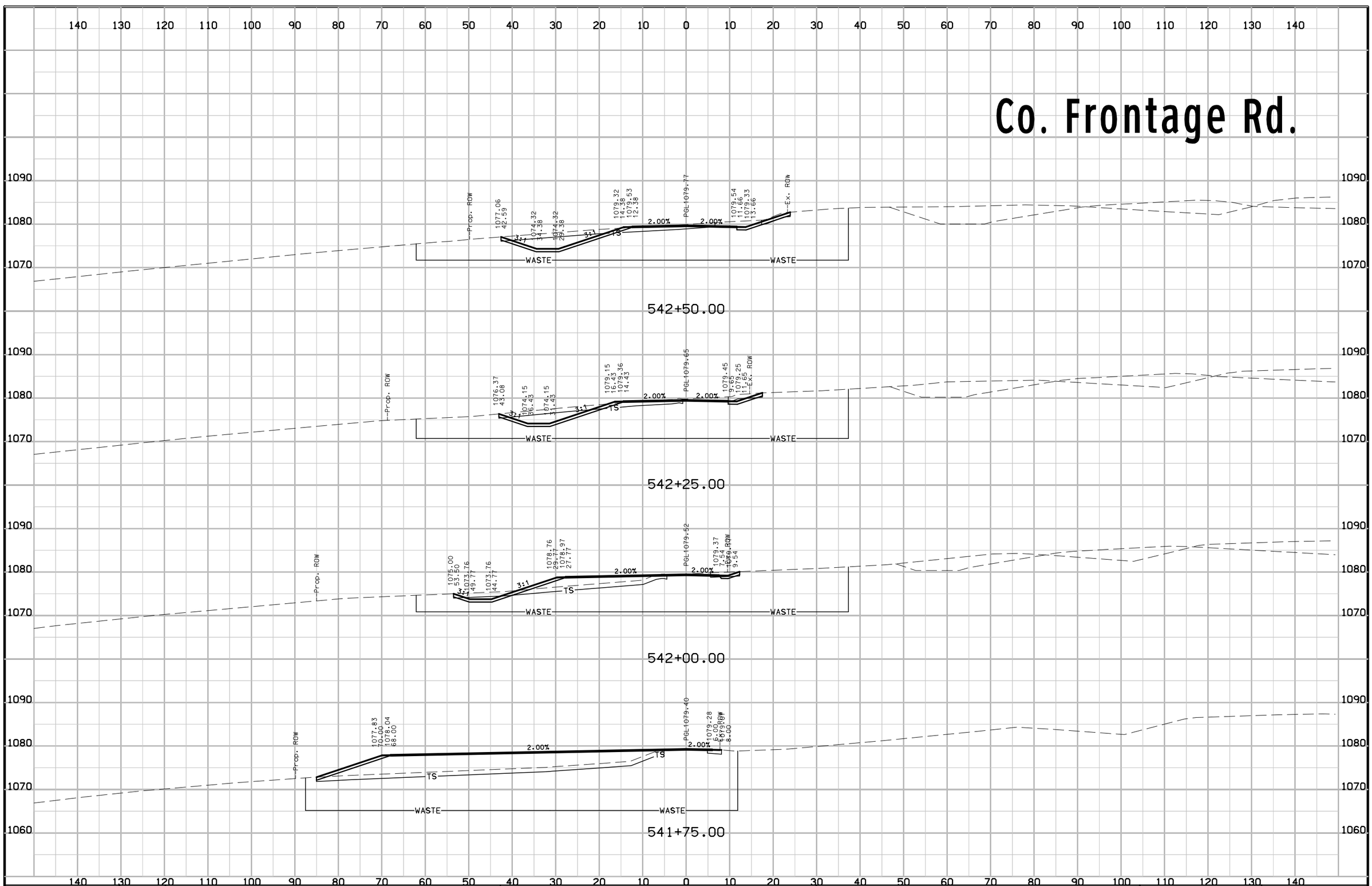
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.36

5:34:35 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

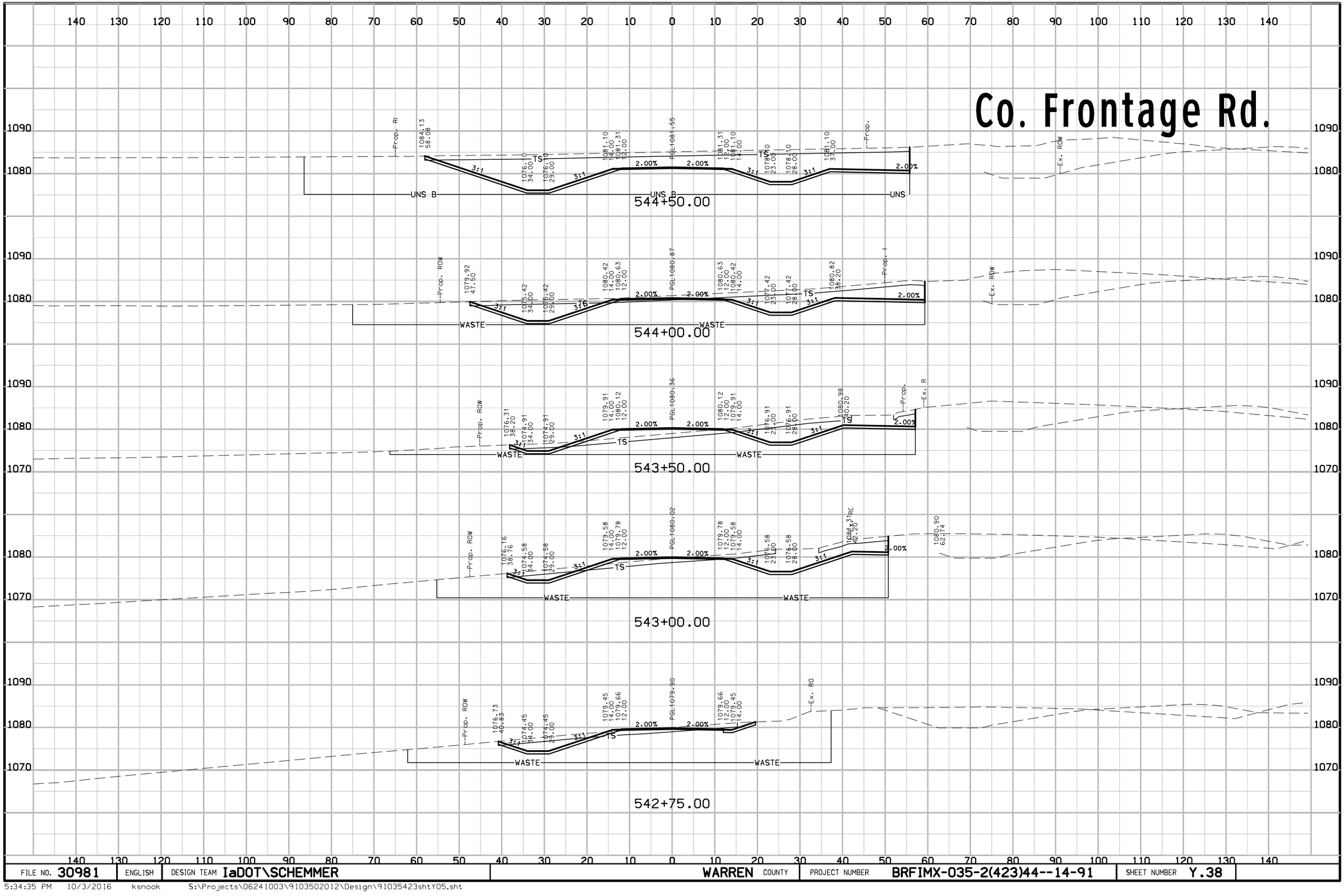
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.37

5:34:35 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

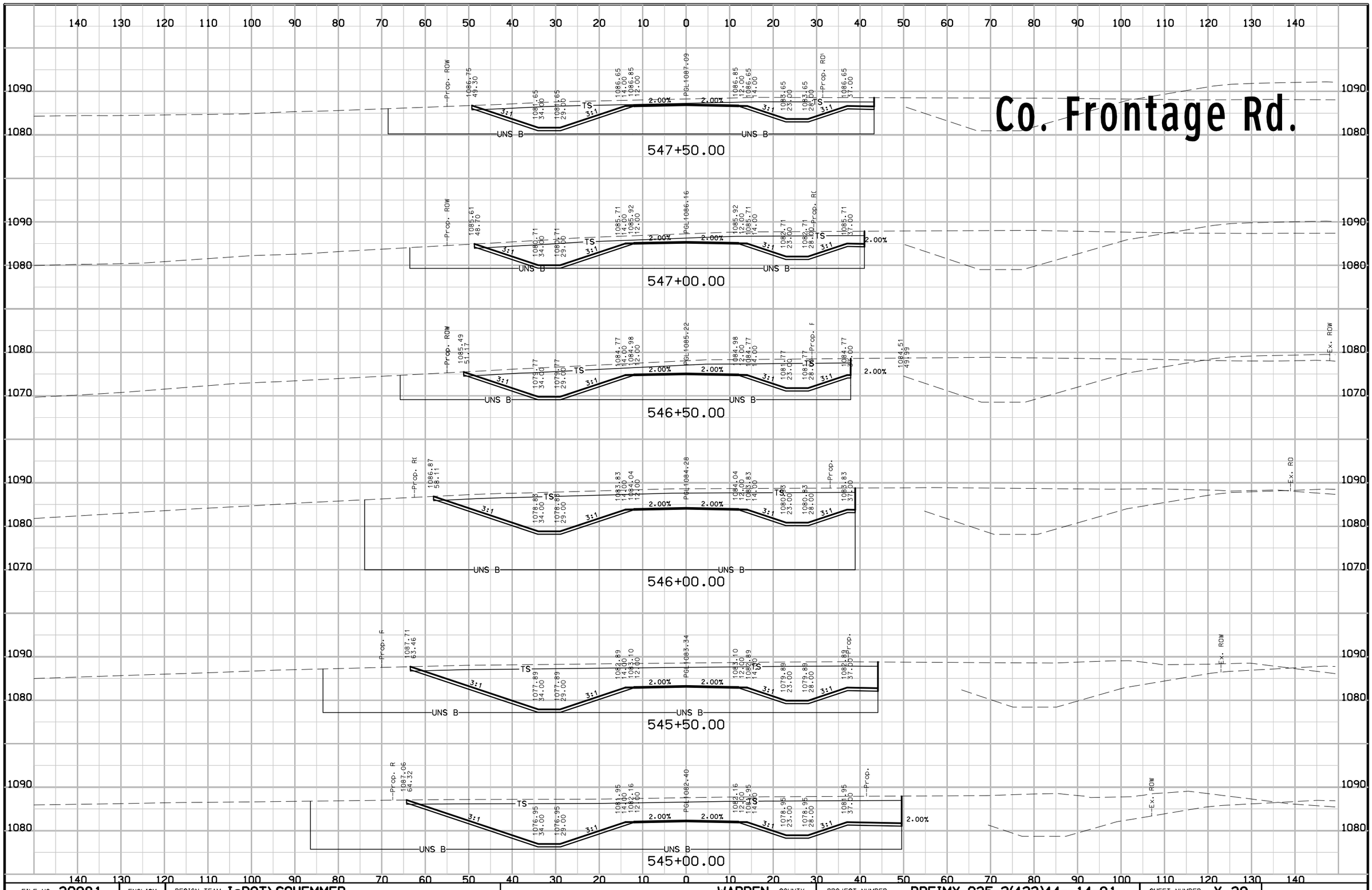
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.38

5:34:35 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

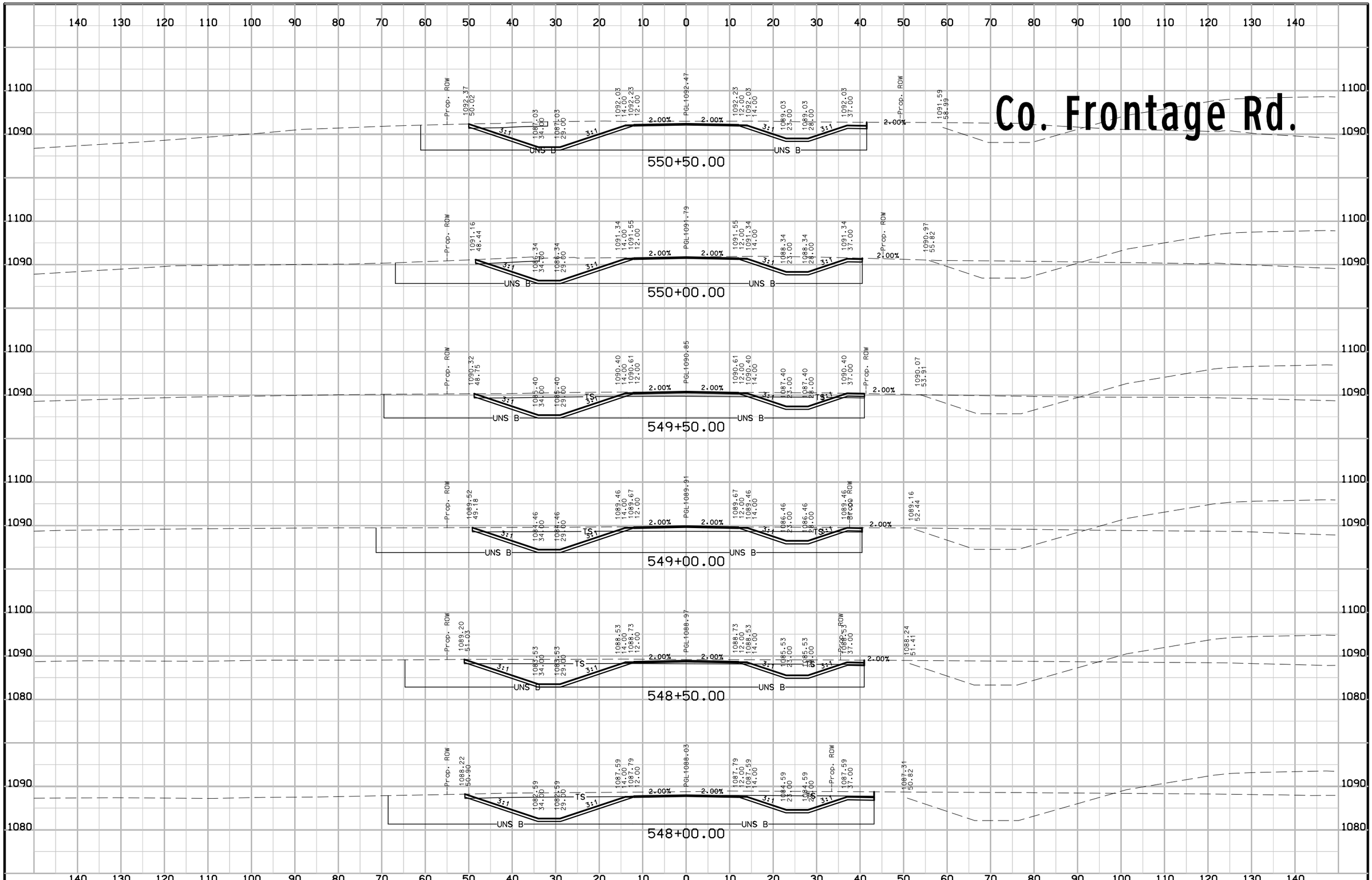
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.39

5:34:35 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

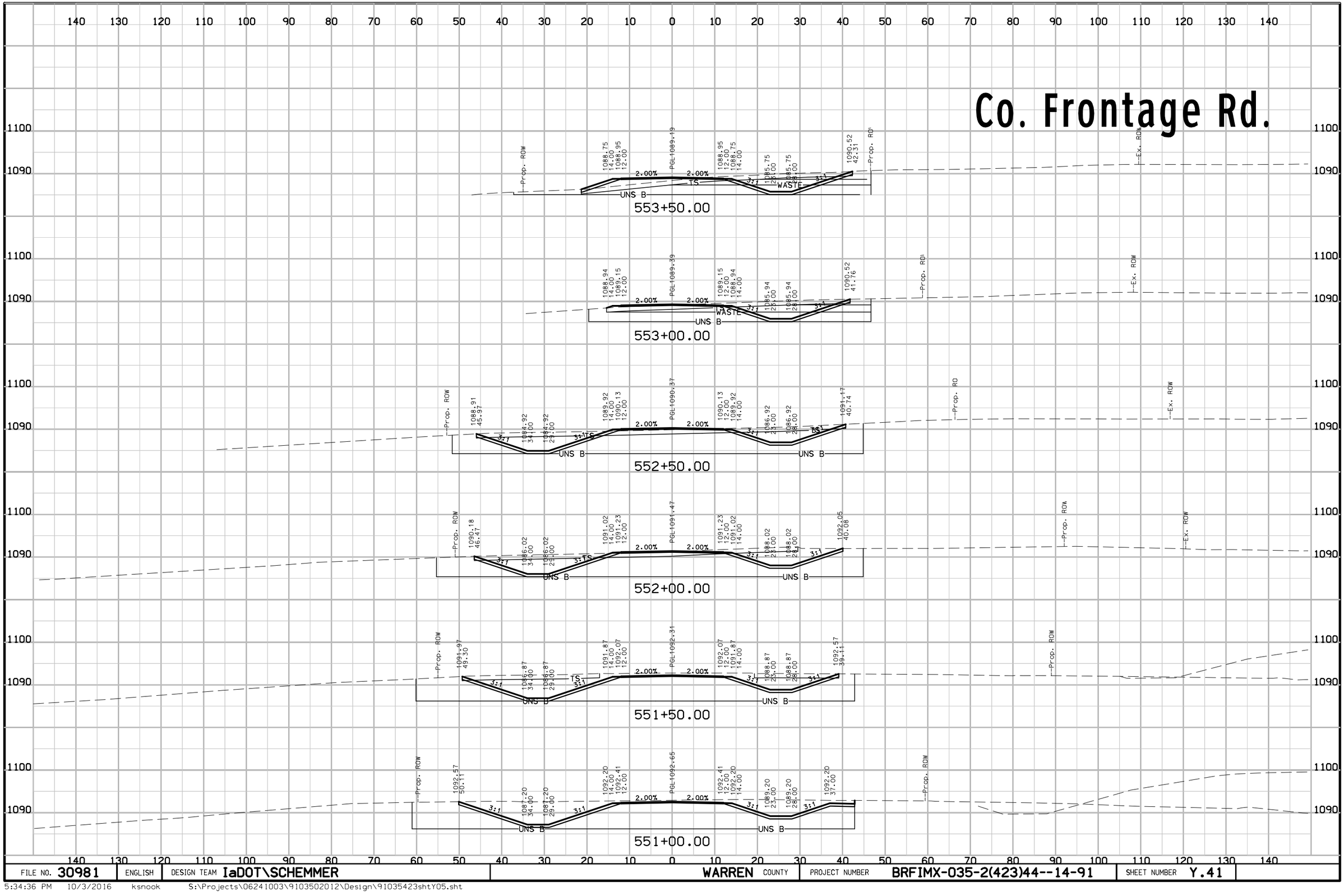
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.40

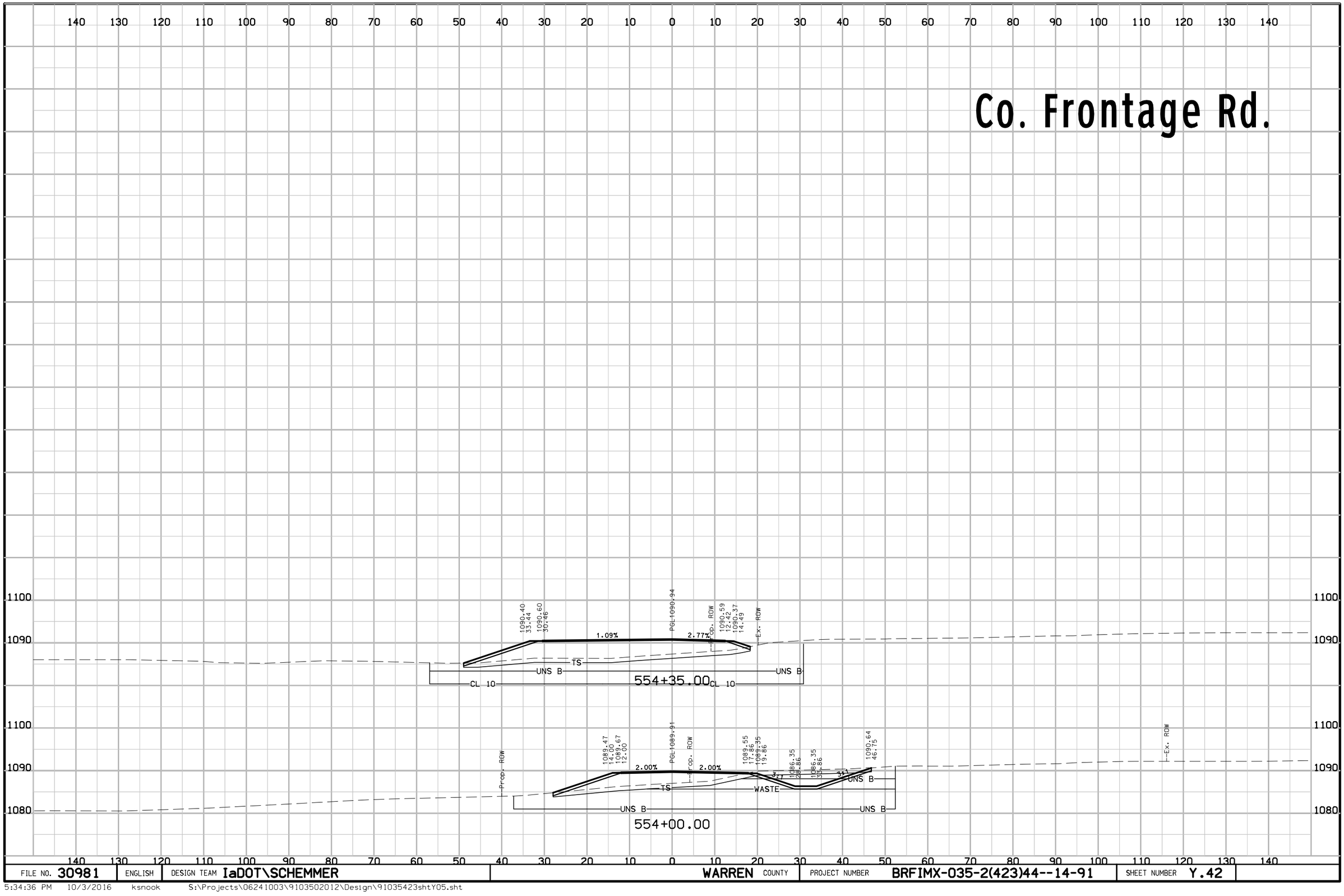
5:34:36 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.41

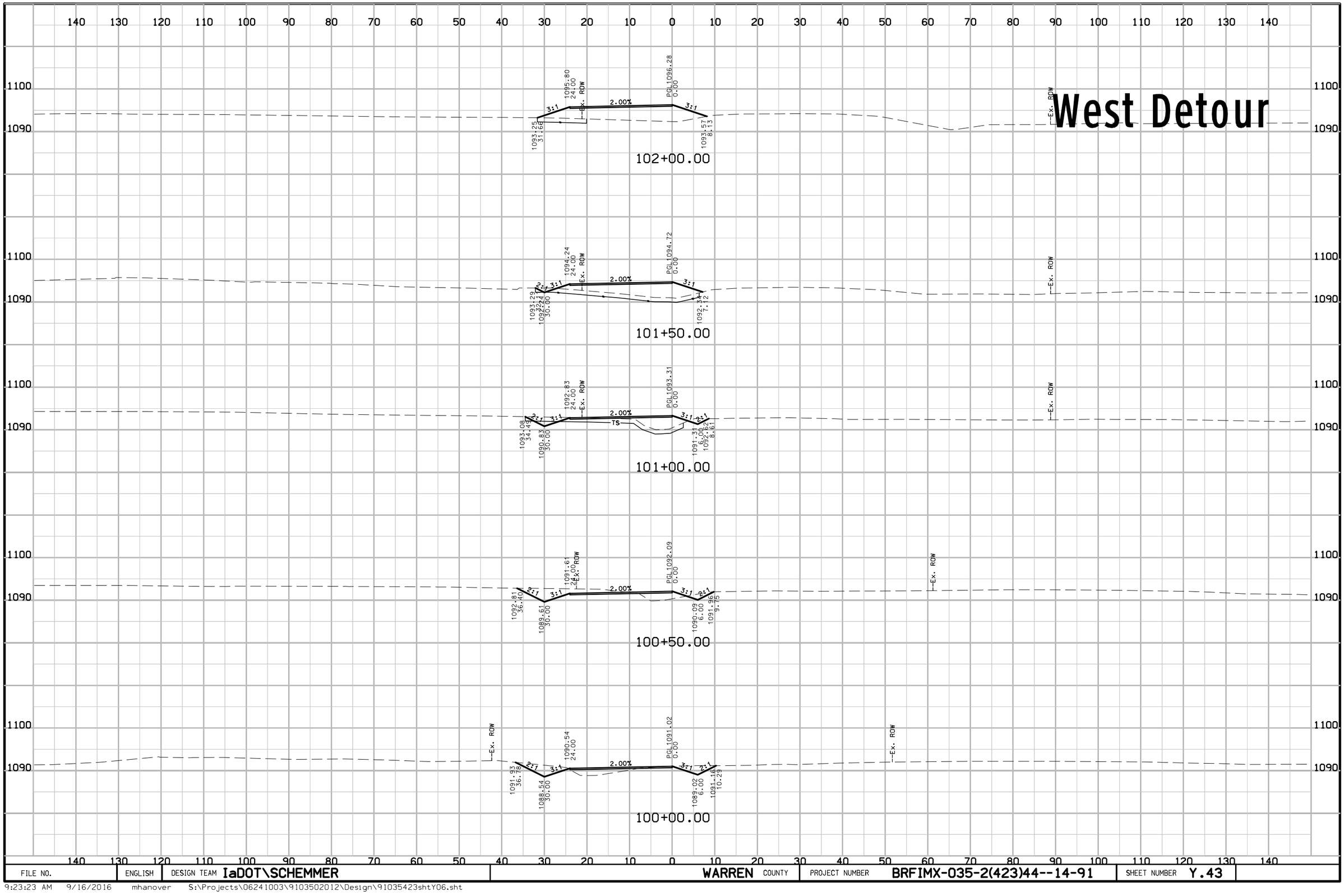
Co. Frontage Rd.



FILE NO. 30981	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.42

5:34:36 PM 10/3/2016 ksnook S:\Projects\06241003\9103502012\Design\91035423shtY05.sht

West Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.43

9:23:23 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY06.sht

West Detour

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

1090

103+79.67

1100

Ex. ROW

3:1

1089.68
44.50

3:1

1096.51
24.00

2.00%

PGL1096.99
0.00

3:1

2:1

1094.99
6.00
1096.23
8.48

1090

103+50.00

1100

RAMP A GRADE

3:1

1097.71
24.00

Ex. ROW

2.00%

PGL1098.19
0.00

1090

103+00.00

Ex. ROW

1100

3:1

1092.87
37.56

1097.39
24.00

Ex. ROW

2.00%

PGL1097.87
0.00

3:1

1094.74
9.37

1090

102+50.00

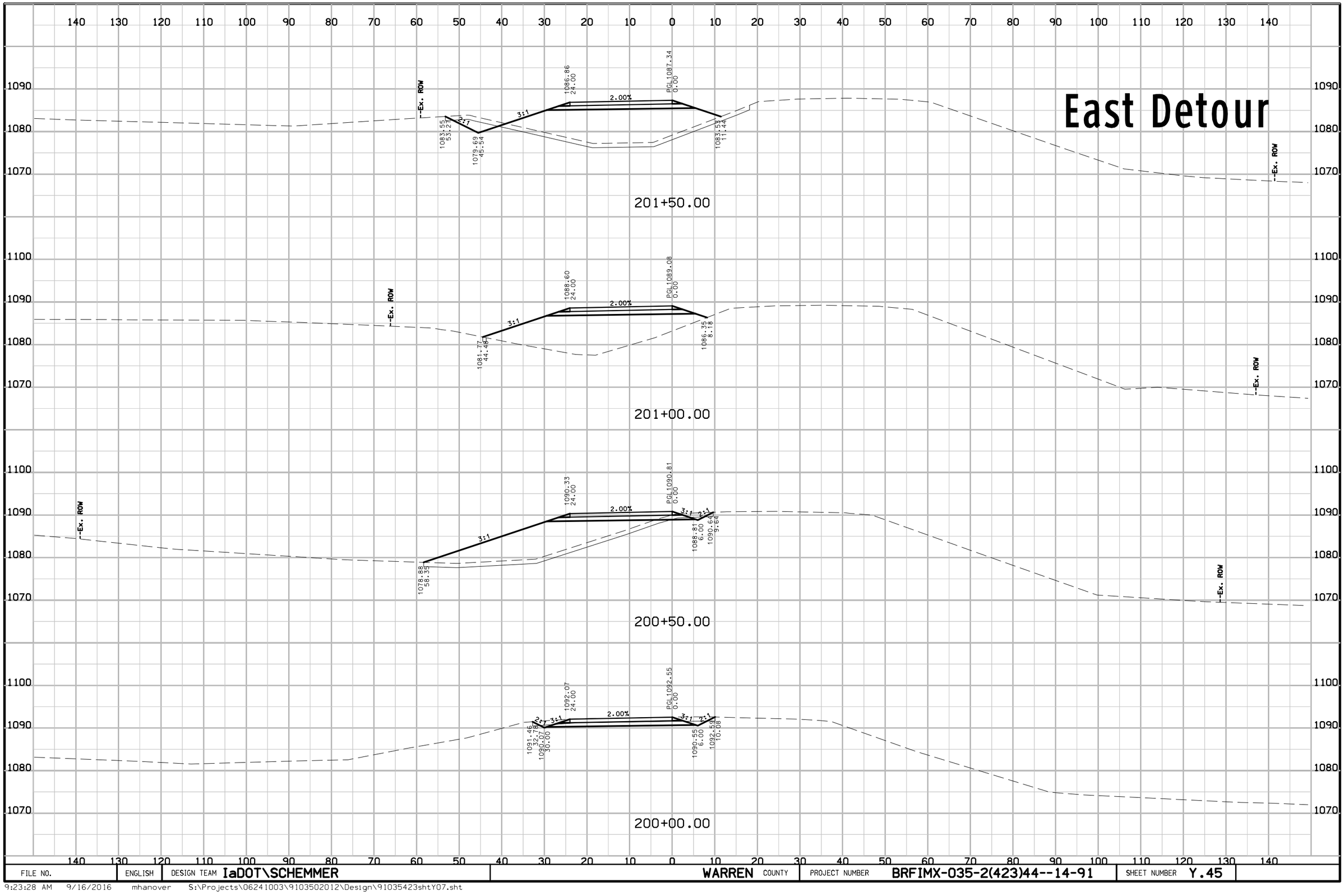
Ex. ROW

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.44

9:23:23 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY06.sht

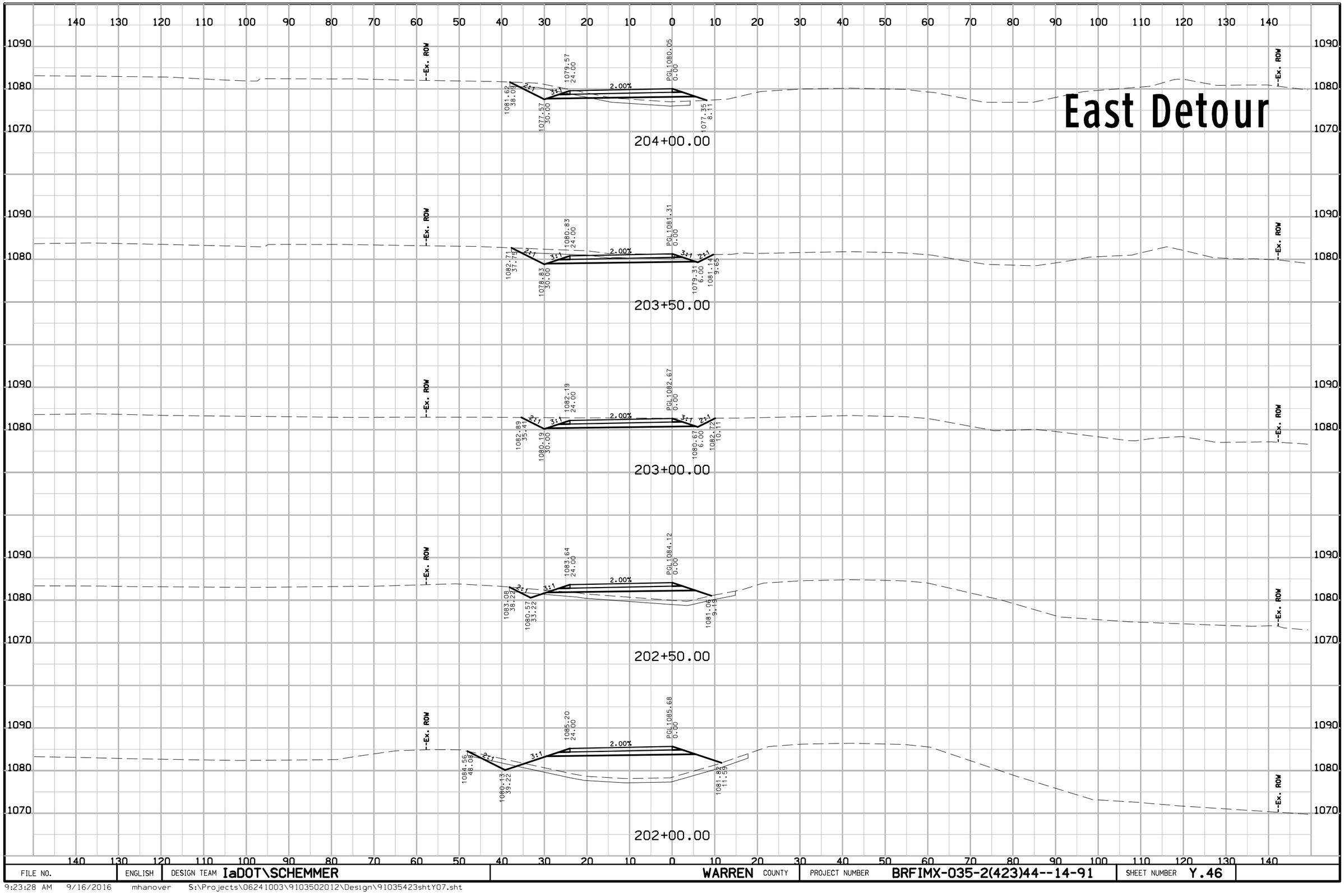
East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.45

9:23:28 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY07.sht

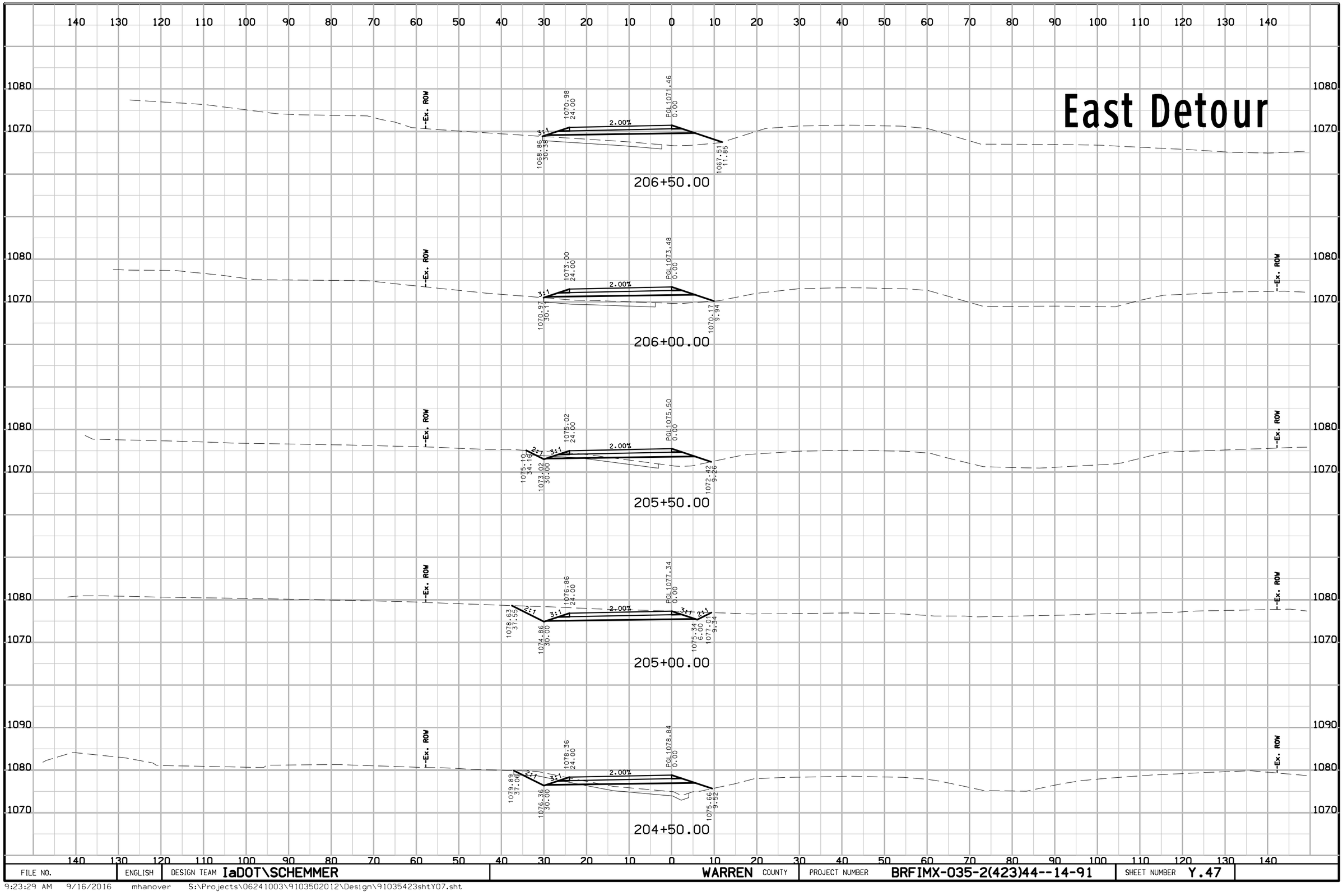
East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.46

9:23:28 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY07.sht

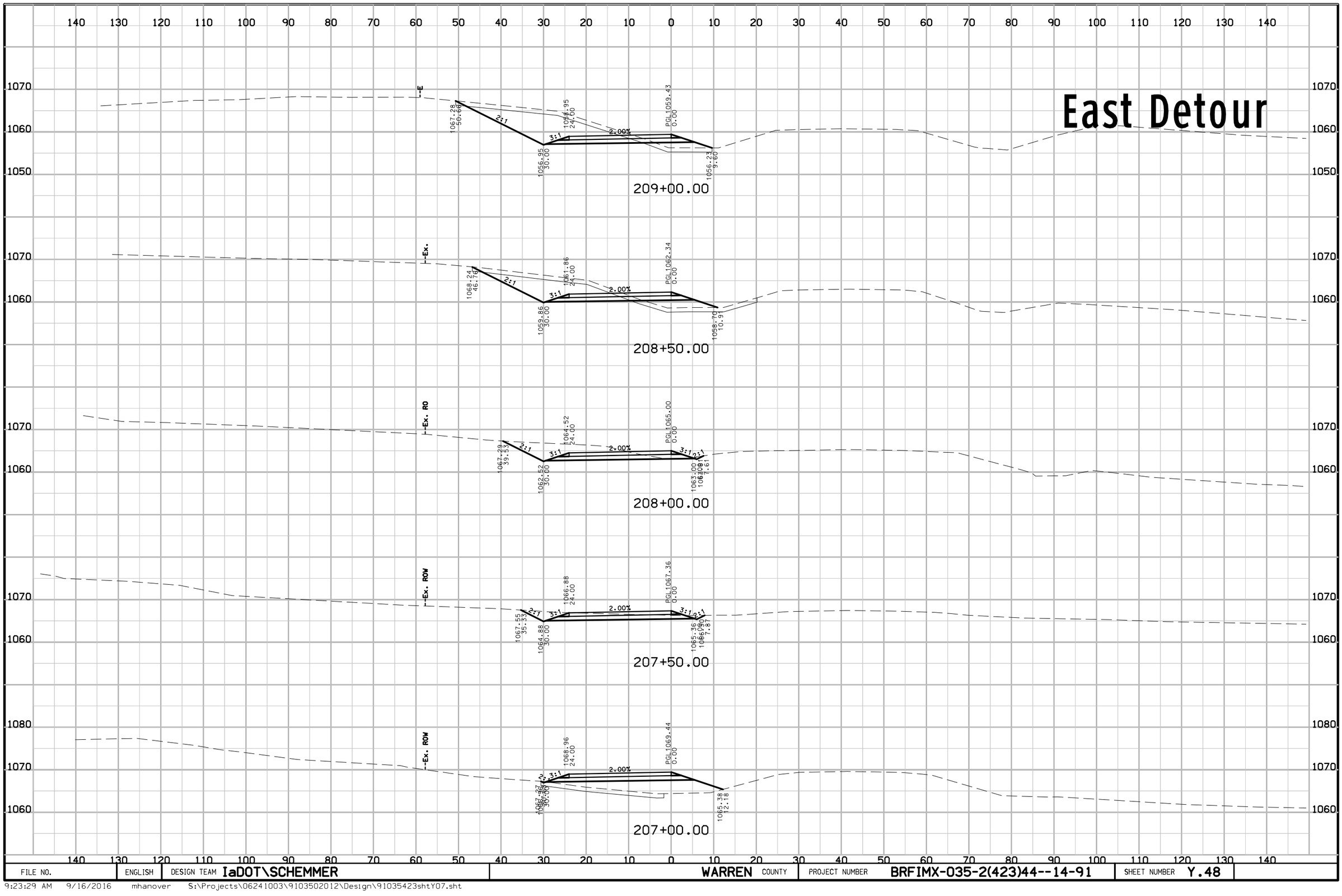
East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.47

9:23:29 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY07.sht

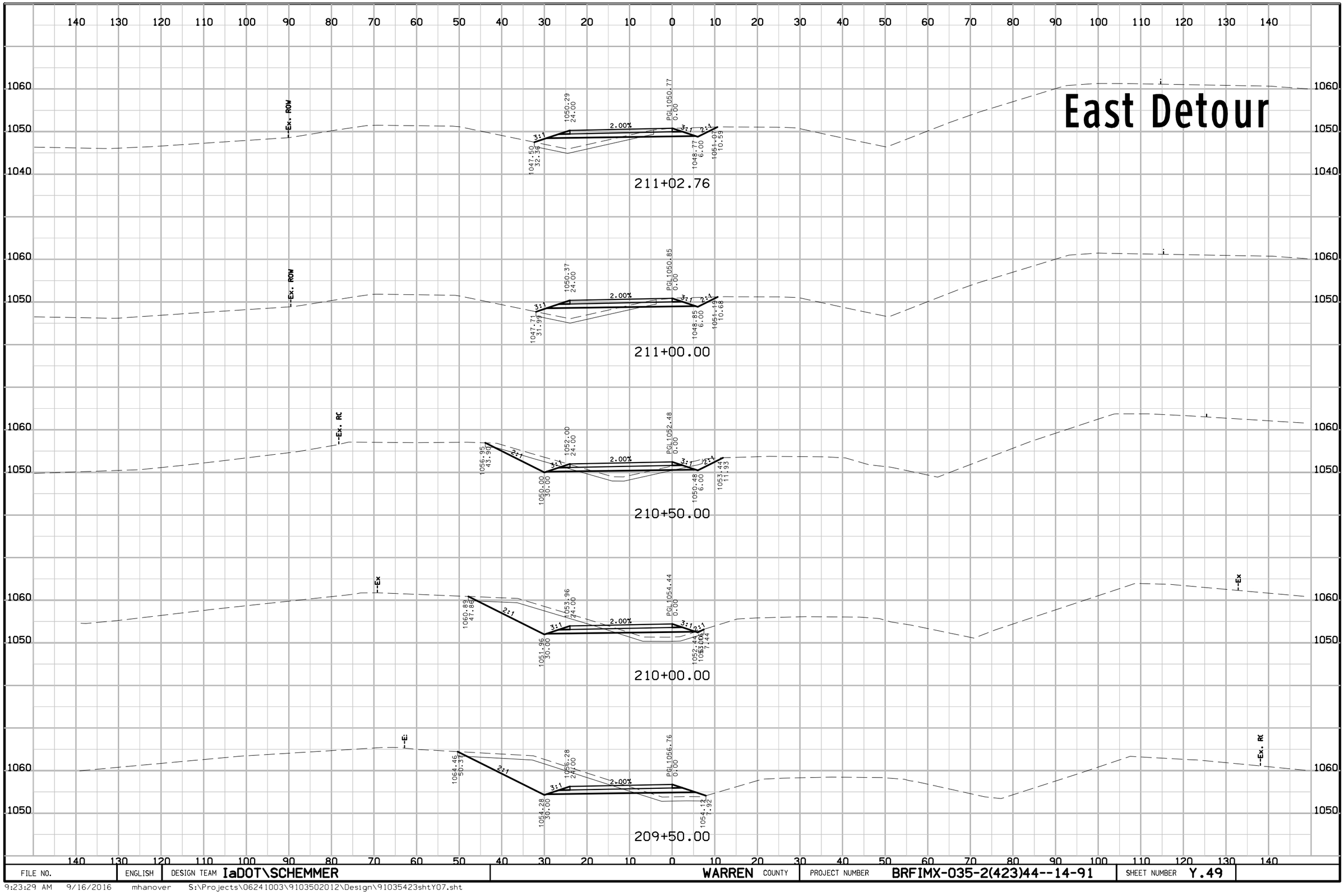
East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.48

9:23:29 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY07.sht

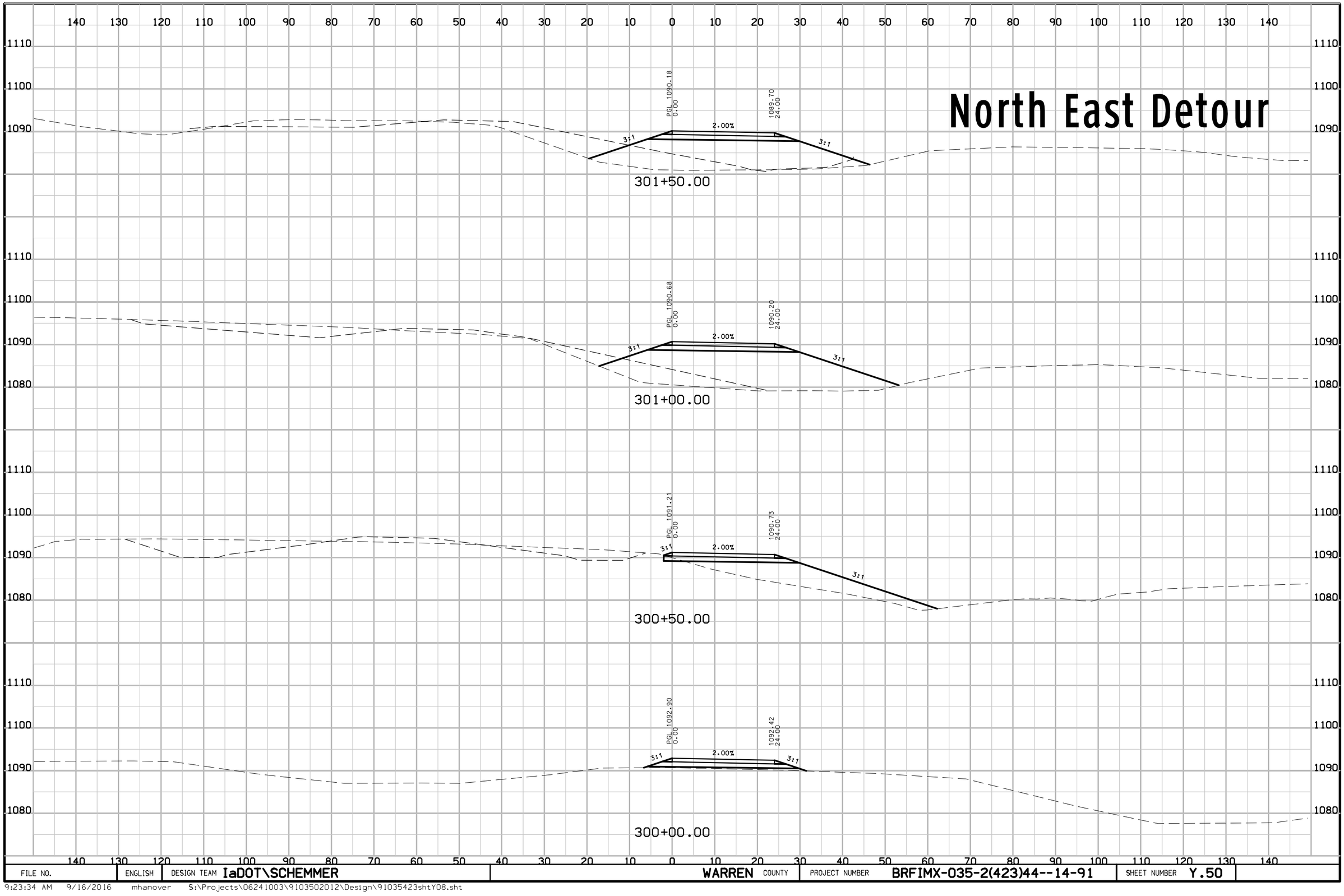
East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.49

9:23:29 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY07.sht

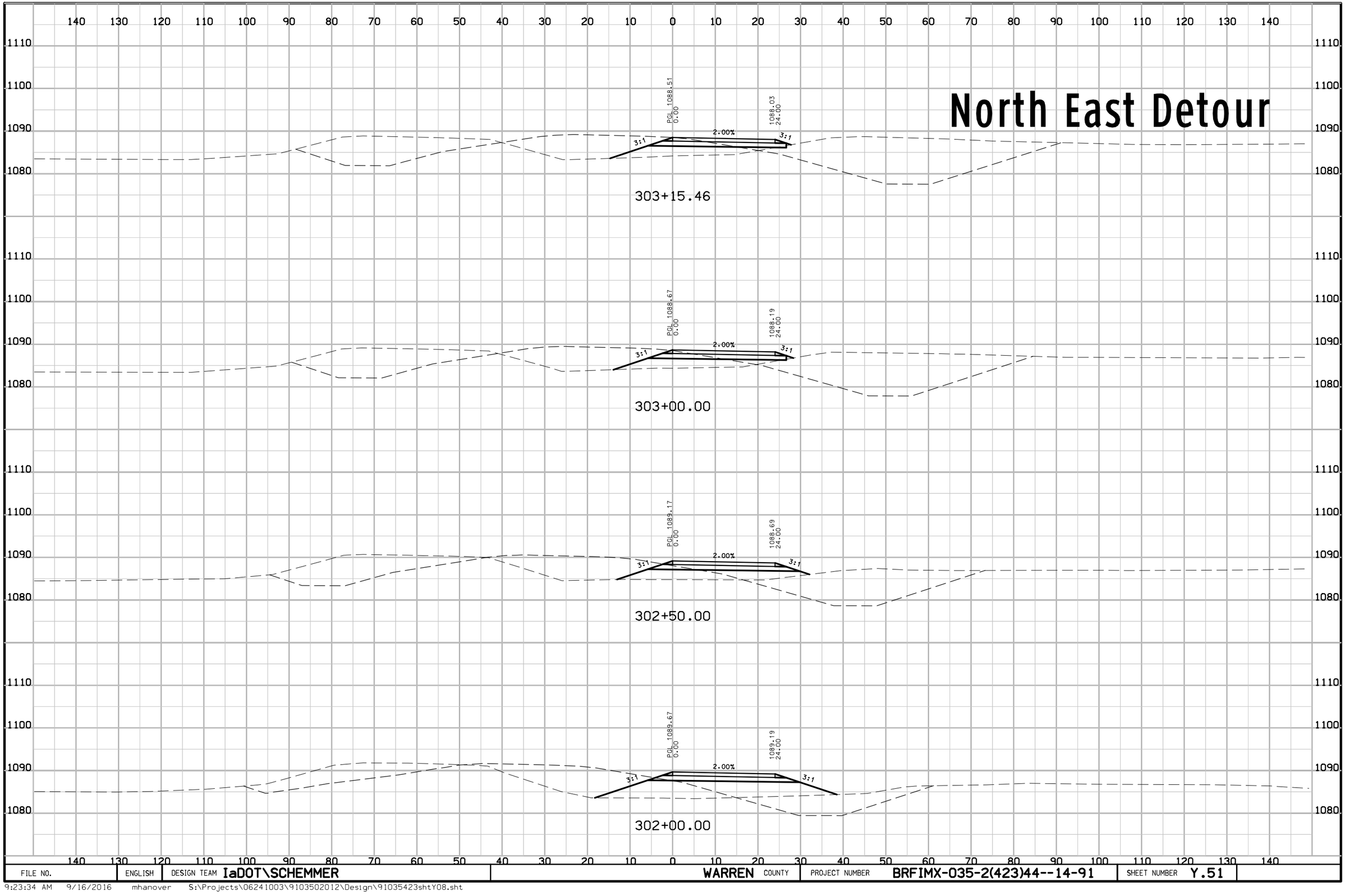
North East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.50

9:23:34 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY08.sht

North East Detour



FILE NO.	ENGLISH	DESIGN TEAM IaDOT\SCHEMMER	WARREN COUNTY	PROJECT NUMBER BRFIMX-035-2(423)44--14-91	SHEET NUMBER Y.51

9:23:34 AM 9/16/2016 mhanover S:\Projects\06241003\9103502012\Design\91035423shtY08.sht