LETTING DATE 03/21/2017

PIPE CULVERTS

STPN-014-8(21)--2J-34

FLOYD Co.

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

FLOYD COUNTY

RCB Culvert Replacement - Single Box

0.4 mi W of S Iowa St in Charles City

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

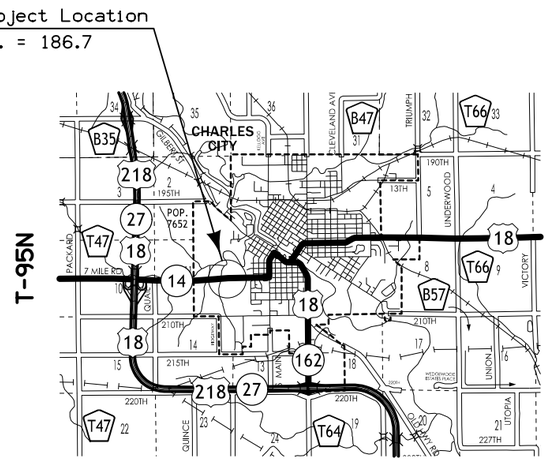
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

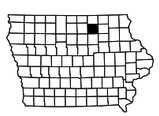
REVISIONS

TOTAL 14
PROJECT IDENTIFICATION NUMBER
10-12-014-010
PROJECT NUMBER
STPN-014-8(21)--2J-34
R.O.W. PROJECT NUMBER
STPN-014-8(20)--2J-34

INDEX OF SHEETS

Project Location
MP. = 186.7





LOCATION MAP SCALE
0 1 2 3
Miles

101-4 04-30-02		
DESIGN DATA RURAL		
2014 AADT	2490	V.P.D.
20-- AADT	--	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	4.46	%
Total Design ESALs	--	

PRELIMINARY PLANS

Subject to change by final design.

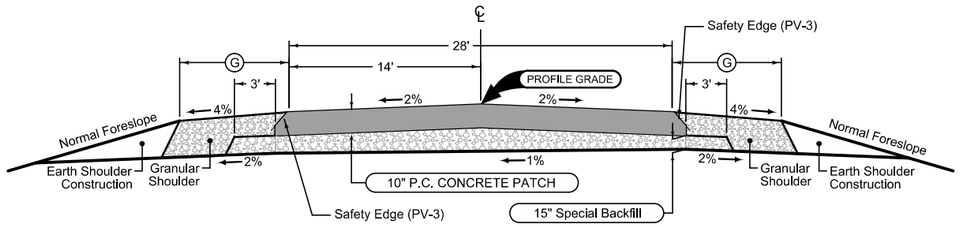
D5 PLAN – Date: 12–04–15

FILE NO. 30734	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER A.1

11:25:00 AM 1/21/2016 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1201401010\Design\STPN-014-8(21)--2J-34\12014021A01.sht

Granular Shoulder with Safety Edge

		2_G_ 10-21-14
STATION TO STATION		Ⓖ Feet
329+61.25	330+18.75	4



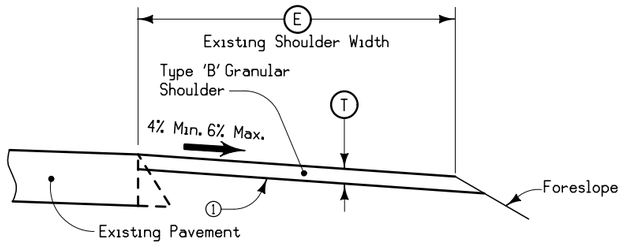
Granular Shoulder with Safety Edge

		2_G_ 10-21-14
STATION TO STATION		Ⓖ Feet
329+61.25	330+18.75	4

Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

	2H_ 10-19-10
STATION TO STATION	
329+61.25	330+18.75

7135M
MODIFIED



① Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material.

LOCATION			Ⓣ	Ⓔ
ROAD IDENTIFICATION	STATION TO STATION		SIDE	Inches	Feet
IA 14	329+06.37	329+61.25	Lt	2	4
IA 14	330+18.75	331+04.43	Lt	2	4
IA 14	328+57.87	329+61.25	Rt	2	4
IA 14	330+18.75	330+73.62	Rt	2	4

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

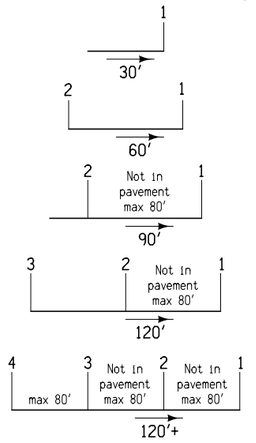
ADJACENT TO EXISTING PAVEMENT

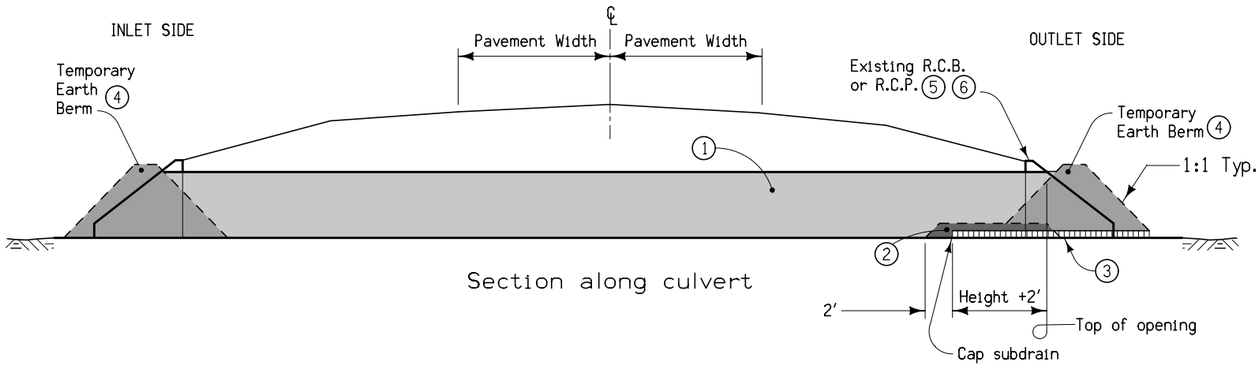
See Tab 100-24 or 100-25 for pavement quantities.

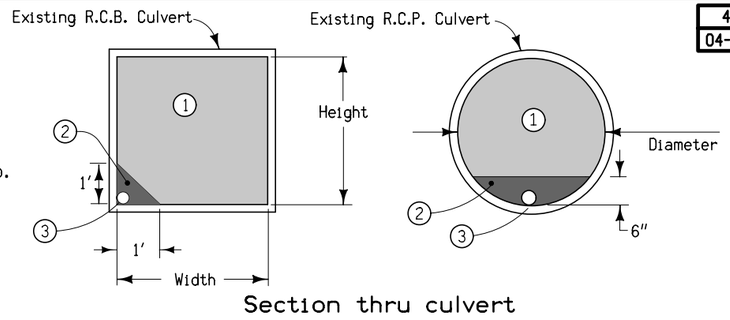
See Tab 112-9 for shoulder quantities.

IA 14

Required Injection Points ⑥

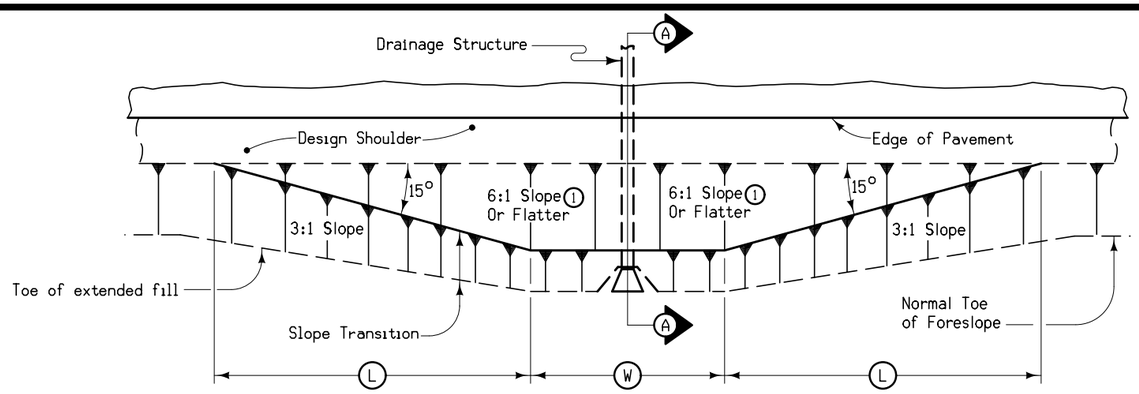




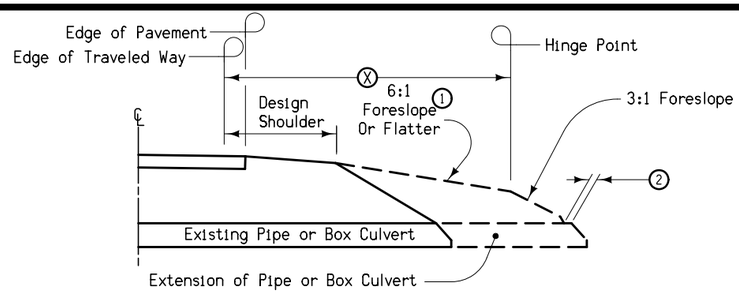


① Flowable Mortar.
② Granular Backfill.
③ 4″ subdrain at flowline elevation of culvert shall be extended into the culvert a distance of 2′ plus the height of the culvert. Granular Backfill covers subdrain and extends an additional 2′. Subdrain and granular backfill are incidental to flowable mortar.
④ Ends of culvert shall be plugged sufficiently to retain flowable mortar. Temporary earth berms are incidental to flowable mortar.
⑤ Removal of headwalls may be required.
⑥ Outlet shall be filled first. See injection point detail for additional information.

DETAILS OF CULVERT ABANDONMENT WITH FLOWABLE MORTAR
(Rectangular structures less than 8′ in either height or width. Circular structures less than 10′ Dia.)



PLAN VIEW



SECTION A-A

STRUCTURE LOCATION		Ⓦ	Ⓛ	Ⓧ
STATION	SIDE	Feet	Feet	Feet
330+14.24	Lt	51.5	82.1	30
329+65.75	Rt	51.5	82.1	30

Notes:

At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, the foreslope shall be flattened as indicated so as to cover the structure. Minimum earth cover is 4″.

① 6:1 Maximum Foreslope - Refer to cross sections
② 4″ Minimum for pipe installations or to top of headwall on R.C.B.
Ⓦ = Pipe or R.C.B. width plus 20 feet each side.

DETAILS OF BARNROOF FORESLOPE AT DRAINAGE STRUCTURE

SURVEY SYMBOLS

- MIS Miscellaneous
- WV Water Valve
- LUM Luminaire
- MH Utility Access (Manhole)
- WEL Well
- SI Sign
- TDC Tree Deciduous
- EB Electrical Box
- TPD Telephone Pedestal
- PPA Power Pole Co. 1
- OUT Tile Outlet
- RET Retaining Walls
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- FO – FOA Underground Fiber Optic Co. 1
- FO2 – FOB Underground Fiber Optic Co. 2
- FO3 – FOC Underground Fiber Optic Co. 3

UTILITY LEGEND

MidAmerican Energy Company
Adam Streeter
1630 Lower Muscatine road
Iowa City, IA 52240
319-341-4432
astreeter@midamerican.com

MediaCom
Kevin Parker
4010 Alexandra Drive
Waterloo, IA 50702
319-235-2197
kparker@mediacomcc.com

FO –

CenturyLink
Steven Parker
2103 E. University Ave. 1st Floor
Des Moines, IA 50317
515-265-0968
Steven.Parker4@CenturyLink.com

FO2 –
FO3 –

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
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 30734	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER D.1

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PLUG & ABANDON
330+30
5' x 7' x 48.7' RCB
DA = 310 Ac
FL: Lt 1017.24
Rt 1017.44

INSTALL
Sta. 329+90.00
10' x 5' x 100' RCB
Skew = 30° Lt. Ahd.
F.L. = Lt. 1017.24
Rt. 1017.54
Design No. 117

Sta. 330+18.75
END PAVING

Sta. 329+61.25
BEGIN PAVING

325 330 335

+40.34 ENT. (U.A.C.)

+16.72 ENT. (U.A.C.)

U.A.C.
15" x 20' CMP

POT Sta 336+53.91

IA 14 IA 14

Sta. 328+57.87
BEGIN PROJECT

Sta. 331+04.43
END PROJECT

Temporary Easement
For Construction

+16.72 ENT. (U.A.C.)

REMOVE
329+81
Twin 48" x 64' RCP W\Aprons
FL: Lt 1017.3
Rt 1017.65

St. Charles TWP.
T-95N R-16W
SEC. 11

RELOCATE
331+13
15" x 127' RCP and
FLOWMETER
FL: West 1020.02
East 1022+87

0 50
FEET

+06 Lt. 1024.19
+09 Lt. 1019.27
-33.33% Lt.
+58 Rt. 1023.28
-2.00% Rt.
-4.80% Lt.
+32 Rt. 1021.79
-33.33% Rt.
+50 Rt. 1018.99
+45 Rt. 1017.54
+1.70%
+2.00%
+70 Lt. 1017.94
+65 Rt. 1017.54
+15 Lt. 1017.24
+35 Lt. 1017.24

U.A.C. Ditch Grade RCB DG U.A.C.
Ditch Grade RCB Ditch Grade U.A.C.

1030 1025 1020 1015 1010 1005
Lt Rt

325 326 327 328 329 330 331 332 333 334 335

FILE NO. 30734	ENGLISH	DESIGN TEAM Holst \ Brinkman \ Paul	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER D.2

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Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Culvert extension. Project datum and control information is provided by District 2 Office.
This project is a complete field survey for the digital terrain model.

Vertical Control

Vertical datum for this survey is relative to NAVD88.

A series of RTK-GPS observations using the Iowa RTN, were taken over several days.

As Built Plan FA 271A,B,C, benchmark # 21 (Elev. 1033.49) = # 500 (1025.834) this survey.

Horizontal Control

Iowa RTN was used to establish Iowa state plane north zone (US ft.) coordinates for project control. Redundant RTK observations were used to verify these values.

Alignment Information

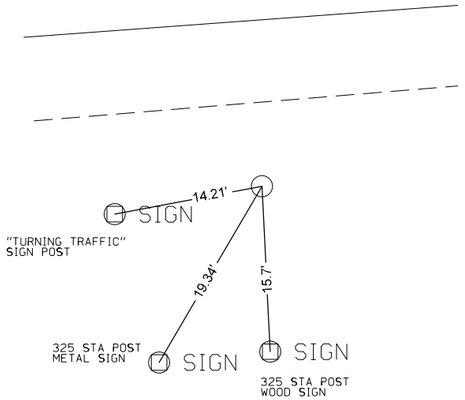
The horizontal alignment for this survey is a retrace of As-built Plans No. FA 271A,B,C.
Survey stationing was equated to the plan at PI Sta. 336+53.9 and ran backwards without equation throughout the survey.

Geopak Alignment Chains created:
ML14 IA14 Mainline

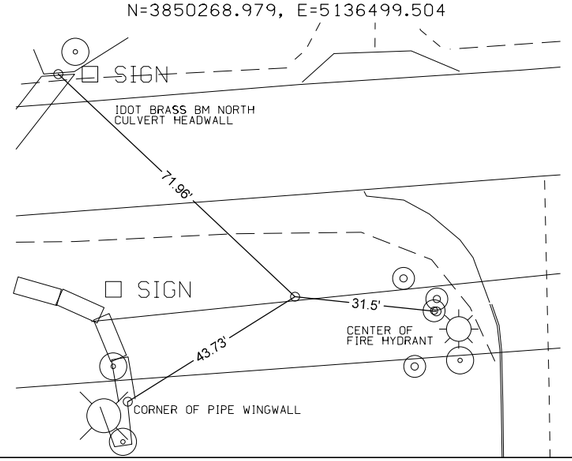
VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
500	3850318.245	5136447.119	1025.834	330+46.37	-18.585	BM	IDOT BRASS BM ON CENTER OF NORTH CULVERT HEADWALL◈ BENCH MARK

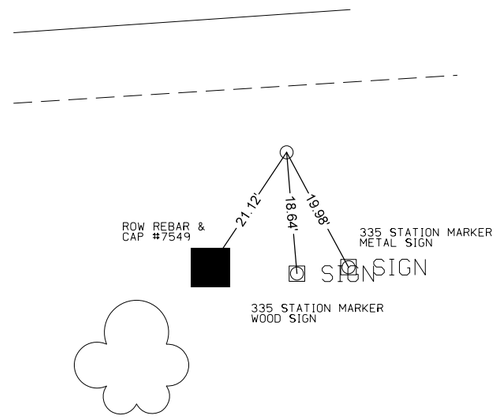
C.P. G001 325+10.43, 27.58 RT
Set 5/8" Rebar
N=3850232.847, E=5135916.020



C.P. G002 330+95.00, 34.40 RT
Set 5/8" Rebar
N=3850268.979, E=5136499.504



C.P. G003 334+97.06, 33.39 RT
Set 5/8" Rebar
N=3850299.514, E=5136900.410



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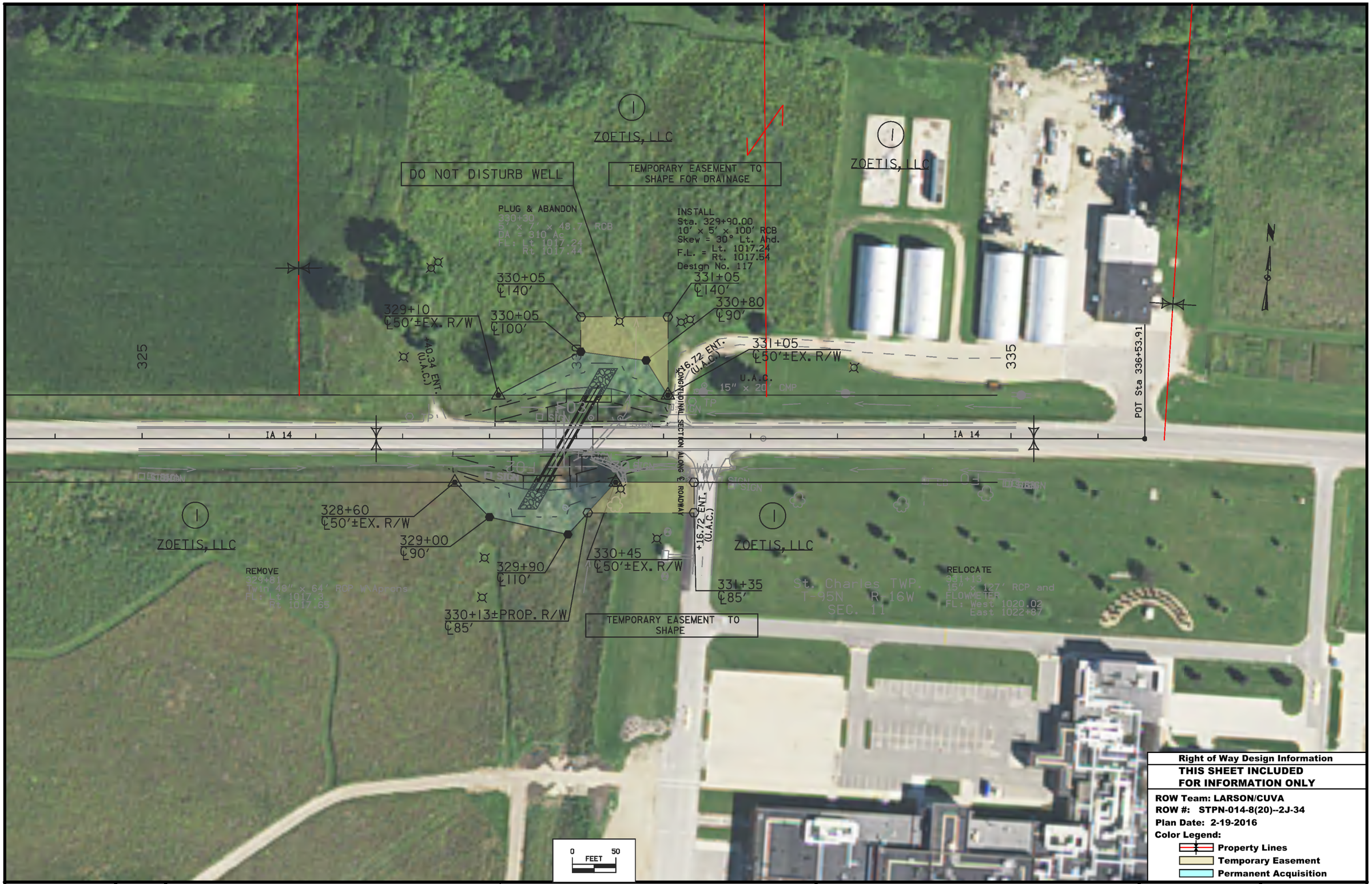
ALIGNMENT COORDINATES

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)
ML14_PIPE_330																			
CUL700		308+31.97	3,850,137.09	5,134,240.06															
CUL701		336+53.91	3,850,344.33	5,137,054.37															

FILE NO. 30734	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER G.3

Floyd	ROW: STPN-014-8(20)--2J-34				PIN	10-12-014-010													
	0.4 mi W of S Iowa St in Charles City																		
		STATE			COUNTY			CITY				BORROW							
PARCEL NO.	OWNER NAME	FEE	EASE		FEE	EASE		FEE	EASE		EXCESS	FEE	T.E.	MITIGATION	OTHER	HOUSE	BUILDING(S	A/C ONLY	TOTAL ACQ
1	Zoetis LLC - Fee		0.3 AC																
1 Parcel	"TOTALS	0 AC	0.3 AC		0 AC	0 AC		0 AC	0 AC		0 AC	0 AC	0 AC	0 AC					
		0 SF		0 SF	0 SF		0 SF	0 SF		0 SF	0 SF								



Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON/CUVA
ROW #: STPN-014-8(20)--2J-34
Plan Date: 2-19-2016
Color Legend:
- **Property Lines**
- **Temporary Easement**
- **Permanent Acquisition**

FILE NO. 30734	ENGLISH	DESIGN TEAM Holst \ Brinkman \ Paul	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER H.1

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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

LEGEND OF CROSS SECTION SHEETS (SOILS)

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

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

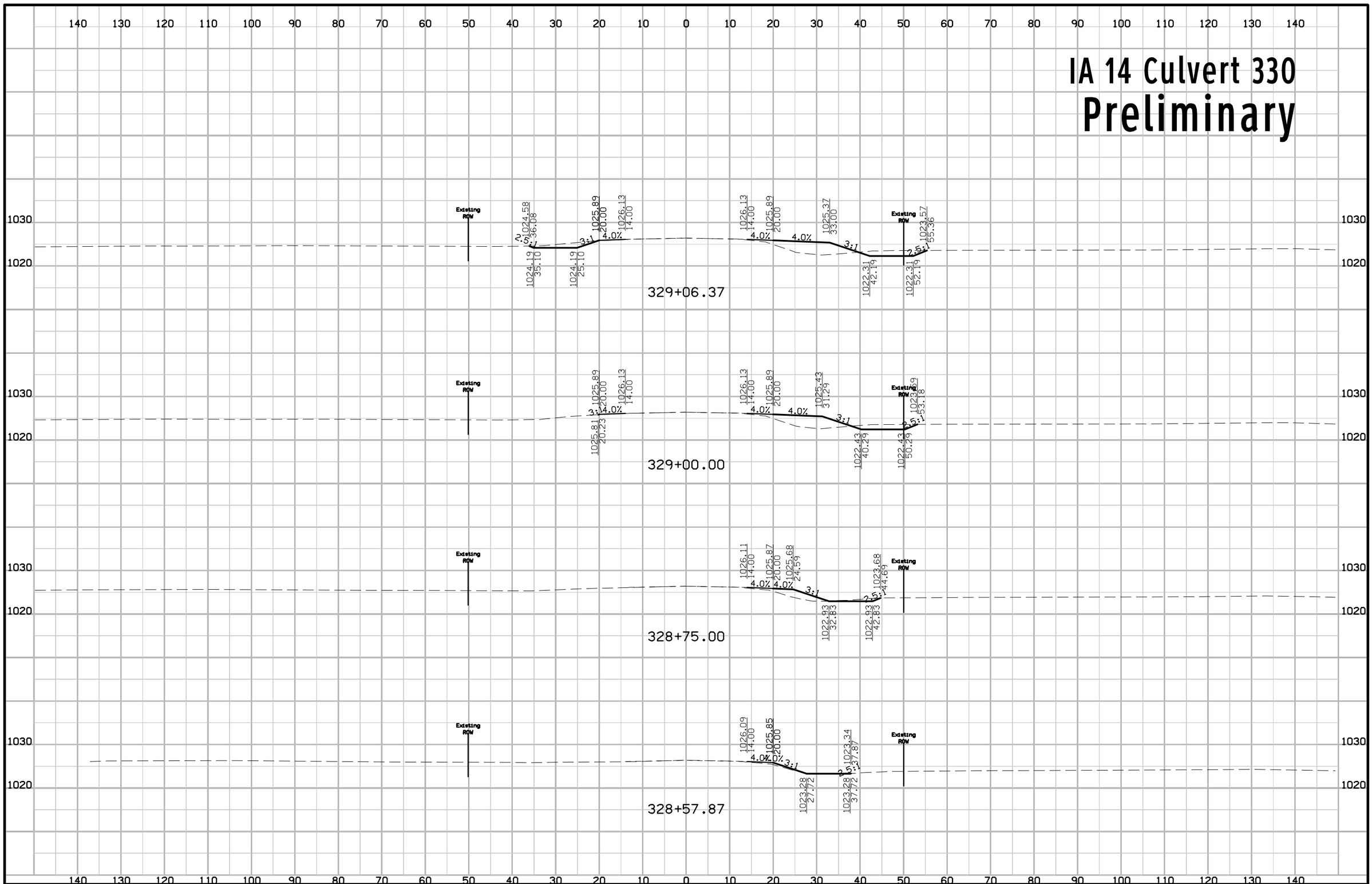
Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

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

IA 14 Culvert 330

Preliminary



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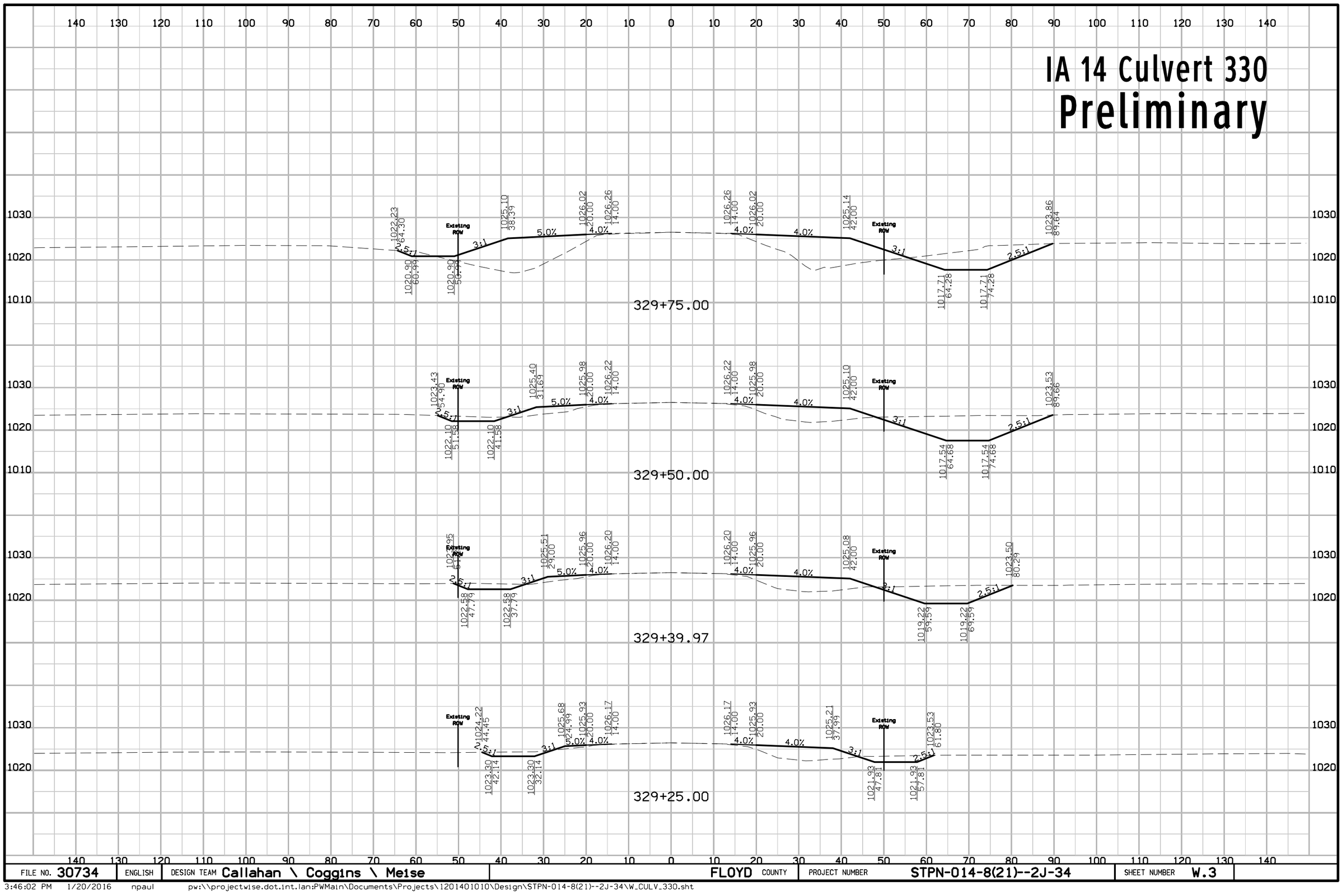
IA 14 Culvert 330

Preliminary



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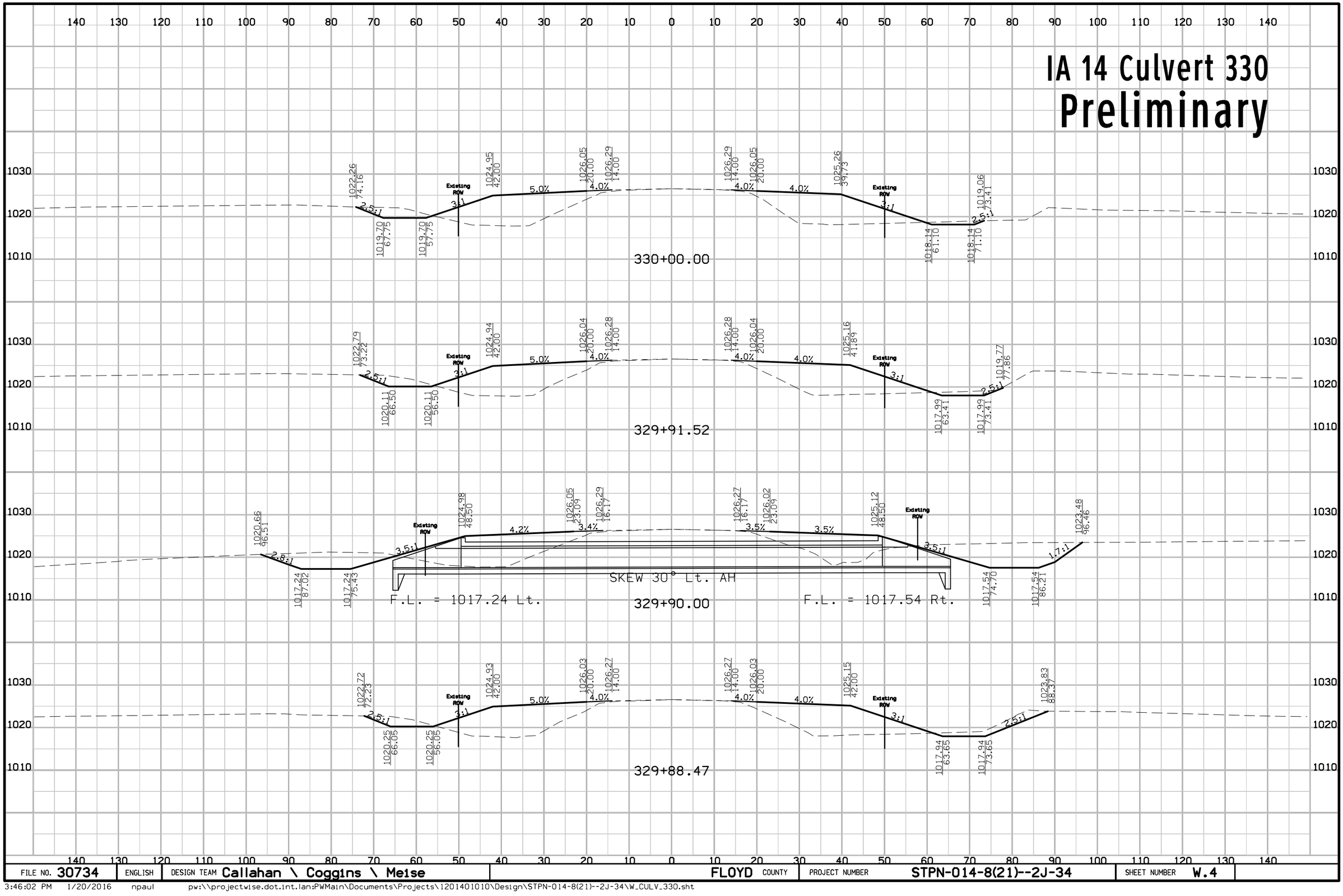
IA 14 Culvert 330

Preliminary



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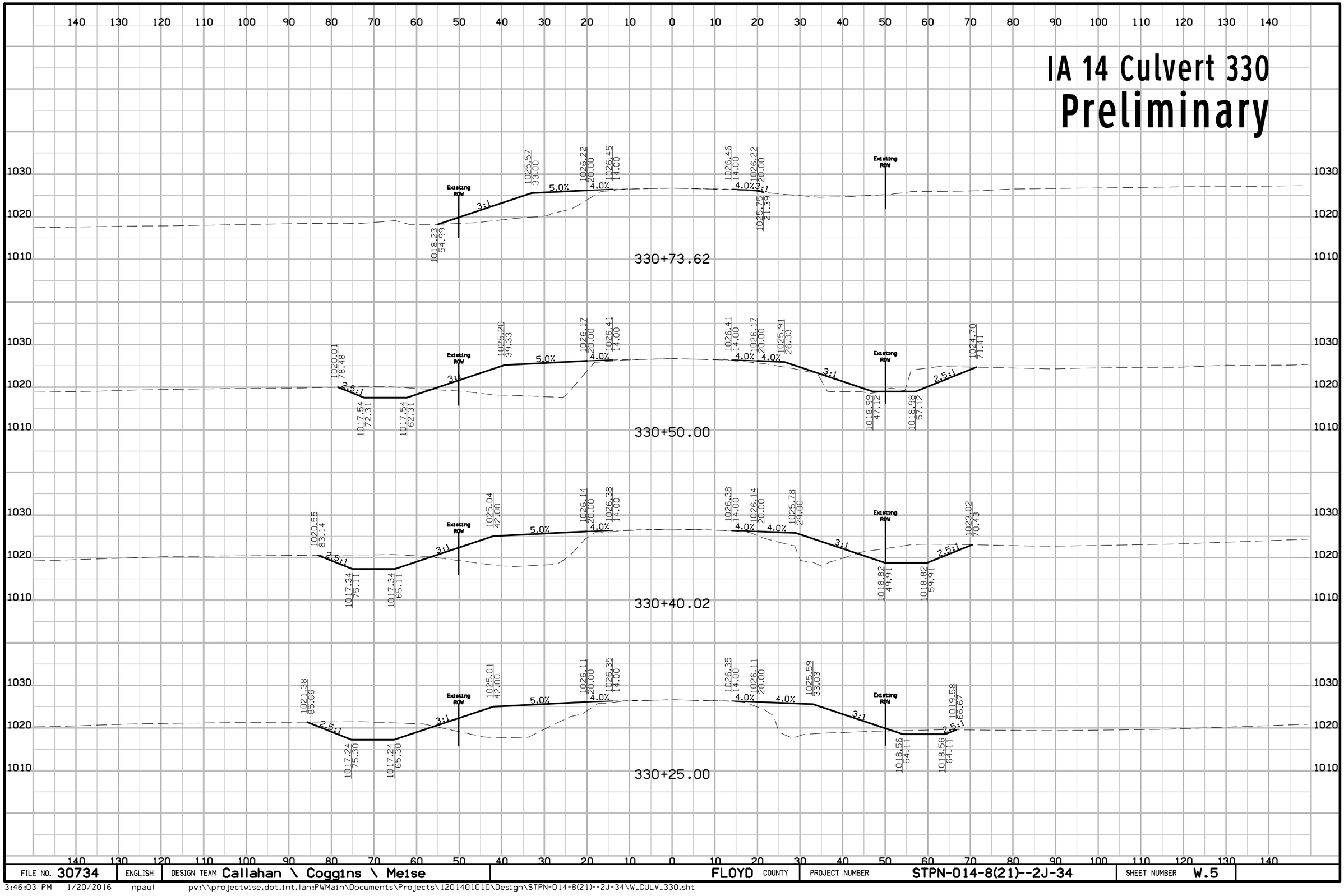
IA 14 Culvert 330

Preliminary



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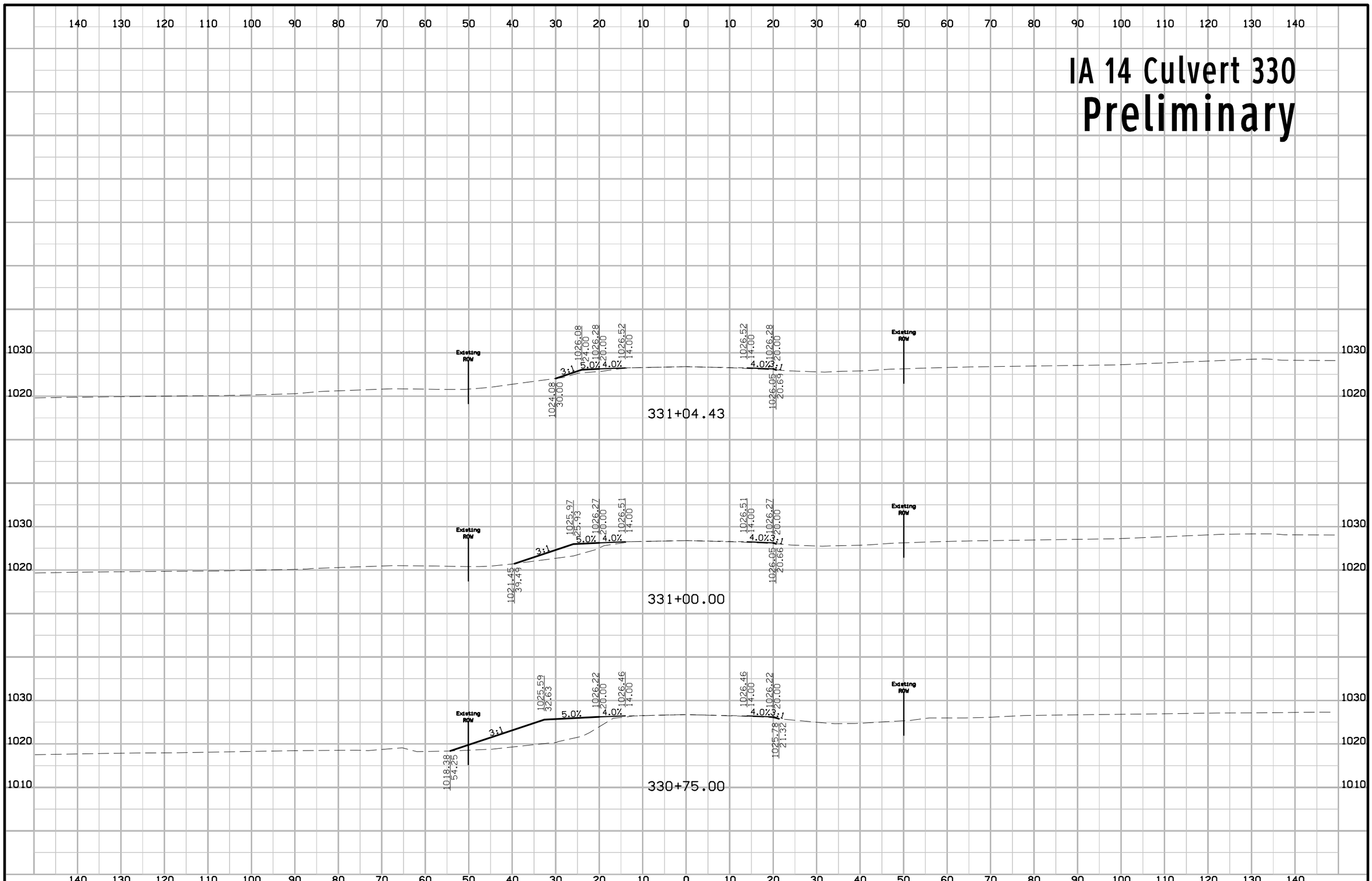
IA 14 Culvert 330

Preliminary



FILE NO. 30734	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FLOYD COUNTY	PROJECT NUMBER STPN-014-8(21)--2J-34	SHEET NUMBER W.6

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