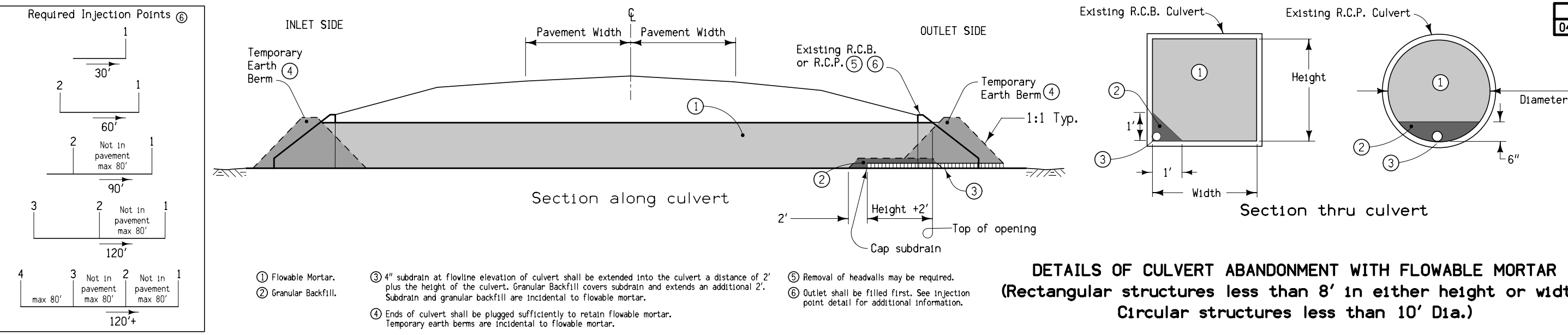


- ① See Standard Road Plan RF-3, specify if inlet or outlet.
- ② Existing structure
- ③ If less than 12" cover over pipe in median, install median pipe and dike.



### SURVEY SYMBOLS

- GDL Guard Rail Steel
- MM Mile Marker Post
- FW Wire Fence
- OUT Tile Outlet
- FCL Chain Link and Security Fence
- SI Sign
- PPA Power Pole Co. 1
- TA Tower Anchor
- TPD Telephone Pedestal
- TW Top of Water
- TEV Evergreen Tree
- TDC Tree Deciduous
- LUM Luminaire
- SNP Unpaved Shoulder
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- ENU Edge Unpaved Entrance & Parking
- BNK Stream Bank
- SP Stream Profile
- EW Edge of Water
- F0 FOA Underground Fiber Optic Co. 1
- MIS Miscellaneous
- DIK Centerline of Dike or Dam
- RIP Rip-Rap
- W WLA Underground Water Line Co. 1
- F02 FOB Underground Fiber Optic Co. 2

### UTILITY LEGEND

**Alliant Energy**  
**Jason A. Hogan**  
 4902 North Biltmore  
 Madison, WI. 53707-1007  
 608-458-4871  
 Jasonhogan@alliantenergy.com

**Atkins Telephone Company, Inc.**  
**Jerry Spaight**  
 85 Main Avenue  
 Atkins, IA. 52206  
 319-446-7331  
 office@atkinstelephone.com

**CenturyLink / LightCore**  
**Robert Sampson**  
 1151 Century Drive  
 Wentzville, MO. 63385  
 636-887-4755  
 robert.sampson@centurylink.com

**Poweshiek Water Association**  
**Chad Coburn**  
 125 Industrial Drive  
 Brooklyn, IA. 52211  
 641-522-7416  
 chad@poweshiekwater.com

- Alliant
- F0 - Lightcore
- F02 - Atkins Telephone
- W - Poweshiek Water Association

### 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

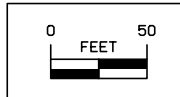
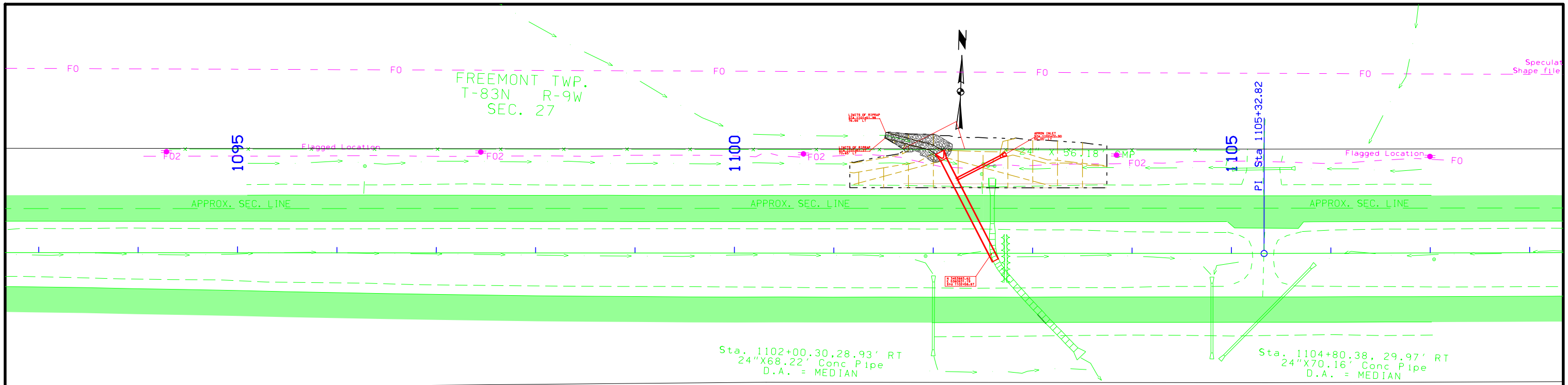
- Reference Point
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

### 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

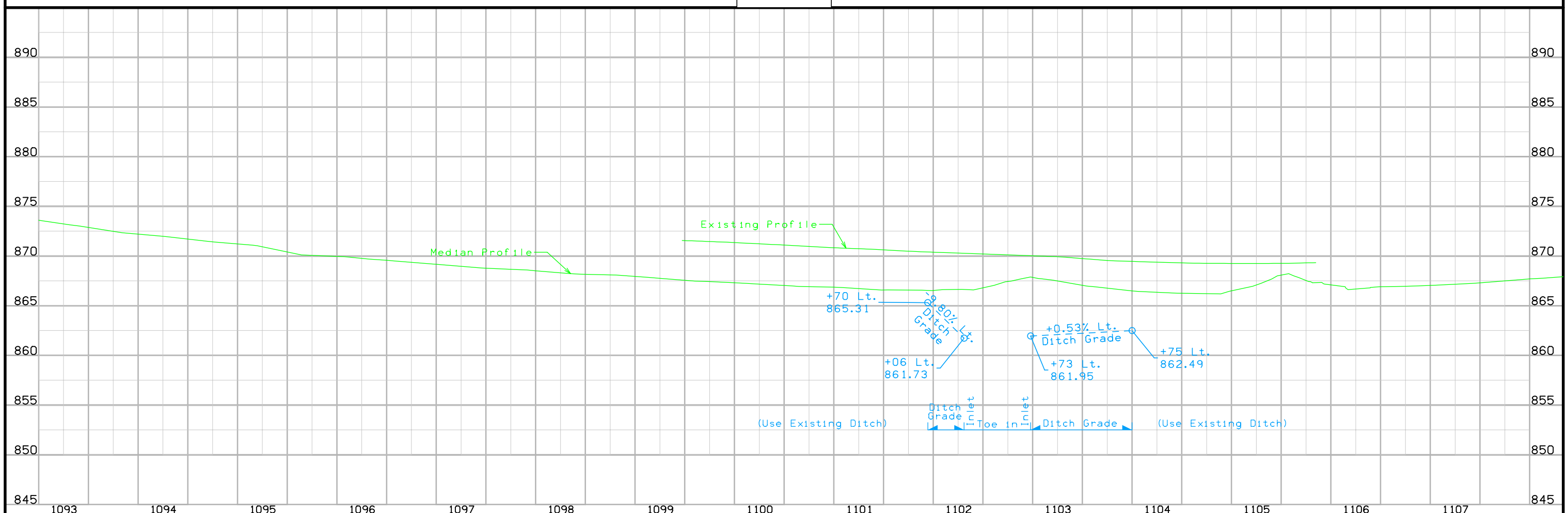
# PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Sta. 1102+60  
6FT X 5FT X 46.7FT RCB  
W/ 72"X149.19' EXT SKEWED 40° AHEAD RT  
D.A. = 255AC Ac - R

Sta. 1105+79.63, 15.08' RT  
24"X123.64' Conc Pipe  
D.A. = MEDIAN



## Survey Information

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed pipe reconstruction under Highway 30. Project datum and control information is provided by Design Survey Office. This project is a complete field survey for the digital terrain model. No photogrammetric survey is added.

### Vertical Control

Vertical datum for this survey is relative to NAVD88(Computed using Geoid 09).

laRTN ellipsoidal height relative to NAD83(96CORS)(Epoch2002.00) was established at project CP300 using averaged observations and applying Geoid 09 to determine survey orthometric height.

Survey projects height relates to published NAVD88 height at nearby federal 1st Order, II class NGS Monument "683" south of Atkins as follows:

NGS BM 6 83 Survey Height = El. 904.84	NGS BM 6 83 Published Height =El. 904.78 NAVD 1988
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### Horizontal Control

Iowa State Plane North Zone coordinate system was used throughout this survey. A combined scale factor of 1 may be used for total station work. Unmodified Iowa state plane North Zone system may be used for GPS work. Horizontal coordinates were brought to the site by averaging five laRTN observations on CP300. Remaining project control coordinates were computed using 3 averaged observations from a base station at CP300. Horizontal datum is relative to NAD83(96CORS)(Epoch2002.00).

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F-30-6(28)-20-06. Survey stationing was equated to the plan at the PI at Sta. 1105+32.82, as this is the alignment point closest to the culvert subject to the survey, and run back and ahead without equation throughout the survey.

Equations are as follows:

PI Sta. 1079+15.76 This Survey  
= PI Sta. 1079+15.51 As-built Plans Project No. F-30-6(28)-20-06

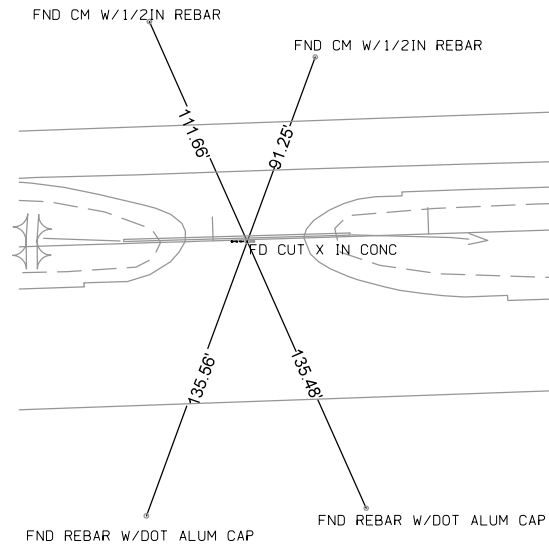
PI Sta. 1105+32.82 This Survey  
= PI Sta. 1105+32.82 As-built Plans Project No. F-30-6(28)-20-06

PI Sta. 1131+56.20 This Survey  
= PI Sta. 1131+56.02 As-built Plans Project No. F-30-6(28)-20-06

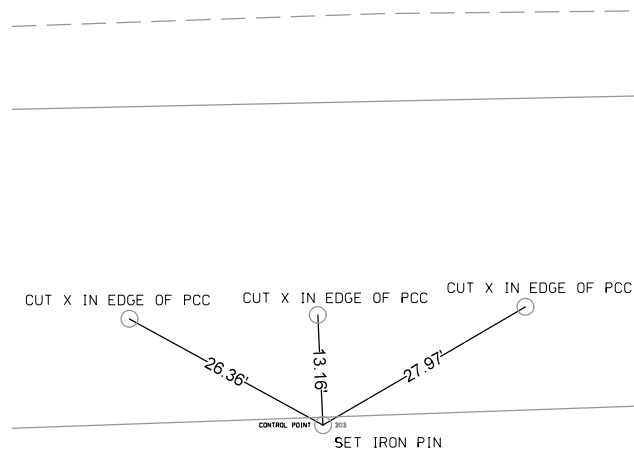
## VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
<b>500</b>	<b>3453906.695</b>	<b>5358544.041</b>	<b>915.052</b>	<b>1078+73.58</b>	<b>-102.552</b>	<b>BM</b>	<b>FD1/2IN REBAR IN CONCRETE MONUMENT</b>
<b>300</b>	<b>3453994.145</b>	<b>5361246.102</b>	<b>867.500</b>	<b>1105+77.66</b>	<b>-99.785</b>	<b>CP</b>	<b>FD 1/2IN REBAR IN CONCRETE MONUMENT</b>

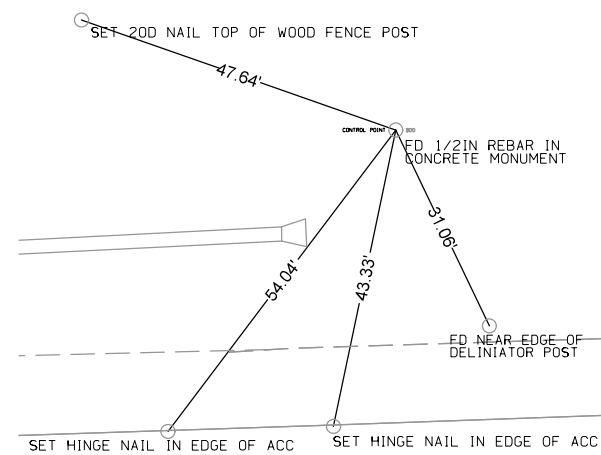
PI STA 1079+15.76, 0.85' LT  
 CP 1003, FD CUT X IN CONCRETE  
 N=3453804.668, E=5358589.416



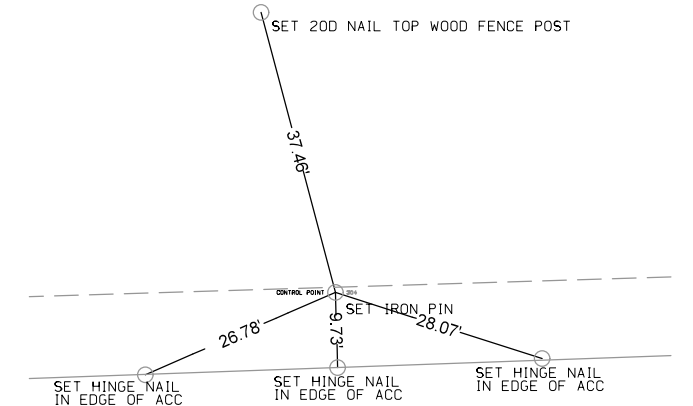
CP 303 1079+15.76, 72.82 LT  
 CP 303, SET IRON PIN  
 N=3453778.017, E=5359951.122



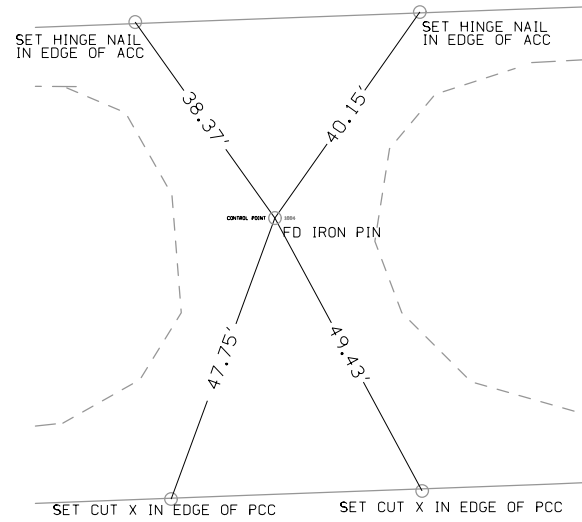
CP 300 STA 151+77.66, 99.79' RT  
 CP 300, FD 1/2" REBAR IN CONCRETE MONUMENT  
 N=3453994.145, E=5361246.102



CP 304 STA 1108+53.46, 67.42' RT  
 CP 304, FD 1/2" REBAR IN CONCRETE MONUMENT  
 N=3453972.049, E=5361522.910



POT 1118+48.23  
 CP 1004, FD IRON PIN  
 N=3453941.582, E=5362519.496

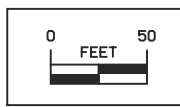
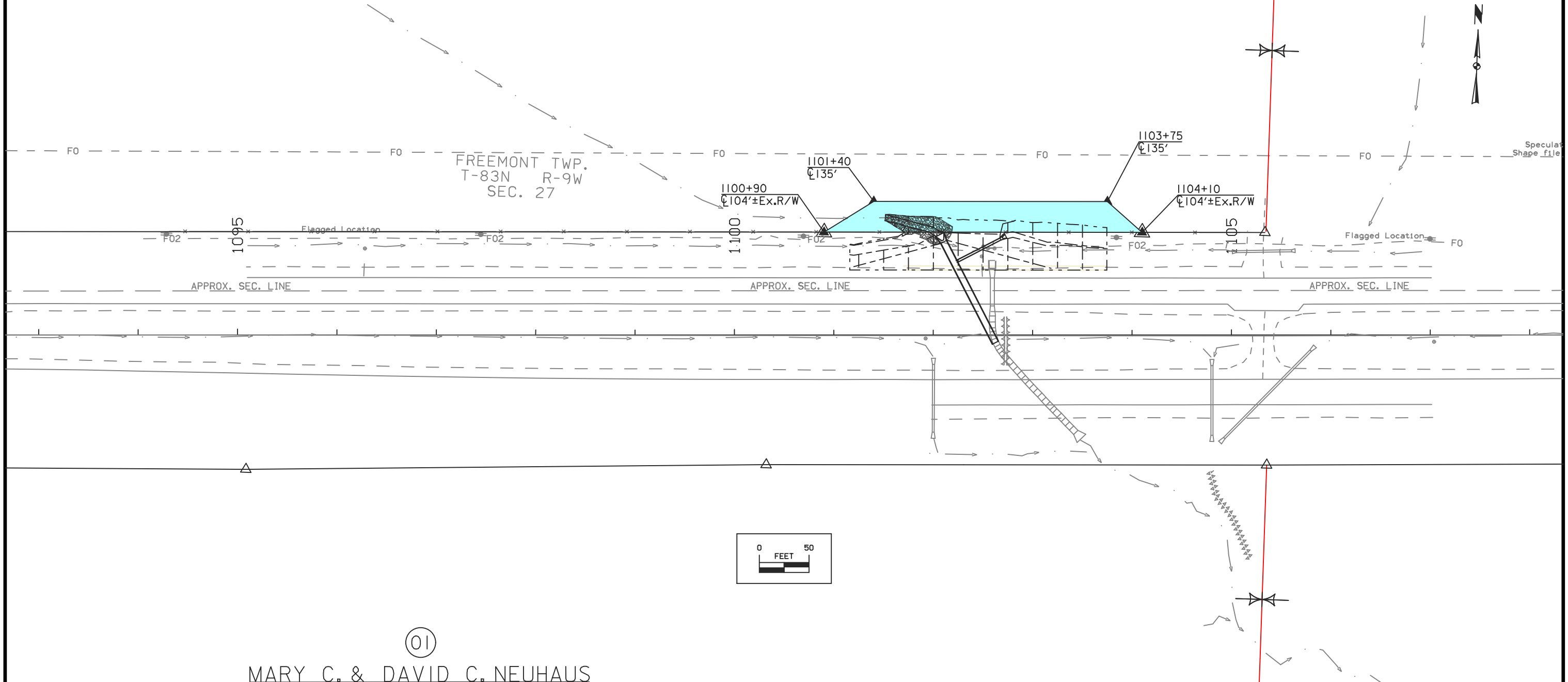




01

MARY C. & DAVID C. NEUHAUS

FREEMONT TWP.  
T-83N R-9W  
SEC. 27



01

MARY C. & DAVID C. NEUHAUS

<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
ROW Team: GETTINGS/CUVA / GROAT	
ROW #: NHSN-030-6(180)-2R-06	
Plan Date: 1-23-13	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



PARCEL CHECK LIST

01/23/13 14:22 HSL PRINT FOR S J GROAT PAGES: 1 - 1 GEN: 1

PARCEL CHECK BY PROJ UPDATED 01/23/13 14:22 PAGE: 1

R2360003 PARCEL CHECK LIST BY PROJECT NUMBER  
 COUNTY : BENTON PROJECT NO. :NHSN-030-6(180)--2R-06 PIN: 10-06-030010-00  
 CONSTRUCTION NO.:NHSN-030-6(179)--2R-06 ASSIGNED TO: NLC

DESCRIPTION : US 30, 0.5 Mile W. Of Co. Rd. W-26(WBL)

PARCEL	KEY	OWNER	TYPE	R/W W.D OR EASE.	BORROW W.D OR EASE.	HOUSE OR
0001	26683	MARY C. NEUHAUS	FEE	STATE OF IOWA		
		DAVID C. NEUHAUS	FEE	0.20 WD ACRE		

1 TOTAL PARCELS ON PROJECT

875	FL INLET=861.70	PG=870.20	FL OTHER=861.10	PG=869.84	FL OUTLET=861.10	875
870	VAR.					870
865	TEE FOR 24" PIPE					865
860	FL ELEV.=861.85					860
855						855
850						850

LONGITUDINAL SECTION ALONG  $\phi$  ROADWAY

Sta. 1102+60  
 6FT X 5FT X 46.7FT RCB  
 W/ 72"X149.19' EXT SKEWED 40° AHEAD RT  
 D.A. = 255 AC - R  
 RCB DESIGN #3425/3449  
 PIPE F-30-6(28)--20-06  
 REMOVE SEVERAL D SECTIONS AT RCB/PIPE JUNCTION  
 SO SKEW OF EXTENSION=27.2229°  
 EXTEND 72" PIPE 114'-0 + INLET APRON  
 FL INLET=861.70  
 FL OTHER AT TIE-IN=861.10  
 FILL RCB WITH FLOWABLE MORTAR AND ABANDON

**TRAFFIC ESTIMATE**

2014 A.A.D.T. = 11,000 VPD  
 2034 A.A.D.T. = 16,000 VPD  
 20?? D.H.V. = ? VPH  
 % TRUCKS = 13 %  
 TOTAL DESIGN ESAL's = ?

PLACE 24-72 INCH TEE AT G=31.75 FT  
 MEASURED FROM INLET APRON.  
 EXTEND 24" PIPE WITH INLET APRON TO DITCH  
 FL INLET=861.85  
 FL AT 72" PIPE=861.85

-0.36%  
 PI STA 1101+90.00 PI STA 1102+75.00  
 PI ELEV 870.33 PI ELEV 870.03

**ESTIMATED PROFILE GRADE ON U.S. 30**

PROFILE GRADE LINE (PGL) IS AT  $\phi$ .  
 U.A.C. EXISTING GRADE

**UTILITIES LEGEND:**

PPA ALLIANT  
 F02 ATKINS TELEPHONE

**HYDRAULIC DATA**

DRAINAGE AREA= 245 AC R  
 STREAM SLOPE= 24.0 FT./MI.

Q<sub>5</sub> = 142 CFS  
 Q<sub>50</sub> = 284 CFS  
 Q<sub>100</sub> = 341 CFS  
 Q<sub>500</sub> = 483 CFS

THERE IS A DROP-OFF OF 3+ FT. JUST BEFORE THE PIPE INLET. SHAPE THE CHANNEL AS INDICATED FROM THE LIMITS OF RIPRAP, (NATURAL CHANNEL ELEVATION=845.47) TO THE PIPE INLET (FLOWLINE ELEVATION=861.70). THE REVISED STREAMBED ELEVATIONS, INCLUDING RIPRAP, ARE SHOWN ON BRGPREGROUNDSHOTS LEVEL. SHAPE CHANNEL BANKS AS NEEDED ALONG THE CHANNEL. PLACE RIPRAP AS INDICATED AT THE CHANNEL BOTTOM AND TO TOPS OF BANKS.

**LOCATION**

U.S. 30 OVER MORGAN CREEK  
 T-83N R-9W  
 SECTION 27/34  
 FREMONT TOWNSHIP  
 BENTON COUNTY  
 BRIDGE MAINT. NO. 0630.5B030  
 LATITUDE 41.963322° N  
 LONGITUDE 91.883314° W

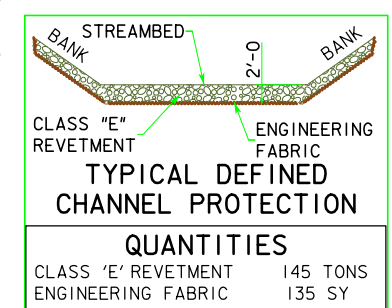
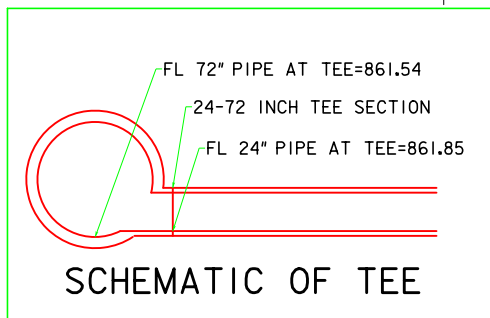
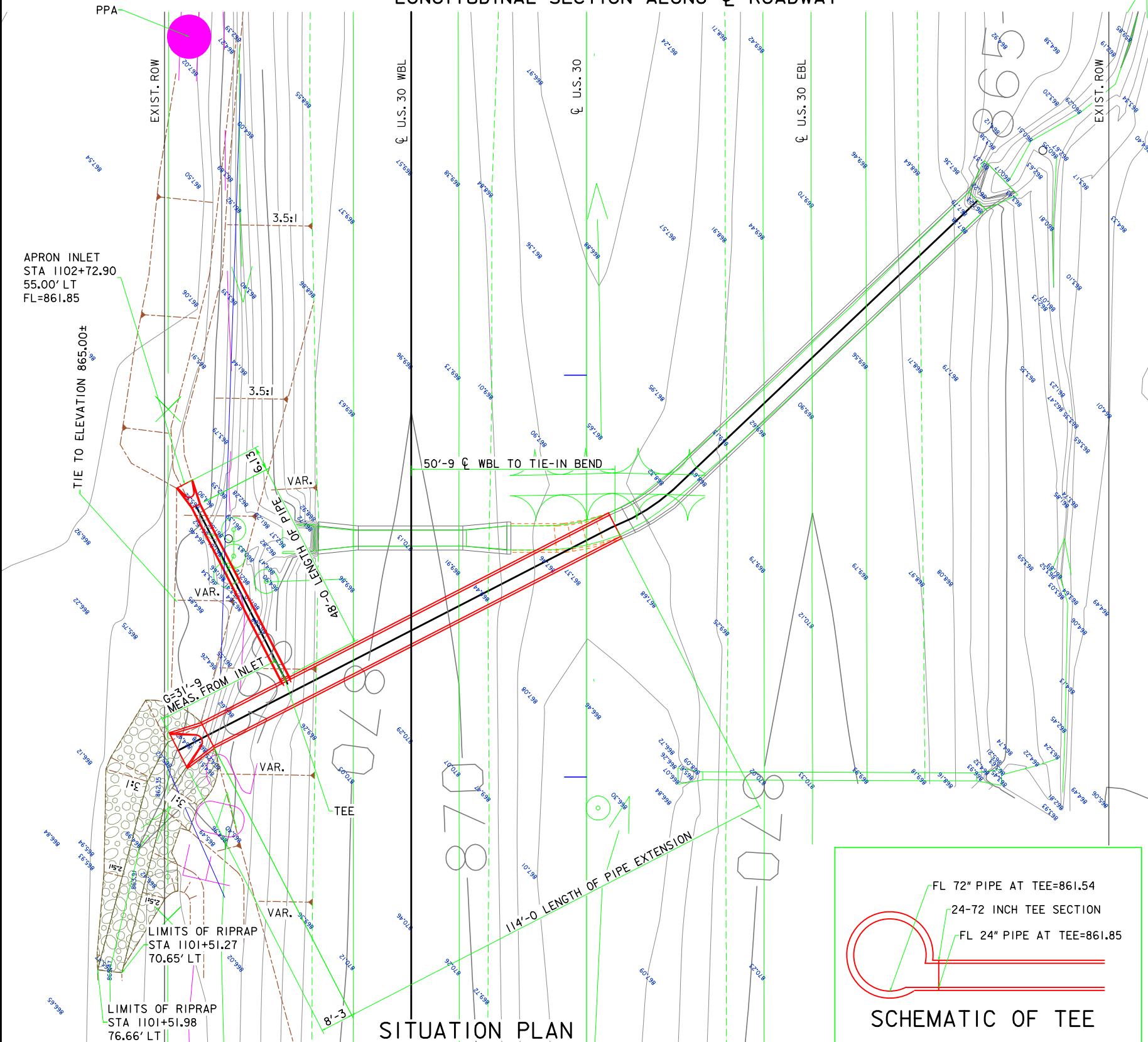


PRELIMINARY

DESIGN FOR 27.2229° SKEW RA  
**72" REINFORCED CONCRETE PIPE EXT. OF 72" PIPE**  
 WITH 24-72 INCH TEE

**SITUATION PLAN**  
 STATION: 1102+58.87  
**BENTON COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_ FILE NO. 30824 DESIGN NO. \_\_\_\_\_



**QUANTITIES**

CLASS 'E' REVETMENT	145 TONS
ENGINEERING FABRIC	135 SY

**LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)**

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

**LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)**

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

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

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

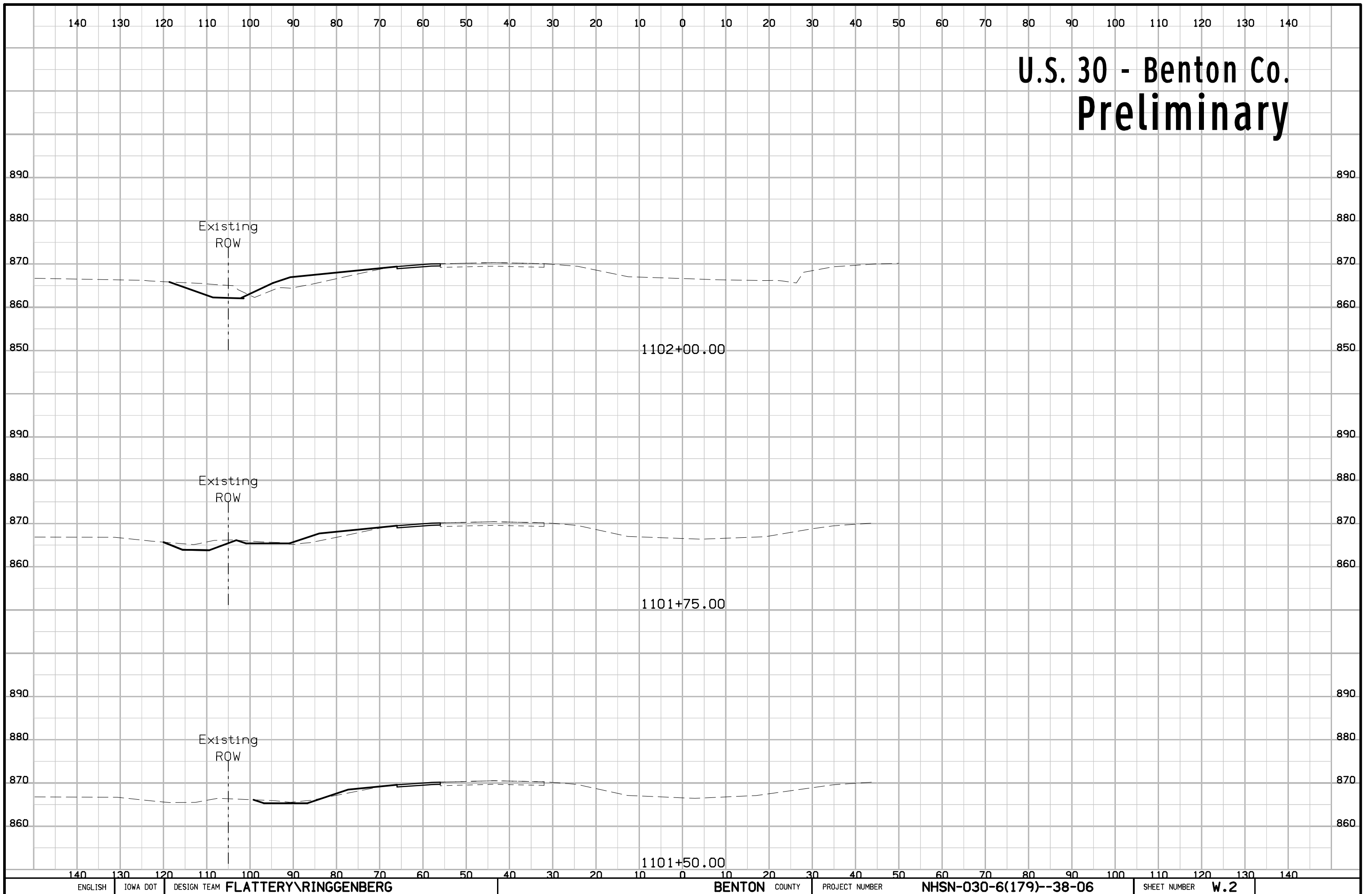
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

- Existing ROW  
|  
Existing Right-of-Way Limit
- Proposed ROW  
|  
Proposed Right-of-Way Limit
- Temporary ROW  
|  
Temporary Right-of-Way Limit

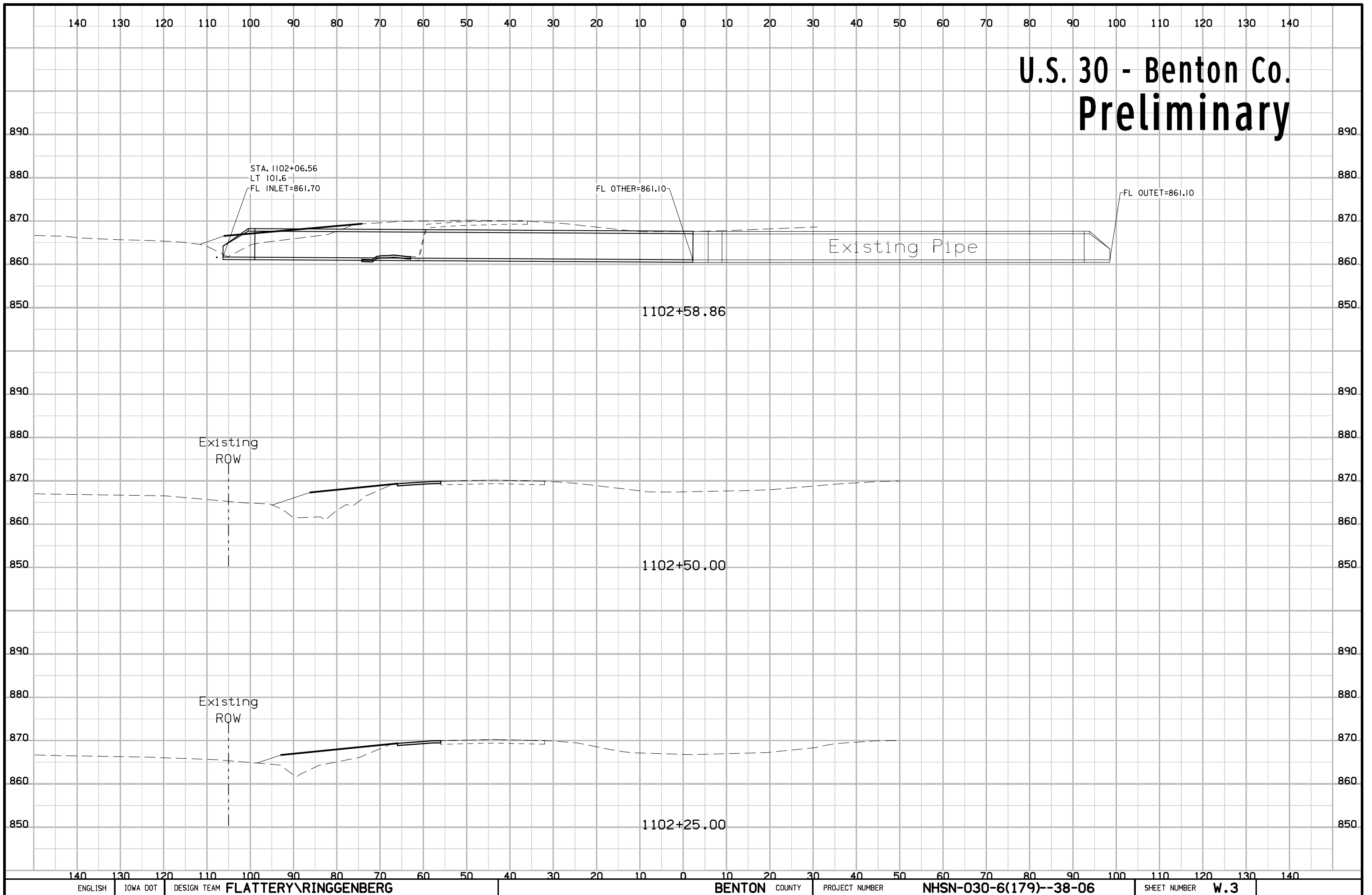
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

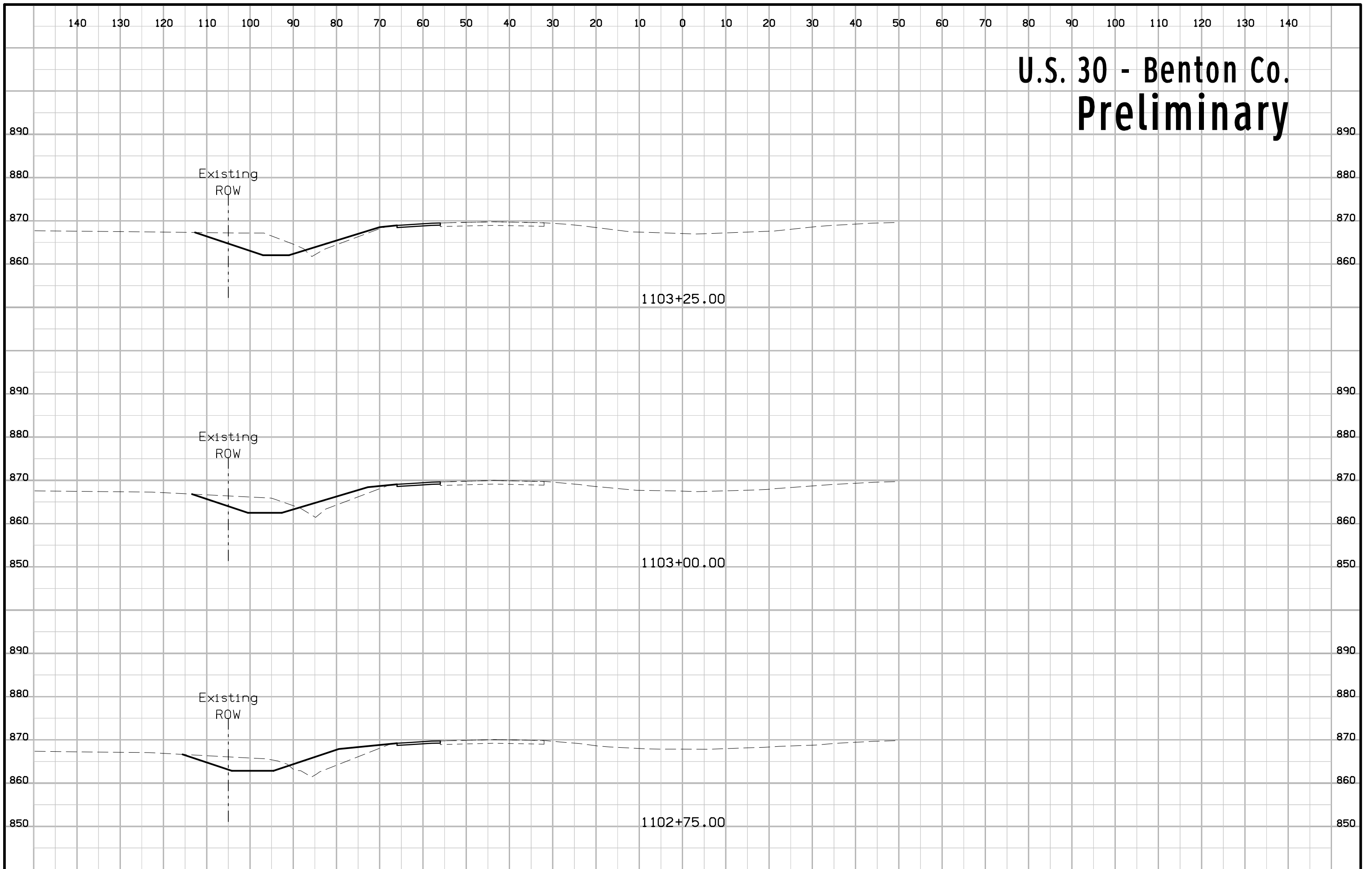
# U.S. 30 - Benton Co. Preliminary



# U.S. 30 - Benton Co. Preliminary



# U.S. 30 - Benton Co. Preliminary



# U.S. 30 - Benton Co. Preliminary

