

**PIPE CULVERTS**  
**STPN-141-3(71)--2J-24**

LETTING DATE  
 11-16-2021

**CRAWFORD CO.**



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**CRAWFORD COUNTY**  
 PIPE CULVERTS

2.8 mi E of Co Rd M36 (MP 67.6)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

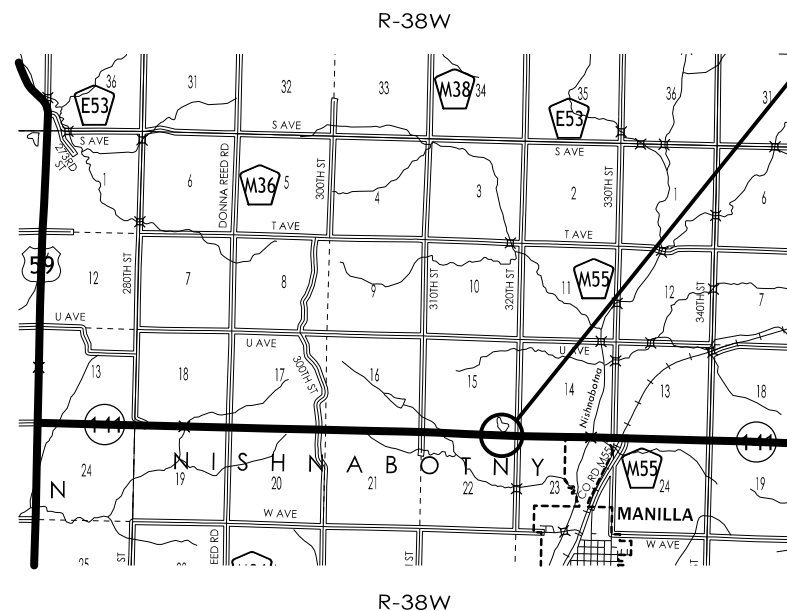


REVISIONS

TOTAL	11
PROJECT IDENTIFICATION NUMBER	18-24-141-010
PROJECT NUMBER	STPN-141-3(71)--2J-24
R.O.W. PROJECT NUMBER	STPN-141-3(72)--2J-24

INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.1	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 141
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 3	Reference Ties and Bench Marks
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
J.1	Traffic Control Plan
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 3	Mainline Cross Sections
	* Color Plan Sheets

Project Location  
 Sta. 260+55  
 Ref. Loc. Sign 67.62



DESIGN DATA RURAL			
2019	AADT	1530	V.P.D.
20--	AADT	--	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	--	%
	Total		
	Design ESALs	--	

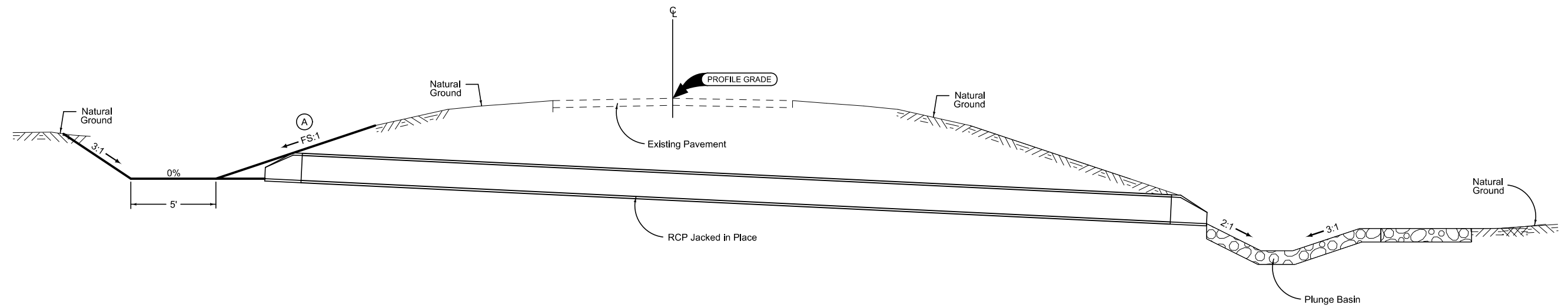
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

D9 PLAN - Date: 9-7-21  
 DM5 PLAN - Date: 8-3-21

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 4-30-20



**Foreslope**

STATION TO STATION		(A)
260+12.50	260+88.60	4:1
260+88.60	261+99.00	2:1

**TYPICAL SECTION**

### SURVEY SYMBOLS

- BM Bench Mark
- WC Wild Card (Misc. Field Shot)
- SNP Unpaved Shoulder
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- BL Topo Breakline
- TL1D Telephone Line Co. 1 - Quality D
- D Centerline Draw or Stream (Down)
- BNK Stream Bank
- DU Centerline Draw or Stream (Up)
- EL1D Electric Line Co. 1 - Quality D
- EW Edge of Water
- GR Ground Shot
- OUT Tile Outlet
- TIL Tile Line
- RIP Rip-Rap
- CON Concrete or A/C Slab
- CUL Culvert
- PRO Profile Shot
- CP Control Point
- PIP Pipe Culvert
- TDC Tree Deciduous
- TEV Evergreen Tree
- PLG Location of General Photo
- SOP Size of Pipe or Culvert
- DAB Drainage Area Boundary

### UTILITY LEGEND

- TL1D Farmers Mutual Telephone Co - Quality D  
Brad Sunderman  
410 Broad Street  
Stanton, IA 51573  
(712)829-2111  
bsunderman@fmcnet.com
- EL1D Manilla Municipal Utilities - Quality D  
Bryan Gerritson  
166 6th Avenue  
Manilla, IA 51454  
manillautilities@fmctc.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

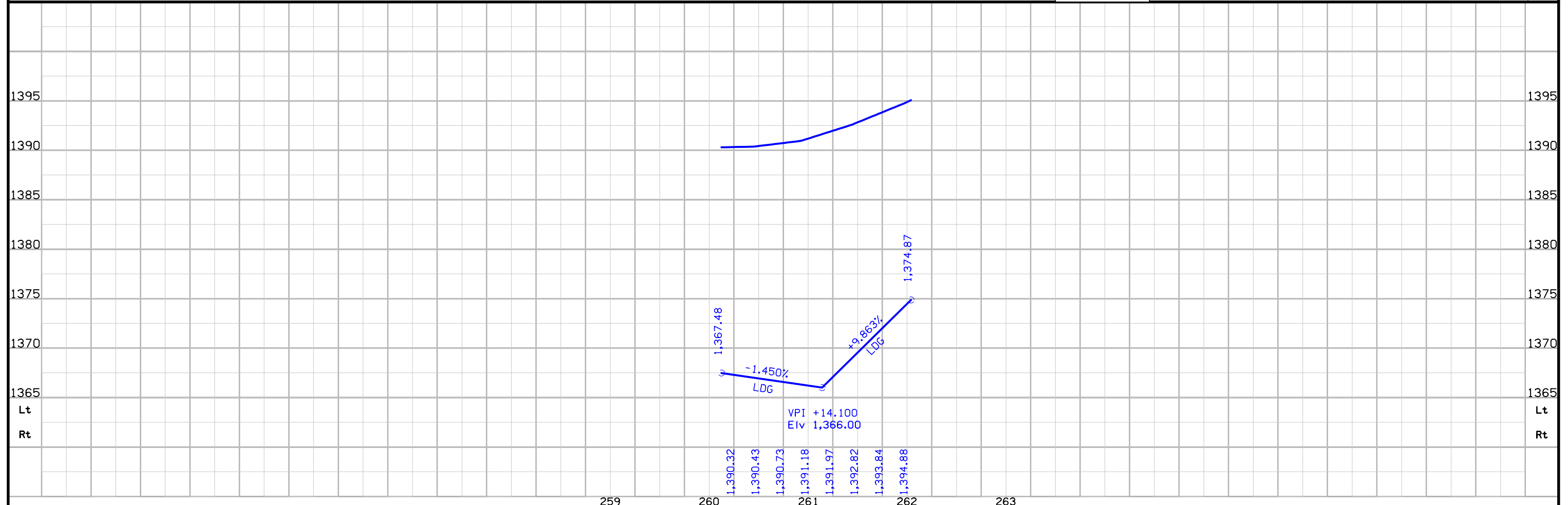
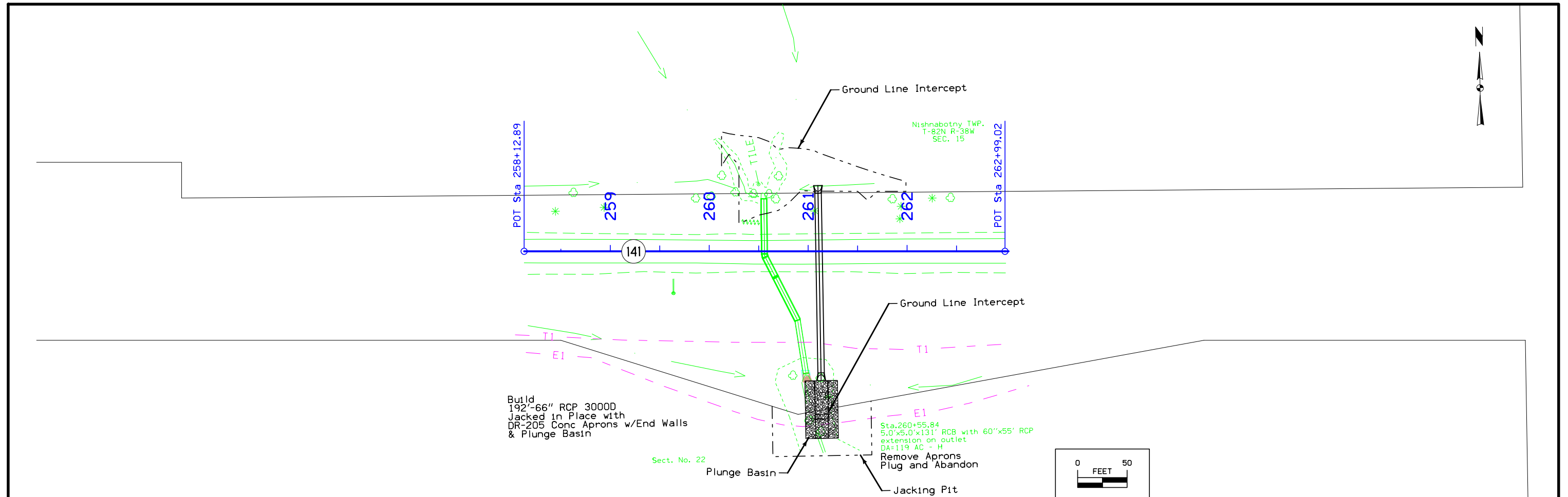
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

### 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
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



## Survey Information

County: Crawford  
PIN: 18-24-141-010  
Project Number: STPN-141-3(71)--2J-24  
Location: 2.8 mi E of Co Rd M36 (MP 67.6)  
Type of Work: Pipe Culverts  
Project Directory: 2414101018  
SAP 855.2

### Vertical Control

Vertical Control was established on 4 monuments on the project designated as points GSVS002, GSVS003, T90\_RESET, and X95. These monuments are stable and are expected to hold vertical reasonably well. The vertical datum is NAVD88. Datum was transferred from the Iowa RTN reference station at Denison to the projects monuments mentioned above by using concurrent 6 hour static measurements and post processing connecting vectors. Geoid 12B was used in processing.

This survey observed 4 NGS Control Monuments with published NAVD88 heights to validate the reference station height used in computation of project heights. The county control has a stated vertical accuracy of + or - 0.05 ft. The survey heights determined at the NGS monuments validate the NAVD 88 height used at the Council Bluffs reference station and the positions of the project control monuments within acceptable tolerance.

This survey observed 4 NGS Control Monuments with published NAVD88 heights to compare to local ground control:

NGS 2nd. order class I mark designated GSVS002 has a published Elev. Of 331.538 (m) Survey Elev. = 331.513 (m)

NGS 2nd. order class I mark designated GSVS003 has a published Elev. Of 335.56 (m) Survey Elev. = 335.55 (m)

NGS 3rd. order mark designated T90\_RESET has a published Elev. Of 392.814 (m) Survey Elev. = 392.821 (m)

NGS 2nd. order class 0 mark designated X95 has a published Elev. Of 371.978 (m) Survey Elev. = 371.973 (m)

This survey observed 1 As-Built plan bench mark to compare to local ground control:

BM 500 This Survey Elev. = 1373.248 = Project F.A. 739 BM 21 Sta 260+55 Elev. 1311.53

### Horizontal Control

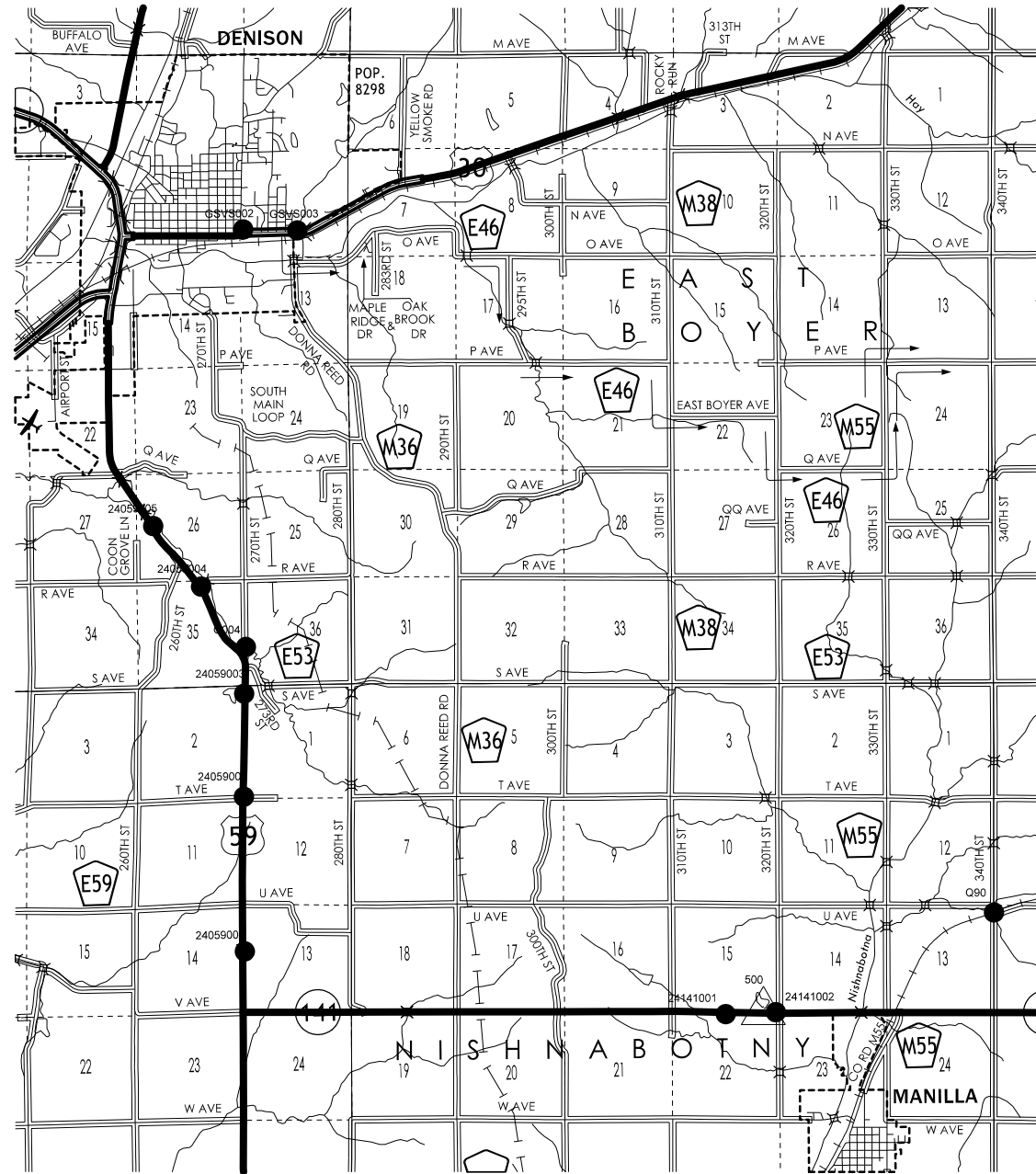
Horizontal Control was established on 5 monuments on the project designated as points DENIPORT, GSVS002, GSVS003, T90\_RESET, and X95. These monuments are stable and are expected to hold vertical reasonably well. The horizontal datum is NAD83(2011) (EPOCH 2010.00). Datum was transferred from the Iowa RTN reference station at Denison to the projects monuments mentioned above by using concurrent 6 hour static measurements and post processing connecting vectors. Iowa Regional Coordinate System Zone 6 is used. The Zone 6 coordinates used at the Denison reference station are: N= 7236897.886, E= 16597218.921.

### Survey Alignment Information

The horizontal alignment for this survey was provided by District 3 ROW office.

## CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points  
 Primary control is for use with RTK base stations and for RTN validation.  
 Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 6

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

# HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 6

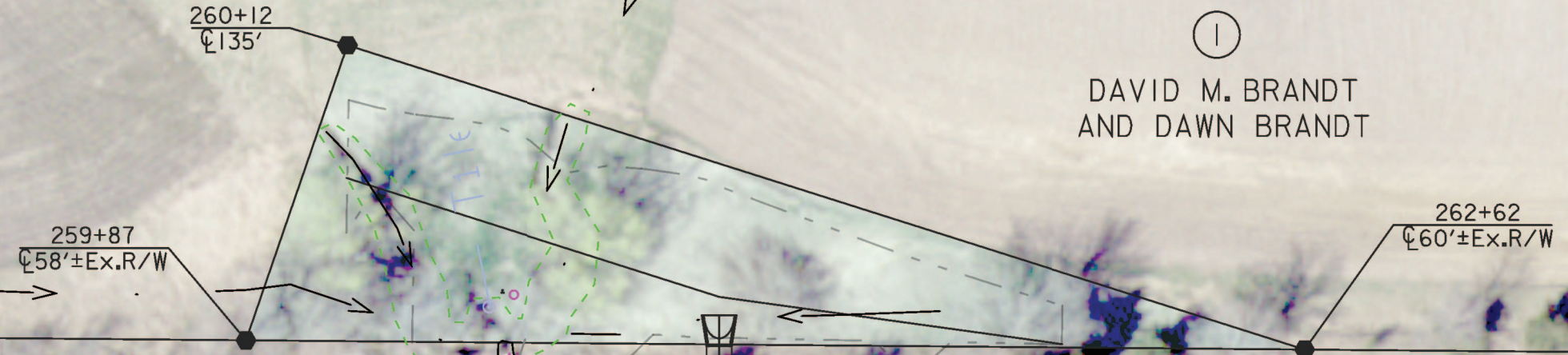
Point Name	Northing	Easting	Elevation	Feature	Description
24141002	7204252.1	16632116.13	1412.16	CP	24141002 AT INTERSECTION OF IA 141 AND US 59 SOUTH OF DENISON GO 5 MILES EAST TO INTERSECTION OF HWY 141 AND 320TH ST SET FENO IN NW QUAD OF INTERSECTION 20 FEET SOUTH OF WEST GATE POST 44 FEET NORTH OF CL IA 141 74 FEET WEST OF HWY 141 SIGN
G004	7222192.67	16606079.53	1263.01	CP	G004 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 3.8 MI S TO INTERSECTION 270TH ST AND US 59 GO 0.1 MI S ON 270TH ST TO FARM ENT ON EAST SIDE FND REBAR 45 FEET EAST OF 270TH ST CL 10 FEET S OF DRIVE CL 28 FEET NE OF CROSSED NAILS IN NE WINGWALL POLE
GSVS003	7242658.46	16608601.46	1196.95	CP	GSVS003 HTTPS://WWW.NGS.NOAA.GOV/CGI-BIN/DS_MARK.PRL?PIDBOX
24059002	7214836.72	16605981.88	1415.8	CP	24059002 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 5.1 MI S TO INTERSECTION OF US 59 AND T AVE SET FENO IN NE QUAD OF INTERSECTION 43 FEET E OF US 59 CL 30 FEET N OF T AVE AND US 59 SIGN 33 FEET WEST OF SEC REF SIGN
24059004	7225160.31	16603878.78	1254.4	CP	24059004 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 3.0 MI S TO INTERSECTION OF US 59 AND R AVE FND IRON PIN IN CONC MONUMENT IN SE QUAD OF INTERSECTION 37 FEET S OF R AVE CL 52 FEET E OF US 59 CL 1 FOOT EAST OF STA MARKER 375
GSVS002	7242707.03	16605947.65	1183.69	CP	GSV002 HTTPS://WWW.NGS.NOAA.GOV/CGI-BIN/DS_MARK.PRL?PIDBOX
24059001	7207238.61	16606023.27	1384.5	CP	24059001 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 6.6 MI S TO BRIDGE OVER ABANDONED RAILROAD BRIDGE SET FENO ON OLD RAILROAD BED 24 FEET WEST OF MILWAUKEE ROAD PUBLIC HUNTING SIGN 105 FEET SE OF EAST PIER ON N END OF BRIDGE 80 FEET NE OF EAST PIER ON S
24059005	7228135.04	16601521.15	1252.58	CP	24059005 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 2.3 MI S ALONG US 59 FND IRON PIN IN CONC MONUMENT 62 FEET E OF US 59 CL 27 FEET E OF LITTER REMOVAL SIGN 27 FEET S OF P POLE
24141001	7204159.75	16629654.51	1422.62	CP	24141001 FROM INTERSECTION OF IA 141 AND US 59 S OF DENISON GO 4.5 MI EAST ALONG IA 141 TO FIELD ENT ON S SIDE OF 141 CUT X ON ROW RAIL 90 FEET S OF IA 141 CL 5 FEET SW OF TEL PED 13 E OF FIELD ENT CL 4 FEET W OF FIBER OPTIC WARNING SIGN
24059003	7219902.34	16605995.23	1376.38	CP	24059003 AT SOUTH INTERSECTION OF US 30 AND US 59 GO 4.1 MI S ALONG US 59 FND IRON PIN IN CONC MONUMENT ON TOP OF W BACKSLOPE 49 FEET W OF US 59 CL 100 FEET NW OF STA MARKER 315
Q90	7209149.473	16642832.803	1379.402	CP	Q90 HTTP://WWW.NGS.NOAA.GOV/CGI-BIN/DS_MARK.PRL?PIDBOX=MJ0334
500	7204271.444	16631503.625	1373.248	BM	500 FROM INTERSECTION OF IA 141 AND US 59 S OF DENISON GO 4.7 MI EAST ALONG IA 141 FND PLUG INLET HDWL 5X5 RCB AT STA. 260+55.84

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



Nishnabotny TWP.  
T-82N R-38W  
SEC. 15

①  
DAVID M. BRANDT  
AND DAWN BRANDT



IA 141

IA 141

259

260

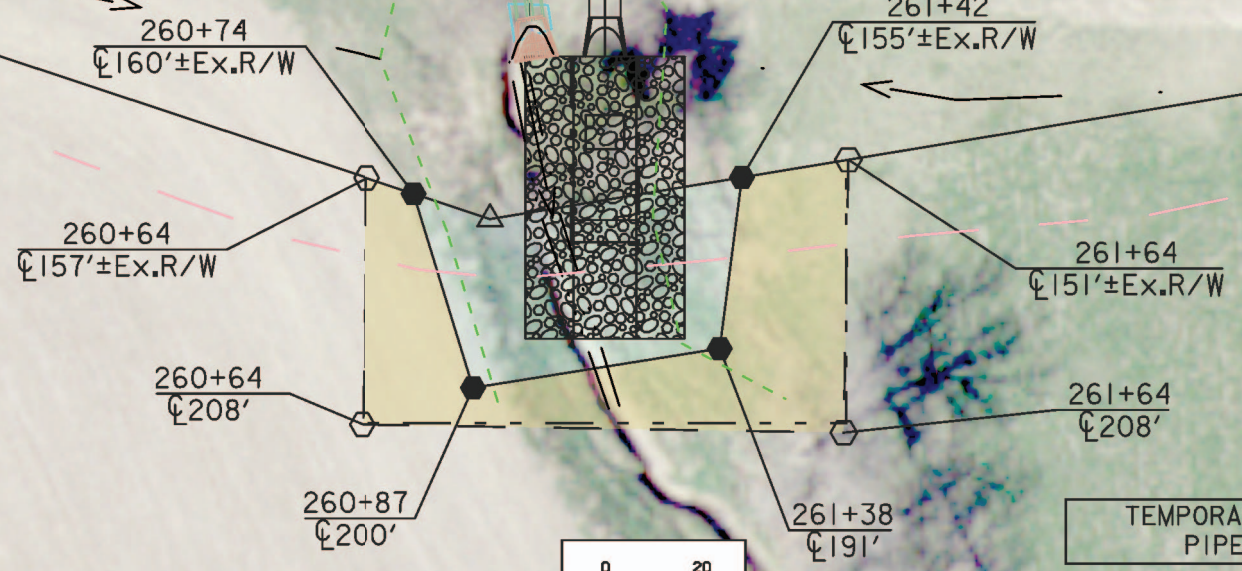
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262

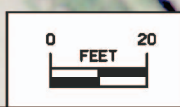
263

②  
LAJEAN STEINHOFF

Nishnabotny TWP.  
T-82N R-38W  
SEC. 22



TEMPORARY EASEMENT FOR  
PIPE JACKING PIT



<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
ROW Team: CAGLE / LARSON	
ROW #: STPN-141-3(72)--2J-24	
Plan Date: 5/22/2020	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



**TRAFFIC CONTROL PLAN**

108-23A  
08-01-08

Traffic on IA 141 shall be maintained at all times.

**511 TRAVEL RESTRICTIONS**

108-25  
10-21-14

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No travel restrictions anticipated.									

**COORDINATED OPERATIONS**

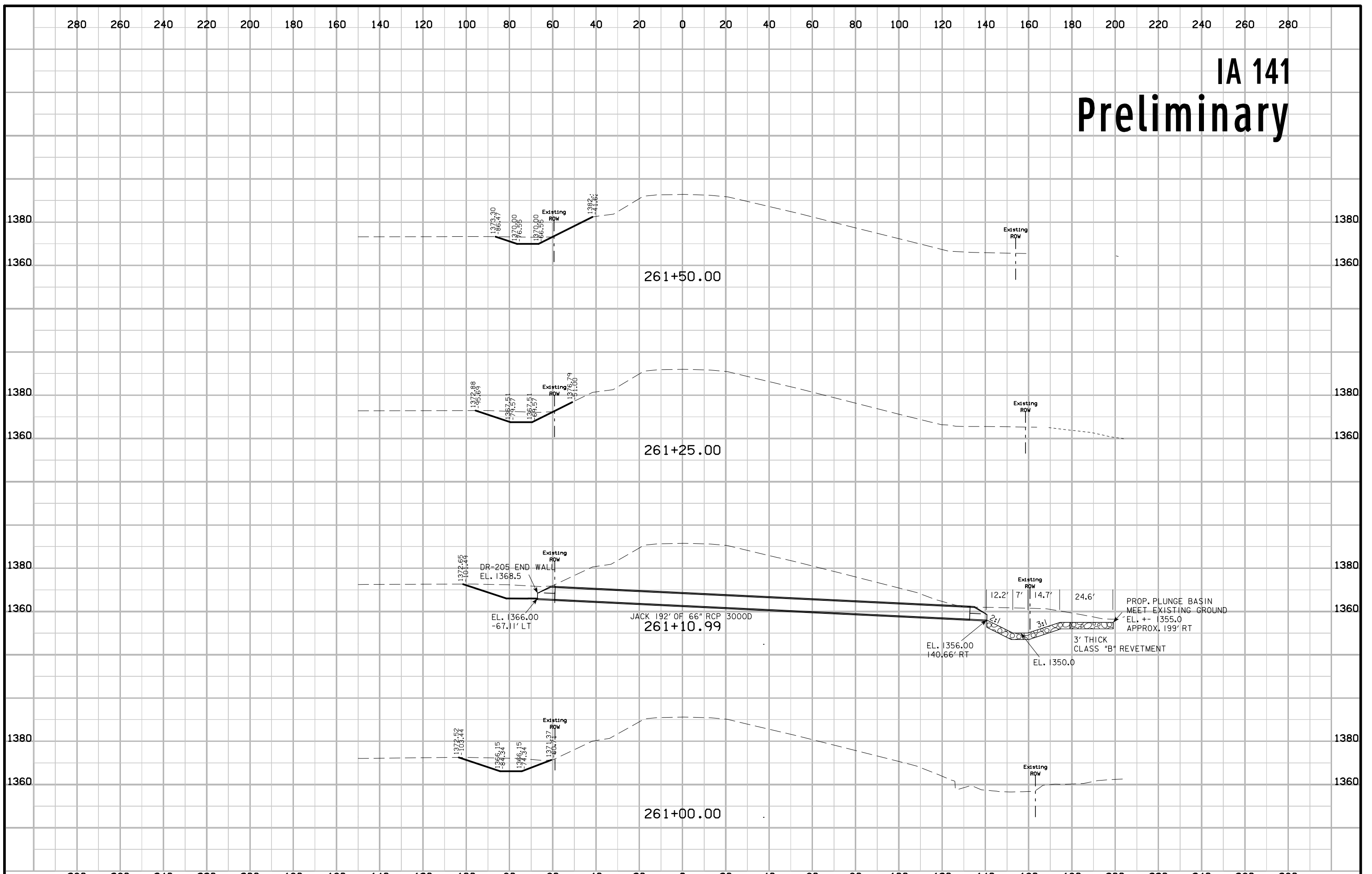
111-01  
04-17-12

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
None provided	



# IA 141 Preliminary



# IA 141 Preliminary

