

PALO ALTO CO. BRIDGE REPLACEMENT - OTHER
 BRFN-018-3(106)--39-74

LETTING DATE
 TBD

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US Highway 18
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tabulations
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3	US 18 Detour
V Sheets	Culvert Situation Plans
* V.1	Situation Plan
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W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 6	Mainline Cross Sections
	* Color Plan Sheets

← H Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
PALO ALTO COUNTY
BRIDGE REPLACEMENT - OTHER
 US 18 OVER PRAIRIE CREEK
 2.8 MILES WEST OF WEST JCT. IA 15

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



MILEAGE SUMMARY			
Div.	Location	Lin. Ft.	Miles
	US Highway 18 Sta. 545+10.00 to Sta. 550+55.00	545.00	0.1032
	Total Length of Roadway	545.00	0.1032
	Total Length of Project	545.00	0.1032

For Project Location Map Refer to Sheet No. A.2

EARTHWORK SUMMARY	
Cut	955 CY
Fill +30%	290 CY
Borrow	- - CY

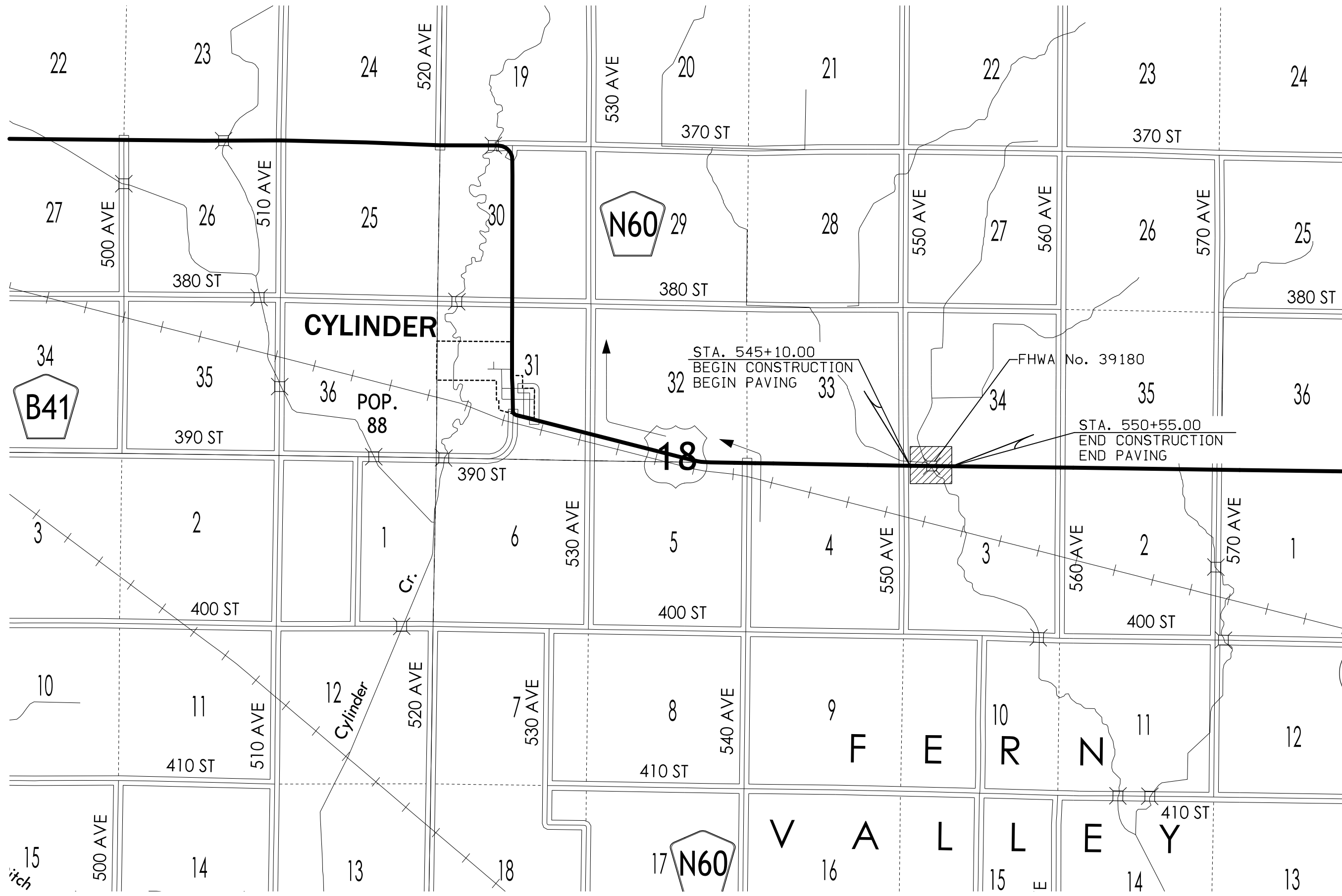
DESIGN DATA RURAL	
2019 AADT	2550 V.P.D.
2044 AADT	3100 V.P.D.
2044 DHV	320 V.P.H.
TRUCKS	27 %
Total Design ESALs	--

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	- -	Primary Signature Block
V.1	Dallas R. Schechinger	Hydraulic Engineer

ROADWAY 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. - Date: 10-15-2021 Signature: <u>Dallas R. Schechinger</u> Date: _____ Printed or Typed Name: _____ My license renewal date is December 31, 2022
Pages or sheets covered by this seal: X X	

R-32W

R-31W



CYLINDER

POP.
88

STA. 545+10.00
BEGIN CONSTRUCTION
BEGIN PAVING

FHWA No. 39180

STA. 550+55.00
END CONSTRUCTION
END PAVING

18

F E R N

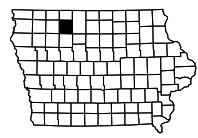
V A L L E Y

T-96N

T-95N



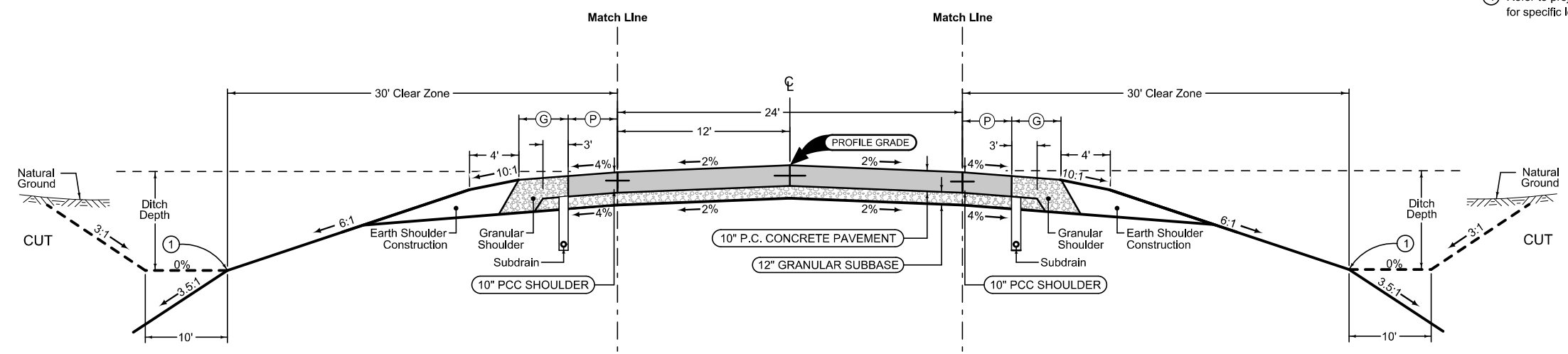
NOT TO SCALE



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

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.



Full Depth PCC Combination Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
545+10.00	550+55.00	4.0	6.0

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

2P_04-21-20	
STATION TO STATION	
545+10.00	550+55.00

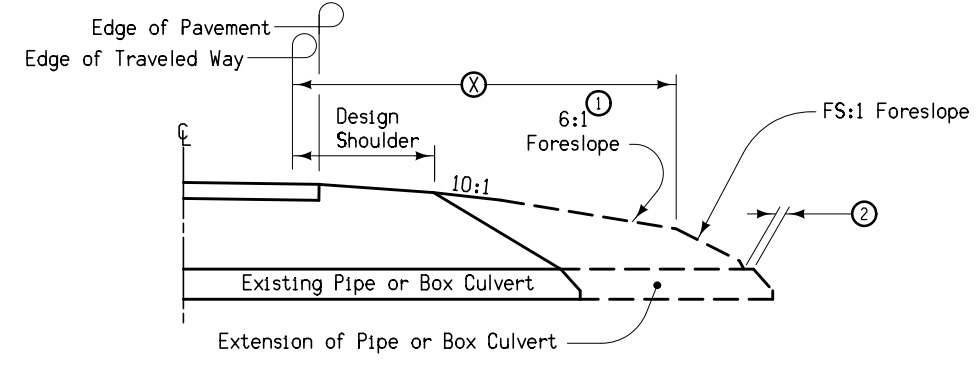
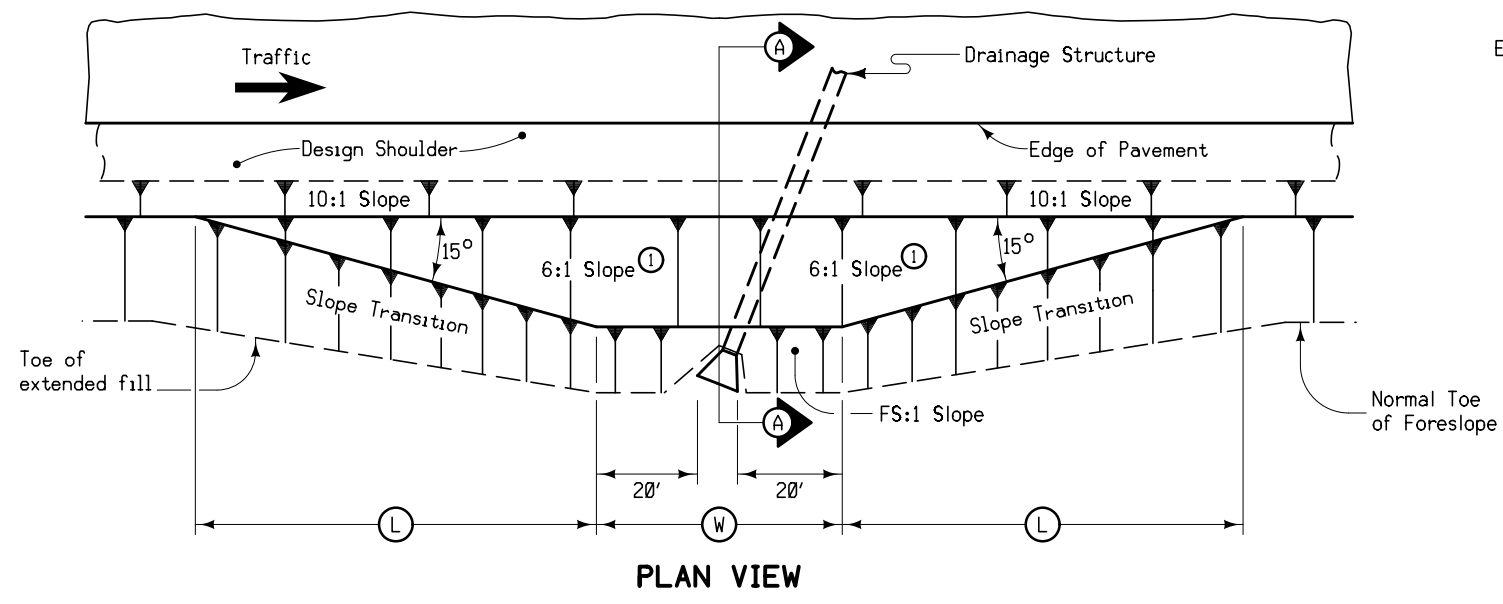
Full Depth PCC Combination Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
545+10.00	550+55.00	4.0	6.0

Refer to Tab. 100-24 for Pavement Quantities
 Refer to Tab. 112-9 for Shoulder Quantities

**TYPICAL CROSS SECTION
 US HIGHWAY 18**



STRUCTURE LOCATION		W	L	X	FS
STATION ③	SIDE	Feet	Feet	Feet	
547+83.00	RT	85	60	30	3.5:1
547+83.00	LT	85	60	30	3.5:1

- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten as indicated so as to cover the structure. Minimum earth cover is 6 inches.
- ① Slope may be flatter than 6:1.
 - ② 6 inch minimum for pipe installations or to top of headwall on RCB.
 - ③ At \bar{C} of roadway.
 - W = Pipe or RCB opening width plus 20 feet each side.

BARNROOF FORESLOPE AT SKEWED DRAINAGE STRUCTURE

SURVEY SYMBOLS

	Interstate Highway Symbol		Cistern
	U.S. Highway Symbol		L.P. Gas Tank (No Footing)
	Iowa Highway Symbol		Underground Storage Tank
	County Road Highway Symbol		Latrine
	Evergreen Tree		Luminaire
	Deciduous Tree		Traffic Signal
	Fruit Tree		Traffic Signal with Luminaire
	Shrub (Bushes)		Telephone Pedestal
	Timber		Television Pedestal
	Hedge		Telephone Pole
	Stump		Telephone Pole (Second Company)
	Swamp		Telephone Pole (Third Company)
	Rock Outcrop		Telephone Pole (Fourth Company)
	Broken Concrete		Telephone Pole (Fifth Company)
	Revetment (Rip Rap)		Power Pole
	Cemetery		Power Pole (Second Company)
	Grave		Power Pole (Third Company)
	Cave		Power Pole (Fourth Company)
	Sink Hole		Power Pole (Fifth Company)
	Board Fence		Electrical Highline Tower (Metal or Concrete)
	Chain Link or Security Fence		Telephone Riser Pole
	Wire Fence		Power Riser Pole
	Terrace		Telegraph Pole
	Earth Dam or Dike (Existing)		Satellite TV Dish
	Earth Dam or Dike (Proposed)		Water Hook Up
	Tile Outlet		Radio Tower
	Edge of Water		Tower Anchor
	Existing Drainage		Guardrail (Beam or Cable)
	Proposed Drainage		Guard Post (one or two)
	Right of Way Rail or Lot Corner		Guard Post (over two)
	Concrete Monument		Filler Pipe
	Well		Gas Valve
	Windmill		Water Valve
	Beehive Intake		Speed Limit Sign
	Existing Intake		Mile Marker Post
	Proposed Intake		Sign
	Existing Utility Access (Manhole)		Traffic Signal Control Box
	Proposed Utility Access (Manhole)		Rail Road Signal Control Box
	Fire Hydrant		Telephone Switch Box
	Water Hydrant (Rural)		Electric Box

UTILITY LEGEND

	Iowa Lakes Electric Brian Scott Phone # brians@ilec.coop
	Iowa Communications Network Shannon Marlow 515-725-4402 shannon.marlow@iowa.gov

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

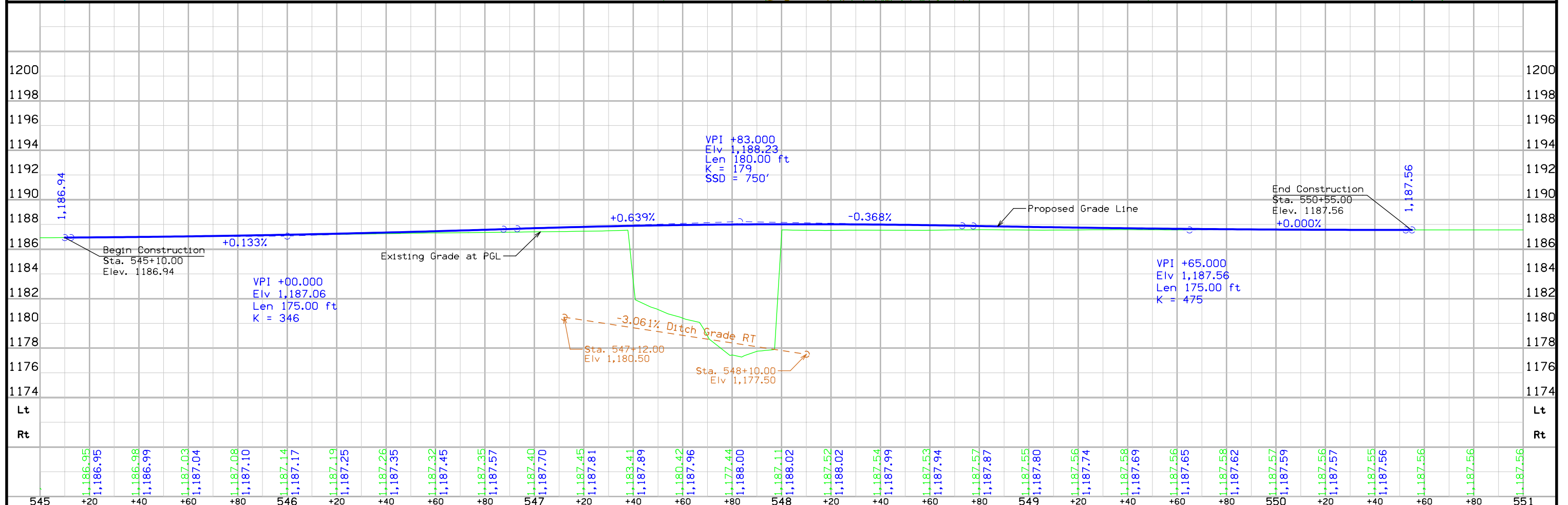
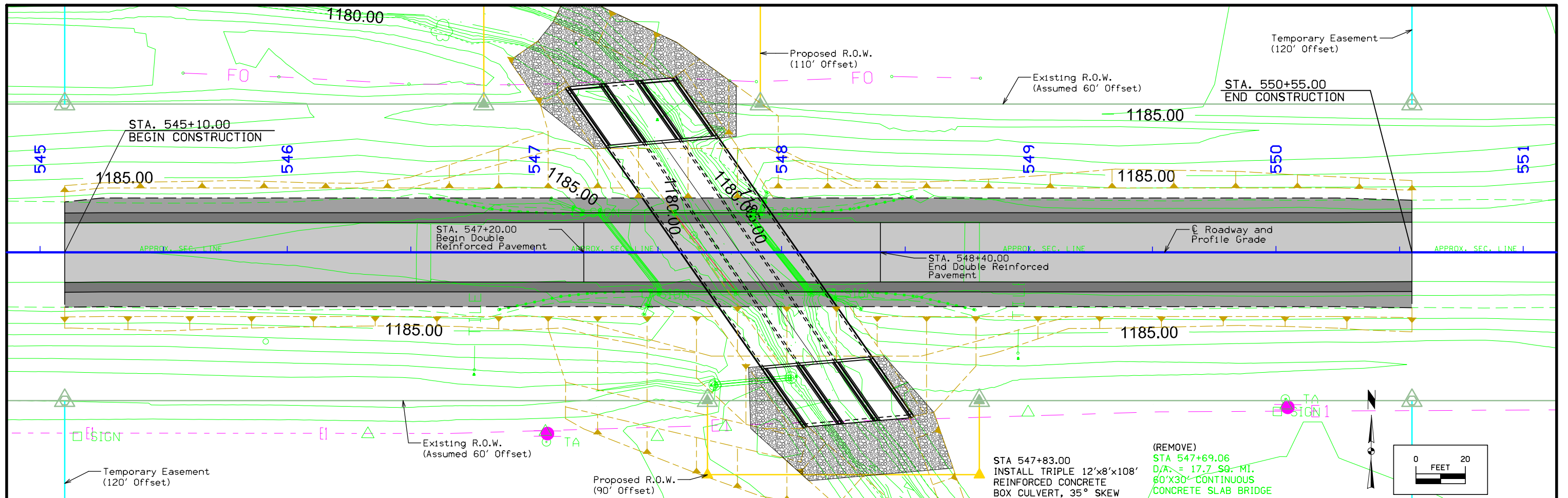
LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

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)



FILE NO.	ENGLISH	DESIGN TEAM	SCHRODER \ JEO CONSULTING GROUP	PALO ALTO COUNTY	PROJECT NUMBER	BRFN-018-3(106)--39-74	SHEET NUMBER	D.2
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Survey Information

PALO ALTO COUNTY
 BRFN-018-3(106)--39-74
 PRAIRIE CREEK 2.8 MI W OF W JCT IA 15
 PIN 19-74-018-010
 SAP-06112

Survey Personnel

Field personnel:
 Dirk Janssen Survey Field Chief
 Brandon Mount - Surveyor
 William Riordan - Surveyor

Office personnel:
 Jeremy Cswercko

Date(s) of Survey

Begin Date July 8, 2020
 End Date July 14, 2020

General Information

Measurement units for this survey are US survey feet. This project involves a bridge over Prairie Creek 2.8 miles W of W Jct IA 15. This is a full field survey.
 The survey request was made for the purpose of bridge reconstruction.

Vertical Control

Vertical datum for this survey was established with NAVD88 (Computed using Geoid 12B). Referencing the Iowa RTN, surveyors checked into NGS monuments with Trimble TSC3 collector using 15 second static observations. NGS PID DP4482 has a published elevation of 1258.67 ft. Survey observation of point was 1258.63. Surveyors accepted this vertical difference as tolerable for establishing control on site. NGS PID NL0924 has an approximate elevation of 1221 ft. Survey observation of point was 1221.17. This point was primarily used to confirm horizontal control but accepted vertical proximity. Benchmark was established on site using repeated 15 second observations. Elevations were transferred to additional control points and benchmark using level loop.

Horizontal Control

Horizontal control was established on 4 monuments for this project using the Iowa RTN with horizontal datum NAD83(2011) epoch 2010.00. Iowa Regional Coordinate System Zone 1 (Spencer) was used. Surveyors checked on NGS PID NL0924 for horizontal accuracy and were within .03' of North and East as noted on datasheet. Monuments set are considered stable and expected to hold horizontally and vertically reasonably well.

Survey Alignment Information

The horizontal alignment for this survey was provided by District 3 of the Iowa Department of Transportation.

Utility Information

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 *Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data*.

Remark abbreviations
 QLA Quality Level A Highest guideline quality level
 QLD Quality Level D Lowest guideline quality level

One-call Design Information request:

Ticket # 552002873 submitted 4/17/20 at 2:16pm

One-call Design Information converted to Locate request:

Ticket # 552003302 submitted 5/09/20 at 11:40am

Iowa One-Call Does not allow joint meets for survey related requests.

The following Companies were listed:

Company (Quality)	Symbol	Remark
(ICN) Iowa Communications Network	-FO(C)-	QLC
Iowa Lakes Electric	- E -	QLA
Iowa Lakes Electric	⦿	QLD

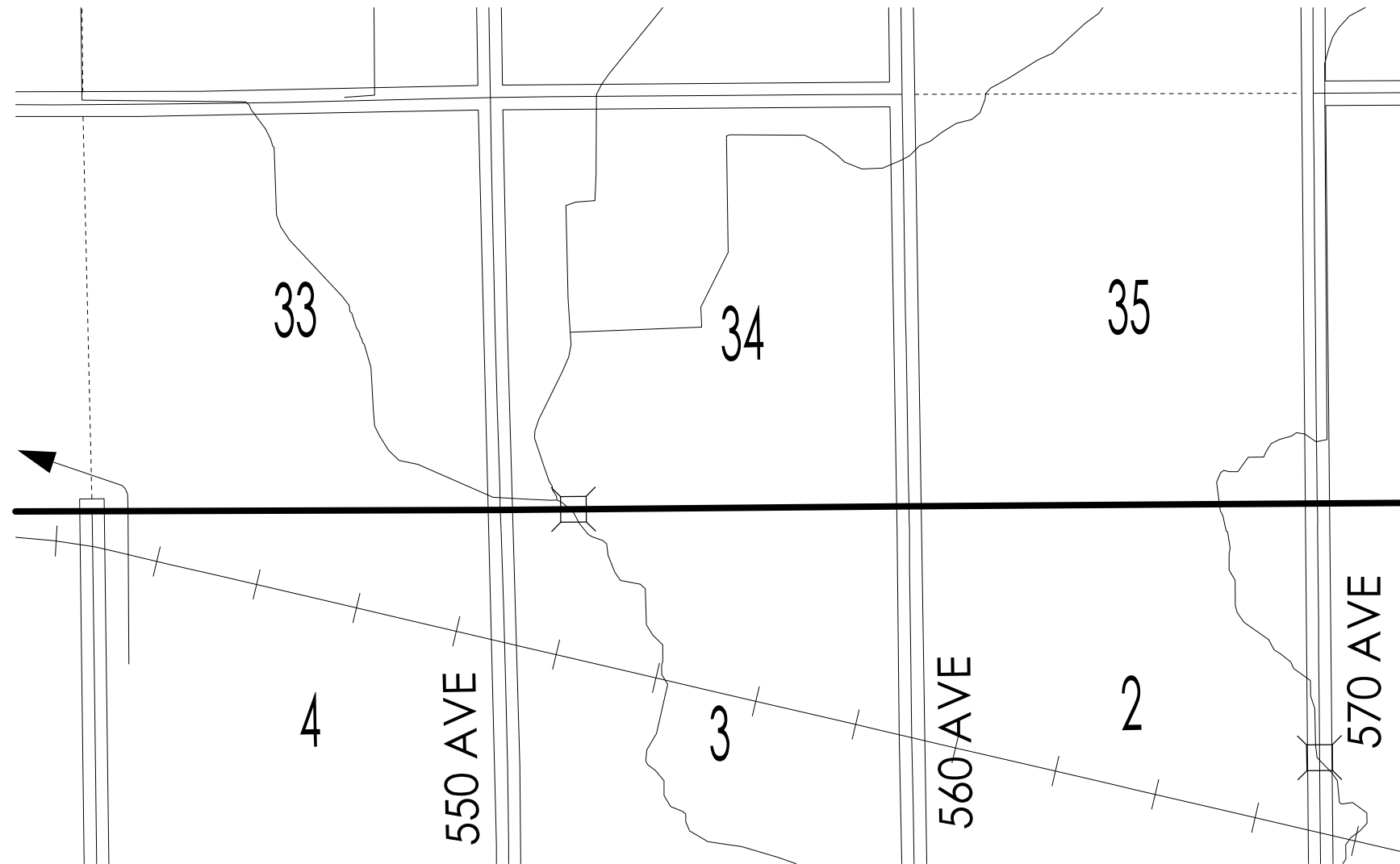
Companies responses to One-Call requests:

4/17/20 Received an E-mail from Shannon Marlow, Shannon.marlow@iowa.gov with Iowa Communications Network (ICN) in response to ticket #552002873, attaching a map of their utilities in the project area.

Code	Status
ICN	Marked
Iowa Lakes Electric	Clear

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.
150TH AVE



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 1

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 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 1

Point Name	Northing	Easting	Elevation	Feature Definition	Description
100	9558261.583	11700316.67	1183.643	CP	SET ½"x 30"REBAR W/OPC STAMPED JEO CONTROL +/- 509.7' W OF W END OF BRIDGE DECK, +/- 34' N OF CL HWY 18
101	9558194.701	11700679.81	1183.800	CP	SET ½"x 30"REBAR W/OPC STAMPED JEO CONTROL +/- 147' W OF W END OF BRIDGE DECK, +/- 35' S OF CL HWY 18
102	9558292.870	11701387.65	1186.856	CP	SET ½"x 30"REBAR W/OPC STAMPED JEO CONTROL +/- 499.2' E OF E END OF BRIDGE DECK, +/- 56.2' N OF CL HWY 18
500	9558159.109	11700793.25	1184.651	BM	SET RR SPIKE ON N FACE OF 1ST P.P. W OF BRIDGE ON S. SIDE HWY 18
501	9558172.314	11701092.82	1185.429	BM	SET RR SPIKE ON N FACE OF 1ST P.P. E OF BRIDGE ON S. SIDE HWY 18

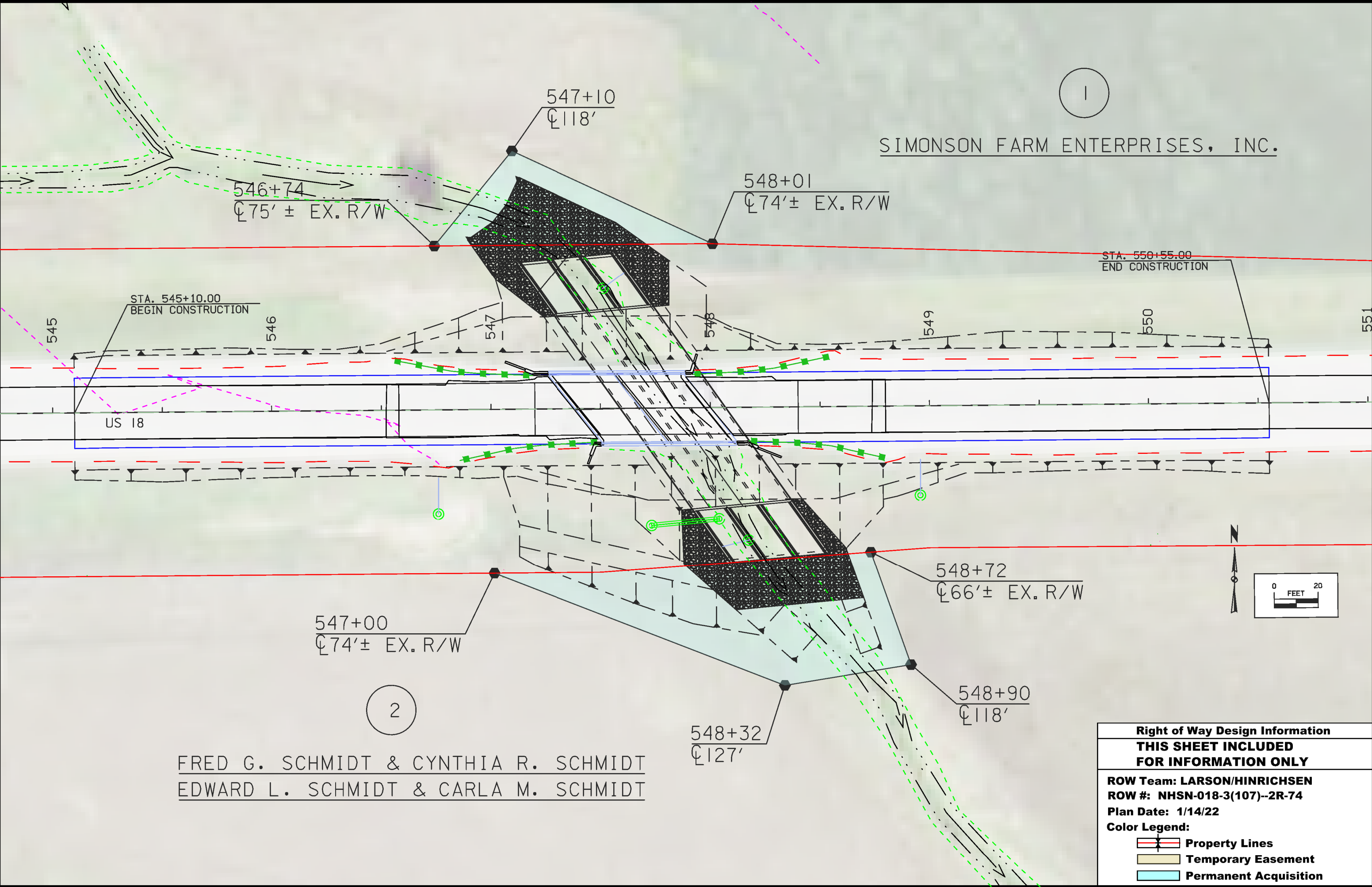
ALIGNMENT COORDINATES

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)
Point 5	US 18	538+48.90	9558224.51	11699937.12															
Point 6	US 18	564+79.58	9558246.75	11702567.71															

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.




1

SIMONSON FARM ENTERPRISES, INC.



2

FRED G. SCHMIDT & CYNTHIA R. SCHMIDT
 EDWARD L. SCHMIDT & CARLA M. SCHMIDT

Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: LARSON/HINRICHSEN	
ROW #: NHSN-018-3(107)--2R-74	
Plan Date: 1/14/22	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

TRAFFIC CONTROL PLAN

Traffic control on this project shall be in accordance with the standard road plans shown in Tabulation 105-4 and the specific layouts shown in the plans. For additional complementary information, refer to Part 6 of the Manual of Uniform Traffic Control Devices (MUTCD) and the current standard specifications and supplemental specifications.

The Contractor shall coordinate traffic control with projects listed in Tabulations 111-01 and other projects in the area.

The Contractor shall notify the Resident Construction Engineer and Palo Alto County two (2) weeks prior to temporary road closures and changes in traffic patterns during construction.

The Contractor shall be responsible for furnishing, installing, maintaining, and removing the signage for the temporary detours.

The Contractor shall remove existing signs and posts within the project limits, as required for construction. The Contractor shall provide Iowa DOT and Palo Alto County two (2) weeks advance notice prior to removal of existing signs.

The Contractor shall maintain clean pavement in and out of the work area at all times.

All signs to be in place longer than three days must be mounted.

The Contractor will be responsible for securing a safe storage area for equipment and materials to be used on the project.

US 18 will be closed to thru traffic during construction.

US 18 traffic will be maintained via offsite detour. See Sheet J.3 for detour route.

STAGING NOTES

General Notes:

1. Access to properties shall be maintained at all times.
2. The Contractor shall coordinate traffic control with project listed in Tabulation 111-01 and other projects in the area.

Stage 1 - Traffic Control

- Utilize Iowa DOT Standard Road Plan TC-211 for patching along the detour route.

Stage 1 - Construction

- Install temporary traffic control as required for construction.
- Install patches as outlined in the C-Sheets.

Stage 2 - Traffic Control

- Utilize Iowa DOT Standard Road Plan TC-233 for pavement marking operations along the detour route.

Stage 2 - Construction

- Install pavement markings as described in the C-Sheets along the detour route.

Stage 3 - Traffic Control

- Close US Highway 18 to traffic utilizing Iowa DOT Standard Road Plan TC-252, Situation 1 (Rural).
- Maintain access to properties at all times.

Stage 3 - Construction

- Install temporary traffic control and erosion control.
- Remove existing bridge and install new box culvert.
- Grade and pave proposed pavement. Install pavement markings.
- Install final erosion control.

Stage 4 - Traffic Control

- Open traffic to US Highway 18.
- Remove remaining traffic control.

**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		Lane Identification

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

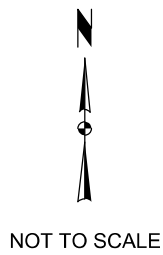
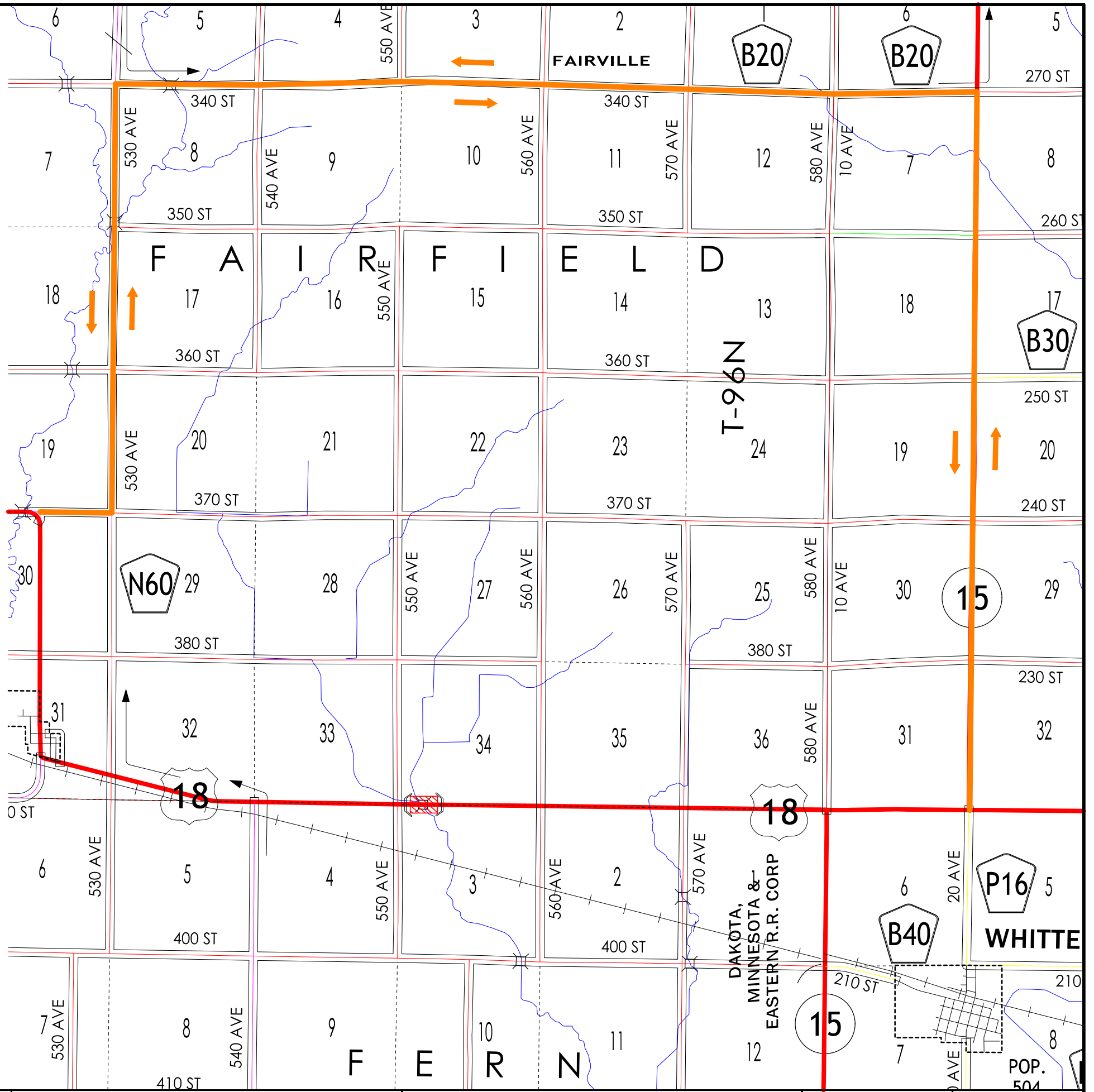
**TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET**

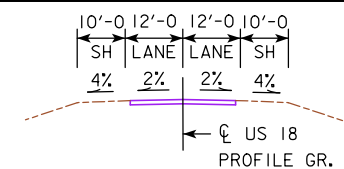
(COVERS SHEET SERIES J)

LEGEND

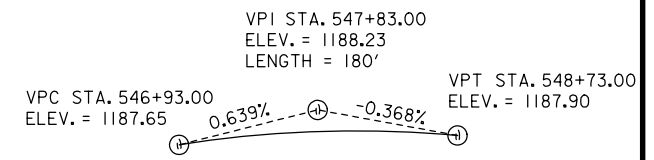
-  Project Location
-  Detour Route
-  Traffic Sign
-  Traffic Sign Identification
-  Road Closure

Note: Highway B20 is planned to be reconstructed in 2022. Proceed with proposed detour route as shown.

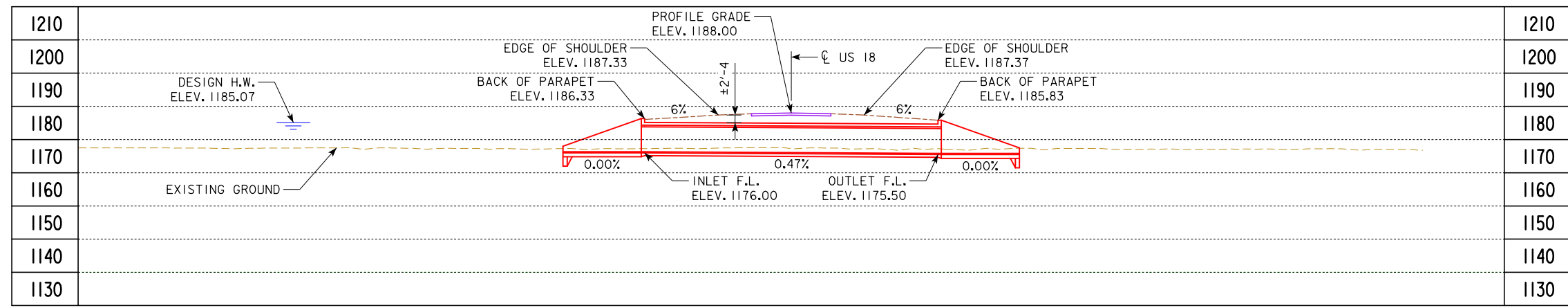




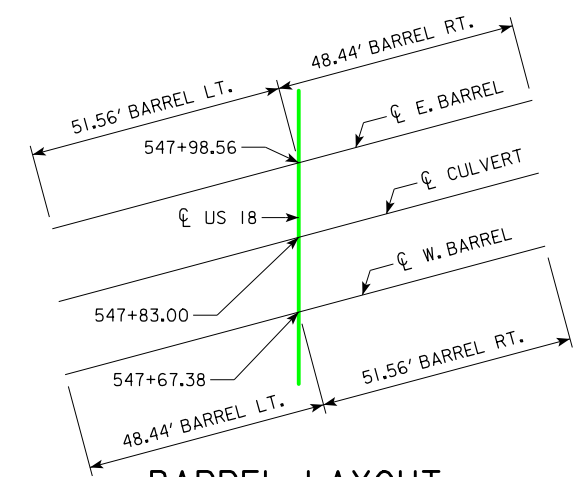
BENCH MARK NO. 500: SET RR SPIKE ON N. FACE OF 1ST PP W. OF BRIDGE ON S. SIDE OF US 18, ELEV. 1184.65



TYPICAL APPROACH SECTION



PROPOSED PROFILE GRADE U.S. 18



BARREL LAYOUT

LINTEL BEAM AND CURTAIN WALLS SHALL FORM ONE CONTINUOUS LINE AND SHALL NOT BE STAGGERED OR OFFSET. (REMOVE THIS LAYOUT FROM CIP SHEET IN FINAL DESIGN).

HYDRAULIC 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.

Signature: *Dallas R. Schechinger* Date: 09/30/2021
 Printed or Typed Name: Dallas R. Schechinger
 My license renewal date is December 31, 2022

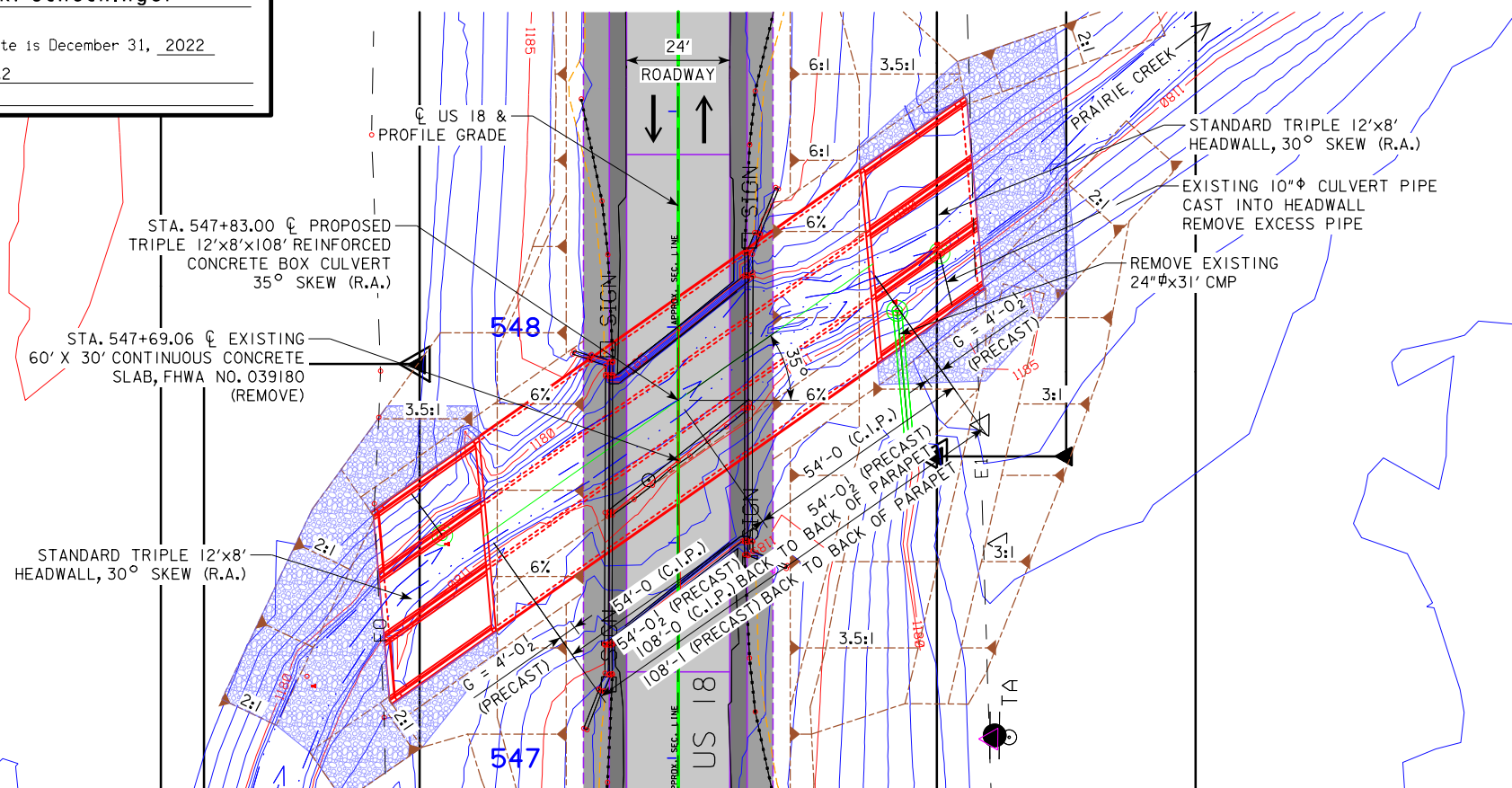
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LONGITUDINAL SECTION ALONG CULVERT

ANTICIPATED SETTLEMENT = UNKNOWN

NOTE: FLOW LINE OF THE CULVERT HAS BEEN SET 1' BELOW STREAMBED

NOTE: HAUL CONCRETE FROM EXISTING BRIDGE OFFSITE. DO NOT USE AS RIP RAP.



SITUATION PLAN

NOTE: THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 60'x30' CCS BRIDGE, PALO ALTO DESIGN NO. 457, FHWA NO. 039180, MAINT. NO. 7416.7S018.

EXISTING STRUCTURE

60' X 30' CONTINUOUS CONCRETE SLAB (REMOVE)

UTILITIES LEGEND:

E1 - ELECTRIC
 FO - FIBER OPTIC

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

HYDRAULIC DATA

DRAINAGE AREA = 17.7 SQ. MI.
 $Q_{50} = 1,200$ CFS
 HW ELEV. = 1185.07
 STREAM SLOPE = 4.67 FT./MI.

LOCATION

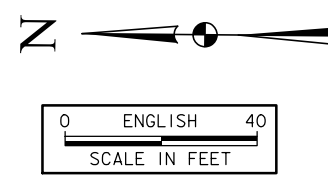
US 18
 OVER PRAIRIE CREEK
 T-95N R-31W
 SECTION 3
 FERN VALLEY TOWNSHIP
 PALO ALTO COUNTY
 FHWA NO. 039181
 BRIDGE MAINT. NO. 7416.7S018
 LATITUDE 43.082938°
 LONGITUDE -94.498161°

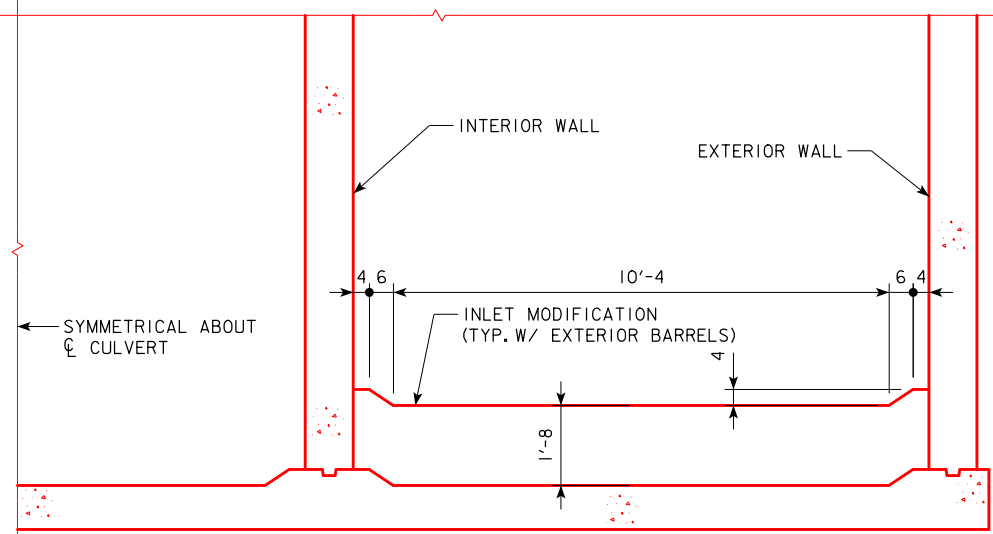
TRAFFIC ESTIMATE

2019 AADT	2550	V.P.D.
2044 AADT	3100	V.P.D.
2044 DHV	320	V.P.H.
TRUCKS	27	%
TOTAL DESIGN ESALs		

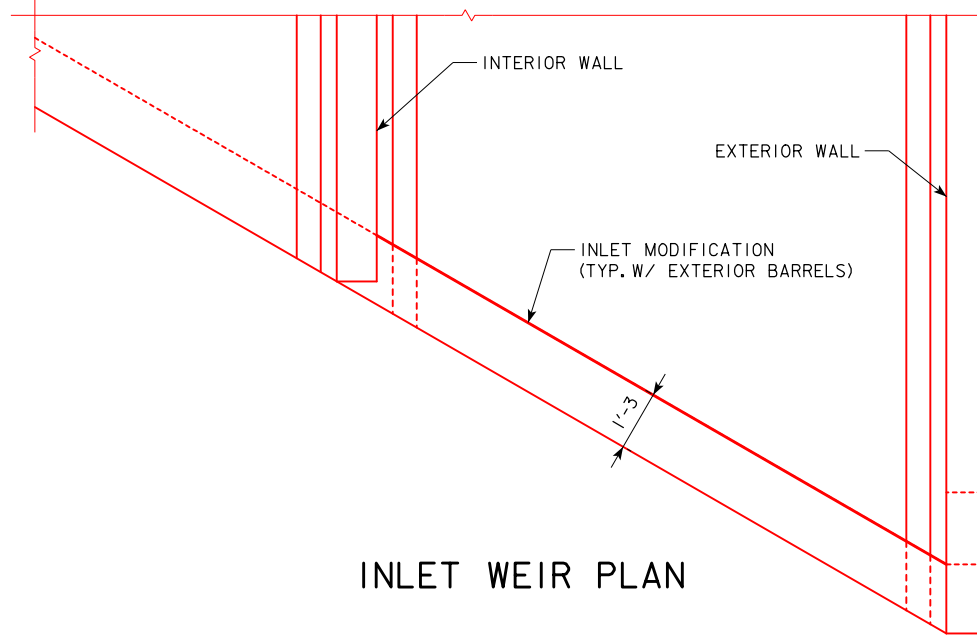
DESIGN FOR 35° SKEW (R.A.) TRIPLE 12'x8'x108' REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN
 STA. 547+83.00 (US 18) SEPTEMBER 2021
 PALO ALTO COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION
 DESIGN SHEET NO. 1 OF 2 FILE NO. 32088 DESIGN NO. 125

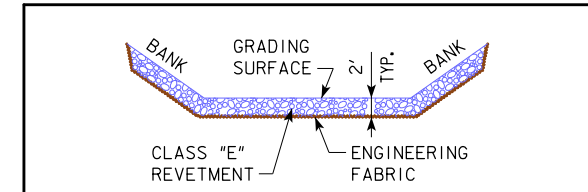




INLET WEIR SECTION



INLET WEIR PLAN

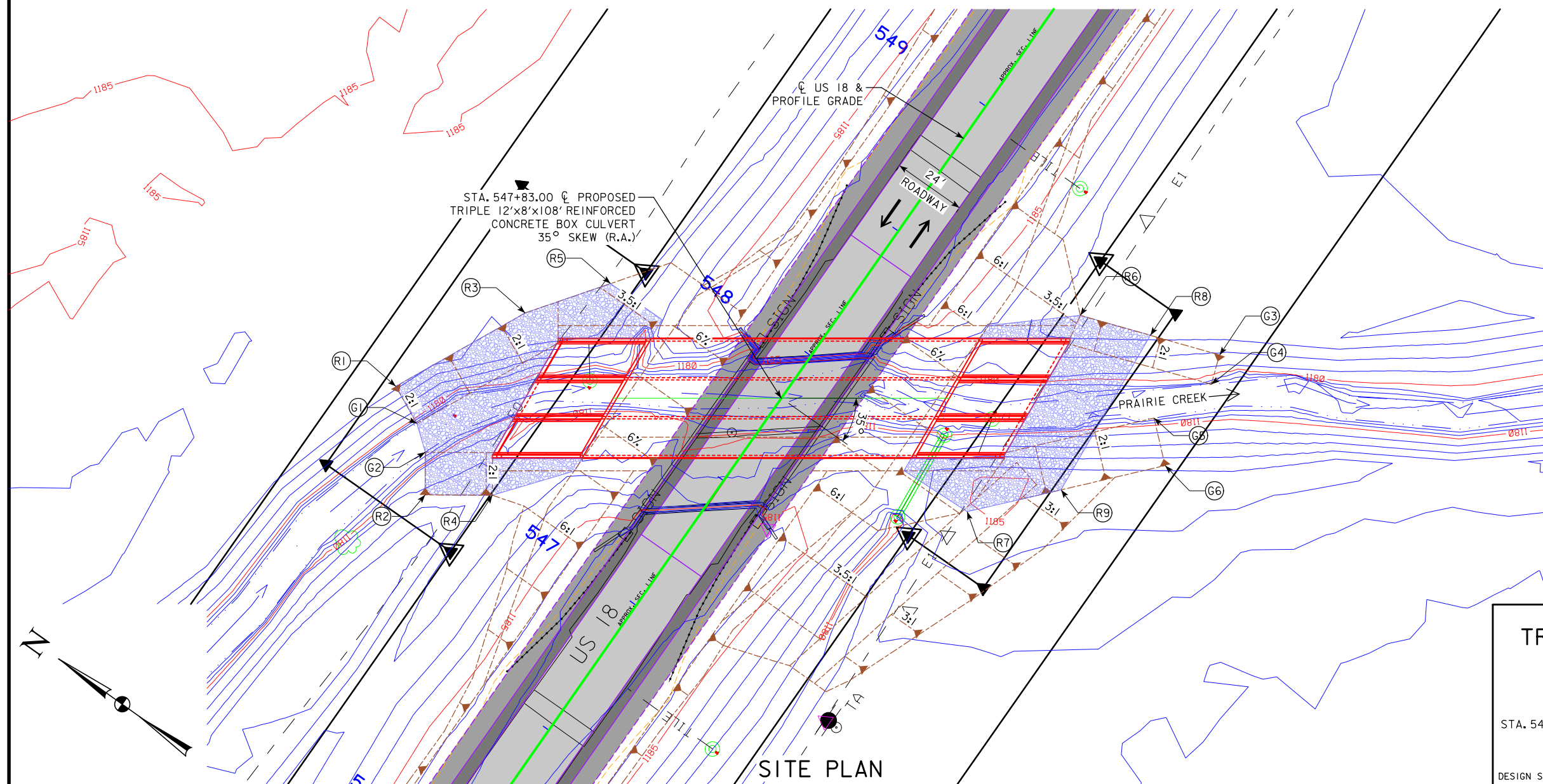


TYPICAL CHANNEL PROTECTION

ESTIMATED REVELTMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVELTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	290	270	180
OUTLET	230	220	145
TOTALS	520	490	325

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



REVELTMENT LAYOUT:

- (R1) STA. 547+13.63, 105.9' LT.
- (R2) STA. 546+89.97, 77.6' LT.
- (R3) STA. 547+57.74, 84.9' LT.
- (R4) STA. 547+02.55, 59.4' LT.
- (R5) STA. 547+81.69, 67.5' LT.
- (R6) STA. 548+61.56, 64.8' RT.
- (R7) STA. 547+87.50, 71.3' RT.
- (R8) STA. 548+69.40, 87.4' RT.
- (R9) STA. 548+11.03, 92.5' RT.

GRADING CONTROL:

- (G1) STA. 547+07.62, 93.2' LT., STREAMBED, ELEV. 1,177.3
- (G2) STA. 547+01.47, 85.5' LT., STREAMBED, ELEV. 1,177.6
- (G3) STA. 548+77.14, 109.7' RT., TOP OF BANK, ELEV. 1,181.8
- (G4) STA. 548+67.69, 113.0' RT., STREAMBED, ELEV. 1,177.2
- (G5) STA. 548+47.82, 104.0' RT., STREAMBED, ELEV. 1,177.2
- (G6) STA. 548+37.15, 115.9' RT., TOP OF BANK, ELEV. 1,183.6

DESIGN FOR 35° SKEW (R.A.)
TRIPLE 12'x8'x108' REINFORCED CONCRETE BOX CULVERT
 SITUATION PLAN - SITE
 STA. 547+83.00 (US 18) SEPTEMBER 2021
PALO ALTO COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION
 DESIGN SHEET NO. 2 OF 2 FILE NO. 32088 DESIGN NO. 125

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)

- Topsoil (Class 10)
- Slope Dressing Only
- Class 10 Materials
- Select Loams And Clay-Loams
- Select Sand
- Unsuitable Type A Disposal
- Unsuitable Type B Disposal
- Unsuitable Type C Disposal
- Shale
- Waste
- Broken and Weathered Rock
- Solid Rock
- 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.

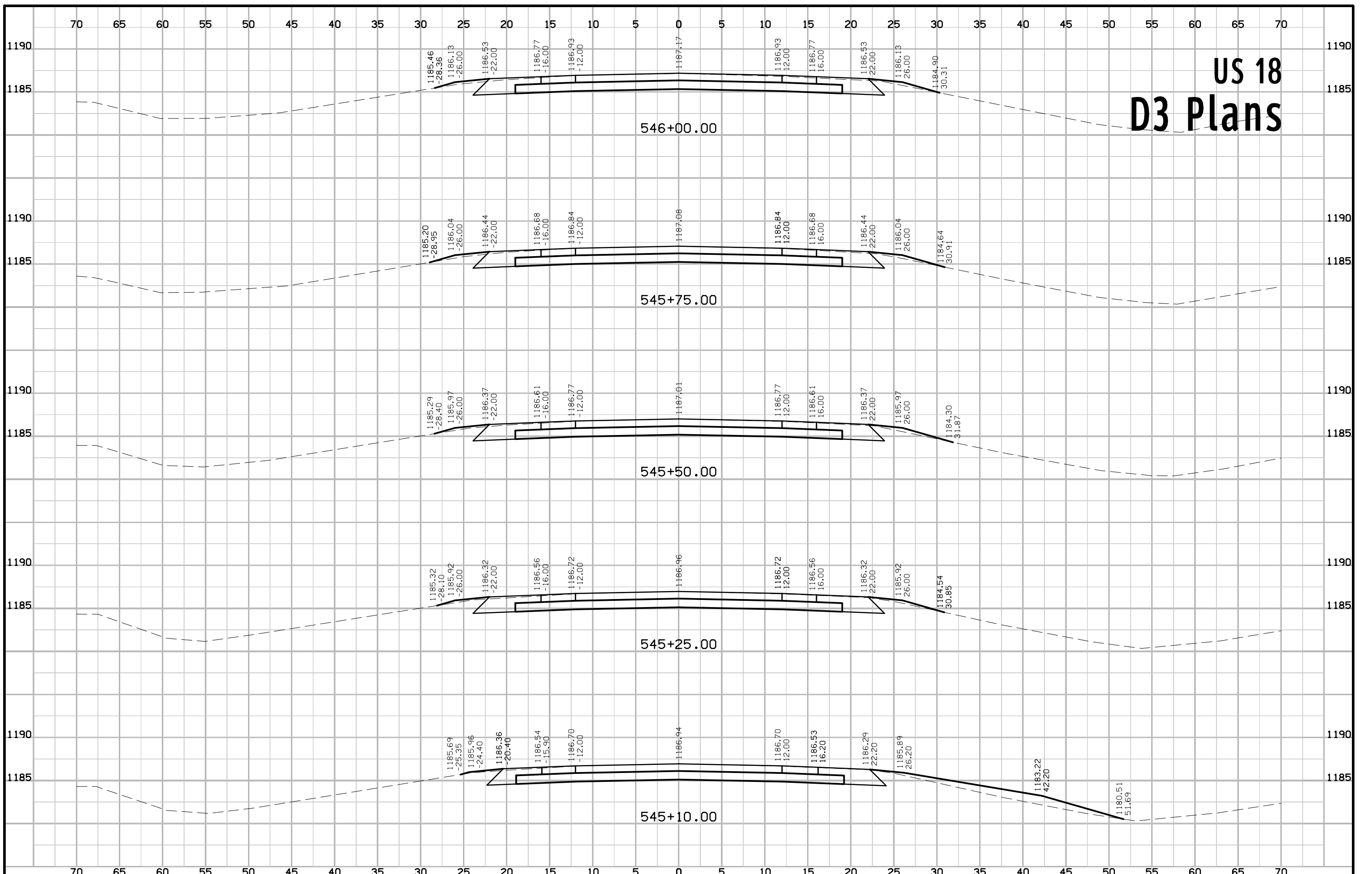
SYMBOL LEGEND OF CROSS SECTION SHEETS

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

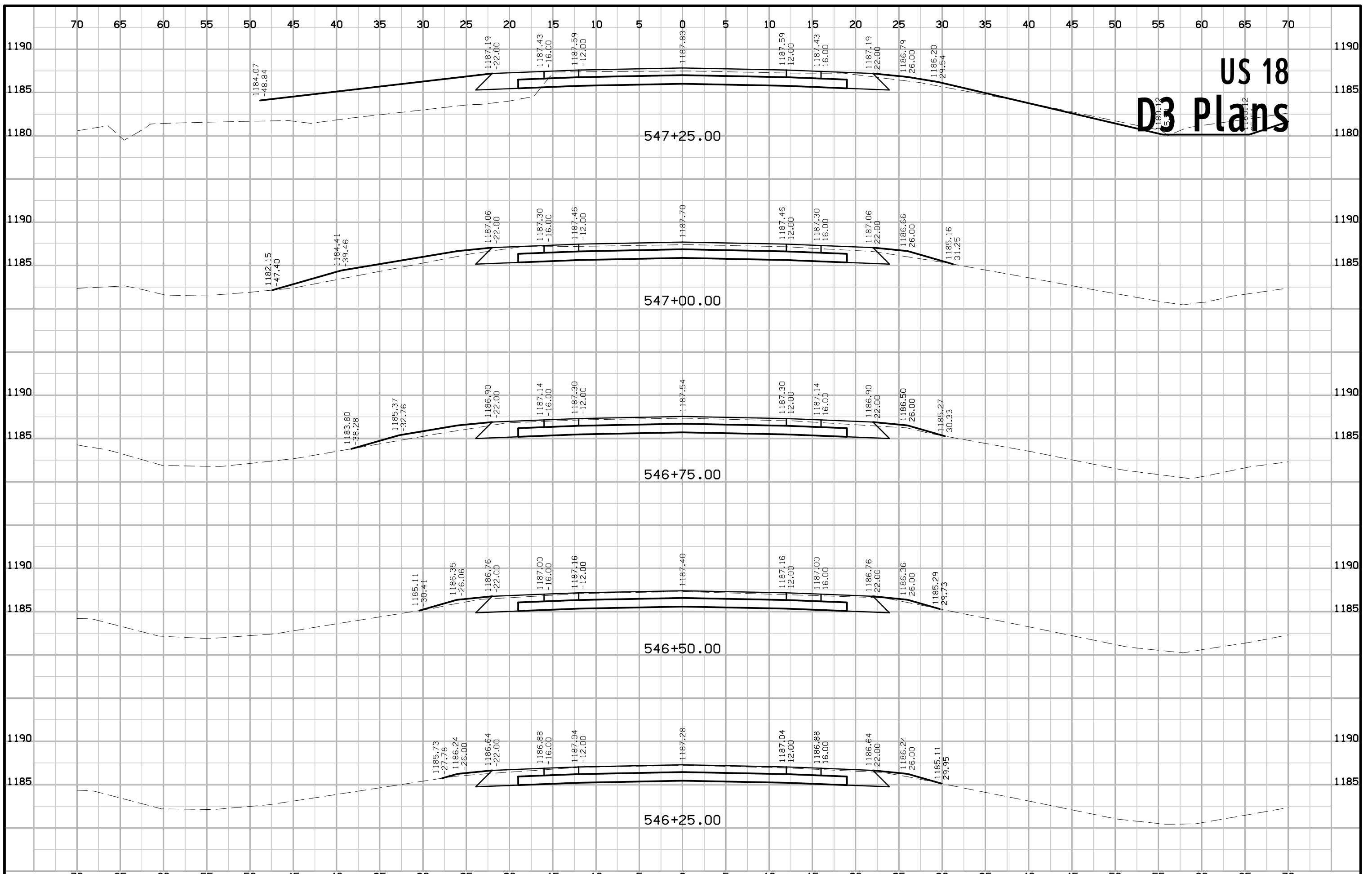
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

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

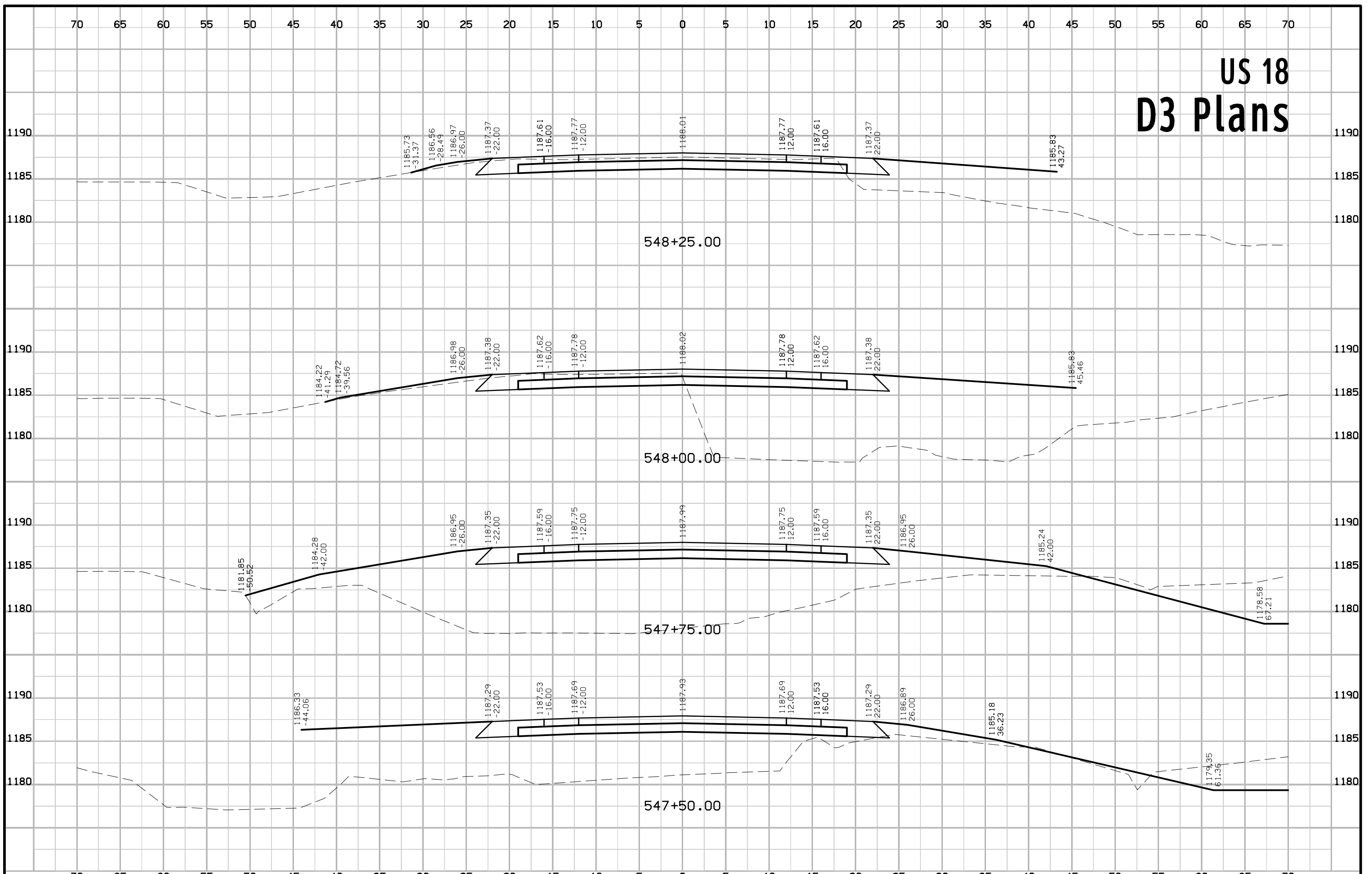
US 18 D3 Plans



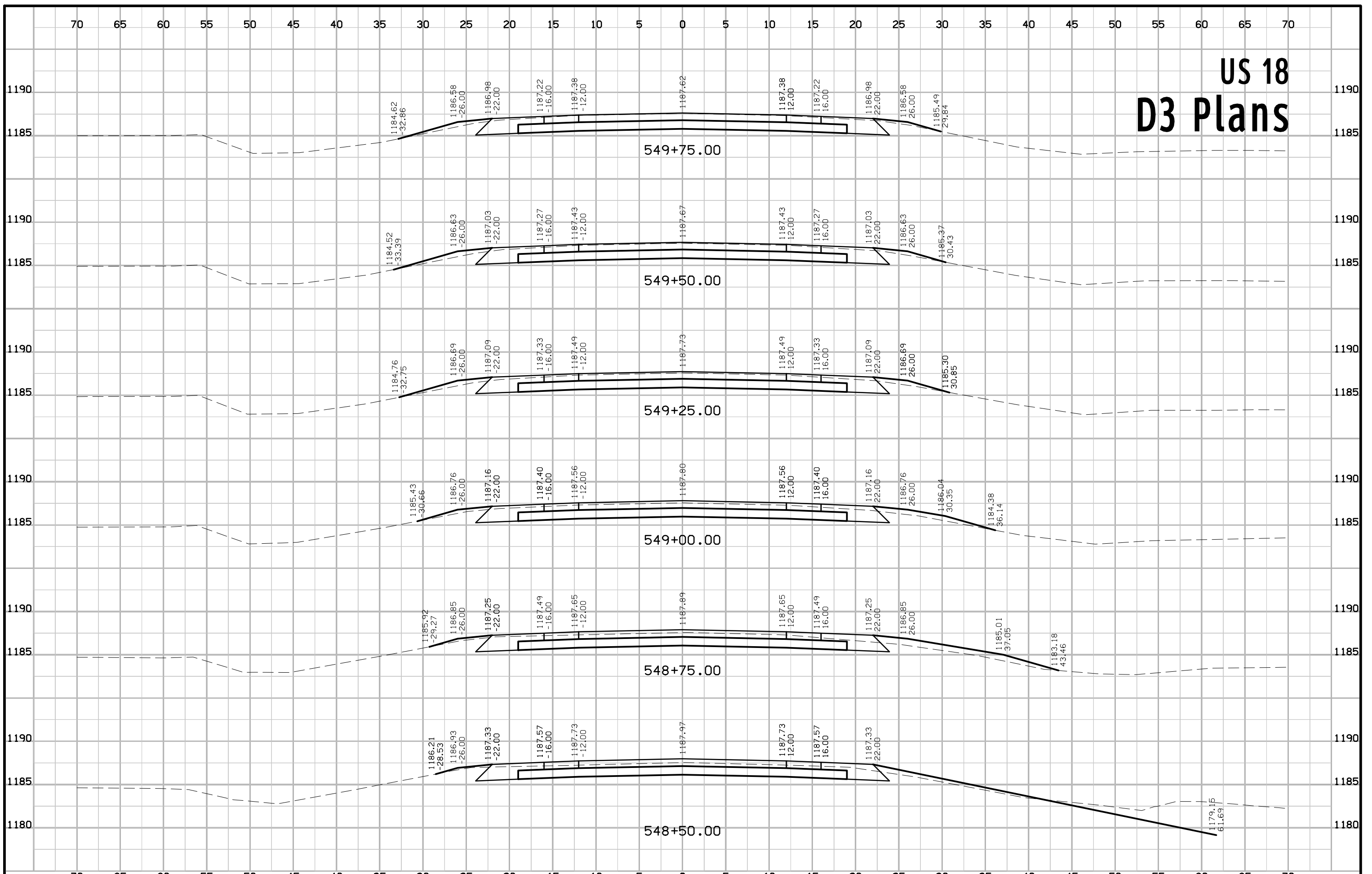
US 18 D3 Plans



US 18 D3 Plans



US 18 D3 Plans



US 18 D3 Plans

