CLAYTON Co. RCB CULVERT REPLACEMENT - TWIN BOX BRFN-018-9(103)--39-22 LETTING DATE 12-20-2022

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

CLAYTON COUNTY

RCB CULVERT REPLACEMENT - TWIN BOX

US 18 OVER DRY RUN CREEK 0.6 MI W OF E US 52 JUNCTION

SCALES: As Noted

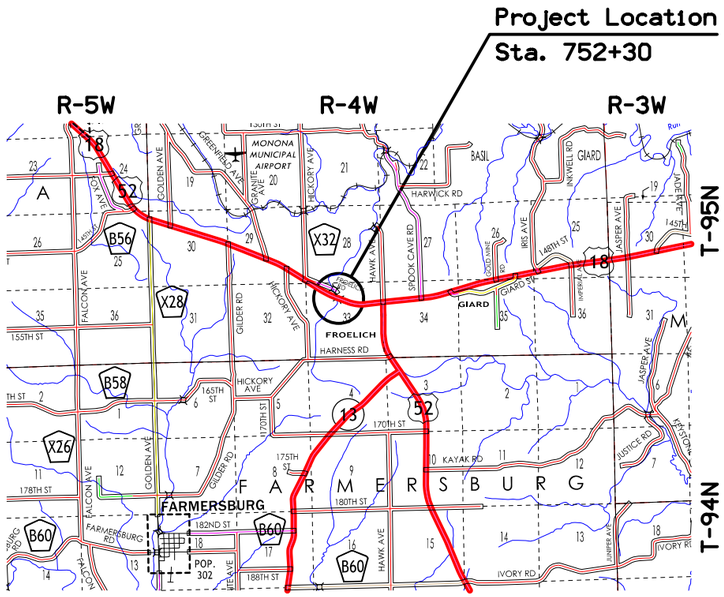
Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL 1-800-292-8989 811 www.iowaonecall.com

REVISIONS

TOTAL 26
PROJECT IDENTIFICATION NUMBER
12-22-018-020
PROJECT NUMBER
BRFN-018-9(103)--39-22
R.O.W. PROJECT NUMBER
?



INDEX OF SHEETS

* Color Plan Sheets

DESIGN DATA RURAL		
2023 AADT	3,319	V.P.D.
2043 AADT	4,404	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	18.4	%
Total Design ESALs	4,400,000	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Taylor R. Theulen	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN – Date: 05/29/2020

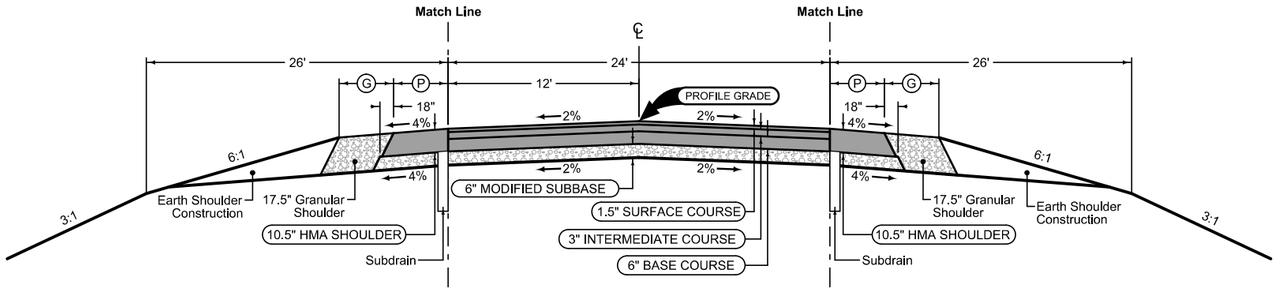
FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER A.1

12:00:28 AM 5/29/2020 8725 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\2201802012\Design\CADD\SHT\SHT_22018103_A01.dgn

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
750+31.00	754+81.00	4	4



2H_ 04-21-20	
STATION TO STATION	
750+31.00	754+81.00

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
750+31.00	754+81.00	4	4

US 18

100-1D
10-18-05

PROJECT DESCRIPTION

This project involves the replacement of the bridge (Maint. No. 2296.0S018) on US 18 over Dry Run Creek, located 0.6 miles west of East Junction US 52.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description

232-10
04-18-17

EMERALD ASH BORER

Any living, dead, cut or fallen material of the ash (Fraxinus spp.) including trees, nursery stock, logs, firewood, stumps, roots, branches, and composted or uncomposted ash chips can be freely moved within the yellow areas of the most recent Federal EAB Quarantine & Authorized Transit.

https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/eab_quarantine_map.pdf.

Obtain appropriate Compliance Agreements from USDA APHIS PPQ prior to moving any of the above listed ash articles to areas outside the yellow zone on the map.

For questions, concerns, and general assistance, contact:

USDA APHIS PPQ, Iowa office, 515-414-3295

Or

Iowa Department of Agriculture & Land Stewardship
515-725-1470
Entomology@IowaAgriculture.gov

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 _____, Permit No. _____. 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.

281-3
10-17-17

STORM WATER
BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided:

STANDARD ROAD PLANS

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

Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-111	04-17-18	Box Culvert (Backfill)
DR-121	10-17-17	Connected Pipe Joints
DR-202	04-21-20	Low Clearance Concrete Pipe Aprons
DR-213	04-21-20	Pipe Apron Guard
DR-503	04-21-20	Safety Grates for Box Culverts
DR-601	04-18-17	Reinforced Concrete Pipe Culvert
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-104	04-17-18	Turf Reinforced Mat (TRM)
EC-201	10-15-19	Silt Fence
EC-204	04-21-20	Perimeter and Slope Sediment Control Devices
EC-303	10-20-20	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
EW-103	10-20-15	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-402	04-18-17	Temporary Stream Diversion
EW-403	04-18-17	Temporary Erosion Control Measures
PM-110	04-21-20	Line Types
PV-3	04-16-19	Safety Edge
PV-12	10-20-20	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-101	04-21-20	Joints
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-17-17	Pavement Marking Operations Two-Lane
TC-252	04-21-20	Routes Closed to Traffic

SURVEY SYMBOLS

- BBB Bottom Bridge Beam
- BCL Bridge Centerline
- BD Bridge Deck
- BL Topo Breakline
- BLS Bridge Low Steel
- BM Bench Mark
- BNK Stream Bank
- BRG Bridge
- C Centerline BL of Road (ML or SR)
- CON Concrete or A/C Slab
- CP Control Point
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- EG Edge of Gravel Road
- ENT Entance
- ENU Edge Unpaved Entrance & Parking
- EP Edge of Paved Roads (ML or SR)
- FW Wire Fence
- GDL Guard Rail Steel
- GR Ground Shot
- LIN Miscellaneous Line
- MIS Miscellaneous
- MM Mile Marker
- OUT Tile Outlet
- PIP Pipe
- PLG Photo Location General
- PR Electic Riser Pole
- PRO Profile Shot
- RET Retaining Walls
- RIP Rip-Rap
- ROW Right of Way Mark
- SCR - Section Corner
- SH Paved Shoulder
- SI Sign
- SNP Unpaved Shoulder
- SP Stream Profile
- TDC - Deciduous Tree
- TEV - Tree Evergreen
- TLNR - Tree Line RIght
- TOP Top of Bridge Pier
- TPD Telephone Pedestal
- TW - Top of Water
- VS Channel Cross Section

UTILITY LEGEND

- E1 EL1D Electric Line Co. 1 - Quality D
- PPA Power Pole - Quality A

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)

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER D.1

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Giard TWP.
T-95N R-4W
SEC. 33

REINFORCED CONCRETE
ARCH PIPE, 88" X 54"

OBLITERATE EXISTING
ENTRANCE AND RELOCATE

TWIN 12' X 7' X 303'-0 REINFORCED
CONCRETE BOX CULVERT

Lance A.Donlon

Froelich Foundation For The Preservation Of Farm Tractor History

Thompson Real Estate Holdings LLC

750

755

POT Sta 748+50.00

POT Sta 757+00.00

℄ US 18

Sta. 750+31.00
Begin Construction

Sta. 754+81.00
End Construction

Giard TWP.
T-95N R-4W
SEC. 33

0 FEET 50

US 18

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER D.2

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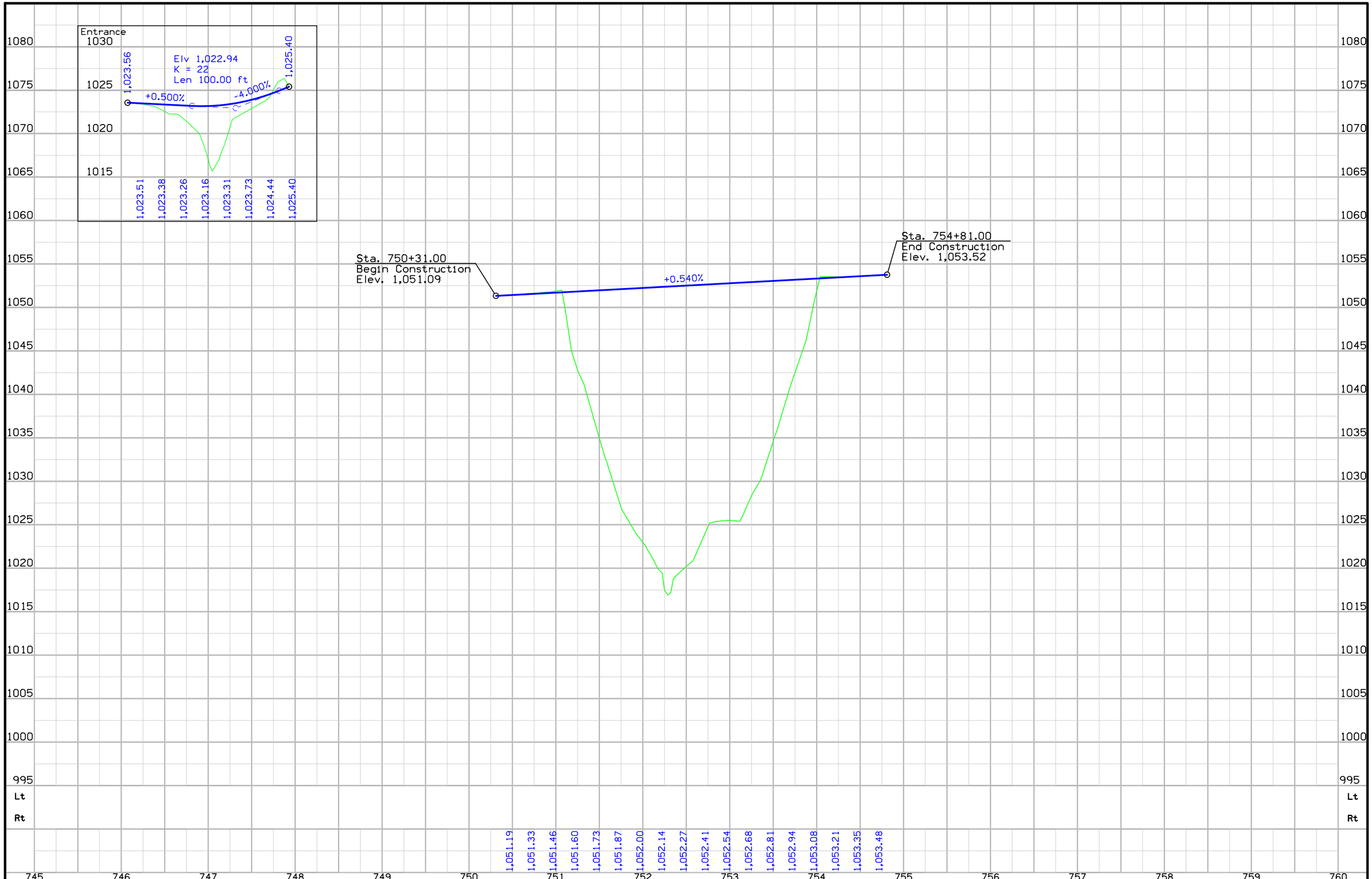

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER D.3

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Survey Information

Clayton County
BRFN-018-9(103)--39-22
US 18 over Dry Run Creek
PIN 12-22-018-020
Sap-0000

Party Personnel

Matt Fouts- Surveyor/PLS
Brandon Wood- Survey Technician
Will Riordan- Survey Senior Technician
Dirk Janssen- Survey Technician

Date(s) of Survey
Begin Date 11/21/2019
End Date 12/03/2019

General Information

Measurement units for this survey are US survey feet. This survey is for Preliminary/Engineering for the proposed bridge replacement on US Highway 18 over Dry Run Creek and 0.6 miles West of East US 52 Junction. This project is a Full Field Survey.

Vertical Control

Vertical datum for this survey is relative to NAVD88, Geoid 12BUS.

Vertical positions were established by static observations and post processed using concurrent observations from the IaRTN Elkader reference station.

Horizontal Control

The project coordinate system is the Iowa Regional Coordinate System, Zone 3. Horizontal datum is NAD83 (2011) for Epoch 2010.00. The projection parameters for Zone 3 of the IaRCS is defined below:

Lambert Conformal Conic Projection North American Datum of 1983
Origin Lat: 40°15'00"N
Origin Central Meridian: 91°12'00"W
Central Meridian Scale: 1.000035
False Northing: 8,300,000
False Easting: 13,500,000

Horizontal positions for site control were established by static observations and post processed using concurrent observations from the IaRTN Elkader reference station

Alignment Information

The horizontal alignment for this survey is a retrace of the Construction centerline of Plans No. o. F-18-9(1)**22-7. Survey stationing was equated to the plan PI at STA 730+23.6 and run ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

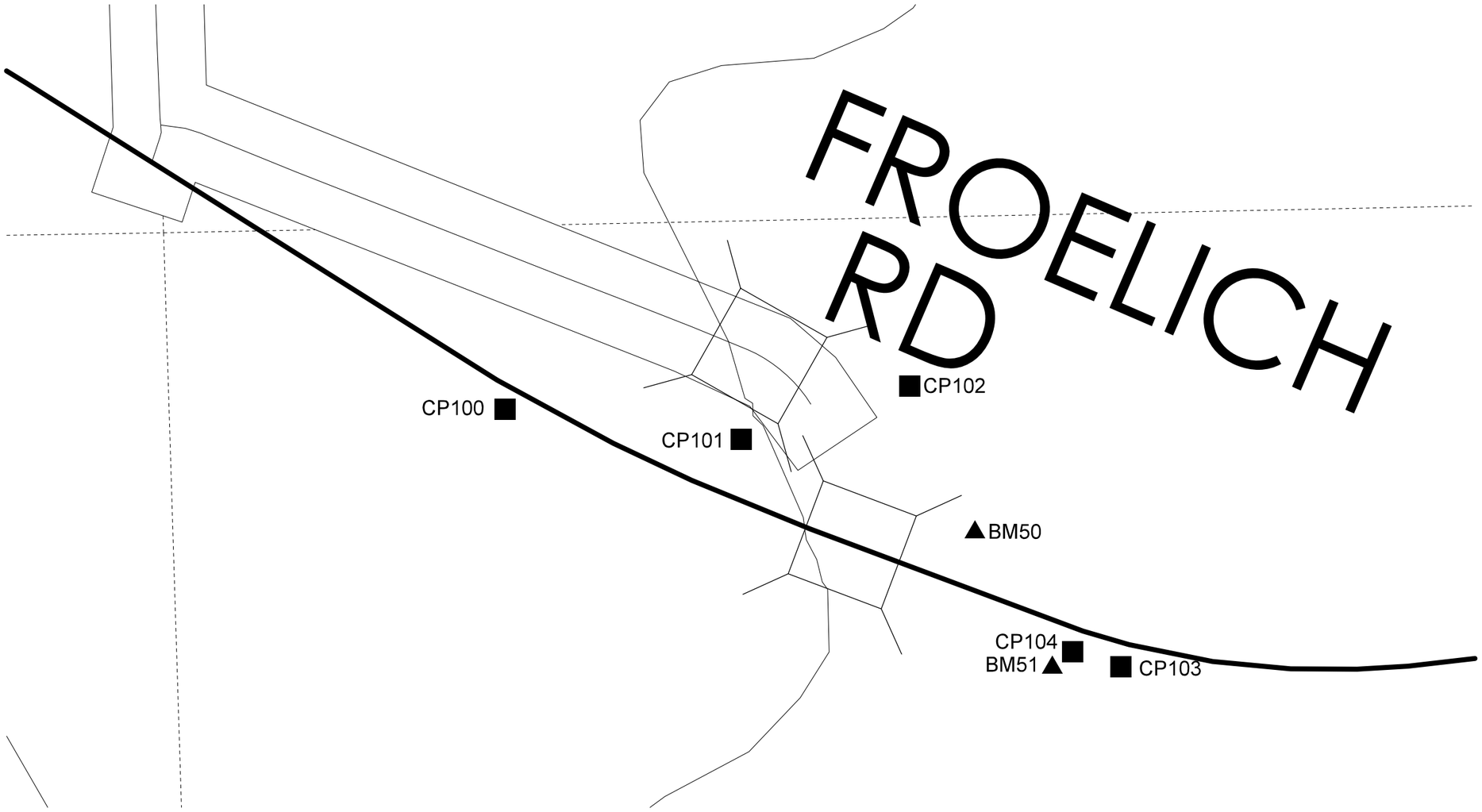
PC Sta. 738+32.3 Const. CL Project Project No. F-18-9(1)**22-7
Survey PC Sta. 738+32.3

PT Sta 749+24.0 Const. CL Project Project No. F-18-9(1)**22-7
Survey PT STA 749+24.0

POT STA 757+10.4 Const. CL Project Project No. F-18-9(1)**22-7
Survey POT STA 757+10.5

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 2010.00
VERT. DATUM: NAVD88
Ia. Regional Coordinate System Zone 3

Coordinate listing from next sheet will be used with IaRTN 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

Ia. Regional Coordinate System Zone 3

Point Name	Northing	Easting	Elevation	Feature Definition	Description
CP100	9304287.90	13467010.14	1049.05	CP	1/2" REBAR WITH ORANGE PLASTIC CAP SOUTH OF HIGHWAY 18 AND AT THE WEST END OF SITE
CP101	9304223.77	13467456.36	1025.55	CP	ROW MONUMENT NORTH OF HIGHWAY 18 AND WEST OF BRIDGE
CP102	9304499.57	13467548.30	1023.25	CP	1/2" REBAR WITH ORANGE PLASTIC CAP NORTH OF HIGHWAY 18 AND SOUTH OF SHELTER BY ROAD
CP103	9303744.20	13468272.09	1055.57	CP	1/2" REBAR WITH ORANGE PLASTIC CAP SOUTH OF HIGHWAY 18 AND AT THE EAST END OF SITE
CP104	9303758.83	13468025.26	1048.33	CP	ROW MONUMENT EAST OF POWER POLE AND SOUTHEAST OF BRIDGE
BM50	9304014.80	13467884.13	1044.78	BM	RAILROAD SPIKE IN THE 1ST POWER POLE EAST OF BRIDGE AND NORTH OF HIGHWAY 18
BM51	9303755.42	13468012.12	1047.87	BM	RAILROAD SPIKE IN A POWER POLE EAST OF BRIDGE AND SOUTH OF HIGHWAY 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)
C1	US 18	748+50.00	9304195.09	13467268.76															
C2	US 18	757+00.00	9303864.37	13468051.79															

br

108-25
10-21-14

511 TRAVEL RESTRICTIONS

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
			None anticipated									

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Construction of the box culvert shall be completed under live traffic. US 18 to be closed and detoured to remove existing bridge superstructure and construct new roadway.

Contractor shall give Iowa DOT 14 days notice prior to the start of the detour. Detour signs will be placed by others.

US 18 Detour - US 18 will be closed and an off-site detour will be utilized. The detour would follow County Road X28 south to County Road B60, then east to IA 13, then northeast to US 52, then north to US 18.

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
None provided	

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. Is signature authority on the Base PPP.
- B. Contractor:
  1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. 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. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
  3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
  4. Installs and maintains appropriate controls. This work may be subcontracted.
  5. Supervises and implements good housekeeping practices.
  6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
  7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
- C. Subcontractors:
  1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if 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. Implement good housekeeping practices.
- D. RCE/Project Engineer:
  1. Is Project Storm Water Manager.
  2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
  3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
  4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
  5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
  6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
  7. Is familiar with the Project PPP and storm water site map.
  8. On projects where DOT is Contracting Authority, is responsible for monitoring inspection reports on a monthly basis, to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
  9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
  10. Is signature authority on Notice of Discontinuation.
- E. Inspector:
  1. Updates 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. Maintains an up-to-date record that identifies contractors and subcontractors as co-permittees.
  3. Makes these plans available to the DNR upon their request.
  4. Conducts joint required inspections of the site with the contractor/subcontractor.
  5. Completes an inspection report after each inspection.
  6. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION
- A. This Pollution Prevention Plan (PPP) is for the construction of a RCB culvert and related activities.
- B. This PPP covers approximately 2.8 acres with an estimated 2.8 acres being disturbed. The portion of the PPP covered by this contract has 2.8 acres disturbed.
- C. The PPP is located in an area of Downs - Fayette - Nordness soil association
  The estimated weighted average runoff coefficient number for this PPP after completion will be 0.28.
- D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water 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 Dry Run Creek.

110-12
04-16-19

POLLUTION PREVENTION PLAN

III. CONTROLS
- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications 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 of the Standard Specifications.
  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) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
           a) Permanently ceased on any portion of the site, or
           b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
        3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
        4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map (when included), Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C sheets.
        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 in the C sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.
     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 storm water site map (when included), Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C sheets, 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 or are referenced in the Standard Road Plans Tabulation (105-4) located in the C sheets.
     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 storm water site map (when included) and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets, 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 chemical spill and leak prevention and response 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 - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. 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 onsite 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. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
        9) Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
        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.

POLLUTION PREVENTION PLAN

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 of 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. Identification of 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 and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

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 headwalls or 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 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 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.

Signature

Printed or Typed Name

Signature

Printed or Typed Name

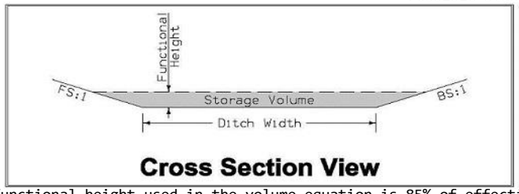
STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

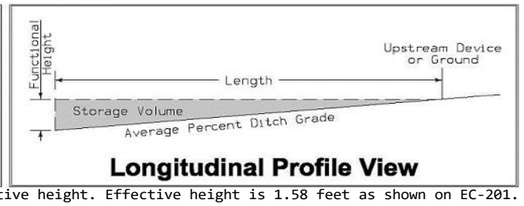
Drainage Basin Location						Summary of Stormwater Storage							Remarks
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	
				Station	Side	Acres	Acres	Acres		CF	CF	Yes/No	
1	750+31.00	754+81.00	Both	750+00.00	Left	2.8	2.8	0.0	Silt Fence for Ditch Check (EC-201)	9983.0	9972.0	Yes	

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



Cross Section View



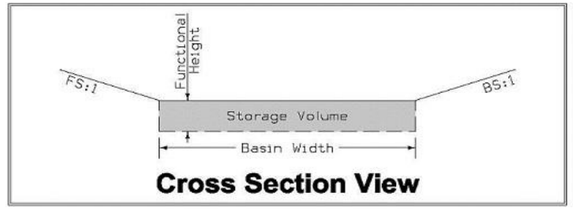
Longitudinal Profile View

* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
1	1	749+10.00	Lt	40.0	4.0	40.0	3.5	3.5	10.0	0.1%	1322.8	
1	1	752+25.00	Lt	40.0	4.0	40.0	3.0	3.0	10.0	5.0%	2355.1	
1	1	752+85.00	Rt	40.0	4.0	40.0	3.0	3.0	10.0	5.0%	2355.1	
										Total:	6033.0	

SILT BASINS

Possible Standard: EW-403



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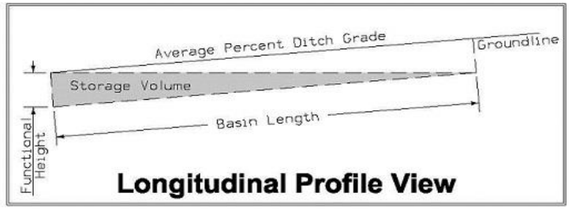

Longitudinal Profile View

* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
1	750+00.00	Left	1	1	10.0	100.0	4.00	0.1%	3950.0	

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

- Silt Fence
- Perimeter and Slope Sediment Control Device (9")
- Perimeter and Slope Sediment Control Device (12")
- Perimeter and Slope Sediment Control Device (20")
- Open-Throat Curb Intake Sediment Filter
- Concentrated Flow
- Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

- Temporary Sediment Control basin
- Erosion Control for Circular Intake or Manhole Well
- Erosion Control for Rectangular Intake or Manhole Well
- Grate Intake Sediment Filter Bag
- Silt Basin
- Silt Fence Tail
- Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL 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
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

- Seeding and Fertilizing
- Seeding and Fertilizing (Rural) (R)
- Seeding and Fertilizing (Urban) (U)
- Native Grass Seeding (N)
- Salt Tolerant Seeding (ST)
- Wetland Grass Seeding (WL)
- Wildflower Seeding (WF)
- Sodding (SOD)
- Turf Reinforcement Mat Type 1
- Turf Reinforcement Mat Type 2
- Turf Reinforcement Mat Type 3
- Turf Reinforcement Mat Type 4
- Slope Protection, Wood Excelsior Mat
- Transition Mat
- Rock Features, Permanent
- Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER RR.1

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Grard TWP.
T-95N R-4W
SEC. 33

Basin
1

750

755

POT Sta 748+50.00

POT Sta 757+00.00

℄ US 18

Grard TWP.
T-95N R-4W
SEC. 33

0 50
FEET

US 18

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER RR.2	

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Grard TWP.
T-95N R-4W
SEC. 33

POT Sta 748+50.00

750

℄ US 18

755

POT Sta 757+00.00

Grard TWP.
T-95N R-4W
SEC. 33

0 FEET 50

US 18

FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER RR.3	

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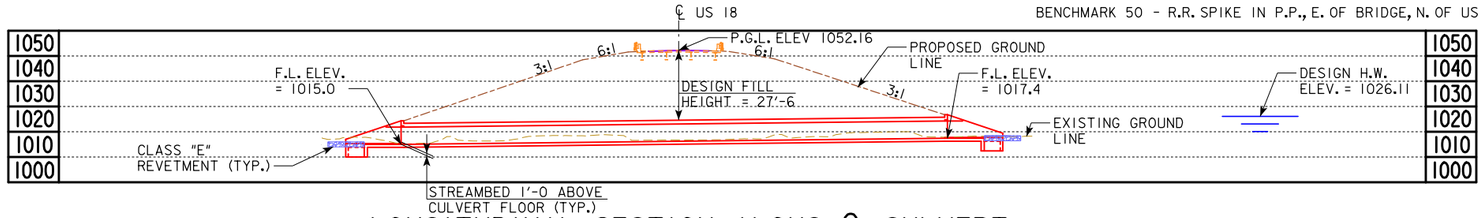
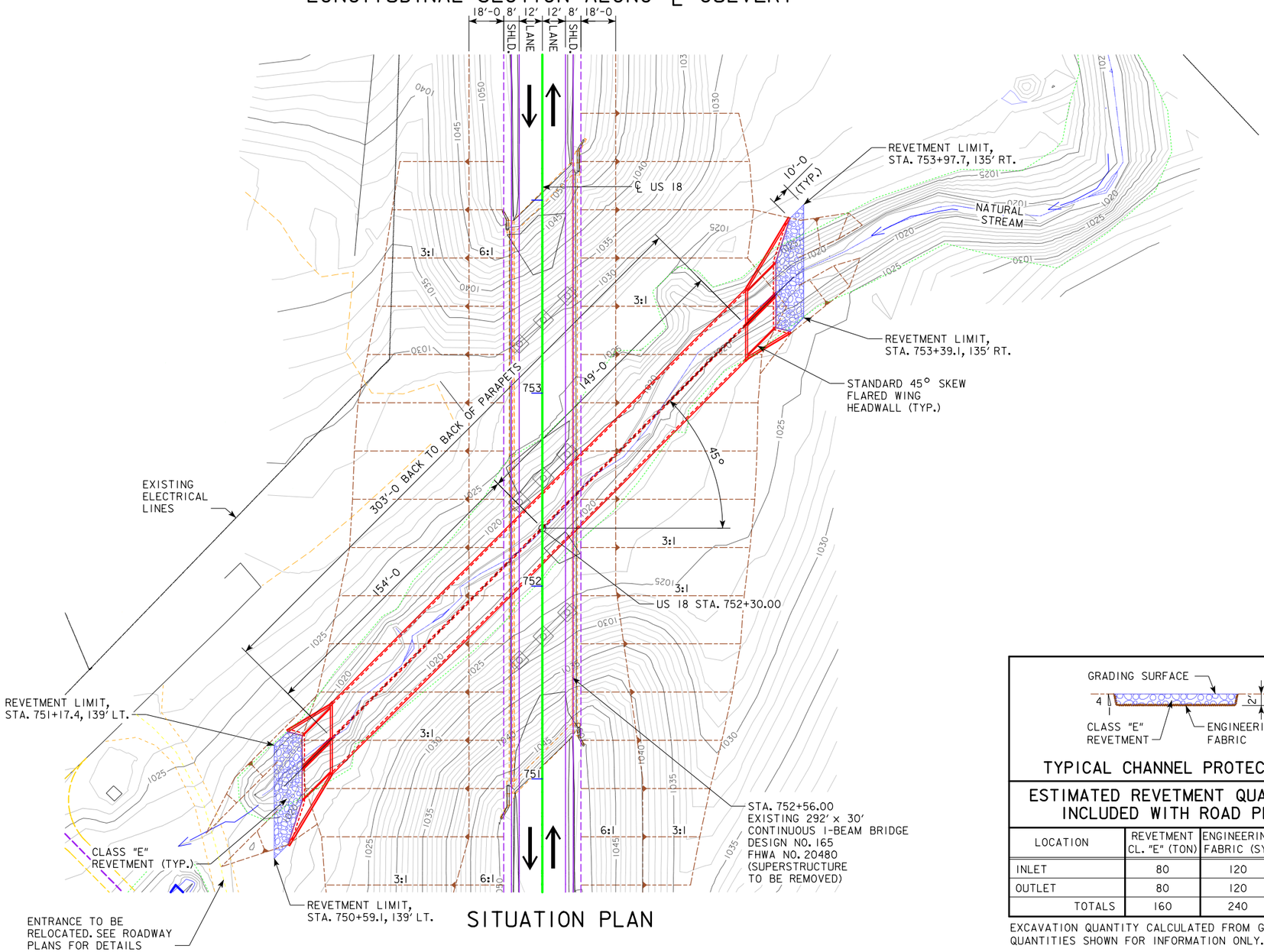


LONGITUDINAL SECTION ALONG ℄ CULVERT



SITUATION PLAN

BENCHMARK 50 - R.R. SPIKE IN P.P., E. OF BRIDGE, N. OF US 18 - N:9304014.80, E:13467884.13, ELEV. 1044.78

HYDRAULIC DATA

DRAINAGE AREA = 992 ACRES
Q_{50} = 1,278 CFS
HW ELEV. = 1026.11
STREAM SLOPE = 44.2 FT./MI.

STA = 754+81.00
ELEV = 1053.52
+0.540%

PROPOSED PROFILE GRADE US 18

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.

LICENSED PROFESSIONAL ENGINEER
Mark D. Werner
15418
IOWA

Mark D Werner — 5/21/2020
Signature — Date

Mark D. Werner
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: V.1

NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.

DRAINAGE WILL NEED TO BYPASS CULVERT DURING CONSTRUCTION.

FLOWLINE ELEVATION AT CULVERT FLOOR. HYDRAULIC ANALYSIS ASSUMES STREAMBED 1'-0 ABOVE CULVERT FLOOR.

THE NEED FOR CAMBER TO BE DETERMINED AFTER REVIEW OF SOILS REPORT.

FILL HEIGHT EXCEEDS MAXIMUM STANDARD DESIGN PER BRIDGES AND STRUCTURES BUREAU INSTRUCTIONS. NONSTANDARD DESIGN REQUIRED.

N

UTILITY LEGEND

---E--- ALLIANT ENERGY

0 ENGLISH 60
SCALE IN FEET

TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	80	120	56
OUTLET	80	120	56
TOTALS	160	240	112

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

LOCATION

US 18 OVER
NATURAL STREAM
T-95N R-4W
SECTION 33
GIARD TOWNSHIP
CLAYTON COUNTY
FHWA NO. 20481
BRIDGE MAINT. NO. 2296.0S018
LATITUDE 43.005267°
LONGITUDE -91.321047°

TRAFFIC ESTIMATE

2023 AADT	3,319	V.P.D.
2043 AADT	4,404	V.P.D.
TRUCKS	18.4	%
TOTAL DESIGN ESALs	4,400,000	

DESIGN FOR 45° SKEW (R.A.)

TWIN 12' X 7' X 303' REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN

STATION 752+30 — MAY 2020

CLAYTON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 — FILE NO. 31200 — DESIGN NO. 117

DESIGN TEAM Stanley Consultants Inc. | CLAYTON COUNTY | PROJECT NUMBER BRFN-018-9(103)--39-22 | SHEET NUMBER V.1

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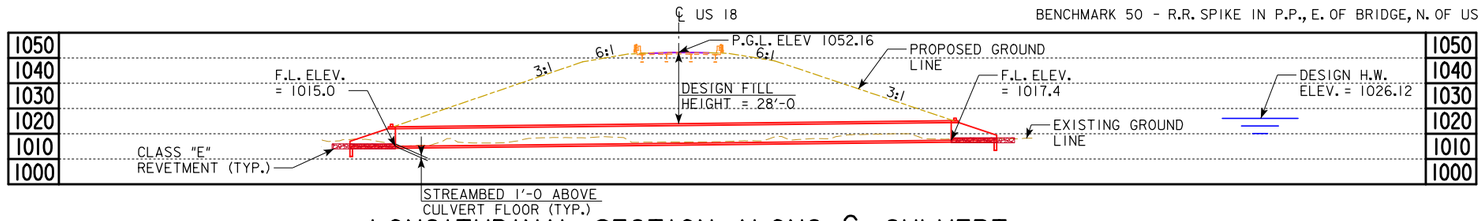
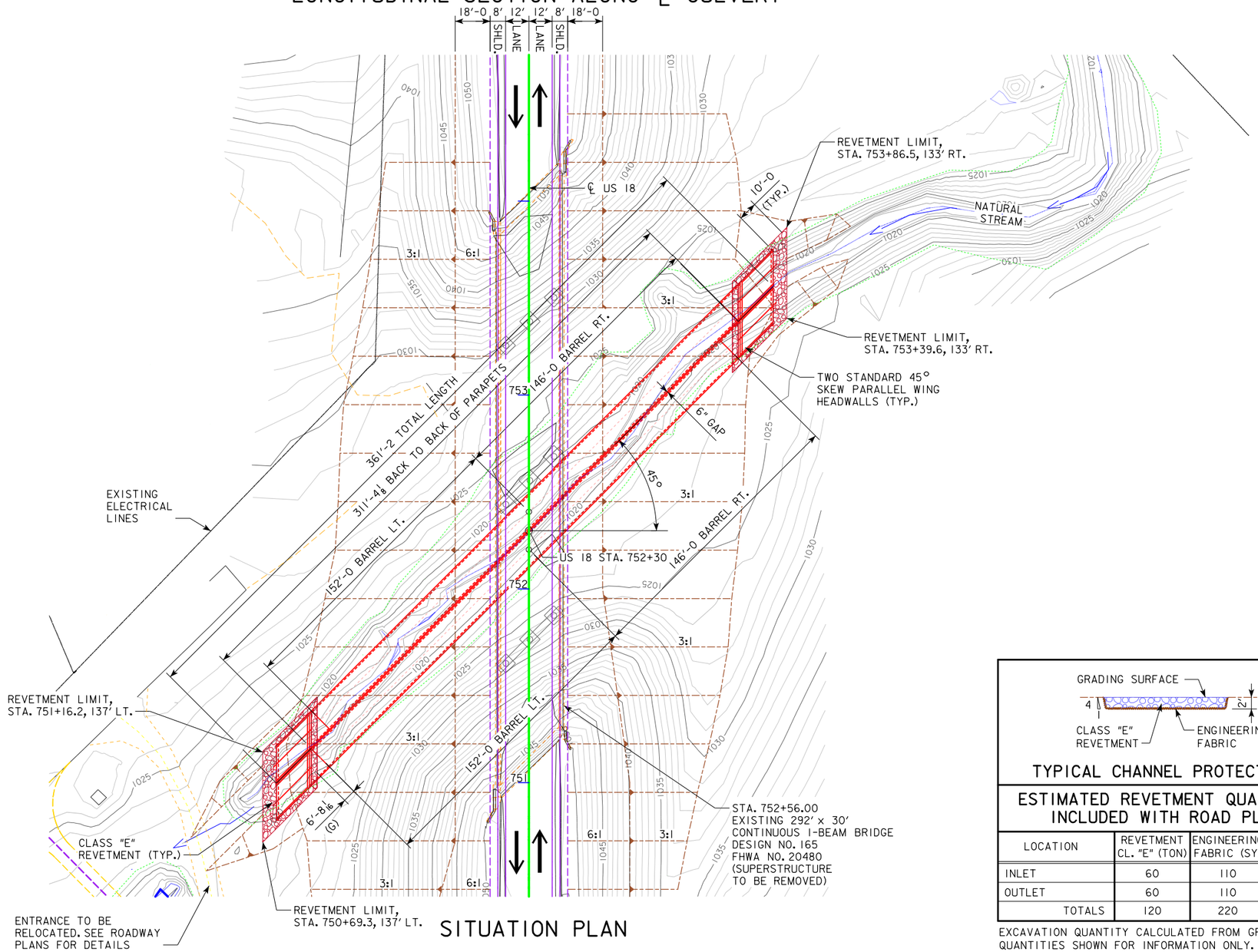


LONGITUDINAL SECTION ALONG ℄ CULVERT



SITUATION PLAN

BENCHMARK 50 - R.R. SPIKE IN P.P., E. OF BRIDGE, N. OF US 18 - N:9304014.80, E:13467884.13, ELEV. 1044.78

STA = 754+81.00
ELEV = 1053.52
+0.540%

PROPOSED PROFILE GRADE US 18

HYDRAULIC DATA

DRAINAGE AREA = 992 ACRES
Q_{50} = 1,278 CFS
HW ELEV. = 1026.12
STREAM SLOPE = 44.2 FT./MI.

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.

LICENSED PROFESSIONAL ENGINEER — Mark D. Werner 15418 — IOWA

Mark D Werner — 5/21/2020
Signature — Date

Mark D. Werner
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: V.2

NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.

DRAINAGE WILL NEED TO BYPASS CULVERT DURING CONSTRUCTION.

FLOWLINE ELEVATION AT CULVERT FLOOR. HYDRAULIC ANALYSIS ASSUMES STREAMBED 1'-0 ABOVE CULVERT FLOOR.

THE NEED FOR CAMBER TO BE DETERMINED AFTER REVIEW OF SOILS REPORT.

FILL HEIGHT EXCEEDS MAXIMUM STANDARD DESIGN PER BRIDGES AND STRUCTURES BUREAU INSTRUCTIONS. NONSTANDARD DESIGN REQUIRED.

N

UTILITY LEGEND

---E--- ALLIANT ENERGY

0 ENGLISH 60
SCALE IN FEET

TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	60	110	40
OUTLET	60	110	40
TOTALS	120	220	80

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

LOCATION

US 18 OVER
NATURAL STREAM
T-95N R-4W
SECTION 33
GIARD TOWNSHIP
CLAYTON COUNTY
FHWA NO. 20481
BRIDGE MAINT. NO. 2296.0S018
LATITUDE 43.005267°
LONGITUDE -91.321047°

TRAFFIC ESTIMATE

2023 AADT	3,319	V.P.D.
2043 AADT	4,404	V.P.D.
TRUCKS	18.4	%
TOTAL DESIGN ESALs	4,400,000	

DESIGN FOR 45° SKEW (R.A.)

TWIN 12' X 7' X 311'-4⅛ PRECAST CONCRETE BOX CULVERT

SITUATION PLAN

STATION 752+30 — MAY 2020

CLAYTON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 — FILE NO. 31200 — DESIGN NO. 117

DESIGN TEAM Stanley Consultants Inc. | CLAYTON COUNTY | PROJECT NUMBER BRFN-018-9(103)--39-22 | SHEET NUMBER V.2

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

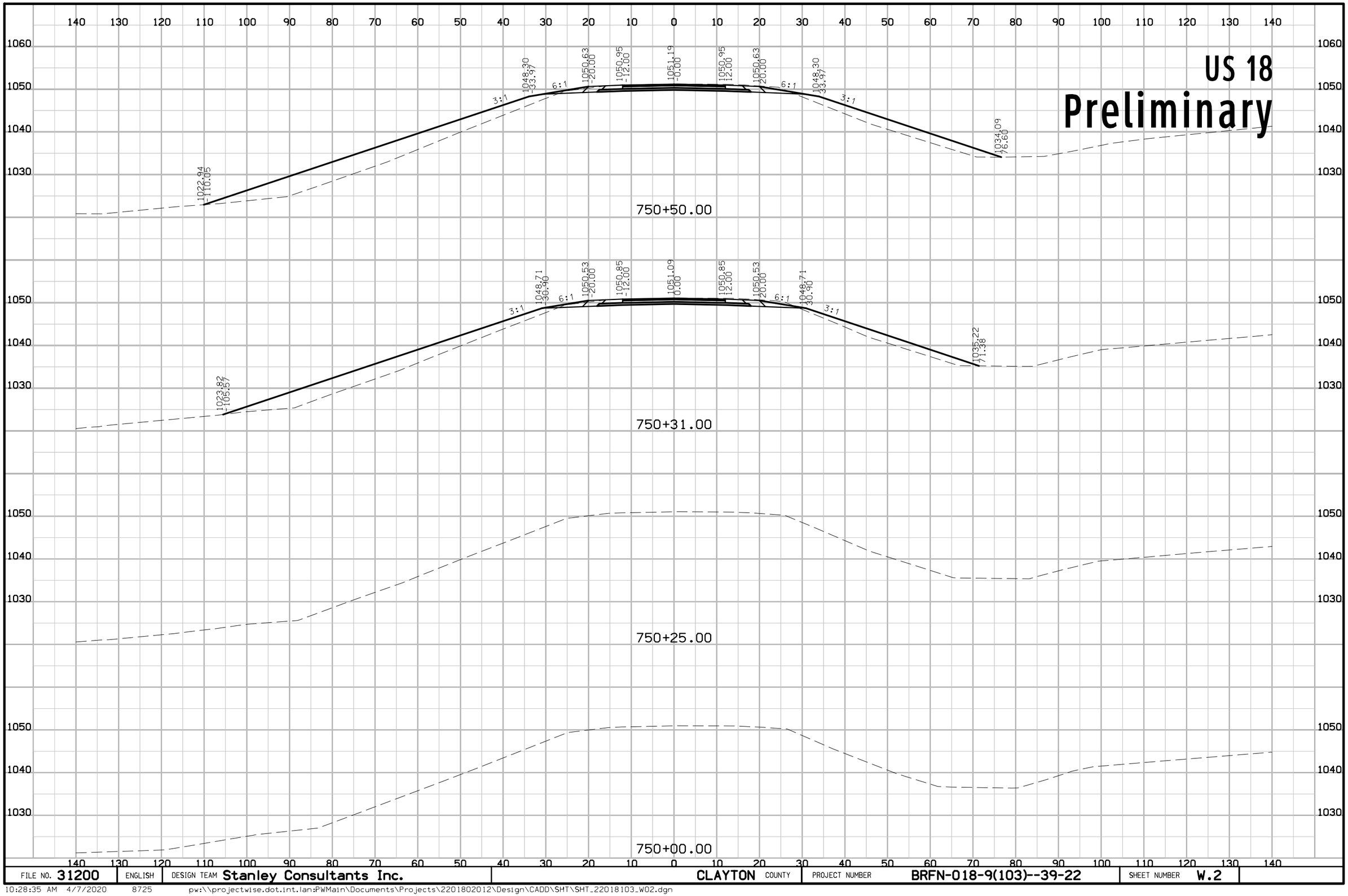
Proposed ROW — Proposed Right-of-Way Limit

Temporary ROW — Temporary Right-of-Way Limit

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

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

US 18
Preliminary



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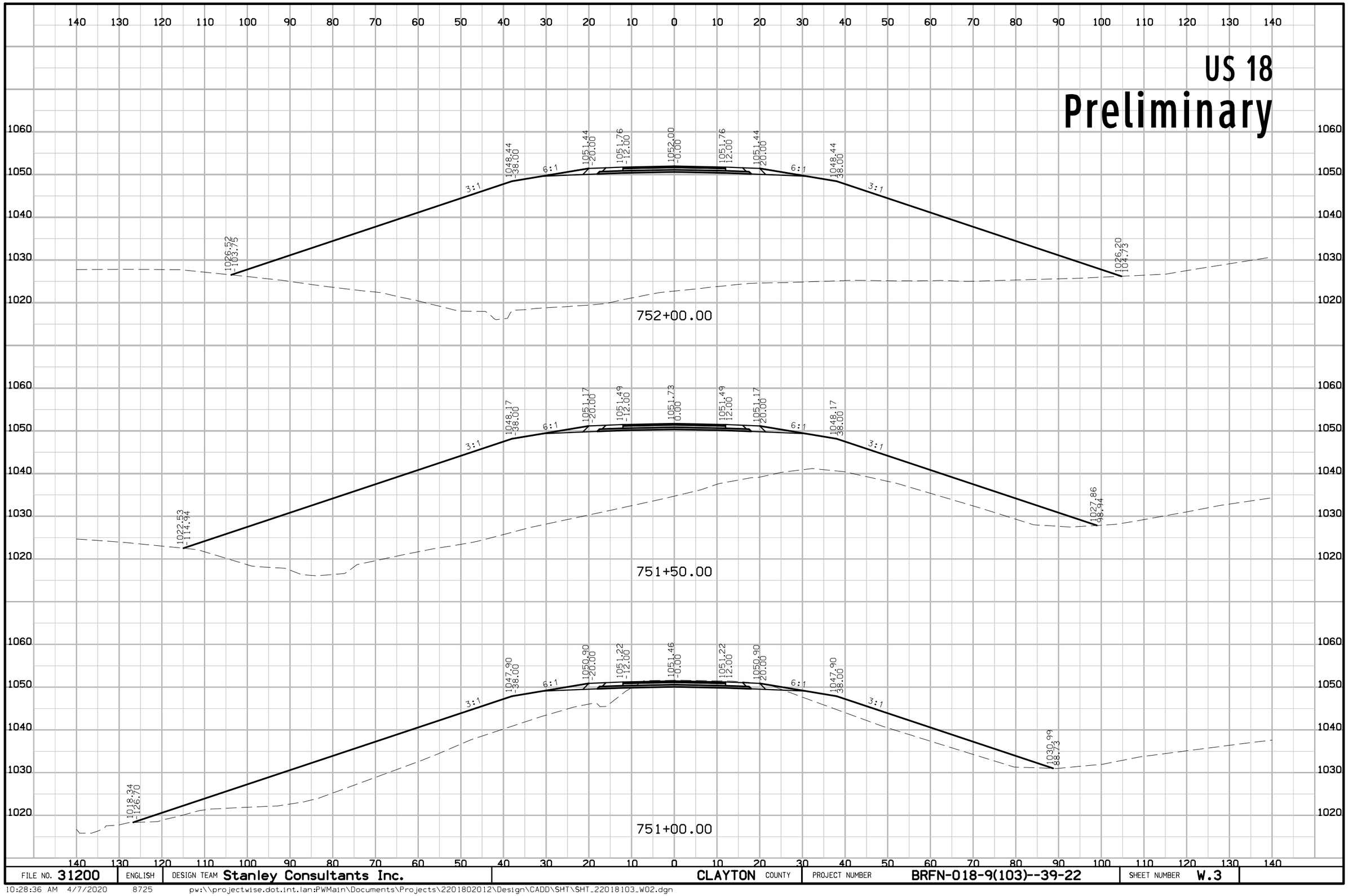
US 18
Preliminary



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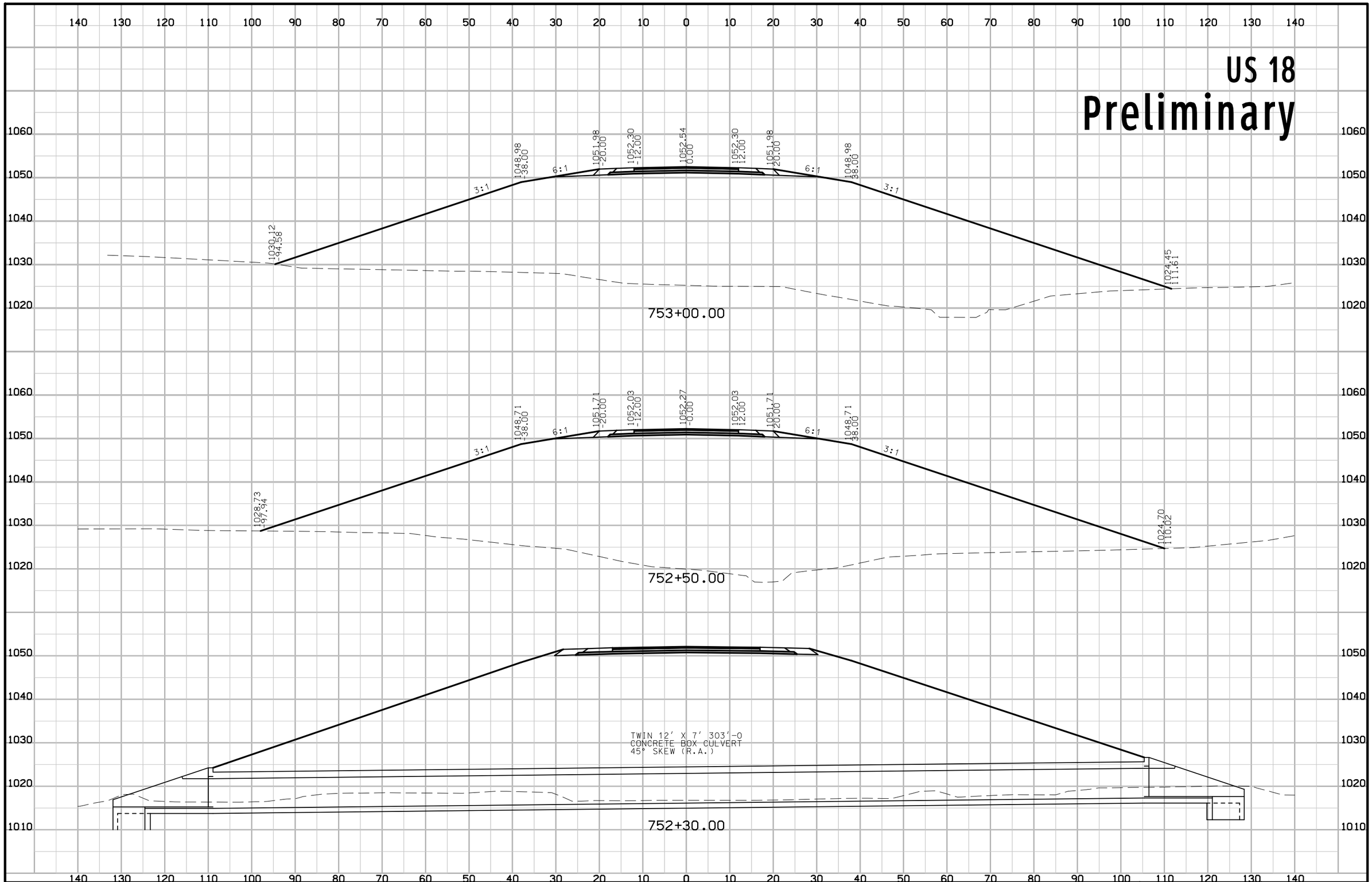
US 18
Preliminary



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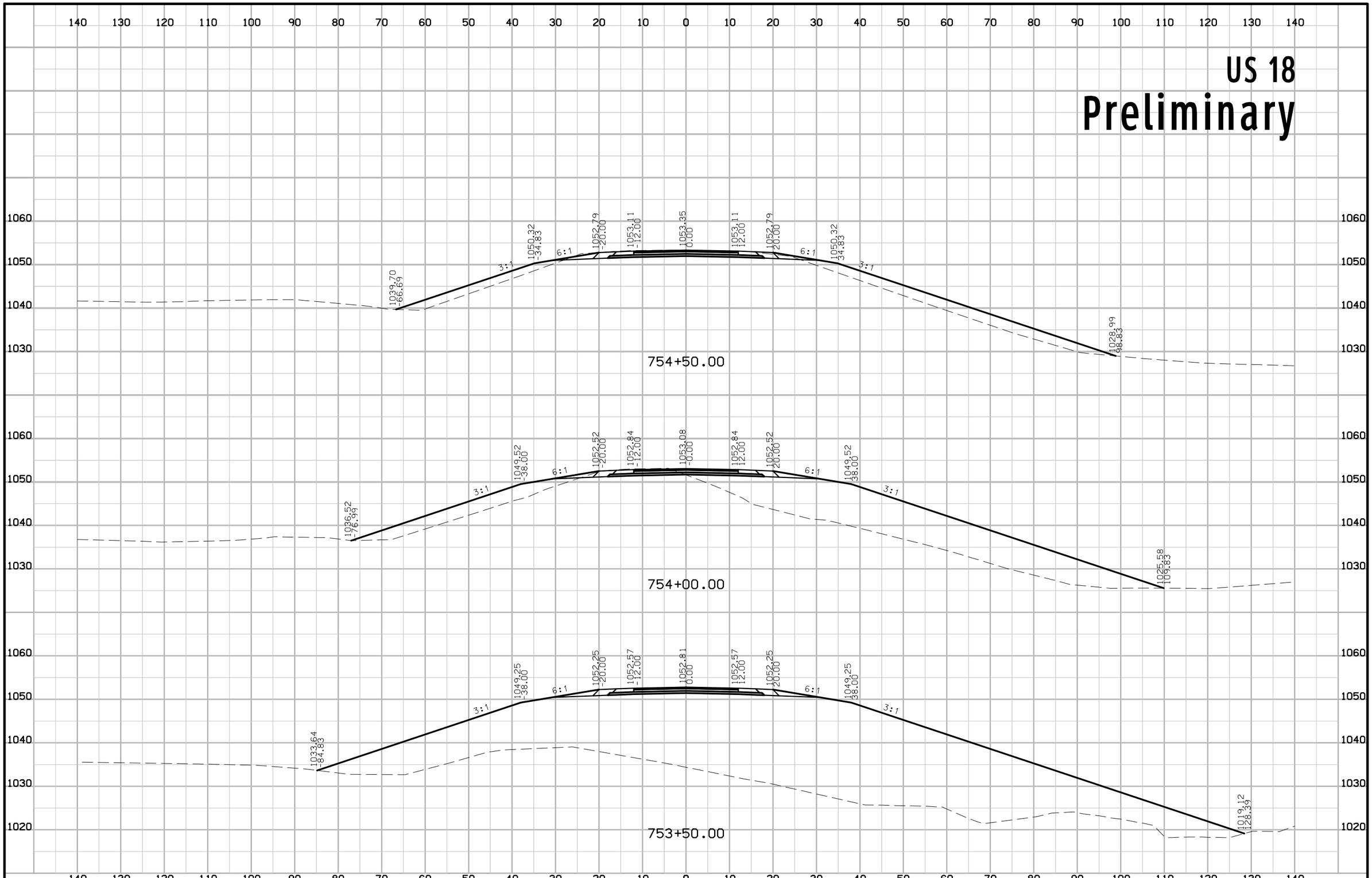
US 18
Preliminary



FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER W.5

US 18

Preliminary

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

1050
1040
1030

755+25.00

755+00.00

754+81.00

1041.90
58.63
3:1
1051.14
30.90
6:1
1052.96
20.00
1053.28
12.00
1053.52
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FILE NO. 31200	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	CLAYTON COUNTY	PROJECT NUMBER BRFN-018-9(103)--39-22	SHEET NUMBER W.6

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