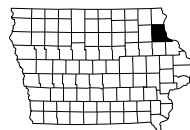


CLAYTON COUNTY

PIPE CULVERTS
STPN-128-1(11)--2J-22

LETTING DATE
7-18-2023



| 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 | Typical Cross Sections and Details |
| C Sheets | Quantities and General Information |
| C.1 | Tabulations (beg. with tab. of incidentals if needed) |
| D Sheets | Mainline Plan and Profile Sheets |
| * D.1 | Plan & Profile Legend & Symbol Information Sheet |
| * D.2 | Iowa 128 Plan and Profile 1 |
| * D.3 | Iowa 128 Plan and Profile 2 |
| G Sheets | Survey Sheets |
| G.1 | Survey General Information |
| * G.2 | Control Point Vicinity Map |
| G.2 | Horizontal and Vertical Project Control Coordinate list |
| J Sheets | Traffic Control and Staging Sheets |
| * J.1 - 2 | Detour Plan |
| M Sheets | Storm Sewer Sheets |
| M.1 | Storm Sewer Tabulations |
| R Sheets | Erosion Control Sheets |
| RC.1 | Est. Quantities, PPP, General Notes and Tabulations |
| V Sheets | Bridge and Culvert Situation Plans |
| * V.1 | Culvert 1 Situation Plan |
| * V.2 | Culvert 2 Situation Plan |
| | * Color Plan Sheets |



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
CLAYTON COUNTY
PIPE CULVERTS

IA 128 390 ft SW of Hickory Ave. and 1230 ft East of Heron Ave.

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

16

PROJECT IDENTIFICATION NUMBER

21-22-128-010

PROJECT NUMBER

STPN-128-1(11)--2J-22

R.O.W. PROJECT NUMBER

INDEX OF SEALS

| SHEET NO. | NAME | TYPE | BID QUANTITY SHEETS |
|-----------|---------------|-------------------------|---------------------|
| A.1 | Cindy Spencer | Primary Signature Block | X |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

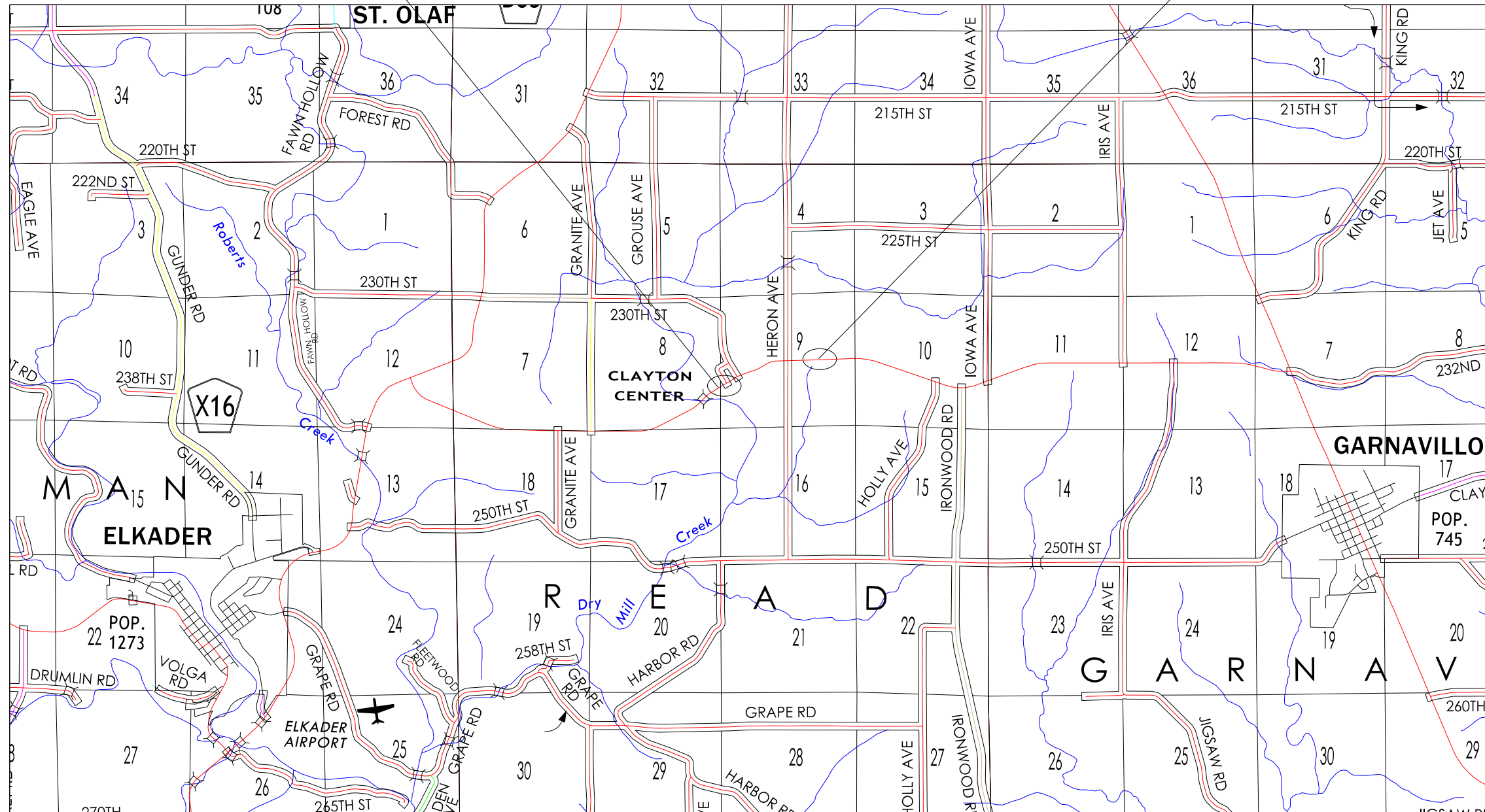
PRELIMINARY PLANS

Subject to change by final design.

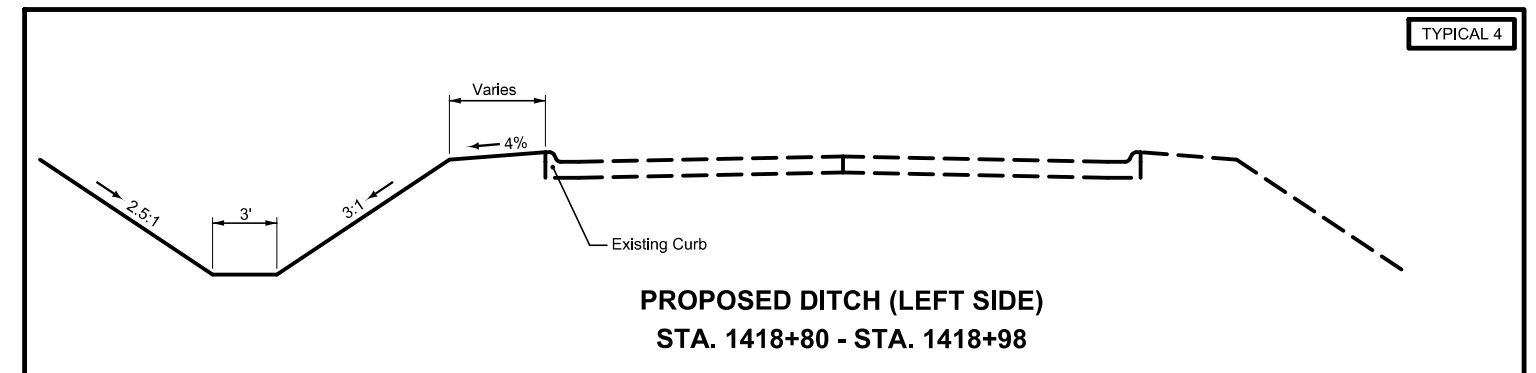
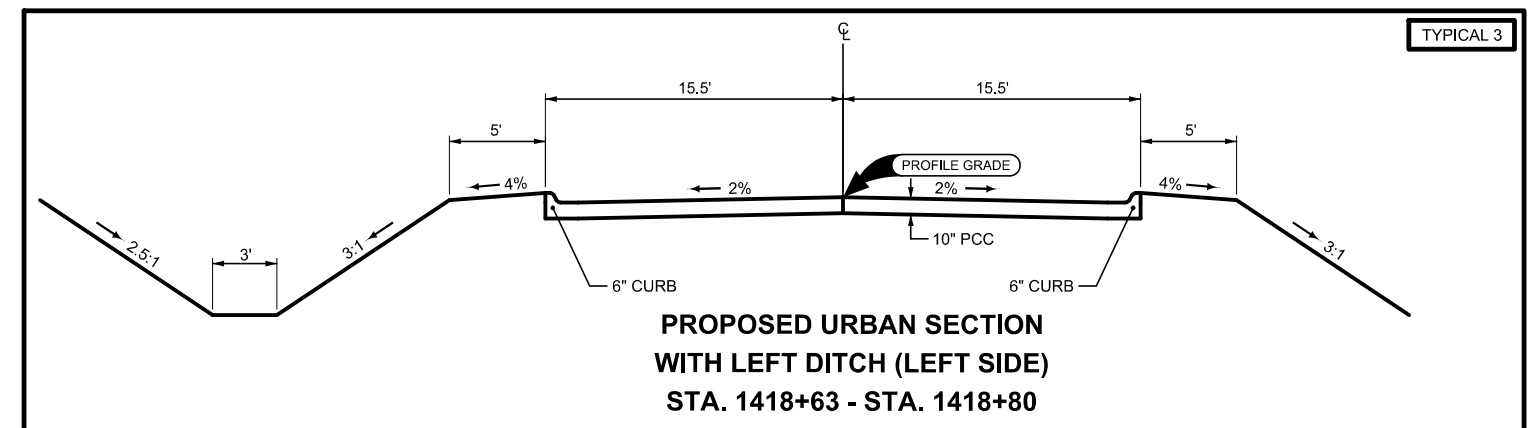
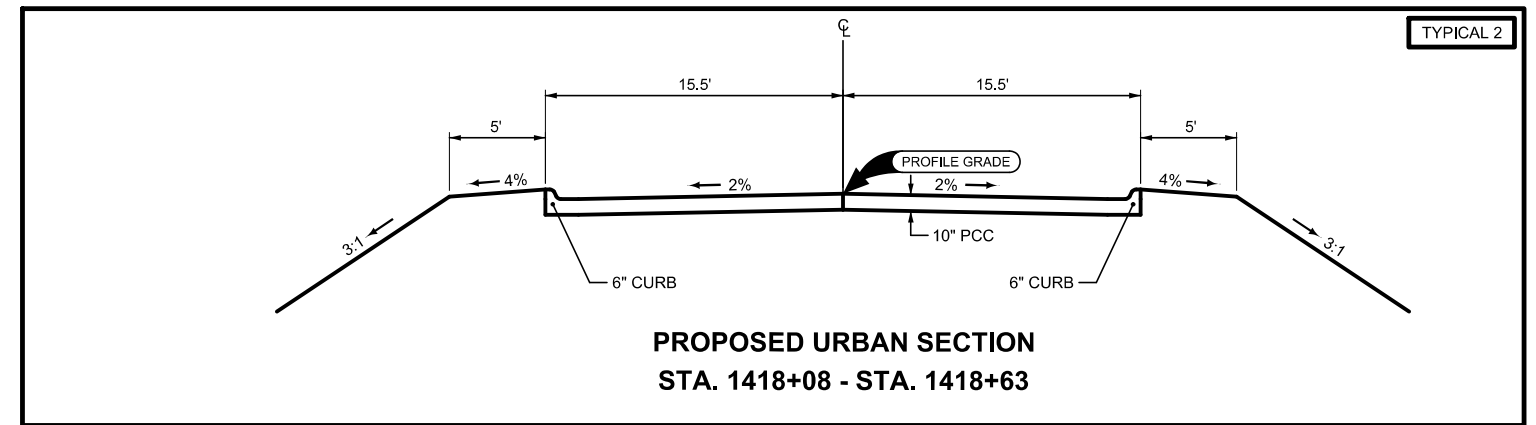
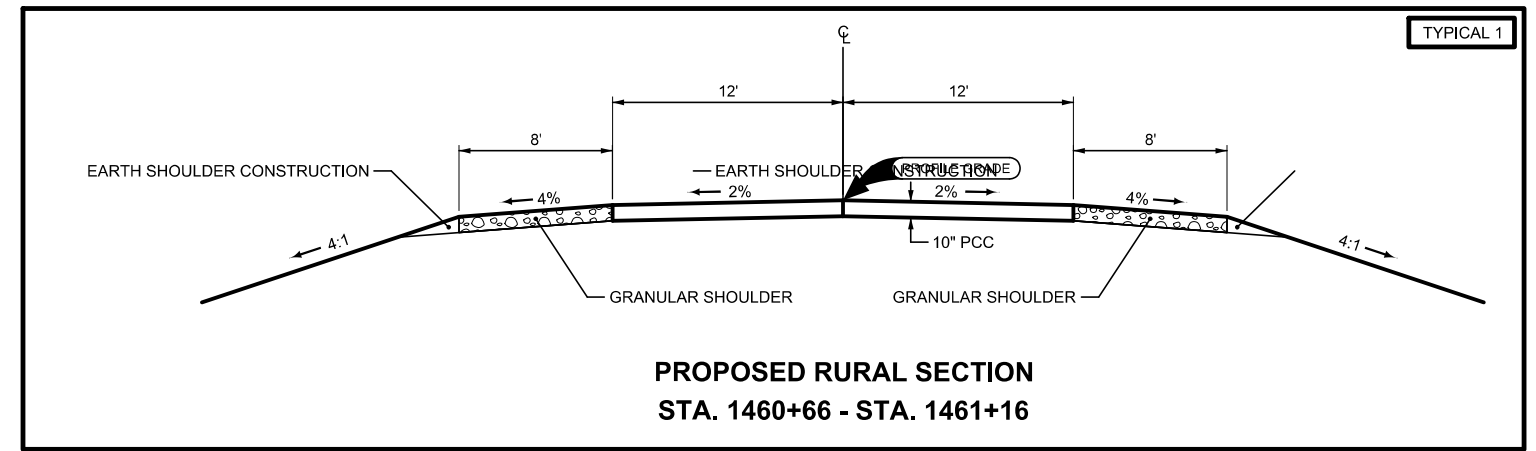
D5 PLAN - Date: 07-18-2022

PROJECT LOCATION

PROJECT LOCATION



NOT TO SCALE



| DESIGN QUANTITIES (PER STATION) | | |
|---------------------------------|-------------------------|----------|
| ITEM | RATE | QUANTITY |
| TASK COAT | X GAL / YD ² | X GAL |
| BINDER COURSE | X LB / FT ³ | X TONS |
| SURFACE COURSE | X LB / FT ³ | X TONST |

| STATION TO STATION | |
|--------------------|---|
| X | X |
| X | X |

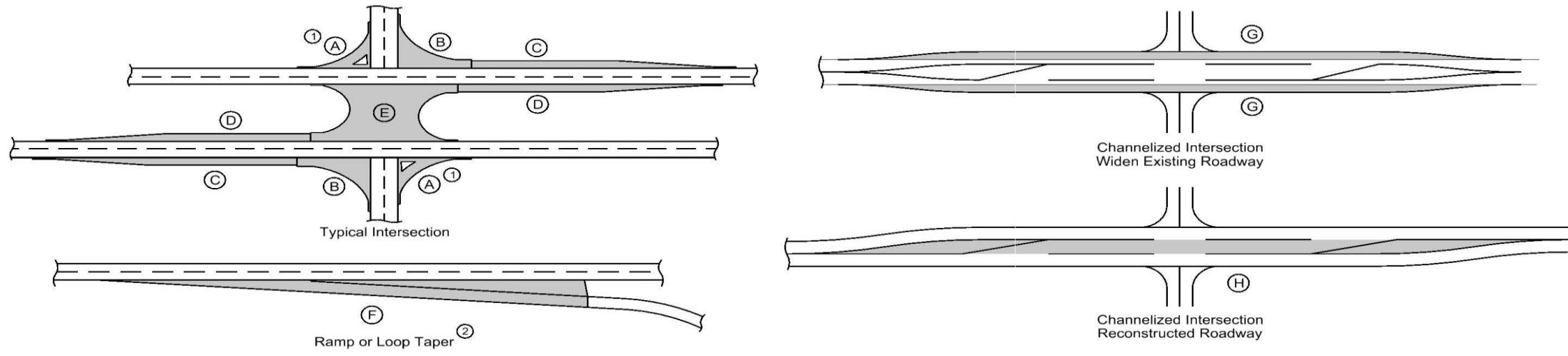
DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

- ① Not a bid item
- ② Diameter or equivalent diameter
- ③ UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
- ④ Backfill according to DR-101

| Drainage Area ACRE | Location | Type | Size ① IN | Kind Of Pipe ② | Length New Const. LF | Bedding Class | Design Cover (H) FT | Camber* (DR-102) FT | Apron No. | | Apron Guard* (DR-213) No. | Elbow* (DR-141) No. | Diaphragm* (DR-501) No. | Tee Section* (DR-142) No. | "D" Section* (DR-141) No. | Reducer* | Type 'C' Connections* (DR-122) Type No. | Connected Pipe Joint* (DR-121) Type | 4" Perforated Subdrain* | Flow Line Elevations | | | | Dimensions Lin. Ft. | | | | Skew Ahead Degrees | | Dike | | | Class 20 CY | Flowable Mortar CY | Floodable* Backfill (A) CY | Porous* Backfill (B) CY | Flooded Backfill (A+B) CY | Remarks | | | |
|-----------------------|------------|--------|-----------------|-------------------|-------------------------|---------------|------------------------|---------------------------|-----------|------------|---------------------------------|---------------------------|-------------------------------|---------------------------------|---------------------------------|----------|--|--|----------------------------|----------------------|--------|-------|-------|------------------------|------|-----|-----|--------------------------|-----|------|-----|-----|-------------------|--------------------------|-------------------------------------|----------------------------------|------------------------------------|---------|---------------------|------------------|------|
| | | | | | | | | | IN | OUT | | | | | | | | | | Lt. | Rt. | Other | Other | Lt. | Rt. | Lt. | Rt. | Lt. | Rt. | Lt. | Rt. | Rt. | | | | | | | Location Station | Top Elevation | Type |
| | | | | | | | | | Total | Extensions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59.9 | 1460+91.00 | DR-601 | 48 | RCP | 86 | B | 6.5 | 0.17 | 1 | 1 | 1 | | | | | | | Type 3 | | 1001.40 | 998.25 | | | 44.7 | 57.3 | | | | | | | | | | | | | | | | |

PCC PAVEMENT



- ① Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
- ② Refer to PV-410, PV-411, PV-412, and PV-414.
- ③ Quantity includes Pavement Header.

| Road Identification | Location Direction of Travel | Station to Station | Mainline | | | Area ③ | | | | | | | | Total Area By Pavement Thickness | | | Special Backfill TONS | Modified Subbase CY | Granular Subbase SY | Remarks | | | | | | | | | | | | | | | | |
|---------------------|---------------------------------|--------------------------|----------|--------|-------|--------|----|----|----|----|-----|----|----|-------------------------------------|--------|----|-----------------------------|---------------------------|---------------------------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | Width | Length | Area | A ① | B | C | D | E | F ② | G | H | 10 IN | 10% IN | SY | | | | | | | | | | | | | | | | | | | | |
| | | | FT | FT | SY | SY | SY | SY | SY | SY | SY | SY | SY | SY | SY | | | | | | | | | | | | | | | | | | | | | |
| Iowa 128 | BOTH | 1418+08.00 1418+80.00 | 31.0 | 72.0 | 248.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BOTH | 1460+66.00 1461+16.00 | 24.0 | 50.0 | 133.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SHOULDERS

- ① Lane(s) to which the shoulder is adjacent.
- ② See Typ. 7156, 7157, or 7158.
- ③ Bid Item.
- ④ Applies only for Paved Shoulders constructed on project with existing granular shoulders.
- ⑤ Bid Item. Typ. 7156, 7157, or 7158.
- ⑥ Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

| Road Identification | Location Direction Of Traffic | Station to Station | Side | Quantities | | | | | | | | | | | | Remarks | | | | | | | | | | | | | | | | | | | | | |
|---------------------|----------------------------------|--------------------------|------|-------------|-----------------|-------------|--------------|--------------------------------|-----------------|---------|----------------|---------------------------|--|---|------------------------|---------|---------|------------------------|-----------------|-------------------|-------|---|-------|-------------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | P | P _{SG} | G | L | Class 13 Excavation CY ③ | Hot Mix Asphalt | | Binder TONS | Paved Shoulder SY ③ | " " Paved Shoulder at Guardrail SY ⑤ | Reinforced Paved Shoulder SY ③ | Special Backfill | | | | Subbase CY ③ | Granular Shoulder | | Earth Shoulder Construction Alternates | | | | | | | | | | | | | | | |
| | | | | Width FT | Width FT ② | Width FT | Length FT | | TON | TON/STA | | | | | HMA Alternate TON ③ | | TON/STA | PCC Alternate TON ③ | | TON/STA | TON ③ | TON/STA | STA ③ | HMA CY ⑥ | PCC CY ⑥ | | | | | | | | | | | | |
| Iowa 128 | BB | 1460+66.00 1461+16.00 | BT | | | | 8.0 | 50.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SURVEY SYMBOLS

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

UTILITY LEGEND

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. | |
| Lavender | (9) | | Temporary Pavement Shading |
| Yellow | (4) | | Proposed Pavement Shading |
| Orange | (6) | | Proposed Granular Shading |
| Orange | (70) | | Proposed Shoulder Granular Shading |
| Yellow | (68) | | Proposed Shoulder Paved Full Depth Shading |
| Yellow | (132) | | Proposed Shoulder Paved Partial Depth Shading |
| Gray, Dark | (112) | | Proposed Grade and Pave Shading "In conjunction with a paving project" |
| Brown, Light | (236) | | Grading Shading |
| Orange, Light | (134) | | Proposed Granular Entrance Shading |
| Yellow | (220) | | Proposed Paved Entrance Shading |
| Tan | (8) | | Proposed Sidewalk Shading |
| Blue, Light | (230) | | Proposed Sidewalk Landing Shading |
| Pink | (11) | | Proposed Sidewalk Ramp Shading |
| Green, Light | (225) | | Existing Pavement Shading |
| Red | (3) | | Proposed Structure Shading |

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

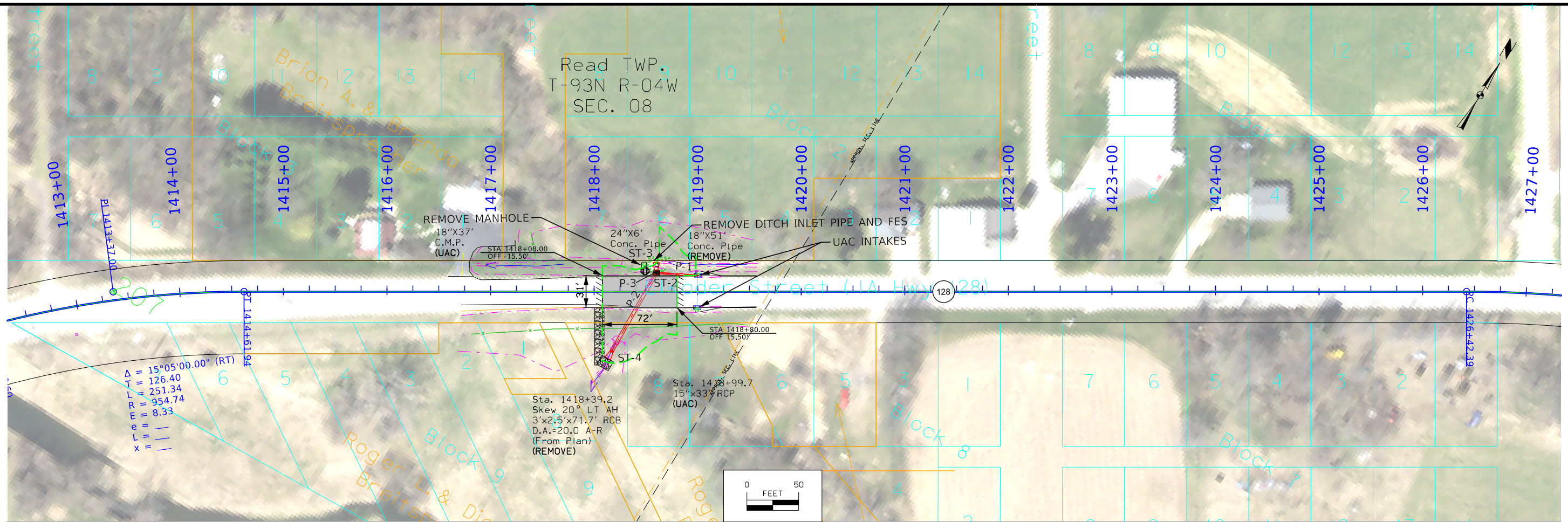
| LINEWORK | | Design Color No. | |
|-------------|-------|------------------|---------------------------------|
| Green | (2) | | Existing Ground Line Profile |
| Blue | (1) | | Proposed Profile and Annotation |
| Magenta | (5) | | Existing Utilities |
| Blue, Light | (230) | | Proposed Ditch Grades, 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

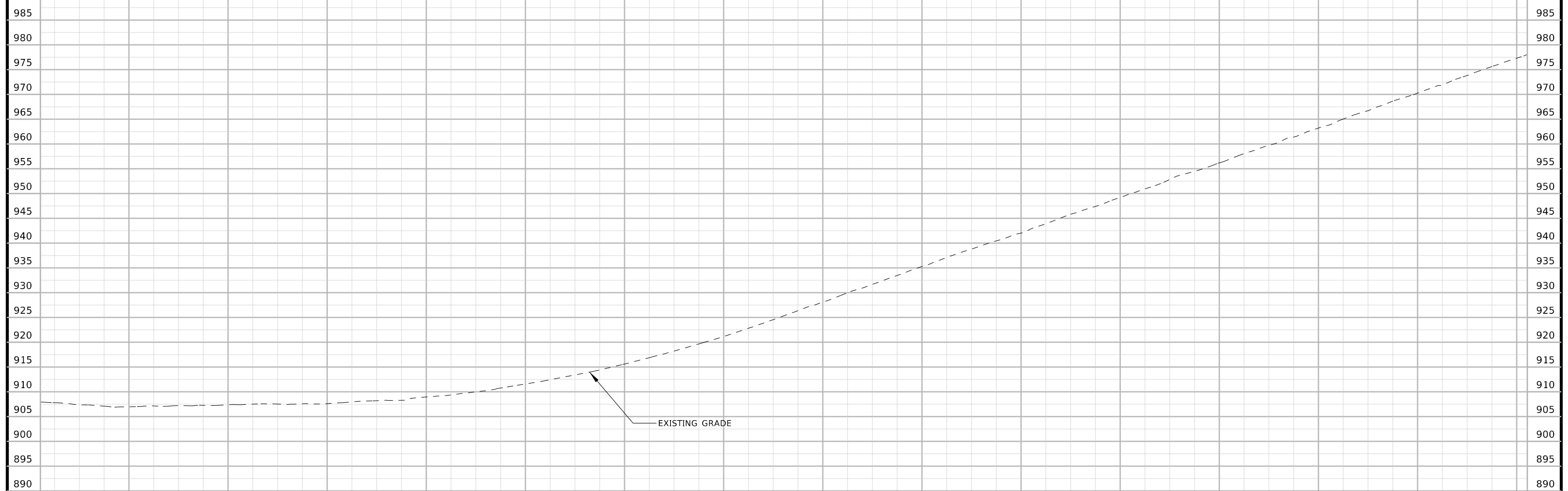
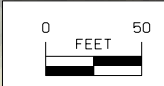
(COVERS SHEET SERIES D, E, F, & K)



$\Delta = 15^{\circ}05'00.00''$ (RT)
 $L = 126.40$
 $R = 251.34$
 $E = 954.74$
 $L_e =$
 $x =$

Sta. 1418+39.2
 Skew 20° LT AH
 $3' \times 2.5' \times 71.7'$ RCB
 D.A. = 20.0 A-R
 (From Plan)
 (REMOVE)

Sta. 1418+99.7
 $15' \times 33'$ RCP
 (UAC)



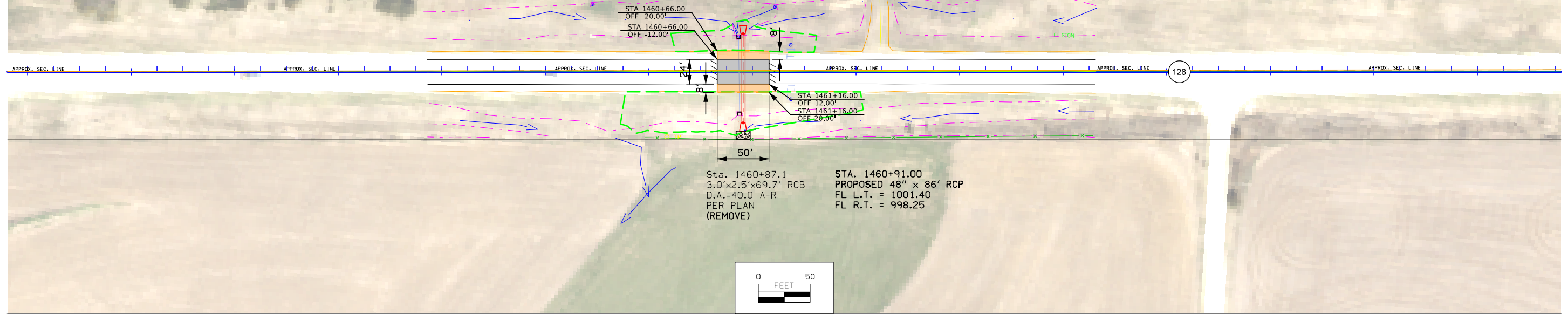
| | | | | | | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1413+00 | 1414+00 | 1415+00 | 1416+00 | 1417+00 | 1418+00 | 1419+00 | 1420+00 | 1421+00 | 1422+00 | 1423+00 | 1424+00 | 1425+00 | 1426+00 | 1427+00 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|

Steve Kregel et al

READ TWP.
T-93N R-04W
SEC. 09

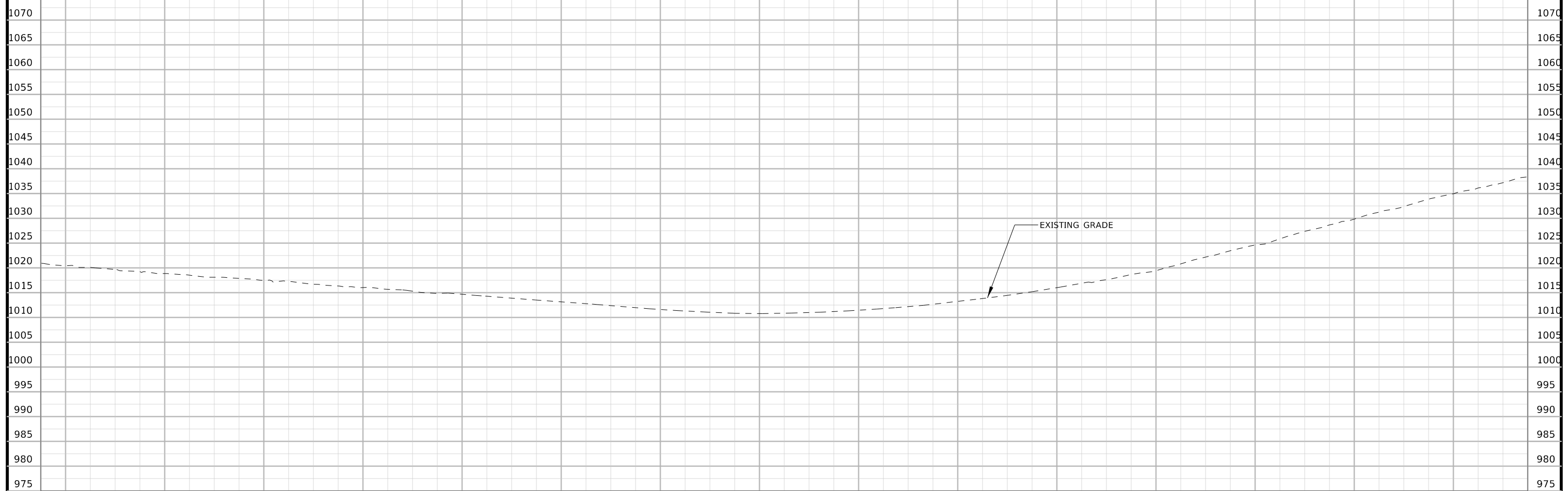
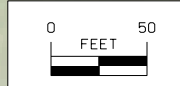
18"X24'
C.M.P.

1454+00 1455+00 1456+00 1457+00 1458+00 1459+00 1460+00 1461+00 1462+00 1463+00 1464+00 1465+00 1466+00 1467+00 1468+00



Sta. 1460+87.1
3.0'x2.5'x69.7' RCB
D.A.=40.0 A-R
PER PLAN
(REMOVE)

STA. 1460+91.00
PROPOSED 48" x 86' RCP
FL L.T. = 1001.40
FL R.T. = 998.25



| | | | | | | | | | | | | | | |
|----------|---------|---------------------------------|---------|---------|---------|----------------|---------|---------|--------------------------------------|---------|---------|------------------|---------|---------|
| 1454+00 | 1455+00 | 1456+00 | 1457+00 | 1458+00 | 1459+00 | 1460+00 | 1461+00 | 1462+00 | 1463+00 | 1464+00 | 1465+00 | 1466+00 | 1467+00 | 1468+00 |
| FILE NO. | ENGLISH | DESIGN TEAM SNYDER & ASSOCIATES | | | | CLAYTON COUNTY | | | PROJECT NUMBER STPN-128-1(11)--2J-22 | | | SHEET NUMBER D.3 | | |

Survey Information

SURVEY INDEX

County: Clayton
PIN: 21-22-128-010
Project Number: STPN-128-1(11)--2J-22
Location: W of Clayton Center and 1.1 mi W of Co Rd X41
Type of Work: Pipe Culverts
Project Directory: 2212801021

Survey Personnel

John Hahn – Survey Party Chief
Robert Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 09/30/2021
End Date 02/10/2022

General Information

Measurement units for this survey are US survey feet. This survey is for an IA Hwy 128 pipe culvert west of Clayton Center and 1.1 miles west of County Road X41.

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two five-minute observations were taken with appropriate time spans between and used in a weighted average to obtain final coordinate values. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
VERTICAL DATUM: NAVD88
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 3

Alignments Information

Alignment information was provided by District 2 Land Survey office.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

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 - 1a. RCS Zone 03

VERT. DATUM: NAVD88 - Geoid Model 12b

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
 1a. Regional Coordinate System Zone 03

VERT. DATUM: NAVD88
 Geoid Model 12b
 Project Control Marks are Bench Marks

| Point Name | Northing | Easting | Elevation | Code/Description |
|------------|-------------|--------------|-----------|---|
| 221280021 | 9257738.656 | 13463297.962 | 1019.113 | CP ROW RAIL 64 feet perpendicular SSW from highway 128 CL, 37 feet perpendicular ENE from cl of residential driveway, 1281 feet WSW of residential driveway entrance CL where intersects with 128 on the south side |
| 221280026 | 9259132.501 | 13465239.892 | 921.458 | CP CUT X W corner of conc catch basin lid 19 feet perpendicular from CL 128, 225 feet ENE from CL residential driveway north side of 128, 204 feet WSW of residential driveway on north side of 128 |
| 221280027 | 9259544.409 | 13466024.602 | 985.251 | CP CONC MON 30 feet perpendicular SSE from CL 128, 87 feet westerly from CL 230th street where intersects with 128, 284 feet ESE from CL residential driveway on south side of 128 |

NOTE:

The first two digits in the control point name refer to the county number.
 The next 3 digits refer to the highway number.
 The next 3 digits refer to the highway milepost.
 The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.



THOMAS L & SHERYL STOFFEL

Village of Clayton Center

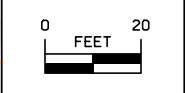
ROGER L & DIANE K BREITSPRECHER

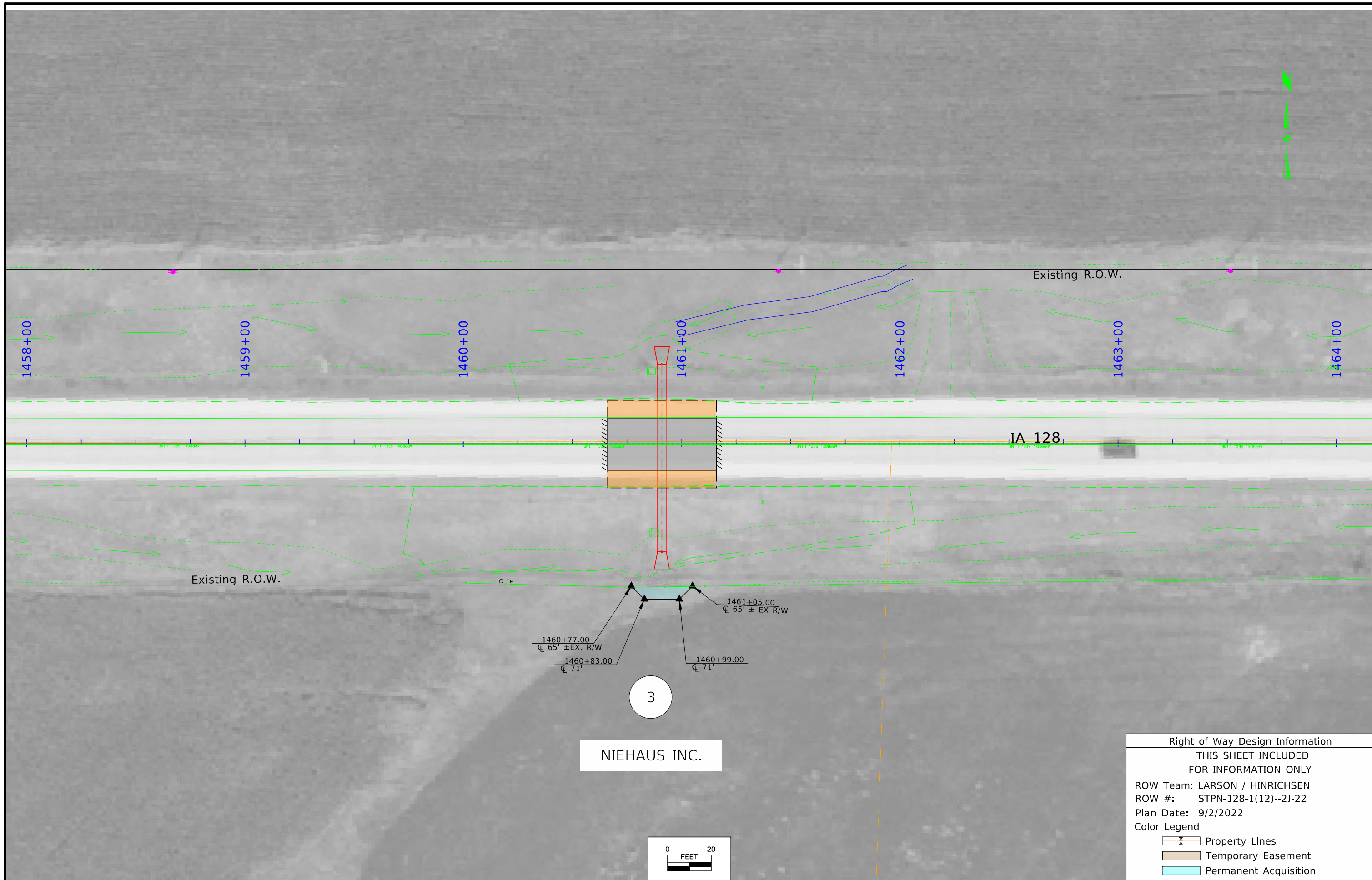
Right of Way Design Information
 THIS SHEET INCLUDED
 FOR INFORMATION ONLY

ROW Team: LARSON / HINRICHSEN
 ROW #: STPN-128-1(12)--2J-22
 Plan Date: 9/2/2022

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

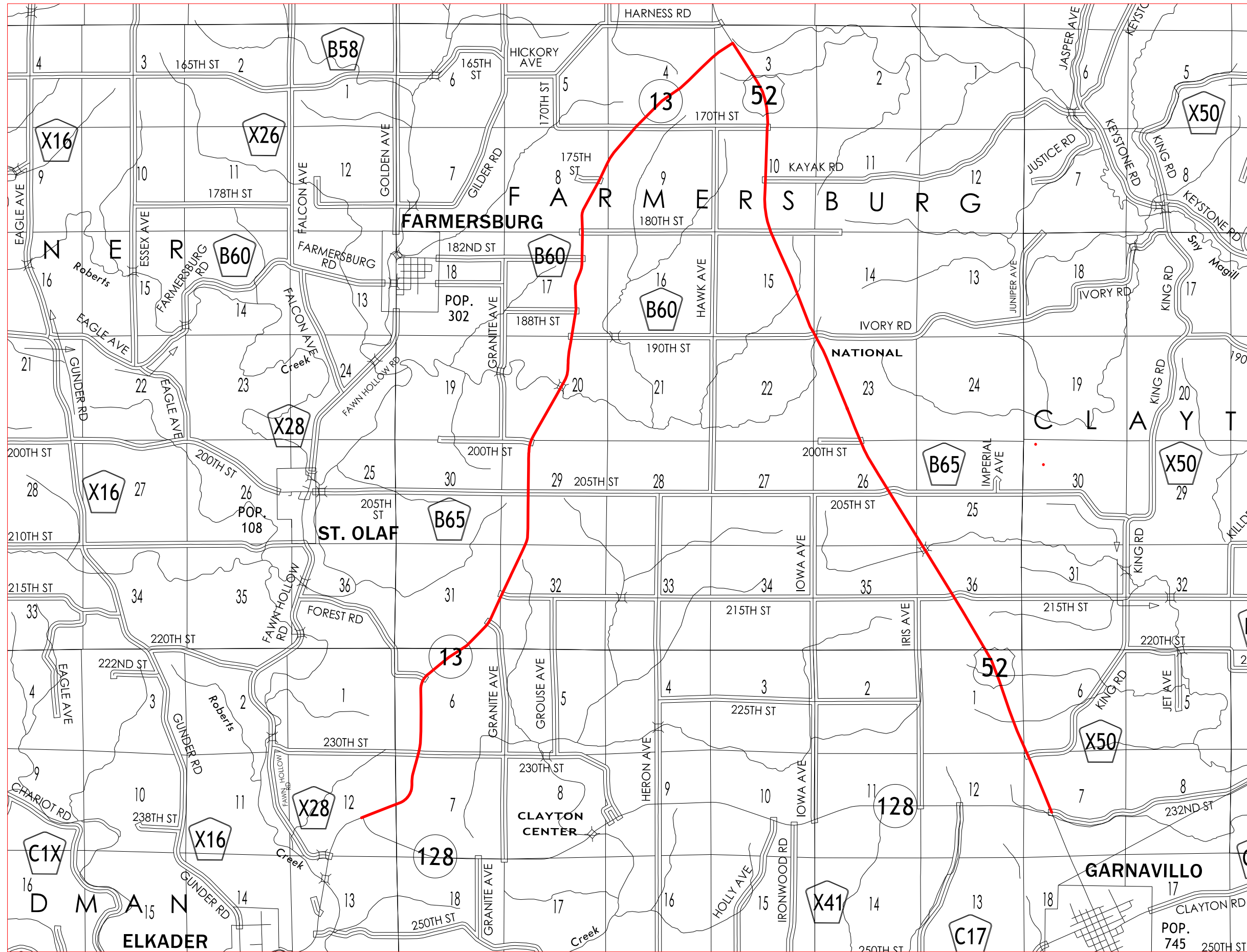




108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Iowa 128 will be closed to traffic during construction. Traffic will follow the detour route shown on J.2.
2. Closures at each location will be coordinated to allow local access to individual properties throughout construction.



NOT TO SCALE

STORM SEWER

① Diameter or equivalent diameter

* Bid Item

** For SW-545

INTAKES AND UTILITY ACCESSES

PIPES

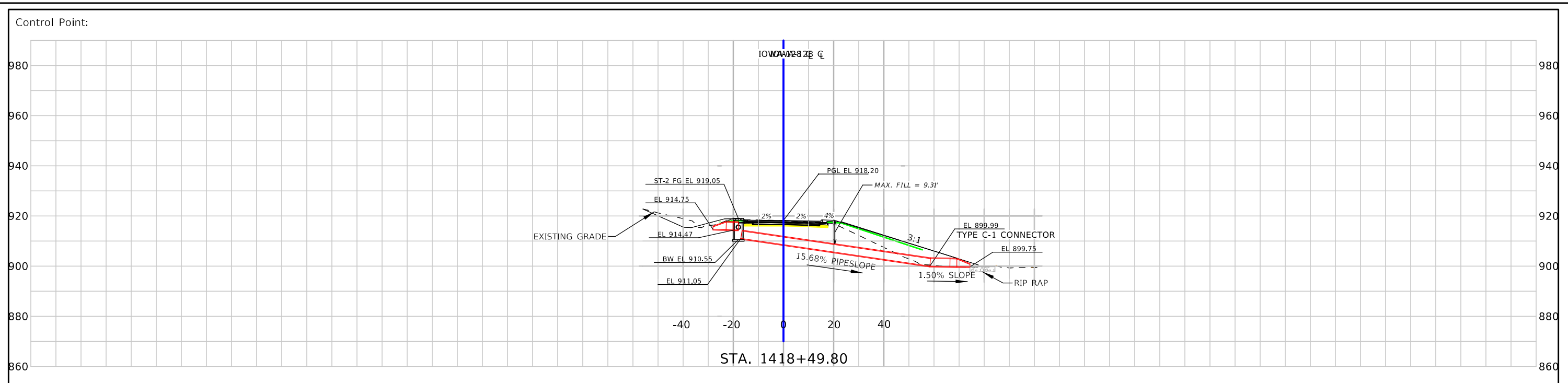
Design Length, Slope, and Flowlines are calculated from center of structure to center of structure.

| No. | Location Station and Offset | *Type or Standard Road Plan | Form Grade | Bottom Well | Ext. Length** | Notes | Line Number | Intake/Utility Access No. | | Class 'D' | Pipe Size ① | Bid* Length | Design Length | Slope % | Connected Pipe Joint (DR-121) Type | Flow Lines | | | Pipe Profile Sheet No. | Notes |
|-----|-----------------------------|-----------------------------|------------|-------------|---------------|---------------|-------------|---------------------------|----|-----------|-------------|-------------|---------------|---------|------------------------------------|-----------------|------------------|-----------------|------------------------|--------------------|
| | | | Elev. | Elev. | FT | | | From | To | | | | | | | Inlet Elevation | Outlet Elevation | Other Elevation | | |
| | | | | | | | | IN | FT | | | | | | | FT | | | | |
| 1 | 1419+00.00, 15.5' LT | RA-8 (6-7-71) | 920.34 | | | Existing. UAC | 1 | 1 | 2 | 1500 | 18 | 40.0 | 40.0 | 4.45 | | 916.58 | 914.80 | | | |
| 2 | 1418+60.00, 18.0' LT | SW-402 | 919.05 | 910.55 | | 5' x 3' | 3 | 3 | 2 | 2000 | 36 | 4.0 | 12.0 | 4.00 | | 914.95 | 914.47 | | | |
| 3 | 1418+60.00, 28.0' LT | DR-201 | | | | | 2 | 2 | 4 | 2000 | 36 | 87.0 | 95.0 | 14.00 | | 911.05 | 899.75 | 899.99 | | Bend @16' from end |
| 4 | 1418+13.00, 64.6' RT | DR-201 | | | | | | | | | | | | | | | | | | |

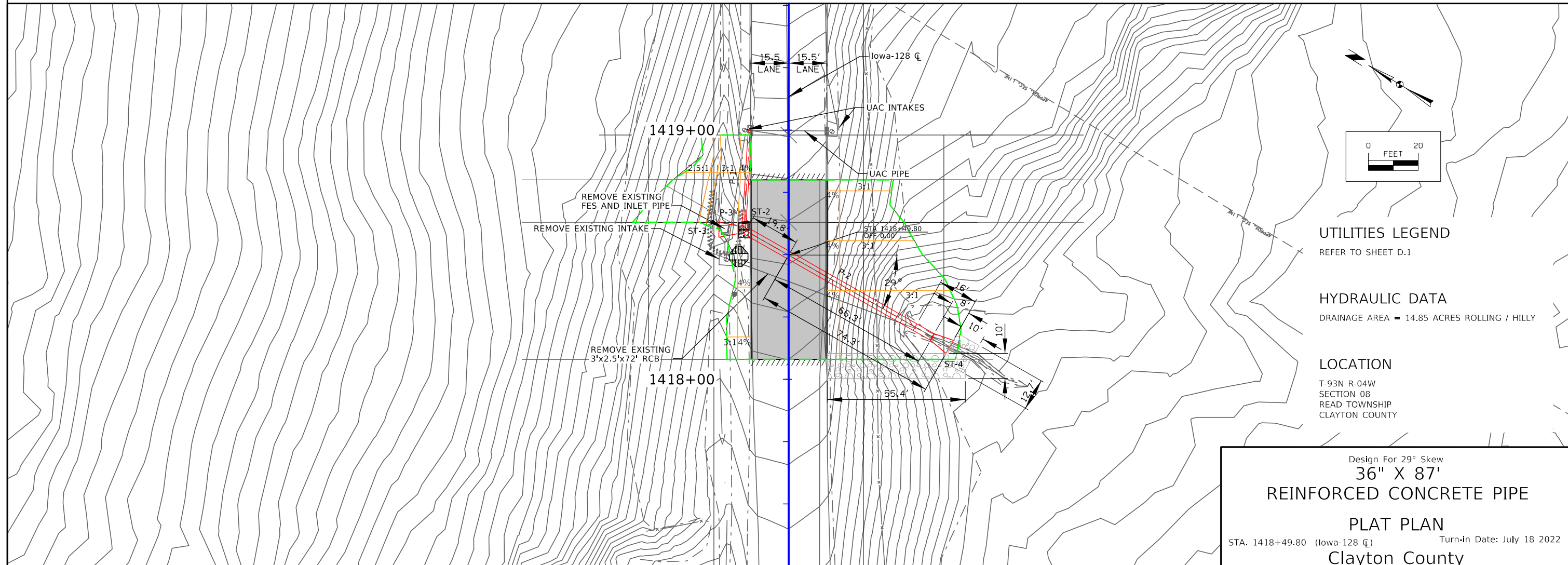
ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

| Location | | | | Rock Erosion Control (REC) | | | | | Material Bid Quantities | | | Remarks | | |
|---------------------|---------------|-------------|---------|----------------------------|------|------------------|------------|------------|-------------------------|-----------------------|-------------|---------|-------------------|---------------|
| Road Identification | Begin Station | End Station | Side | (L) | (W) | Type 1 | Type 2 | Type 3 | Type 4 | Type 5 | Eng. Fabric | | Class E Revetment | Erosion Stone |
| | | | Lt./Rt. | FT | FT | Rock Ditch Check | Rock Ditch | Rock Flume | Rock Splash Basin | Rock Slope Protection | SY | | TON | TON |
| Iowa 128 | 1417+98.00 | 1418+08.00 | RT | 10 | 55.4 | | | X | | | 92.4 | | 60.9 | |
| | 1418+13.00 | | RT | 12.7 | 10 | | | | X | | 26.0 | 14.0 | | |
| | 1460+91.00 | | RT | 13.8 | 8 | | | | X | | 23.7 | 12.1 | | |
| | | | | | | | | | | | | | | |



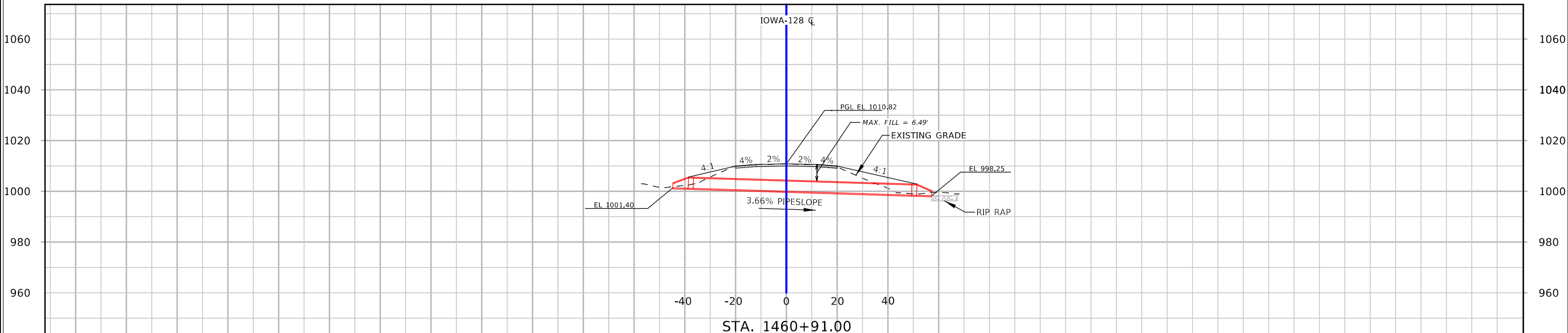
LONGITUDINAL SECTION ALONG \bar{C} CULVERT



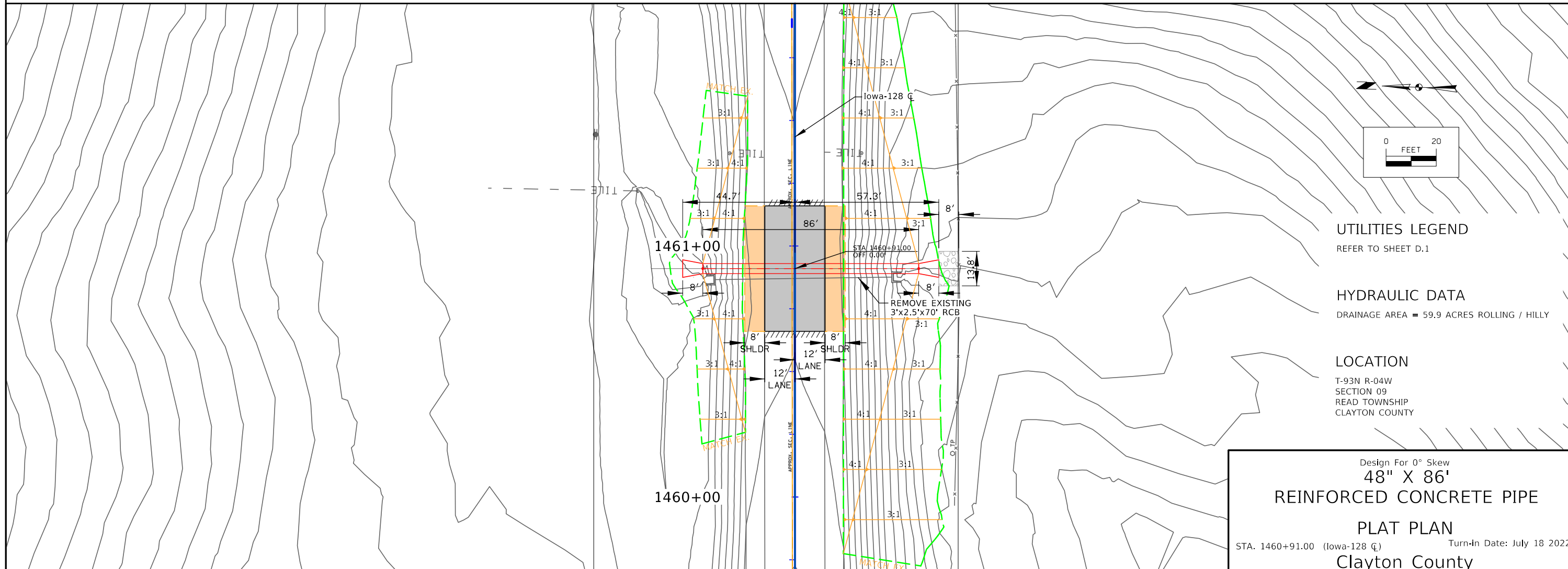
PLAT PLAN

Design For 29° Skew
36" X 87'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STA. 1418+49.80 (Iowa-128 \bar{C}) Turn-In Date: July 18 2022
Clayton County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. Design Sheet No. 1 of 1 FHWA/Asset

Control Point:



LONGITUDINAL SECTION ALONG \bar{C} CULVERT



- UTILITIES LEGEND**
REFER TO SHEET D.1
- HYDRAULIC DATA**
DRAINAGE AREA = 59.9 ACRES ROLLING / HILLY
- LOCATION**
T-93N R-04W
SECTION 09
READ TOWNSHIP
CLAYTON COUNTY

Design For 0° Skew
48" X 86'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STA. 1460+91.00 (Iowa-128 \bar{C}) Turn-In Date: July 18 2022
Clayton County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. Design Sheet No. 1 of 1 FHWA/Asset

PLAT PLAN