TOTAL SHEETS = 28

11-06-2020 LETTING ITEM 118

CONTRACT NO. 85689

# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS

# PLANS FOR PROPOSED
# SURFACE TRANSPORTATION PROGRAM–BRIDGE

## WOODLAND ROAD DISTRICT
## SECTION 14–12124–00–BR
## CARROLL COUNTY
## PROJECT NO. 2198 (254)
## T.R. 46 & T.R. 35
## JOB NO. C–92–032–17

**INDEX OF SHEETS**



**STANDARDS**

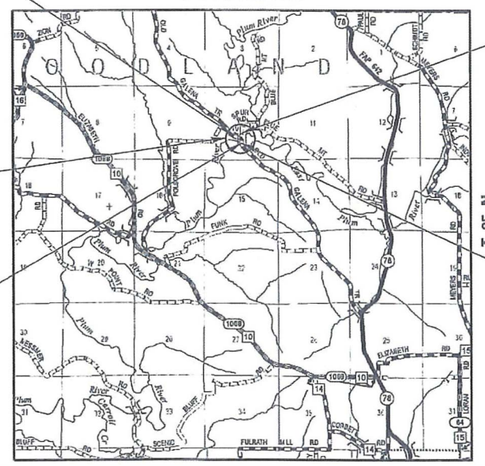
| | |
|---|---|
| 280001–07 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001–04 | NAME PLATE FOR BRIDGES |
| 701001–02 | OFF–RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY |
| 701006–05 | OFF–RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE |
| 701901–08 | TRAFFIC CONTROL DEVICES |
| 720011–01 | METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS |
| 725001–01 | OBJECT AND TERMINAL MARKERS |
| 728001–01 | TELESCOPING STEEL SIGN SUPPORT |
| 729001–01 | APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS AND MARKERS) |
| BLR 21–9 | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS |

IMPROVEMENT BEGINS
STA. 46 + 57.14 (T.R. 46)

STA. 10 + 04
SPECIAL BRIDGE DESIGN
P.P.C. DECK BEAM BRIDGE (21" DEPTH);
3 SPANS @ 40'–0", 45'–0", 40'–0";
27'–0" RDWY.; 20° SKEW LT. FWD.

IMPROVEMENT BEGINS
STA. 7 + 00.00 (T.R. 46)

R. 4 E., 4TH P.M.




IMPROVEMENT ENDS
STA. 17 + 00.00 (T.R. 35)

IMPROVEMENT ENDS
STA. 49 + 90.00 (T.R. 46)

N

**LOCATION PLAN**

NET LENGTH OF OF T.R. 46 = 680.13 FEET = 0.129 MILES
NET LENGTH OF OF T.R. 35 = 509.87 FEET = 0.096 MILES
NET LENGTH OF SECTION = 1190.00 FEET = 0.225 MILES

0 1 2 3 4 5
SCALE IN MILES


LOCATION OF SECTION INDICATED THUS: –

CLASSIFICATION: LOCAL ROAD (NON–URBAN)
DESIGN VOLUME: UNDER 250 ADT
CURRENT ADT: 100 (2019)
DESIGN SPEED: 30 MPH
3R DESIGN GUIDELINES

**UTILITIES**

CENTURY LINK TELEPHONE
CHAD MILO
309–447–0331

JO–CARROLL ENERGY, INC. (NFP)
MARK WILD
800–858–5522: EXT 1258

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NUMBER 1-800-892-0123

APPROVED 3-31-2020
Kyle M. Roth
ROAD DISTRICT COMMISSIONER

APPROVED 3/31/2020
COUNTY ENGINEER

PASSED 4/2 20 20
DISTRICT TWO ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW 4/2 20 20
REGION TWO ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**SCALES**

| | | | |
|---|---|---|---|
| PLAN | 0' | 50' | 100' |
| PROFILE HORIZ. | 0' | 50' | 100' |
| PROFILE VERT. | 0' | 5' | 10' |
| CROSS SECTIONS | 0' | 5' | 10' |

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS IOWA WISCONSIN

ILLINOIS PROFESSIONAL DESIGN FIRM NUMBER: 184003525

GARY J. CARTWRIGHT
43408
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Gary J. Cartwright 3-18-2020
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-21

*15-701

## SUMMARY OF QUANTITIES
## CONSTRUCTION TYPE CODE: 0010

| | CODE NO. | ITEM | UNIT | TOTAL QUANTITY |
|---|---|---|---|---|
| | 20200100 | EARTH EXCAVATION | CU YD | 2877 |
| | 20300100 | CHANNEL EXCAVATION | CU YD | 639 |
| | 20400800 | FURNISHED EXCAVATION | CU YD | 4735 |
| | 28000250 | TEMPORARY EROSION CONTROL SEEDING | POUND | 165 |
| | 28000305 | TEMPORARY DITCH CHECKS | FOOT | 130 |
| | 28000400 | PERIMETER EROSION BARRIER | FOOT | 2172 |
| | 28000500 | INLET AND PIPE PROTECTION | EACH | 1 |
| | 28100209 | STONE RIPRAP, CLASS A5 | TON | 545 |
| | 28200200 | FILTER FABRIC | SQ YD | 542 |
| | 35101400 | AGGREGATE BASE COURSE, TYPE B | TON | 2249 |
| | 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | 1 |
| | 50300225 | CONCRETE STRUCTURES | CU YD | 154.6 |
| | 50300280 | CONCRETE ENCASEMENT | CU YD | 4.6 |
| | 50400405 | PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH) | SQ FT | 3375 |
| | 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 15390 |
| | 51201600 | FURNISHING STEEL PILES HP12X53 | FOOT | 850 |
| | 51202305 | DRIVING PILES | FOOT | 850 |
| | 51203600 | TEST PILE STEEL HP12X53 | EACH | 2 |
| | 51500100 | NAME PLATES | EACH | 1 |
| | 542A1087 | PIPE CULVERTS, CLASS A, TYPE 2 42" | FOOT | 78 |
| | 54213687 | PRECAST REINFORCED CONCRETE FLARED END SECTIONS 42" | EACH | 2 |
| | 67100100 | MOBILIZATION | L SUM | 1 |
| Δ | 72501000 | TERMINAL MARKER - DIRECT APPLIED | EACH | 4 |
| Δ • | X2300017 | STEEL RAILING, TYPE SM (SPECIAL) | FOOT | 251 |
| • | X2501000 | SEEDING, CLASS 2 (SPECIAL) | ACRE | 1.3 |
| • | X7010216 | TRAFFIC CONTROL AND PROTECTION, (SPECIAL) | L SUM | 1 |
| • | Z0013798 | CONSTRUCTION LAYOUT | L SUM | 1 |

•SEE SPECIAL PROVISIONS

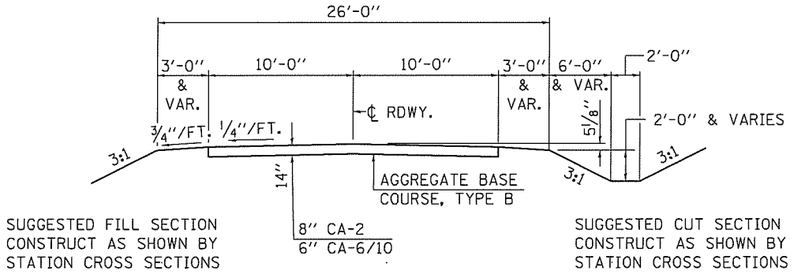
Δ SPECIALTY ITEMS

## GENERAL NOTES

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED. THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

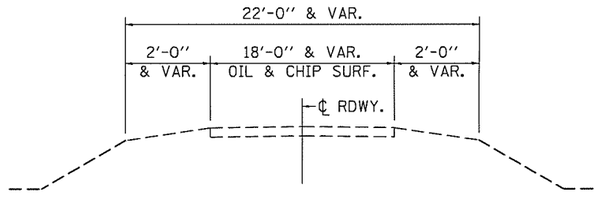
SEEDING, CLASS 2 (SPECIAL) = 1.3 ACRE




## ** TYPICAL PROPOSED CROSS SECTION

STA. 7+50.00 TO STA. 9+40.47 (TR 46)
STA. 10+67.43 TO STA. 16+50.00 (TR 35)
STA. 47+07.19 TO STA. 49+90.00 (TR 46)

** TRANSITION FROM EXISTING ROADWAY WIDTH TO PROPOSED ROADWAY WIDTH TO BE CONSTRUCTED FROM STA. 7+00 TO STA. 7+50, FROM STA. 16+50 TO STA. 17+00 AND STA. 46+57.19 TO STA. 47+07.19




## TYPICAL EXISITNG CROSS SECTION

## APPLICATION RATES USED IN QUANTITY CALCULATIONS

AGGREGATE BASE COURSE..... 2.05 TON/CU YD
STONE RIPRAP, CLASS A5..... 1.65 TON/CU YD

NOTE: THE ABOVE NOTED APPLICATION RATES ARE FOR QUANTITY CALCULATIONS ONLY. THE APPLICATION RATE TO BE APPLIED WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF PLACEMENT.

MODEL: Default
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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 2.000 ' / In. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTIONS**

SCALE: | SHEET OF SHEETS | STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 2 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |

EXIST. CURVE EX1
PI STA. = 6+16.43
Δ = 22° 41′ 28″ (RT)
D = 13° 28′ 53″
R = 425.00′
T = 85.27′
L = 168.31′
E = 8.47′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 5+31.16
P.T. STA. = 6+99.47

EXIST. CURVE EX2
PI STA. = 7+35.75
Δ = 9° 45′ 29″ (RT)
D = 13° 28′ 53″
R = 425.00′
T = 36.28′
L = 72.38′
E = 1.55′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 6+99.47
P.T. STA. = 7+71.86

EXIST. CURVE EX3
PI STA. = 8+36.05
Δ = 6° 01′ 20″ (RT)
D = 5° 12′ 31″
R = 1,100.00′
T = 57.86′
L = 115.62′
E = 1.52′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 7+78.19
P.T. STA. = 8+93.81

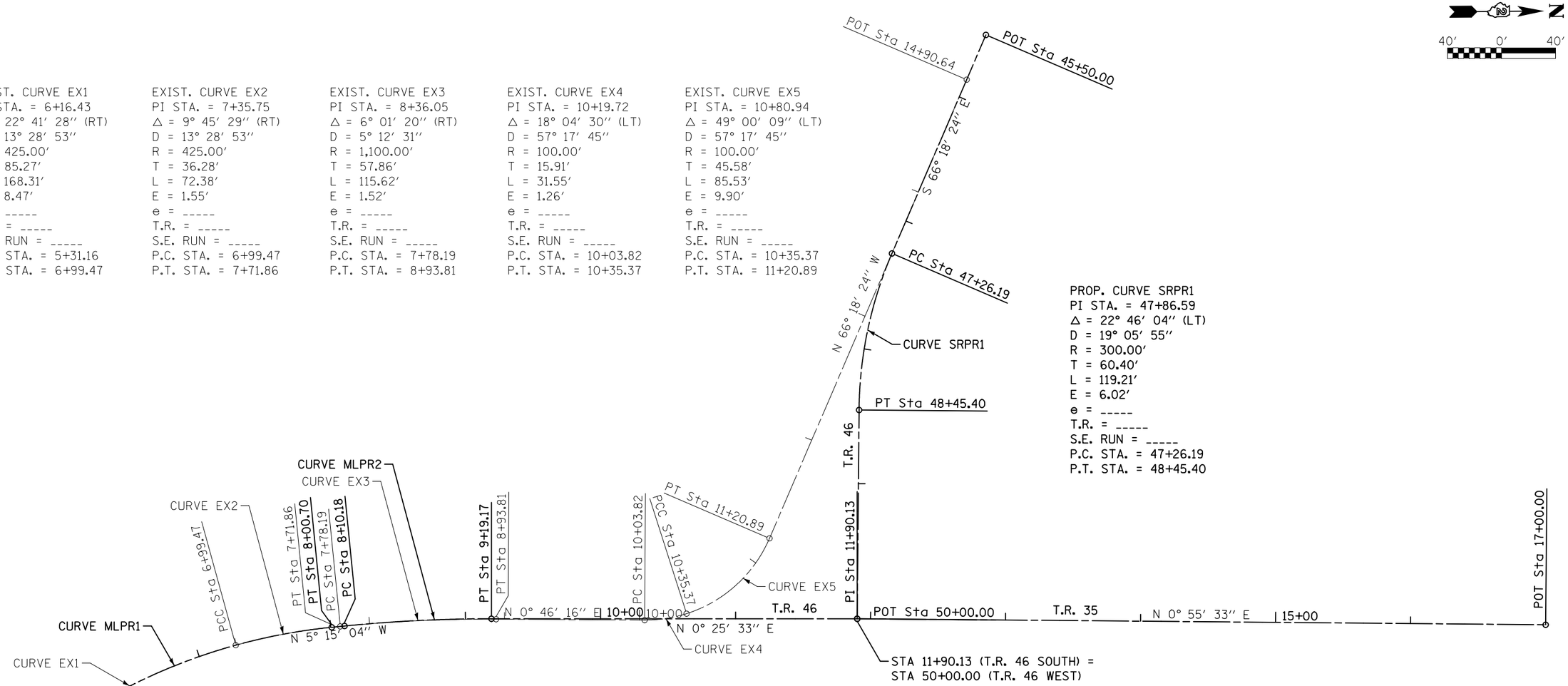
EXIST. CURVE EX4
PI STA. = 10+19.72
Δ = 18° 04′ 30″ (LT)
D = 57° 17′ 45″
R = 100.00′
T = 15.91′
L = 31.55′
E = 1.26′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 10+03.82
P.T. STA. = 10+35.37

EXIST. CURVE EX5
PI STA. = 10+80.94
Δ = 49° 00′ 09″ (LT)
D = 57° 17′ 45″
R = 100.00′
T = 45.58′
L = 85.53′
E = 9.90′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 10+35.37
P.T. STA. = 11+20.89

PROP. CURVE SRPR1
PI STA. = 47+86.59
Δ = 22° 46′ 04″ (LT)
D = 19° 05′ 55″
R = 300.00′
T = 60.40′
L = 119.21′
E = 6.02′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 47+26.19
P.T. STA. = 48+45.40

PROP. CURVE MLPR1
PI STA. = 6+83.67
Δ = 32° 26′ 57″ (RT)
D = 13° 28′ 53″
R = 425.00′
T = 123.67′
L = 240.70′
E = 17.63′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 5+60.00
P.T. STA. = 8+00.70

PROP. CURVE MLPR2
PI STA. = 8+64.72
Δ = 5° 40′ 36″ (RT)
D = 5° 12′ 31″
R = 1,100.00′
T = 54.54′
L = 108.99′
E = 1.35′
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 8+10.18
P.T. STA. = 9+19.17

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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 80.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

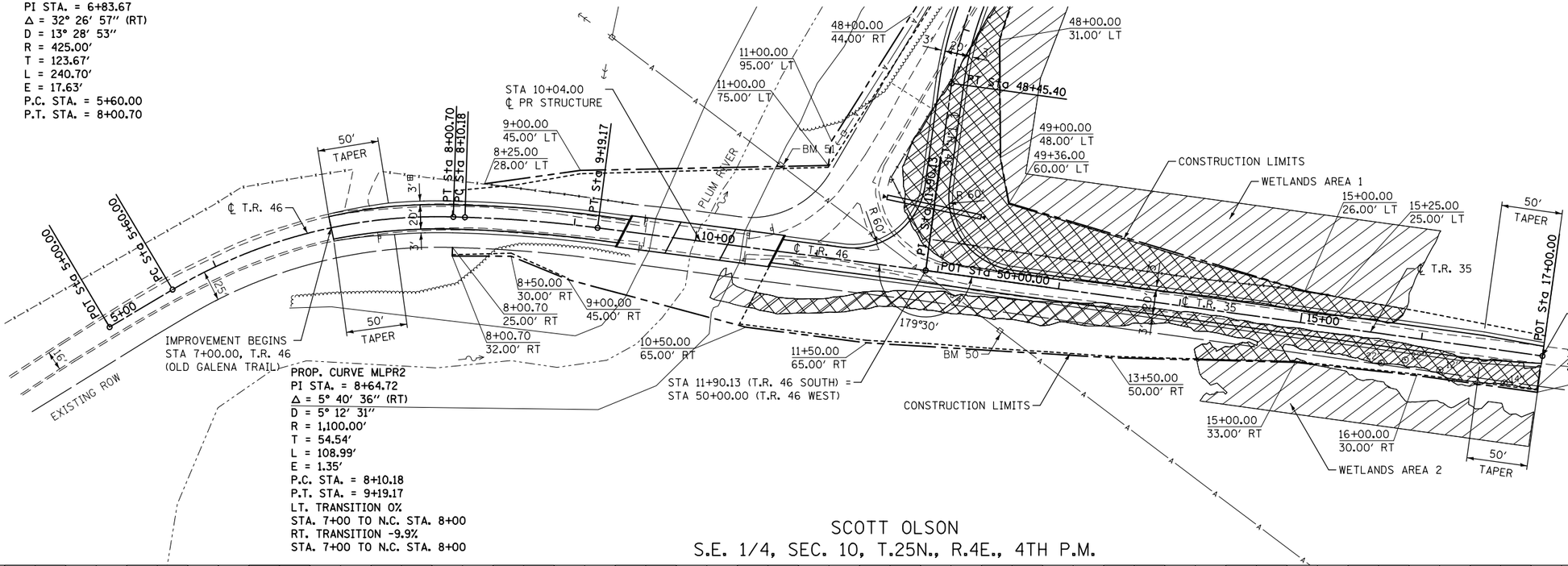
**ALIGNMENTS**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

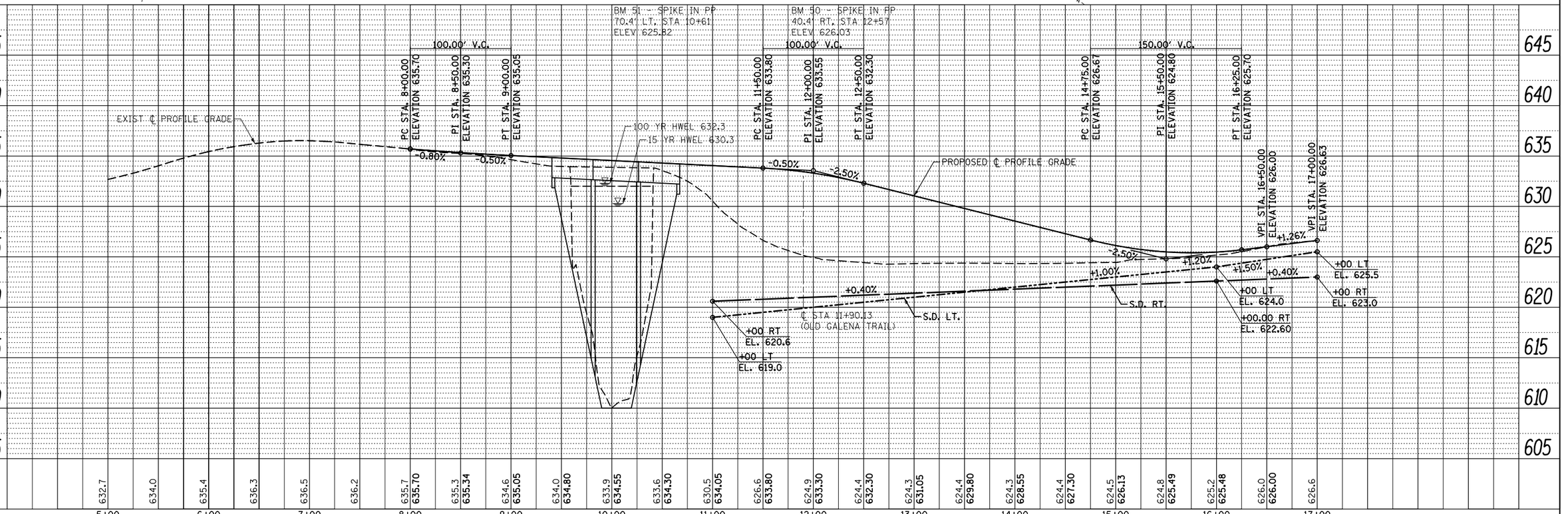
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 3 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |

GREGORY & SHIRLEY TURNBAUGH  S.W. 1/4, SEC. 10, T.25N., R.4E., 4TH P.M.  CAROL E. BERGLAND REV. TRUST

PROP. CURVE MLPR1
PI STA. = 6+83.67
Δ = 32° 26′ 57″ (RT)
D = 13° 28′ 53″
R = 425.00′
T = 123.67′
L = 240.70′
E = 17.63′
P.C. STA. = 5+60.00
P.T. STA. = 8+00.70




SCOTT OLSON
S.E. 1/4, SEC. 10, T.25N., R.4E., 4TH P.M.




PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, CADD FILE NAME, NOTE BOOK, NO., BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATNS CHKD, NOTE BOOK, NO., BY, DATE

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FILE NAME: ...\sht-004-plan-prof-ml-001.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

USER NAME = cconnor
PLOT SCALE = 100.000000 ' / in.
PLOT DATE = 4/1/2020

DESIGNED - MRL
DRAWN - CFC
CHECKED - MCB
DATE -

REVISED -
REVISED -
REVISED -

FEHR GRAHAM PROJECT NUMBER: 15-701

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE OLD GALENA TRAIL /SPUR ROAD**
**SN 008-3120 OVER PLUM RIVER**

SCALE: SHEET OF SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 4 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS FED. AID PROJECT | | | |

S.W. 1/4, SEC. 10, T.25N., R.4E., 4TH P.M.
CAROL E. BERGLAND REV. TRUST

S.E. 1/4, SEC. 10, T.25N., R.4E., 4TH P.M.
SCOTT OLSON

SCOTT OLSON
S.E. 1/4, SEC. 10, T.25N., R.4E., 4TH P.M.

GREGORY & SHIRLEY TURNBAUGH

PROP. CURVE SRPR1
PI STA. = 47+86.59
Δ = 22° 46′ 04″ (LT)
D = 19° 05′ 55″
R = 300.00′
T = 60.40′
L = 119.21′
E = 6.02′
e = 4.0%
T.R. = 25′
S.E. RUN = 67′
P.C. STA. = 47+26.19
P.T. STA. = 48+45.40
S.E. TRANSITIONING
46+57.19 TO 47+49.19
48+22.40 TO 49+14.40

15+00.00 26.00′ LT
15+00.00 33.00′ RT
13+50.00 50.00′ RT
49+36.00 60.00′ LT
47+26.19 25.00′ LT
49+00.00 48.00′ LT
48+00.00 31.00′ LT
47+00.00 30.00′ RT
48+00.00 44.00′ RT
11+00.00 95.00′ LT
11+00.00 75.00′ LT
10+50.00 65.00′ RT
11+50.00 65.00′ RT

CONST. LIMITS
50′ TAPER
50′ TAPER
POT Sta 45+50.00
PC Sta 47+26.19
PT Sta 48+45.40
POT Sta 50+00.00
℄ LT. 35
℄ LT. 46
℄ TR. 46
CF06+17 OFS 1d
R 60′
179°30′
IMPROVEMENT BEGINS
STA 46+57.14 T.R. 46
A.R. CULVERT, STA 49+47.70
78′ LONG, 42″ DIA. WITH
2 - PRECAST REINFORCED CONC FES 42″
BM 50
IMPROVEMENT ENDS
STA 49+90.00 T.R. 46
CONSTRUCTION LIMITS
STA 11+90.13 (T.R. 46 SOUTH) =
STA 50+00.00 (T.R. 46 WEST)
PLUM RIVER
PIPE CULVERT TO BE REMOVED
RT. STA. 48+59.80, 36″X54″
ELLIP. CMP, 36′ LONG
CONSTRUCTION LIMITS
BM 51

N
50′ 0′ 50′

LEGEND
- POWER POLE
- GUY
- SB (TELEPHONE)
- SIGN
- TREE (DECIDUOUS)
- WETLANDS
- WETLANDS IMPACTED
  AREA 1 = 0.49 AC.
  AREA 2 = 0.25 AC.

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

PROPOSED ℄ PROFILE GRADE
EXIST ℄ PROFILE GRADE
VPI STA. 46+57.14 ELEVATION 626.75
PC STA. 47+00.00 ELEVATION 626.70
PI STA. 47+75.00 ELEVATION 626.70
PRC STA. 48+50.00 ELEVATION 629.54
PI STA. 49+00.00 ELEVATION 631.43
PT STA. 49+50.00 ELEVATION 632.43
VPI STA. 49+90.00 ELEVATION 633.23
VPI STA. 50+00.00 ELEVATION 633.44
150.00′ V.C.
100.00′ V.C.
+0.00%
+3.78%
+3.78%
+2.00%
+2.00%
+2.10%
-1.00%
-0.80%
+00 LT & RT EL. 623.0
S.D. LT.
S.D. LT. & RT.
S.D. RT.
+50 LT EL. 621.8
+50 RT EL. 621.5

645 640 635 630 625 620 615 610 605

626.2 626.3 626.7 626.7 626.70 626.3 627.02 625.9 627.96 623.7 629.54 624.1 631.21 623.3 632.43 633.44

46+00 47+00 48+00 49+00 50+00

MODEL: Default
FILE NAME: ...sht-003-plan-prof-003.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 100.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

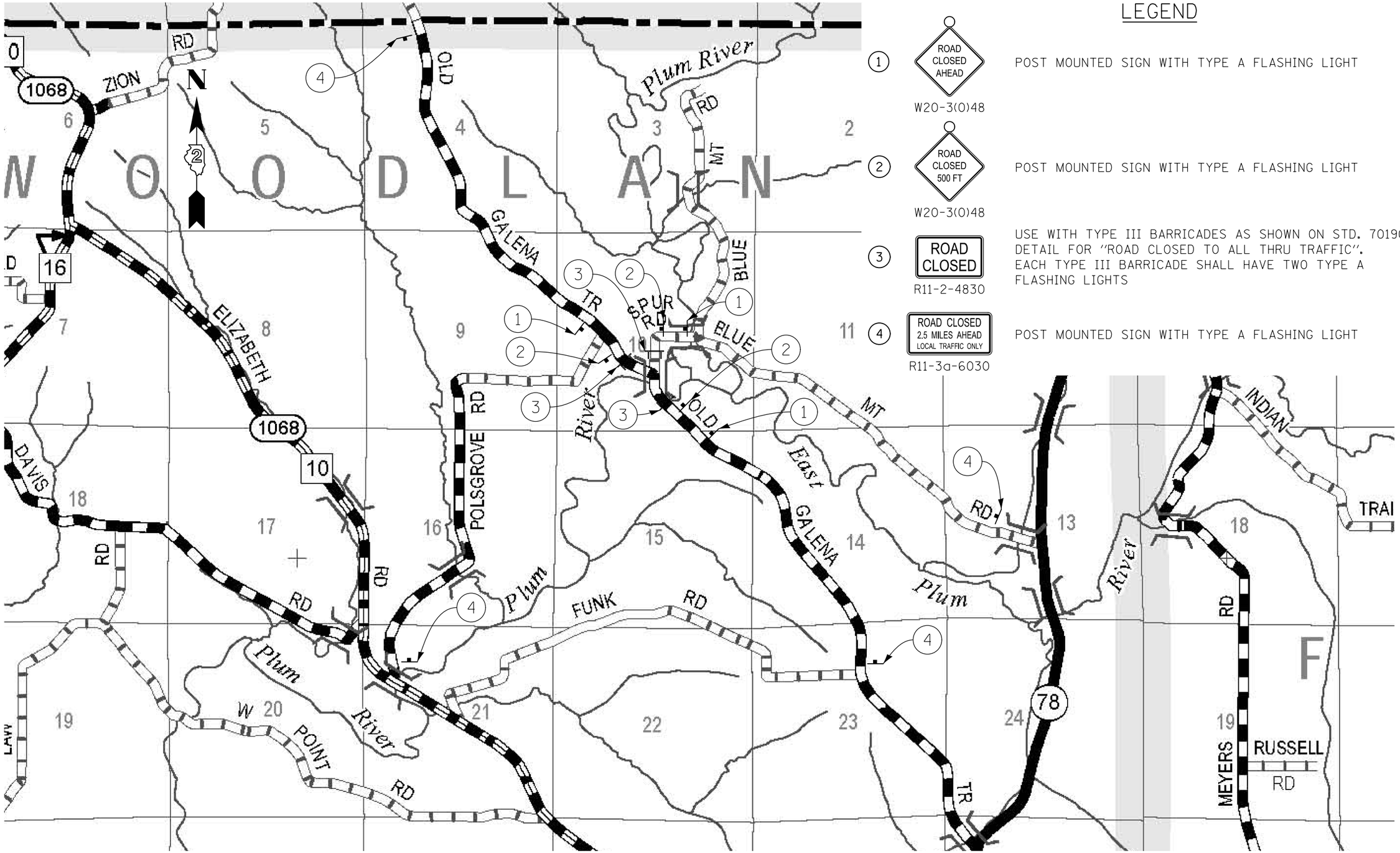
FEHR GRAHAM PROJECT NUMBER: 15-701

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: SHEET OF SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 5 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |




## LEGEND

| | | |
|---|---|---|
| 1 | ROAD CLOSED AHEAD<br>W20-3(0)48 | POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT |
| 2 | ROAD CLOSED 500 FT<br>W20-3(0)48 | POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT |
| 3 | ROAD CLOSED<br>R11-2-4830 | USE WITH TYPE III BARRICADES AS SHOWN ON STD. 701901 DETAIL FOR "ROAD CLOSED TO ALL THRU TRAFFIC". EACH TYPE III BARRICADE SHALL HAVE TWO TYPE A FLASHING LIGHTS |
| 4 | ROAD CLOSED 2.5 MILES AHEAD LOCAL TRAFFIC ONLY<br>R11-3a-6030 | POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT |

MODEL: Default
FILE NAME: ...\vBrassoh-006-traffic.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 2.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

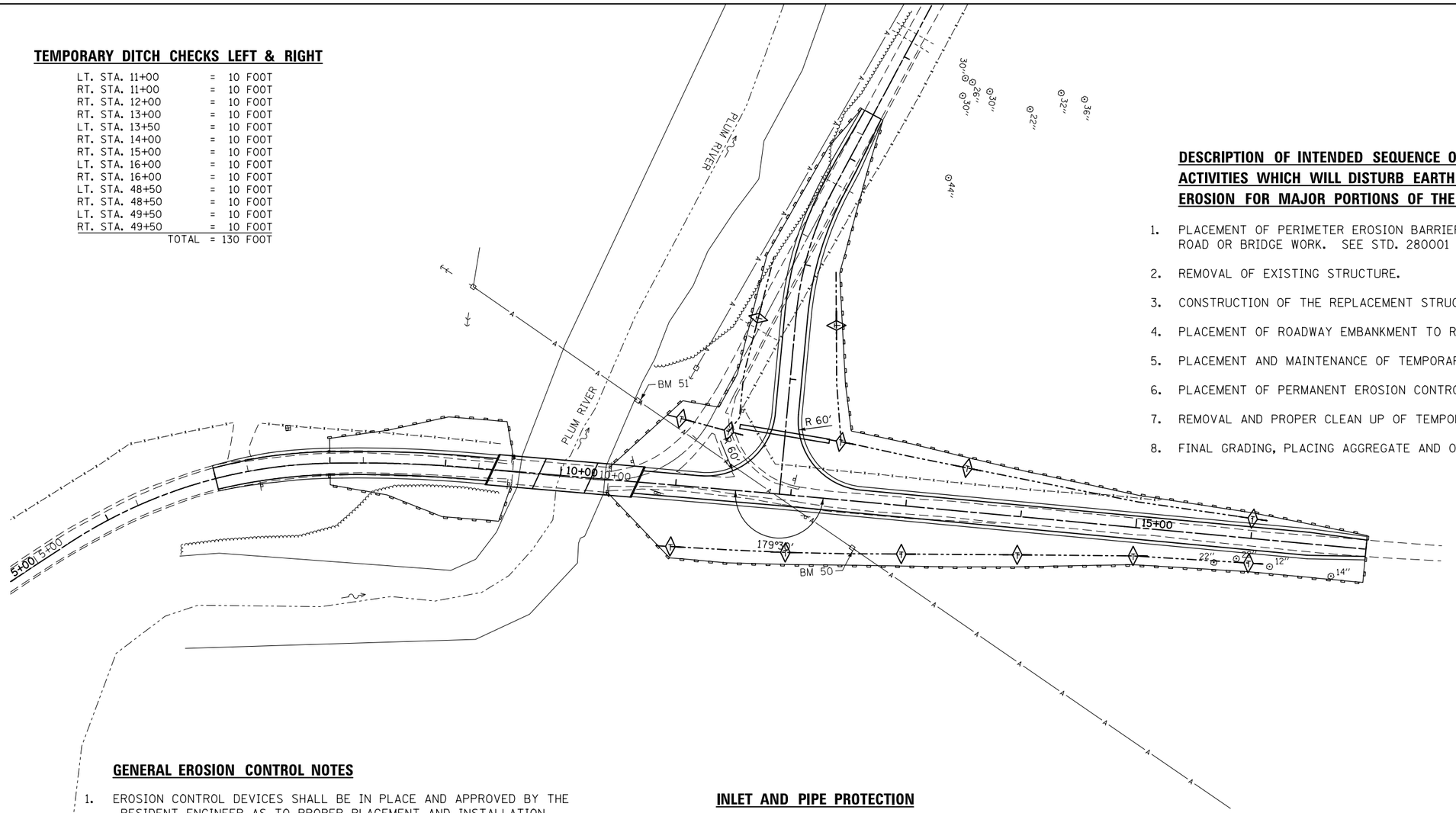
**TRAFFIC CONTROL PLAN**
**SN 008-3120 OVER PLUM RIVER**

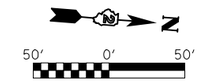
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 6 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS FED. AID PROJECT | | | |

## TEMPORARY DITCH CHECKS LEFT & RIGHT

| | | |
|---|---|---|
| LT. STA. 11+00 | = | 10 FOOT |
| RT. STA. 11+00 | = | 10 FOOT |
| RT. STA. 12+00 | = | 10 FOOT |
| RT. STA. 13+00 | = | 10 FOOT |
| LT. STA. 13+50 | = | 10 FOOT |
| RT. STA. 14+00 | = | 10 FOOT |
| RT. STA. 15+00 | = | 10 FOOT |
| LT. STA. 16+00 | = | 10 FOOT |
| RT. STA. 16+00 | = | 10 FOOT |
| LT. STA. 48+50 | = | 10 FOOT |
| RT. STA. 48+50 | = | 10 FOOT |
| LT. STA. 49+50 | = | 10 FOOT |
| RT. STA. 49+50 | = | 10 FOOT |
| TOTAL | = | 130 FOOT |




## DESCRIPTION OF INTENDED SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB EARTH AND LEAD TO POSSIBLE EROSION FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE:

1. PLACEMENT OF PERIMETER EROSION BARRIER PRIOR TO THE COMMENCEMENT OF ANY ROAD OR BRIDGE WORK. SEE STD. 280001
2. REMOVAL OF EXISTING STRUCTURE.
3. CONSTRUCTION OF THE REPLACEMENT STRUCTURE.
4. PLACEMENT OF ROADWAY EMBANKMENT TO RAISE THE ROADWAY TO THE PROPOSED GRADE.
5. PLACEMENT AND MAINTENANCE OF TEMPORARY EROSION CONTROL.
6. PLACEMENT OF PERMANENT EROSION CONTROL.
7. REMOVAL AND PROPER CLEAN UP OF TEMPORARY EROSION CONTROL.
8. FINAL GRADING, PLACING AGGREGATE AND OTHER MISCELLANEOUS ITEMS.

## GENERAL EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES SHALL BE IN PLACE AND APPROVED BY THE RESIDENT ENGINEER AS TO PROPER PLACEMENT AND INSTALLATION PRIOR TO BEGINNING OTHER WORK.
2. THE RESIDENT ENGINEER WILL DETERMINE WHEN TEMPORARY EROSION CONTROL SYSTEMS SHOWN ON THE PLAN MAY BE MOVED TO A DIFFERENT LOCATION OR DELETED.
3. IN THE EVENT OF HIGH WATER AND/OR HIGH FLOW RATES THAT DAMAGE THE PERIMETER EROSION AND SEDIMENT CONTROLS, THE CONTRACTOR SHALL RETRIEVE ANY CONTROLS THAT HAVE BEEN WASHED DOWNSTREAM.
4. STRAW BALES ARE NOT ALLOWED FOR ANY USE.
5. AFTER THE VEGETATION IS ESTABLISHED IN THE DISTURBED AREA, THE CONTRACTOR SHALL:

   -REMOVE THE REMAINING SEDIMENT CONTROL ITEMS AS DIRECTED BY THE RESIDENT ENGINEER.

   -RESTORE THE AREAS DISTURBED BY THE SEDIMENT CONTROL ITEMS BY PERMANENT SEEDING MEASURES.

   SPECIAL CARE SHALL BE TAKEN TO MINIMIZE AFFECTS TO WETLANDS.

## INLET AND PIPE PROTECTION

| | | |
|---|---|---|
| LT. STA. 12+45 | = | 1 EACH |
| TOTAL | = | 1 EACH |

## BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|---|---|---|
| TEMPORARY EROSION CONTROL SEEDING | POUND | 165 |
| PERIMETER EROSION BARRIER | FOOT | 2172 |

**TEMPORARY EROSION CONTROL:**

PERIMETER EROSION BARRIER

**PERMANENT EROSION CONTROL:**

SEEDING CLASS 2, FERTILIZERS & MULCH, METHOD 2

MODEL: Default
FILE NAME: ...\v8-ros\sht-007-eros-001.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

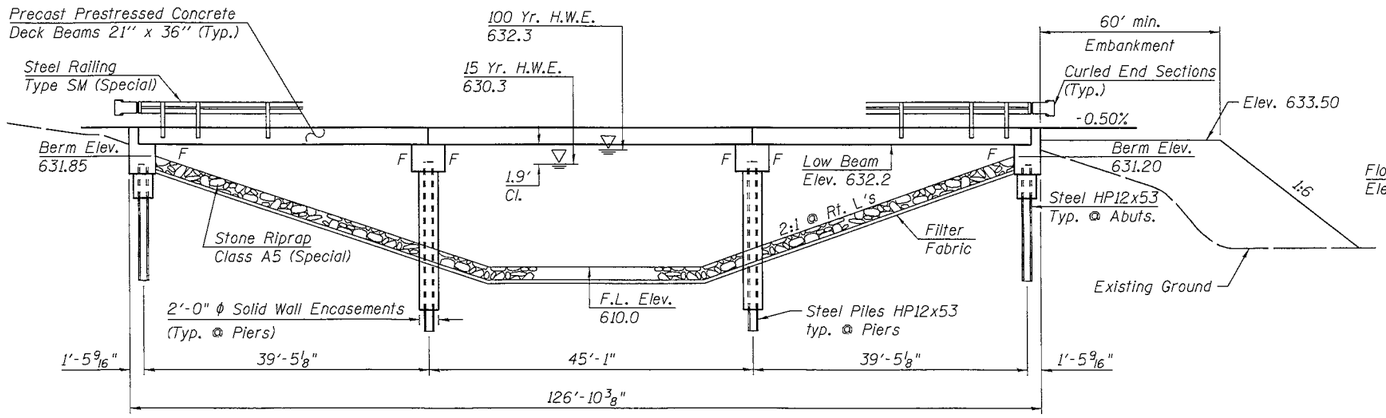
| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 100.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

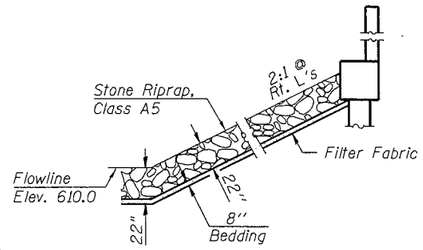
**EROSION CONTROL PLAN**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 7 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |




## ELEVATION




## SECTION A-A

Excavation will not be paid for as a separate item and shall be considered as included in Stone Riprap, Class A5.

## GENERAL NOTES

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Reinforcement bars designated (E) shall be epoxy coated.

Structure Excavation will not be measured for payment but shall be included in the unit price bid for "Concrete Structures" or "Concrete Encasement."

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

## DESIGN SCOUR ELEVATION TABLE

| Event/Limit | Design Scour Elevations (ft.) | | | | Item 113 |
|---|---|---|---|---|---|
| State | S. Abut. | Pier 1 | Pier 2 | N. Abut. | |
| Q100 | -- | 593.4 | 593.4 | -- | |
| Q200 | -- | 592.5 | 592.5 | -- | 5 |
| Design | 629.88 | 593.4 | 593.4 | 629.26 | |
| Check | 629.88 | 592.5 | 592.5 | 629.26 | |

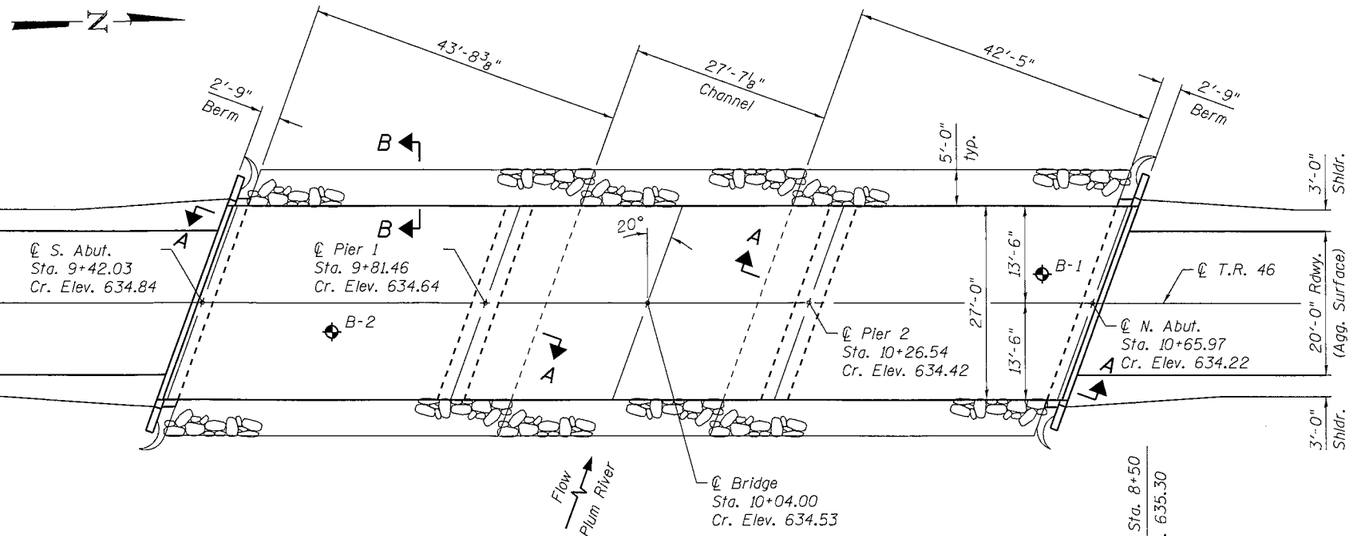
## WATERWAY INFORMATION

Drainage Area = 146 sq. mi.

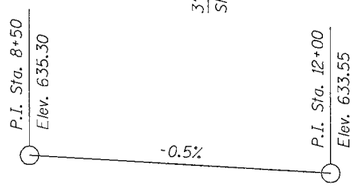
| Flood Event | Freq. Yr. | Discharge Ft³/s | Waterway Opening - ft² | | Natural H.W.E. ft. | Head - ft. | | Headwater Elevation ft. | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Existing | Proposed | | Existing | Proposed | Existing | Proposed |
| Design | 15 | 8400 | Bridge 1146 | Bridge 1251 | 630.3 | 0.24 | 0.58 | 630.58 | 630.92 |
| Base | 100 | 13200 | Bridge 1279 | Bridge 1441 | 632.3 | 0.28 | 0.85 | 632.54 | 633.11 |

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Precast Prestressed Concrete Deck Beams (21'' Depth) | Sq. Ft. | | 3375 | 3375 |
| Concrete Structures | Cu. Yd. | | 154.6 | 154.6 |
| Reinforcement Bars, Epoxy Coated | Pound | | 15390 | 15390 |
| Steel Railing, Type SM (Special) | Foot | | 251 | 251 |
| Name Plates | Each | | 1 | 1 |
| Furnishing Steel Piles HP12x53 | Foot | | 850 | 850 |
| Driving Piles | Foot | | 850 | 850 |
| Test Pile Steel HP12x53 | Each | | 2 | 2 |
| Stone Riprap, Class A5 | Ton | | 545 | 545 |
| Concrete Encasement | Cu. Yd. | | 4.6 | 4.6 |
| Filter Fabric | Sq. Yd. | | 542 | 542 |




## PLAN




## PROFILE GRADE

(Along proposed ℄)

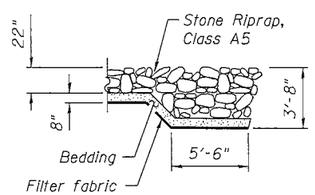
PLUM RIVER
BUILT 20___ BY
WOODLAND ROAD DISTRICT
CARROLL COUNTY
SEC. 14-12124-00-BR
STR. NO. 008-3120
LOADING HL-93

## LETTERING FOR NAME PLATE

See Std. 515001

## DESIGN STRESSES

$f'_c$ = 6,000 p.s.i. (Prestressed Beams)
$f'_{ci}$ = 5,000 p.s.i. (Prestressed Beams)
$f_s$ = 270,000 p.s.i. (Prestressed Strands)
$f_{si}$ = 201,960 p.s.i. (Prestressed Strands)
$f'_c$ = 3,500 p.s.i. (Concrete -- Field Units)
$f_y$ = 60,000 p.s.i. (Reinf. Bars)
LOADING HL-93
Design Specifications: 2014 AASHTO LRFD & Interims
50#/Sq. Ft. included in dead load for
future wearing surface.



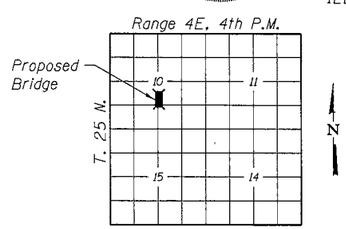

## SECTION B-B

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the specified 'AASHTO LRFD Bridge Design Specifications'".

LICENSED STRUCTURAL ENGINEER
MARY COOMBE BLOXDORF
4859
SPRINGFIELD
STATE OF ILLINOIS

03-18-2020

ILLINOIS STRUCTURAL NO. 4859 (Expires 11/30/20)




## LOCATION SKETCH

## GENERAL PLAN & ELEVATION
## T.R. 46
## SECTION 14-12124-00-BR
## CARROLL COUNTY
## STATION 10+04
## S.N. 008-3120

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT: SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

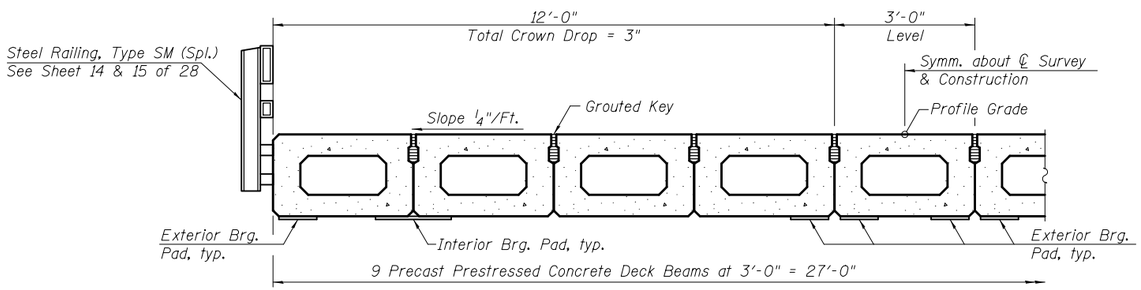
| REVISIONS | | |
|---|---|---|
| REV. NO. | DESCRIPTION | DATE |
| | | |
| | | |
| | | |
| | | |

DRAWING: GENERAL PLAN & ELEVATION
STRUCTURE NO. 008-3120
SET TYPE: ...\bridge\008320-008-gpe.dgn

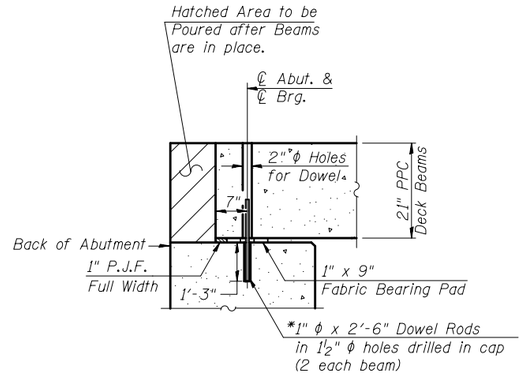
JOB NUMBER: 15-701

SHEET NUMBER: 8 of 28

PLOT DATE: 3/13/2020
cconnor

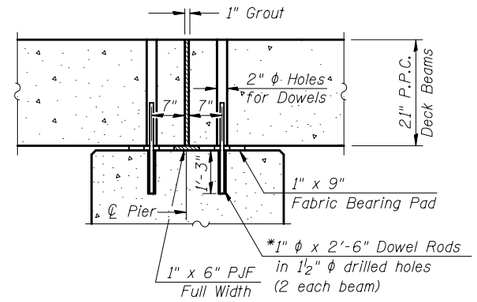



## HALF CROSS SECTION



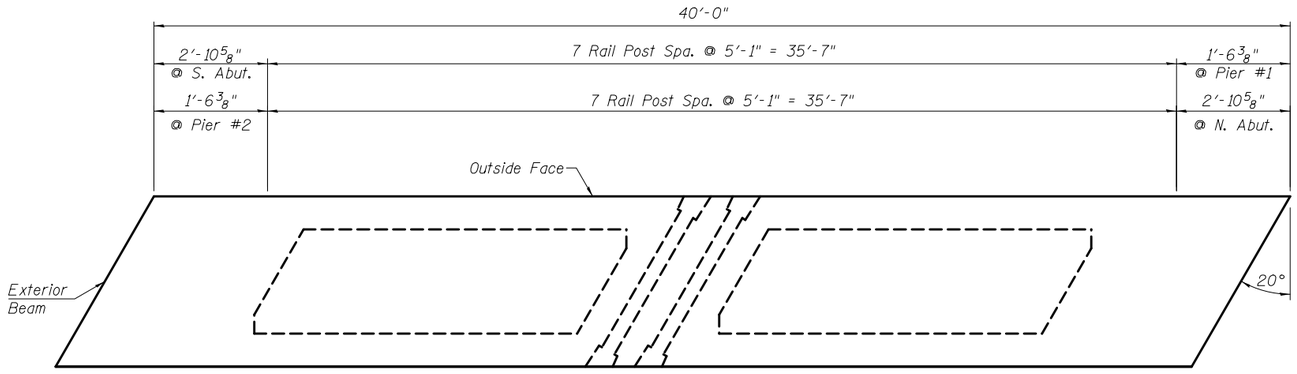

## SEC. THRU ABUT.

(@ Rt. L's)

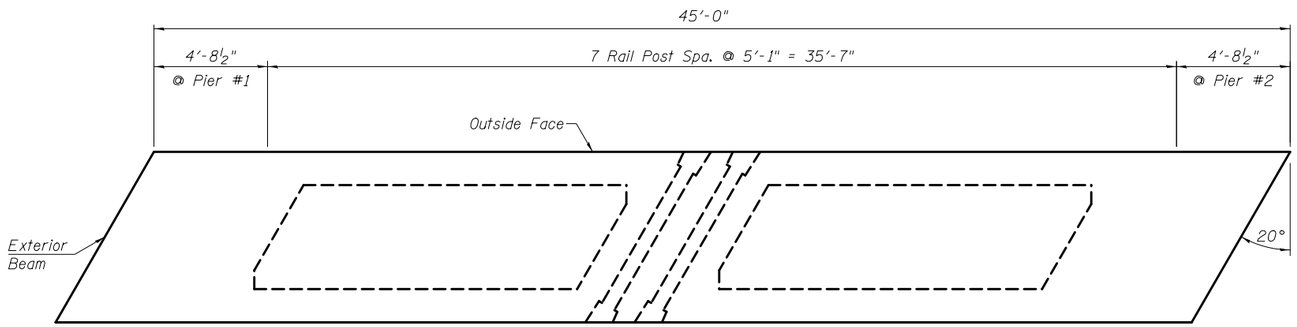



## SEC. AT PIER

(@ Rt. L's)

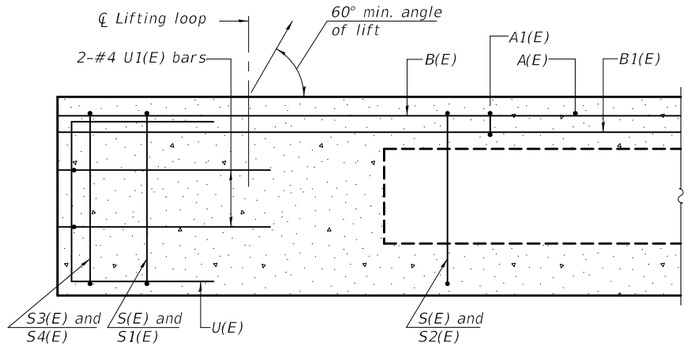



## SPAN #1 & #3
## RAIL POST SPACING PLAN

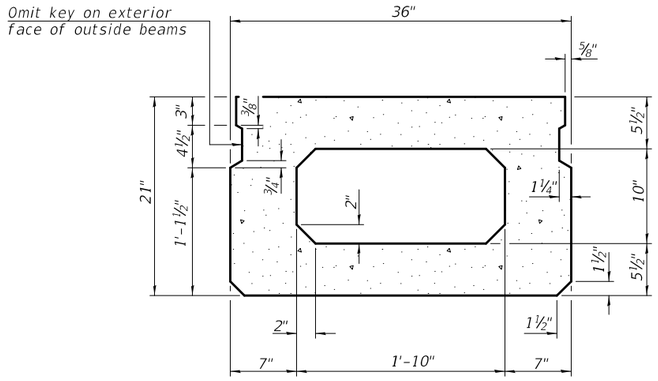



## SPAN #2
## RAIL POST SPACING PLAN

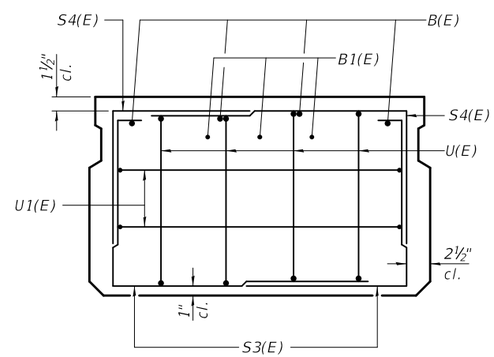
* Note: After beams are in place, 1 1/2" holes shall be drilled into the Substructure, and the dowel rods grouted in place and allowed to cure (Min. 24 Hrs.) prior to grouting shear key.



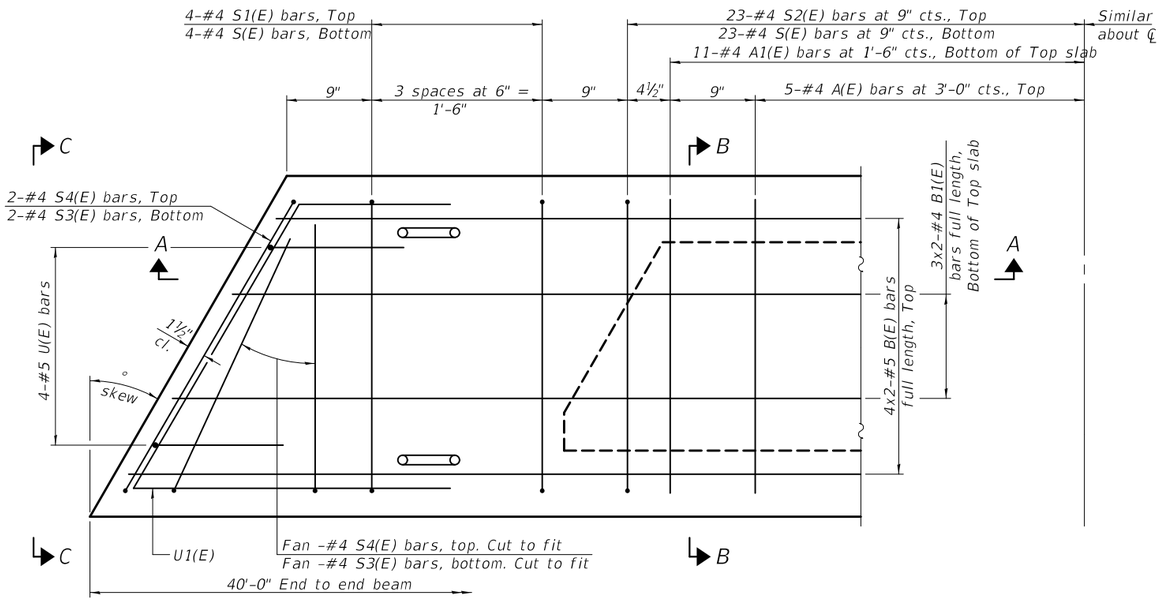

## SECTION A-A



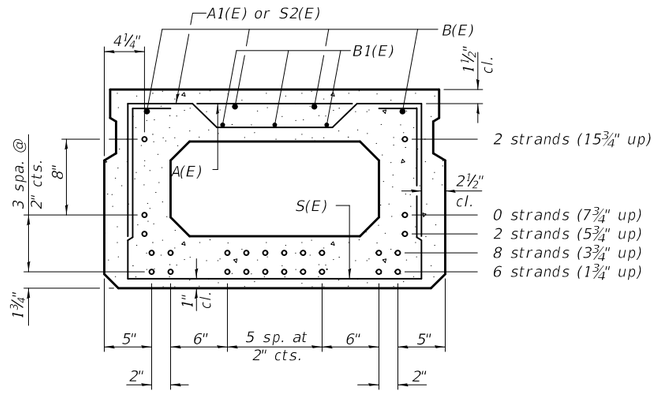

## SECTION B-B
(Showing dimensions)




## VIEW C-C




## PLAN VIEW




## SECTION B-B
(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

## BAR LIST
### ONE BEAM ONLY
(For information only)

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| A(E) | 10 | #4 | 2'-7" | — |
| A1(E) | 22 | #4 | 2'-10" | ⌒ |
| | | | | |
| B(E) | 8 | #5 | 21'-5" | — |
| B1(E) | 6 | #4 | 21'-1" | — |
| | | | | |
| S(E) | 54 | #4 | 6'-5" | ⌴ |
| S1(E) | 8 | #4 | 4'-11" | ⌐¬ |
| S2(E) | 44 | #4 | 5'-2" | ⌐¬ |
| S3(E) | 8 | #4 | 4'-8" | ⌐⌐ |
| S4(E) | 8 | #4 | 3'-11" | ⌐⌐ |
| | | | | |
| U(E) | 8 | #5 | 4'-0" | ⊏ |
| U1(E) | 4 | #4 | 6'-1" | ⊏ |

Note:
See sheet 11 of 28 for additional details and Bill of Material.

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

## MINIMUM BAR LAP
#4 bar = 2'-5"
#5 bar = 3'-0"

PD-2136-L 2-17-2017

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

PLOT DATE: 4/1/2020
cconnor



AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

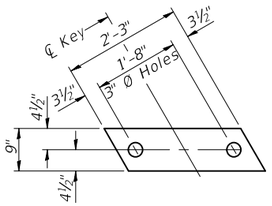
| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING:
21" X 36" PPC DECK BEAM
SPANS 1 AND 3
STRUCTURE NO. 008-3120

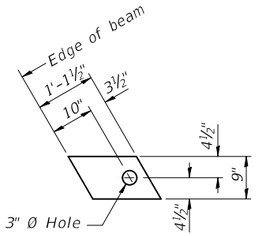
SET TYPE:
...\0083120-010-ppc-deck-bms-001.dgn

JOB NUMBER:
15-701

SHEET NUMBER:
10 of 28



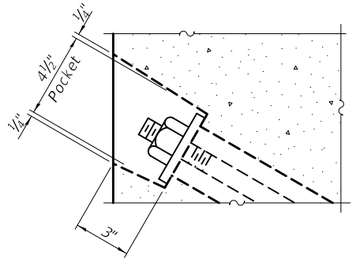

FABRIC BEARING PAD
(Interior)



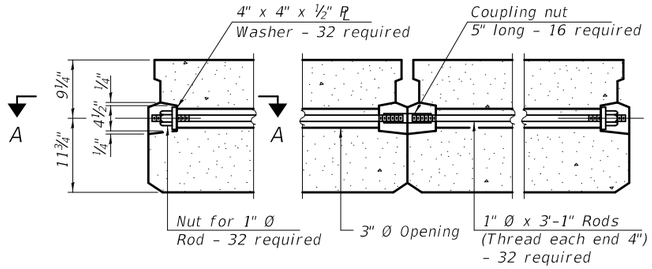

FABRIC BEARING PAD
(Exterior)

FIXED

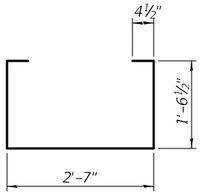
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



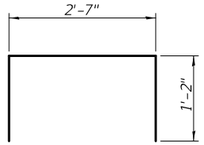

SECTION A-A



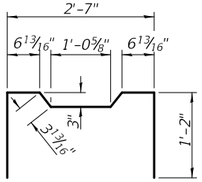

TYPICAL TRANSVERSE TIE ASSEMBLY



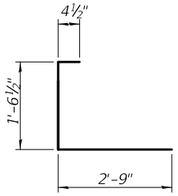

BAR S(E)



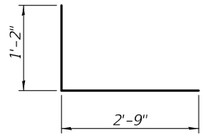

BAR S1(E)



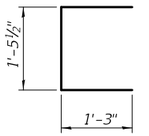

BAR S2(E)



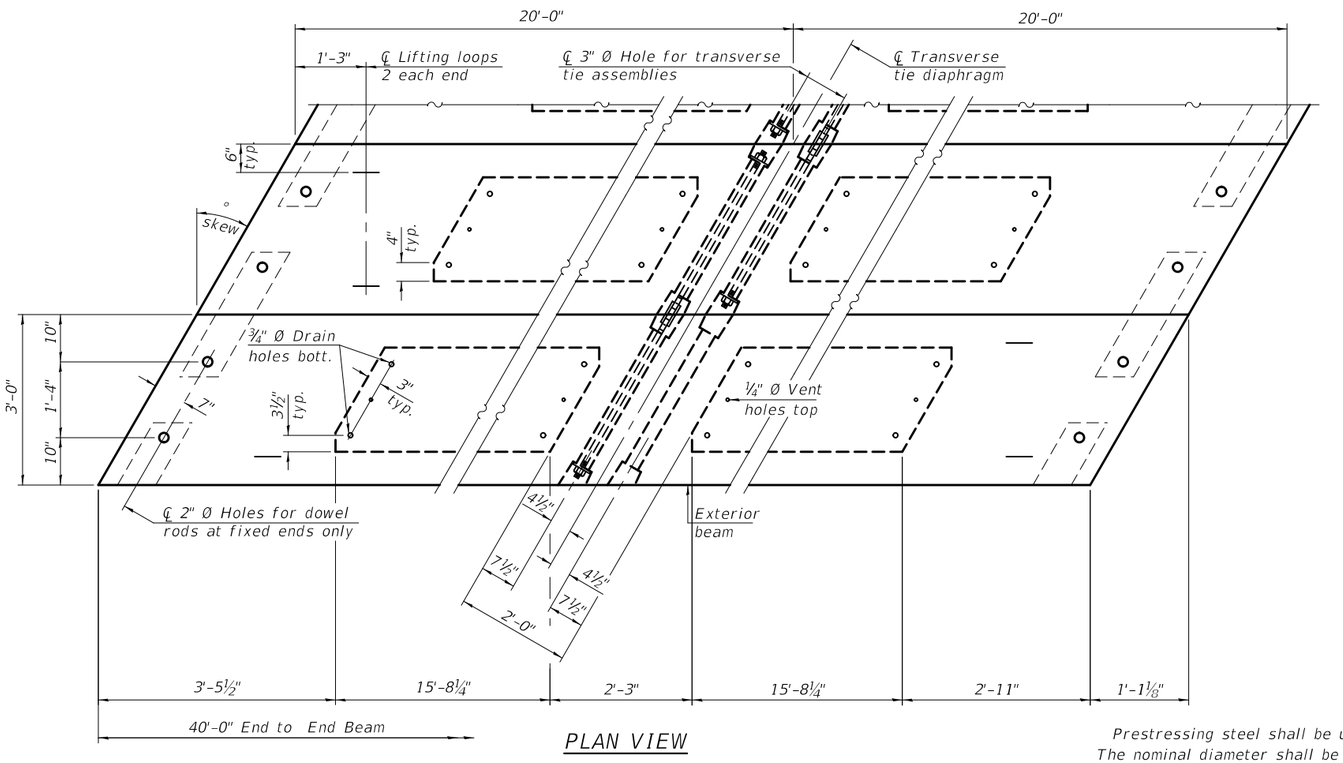

BAR S3(E)




BAR S4(E)

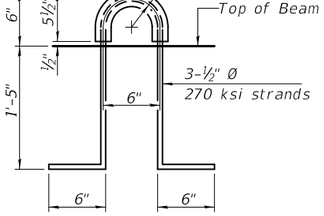



BAR U(E)

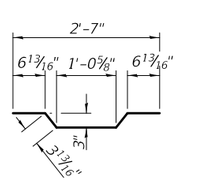



PLAN VIEW

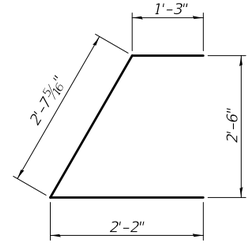
Note:
Connect beams in pairs with the transverse tie configuration shown.




LIFTING LOOP DETAIL




BAR A1(E)




BAR U1(E)

## NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" Ø lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

## BILL OF MATERIAL

| | | |
|---|---|---|
| Precast Prestressed Conc. Deck Bms. (21" depth) | Sq. Ft. | 2160 |

Estimated Total Weight (one Beam) = 25,000 Pounds

2-17-2017

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

PLOT DATE: 4/1/2020
oconnor



AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

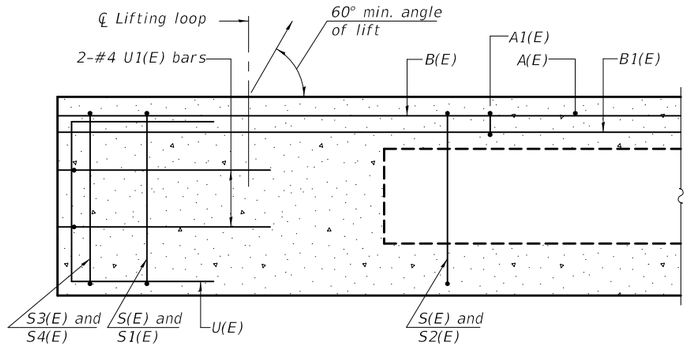
| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING:
21" X 36" PPC DECK BEAM DETAILS
SPANS 1 AND 3
STRUCTURE NO. 008-3120

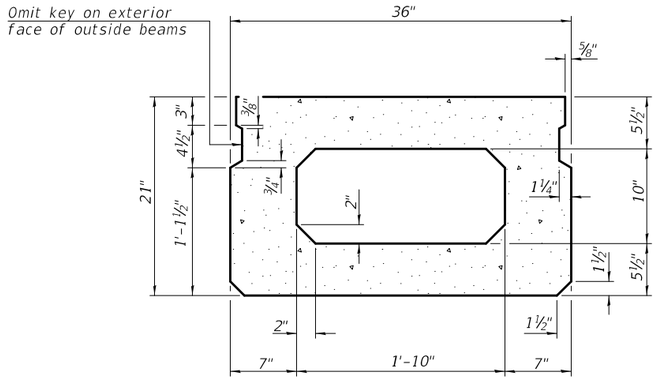
SET TYPE:
...\008312O-01-ppc-deck-bms-002.dgn

JOB NUMBER:
15-701

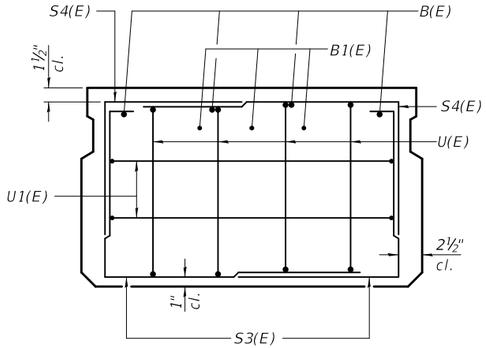
SHEET NUMBER:
11 of 28



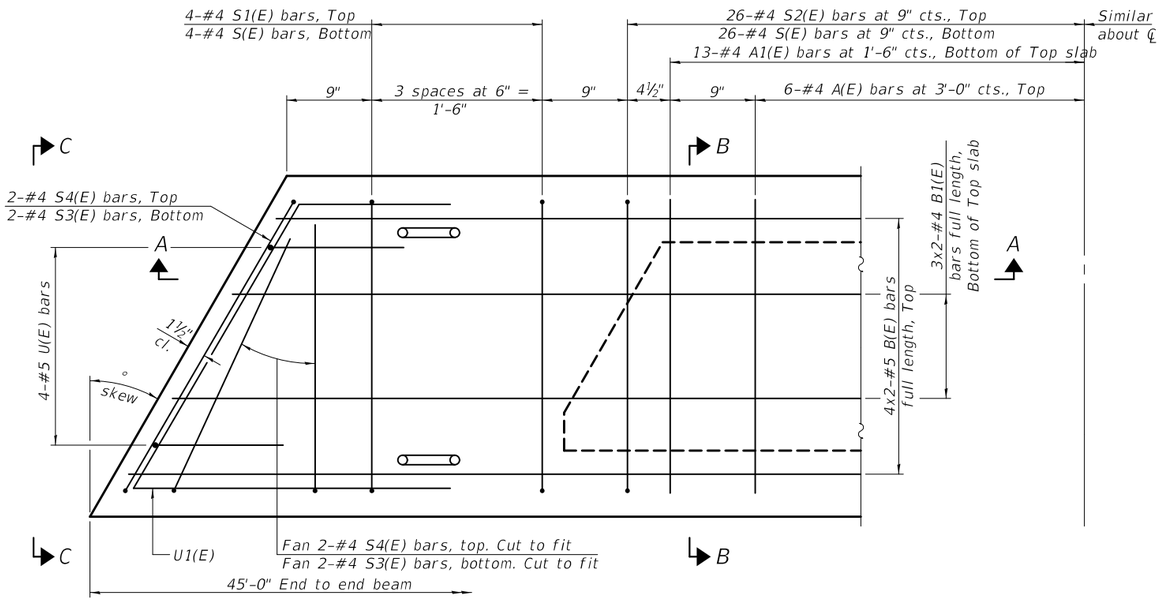

SECTION A-A




SECTION B-B
(Showing dimensions)

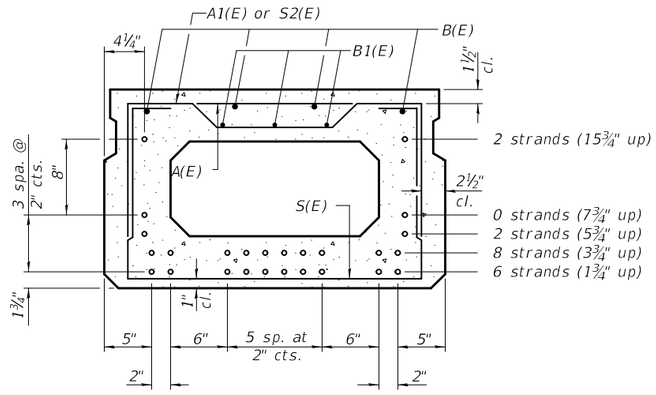



VIEW C-C




PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.




SECTION B-B
(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MINIMUM BAR LAP
#4 bar = 2'-5"
#5 bar = 3'-0"

BAR LIST
ONE BEAM ONLY
(For information only)

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| A(E) | 12 | #4 | 2'-7" | — |
| A1(E) | 26 | #4 | 2'-10" | ⌒ |
| | | | | |
| B(E) | 8 | #5 | 23'-11" | — |
| B1(E) | 6 | #4 | 23'-7" | — |
| | | | | |
| S(E) | 60 | #4 | 6'-5" | ⌴ |
| S1(E) | 8 | #4 | 4'-11" | ⌐¬ |
| S2(E) | 52 | #4 | 5'-2" | ⌐¬ |
| S3(E) | 8 | #4 | 4'-8" | ⌴ |
| S4(E) | 8 | #4 | 3'-11" | ⌴ |
| | | | | |
| U(E) | 8 | #5 | 4'-0" | ⊏ |
| U1(E) | 4 | #4 | 6'-1" | ⊏ |

Note:
See sheet 13 of 28 for additional details and Bill of Material.

PD-2136-L 2-17-2017

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

PLOT DATE: 4/1/2020
cconnor



AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

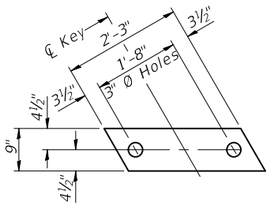
| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING:
21" X 36" PPC DECK BEAM
SPAN 2
STRUCTURE NO. 008-3120

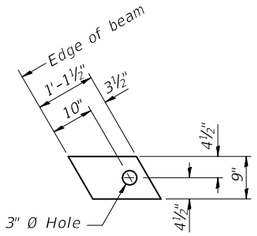
SET TYPE:
...\0083120-012-ppc-deck-bms-003.dgn

JOB NUMBER:
15-701

SHEET NUMBER:
12 of 28



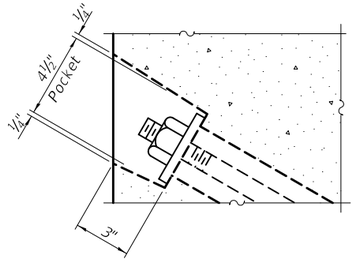

FABRIC BEARING PAD
(Interior)



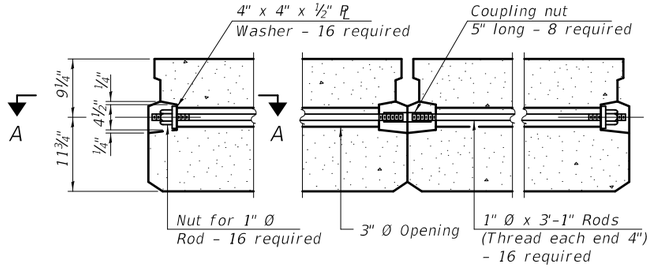

FABRIC BEARING PAD
(Exterior)

FIXED

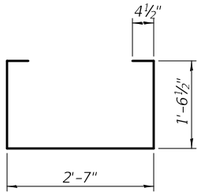
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



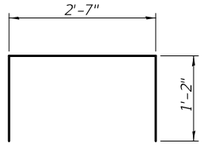

SECTION A-A



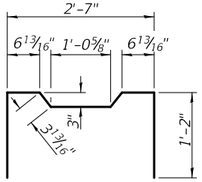

TYPICAL TRANSVERSE TIE ASSEMBLY



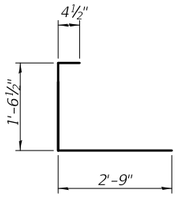

BAR S(E)



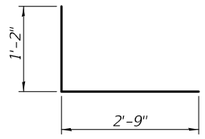

BAR S1(E)



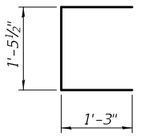

BAR S2(E)



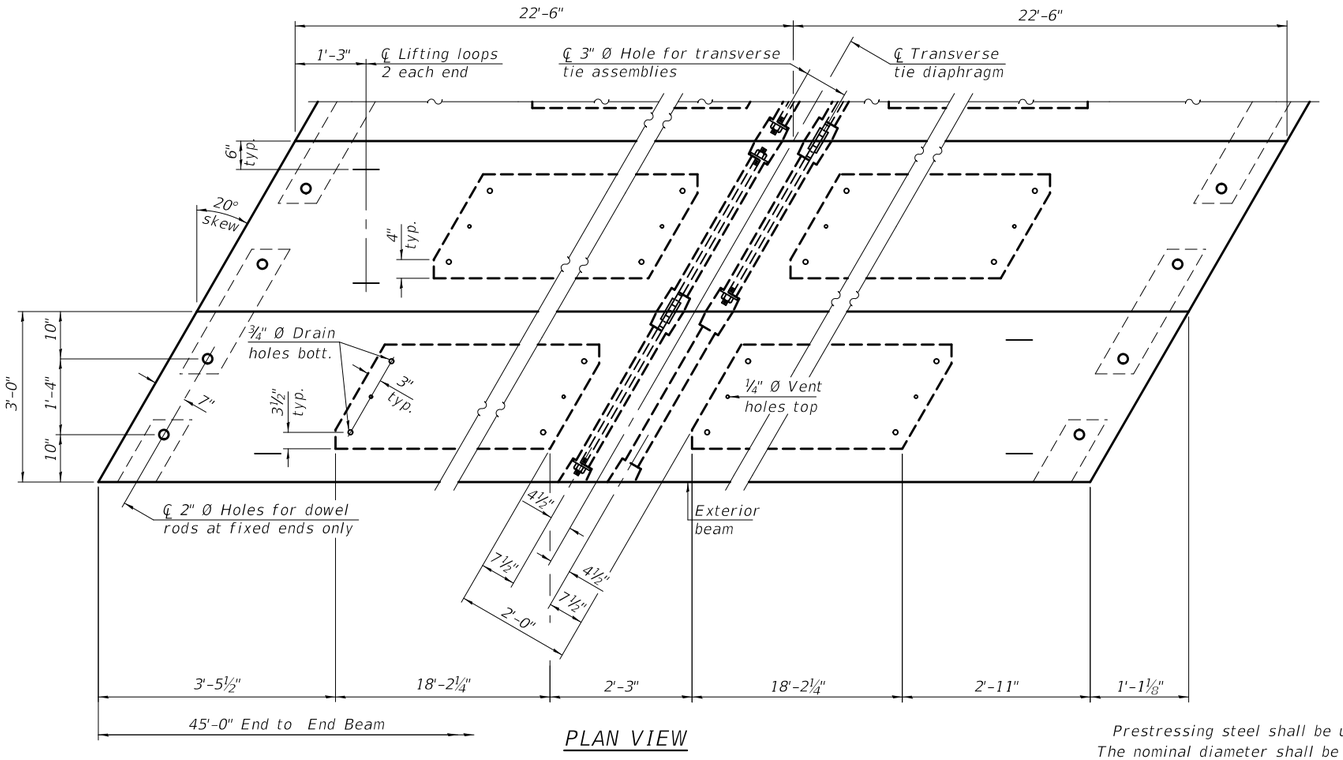

BAR S3(E)




BAR S4(E)




BAR U(E)

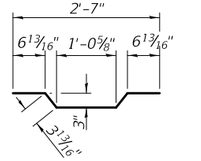



PLAN VIEW

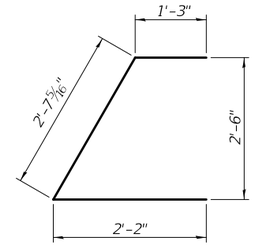
Note:
Connect beams in pairs with the transverse tie configuration shown.




LIFTING LOOP DETAIL




BAR A1(E)




BAR U1(E)

## NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" Ø lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

## BILL OF MATERIAL

| | | |
|---|---|---|
| Precast Prestressed Conc. Deck Bms. (21" depth) | Sq. Ft. | 1215 |

Estimated Total Weight (one Beam) = 27,900 Pounds

2-17-2017


FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN


AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

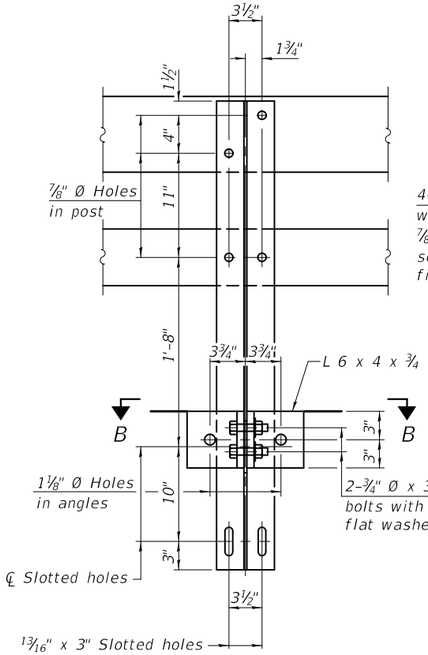
DRAWING:
21" X 36" PPC DECK BEAM DETAILS
SPAN 2
STRUCTURE NO. 008-3120

SET TYPE:
...\008312O-013-ppc-deck-bms-004.dgn

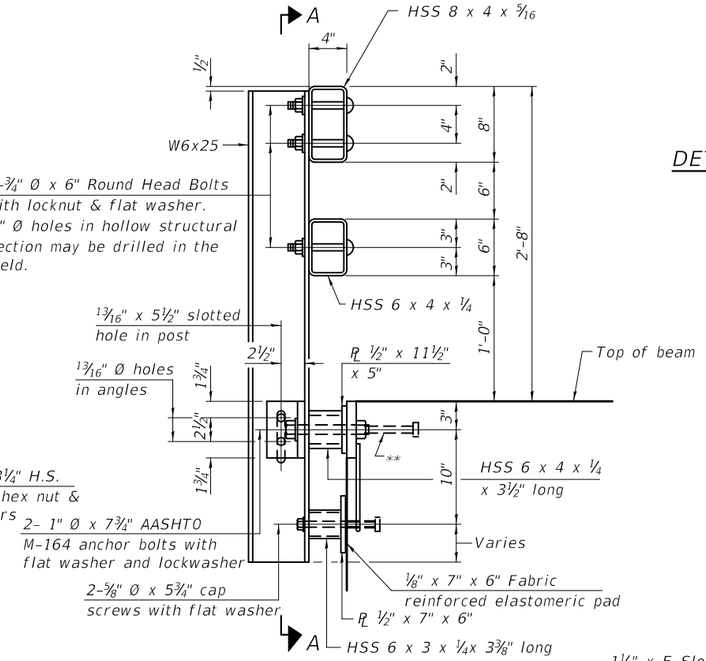
JOB NUMBER:
15-701

SHEET NUMBER:
13 of 28

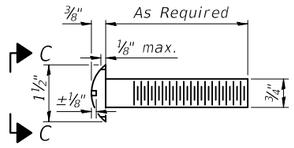
PLOT DATE: 4/1/2020
cconnor



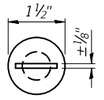

SECTION A-A



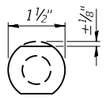

SECTION AT RAIL POST




DETAIL OF ¾" Ø ROUND HEAD BOLT

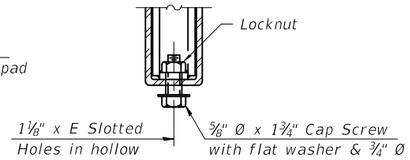



With Slot (shown) or Approved Recess

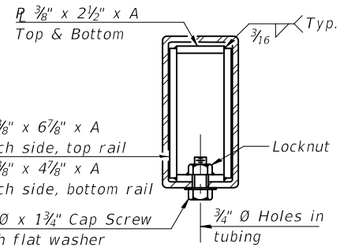



Without Slot or Recess

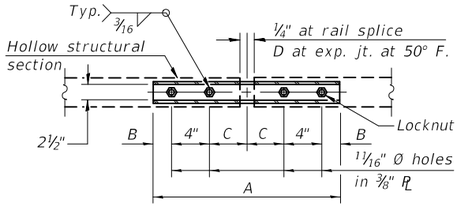
VIEW C-C



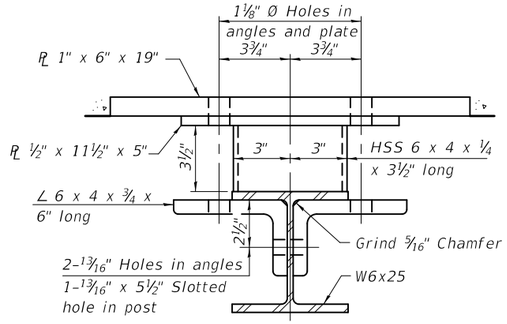

RAIL SPLICE CONNECTION AT EXPANSION JT.



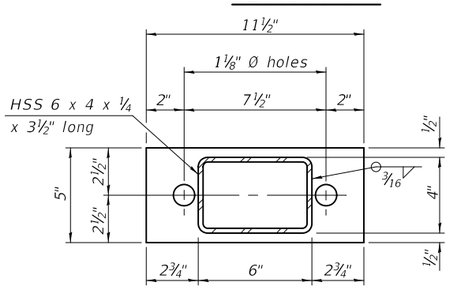

SECTION AT RAIL SPLICE



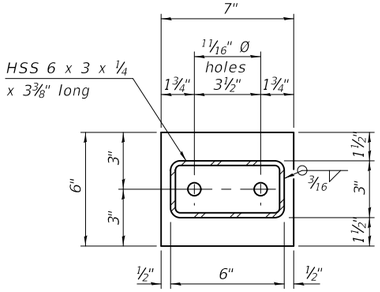

PLAN-BOTT. SPLICE PL TYPICAL



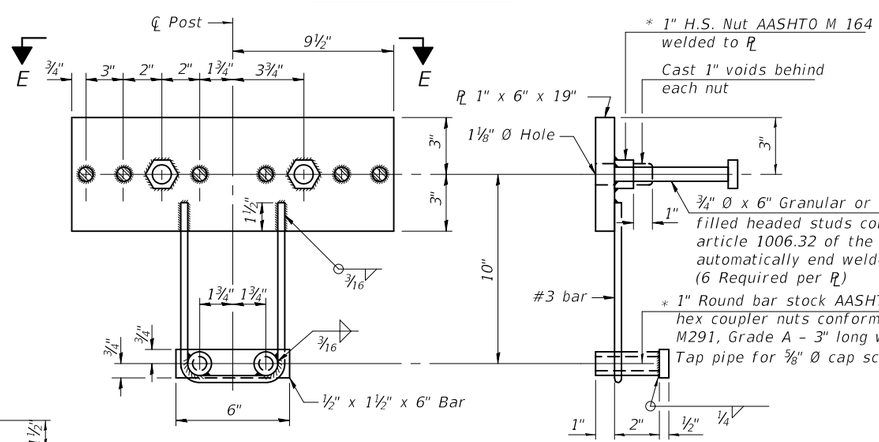

SECTION B-B




PL ½" x 11½" x 5"

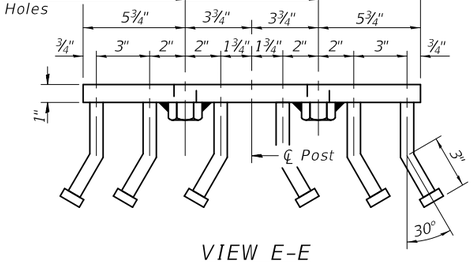



PL ½" x 7" x 6"




ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.




VIEW E-E

## SPLICE DIMENSIONS

| T | D | A | B | C | E |
|---|---|---|---|---|---|
| ≤ 4" | 2½" | 1'-8" | 2" | 4" | 2½" |
| > 4" ≤ 6½" | 3¾" | 2'-0" | 2½" | 5½" | 3½" |
| > 6½" ≤ 9" | 5" | 2'-4" | 3½" | 6½" | 9" |
| > 9" ≤ 13" | 7" | 2'-10" | 4½" | 8½" | 11" |
| Rail Splice | ¼" | 1'-8" | 2" | 4" | —— |

T = Total movement at expansion joint as shown on the design plans.

Notes:

For multi-span bridges, sufficient ¼" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.

All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.

** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down ½" to accommodate the top reinforcement bar placement.

See sheet 15 of 28 for rail post spacing and End of Rail Details.

## BILL OF MATERIAL

| Item | Unit | Quantity |
|---|---|---|
| Steel Railing, Type SM (Special) | Foot | 251 |

8-11-2017 (6'-3" Maximum Post Spacing)

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
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WISCONSIN

AGENCY: CARROLL COUNTY HWY. DEPT. WOODLAND ROAD DISTRICT

PROJECT: SECTION 14-12124-00-BR T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

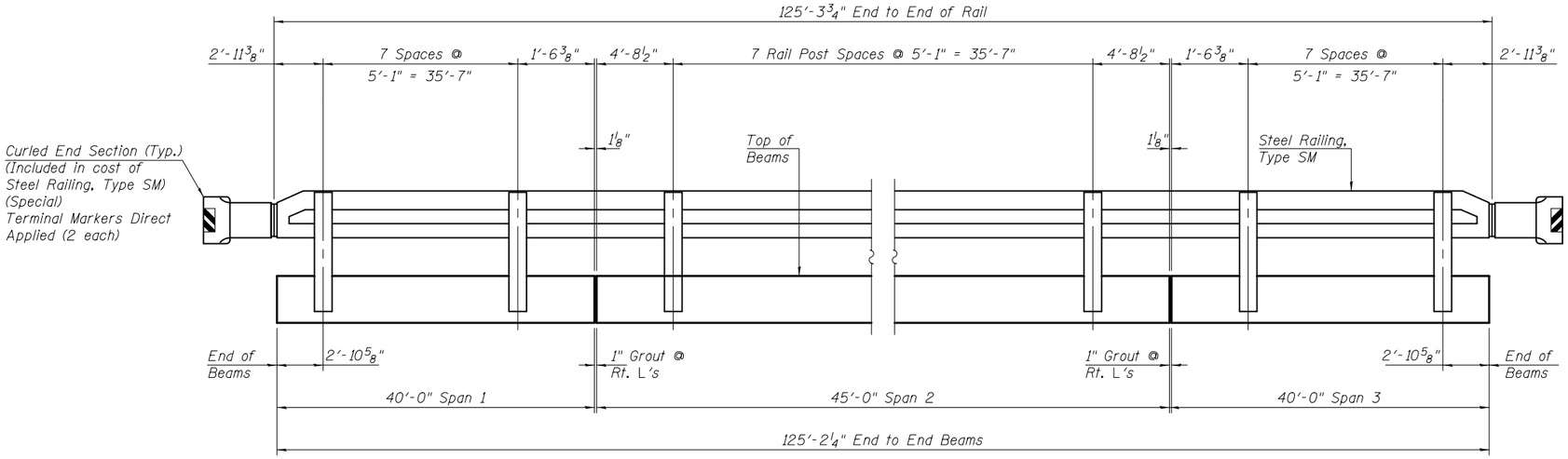
| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING: STEEL RAILING, TYPE SM (SPECIAL)
STRUCTURE NO. 008-3120
SET TYPE: ...\0083120-014-rail-00L.dgn

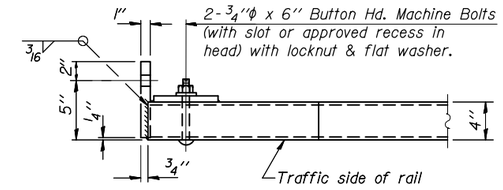
JOB NUMBER: 15-701

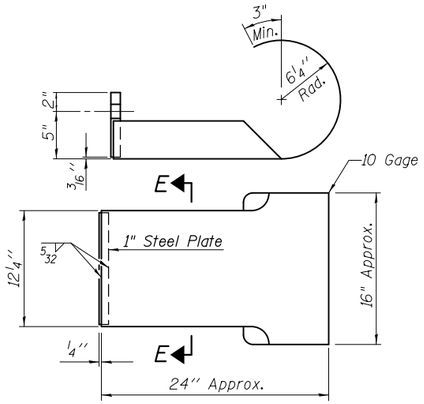
SHEET NUMBER: 14 of 28

PLOT DATE: 4/1/2020
oconnor



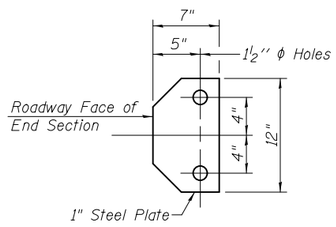

## ELEVATION



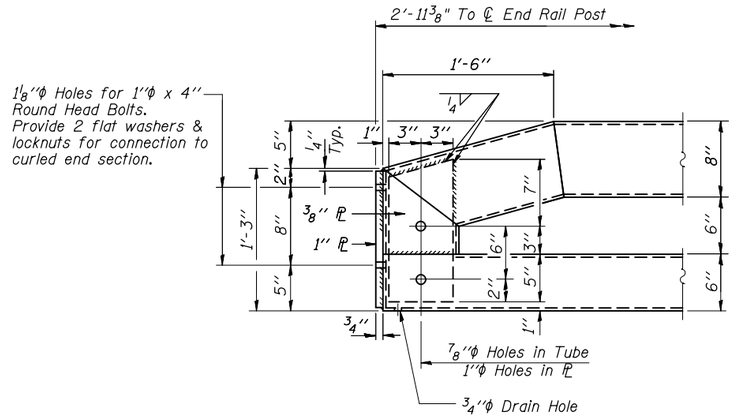




## CURLED END SECTION DETAILS

(4 Required)




## SECTION E-E




## END OF RAIL DETAILS

See sheet 14 for Steel Railing Details.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

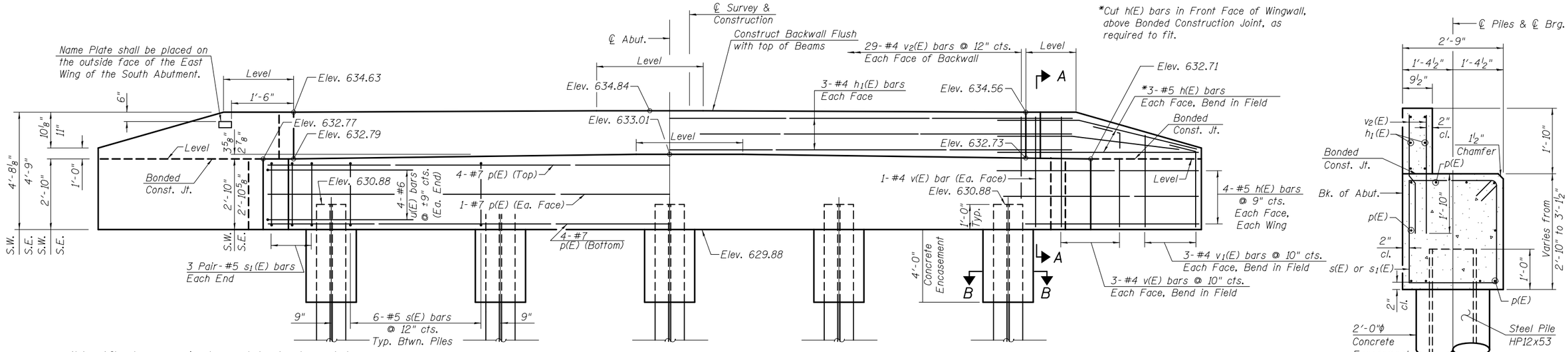
| REVISIONS | | |
|---|---|---|
| REV. NO. | DESCRIPTION | DATE |
| | | |
| | | |
| | | |
| | | |

DRAWING:
STEEL RAILING, TYPE SM (SPECIAL)
STRUCTURE NO. 008-3120
SET TYPE:
...\0083120-015-rail-002.dgn

JOB NUMBER:
15-701

SHEET NUMBER:
15 of 28

PLOT DATE: 4/1/2020
cconnor



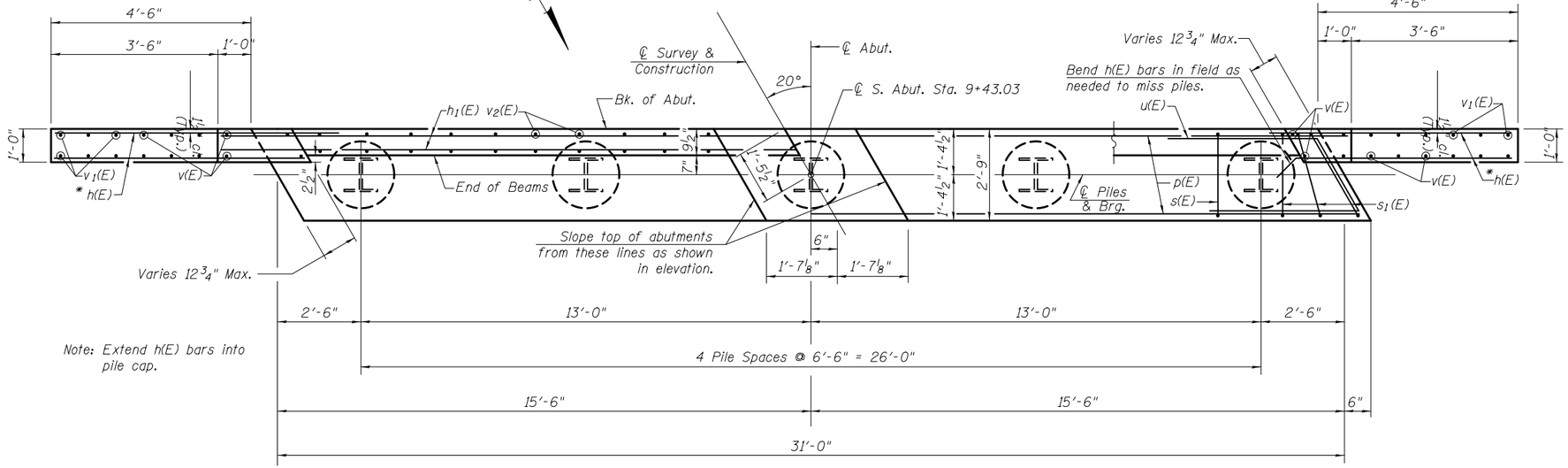

Note: After beams are in place and dowel rods grouted, the backwall and the portions of the wingwalls above the Bonded Construction Joint shall be poured.

## ELEVATION

(Looking South)

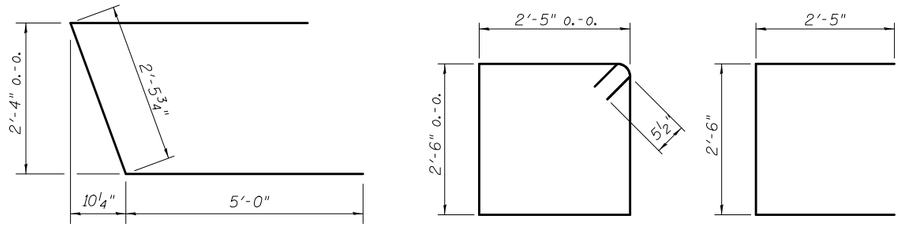



## SECTION THRU ABUT.

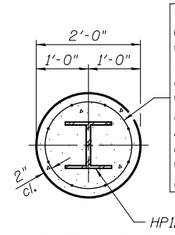



Note: Extend h(E) bars into pile cap.

## PLAN




BAR u(E) BAR s(E) BAR s1(E)




## SECTION B-B

Concrete Encasement

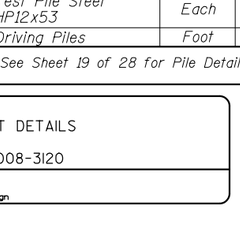
Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, and Reinforcement is included with Concrete Encasement. Forms for Encasement may be omitted when soil conditions permit. Extend welded wire fabric 1'-0" min. into Abutment Cap.

## PILE DATA

| | |
|---|---|
| Type & Size | Steel HP12x53 |
| No. Req'd. | *5 |
| Nominal Required Bearing | 418 k |
| Factored Resistance Available | 112 k |
| Estimated Length | 42 ft. |

Steel H-Piles shall be according to AASHTO M270 Grade 50

* Includes 1 Test Pile in a permanent location.




## SECTION A-A

## S. ABUTMENT BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| h(E) | 28 | #5 | 7'-4" | —— |
| h1(E) | 6 | #4 | 32'-6" | —— |
| | | | | |
| p(E) | 10 | #7 | 30'-8" | —— |
| | | | | |
| s(E) | 24 | #5 | 10'-9" | □ |
| s1(E) | 12 | #5 | 7'-4" | ⊏ |
| | | | | |
| u(E) | 8 | #6 | 12'-6" | ▱ |
| | | | | |
| v(E) | 16 | #4 | 4'-6" | —— |
| v1(E) | 12 | #4 | 4'-0" | —— |
| v2(E) | 58 | #4 | 3'-6" | —— |
| | | | | |
| Concrete Structures | | | Cu. Yd. | 12.4 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1700 |
| Name Plates | | | Each | 1 |
| Furnishing Steel Piles HP12x53 | | | Foot | 168 |
| Concrete Encasement | | | Cu. Yd. | 2.3 |
| Test Pile Steel HP12x53 | | | Each | 1 |
| Driving Piles | | | Foot | 168 |

See Sheet 19 of 28 for Pile Details.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: CARROLL COUNTY HWY. DEPT. WOODLAND ROAD DISTRICT

PROJECT: SECTION 14-12124-00-BR T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

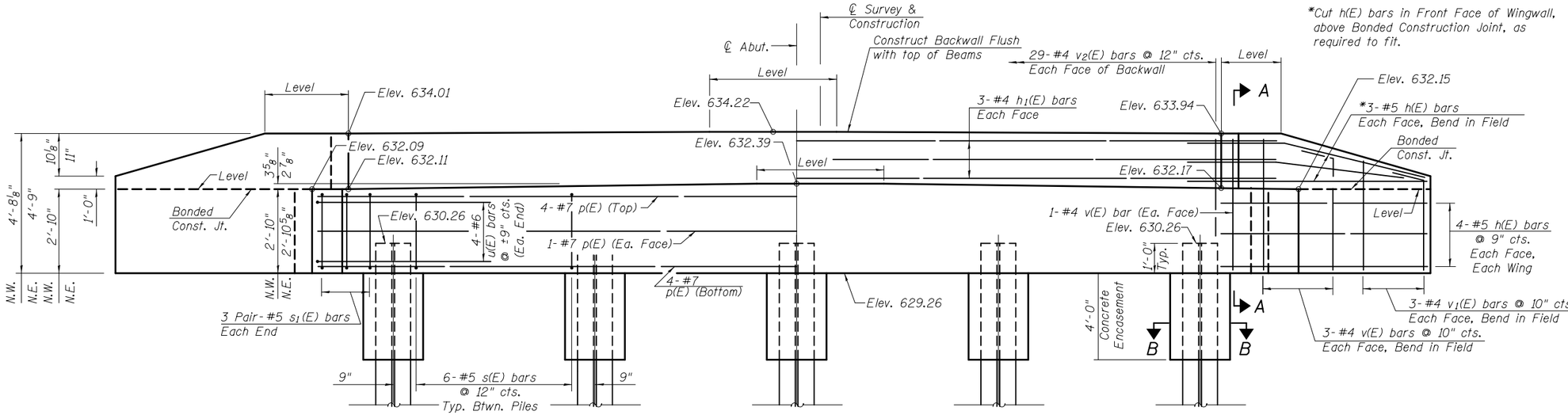
| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING: SOUTH ABUTMENT DETAILS
STRUCTURE NO. 008-3120
SET TYPE:
...\0083120-016-s-abut-details.dgn

JOB NUMBER: 15-701

SHEET NUMBER: 16 of 28

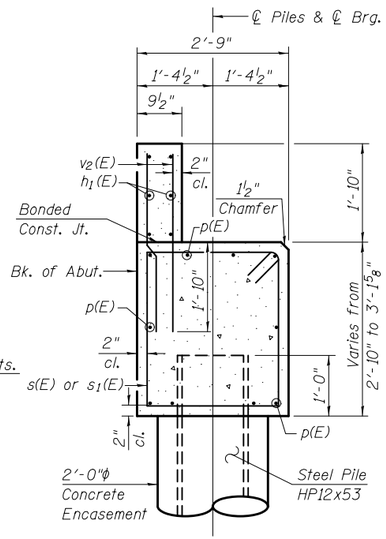
PLOT DATE: 4/1/2020
cconnor



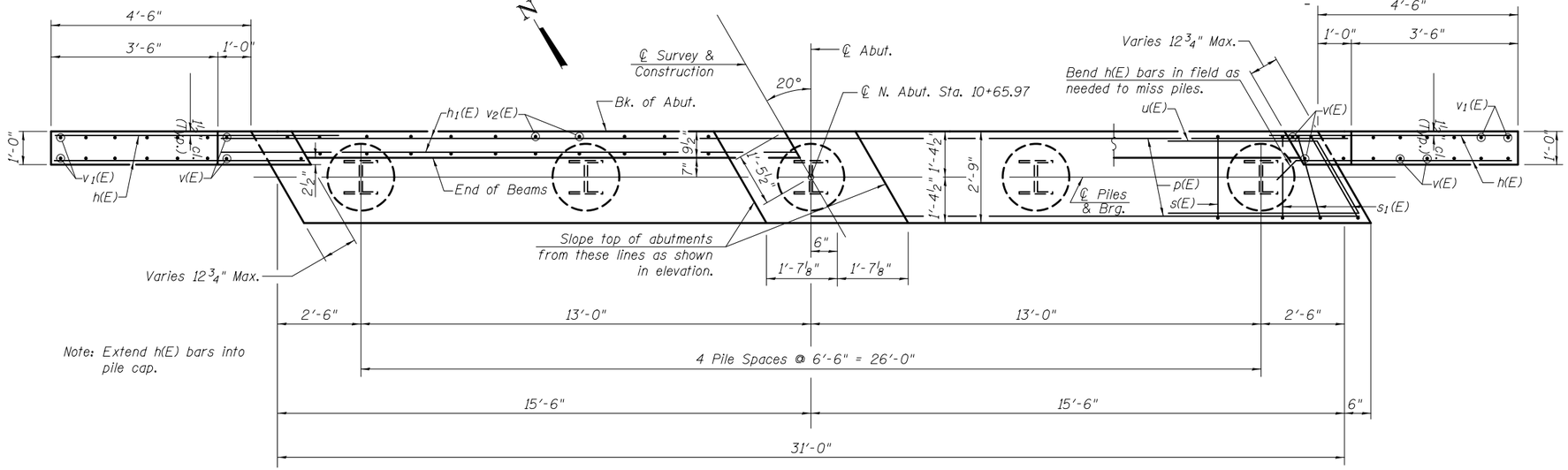

*Cut h(E) bars in Front Face of Wingwall, above Bonded Construction Joint, as required to fit.

Note: After beams are in place and dowel rods grouted, the backwall and the portions of the wingwalls above the Bonded Construction Joint shall be poured.

## ELEVATION
(Looking North)

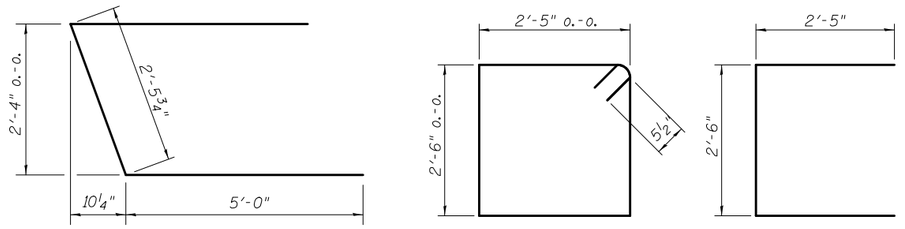



## SECTION THRU ABUT.




Note: Extend h(E) bars into pile cap.

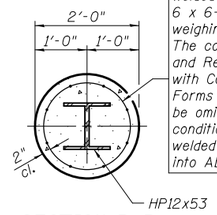
## PLAN




## BAR u(E)

## BAR s(E)

## BAR s1(E)




## SECTION B-B
Concrete Encasement

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, and Reinforcement is included with Concrete Encasement. Forms for Encasement may be omitted when soil conditions permit. Extend welded wire fabric 1'-0" min. into Abutment Cap.

## PILE DATA

| | |
|---|---|
| Type & Size | Steel HP12x53 |
| No. Req'd. | 5 |
| Nominal Required Bearing | 418 k |
| Factored Resistance Available | 112 k |
| Estimated Length | 41 ft. |

Steel H-Piles shall be according to AASHTO M270 Grade 50




## SECTION A-A

## N. ABUTMENT BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| h(E) | 28 | #5 | 7'-4" | —— |
| h1(E) | 6 | #4 | 32'-6" | —— |
| | | | | |
| p(E) | 10 | #7 | 30'-8" | —— |
| | | | | |
| s(E) | 24 | #5 | 10'-9" | □ |
| s1(E) | 12 | #5 | 7'-4" | ⊏ |
| | | | | |
| u(E) | 8 | #6 | 12'-6" | ▱ |
| | | | | |
| v(E) | 16 | #4 | 4'-6" | —— |
| v1(E) | 12 | #4 | 4'-0" | —— |
| v2(E) | 58 | #4 | 3'-6" | —— |
| | | | | |
| Concrete Structures | | | Cu. Yd. | 12.4 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1700 |
| Furnishing Steel Piles HP12x53 | | | Foot | 205 |
| Driving Piles | | | Foot | 205 |
| Concrete Encasement | | | Cu. Yd. | 2.3 |
| | | | | |

See Sheet 19 of 28 for Pile Details.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

PLOT DATE: 4/1/2020
cconnor



AGENCY:
CARROLL COUNTY HWY. DEPT.
WOODLAND ROAD DISTRICT

PROJECT:
SECTION 14-12124-00-BR
T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

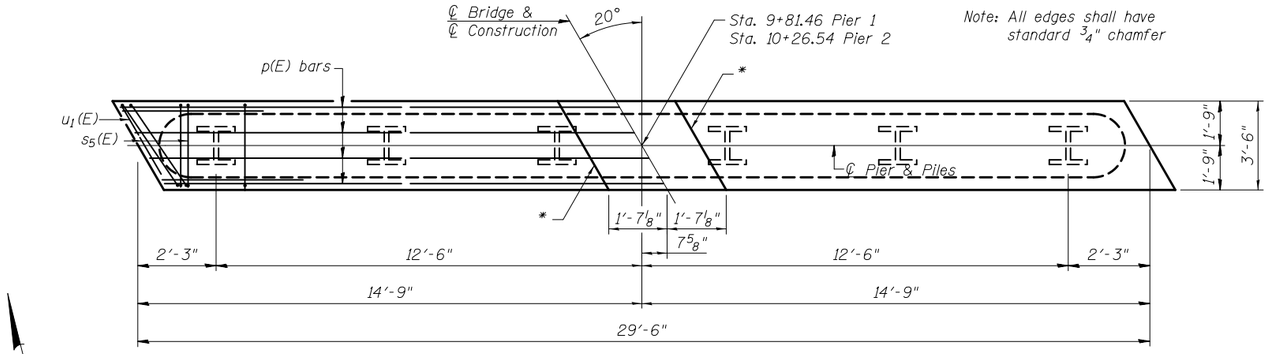
REVISIONS

| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING:
NORTH ABUTMENT DETAILS
STRUCTURE NO. 008-3120
SET TYPE:
...\0083120-017-n-abut-details.dgn

JOB NUMBER:
15-701

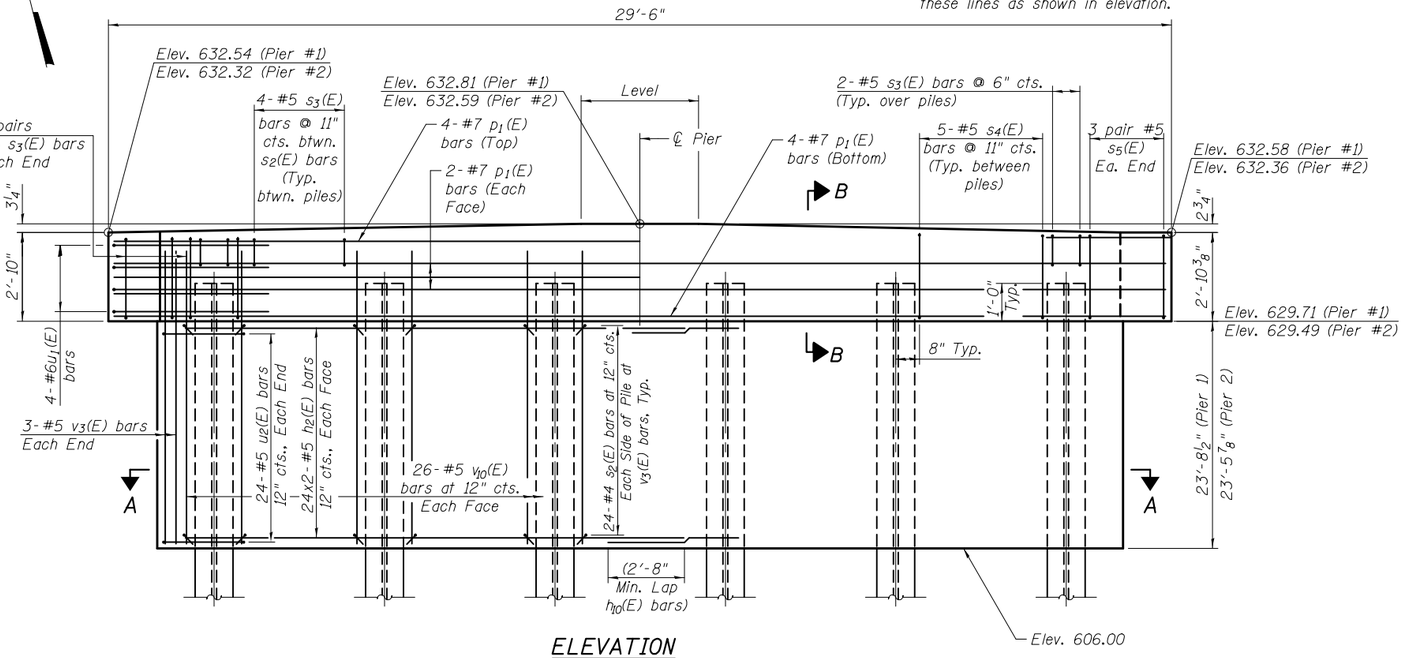
SHEET NUMBER:
17 of 28



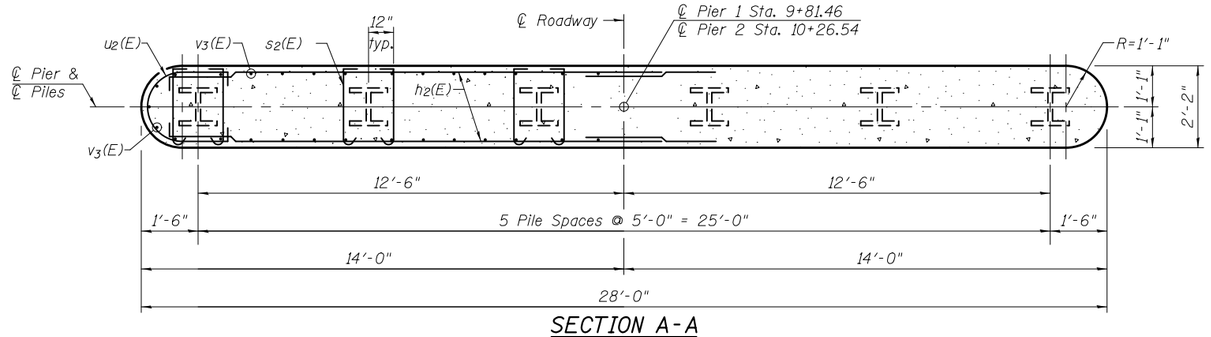

PLAN

Note: All edges shall have standard ¾" chamfer

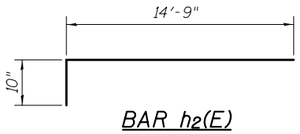
* Slope top of pier cap from these lines as shown in elevation.



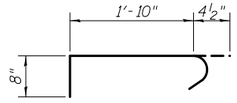

ELEVATION



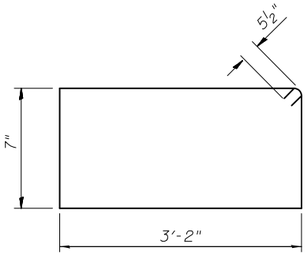

SECTION A-A



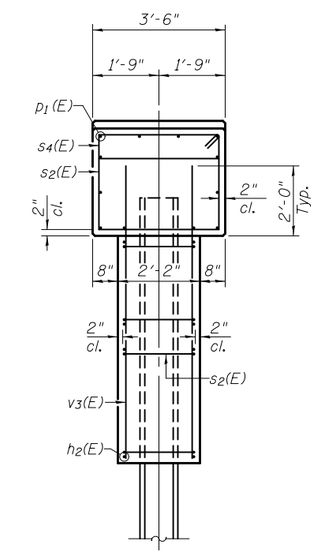

BAR $h_2(E)$



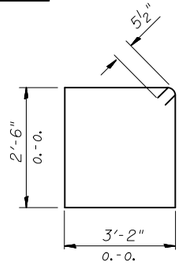

BAR $s_2(E)$



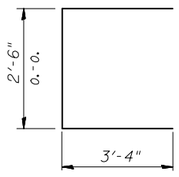

BAR $s_3(E)$



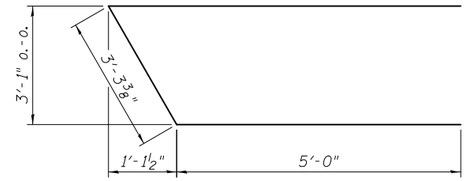

END VIEW



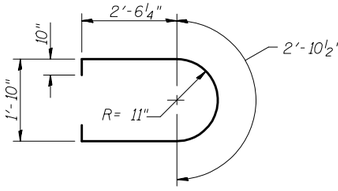

BAR $s_4(E)$




BAR $s_5(E)$




BAR $u_1(E)$




BAR $u_2(E)$

## PILE DATA

| | |
|---|---|
| Type & Size | HP12X53 |
| No. Req'd. | *12 |
| Nominal Required Bearing | 418 kips |
| Allowable Resistance Available | 182 kips |
| Estimated Length | 42 ft. @ Pier 1<br>45 ft. @ Pier 2 |

*Includes 1 Test Pile to be driven in a permanent location at Pier 2.

## MINIMUM BAR LAP

#5 bar = 3'-8"

Note: If a portion of the concrete pier wall is under water, reinforcement may be placed under water into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

## TWO PIERS BILL OF MATERIAL

| BAR | NO. | SIZE | LENGTH | SHAPE |
|---|---|---|---|---|
| $h_2(E)$ | 192 | #5 | 14'-11" | |
| | | | | |
| $p_1(E)$ | 24 | #7 | 29'-2" | |
| | | | | |
| $s_2(E)$ | 576 | #5 | 2'-11" | |
| $s_3(E)$ | 64 | #5 | 8'-5" | |
| $s_4(E)$ | 50 | #5 | 12'-3" | |
| $s_5(E)$ | 24 | #5 | 9'-2" | |
| | | | | |
| $u_1(E)$ | 16 | #6 | 13'-4" | |
| $u_2(E)$ | 96 | #5 | 9'-7" | |
| | | | | |
| $v_3(E)$ | 116 | #5 | 25'-8" | |
| | | | | |
| Concrete Structures | | | Cu. Yd. | 129.8 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 11,990 |
| Furnishing Steel Piles HP12x53 | | | Foot | 477 |
| Driving Piles | | | Foot | 477 |
| Test Pile Steel HP12x53 | | | Each | 1 |

Note: See Sheet 19 of 28 for Pile Details.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: CARROLL COUNTY HWY. DEPT. WOODLAND ROAD DISTRICT

PROJECT: SECTION 14-12124-00-BR T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING: PIERS
STRUCTURE NO. 008-3120
SET TYPE:
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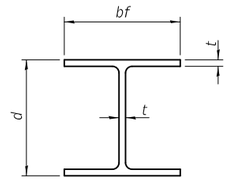
JOB NUMBER: 15-701

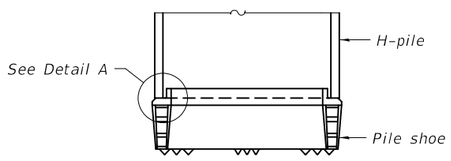
SHEET NUMBER: 18 of 28

PLOT DATE: 4/1/2020
oconnor

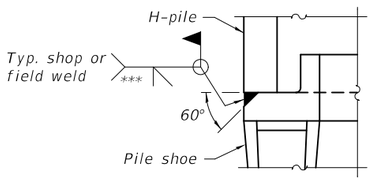



## STEEL PILE TABLE

| Designation | Depth d | Flange width bf | Web and Flange thickness t | Encasement diameter A |
|---|---|---|---|---|
| HP 14x117 | 14¼" | 14⅞" | 13/16" | 30" |
| x102 | 14" | 14¾" | 1 1/16" | 30" |
| x89 | 13⅞" | 14¾" | ⅝" | 30" |
| x73 | 13⅝" | 14⅝" | ½" | 30" |
| HP 12x84 | 12¼" | 12¼" | 1 1/16" | 24" |
| x74 | 12⅛" | 12¼" | ⅝" | 24" |
| x63 | 12" | 12⅛" | ½" | 24" |
| x53 | 11¾" | 12" | 7/16" | 24" |
| HP 10x57 | 10" | 10¼" | 9/16" | 24" |
| x42 | 9¾" | 10⅛" | 7/16" | 24" |
| HP 8x36 | 8" | 8⅛" | 7/16" | 18" |



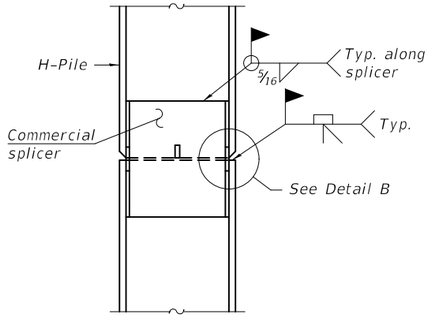

ELEVATION



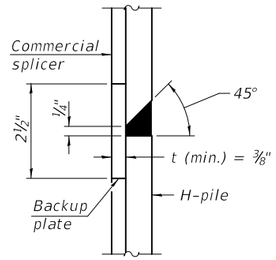

DETAIL A

SHOE ATTACHMENT

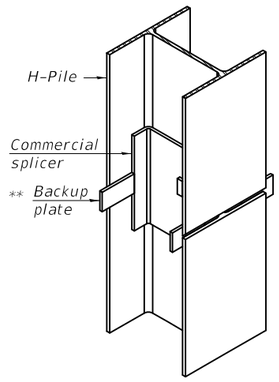
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.




ELEVATION

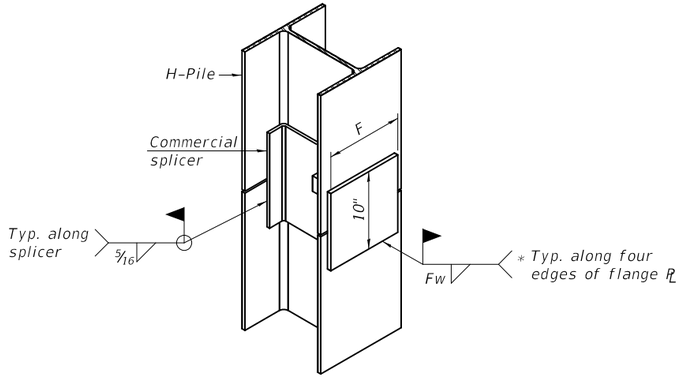



DETAIL "B"




ISOMETRIC VIEW

## WELDED COMMERCIAL SPLICE



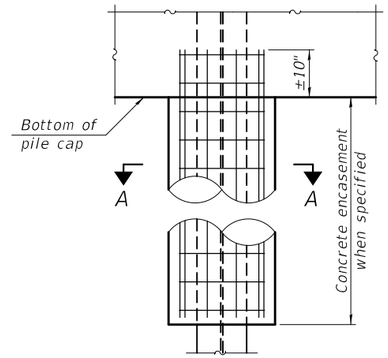

ISOMETRIC VIEW

## WELDED COMMERCIAL SPLICE ALTERNATE

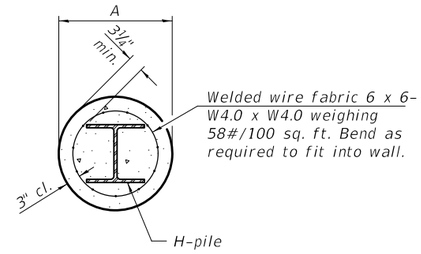
* Interrupt welds ¼" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



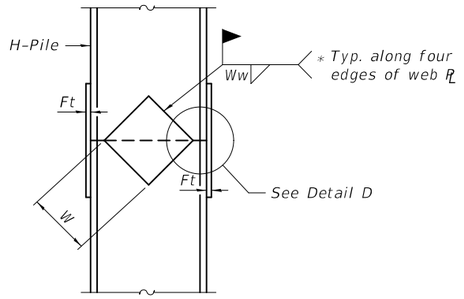

ELEVATION



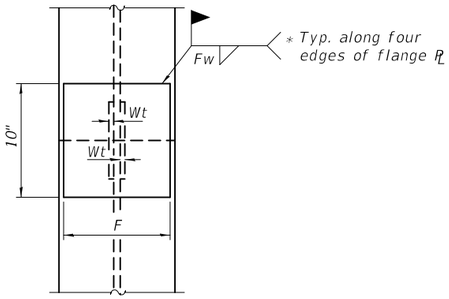

SECTION A-A

## INDIVIDUAL PILE CONCRETE ENCASEMENT

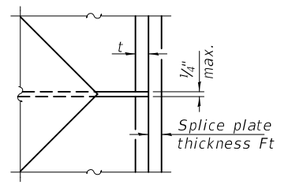
(Forms for encasement may be omitted when soil conditions permit).




ELEVATION




END VIEW




DETAIL D

| Designation | F | Ft | Fw | W | Wt | Ww |
|---|---|---|---|---|---|---|
| HP 14x117 | 12½" | 1" | ⅞" | 7¾" | ⅝" | ½" |
| x102 | 12½" | ⅞" | ¾" | 7¾" | ⅝" | ½" |
| x89 | 12½" | ¾" | 1 1/16" | 7¾" | ⅝" | ½" |
| x73 | 12½" | ⅝" | 9/16" | 7¾" | ⅝" | ½" |
| HP 12x84 | 10" | ⅞" | 1 1/16" | 6½" | ⅝" | ½" |
| x74 | 10" | ⅞" | 1 1/16" | 6½" | ⅝" | ½" |
| x63 | 10" | ⅝" | ½" | 6½" | ½" | ⅜" |
| x53 | 10" | ⅝" | ½" | 6½" | ½" | ⅜" |
| HP 10x57 | 8" | ¾" | 9/16" | 5¼" | ½" | ⅜" |
| x42 | 8" | ⅝" | 9/16" | 5¼" | ½" | ⅜" |
| HP 8x36 | 7" | ⅝" | 7/16" | 4¼" | ½" | ⅜" |

## WELDED PLATE FIELD SPLICE

F-HP 8-11-2017

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: CARROLL COUNTY HWY. DEPT. WOODLAND ROAD DISTRICT

PROJECT: SECTION 14-12124-00-BR T.R. 46 OVER PLUM RIVER

DRAWN BY: CFC
APPROVED BY: MCB
DATE:
SCALE:

REVISIONS

| REV. NO. | DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DRAWING: HP PILE DETAILS
STRUCTURE NO. 008-3120
SET TYPE: ...\0083120-019-pile-details.dgn

JOB NUMBER: 15-701

SHEET NUMBER: 19 of 28

PLOT DATE: 4/1/2020
cconnor

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 1 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-1
Surface Elev. 633.60
Auger Depth 61'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Left Of Station 10+59

SAMPLES | DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) *ELEV. 633.60 | DESCRIPTION OF MATERIALS | Depth in feet | Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 632.60 | Stiff Brown And Black Silty Clay (Fill) | 1 | 1 | SS | 1.5 | 8 | S | | 23 | | |
| 631.60 | | 2 | | | | | | | | | |
| 630.60 | | 3 | 2 | SS | 1.5 | 6 | S | | 24 | | |
| 629.60 | | 4 | | | | | | | | | |
| 628.60 | | 5 | 3 | SS | 1.3 | 7 | B | | 24 | | |
| 627.60 | | 6 | | | | | | | | | |
| 626.60 | | 7 | 4 | SS | 1.2 | 6 | B | | 26 | | |
| 625.60 | | 8 | | | | | | | | | |
| 624.60 | | 9 | 5 | SS | 1.1 | 5 | B | | 32 | | |
| 623.60 | | 10 | | | | | | | | | |
| 622.60 | | 11 | 6 | SS | 1.0 | 5 | B | | 34 | | |
| 621.60 | | 12 | | | | | | | | | |
| 620.60 | | 13 | 7 | SS | 0.9 | 5 | B | | 33 | | |
| 619.60 | | 14 | | | | | | | | | |
| 618.60 | Stiff To Medium Black And Gray Silty Clay | 15 | | | | | | | | | |
| 617.60 | | 16 | | | | | | | | | |
| 616.60 | | 17 | | | | | | | | | |
| 615.60 | | 18 | 8 | SS | 0.7 | 4 | B | | 34 | | |
| 614.60 | | 19 | | | | | | | | | |
| 613.60 | | 20 | | | | | | | | | |

Groundwater Data - Static water level after auger removal - Elevation 617.0
Comments:

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 2 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-1
Surface Elev. 633.60
Auger Depth 61'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Left Of Station 10+59

SAMPLES | DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) ELEV. 612.60 | DESCRIPTION OF MATERIALS | Depth in feet | Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 611.60 | Medium To Soft Black And Gray Silty Clay Loam | 22 | | | | | | | | | |
| 610.60 | | 23 | 9 | SS | 0.8 | 4 | B | | 33 | | |
| 609.60 | | 24 | | | | | | | | | |
| 608.60 | | 25 | 10 | SS | 0.5 | 3 | B | | 35 | | |
| 607.60 | | 26 | | | | | | | | | |
| 606.60 | | 27 | | | | | | | | | |
| 605.60 | | 28 | 11 | SS | 0.7 | 4 | B | | 32 | | |
| 604.60 | | 29 | | | | | | | | | |
| 603.60 | | 30 | | | | | | | | | |
| 602.60 | Medium To Soft Black And Gray Clay With Limestone Fragments | 31 | 12 | SS | 0.6 | 5 | S | | 32 | | |
| 601.60 | | 32 | | | | | | | | | |
| 600.60 | | 33 | | | | | | | | | |
| 599.60 | | 34 | | | | | | | | | |
| 598.60 | | 35 | 13 | SS | 0.4 | 5 | S | | 35 | | |
| 597.60 | | 36 | | | | | | | | | |
| 596.60 | | 37 | | | | | | | | | |
| 595.60 | | 38 | | | | | | | | | |
| 594.60 | | 39 | | | | | | | | | |
| 593.60 | Very Dense Brownish Gray Shale | 40 | 14 | SS | --- | 102 6" | --- | | --- | | |
| 592.60 | | 41 | | | | | | | | | |

Groundwater Data - Static water level after auger removal - Elevation 617.0
Comments:

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 3 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-1
Surface Elev. 633.60
Auger Depth 61'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Left Of Station 10+59

SAMPLES | DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) ELEV. 591.60 | DESCRIPTION OF MATERIALS | Depth in feet | Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 590.60 | Very Dense Brownish Gray Weathered Shale | 43 | | | | | | | | | |
| 589.60 | | 44 | | | | | | | | | |
| 588.60 | | 45 | | | | | | | | | |
| 587.60 | | 46 | | | | | | | | | |
| 586.60 | | 47 | | | | | | | | | |
| 585.60 | | 48 | | | | | | | | | |
| 584.60 | | 49 | | | | | | | | | |
| 583.60 | | 50 | | | | | | | | | |
| 582.60 | | 51 | 15 | SS | --- | 102 10" | --- | | --- | | |
| 581.60 | | 52 | | | | | | | | | |
| 580.60 | | 53 | | | | | | | | | |
| 579.60 | | 54 | | | | | | | | | |
| 578.60 | | 55 | | | | | | | | | |
| 577.60 | | 56 | | | | | | | | | |
| 576.60 | | 57 | | | | | | | | | |
| 575.60 | Very Dense Gray Shale (Drilled With Rock Bit) | 58 | | | | | | | | | |
| 574.60 | | 59 | | | | | | | | | |
| 573.60 | | 60 | | | | | | | | | |
| 572.60 | Boring Terminated | 61 | | | | | | | | | |
| 571.60 | | 62 | | | | | | | | | |

Groundwater Data - Static water level after auger removal - Elevation 617.0
Comments:

MODEL: Default
FILE NAME: ...\v8-xs\sht-020-boring-001.dgn

| | | | | |
|---|---|---|---|---|
| FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 184-003525 | USER NAME = cconnor | DESIGNED - MRL | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION |
| | | DRAWN - CFC | REVISED - | |
| | PLOT SCALE = 2.000000 ' / in. | CHECKED - MCB | REVISED - | |
| | PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

FEHR GRAHAM PROJECT NUMBER: 15-701

**BORING LOGS**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 27 | 20 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS FED. AID PROJECT | | | |

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 1 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-2
Surface Elev. 634.00
Auger Depth 51'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Right Station 9+60

DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) ELEV. 634.00 | DESCRIPTION OF MATERIALS | Graphic Log | Depth in feet | SAMPLES: Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 633.00 | Stiff Brown And Black Silty Clay (Fill) | | 1 | 1 | SS | 1.3 | 6 | B | | 25 | | |
| 632.00 | | | 2 | | | | | | | | | |
| 631.00 | | | 3 | 2 | SS | 1.5 | 7 | B | | 23 | | |
| 630.00 | | | 4 | | | | | | | | | |
| 629.00 | | | 5 | 3 | SS | 1.4 | 6 | B | | 24 | | |
| 628.00 | | | 6 | | | | | | | | | |
| 627.00 | | | 7 | 4 | SS | 1.4 | 6 | B | | 24 | | |
| 626.00 | | | 8 | | | | | | | | | |
| 625.00 | | | 9 | | | | | | | | | |
| 624.00 | | | 10 | 5 | SS | 1.1 | 6 | B | | 26 | | |
| 623.00 | | | 11 | | | | | | | | | |
| 622.00 | | | 12 | | | | | | | | | |
| 621.00 | Stiff To Medium Black And Gray Silty Clay | | 13 | 6 | SS | 1.0 | 5 | B | | 27 | | |
| 620.00 | | | 14 | | | | | | | | | |
| 619.00 | | | 15 | | | | | | | | | |
| 618.00 | | | 16 | | | | | | | | | |
| 617.00 | | | 17 | | | | | | | | | |
| 616.00 | | | 18 | 7 | SS | 0.8 | 5 | B | | 30 | | |
| 615.00 | | | 19 | | | | | | | | | |
| 614.00 | | | 20 | 8 | SS | 0.9 | 5 | B | | 30 | | |

Groundwater Data: Static water level after auger removal - Elevation 617.0
Comments:

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 2 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-2
Surface Elev. 634.00
Auger Depth 51'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Right Station 9+60

DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) ELEV. 613.00 | DESCRIPTION OF MATERIALS | Graphic Log | Depth in feet | SAMPLES: Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 612.00 | | | 22 | | | | | | | | | |
| 611.00 | | | 23 | 9 | SS | 0.6 | 5 | B | | 32 | | |
| 610.00 | | | 24 | | | | | | | | | |
| 609.00 | Medium To Soft Black And Gray Silty Loam (Occasional Limestone Fragments) | | 25 | | | | | | | | | |
| 608.00 | | | 26 | 10 | SS | 0.6 | 5 | B | | 34 | | |
| 607.00 | | | 27 | | | | | | | | | |
| 606.00 | | | 28 | 11 | SS | 0.8 | 6 | B | | 33 | | |
| 605.00 | | | 29 | | | | | | | | | |
| 604.00 | | | 30 | | | | | | | | | |
| 603.00 | | | 31 | 12 | SS | 0.7 | 6 | B | | 33 | | |
| 602.00 | | | 32 | | | | | | | | | |
| 601.00 | | | 33 | | | | | | | | | |
| 600.00 | | | 34 | | | | | | | | | |
| 599.00 | Dense Black And Gray Clay With Limestone Fragments 34-36' Depth | | 35 | | | | | | | | | |
| 598.00 | | | 36 | 13 | SS | --- | 32 | --- | --- | | | |
| 597.00 | | | 37 | | | | | | | | | |
| 596.00 | | | 38 | | | | | | | | | |
| 595.00 | | | 39 | | | | | | | | | |
| 594.00 | Very Dense Brownish Gray Weathered Shale | | 40 | 14 | SS | --- | 102 10" | --- | --- | | | |
| 593.00 | | | 41 | | | | | | | | | |

Groundwater Data: Static water level after auger removal - Elevation 617.0
Comments:

*Midwest Testing Services, Inc.*
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

## BORING LOG

Sheet 3 of 3

Client: Fehr Graham & Associates
Project Name: Section 14-12124-00-BR TR Over Plum River
Project Site: Carroll County, Illinois

Boring No. B-2
Surface Elev. 634.00
Auger Depth 57'
Rotary Depth NA
Start Date 03/25/19
Finish Date 03/25/19

Location: 4' Right Station 9+60

DRILLED BY: Jeff Safranski, Diedrich D-120

| (DEPTH) ELEV. 592.00 | DESCRIPTION OF MATERIALS | Graphic Log | Depth in feet | SAMPLES: Sample No. | Sample Type | Qu. (TSF) | N Value (Blows) | Bulge | Shear | Moisture (%) | Dry Density (PCF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 591.00 | Very Dense Gray Shale | | 43 | | | | | | | | | |
| 590.00 | | | 44 | | | | | | | | | |
| 589.00 | | | 45 | | | | | | | | | |
| 588.00 | | | 46 | | | | | | | | | |
| 587.00 | | | 47 | | | | | | | | | |
| 586.00 | | | 48 | | | | | | | | | |
| 585.00 | | | 49 | | | | | | | | | |
| 584.00 | | | 50 | | | | | | | | | |
| 583.00 | | | 51 | 15 | SS | --- | 100/3" | --- | --- | | | |
| 582.00 | Very Dense Gray Shale (Drilled With Rock Bit) | | 52 | | | | | | | | | |
| 581.00 | | | 53 | | | | | | | | | |
| 580.00 | | | 54 | | | | | | | | | |
| 579.00 | | | 55 | | | | | | | | | |
| 578.00 | | | 56 | | | | | | | | | |
| 577.00 | Boring Terminated | | 57 | | | | | | | | | |
| 576.00 | | | 58 | | | | | | | | | |
| 575.00 | | | 59 | | | | | | | | | |
| 574.00 | | | 60 | | | | | | | | | |
| 573.00 | | | 61 | | | | | | | | | |
| 572.00 | | | 62 | | | | | | | | | |

Groundwater Data: Static water level after auger removal - Elevation 617.0
Comments:

MODEL: Default
FILE NAME: ...\08-mts\sht-021-boring-002.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 2.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

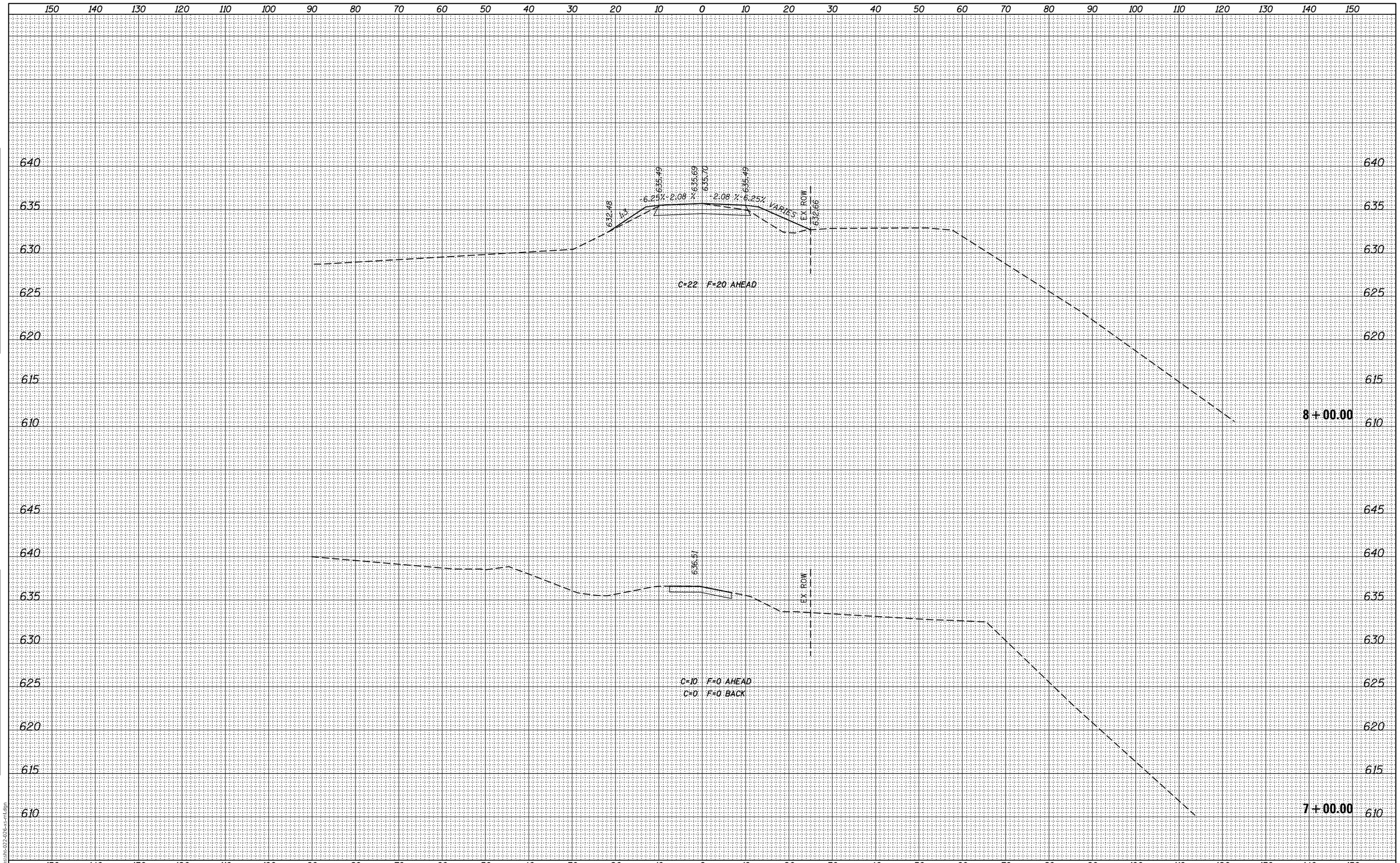
FEHR GRAHAM PROJECT NUMBER: 15-701

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**BORINGS LOGS**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 21 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS FED. AID PROJECT | | | |




FINAL SURVEY

| NOTE BOOK | SURVEYED | BY |
|---|---|---|
| AREAS | PLOTTED | |
| NO. | TEMPLATE | DATE |
| | AREAS CHECKED | |

ORIGINAL SURVEY

| NOTE BOOK | SURVEYED | BY |
|---|---|---|
| AREAS | PLOTTED | |
| NO. | TEMPLATE | DATE |
| | AREAS CHECKED | |

MODEL: Default
FILE NAME: ...\v8-sis\sht-022-026-xs-m1.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

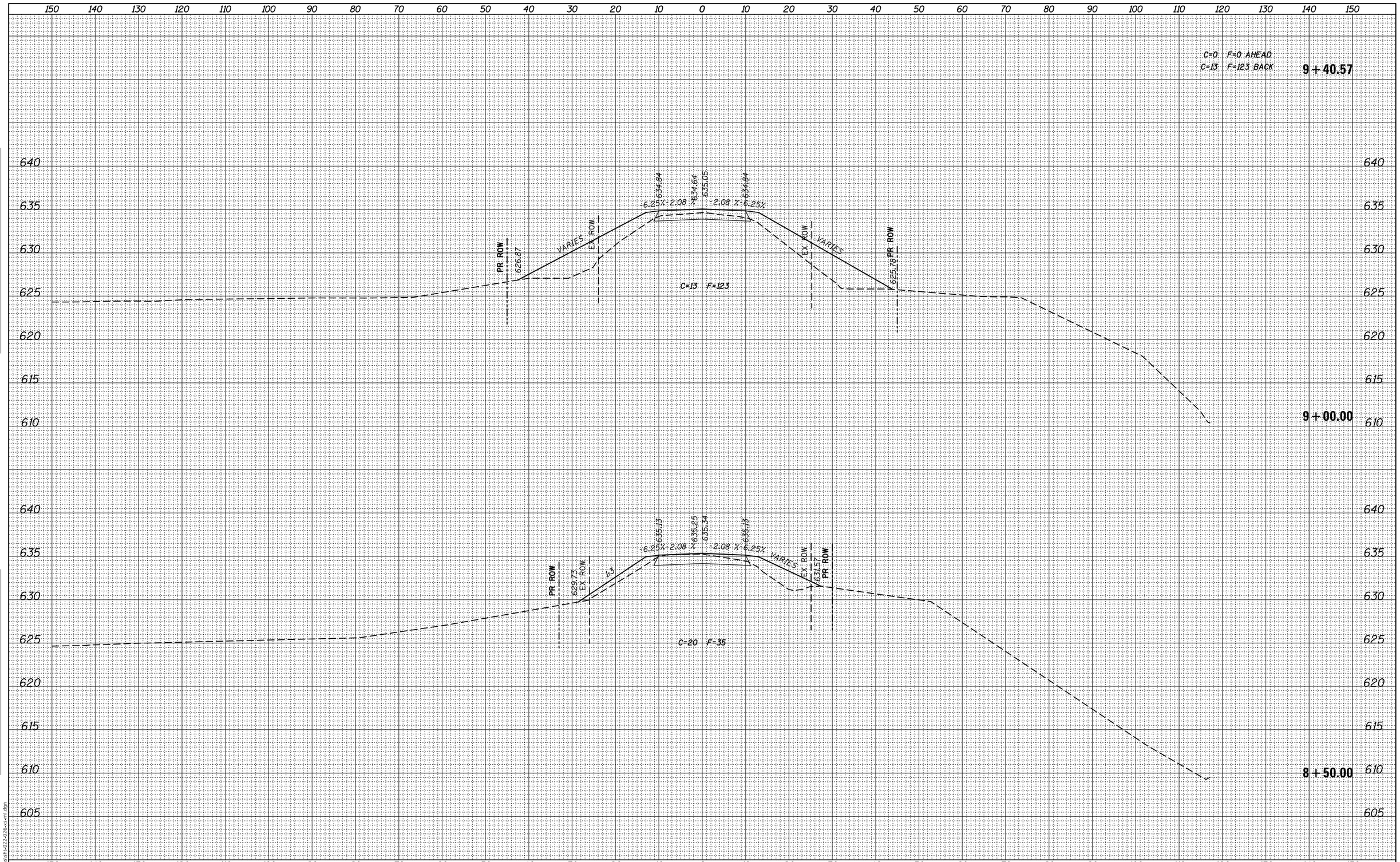
| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 7+00.00 | TO STA. 8+00.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 22 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |




| FINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |

| ORIGINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |

MODEL: Default
FILE NAME: ...\v8-sis\sht-022-026-xs-m1.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

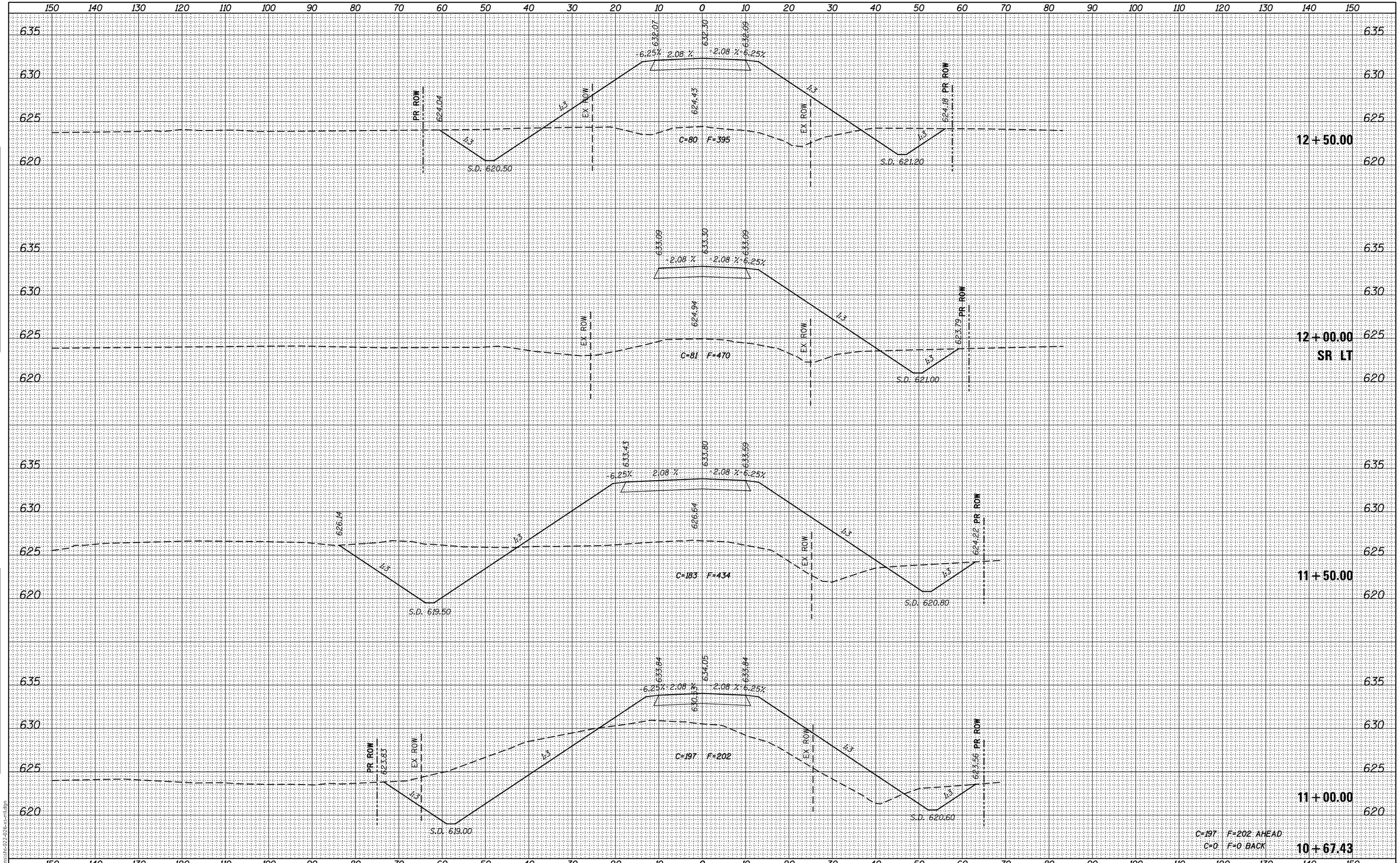
| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 8+50.00 | TO STA. 9+00.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 23 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |




FINAL SURVEY

| NO. | NOTE BOOK | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

ORIGINAL SURVEY

| NO. | NOTE BOOK | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

MODEL: Default
FILE NAME: ...\v8-nisish-022-026-xs-ml.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

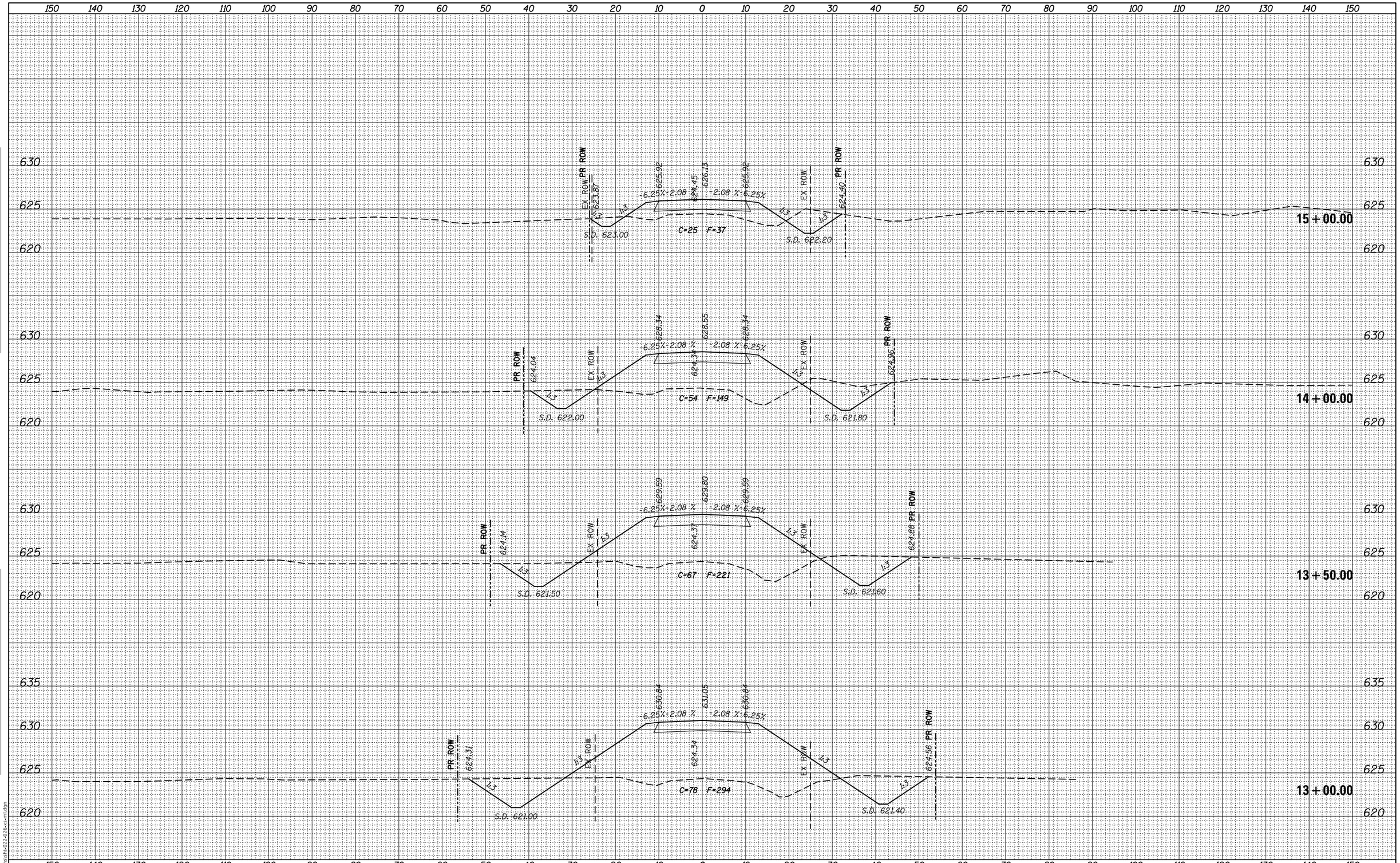
| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 11+00.00 | TO STA. 12+50.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 24 |
| | | CONTRACT NO. 85689 | | |
| | | ILLINOIS | FED. AID PROJECT | |




| FINAL SURVEY | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| TEMPLATE | | |
| NOTE BOOK | | |
| AREAS | | |
| NO. | AREAS CHECKED | |

| ORIGINAL SURVEY | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| TEMPLATE | | |
| NOTE BOOK | | |
| AREAS | | |
| NO. | AREAS CHECKED | |

MODEL: Default
FILE NAME: ...\v8\sts\sht-022-026-xs-m1.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

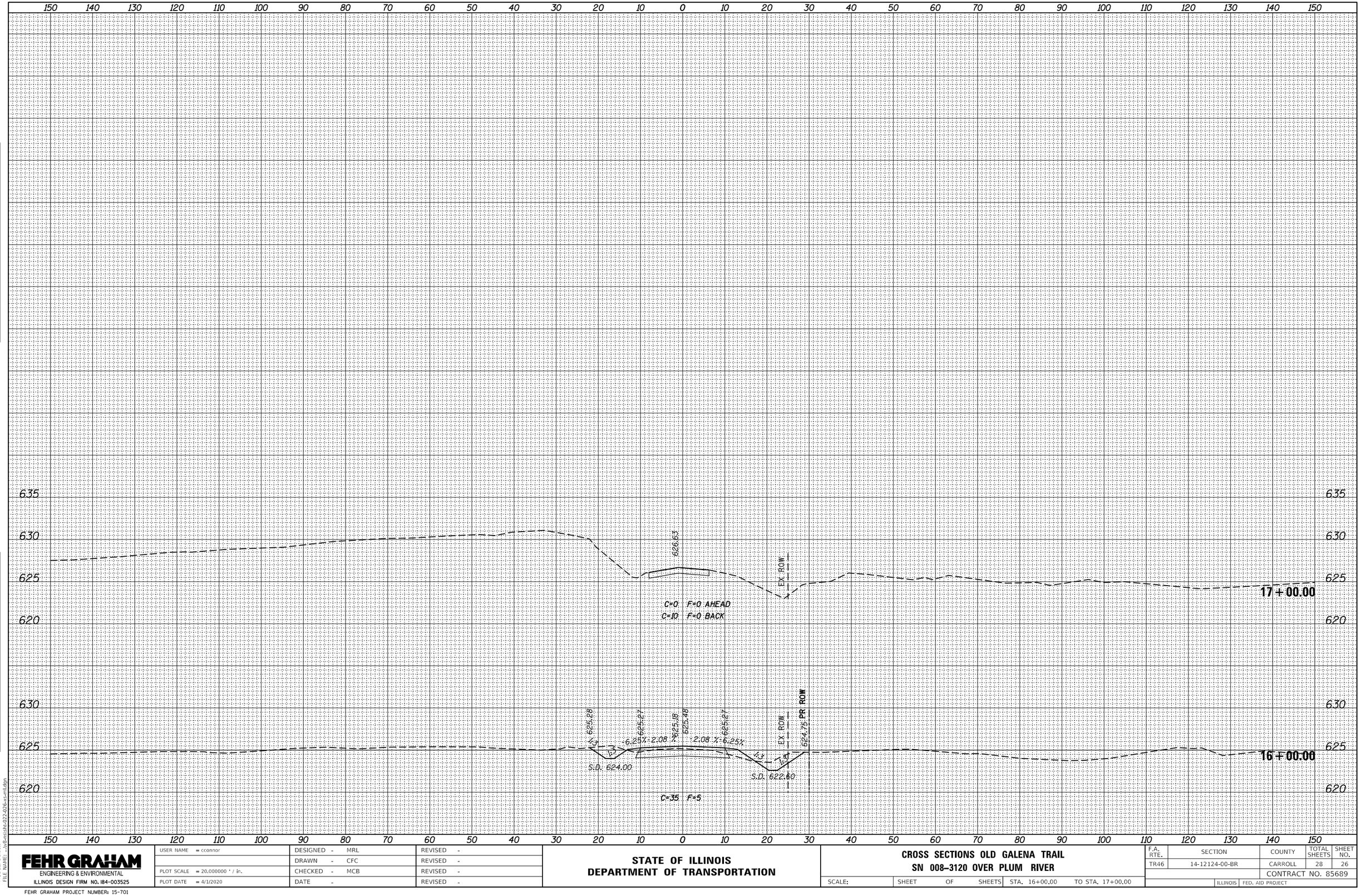
**CROSS SECTIONS OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 13+00.00 | TO STA. 15+00.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 25 |
| | | CONTRACT NO. 85689 | | |
| | | ILLINOIS | FED. AID PROJECT | |

| FINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |

| ORIGINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |




MODEL: Default
FILE NAME: ...\v8-sis\sht-022-026-xs-m1.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

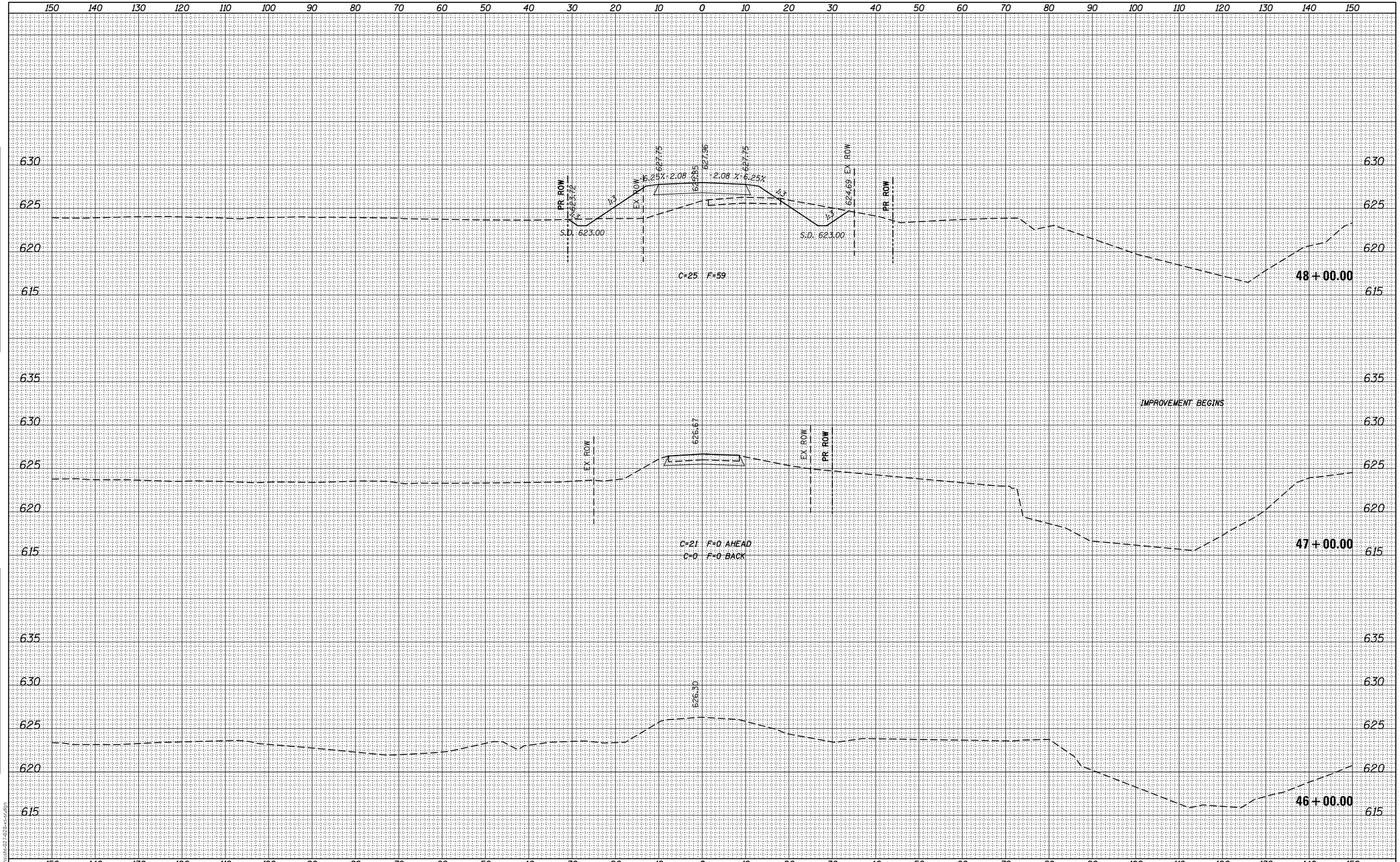
| | | | |
|---|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - | |
| | DRAWN - CFC | REVISED - | |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - | |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS OLD GALENA TRAIL**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 16+00.00 | TO STA. 17+00.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 26 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |




| FINAL SURVEY | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| TEMPLATE | | |
| NOTE BOOK | | |
| AREAS | | |
| NO. | AREAS CHECKED | |

| ORIGINAL SURVEY | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| TEMPLATE | | |
| NOTE BOOK | | |
| AREAS | | |
| NO. | AREAS CHECKED | |

MODEL: Default
FILE NAME: ...\v8-ansisht-027-028-xs-sd.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

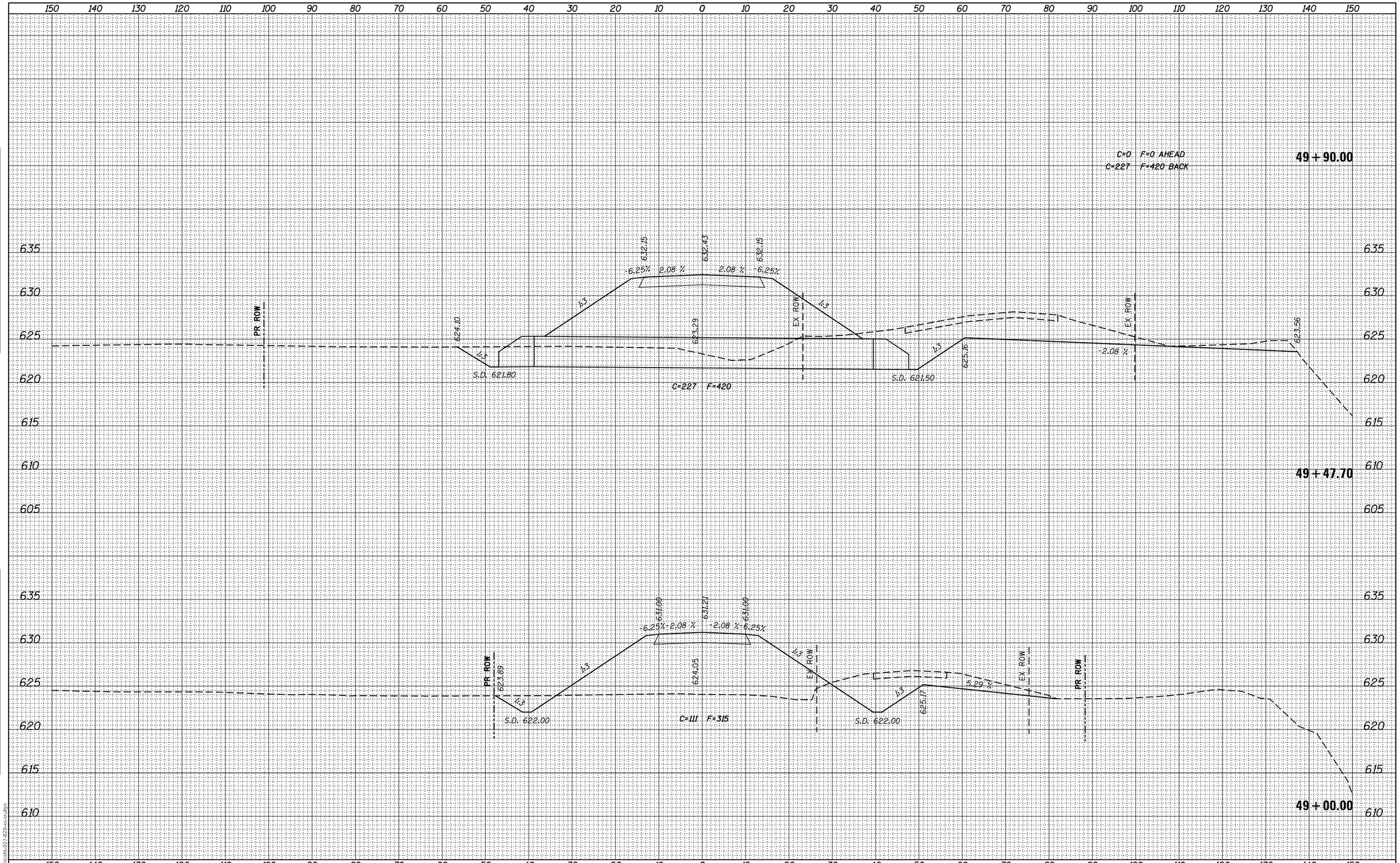
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS SPUR RD**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 46+00.00 | TO STA. 48+00.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 27 |
| | | CONTRACT NO. 85689 | | |
| | ILLINOIS | FED. AID PROJECT | | |

| FINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |




| ORIGINAL SURVEY | | BY | DATE |
|---|---|---|---|
| | SURVEYED | | |
| | PLOTTED | | |
| NOTE BOOK | TEMPLATE | | |
| | AREAS | | |
| NO. | AREAS CHECKED | | |

MODEL: Default
FILE NAME: ...\v8-sis\sht-027-028-xs-sd.dgn

**FEHR GRAHAM**
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

FEHR GRAHAM PROJECT NUMBER: 15-701

| | | |
|---|---|---|
| USER NAME = cconnor | DESIGNED - MRL | REVISED - |
| | DRAWN - CFC | REVISED - |
| PLOT SCALE = 20.000000 ' / in. | CHECKED - MCB | REVISED - |
| PLOT DATE = 4/1/2020 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS SPUR RD**
**SN 008-3120 OVER PLUM RIVER**

SCALE: | SHEET OF SHEETS | STA. 49+00.00 | TO STA. 49+50.00

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| TR46 | 14-12124-00-BR | CARROLL | 28 | 28 |
| | | CONTRACT NO. 85689 | | |
| | | ILLINOIS | FED. AID PROJECT | |