POLK COUNTY - DESIGN NO. 818

RCB CULVERT REPLACEMENT - TRIPLE BOX

IM-NHS-035-4(219)93--03-77

LETTING DATE 12-18-2018

POLK COUNTY

LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (175)
- COUNTY HIGHWAY (S27)
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES — ABBEY ROAD
- UNINCORPORATED PLACE — ELWOOD

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

POLK COUNTY

RCB CULVERT REPLACEMENT - TRIPLE BOX

STAGE 2 - ON INTERSTATE 35

IN ANKENY APPROX. 0.8 MILES N OF E 1ST ST (NB)

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD CULVERT PLANS

STANDARD	ISSUED	REVISED
TRRCB G1-12	04-12	07-16
TRRCB G2-12	04-12	12-16
TRRCB 12-8-12	04-12	-----

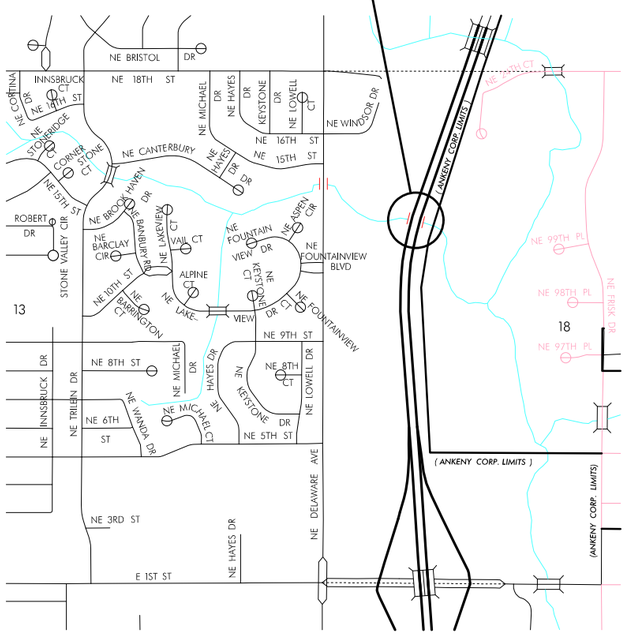
TOTAL SHEETS	25
PROJECT NUMBER	IM-NHS-035-4(219)93--03-77
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	04-77-035-030-01

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - DESIGN 818
2-5	DESIGN 818
SPS.1	SOIL PROFILE SHEET
C.1	ESTIMATE SHEET FOR ROADWAY
A.1-J.3	ROADWAY SHEETS

REVISIONS

DESIGN NO. 818



LOCATION MAP

IOWA ONE CALL

1-800-292-8989

www.iowaonecall.com

811 Know what's below. Call before you dig.

CITY MAP NOT TO SCALE

T-80N R-23W
SECTION 18
DOUGLAS TWP.
PART OF CITY OF ANKENY

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.1

DESIGN DATA URBAN

2012	AADT	39,900	V.P.D.
2035	AADT	77,600	V.P.D.
2035	DHV	7,530	V.P.H.
TRUCKS		15	%
Total Design ESALs			

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	Steven M. Kunz	STRUCTURAL DESIGN
**1	Mark A. Land	HYDRAULIC DESIGN
*SPS.1	Matthew D. Cushman	GEOTECHNICAL DESIGN
**A.1	John W. Haldeman	ROADWAY DESIGN
CULVERT STANDARDS	NORMAN L. McDONALD	STRUCTURAL DESIGN

* Provided by Terracon Consultants Inc.

** Provided by Snyder & Associates Inc.

HYDRAULIC DESIGN

LICENSED PROFESSIONAL ENGINEER Mark A. Land 14045 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Mark A. Land — Date: 10-15-2018

Printed or Typed Name: Mark A. Land

My license renewal date is December 31, 2018

Pages or sheets covered by this seal: SHEET 4 (HYDRAULIC DATA)

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER Steven M. Kunz 14321 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Steven M. Kunz — Date: 10-15-2018

Printed or Typed Name: Steven M. Kunz

My license renewal date is December 31, 2019

Pages or sheets covered by this seal: SHEETS 1 THRU 5 (EXCLUDING HYDRAULIC DATA)

PROJECT DIRECTORY NAME: 7703503004

ESTIMATED CAST IN PLACE CULVERT QUANTITIES - ALTERNATE - STAGE 2

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	60.4	
2	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
3	2402-2720000	EXCAVATION, CLASS 20	CY	1486	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	125.2	
5	2404-7775000	REINFORCING STEEL	LB	18,758	
6	2501-8400172	TEMPORARY SHORING	LS	1.00	
7	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
8	2533-4980005	MOBILIZATION	LS	1.00	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2107-3825025	**GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN** INCLUDES COST OF 1'-0 THICK WORKING BLANKET. SEE SHEET SPS.1 FOR ADDITIONAL INFORMATION. THE WORKING BLANKET MAY BE DELETED IF DETERMINED TO BE UNNECESSARY AT THE TIME OF CONSTRUCTION. GRANULAR MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 4118, GRADATION NO. 3 OF THE STANDARD SPECIFICATIONS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE WORKING BLANKET.
2	2401-6750001	**REMOVALS, AS PER PLAN** INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF THE EXISTING TWIN 8'x10' CULVERT BARREL SECTION AS INDICATED ON THE SITUATION PLAN ON DESIGN SHEET 3, THE PORTION OF THE ABANDONED TEMPORARY SHORING FROM STAGE 1 RCB CULVERT CONSTRUCTION DETAILED ON DESIGN SHEETS 3 AND 4, AND THE TEMPORARY SHORING SEAL THAT WAS INSTALLED AT THE WEST END OF THE STAGE 1 RCB CULVERT CONSTRUCTION DETAILED ON DESIGN SHEET 4, AS NEEDED TO CONSTRUCT THE NEW BARREL EXTENSION. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.
3	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES EXCAVATION NECESSARY TO PLACE THE 1'-0 THICK WORKING BLANKET. QUANTITY SHOULD BE REDUCED BY 60 CY IN THE EVENT THAT THE WORKING BLANKET IS DELETED. INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
4	2403-0100020	**STRUCTURAL CONCRETE (RCB CULVERT)** INCLUDES ALL COSTS ASSOCIATED WITH INSTALLING THE DOWEL BARS BETWEEN EXISTING AND NEW CONSTRUCTION AS DETAILED IN THESE PLANS.
5	2404-7775000	**REINFORCING STEEL** - -
6	2501-8400172	**TEMPORARY SHORING** SEE GENERAL NOTES ON DESIGN SHEET 2 FOR ADDITIONAL INFORMATION AND BASIS OF PAYMENT.
7	2526-8285000	**CONSTRUCTION SURVEY** - -
8	2533-4980005	**MOBILIZATION** - -

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

SPECIFICATIONS:

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5th Ed, SERIES OF 2010.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI.

STANDARDS:
FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - HIGHWAY STANDARDS:

STANDARD	ISSUED	REVISED
TRRCB G1-12	04-12	07-16
TRRCB G2-12	04-12	12-16
TRRCB 12-8-12	04-12	-----

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
32'-0 BARREL SECTION	1 AT 18,758	18,758
	TOTAL (LBS.)	18,758

CONCRETE PLACEMENT QUANTITIES

LOCATION	FOOTING	WALLS	SLAB	TOTAL
32'-0 BARREL SECTION	1 AT 53.3	1 AT 26.9	1 AT 45.0	125.2
TOTAL (C.Y.)	53.3	26.9	45.0	125.2

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
3762	ORIGINAL DESIGN
718	STAGE 1
818	NEW CONSTRUCTION - STAGE 2

DESIGN FOR 0° SKEW

TRIPLE 12'-0 x 8'-0 x 32'-0 R.C.B. CULVERT - STAGE 2

ESTIMATED QUANTITIES

STA. 309+87.00 ℄ I-35 OCTOBER 2018

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30451 DESIGN NO. 818

CHANGED BY ADDENDA

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO REPLACE A SEGMENT OF THE EXISTING TWIN 8'-0 x 10'-0 x 155'-0 REINFORCED CONCRETE BOX CULVERT SKEWED 0° AT STATION 309+80 AND EXTEND THE EXISTING TRIPLE 12'-0 x 8'-0 x 81'-0 REINFORCED CONCRETE BOX CULVERT (STAGE 1) SKEWED 0° AT STATION 309+87.00 WITH A TRIPLE 12'-0 x 8'-0 x 32'-0 REINFORCED CONCRETE BOX CULVERT SKEWED 0° AT STATION 309+87.00. NEW CULVERT CONSTRUCTION WILL BE DONE IN 3 STAGES. THESE PLANS INCLUDE STAGE 2 ONLY. STAGE 1 HAS BEEN COMPLETED AND STAGE 3 WILL BE COMPLETED AT A FUTURE DATE UNDER SEPARATE CONTRACTS. STAGE 2 OF THIS CULVERT CONSTRUCTION PROJECT CORRESPONDS TO STAGE 4 OF THE PAVING PROJECT NHS-035-4(198)92--11-77.

THE RCB CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 10 FEET.

ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (ORIGINAL DESIGN 3762 AND STAGE 1 DESIGN 718).

FAINT LINES ON PLANS INDICATE EXISTING STRUCTURE.

UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

CLASS 20 EXCAVATION MATERIAL UNSUITABLE FOR BACKFILLING SHALL BE DISPOSED OF IN A MANNER THAT WILL LEAVE THE SITE IN A NEAT CONDITION.

THE CLASS 20 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" ON DESIGN SHEET 3 HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

"REMOVALS AS PER PLAN" INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE PORTIONS OF THE EXISTING TWIN 8'x10' CULVERT AS INDICATED ON THE SITUATION PLAN ON DESIGN SHEET 3, THE PORTION OF THE ABANDONED TEMPORARY SHORING FROM STAGE 1 RCB CULVERT CONSTRUCTION DETAILED ON DESIGN SHEETS 3 AND 4, AND THE TEMPORARY SHORING SEAL THAT WAS INSTALLED AT THE WEST END OF THE STAGE 1 RCB CULVERT CONSTRUCTION DETAILED ON DESIGN SHEET 4. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO EXTRA COST TO THE STATE.

REMOVAL OF THE EXISTING TWIN 8'x10' CULVERT SHALL BE ON A VERTICAL PLANE PARALLEL WITH AND AT THE LOCATION INDICATED ON THE "SITUATION PLAN", AND TO THE WIDTH OF THE FLOOR. THE WALLS SHALL BE CUT NORMAL TO THE BARREL WALLS. THE REMOVAL LINE SHALL BE INITIATED WITH A $2\frac{1}{2}$± DEEP SAW CUT ON THE TOP AND BOTH SIDES OF EACH WALL, AND ACROSS THE TOP OF THE FLOOR. THIS SAW CUT SHOULD CUT THRU ANY EXISTING LONGITUDINAL REINFORCING THEREBY FACILITATING A NEAT NON-SPALLED BREAK LINE.

THE PROPOSED CULVERT EXTENSION SHALL ABUT AGAINST THE FACE OF THE EXISTING STAGE 1 BARREL SECTION. 5z1 x 2'-6 DOWEL REINFORCING BARS WITH A 10" MINIMUM EMBEDMENT INTO EXISTING CONCRETE SHALL BE SET AROUND THE ENTIRE PERIPHERY OF THE EXISTING CULVERT. 5z1 DOWEL REINFORCING BARS SHALL BE CENTERED IN THE EXISTING SLAB, WALLS AND FLOOR. 5z1 DOWEL REINFORCING BARS SHALL BE AT 1'-0 MAXIMUM SPACING C.-C. OF DOWELS. 5z1 DOWEL REINFORCING BARS SHALL BE SET WITH POLYMER GROUT IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

FLOOR OF BARREL IS TO BE FINISIHED SMOOTH. SIDES OF FOOTING ARE TO BE FORMED TO INSURE CORRECT LINE AND GRADE.

TEMPORARY SHORING (SHEET PILE OR OTHER) SHALL BE REQUIRED AS NECESSARY TO PREVENT THE EARTH UNDER THE TRAFFIC LANE FROM SLOUGHING IN DURING CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT A TEMPORARY SHORING PLAN FOR REVIEW. THE TEMPORARY SHORING PLAN SHALL BE DESIGNED AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IOWA. THE CONTRACTOR SHALL NOT PROCEED WITH INSTALLATION OF THE TEMPORARY SHORING WITHOUT NOTICE TO PROCEED FROM THE ENGINEER.

THE TEMPORARY SHORING SUBMITTAL SHALL INCLUDE:

- DESIGN CALCULATIONS (INCLUDING A GLOBAL STABILITY ANALYSIS)
- SOIL PROPERTIES
- SHORING MATERIALS
- SHORING PLAN LAYOUT (SHOWING LOCATION OF TRAFFIC)
- SHORING DETAILS

TEMPORARY SHORING SHALL BE PAID FOR AS A LUMP SUM INCLUDING ALL COSTS ASSOCIATED WITH FOR DESIGNING, FURNISHING, INSTALLING AND REMOVAL EXCEPT AS INDICATED. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR EXCEPT FOR SHORING MATERIAL INDICATED TO REMAIN IN PLACE UNTIL RCB STAGE 3 CONSTRUCTION. SHORING SHALL NOT BE REMOVED UNTIL APPROVED BY THE ENGINEER. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS STILL APPLIES.

THE REFERENCED PROJECT (198) IN THE FOLLOWING RCB CONSTRUCTION AND TEMPORARY SHORING STAGING NOTES IS A REFERENCE TO THE PAVING PLANS PROJECT NHS-035-4(198)92--11-77 WHICH IS TIED TO THESE CULVERT PLANS THROUGH THE CONTRACT LETTING PROCESS. THE TEMPORARY SHORING NOTATIONS OF "A", "B", OR "C" IS REFERENCING ENCIRCLED NOTES 7A, 7B, OR 7C RESPECTIVELY, AS INDICATED ON THE SITUATION PLAN ON DESIGN SHEET 3.

RCB CONSTRUCTION AND TEMPORARY SHORING STAGING:

1. REMOVE PAVEMENT ACCORDING TO STAGE 2 OF THE (198) PLANS (BY OTHERS).
2. INSTALL TEMPORARY SHORING "A".
3. INSTALL PAVEMENT ON EAST SIDE OF NB LANES ACCORDING TO STAGE 2 OF THE (198) PLANS (BY OTHERS).
4. REMOVE PAVEMENT ON WEST SIDE OF NB LANES ACCORDING TO STAGE 4 OF THE (198) PLANS (BY OTHERS).
5. INSTALL TEMPORARY SHORING "B".
6. CONSTRUCT STAGE 2 RCB TRIPLE CULVERT, DESIGN 818, ACCORDING TO THESE PLANS.
7. INSTALL TEMPORARY SHORING "C".
8. BACKFILL AREA BETWEEN TEMPORARY SHORING "A" AND "C".
9. REMOVE TEMPORARY SHORING "A".
10. INSTALL PAVEMENT ACCORDING TO STAGE 4 OF THE (198) PLANS (BY OTHERS).
11. TEMPORARY SHORING "B" AND "C" TO REMAIN IN PLACE UNTIL RCB STAGE 3 CONSTRUCTION.

TEMPORARY SHORING "B" AND "C" AND/OR FENCE SHALL EXTEND AT LEAST 4'-0 ABOVE GROUND AROUND THE PERIMETER OF SHORING FOR PEDESTRIAN PROTECTION.

THE ROADWAY WILL BE OPEN TO TRAFFIC DURING CONSTRUCTION. TRAFFIC WILL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS. REFER TO PROJECT NO. NHS-035-4(198)92--11-77 FOR TRAFFIC CONTROL PLANS.

TRAFFIC CONTROL ADJACENT TO THE CULVERT SHALL BE THE RESPONSIBILITY OF THE GRADING CONTRACTOR. THE CONTRACTOR CONSTRUCTING THE CULVERT SHALL COORDINATE CONSTRUCTION OF THE CULVERT WITH THE GRADING CONTRACTOR.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

DRAINAGE THROUGH EXISTING CULVERT/CHANNEL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

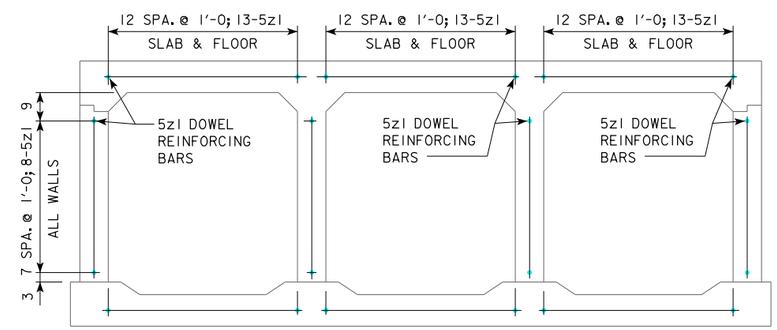
DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF THE FOLLOWING PROJECTS:

NHS-035-4(198)92--11-77	PCC PAVEMENT - NEW
NHS-035-4(222)93--11-77	BRIDGE DECK OVERLAY
IM-NHS-035-4(140)92--03-77	GRADING

TRAFFIC CONTROL PLAN

THE TRAFFIC CONTROL PLAN IS NOT INCLUDED IN THESE PLANS, BUT IS INCLUDED IN THE PAVING PLANS PROJECT NHS-035-4(198)92--11-77 WHICH IS TIED TO THESE CULVERT PLANS THROUGH THE CONTRACT LETTING PROCESS.

THE POLLUTION PREVENTION PLAN IS NOT INCLUDED IN THESE PLANS, BUT IS INCLUDED IN THE PAVING PLANS PROJECT NHS-035-4(198)92--11-77 WHICH IS TIED TO THESE CULVERT PLANS THROUGH THE CONTRACT LETTING PROCESS.



SECTION AT CONSTRUCTION JOINT BETWEEN STAGE 1 AND STAGE 2 CONSTRUCTION

(SHOWING SPACING OF 5z1 DOWEL REINFORCING BARS)

IT IS INTENDED THAT NO 5r1 CONSTRUCTION JOINT DOWELS, AS SHOWN ON IOWA DOT STANDARD SHEET TRRCB G2-12, BE INSTALLED AT THE WEST END OF STAGE 2 CONSTRUCTION.

DESIGN FOR 0° SKEW

TRIPLE 12'-0 x 8'-0 x 32'-0
R.C.B. CULVERT - STAGE 2

GENERAL NOTES

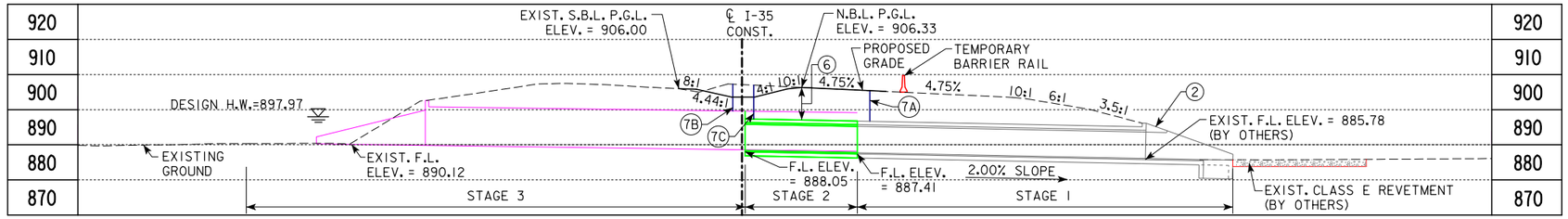
STA. 309+87.00 ℄ I-35 OCTOBER 2018

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 4 FILE NO. 30451 DESIGN NO. 818

CHANGED BY ADDENDA



LONGITUDINAL SECTION ALONG ℄ CULVERT

ANTICIPATED CULVERT SETTLEMENT = 1 INCH

BM NO.11 STA. 309+88.71, 91.00'LT.
CUT 'X' IN TOP OF NORTH CORNER OF INLET
HEADWALL OF RCB UNDER I-35.
MILE MARKER 93.35. ELEV = 902.48

PROPOSED GRADE
I-35 S.B.L. AND N.B.L.

-0.52% -0.75% 0.50%

VPI STA. 287+75.00
ELEV.=922.93
LVC=210.00'

VPI STA. 315+00.00
ELEV.=902.48
LVC=230.00'

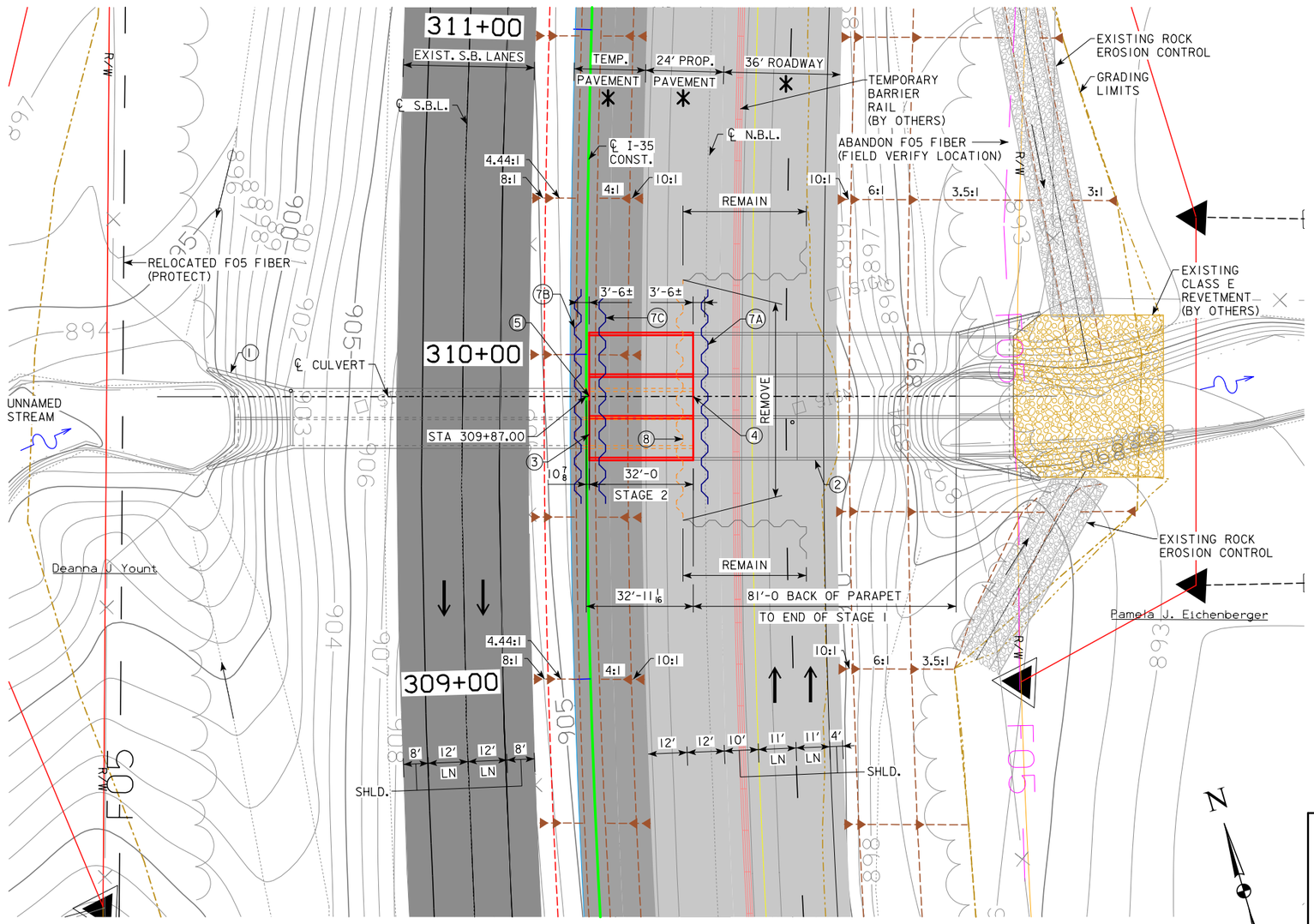
NOTES:

1. MAINTAIN EXISTING HEADWALL AND BARREL SECTIONS.
2. MAINTAIN TRIPLE 12' X 8' AT 0° SKEWED WINGWALLS INSTALLED DURING STAGE 1 CONSTRUCTION
3. DRAINAGE THROUGH EXISTING CULVERT/CHANNEL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
4. CONNECT TO EXISTING TRIPLE 12' X 8' INSTALLED IN STAGE 1 CONSTRUCTION AT STA. 309+87.00, 32.91'RT ELEV=887.41
5. CONNECT TO EXISTING TWIN 8' X 10' BOX CULVERT AT STA. 309+87.00, 0.91'RT ELEV=888.05
6. DESIGN EARTH FILL = 10' FOR ALL STAGES.

✱ (7A) (7B) (7C) TEMPORARY SHORING AS REQUIRED FOR STAGED CONSTRUCTION. SEE RCB CONSTRUCTION AND TEMPORARY SHORING STAGING NOTES ON DESIGN SHEET 2.

8. REMOVE ABANDONED TEMPORARY SHORING FROM STAGE 1 RCB CULVERT CONSTRUCTION. SEE DESIGN SHEET 4 FOR DETAILS.

CONTRACTOR TO COORDINATE WITH THE PAVING PLANS PROJECT NHS-035-4(198)92--11-77 FOR MEDIAN GRADING AND DRAINAGE CONTROL BETWEEN RCB CULVERT STAGE 2 AND 3 CONSTRUCTION.



SITUATION PLAN

ALL UNITS IN FEET UNLESS NOTED OTHERWISE

HORIZONTAL CURVE DATA

SCS PI Sta 305+14.32
Δ = 24° 53' 19.19" (RT)
Theta = 4° 08' 56.42"
Ls = 420.00
Ts = 850.48
Es = 72.37
P = 2.53
K = 209.96
Xc = 419.78
Yc = 10.13
LT = 280.08
ST = 140.07
LC = 419.90

Curve Data
Δ = 16° 35' 27.42" (RT)
T = 422.83
L = 839.74
R = 2,900.00
E = 30.66
e = 5.6%
L = 420.0'
X = 188.0'

TRAFFIC ESTIMATE

A.D.T.=39,900 V.P.D. (2012)
A.D.T.=77,600 V.P.D. (2035)
D.H.V.=7530 V.P.D. (2035)
15% Trucks

HYDRAULIC DATA

DRAINAGE AREA = 2.2 SQ MI.
DESIGN Q50 = 1820 CFS
DESIGN Q100 = 2100 CFS
DESIGN Q500 = 2750 CFS
DESIGN HIGH WATER ELEV. = 897.97
OUTLET STREAM SLOPE= 0.0040 FT/FT
CULVERT WATERWAY AREA= 288.0 SF

EXISTING STRUCTURE

TWIN 8'-0 x 10'-0 x 155'-0 R.C.B.
TRIPLE 12'-0 x 8'-0 x 81'-0 R.C.B. (STAGE 1)

PROPOSED STRUCTURE

TRIPLE 12'-0 x 8'-0 x 32'-0 R.C.B. (STAGE 2)

UTILITIES LEGEND:

F05 - FIBER OPTICS - IOWA DOT

LOCATION

I-35 OVER TRIBUTARY A
TO FOURMILE CREEK
T-80 N R-23 W
SECTION 18
DOUGLAS TOWNSHIP
POLK COUNTY
LAT 41.742119°
LONG -93.577544°
FHWA No. 700770

DESIGN FOR 0° SKEW

TRIPLE 12'-0 x 8'-0 x 32'-0 R.C.B. CULVERT - STAGE 2

SITUATION PLAN

STA. 309+87.00 ℄ I-35 OCTOBER 2018

POLK COUNTY

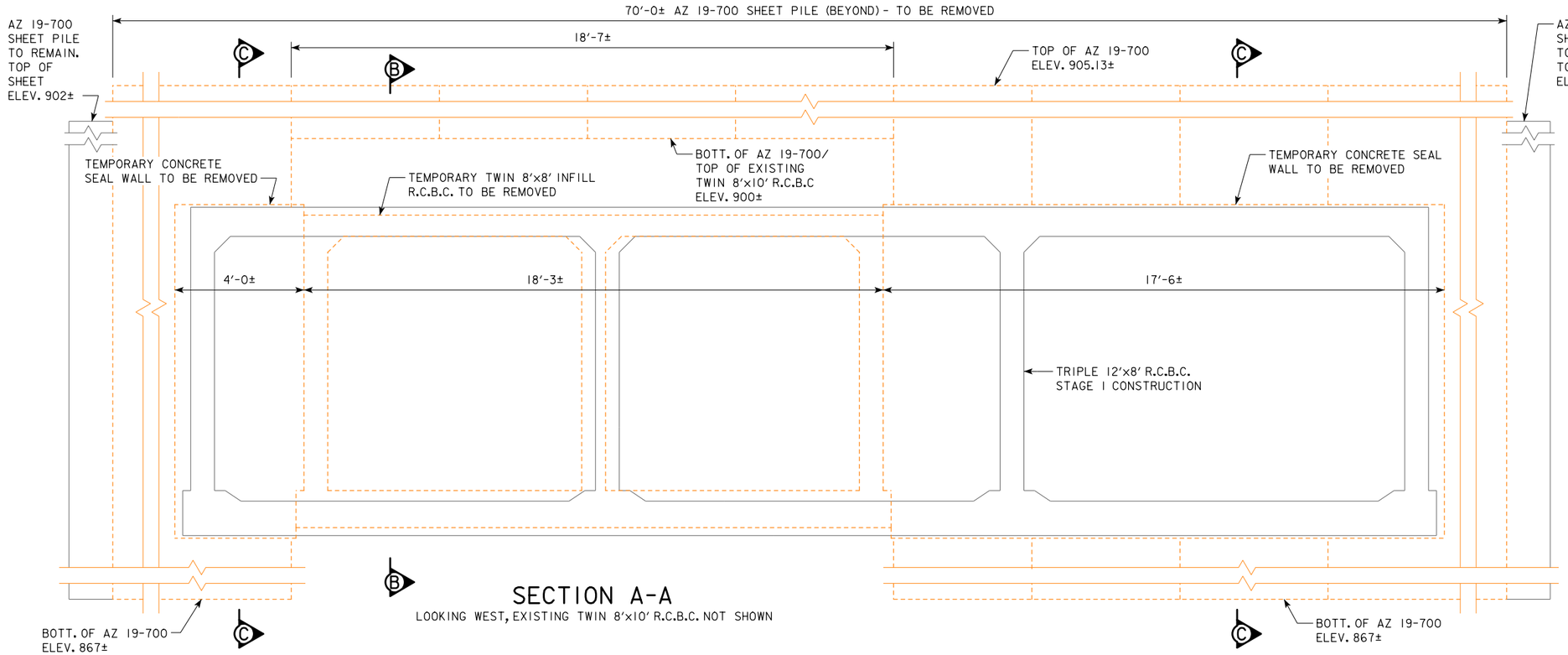
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 4 FILE NO. 30451 DESIGN NO. 818

DESIGN TEAM SHUCK-BRITSON INC. 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 S.B.I. NO. 109.0051.01 POLK COUNTY PROJECT NUMBER IM-NHS-035-4(219)93--03-77 SHEET NUMBER 4

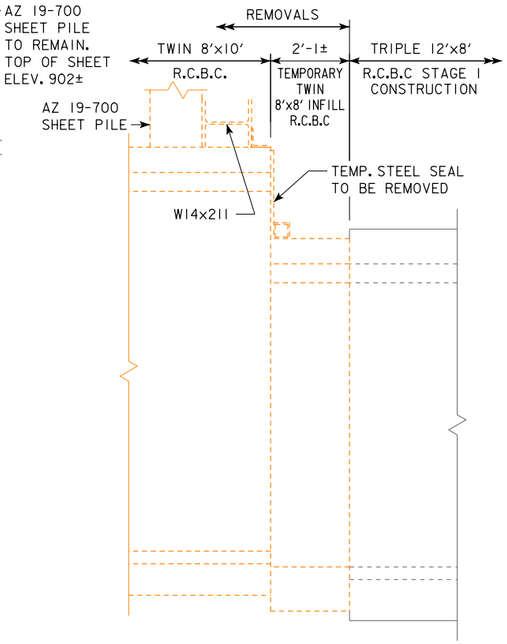
11/20/2018 2:55:39 PM V8i_IDOTBridge pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703503004\BRPrelim\k77035140_V01.str TSL_77_0140_228_B 11x17_pdf.pltcfg

CHANGED BY ADDENDA

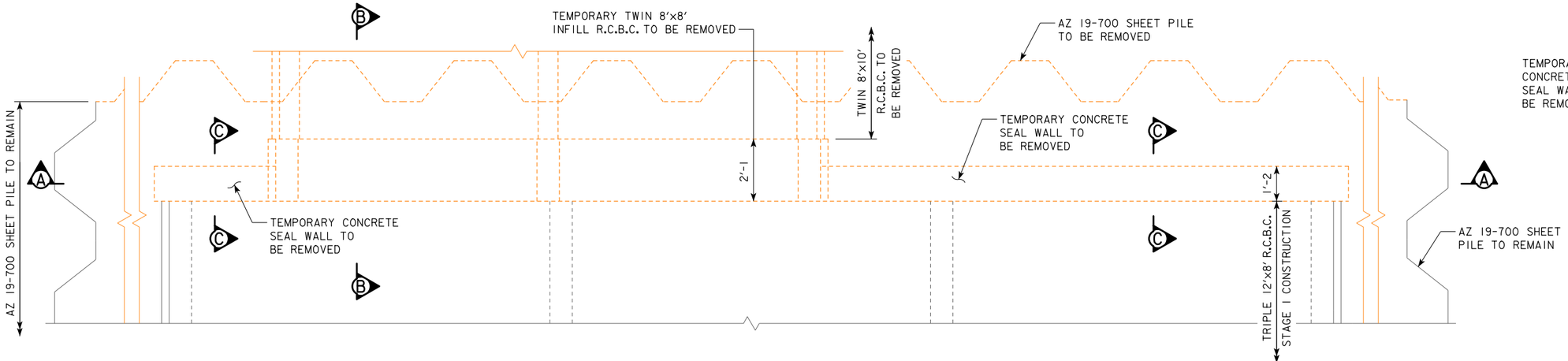


SECTION A-A

LOOKING WEST, EXISTING TWIN 8'x10' R.C.B.C. NOT SHOWN

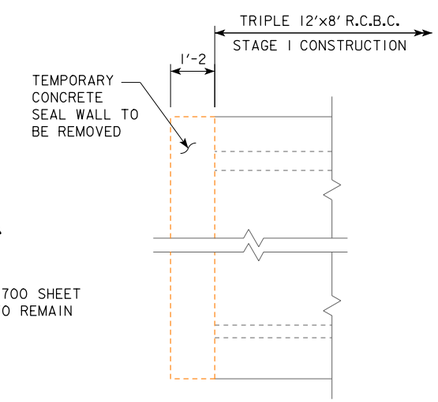


SECTION B-B



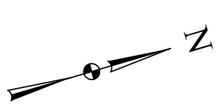
PLAN AT LIMITS OF STAGE I CULVERT CONSTRUCTION

SHOWING REMOVALS



SECTION C-C

AZ 19-700 SHEET PILE NOT SHOWN



NOTES:
SEE SITUATION PLAN FOR LIMITS OF REMOVAL OF EXISTING TWIN 8'x10' R.C.B. CULVERT.

TEMPORARY TWIN 8'x8' INFILL R.C.B.C AND TEMPORARY CONCRETE SEAL WALLS ARE NOT MECHANICALLY CONNECTED TO EITHER EXISTING TWIN 8'x10' R.C.B.C. OR EXISTING TRIPLE 12'x8' R.C.B.C. STAGE I CONSTRUCTION.

THE CONTRACTOR SHALL TAKE APPROPRIATE CARE DURING REMOVALS TO PROTECT EXISTING STAGE I CONSTRUCTION WHICH IS TO REMAIN.

INDICATES ITEMS TO BE REMOVED.

DESIGN FOR 0° SKEW

TRIPLE 12'-0 x 8'-0 x 32'-0 R.C.B. CULVERT - STAGE 2

REMOVAL DETAILS

STA. 309+87.00 ℄ I-35 — OCTOBER 2018

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 4 — FILE NO. 30451 — DESIGN NO. 818

DESIGN TEAM SHUCK-BRITSON 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 — S.B.I. NO. 109.0051.01 — POLK COUNTY — PROJECT NUMBER IM-NHS-035-4(219)93--03-77 — SHEET NUMBER 5

11/20/2018 4:45:21 PM V8i_IDOTBridge pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703503004\BRFinal\Consultant\(219) RCB Triple 12x8 Stage 2\Polk 818\CADD\BRG_77035219.dgn 770818S004 11x17_pdf.pltcfg

CHANGED BY ADDENDA

LEGEND

$-H_2O-$	WATER
— DRY	DRY
-◁	PLUGGED
M—	MOISTURE
■	SHELBY
■	BLOW COUNT
▬	DENS. CORE
Ⓢ	SAMPLE

BLOW COUNT
LAYER - NO. BLOWS
B2 ■ 5

SOILS BOOK NO. _ _ _ _ _

	SOIL REMEDIATION AREA
	LIMESTONE (LS.)
	BROKEN & WEATHERED LS.
	SANDSTONE
	SHALE
	SANDY SOIL
	DIAMOND CORE
	SAND
	GRAVELLY SAND
	BOULDERS

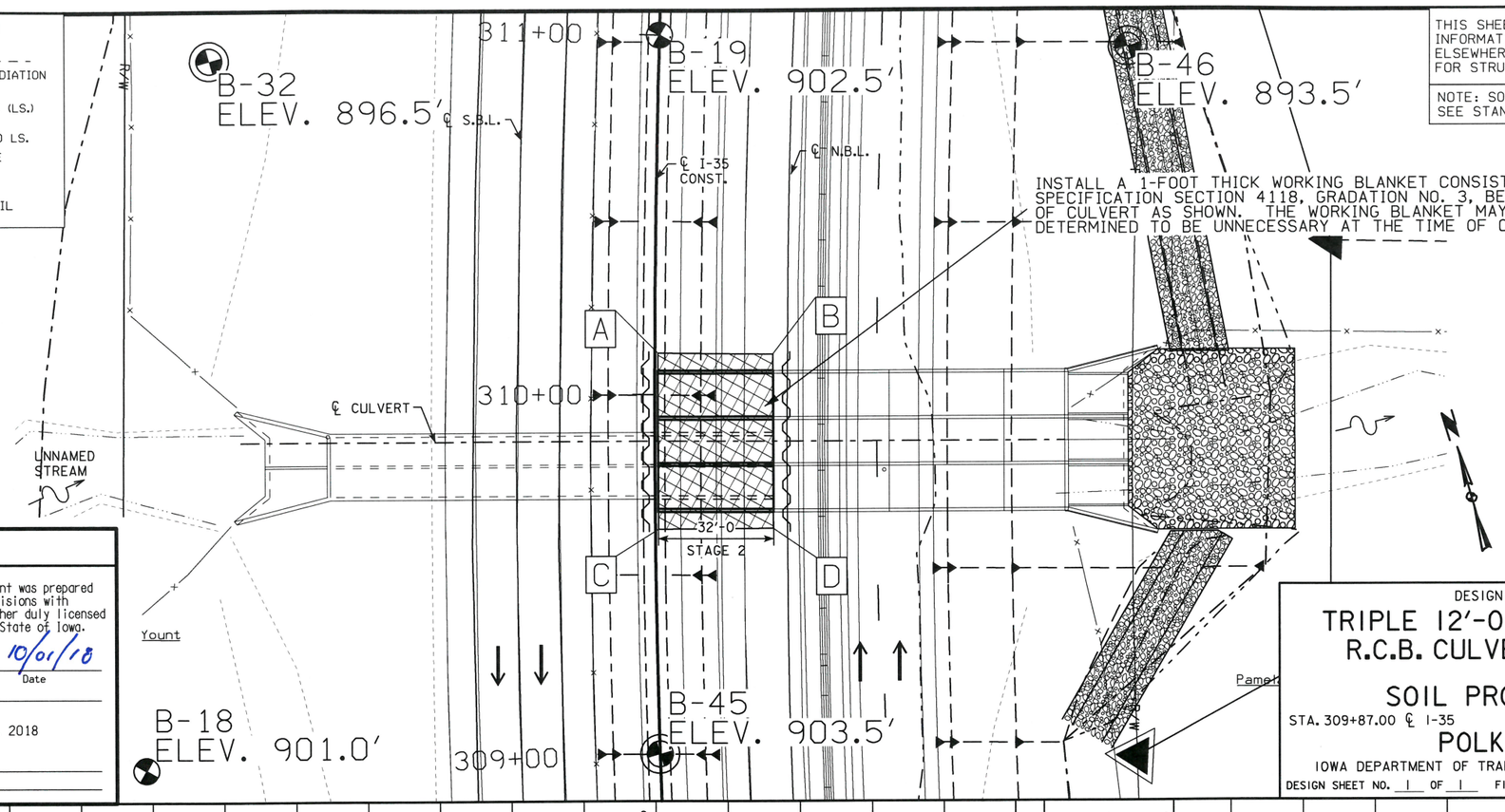
X.X -INDICATES LAYER THICKNESS (ft.)

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

LOCATION

I-35 OVER TRIBUTARY A
TO FOURMILE CREEK
T-80 N R-23 W
SECTION 18
DOUGLAS TOWNSHIP
POLK COUNTY
404 PERMIT #XXXX-XXX
LAT 1619254.08
LONG 634733.16
FHWA No. 700770



POINT	STATION	OFFSET
A	310+11.5	RT.0.9
B	310+11.5	RT.32.7
C	309+62.5	RT.0.9
D	309+62.5	RT.32.7

0 FEET 40

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER MATTHEW D. CUSHMAN 20478 IOWA

I hereby certify that this engineering document was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly licensed Professional Engineers under the laws of the State of Iowa.

Signature: Matthew D. Cushman Date: 10/01/18

MATTHEW D. CUSHMAN
Printed or Typed Name

My license renewal date is December 31, 2018

Pages or sheets covered by this seal: SPS.1

DESIGN FOR 0° SKEW

TRIPLE 12'-0 x 8'-0 x 32'-0 R.C.B. CULVERT - STAGE 2

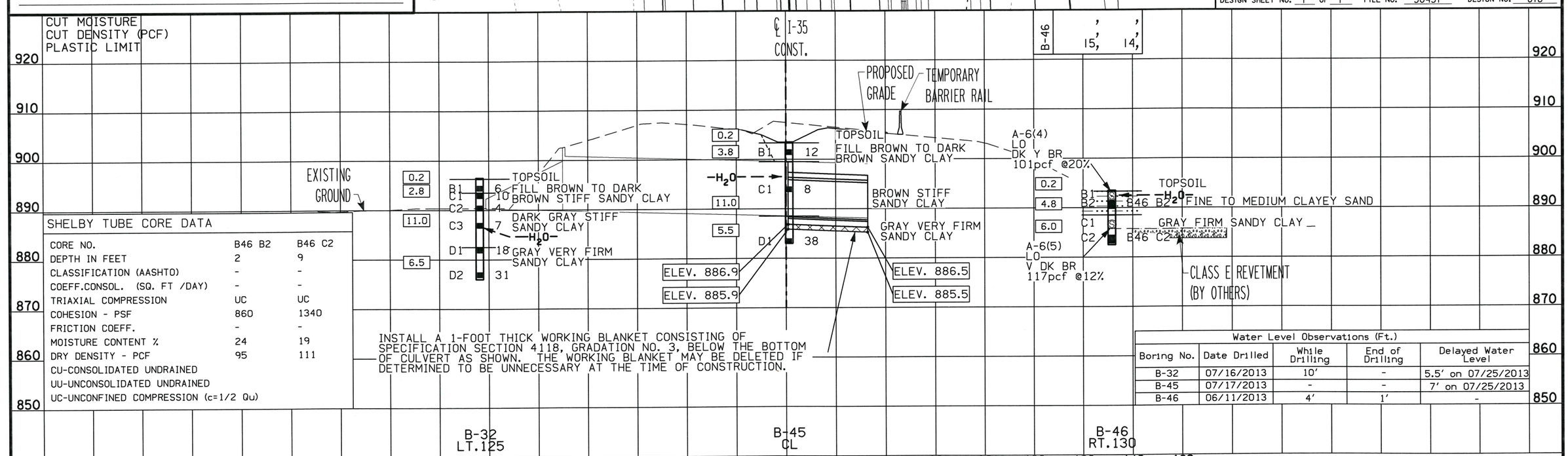
SOIL PROFILE SHEET

STA. 309+87.00 ℄ I-35

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30451 DESIGN NO. 818



SHELBY TUBE CORE DATA

CORE NO.	B46 B2	B46 C2
DEPTH IN FEET	2	9
CLASSIFICATION (AASHTO)	-	-
COEFF.CONSOL. (SQ. FT /DAY)	-	-
TRIAXIAL COMPRESSION	UC	UC
COHESION - PSF	860	1340
FRICTION COEFF.	-	-
MOISTURE CONTENT %	24	19
DRY DENSITY - PCF	95	111

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

Water Level Observations (Ft.)

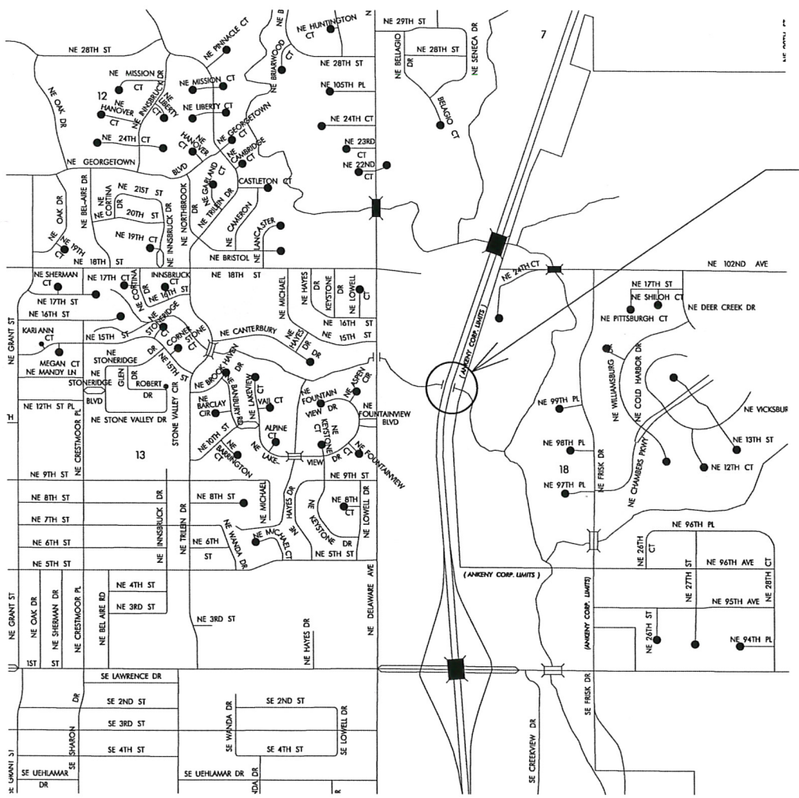
Boring No.	Date Drilled	While Drilling	End of Drilling	Delayed Water Level
B-32	07/16/2013	10'	-	5.5' on 07/25/2013
B-45	07/17/2013	-	-	7' on 07/25/2013
B-46	06/11/2013	4'	1'	-

FILE NO. 30451	ENGLISH	DESIGN TEAM Snyder & Associates\Terracon	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER SPS.1

2:35:52 PM 10/1/2018 kekausalik N:\Projects\2013\08135006\CAD\SPS\k77035140 (818).SPS

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
C Sheets	**Quantities and General Information**
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	Interstate-35 Plan View
G Sheets	**Survey Sheets**
G.1 - 2	Reference Ties and Bench Marks
G.3 - 12	Horizontal Control Tab. & Super for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
* J.1	Tabulation of Coordinated Operations
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3	Staging and Traffic Control Sheets
	* Color Plan Sheets



DESIGN NO. 818

NO MILEAGE SUMMARY

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

LICENSED PROFESSIONAL ENGINEER
JOHN W. HALDEMAN
15808
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

J. W. Haldeman 09/18/18
John W. Haldeman, P.E. Date

License Number 15808

My License Renewal Date is December 31, 2018

Pages or sheets covered by this seal:
A.1, C.1, D.1-D.2, G.1-G.12, J.1-J.3

FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER A.1

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2402-0425040	FLOODED BACKFILL	CY	53.3	
2	2402-0875150	COMPACTION WITH MOISTURE CONTROL (STRUCTURES)	CY	365.4	
3	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1	

100-1D
10-18-05

PROJECT DESCRIPTION

This project involves Stage 2 of the triple 12' x 8' box culvert under the northbound I-35 roadway. Stage 1 of the triple 12' x 8' box culvert was completed in 2018. Stage 3 of the triple 12'x 8' box culvert shall take place the following year and be construction by others. Refer to the NHS-035-4(198)92--11-77 I-35 Northbound Paving Project for paving, traffic control, staging, TBR, sign removal, erosion control, etc.

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
DR-111	04-17-18	Box Culvert (Backfill)
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
EW-402	04-18-17	Temporary Stream Diversion

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2402-0425040	FLOODED BACKFILL
		REFER TO TAB 104-4 FOR QUANTITIES
		REFER TO SUPPLEMENTAL SPECIFICATION SS-15003 "BACKFILLING AND COMPACTION OF PIPE AND REINFORCED BOX
		CULVERTS BY FLOODING", DATE:10/20/2015
2	2107-0875100	COMPACTION WITH MOISTURE CONTROL (STRUCTURES)
		REFER TO TABULATION 104-4 FOR QUANTITIES
3	2418-0000010	TEMPORARY STREAM DIVERSION
		DRAINAGE OF UNNAMED STREAM SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-1A	ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.1
102-5	EXISTING PAVEMENT	C.1
104-4	DRAINAGE STRUCTURES BY CULVERT CONTRACTOR	C.1
105-4	STANDARD ROAD PLANS	C.1
111-25	INDEX OF TABULATIONS	C.1

282-3
04-17-18

TEMPORARY STREAM CROSSING, CAUSEWAY, OR EQUIPMENT PAD

Standard Road Plan EW-401 is listed in Tabulation 105-4; however, it is included for information purposes only since it is an option. No quantities associated with constructing EW-401 are included in any bid items.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Regional, Permit No. 2017-0354. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

262-5
10-18-05

UTILITIES (POINT 25 PROJECT)

This is a POINT 25 project and is subject to the provisions of IAC 761-115.25.

104-4
10-20-09

DRAINAGE STRUCTURES BY CULVERT CONTRACTOR

* Not a Bid Item

Location	Design Number	Size	Kind	Lgth. New Const.	No. of Aprons	Flow Line Elevation				Dimensions - Lin. Ft.				Skew Ahead		By Road Contractor						Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks
										Total		Extensions		Degrees		Dike					Comp. Backfill				
																Rt. / Lt.		Location Station	Top. Elev.	Type		(A)	(B)	(A+B)	
		Ft.		Lin. Ft.		Left	Right	Other	Other	Left	Right	Left	Right	Left	Right						Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	
309+87.00	818	12X8	RCBC	32		888.05	887.41				32		32								365.4	53.3		53.3	

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
										IN		IN		IN		IN					
1	POLK	I-035	1	92.65	93.84	2008		IM-35-4-(131)92--13-77	HMA	2	HMA	2			MIL	2	AMES MINE	C.LST.			WIDENING VARIES
2	POLK	I-035	1	92.65	93.84	2008	W	IM-35-4-(131)92--13-77	HMA	2	HMA	2					AMES MINE	C.LST.			
3	POLK	I-035	1	92.65	93.84	1988		IR-35-3(49)87	AAC	4							AMES MINE	C.LST.			
4	POLK	I-035	1	92.65	93.84	1965		I-35-4(11)93	PCC	10			GSB	4			CHRISTENSEN	GRAVEL	1		

SURVEY SYMBOLS

- IN Storm Sewer Intake
- FW Wire Fence
- INB Storm Sewer Beehive Intake
- PR Electic Riser Pole
- GP Guard Post (Less Than 4 Posts)
- SL Speed Limit Sign
- SI Sign
- TIL Tile Line
- GDL Guard Rail Steel
- LUM Luminaire
- UE Utility Elevation
- WV Water Valve
- GPR Guard Post (4 or More Posts)
- FP Filler Pipe
- OUT Tile Outlet
- MIS Miscellaneous
- PPA Power Pole Co. 1
- AST Above Ground Storage Tank
- LP L.P. Tank
- FLG Flag Poles
- WHD Water Hydrant
- WEL Well
- MH Utility Access (Manhole)
- TPD Telephone Pedestal
- MM Mile Marker Post
- FCL Chain Link and Security Fence
- EB Electrical Box
- TV Satelite TV Dish
- UB Utility Box
- UST Underground Tank
- GV Gas Valve
- WHU RV Water Hook Up
- SEP Septic Tank
- FHD Fire Hydrants
- FWD Wood Fence
- RET Retaining Walls
- D Centerline Draw or Stream (Down)
- BNK Stream Bank
- RIP Rip-Rap
- EW Edge of Water
- DU Centerline Draw or Stream (Up)
- ENT Centerline BL of Entrance
- ENU Edge Unpaved Entrance & Parking
- EG Edge of Gravel Road
- SNP Unpaved Shoulder
- DIK Centerline of Dike or Dam

- FO2 FOB Underground Fiber Optic Co. 2
- T1 TLA Underground Telephone Line Co. 1
- E1 ELA Underground Electric Line Co. 1
- FO FOA Underground Fiber Optic Co. 1
- W WLA Underground Water Line Co. 1
- St.S.2 STB Storm Sewer Line Co. 2
- San. SAA Sanitary Sewer Line Co. 1
- E2 ELB Underground Electric Line Co. 2
- TV TVA Underground TV Cable Co. 1
- FO3 FOC Underground Fiber Optic Co. 3

UTILITY LEGEND

This is a POINT 25 Project and is subject to provisions of IAC 761-115.25

Mid American Electric

Mid American Electric

E1
Mid American Energy - Electric
Derek Degen
200 SE 3rd Street
Des Moines, IA 50309
515-242-3918
515-330-8201 (Mobile)
dmdegen@midamerican.com

E2
Mid Amer. - Electric (Traffic Signals)
Dan Adams
10510 Douglas Avenue
Urbandale, IA 50322
515-252-6565
515-252-6701 (Office)
DDAdams@midamerican.com

FO
City of Ankeny - Fiber
Tom Dozler
220 W. 1st Street
Ankeny, IA 50023
(515) 669-0420
TDozler@AnkenyIowa.gov

FO2
Iowa Comm. Network (ICN) - Fiber
Mike Broderick
400 E. 14th Street
Des Moines, IA 50319
(515) 725-4610
mike.broderick@iowa.gov

FO3
Mediacom - Fiber
Al Roberts
2205 Ingersoll Avenue
Des Moines, IA 50312
(515) 202-8669
aroberts@mediacomcc.com

FO4
CenturyLink - Fiber
Robin DePenning
210 S 3rd Street
Ames, IA 50010
(515) 233-5149
(515) 451-1538 (mobile)
robin.depenning@centurylink.com

FO5
Iowa DOT - ITS
Tony Taylor
515-239-1902
tony.taylor@dot.iowa.gov

FO6
Windstream - Fiber
Michael Ferm
3630 109th Street
Urbandale, IA 50322
(515) 309-0316 (Office)
515-229-4986 (Mobile)
Michael.j.Ferm@windstream.com

FO7
Nexgen Communications
Ryan Rolwes
3405 SE Crossroads Drive, Ste V
Grimes, IA 50111
(515) 369-7131 (Office)
(515) 401-7979 (Mobile)
ryan@nexgencom.com

FO8
Aureon Technology (Formerly INS)
Jeff Klocko
7760 Office Plaza Drive South
West Des Moines, IA 50266
(515) 830-0445
jeff.klocko@aureon.com

FO9
Unite Private Networks (UPN)
Jeff Hensley
13300 Hickman Road, Suite 115
Clive, IA 50325
(515) 243-2241 (Office)
(515) 419-4838 (Mobile)
jeff.hensley@upnfiber.com

G
Mid American Energy - Gas
Derek Degen
200 SE 3rd Street
Des Moines, IA 50309
515-242-3918
515-330-8201 (Mobile)
dmdegen@midamerican.com

G2
Northern Natural Gas
Tom Dickson
1120 Centre Point Drive
Suite 400
Mendota, MN 55120
(651) 456-1777
(763) 234-2970 (mobile)
Tom.Dickson@nngco.com

San. / San. 2
City of Ankeny - Sanitary Sewer
Roger McFarland
220 W. 1st Street
Ankeny, IA 50023
(515) 460-3747
rmcfarland@AnkenyIowa.gov

T1
CenturyLink - Telephone
Robin DePenning
210 S 3rd Street
Ames, IA 50010
(515) 233-5149
(515) 451-1538 (mobile)
robin.depenning@centurylink.com

TV
Mediacom - Television
Al Roberts
2205 Ingersoll Avenue
Des Moines, IA 50312
(515) 202-8669
aroberts@mediacomcc.com

W
City of Ankeny - Water
Shawn Buckner
220 W. 1st Street
Ankeny, IA 50023
(515) 979-6987
sbuckner@ankenyiowa.gov

W2
Des Moines Water Works
Carla Schumacher
2201 George Flagg Parkway
Des Moines, IA 50321
(515) 323-6227
cschumacher@dmww.com

St. S
City of Ankeny - Stormwater
Jared Bright
220 W. 1st Street
Ankeny, IA 50023
(515) 229-9539
jbright@ankenyiowa.gov

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

Sta. 309+80.22
Twin 8' x 10'
DA=1304 Ac R

New Fiber Optics Installation
Coordinate with Project
ITS-035-4(239)--25-77

Sta. 309+80.22
Twin 8' x 10'
DA=1304 Ac R
(Remove 54.5' Plus headwall)
Install Triple 12'x8'x81' RCBC
Stage 1 Construction
(Remove 33')
Install Triple 12'x8'x33' RCBC
Stage 2 Construction

307 308 309 310 311 312

℄ I-35 Construction

RCB Stage 3 - Future Construction

CS Sta 309+23.58

PI Sta 310+63.64

Existing Southbound I-35 (UAC)

RCB Stage 2

Remove existing box
culvert to limits
idicated in plans

New Northbound I-35 (UAC)

Pavment (BY OTHERS)

Pavement (BY OTHERS)

RCB Stage 1

Subdrain (BY OTHERS)

Grading Limits

SCS PI Sta 305+14.32
Δ = 24° 53' 19.19" (RT)
Theta = 4° 08' 56.42"
Ls = 420.00
Ts = 850.48
Es = 72.37
P = 2.53
K = 209.96
Xc = 419.78
Yc = 10.13
LT = 280.08
ST = 140.07
LC = 419.90

Curve Data
Δ = 16° 35' 27.42" (RT)
T = 422.83
L = 839.74
R = 2,900.00
E = 30.66
e = 5.6%
L = 420.00
x = 188.00

Rock Flume Installed
in the Phase 1
(140 Grading Project)

Rock Flume Installed
in the Phase 1
(140 Grading Project)

Proposed Right-Of-Way
Verify Acquisition Prior
to Encroachment

Abandoned Fiber
(By Others)
Coordinate with Project
ITS-035-4(239)--25-77

INTERSTATE 35

0 20
FEET

FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER D.2

9:29:50 AM 9/19/2018 V8i_IDOTRoadJ:\2009_projects\109.0051\Design_(219)_RCB_Stage_2\SHT_77035219_D02.dgn

GENERAL INFORMATION

HORIZONTAL DATUM BASED ON IOWA STATE PLANE SOUTH,SCALED FROM POINT #23 (HOWARD R. GREEN) WITH A SCALE FACTOR OF .999955522

VERTICAL DATUM IS NAVD88, WITH ELEVATIONS ESTABLISHED VIA DIGITAL LEVEL LOOP, ORIGINATING ON IDOT BM #827 (ELEV=936.820) FROM IDOT PROJECT #

BENCHMARKS ELEVATION

No. 9 Sta. 335+38.74 152.88' LT SET 1"x36" SMOOTH BAR 10' E OF WEST ROW LINE 250' +/- N OF MILE MARKER 93.8 ON I-35----------919.38

No. 10 Sta. 322+64.11 148.31' LT SET 1"x36" SMOOTH BAR, 10' +/- E OF WEST ROW LINE, 25' +/- S OF MILE MARKER 93.6 AND IN LINE WITH 18" RCP----------913.93

No. 11 Sta. 309+88.71 91.00' LT SET CUT X IN TOP OF N CORNER OF INLET HEADWALL OF RCB UNDER I-35 MILE MARKER 93.35----------902.48

No. 12 Sta. 302+98.61 115.95' LT SET 1"x36" SMOOTH BAR IN WEST ROW, 15' +/- S OF BLUE EAST EXIT 92 SIGN 100' +/- N OF MILE MARKER 93.2----------911.51

No. 13 Sta. 291+97.94 173.56' LT SET 1"x36" SMOOTH BAR IN WEST ROW 5' E OF WEST ROW LINE AND 100' +/- N OF MILE MARKER 93.0----------918.35

No. 14 Sta. 273+75.10 599.90' LT SET 1"x36" SMOOTH BAR AT NW QUAD ON 1ST ST AND SB I35 OFF RAMP, 50' N OF LIGHT POLE----------922.09

No. 15 Sta. 270+16.50 1040.74' RT SET 1"x36" SMOOTH BAR SE QUAD CREEKVIEW AND 1ST ST, 50' E OF HYDRANT, DUE N OF OF E EDGE OF CREEKVIEW----------896.74

No. 16 Sta. 258+65.45 178.22' LT SET 1"x36" SMOOTH BAR W OF I35, JUST OFF OF SB ON RAMP, 25' E OF ROW LINE AT MILE MARKER 92.4----------911.96

No. 17 Sta. 246+77.70 159.26' LT SET 1"x36" SMOOTH BAR IN WEST ROW OF I35, 10' W OF ROW FENCE DIRECTLY E OF MILLPOND OIL PUMP, 150' +/- S OF MM 92.2----------915.70

No. 18 Sta. 238+37.02 147.41' LT SET 1"x36" SMOOTH BAR IN WEST ROW I-35, 25' +/- N OF MILE MARKER 92.0 AT TOP OF BACKSLOPE----------914.58

No. 19 Sta. 227+77.41 130.80' LT SET 1"x36" SMOOTH BAR IN WEST ROW I35, 25' +/- N OF MILE MARKER 91.8, DUE WEST OF EXIT 90 SIGN----------912.04

No. 20 Sta. 216+42.77 104.94' LT SET CUT X IN NORTH CORNER INLET HEADWALL ON RCB UNDER I35, 30' +/- SOUTH OF MILE MARKER 91.6----------908.47

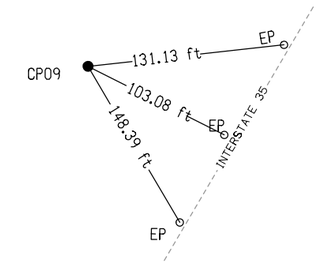
No. 21 Sta. 206+65.30 95.44' LT SET CUT X----------922.61

CONTROL POINT INFORMATION

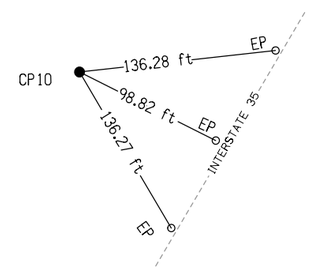
CONTROL POINT	NORTHING	EASTING	DESCRIPTION
CP1	624695.50	1619613.00	SET PK NAIL IN EAST SHOULDER OF NB I35, EVEN WITH NORTH BUILDING LINE OF SLUMBERLAND.
CP2	629077.21	1619522.66	SET PK NAIL AT INTERSECTION OF PAINT STRIPING FOR NB I35 AND 1ST. OFFRAMP
CP3	630972.41	1621730.68	SET PK NAIL IN SOUTH SHOULDER OF E.1ST ST., 600'+/- EAST OF INTERSECTION WITH FRISK DRIVE
CP4	632475.57	1619281.93	SET PK NAIL AT INTERSECTION OF PAINT STRIPING FOR NB I35 AND 1ST ST. ON RAMP
CP5	637143.11	1620134.70	SET PK NAIL IN EAST SHOULDER OF NB I35 AT SPOT WHERE 18TH ST. REST AREA OFFRAMP BEGINS.
CP6	632399.09	1619187.95	SET PK NAIL AT INTERSECTION OF PAINT STRIPING FOR SB I35 AND 1ST. ST. OFFRAMP
CP7	631034.95	1617875.84	SET GIN SPIKE IN TOP OF CURB ON EAST 1ST. ST, DUE SOUTH OF BURGER KING SIGN.
CP8	629401.77	1619402.36	SET PK NAIL AT INTERSECTION OF PAINT STRIPING FOR SB I35 AND 1ST. ST. ONRAMP.
CP9	637196.35	1619939.07	SET 1"X36" SMOOTH BAR, 10' EAST OF WEST ROW LINE, 250'+/- NORTH OF MILE MARKER 93.8.
CP10	635990.47	1619526.09	SET 1"X36" SMOOTH BAR, 10'+/- EAST OF WEST ROW LINE, 25'+/- SOUTH OF MILE MARKER 93.6 AND IN LINE WITH 18" RCP.
CP11	634760.19	1619167.08	SET CUT 'X' IN TOP OF NORTH CORNER OF INLET HEADWALL OF RCB UNDER I35 MILE MARKER 93.35
CP12	634060.99	1619025.89	SET 1"X36" SMOOTH BAR IN WEST ROW, 15'+/- SOUTH OF BLUE GAS EXIT SIGN, 100'+/- NORTH OF MILE MARKER 93.2.
CP13	632941.32	1619046.28	SET 1"X36" SMOOTH BAR IN WEST ROW, 5' EAST OF WEST ROW LINE, AND 100'+/- OF MILE MARKER 93.0.
CP14	631101.29	1618791.81	SET 1"X36" SMOOTH BAR AT NW QUAD ON 1ST. ST. AND SB I35 OFFRAMP, 50' NORTH OF LIGHT POLE.
CP15	630860.72	1620453.87	SET 1"X36" SMOOTH BAR IN SE QUAD OF CREEKVIEW AND EAST 1ST. ST., 50' EAST OF HYDRANT, DUE NORTH OF EAST EDGE OF CREEKVIEW.
CP16	629633.65	1619296.52	SET 1"X36" SMOOTH BAR, WEST ROW OF I35, JUST OFF OF SB ONRAMP, 25' EAST OF ROW LINE AT MILE MARKER 92.4.
CP17	628447.01	1619333.77	SET 1"X36" SMOOTH BAR IN WEST ROW OF I35, 10' WEST OF ROW FENCE, DIRECTLY EAST OF MILL POND OIL PUMP, 150'+/- SOUTH OF MILE MARKER 92.2.
CP18	627606.62	1619358.46	SET 1"X36" SMOOTH BAR IN WEST ROW OF I35, 25'+/- NORTH OF MILE MARKER 92.0 AT TOP OF BACKSLOPE.
CP19	626547.38	1619391.28	SET 1"X36" SMOOTH BAR IN WEST ROW OF I35, 25'+/- NORTH OF MILE MARKER 91.8, DUE WEST OF EXIT 90 SIGN.
CP20	625413.27	1619434.49	SET CUT 'X' IN NORTH CORNER INLET OF HEADWALL ON RCB UNDER I35, 50'+/- SOUTH OF MILE MARKER 91.6.
CP21	624436.07	1619459.21	SET CUT 'X' ON TOP OF INLET FLUME OF 48" RCP, WEST ROW OF I35, 100'+/- NORTH OF MILE MARKER 91.4.

NOTE:
BENCHMARK STATIONS AND OFFSETS ARE BASED ON THE I-35 CONSTRUCTION ALIGNMENT STATIONING, UNLESS OTHERWISE NOTED.

STA 335+38.74
SET 1"X36" SMOOTH BAR
XC=1619526.09, YC=635990.47



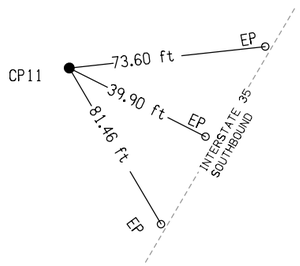
STA 322+64.11
SET 1"X36" SMOOTH BAR
XC=1619526.09, YC=635990.47



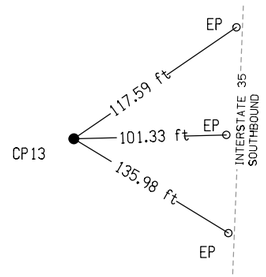
DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances unless otherwise noted.

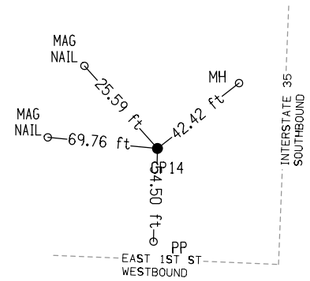
STA 309+88.71
SET CUT 'X'
XC=1619167.08, YC=634760.19



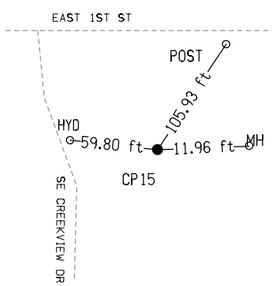
STA 291+97.94
SET 1"X36" SMOOTH BAR
XC=1619046.28, YC=632941.32



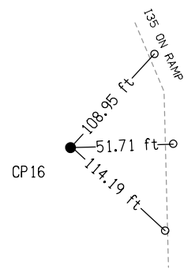
STA 273+75.10
SET 1"X36" SMOOTH BAR
XC=1618791.81, YC=631101.29



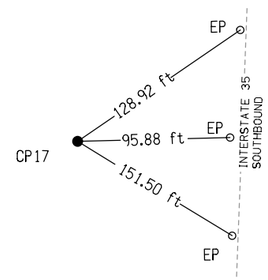
STA 270+16.50
SET 1"X36" SMOOTH BAR
XC=1620453.87, YC=630860.72



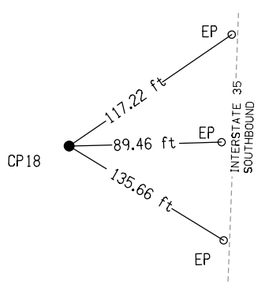
STA 258+65.45
SET 1"X36" SMOOTH BAR
XC=1619296.53, YC=629633.65



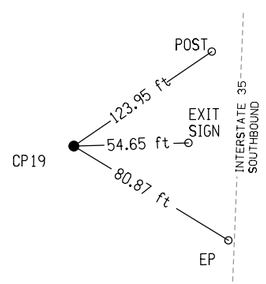
STA 246+77.70
SET 1"X36" SMOOTH BAR
XC=1619333.77, YC=628447.01



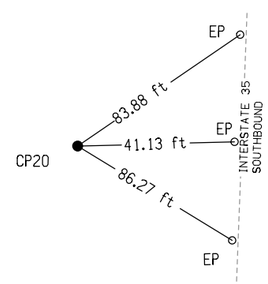
STA 238+37.02
SET 1"X36" SMOOTH BAR
XC=1619358.46, YC=627606.62



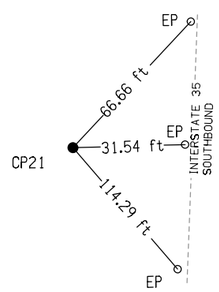
STA 227+77.41
SET 1"X36" SMOOTH BAR
XC=1619391.28, YC=626547.38



STA 216+42.77
SET CUT 'X'
XC=1619434.49, YC=625413.27

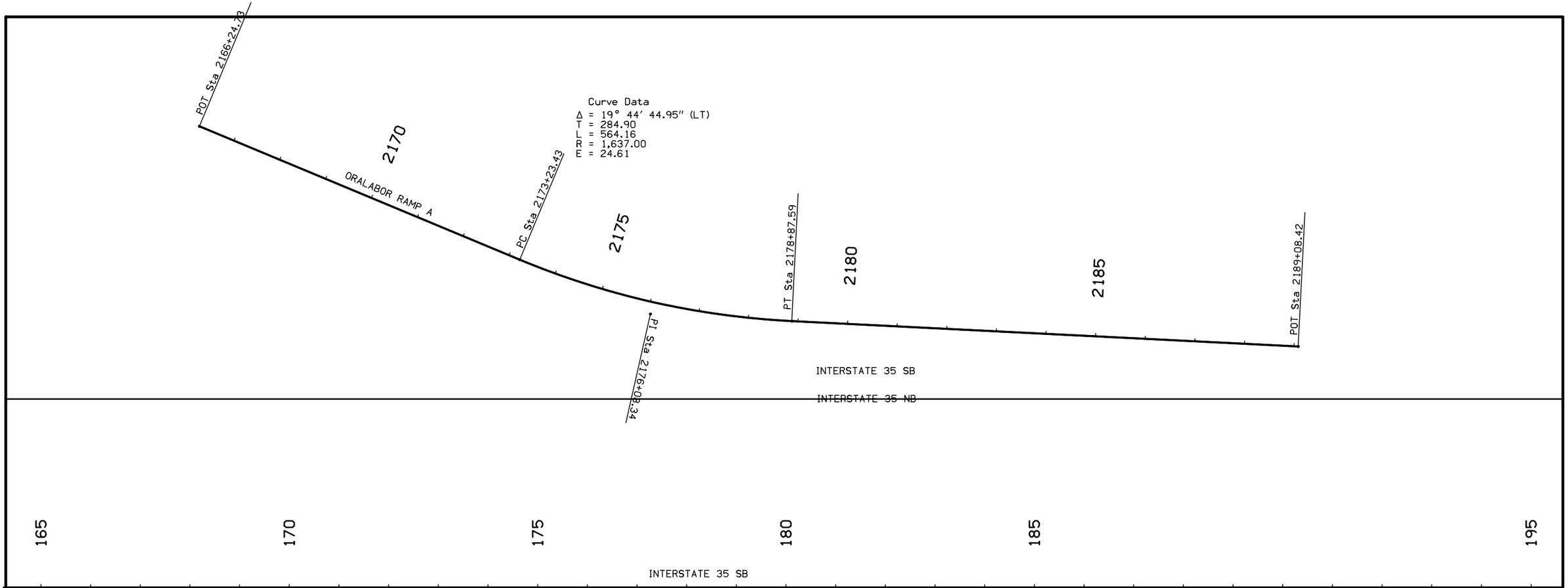


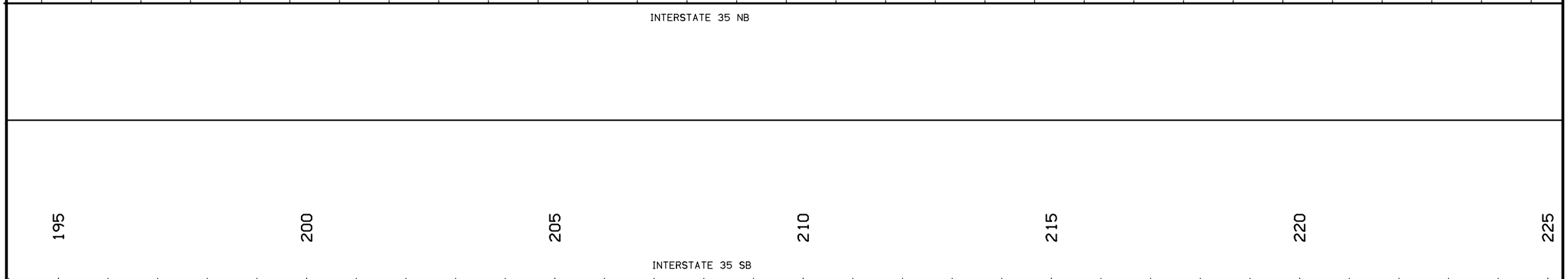
STA 206+65.30
SET CUT 'X'
XC=1619459.21, YC=624436.07

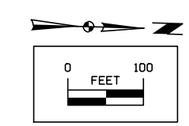


DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances unless otherwise noted.







FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER G.3

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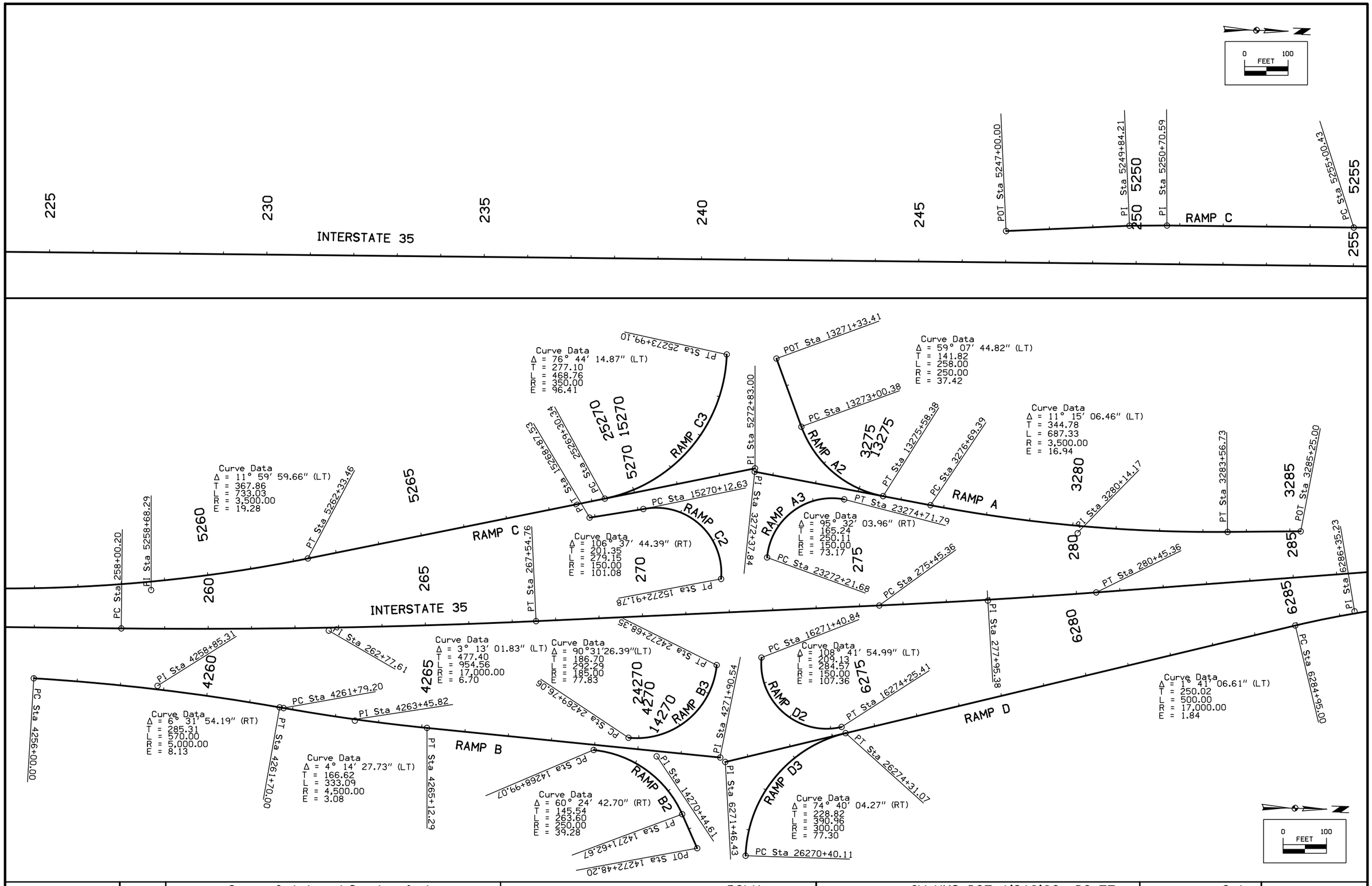

FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER G.4

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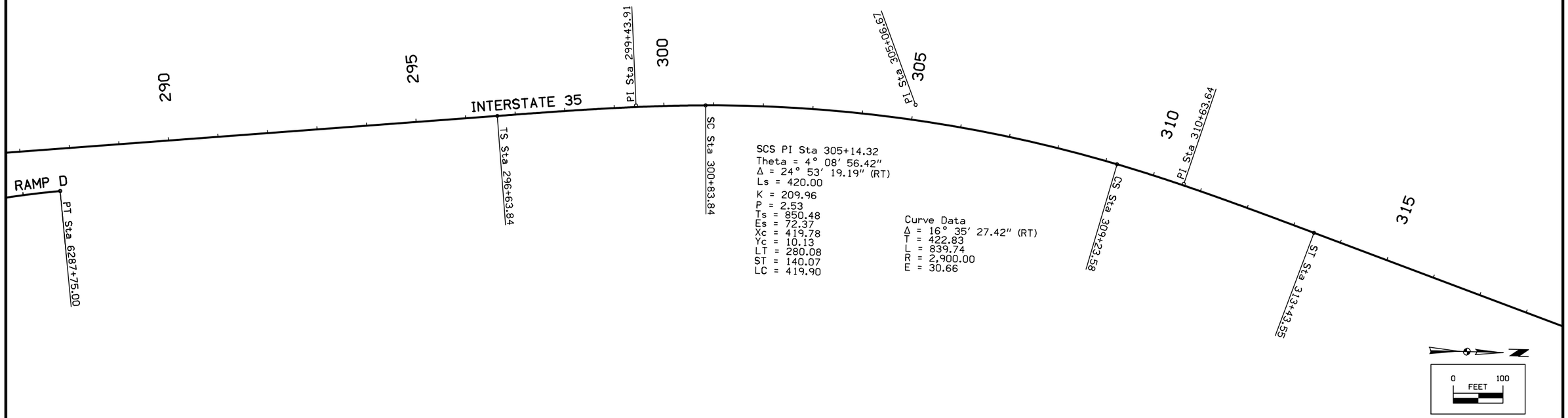

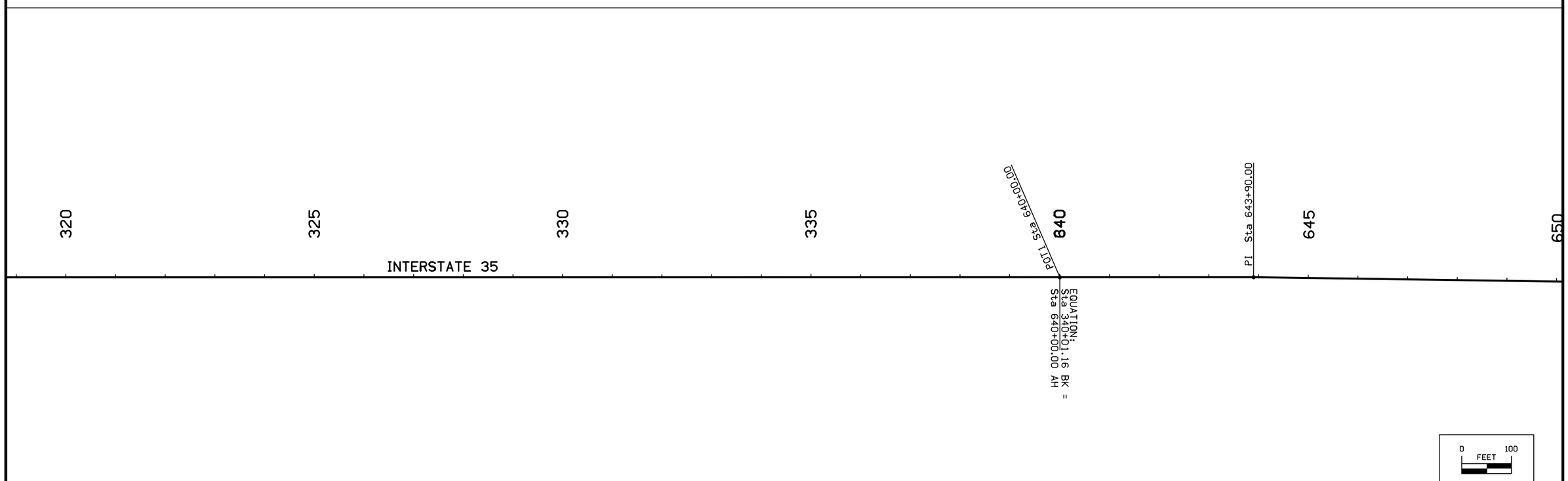

FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER G.5

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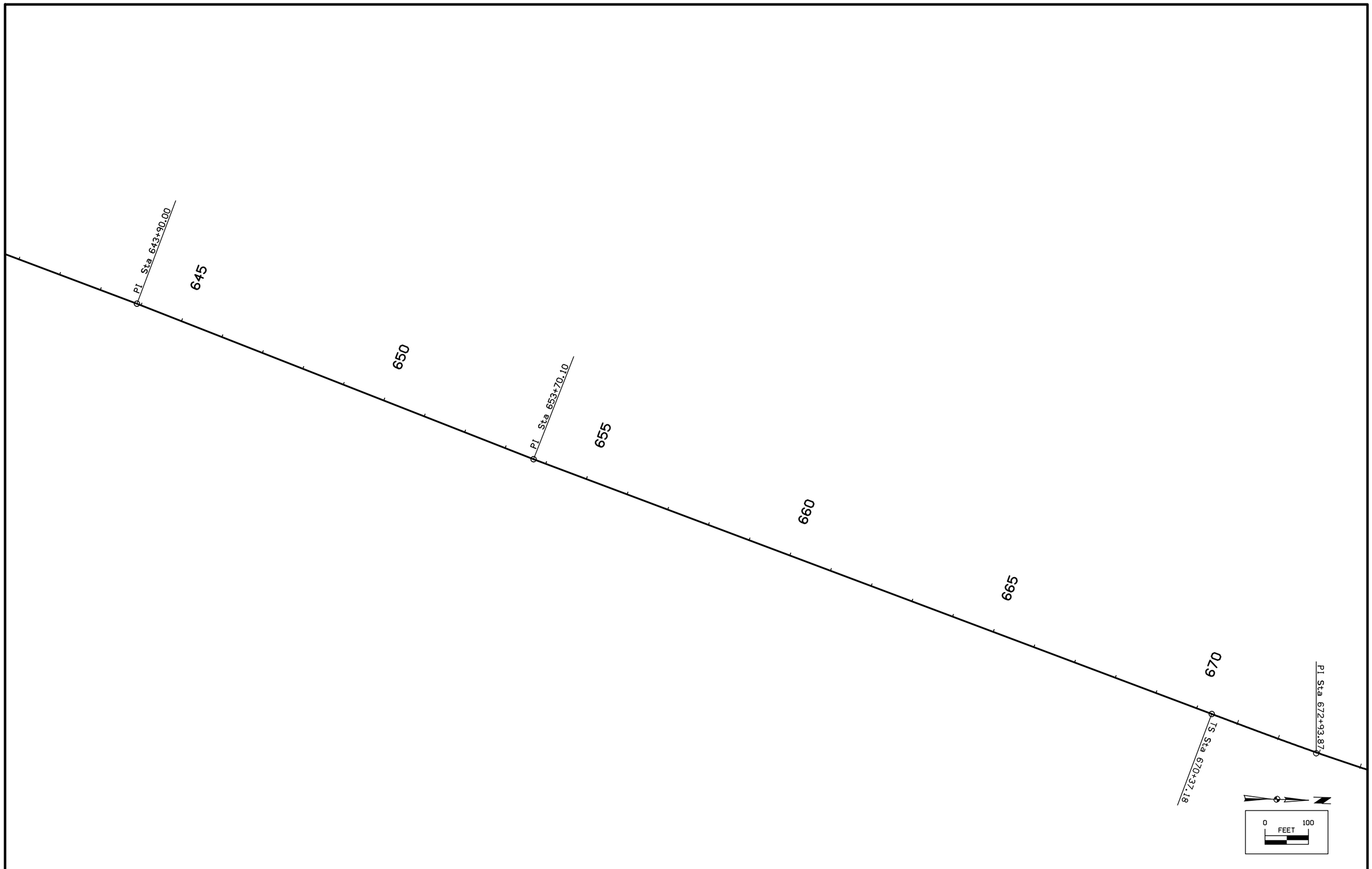

FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER G.6

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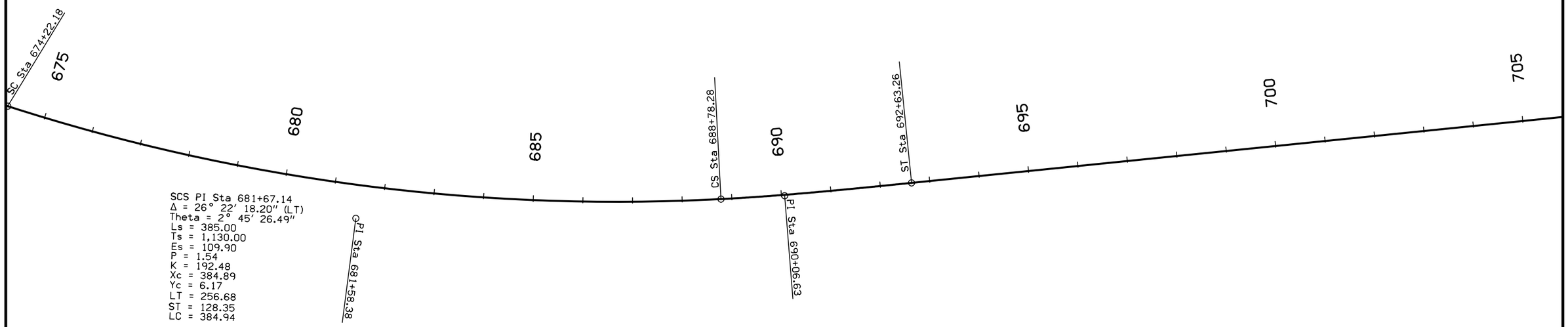

SCS PI Sta 681+67.14
Δ = 26° 22′ 18.20″ (LT)
Theta = 2° 45′ 26.49″
Ls = 385.00
Ts = 1,130.00
Es = 109.90
P = 1.54
K = 192.48
Xc = 384.89
Yc = 6.17
LT = 256.68
ST = 128.35
LC = 384.94

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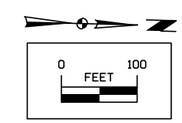
L = 1,456.10
R = 4,000.00
E = 67.18



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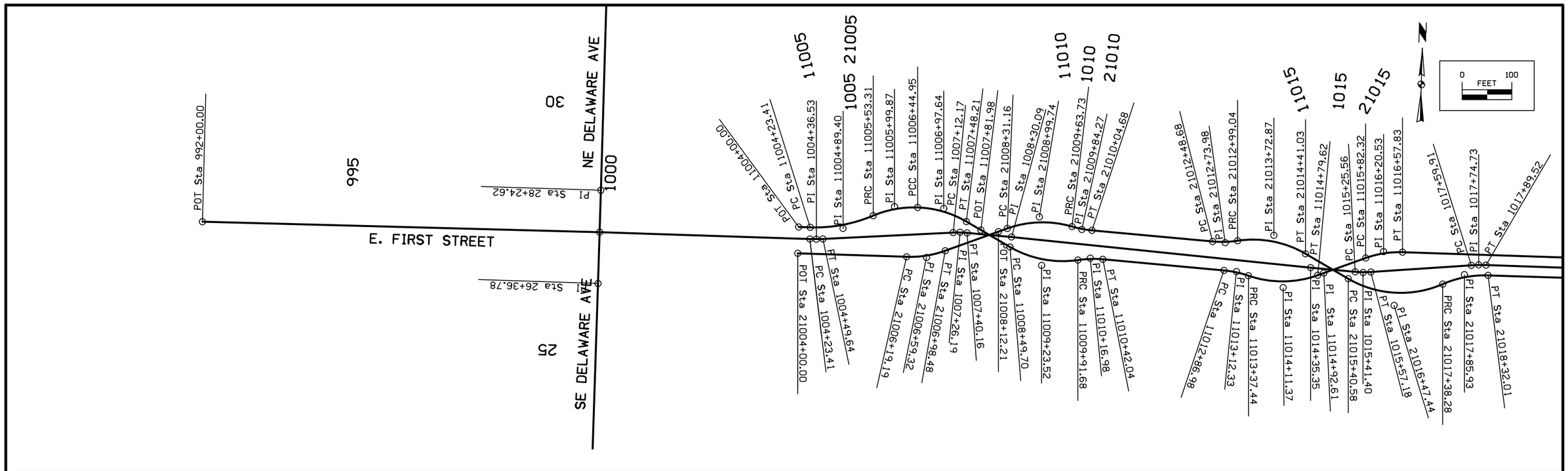

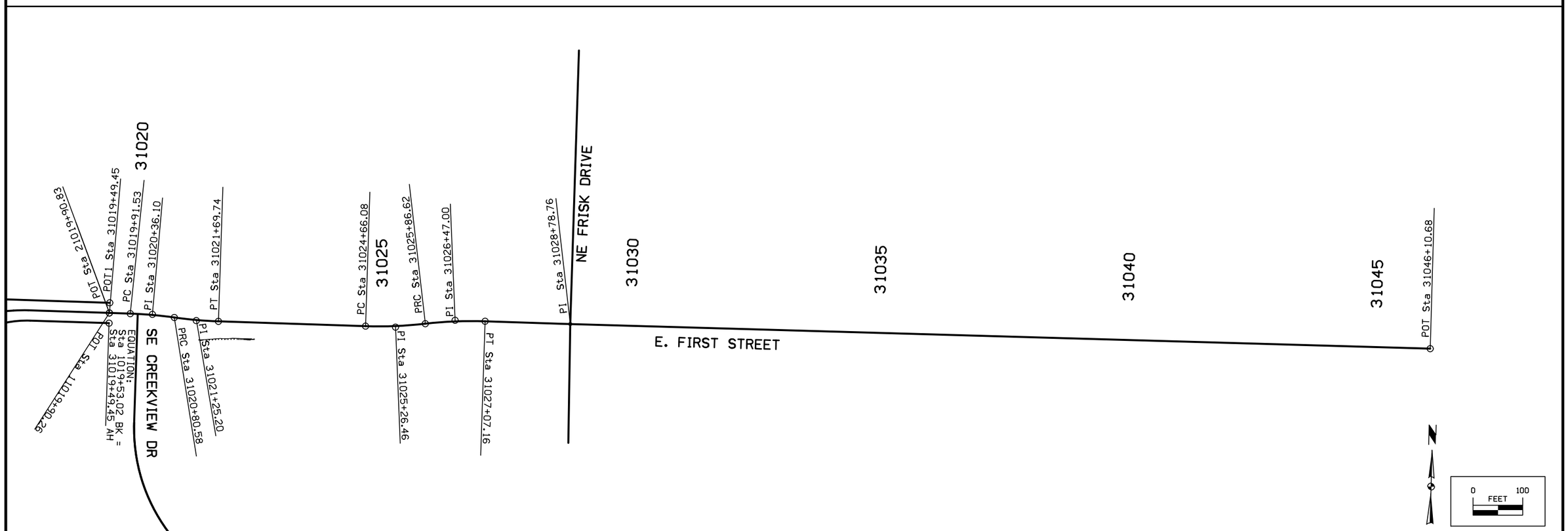

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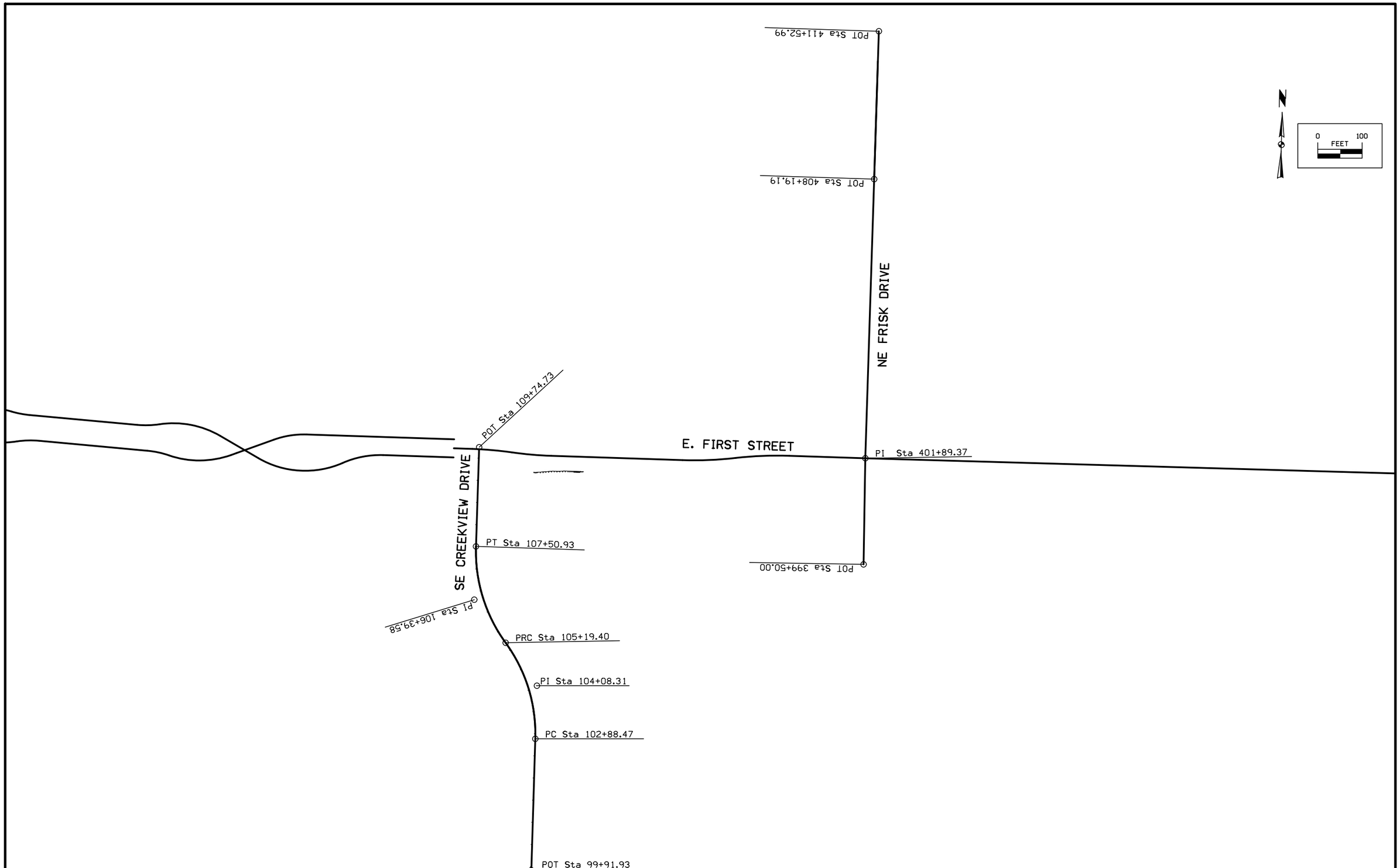


FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER G.9

9:31:43 AM 9/19/2018 V8i_IDOTRoadJ:\2009_projects\109.0051\Design_(219)_RCB_Stage_2\SHT_77035219_G09.dgn

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
POINT CL1	Interstate 35	108+32.89	614,606.26	1,619,704.72															
CURVE I35-1	Interstate 35							258+00.20	629,571.82	1,619,475.84	262+77.61	630,049.17	1,619,468.54	267+54.76	630,525.36	1,619,434.46			
CURVE I35-2	Interstate 35							275+45.36	631,313.94	1,619,378.03	277+95.38	631,563.32	1,619,360.18	280+45.36	631,812.07	1,619,335.01			
SPIRAL I35-3B	Interstate 35				296+63.84	633,422.32	1,619,172.05										300+83.84	633,840.99	1,619,139.87
CURVE I35-3	Interstate 35							300+83.84	633,840.99	1,619,139.87	305+06.67	634,263.65	1,619,127.85	309+23.58	634,672.14	1,619,237.01			
SPIRAL I35-3A	Interstate 35				309+23.58	634,672.14	1,619,237.01										313+43.55	635,072.08	1,619,364.85
POINT CL2	Interstate 35	640+00.00	637,583.23	1,620,234.91															
POINT CL3	Interstate 35	643+90.00	637,951.73	1,620,362.59															
POINT CL4	Interstate 35	653+70.10	638,873.15	1,620,696.66															
SPIRAL I35-4B	Interstate 35				670+37.18	640,448.35	1,621,242.43										674+22.18	640,814.07	1,621,362.61
CURVE I35-4	Interstate 35							674+22.18	640,814.07	1,621,362.61	681+58.38	641,520.49	1,621,569.89	688+78.28	642,254.42	1,621,512.07			
SPIRAL I35-4A	Interstate 35				688+78.28	642,254.41	1,621,512.07										692+63.26	642,637.00	1,621,469.54
CURVE I35-5	Interstate 35							710+42.10	644,401.58	1,621,244.70	716+07.01	644,961.95	1,621,173.29	721+71.08	645,526.56	1,621,154.85			
POINT CL5	Interstate 35	733+56.20	646,711.04	1,621,116.15															
POINT RAMPA1	RAMP A	3272+37.84	630,999.36	1,619,077.75															
CURVE RAMPA-1	RAMP A							3276+69.39	631,425.70	1,619,144.19	3280+14.17	631,765.96	1,619,199.84	3283+56.73	632,110.53	1,619,188.02			
POINT RAMPA2	RAMP A	3285+25.00	632,278.70	1,619,182.25															
POINT RAMPA21	RAMP A	13271+33.41	631,062.59	1,618,816.26															
CURVE RAMPA2-1	RAMP A							13273+00.38	631,124.01	1,618,971.52	13274+42.20	631,176.18	1,619,103.39	13275+58.38	631,316.14	1,619,126.28			
CURVE RAMPA3-1	RAMP A							23272+21.68	631,052.92	1,619,274.20	23273+86.92	631,063.74	1,619,109.32	23274+71.79	631,226.81	1,619,135.99			
CURVE RAMPB-1	RAMP B							4256+00.00	629,373.43	1,619,595.89	4258+85.31	629,658.57	1,619,605.78	4261+70.00	629,940.73	1,619,648.04			
CURVE RAMPB-2	RAMP B							4261+79.20	629,949.83	1,619,649.40	4263+45.82	630,114.61	1,619,674.08	4265+12.29	630,280.77	1,619,686.50			
POINT RAMPB1	RAMP B	4271+90.54	630,957.14	1,619,737.09															
CURVE RAMPB2-1	RAMP B							14268+99.07	630,665.58	1,619,727.32	14270+44.61	630,810.71	1,619,738.17	14271+62.67	630,872.94	1,619,869.74			
POINT RAMPB22	RAMP B	14272+48.20	630,909.50	1,619,947.06															
CURVE RAMPB3-1	RAMP B							24269+76.06	630,745.04	1,619,697.16	24271+62.76	630,931.22	1,619,711.08	24272+68.35	630,943.44	1,619,524.78			
POINT RAMPC1	RAMP C	5247+00.00	628,470.64	1,619,420.32															
POINT RAMPC2	RAMP C	5249+84.21	628,754.17	1,619,400.57															
POINT RAMPC3	RAMP C	5250+70.59	628,840.50	1,619,398.01															
CURVE RAMPC-1	RAMP C							5255+00.43	629,270.29	1,619,391.44	5258+68.29	629,638.11	1,619,385.82	5262+33.46	629,996.72	1,619,303.84			
POINT RAMPC4	RAMP C	5272+83.00	631,019.87	1,619,069.96															
POINT RAMPC21	RAMP C	15268+87.53	630,642.37	1,619,193.18															
CURVE RAMPC2-1	RAMP C							15270+12.63	630,765.34	1,619,170.20	15272+13.98	630,961.63	1,619,125.33	15272+91.78	630,948.45	1,619,326.24			
CURVE RAMPC3-1	RAMP C							25269+30.34	630,676.08	1,619,148.54	25272+07.44	630,946.21	1,619,086.79	25273+99.10	630,948.08	1,618,809.71			
POINT RAMPD1	RAMP D	6271+46.43	630,968.91	1,619,476.99															
CURVE RAMPD-1	RAMP D							6284+95.00	632,271.87	1,619,399.18	6286+35.23	632,407.35	1,619,363.02	6287+75.00	632,546.56	1,619,346.11			
CURVE RAMPD2-1	RAMP D							16271+40.84	631,045.97	1,619,504.83	16273+49.96	631,032.28	1,619,713.51	16274+25.41	631,234.33	1,619,659.58			
CURVE RAMPD3-1	RAMP D							26270+40.11	631,021.31	1,619,961.40	26272+68.93	631,022.86	1,619,732.59	26274+31.07	631,243.94	1,619,673.57			
POINT FIRST10	East First St.	992+00.00	631,005.33	1,617,486.57															
POINT FIRST11	East First St.	999+99.99	631,005.11	1,618,286.56															
CURVE FIRST_OR-1	East First St.							1004+23.41	631,002.25	1,618,709.97	1004+36.53	631,002.17	1,618.723.09	1004+49.64	631,003.14	1,618,736.18			
CURVE FIRST_OR-2	East First St.							1007+12.17	631,022.64	1,618,997.98	1007+26.19	631,023.68	1,619,011.96	1007+40.16	631,022.76	1,619,025.95			
POINT FIRST12	East First St.	1008+30.09	631,016.87	1,619,115.68															
POINT FIRST13	East First St.	1014+35.35	630,970.76	1,619,719.19															
CURVE FIRST_OR-3	East First St.							1015+25.56	630,964.79	1,619,809.20	1015+41.40	630,963.74	1,619,825.01	1015+57.18	630,965.20	1,619,840.79			
CURVE FIRST_OR-4	East First St.							1017+59.91	630,983.81	1,620,042.66	1017+74.73	630,985.17	1,620,057.41	1017+89.52	630,985.07	1,620,072.23			
POINT EQ1	East First St.	31019+49.45	630,983.96	1,620,235.73															
CURVE FIRST_OR-5	East First St.							31019+91.53	630,983.68	1,620,277.81	31020+36.10	630,983.38	1,620,322.37	31020+80.58	630,978.25	1,620,366.64			
CURVE FIRST_OR-6	East First St.							31020+80.58	630,978.25	1,620,366.64	31021+25.20	630,973.11	1,620,410.97	31021+69.74	630,972.81	1,620,455.59			
CURVE FIRST_OR-7	East First St.							31024+66.08	630,970.82	1,620,751.93	31025+26.46	630,970.41	1,620,812.30	31025+86.62	630,978.84	1,620,872.09			
CURVE FIRST_OR-8	East First St.							31025+86.62	630,978.84	1,620,872.09	31026+47.00	630,987.27	1,620,931.88	31027+07.16	630,986.86	1,620,992.26			
POINT FIRST14	East First St.	31028+78.76	630,985.70	1,621,163.85															
POINT FIRST15	East First St.	31046+10.68	630,981.03	1,622,895.77															
POINT DDIEB1	East First St.	21004+00.00	630,972.91	1,618,686.36															
CURVE DDIEB-1	East First St.							21006+19.19	630,971.43	1,618,905.55	21006+59.32	630,971.16	1,618,945.67	21006+98.48	630,985.70	1,618,983,06			
POINT DDIEB2	East First St.	21008+12.21	631,026.92	1,619,089.06															
CURVE DDIEB-2	East First St.							21008+31.16	631,033.78	1,619,106.72	21008+99.74	631,058.64	1,619,170.64	21009+63.73	631,040.97	1,619,236.91			
CURVE DDIEB-3	East First St.							21009+63.73	631,040.97	1,619,236.91	21009+84.27	631,035.68	1,619,256.75	21010+04.68	631,034.34	1,619,277.25			
CURVE DDIEB-4	East First St.							21012+48.68	631,018.37	1,619,520.73	21012+73.98	631,016.71	1,619,545.97	21012+99.04	631,021.10	1,619,570.89			
CURVE DDIEB-5	East First St.							21012+99.04	631,021.10	1,619,570.89	21013+72.87	631,033.90	1,619,643.60	21014+41.03	630,998.39	1,619,708.32			
CURVE DDIEB-6	East First St.							21015+40.58	630,950.50	1,619,795.60	21016+47.44	630,899.10	1,619,889.28	21017+38.28	630,944.58	1,619,985.99			
CURVE DDIEB-7	East First St.							21017+38.28	630,944.58	1,619,985.99	21017+85.93	630,964.86	1,620,029.11	21018+32.01	630,964.54	1,620,076.77			
POINT DDIEB3	East First St.	21019+90.83	630,963.46	1,620,235.59															

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
DDIWB1	East First St.	11004+00.00	631,025.91	1,618,686.72															
DDIWB-1	East First St.							11004+23.41	631,025.75	1,618,710.13	11004+89.40	631,025.31	1,618,776.11	11005+53.31	631,052.59	1,618,836.19			
DDIWB-2	East First St.							11005+53.31	631,052.59	1,618,836.19	11005+99.87	631,071.84	1,618,878.58	11006+44.95	631,071.37	1,618,925.14			
DDIWB-3	East First St.							11006+44.95	631,071.37	1,618,925.14	11006+97.64	631,070.83	1,618,977.83	11007+48.21	631,045.49	1,619,024.03			
DDIWB2	East First St.	11007+81.98	631,029.24	1,619,053.64															
DDIWB-4	East First St.							11008+49.70	630,996.67	1,619,113.01	11009+23.52	630,961.15	1,619,177.73	11009+91.68	630,973.96	1,619,250.44			
DDIWB-5	East First St.							11009+91.68	630,973.96	1,619,250.44	11010+16.98	630,978.34	1,619,275.36	11010+42.04	630,976.69	1,619,300.60			
DDIWB-6	East First St.							11012+86.98	630,960.66	1,619,545.02	11013+12.33	630,959.00	1,619,570.32	11013+37.44	630,951.36	1,619,594.49			
DDIWB-7	East First St.							11013+37.44	630,951.36	1,619,594.49	11014+11.37	630,929.11	1,619,664.99	11014+79.62	630,955.90	1,619,733.90			
DDIWB3	East First St.	11014+92.61	630,960.60	1,619,746.01															
DDIWB-8	East First St.							11015+82.32	630,993.11	1,619,829.62	11016+20.53	631,006.96	1,619,865.23	11016+57.83	631,006.71	1,619,903.45			
DDIWB4	East First St.	11019+90.26	631,004.46	1,620,235.86															
CREEK1	Creekview	99+91.93	630,037.26	1,620,434.96				102+88.47	630,333.80	1,620,436.31	104+08.31	630,453.64	1,620,436.85	105+19.40	630,548.66	1,620,363.82			
CREEKVIEW-1	Creekview							105+19.40	630,548.66	1,620,363.82	106+39.58	630,643.95	1,620,290.59	107+50.93	630,764.13	1,620,291.34			
CREEKVIEW-2	Creekview																		
CREEK2	Creekview	109+74.73	630,987.94	1,620,292.74															
FRISK1	Frisk	400+00.00	630,796.34	1,621,165.61															
FRISK2	Frisk	401+89.37	630,985.70	1,621,163.85															
FRISK3	Frisk	408+19.19	631,615.51	1,621,167.43															
Point RAMPA01	RAMP A_Oralabor	2166+24.73	620,461.10	1,619,100.12															
Curve RAMPA_O-1	RAMP A_Oralabor							2173+23.43	621,110.14	1,619,358.82	2176+08.34	621,374.80	1,619,464.31	2178+87.59	621,659.53	1,619,474.19			
Point RAMPA02	RAMP A_Oralabor	2189+08.42	622,679.75	1,619,509.57															

SPIRAL OR CIRCULAR CURVE DATA

101-17
10-20-09

Name	Location	Δ_{scs}	Horizontal Alignment Data													Details
			Spiral Data								Curve Data					
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E	
I35-1	Interstate 35										3° 13′ 01.83″	477.40	954.56	17,000.00	6.70	
I35-2	Interstate 35										1° 41′ 06.61″	250.02	500.00	17,000.00	1.84	
I35-3B	Interstate 35	24° 53′ 19.19″	4° 08′ 56.42″	420.00′	850.48′	72.37′	419.78′	10.13′	280.08′	140.07′						
I35-3	Interstate 35										16° 35′ 27.42″	422.83	839.74	2,900.00	30.66	
I35-3A	Interstate 35	24° 53′ 19.19″	4° 08′ 55.35″	420.00′	850.48′	72.37′	419.75′	10.13′	280.06′	140.06′						
I35-4B	Interstate 35	26° 22′ 18.20″	2° 45′ 26.49″	385.00′	1,130.00′	109.90′	384.91′	6.18′	256.70′	128.36′						
I35-4	Interstate 35										20° 51′ 25.73″	736.20	1,456.10	4,000.00	67.18	
I35-4A	Interstate 35	26° 22′ 18.20″	2° 45′ 26.49″	385.00′	1,130.00′	109.90′	384.91′	6.18′	256.70′	128.36′						
I35-5	Interstate 35										5° 23′ 25.77″	564.91	1,128.57	12,000.00	13.28	
RAMPA-1	RAMP A										11° 15′ 06.46″	344.78	687.33	3,500.00	16.94	
RAMPA2-1	RAMP A										59° 07′ 44.82″	141.82	258.00	250.00	37.42	
RAMPA3-1	RAMP A										95° 32′ 03.96″	165.24	250.11	150.00	73.17	
RAMPB-1	RAMP B										6° 31′ 54.19″	285.31	570.00	5,000.00	8.13	
RAMPB-2	RAMP B										4° 14′ 27.73″	166.62	333.09	4,500.00	3.08	
RAMPB2-1	RAMP B										60° 24′ 42.70″	145.54	263.60	250.00	39.28	
RAMPB3-1	RAMP B										90° 31′ 26.39″	186.70	292.29	185.00	77.73	
RAMPC-1	RAMP C										11° 59′ 59.66″	367+86	733.03	3,500.00	19.28	
RAMPC2-1	RAMP C										106° 37′ 44.39″	201.35	279.15	150.00	101.08	
RAMPC3-1	RAMP C										76° 44′ 14.87″	277.10	468.76	350.00	96.41	
RAMPD-1	RAMP D										8° 01′ 17.07″	140.23	280.00	2,000.00	4.91	
RAMPD2-1	RAMP D										108° 41′ 54.99″	209.13	284.57	150.00	107.36	
RAMPD3-1	RAMP D										74° 40′ 04.27″	228.82	390.96	300.00	77.30	
FIRST_OR-1	East First St.										4° 38′ 46.64″	13.12	26.23	323.50	0.27	
FIRST_OR-2	East First St.										8° 01′ 02.32″	14.02	27.99	200.00	0.49	
FIRST_OR-3	East First St.										9° 03′ 36.03″	15.85	31.63	200.00	0.63	
FIRST_OR-4	East First St.										5° 39′ 12.89″	14.81	29.60	300.00	0.37	
FIRST_OR-5	East First St.										6° 13′ 19.50″	44.57	89.05	820.00	1.21	
FIRST_OR-6	East First St.										6° 13′ 19.50″	44.62	89.16	821.00	1.21	
FIRST_OR-7	East First St.										8° 24′ 44.57″	60.38	120.54	821.00	2.21	
FIRST_OR-8	East First St.										8° 24′ 44.57″	60.38	120.54	821.00	2.21	
DDIEB-1	East First St.										21° 38′ 00.74″	40.12	79.29	210.00	3.73	
DDIEB-2	East First St.										36° 10′ 18.60″	68.58	132.58	210.00	10.92	
DDIEB-3	East First St.										11° 10′ 18.60″	20.54	40.95	210.00	1.00	
DDIEB-4	East First St.										13° 44′ 21.95″	25.30	50.36	210.00	1.52	
DDIEB-5	East First St.										38° 44′ 21.95″	73.83	141.99	210.00	12.60	
DDIEB-6	East First St.										53° 56′ 21.18″	106.86	197.70	210.00	25.62	
DDIEB-7	East First St.										25° 34′ 21.93″	47.66	93.73	210.00	5.34	
DDIWB-1	East First St.										24° 48′ 30.22″	65.98	129.90	300.00	7.17	
DDIWB-2	East First St.										25° 00′ 08.53″	46.56	91.64	210.00	5.10	
DDIWB-3	East First St.										28° 10′ 20.96″	52.69	103.26	210.00	6.51	
DDIWB-4	East First St.										38° 44′ 21.95″	73.83	141.99	210.00	12.60	
DDIWB-5	East First St.										13° 44′ 21.95″	25.3	50.36	210.00	1.52	
DDIWB-6	East First St.										13° 46′ 05.65″	25.35	50.46	210.00	1.53	
DDIWB-7	East First St.										38° 46′ 02.24″	73.93	142.17	210.00	12.63	
DDIWB-8	East First St.										21° 38′ 00.74″	38.21	75.52	200.00	3.62	
CREEKVIEW-1	Creekview										37° 48′ 11.34″	119.84	230.93	350.00	19.95	
CREEKVIEW-2	Creekview										37° 54′ 06.11″	120.18	231.53	350.00	20.06	
RAMPA-O	RAMP A - Oralabor										19° 44′ 44.95″	284.90	564.16	1,637.00	24.61	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. All traffic control and traffic control devices shall be FOR INFORMATION ONLY.

   Coordinate with projects listed in Tab 111-01.

   Refer to the NHS-035-4(198)92--11-77 plans for a complete set of traffic control and staging operations.

2. Two lanes of traffic shall be maintained on I-35 Northbound and I-35 Southbound at all times except as noted in Note 3.

3. Lane Closures allowed as indicated on Tab 108-23B.

111-01
04-17-12

COORDINATED OPERATIONS

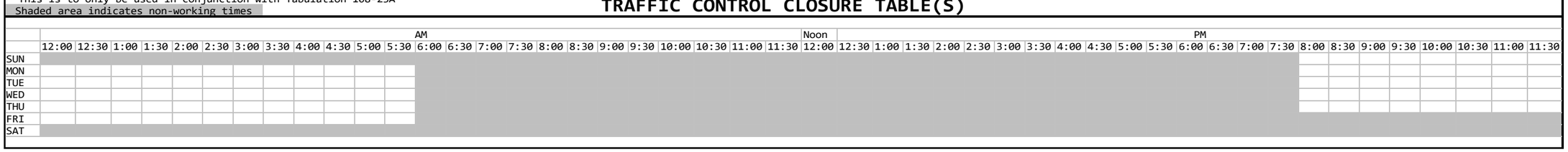
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
NHS-035-4(198)92--11-77	Paving In Ankeny from N of Oralabor Rd to NE 36th St (NB)
IM-035-4(222)93--13-77	E. First Street Bridge Overlay over Fourmile Creek
IM-035-4(148)92--13-77	I-35 NB Signing
IM-NHS-035-4(140)92--03-77	Grading In Ankeny from N of Oralabor Rd to NE 36th St (NB)

108-23B
04-21-15

* This is to only be used in conjunction with Tabulation 108-23A
Shaded area indicates non-working times

TRAFFIC CONTROL CLOSURE TABLE(S)



108-25
10-21-14

511 TRAVEL RESTRICTIONS

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

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

Pavement Removal	Proposed Granular Shoulder
Proposed Granular Subbase	Temporary Shoulder
Proposed Special Backfill	Existing Shoulder Strengthening
Temporary Barrier Rail	Permanent Barrier Rail
	Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

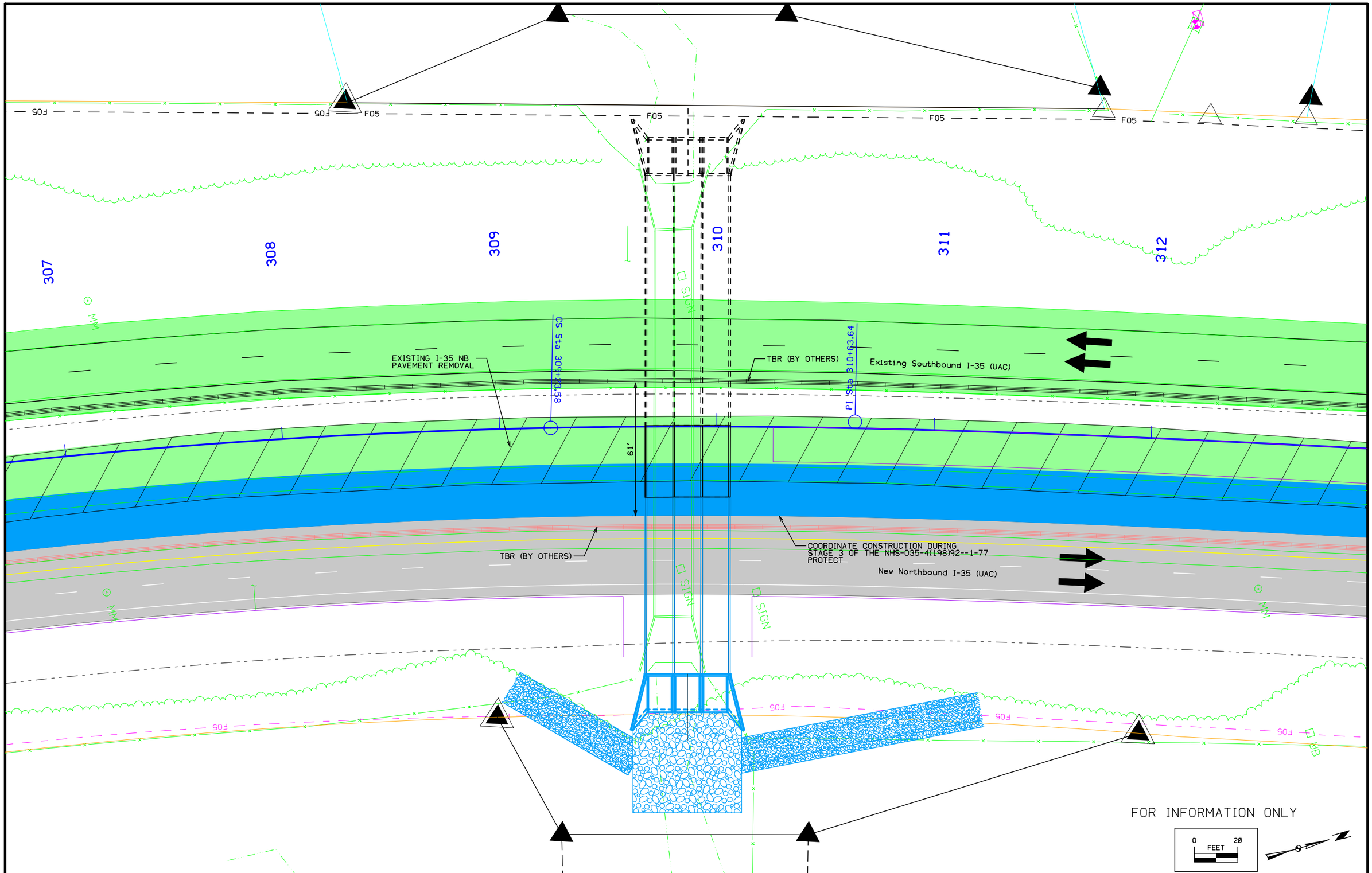
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

Channelizing Device	Crash Cushion
Drum	Traffic Signal
Temporary Lane Separator	Flagger
Tubular Marker	Temporary Floodlighting
Channelizer Marker	Traffic Sign
Concrete Barrier Marker	Type III Barricade
Delineator	Type A Warning Light
Temporary Barrier Rail	Direction of Traffic
Pavement Removal	Safety Closure

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

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)



FILE NO.	ENGLISH	DESIGN TEAM City of Ankeny\Snyder & Associates	POLK COUNTY	PROJECT NUMBER IM-NHS-035-4(219)93--03-77	SHEET NUMBER J.3

9:27:55 AM 9/19/2018 V8i_IDOTRoadJ:\2009_projects\109.0051\Design_(219)_RCB_Stage_2\SHT_77035219_J.03.dgn