7/26/2018

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P.E. NO: 30348(04)

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

INTERSTATE

PROJECT NO. NHPPI-3500(072)PM
BRIDGES AND APPROACHES
I-35 OVER US-60

KAY COUNTY

CONTROL SECTION 35-36-25
STATE JOB NO. 24432(14)

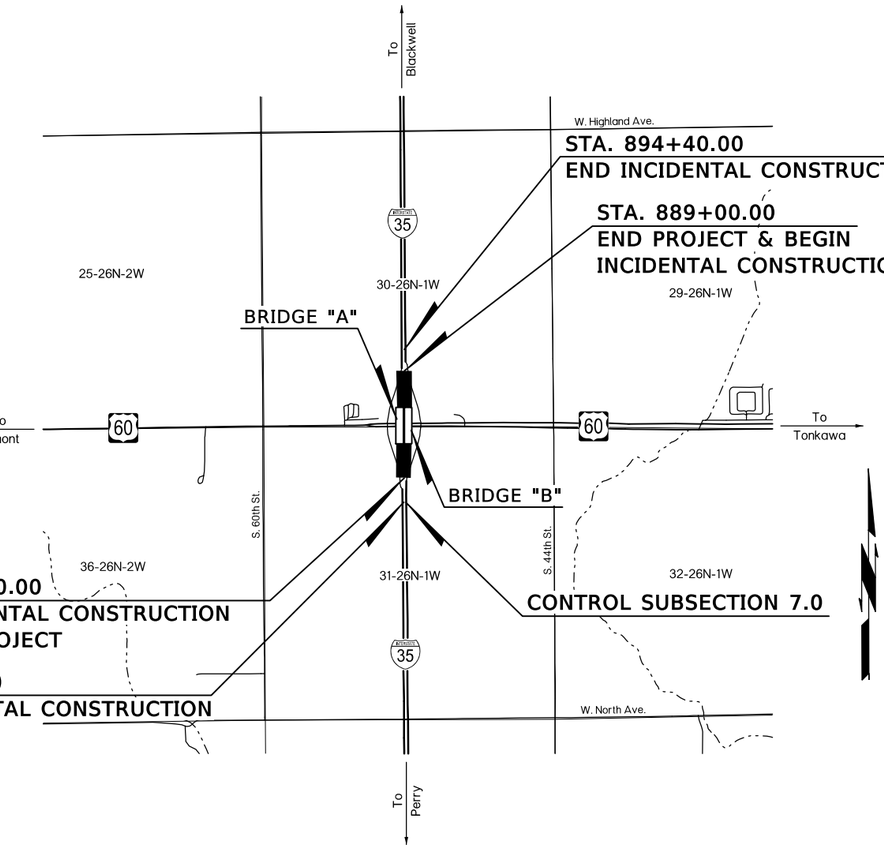
BRIDGE A LOCATION NO. 3625 0698 WX EXISTING NBI NO. 14408, NEW NBI NO. 32096
BRIDGE B LOCATION NO. 3625 0698 EX EXISTING NBI NO. 14409, NEW NBI NO. 32097

FOR SURVEY CONTROL DATA,
SEE SURVEY DATA SHEETS

FOR INDEX OF SHEETS &
ODOT STANDARD DRAWINGS,
SEE SHEET 0002

DESIGN DATA

AADT 2018	10500
AADT 2038	14700
K (DHV / ADT-TWO WAY)	13%
D (DIRECTIONAL DIST.)	53%
T (% OF DHV)	26%
T (% OF AADT)	28%
T_3 OVERLOADS (AXLES)	24%
20-YR FLEX ESALs	22.3 MIL
I-35	V=70 MPH
US 60	V=55 MPH
I-35 CROSSOVER	V=50 MPH



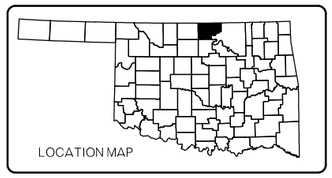
END STA. 880+28.38
LENGTH = 260.00' BRIDGE "A"
BEGIN STA. 877+68.38

END STA. 880+28.52
LENGTH = 260.00' BRIDGE "B"
BEGIN STA. 877+68.52

SCALES 1"
PLAN 1" = 50'
PROFILE HOR. 1" = 50'
VER. 1" = 5'
LAYOUT MAP 1" = 2000'

CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROADS
- RANGE & TOWNSHIP
- SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER LINES
- BUILDINGS
- OILWELL
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- PRES. R/W — RIGHT-OF-WAY LINES - EXISTING
- R/W — RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- R/W — RIGHT-OF-WAY FENCE



NOTE: PROJECT LENGTH BASED ON ℄ SURVEY STATIONING.

ROADWAY LENGTH	1,720.00	FT.	0.325 MI.
BRIDGE LENGTH	260.00	FT.	0.049 MI.
PROJECT LENGTH			0.374 MI.

EQUATIONS : NONE
EXCEPTIONS : NONE

2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION-ENGLISH GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 4, 2010.

CERTIFICATE OF AUTHORIZATION NO. 7569 P.E., L.S. RENEWAL DATE 6-30-20

BENHAM a Haskell Company
Benham Design, LLC
One West Third Street, Suite 200
Tulsa, Oklahoma 74103
(918) 492-1600

Shannon A. Koeninger, P.E.
OK P.E. NO. 20481
PROJECT ENGINEER
DATE : 7/26/18

REGISTERED PROFESSIONAL ENGINEER
SHANNON A. KOENINGER
20481
OKLAHOMA

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED	DATE APPROVED
BY	BY
CHIEF ENGINEER	DIVISION ADMINISTRATOR

SWO 5061(1) PROJECT NO. NHPPI-3500(072)PM
COUNTY KAY HIGHWAY I-35 SHEET NO. 0001

INDEX OF SHEETS

THE FOLLOWING ODOT STANDARDS WILL BE REQUIRED

ROADWAY	TRAFFIC CONTROL	TRAFFIC SIGNING	TRAFFIC SAFETY	BRIDGE DESIGN
SSS-1-1	TCS1-1-01	PM4-1-01	THRI-1-02	FSHP-42-2-00E
TSC1-3-2	TCS2-1-00	DU1-1-00	SKT-1-00	EJ-SQ-04E
TSC2-3-2	TCS3-1-01	DU2-1-00	GA31-1-00	EJ-DTL-02E
TSD-2-0	TCS4-1-01	WSD1-1-00	GHW1-1-00	HP1-2-01E
TFL-1-1	TCS5-1-00	WSD2-1-00	GHW2-1-00	B40-STL-BM-BRACING-00E
LECS-4-1	TCS6-1-02	WSD3-1-00	RS3-1-00	B40-C-ABUT-MISC-01E
PSE-1-0	TCS7-1-02	SIS4-1-00		
PCES-4-1	TCS8-1-00	SIS5-1-00		
SMD-3-1	TCS9-1-01	GMS1-1-00		
SSCD-3-1	TCS10-1-00	GMS2-1-00		
SPI-4-1	TCS11-1-01	SSP1-1-02		
SPB-1-4	TCS14-1-00	SSA1-1-00		
FHTCP-3-1	TCS16-1-00	FGS2-1-01		
SBI-4-2	TCS17-1-00	SPA1-1-00		
PUD-3-2	TCS18-1-01			
PDT-1-3	TCS19-1-01			
	TCS20-1-00			
	TCS21-1-02			
	TCS22-1-00			
	TCS24-1-02			
	TCS25-1-00			

REGISTERED PROFESSIONAL ENGINEER
SCOTT T. FOSTER
28520
OKLAHOMA
7-26-18

RESPONSIBLE FOR :
BRIDGE SHEETS
AB01 & AB02, B001 - B064

REGISTERED PROFESSIONAL ENGINEER
JARED RODGERS
25822
OKLAHOMA
7-26-18

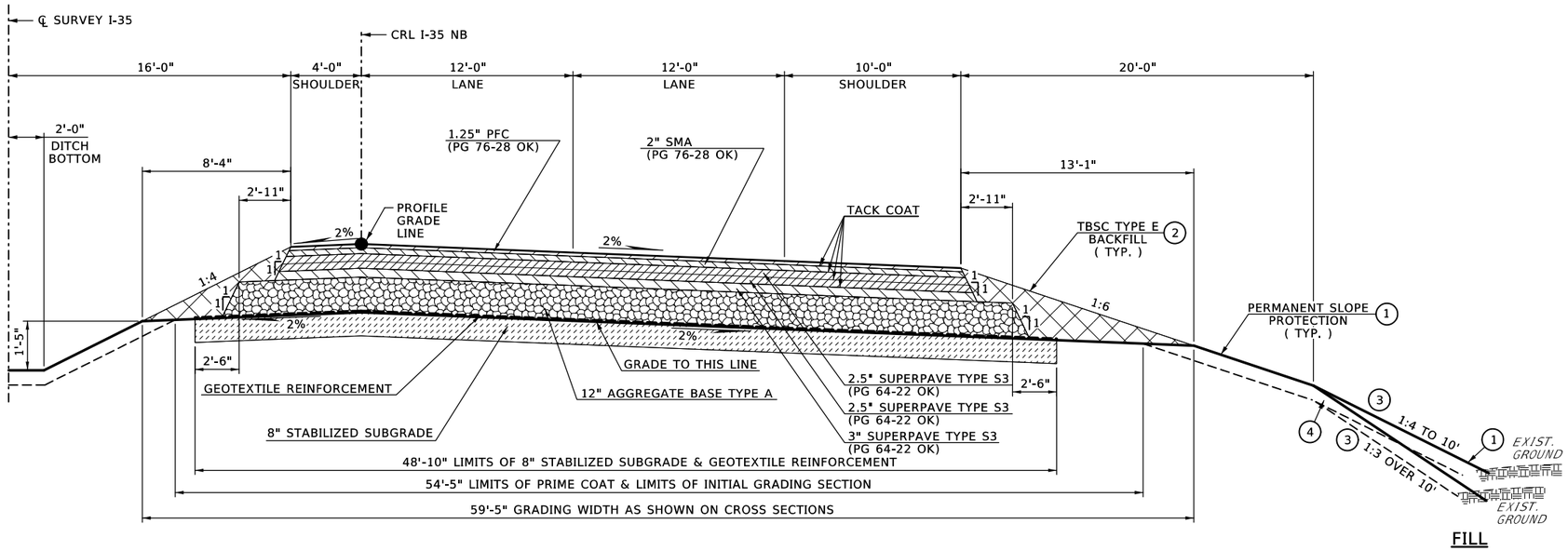
RESPONSIBLE FOR :
ROADWAY SHEETS
0001 - 0005, AR01 - AR03,
AT02 - AX02, R001 - R013,
T005 - T017, X001 - X023

MESHEK & ASSOCIATES, PLC
RESPONSIBLE FOR :
SIGNING & STRIPING SHEETS
AT01, T001 - T004

OKLAHOMA DEPARTMENT OF TRANSPORTATION
RESPONSIBLE FOR :
SURVEY DATA SHEETS
S001 - S018

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			INDEX OF SHEETS & ODOT STANDARD DRAWINGS
APPROVED			
SQUAD			

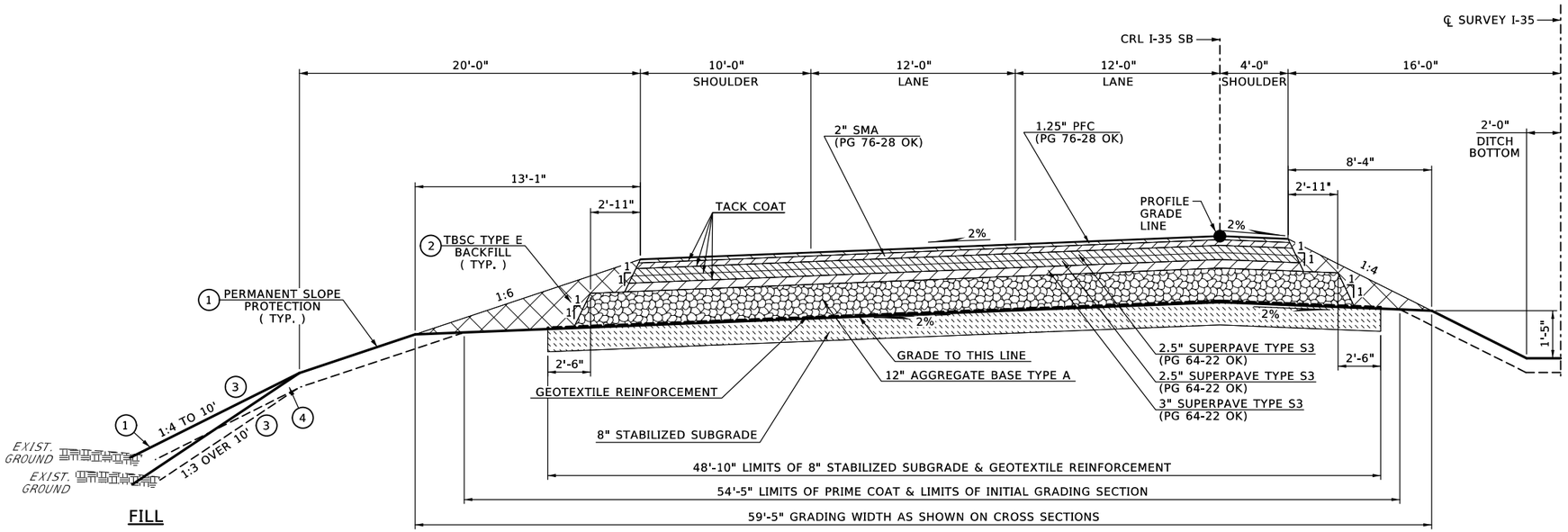
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. 0002



1 TYPICAL SECTION - I-35 NB

N.T.S.

STA. 869+20.00 TO STA. 877+38.52
STA. 880+58.52 TO STA. 889+00.00



2 TYPICAL SECTION - I-35 SB

N.T.S.

STA. 869+20.00 TO STA. 877+38.38
STA. 880+58.38 TO STA. 889+00.00

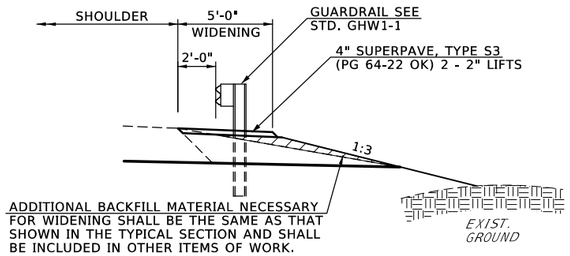
(1) PERMANENT SLOPE PROTECTION
REFER TO DETAIL SHEET R011.

(2) TO BE BACKFILLED & COMPACTED AS PART OF THE FINISHING OPERATIONS. COST TO BE INCLUDED IN TBSC TYPE E.

(3) FILL SLOPE DEPTHS ARE DEFINED FROM EDGE OF SHOULDER.

(4) TOPSOIL NOTE :
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL,STOCKPILE IT AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETE SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEMS FOR SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO TOP OF THE SOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITY IS INCLUDED IN THE SUMMARIZED EARTHWORK.



ADDITIONAL BACKFILL MATERIAL NECESSARY FOR WIDENING SHALL BE THE SAME AS THAT SHOWN IN THE TYPICAL SECTION AND SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

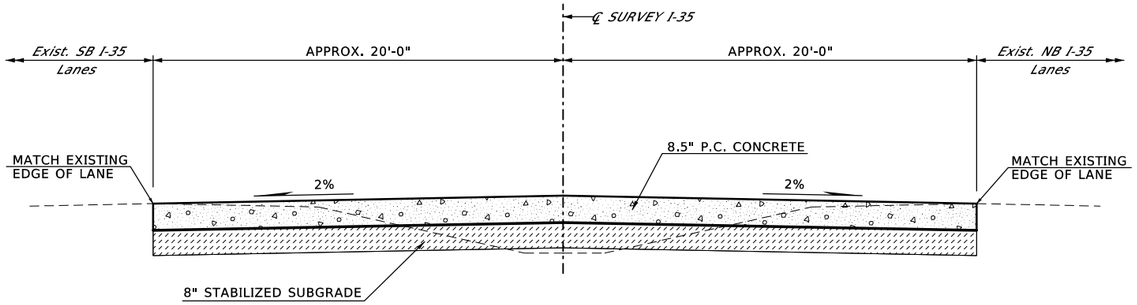
GUARDRAIL DETAIL

N.T.S.

STA. 874+07.80 TO STA. 877+38.98 RT. (OPPOSITE HAND)
STA. 874+82.80 TO STA. 877+38.98 RT.
STA. 876+64.45 TO STA. 877+39.38 LT. (OPPOSITE HAND)
STA. 880+57.52 TO STA. 881+32.45 RT.
STA. 880+57.92 TO STA. 883+14.10 LT. (OPPOSITE HAND)
STA. 880+57.92 TO STA. 883+89.10 LT.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			TYPICAL SECTIONS (1)
APPROVED			
SQUAD			

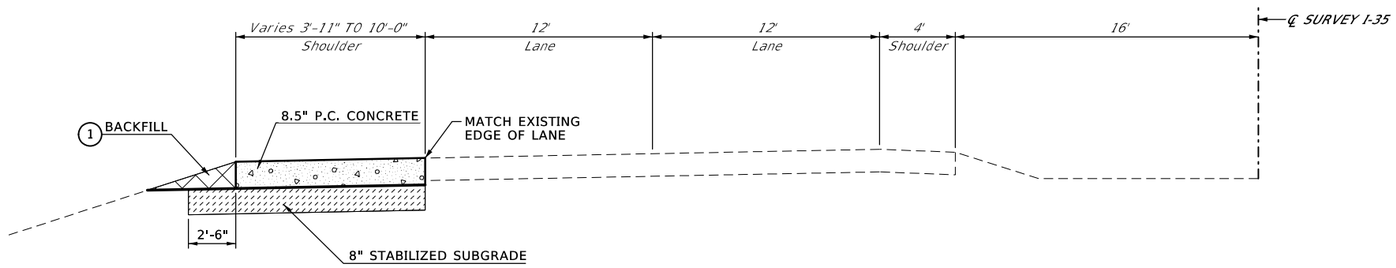
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. 0003



3 **TYPICAL SECTION - I-35 CROSSOVER**

N.T.S.

STA. 862+45.00 TO STA. 867+90.00
STA. 889+15.00 TO STA. 894+40.00



4 **TYPICAL SECTION - I-35 SHOULDER REHABILITATION**

N.T.S.

STA. 864+00.00 TO STA. 867+90.00 (OPPOSITE HAND)
STA. 865+39.00 TO STA. 869+20.00
STA. 889+00.00 TO STA. 891+50.00 (OPPOSITE HAND)

NOTE: REFER TO SHEET T006 FOR TYPICAL SECTION OF TEMPORARY SHOULDER REHABILITATION.

(1) TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		
CHECKED		**TYPICAL SECTIONS (2)**
APPROVED		
SQUAD		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. 0004

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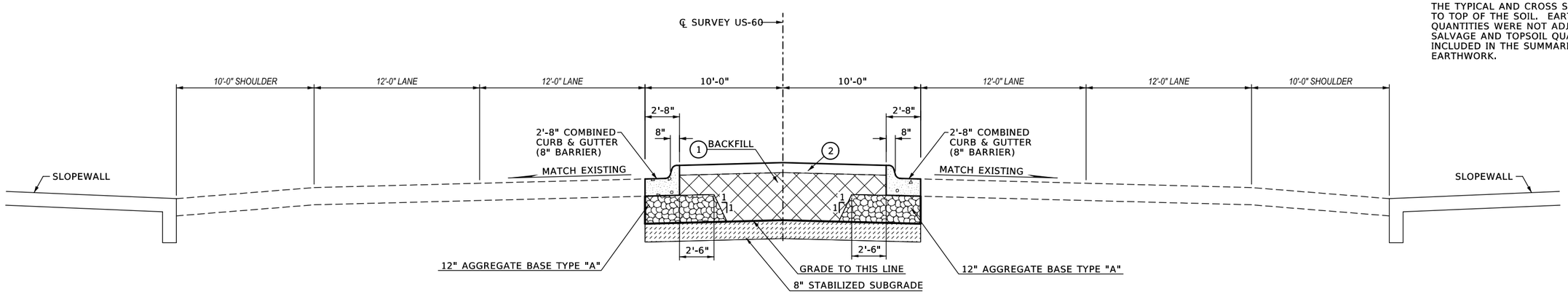


1. TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.
2. TOPSOIL NOTE : THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL,STOCKPILE IT AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETE SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO TOP OF THE SOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND TOPSOIL QUANTITY IS INCLUDED IN THE SUMMARIZED EARTHWORK.

5 **TYPICAL SECTION - US-60**

STA. 24+83.00 TO STA. 25+94.00 N.T.S.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**TYPICAL SECTIONS (3)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. 0005

JP NO. 24432(14) NBI NO. 32096

BRIDGE A PAY ITEMS

0200 BRIDGE A

CONSTRUCT NEW CONVENTIONAL 45'-85'-85'-45' ROLLED BEAM AND CONT. STEEL PLATE GIRDER SPANS 38'-0" CLEAR ROADWAY, SKEW 0°, F-SHAPED PARAPET AT ℄ I-35 SURVEY STA. 878+98.45, 20' LT

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	TOTAL
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(BR-1)	CY	160
501(G)	6309	CLSM BACKFILL	(BR-1)	CY	150.8
504(A)	1304	APPROACH SLAB	(BR-1,3,4)	SY	273.4
504(B)	1305	SAW-CUT GROOVING	(BR-1)	SY	1174.2
504(C)	6250	SEALED EXPANSION JOINT	(BR-1)	LF	84.00
504(E)	6190	42" F-SHAPED PARAPET	(BR-1,7)	LF	640.0
506(A)	4050	STRUCTURAL STEEL M270 GRADE 50W	(BR-1)	LB	289480
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY		EA	15
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY		EA	20
509	6152	SPECIAL CONCRETE FINISH	(BR-11)	SY	972
509(A)	1326	CLASS AA CONCRETE	(BR-1,2,7)	CY	279.6
509(B)	1328	CLASS A CONCRETE	(BR-1,7)	CY	264.8
510(C)	6138	SLOPE WALL (5")	(BR-1,7)	SY	1164
511(A)	1332	REINFORCING STEEL	(BR-1)	LB	1740
511(B)	6010	EPOXY COATED REINFORCING STEEL	(BR-1)	LB	142410
514(A)	6010	PILES, FURNISHED (HP10X42)		LF	242
514(A)	6011	PILES, FURNISHED (HP12X53)		LF	1316
514(B)	6292	PILES, DRIVEN (HP10X42)		LF	242
514(B)	6294	PILES, DRIVEN (HP12X53)		LF	1316
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)		EA	1
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	(BR-1)	SY	1252
516(A)	6100	DRILLED SHAFTS 84" DIAMETER	(BR-5,9)	LF	515
516(C)	6200	CROSSHOLE SONIC LOGGING	(BR-6)	EA	3
523(A)	6550	SEALER CRACK PREPARATION	(BR-1)	LF	82
523(B)	6560	SEALER RESIN	(BR-1)	GAL	0.6
542	4600	(PL) INSTALLATION OF BRIDGE ITEMS	(BR-10)	LSUM	1
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	(BR-1)	LF	206
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND.		LF	80
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE		LSUM	1

JP NO. 24432(14) NBI NO. 32097

BRIDGE B PAY ITEMS

0201 BRIDGE B

CONSTRUCT NEW CONVENTIONAL 45'-85'-85'-45' ROLLED BEAM AND CONT. STEEL PLATE GIRDER SPANS 38'-0" CLEAR ROADWAY, SKEW 0°, F-SHAPED PARAPET AT ℄ I-35 SURVEY STA. 878+98.45, 20' RT

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	TOTAL
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(BR-1)	CY	160
501(G)	6309	CLSM BACKFILL	(BR-1)	CY	150.8
504(A)	1304	APPROACH SLAB	(BR-1,3,4)	SY	273.4
504(B)	1305	SAW-CUT GROOVING	(BR-1)	SY	1174.2
504(C)	6250	SEALED EXPANSION JOINT	(BR-1)	LF	84.00
504(E)	6190	42" F-SHAPED PARAPET	(BR-1,7)	LF	640.0
506(A)	4050	STRUCTURAL STEEL M270 GRADE 50W	(BR-1)	LB	289480
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY		EA	15
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY		EA	20
509	6152	SPECIAL CONCRETE FINISH	(BR-11)	SY	972
509(A)	1326	CLASS AA CONCRETE	(BR-1,2,7)	CY	279.6
509(B)	1328	CLASS A CONCRETE	(BR-1,7)	CY	264.8
510(C)	6138	SLOPE WALL (5")	(BR-1,7)	SY	1167
511(A)	1332	REINFORCING STEEL	(BR-1)	LB	1740
511(B)	6010	EPOXY COATED REINFORCING STEEL	(BR-1)	LB	142410
514(A)	6010	PILES, FURNISHED (HP10X42)		LF	242
514(A)	6011	PILES, FURNISHED (HP12X53)		LF	1316
514(B)	6292	PILES, DRIVEN (HP10X42)		LF	242
514(B)	6294	PILES, DRIVEN (HP12X53)		LF	1316
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)		EA	1
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	(BR-1)	SY	1252
516(A)	6100	DRILLED SHAFTS 84" DIAMETER	(BR-5,9)	LF	515
516(C)	6200	CROSSHOLE SONIC LOGGING	(BR-6)	EA	3
523(A)	6550	SEALER CRACK PREPARATION	(BR-1)	LF	82
523(B)	6560	SEALER RESIN	(BR-1)	GAL	0.6
542	4600	(PL) INSTALLATION OF BRIDGE ITEMS	(BR-10)	LSUM	1
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	(BR-1)	LF	206
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND.		LF	80
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE		LSUM	1

BRIDGE PAY ITEM NOTES

(BR-1) PAY PLAN QUANTITY PER SECTION 109.01(B) OF THE STANDARD SPECIFICATIONS.

(BR-2) PLAN QUANTITY FOR CLASS AA CONCRETE INCLUDES 11.66 C.Y. FOR HAUNCHES OVER GIRDERS FOR EACH BRIDGE. THIS QUANTITY IS CALCULATED ASSUMING A HAUNCH ALONG THE FULL LENGTH OF THE GIRDERS AS SHOWN IN THE DETAILS ON THE TYPICAL SECTION SHEET. THE FINAL HAUNCH HEIGHTS WILL BE SET AFTER ERECTION OF GIRDERS AND DIAPHRAGMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT.

(BR-3) THERE IS AN ESTIMATED 98.8 C.Y. OF CLASS AA CONCRETE FOR BOTH APPROACH SLABS FOR EACH BRIDGE.

(BR-4) THERE IS AN ESTIMATED 18,640 LBS. OF EPOXY COATED REINFORCING STEEL FOR BOTH APPROACH SLABS FOR EACH BRIDGE.

(BR-5) CROSSHOLE SONIC ACCESS TUBES SHALL BE PLACED IN ALL DRILLED SHAFTS. INCLUDE ALL COSTS FOR CROSSHOLE SONIC ACCESS TUBES IN THE PRICE BID PER L.F. OF "DRILLED SHAFTS 84" DIAMETER."

(BR-6) A MINIMUM OF 3 DRILLED SHAFTS PER BRIDGE SHALL BE TESTED AND LOGGED WITH CROSSHOLE SONIC LOGGING. ADDITIONAL TESTING MAY BE REQUIRED, AT THE DESCRETION OF THE ENGINEER.

(BR-7) PRICE BID TO INCLUDE THE COST OF FORM LINERS AND COLOR/STAIN TREATMENTS, INCLUDING LABOR, EQUIPMENT, MATERAILS AND INCIDENTALS REQUIRED FOR AESTHETIC TREATMENT OF THE SURFACES INDICATED IN THE PLANS.

(BR-8) PRICE BID SHALL INCLUDE THE WORK DESCRIBED IN SECTION 642.04(b) OF THE 2009 ODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

(BR-9) THE "DOUBLE CASING METHOD" FOR DRILLED SHAFT CONSTRUCTION, AS DESCRIBED IN THE SPECIAL PROVISION, SHALL NOT BE USED ON THIS PROJECT. ANY OTHER METHOD, INCLUDING OTHER CASING METHODS, IS ACCEPTABLE.

(BR-10) PRICE BID TO INCLUDE 154.0 S.Y. OF LIQUID APPLIED URETHANE COATING FOR EACH BRIDGE.

(BR-11) PRICE BID TO INCLUDE THE COST OF COLOR/STAIN TREATMENTS INCLUDING LABOR, EQUIPMENT, MATERAILS AND INCIDENTALS REQUIRED FOR AESTHETIC TREATMENT OF THE SURFACES INDICATED IN THE PLANS AND AS DESCRIBED IN THE GENERAL NOTES FOR SPECIAL CONCRETE FINISH.

0600 STAKING

STAKING PAY ITEMS

JP. NO. 24432(14)

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
642(B)	0096	CONSTRUCTION STAKING LEVEL II	(BR-8)	LSUM	1

0640 CONSTRUCTION

CONSTRUCTION PAY ITEMS

JP. NO. 24432(14)

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
220	2800	SWPPP DOCUMENTATION AND MANAGEMENT		LSUM	1
641	1399	MOBILIZATION		LSUM	1

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

BRIDGE PAY ITEMS AND NOTES

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AB01

BRIDGE GENERAL NOTES

SPECIFICATIONS:

COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

ODOT STANDARDS:

SEE ODOT STANDARDS FOR ELEVATIONS, SECTIONS, DETAILS, DIMENSIONS, NOTES AND REINFORCING NOT SHOWN ON THE PLANS.

EXISTING PLANS:

PLANS OF THE EXISTING BRIDGE MAY BE OBTAINED FROM THE ODOT REPRODUCTION DEPARTMENT, 200 N.E. 21ST ST., OKLAHOMA CITY, OK. 73105.

PILE DRIVING EQUIPMENT:

USE A PILE DRIVING HAMMER OF THE SIZE AND TYPE CAPABLE OF CONSISTENTLY DELIVERING THE EFFECTIVE DYNAMIC ENERGY SUFFICIENT TO DRIVE THE PILES TO THE REQUIRED TIP ELEVATION AND TO ACHIEVE THE AXIAL LOAD RESISTANCES WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03(A)2.

ABUTMENT PILING CAPACITY:

THE FACTORED REACTION FOR EACH HP 12X53 PILE AT EACH ABUTMENT IS 43.70 TONS.

THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES.

AXIAL LOAD RESISTANCE = $\emptyset\ [(0.875\sqrt{E}\ \mathrm{LOG}_{10}(10N)) - 50]$

WHERE:

- Ø = RESISTANCE FACTOR OF 0.4
- E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS BASED ON THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.
- N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE ABOVE FORMULA IS ONLY APPLICABLE WHEN:

1) THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY & SINGLE ACTING HAMMERS ONLY).
2) THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
3) THE PENETRATION IS QUICK AND UNIFORM.
1) THERE IS NO APPRECIABLE REBOUND OF THE HAMMER.
2) A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER.

IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

PERFORATED PIPE UNDERDRAIN ROUND:

"PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES ALL COSTS OF PERFORATED PIPE AND OF UNDERDRAIN COVER MATERIAL, BOTH COARSE AND FINE, FOR EACH ABUTMENT. THE INSTALLATION OF THE PERFORATED PIPE AND PIPE UNDERDRAIN COVER MATERIAL SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.

ALL COSTS OF THE PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN ROUND".

NON-PERFORATED PIPE UNDERDRAIN ROUND:

"6" NON-PERF. PIPE UNDERDRAIN - RND." INCLUDES ALL COSTS OF NON-PERFORATED PIPE, TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL FOR EACH ABUTMENT. THE INSTALLATION OF THE NON-PERFORATED PIPE SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3.

ALL COSTS OF THE NON-PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING BACKFILLING, LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" NON-PERF. PIPE UNDERDRAIN RND.".

CLSM BACKFILL:

THE CLSM BACKFILL MUST BE PLACED IN TWO LIFTS OF EQUAL HEIGHTS AT BOTH ABUTMENT 1 AND ABUTMENT 2. SEE STANDARD SPECIFICATIONS REGARDING CURING CLSM.

BRIDGE GENERAL NOTES

STAINLESS STEEL FIXED BEARING ASSEMBLY:

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES AT THE ABUTMENT LOCATIONS AND AT PIER 2, AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL WEIGHT OF 3270.0 LBS. OF STRUCTURAL STEEL FOR THE FIXED BEARING ASSEMBLIES.

INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE FIXED BEARING ASSEMBLIES, ELASTOMERIC PADS, ANCHOR BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS IN THE UNIT PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY".

STAINLESS STEEL EXPANSION BEARING ASSEMBLY:

PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE AND SHAPE AT PIERS 1 & 3 AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL WEIGHT OF 3510.0 LBS. OF STRUCTURAL STEEL FOR THE EXPANSION BEARING ASSEMBLIES.

INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ELASTOMERIC PADS, ANCHOR PLATE, CONTACT ANGLES, ANCHOR BOLTS, NUTS AND WASHERS, INCLUDING ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS IN THE UNIT PRICE BID PER EACH OF "STAINLESS STEEL EXPANSION BEARING ASSEMBLY".

WATER REPELLENT:

A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO THE CONCRETE SURFACES OF THE BRIDGE AS SHOWN ON THE PLANS. PIER CAP SHALL BE TREATED ON ALL VERTICAL FACES AND THE BOTTOM FACE FOR THE CAP CANTILEVER EXCEPT WHERE SPECIAL CONCRETE FINISH IS APPLIED.

APPROACH SLAB:

CLASS AA CONCRETE SHALL BE USED IN THE APPROACH SLABS. THE QUANTITY GIVEN IS BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS. THE CONTRACT UNIT PRICE FOR APPROACH SLAB SHALL BE FULL COMPENSATION FOR CONCRETE, REINFORCING STEEL, BACKER RODS, RAPID CURE JOINT SEALANT, POLYSTYRENE, LABOR, EQUIPMENT, AND INCIDENTALS NEEDED TO COMPLETE THE WORK AS SPECIFIED IN THE PLANS.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270 (ASTM A709) GRADE 50W, UNLESS SHOWN OR NOTED OTHERWISE. HIGH STRENGTH FASTENERS SHALL CONFORM TO ASTM M164 (ASTM A325), TYPE 3. NUTS, WASHERS, AND WELDING SHALL HAVE WEATHERING CHARACTERISTICS.

ERECTED GIRDERS SHALL HAVE ALL DIAPHRAGM CONNECTIONS COMPLETED PRIOR TO LEAVING JOBSITE AT THE END OF EACH DAY.

STAY-IN-PLACE-FORMS:

STAY-IN-PLACE STEEL DECK FORMS MAY BE USED IF THE MINIMUM DECK SLAB THICKNESS OF 8" IS OBTAINED BY MEASURING FROM THE TOP OF THE DECK SLAB TO THE TOP PORTION OF THE STEEL CORRUGATION. NO ADDITIONAL CONCRETE WEIGHT WILL BE ALLOWED. WEIGHT OF THE STAY-IN-PLACE STEEL DECK FORMS SHALL NOT EXCEED 5 P.S.F.. PREFORMED STYROFOAM OR ANY OTHER FILLER MATERIAL SHALL BE BONDED TO THE STAY-IN PLACE FORMS. STAY-IN-PLACE PRE-STRESSED CONCRETE DECK FORMS MAY BE USED IF THE FOLLOWING CONDITIONS ARE MET:

1. SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE FORMS ARE SUBMITTED TO THE BRIDGE ENGINEER FOR APPROVAL.
2. A NEW STRUCTURAL DESIGN, STRUCTURAL CALCULATIONS, AND A NEW REINFORCING SCHEDULE FOR THE DECK SLAB IS SUBMITTED TO THE BRIDGE ENGINEER FOR APPROVAL,
3. SHOP DRAWINGS, NEW DECK SLAB REINFORCING SCHEDULE, STRUCTURAL DESIGNS, AND CALCULATIONS SHALL BE PREPARED BY AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.

ALL COSTS ASSOCIATED WITH THE USE OF STAY-IN-PLACE FORMS INCLUDING ALL MATERIALS, LABOR, EQUIPMENT, INCIDENTALS, AND PROFESSIONAL SERVICES SHALL BE AT THE CONTRACTOR'S EXPENSE, FOR ADDITIONAL INFORMATION CONCERNING THE USE OF STAY-IN-PLACE FORMS, SEE SECTION 502 OF THE 2009 ENGLISH STANDARD SPECIFICATION.

CONCRETE FINISH:

ALL EXPOSED SURFACES NOT COVERED BY A FORM LINER INCLUDING PORTIONS OF THE ABUTMENTS, PORTIONS OF WINGS, PIERS ABOVE TOP OF DRILLED SHAFT, PORTIONS OF PARAPETS, OUTSIDE EDGE AND UNDERSIDE OF DECK SHALL BE FINISHED WITH A CLASS 7 PAINT FINISH IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS. CLASS 7 PAINT FINISH SHALL USE THE ODOT STANDARD STRAW COLOR (FEDERAL COLOR 33531). ALL COSTS ASSOCIATED WITH THE PAINT FINISH WORK INCLUDING ALL MATERIAL, COLOR/STAIN TREATMENTS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "SPECIAL CONCRETE FINISH."

BRIDGE GENERAL NOTES

CONCRETE FORM LINER:

CONCRETE FORM LINERS (RUNNING HORSES) SHALL BE USED ON THE OUTSIDE FACE OF THE WEST CONCRETE PARAPET ONLY FOR BRIDGE A AND THE OUTSIDE FACE OF THE EAST CONCRETE PARAPET ONLY FOR BRIDGE B.

ALL COSTS ASSOCIATED WITH THE BRIDGE PARAPET FORM LINER (RUNNING HORSES) WORK INCLUDING ALL MATERIAL, COLOR/STAIN TREATMENTS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "42" F-SHAPED PARAPET."

CONCRETE FORM LINERS (NEW BRICK RUNNING BOND) SHALL BE USED ON THE OUTSIDE FACE OF THE WEST WING WALLS AND BOTH ABUTMENT SEATS FOR BRIDGE A AND THE OUTSIDE FACE OF THE EAST WING WALLS AND BOTH ABUTMENT SEATS FOR BRIDGE B.

ALL COSTS ASSOCIATED WITH THE WING WALL AND ABUTMENT SEAT FORM LINER (NEW BRICK RUNNING BOND) WORK INCLUDING ALL MATERIAL, COLOR/STAIN TREATMENTS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF "CLASS A CONCRETE."

SEE FORM LINER DETAILS SHEETS FOR LOCATIONS, DETAILS AND ADDITIONAL INFORMATION.

INSTALLATION OF BRIDGE ITEMS:

THE INSTALLATION OF BRIDGE ITEMS SHALL INCLUDE A LIQUID APPLIED URETHANE COATING SUCH AS CIM 1000 AS MANUFACTURED BY CIM INDUSTRIES, INC., IM-129 AS MANUFACTURED BY CUSTOM LININGS, OR AN APPROVED EQUAL.

THE URETHANE COATING SHALL BE APPLIED TO THE AREAS SHOWN IN THE PLANS. THE FINISH SHALL BE NEAT STRAIGHT LINES FOR APPROVAL.

THE EQUIPMENT AND METHODS OF APPLYING THE URETHANE COATING SHALL BE IN ACCORDANCE WITH THE PRODUCT COATING PROFILE AND INSTRUCTION GUIDES FOR APPLICATION FOR APPLICATION TO CONCRETE. PRECAUTIONARY MEASURES SHALL BE IN ACCORDANCE WITH THE MATERIAL SAFETY DATA SHEETS AS PROVIDED BY THE MANUFACTURER.

THE COATING SHALL BE 60 MILS DRY THICKNESS AND 68 MILS WET THICKNESS. IN ADDITION TO APPLYING THE COATING TO THE CONCRETE SUBSTRUCTURE UNITS AS SHOWN IN THE PLANS, THE COATING SHALL RETURN UP THE VERTICAL SURFACES OF THE PIER BEARING PADS TO PROVIDE A WATER TIGHT SEAL WITH THE CONCRETE PEDESTALS. SURFACE PREPARATION AND PRODUCT MIXING SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS AND ALL NEW CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3,000 PSI AT THE TIME OF APPLICATION. PRIMER SHALL BE APPLIED TO THE CONCRETE SURFACES PRIOR TO APPLYING THE URETHANE COATING. ALL CONCRETE WORK SHALL BE COMPLETED PRIOR TO THE APPLICATION OF THE URETHANE COATING.

WATER REPELLENT WILL NOT BE REQUIRED ON SURFACES THAT ARE COATED WITH URETHANE COATING.

ALL COSTS ASSOCIATED WITH THE USE OF THE LIQUID APPLIED URETHANE COATING INCLUDING THE COST OF MATERIAL, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NEEDED TO COMPLETE THE WORK AS SPECIFIED IN THE PLANS AND SHALL BE INCLUDED IN THE LUMP SUM PRICE BID OF "(PL) INSTALLATION OF BRIDGE ITEMS".

REMOVAL OF EXISTING BRIDGE STRUCTURE:

REMOVAL CONSISTS OF A 30'-45'-45'-30' REINFORCED CONCRETE SLAB SPAN BRIDGE. C.L. I-35 SURVEY STA. 878+98.45, 32' LT. & 32' RT., 38' ROADWAY, SKEW 0º, 2-18" S.C'S.

REMOVE CENTER PIER IN IT'S ENTIRETY, INCLUDING FOOTINGS AND PILES. REMOVE THE OUTER PIERS TO 2 FT. BELOW THE PROPOSED SUBGRADE. REMOVE EXISTING ABUTMENTS AND PILES PER SECTION 619 OF THE STANDARD SPECIFICATIONS.

ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE RIGHT-OF-WAY.

REMOVAL OF EXISTING STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 619 OF THE STANDARD SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING DEBRIS FROM FALLING ONTO US-60 BELOW THE BRIDGE DURING DEMOLITION AND CONSTRUCTION OPERATIONS. A METHOD TO PREVENT DEBRIS FROM FALLING ONTO US-60 TRAFFIC SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE ANY WORK IS STARTED.

ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO ODOT.

ALL COSTS ASSOCIATED WITH THE REMOVAL, BACKFILLING, TRANSIT, AND DISPOSAL OF THE EXISTING BRIDGE STRUCTURE AS DESCRIBED ABOVE AND AS DIRECTED BY THE ENGINEER, INCLUDING LABOR, EQUIPMENT, AND INCIDENTALS, IN ACCORDANCE WITH SECTION 619.06 OF THE STANDARD SPECIFICATIONS SHALL BE INCLUDED IN THE PRICE BID PER LUMP SUM OF "REMOVAL OF EXISTING BRIDGE STRUCTURE."

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

BRIDGE GENERAL NOTES

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AB02

ROADWAY GENERAL CONSTRUCTION NOTES

MAINTENANCE OF THROUGH TRAFFIC INCLUDES THE MAINTENANCE OF THE EXISTING ROAD IN CLOSE PROXIMITY TO THE NEW CONSTRUCTION AS SHOWN ON THE PLANS.

FOR PROJECTS THAT INCLUDE WIDENING AND/OR RESURFACING, THE CONTRACTOR SHALL SCHEDULE OPERATIONS TO MINIMIZE POTENTIAL DROP-OFF HAZARDS AND SHALL SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS TO THE RESIDENT ENGINEER FOR APPROVAL BEFORE OPERATIONS BEGIN. ANY PORTION OF THE CONSTRUCTION OPERATIONS, SUCH AS SUPERPAVE LAYING OPERATIONS, EXCAVATION FOR PAVEMENT WIDENING, OR EXTENSION OF ROADWAY STRUCTURES, SHALL BE LIMITED TO ONE SIDE AT A TIME, AND THE PROCEDURES OUTLINED IN THE PAVEMENT DROP-OFF TREATMENT STANDARD PDT-1 (LATEST REVISION) SHALL BE IMPLEMENTED. ONLY THAT AMOUNT OF OPEN TRENCH WILL BE ALLOWED THAT CAN BE SURFACED IN 1 (ONE) DAY'S TIME WITHOUT APPROVAL BY THE ENGINEER. LIGHTS, SIGNS AND BARRICADES SHALL BE MOVED AS WORK PROGRESSES.

ALL TREES, BRUSH, AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER SHALL BE CLEANED OUT TO THE RIGHT-OF-WAY LINE, AT EACH STRUCTURE AND BRIDGE, IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY RIGHT-OF-WAY FENCE AS REQUIRED. WHEN THE PORTION OF THE PROJECT THAT REQUIRED THIS FENCE IS COMPLETED, THE TEMPORARY FENCE SHALL BE REMOVED, AND PERMANENT RIGHT-OF-WAY FENCING SHALL BE RESTORED OR INSTALLED IN A MANNER APPROVED BY THE ENGINEER. ALL COST OF TEMPORARY FENCING SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

ALL FLOWLINES THAT ARE TO BE FILLED SHALL BE THOROUGHLY TAMPED BEFORE CONSTRUCTION OR EXTENSION OF DRAINAGE STRUCTURES. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

IN ORDER TO ALLEVIATE DUST CONDITIONS DURING GRADING OPERATIONS AND BEFORE PAVEMENT WORK IS COMPLETED, THE CONTRACTOR SHALL SPRINKLE GRADING AT INTERVALS APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THE CONTRACTOR SHALL NOT WASTE ANY EXCESS EXCAVATION UNTIL ALL PLANNED EMBANKMENTS AND BACKFILLS ARE COMPLETED. EXCESS UNCLASSIFIED EXCAVATION MATERIAL DETERMINED BY THE ENGINEER TO BE SUITABLE FOR BACKFILL SHALL BE USED TO REDUCE ANY UNCLASSIFIED BORROW NEEDED. COST OF SECOND HANDLING SHALL BE INCLUDED IN OTHER ITEMS OF WORK. ANY REMAINING EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

TEMPORARY SEEDING MIX SHALL BE AS FOLLOWS:

KINDS OF SEED TO BE FURNISHED	QUANTITY PER ACRE
PERENNIAL RYEGRASS (LOLIUM PERENE)	20 LBS. OF SEED
CRIMSON CLOVER (TRIFOLIUM INCARNTUM)	12 LBS. OF SEED

VEGETATIVE MULCHING: THE VEGETATIVE MULCH SHALL BE ANCHORED IN ACCORDANCE WITH THE "MULCHING-TILLER METHOD", AS SPECIFIED IN 233.04B(2) OF THE STANDARD SPECIFICATIONS.

AREAS ON WHICH SALVAGED TOPSOIL IS TO BE REPLACED SHALL HAVE 18-46-0 FERTILIZER APPLIED, AT THE RATE OF 150 POUNDS PER ACRE, JUST PRIOR TO THE REPLACEMENT OF SALVAGED TOPSOIL.

AT THE BEGINNING OF TURFING OPERATIONS, ANY AREAS INCLUDED IN PLANNED QUANTITIES THAT HAVE GROWN A SATISFACTORY VOLUNTEER TURF OF PERENNIAL GRASS, AS DETERMINED BY THE ENGINEER, SHALL BE FERTILIZED AND WATERED AS CALLED FOR ON THE PLANS, BUT SHALL NOT BE SEEDED, SODDED, OR SPRIGGED.

SURFACING OF RETURNS, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL BE OF THE SAME MATERIAL (BASE AND SURFACE) AS THAT OF THE ABUTTING SHOULDER OF THE MAINLINE. BASE AND SURFACE THICKNESS SHALL BE THE THICKNESS SHOWN ON PLANS.

T.B.S.C. SURFACES SHALL BE SPRINKLED WITH WATER AND ROLLED WITH A PNEUMATIC ROLLER IN A MANNER APPROVED BY THE ENGINEER.

EXCESS ASPHALT AT JOINTS AND CRACKS IN EXISTING PAVEMENT SHALL BE REMOVED FLUSH TO TOP OF PAVING IN A MANNER APPROVED BY THE ENGINEER.

IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC.
"CALL OKIE" 1-800-522-6543 OR 811.

NO PAYMENT WILL BE MADE FOR THE REMOVAL OF ABANDONED UTILITY PIPE LINES THAT INTERFERE WITH CONSTRUCTION. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

ROADWAY GENERAL CONSTRUCTION NOTES (CONT'D)

ALL WORK AND/OR MATERIALS NOT CLASSIFIED AS A "CONTRACT PAY ITEM" SHALL BE CONSIDERED INCIDENTAL AND THE COST THEREOF SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS WHICH ARE CLASSIFIED FOR PAYMENT.

THE CONTRACTOR SHALL SEAL ANY CRACK THAT DEVELOPS IN THE SURFACE PRIOR TO FINAL INSPECTION. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

TREES OUTSIDE THE TOE OF FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE APPROVAL OF THE ENGINEER.

(CAUTION) THE LOCATION AND DEPTH OF ALL UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC. PRIOR TO DIGGING NEAR THE UTILITIES, THE CONTRACTOR SHALL CALL FOR A LIST OF ALL UNDERGROUND FACILITIES REGISTERED WITH THE FOLLOWING AGENCIES:

- THE LOCAL COUNTY CLERK'S OFFICE
- THE LOCAL CITY GOVERNMENT'S OFFICE
- THE "OKIE" NOTIFICATION CENTER: (405) 840-5032 OR (800) 522-6543
- (SEE UTILITY DATA SHEET FOR KNOWN UTILITIES IN THE AREA)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE HE MAY INFLICT TO THE EXISTING DRAINAGE STRUCTURES TO REMAIN IN PLACE, AND SHALL REPAIR SUCH DAMAGES AT NO ADDITIONAL COST TO ODOT.

ALL MATERIAL REMOVED, INCLUDING BUT NOT LIMITED TO DRAINAGE STRUCTURES, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER, UNLESS OTHERWISE SPECIFIED.

THE FOLLOWING AIRPORT/AIRFIELD LOCATED WITHIN 4 MILES OF THIS PROJECT. THIS ACTION MAY REQUIRE NOTIFYING THE FEDERAL AVIATION ADMINISTRATION (FAA) OF PROPOSED CONSTRUCTION VIA FORM 7460-1 PRIOR TO CONSTRUCTION.

- BLACKWELL - TONKAWA MUNICIPAL AIRPORT.

EXISTING OVERHEAD ELECTRIC CROSSING AT APPROXIMATELY STA. 880+00.01 ℄, SURVEY I-35 TO BE RELOCATED BY THE CITY OF TONKAWA APPROXIMATELY 100 FEET TO THE NORTH AS PUG.

EXISTING POWER UNDERGROUND CROSSING AT APPROXIMATLY STA. 879+47.74 ℄, SURVEY I-35 TO BE RELOCATED DURING CONSTRUCTION.

GEOTECHNICAL REPORT NOTES

THE FOLLOWING GEOTECHNICAL REPORTS HAVE BEEN PREPARED BY TERRACON:

Date	Description
July 21, 2017	Geotechnical Engineering Report I-35 Bridge and Approaches over US-60
September 1, 2017	Pavement and Subgrade Soil Survey I-35 over US-60

LOCATIONS OF SOIL BORINGS AND BORING LOGS ARE INCLUDED IN THE PLANS. THE GEOTECHNICAL REPORTS ARE AVAILABLE FOR REVIEW AT THE OFFICE ENGINEER DIVISION, ODOT, 200 N.E. 21ST STREET, OKLAHOMA CITY OK 73105. ANY INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT SHOULD NOT BE CONSIDERED AS REPRESENTATIVE OF ALL FIELD CONDITIONS.

DESIGN		
DRAWN		
CHECKED		
APPROVED		
SQUAD		

OKLAHOMA DEPARTMENT OF TRANSPORTATION

ROADWAY GENERAL CONSTRUCTION NOTES

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AR01

ENVIRONMENTAL MITIGATION NOTES

MIGRATORY BIRDS ARE PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. MANY BIRDS COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR MOST BIRD SPECIES EXTENDS FROM MARCH 1 TO AUGUST 31. THE PROJECT WAS SURVEYED FOR MIGRATORY BIRD NESTS IN OCTOBER 2017. ALTHOUGH NO NESTS WERE OBSERVED, THE SURVEY IS VALID ONLY UNTIL THE START OF THE 2018 NESTING SEASON (BEGINNING MARCH 1). THE RESIDENT ENGINEER SHALL CONTACT THE ODOT BIOLOGIST AT 405-521-2515 IF ANY BIRD USE OF THE EXISTING STRUCTURES IS OBSERVED. IF BIRDS ARE OBSERVED THEN REPAIR, RETROFIT, REHABILITATION OR DEMOLITION OF THE EXISTING BRIDGES AND CULVERTS SHALL BE CONDUCTED BETWEEN SEPTEMBER 1, AND FEBRUARY 28, WHEN MIGRATORY BIRD NESTS ARE NOT OCCUPIED. THE BRIDGES AND CULVERTS MAY BE PROTECTED FROM NEW NEST ESTABLISHMENT PRIOR TO MARCH 1, BY MEANS THAT DO NOT RESULT IN BIRD DEATH OR INJURY. OPTIONS INCLUDE THE EXCLUSION OF ADULT BIRDS FROM SUITABLE NEST SITES ON OR WITHIN A STRUCTURE BY THE PLACEMENT OF WEATHER-RESISTANT POLYPROPYLENE NETTING WITH 0.25-INCH OR SMALLER OPENINGS, PRIOR TO MARCH 1. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGIST.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**ENVIRONMENTAL MITIGATION NOTES**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AR02

ROADWAY PAY ITEMS

0100 ROADWAY

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
201(A)	0102	CLEARING AND GRUBBING	(R-50)	LSUM	1
202(A)	0183	UNCLASSIFIED EXCAVATION	(R-1)	CY	7,576
202(D)	0184	UNCLASSIFIED BORROW		CY	22,558
205(A)	4229	TYPE A-SALVAGED TOPSOIL	(1) (R-5, 7)	LSUM	1
221(C)	2801	TEMPORARY SILT FENCE	(5)	LF	3,956
221(D)	2803	TEMPORARY SEDIMENT FILTER	(5, 11)	EA	3
221(F)	0100	TEMPORARY SILT DIKE	(5)	LF	266
230(A)	2806	SOLID SLAB SODDING	(3) (R-7, 8)	SY	23,747
232(A)	2813	SEEDING METHOD A	(1, 2) (R-7, 8, 11)	AC	4.91
233(A)	2817	VEGETATIVE MULCHING	(1, 2) (R-11)	AC	4.91
241	2832	MOWING	(R-16)	AC	9.82
242	0400	(PL)STABILIZED CONSTRUCTION EXIT	(4)	EA	2
303(A)	2100	AGGREGATE BASE TYPE A		CY	5,624
307(K)	4300	STABILIZED SUBGRADE	(8)	SY	26,693
326(A)	0100	GEOTEXTILE REINFORCEMENT	(13)	SY	20,029
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	(R-25)	TON	2,656
405	5200	PERMEABLE FRICTION COURSE	(R-26)	TON	817
407(B)	0250	TACK COAT	(7, 9, 10)	GAL	9,305
411(B)	5945	SUPERPAVE, TYPE S3(PG 64-22 OK)	(17) (R-32)	TON	6,642
411(F)	6100	STONE MATRIX ASPHALT	(R-33)	TON	1,532
413(A)	4861	RUMBLE STRIP-METHOD HMA-CON		LF	6,930
413(C)	4868	RUMBLE STRIP-METHOD PCC-CON		LF	3,293
414(A)	0210	P.C.CONCRETE PAVEMENT(PLACEMENT)		SY	7,839
414(G)	5275	P.C. CONCRETE FOR PAVEMENT		CY	1,854
509(D)	0325	CLASS C CONCRETE		CY	10
609(B)	1526	2'-8" COMB. CURB & GUTTER (8" BARRIER)		LF	222
611(G)	6002	INLET (SMD-TYPE 2)		EA	3
613(A)	0491	18" R.C.PIPE CLASS III	(14, 15, 16)	LF	412
613(A)	4495	22" X 13" R.C.PIPE ARCH CLASS A-III	(14, 15, 16)	LF	549
613(L)	4506	22" X 13" PREFAB. CULVERT END SEC., ARCH		EA	1
613(L)	5726	18" PREFAB. CULVERT END SECTION, ROUND		EA	1
619(A)	0920	REMOVAL OF STRUCTURES & OBSTRUCTIONS	(6) (R-48, 49)	LSUM	1
619(B)	4726	REMOVAL OF CURB AND GUTTER	(6) (R-49)	LF	222
619(B)	4727	REMOVAL OF CONCRETE PAVEMENT	(6) (R-49, 50)	SY	1,955
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(6) (R-49, 50)	SY	8,810
619(B)	4763	REMOVAL OF CONCRETE PAVEMENT W/ASPHALT OVERLAY	(6) (R-49, 50)	SY	9,758
619(B)	4780	REMOVAL OF GUARDRAIL	(6) (R-49)	LF	1,962
619(B)	4791	REMOVAL OF CURB	(6) (R-49)	LF	152
619(C)	0924	SAWING PAVEMENT		LF	5,944
623	0100	(PL)GUARDRAIL CURBING		EA	4
623(A)	0932	BEAM GUARDRAIL W-BEAM SINGLE		LF	900
623(F)	8300	GUARDRAIL TRAIL END TURNDOWN (31")		EA	2
623(G)	8590	GUARDRAIL END TREATMENT (31")	(12)	EA	6
623(I)	8690	GUARDRAIL BRIDGE CONN-TRAIL END (31")		EA	2
623(I)	8700	GUARDRAIL BRIDGE CONN-THRIE BEAM (31")		EA	4
853	9066	GUARDRAIL DELINATORS(TYPE 1, CODE 1)		EA	30

ROADWAY PAY ITEMS NOTES

1 TOPSOIL STOCKPILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 14 DAYS ARE TO BE STABILIZED WITH TEMPORARY SEEDING AND MULCH NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THE AREA. PRIOR TO SEEDING, (10-20-10) FERTILIZER OR APPROVED EQUAL SHALL BE APPLIED TO ALL AREAS TO BE STABILIZED.

2 SEEDING QUANTITIES - ONE APPLICATION OF SEEDING METHOD A FOR TEMPORARY EROSION CONTROL, IF NEEDED.
MULCHING QUANTITIES - ONE APPLICATION OF VEGETATIVE MULCHING FOR TEMPORARY EROSION CONTROL, IF NEEDED, ESTIMATED AT 4,000 LBS PER ACRE.

3 SOLID SLAB SODDING SHALL BE PLACED IN THE BOTTOM OF ALL UNPAVED DITCHES AND ALL OTHER DISTURBED AREAS PER PLANS. PERMANENT SLOPE PROTECTION SHALL BE SOLID SLAB SOD PER MISCELLANEOUS DETAILS, SHEET R011.

4 ESTIMATED QUANTITY TO BE USED AT THE DISCRETION OF THE ENGINEER.

5 PRICE BID SHALL INCLUDE SEDIMENT REMOVAL.

6 ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.

7 ESTIMATED AT 0.20 GALLONS PER SQUARE YARD AFTER DILUTION FOR THE APPLICATION OF ITEM NO. 405.

8 PRICE BID TO INCLUDE THE CHEMICAL ADDITIVE(S) TO ACHIEVE THE RATE SPECIFIED FOR THE APPROPRIATE SOIL CLASSIFICATION AS SPECIFIED IN THE MOST CURRENT ODOT MATERIALS DIVISION OHDL-50. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLASSIFY THE SOIL AND DETERMINE THE APPROPRIATE ADDITIVE(S).

9 ESTIMATED AT 0.15 GALLONS PER SQUARE YARD AFTER DILUTION FOR THE APPLICATION OF ITEM NO. 411(B) AND 411(F).

10 INCLUDES 9,170 GAL FOR I-35 SURFACING AND 135 GAL FOR I-35 GUARDRAIL AS SHOWN ON SUMMARIES (1).

11 TEMPORARY SEDIMENT FILTERS SHALL BE TYPE 1-C.

12 THE GUARDRAIL END TREATMENT SHALL BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION LIST OF APPROVED QUALIFIED PRODUCTS. FOR A LIST OF THE APPROVED DEVICES GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT: http://www.okladot.state.ok.us/traffic/qpl/index.php

13 USE RS380I OR APPROVED EQUAL.

14 TRENCH WIDTHS SHALL BE AS SHOWN ON STANDARD SPI-4. SPECIFIED TRENCH WIDTHS SHALL BE MAINTAINED FULL DEPTH FROM THE FLOW LINE TO THE GRADING TEMPLATE. ALL TRENCH EXCAVATION GREATER THAN 5 FEET IN DEPTH SHALL BE SHORED. ALL COSTS TO BRING TRENCHING INTO CONFORMANCE WILL BE INCLUDED IN PRICE BID FOR PIPE.

15 INCLUDES THE PRICE OF AN OMNI-FLEX, OR APPROVED EQUAL, TONGUE AND GROOVE GASKET JOINT.

16 PRICE BID TO INCLUDE ALL TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL AS SHOWN ON THE SUMMARY OF DRAINAGE STRUCTURES.

17 INCLUDES 6,438 TONS FOR I-35 AND 204 TONS FOR GUARDRAIL AS SHOWN ON SUMMARIES (1).

ROADWAY PAY ITEMS NOTES (CONT'D)

(R-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY ONLY. SEE SECTION 109.01B OF THE STANDARD SPECIFICATIONS.

(R-5) AN ESTIMATED QUANTITY OF 3,027 C.Y. TOPSOIL TO BE RESERVED FOR REPLACEMENT OF APPROXIMATELY 5" ON COMPLETED FORESLOPES, DITCHES, AND BACKSLOPES. THIS QUANTITY IS INCLUDED IN THE EARTHWORK BALANCE. ANY ADDITIONAL EXCAVATION REQUIRED IN CUT SECTIONS TO ALLOW FOR PLACEMENT OF TOPSOIL TO FINAL GRADE, SHALL BE INCLUDED IN THE PRICE BID.

(R-7) FOR 205(A) PRICE BID TO INCLUDE COST OF (18-46-0) FERTILIZER. ESTIMATED AT 150 POUNDS PER ACRE.

FOR 230(A) AND 232(A) PRICE BID TO INCLUDE COST OF (10-20-10) FERTILIZER, ESTIMATED AT 200 POUNDS PER 1000 SQUARE YARDS.

(R-8) FOR 230(A) & 232(A) PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 60 GALLONS PER SQUARE YARD.

(R-11) THE QUANTITIES ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 4.91 ACRES.

(R-16) QUANTITY BASED ON TWO APPLICATIONS.

(R-25) ESTIMATED AT 120 LBS. PER CU. FT.

(R-26) ESTIMATED AT 93.6 LBS. PER SQ. YD. PER 1" THICK.

(R-32) ESTIMATED AT 112 LBS. PER SQ. YD. PER 1" THICK.

(R-33) ESTIMATED AT 109 LBS. PER SQ. YD. PER 1" THICK.

(R-48) INCLUDES REMOVAL OF ALL EXISTING ROADWAY DRAINAGE STRUCTURES, HEADWALLS (UNLESS OTHERWISE SPECIFIED), INLETS, FENCES, AND OTHER STRUCTURES WITHIN THE RIGHT OF WAY.

(R-49) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.

(R-50) MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**ROADWAY PAY ITEMS & NOTES**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AR03

TRAFFIC SIGNING GENERAL CONSTRUCTION NOTES

REMOVED MATERIAL TO BECOME PROPERTY OF CONTRACTOR AND IT SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

ALL REGULATORY SIGNS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956–(LATEST REVISION) FOR TYPE III SHEETING.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT YELLOW SHEETING. THE FLUORESCENT YELLOW SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956– (LATEST REVISION) REQUIREMENTS FOR TYPE VIII SHEETING.

ALL GREEN AND BLUE SIGNS ON CONVENTIONAL HIGHWAYS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956–(LATEST REVISION) FOR TYPE III SHEETING.

ALL PANEL AND OVERHEAD SIGNS SHALL HAVE TYPE III HIGH INTENSITY BACKGROUND WITH TYPE VIII LEGENDS AND BORDERS. THE TYPE III BACKGROUND AND THE TYPE VIII LEGENDS AND BORDERS SHALL MEET THE REQUIREMENTS OF ASTM D4956–(LATEST REVISION).

THE MANUFACTURER SHALL FURNISH A TYPE 'A' CERTIFICATION IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS, LATEST EDITION, and SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON THE MATERIAL SUBMITTED FOR APPROVAL.

ALL ANCHOR BOLTS SHALL BE GRADE A–36 STEEL.

THE STATIONS AND LOCATIONS OF THE SIGN PLACEMENT, AS SHOWN ON THE PLAN SHEETS, ARE APPROXIMATE. EXACT STATIONS AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH DEPARTMENT STANDARDS AND THE MUTCD IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED.

POST LENGTHS SHOWN ON SIGN SUMMARY ARE APPROXIMATE, EXACT LENGTH SHALL BE DETERMINED BY FIELD SURVEY BY THE CONTRACTOR.

ALL SIGNS SHALL BE REMOVED FROM THE POSTS IN A SALVAGEABLE MANNER FOR CARE SHALL BE TAKEN DURING REMOVAL AND TRANSPORTING TO ALLEVIATE DAMAGE OF MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED DURING REMOVAL OF SIGNS AND SIGN POSTS.

AFTER REMOVAL OF ANY SIGN FOOTINGS, THE HOLES SHALL BE FILLED WITH SOIL AND TAMPED AND SHAPED IN A MANNER APPROVED BY THE ENGINEER.

FOR NEW OR EXISTING GROUND MOUNTED SIGNS, MAXIMUM STUB POST PROJECTION ABOVE FOOTING/GROUND LINE SHALL BE 1–3/4" + /– 1/4". MAXIMUM FOOTING PROJECTION ABOVE GROUND LINE SHALL BE NO MORE THAN 2". SHOULD ADDITIONAL SOIL BE REQUIRED, THE ENGINEER WILL DESIGNATE AN AREA TO OBTAIN ADDITIONAL ALL ASSOCIATED COSTS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

TRAFFIC SIGNING PAY ITEM NOTES

(TS–25) QUANTITY SHOWN INCLUDES **10,840** L.F. TRAFFIC STRIPE (MULTI–POLYMER)(WHITE), **9,200** L.F. TRAFFIC STRIPE(MULTI–POLYMER)(YELLOW), AND **2,799** L.F. TRAFFIC STRIPE(MULTI–POLYMER)(BLACK) AND WILL BE MEASURED BY THE LINEAR FOOT OF SIX INCH (6") WIDE TRAFFIC STRIPE.

(TS–33) INCLUDED IN THIS PAY ITEM IS ALL HARDWARE ASSOCIATED WITH PROPERLY ANCHORING AND MOUNTING THE HIGHWAY SIGN IN ACCORDANCE WITH O.D.O.T. PLANS AND STANDARD DRAWINGS SSA1–1 AND SSP1–1–(LATEST REVISION).

(TS–34) INCLUDED IN THIS PAY ITEM IS THE REMOVAL OF ANY EXISTING SIGNS TO BE REPLACED BY NEW ASSEMBLIES AND THE REMOVAL OF ANY EXISTING SIGNS THAT WILL BE IN CONFLICT WITH THE NEW ROADWAY OR NEW SIGNAGE.

PAY QUANTITIES JP 24432(14)

TRAFFIC SIGNING AND STRIPING 0310

ITEM	DESCRIPTION	UNIT	QUANTITY
804(A) 2915	STRUCTURAL CONCRETE	CY	5.12
804(B) 2916	REINFORCING STEEL	LBS	862.00
850(A) 8110	SHEET ALUMINUM SIGNS (TS-34)	SF	174.25
850(B) 8112	EXTRUDED ALUMINUM PANEL SIGNS	SF	482.50
851(A) 3206	4"@13 GALV. STEEL WIDE FLANGE BEAM POST	LF	179.12
851(A) 3207	6"@15 GALV. STEEL WIDE FLANGE BEAM POST	LF	94.20
851(C) 8324	2" SQUARE TUBE POST (TS-33)	LF	280.56
856(A) 8535	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE) (TS-25)	LF	22839.00

SUMMARY OF TRAFFIC STRIPING

STATION TO STATION		WHITE EDGE	DASHED WHITE	DASHED BLACK	YELLOW EDGE	DOTTED WHITE	DOTTED BLACK
		TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)	TRAFFIC STRIPE (MULTI-POLY.) (6" WIDE)
		856(A)	856(A)	856(A)	856(A)	856(A)	856(A)
		LF	LF	LF	LF	LF	LF
855+00	901+00	8041	2567	2567	9200	232	232

SUMMARY OF TRAFFIC SIGNS

STATION	OFFSET	LT.	RT.	DESCRIPTION	NOTES	FOOTING DESIGN NO.	STRUCTURAL CONCRETE	REINFORCING STEEL	SHEET ALUMINUM SIGNS	EXTRUDED ALUMINUM PANEL SIGNS	4"@13 GALV. STEEL WIDE FLANGE BEAM POST	6"@15 GALV. STEEL WIDE FLANGE BEAM POST	2" SQUARE TUBE POST
							804(A)	804(B)	850(A)	850(B)	851(A)	851(A)	851(C)
							CY	LBS	SF	SF	LF	LF	LF
861+04.43	78.53		X	SPECIAL SIGN 1 (SEE SIGN DETAILS)	TONKAWA PONCA CITY EXIT 214	KC-0	0.72	130		94	48.66		
865+17.98	77.10		X	W8-13F	BRIDGE ICES BEFORE ROAD				16				42.34
866+44.83	76.50		X	W13-2F "50 MPH"	ADVISORY EXIT SPEED				20				41
870+60.44	62.32		X	E5-1a "EXIT 214"	INTERSTATE EXIT SIGN	KC-0	0.72	130		40	35		
875+83.61	76.83	X		W4-1E(R)	RIGHT MERGE				16				45.54
876+12.97	72.24		X	D8-1 "1 1/2 MILE"	WEIGH STATION	KC-1	1.52	212	34.25	117		55.2	
879+98.49	56.49	X		W12-2P "17FT 8IN"	BRIDGE CLEARANCE				14				
879+98.49	56.40		X	W12-2P "17FT 8IN"	BRIDGE CLEARANCE				14				
882+07.74	76.83		X	W4-1E(R)	RIGHT MERGE				16				45.54
883+00.08	80.50		X	SPECIAL SIGN 2 (SEE SIGN DETAILS)	PREPASS SITE FOLLOW IN-CAB SIGNALS	KC-0	0.72	130		97.5	42.8		
883+92.29	60.50		X	D10-3F "MILE 215"	REFERENCE LOCATION SIGN				4				13.1
883+92.41	61.43	X		D10-3F "MILE 215"	REFERENCE LOCATION SIGN				4				13.7
887+33.96	62.32	X		E5-1a "EXIT 214"	INTERSTATE EXIT SIGN	KC-0	0.72	130		40		39	
890+96.21	76.08	X		W13-2F "50 MPH"	ADVISORY EXIT SPEED				20				39
892+79.27	76.78	X		W8-13F	BRIDGE ICES BEFORE ROAD				16				40.34
896+92.96	78.41	X		SPECIAL SIGN 1 (SEE SIGN DETAILS)	TONKAWA PONCA CITY EXIT 214	KC-0	0.72	130		94	52.66		
						TOTALS:	5.12	862	174.25	482.5	179.12	94.2	280.56

DESIGN	BWF	2/18
DRAWN	BWF	2/18
CHECKED	ATD	3/18
APPROVED	BWF	3/18
SQUAD	MESHEK	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SIGNING & STRIPING NOTES QUANTITIES & SUMMARIES

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO AT01

PRINT DATE: 07/26/2018 M:\BENHAM16BEN01\DESIGN\DRAWINGS\16BEN01_STRIPING.DWG

TRAFFIC CONTROL PAY ITEMS

0340 TRAFFIC CONTROL

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
857(C)	8851	REMOVABLE PAVEMENT MARKING TAPE(4" WIDE)	(TC-19, 70, 75)	LF	37,283
857(F)	8006	PAVEMENT MARKING REMOVAL(TRAFFIC STRIPE)	(TC-22, 70, 75)	LF	28,111
871(B)	8705	(SP)CONST. ZONE IMPACT ATTEN.	(TC-52, 80, 84)	SD	1,545
877(B)	8484	DELIVER PORTABLE LONGITUDINAL BARRIER	(SP-2) (TC-1, 2)	LF	5,863
877(C)	8486	RELOCATION OF PORTABLE LONGITUDINAL BARRIER	(TC-1)	LF	6,745
878(B)	8487	MODULAR GLARE SCREEN (TEMPORARY)	(TC-84)	SD	16,272
880(A)	8812	ARROW DISPLAY(TYPE C)	(TC-84)	SD	720
880(B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 SF	(TC-26, 28, 33, 84)	SD	12,616
880(B)	8821	CONSTRUCTION SIGNS 6.26 SF TO 15.99 SF	(TC-26, 29, 33, 84)	SD	6,964
880(B)	8824	CONSTRUCTION SIGNS 16.0 SF TO 32.99 SF	(TC-26, 30, 33, 84)	SD	22,928
880(C)	8842	CONSTRUCTION BARRICADES(TYPE III)	(TC-26, 84)	SD	2,172
880(C)	8848	WING BARRICADES	(TC-26, 84)	SD	3,120
880(E)	8860	WARNING LIGHTS(TYPE A)	(TC-26, 84)	SD	18,504
880(F)	8878	DRUMS	(SP-3) (TC-26, 84)	SD	67,635
880(L)	8920	(SP) TRAFFIC SURVEILLANCE, OHP (NON-BIDDABLE)	(TC-65, 70)	HOUR	1,700
882(A)	8306	PORT. CHANGEABLE MESSAGE SIGN	(SP-1, 4) (TC-52, 84, 85)	SD	2,532

TRAFFIC CABLE BARRIER PAY ITEMS

0350 TRAFFIC CABLE BARRIER

ITEM NO.	CODE NO.	DESCRIPTION	NOTES	UNIT	QUANTITY
509(A)	0319	CLASS AA CONCRETE	(SP-5) (TP-73, 74)	CY	15.12
619(B)	5190	REMOVAL OF CABLE BARRIER	(TP-63, 68, 69)	LF	3,028
628	5180	INSTALLATION OF CABLE BARRIER SYSTEM	(TP-57, 58, 59, 60, 63, 67)	LF	2,883
628(C)	5110	END ANCHORS	(TP-61, 62, 66, 67)	EA	2

TRAFFIC CONTROL PAY ITEMS NOTES

(TC-1) THE CONTRACTOR SHALL FURNISH AND INSTALL SUCH LIGHTS, SIGNS, BARRICADES, AND PROVIDE FLAGGERS NECESSARY FOR THE CONTROL, SAFETY, AND MAINTENANCE OF TRAFFIC WHEN INSTALLING, RELOCATING OR DELIVERING PORTABLE LONGITUDINAL BARRIER.

(TC-2) QUANTITY INCLUDES SUFFICIENT LENGTH OF PORTABLE LONGITUDINAL BARRIER TO PROVIDE FOR THE LONGEST SECTION SHOWN ON THE PLANS. THIS SAME BARRIER WILL BE USED ON OTHER DETOUR PHASES.

(TC-19) THIS ITEM INCLUDES AN ESTIMATED 22,568 L.F. (4" WIDE) WHITE AND 14,715 L.F. (4" WIDE) YELLOW STRIPE. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN O.D.O.T. APPROVED REMOVABLE PAVEMENT MARKING TAPE. COST FOR REMOVAL OF THIS TAPE SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NON-REMOVABLE MARKING TAPE (FOIL BACK) SHALL NOT BE CONSIDERED AN APPROVED EQUAL FOR THIS ITEM.

(TC-22) AMOUNT SHOWN IS AN APPROXIMATION AND THE ACTUAL AMOUNT OF REMOVAL, IF NECESSARY, SHALL BE DETERMINED BY THE ENGINEER. PRICE BID FOR PAVEMENT MARKING REMOVAL SHALL INCLUDE THE COST OF REMOVING STRIPE, ARROWS, WORDS AND SYMBOLS, AS SHOWN IN THE PLANS. THESE ITEMS MAY CONSIST OF PLASTIC, PAINT OR NON-REMOVABLE MARKING TAPE.

(TC-26) ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THE PROJECT.

ALL SIGNS AND BARRICADES WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.

(TC-28) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 0.00 S.F. AND 6.25 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.

(TC-29) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 6.26 S.F. AND 15.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.

(TC-30) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 16.00 S.F. AND 32.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.

(TC-33) ALL CONSTRUCTION WORK ZONE SIGNS SHALL HAVE FLUORESCENT SHEETING. THE FLUORESCENT SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956 (LATEST REVISION)

THE MANUFACTURER SHALL FURNISH A TYPE 'D' CERTIFICATION IN ACCORDANCE WITH O.D.O.T. STANDARD SPECIFICATIONS (CURRENT EDITION) SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON MATERIAL SUBMITTED FOR APPROVAL.

TRAFFIC CONTROL PAY ITEMS NOTES (CONT'D)

(TC-52) ANY USED _____*_____ TO BE PLACED ON THIS PROJECT SHALL BE SUBJECT TO INSPECTION AND APPROVAL, BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, TO ASSURE THAT THEY ARE IN GOOD WORKING CONDITION, PRIOR TO PLACEMENT ON THE PROJECT.

* CHANGEABLE MESSAGE SIGN
CONSTRUCTION ZONE IMPACT ATTENUATOR

(TC-65) THE PRICE BID FOR THIS ITEM SHALL INCLUDE THE FOLLOWING:

A. ONE OFFICIALLY MARKED OKLAHOMA HIGHWAY PATROL CAR (WHEN PROJECT INVOLVES A STATE OR FEDERAL HIGHWAY). IF AN OKLAHOMA HIGHWAY PATROL CAR IS NOT AVAILABLE, THEN A LOCAL CITY OR COUNTY LAW ENFORCEMENT VEHICLE IS TO BE USED. PRICE BID FOR THIS ITEM SHALL BE PAID ON A PER UNIT PER HOUR BASIS.

B. ONE OKLAHOMA HIGHWAY LAW ENFORCEMENT OFFICER WITH JURISDICTIONAL AUTHORITY TO WRITE AND ISSUE TRAFFIC CITATIONS. IF AN OKLAHOMA HIGHWAY PATROL LAW OFFICER IS NOT AVAILABLE, THEN A LOCAL CITY OR COUNTY LAW ENFORCEMENT OFFICER IS TO BE USED. THE LAW ENFORCEMENT OFFICER SHALL BE INSURED, LICENSED AND BONDED, IF REQUIRED, BY THE CONTRACTOR. THIS OFFICER SHALL BE SPECIFICALLY APPROVED AND ASSIGNED TO THIS WORK ACTIVITY.

C. THE CONTRACTOR SHALL MAKE ALL THE NECESSARY ARRANGEMENTS WITH THE OKLAHOMA HIGHWAY PATROL OR THE LAW ENFORCEMENT AGENCY TO PROVIDE THE REQUIRED LAW ENFORCEMENT ON THIS PROJECT.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HIS ANTICIPATED WEEKLY SCHEDULE TO THE OKLAHOMA HIGHWAY PATROL OR THE LOCAL LAW AGENCY TWO WEEKS IN ADVANCE OF THE WORK. THE WORK SCHEDULE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

E. THE OKLAHOMA HIGHWAY PATROL OR THE LOCAL LAW ENFORCEMENT AGENCY WILL BE PAID FOR A MAXIMUM OF ONE (1) HOUR, PER WORK PERIOD, TO ALLOW FOR TRAVEL TO AND FROM THE OFFICER'S PERMANENT DUTY STATION AND THE WORK SITE. THIS WILL BE PAID ONE (1) TIME PER WORK PERIOD AS DEFINED BY THE CONTRACTOR IN AGREEMENT WITH THE ENGINEER.

(TC-70) THIS ITEM IS AN ESTIMATED QUANTITY TO BE USED AS DEEMED NECESSARY BY THE ENGINEER.

(TC-75) TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE THE SAME DAY THAT EXISTING PAVEMENT MARKINGS ARE REMOVED FROM ANY ROADWAY OPEN TO TRAFFIC. ALSO, ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO THE INSTALLATION OF FINAL STRIPING.

(TC-80) INCLUDED IN THIS ITEM SHALL BE ONE (1) ADDITIONAL UNIT TO BE USED AS A STAND-BY OR REPLACEMENT. THIS STAND-BY UNIT SHALL BE IMMEDIATELY ACCESSIBLE TO REPLACE A DAMAGED, STOLEN OR MALFUNCTIONING UNIT. THE AMOUNT OF TIME BETWEEN THE REMOVAL OF THE DAMAGED UNIT AND THE INSTALLATION OF THE STAND-BY UNIT SHALL BE NO MORE THAN TWENTY-FOUR (24) HOURS.

(TC-84) 420 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.

(TC-85) THESE SIGNS MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION LIST OF APPROVED CHANGEABLE MESSAGE SIGNS. FOR A LIST OF THE APPROVED SIGNS GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT:
http://www.okladot.state.ok.us/traffic/qpl/index.php

(SP-1) QUANTITY INCLUDES THE USE OF TWO (2) PORTABLE CHANGEABLE MESSAGE SIGNS FOR 2 WEEKS IN ADVANCE TO BE PLACED AT APPROVED LOCATIONS BY THE ENGINEER.

(SP-2) PRICE BID FOR THIS ITEM SHALL INCLUDE THE INSTALLATION AND MAINTENANCE OF THE REFLECTORS ON THE BARRIER WALL.

(SP-3) TYPE "C" WARNING LIGHTS ARE NOT REQUIRED.

(SP-4) QUANTITY INCLUDES THE USE OF SIX (6) PORTABLE CHANGEABLE MESSAGE SIGNS FOR THE DURATION OF THE PROJECT.

TRAFFIC CABLE BARRIER PAY ITEMS NOTES

(TP-57) PRICE BID FOR THIS ITEM CONSISTS OF INSTALLATION OF CABLE BARRIER SYSTEM AND ITS HARDWARE (CAPS, POST, TURN BUCKLE, ETC.). CONTRACTOR SHALL USE THE MATERIAL REMOVED FROM THE EXISTING CABLE BARRIER SYSTEM WITH THE EXCEPTION OF CONCRETE FOOTINGS. COST TO INCLUDE ANY ADDITIONAL HARDWARE NEEDED TO COMPLETE THE INSTALLATION. CONTRACTOR SHALL SWAGE NEW FITTINGS FOR THE INSTALLATION OF NEW SECTION IF DEEMED NECESSARY BY THE ENGINEER. PRICE BID FOR THIS ITEM ALSO INCLUDES COST OF NEW SWAGING FOR CABLE BARRIER SYSTEM.

(TP-58) COST TO INCLUDE ANY ADDITIONAL HARDWARE NEEDED TO COMPLETE THE INSTALLATION. CONTRACTOR SHALL SWAGE NEW FITTINGS FOR THE INSTALLATION OF EXISTING SECTION IF NECESSARY BY THE ENGINEER. PRICE BID FOR THIS ITEM ALSO INCLUDES COST OF NEW SWAGING FOR CABLE BARRIER SYSTEM.

TRAFFIC CABLE BARRIER PAY ITEMS NOTES (CONT'D)

(TP-59) TURNBUCKLES SHALL BE NO CLOSER THAN 1' TO A CABLE POST, IF IT INTERFERES WITH THE TENSIONING OPERATION OF THE SYSTEM. THE HEIGHTS FOR ALL ROWS OF CABLES SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS. THE BOTTOM CABLE MUST BE WITHIN THE TOLERANCE LIMITS RECOMMENDED BY THE MANUFACTURER.

(TP-60) PRICE BID FOR THIS ITEM INCLUDES THE REMOVAL OR RELOCATION / RESET OF ANY EXISTING SIGNS OR DELINEATORS WITHIN THE MEDIAN WITH THE APPROVAL OF THE ENGINEER, AS WELL AS, RESHAPING THE DITCHES AS DIRECTED BY THE ENGINEER WITHIN THIS AREA PRIOR TO INSTALLATION OF THE CABLE BARRIER SYSTEM. RELOCATION OF ANY EXISTING SIGN OR DELINEATOR SHALL BE DETERMINED BY THE ENGINEER.

(TP-61) INCLUDED IN THIS PAY ITEM IS ALL MISCELLANEOUS HARDWARE REQUIRED BY THE MANUFACTURER TO BE USED FOR INSTALLATION OF SOCKETED CABLE BARRIER SYSTEM. ALSO, AN ADDITIONAL 400 POSTS AND POST ACCESSORIES (CAPS, PLASTIC HARDWARE, GROUND COVER, ETC.) SHALL BE DELIVERED TO THE ODOT INTERSTATE MAINTENANCE YARD IN TONKAWA.

(TP-62) INCLUDED IN THIS PAY ITEM WILL BE TWO (2) DAYS OF TRAINING FROM THE MANUFACTURER'S REPRESENTATIVE FOR MAINTAINING WIRE ROPE SAFETY FENCE SYSTEM. THE TRAINING SESSION(S) SHALL INCLUDE TRAINING TO PERTINENT ODOT AND LOCAL EMERGENCY PERSONNEL. PARTICIPANT SELECTION AND TRAINING LOCATION SHALL BE APPROVED BY THE ENGINEER.

(TP-63) CABLE WILL BE MEASURED FROM BEGINNING OF WIRE ROPE CABLE TO END OF WIRE ROPE CABLE.

(TP-66) INCLUDED IN THIS PAY ITEM IS ALL MISCELLANEOUS HARDWARE REQUIRED BY THE MANUFACTURER TO BE USED FOR INSTALLATION OF SOCKETED CABLE BARRIER SYSTEM. ALSO INCLUDED SHALL BE CABLE BARRIER POSTS, CAPS, PLASTIC HARDWARE, GROUND COVER, ETC.

(TP-67) THE EXISTING CABLE BARRIER SYSTEM IS SAFE FENCE (HIGH TENSION CABLE BARRIER (TL-4)). CONTRACTOR SHALL CONTACT THE ENGINEER FOR EXISTING END ANCHOR AND FOOTINGS DESIGN AND CONSTRUCT THE CABLE BARRIER SYSTEM ACCORDING TO THE MANUFACTURER RECOMMENDED INSTALLATION. ALL INSTALLATION OF CABLE BARRIERS ON THIS SECTION SHALL BE SAFE FENCE (HIGH TENSION CABLE BARRIER (TL-4)).

(TP-68) PRICE BID FOR THIS ITEM CONSISTS OF REMOVAL OF EXISTING CABLE BARRIER SYSTEM, ITS CONCRETE FOOTINGS, AND/OR ANCHOR UNITS. CONTRACTOR SHALL REMOVE, SPOOL, COLLECT, AND STORE ALL CABLE BARRIER HARDWARE. THE MATERIALS SHALL BE STORED AT A LOCATION DETERMINED BY THE ENGINEER TO BE USED ON THIS PROJECT. ALL CONCRETE FOOTINGS ARE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

(TP-69) PRICE BID FOR THIS ITEM SHALL INCLUDE THE FILLING AND TAMPING OF HOLES LEFT AFTER THE REMOVAL OF POST FOOTINGS DURING CABLE BARRIER REMOVAL OPERATION. WORK SHALL BE PERFORMED IN A MANNER APPROVED BY THE ENGINEER.

(TP-73) THIS IS AN ESTIMATED QUANTITY TO BE USED FOR POST FOOTINGS AND ANCHOR UNITS FOR THIS PROJECT. THIS ITEM SHALL ALSO INCLUDE REINFORCING STEEL BARS REQUIRED FOR POST FOOTINGS AND ANCHOR UNITS AS SHOWN BY THE MANUFACTURER'S DESIGN.

(TP-74) THIS ITEM INCLUDES AN ESTIMATED QUANTITY OF CLASS AA CONCRETE BASED ON 12" DIAMETER AND 36" DEPTH MINIMUM FOOTING DESIGN. THIS ITEM INCLUDES A SOIL REPORT TO BE PROVIDED BY THE CONTRACTOR FROM THE EXISTING PROJECT NO. HSIPIG-0035-4(234)215TR TO THE CABLE MANUFACTURER INDICATING ALL NECESSARY SOIL INFORMATION REQUIRED FOR THE MANUFACTURER TO DESIGN POST FOOTINGS AND ANCHOR UNITS FOR THIS PROJECT. THE FOUNDATION FOOTING DESIGN SHALL BE COMPLETED AND APPROVED BY THE ENGINEER, PRIOR TO EXCAVATION OF END ANCHOR AND POST FOOTINGS. ALL POSTS AND ANCHOR UNIT FOUNDATION DESIGNS RECOMMENDED BY THE MANUFACTURER FOR THIS PROJECT SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER. THE POST FOOTINGS SHALL NOT BE LESS THAN 12" DIAMETER BY 36" DEEP. FOOTINGS SHALL NOT EXTEND ABOVE GROUND MORE THAN 1".

(SP-5) INCLUDED IN THIS ITEM IS 15.12 C.Y. FOR END ANCHORS.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**TRAFFIC PAY ITEMS & NOTES**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AT02

100 ROADWAY

SUMMARY OF SURFACING QUANTITIES

STATION TO STATION	AGGREGATE BASE TYPE A 303(A) CY	STABILIZED SUBGRADE 307(K) SY	GEOTEXTILE REINFORCEMENT 326(A) SY	TRAFFIC BOUND SURFACE COURSE TYPE E 402(E) TON	PERMEABLE FRICTION COURSE 405 TON	TACK COAT 407(B) GAL	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B) TON	STONE MATRIX ASPHALT 411(F) TON	RUMBLE STRIP-METHOD HMA-CON 413(A) LF	RUMBLE STRIP-METHOD PCC-CON 413(C) LF	P.C. CONCRETE PAVEMENT (PLACEMENT) 414(A) SY	P.C. CONCRETE FOR PAVEMENT 414(G) CY	2'-8" COMB. & GUTTER (8" BARRIER) 609(B) LF
I-35 NB													
869+20.00 TO 872+00.00	453	1,450	1,624	224	66	738	519	124	690	0	0	0	0
872+00.00 TO 887+00.00	2,004	6,403	7,135	944	294	3,301	2,317	551	2,360	0	0	0	0
887+00.00 TO 889+00.00	340	1,086	1,210	160	50	560	393	94	415	0	0	0	0
I-35 SB													
869+20.00 TO 872+00.00	476	1,520	1,693	224	70	784	550	131	690	0	0	0	0
872+00.00 TO 887+00.00	2,004	6,403	7,135	944	294	3,301	2,317	551	2,360	0	0	0	0
887+00.00 TO 889+00.00	303	974	1,100	160	43	486	342	81	415	0	0	0	0
I-35 CROSSOVER													
862+45.00 TO 867+90.00	0	2,464	0	0	0	0	0	0	0	1,090	2,464	582	0
889+15.00 TO 894+40.00	0	2,328	0	0	0	0	0	0	0	1,050	2,328	550	0
I-35 SHOULDER REHABILITATION													
864+00.00 TO 867+90.00	0	553	0	0	0	0	0	0	0	390	444	105	0
865+39.00 TO 869+20.00	0	479	0	0	0	0	0	0	0	381	373	89	0
889+00.00 TO 891+50.00	0	344	0	0	0	0	0	0	0	250	274	65	0
I-35 TEMP. SHOULDER REHABILITATION													
869+20.00 TO 878+23.00		1,254	0	0	0	0	0	0	0	0	1,003	237	0
879+74.00 TO 888+20.00	0	1,188	0	0	0	0	0	0	0	0	953	226	0
US 60													
24+83.15 TO 25+94.19	44	247	132	0	0	0	0	0	0	132	0	0	222
TOTALS	**5,624**	**26,693**	**20,029**	**2,656**	**817**	**9,170**	**6,438**	**1,532**	**6,930**	**3,293**	**7,839**	**1,854**	**222**

0100 ROADWAY

SUMMARY OF REMOVALS

STATION TO STATION	CURB AND GUTTER 619(B) LF	CONCRETE PAVEMENT 619(B) SY	ASPHALT PAVEMENT 619(B) SY	CONCRETE PAVEMENT W/ASPHALT OVERLAY 619(B) SY	GUARDRAIL 619(B) LF	CURB 619(B) LF	SAWING PAVEMENT 619(C) LF
I-35							
862+45.00 TO 879+00.00			4,667	4,812	991	76	3,320
879+00.00 TO 894+40.00			4,143	4,946	971	76	2,402
SHOULDER REHABILITATION							
869+20.00 TO 888+20.00		1,955					
US-60							
24+83.15 TO 25+94.19	222						222
TOTALS	**222**	**1,955**	**8,810**	**9,758**	**1,962**	**152**	**5,944**

0100 ROADWAY

REMOVAL OF STRUCTURES & OBSTRUCTIONS (619A)

STATION TO STATION	REMOVAL OF 18" RCP LF	REMOVAL OF CONC. DITCH LINER LF
I-35		
862+45.00 TO 879+00.00		75
879+00.00 TO 894+40.00	73	76
TOTALS	73	151

REMOVALS SHALL BE PAID FOR UNDER STRUCTURES AND OBSTRUCTIONS, ITEM 619(A). THIS SUMMARY IS INTENDED TO PROVIDE FOR THE REMOVAL OF ALL OBSTRUCTIONS. HOWEVER, IF ADDITIONAL OBSTRUCTIONS ARE ENCOUNTERED THEY SHALL BE REMOVED. THE COST OF REMOVING THE ADDITIONAL OBSTRUCTIONS SHALL BE INCLUDED IN THE LUMP SUM BID FOR THIS ITEM.

0100 ROADWAY

SUMMARY OF PAVED FLUME

STATION	OFFSET	DESCRIPTION	CLASS C CONCRETE 509(D) CY
I-35			
NORTHBOUND			
876+85.32	59.67' RT	DESIGN 2	2.29
881+11.58	59.67' RT	DESIGN 2	2.48
SOUTHBOUND			
876+85.32	59.67' LT	DESIGN 2	2.74
881+11.58	59.67' LT	DESIGN 2	2.29
TOTAL			**10**

0100 ROADWAY

SUMMARY OF GUARDRAIL

LOCATION	STATION TO STATION	TACK COAT 407(B) GAL	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B) TON	(PL)GUARDRAIL CURBING 623 EA	BEAM GUARDRAIL W-BEAM SINGLE 623(A) LF	GUARDRAIL TRAIL END TURNDOWN (31") 623(F) EA	GUARDRAIL END TREATMENT (31") 623(G) EA	GUARDRAIL BRIDGE CONN - TRAIL END (31") 623(I) EA	GUARDRAIL BRIDGE CONN - THRIE BEAM (31") 623(I) EA	LENGTH INCLUDING ANCHOR UNITS ** LF	GUARDRAIL DELINEATORS (TYPE 1, CODE 1) 853 EA
I-35 NB	874+07.73 TO 877+38.98 LT	32	49		262.5		1		1	331.25	7
I-35 NB	874+82.73 TO 877+38.98 RT	26	39	1	187.5		1		1	256.25	6
I-35 SB	876+64.38 TO 877+39.38 LT	9	14	1		1	1	1		75.00	2
I-35 NB	880+57.52 TO 881+32.52 RT	9	14	1		1	1	1		75.00	2
I-35 SB	880+57.92 TO 883+14.17 LT	26	39	1	187.5		1		1	256.25	6
I-35 SB	880+57.92 TO 883+89.17 LT	32	49		262.5		1		1	331.25	7
TOTALS		**135**	**204**	**4**	**900**	**2**	**6**	**2**	**4**	1,325	**30**

**FOR INFORMATION USE ONLY

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SUMMARIES (1)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AX01

0100 ROADWAY

SUMMARY OF DRAINAGE STRUCTURES

STR. NO.	ALIGNMENT	STATION	DESCRIPTION	DESIGN	STRUCTURAL INSTALLATION		INLET	PIPE		END SECTION		STR. NO.
					TRENCH EXCAVATION	STD. BEDDING MATERIAL, CLASS B	INLET (SMD-TYPE 2)	18" R.C.PIPE CLASS III	22" X 13" R.C.PIPE ARCH CLASS A-III	22" X 13" PREFAB. CULVERT END SEC., ARCH	18" PREFAB. CULVERT END SECTION, ROUND	
					**	**	611(G)	613(A)	613(A)	613(L)	613(L)	
					CY	CY	EA	LF	LF	EA	EA	
100	I - 35	888+00.00	CONST. INLET (SMD-TYPE 2) W/ 18" X 298' LG RCP SD	SMD-3, SPI-4, SPB-1, FHTCP-3	38	21	1	298				100
101	I - 35	894+53.75	CONST. INLET (SMD-TYPE 2) W/ 22" X 13" X 549' LG RCPA SD AND PCES	PCES-4, SMD-3, SPI-4, SPB-1, FHTCP-3	51	220	1		549	1		101
102	I - 35	885+00.00	CONST. INLET (SMD-TYPE 2) W/ 18" X 114' LG RCP XD AND PCES	PCES-4, SMD-3, SPI-4, SPB-1, FHTCP-3	51	220	1	114			1	102
				TOTALS	140	462	**3**	**412**	**549**	**1**	**1**	**TOTALS**

** FOR INFORMATION ONLY

0100 ROADWAY

SUMMARY OF EARTHWORK

LOCATION	UNCL. EXCAVATION 202(A) CY	FILL (+20%) CY	UNCL. BORROW 202(D) CY	WASTE CY
I-35 - Phase 0				
862+00.00 - 894+50.00	**193**	341	**149**	0
I-35 - Phase 1				
862+00.00 - 894+50.00	**86**	901	**815**	0
I-35 - Phase 2				
862+00.00 - 894+50.00	**3,614**	13,393	**9,779**	0
I-35 - Phase 3				
862+00.00 - 894+50.00	**3,683**	15,498	**11,815**	0
TOTALS	**7,576**	30,134	**22,558**	0

0100 ROADWAY

SUMMARY OF EROSION CONTROL

STATION TO STATION	TYPE A SALVAGED TOPSOIL	SOLID SLAB SODDING	SEEDING METHOD A	VEGETATIVE MULCHING	MOWING
	**	230(A)	232(A)	233(A)	241
	CY	SY	AC	AC	AC
862+45.00 - 894+40.00	3,299	23,747	4.91	4.91	9.82
TOTALS	3,299	**23,747**	**4.91**	**4.91**	**9.82**

** For Information Only

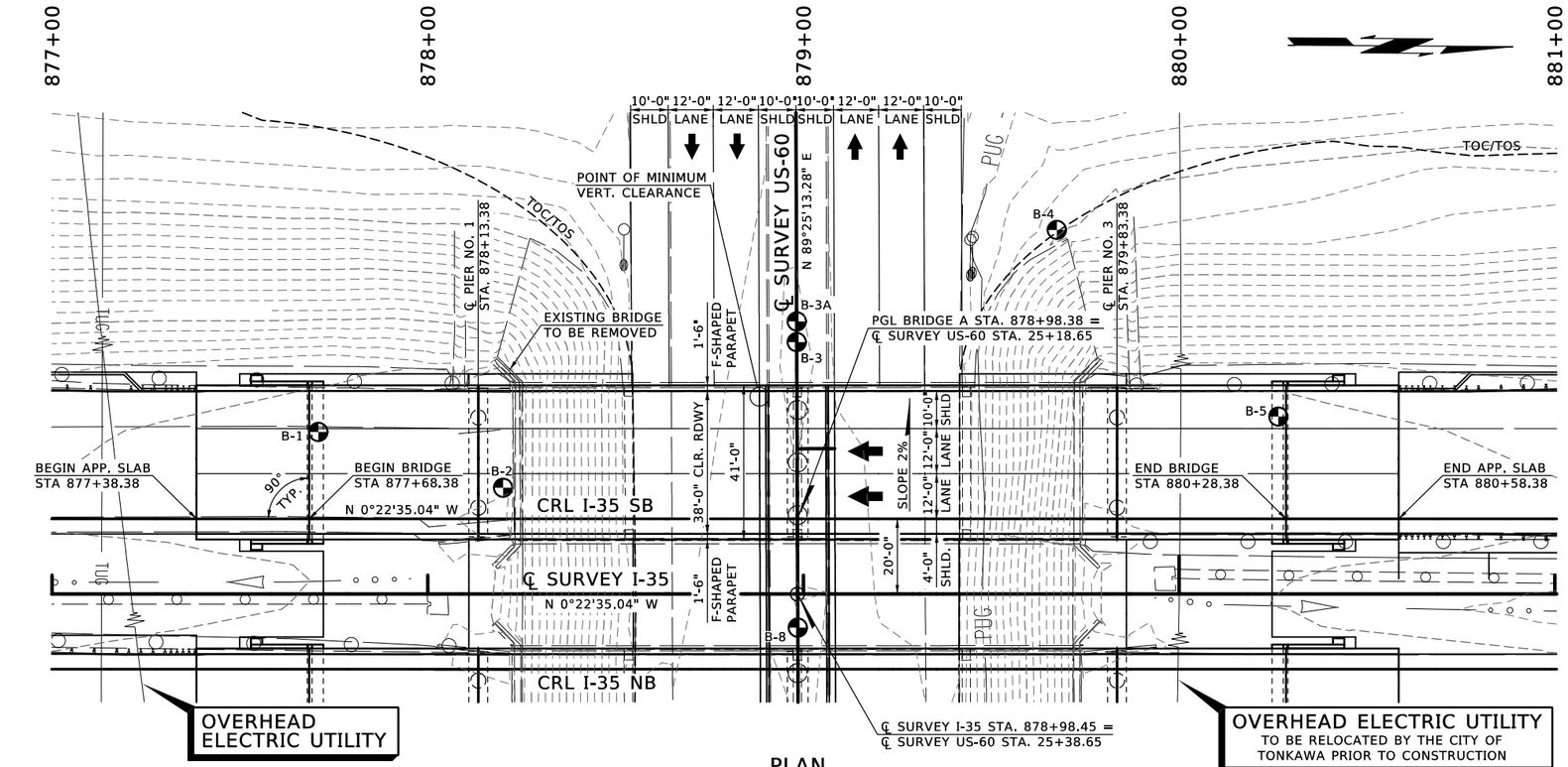
0100 ROADWAY

SUMMARY OF TEMPORARY SEDIMENT CONTROL

STATION	TO	STATION	TEMPORARY SILT FENCE 221(C) LF	TEMPORARY SEDIMENT FILTER 221(D) EA	TEMPORARY SILT DIKE 221(F) LF
I-35					
869+20.00	TO	879+00.00	1,936	1	140
879+00.00	TO	894+40.00	2,019	2	126
		TOTALS	**3,956**	**3**	**266**

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**SUMMARIES (2)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. AX02



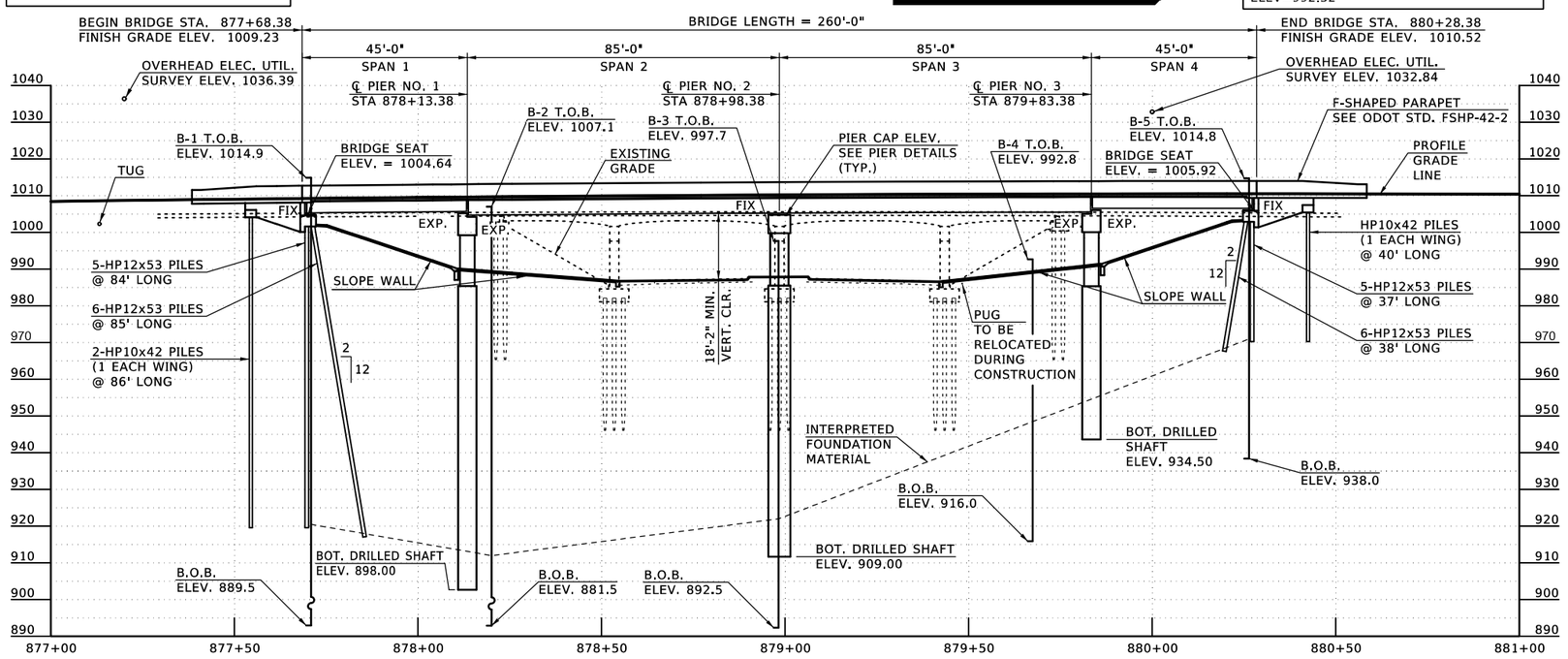
PLAN

SCALE: 1" = 20'

ALL BRIDGE STATIONS ARE CRL I-35 SB

BM 45 - "[ ]" IN SE CORNER OF E. HDWL STA. 873+69, 216' RT ℄ SURVEY I-35 ELEV=986.23

BM 43 - "X" IN CONC. BASE OF LIGHT POLE STA. 883+83, 216' RT ℄ SURVEY I-35 ELEV=992.52



ELEVATION

SCALE HORIZ. 1" = 20', VERT. 1" = 20'

DESIGN DATA
(LOAD RESISTANCE FACTOR DESIGN)

CLASS AA CONCRETE	f'c = 4,000 PSI
CLASS A CONCRETE	f'c = 3,000 PSI
REINFORCING STEEL (GRADE 60)	Fy = 60,000 PSI
STRUCTURAL STEEL M270 (GRADE 50W)	Fy = 50,000 PSI
STAINLESS STEEL A240 (TYPE 316)	Fy = 30,000 PSI

LOADING: HL-93 OR OKLAHOMA OVERLOAD TRUCK OR 315 OVERLOAD TRUCK AND 20 P.S.F. FUTURE WEARING SURFACE AND 5 P.S.F. FOR STAY-IN-PLACE FORMS
DESIGN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION.
ANSI / AASHTO / AWS D1.5 BRIDGE WELDING CODE
ANSI / AWS D1.6 STRUCTURAL WELDING CODE
STAINLESS STEEL WELDING CODE

LRFR OPERATING RATING 1.76

FOUNDATION DATA

ABUTMENTS (HP 12X53 PILING)

	ABUTMENT 1	ABUTMENT 2
FACTORED PILE REACTION	= 43.7 TONS	= 43.7 TONS
PILE LENGTHS	= 38 FT	= 38 FT

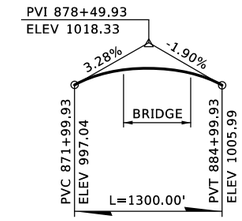
ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE EXISTING FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIERS 1 AND 3 (84" DIAMETER DRILLED SHAFTS)

	PIER 1	PIER 3
MINIMUM DEPTH INTO ROCK	= 14.00 FT	= 14.00 FT
DEPTH OF ROCK NEG'D FOR FRICTION	= 5.00 FT	= 5.00 FT
UNIT BEARING RESISTANCE	= 12.37 TSF	= 60 TSF
BEARING RESISTANCE FACTOR	= 0.7	= 0.7
FACTORED BEARING RESISTANCE	= 333.3 T/SHAFT	= 1617.0 T/SHAFT
UNIT FRICTION RESISTANCE	= 9 TSF	= 9 TSF
FRICTION RESISTANCE FACTOR	= 0.45	= 0.45
FACTORED FRICTION RESISTANCE	= 801.9 T/SHAFT	= 801.9 T/SHAFT
TOTAL FACTORED RESISTANCE	= 1135.2 T/SHAFT	= 2418.9 T/SHAFT
TOTAL FACTORED REACTION	= 708.5 T/SHAFT	= 583.0 T/SHAFT

PIER 2 (84" DIAMETER DRILLED SHAFTS)

MINIMUM DEPTH INTO ROCK	= 14.00 FT
DEPTH OF ROCK NEG'D FOR FRICTION	= 5.00 FT
UNIT BEARING RESISTANCE	= 60 TSF
BEARING RESISTANCE FACTOR	= 0.7
FACTORED BEARING RESISTANCE	= 1617.0 T/SHAFT
UNIT FRICTION RESISTANCE	= 9 TSF
FRICTION RESISTANCE FACTOR	= 0.45
FACTORED FRICTION RESISTANCE	= 801.9 T/SHAFT
TOTAL FACTORED RESISTANCE	= 2418.9 T/SHAFT
TOTAL FACTORED REACTION	= 960.0 T/SHAFT



VERTICAL CURVE DATA

I-35 NB & SB PROFILE GRADE LINE

REMOVAL: 30'-45'-45'-30' REINFORCED CONCRETE SLAB SPAN BRIDGE. C.L. I-35 SURVEY STA. 878+98.45, 32' LT., 38' ROADWAY, SKEW 0°, 2-18" S.C'S.

BRIDGE A

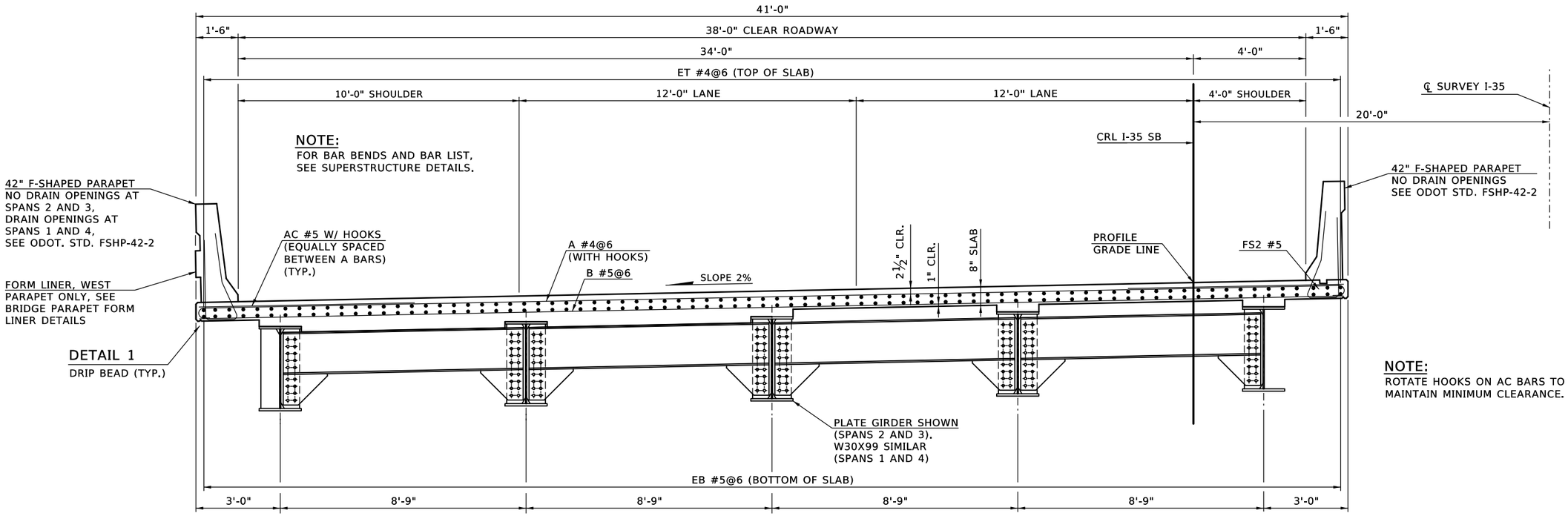
DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

CONSTRUCT NEW 45'-85'-85'-45' ROLLED BEAM AND CONT. STEEL PLATE GIRDER SPANS, F-SHAPED PARAPET, 38' CLEAR ROADWAY
0° SKEW AT ℄ I-35 SURVEY STA. 878+98.45, 20' LT

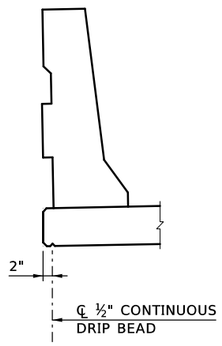
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B001



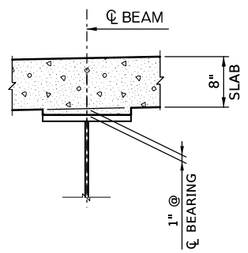
HALF SECTION AT END DIAPHRAGM

HALF SECTION AT INTERMEDIATE DIAPHRAGM

TYPICAL SECTION THRU SUPERSTRUCTURE

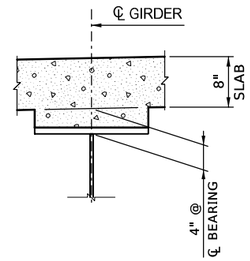


DETAIL 1
SCALE: ¾" = 1'-0"



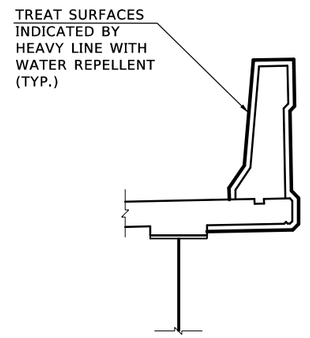
NOTE:
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE BEAM HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF THE FLANGE, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENT.

ROLLED BEAM HAUNCH DETAIL
SCALE: 1" = 1'-0"

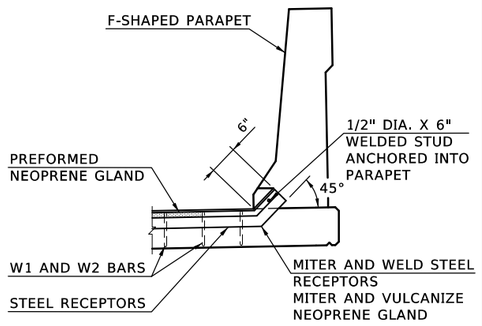


NOTE:
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE GIRDER HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF THE WEB, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENT.

PLATE GIRDER HAUNCH DETAIL
SCALE: 1" = 1'-0"



WATER REPELLENT
TREATMENT DETAIL
SCALE: ½" = 1'-0"

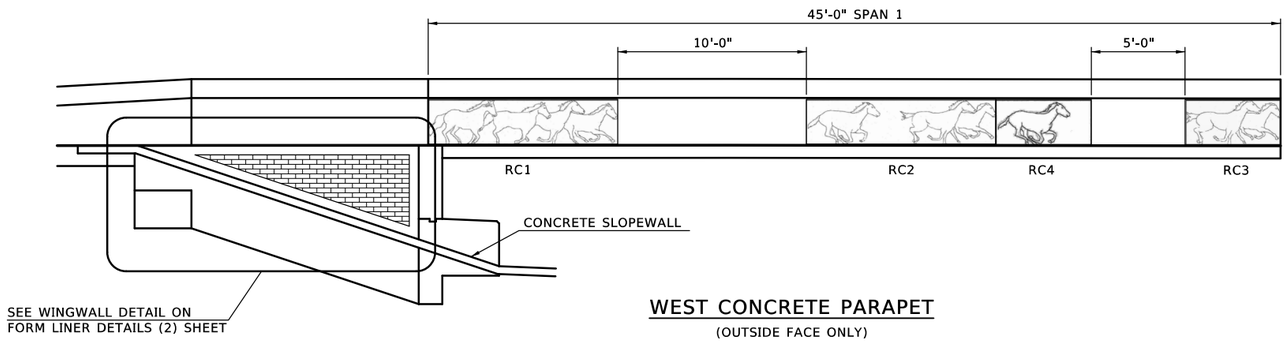


SECTION AT F-SHAPED
PARAPET WITHOUT OPENINGS

BRIDGE A

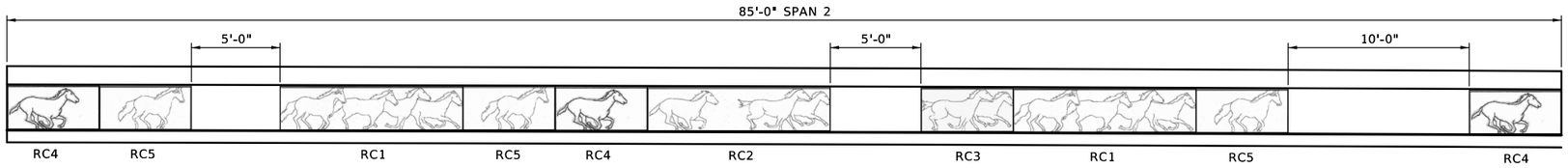
DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	TYPICAL SECTION
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B002



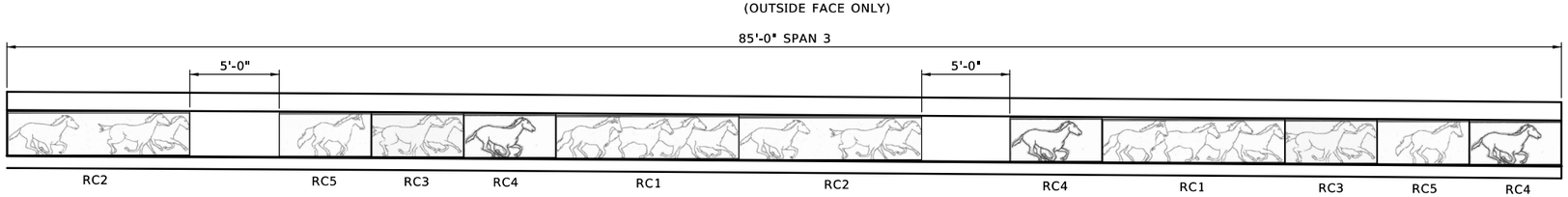
WEST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



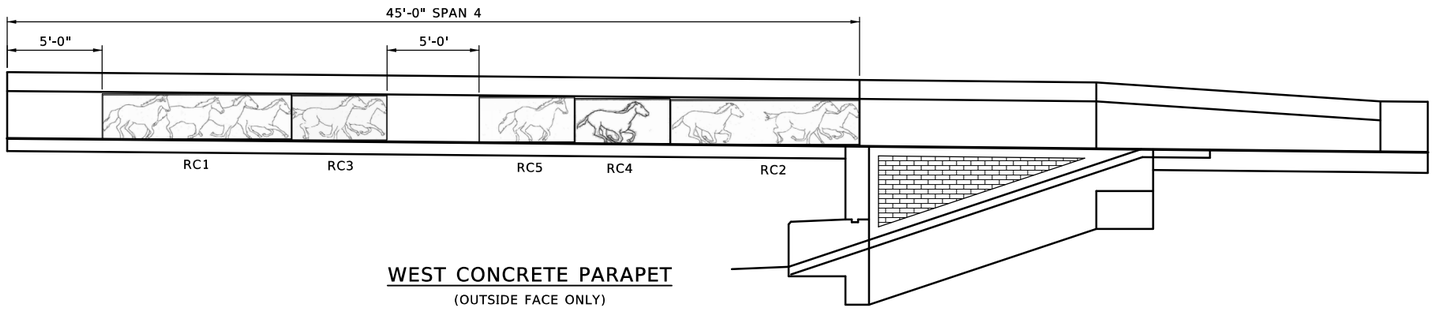
WEST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



WEST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



WEST CONCRETE PARAPET

(OUTSIDE FACE ONLY)

SPECIAL WALL TREATMENT

1. THE EXPOSED EXTERIOR CONCRETE SURFACES OF THE F-SHAPED PARAPETS AND ABUTMENT SEATS AND WINGS (REF. SHEET FORM LINER DETAILS (1) AND FORM LINER DETAILS (2)) SHALL HAVE A TEXTURED SURFACE TREATMENT AS INDICATED ON THE PLANS. THE SURFACE TREATMENT OF THE INDICATED F-SHAPED PARAPETS SHALL BE A FORM LINER CONSISTING OF RUNNING HORSES. THE SURFACE TREATMENT OF THE INDICATED BRIDGE ABUTMENT SEATS AND WINGS SHALL BE NEW BRICK RUNNING BOND.

2. ONCE CONTRACTOR HAS INSTALLED THE FORM LINERS, CAST THE PARAPET AND WING WALLS, STRIPPED THE FORMS, AND POINTED UP THE CONCRETE, THE CONTRACTOR WILL PREPARE THE SURFACE AND STAIN ANY INDIVIDUAL BRIDGE COMPONENTS AND OVERALL BACKGROUND COLOR(S) ("NON-SPECIALTY STAINING") BASED ON THE COLOR RECOMMENDATIONS. THE RECOMMENDED STAIN COLOR FOR THE MAIN COMPONENTS OF THE BRIDGE NOT COVERED BY SHEETS FORM LINER DETAILS (1) AND FORM LINER DETAILS (2), INCLUDING PORTIONS OF PARAPETS, EXTERIOR DECK SLAB SOFFIT, PIERS, PORTIONS OF ABUTMENTS, PORTIONS OF THE WINGS AND SLOPE WALLS IS ODOT STANDARD STRAW COLOR (FEDERAL COLOR #33531). THE RECOMMENDED STAIN COLORS MAY BE CHANGED AT THE DIRECTION OF THE ENGINEER.

3. THE CONTRACTOR SHALL SUBMIT THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PRODUCT DATA FOR THE TEXTURE SURFACE TREATMENTS. SHOP DRAWINGS SHALL INDICATE FORM LINER LAYOUT, RUSTICATION, REVEAL, AND CHAMFER STRIPS. LOCATION OF JOINTS AND FORM TIES SHALL BE INCLUDED.

4. THE CONTRACTOR SHALL PROVIDE THE ENGINEER FOR APPROVAL, A SAMPLE PANEL OF THE RUNNING HORSES AND THE BRICK PATTERN SURFACE TREATMENTS. THE SAMPLE PANELS SHALL BE 18" X 18" PANELS WITH SURFACE TREATMENTS USING PROPOSED MATERIALS, METHODS AND WORKMANSHIP. THE PANEL SHALL INCORPORATE PROPOSED CONCRETE MIX, FORM WORK, FORM LINER, FORM RELEASE AGENTS, FORM PRESSURES, JOINT SEALER, VIBRATING, FORM STRIPPING PRACTICES, AND STAIN.

5. FORM WORK SHALL BE DESIGNED BY THE CONTRACTOR TO COMPLY WITH ALL REQUIREMENTS OF THE FORM LINER MANUFACTURER. IN ADDITION, ALL REQUIREMENTS OF THE FORM LINER MANUFACTURER FOR HANDLING AND INSTALLATION OF THE FORM LINERS, APPLICATION OF RELEASE AGENTS, PLACEMENT OF CONCRETE, VIBRATING OF CONCRETE, AND REMOVAL OF FORMS SHALL BE FOLLOWED. FORM LINER BUTT JOINTS SHALL BE CAREFULLY ALIGNED TO PROVIDE A SURFACE FREE FROM VISIBLE SEAM LINES.

6. PRIOR TO PLACEMENT OF CAST-IN-PLACE CONCRETE, THE ENGINEER SHALL VERIFY THE LINES AND FORM LINER PANEL PATTERNS. AFTER STRIPPING OF THE FORMS, THE APPROVED STAINS AND FINISHES SHALL BE APPLIED TO MATCH THE APPROVED COLOR, IN ACCORDANCE WITH THE STANDARD SPECIFICATION AND SPECIAL PROVISIONS.

BRIDGE PARAPET FORM LINER NOTES

1. ALL COSTS ASSOCIATED WITH BRIDGE PARAPET FORM LINER (RUNNING HORSES) WORK SHALL BE INCLUDED IN THE PRICE BID FOR 42" F-SHAPED PARAPET. THE BRIDGE PARAPET FORM LINERS (RUNNING HORSES) ARE THE PROPERTY OF THE DEPARTMENT AND WILL BE PROVIDED TO THE CONTRACTOR. REFERENCE BRIDGE STANDARD FSHP-42-2-00E (42" F-SHAPED CONCRETE PARAPET) FOR ADDITIONAL PARAPET DETAILS.

2. ALL FORM LINERS SHALL BE DELIVERED TO THE DEPARTMENT AT A LOCATION DETERMINED BY THE ENGINEER IN ACCEPTABLE CONDITION AT THE COMPLETION OF THE PROJECT.

3. REFERENCE FORM LINER DETAILS (2) SHEET FOR ADDITIONAL FORM LINER AND CONCRETE FINISH INFORMATION.

BRIDGE PARAPET FORM LINER NOTES CONT'D.

4. THE RECOMMENDED STAIN COLOR FOR THE BRIDGE PARAPET FORM LINER (RUNNING HORSES) WILL BE SPRAYED OR OTHERWISE APPLIED BY THE CONTRACTOR TO THE FORMED AREAS OF THE BRIDGE PARAPET. THE RECOMMENED STAIN COLOR IS HC-145 (FALL GRASS).

5. THE RECOMMENDED STAIN COLORS MAY BE CHANGED AT THE DIRECTION OF THE ENGINEER.

6. CONTACT CHARLES SIMS, ODOT FORM LINER COORDINATOR FOR INFORMATION REGARDING FORM LINERS.
EMAIL : CSIMS@ODOT.ORG
PHONE : (405)522-7608

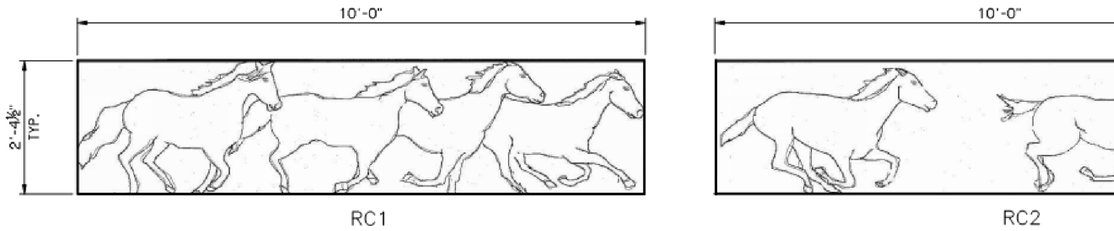
BRIDGE A

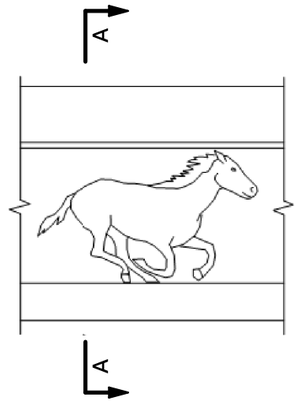
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

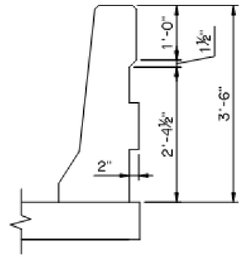
FORM LINER DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B003

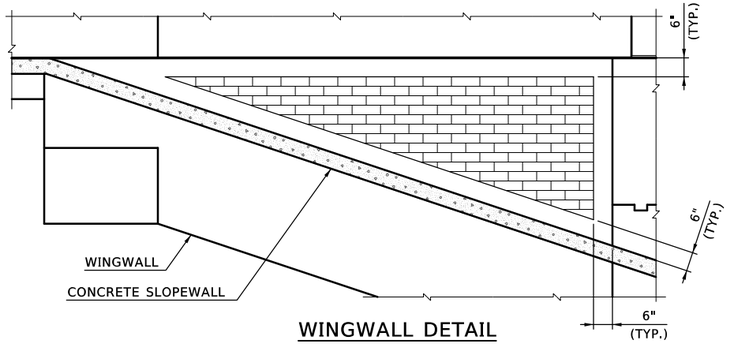




TYPICAL PARAPET LINER



SECTION A-A

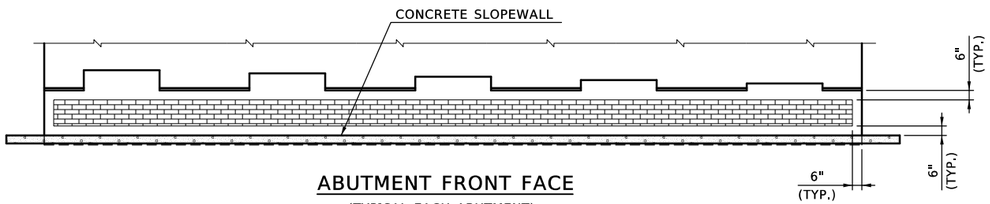


WINGWALL DETAIL

(TYPICAL WEST OUTSIDE FACES ONLY)

ABUTMENT/WINGWALL FORM LINER NOTES

1. CONCRETE IS TO BE FORMED AS SHOWN ON THE PLANS UTILIZING A "NEW BRICK RUNNING BOND" PATTERN.
2. ALL COSTS ASSOCIATED WITH BRIDGE ABUTMENT SEATS AND WINGWALL FORM LINER WORK SHALL BE INCLUDED IN THE PRICE BID FOR CLASS A CONCRETE.
3. THE RECOMMENDED STAIN COLOR FOR THE BRICK PATTERN WILL BE SPRAYED OR OTHERWISE APPLIED BY THE CONTRACTOR TO THE BRICK PATTERN FORMED AREAS OF THE CONCRETE ABUTMENT SEATS AND WINGWALLS. THE RECOMMENDED STAIN COLOR IS HC-110 (TILE RED)



ABUTMENT FRONT FACE

(TYPICAL EACH ABUTMENT)

BRIDGE A

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	FORM LINER DETAILS (2)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B004

Boring No. B-1

Surface Elev. (Ft.): 1014.9

3" Asphalt FILL - LEAN CLAY , with sand, yellowish-red (5YR,5/8)	1015 1015	1014.5 1013	SPT-1;N=48;SOIL REC=18 (In.); MC=17%
		1010	SPT-2;N=44;SOIL REC=10 (In.); MC=17% P200=75%; LL= 36; PL= 16; PI= 20
LEAN CLAY (CL), trace sand, strong brown (7.5YR,4/6), very stiff	1006.5	1006.5	SPT-3;N=22;SOIL REC=10 (In.); MC=16%
		1001.5	SPT-4;N=36;SOIL REC=16 (In.); MC=19%
SILTY CLAY WITH SAND (CL-ML), dark brown (7.5YR,3/3), very stiff to hard	1001		SPT-5;N=46;SOIL REC=14 (In.); MC=18% P200=84%; LL= 25; PL= 20; PI= 5
		996.5	SPT-6;N=17;SOIL REC=18 (In.); MC=19%
SANDY LEAN CLAY (CL), dark brown (10YR,3/4) and yellowish-red (5Y,5/8), stiff to very stiff	991.5	991.5	SPT-7;N=26;SOIL REC=18 (In.); MC=18%
		986.5	SPT-8;N=10;SOIL REC=18 (In.); MC=21%
LEAN CLAY (CL), red (2.5YR,4/8) to yellowish-red (2.5Y,4/8), soft to medium stiff	981.5	981.5	SPT-9;N=3;SOIL REC=18 (In.); MC=23% P200=92%; LL= 27; PL= 18; PI= 9
		976.5	SPT-10;N=5;SOIL REC=0 (In.)
		971.5	SPT-11;N=4;SOIL REC=18 (In.); MC=23%
SANDY LEAN CLAY (CL), strong brown (7.5YR,4/6), medium stiff	966.5	966.5	SPT-12;N=6;SOIL REC=18 (In.); MC=20%
		961.5	SPT-13;N=6;SOIL REC=18 (In.); MC=24%
		956.5	SPT-14;N=5;SOIL REC=8 (In.); MC=21%
		951.5	SPT-15;N=24;SOIL REC=18 (In.); MC=15%
SHALEY LEAN CLAY (CL), olive-brown (2.5YR,4/4), very stiff	950.5		
		946.5	SPT-16;N=26;SOIL REC=18 (In.); MC=19%
		941.5	SPT-17;N=18;SOIL REC=18 (In.); MC=24%
		936.5	SPT-18;N=28;SOIL REC=18 (In.); MC=35%
SAND (SP), fine grained, dark red (2.5YR,3/6), medium dense to very dense	931.5	931.5	SPT-19;N=60;SOIL REC=18 (In.); MC=19%
		926.5	SPT-20;N=27;SOIL REC=18 (In.); MC=13%
SHALE+, olive-brown (2.5YR,4/4), moderately hard to hard	920.5	920.5	SPT-21; N=50/1; SOIL REC=1 (In.); MC=16% 920.5 = TOP OF ROCK
		920	TCP 50/3/16" 50/1/8"
		915	TCP 50/7/16" 50/5/16"
		910	TCP 50/13/16" 50/5/16"
- dark reddish-brown below 110 feet	905	905	TCP 50/9/16" 50/1/4"
		904.5	SPT-22; N=50/2;SOIL REC=2 (In.); MC=22%
		900	TCP 50/3/4" 50/1/4"
		895	TCP 50/1/4" 50/1/8"
- dark gray (below 125 feet	890	890.5 890	TCP 50/9/16" 50/3/8" SPT-23; N=50/3;SOIL REC=3 (In.)

BT-125.25
Elevation: 889.5

Boring No. B-2

Surface Elev. (Ft.): 1007.1

7" concrete FILL - LEAN CLAY , yellowish-red (5YR,5/8) and dark red (5YR,3/4)	1007 1007	1006.5 1005	SPT-1;N=25;SOIL REC=16 (In.); MC=17%
		1002	SPT-2;N=44;SOIL REC=18 (In.); MC=16%
- with sand below 6 feet	1001		SPT-3;N=40;SOIL REC=18 (In.); MC=18%
- strong brown (7.5YR,4/6) below 8.5 feet	998.5	998.5	SPT-4;N=46;SOIL REC=18 (In.); MC=13%
FILL - LEAN CLAY WITH SAND , strong brown (7.5YR,4/6)	993.5 993.5	993.5	SPT-5;N=43;SOIL REC=18 (In.); MC=19%
		988.5	SPT-6;N=16;SOIL REC=18 (In.); MC=17%
LEAN CLAY/FAT CLAY (CL/CH), trace sand, dark brown (10YR,3/3), stiff with sand below 24 feet	987 983	983.5	SPT-7;N=12;SOIL REC=18 (In.); MC=18%
LEAN CLAY (CL), olive-red (5YR,5/8), medium stiff	978.5	978.5	SPT-8;N=7;SOIL REC=18 (In.); MC=21%
		973.5	SPT-9;N=4;SOIL REC=18 (In.); MC=23%
SANDY LEAN CLAY (CL), yellowish-red (5YR,5/8), medium stiff	968.5	968.5	SPT-10;N=7;SOIL REC=4 (In.); MC=18%
		963.5	SPT-11;N=5;SOIL REC=6 (In.); MC=23%
LEAN CLAY (CL), with sand, yellowish-red (5YR,5/8), medium stiff	958.5	958.5	SPT-12;N=7;SOIL REC=18 (In.); MC=22% P200=84%; LL= 26; PL= 16; PI= 10
SANDY LEAN CLAY (CL), strong brown (7.5YR,4/6), medium stiff	953.5	953.5	SPT-13;N=7;SOIL REC=14 (In.); MC=21%
LEAN CLAY (CL), yellowish-red (5YR,5/8), stiff	948.5	948.5	SPT-14;N=9;SOIL REC=8 (In.); MC=25%
SANDY FAT CLAY (CH), yellowish-brown (10YR,5/4), very stiff	943.5	943.5	SPT-15;N=30;SOIL REC=18 (In.); MC=20%
FAT CLAY (CH), with sand, light yellowish-brown (10YR,6/4), very stiff	938.5	938.5	SPT-16;N=26;SOIL REC=18 (In.); MC=21%
LEAN CLAY WITH SAND (CL), olive-brown (2.5Y,4/4), very stiff	933.5	933.5	SPT-17;N=29;SOIL REC=18 (In.); MC=20% P200=84%; LL= 43; PL= 16; PI= 27
FAT CLAY (CH), trace sand, very dark brown (10YR,2/2), very stiff	928.5	928.5	SPT-18;N=20;SOIL REC=12 (In.); MC=21%
SAND (SP), trace clay, fine grained, dark reddish-brown (2.5YR,3/4), dense	923.5	923.5	SPT-19;N=50;SOIL REC=18 (In.); MC=19%
SAND (SP), fine to medium grained, strong brown (7.5YR,5/6), dense	918.5	918.5	SPT-20;N=45;SOIL REC=8 (In.); MC=16%
SHALE+, olive-gray (5Y,5/2), moderately hard to hard	912	912 911.5	SPT-21; N=50/1;SOIL REC=1 (In.); MC=16% 912.0 = TOP OF ROCK
		906.5	TCP 50/1/4" 50/1/4"
		901.5	TCP 50/5/16" 50/3/16"
		896.5	TCP 50/1 1/8" 50/3/8"
- dark reddish-brown (5YR,3/4) below 110.5 feet	896.5	896	TCP 50/3/8" 50/1/8" SPT-22; N=50/1;SOIL REC=1 (In.); MC=19%
		891.5	TCP 50/11/16" 50/1/4"
		886.5	TCP 50/7/16" 50/1/8"
- black (5YR,2.5/1) below 125.5 feet	881.5	882.5 882	TCP 50/3/8" 50/3/16" SPT-23; N=50/1;SOIL REC=1 (In.) MC=17%

BT-125.60
Elevation: 881.5

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▼ = WATER LEVEL 24 HOURS AFTER DRILLING
▨ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHTOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST. ASSHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSED ONLY

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTION OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

Based on information published in the Oklahoma Department of Transportation manual, "Engineering Classification of Geologic Materials: Division 4," the project site appears to be underlain by the Wellington Unit, nearing terrace deposits toward the south.

This unit consists dominantly of red, maroon, and gray blocky shales with minor amounts of sandstone, gypsum, and limestone. The gray shales located in Kay County change southward to maroon and red colors. The total thickness of the unit ranges from 400 to 800 feet.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION REPORT (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B005

Boring No. B-3

Surface Elev. (Ft.): 997.7

3 inch topsoil	997.5	997	SPT-1;N=8;SOIL REC=4 (In.); MC=12%
SANDY LEAN CLAY (CL), dark reddish-brown (5YR,3/4), stiff to very stiff	997.5 994.5	995.5 992.5	SPT-2;N=16;SOIL REC=8 (In.); MC=15%
LEAN CLAY (CL), with sand, dark reddish-brown (5YR,3/4), very stiff	989	989	SPT-3;N=20;SOIL REC=16 (In.); MC=17% P200=77%; LL= 41; PL= 15; PI= 26
SANDY LEAN CLAY (CL), yellowish-red (5YR,4/6), very stiff	983.5	984	SPT-4;N=16;SOIL REC=18 (In.); MC=20%
FAT CLAY (CH), yellowish-red (5YR,5/8), medium stiff	979	979	SPT-5;N=4;SOIL REC=13 (In.); MC=19%
CLAYEY SAND (SC), yellowish-red (5YR,4/6), very loose	974	974	SPT-6;N=3;SOIL REC=8 (In.); MC=20%
LEAN CLAY (CL), with sand, yellowish-red (5YR,4/6), stiff to very stiff		969	SPT-7;N=11;SOIL REC=14 (In.); MC=21% P200=72%; LL= 26; PL= 14; PI= 12
- with gravel below 33.5 feet	964	964	SPT-8;N=11;SOIL REC=18 (In.); MC=23%
		959	SPT-9;N=24;SOIL REC=18 (In.); MC=21%
SANDY FAT CLAY (CH), dark yellowish-brown (10YR,3/6), very stiff	954	954	SPT-10;N=13; MC=20%
		949	SPT-11;N=26;SOIL REC=18 (In.); MC=16%
LEAN CLAY (CL), trace gravel, strong brown (7.5YR,4/6), stiff to very stiff	944	944	SPT-12;N=23;SOIL REC=18 (In.); MC=16%
SANDY LEAN CLAY (CL), with gravel, yellowish-red (5YR,4/6), stiff to very stiff	939	939	SPT-13;N=15;SOIL REC=18 (In.); MC=22% P200=91%; LL= 37; PL= 14; PI= 23
		934	SPT-14;N=11;SOIL REC=5 (In.); MC=25%
CLAYEY SAND (SC), yellowish-red (5YR,4/6), dense	929	929	SPT-15;N=32;SOIL REC=18 (In.); MC=21%
			SPT-16;N=37;SOIL REC=16 (In.); MC=15%
SHALE+, with clay seams, olive (5Y,4/4) to dark olive-gray (5Y,3/2), soft	923	923 922.5 921 917.5	SPT-17; N=50/4;SOIL REC=4 (In.); MC=20% REC = 88% RQD = 40% 923.0 = TOP OF ROCK UCS = 1140
- dark olive-gray (5Y,3/2) and dark reddish-brown (5YR,3/4) below 85 feet	912.5	912.5 909 907.5 905.5 902.5	REC = 58% RQD = 33% UCS = 700 REC = 83% RQD = 45% UCS = 310 REC = 55% RQD = 33% UCS = 20 REC = 95% RQD = 37%
- dark olive-gray (5Y,3/2) below 101 feet	896.5	897.5 896	REC = 95% RQD = 50% UCS = 550

BT-105.00
Elevation: 892.5

Boring No. B-3A

Surface Elev. (Ft.): 997.1

see boring B-3 for soil stratification	997		
SHALE+, olive (5Y,4/4) to dark olive-gray (5Y,3/2), moderately hard	922.5	922 921.5	SPT-1;N=50/3";SOIL REC=9 (In.); MC=19% 922.5 = TOP OF ROCK TCP 50/3/4"
		916.5	50/1/2" TCP 50/5/16"
		911.5	50/3/16" TCP 50/7/16"
SHALE+, with clay seams, dark reddish-brown (5YR,3/4), moderately hard	906.5	906.5 906 901.5	50/1/2" TCP 50/1" 50/3/4" SPT-2; N=50/2;SOIL REC=2 (In.); MC=20%
		896.5	TCP 50/3/4" 50/1/4" TCP 50/7/8"
SHALE+, dark olive-gray (5Y,3/2), moderately hard to hard	891.5	892 891.5	50/1/2" TCP 50/13/16" 50/1/4" SPT-3; N=50/1;SOIL REC=1 (In.) MC=20%

BT-105.90
Elevation: 891

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▼ = WATER LEVEL 24 HOURS AFTER DRILLING
▨ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHTOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST. ASSHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSED ONLY

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SITE GEOLOGY

Based on information published in the Oklahoma Department of Transportation manual, "Engineering Classification of Geologic Materials: Division 4," the project site appears to be underlain by the Wellington Unit, nearing terrace deposits toward the south.

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GEOTECHNICAL REPORT

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BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION REPORT (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B006

Boring No. B-4

Surface Elev. (Ft.): 992.8

4" Topsoil	993	992.5		SPT-1;N=18;SOIL REC=10 (In.); MC=9%
FILL - SANDY LEAN CLAY , brown (7.5YR,4/4) to dark brown (7.5YR,3/4)	992.5	991		SPT-2;N=7;SOIL REC=13 (In.); MC=15%
SANDY LEAN CLAY (CL), yellowish-red (5YR,5/8), stiff to very stiff	987.5	988		SPT-3;N=12;SOIL REC=18 (In.); MC=16% P200=56%; LL= 30; PL= 14; PI= 16
		984.5		SPT-4;N=18;SOIL REC=4 (In.); MC=15%
SANDY LEAN CLAY (CL), yellowish-red (5YR,5/8), soft to medium stiff	979.5	979.5		SPT-5;N=3;SOIL REC=18 (In.); MC=25%
		974.5		SPT-6;N=4;SOIL REC=0 (In.)
SANDY LEAN CLAY (CL), yellowish-red (5YR,5/8), very stiff	969.5	969.5		SPT-7;N=27;SOIL REC=18 (In.); MC=20%
SANDY FAT CLAY (CH), strong brown (7.5YR,5/6), very stiff	964.5	964.5		SPT-8;N=52;SOIL REC=18 (In.); MC=19%
LEAN CLAY (CL), brown (7.5YR,5/6) and brown (10YR,5/3), very stiff	959.5	959.5		SPT-9;N=40;SOIL REC=18 (In.); MC=21% P200=85%; LL= 38; PL= 22; PI= 16
SHALEY LEAN CLAY (CL), light olive-brown (2.5Y,5/4), very stiff	954.5	954.5		SPT-10;N=56; MC=26%
SHALE+, dark grayish-brown (2.5Y,4/2), soft to moderately hard	948.5	949.5		SPT-11;N=50/4";SOIL REC=16 (In.); MC=22%
		946.5		TCP 50/1 1/8" 50/5/16"
		941.5		TCP 50/1 5/8" 50/7/8"
		936.5		TCP 50/11/16" 50/5/16"
SHALE+, with clay seams, dark grayish-brown (2.5Y,4/2) and dark gray (2.5Y,4/1), soft	931.5	931.5		TCP 50/4 1/2" 50/5 5/8"
		931		SPT-12; N=50/5; MC=25%
		926.5		TCP 50/3/8" 50/1/8"
		921.5		TCP 50/1/2" 50/1/4"
		917		TCP 50/3/4" 50/5/16"
		916.5		SPT-13; N=50/1, MC=19%

948.5 = TOP OF ROCK

BT-76.60
Elevation: 916

Boring No. B-5

Surface Elev. (Ft.): 1014.8

3.5" Asphalt	1015	1014.5		SPT-1;N=27;SOIL REC=8 (In.); MC=17%
FILL - SANDY LEAN CLAY , yellowish-red (5YR,5/8)	1014.5	1013		SPT-2;N=16;SOIL REC=16 (In.); MC=16%
FILL - LEAN CLAY , dark brown (7.5YR,3/3)	1013	1010		SPT-3;N=13;SOIL REC=18 (In.); MC=31%
FILL - SANDY LEAN CLAY , with shale fragments, dark red (2.5YR,3/6)	1010	1006.5		SPT-4;N=14;SOIL REC=18 (In.); MC=13% P200=69%; LL= 31; PL= 14; PI= 17
		1001.5		SPT-5;N=24;SOIL REC=18 (In.); MC=17%
LEAN CLAY (CL), with sand, yellowish-red (5Y,4/6), medium stiff to very stiff	996.5	996.5		SPT-6;N=14;SOIL REC=18 (In.); MC=17%
		991.5		SPT-7;N=11;SOIL REC=16 (In.); MC=21%
		986.5		SPT-8;N=5;SOIL REC=18 (In.); MC=24% P200=85%; LL= 27; PL= 14; PI= 13
		981.5		SPT-9;N=4;SOIL REC=18 (In.); MC=20%
- trace limestone gravel below 39.5 feet	975.5	976.5		SPT-10;N=27;SOIL REC=18 (In.); MC=21%
SHALE+, pale olive (5Y,6/3), soft	971	971.5		SPT-11;N=50/5";SOIL REC=11 (In.); MC=25%
		969		TCP 50/1 7/8" 50/1 1/4"
		964		TCP 50/3 1/4" 50/2"
		959		TCP 50/3" 50/1 15/16"
SHALE+, dark olive-gray (5Y,3/2), moderately hard	954	954		TCP 50/2 1/4" 50/2 3/8"
		953.5		SPT-12; N=50/2;SOIL REC=2 (In.); MC=22%
		949		TCP 50/5/8" 50/1/4"
		944		TCP 50/13/16" 50/3/8"
		939		TCP 50/1 3/8" 50/7/8"
		938.5		SPT-13; N=50/4;SOIL REC=4 (In.); MC=21%

971.0 = TOP OF ROCK

BT-76.80
Elevation: 938

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
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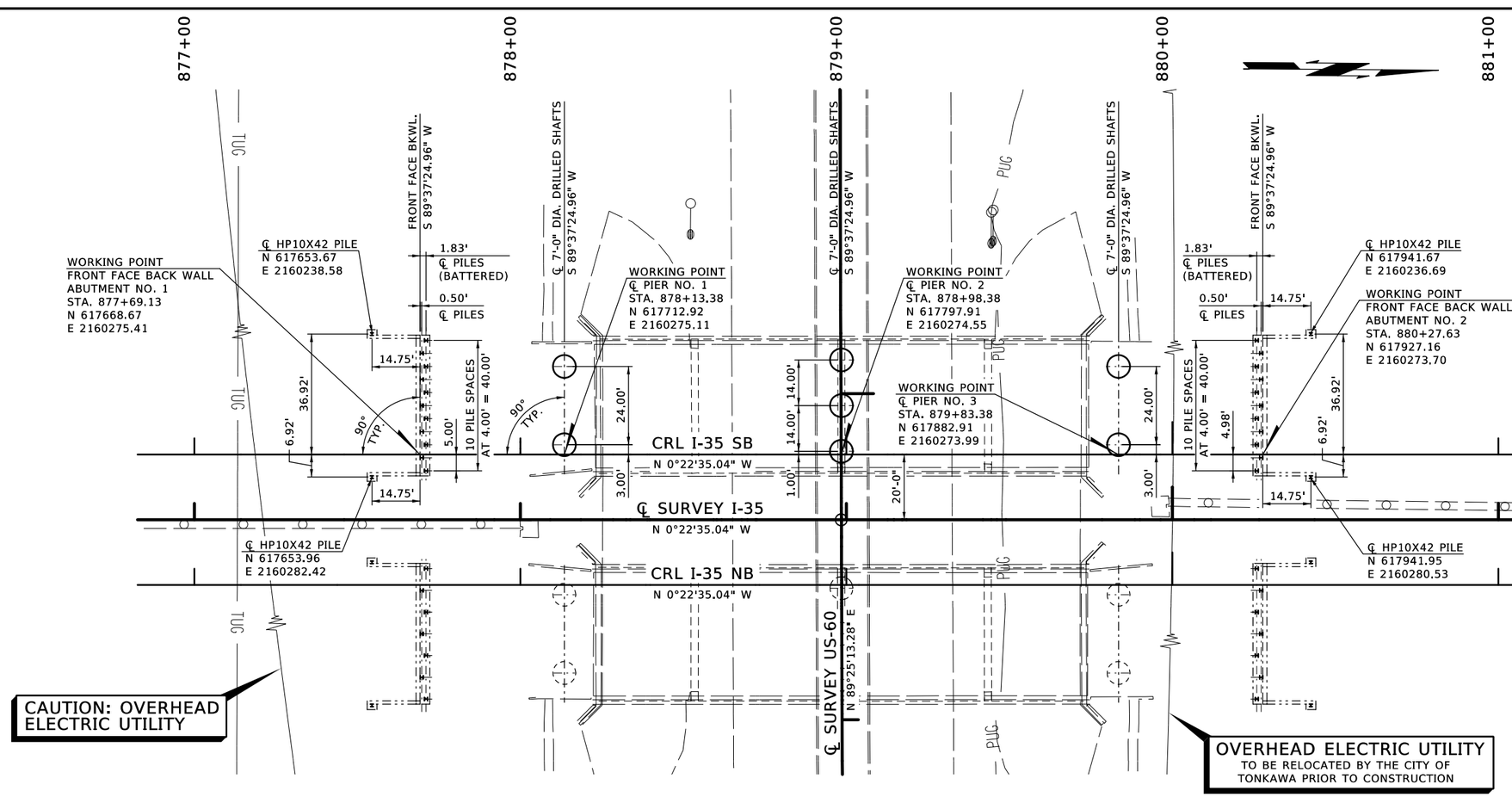
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION REPORT (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B007



PLAN - BRIDGE A

SCALE: 1" = 20'

SUMMARY OF QUANTITIES - BRIDGE A

DESCRIPTION	UNIT	ABUTMENT	PIER	SUPERSTR.	APPROACH	SLOPEWALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	160					160
CLSM BACKFILL	CY	150.8					150.8
APPROACH SLAB	SY				273.4		273.4
SAW-CUT GROOVING	SY			961.4	212.8		1174.2
SEALED EXPANSION JOINT	LF			84.00			84.00
42" F-SHAPED PARAPET	LF			520.0	120.0		640.0
STRUCTURAL STEEL M270 GRADE 50W	LB			289480			289480
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA			15			15
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA			20			20
SPECIAL CONCRETE FINISH	SY	44	324	498	106		972
CLASS AA CONCRETE	CY			279.6			279.6
CLASS A CONCRETE	CY	75.6	189.2				264.8
SLOPE WALL (5")	SY					1164	1164
REINFORCING STEEL	LB		1740				1740
EPOXY COATED REINFORCING STEEL	LB	10200	36370	95840			142410
PILES, FURNISHED (HP10X42)	LF	242					242
PILES, FURNISHED (HP12X53)	LF	1316					1316
PILES, DRIVEN (HP10X42)	LF	242					242
PILES, DRIVEN (HP12X53)	LF	1316					1316
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1					1
WATER REPELLENT (VISUALLY INSPECTED)	SY	96	415	635	106		1252
DRILLED SHAFTS 84" DIAMETER	LF		515				515
CROSSHOLE SONIC LOGGING	EA		3				3
SEALER CRACK PREPARATION	LF			82			82
SEALER RESIN	GAL			0.6			0.6
(PL) INSTALLATION OF BRIDGE ITEMS	LSUM					1	1
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	88				118	206
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	40				40	80
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM						1

TOP OF PILE ELEVATIONS

ABUTMENT NO. 1	1002.64
ABUTMENT NO. 2	1003.92

INDEX OF BRIDGE SHEETS

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION AND STATUS (I.E. "ABANDONED") OF ALL UTILITIES PRIOR TO BEGINNING EXCAVATION OR DRIVING PILES.
2. REMOVE EXISTING ABUTMENTS AND PILES IN THEIR ENTIRETY.

BRIDGE A

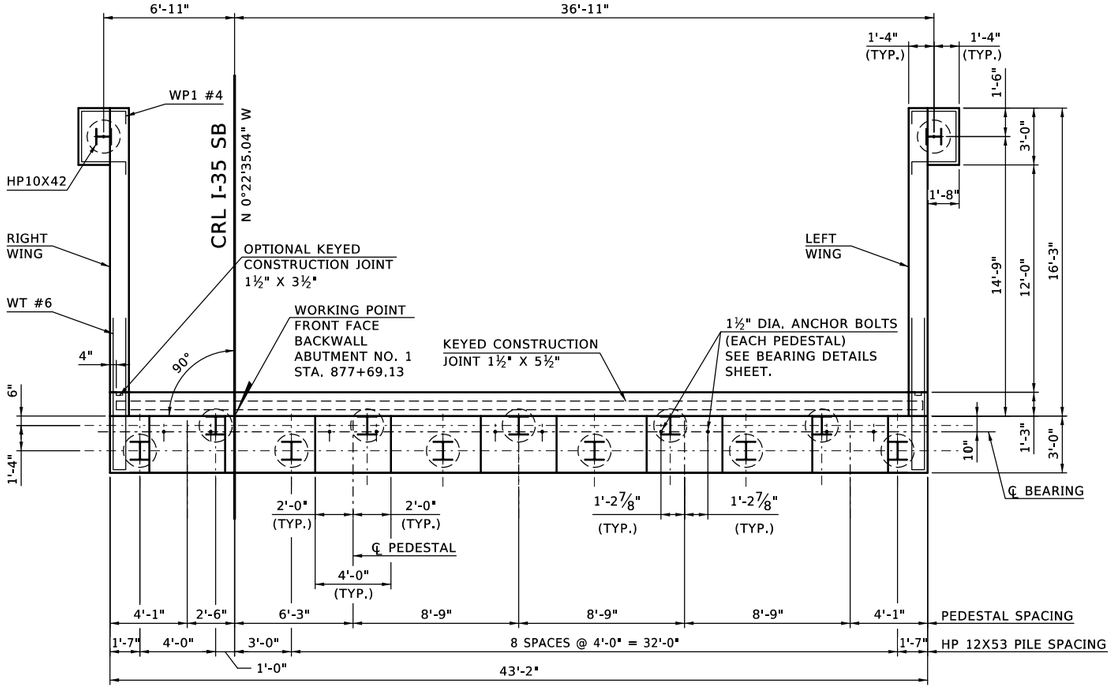
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

STAKING DIAGRAM

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B008

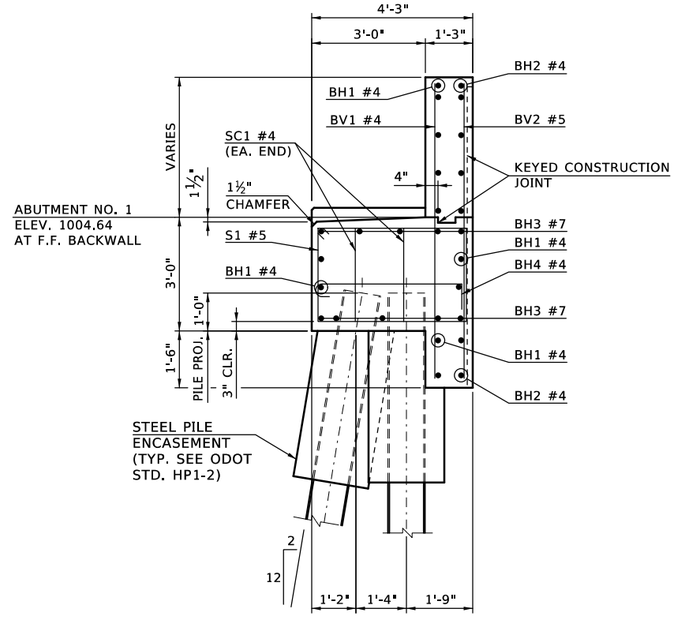
7/26/2018 4:53:58 PM P:\FDB\650-TUL\CIV\40052_EC1839_I35_US60\20_DESGN\40_CAD'S\Bridge A\244324 SISub Layout 01.dgn



PLAN - ABUTMENT NO. 1

TOP OF PEDESTAL ELEVATIONS

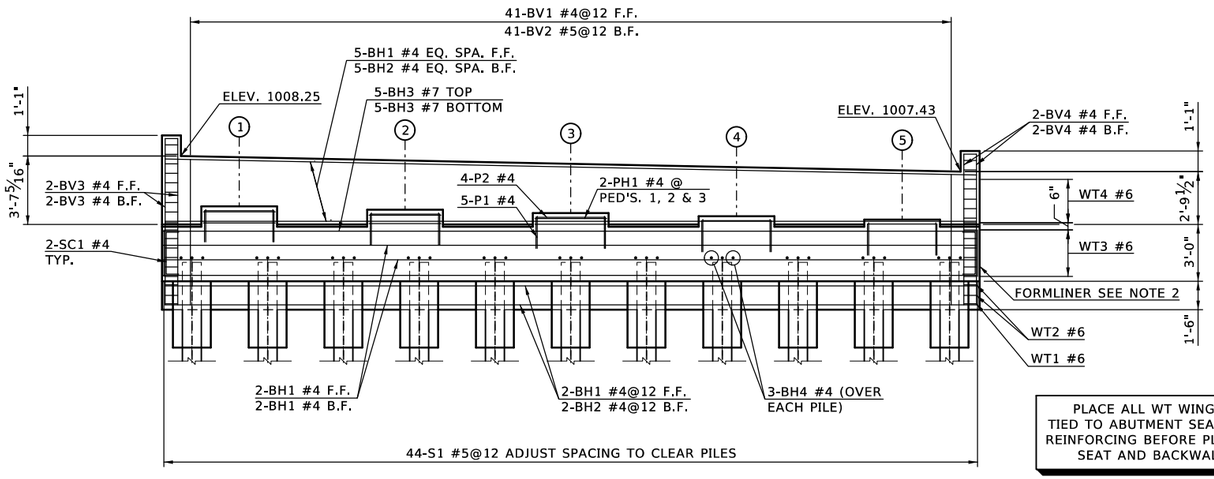
PEDESTAL	ABUT. NO. 1
1	1005.59
2	1005.41
3	1005.24
4	1005.06
5	1004.89



TYPICAL SECTION THRU SEAT

NOTES:

1. SEE ODOT STD. B40-C-ABUT-MISC FOR EXCAVATION AND PIPE UNDERDRAIN DETAILS.
2. SEE FORM LINER DETAILS FOR SPECIAL WALL TREATMENT AND DETAILS.



ELEVATION - ABUTMENT NO. 1

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.

ABUTMENT QUANTITIES

ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	80	80	160
CLSM BACKFILL	CY	75.4	75.4	150.8
SPECIAL CONCRETE FINISH	SY	22	22	44
CLASS A CONCRETE	CY	37.7	37.9	75.6
EPOXY COATED REINFORCING STEEL	LB	5100	5100	10200
PILES, FURNISHED (HP10X42)	LF	172	70	242
PILES, FURNISHED (HP12X53)	LF	930	386	1316
PILES, DRIVEN (HP10X42)	LF	172	70	242
PILES, DRIVEN (HP12X53)	LF	930	386	1316
WATER REPELLENT (VISUALLY INSPECTED)	SY	48	48	96
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	44	44	88
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	20	20	40

F.F. = FRONT FACE
B.F. = BACK FACE

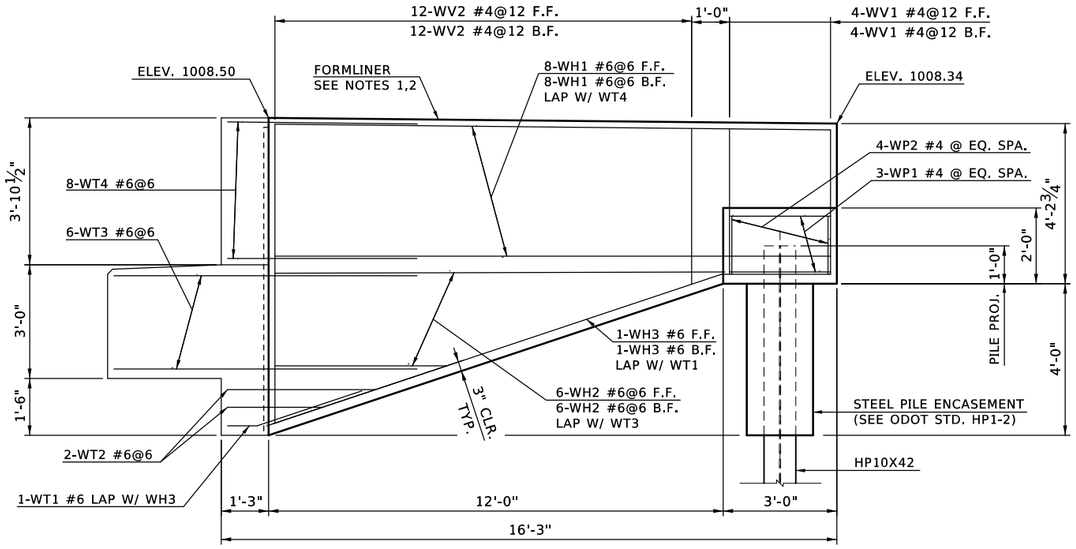
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

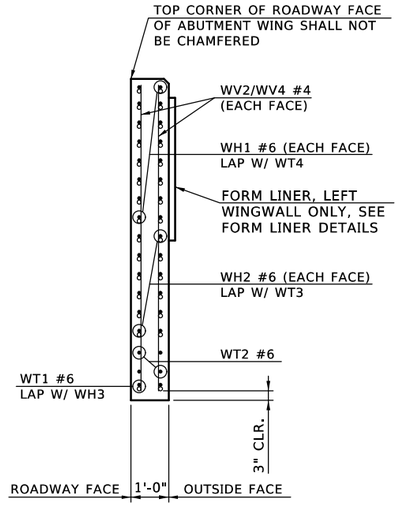
ABUTMENT DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B009



LEFT WING ELEVATION - ABUTMENT NO. 1

SCALE: ½" = 1'-0"



SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT

SCALE: ½" = 1'-0"

ABUTMENT NO. 1 BAR LIST

(ONE REQUIRED)

EPOXY COATED REINFORCING

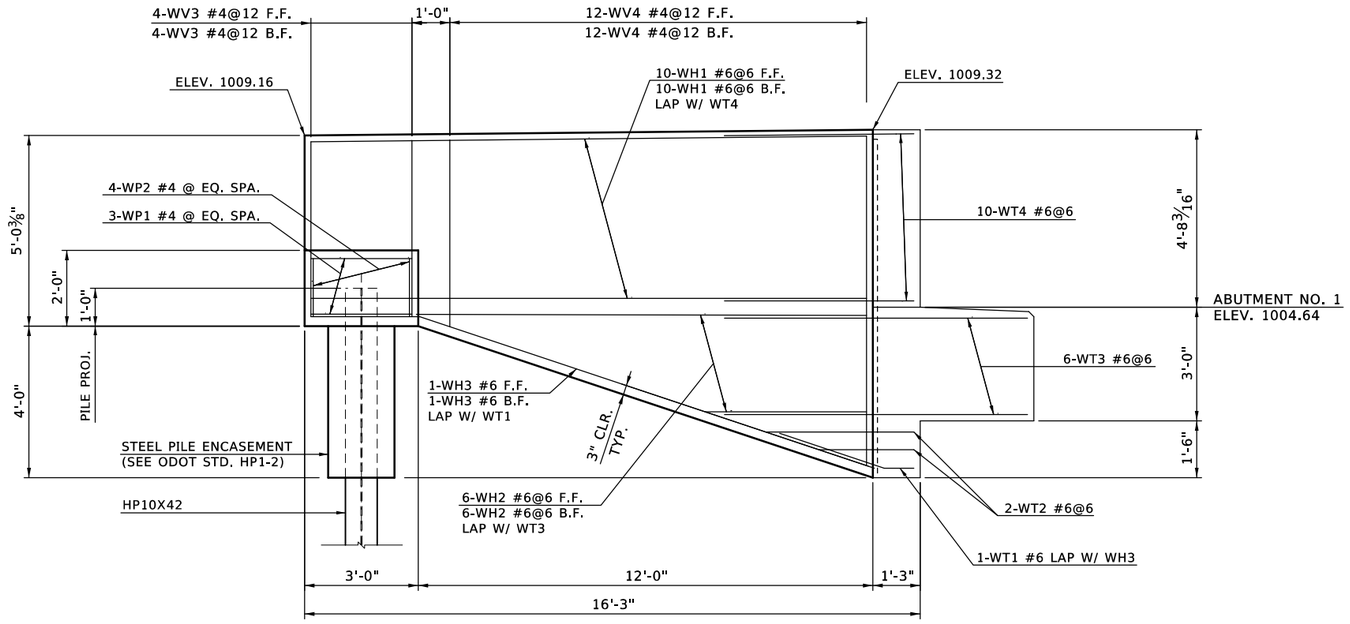
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	11	STR	42'-10"	
BH2	#4	7	BNT.	44'-2"	
BH3	#7	10	STR.	42'-10"	
BH4	#4	33	BNT.	5'-1"	
BV1	#4	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV2	#5	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV3	#4	4	STR.	8'-9"	
BV4	#4	4	STR.	7'-11"	
S1	#5	44	BNT.	13'-11"	
SC1	#4	4	BNT.	3'-9"	
P1	#4	25	BNT.	6'-3"	
P2	#4	20	BNT.	7'-3"	
PH1	#4	6	BNT.	13'-5"	
WT1	#6	2	BNT.	8'-2"	
WT2	#6	4	BNT.	7'-1" (AVG.)	5'-8" TO 8'-6" NOTE 1
WT3	#6	12	BNT.	16'-8"	
WT4	#6	18	BNT.	10'-8"	
WH1	#6	36	STR.	14'-8"	
WH2	#6	24	STR.	8'-2" (AVG.)	4'-6" TO 11'-9" NOTE 2
WH3	#6	4	BNT.	15'-4"	
WV1	#4	8	STR.	3'-10"	
WV2	#4	24	STR.	6'-0" (AVG.)	4'-1" TO 7'-10" NOTE 3
WV3	#4	8	STR.	4'-7"	
WV4	#4	24	STR.	6'-10" (AVG.)	4'-11" TO 8'-8" NOTE 3
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	

NOTES:

1. (2) SETS OF 2.
2. (4) SETS OF 6.
3. (2) SETS OF 12.

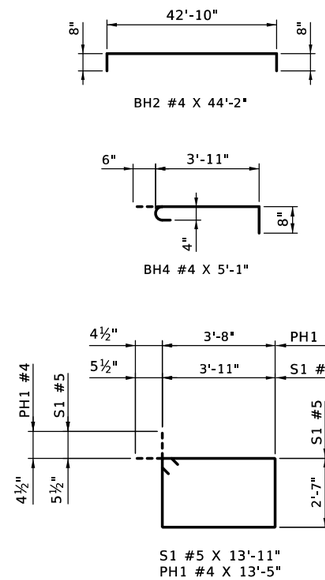
NOTES:

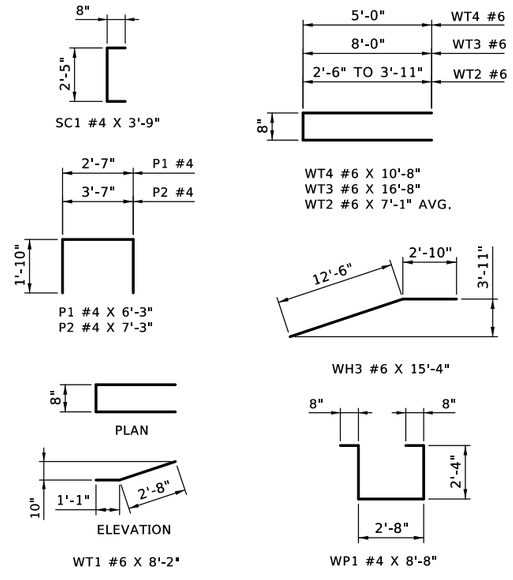
1. SEE FORMLINER DETAILS FOR SPECIAL WALL TREATMENT.
2. FORM LINER ON LEFT WING ONLY.



RIGHT WING ELEVATION - ABUTMENT NO. 1

SCALE: ½" = 1'-0"





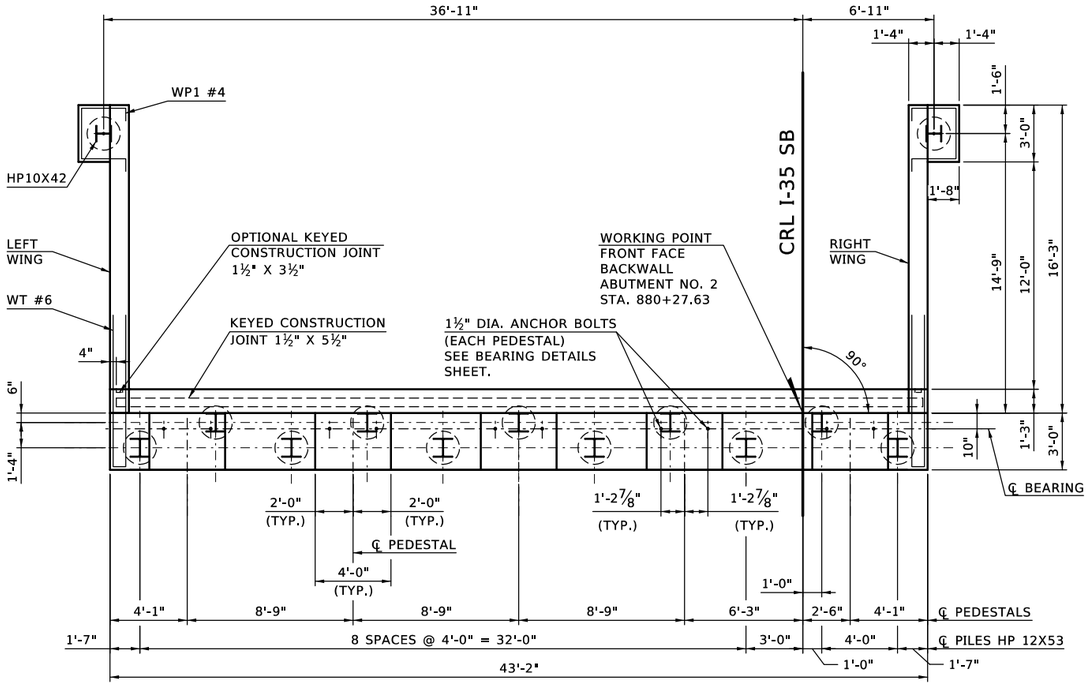
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

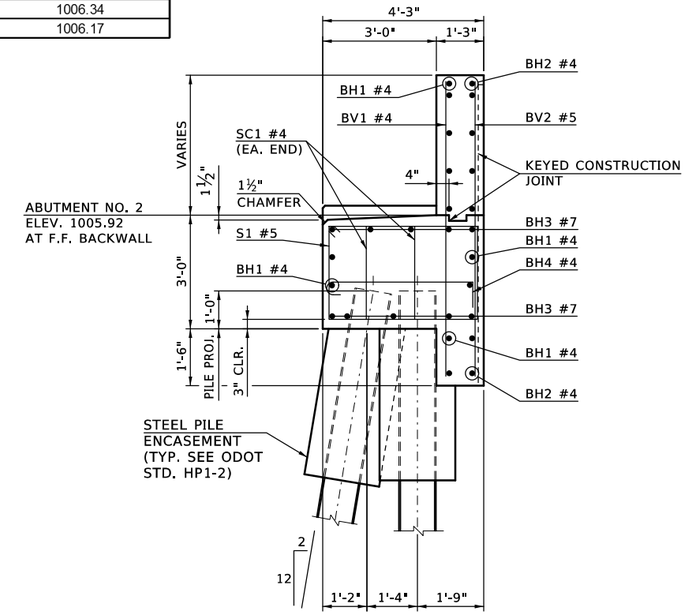
ABUTMENT DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B010



PLAN - ABUTMENT NO. 2

TOP OF PEDESTAL ELEVATIONS	
PEDESTAL	ABUT. NO. 2
1	1006.87
2	1006.69
3	1006.52
4	1006.34
5	1006.17



TYPICAL SECTION THRU SEAT

NOTES:

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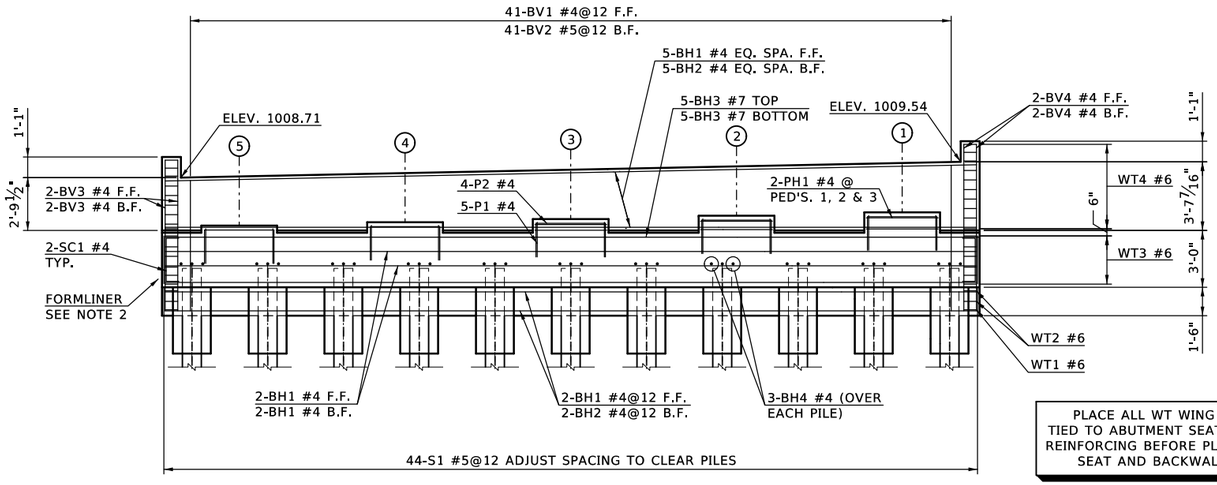
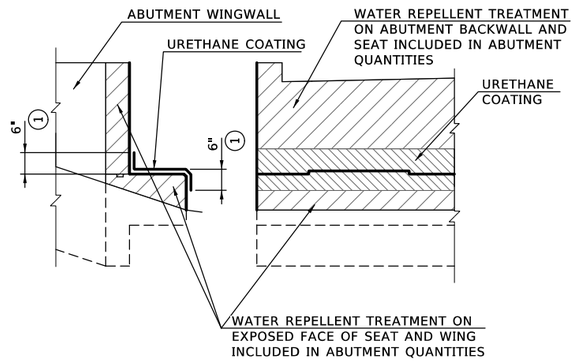
2. SEE FORM LINER DETAILS FOR SPECIAL WALL TREATMENT AND DETAILS.



ELEVATION - ABUTMENT NO. 2

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.



SIDE ELEVATION

1. FOR ADDITIONAL INFORMATION SEE SPECIAL CONCRETE FINISH DETAIL SHEET B014
2. DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.

WATER REPELLENT TREATMENT DETAILS

F.F. = FRONT FACE
B.F. = BACK FACE

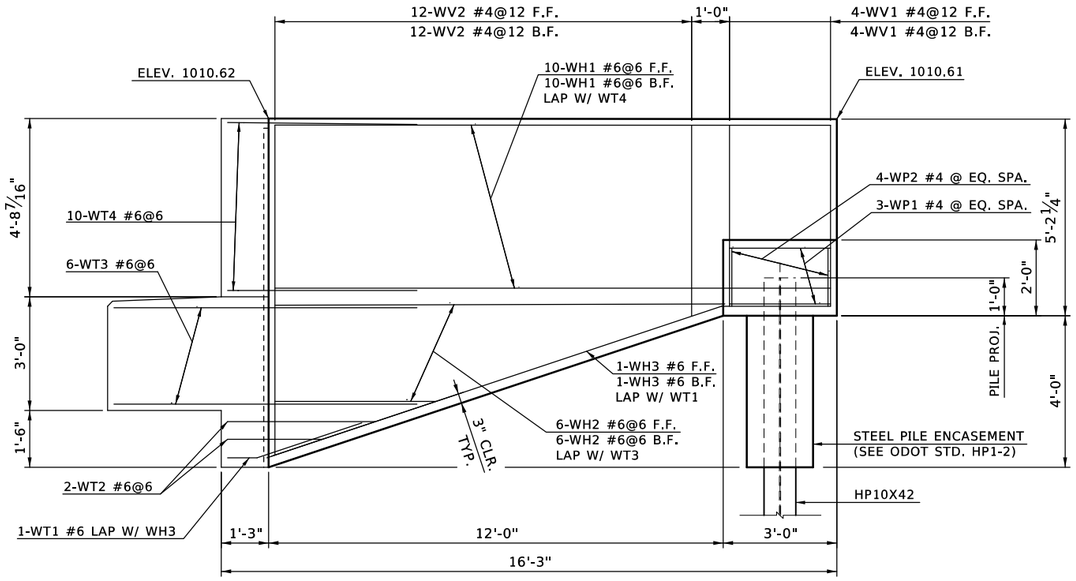
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

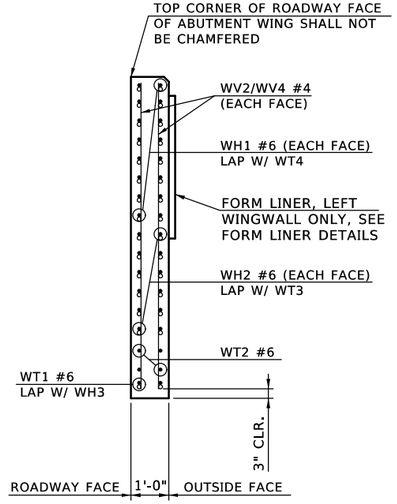
ABUTMENT DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B011



RIGHT WING ELEVATION - ABUTMENT NO. 2

SCALE: ½" = 1'-0"



SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT

SCALE: ½" = 1'-0"

ABUTMENT NO. 2 BAR LIST

(ONE REQUIRED)

EPOXY COATED REINFORCING

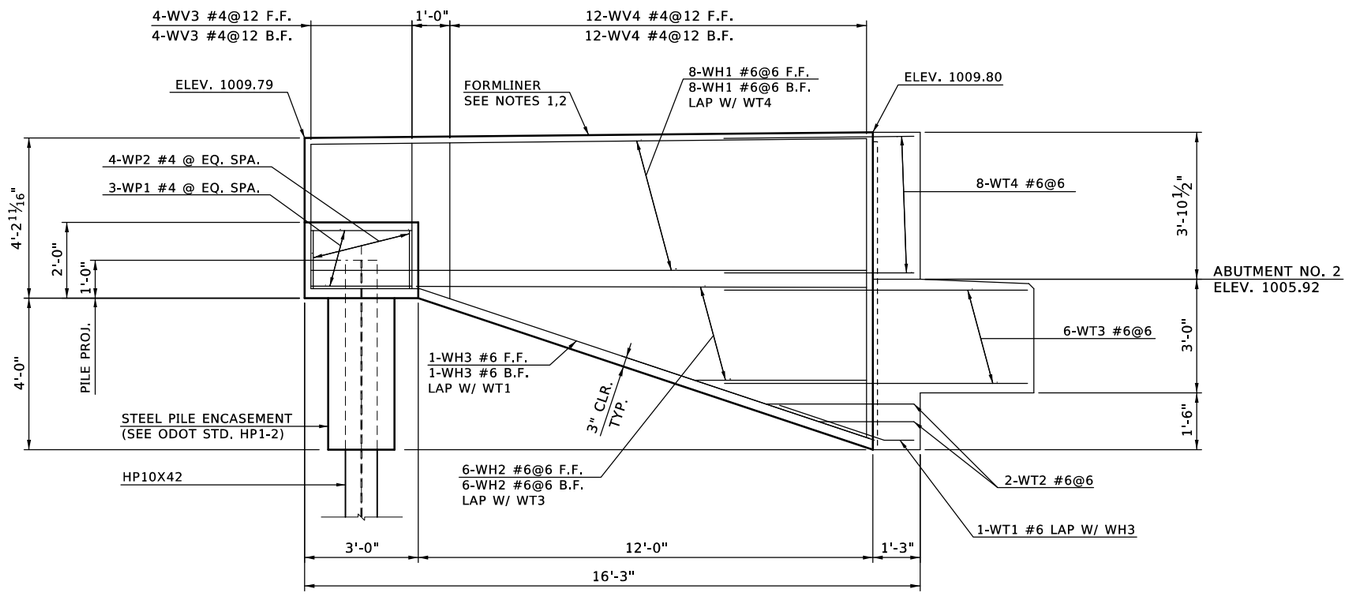
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	11	STR	42'-10"	
BH2	#4	7	BNT.	44'-2"	
BH3	#7	10	STR.	42'-10"	
BH4	#4	33	BNT.	5'-1"	
BV1	#4	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV2	#5	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV3	#4	4	STR.	8'-9"	
BV4	#4	4	STR.	7'-11"	
S1	#5	44	BNT.	13'-11"	
SC1	#4	4	BNT.	3'-9"	
P1	#4	25	BNT.	6'-3"	
P2	#4	20	BNT.	7'-3"	
PH1	#4	6	BNT.	13'-5"	
WT1	#6	2	BNT.	8'-2"	
WT2	#6	4	BNT.	7'-1" (AVG.)	5'-8" TO 8'-6" NOTE 1
WT3	#6	12	BNT.	16'-8"	
WT4	#6	18	BNT.	10'-8"	
WH1	#6	36	STR.	14'-8"	
WH2	#6	24	STR.	8'-2" (AVG.)	4'-6" TO 11'-9" NOTE 2
WH3	#6	4	BNT.	15'-4"	
WV1	#4	8	STR.	3'-10"	
WV2	#4	24	STR.	6'-0" (AVG.)	4'-1" TO 7'-10" NOTE 3
WV3	#4	8	STR.	4'-7"	
WV4	#4	24	STR.	6'-10" (AVG.)	4'-11" TO 8'-8" NOTE 3
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	

NOTES:

1. SEE FORMLINER DETAILS FOR SPECIAL WALL TREATMENT.
2. FORM LINER ON LEFT WING ONLY.

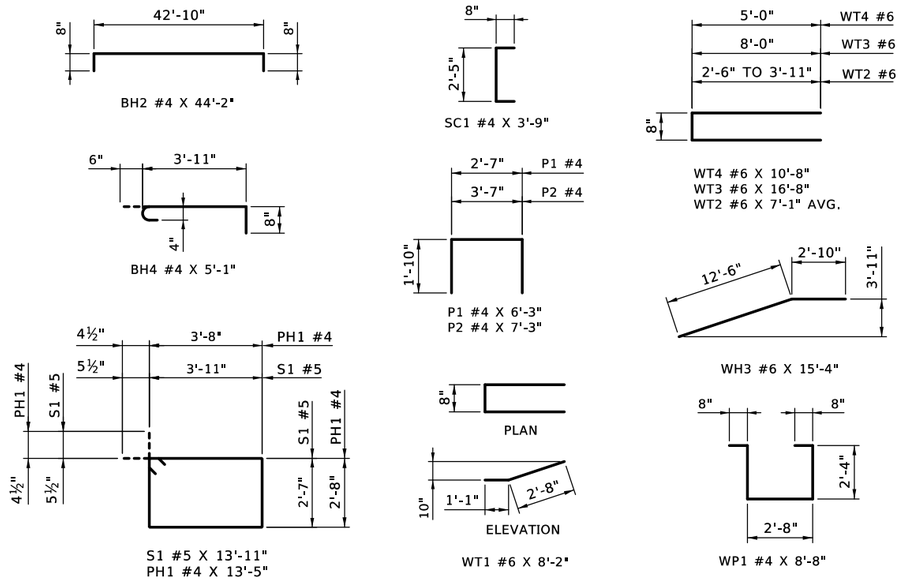
NOTES:

1. (2) SETS OF 2.
2. (4) SETS OF 6.
3. (2) SETS OF 12.



LEFT WING ELEVATION - ABUTMENT NO. 2

SCALE: ½" = 1'-0"



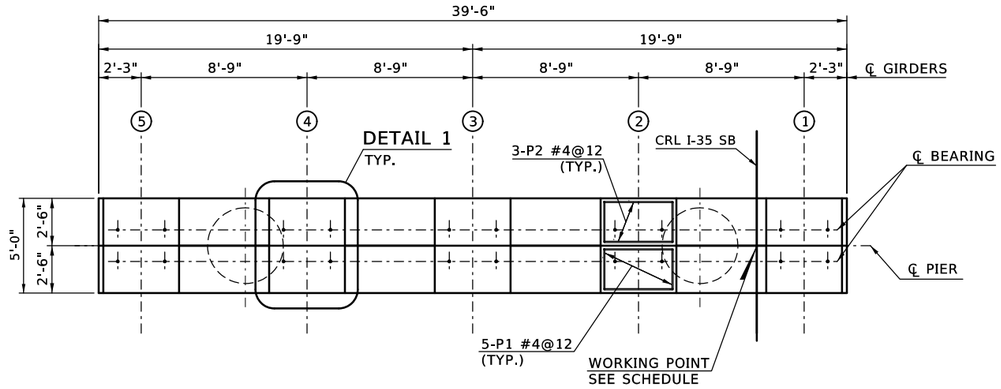
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

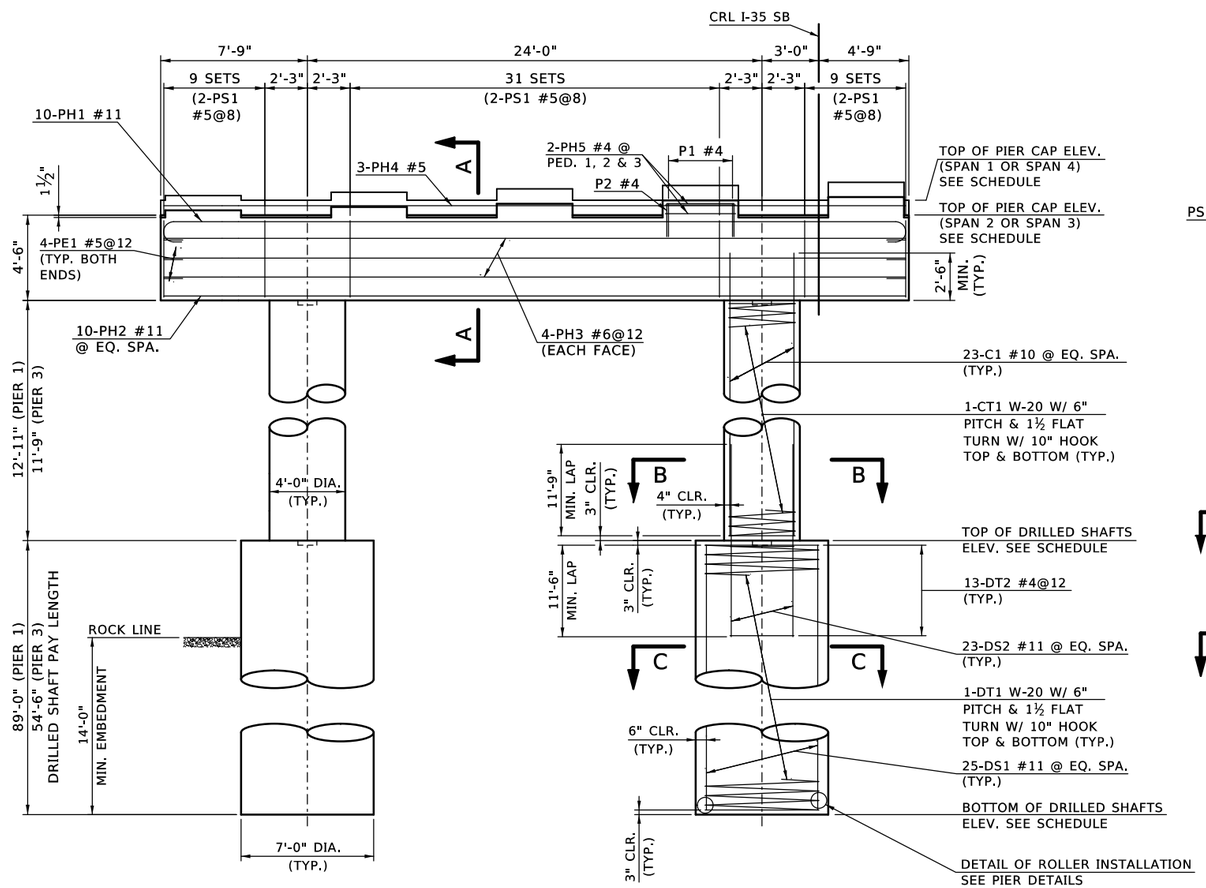
ABUTMENT DETAILS (4)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B012



PLAN - PIERS NO. 1 AND 3

SCALE: ¼" = 1'-0"



ELEVATION - PIER NO. 1 AND 3

SCALE: ¼" = 1'-0"

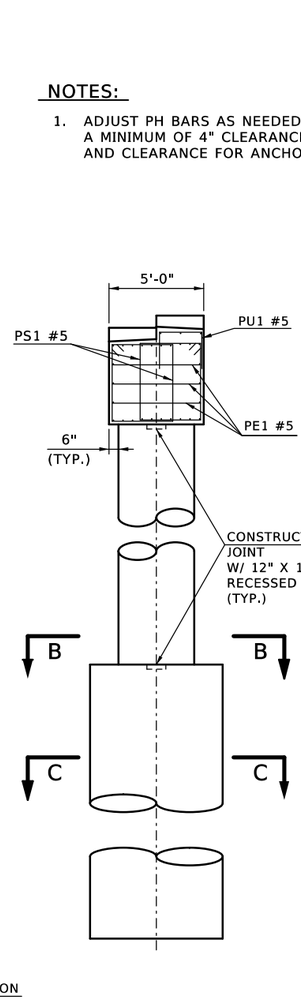
(PIER NO. 3 SHOWN - PIER 1 CHANGE HIGH AND LOW STEP)

PIER QUANTITIES

ITEM	UNIT	PIER NO. 1	PIER NO. 2	PIER NO. 3	TOTAL
SPECIAL CONCRETE FINISH	SY	85	157	82	324
CLASS A CONCRETE	CY	49.5	91.2	48.5	189.2
REINFORCING STEEL	LB	410	960	370	1740
EPOXY COATED REINFORCING STEEL	LB	10330	15710	10330	36370
WATER REPELLENT (VISUALLY INSPECTED)	SY	115	191	109	415
DRILLED SHAFTS 84" DIAMETER	LF	178	228	109	515
CROSSHOLE SONIC LOGGING	EA	1	1	1	3

NOTES:

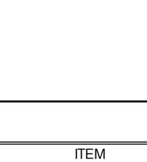
1. ADJUST PH BARS AS NEEDED TO PROVIDE A MINIMUM OF 4" CLEARANCE FOR TREMIE AND CLEARANCE FOR ANCHOR BOLTS.



END VIEW

SCALE: ¼" = 1'-0"

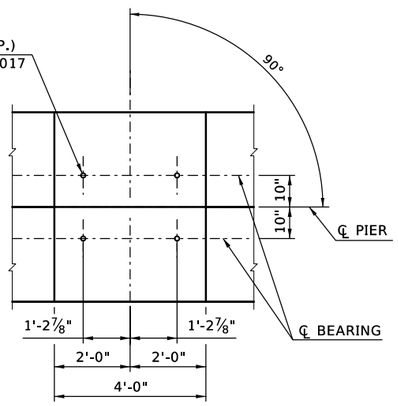
(PIER NO. 3 SHOWN)



END VIEW

SCALE: ¼" = 1'-0"

(PIER NO. 1 SHOWN)



DETAIL 1

SCALE: ½" = 1'-0"

PIER STATIONS AND ELEVATIONS SCHEDULE

PIER NO. 1

WORKING POINT STATION = 878+13.38

PEDESTAL	ELEV. DOWN STA.	ELEV. UP STA.		ELEVATION
1	1005.98	1005.35		--
2	1005.81	1005.17	TOP OF PIER DOWN STA.	1005.03
3	1005.63	1005.00	TOP OF PIER UP STA.	1004.40
4	1005.46	1004.82	TOP OF DRILLED SHAFTS	987.00
5	1005.28	1004.65	BOT. OF DRILLED SHAFTS	898.00

PIER NO. 3

WORKING POINT STATION = 879+83.38

PEDESTAL	ELEV. DOWN STA.	ELEV. UP STA.		ELEVATION
1	1006.18	1006.84		--
2	1006.01	1006.66	TOP OF PIER DOWN STA.	1005.23
3	1005.83	1006.49	TOP OF PIER UP STA.	1005.89
4	1005.66	1006.31	TOP OF DRILLED SHAFTS	989.00
5	1005.48	1006.14	BOT. OF DRILLED SHAFTS	934.50

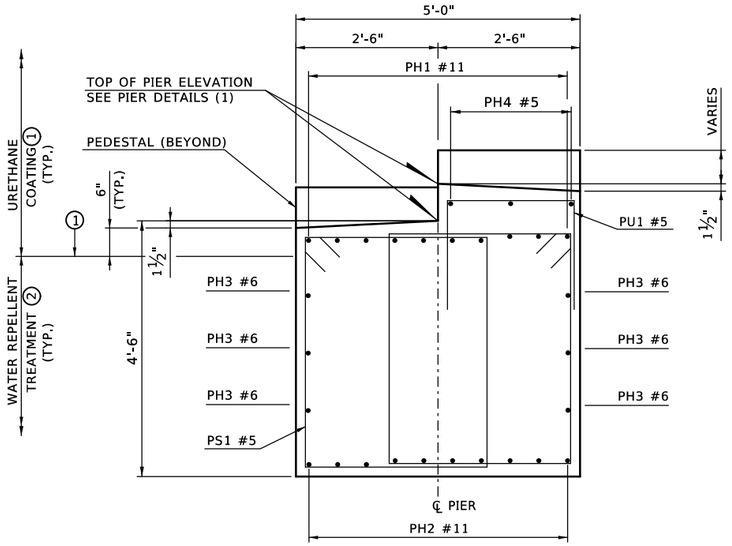
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

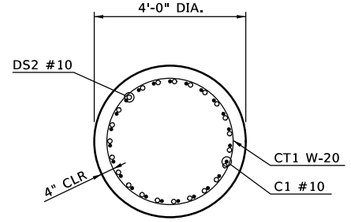
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (1)

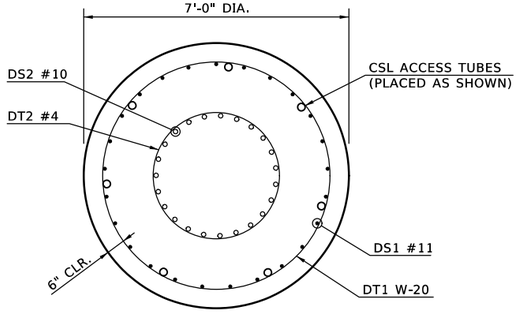
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B013



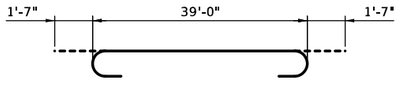
SECTION A-A - PIER NO. 3



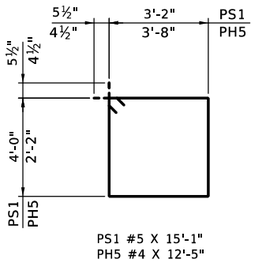
SECTION B-B



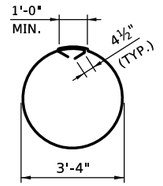
SECTION C-C



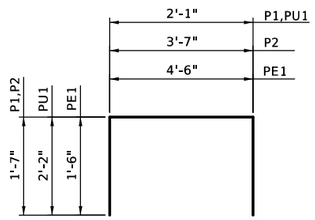
PH1 #11 X 42'-2"



PS1 #5 X 15'-1"
PH5 #4 X 12'-5"



DT2 #4 X 12'-3"

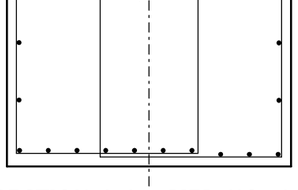


P1 #4 X 5'-3"
P2 #4 X 6'-9"
PE1 #5 X 11'-8"
PU1 #5 X 6'-5"

URETHANE COATING NOTES:

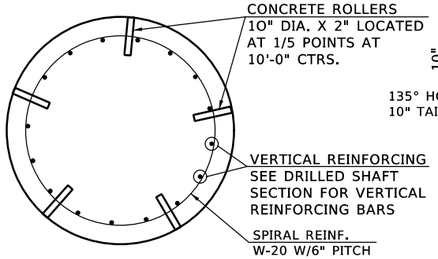
(1) COAT ALL EXPOSED CONCRETE ON TOP OF PIER CAP AND 6" MIN. DOWN ON VERTICAL FACE OF PIER CAP WITH CIM1000 URETHANE COATING AS MANUFACTURED BY C.I.M. INDUSTRIES, INC., IM-129 AS MANUFACTURED BY CUSTOM LINING OR AN APPROVED EQUAL. SURFACE TO BE SANDBLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT. URETHANE COATING SHALL BE PAID FOR AT THE UNIT PRICE BID PER LSUM 0F (PL) INSTALLATION OF BRIDGE ITEMS.

(2) TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (URETHANE COATING WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP.) DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.

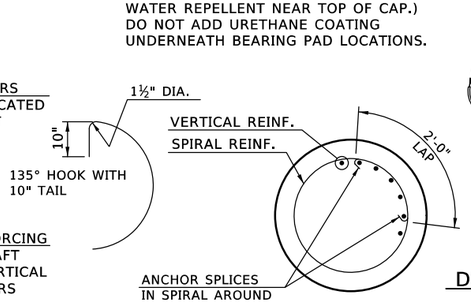


SECTION A-A - PIER NO. 1

(SAME AS PIER NO. 3)

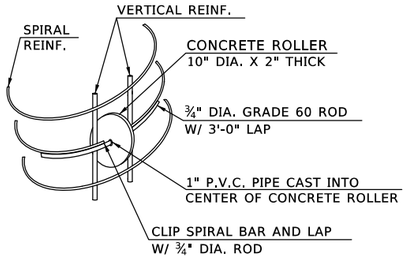


DETAIL OF DRILLED SHAFT ROLLER PLACEMENT



SPIRAL SPLICE

NOTE:
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH INCLUDE LAPS.



DETAIL OF DRILLED SHAFT ROLLER INSTALLATION

NOTES:
1. CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I.. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

2. ALL MATERIALS, LABOR AND INCIDENTALS REQUIRED FOR THE INSTALLATION OF THE CONCRETE ROLLERS TO BE INCLUDED IN THE PRICE BID PER L.F. OF DRILLED SHAFTS.

PIER NO. 1 BAR LIST

(ONE PIER)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	46	STR.	15'-2"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#5	3	STR.	39'-0"	
PH5	#4	12	BNT.	12'-5"	
PE1	#5	6	BNT.	7'-6"	
PS1	#5	98	BNT.	15'-1"	
P1	#4	50	BNT.	5'-3"	
P2	#4	30	BNT.	6'-9"	
PU1	#5	80	BNT.	6'-5"	

PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	2	BNT	296'-11"	

DRILLED SHAFT PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	50	STR	88'-6"	SEE NOTE 1
DS2	#11	46	STR	19'-5"	SEE NOTE 1
DT1	W20	2	BNT	2,276'-4"	SEE NOTE 1
DT2	#4	26	BNT	12'-6"	SEE NOTE 1

PIER NO. 3 BAR LIST

(ONE PIER)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	46	STR.	15'-2"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#5	3	STR.	39'-0"	
PH5	#4	12	BNT.	12'-5"	
PE1	#5	6	BNT.	7'-6"	
PS1	#5	98	BNT.	15'-1"	
P1	#4	50	BNT.	5'-3"	
P2	#4	30	BNT.	6'-9"	
PU1	#5	80	BNT.	6'-5"	

PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	2	BNT	270'-9"	

DRILLED SHAFT PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	50	STR	54'-0"	SEE NOTE 1
DS2	#11	46	STR	23'-9"	SEE NOTE 1
DT1	W20	2	BNT	1,404'-11"	SEE NOTE 1
DT2	#4	26	BNT	12'-3"	SEE NOTE 1

NOTE:

1. DRILLED SHAFT BARS ARE FOR INFORMATION PURPOSES ONLY. THE BARS ARE NOT INCLUDED IN THE QUANTITIES, BUT ARE INCLUDED IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.

BRIDGE A

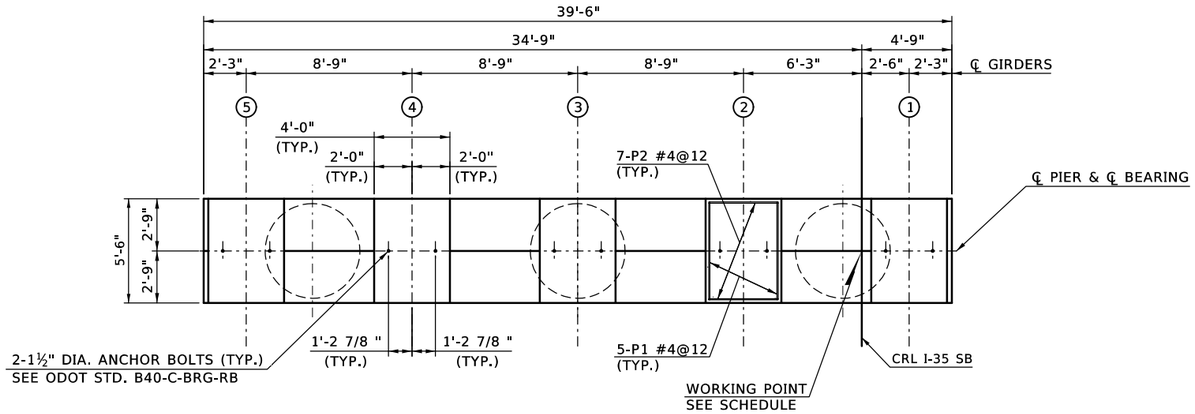
DESIGN	KSJ	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (2)

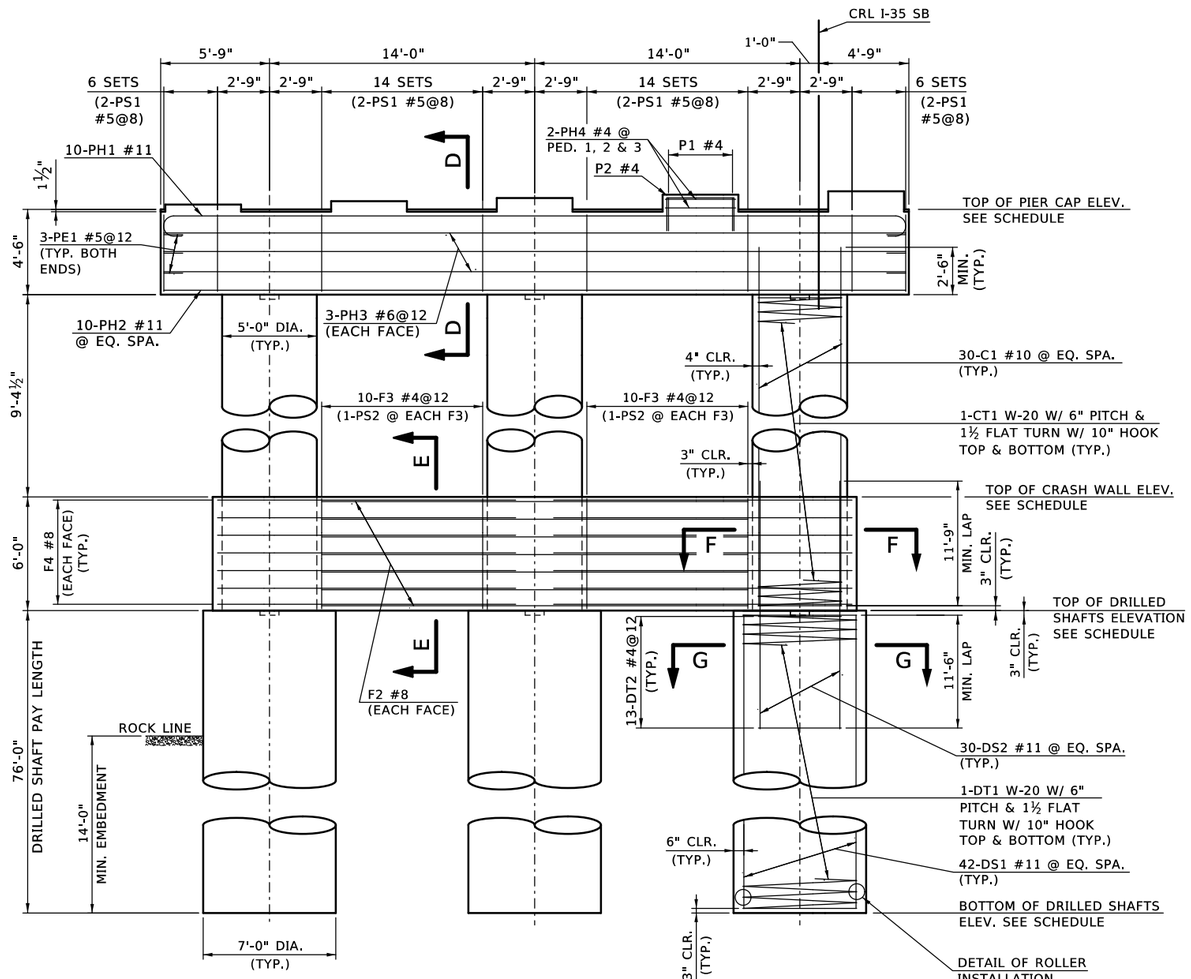
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B014

7/26/2018 4:54:06 PM P:\FDB\650-TUL\CIV\40052_EC1839_I35_US60\20_DESGN\40_CAD\S\Bridge A\24432(4 S)Pier 1Det 0i.dgn



PLAN - PIER NO. 2

SCALE: ¼" = 1'-0"



ELEVATION

SCALE: ¼" = 1'-0"

END VIEW

SCALE: ¼" = 1'-0"

NOTES:

1. ADJUST PH BARS AS NEEDED TO PROVIDE A MINIMUM OF 4" CLEARANCE FOR TREMIE AND CLEARANCE FOR ANCHOR BOLTS.
2. FOR BEARINGS, SEE BEARING DETAILS SHEET.

PIER STATION AND ELEVATIONS SCHEDULE

PIER NO. 2

WORKING POINT STATION = 878+98.38

PEDESTAL	ELEVATION		ELEVATION
1	1005.82		--
2	1005.65	TOP OF PIER	1004.87
3	1005.47	TOP OF CRASH WALL	991.00
4	1005.30	TOP OF DRILLED SHAFTS	985.00
5	1005.12	BOT. OF DRILLED SHAFTS	909.00

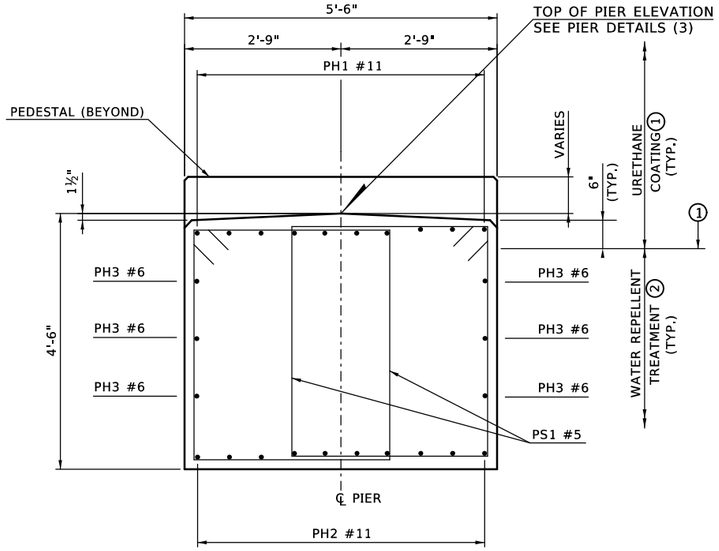
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

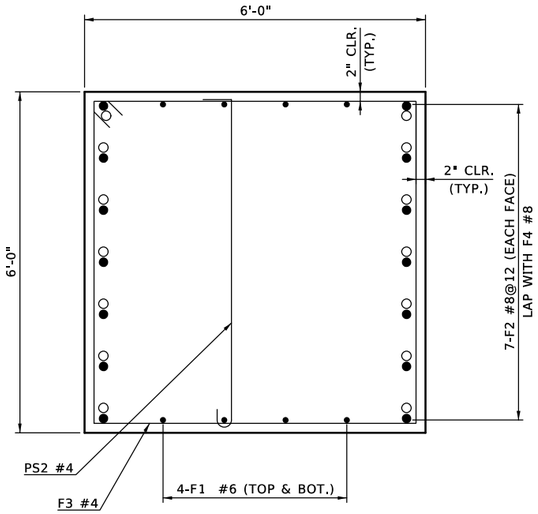
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (3)

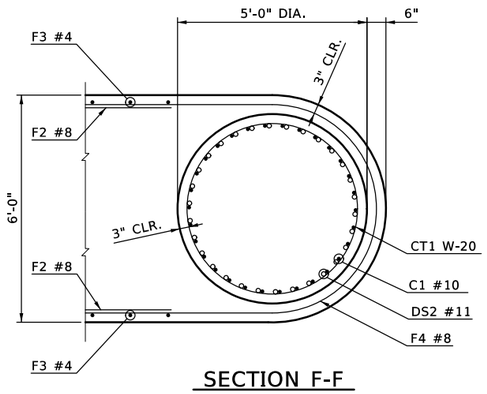
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B015



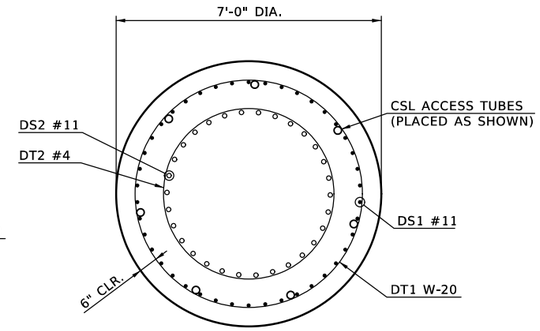
SECTION D-D



SECTION E-E



SECTION F-F

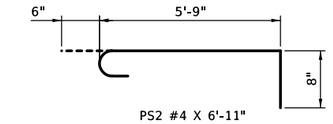


SECTION G-G

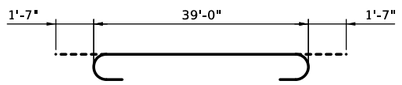
URETHANE COATING NOTES:

① COAT ALL EXPOSED CONCRETE ON TOP OF PIER CAP AND 6" MIN. DOWN ON VERTICAL FACE OF PIER CAP WITH CIM1000 URETHANE COATING AS MANUFACTURED BY C.I.M. INDUSTRIES, INC., IM-129 AS MANUFACTURED BY CUSTOM LINING OR AN APPROVED EQUAL. SURFACE TO BE SANDBLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT. URETHANE COATING SHALL BE PAID FOR AT THE UNIT PRICE BID PER LSUM 0F (PL) INSTALLATION OF BRIDGE ITEMS.

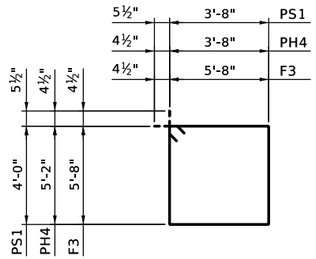
② TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (URETHANE COATING WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP.) DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.



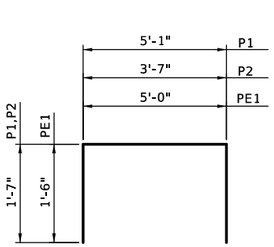
PS2 #4 X 6'-11"



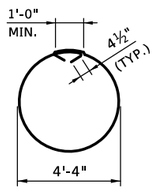
PH1 #11 X 42'-2"



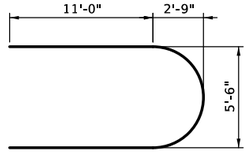
PS1 #5 X 16'-3"
PH4 #4 X 18'-5"
F3 #4 X 23'-5"



P1 #4 X 8'-3"
P2 #4 X 6'-9"
PE1 #5 X 8'-0"



DT2 #4 X 15'-5"



F4 #8 X 30'-8"

PIER NO. 2 BAR LIST

(ONE PIER)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	90	STR.	17'-8"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#4	6	BNT.	18'-5"	
PE1	#5	6	BNT.	8'-0"	
PS1	#5	80	BNT.	15'-9"	
PS2	#4	20	BNT.	6'-11"	
P1	#4	15	BNT.	8'-3"	
P2	#4	18	BNT.	6'-9"	
F1	#6	16	STR	8'-6"	
F2	#8	14	STR.	22'-6"	
F3	#4	20	BNT.	23'-5"	
F4	#8	14	BNT.	30'-8"	

PLAIN REINFORCING

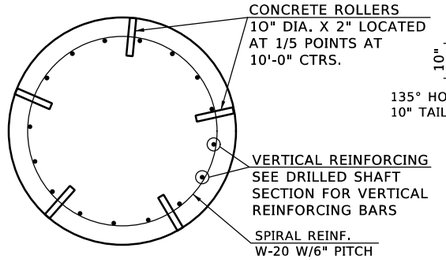
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	3	BNT	467'-4"	

DRILLED SHAFT PLAIN REINFORCING

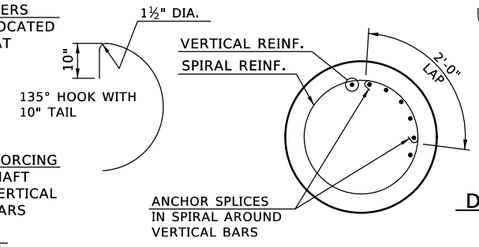
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	126	STR	75'-6"	SEE NOTE 1
DS2	#11	90	STR	23'-9"	SEE NOTE 1
DT1	W20	3	BNT	2,916'-6"	SEE NOTE 1
DT2	#4	39	BNT	15'-5"	SEE NOTE 1

NOTE:

1. DRILLED SHAFT BARS ARE FOR INFORMATION PURPOSES ONLY. THE BARS ARE NOT INCLUDED IN THE QUANTITIES, BUT ARE INCLUDED IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.

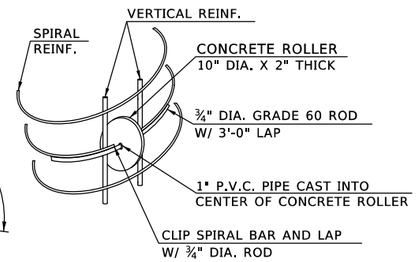


DETAIL OF DRILLED SHAFT
ROLLER PLACEMENT



SPIRAL SPLICE

NOTE:
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH INCLUDE LAPS.



DETAIL OF DRILLED SHAFT
ROLLER INSTALLATION

NOTES:
1. CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I.. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

2. ALL MATERIALS, LABOR AND INCIDENTALS REQUIRED FOR THE INSTALLATION OF THE CONCRETE ROLLERS TO BE INCLUDED IN THE PRICE BID PER L.F. OF DRILLED SHAFTS.

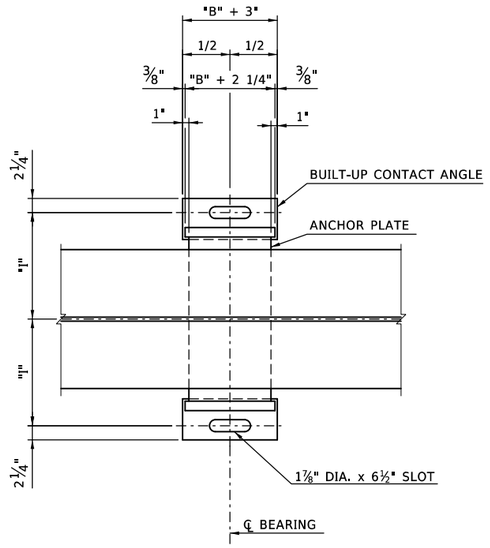
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

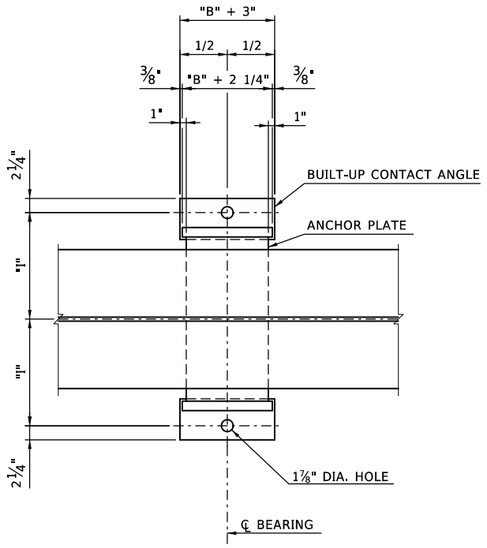
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (4)

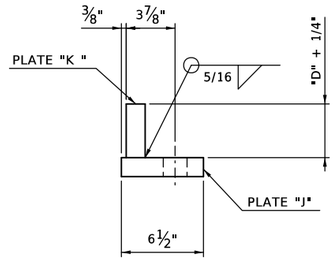
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B016



EXPANSION BEARING PLAN

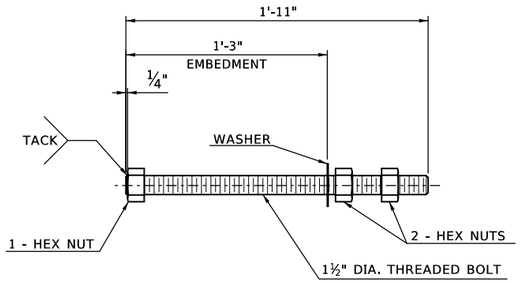


FIXED BEARING PLAN



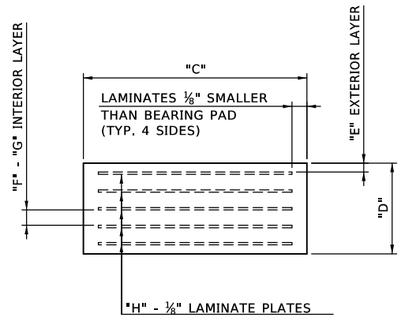
BUILT-UP CONTACT ANGLE DETAIL

SCALE: NONE



ANCHOR BOLT DETAIL

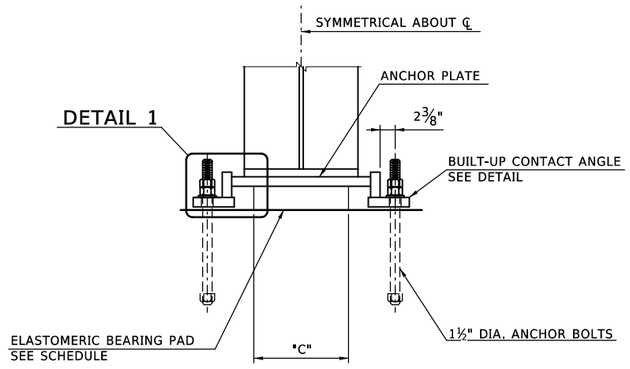
SCALE: NONE



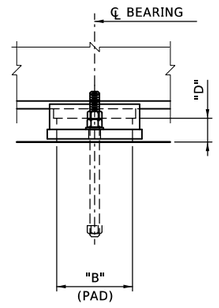
BEARING PAD ELEVATION

SCALE: NONE

(60 DUROMETER HARDNESS) INCLUDE ALL COSTS OF BEARING PADS IN PRICE BID FOR FIXED OR EXPANSION BEARING ASSEMBLY



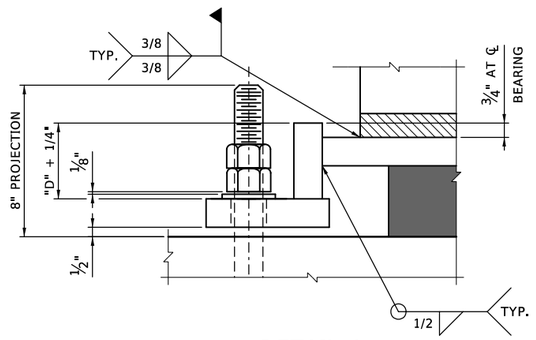
END VIEW



SIDE VIEW

BEARING DETAILS

SCALE: 1" = 1'-0"



DETAIL 1

SCALE: 3" = 1'-0"

BEARING ASSEMBLY SCHEDULE

LOCATION	GIRDER	"A" BEVEL SLOPE %	"B" LENGTH OF PAD (IN)	"C" WIDTH OF PAD (IN)	"D" TOTAL HEIGHT OF PAD (IN)	"E" HEIGHT OF EXTERIOR LAYERS (IN)	"F" NUMBER OF INTERIOR LAYERS	"G" HEIGHT OF INTERIOR LAYERS (IN)	"H" NUMBER OF ⅛" LAMINATE PLATES	"I" ℄ OF BEAM TO ℄ ANCHOR BOLT	ANCHOR PLATES	CONTACT PLATES "J" (HORIZ.)	CONTACT PLATES "K" (VERT.)	FIXITY
ABUTMENT 1, SPAN 1	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 8 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	FIX
PIER 1, SPAN 1	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	EXP
PIER 1, SPAN 2	1-5	0.00%	6 1/2"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2"X7 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 8 3/4"	EXP
PIER 2	1-5	0.00%	14"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2" X 15" X 1'-10"	PL 1 1/2" X 6 1/2" X 1'-5"	PL 1 1/2" X 3 7/8" X 1'-4 1/4"	FIX
PIER 3, SPAN 3	1-5	0.00%	6 1/2"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2"X7 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 8 3/4"	EXP
PIER 3, SPAN 4	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	EXP
ABUTMENT 2, SPAN 4	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 8 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	FIX

NOTES:

PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES AND BUILT-UP CONTACT ANGLES IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.

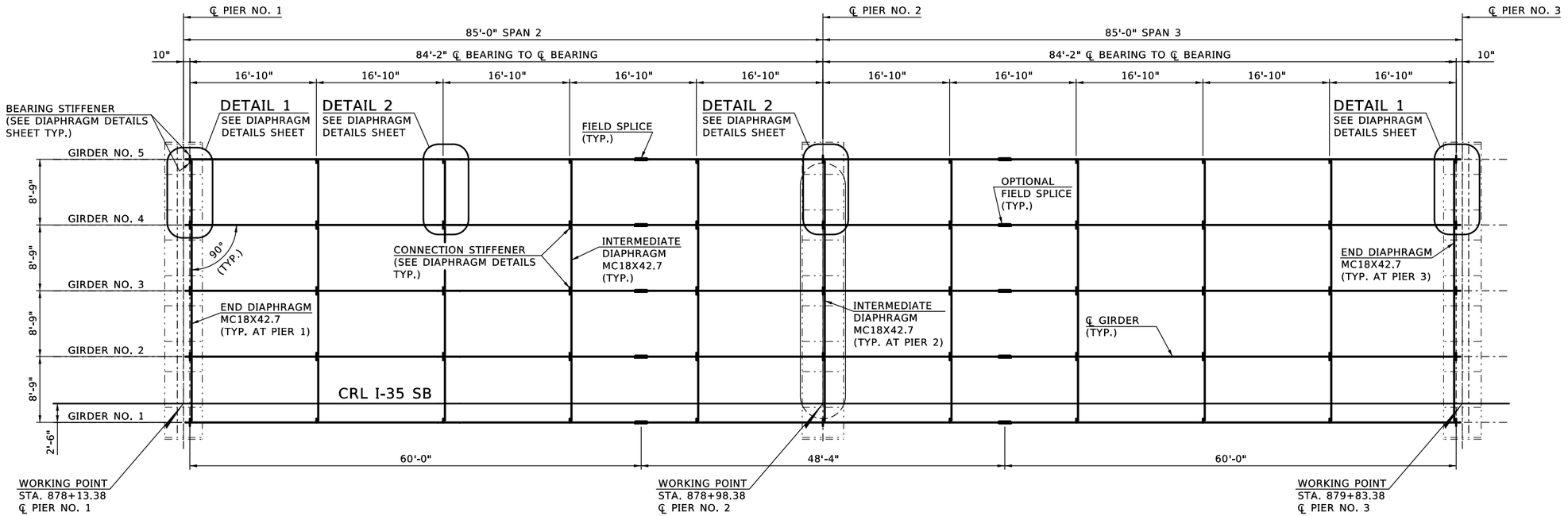
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

BEARING DETAILS

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B017



PLAN

NOTE:
FOR INTERMEDIATE DIAPHRAGM LOCATIONS AT SPAN 1 AND SPAN 4, SEE STEEL GIRDER DETAILS (1).

BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

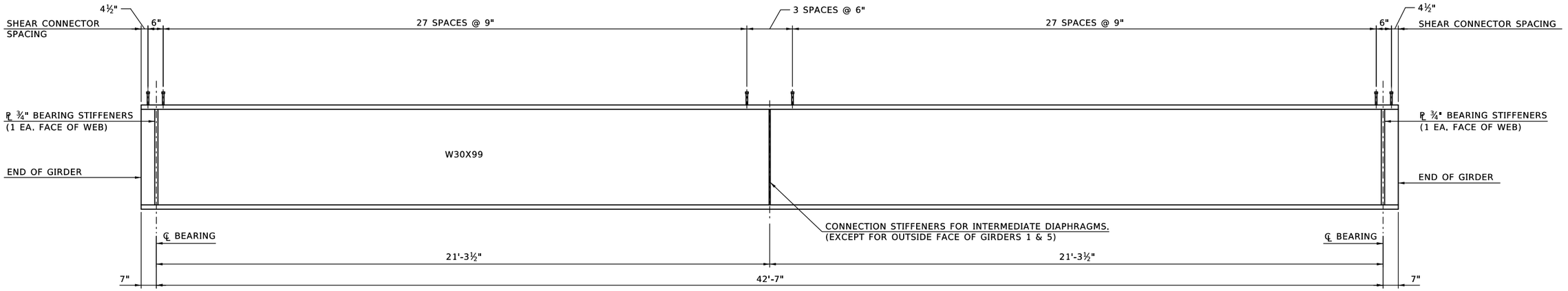
FRAMING PLAN DETAILS
SPAN 2 AND 3

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B018

7/26/2018

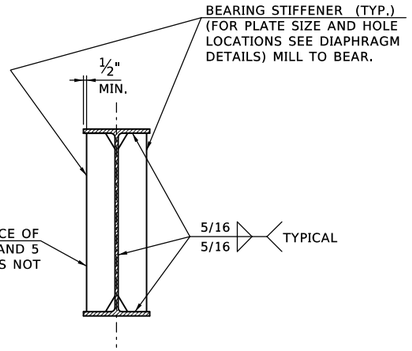
4:54:10 PM

P:\FDB\1650-TUL\CIV\140052_EC1839_I35_US60\20_DESGN\40_CAD\S\Bridge A\24432(4 SIFraming Plan 01.dgn



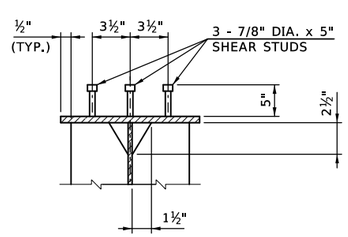
BEAM ELEVATION (SPANS 1 AND 4)

SCALE: NONE



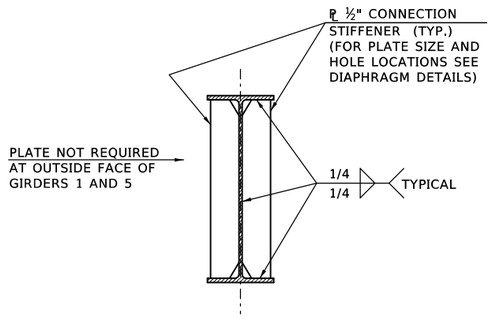
BEARING STIFFENERS FOR SPANS 1 & 4

SCALE: 1"=1'-0"



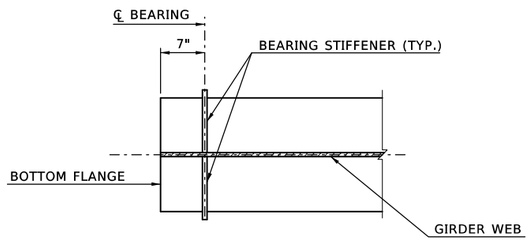
STIFFENER CLIP AND SHEAR CONNECTORS

SCALE: NONE



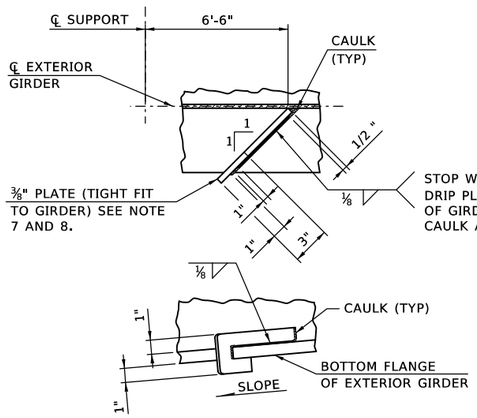
CONNECTION STIFFENERS FOR SPANS 1 & 4

SCALE: 1"=1'-0"



TYPICAL BEARING STIFFENER

SCALE: NONE



TYPICAL DRIP PLATE DETAIL FOR EXTERIOR GIRDERS

SCALE: NONE

NOTES:

1. FOR BRIDGE GEOMETRIC DATA SEE GENERAL PLAN AND ELEVATION.
2. W30X99 AND STIFFENER PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
3. GIRDERS, DIAPHRAGMS, AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.
4. ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
5. ℄ BEARING TO ℄ BEARING LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED AS SHOWN IN THE GIRDER ELEVATION.
6. GIRDERS ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS WERE IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
7. ALL FILLET WELDS SHALL BE TERMINATED ⅜" +/- ⅛" FROM EDGES OF STIFFENERS AS PER AWS D1.5 SECT 9.15.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INSTALLED PRIOR TO INSTALLING STRUCTURAL STEEL.
9. DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS ON THE UP GRADE SIDE OF ABUTMENT AND EACH PIER.
10. ALL COST OF DRIP PLATE, WELD, CAULK AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL".

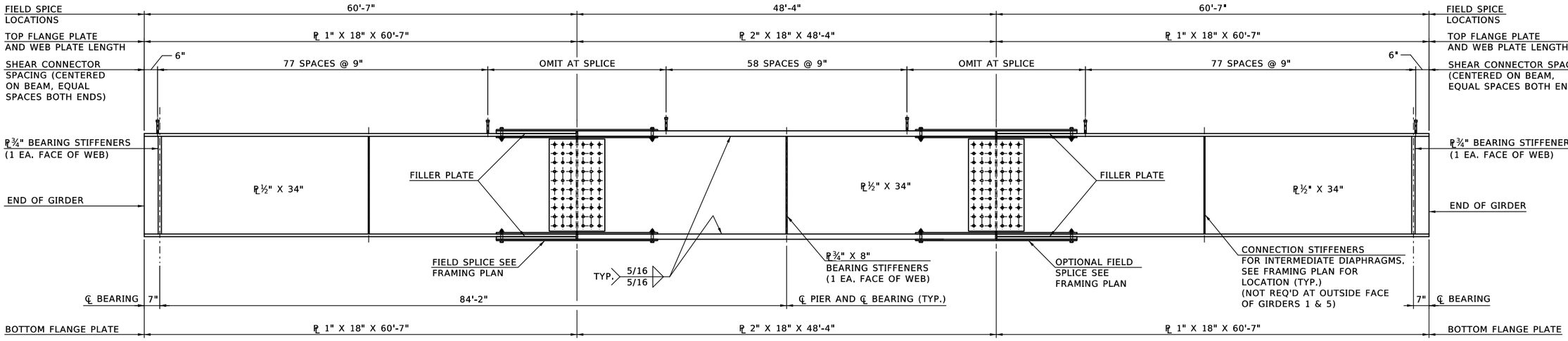
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	LJW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

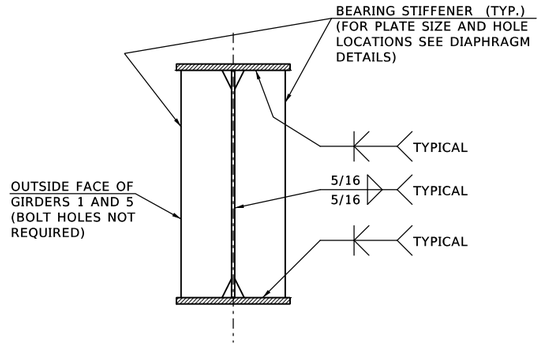
STEEL GIRDER DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B019



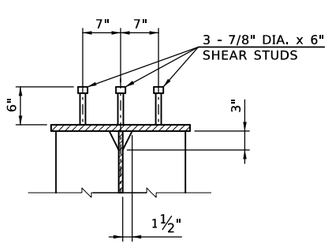
BEAM ELEVATION (SPANS 2 AND 3)

SCALE: NONE



BEARING STIFFENERS FOR SPANS 2 & 3

SCALE: 1"=1'-0"

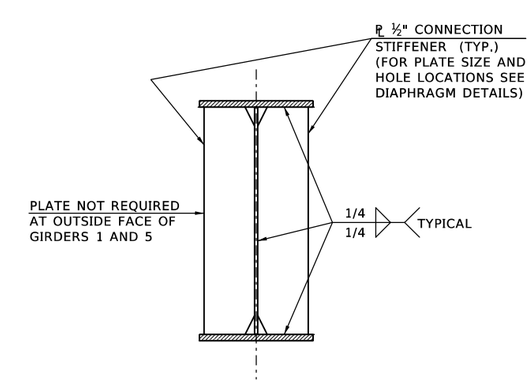


STIFFENER CLIP AND SHEAR CONNECTORS

SCALE: NONE

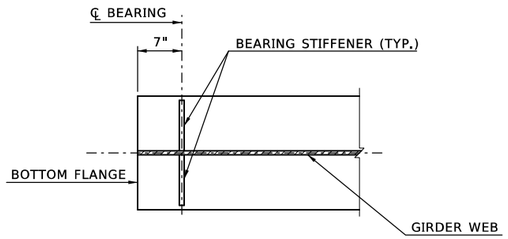
NOTES:

1. FOR BRIDGE GEOMETRIC DATA SEE GENERAL PLAN AND ELEVATION.
2. ALL FLANGE PLATES, WEB PLATES, STIFFENER PLATES, AND FIELD SPLICE PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
3. PLATE GIRDERS, DIAPHRAGMS, AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.
4. ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
5. ℄ BEARING TO ℄ BEARING LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED AS SHOWN ON THE FRAMING PLAN.
6. GIRDERS ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS IS IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
7. ALL FILLET WELDS SHALL BE TERMINATED ⅜" +/- ⅛" FROM EDGES OF STIFFENERS AS PER AWS D1.5, SECT 9.15.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INSTALLED PRIOR TO INSTALLING THE STRUCTURAL STEEL.
9. DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS, ON THE UP GRADE SIDE OF ABUTMENTS, AND EACH PIER.
10. ALL COSTS OF DRIP PLATE WELD, CAULK, AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL".
11. FLANGE WIDTH ACCOMMODATES SHIPPING AND HANDLING OF A 108'-4" FOOT LONG SECTION.
12. CONTRACTOR MAY UTILIZE ONE OR BOTH FIELD SPLICES ON SITE. IF THE SPLICE BETWEEN PIER NO. 2 AND 3 IS CONNECTED IN PLACE, THE CONTRACTOR SHALL MODIFY THE TRAFFIC CONTROL ACCORDINGLY.



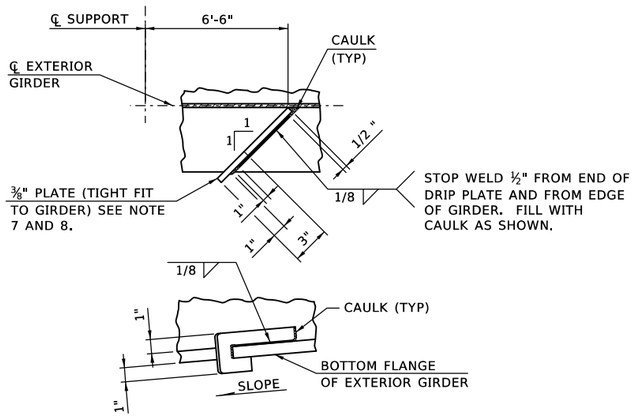
CONNECTION STIFFENERS FOR SPANS 2 & 3

SCALE: 1"=1'-0"



TYPICAL BEARING STIFFENER

SCALE: NONE



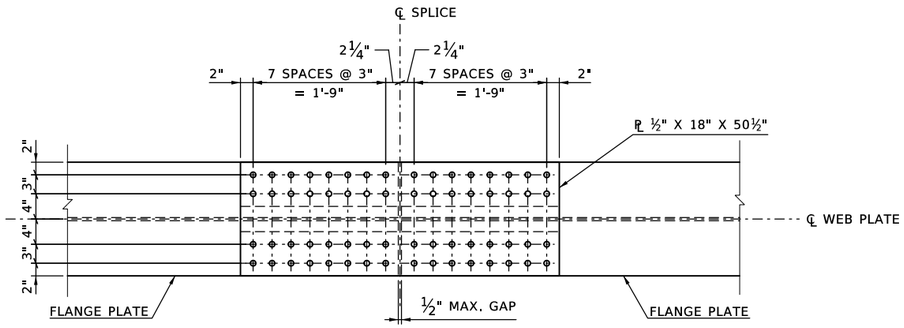
TYPICAL DRIP PLATE DETAIL FOR EXTERIOR GIRDERS

SCALE: NONE

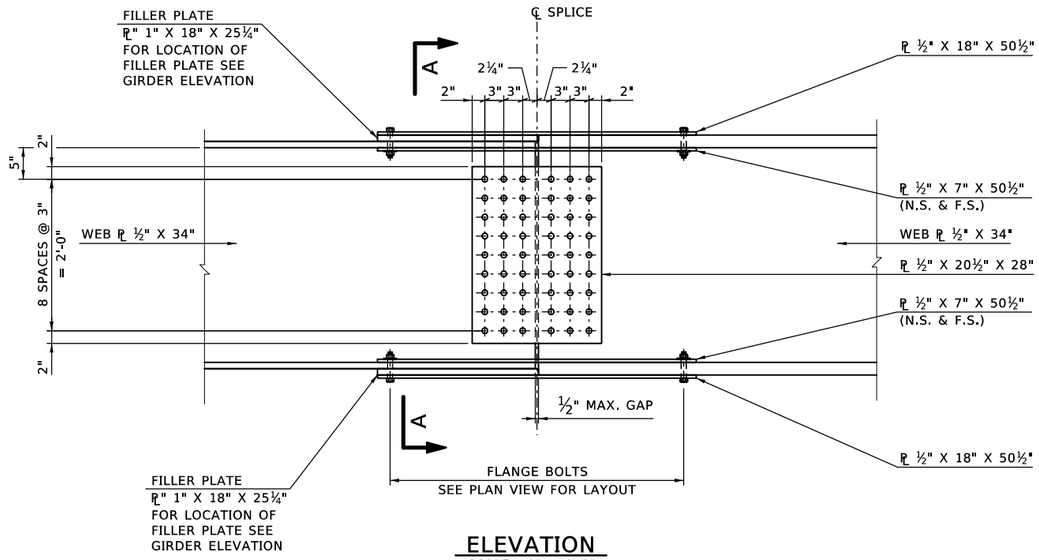
BRIDGE A

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	LJW	2/18	STEEL GIRDER DETAILS (2)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

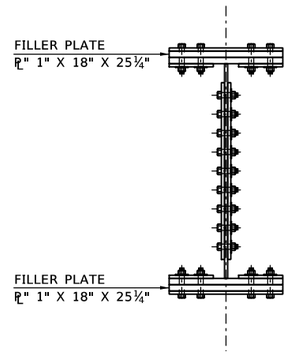
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B020



FIELD SPLICE PLAN
SCALE: 1" = 1'-0"



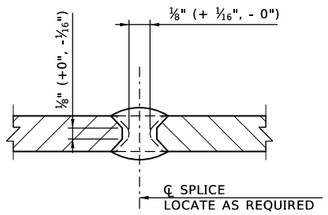
ELEVATION
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"

BOLTED FIELD SPLICE

ALL BOLTED SPLICES SHALL USE ⅞" DIAMETER BOLTS (SEE NOTES 3 & 4)



WELDED WEB SPLICE DETAIL

N.S. = NEAR SIDE
F.S. = FAR SIDE

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL.
2. FOR DIMENSION OF BEAMS WITH RESPECT TO BASELINE, SEE ABUTMENT AND PIERS.
3. ALL BOLTED CONNECTIONS SHALL USE ⅞" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED.
4. ALL SPLICE PLATES AND FILLER PLATES SHALL BE M270 GRADE 50W STEEL. BOLT HOLES SHALL BE 15/16" DIA.
5. FOR SPLICE LOCATIONS, SEE STEEL GIRDER DETAILS (2) AND FRAMING PLAN.
6. BOTTOM FLANGE CONNECTION IS SAME AS TOP FLANGE CONNECTION.

BRIDGE A

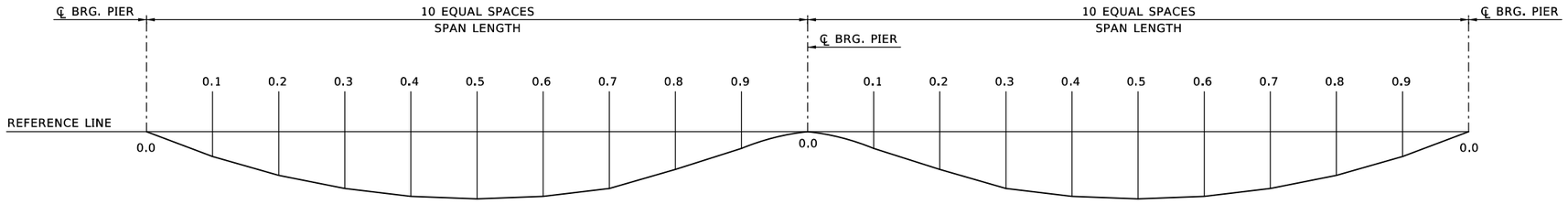
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	LJW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

STEEL GIRDER DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B021

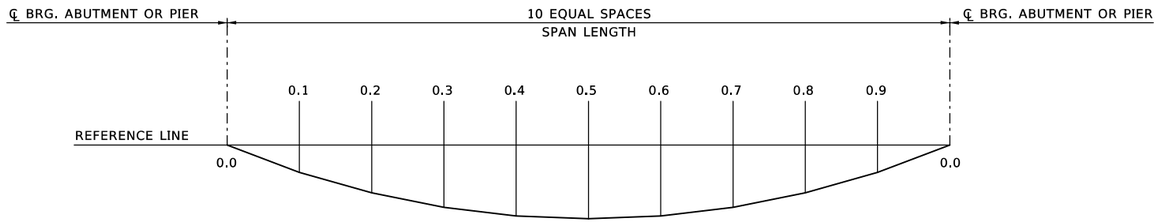
ORDINATES	TENTH PT.	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-
SPANS 2 & 3 GIRDERS 1-5	AVERAGE STEEL	0	0.10	0.18	0.24	0.26	0.24	0.20	0.13	0.07	0.02	0.00	0.02	0.07	0.13	0.20	0.24	0.26	0.24	0.18	0.10	0
	AVERAGE CONCRETE	0	0.38	0.70	0.90	0.97	0.90	0.73	0.50	0.26	0.08	0.00	0.08	0.26	0.50	0.73	0.90	0.97	0.90	0.70	0.38	0
	AVERAGE TOTAL	0	0.48	0.88	1.14	1.23	1.14	0.93	0.63	0.33	0.10	0.00	0.10	0.33	0.63	0.93	1.14	1.23	1.14	0.88	0.48	0



DEAD LOAD DEFLECTION DIAGRAM SPANS 2 AND 3

SCALE: NONE

ORDINATES	TENTH PT.	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-
SPANS 1 & 4 GIRDERS 1-5	AVERAGE STEEL	0.00	0.03	0.06	0.08	0.09	0.10	0.09	0.08	0.06	0.03	0.00
	AVERAGE CONCRETE	0.00	0.18	0.35	0.48	0.56	0.59	0.56	0.48	0.35	0.18	0.00
	AVERAGE TOTAL	0.00	0.21	0.41	0.56	0.65	0.69	0.65	0.56	0.41	0.21	0.00



DEAD LOAD DEFLECTION DIAGRAM SPANS 1 AND 4

SCALE: NONE

NOTES:

1. DEFLECTION IS IN INCHES.
2. POSITIVE VALUE INDICATES DEFLECTION IS DOWNWARD.
3. CONCRETE LOAD INCLUDES SLAB, HAUNCHES, PARAPETS AND STAY-IN-PLACE FORMS.
4. PLATE GIRDERS, DIAPHRAGMS AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.

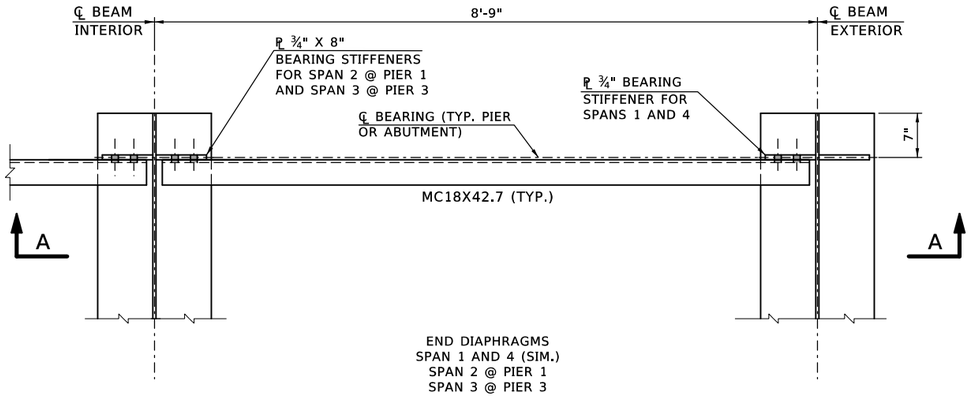
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

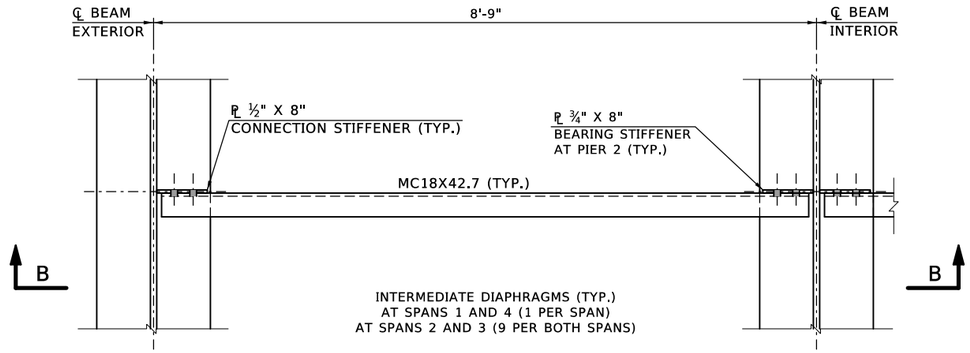
OKLAHOMA DEPARTMENT OF TRANSPORTATION

STEEL GIRDER DETAILS (4)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B022



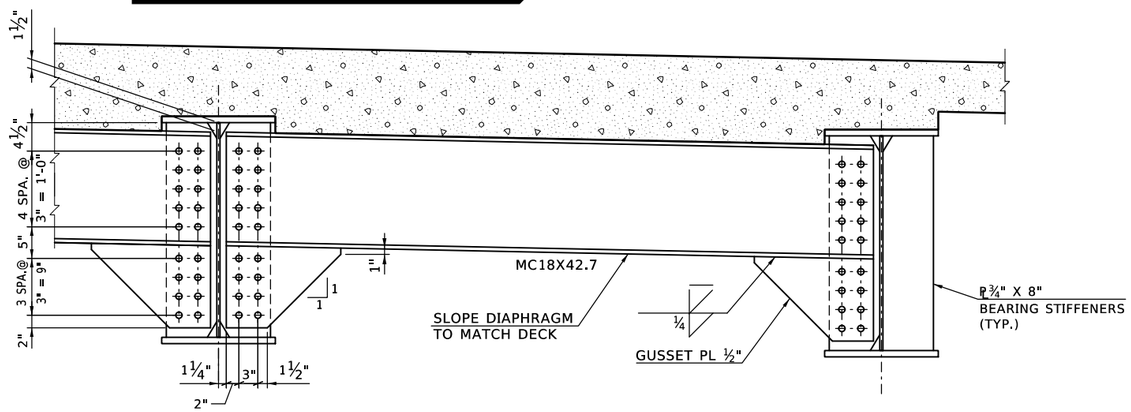
DETAIL 1
SCALE: 1" = 1'-0"



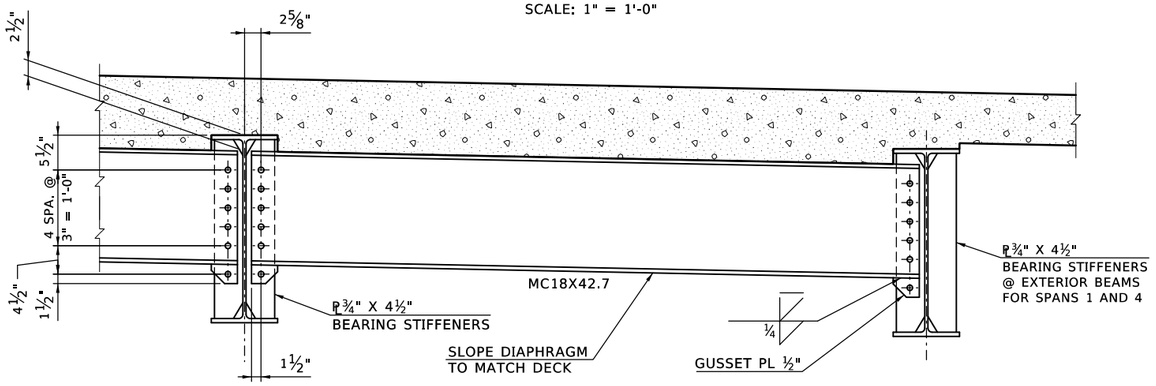
DETAIL 2
SCALE: 1" = 1'-0"

ALL BOLTED CONNECTION SHALL BE 1" DIAMETER (SEE NOTE)

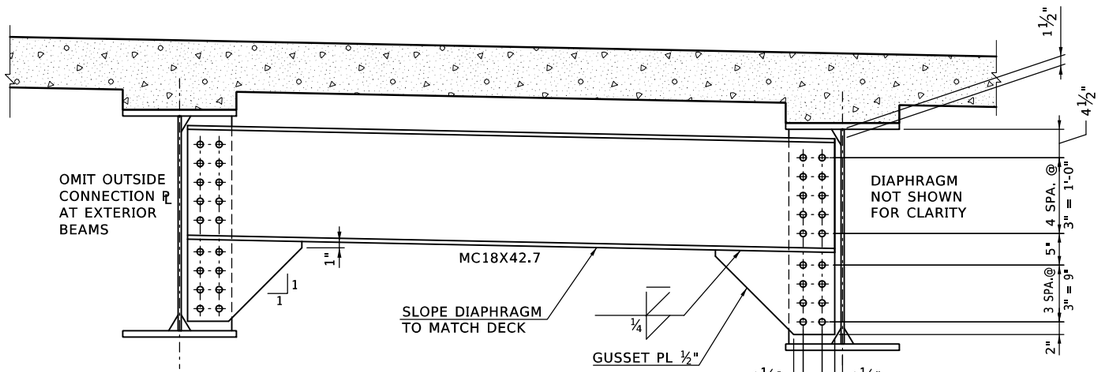
* FOR CROSS SLOPE SEE TYPICAL SECTION



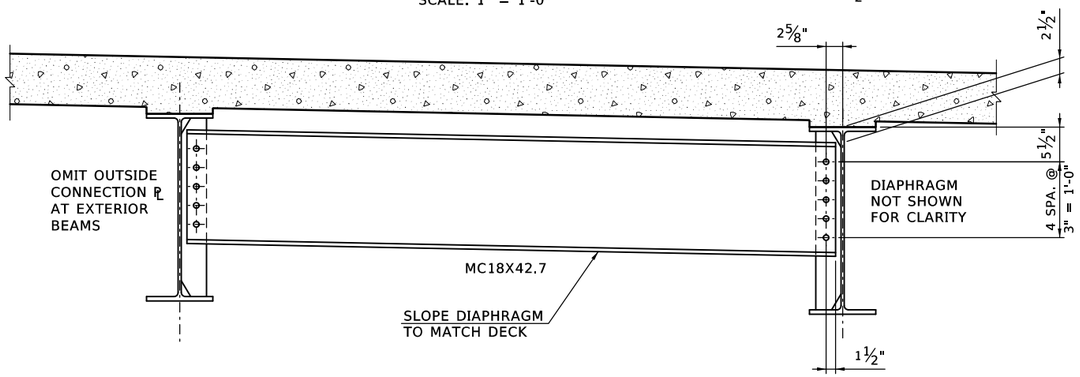
* SECTION A-A AT SPAN 2 AT PIER 1 AND SPAN 3 AT PIER 3
SCALE: 1" = 1'-0"



* SECTION A-A AT SPANS 1 & 4
SCALE: 1" = 1'-0"



* SECTION B-B AT SPANS 2 & 3
SCALE: 1" = 1'-0"



* SECTION B-B AT SPANS 1 & 4
SCALE: 1" = 1'-0"

NOTE
ALL BOLTED CONNECTIONS SHALL USE 1" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS.
THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED.
ALL BOLT HOLES SHALL BE 1 1/16" DIA. WITH A MIN. 2" EDGE DISTANCE UNLESS NOTED OTHERWISE.

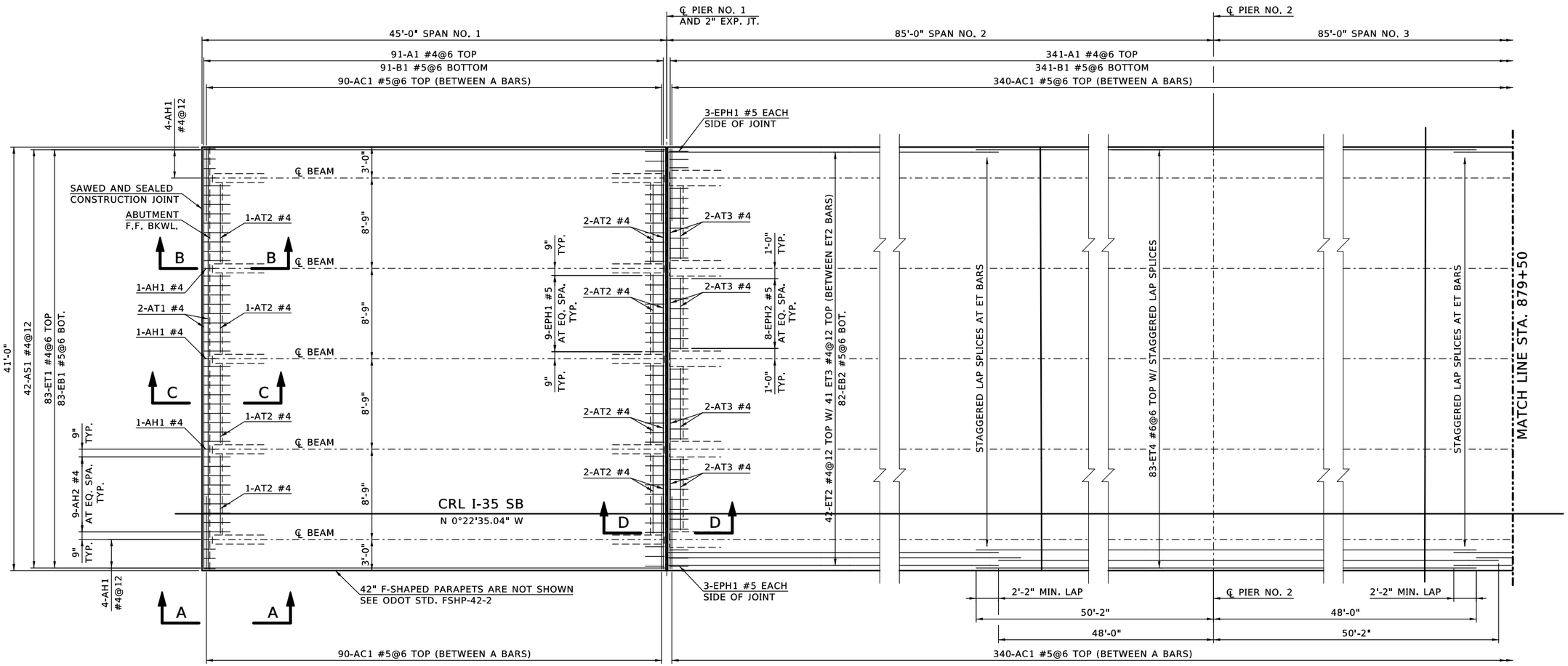
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B023



DECK REINFORCEMENT PLAN

SUPERSTRUCTURE QUANTITIES

ITEM	UNIT	TOTAL
SAW-CUT GROOVING	SY	961.4
SEALED EXPANSION JOINT	LF	84.00
42" F-SHAPED PARAPET	LF	520.0
STRUCTURAL STEEL M270 GRADE 50W	LB	289480
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	15
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	20
SPECIAL CONCRETE FINISH	SY	498
CLASS AA CONCRETE	CY	279.6
EPOXY COATED REINFORCING STEEL	LB	95840
WATER REPELLENT (VISUALLY INSPECTED)	SY	635
SEALER CRACK PREPARATION	LF	82
SEALER RESIN	GAL	0.6

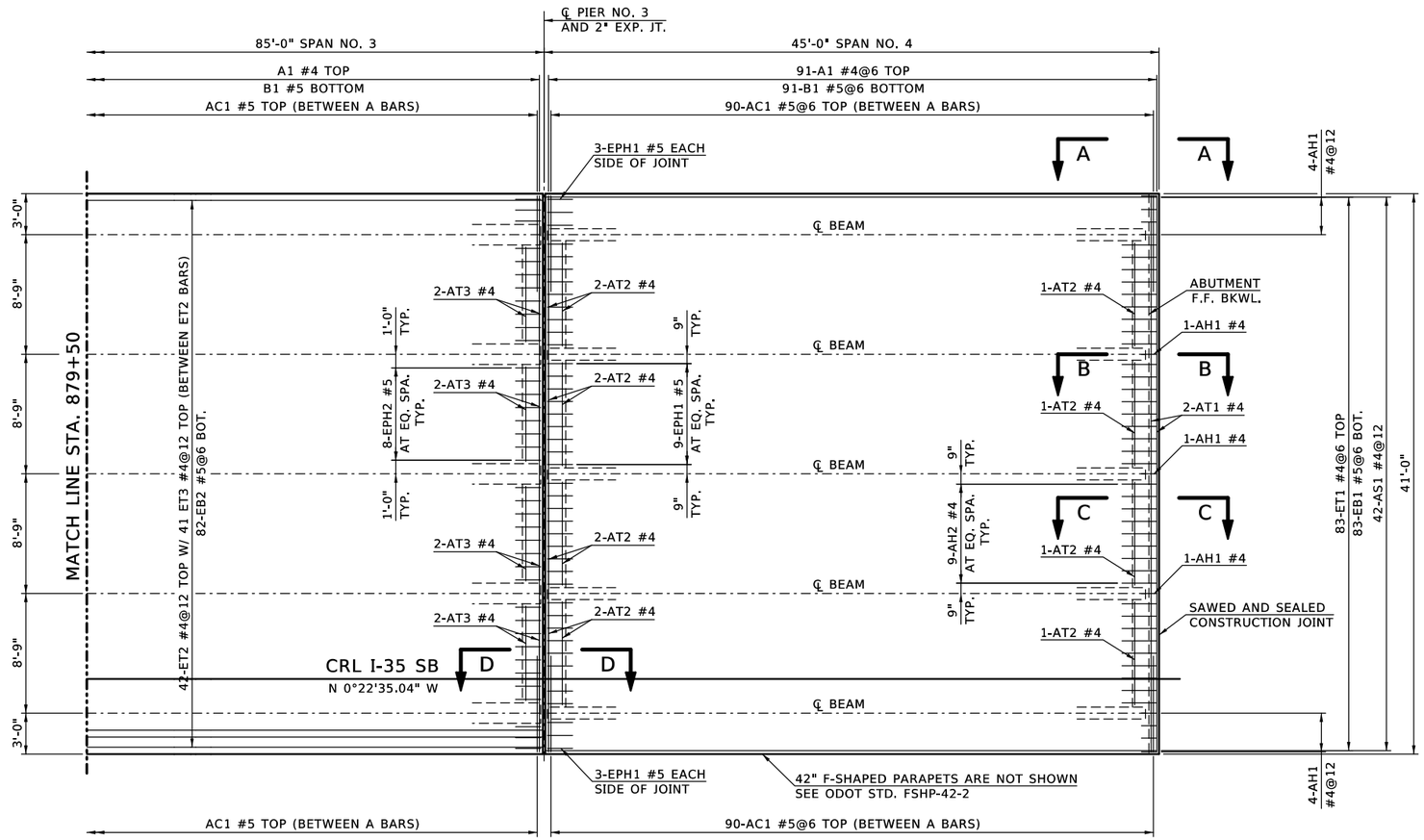
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B024



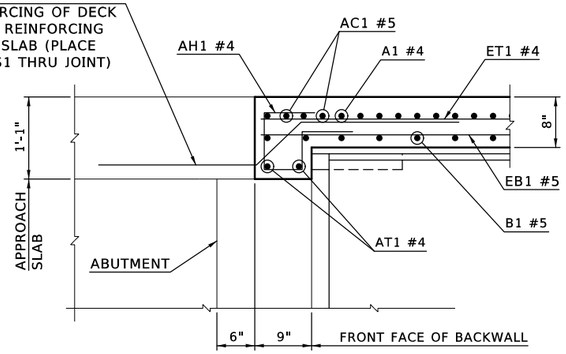
DECK REINFORCEMENT PLAN

BRIDGE A

DESIGN	STF	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	LW	2/18	SUPERSTRUCTURE DETAILS (2)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

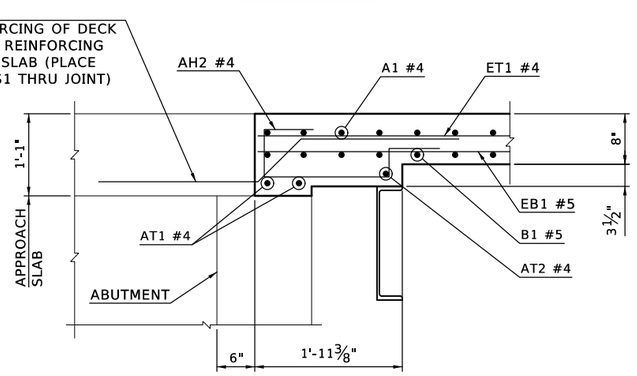
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B025

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)



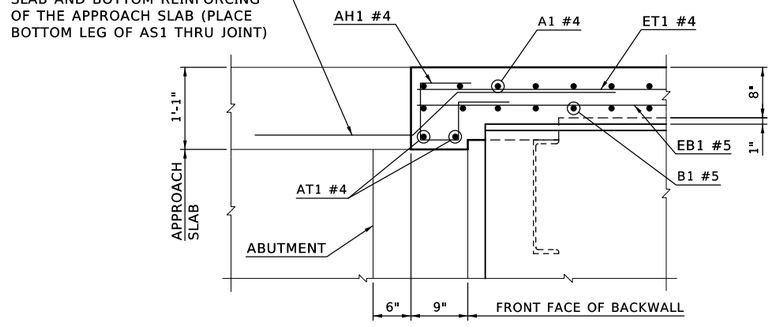
SECTION A-A

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)

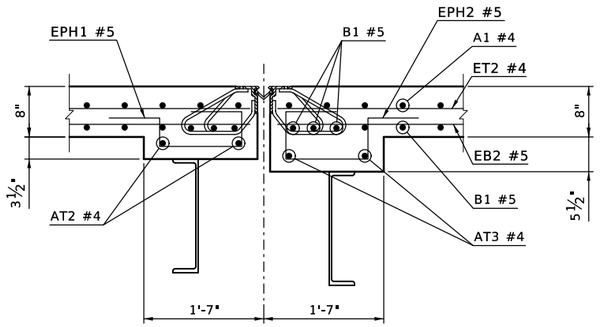


SECTION C-C

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)



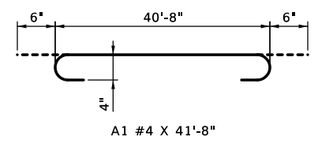
SECTION B-B



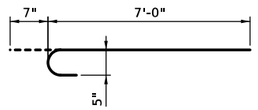
SECTION D-D

SUPERSTRUCTURE BAR LIST (ONE REQUIRED) EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
A1	#4	523	BNT.	41'-8"	
AC1	#5	1040	BNT.	7'-7"	
AH1	#4	22	BNT.	3'-1"	
AH2	#4	72	BNT.	4'-0"	
AS1	#4	84	BNT.	5'-0"	
AT1	#4	4	STR.	40'-8"	
AT2	#4	24	STR.	7'-7"	
AT3	#4	16	STR.	6'-11"	
AT3	#4	16	STR.	6'-11"	
B1	#5	527	STR.	40'-8"	
EB1	#5	166	STR.	44'-9"	
EB2	#5	83	STR.	179'-5"	SEE NOTE 1
EPH1	#5	96	BNT.	3'-9"	
EPH2	#5	64	BNT.	4'-1"	
ET1	#4	166	STR.	44'-9"	
ET2	#4	83	STR.	37'-0"	
ET3	#4	83	STR.	39'-2"	
ET4	#6	83	STR.	102'-0"	SEE NOTE 2
FS2	#5	520	BNT.	7'-4"	SEE NOTE 3

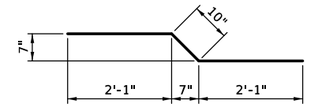
NOTES:
1. INCLUDES 3 - 39" MIN. LAPS
2. INCLUDES 1 - 46" MIN. LAP
3. SEE ODOT STD. FSHP-42-2



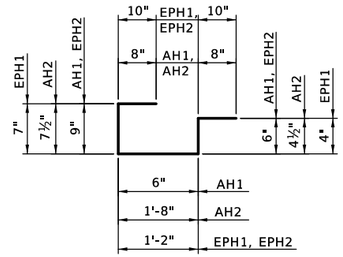
A1 #4 X 41'-8"



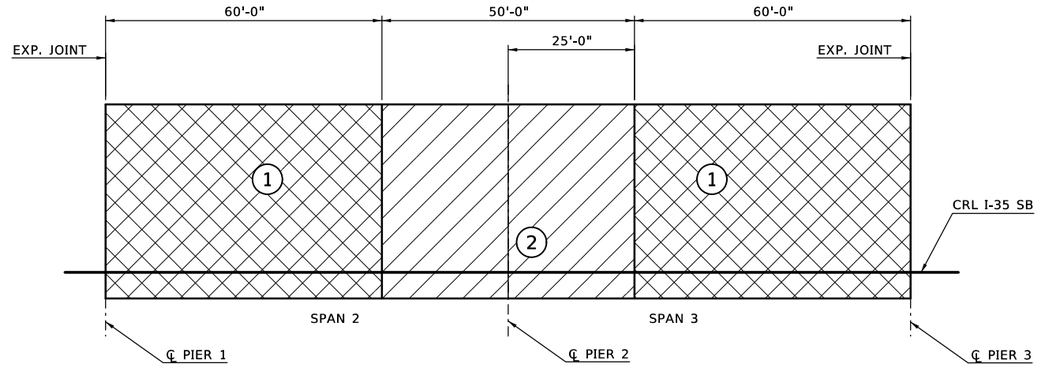
AC1 #5 X 7'-7"



AS1 #4 X 5'-0"



AH1 #4 X 3'-1"
AH2 #4 X 4'-0"
EPH1 #5 X 3'-9"
EPH2 #5 X 4'-1"



PLAN - DECK POURING SEQUENCE - SPANS 2 AND 3

POURING SEQUENCE NOTES:

1. THE DECK SLAB IS DIVIDED INTO SECTIONS 1 AND 2 BETWEEN CONSTRUCTION JOINTS AS SHOWN. THE CONCRETE SHALL BE POURED IN EACH SECTION OF THE DECK SLAB IN THE NUMERICAL SEQUENCE INDICATED. SECTIONS OF THE DECK SLAB WITH THE SAME NUMBER MAY BE POURED IN ANY ORDER. NO SECTION SHALL BE POURED BEFORE THE ADJACENT SECTION(S) HAVE BEEN IN PLACE FOR AT LEAST 48 HOURS.
2. ALL CONSTRUCTION JOINTS WITHIN THE DECK SLAB SHALL BE SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. ALL COST OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". ALL COST OF EQUIPMENT AND LABOR FOR THE INSTALLATION OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION".
3. IN THE EVENT OF AN EMERGENCY, POURING OF THE DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER.
4. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THRU ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK SLAB WITHIN 15' OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT.
5. DO NOT SAW-CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.
6. DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER HEAVY EQUIPMENT LOADS TO THE BEAMS UNTIL THE DIAPHRAGMS HAVE BEEN PLACED AND ALL BOLTS HAVE BEEN TIGHTENED.

BRIDGE A

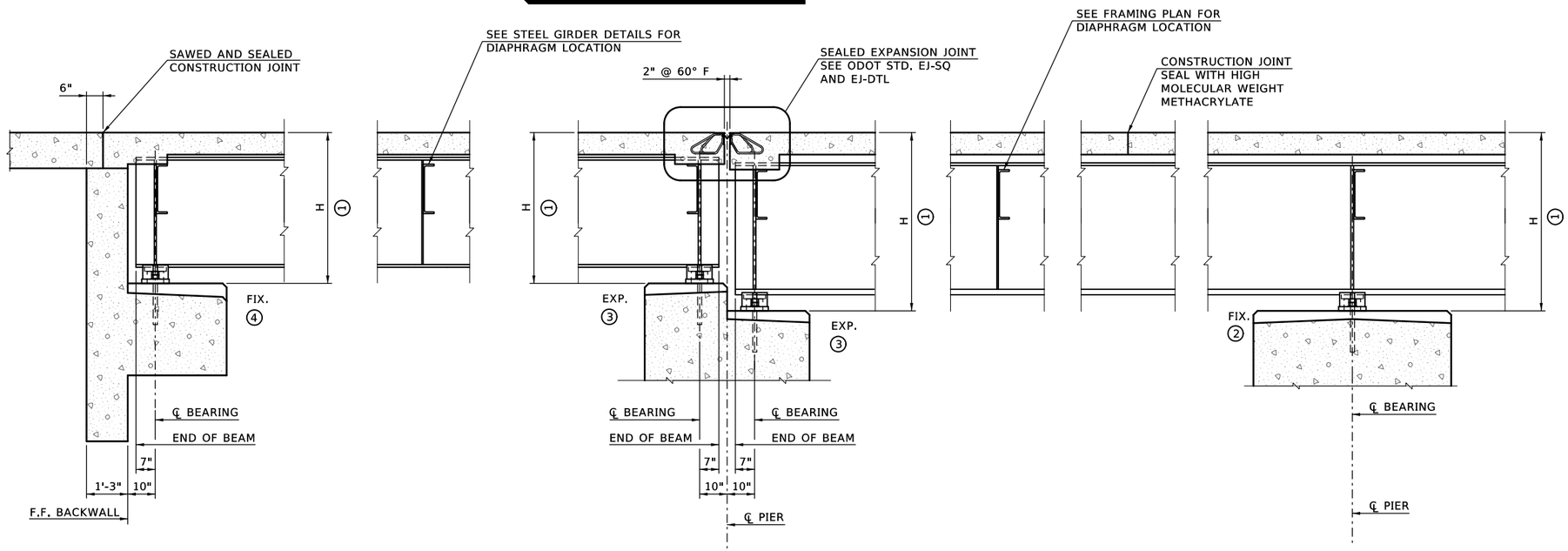
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B026

NOTE: DO NOT SAW-CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS



ABUTMENT

PIER 1
(PIER 3 IS OPPOSITE HAND)

PIER 2

LONGITUDINAL SECTION

SCALE: ½" = 1'-0"

EXPANSION DEVICE SETTING TABLE AT PIER NO. 1 AND 3

(PERPENDICULAR TO JOINT)

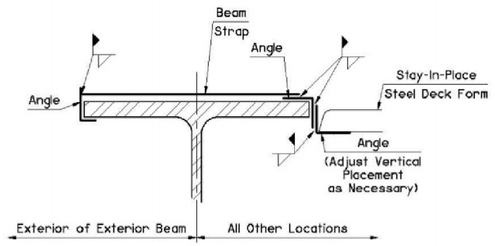
TEMPERATURE (°F)	JOINT OPENING (in)
0.0	2 1/2
15.0	2 3/8
30.0	2 1/4
45.0	2 1/8
60.0	2
75.0	1 7/8
90.0	1 3/4
105.0	1 5/8
120.0	1 1/2

HEIGHT DIMENSION

LOCATION	H
ABUTMENT NO.1	3'-8 5/16"
PIER NO. 1 DWN STA.	3'-8 5/16"
PIER NO. 1 UP STA.	4'-4 1/8"
PIER NO. 2	4'-5 1/8"
PIER NO. 3 DWN STA.	4'-4 1/8"
PIER NO. 3 UP STA.	3'-8 5/16"
ABUTMENT NO. 2	3'-8 5/16"

NOTES:

1. EPOXY-COAT OR GALVANIZE STEEL ITEMS USED TO FACILITATE CONSTRUCTION, SUCH AS DECK FORM HANGER ASSEMBLIES, TY-BAR CLIPS, INSERT WELD ANCHORS, OR OTHER APPURTENANCES, THAT WILL REMAIN IN PLACE IN THE DECK SLAB. EPOXY-COAT IN ACCORDANCE WITH AASHTO M284 OR GALVANIZE IN ACCORDANCE WITH AASHTO M111.
2. IN THE EVENT OF AN EMERGENCY, HALT THE PLACEMENT OF CONCRETE BY FORMING A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC OR AS DIRECTED BY THE ENGINEER. DO NOT PLACE ANY HEAVY EQUIPMENT ON THE FINISHED DECK SLAB WITHIN 5 FEET OF ANY CONSTRUCTION JOINT UNTIL THE CONCRETE IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT AND AT LEAST 48 HOURS HAS ELAPSED SINCE CONCRETE PLACEMENT. CONSTRUCTION JOINTS AT THE CLOSURE POURS IN THE DECK SLAB SHALL NOT BE KEYED.
3. FOR STAY-IN-PLACE DECK FORMS DETAILS AND NOTES SEE ODOT STANDARD B40-C-LSECT-RB.
4. SEAL ALL DECK SLAB CONSTRUCTION JOINTS WITH HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE ALL COST OF EQUIPMENT AND LABOR FOR THE INSTALLATION OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION". INCLUDE ALL COSTS OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". THE PREPARATION AND SEALER OF EMERGENCY CONSTRUCTION JOINTS SHALL NOT BE MEASURED FOR PAYMENT.



STAY-IN-PLACE STEEL DECK FORM FLANGE CONNECTION DETAIL

NOTE:
DO NOT WELD TO THE TOP FLANGE OR STUDS. REPORT ANY ARC STRIKE, WELD SPLATTER OR WELDING ON TOP FLANGE TO BRIDGE ENGINEER IMMEDIATELY.

(1) DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT ℄ BEARING.

(2) FIXED DESIGNATION INDICATES CONTINUOUS DECK SLAB OVER PIER. INSTALL FIXED BEARING ASSEMBLIES AT FIXED LOCATIONS. SEE BEARING DETAILS SHEET.

(3) EXPANSION DESIGNATION INDICATES SEALED EXPANSION JOINT IN DECK SLAB OVER PIER. EXPANSION PIER REQUIRES EXPANSION BEARING ASSEMBLIES. SEE ODOT STD. B40-C-BRG-RB, AND BEARING DETAILS SHEET.

(4) FIXED DESIGNATION INDICATES FIXED JOINT IN DECK SLAB TO APPROACH SLAB. FIXED ABUTMENT REQUIRES FIXED BEARING ASSEMBLIES. SEE ODOT STD. B40-C-BRG-RB, AND BEARING DETAILS SHEET.

INSTALL ALL DIAPHRAGMS AND TIGHTEN ALL BOLTS BEFORE PLACING CONCRETE FOR THE DECK SLAB OR APPLYING OTHER MASSIVE LOADS TO THE BEAMS.

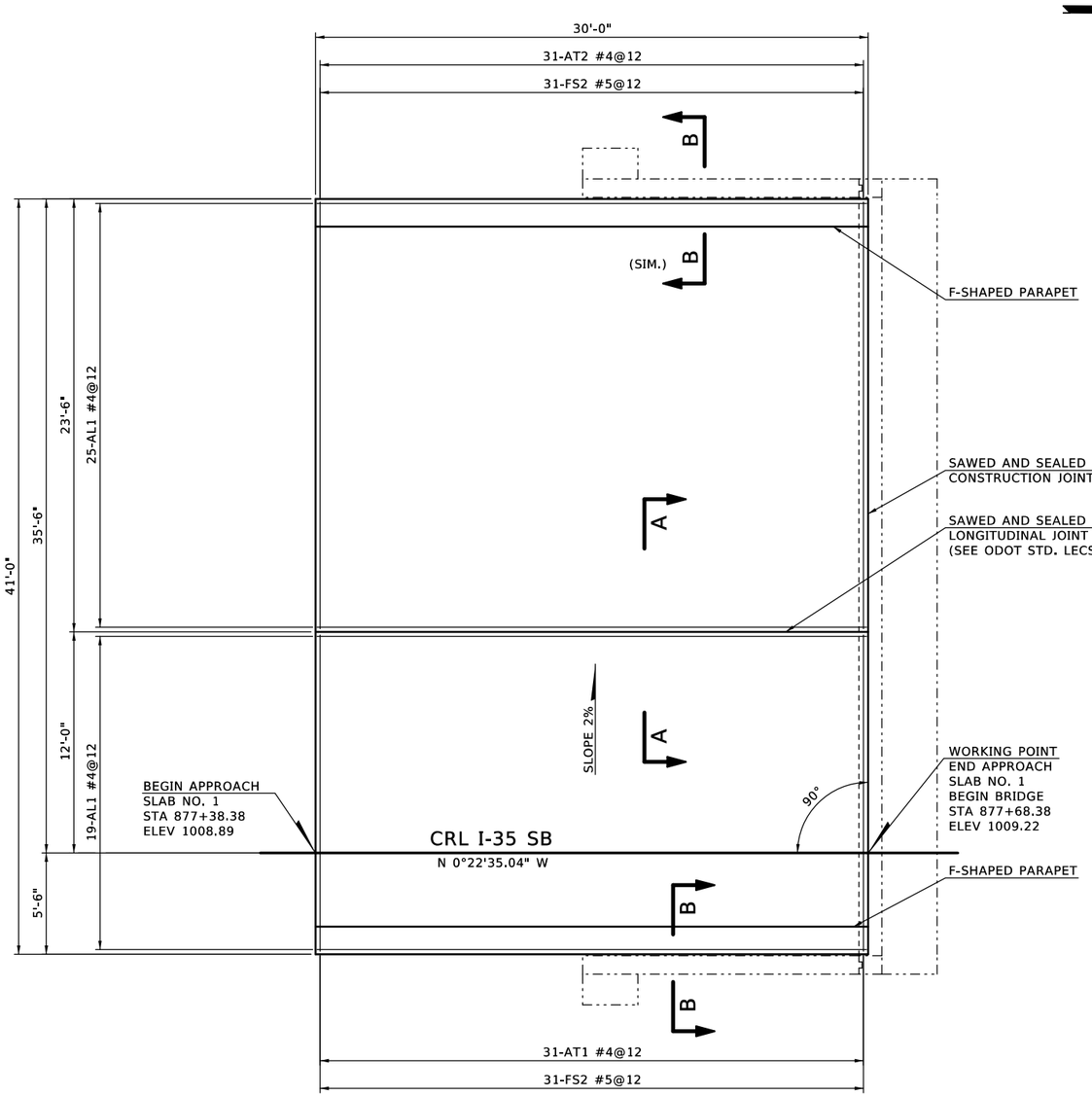
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

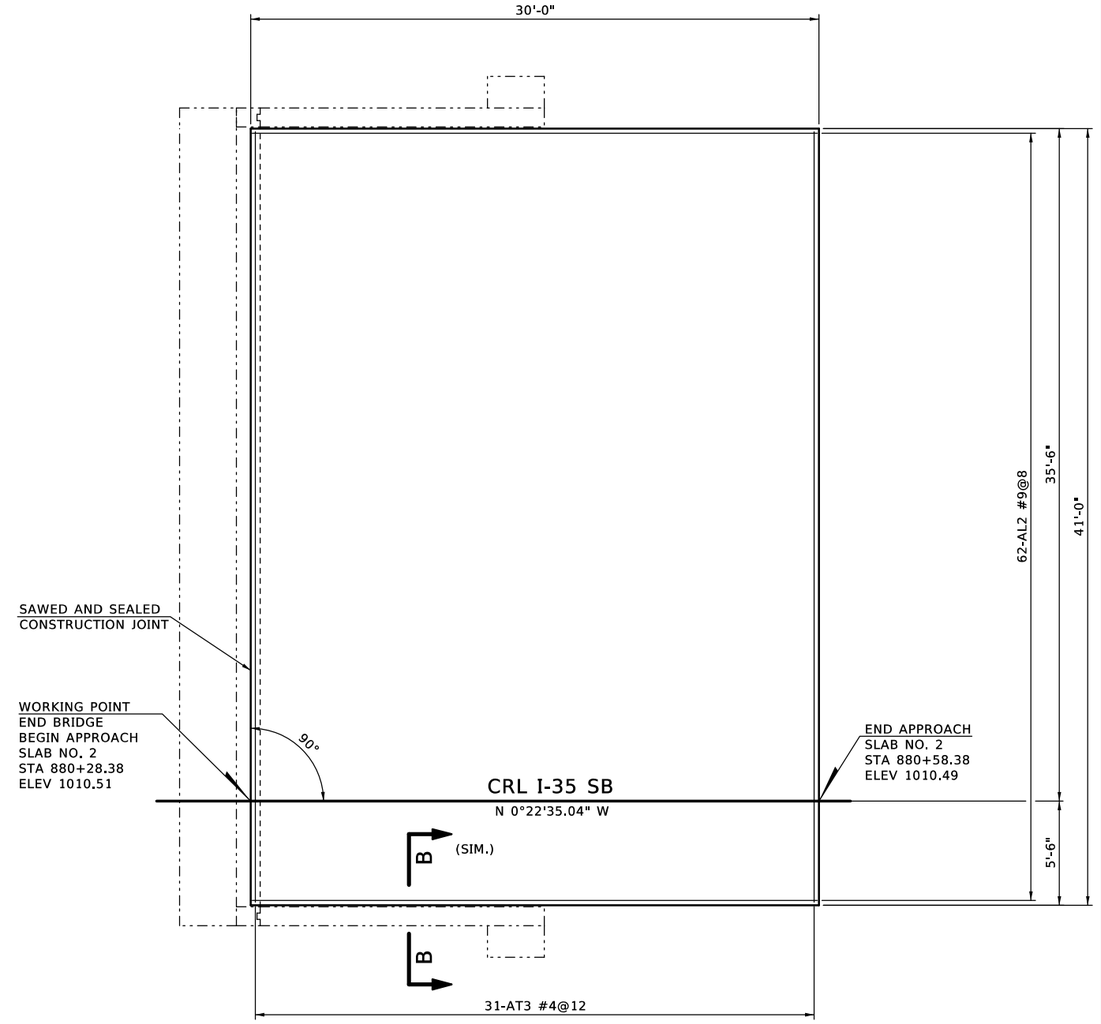
LONGITUDINAL SECTION

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B027



TOP REINFORCING MAT DETAIL

APPROACH SLAB NO. 1



BOTTOM REINFORCING MAT DETAIL

APPROACH SLAB NO. 2

NOTES:

1. THE DEPARTMENT CONSIDERS THE COST OF CLASS AA CONCRETE, REINFORCING STEEL (INCLUDING FS2 BARS), BACKER ROD, RAPID CURE JOINT SEALANT, POLYSTYRENE AND POLYETHYLENE SHEETING TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF APPROACH SLAB.

2. THERE IS AN ESTIMATED 98.8 C.Y. OF CLASS AA CONCRETE AND AN ESTIMATED 18,640 LBS. OF EPOXY COATED REINFORCING STEEL IN BOTH APPROACH SLABS.

APPROACH SLAB QUANTITIES

ITEM	UNIT	SLAB NO. 1	SLAB NO. 2	TOTAL
(1)(2) APPROACH SLAB	SY	136.7	136.7	273.4
SAW-CUT GROOVING	SY	106.4	106.4	212.8
42" F-SHAPED PARAPET	LF	60.0	60.0	120.0
SPECIAL CONCRETE FINISH	SY	53	53	106
WATER REPELLENT (VISUALLY INSPECTED)	SY	53	53	106

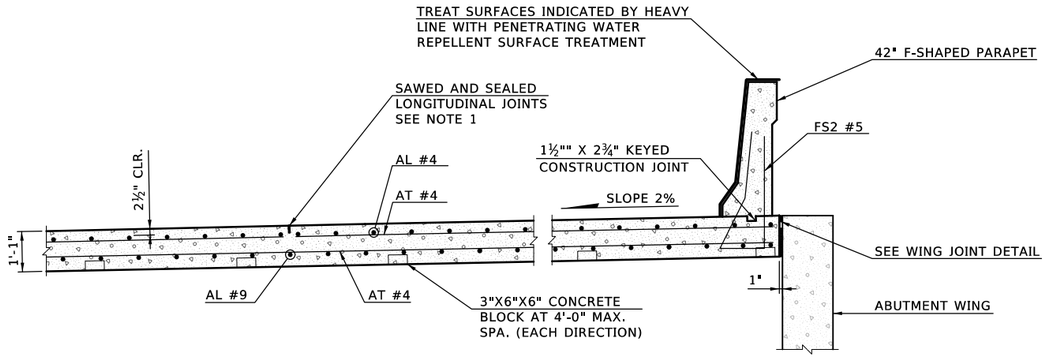
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B028



SECTION A-A SECTION B-B

NOTES:

1. PLACE REINFORCING IN THE TOP OF THE APPROACH SLAB 2" FROM EITHER SIDE OF SAWED AND SEALED LONGITUDINAL JOINT. FOR ADDITIONAL DETAILS OF LONGITUDINAL JOINT, SEE STD. LECS-4.
2. FOR ADDITIONAL DETAIL OF 42" F-SHAPED CONCRETE PARAPET, SEE ODOT STD. FSHP-42-2.

APPROACH SLAB BAR LIST

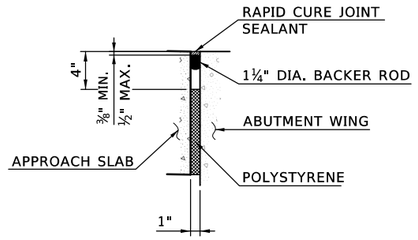
(ONE SHOWN, TWO REQUIRED)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
AT1	#4	31	STR.	17'-2"	
AT2	#4	31	STR.	23'-2"	
AT3	#4	31	STR.	40'-8"	
AL1	#4	44	STR.	29'-10"	
AL2	#9	62	STR.	29'-10"	
FS2	#5	62	BNT.	7'-4"	SEE NOTE 1

NOTES:

1. FOR FS2 #5 BEND DETAIL SEE ODOT STD. FSHP-42-2



WING JOINT DETAIL

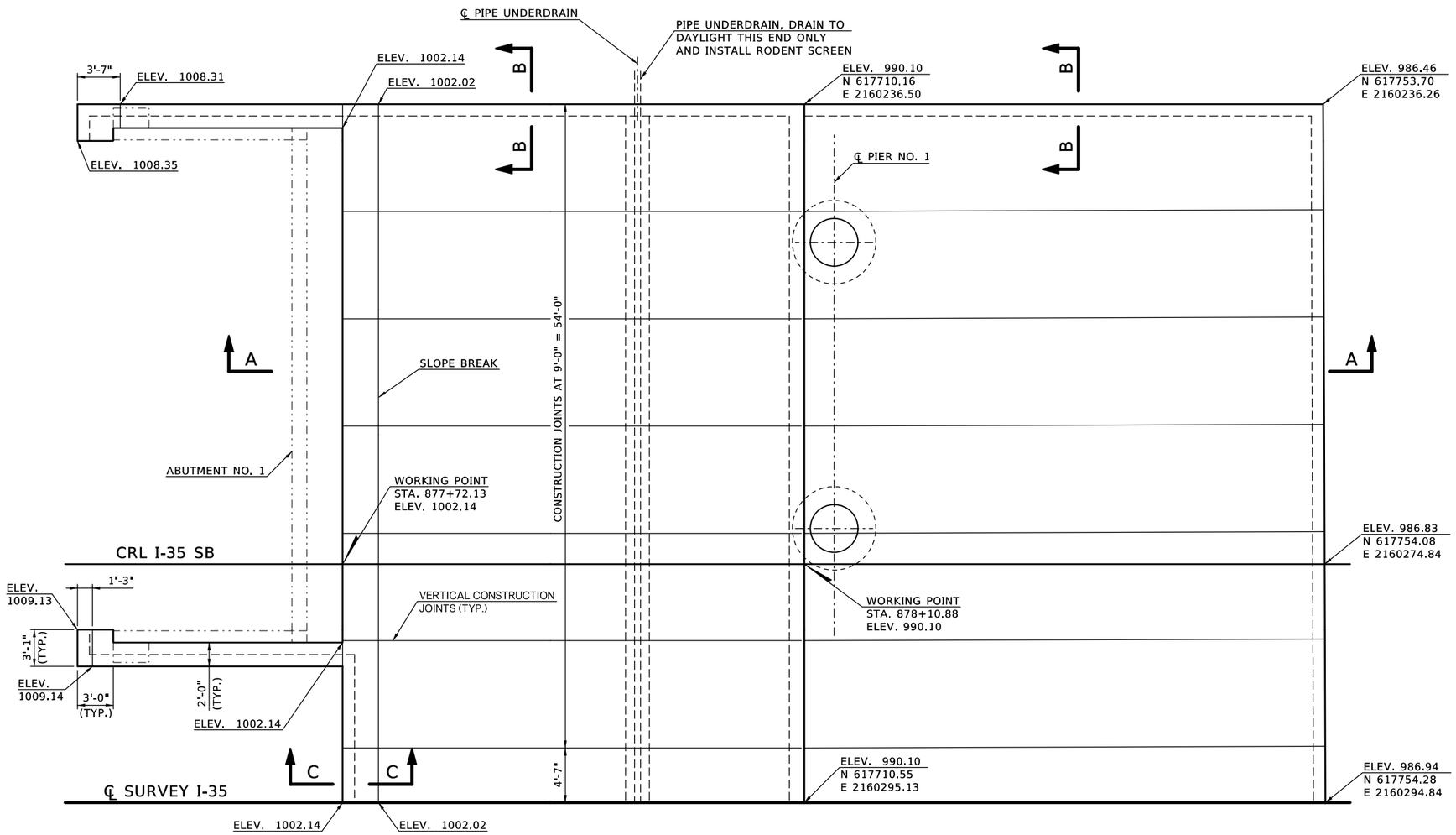
BRIDGE A

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B029



SLOPE WALL NO. 1 - ABUTMENT NO. 1

SLOPEWALL QUANTITIES

ITEM	UNIT	SLOPEWALL NO. 1	SLOPEWALL NO. 2	TOTAL
SLOPE WALL (5")	SY	579	585	1164
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	59	59	118
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	20	20	40

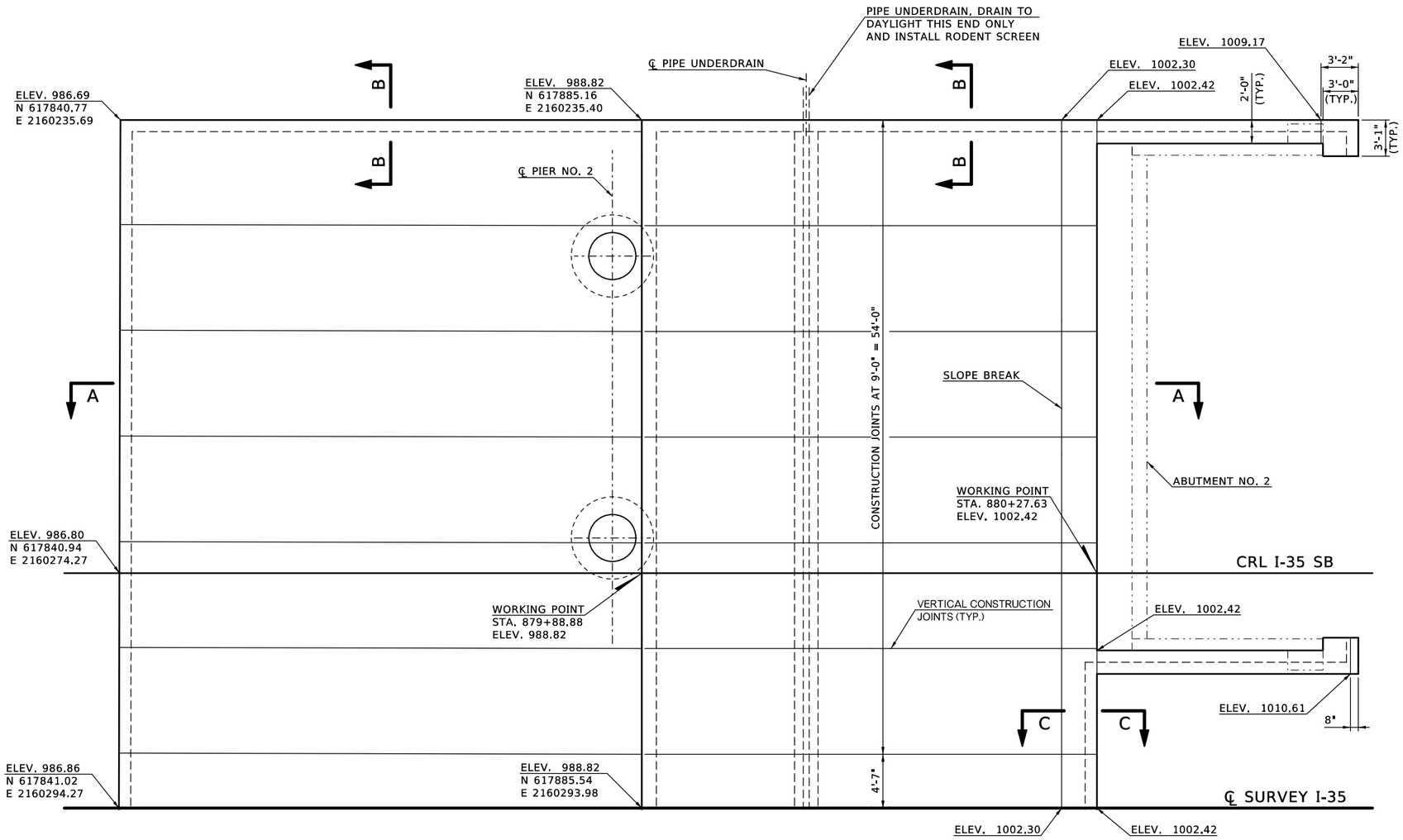
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SLOPE WALL DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B030



SLOPE WALL NO. 2 - ABUTMENT NO. 2

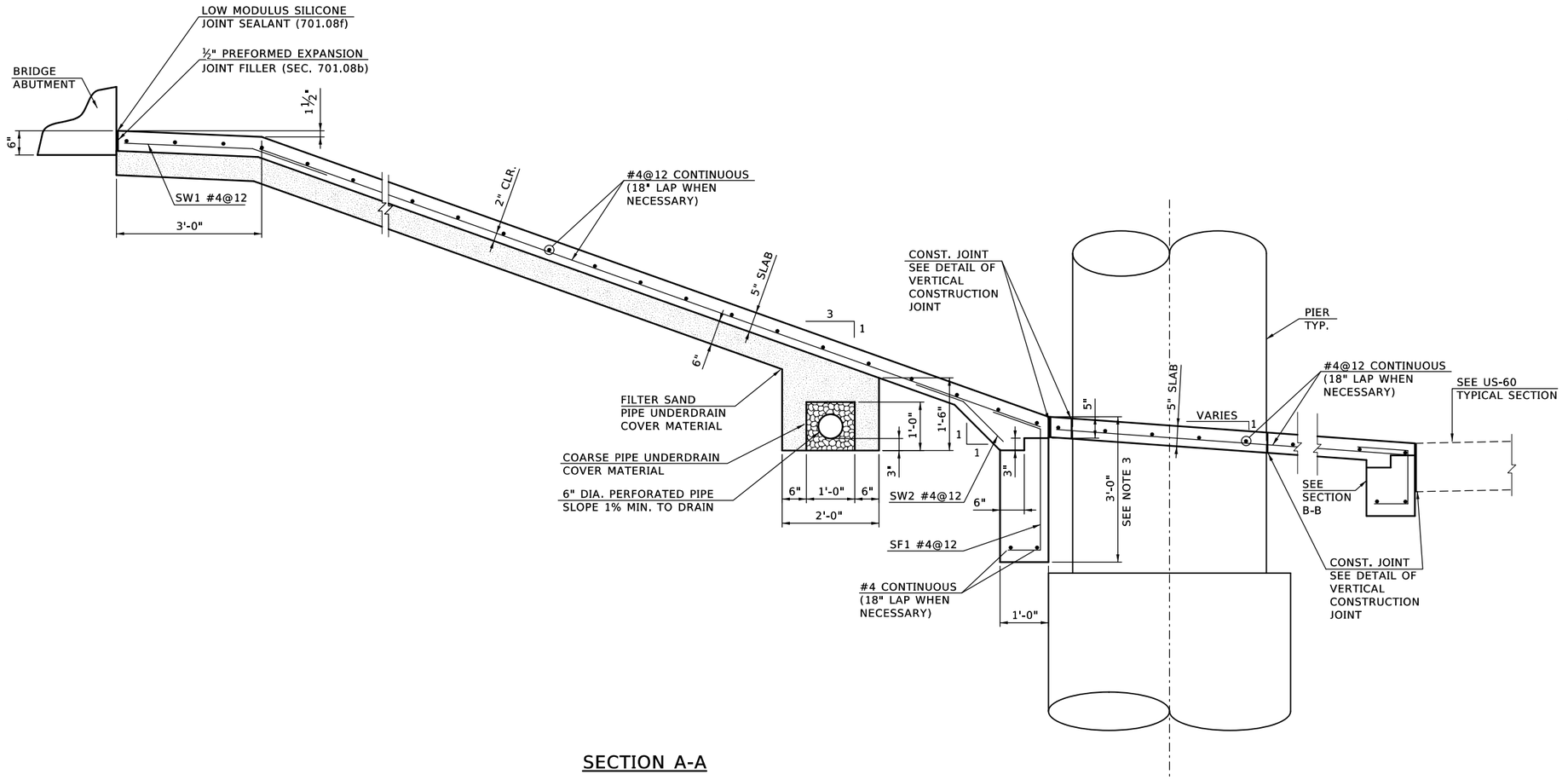
BRIDGE A

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

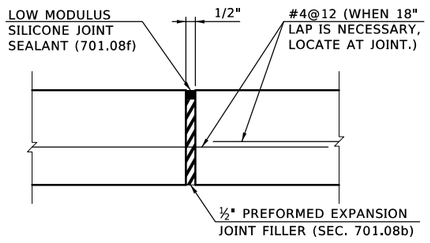
OKLAHOMA DEPARTMENT OF TRANSPORTATION

SLOPE WALL DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B031

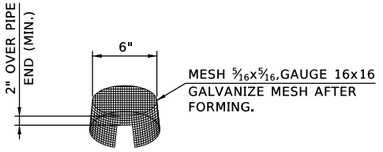


SECTION A-A



DETAIL OF VERTICAL CONSTRUCTION JOINT

(SEE ODOT STD. LECS-4)
(HORIZONTAL JOINT SIMILAR)



NOTE;

RODENT SCREEN SHALL BE PREFORMED BY THE MANUFACTURER AND DELIVERED TO THE CONSTRUCTION SITE FORMED TO FIT 6" DIA. PIPE DRAIN. SECURE SCREEN TO PIPE WITH SCREWS.

RODENT SCREEN DETAIL

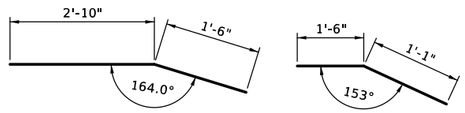
NOTES:

1. CLASS A CONCRETE:
   ALL CONCRETE IN THE SLOPE WALL SHALL BE CLASS A CONCRETE AND SHALL BE POURED IN THE DRY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 509 AND 610 OF THE STANDARD SPECIFICATIONS. COARSE AGGREGATE FOR THIN SECTION CONCRETE (701.06) MAY BE USED.

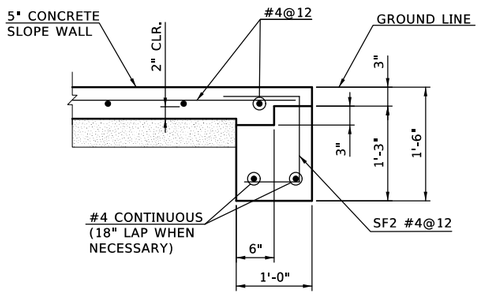
2. CONSTRUCTION JOINTS:
   NO ADDITIONAL HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN THE SLOPE WALL. FINAL NUMBER AND LOCATION OF VERTICAL CONSTRUCTION JOINTS WILL BE DETERMINED BY THE ENGINEER. JOINTS WILL HAVE A MAXIMUM SPACING OF 10'-0" MEASURED ALONG THE TOE OF THE SLOPE WALL.

3. BASIS OF PAYMENT:
   CONCRETE SLOPE WALL WILL BE MEASURED FROM EDGE TO EDGE AND FROM TOP TO BOTTOM OF THE TOP SURFACE OF THE SLOPE WALL, FULL FACE OF THE TOE OF THE SLOPEWALL, AND FULL FACE OF TURNDOWN AT PIERS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:
   510(C) SLOPE WALL (5") S.Y.
   WHICH SHALL INCLUDE ALL COSTS OF JOINT SEALER AND FILLER, REINFORCING STEEL, CONCRETE, EXCAVATION, LABOR, FORMS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN AND SPECIFIED.

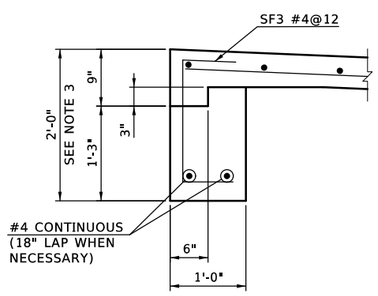
4. UNDERDRAIN MATERIALS WILL BE MEASURED BY VOLUME AND LENGTH AS SHOWN ON THE PLANS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:
   613(I) 6" NON-PERF. PIPE UNDERDRAIN RND. L.F.
   613(H) 6" PERFORATED PIPE UNDERDRAIN ROUND L.F.
   WHICH SHALL INCLUDE ALL COSTS OF FILTER SAND, COARSE MATERIAL, PERFORATED PIPE, EXCAVATION, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN AND SPECIFIED.



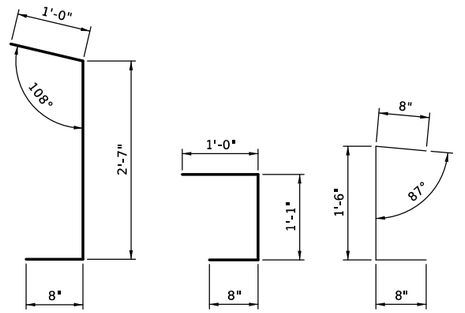
SW1 #4 X 4'-4" SW2 #4 X 2'-7"



SECTION B-B



SECTION C-C

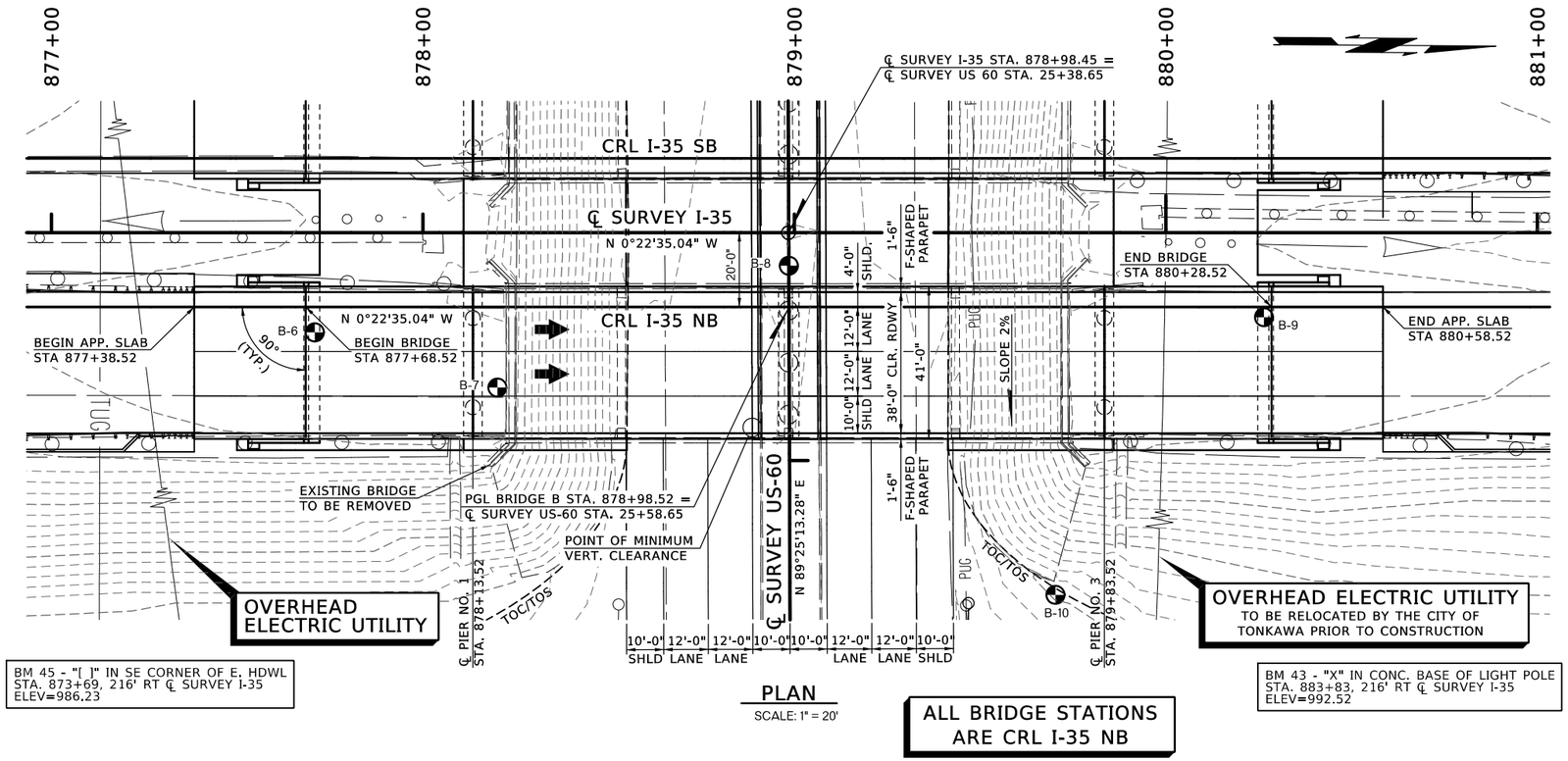


SF1 #4 X 4'-3" SF2 #4 X 2'-9" SF3 #4 X 2'-10"

BRIDGE A

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	SLOPE WALL DETAILS (3)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

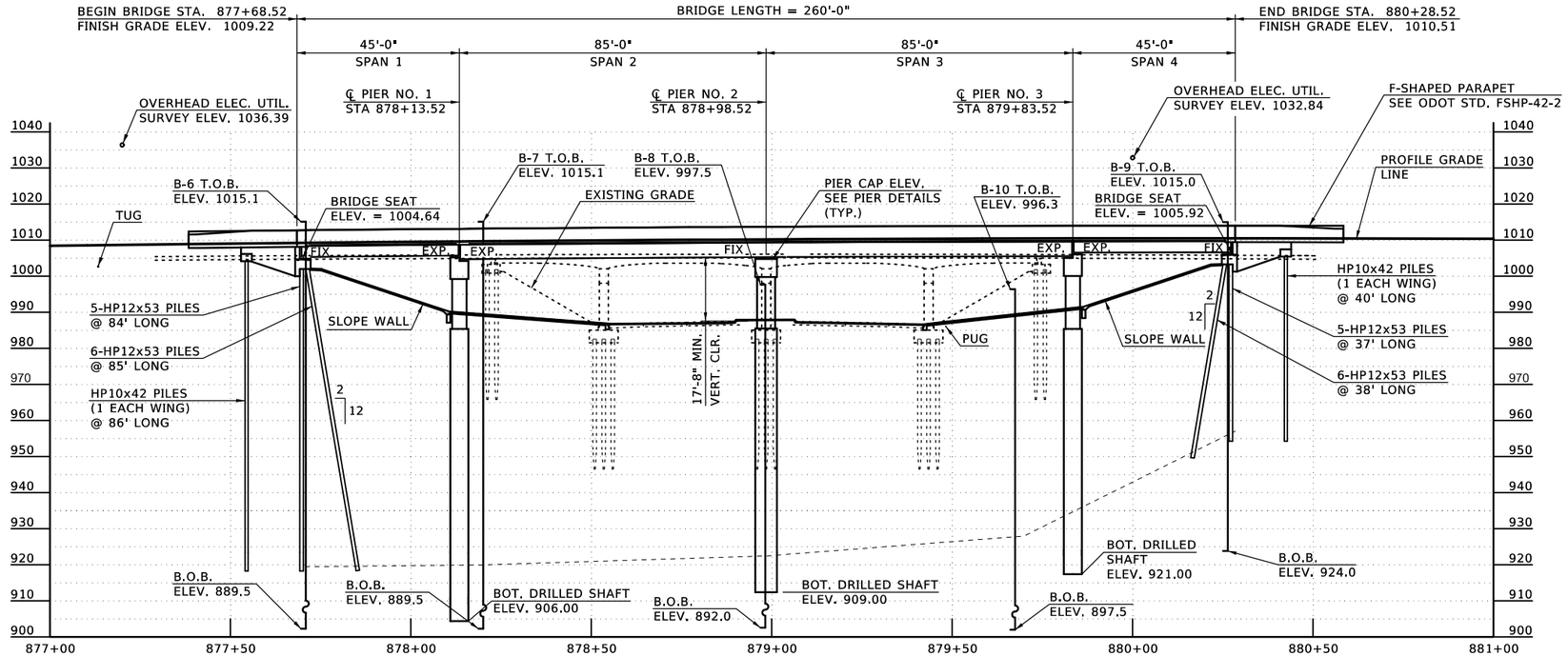
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B032



PLAN

SCALE: 1" = 20'

ALL BRIDGE STATIONS ARE CRL I-35 NB



ELEVATION

SCALE HORIZ. 1" = 20'
VERT. 1" = 20'

DESIGN DATA
(LOAD RESISTANCE FACTOR DESIGN)

CLASS AA CONCRETE	f'c = 4,000 PSI
CLASS A CONCRETE	f'c = 3,000 PSI
REINFORCING STEEL (GRADE 60)	Fy = 60,000 PSI
STRUCTURAL STEEL M270 (GRADE 50W)	Fy = 50,000 PSI
STAINLESS STEEL A240 (TYPE 316)	Fy = 30,000 PSI

LOADING: HL-93 OR OKLAHOMA OVERLOAD TRUCK OR 315 OVERLOAD TRUCK AND 20 P.S.F. FUTURE WEARING SURFACE AND 5 P.S.F. FOR STAY-IN-PLACE FORMS
DESIGN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION.
ANSI / AASHTO / AWS D1.5 BRIDGE WELDING CODE
ANSI / AWS D1.6 STRUCTURAL WELDING CODE
STAINLESS STEEL WELDING CODE

LRFR OPERATING RATING 1.76

FOUNDATION DATA

ABUTMENTS (HP 12X53 PILING)

	ABUTMENT 1	ABUTMENT 2
FACTORED PILE REACTION	= 43.7 TONS	= 43.7 TONS
PILE LENGTHS	= 38 FT	= 38 FT

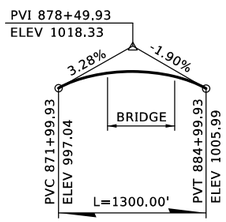
ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE EXISTING FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIERS 1 AND 3 (84" DIAMETER DRILLED SHAFTS)

	PIER 1	PIER 3
MINIMUM DEPTH INTO ROCK	= 14.00 FT	= 14.00 FT
DEPTH OF ROCK NEG'D FOR FRICTION	= 5.00 FT	= 5.00 FT
UNIT BEARING RESISTANCE	= 60 TSF	= 60 TSF
BEARING RESISTANCE FACTOR	= 0.7	= 0.7
FACTORED BEARING RESISTANCE	= 1617.0 T/SHAFT	= 1617.0 T/SHAFT
UNIT FRICTION RESISTANCE	= 9 TSF	= 9 TSF
FRICTION RESISTANCE FACTOR	= 0.45	= 0.45
FACTORED FRICTION RESISTANCE	= 801.9 T/SHAFT	= 801.9 T/SHAFT
TOTAL FACTORED RESISTANCE	= 2418.9 T/SHAFT	= 2418.9 T/SHAFT
TOTAL FACTORED REACTION	= 691.0 T/SHAFT	= 620.0 T/SHAFT

PIER 2 (84" DIAMETER DRILLED SHAFTS)

MINIMUM DEPTH INTO ROCK	= 14.00 FT
DEPTH OF ROCK NEG'D FOR FRICTION	= 5.00 FT
UNIT BEARING RESISTANCE	= 60 TSF
BEARING RESISTANCE FACTOR	= 0.7
FACTORED BEARING RESISTANCE	= 1617.0 T/SHAFT
UNIT FRICTION RESISTANCE	= 9 TSF
FRICTION RESISTANCE FACTOR	= 0.45
FACTORED FRICTION RESISTANCE	= 801.9 T/SHAFT
TOTAL FACTORED RESISTANCE	= 2418.9 T/SHAFT
TOTAL FACTORED REACTION	= 960.0 T/SHAFT



VERTICAL CURVE DATA

I-35 NB & SB PROFILE GRADE LINE

REMOVAL: 30'-45'-45'-30' REINFORCED CONCRETE SLAB SPAN BRIDGE.
C.L. I-35 SURVEY STA. 878+98.45, 32' RT., 38' ROADWAY,
SKEW 0°, 2-18" S.C'S.

BRIDGE B

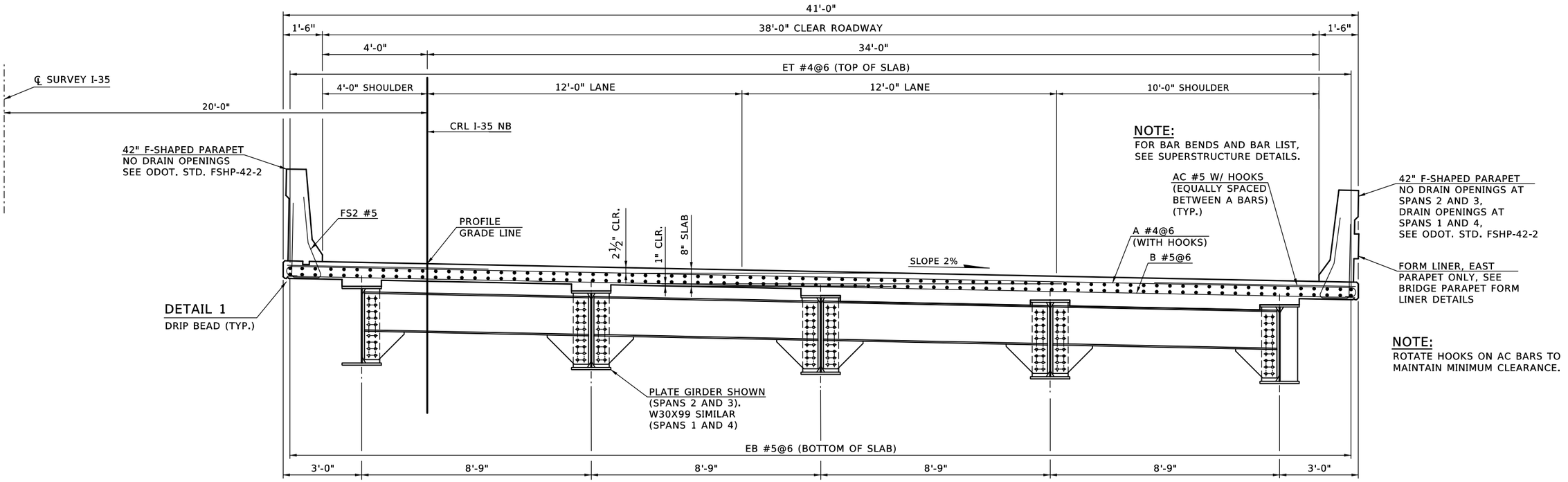
DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

CONSTRUCT NEW 45'-85'-85'-45' ROLLED BEAM AND CONT. STEEL PLATE GIRDER SPANS, F-SHAPED PARAPET, 38' CLEAR ROADWAY
0° SKEW AT ℄ I-35 SURVEY STA. 878+98.45, 20' RT.

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B033



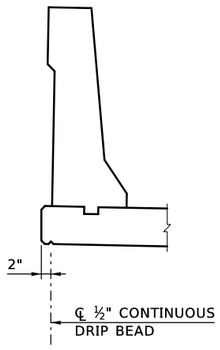
NOTE:
FOR BAR BENDS AND BAR LIST, SEE SUPERSTRUCTURE DETAILS.

NOTE:
ROTATE HOOKS ON AC BARS TO MAINTAIN MINIMUM CLEARANCE.

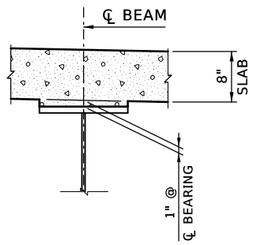
HALF SECTION AT INTERMEDIATE DIAPHRAGM

HALF SECTION AT END DIAPHRAGM

TYPICAL SECTION THRU SUPERSTRUCTURE

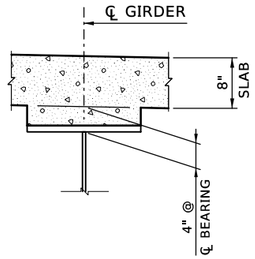


DETAIL 1
SCALE: ¾" = 1'-0"



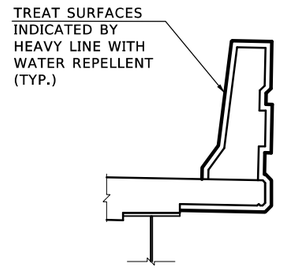
NOTE:
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE BEAM HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF THE FLANGE, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENT.

ROLLED BEAM HAUNCH DETAIL
SCALE: 1" = 1'-0"

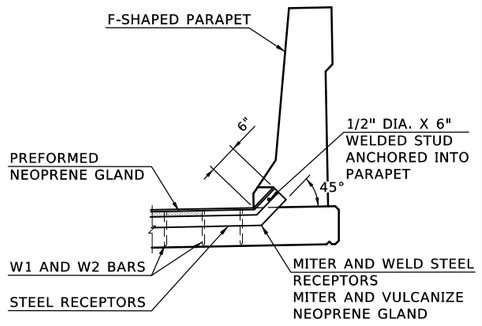


NOTE:
PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE GIRDER HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF THE WEB, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENT.

PLATE GIRDER HAUNCH DETAIL
SCALE: 1" = 1'-0"



WATER REPELLENT TREATMENT DETAIL
SCALE: ½" = 1'-0"



SECTION AT F-SHAPED PARAPET WITHOUT OPENINGS

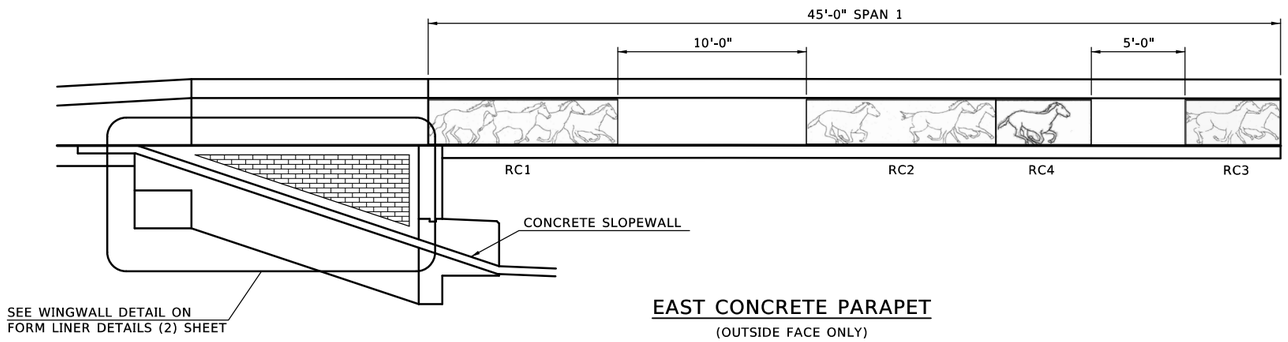
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

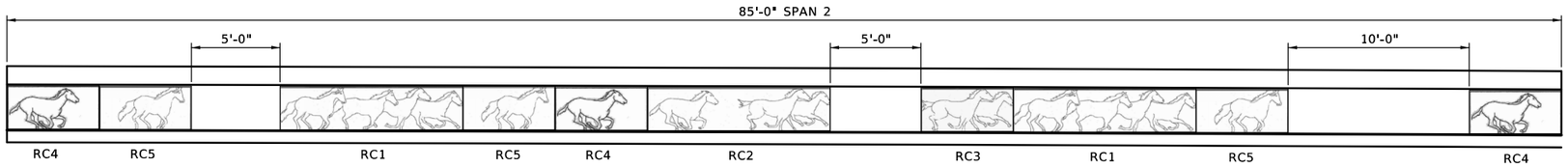
TYPICAL SECTION

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B034



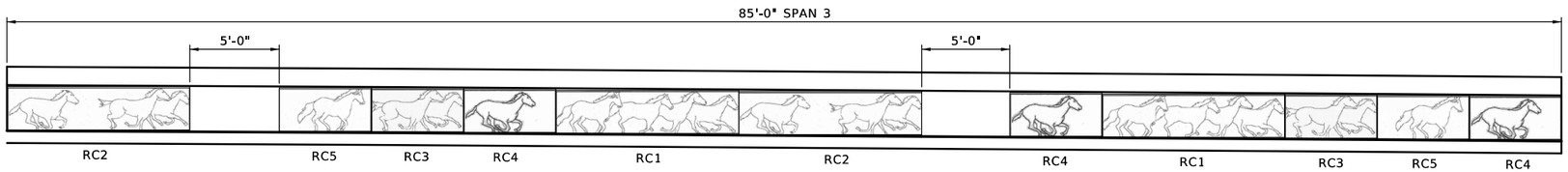
EAST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



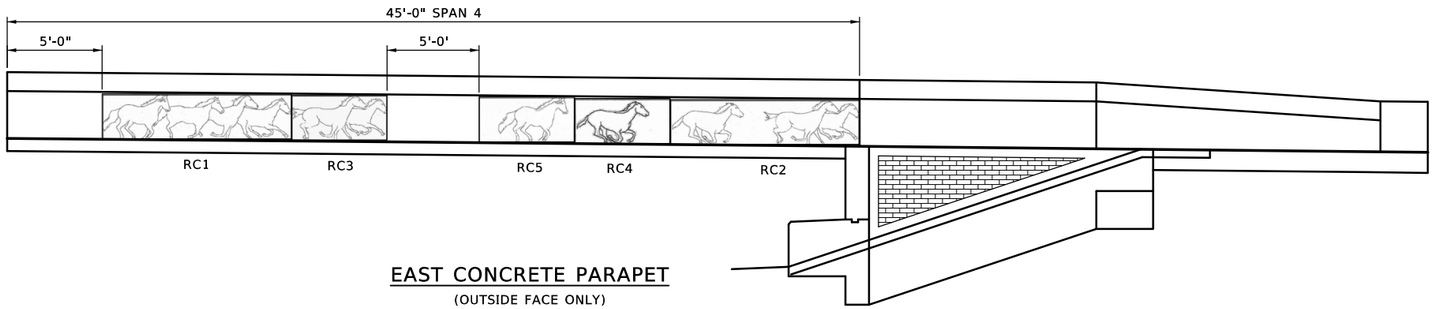
EAST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



EAST CONCRETE PARAPET

(OUTSIDE FACE ONLY)



EAST CONCRETE PARAPET

(OUTSIDE FACE ONLY)

SPECIAL WALL TREATMENT

1. THE EXPOSED EXTERIOR CONCRETE SURFACES OF THE F-SHAPED PARAPETS AND ABUTMENT SEATS AND WINGS (REF. SHEET FORM LINER DETAILS (1) AND FORM LINER DETAILS (2)) SHALL HAVE A TEXTURED SURFACE TREATMENT AS INDICATED ON THE PLANS. THE SURFACE TREATMENT OF THE INDICATED F-SHAPED PARAPETS SHALL BE A FORM LINER CONSISTING OF RUNNING HORSES. THE SURFACE TREATMENT OF THE INDICATED BRIDGE ABUTMENT SEATS AND WINGS SHALL BE NEW BRICK RUNNING BOND.

2. ONCE CONTRACTOR HAS INSTALLED THE FORM LINERS, CAST THE PARAPET AND WING WALLS, STRIPPED THE FORMS, AND POINTED UP THE CONCRETE, THE CONTRACTOR WILL PREPARE THE SURFACE AND STAIN ANY INDIVIDUAL BRIDGE COMPONENTS AND OVERALL BACKGROUND COLOR(S) ("NON-SPECIALTY STAINING") BASED ON THE COLOR RECOMMENDATIONS. THE RECOMMENDED STAIN COLOR FOR THE MAIN COMPONENTS OF THE BRIDGE NOT COVERED BY SHEETS FORM LINER DETAILS (1) AND FORM LINER DETAILS (2), INCLUDING PORTIONS OF PARAPETS, EXTERIOR DECK SLAB SOFFIT, PIERS, PORTIONS OF ABUTMENTS, PORTIONS OF THE WINGS AND SLOPE WALLS IS ODOT STANDARD STRAW COLOR (FEDERAL COLOR #33531). THE RECOMMENDED STAIN COLORS MAY BE CHANGED AT THE DIRECTION OF THE ENGINEER.

3. THE CONTRACTOR SHALL SUBMIT THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PRODUCT DATA FOR THE TEXTURE SURFACE TREATMENTS. SHOP DRAWINGS SHALL INDICATE FORM LINER LAYOUT, RUSTICATION, REVEAL, AND CHAMFER STRIPS. LOCATION OF JOINTS AND FORM TIES SHALL BE INCLUDED.

4. THE CONTRACTOR SHALL PROVIDE THE ENGINEER FOR APPROVAL, A SAMPLE PANEL OF THE RUNNING HORSES AND THE BRICK PATTERN SURFACE TREATMENTS. THE SAMPLE PANELS SHALL BE 18" X 18" PANELS WITH SURFACE TREATMENTS USING PROPOSED MATERIALS, METHODS AND WORKMANSHIP. THE PANEL SHALL INCORPORATE PROPOSED CONCRETE MIX, FORM WORK, FORM LINER, FORM RELEASE AGENTS, FORM PRESSURES, JOINT SEALER, VIBRATING, FORM STRIPPING PRACTICES, AND STAIN.

5. FORM WORK SHALL BE DESIGNED BY THE CONTRACTOR TO COMPLY WITH ALL REQUIREMENTS OF THE FORM LINER MANUFACTURER. IN ADDITION, ALL REQUIREMENTS OF THE FORM LINER MANUFACTURER FOR HANDLING AND INSTALLATION OF THE FORM LINERS, APPLICATION OF RELEASE AGENTS, PLACEMENT OF CONCRETE, VIBRATING OF CONCRETE, AND REMOVAL OF FORMS SHALL BE FOLLOWED. FORM LINER BUTT JOINTS SHALL BE CAREFULLY ALIGNED TO PROVIDE A SURFACE FREE FROM VISIBLE SEAM LINES.

6. PRIOR TO PLACEMENT OF CAST-IN-PLACE CONCRETE, THE ENGINEER SHALL VERIFY THE LINES AND FORM LINER PANEL PATTERNS. AFTER STRIPPING OF THE FORMS, THE APPROVED STAINS AND FINISHES SHALL BE APPLIED TO MATCH THE APPROVED COLOR, IN ACCORDANCE WITH THE STANDARD SPECIFICATION AND SPECIAL PROVISIONS.

BRIDGE PARAPET FORM LINER NOTES

1. ALL COSTS ASSOCIATED WITH BRIDGE PARAPET FORM LINER (RUNNING HORSES) WORK SHALL BE INCLUDED IN THE PRICE BID FOR 42" F-SHAPED PARAPET. THE BRIDGE PARAPET FORM LINERS (RUNNING HORSES) ARE THE PROPERTY OF THE DEPARTMENT AND WILL BE PROVIDED TO THE CONTRACTOR. REFERENCE BRIDGE STANDARD FSHP-42-2-00E (42" F-SHAPED CONCRETE PARAPET) FOR ADDITIONAL PARAPET DETAILS.

2. ALL FORM LINERS SHALL BE DELIVERED TO THE DEPARTMENT AT A LOCATION DETERMINED BY THE ENGINEER IN ACCEPTABLE CONDITION AT THE COMPLETION OF THE PROJECT.

3. REFERENCE FORM LINER DETAILS (2) SHEET FOR ADDITIONAL FORM LINER AND CONCRETE FINISH INFORMATION.

BRIDGE PARAPET FORM LINER NOTES CONT'D.

4. THE RECOMMENDED STAIN COLOR FOR THE BRIDGE PARAPET FORM LINER (RUNNING HORSES) WILL BE SPRAYED OR OTHERWISE APPLIED BY THE CONTRACTOR TO THE FORMED AREAS OF THE BRIDGE PARAPET. THE RECOMMENED STAIN COLOR IS HC-145 (FALL GRASS).

5. THE RECOMMENDED STAIN COLORS MAY BE CHANGED AT THE DIRECTION OF THE ENGINEER.

6. CONTACT CHARLES SIMS, ODOT FORM LINER COORDINATOR FOR INFORMATION REGARDING FORM LINERS.
EMAIL : CSIMS@ODOT.ORG
PHONE : (405)522-7608

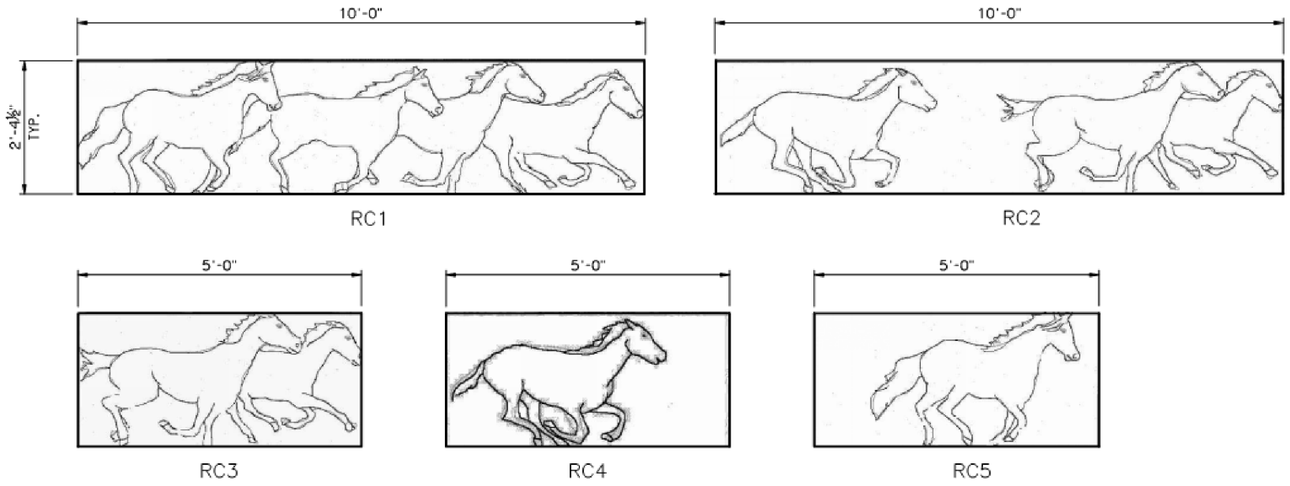
BRIDGE B

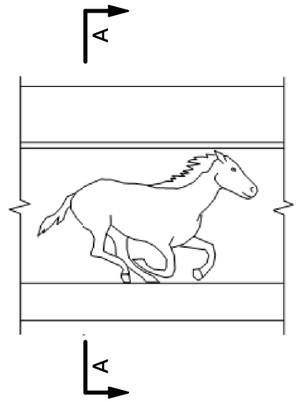
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

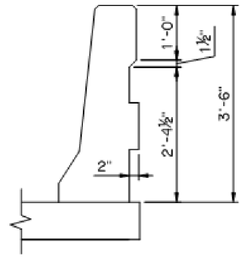
FORM LINER DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B035

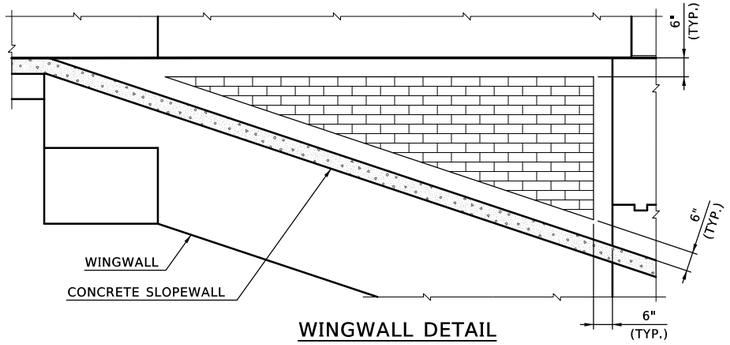




TYPICAL PARAPET LINER



SECTION A-A

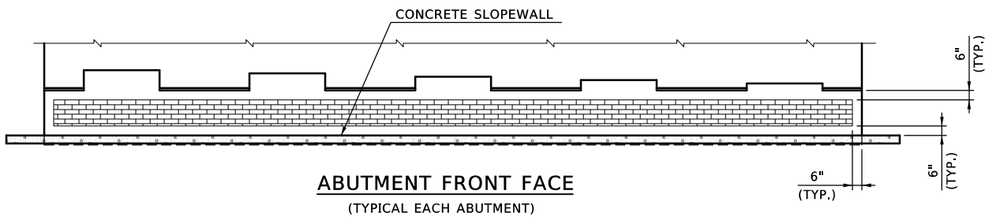


WINGWALL DETAIL

(TYPICAL WEST OUTSIDE FACES ONLY)

ABUTMENT/WINGWALL FORM LINER NOTES

1. CONCRETE IS TO BE FORMED AS SHOWN ON THE PLANS UTILIZING A "NEW BRICK RUNNING BOND" PATTERN.
2. ALL COSTS ASSOCIATED WITH BRIDGE ABUTMENT SEATS AND WINGWALL FORM LINER WORK SHALL BE INCLUDED IN THE PRICE BID FOR CLASS A CONCRETE.
3. THE RECOMMENDED STAIN COLOR FOR THE BRICK PATTERN WILL BE SPRAYED OR OTHERWISE APPLIED BY THE CONTRACTOR TO THE BRICK PATTERN FORMED AREAS OF THE CONCRETE ABUTMENT SEATS AND WINGWALLS. THE RECOMMENDED STAIN COLOR IS HC-110 (TILE RED)



ABUTMENT FRONT FACE

(TYPICAL EACH ABUTMENT)

BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FORM LINER DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B036

Boring No. B-6

Surface Elev. (Ft.): 1015.1

	1.5" Asphalt 7" Concrete			
	FILL - CLAYEY SAND ,yellowish-red (5YR,5/8)	1015	1014.5	SPT-1;N=27;SOIL REC=14 (In.); MC=18%
	FILL - LEAN CLAY , dark yellowish-brown (10YR,3/6)	1015	1013	SPT-2;N=22;SOIL REC=10 (In.); MC=13%
	- strong brown (7.5YR,5/6) & dark brown (7.5YR,3/3) below 5 feet	1013	1010	SPT-3;N=28;SOIL REC=16 (In.); MC=16%
	FILL - SILT WITH SAND , fine grained, yellowish-red (5YR,5/8)	1010	1006.5	SPT-4;N=46;SOIL REC=16 (In.); MC=16% P200=74%; LL= NP; PL= NP; PI= NP
	FILL - LEAN CLAY , dark brown (7.5YR,3/3)	1006.5 1005.5	1001.5	SPT-5;N=44;SOIL REC=18 (In.); MC=17%
1,000	SAND (SP), fine grained, strong brown (7.5YR,5/6), dense	1001	996.5	SPT-6;N=19;SOIL REC=18 (In.); MC=18%
	LEAN CLAY (CL), dark brown (7.5YR,3/4), very stiff	996.5	991.5	SPT-7;N=7;SOIL REC=18 (In.); MC=20%
	LEAN CLAY (CL), with sand, yellowish-red (5YR,5/8), soft to medium stiff	991.5	986.5	SPT-8;N=5;SOIL REC=18 (In.); MC=16%
			981.5	SPT-9;N=3;SOIL REC=18 (In.); MC=26%
980				
	SANDY LEAN CLAY (CL), red (2.5YR,4/8), stiff	976.5	976.5	SPT-10;N=12;SOIL REC=18 (In.); MC=18%
	LEAN CLAY (CL), trace sand, yellowish-red (5YR,5/8), stiff	971.5	971.5	SPT-11;N=9;SOIL REC=18 (In.); MC=23%
	SANDY LEAN CLAY (CL), strong brown (7.5YR,5/6), stiff	966.5	966.5	SPT-12;N=9;SOIL REC=18 (In.); MC=23%
960	LEAN CLAY (CL), with sand, strong brown (7.5YR,5/6), medium stiff to stiff	961.5	961.5	SPT-13;N=12;SOIL REC=18 (In.); MC=22% P200=75%; LL= 27; PL= 15; PI= 12
	- trace sand below 58.5 feet, very stiff	956.5	956.5	SPT-14;N=7;SOIL REC=18 (In.); MC=22%
	SHALEY SANDY LEAN CLAY (CL), strong brown (7.5YR,4/6), very stiff	951.5	951.5	SPT-15;N=17;SOIL REC=18 (In.); MC=20%
			946.5	SPT-16;N=18;SOIL REC=18 (In.); MC=23%
940	SHALEY LEAN CLAY (CL), dark olive-brown (2.5Y,3/3), very stiff	941.5	941.5	SPT-17;N=16;SOIL REC=18 (In.); MC=24% P200=86%; LL= 44; PL= 18; PI= 26
			936.5	SPT-18;N=24;SOIL REC=18 (In.); MC=24%
	SAND (SP), fine grained, yellowish-red (5YR,5/8), very dense	931.5	931.5	SPT-19;N=58;SOIL REC=6 (In.); MC=19%
	trace gravel below 88.5 feet	926.5	926.5	SPT-20;N=50/5";SOIL REC=16 (In.); MC=6%
920	SHALE+, dark reddish-brown (5YR,3/4), soft to moderately hard	919.5	920 919.5	SPT-21; N=50/5;SOIL REC=5 (In.); MC=13% TCP 50/5/8" 50/5/16"
			914.5	TCP 50/5/8" 50/3/8"
			909.5	TCP 50/13/16" 50/1/2"
			904.5	TCP 50/9/16" 50/5/16"
900			904	SPT-22; N=50/2;SOIL REC=2 (In.); MC=17%
			899.5	TCP 50/1" 50/1/2"
			894.5	TCP 50/3/8" 50/1/8"
	- black (7.5YR,5/1) below 125.5 feet	889.5	890.5 890	TCP 50/5/8" 50/5/16" SPT-23; N=50/1;SOIL REC=1 (In.) MC=15%
880	BT-125.60 Elevation: 889.5			

Boring No. B-7

Surface Elev. (Ft.): 1015.1

	6.5" Asphalt	1015	1014.5	SPT-1;N=11;SOIL REC=18 (In.); MC=16%
	FILL - SANDY LEAN CLAY , red (2.5YR,5/8)	1015	1013	SPT-2;N=30;SOIL REC=14 (In.); MC=14%
	FILL - LEAN CLAY , trace sand, very dusky red (2.5YR,2.5/2)	1013	1010	SPT-3;N=34;SOIL REC=12 (In.); MC=17%
	FILL - LEAN CLAY , with sand, yellowish-red (5YR,5/8) and dark brown (2.5YR,3/3)	1010 1006.5	1006.5	SPT-4;N=34;SOIL REC=14 (In.); MC=19%
	FILL - SANDY LEAN CLAY , yellowish-red (5YR,4/6)	1001.5	1001.5	SPT-5;N=35;SOIL REC=18 (In.); MC=19%
1,000	- reddish-brown (2.5YR,4/3) below 13.5 feet	996.5	996.5	SPT-6;N=6;SOIL REC=16 (In.); MC=24%
	LEAN CLAY (CL), dark reddish-gray (7.5YR,3/1), medium stiff	991.5	991.5	SPT-7;N=13;SOIL REC=18 (In.); MC=20% P200=77%; LL= 41; PL= 14; PI= 27
	LEAN CLAY (CL), with sand, yellowish-red (5YR,5/8), medium stiff to stiff	986.5	986.5	SPT-8;N=5;SOIL REC=18 (In.); MC=20%
	- yellowish-red (5YR,4/8) below 28.5 feet		981.5	SPT-9;N=20;SOIL REC=18 (In.); MC=21%
980				
	CLAYEY SAND (SC), fine grained, red (2.5YR,4/8), medium dense	978	976.5	SPT-10;N=12;SOIL REC=18 (In.); MC=20%
	LEAN CLAY (CL), trace sand, red (2.5YR,5/8), stiff	971.5	971.5	SPT-11;N=9;SOIL REC=18 (In.); MC=22%
	- yellowish-red (5YR,5/8) below 48.5 feet	966.5	966.5	SPT-12;N=10;SOIL REC=18 (In.); MC=24%
960	SANDY LEAN CLAY (CL), light olive-brown (2.5Y,5/4), medium stiff	961	961.5	SPT-13;N=7;SOIL REC=18 (In.); MC=23%
	LEAN CLAY (CL), weak red (5YR,4/2) to strong brown (7.5YR,5/6), stiff	957	956.5	SPT-14;N=11;SOIL REC=18 (In.); MC=24% P200=91%; LL= 35; PL= 16; PI= 19
	FAT CLAY (CH), gray (5Y,6/1), very stiff	951.5	951.5	SPT-15;N=15;SOIL REC=18 (In.); MC=24%
			946.5	SPT-16;N=19;SOIL REC=18 (In.); MC=23%
940	SANDY LEAN CLAY (CL), olive-gray (5Y,5/2), very stiff	941	941.5	SPT-17;N=20;SOIL REC=18 (In.); MC=23% P200=64%; LL= 46; PL= 17; PI= 29
	FAT CLAY (CH), trace coarse sand, dark brown (10YR,3/3), very stiff	936.5	936.5	SPT-18;N=17;SOIL REC=18 (In.); MC=22%
	SANDY LEAN CLAY (CL), yellowish-red (5YR,5/8), very stiff	931.5	931.5	SPT-19;N=58;SOIL REC=12 (In.); MC=24%
	- dusky red (10YR,3/2) below 85 feet	930	926.5	SPT-20;N=35;SOIL REC=18 (In.); MC=20%
920	SHALE+, gray (5Y,5/1), moderately hard	920	920 919.5	SPT-21; N=50/2;SOIL REC=2 (In.); MC=20% TCP 50/1" 50/9/16"
			914.5	TCP 50/1 7/16" 50/1 1/4"
	SHALE+, dark olive-brown (2.5Y,3/3), moderately hard to hard	909.5	909.5	TCP 50/5/8" 50/7/16"
			904.5	TCP 50/5/8" 50/3/16"
900			904	SPT-1; N=50/2;SOIL REC=2 (In.)
			899.5	TCP 50/1/2" 50/1/4"
			894.5	TCP 50/3/8" 50/3/16"
	- olive-brown (2.5Y,4/3) below 125.5 feet	889.5	890.5 890	TCP 50/3/8" 50/1/8" SPT-2; N=50/1;SOIL REC=1 (In.)
880	BT-125.60 Elevation: 889.5			

919.5 = TOP OF ROCK

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▼ = WATER LEVEL 24 HOURS AFTER DRILLING
▨ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHTOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST. ASSHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSED ONLY

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTION OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

Based on information published in the Oklahoma Department of Transportation manual, "Engineering Classification of Geologic Materials: Division 4," the project site appears to be underlain by the Wellington Unit, nearing terrace deposits toward the south.

This unit consists dominantly of red, maroon, and gray blocky shales with minor amounts of sandstone, gypsum, and limestone. The gray shales located in Kay County change southward to maroon and red colors. The total thickness of the unit ranges from 400 to 800 feet.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

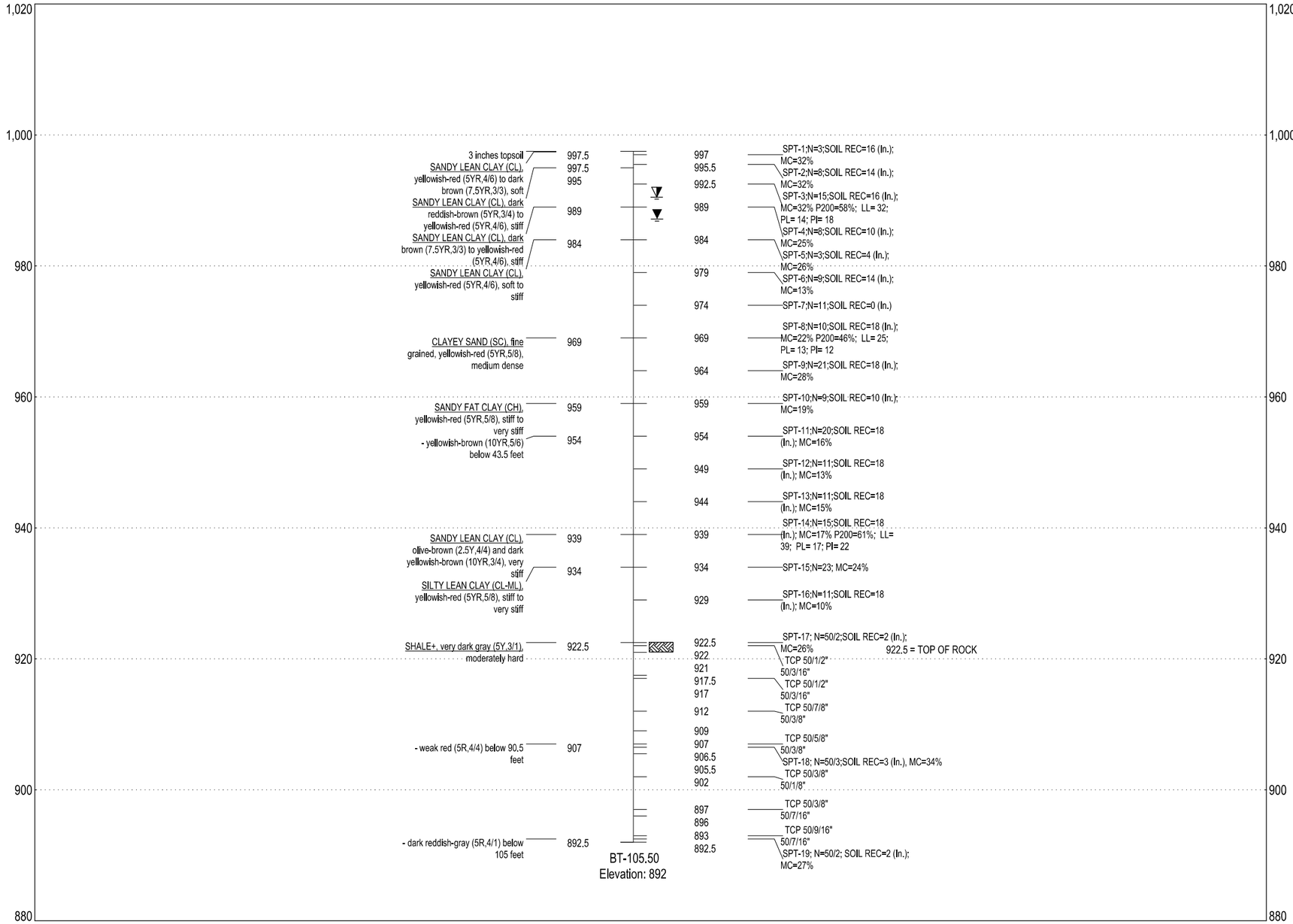
BRIDGE B

DESIGN	STF	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	FOUNDATION REPORT (1)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B037

Boring No. B-8

Surface Elev. (Ft.): 997.5



LEGEND

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SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▼ = WATER LEVEL 24 HOURS AFTER DRILLING
▨ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHTOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST. ASSHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSED ONLY

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTION OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

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GEOTECHNICAL REPORT

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BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION REPORT (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B038

Boring No. B-9

Surface Elev. (Ft.): 1015.0

- 5.5" Asphalt — 1015
- FILL - SANDY LEAN CLAY , yellowish-red (5YR,5/8) — 1015
- FILL - LEAN CLAY , with sand, dark brown (7.5YR,3/4) — 1013
- SANDY LEAN CLAY (CL), dark brown (2.5YR,3/4), very stiff — 1001.5
- CLAYEY SAND (SC), fine grained, strong brown (7.5YR,5/6), medium dense — 996.5
- SANDY LEAN CLAY (CL), strong brown (7.5YR,5/6), very stiff — 971.5
- SHALEY LEAN CLAY (CL), olive-brown (2.5Y,4/4), very stiff — 967
- SHALE+, light olive-brown (2.5Y,5/4), soft to moderately hard — 956
- - very dark gray (7.5YR,3/1) below 71 feet — 944

1014.5	SPT-1;N=16;SOIL REC=18 (In.); MC=30%	
1013	SPT-2;N=19;SOIL REC=14 (In.); MC=38%	
1010	SPT-3;N=16;SOIL REC=18 (In.); MC=48% P200=76%; LL= 25; PL= 17; PI= 8	
1006.5	SPT-4;N=17;SOIL REC=18 (In.); MC=38%	
1001.5	SPT-5;N=30;SOIL REC=18 (In.); MC=46%	
996.5	SPT-6;N=17;SOIL REC=18 (In.); MC=29% P200=39%; LL= 30; PL= 12; PI= 18	
991.5	SPT-7;N=6;SOIL REC=0 (In.)	
986.5	SPT-8;N=3;SOIL REC=18 (In.); MC=12%	
981.5	SPT-9;N=5;SOIL REC=18 (In.); MC=3%	
976.5	SPT-10;N=12;SOIL REC=18 (In.); MC=11%	
971.5	SPT-11;N=18;SOIL REC=18 (In.); MC=28%	
966.5	SPT-12;N=44;SOIL REC=18 (In.); MC=37%	
961.5	SPT-13;N=55;SOIL REC=18 (In.); MC=24% P200=93%; LL= 45; PL= 27; PI= 18	
956.5	SPT-14;N=50/5";SOIL REC=11 (In.); MC=14%	956.0 = TOP OF ROCK
954	TCP 50/1 15/16" 50/1 1/4"	
949	TCP 50/2 1/16" 50/1 7/16"	
944	TCP 50/2" 50/3/4"	
943.5	SPT-15; N=50/5;SOIL REC=5 (In.); MC= 25%	
939	TCP 50/2 5/16" 50/1/2"	
934	TCP 50/7/16" 50/5/16"	
929	TCP 50/1/2" 50/1/4"	
925	TCP 50/1/2" 50/3/16"	
924.5	SPT-16; N=50/2;SOIL REC=2 (In.); MC=22%	

BT-91.00
Elevation: 924

Boring No. B-10

Surface Elev. (Ft.): 996.3

- 4" Topsoil — 996.5
- LEAN CLAY (CL), dark grayish-brown (10YR,4/2), stiff — 996
- LEAN CLAY (CL), with sand, strong brown (7.5YR,5/6), medium stiff to very stiff — 993.5
- - yellowish-red (5YR,4/6) below 13.5 feet — 983
- SAND (SP), strong brown (7.5YR,4/6), medium dense — 973
- SANDY LEAN CLAY (CL), with shale fragments, strong brown (7.5YR,4/6), stiff — 972.5
- LEAN CLAY (CL), with sand, very dark grayish-brown (10YR,3/2), stiff — 957.5
- FAT CLAY (CH), light olive-brown (2.5Y,5/4), very stiff — 952.5
- - dark yellowish-brown (10YR,4/4) — 943
- SILTY CLAY (CL-ML), yellowish-red (5YR,4/6), very stiff — 937
- - with shale fragments below 63.5 feet — 933
- SHALE+, very dark gray (GLEY1,3/N) and olive-gray (5Y,4/2), moderately hard to hard — 928
- - dark gray (GLEY1,4/1,5GY) below 83.5 feet — 913

996	SPT-1;N=14;SOIL REC=9 (In.); MC=20%	
994.5	SPT-2;N=24;SOIL REC=14 (In.); MC=16% P200=73%; LL= 36; PL= 16; PI= 20	
991.5	SPT-3;N=15;SOIL REC=6 (In.); MC=16%	
988	SPT-4;N=14;SOIL REC=2 (In.); MC=14%	
983	SPT-5;N=5;SOIL REC=12 (In.); MC=22%	
978	SPT-6;N=5;SOIL REC=4 (In.); MC=21%	
973	SPT-7;N=10;SOIL REC=18 (In.); MC=23%	
968	SPT-8;N=9;SOIL REC=18 (In.); MC=19%	
963	SPT-9;N=12;SOIL REC=18 (In.); MC=20%	
958	SPT-10;N=13;SOIL REC=18 (In.); MC=22% P200=84%; LL= 41; PL= 15; PI= 26	
953	SPT-11;N=24;SOIL REC=18 (In.); MC=22%	
948	SPT-12;N=34;SOIL REC=18 (In.); MC=22%	
943	SPT-13;N=20;SOIL REC=18 (In.); MC=18%	
938	SPT-14;N=16;SOIL REC=18 (In.); MC=23%	
933	SPT-15;N=26;SOIL REC=18 (In.); MC=26%	
928.5	SPT-16; N=50/1;SOIL REC=1 (In.); MC=17%	928.0 = TOP OF ROCK
928	TCP 50/3 3/4" 50/1 1/4"	
923	TCP 50/3/8" 50/1/8"	
918	TCP 50/1/2" 50/1/4"	
913	TCP 50/5/8" 50/3/8"	
912.5	SPT-17; N=50/0;SOIL REC=0 (In.)	
908	TCP 50/1" 50/3/8"	
903	TCP 50/1/2" 50/1/16"	
898.5	TCP 50/1/4" 50/7/16"	
898	SPT-18; N=50/1;SOIL REC=1 (In.) MC=15%	

BT-98.60
Elevation: 897.5

LEGEND

DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SPT = STANDARD PENETRATION TEST, ASTM D1586
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH (psi)
TCP = TEXAS CONE PENTROMETER
WCI = WET CAVE IN
▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
▼ = WATER LEVEL AFTER DRILLING
▼ = WATER LEVEL 24 HOURS AFTER DRILLING
▨ = TOP OF ROCK

NOTE: WATER LEVEL ELEVATIONS SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHTOUT THE YEAR.

NOTE: "SS" DENOTES STANDARD PENETRATION TEST. ASSHTO D1586-84. "TCP" DENOTES TEXAS CONE PENETRATION TEST.

* NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSED ONLY

** NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

*** NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTION OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

Based on information published in the Oklahoma Department of Transportation manual, "Engineering Classification of Geologic Materials: Division 4," the project site appears to be underlain by the Wellington Unit, nearing terrace deposits toward the south.

This unit consists dominantly of red, maroon, and gray blocky shales with minor amounts of sandstone, gypsum, and limestone. The gray shales located in Kay County change southward to maroon and red colors. The total thickness of the unit ranges from 400 to 800 feet.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER AT (405) 521-2625. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

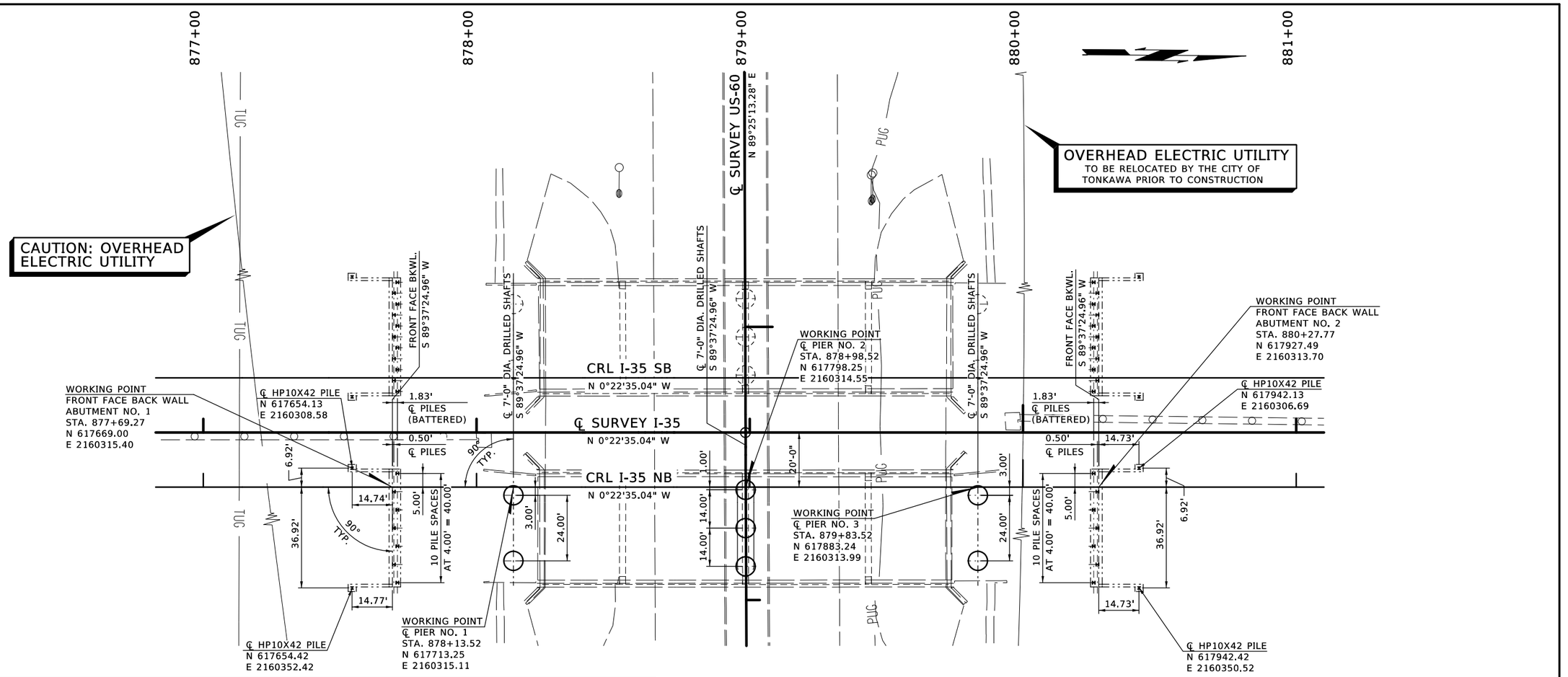
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FOUNDATION REPORT (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B039



PLAN - BRIDGE B

SCALE: 1" = 20'

SUMMARY OF QUANTITIES - BRIDGE B

DESCRIPTION	UNIT	ABUTMENT	PIER	SUPERSTR.	APPROACH	SLOPEWALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	160	0	0	0	0	160
CLSM BACKFILL	CY	150.8	0	0	0	0	150.8
APPROACH SLAB	SY	0	0	0	273.4	0	273.4
SAW-CUT GROOVING	SY	0	0	961.4	212.8	0	1174.2
SEALED EXPANSION JOINT	LF	0	0	84.00	0	0	84.00
42" F-SHAPED PARAPET	LF	0	0	520.0	120.0	0	640.0
STRUCTURAL STEEL M270 GRADE 50W	LB	0	0	289480	0	0	289480
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	0	0	15	0	0	15
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	0	0	20	0	0	20
SPECIAL CONCRETE FINISH	SY	44	324	498	106	0	972
CLASS AA CONCRETE	CY	0	0	279.6	0	0	279.6
CLASS A CONCRETE	CY	75.6	189.2	0	0	1167	264.8
SLOPE WALL (5")	SY	0	0	0	0	1167	1167
REINFORCING STEEL	LB	0	1740	0	0	0	1740
EPOXY COATED REINFORCING STEEL	LB	10200	36370	95840	0	0	142410
PILES, FURNISHED (HP10X42)	LF	242	0	0	0	0	242
PILES, FURNISHED (HP12X53)	LF	1316	0	0	0	0	1316
PILES, DRIVEN (HP10X42)	LF	242	0	0	0	0	242
PILES, DRIVEN (HP12X53)	LF	1316	0	0	0	0	1316
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1	0	0	0	0	1
WATER REPELLENT (VISUALLY INSPECTED)	SY	96	415	635	106	0	1252
DRILLED SHAFTS 84" DIAMETER	LF	0	515	0	0	0	515
CROSSHOLE SONIC LOGGING	EA	0	3	0	0	0	3
SEALER CRACK PREPARATION	LF	0	0	82	0	0	82
SEALER RESIN	GAL	0	0	0.6	0	0	0.6
(PL) INSTALLATION OF BRIDGE ITEMS	LSUM	0	0	0	0	0	1
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	88	0	0	0	118	206
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	40	0	0	0	40	80
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	0	0	0	0	0	1

TOP OF PILE ELEVATIONS

ABUTMENT NO. 1	1002.64
ABUTMENT NO. 2	1003.92

INDEX OF BRIDGE SHEETS

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION AND STATUS (I.E. "ABANDONED") OF ALL UTILITIES PRIOR TO BEGINNING EXCAVATION OR DRIVING PILES.
2. REMOVE EXISTING ABUTMENTS AND PILES IN THEIR ENTIRETY.

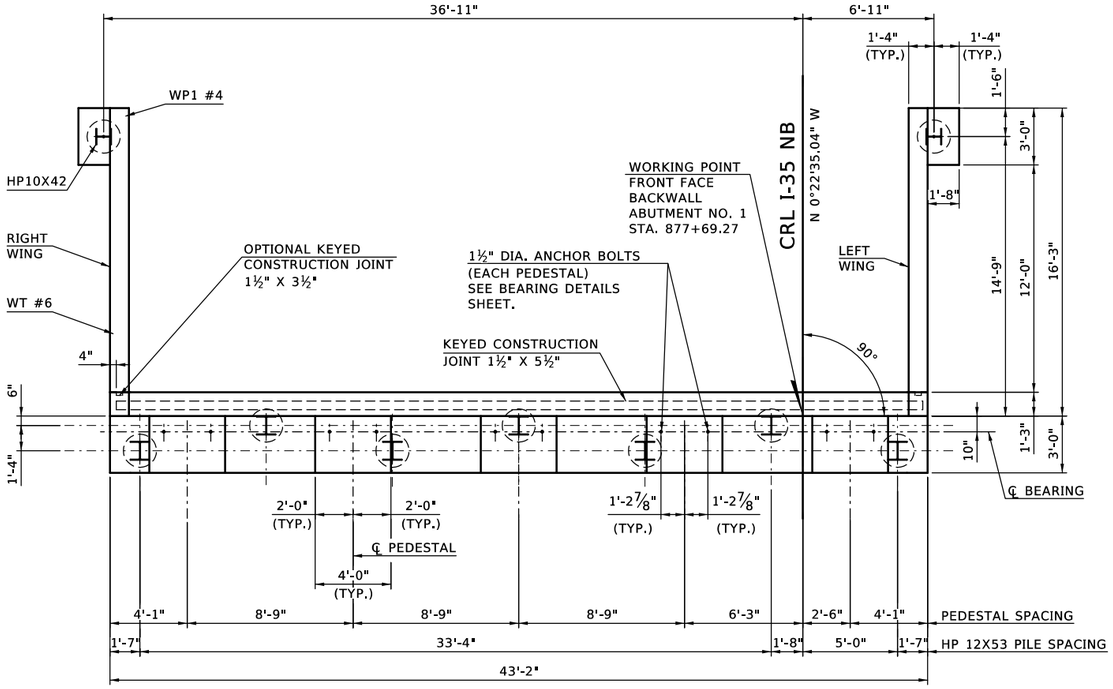
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

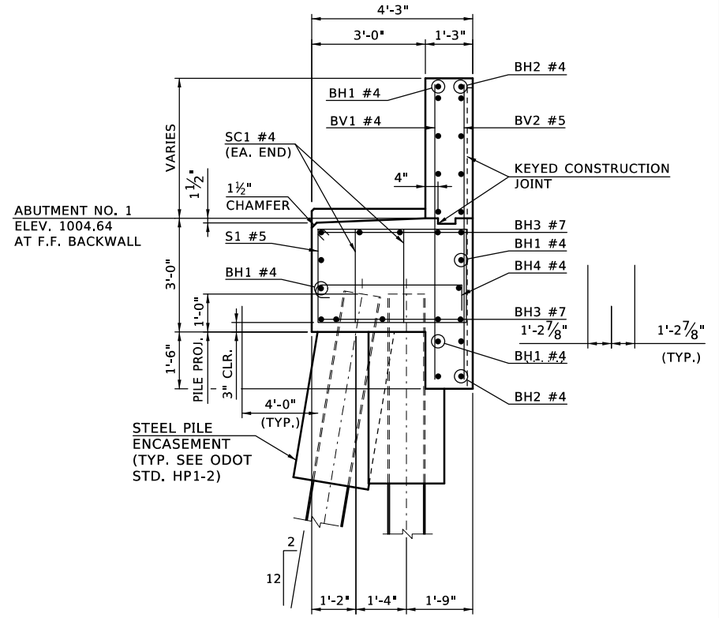
STAKING DIAGRAM

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B040



PLAN - ABUTMENT NO. 1

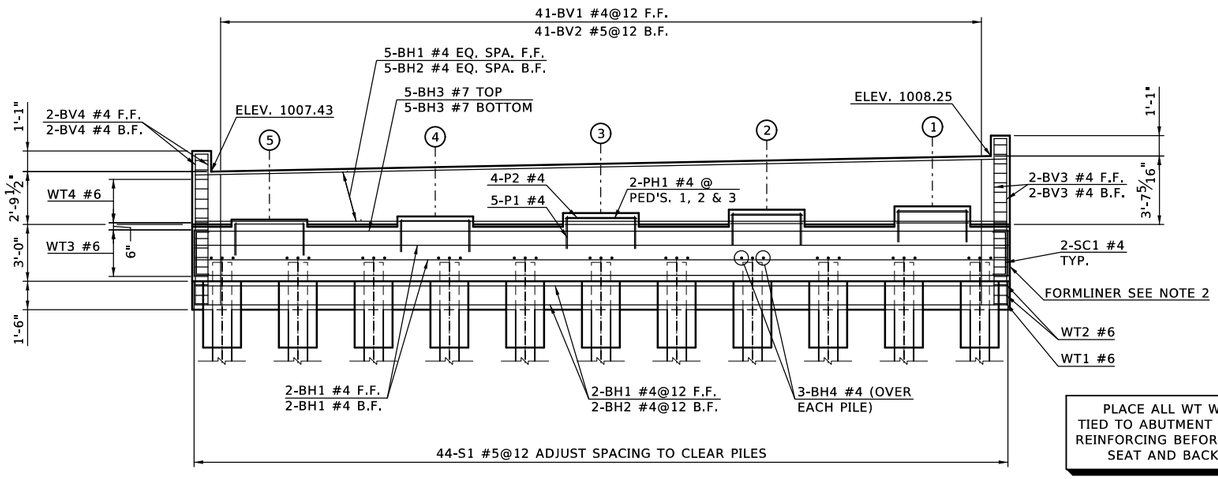
TOP OF PEDESTAL ELEVATIONS	
PEDESTAL	ABUT. NO. 1
1	1004.89
2	1005.07
3	1005.24
4	1005.42
5	1005.59



TYPICAL SECTION THRU SEAT

NOTES:

1. SEE ODOT STD. B40-C-ABUT-MISC FOR EXCAVATION AND PIPE UNDERDRAIN DETAILS.
2. SEE FORM LINER DETAILS FOR SPECIAL WALL TREATMENT AND DETAILS.



ELEVATION - ABUTMENT NO. 1

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.

ABUTMENT QUANTITIES				
ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	80	80	160
CLSM BACKFILL	CY	75.4	75.4	150.8
SPECIAL CONCRETE FINISH	SY	22	22	44
CLASS A CONCRETE	CY	37.7	37.9	75.6
EPOXY COATED REINFORCING STEEL	LB	5100	5100	10200
PILES, FURNISHED (HP10X42)	LF	172	70	242
PILES, FURNISHED (HP12X53)	LF	930	386	1316
PILES, DRIVEN (HP10X42)	LF	172	70	242
PILES, DRIVEN (HP12X53)	LF	930	386	1316
WATER REPELLENT (VISUALLY INSPECTED)	SY	48	48	96
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	44	44	88
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	20	20	40

F.F. = FRONT FACE
B.F. = BACK FACE

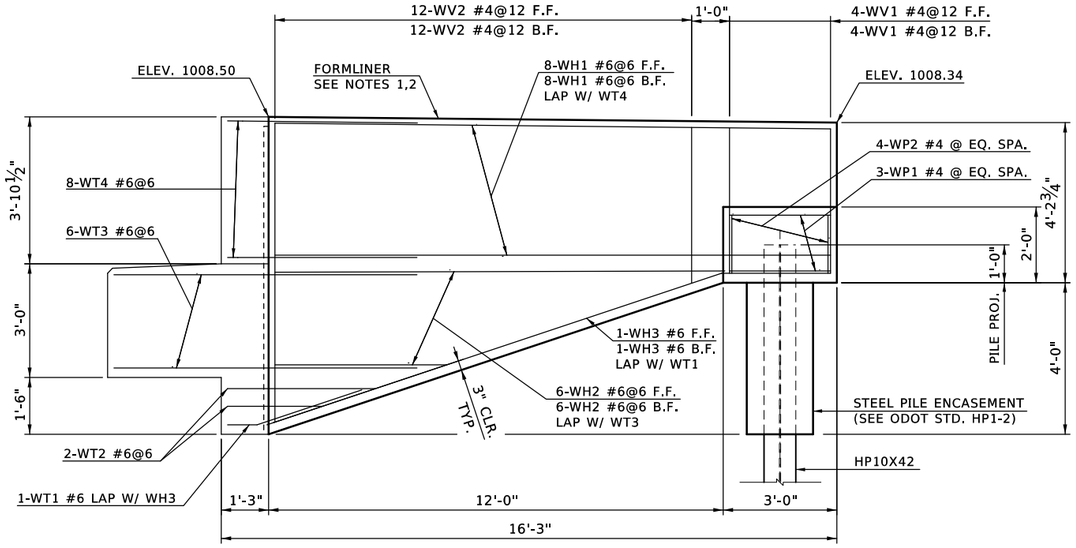
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

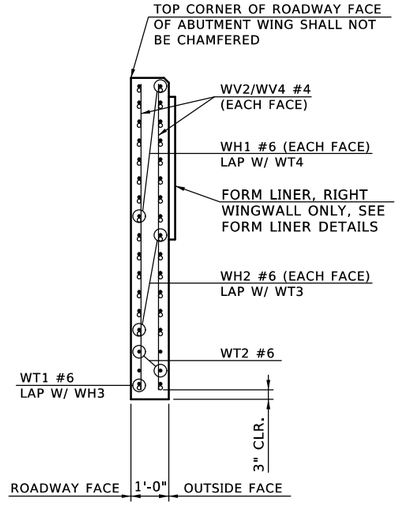
ABUTMENT DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B041



RIGHT WING ELEVATION - ABUTMENT NO. 1

SCALE: ½" = 1'-0"



SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT

SCALE: ½" = 1'-0"

ABUTMENT NO. 1 BAR LIST

(ONE REQUIRED)

EPOXY COATED REINFORCING

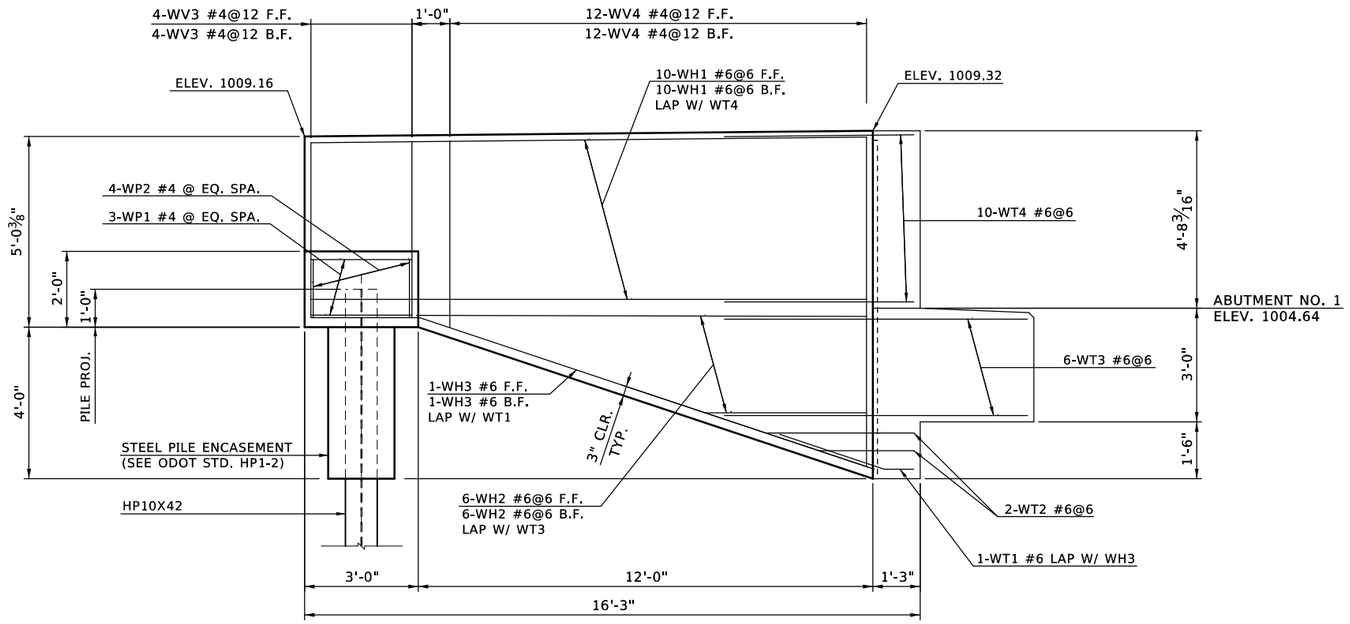
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	11	STR	42'-10"	
BH2	#4	7	BNT.	44'-2"	
BH3	#7	10	STR.	42'-10"	
BH4	#4	33	BNT.	5'-1"	
BV1	#4	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV2	#5	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV3	#4	4	STR.	8'-9"	
BV4	#4	4	STR.	7'-11"	
S1	#5	44	BNT.	13'-11"	
SC1	#4	4	BNT.	3'-9"	
P1	#4	25	BNT.	6'-3"	
P2	#4	20	BNT.	7'-3"	
PH1	#4	6	BNT.	13'-5"	
WT1	#6	2	BNT.	8'-2"	
WT2	#6	4	BNT.	7'-1" (AVG.)	5'-8" TO 8'-6" NOTE 1
WT3	#6	12	BNT.	16'-8"	
WT4	#6	18	BNT.	10'-8"	
WH1	#6	36	STR.	14'-8"	
WH2	#6	24	STR.	8'-2" (AVG.)	4'-6" TO 11'-9" NOTE 2
WH3	#6	4	BNT.	15'-4"	
WV1	#4	8	STR.	3'-10"	
WV2	#4	24	STR.	6'-0" (AVG.)	4'-1" TO 7'-10" NOTE 3
WV3	#4	8	STR.	4'-7"	
WV4	#4	24	STR.	6'-10" (AVG.)	4'-11" TO 8'-8" NOTE 3
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	

NOTES:

1. (2) SETS OF 2.
2. (4) SETS OF 6.
3. (2) SETS OF 12.

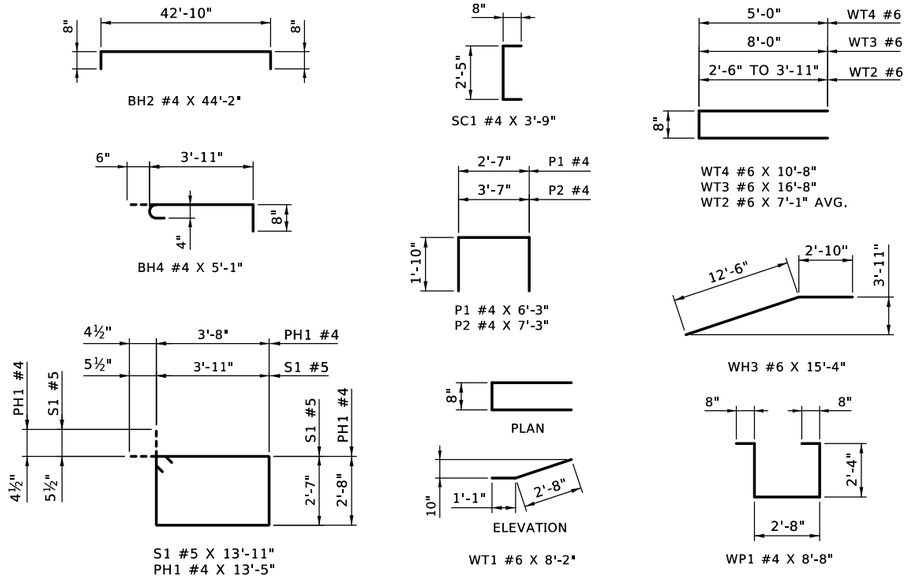
NOTES:

1. SEE FORMLINER DETAILS FOR SPECIAL WALL TREATMENT.
2. FORM LINER ON RIGHT WING ONLY.



LEFT WING ELEVATION - ABUTMENT NO. 1

SCALE: ½" = 1'-0"



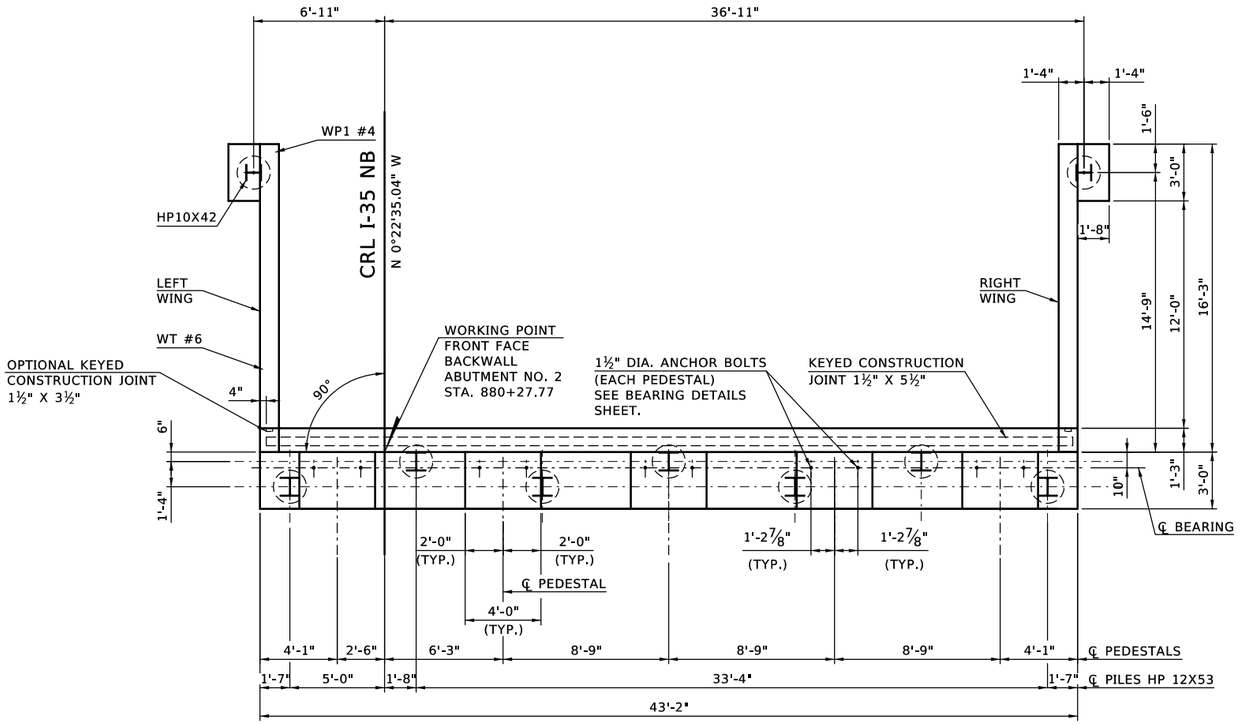
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

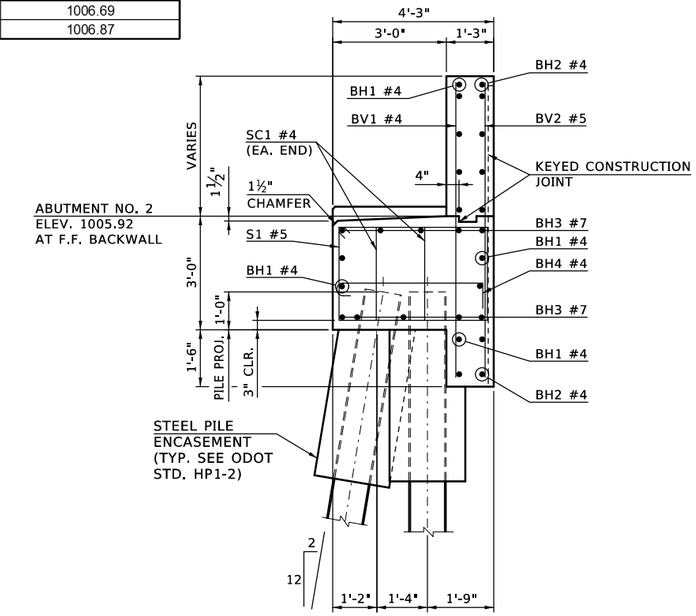
ABUTMENT DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B042

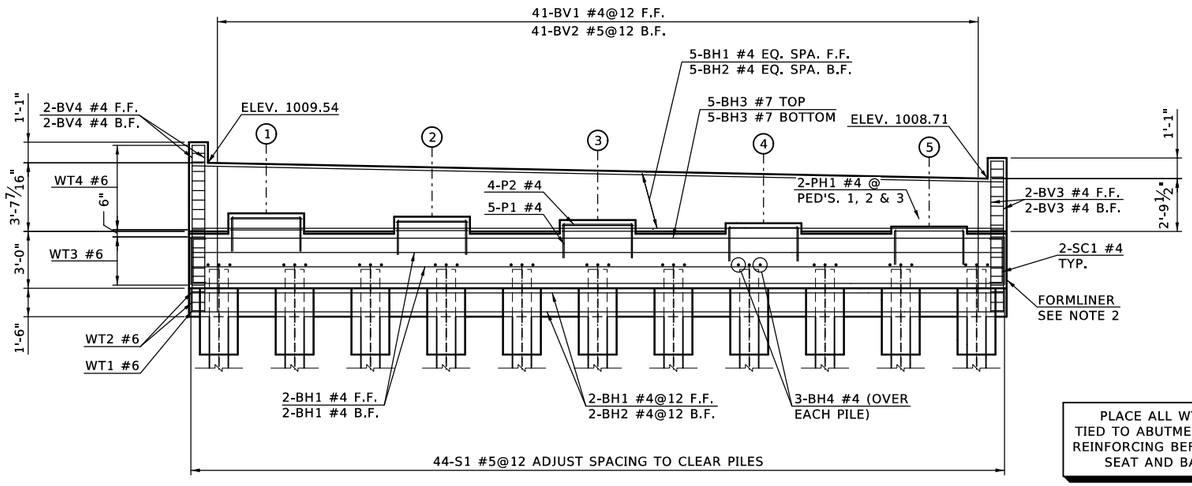


PLAN - ABUTMENT NO. 2

TOP OF PEDESTAL ELEVATIONS	
PEDESTAL	ABUT. NO. 2
1	1006.17
2	1006.34
3	1006.52
4	1006.69
5	1006.87



TYPICAL SECTION THRU SEAT

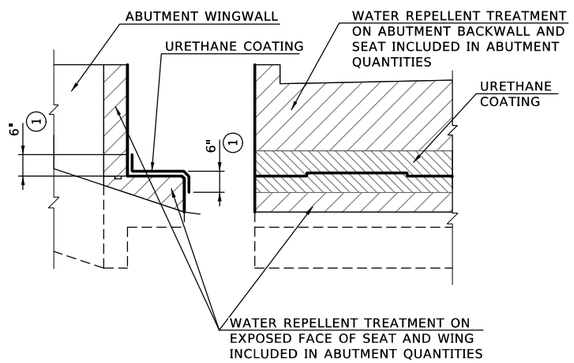


ELEVATION - ABUTMENT NO. 2

NOTES:

1. SEE ODOT STD. B40-C-ABUT-MISC FOR EXCAVATION AND PIPE UNDERDRAIN DETAILS.
2. SEE FORM LINER DETAILS FOR SPECIAL WALL TREATMENT AND DETAILS.

PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.



SIDE ELEVATION

1. FOR ADDITIONAL INFORMATION SEE SPECIAL CONCRETE FINISH DETAIL SHEET B014
2. DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.

WATER REPELLENT TREATMENT DETAILS

F.F. = FRONT FACE
B.F. = BACK FACE

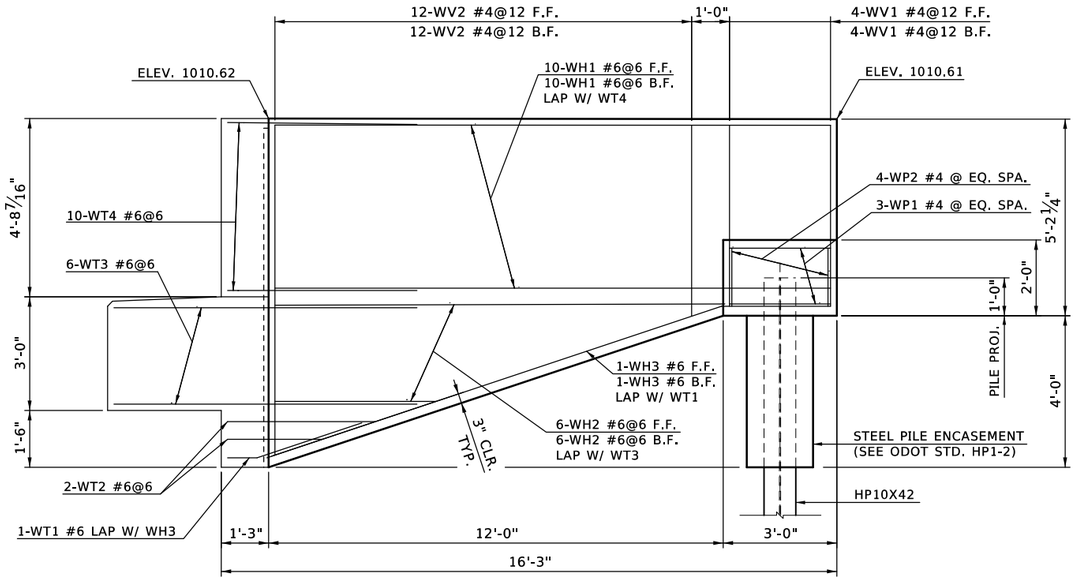
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	LW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

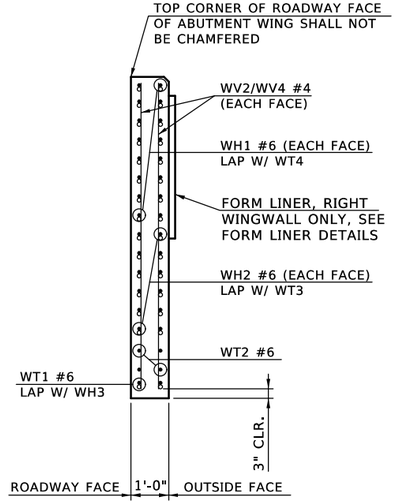
ABUTMENT DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B043



LEFT WING ELEVATION - ABUTMENT NO. 2

SCALE: ½" = 1'-0"

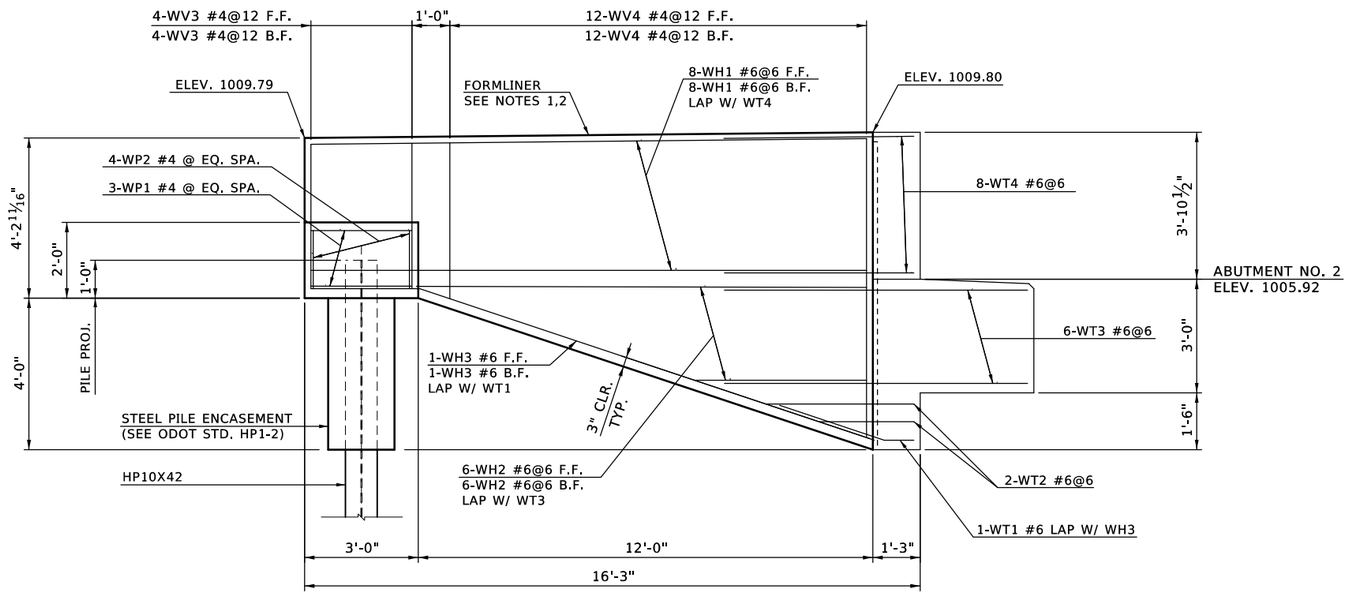


SECTION THRU WING AT BACK FACE OF ABUTMENT SEAT

SCALE: ½" = 1'-0"

NOTES:

1. SEE FORMLINER DETAILS FOR SPECIAL WALL TREATMENT.
2. FORM LINER ON RIGHT WING ONLY.



RIGHT WING ELEVATION - ABUTMENT NO. 2

SCALE: ½" = 1'-0"

ABUTMENT NO. 2 BAR LIST

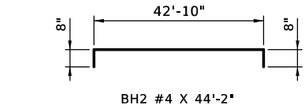
(ONE REQUIRED)

EPOXY COATED REINFORCING

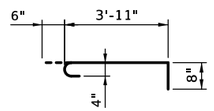
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	#4	11	STR	42'-10"	
BH2	#4	7	BNT.	44'-2"	
BH3	#7	10	STR.	42'-10"	
BH4	#4	33	BNT.	5'-1"	
BV1	#4	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV2	#5	41	STR.	7'-3" (AVG.)	6'-10" TO 7'-8"
BV3	#4	4	STR.	8'-9"	
BV4	#4	4	STR.	7'-11"	
S1	#5	44	BNT.	13'-11"	
SC1	#4	4	BNT.	3'-9"	
P1	#4	25	BNT.	6'-3"	
P2	#4	20	BNT.	7'-3"	
PH1	#4	6	BNT.	13'-5"	
WT1	#6	2	BNT.	8'-2"	
WT2	#6	4	BNT.	7'-1" (AVG.)	5'-8" TO 8'-6" NOTE 1
WT3	#6	12	BNT.	16'-8"	
WT4	#6	18	BNT.	10'-8"	
WH1	#6	36	STR.	14'-8"	
WH2	#6	24	STR.	8'-2" (AVG.)	4'-6" TO 11'-9" NOTE 2
WH3	#6	4	BNT.	15'-4"	
WV1	#4	8	STR.	3'-10"	
WV2	#4	24	STR.	6'-0" (AVG.)	4'-1" TO 7'-10" NOTE 3
WV3	#4	8	STR.	4'-7"	
WV4	#4	24	STR.	6'-10" (AVG.)	4'-11" TO 8'-8" NOTE 3
WP1	#4	6	BNT.	8'-8"	
WP2	#4	8	STR.	1'-7"	

NOTES:

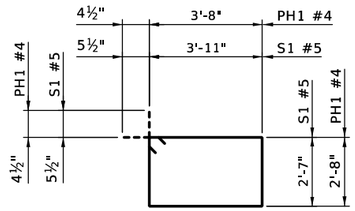
1. (2) SETS OF 2.
2. (4) SETS OF 6.
3. (2) SETS OF 12.



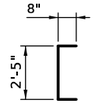
BH2 #4 X 44'-2"



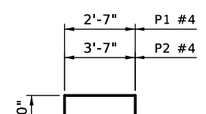
BH4 #4 X 5'-1"



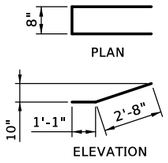
S1 #5 X 13'-11"
PH1 #4 X 13'-5"



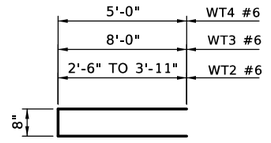
SC1 #4 X 3'-9"



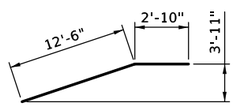
P1 #4 X 6'-3"
P2 #4 X 7'-3"



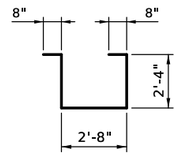
WT1 #6 X 8'-2"



WT4 #6 X 10'-8"
WT3 #6 X 16'-8"
WT2 #6 X 7'-1" AVG.



WH3 #6 X 15'-4"

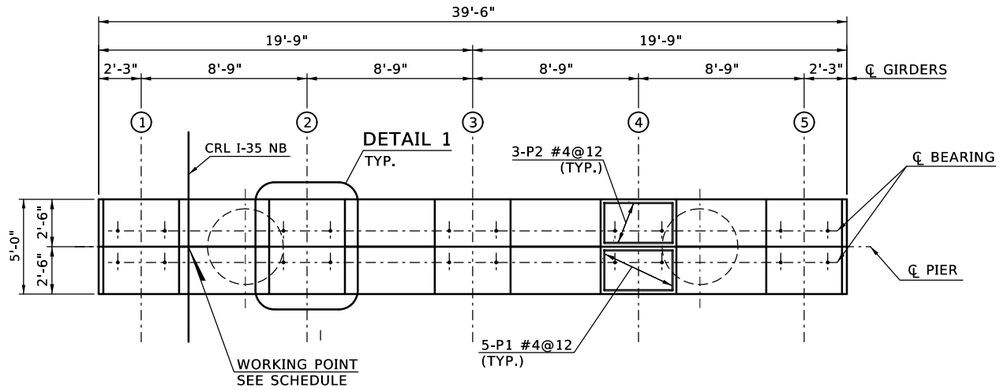


WP1 #4 X 8'-8"

BRIDGE B

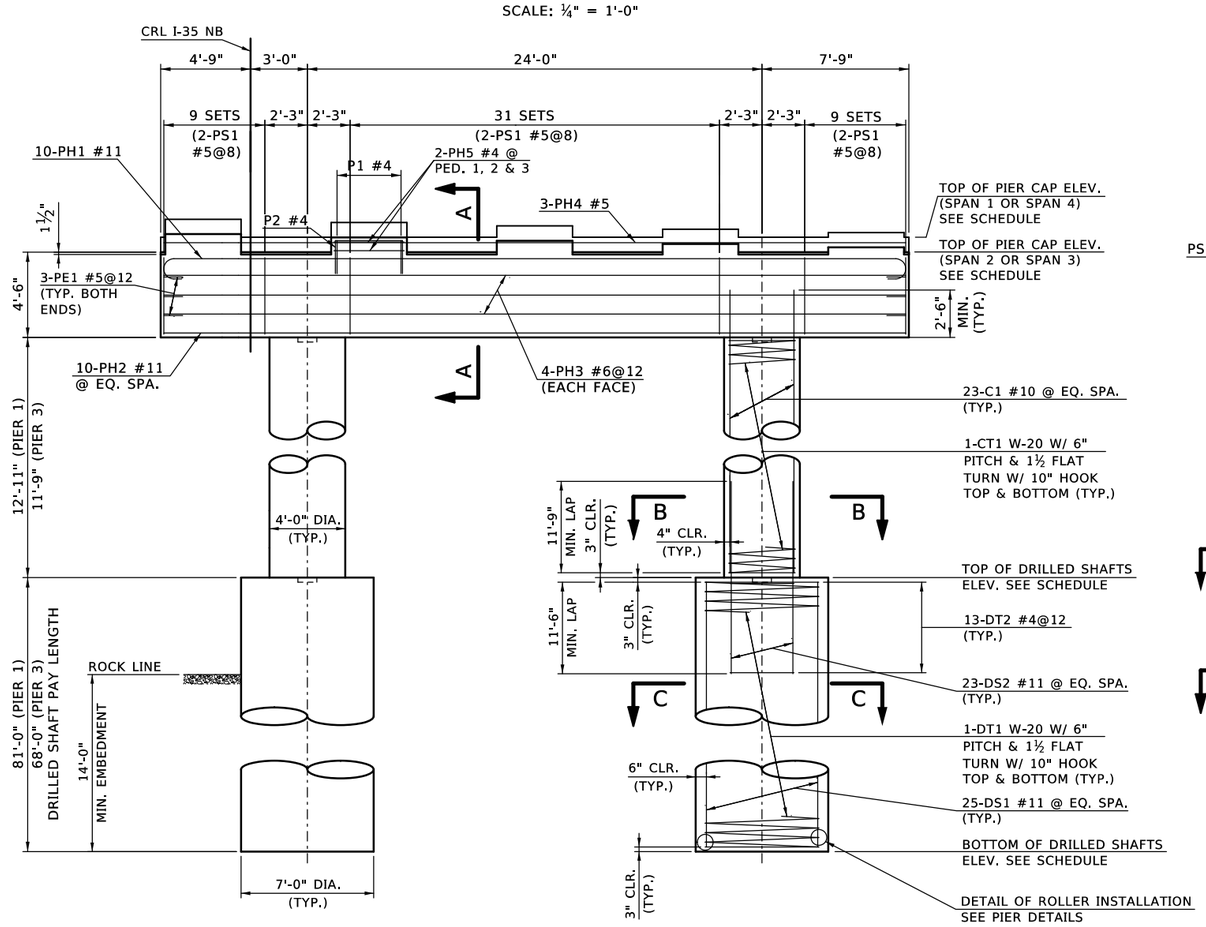
DESIGN	STF	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	LW	2/18	ABUTMENT DETAILS (4)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B044



PLAN - PIERS NO. 1 AND 3

SCALE: ¼" = 1'-0"



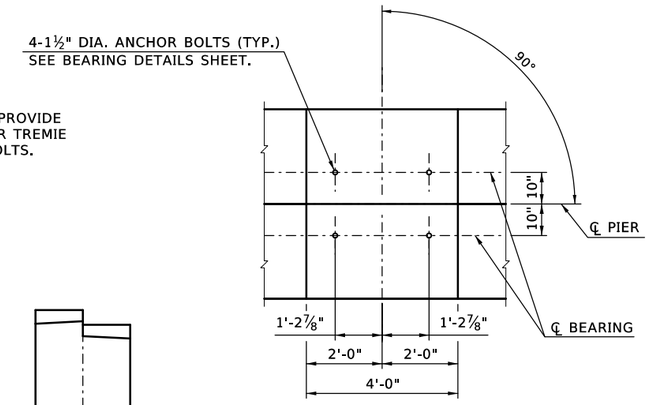
ELEVATION - PIER NO. 1 AND 3

SCALE: ¼" = 1'-0"

(PIER NO. 3 SHOWN - PIER 1 CHANGE HIGH AND LOW STEP)

PIER QUANTITIES

ITEM	UNIT	PIER NO. 1	PIER NO. 2	PIER NO. 3	TOTAL
SPECIAL CONCRETE FINISH	SY	85	157	82	324
CLASS A CONCRETE	CY	49.5	91.2	48.5	189.2
REINFORCING STEEL	LB	410	960	370	1740
EPOXY COATED REINFORCING STEEL	LB	10330	15710	10330	36370
WATER REPELLENT (VISUALLY INSPECTED)	SY	115	191	109	415
DRILLED SHAFTS 84" DIAMETER	LF	178	228	109	515
CROSSHOLE SONIC LOGGING	EA	1	1	1	3

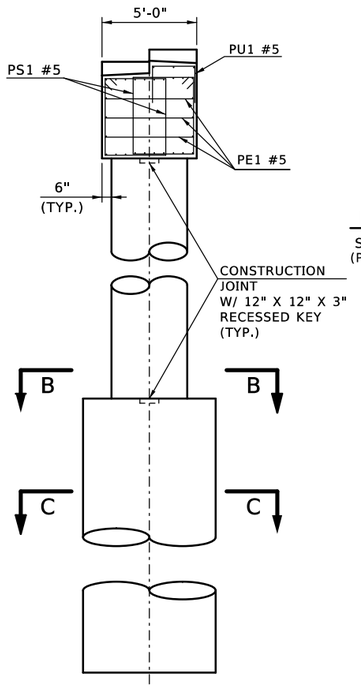


DETAIL 1

SCALE: ½" = 1'-0"

NOTES:

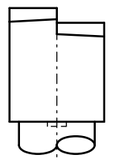
1. ADJUST PH BARS AS NEEDED TO PROVIDE A MINIMUM OF 4" CLEARANCE FOR TREMIE AND CLEARANCE FOR ANCHOR BOLTS.
2. FOR BEARINGS, SEE BEARING DETAILS SHEET.



END VIEW

SCALE: ¼" = 1'-0"

(PIER NO. 3 SHOWN)



END VIEW

SCALE: ¼" = 1'-0"

(PIER NO. 1 SHOWN)

PIER STATIONS AND ELEVATIONS SCHEDULE

PIER NO. 1

WORKING POINT STATION = 878+13.52

PEDESTAL	ELEV. DOWN STA.	ELEV. UP STA.		ELEVATION
1	1005.28	1004.65		--
2	1005.46	1004.82	TOP OF PIER DOWN STA.	1005.03
3	1005.63	1005.00	TOP OF PIER UP STA.	1004.40
4	1005.81	1005.17	TOP OF DRILLED SHAFTS	987.00
5	1005.98	1005.35	BOT. OF DRILLED SHAFTS	906.00

PIER NO. 3

WORKING POINT STATION = 879+83.52

PEDESTAL	ELEV. DOWN STA.	ELEV. UP STA.		ELEVATION
1	1005.48	1006.14		--
2	1005.66	1006.31	TOP OF PIER DOWN STA.	1005.23
3	1005.83	1006.49	TOP OF PIER UP STA.	1005.89
4	1006.01	1006.66	TOP OF DRILLED SHAFTS	989.00
5	1006.18	1006.84	BOT. OF DRILLED SHAFTS	921.00

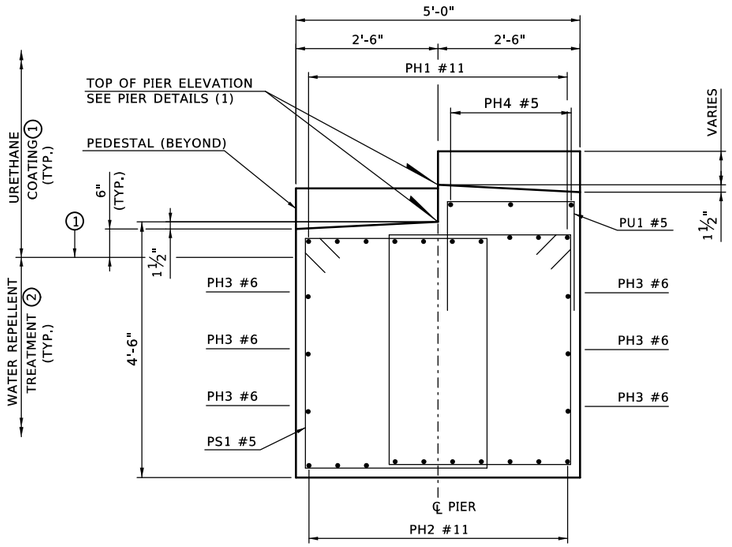
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

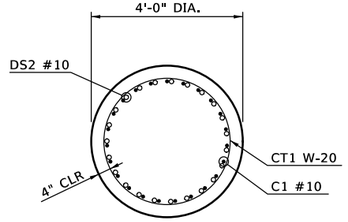
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (1)

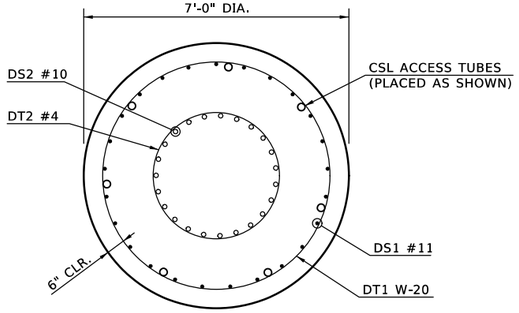
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B045



SECTION A-A - PIER NO. 3



SECTION B-B



SECTION C-C

PIER NO. 1 BAR LIST

(ONE PIER)

EPOXY COATED REINFORCING

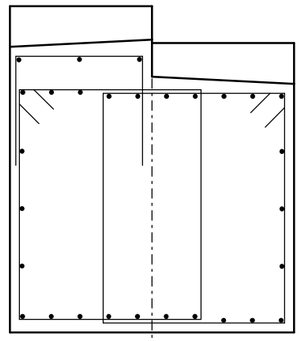
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	46	STR.	15'-2"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#5	3	STR.	39'-0"	
PH5	#4	12	BNT.	12'-5"	
PE1	#5	6	BNT.	7'-6"	
PS1	#5	98	BNT.	15'-1"	
P1	#4	50	BNT.	5'-3"	
P2	#4	30	BNT.	6'-9"	
PU1	#5	80	BNT.	6'-5"	

PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	2	BNT	296'-11"	

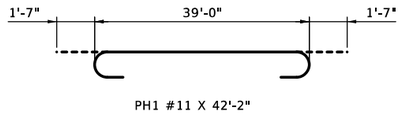
DRILLED SHAFT PLAIN REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	50	STR	88'-6"	SEE NOTE 1
DS2	#11	46	STR	19'-5"	SEE NOTE 1
DT1	W20	2	BNT	2,276'-4"	SEE NOTE 1
DT2	#4	26	BNT	12'-6"	SEE NOTE 1

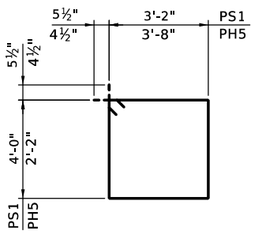


SECTION A-A - PIER NO. 1

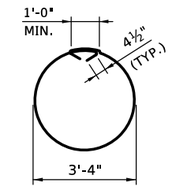
(SAME AS PIER NO. 3)



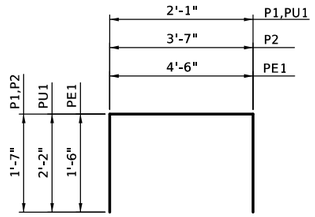
PH1 #11 X 42'-2"



PS1 #5 X 15'-1"
PH5 #4 X 12'-5"



DT2 #4 X 12'-3"



P1 #4 X 5'-3"
P2 #4 X 6'-9"
PE1 #5 X 11'-8"
PU1 #5 X 6'-5"

URETHANE COATING NOTES:

(1) COAT ALL EXPOSED CONCRETE ON TOP OF PIER CAP AND 6" MIN. DOWN ON VERTICAL FACE OF PIER CAP WITH CIM1000 URETHANE COATING AS MANUFACTURED BY C.I.M. INDUSTRIES, INC., IM-129 AS MANUFACTURED BY CUSTOM LINING OR AN APPROVED EQUAL. SURFACE TO BE SANDBLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT. URETHANE COATING SHALL BE PAID FOR AT THE UNIT PRICE BID PER LSUM 0F (PL) INSTALLATION OF BRIDGE ITEMS.

(2) TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (URETHANE COATING WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP.) DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.

PIER NO. 3 BAR LIST

(ONE PIER)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	46	STR.	15'-2"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#5	3	STR.	39'-0"	
PH5	#4	12	BNT.	12'-5"	
PE1	#5	6	BNT.	7'-6"	
PS1	#5	98	BNT.	15'-1"	
P1	#4	50	BNT.	5'-3"	
P2	#4	30	BNT.	6'-9"	
PU1	#5	80	BNT.	6'-5"	

PLAIN REINFORCING

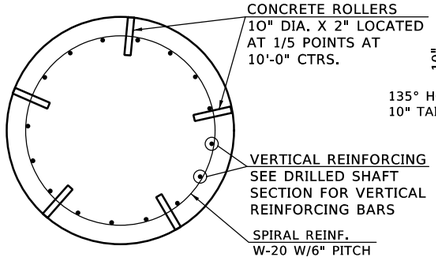
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	2	BNT	270'-9"	

DRILLED SHAFT PLAIN REINFORCING

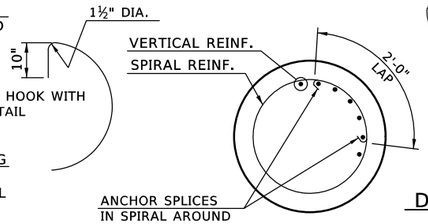
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	50	STR	54'-0"	SEE NOTE 1
DS2	#11	46	STR	23'-9"	SEE NOTE 1
DT1	W20	2	BNT	1,404'-11"	SEE NOTE 1
DT2	#4	26	BNT	12'-3"	SEE NOTE 1

NOTE:

1. DRILLED SHAFT BARS ARE FOR INFORMATION PURPOSES ONLY. THE BARS ARE NOT INCLUDED IN THE QUANTITIES, BUT ARE INCLUDED IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.

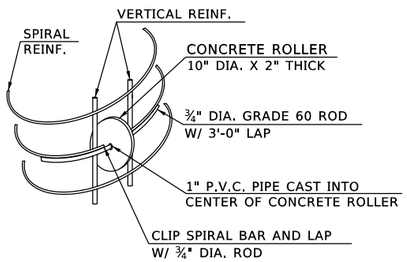


DETAIL OF DRILLED SHAFT
ROLLER PLACEMENT



SPIRAL SPLICE

NOTE:
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH INCLUDE LAPS.



DETAIL OF DRILLED SHAFT
ROLLER INSTALLATION

NOTES:
1. CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I., SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

2. ALL MATERIALS, LABOR AND INCIDENTALS REQUIRED FOR THE INSTALLATION OF THE CONCRETE ROLLERS TO BE INCLUDED IN THE PRICE BID PER L.F. OF DRILLED SHAFTS.

BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

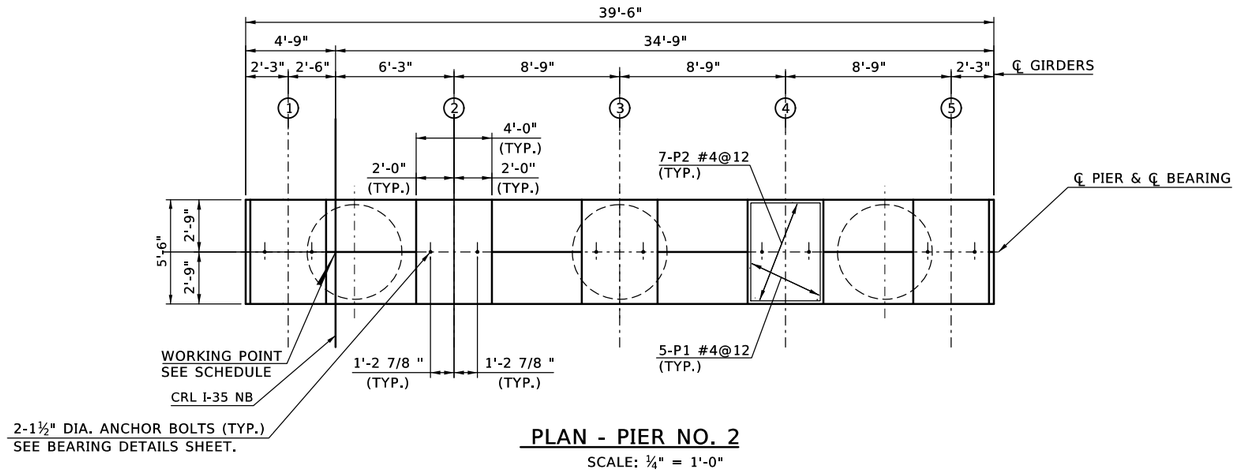
PIER DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B046

7/26/2018

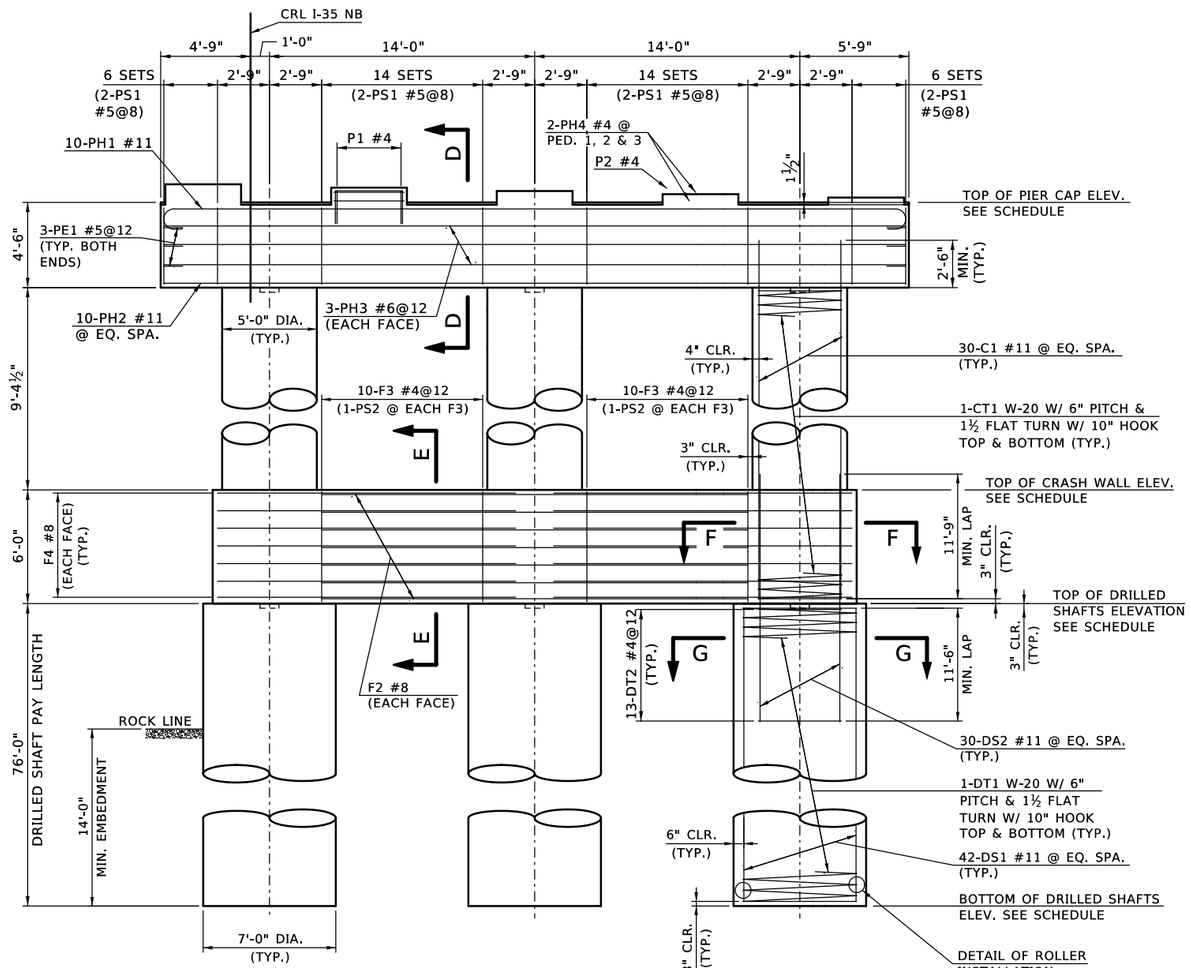
4:55:31 PM

P:\FDB\650-TUL\DIV\40052_EC0839_I35_US60\20_DESGN\40_CAD\S\Bridge B\24432(4 S2 Pier 1Det 0l.dgn



PLAN - PIER NO. 2

SCALE: ¼" = 1'-0"



ELEVATION

SCALE: ¼" = 1'-0"

END VIEW

SCALE: ¼" = 1'-0"

NOTES:

1. ADJUST PH BARS AS NEEDED TO PROVIDE A MINIMUM OF 4" CLEARANCE FOR TREMIE AND CLEARANCE FOR ANCHOR BOLTS.
2. FOR BEARINGS, SEE BEARING DETAILS SHEET.

PIER STATION AND ELEVATIONS SCHEDULE

PIER NO. 2

WORKING POINT STATION = 878+98.52

PEDESTAL	ELEVATION		ELEVATION
1	1005.12		--
2	1005.30	TOP OF PIER	1004.87
3	1005.47	TOP OF CRASH WALL	991.00
4	1005.65	TOP OF DRILLED SHAFTS	985.00
5	1005.82	BOT. OF DRILLED SHAFTS	909.00

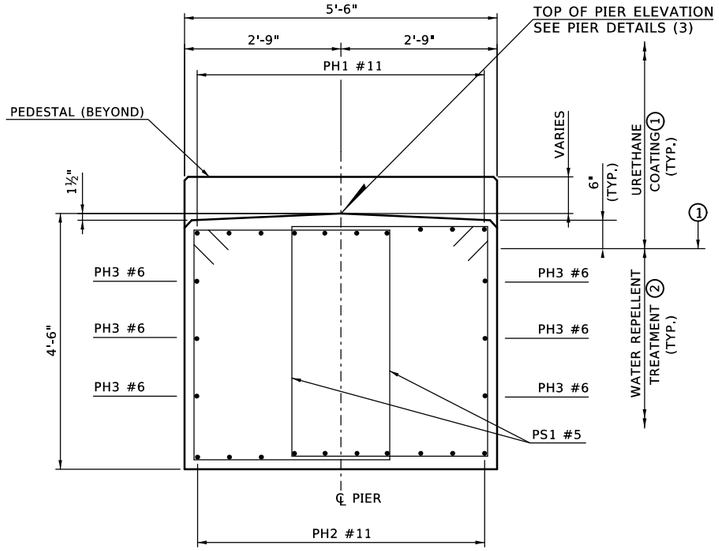
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

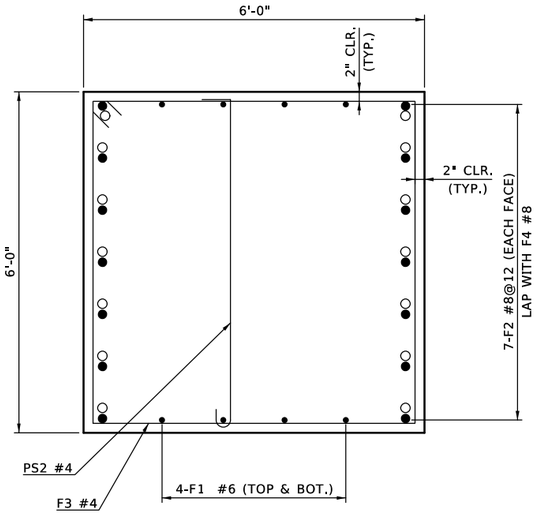
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (3)

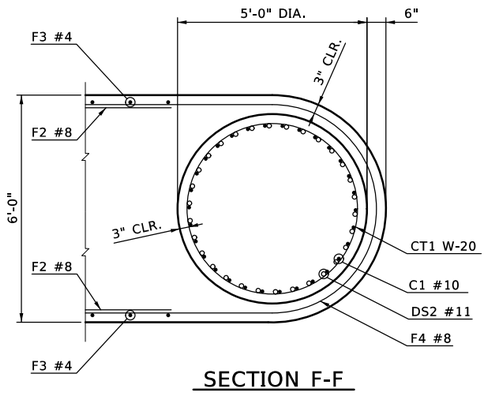
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B047



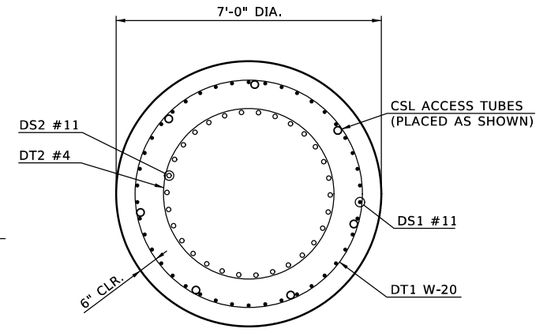
SECTION D-D



SECTION E-E



SECTION F-F

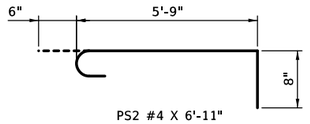


SECTION G-G

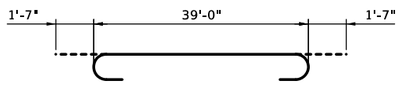
URETHANE COATING NOTES:

1. COAT ALL EXPOSED CONCRETE ON TOP OF PIER CAP AND 6" MIN. DOWN ON VERTICAL FACE OF PIER CAP WITH CIM1000 URETHANE COATING AS MANUFACTURED BY C.I.M. INDUSTRIES, INC., IM-129 AS MANUFACTURED BY CUSTOM LINING OR AN APPROVED EQUAL. SURFACE TO BE SANDBLASTED AND PRIMED AS RECOMMENDED BY THE MANUFACTURER. MASKING SHALL BE USED TO PROVIDE A CLEAN RESULT. URETHANE COATING SHALL BE PAID FOR AT THE UNIT PRICE BID PER LSUM 0F (PL) INSTALLATION OF BRIDGE ITEMS.

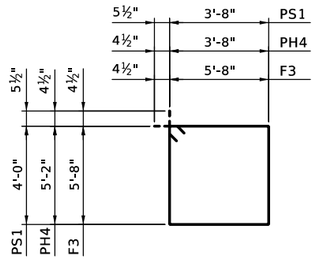
2. TREAT ALL EXTERIOR VERTICAL SURFACES OF THE PIER CAPS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (URETHANE COATING WILL OVERLAP WATER REPELLENT NEAR TOP OF CAP.) DO NOT ADD URETHANE COATING UNDERNEATH BEARING PAD LOCATIONS.



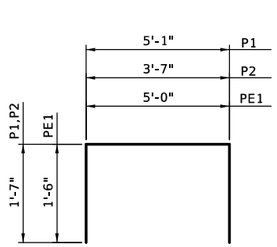
PS2 #4 X 6'-11"



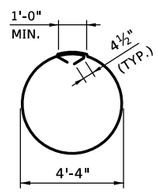
PH1 #11 X 42'-2"



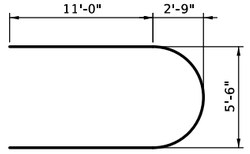
PS1 #5 X 16'-3"
PH4 #4 X 18'-5"
F3 #4 X 23'-5"



P1 #4 X 8'-3"
P2 #4 X 6'-9"
PE1 #5 X 8'-0"



DT2 #4 X 15'-5"



F4 #8 X 30'-8"

PIER NO. 2 BAR LIST
(ONE PIER)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
C1	#10	90	STR.	17'-8"	
PH1	#11	10	BNT.	42'-2"	
PH2	#11	10	STR.	39'-0"	
PH3	#6	6	STR.	39'-0"	
PH4	#4	6	BNT.	18'-5"	
PE1	#5	6	BNT.	8'-0"	
PS1	#5	80	BNT.	15'-9"	
PS2	#4	20	BNT.	6'-11"	
P1	#4	15	BNT.	8'-3"	
P2	#4	18	BNT.	6'-9"	
F1	#6	16	STR	8'-6"	
F2	#8	14	STR.	22'-6"	
F3	#4	20	BNT.	23'-5"	
F4	#8	14	BNT.	30'-8"	

PLAIN REINFORCING

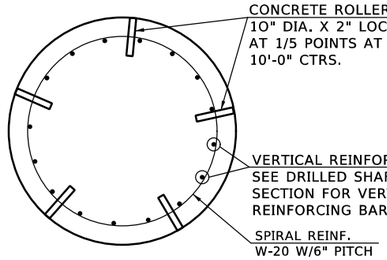
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
CT1	W20	3	BNT	467'-4"	

DRILLED SHAFT PLAIN REINFORCING

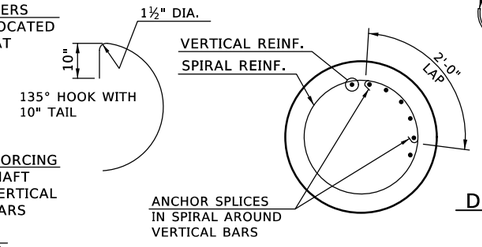
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
DS1	#11	126	STR	75'-6"	SEE NOTE 1
DS2	#11	90	STR	23'-9"	SEE NOTE 1
DT1	W20	3	BNT	2,916'-6"	SEE NOTE 1
DT2	#4	39	BNT	15'-5"	SEE NOTE 1

NOTE:

1. DRILLED SHAFT BARS ARE FOR INFORMATION PURPOSES ONLY. THE BARS ARE NOT INCLUDED IN THE QUANTITIES, BUT ARE INCLUDED IN THE PRICE BID FOR L.F. OF DRILLED SHAFTS.

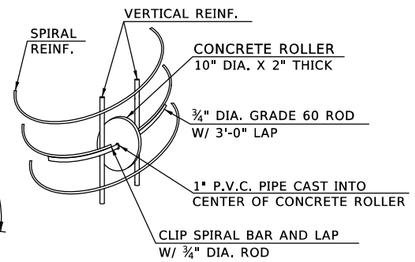


DETAIL OF DRILLED SHAFT
ROLLER PLACEMENT



SPIRAL SPLICE

NOTE:
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH INCLUDE LAPS.



DETAIL OF DRILLED SHAFT
ROLLER INSTALLATION

NOTES:
1. CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I.. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

2. ALL MATERIALS, LABOR AND INCIDENTALS REQUIRED FOR THE INSTALLATION OF THE CONCRETE ROLLERS TO BE INCLUDED IN THE PRICE BID PER L.F. OF DRILLED SHAFTS.

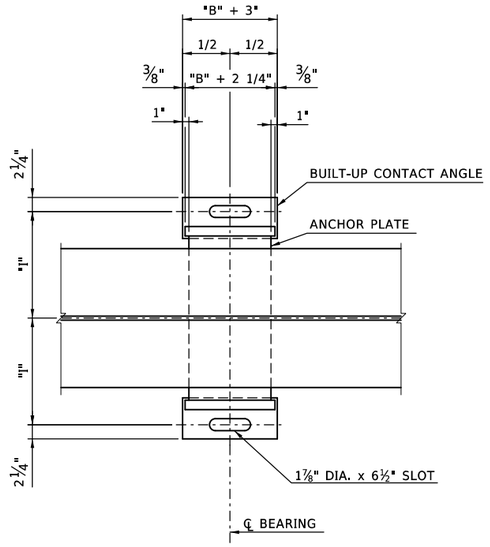
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

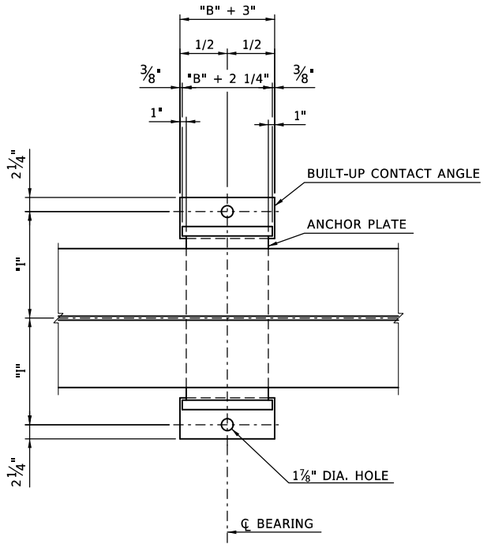
OKLAHOMA DEPARTMENT OF TRANSPORTATION

PIER DETAILS (4)

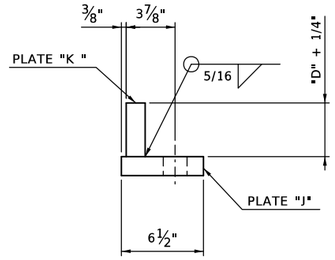
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B048



EXPANSION BEARING PLAN

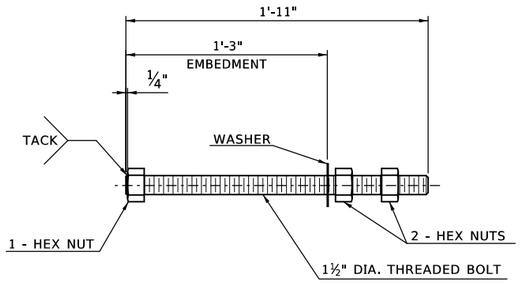


FIXED BEARING PLAN



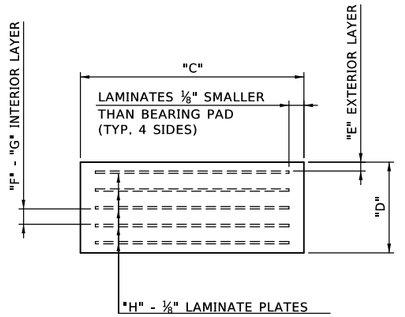
BUILT-UP CONTACT ANGLE DETAIL

SCALE: NONE



ANCHOR BOLT DETAIL

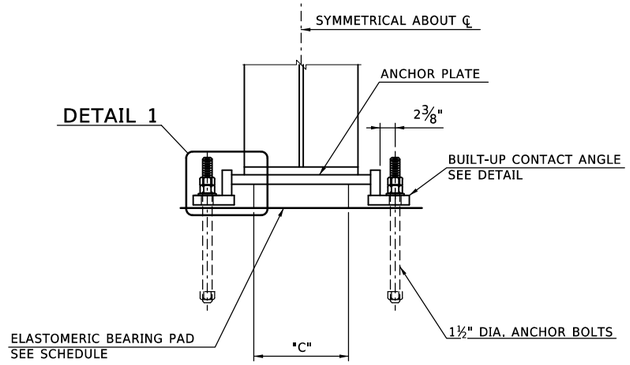
SCALE: NONE



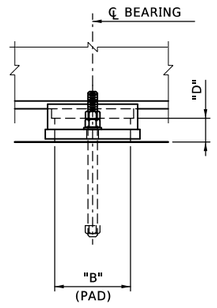
BEARING PAD ELEVATION

SCALE: NONE

(60 DUROMETER HARDNESS) INCLUDE ALL COSTS OF BEARING PADS IN PRICE BID FOR FIXED OR EXPANSION BEARING ASSEMBLY



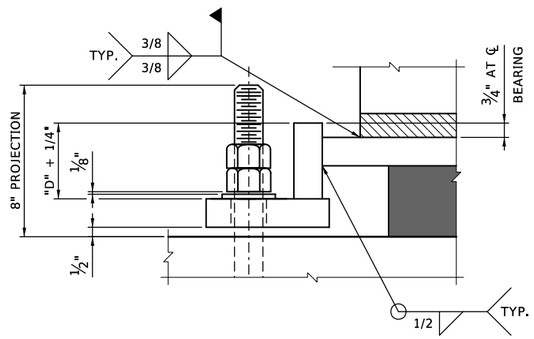
END VIEW



SIDE VIEW

BEARING DETAILS

SCALE: 1" = 1'-0"



DETAIL 1

SCALE: 3" = 1'-0"

NOTES:

PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES AND BUILT-UP CONTACT ANGLES IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316, CHARPY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M AND ASTM A320, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.

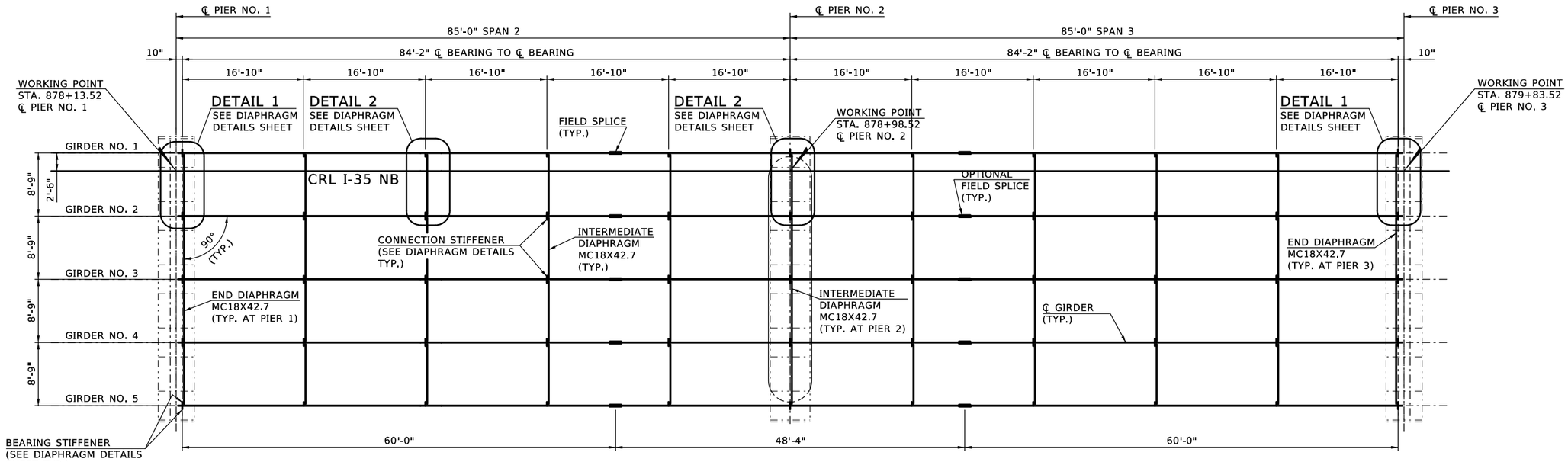
BEARING ASSEMBLY SCHEDULE

LOCATION	GIRDER	"A" BEVEL SLOPE %	"B" LENGTH OF PAD (IN)	"C" WIDTH OF PAD (IN)	"D" TOTAL HEIGHT OF PAD (IN)	"E" HEIGHT OF EXTERIOR LAYERS (IN)	"F" NUMBER OF INTERIOR LAYERS	"G" HEIGHT OF INTERIOR LAYERS (IN)	"H" NUMBER OF ⅛" LAMINATE PLATES	"I" ℄ OF BEAM TO ℄ ANCHOR BOLT	ANCHOR PLATES	CONTACT PLATES "J" (HORIZ.)	CONTACT PLATES "K" (VERT.)	FIXITY
ABUTMENT 1, SPAN 1	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 8 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	FIX
PIER 1, SPAN 1	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	EXP
PIER 1, SPAN 2	1-5	0.00%	6 1/2"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2"X7 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 8 3/4"	EXP
PIER 2	1-5	0.00%	14"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2" X 15" X 1'-10"	PL 1 1/2" X 6 1/2" X 1'-5"	PL 1 1/2" X 3 7/8" X 1'-4 1/4"	FIX
PIER 3, SPAN 3	1-5	0.00%	6 1/2"	19"	3 5/8"	1/4"	6	3/8"	7	1'-2 7/8"	PL 1 1/2"X7 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 8 3/4"	EXP
PIER 3, SPAN 4	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 9 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	EXP
ABUTMENT 2, SPAN 4	1-5	0.00%	6"	19"	4 1/8"	1/4"	7	3/8"	8	1'-2 7/8"	PL 1 1/2"X6 1/2"X1'-10"	PL 1 1/2" X 6 1/2" X 8 1/2"	PL 1 1/2" X 4 1/4" X 7 3/4"	FIX

BRIDGE B

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	BEARING DETAILS
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B049



PLAN

NOTE:
FOR INTERMEDIATE DIAPHRAGM LOCATIONS AT SPAN 1 AND SPAN 4, SEE STEEL GIRDER DETAILS (1).

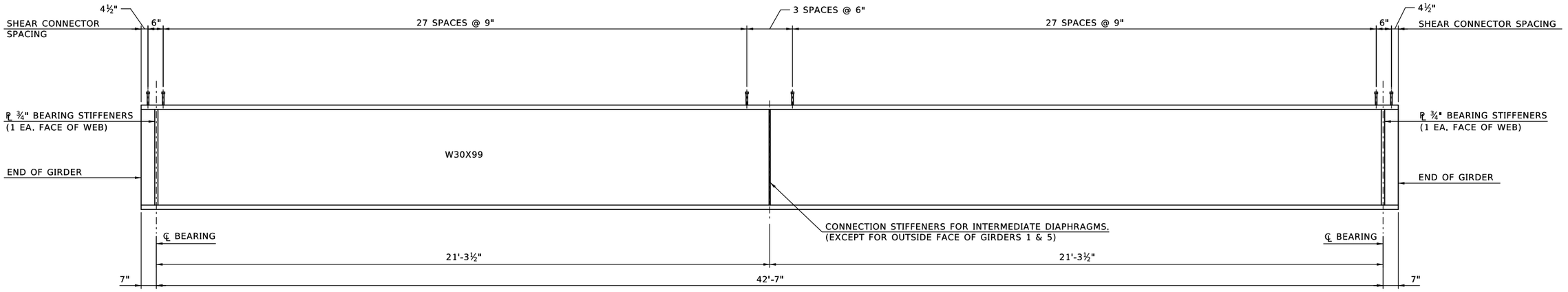
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

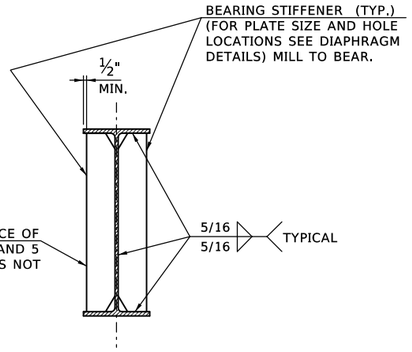
FRAMING PLAN DETAILS
SPAN 2 AND 3

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B050



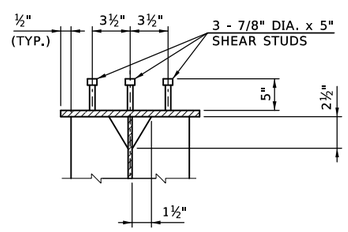
BEAM ELEVATION (SPANS 1 AND 4)

SCALE: NONE



BEARING STIFFENERS FOR SPANS 1 & 4

SCALE: 1"=1'-0"

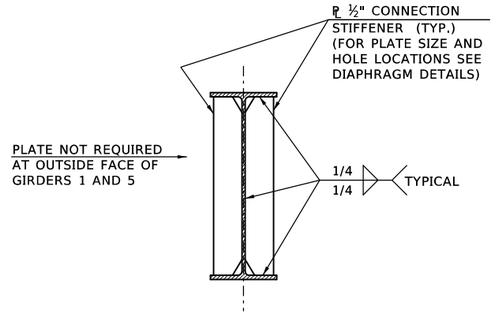


STIFFENER CLIP AND SHEAR CONNECTORS

SCALE: NONE

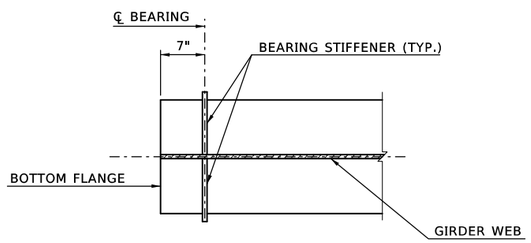
NOTES:

1. FOR BRIDGE GEOMETRIC DATA SEE GENERAL PLAN AND ELEVATION.
2. W30X99 AND STIFFENER PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
3. GIRDERS, DIAPHRAGMS, AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.
4. ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
5. ℄ BEARING TO ℄ BEARING LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED AS SHOWN IN THE GIRDER ELEVATION.
6. GIRDERS ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS WERE IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
7. ALL FILLET WELDS SHALL BE TERMINATED ⅜" +/- ⅛" FROM EDGES OF STIFFENERS AS PER AWS D1.5 SECT 9.15.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INSTALLED PRIOR TO INSTALLING STRUCTURAL STEEL.
9. DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS ON THE UP GRADE SIDE OF ABUTMENT AND EACH PIER.
10. ALL COST OF DRIP PLATE, WELD, CAULK AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL".



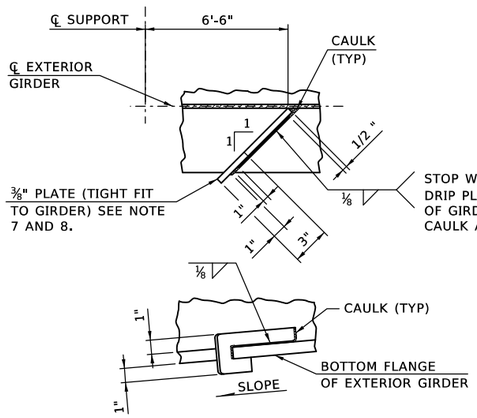
CONNECTION STIFFENERS FOR SPANS 1 & 4

SCALE: 1"=1'-0"



TYPICAL BEARING STIFFENER

SCALE: NONE



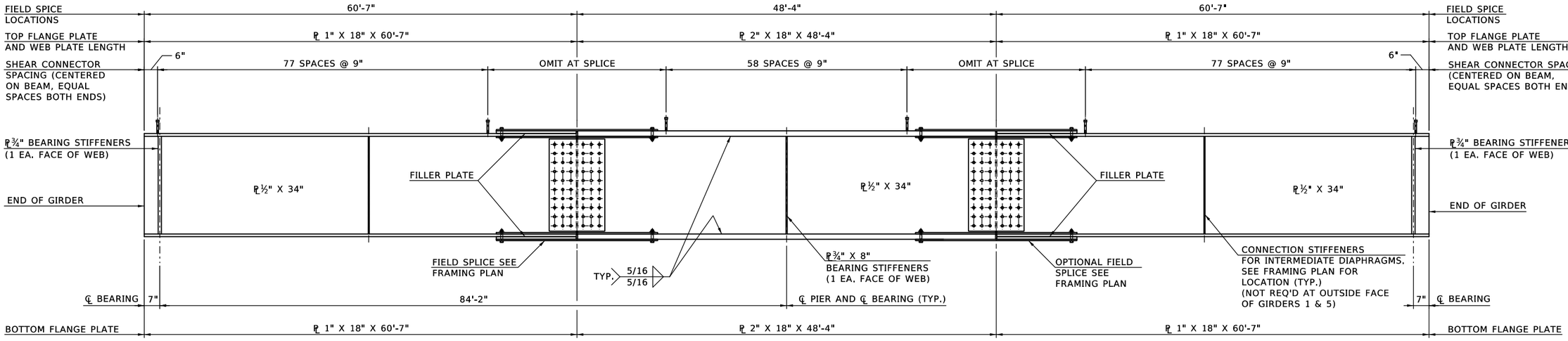
TYPICAL DRIP PLATE DETAIL FOR EXTERIOR GIRDERS

SCALE: NONE

BRIDGE B

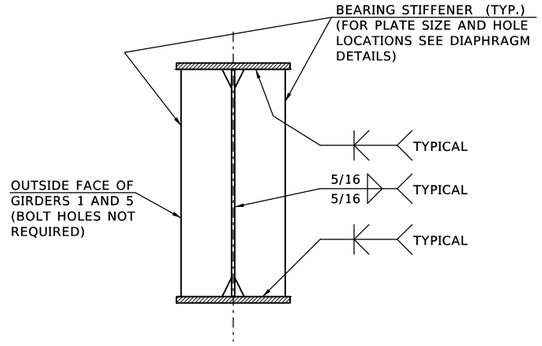
DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	LJW	2/18	STEEL GIRDER DETAILS (1)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B051



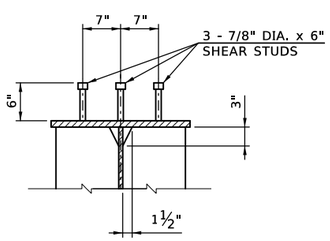
BEAM ELEVATION (SPANS 2 AND 3)

SCALE: NONE



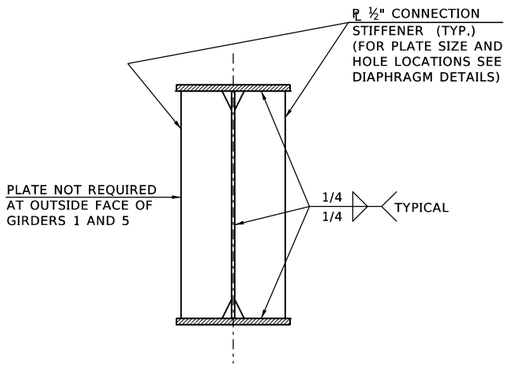
BEARING STIFFENERS FOR SPANS 2 & 3

SCALE: 1"=1'-0"



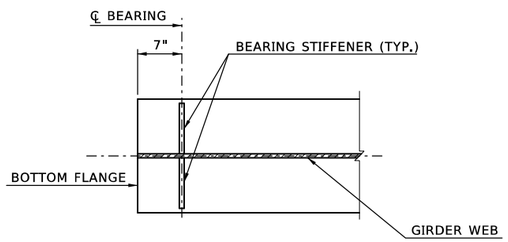
STIFFENER CLIP AND SHEAR CONNECTORS

SCALE: NONE



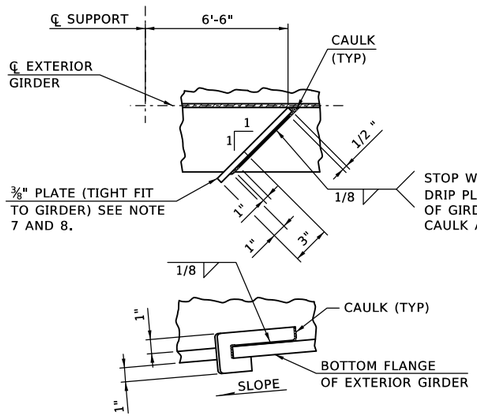
CONNECTION STIFFENERS FOR SPANS 2 & 3

SCALE: 1"=1'-0"



TYPICAL BEARING STIFFENER

SCALE: NONE



TYPICAL DRIP PLATE DETAIL FOR EXTERIOR GIRDERS

SCALE: NONE

NOTES:

1. FOR BRIDGE GEOMETRIC DATA SEE GENERAL PLAN AND ELEVATION.
2. ALL FLANGE PLATES, WEB PLATES, STIFFENER PLATES, AND FIELD SPLICE PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
3. PLATE GIRDERS, DIAPHRAGMS, AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.
4. ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
5. ℄ BEARING TO ℄ BEARING LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED AS SHOWN ON THE FRAMING PLAN.
6. GIRDERS ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS IS IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
7. ALL FILLET WELDS SHALL BE TERMINATED ⅜" +/- ⅛" FROM EDGES OF STIFFENERS AS PER AWS D1.5, SECT 9.15.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INSTALLED PRIOR TO INSTALLING THE STRUCTURAL STEEL.
9. DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS, ON THE UP GRADE SIDE OF ABUTMENTS, AND EACH PIER.
10. ALL COSTS OF DRIP PLATE WELD, CAULK, AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL".
11. FLANGE WIDTH ACCOMMODATES SHIPPING AND HANDLING OF A 108'-4" FOOT LONG SECTION.
12. CONTRACTOR MAY UTILIZE ONE OR BOTH FIELD SPLICES ON SITE. IF THE SPLICE BETWEEN PIER NO. 2 AND 3 IS CONNECTED IN PLACE, THE CONTRACTOR SHALL MODIFY THE TRAFFIC CONTROL ACCORDINGLY.

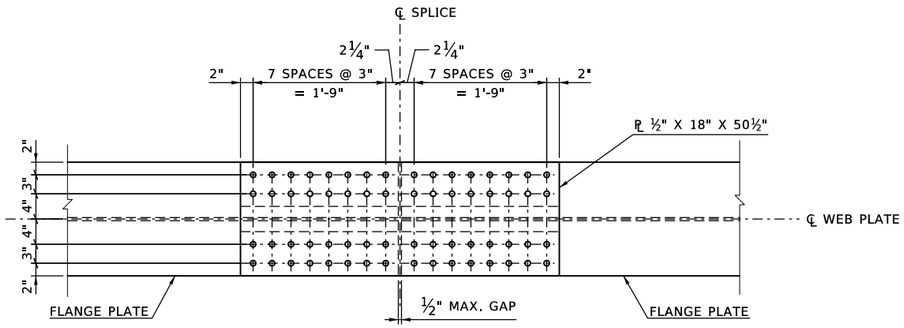
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	LJW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

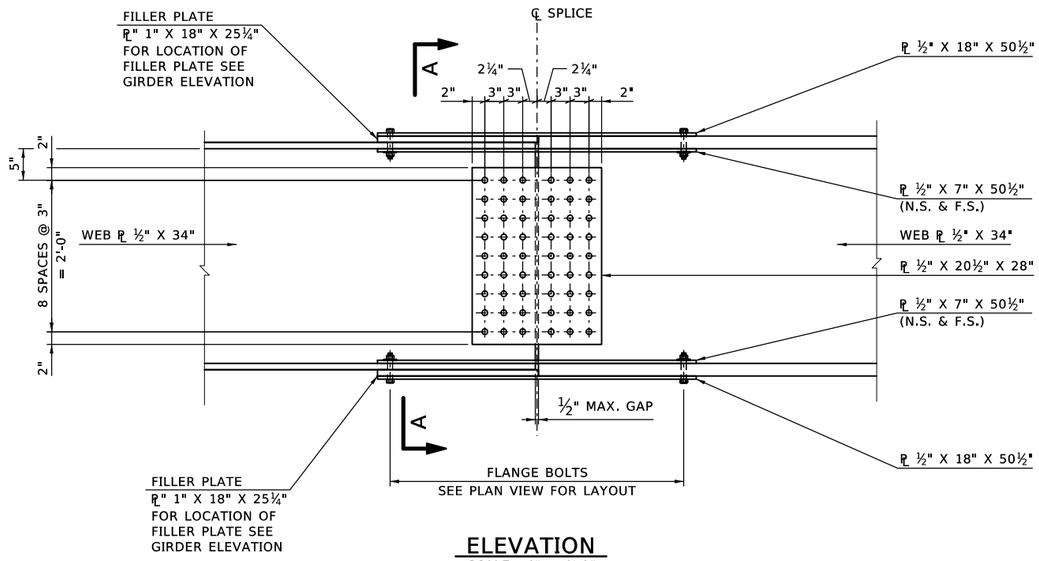
OKLAHOMA DEPARTMENT OF TRANSPORTATION

STEEL GIRDER DETAILS (2)

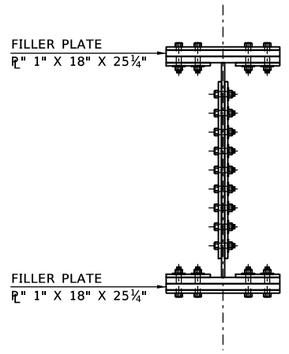
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B052



FIELD SPLICE PLAN
SCALE: 1" = 1'-0"



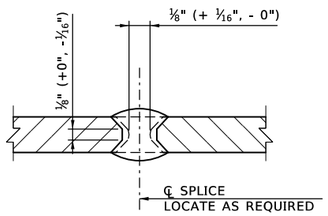
ELEVATION
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"

BOLTED FIELD SPLICE

ALL BOLTED SPLICES SHALL USE ⅞" DIAMETER BOLTS (SEE NOTES 3 & 4)



WELDED WEB SPLICE DETAIL

N.S. = NEAR SIDE
F.S. = FAR SIDE

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL.
2. FOR DIMENSION OF BEAMS WITH RESPECT TO BASELINE, SEE ABUTMENT AND PIERS.
3. ALL BOLTED CONNECTIONS SHALL USE ⅞" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED.
4. ALL SPLICE PLATES AND FILLER PLATES SHALL BE M270 GRADE 50W STEEL. BOLT HOLES SHALL BE 15/16" DIA.
5. FOR SPLICE LOCATIONS, SEE STEEL GIRDER DETAILS (2) AND FRAMING PLAN.
6. BOTTOM FLANGE CONNECTION IS SAME AS TOP FLANGE CONNECTION.

BRIDGE B

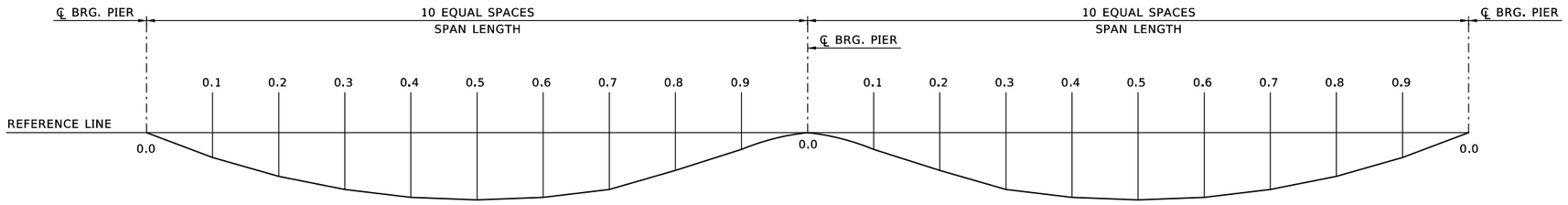
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	LJW	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

STEEL GIRDER DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B053

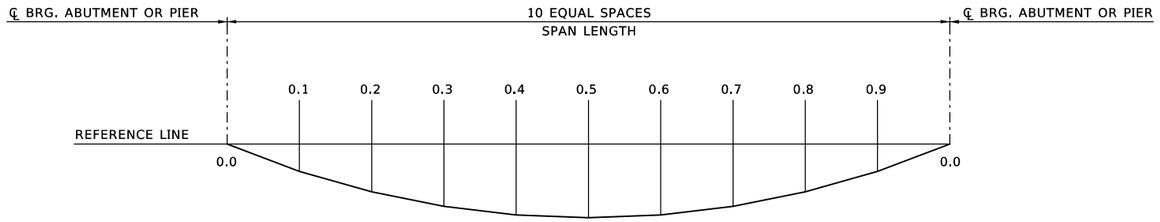
ORDINATES	TENTH PT.	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-
SPANS 2 & 3 GIRDERS 1-5	AVERAGE STEEL	0	0.10	0.18	0.24	0.26	0.24	0.20	0.13	0.07	0.02	0.00	0.02	0.07	0.13	0.20	0.24	0.26	0.24	0.18	0.10	0
	AVERAGE CONCRETE	0	0.38	0.70	0.90	0.97	0.90	0.73	0.50	0.26	0.08	0.00	0.08	0.26	0.50	0.73	0.90	0.97	0.90	0.70	0.38	0
	AVERAGE TOTAL	0	0.48	0.88	1.14	1.23	1.14	0.93	0.63	0.33	0.10	0.00	0.10	0.33	0.63	0.93	1.14	1.23	1.14	0.88	0.48	0



DEAD LOAD DEFLECTION DIAGRAM SPANS 2 AND 3

SCALE: NONE

ORDINATES	TENTH PT.	-	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	-
SPANS 1 & 4 GIRDERS 1-5	AVERAGE STEEL	0.00	0.03	0.06	0.08	0.09	0.10	0.09	0.08	0.06	0.03	0.00
	AVERAGE CONCRETE	0.00	0.18	0.35	0.48	0.56	0.59	0.56	0.48	0.35	0.18	0.00
	AVERAGE TOTAL	0.00	0.21	0.41	0.56	0.65	0.69	0.65	0.56	0.41	0.21	0.00



DEAD LOAD DEFLECTION DIAGRAM SPANS 1 AND 4

SCALE: NONE

NOTES:

1. DEFLECTION IS IN INCHES.
2. POSITIVE VALUE INDICATES DEFLECTION IS DOWNWARD.
3. CONCRETE LOAD INCLUDES SLAB, HAUNCHES, PARAPETS AND STAY-IN-PLACE FORMS.
4. PLATE GIRDERS, DIAPHRAGMS AND CONNECTIONS SHALL BE FABRICATED FOR TOTAL DEAD LOAD FIT CONDITION.

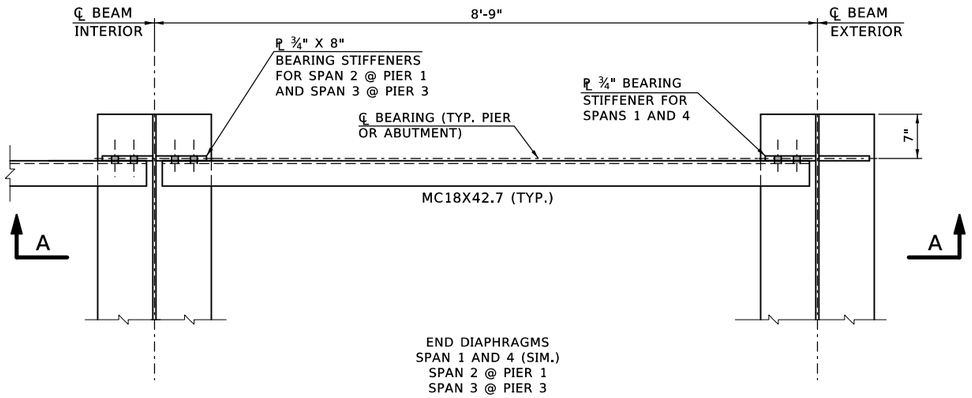
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

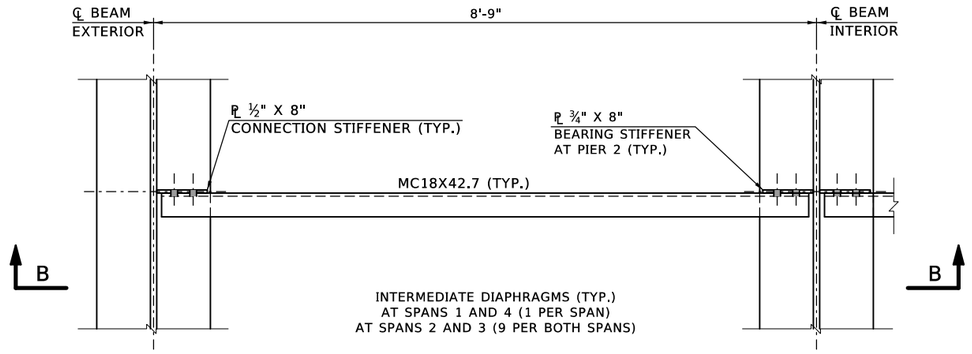
OKLAHOMA DEPARTMENT OF TRANSPORTATION

STEEL GIRDER DETAILS (4)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B054



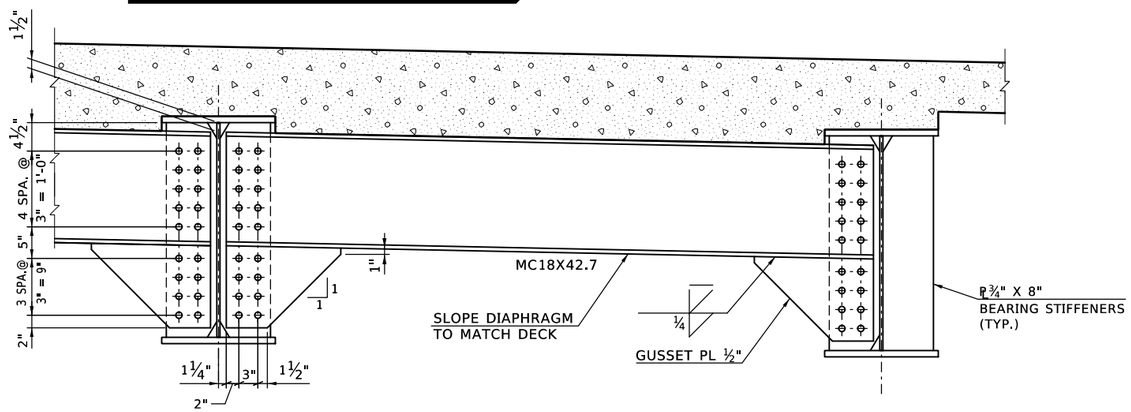
DETAIL 1
SCALE: 1" = 1'-0"



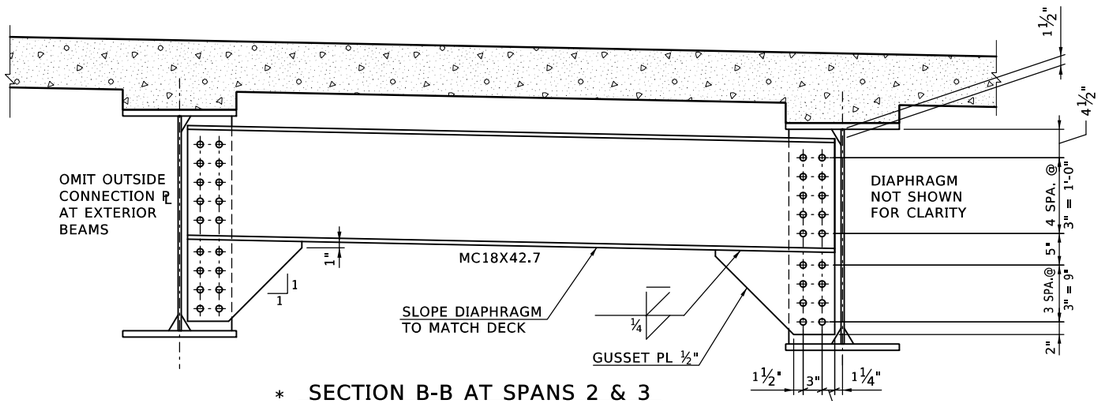
DETAIL 2
SCALE: 1" = 1'-0"

ALL BOLTED CONNECTION SHALL BE 1" DIAMETER (SEE NOTE)

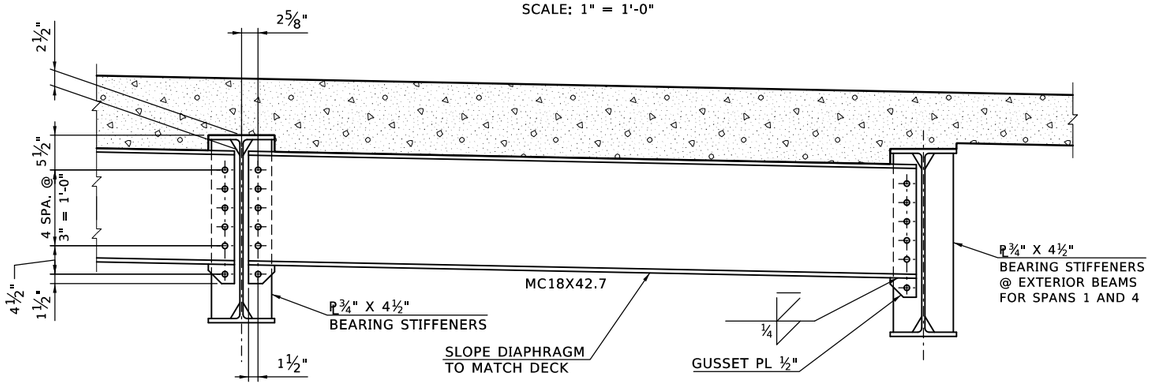
* FOR CROSS SLOPE SEE TYPICAL SECTION



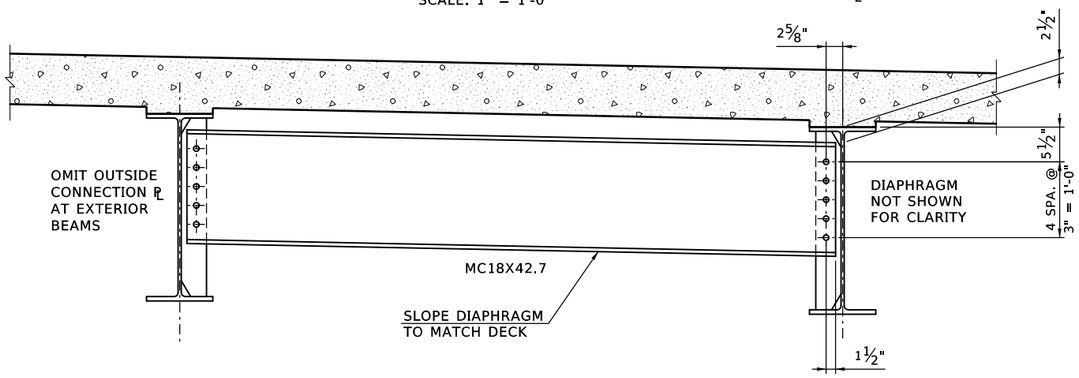
* SECTION A-A AT SPAN 2 AT PIER 1 AND SPAN 3 AT PIER 3
SCALE: 1" = 1'-0"



* SECTION B-B AT SPANS 2 & 3
SCALE: 1" = 1'-0"



* SECTION A-A AT SPANS 1 & 4
SCALE: 1" = 1'-0"



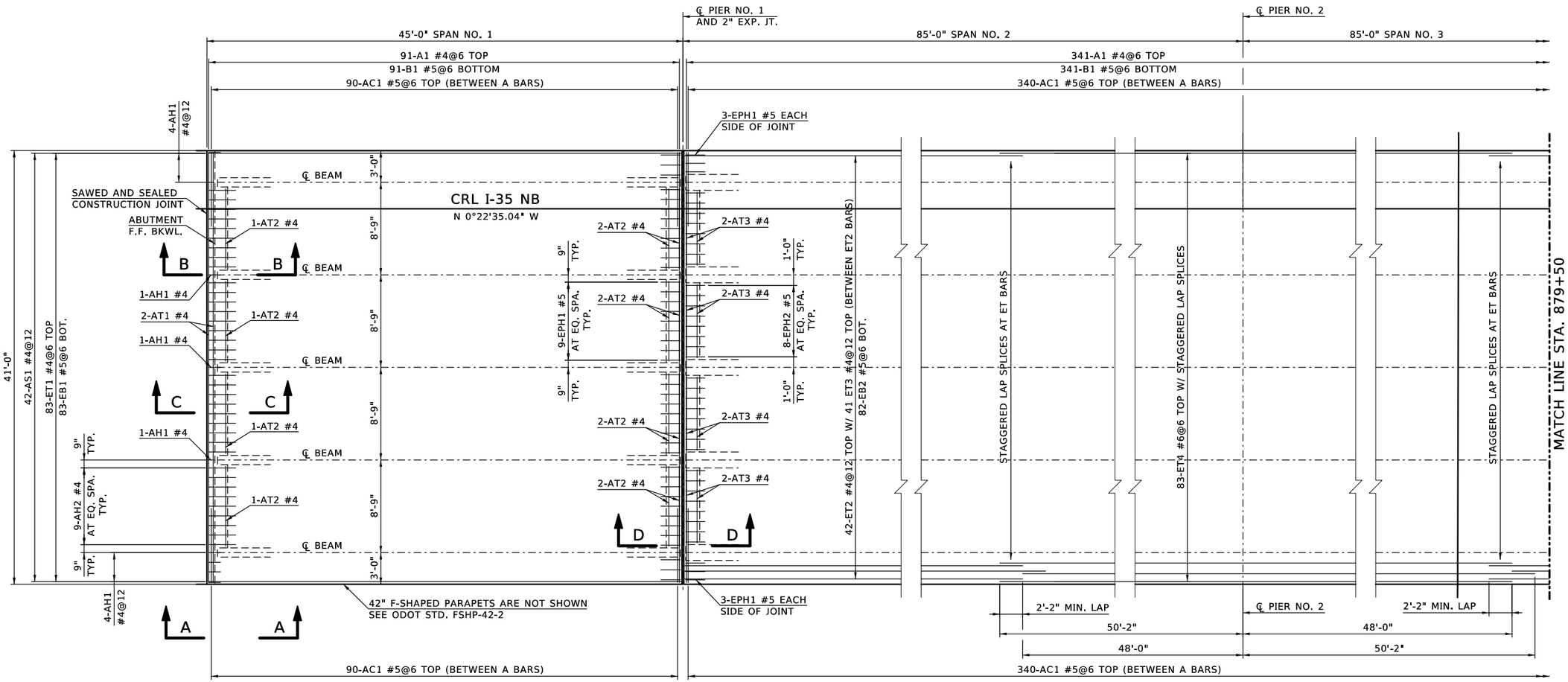
* SECTION B-B AT SPANS 1 & 4
SCALE: 1" = 1'-0"

NOTE
ALL BOLTED CONNECTIONS SHALL USE 1" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS.
THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED.
ALL BOLT HOLES SHALL BE 1 1/16" DIA. WITH A MIN. 2" EDGE DISTANCE UNLESS NOTED OTHERWISE.

BRIDGE B

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	DIAPHRAGM DETAILS
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B055



DECK REINFORCEMENT PLAN

SUPERSTRUCTURE QUANTITIES

ITEM	UNIT	TOTAL
SAW-CUT GROOVING	SY	961.4
SEALED EXPANSION JOINT	LF	84.00
42" F-SHAPED PARAPET	LF	520.0
STRUCTURAL STEEL M270 GRADE 50W	LB	289480
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	15
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	20
SPECIAL CONCRETE FINISH	SY	498
CLASS AA CONCRETE	CY	279.6
EPOXY COATED REINFORCING STEEL	LB	95840
WATER REPELLENT (VISUALLY INSPECTED)	SY	635
SEALER CRACK PREPARATION	LF	82
SEALER RESIN	GAL	0.6

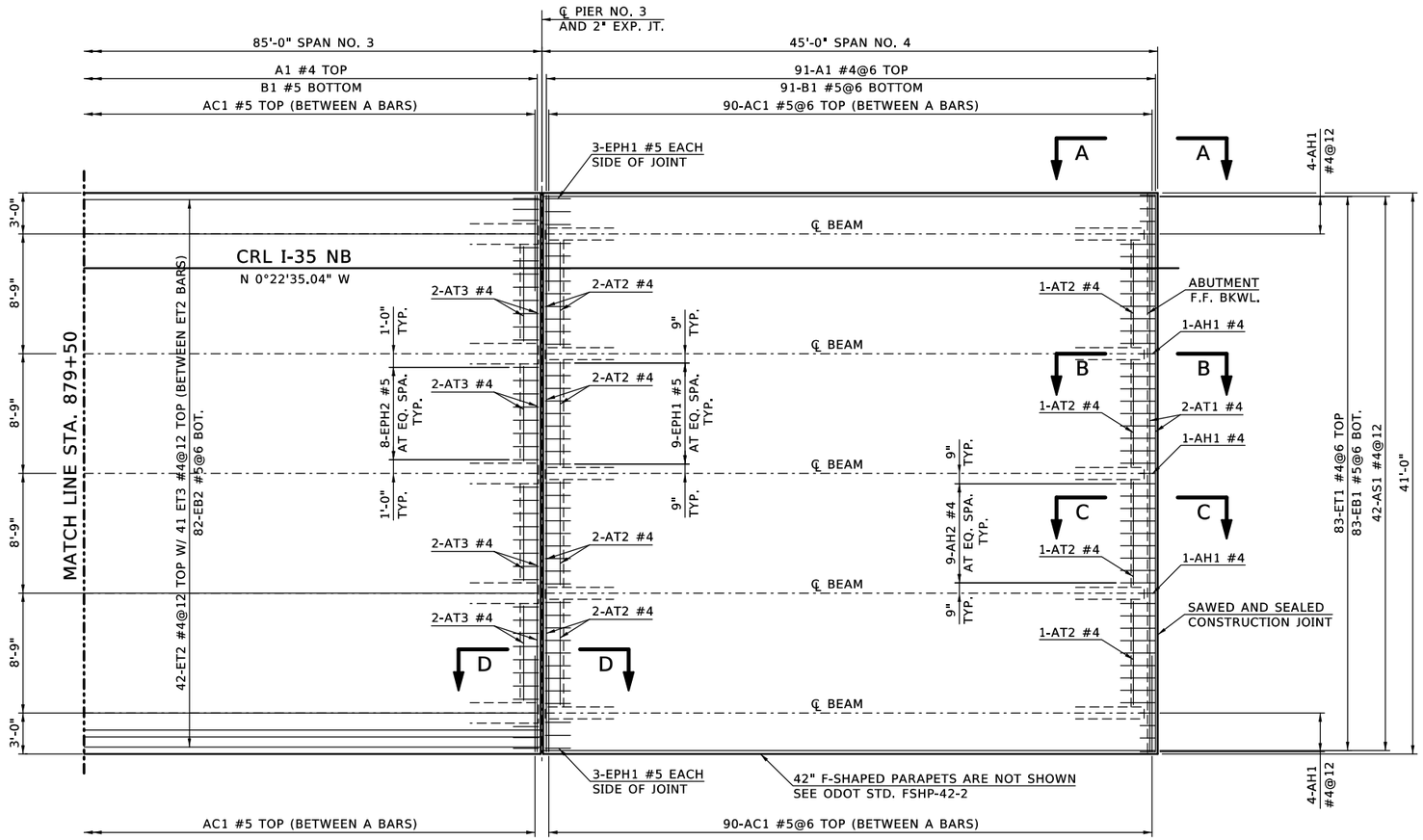
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B056



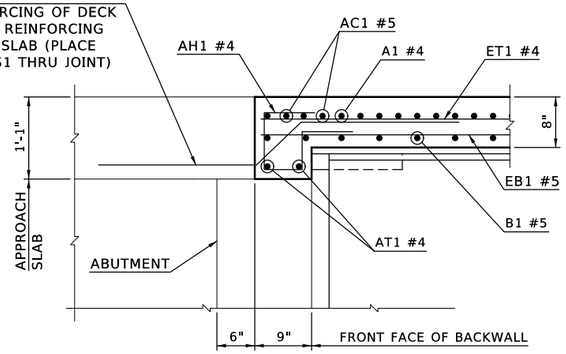
DECK REINFORCEMENT PLAN

BRIDGE B

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	SUPERSTRUCTURE DETAILS (2)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

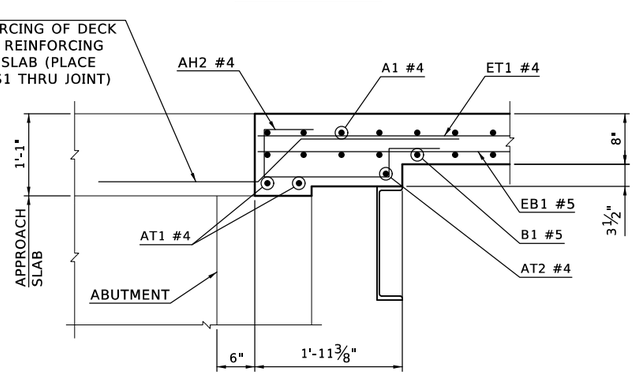
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B057

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)



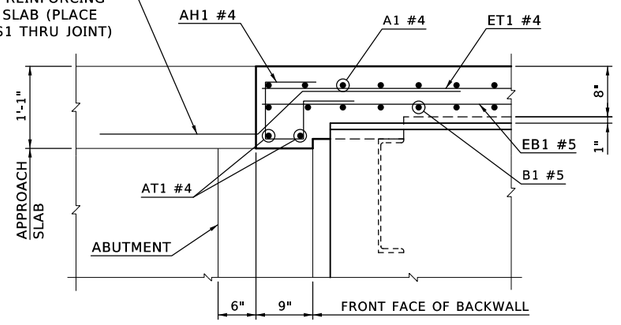
SECTION A-A

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)

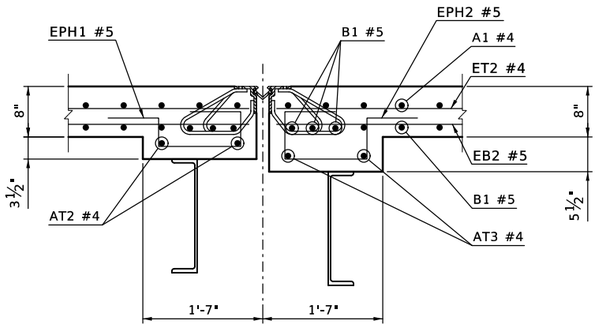


SECTION C-C

AS1 #4
TIE TO TOP REINFORCING OF DECK SLAB AND BOTTOM REINFORCING OF THE APPROACH SLAB (PLACE BOTTOM LEG OF AS1 THRU JOINT)



SECTION B-B



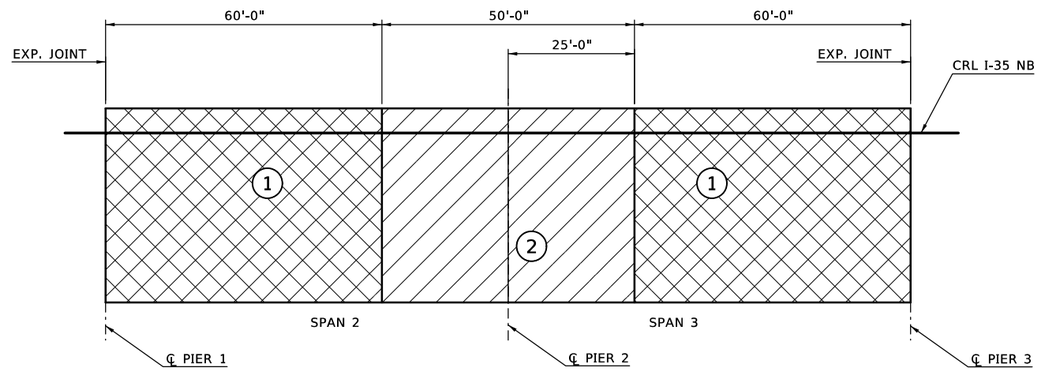
SECTION D-D

SUPERSTRUCTURE BAR LIST
(ONE REQUIRED)

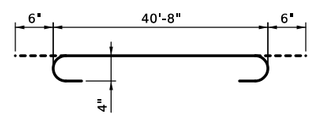
EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
A1	#4	523	BNT.	41'-8"	
AC1	#5	1040	BNT.	7'-7"	
AH1	#4	22	BNT.	3'-1"	
AH2	#4	72	BNT.	4'-0"	
AS1	#4	84	BNT.	5'-0"	
AT1	#4	4	STR.	40'-8"	
AT2	#4	24	STR.	7'-7"	
AT3	#4	16	STR.	6'-11"	
AT3	#4	16	STR.	6'-11"	
B1	#5	527	STR.	40'-8"	
EB1	#5	166	STR.	44'-9"	
EB2	#5	83	STR.	179'-5"	SEE NOTE 1
EPH1	#5	96	BNT.	3'-9"	
EPH2	#5	64	BNT.	4'-1"	
ET1	#4	166	STR.	44'-9"	
ET2	#4	83	STR.	37'-0"	
ET3	#4	83	STR.	39'-2"	
ET4	#6	83	STR.	102'-0"	SEE NOTE 2
FS2	#5	520	BNT.	7'-4"	SEE NOTE 3

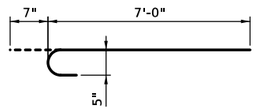
NOTES:
1. INCLUDES 3 - 39" MIN. LAPS
2. INCLUDES 1 - 46" MIN. LAP
3. SEE ODOT STD. FSHP-42-2



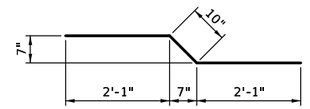
PLAN - DECK POURING SEQUENCE - SPANS 2 AND 3



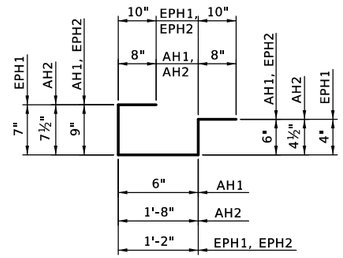
A1 #4 X 41'-8"



AC1 #5 X 7'-7"



AS1 #4 X 5'-0"



AH1 #4 X 3'-1"
AH2 #4 X 4'-0"
EPH1 #5 X 3'-9"
EPH2 #5 X 4'-1"

POURING SEQUENCE NOTES:

1. THE DECK SLAB IS DIVIDED INTO SECTIONS 1 AND 2 BETWEEN CONSTRUCTION JOINTS AS SHOWN. THE CONCRETE SHALL BE POURED IN EACH SECTION OF THE DECK SLAB IN THE NUMERICAL SEQUENCE INDICATED. SECTIONS OF THE DECK SLAB WITH THE SAME NUMBER MAY BE POURED IN ANY ORDER. NO SECTION SHALL BE POURED BEFORE THE ADJACENT SECTION(S) HAVE BEEN IN PLACE FOR AT LEAST 48 HOURS.
2. ALL CONSTRUCTION JOINTS WITHIN THE DECK SLAB SHALL BE SEALED USING HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. ALL COST OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". ALL COST OF EQUIPMENT AND LABOR FOR THE INSTALLATION OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION".
3. IN THE EVENT OF AN EMERGENCY, POURING OF THE DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER.
4. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THRU ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK SLAB WITHIN 15' OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT.
5. DO NOT SAW-CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.
6. DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER HEAVY EQUIPMENT LOADS TO THE BEAMS UNTIL THE DIAPHRAGMS HAVE BEEN PLACED AND ALL BOLTS HAVE BEEN TIGHTENED.

BRIDGE B

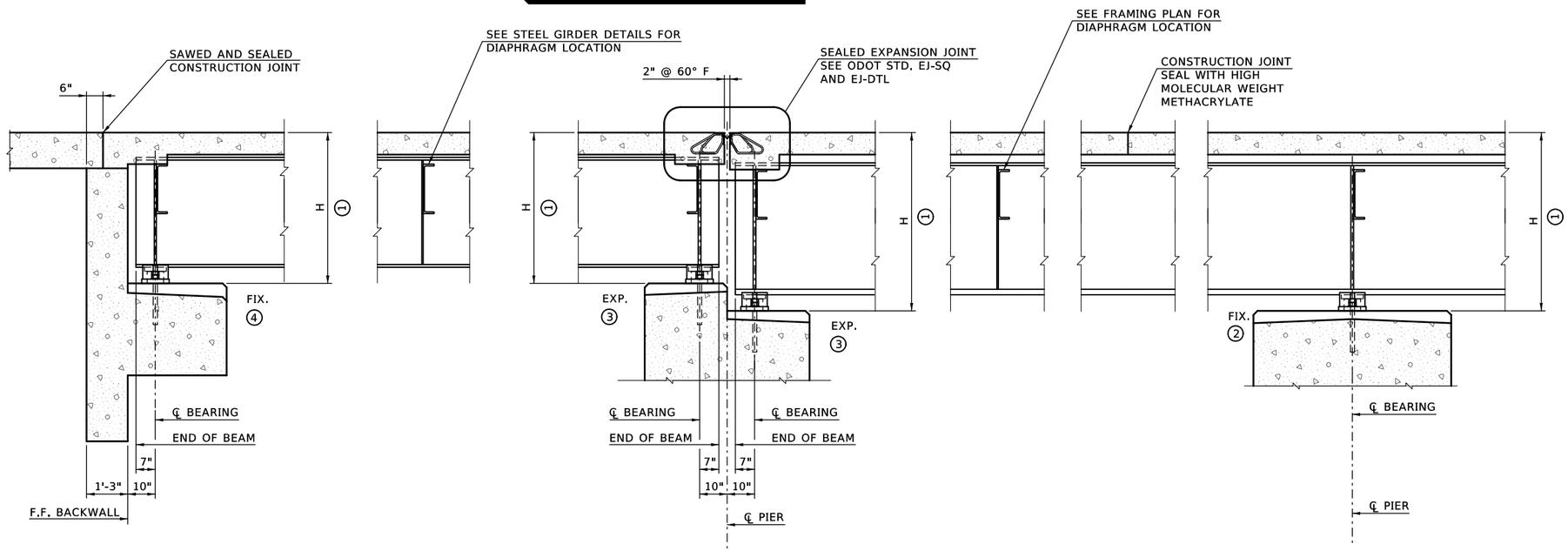
DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B058

NOTE: DO NOT SAW-CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS



ABUTMENT

PIER 1
(PIER 3 IS OPPOSITE HAND)

PIER 2

LONGITUDINAL SECTION

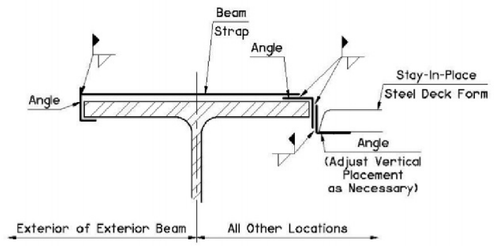
SCALE: ½" = 1'-0"

EXPANSION DEVICE SETTING TABLE AT PIER NO. 1 AND 3 (PERPENDICULAR TO JOINT)	
TEMPERATURE (°F)	JOINT OPENING (in)
0.0	2 1/2
15.0	2 3/8
30.0	2 1/4
45.0	2 1/8
60.0	2
75.0	1 7/8
90.0	1 3/4
105.0	1 5/8
120.0	1 1/2

HEIGHT DIMENSION	
LOCATION	H
ABUTMENT NO.1	3'-8 5/16"
PIER NO. 1 DWN STA.	3'-8 5/16"
PIER NO. 1 UP STA.	4'-4 1/8"
PIER NO. 2	4'-5 1/8"
PIER NO. 3 DWN STA.	4'-4 1/8"
PIER NO. 3 UP STA.	3'-8 5/16"
ABUTMENT NO. 2	3'-8 5/16"

NOTES:

1. EPOXY-COAT OR GALVANIZE STEEL ITEMS USED TO FACILITATE CONSTRUCTION, SUCH AS DECK FORM HANGER ASSEMBLIES, TY-BAR CLIPS, INSERT WELD ANCHORS, OR OTHER APPURTENANCES, THAT WILL REMAIN IN PLACE IN THE DECK SLAB. EPOXY-COAT IN ACCORDANCE WITH AASHTO M284 OR GALVANIZE IN ACCORDANCE WITH AASHTO M111.
2. IN THE EVENT OF AN EMERGENCY, HALT THE PLACEMENT OF CONCRETE BY FORMING A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC OR AS DIRECTED BY THE ENGINEER. DO NOT PLACE ANY HEAVY EQUIPMENT ON THE FINISHED DECK SLAB WITHIN 5 FEET OF ANY CONSTRUCTION JOINT UNTIL THE CONCRETE IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT AND AT LEAST 48 HOURS HAS ELAPSED SINCE CONCRETE PLACEMENT. CONSTRUCTION JOINTS AT THE CLOSURE POURS IN THE DECK SLAB SHALL NOT BE KEYED.
3. FOR STAY-IN-PLACE DECK FORMS DETAILS AND NOTES SEE ODOT STANDARD B40-C-LSECT-RB.
4. SEAL ALL DECK SLAB CONSTRUCTION JOINTS WITH HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE ALL COST OF EQUIPMENT AND LABOR FOR THE INSTALLATION OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION". INCLUDE ALL COSTS OF THE HIGH MOLECULAR WEIGHT METHACRYLATE SEALER IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". THE PREPARATION AND SEALER OF EMERGENCY CONSTRUCTION JOINTS SHALL NOT BE MEASURED FOR PAYMENT.



STAY-IN-PLACE STEEL DECK FORM FLANGE CONNECTION DETAIL

NOTE:
DO NOT WELD TO THE TOP FLANGE OR STUDS. REPORT ANY ARC STRIKE, WELD SPLATTER OR WELDING ON TOP FLANGE TO BRIDGE ENGINEER IMMEDIATELY.

(1) DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT ℄ BEARING.

(2) FIXED DESIGNATION INDICATES CONTINUOUS DECK SLAB OVER PIER. INSTALL FIXED BEARING ASSEMBLIES AT FIXED LOCATIONS. SEE BEARING DETAILS SHEET.

(3) EXPANSION DESIGNATION INDICATES SEALED EXPANSION JOINT IN DECK SLAB OVER PIER. EXPANSION PIER REQUIRES EXPANSION BEARING ASSEMBLIES. SEE ODOT STD. B40-C-BRG-RB, AND BEARING DETAILS SHEET.

(4) FIXED DESIGNATION INDICATES FIXED JOINT IN DECK SLAB TO APPROACH SLAB. FIXED ABUTMENT REQUIRES FIXED BEARING ASSEMBLIES. SEE ODOT STD. B40-C-BRG-RB, AND BEARING DETAILS SHEET.

INSTALL ALL DIAPHRAGMS AND TIGHTEN ALL BOLTS BEFORE PLACING CONCRETE FOR THE DECK SLAB OR APPLYING OTHER MASSIVE LOADS TO THE BEAMS.

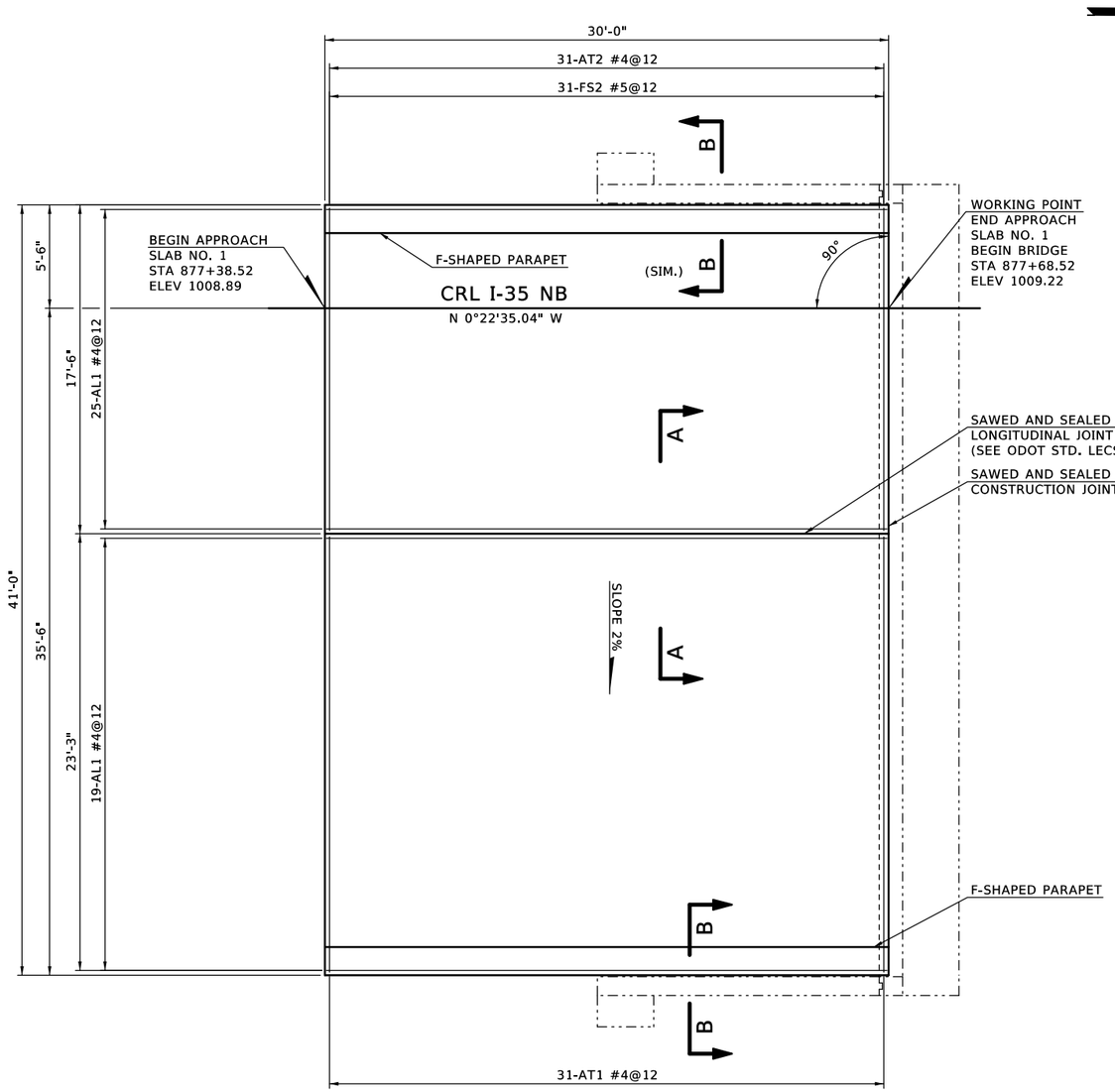
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

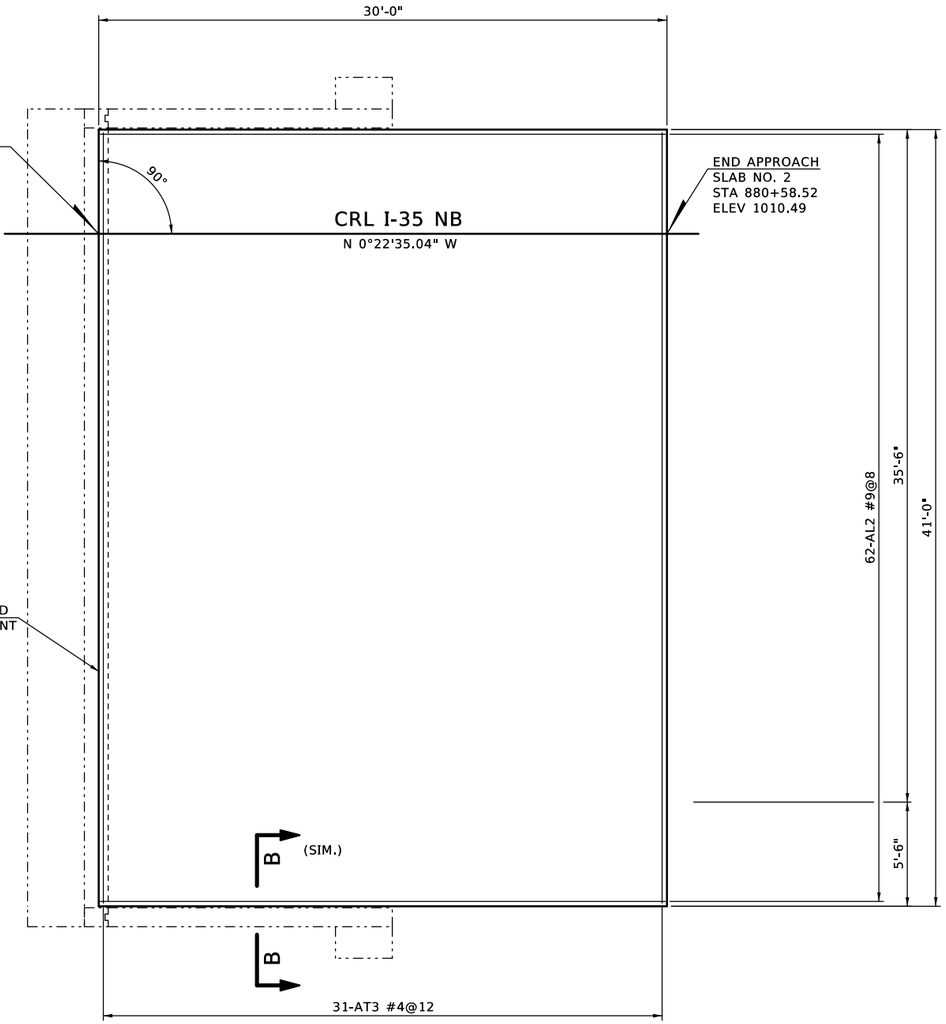
LONGITUDINAL SECTION

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B059



TOP REINFORCING MAT DETAIL

APPROACH SLAB NO. 1



BOTTOM REINFORCING MAT DETAIL

APPROACH SLAB NO. 2

NOTES:

1. THE DEPARTMENT CONSIDERS THE COST OF CLASS AA CONCRETE, REINFORCING STEEL (INCLUDING FS2 BARS), BACKER ROD, RAPID CURE JOINT SEALANT, POLYSTYRENE AND POLYETHYLENE SHEETING TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF APPROACH SLAB.
2. THERE IS AN ESTIMATED 98.8 C.Y. OF CLASS AA CONCRETE AND AN ESTIMATED 18,640 LBS. OF EPOXY COATED REINFORCING STEEL IN BOTH APPROACH SLABS.

APPROACH SLAB QUANTITIES

(1)(2) ITEM	UNIT	SLAB NO. 1	SLAB NO. 2	TOTAL
APPROACH SLAB	SY	136.7	136.7	273.4
SAW-CUT GROOVING	SY	106.4	106.4	212.8
42" F-SHAPED PARAPET	LF	60.0	60.0	120.0
SPECIAL CONCRETE FINISH	SY	53	53	106
WATER REPELLENT (VISUALLY INSPECTED)	SY	53	53	106

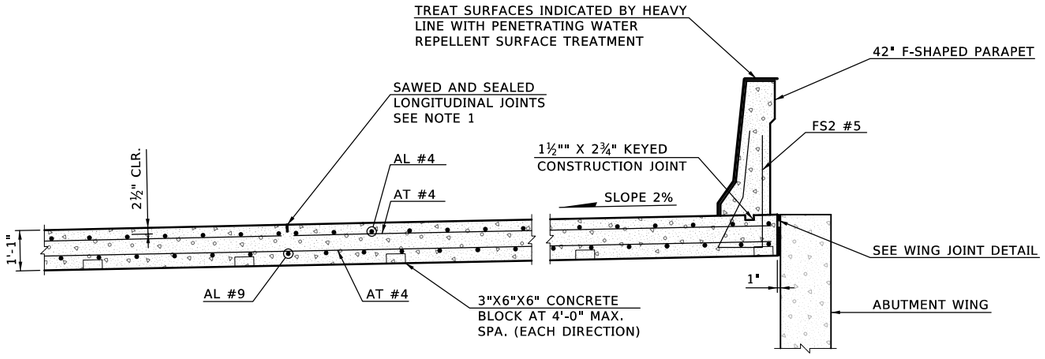
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B060



SECTION A-A

SECTION B-B

NOTES:

1. PLACE REINFORCING IN THE TOP OF THE APPROACH SLAB 2" FROM EITHER SIDE OF SAWED AND SEALED LONGITUDINAL JOINT. FOR ADDITIONAL DETAILS OF LONGITUDINAL JOINT, SEE STD. LECS-4.

2. FOR ADDITIONAL DETAIL OF 42" F-SHAPED CONCRETE PARAPET, SEE ODOT STD. FSHP-42-2.

APPROACH SLAB BAR LIST

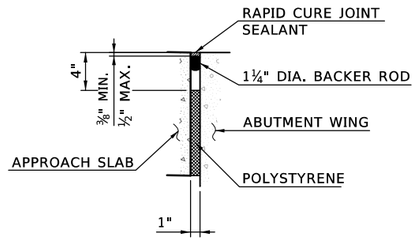
(ONE SHOWN, TWO REQUIRED)

EPOXY COATED REINFORCING

MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
AT1	#4	31	STR.	17'-2"	
AT2	#4	31	STR.	23'-2"	
AT3	#4	31	STR.	40'-8"	
AL1	#4	44	STR.	29'-10"	
AL2	#9	62	STR.	29'-10"	
FS2	#5	62	BNT.	7'-4"	SEE NOTE 1

NOTES:

1. FOR FS2 #5 BEND DETAIL SEE ODOT STD. FSHP-42-2



WING JOINT DETAIL

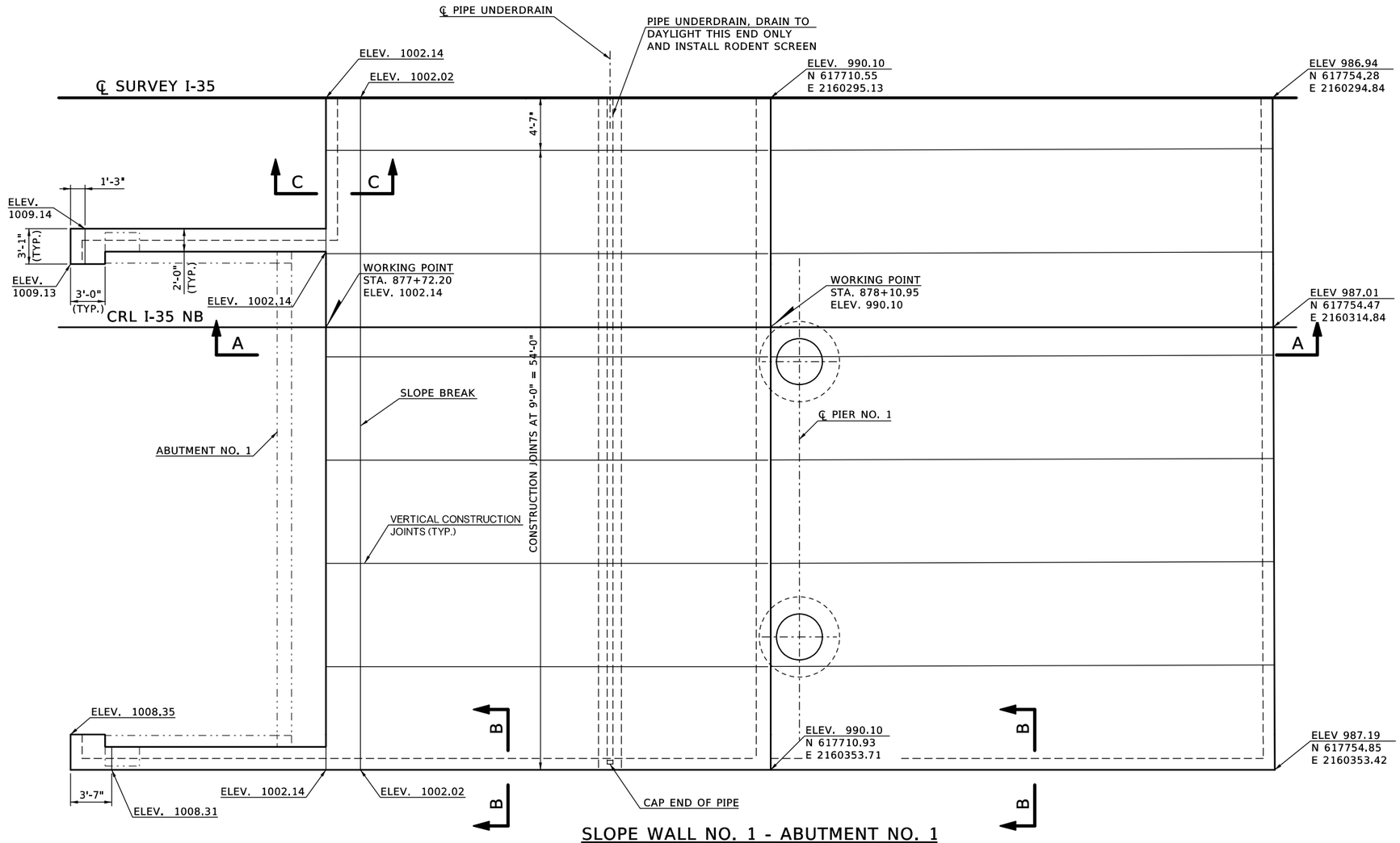
BRIDGE B

DESIGN	STF	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B061



SLOPE WALL NO. 1 - ABUTMENT NO. 1

SLOPEWALL QUANTITIES				
ITEM	UNIT	SLOPEWALL NO. 1	SLOPEWALL NO. 2	TOTAL
SLOPE WALL (5")	SY	586	581	1167
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	59	59	118
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	20	20	40

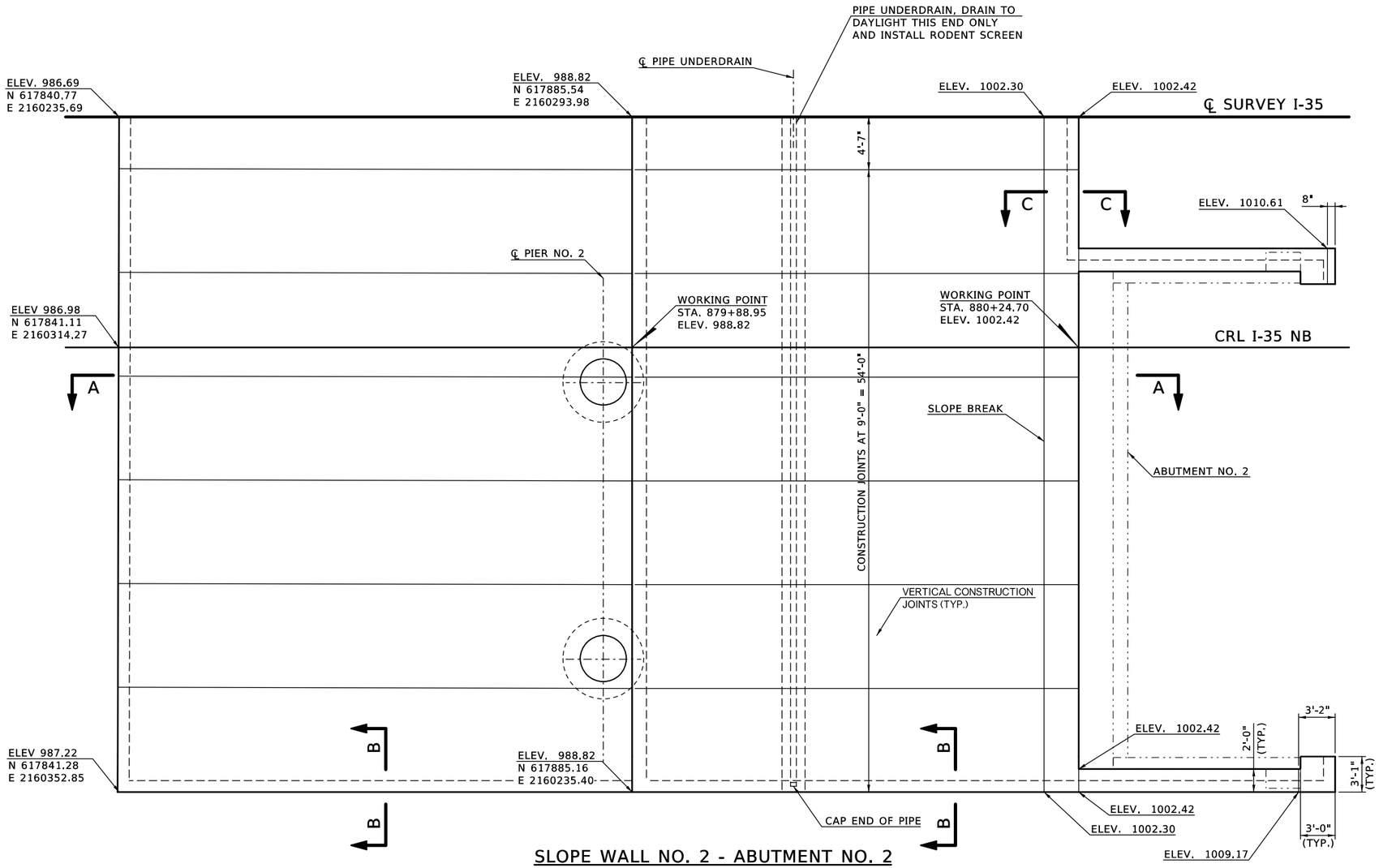
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SLOPE WALL DETAILS (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B062



SLOPE WALL NO. 2 - ABUTMENT NO. 2

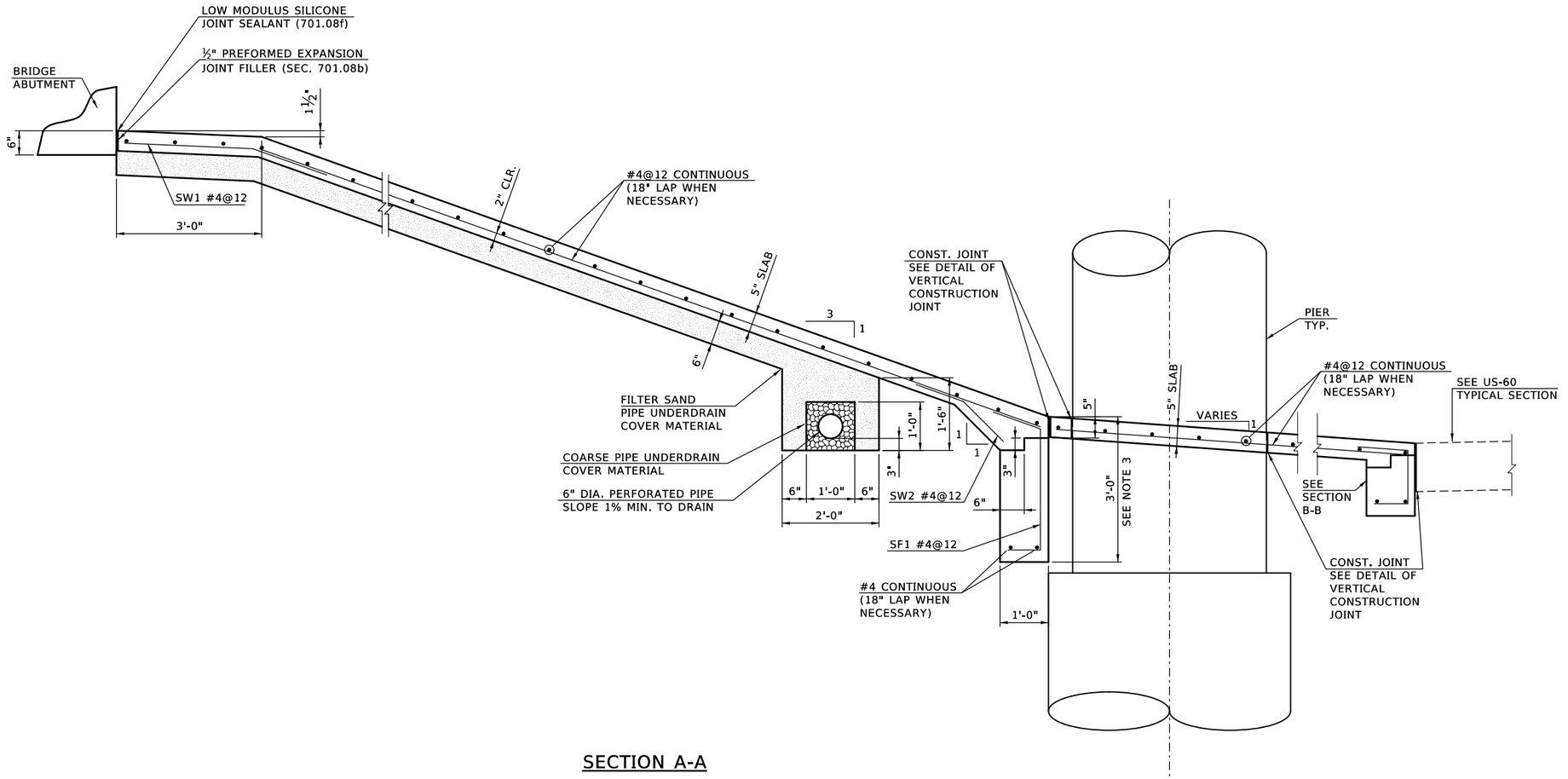
BRIDGE B

DESIGN	MKR	2/18
DRAWN	JT	2/18
CHECKED	STF	2/18
APPROVED	SAK	6/18
SQUAD	BENHAM	

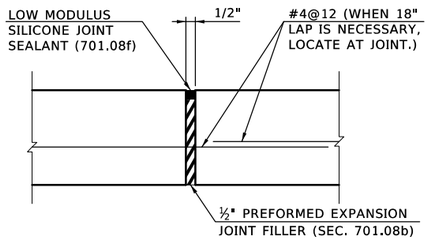
OKLAHOMA DEPARTMENT OF TRANSPORTATION

SLOPE WALL DETAILS (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B063

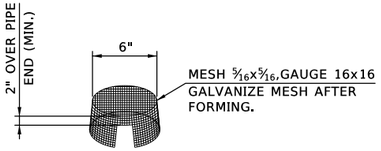


SECTION A-A



DETAIL OF VERTICAL CONSTRUCTION JOINT

(SEE ODOT STD. LECS-4)
(HORIZONTAL JOINT SIMILAR)



NOTE;

RODENT SCREEN SHALL BE PREFORMED BY THE MANUFACTURER AND DELIVERED TO THE CONSTRUCTION SITE FORMED TO FIT 6" DIA. PIPE DRAIN. SECURE SCREEN TO PIPE WITH SCREWS.

RODENT SCREEN DETAIL

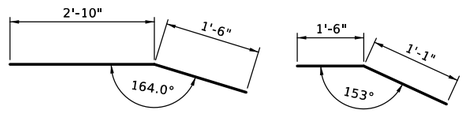
NOTES:

1. CLASS A CONCRETE:
   ALL CONCRETE IN THE SLOPE WALL SHALL BE CLASS A CONCRETE AND SHALL BE POURED IN THE DRY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 509 AND 610 OF THE STANDARD SPECIFICATIONS. COARSE AGGREGATE FOR THIN SECTION CONCRETE (701.06) MAY BE USED.

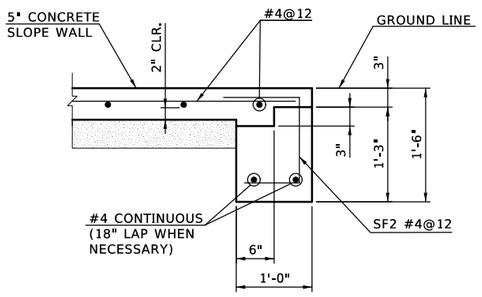
2. CONSTRUCTION JOINTS:
   NO ADDITIONAL HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN THE SLOPE WALL. FINAL NUMBER AND LOCATION OF VERTICAL CONSTRUCTION JOINTS WILL BE DETERMINED BY THE ENGINEER. JOINTS WILL HAVE A MAXIMUM SPACING OF 10'-0" MEASURED ALONG THE TOE OF THE SLOPE WALL.

3. BASIS OF PAYMENT:
   CONCRETE SLOPE WALL WILL BE MEASURED FROM EDGE TO EDGE AND FROM TOP TO BOTTOM OF THE TOP SURFACE OF THE SLOPE WALL, FULL FACE OF THE TOE OF THE SLOPEWALL, AND FULL FACE OF TURNDOWN AT PIERS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:
   510(C) SLOPE WALL (5") S.Y.
   WHICH SHALL INCLUDE ALL COSTS OF JOINT SEALER AND FILLER, REINFORCING STEEL, CONCRETE, EXCAVATION, LABOR, FORMS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN AND SPECIFIED.

4. UNDERDRAIN MATERIALS WILL BE MEASURED BY VOLUME AND LENGTH AS SHOWN ON THE PLANS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:
   613(I) 6" NON-PERF. PIPE UNDERDRAIN RND. L.F.
   613(H) 6" PERFORATED PIPE UNDERDRAIN ROUND L.F.
   WHICH SHALL INCLUDE ALL COSTS OF FILTER SAND, COARSE MATERIAL, PERFORATED PIPE, EXCAVATION, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN AND SPECIFIED.



SW1 #4 X 4'-4" SW2 #4 X 2'-7"



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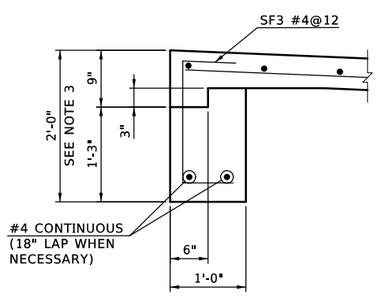
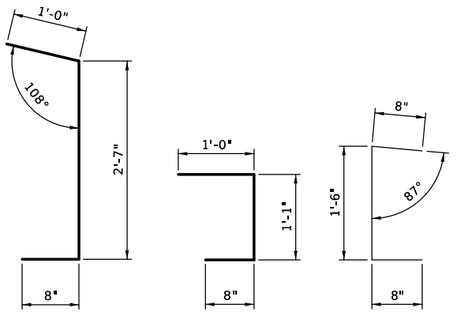


SECTION C-C



SF1 #4 X 4'-3" SF2 #4 X 2'-9" SF3 #4 X 2'-10"

BRIDGE B

DESIGN	MKR	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JT	2/18	
CHECKED	STF	2/18	SLOPE WALL DETAILS (3)
APPROVED	SAK	6/18	
SQUAD	BENHAM		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. B064

7/26/2018

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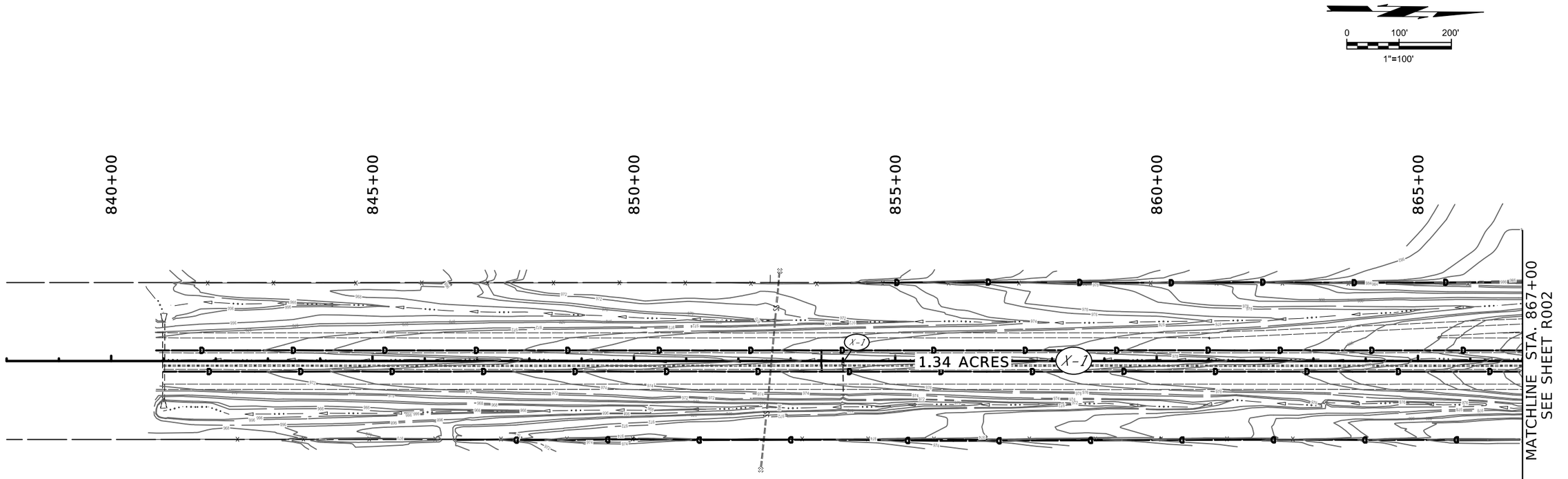


DRAINAGE STRUCTURE DESIGN RECORD

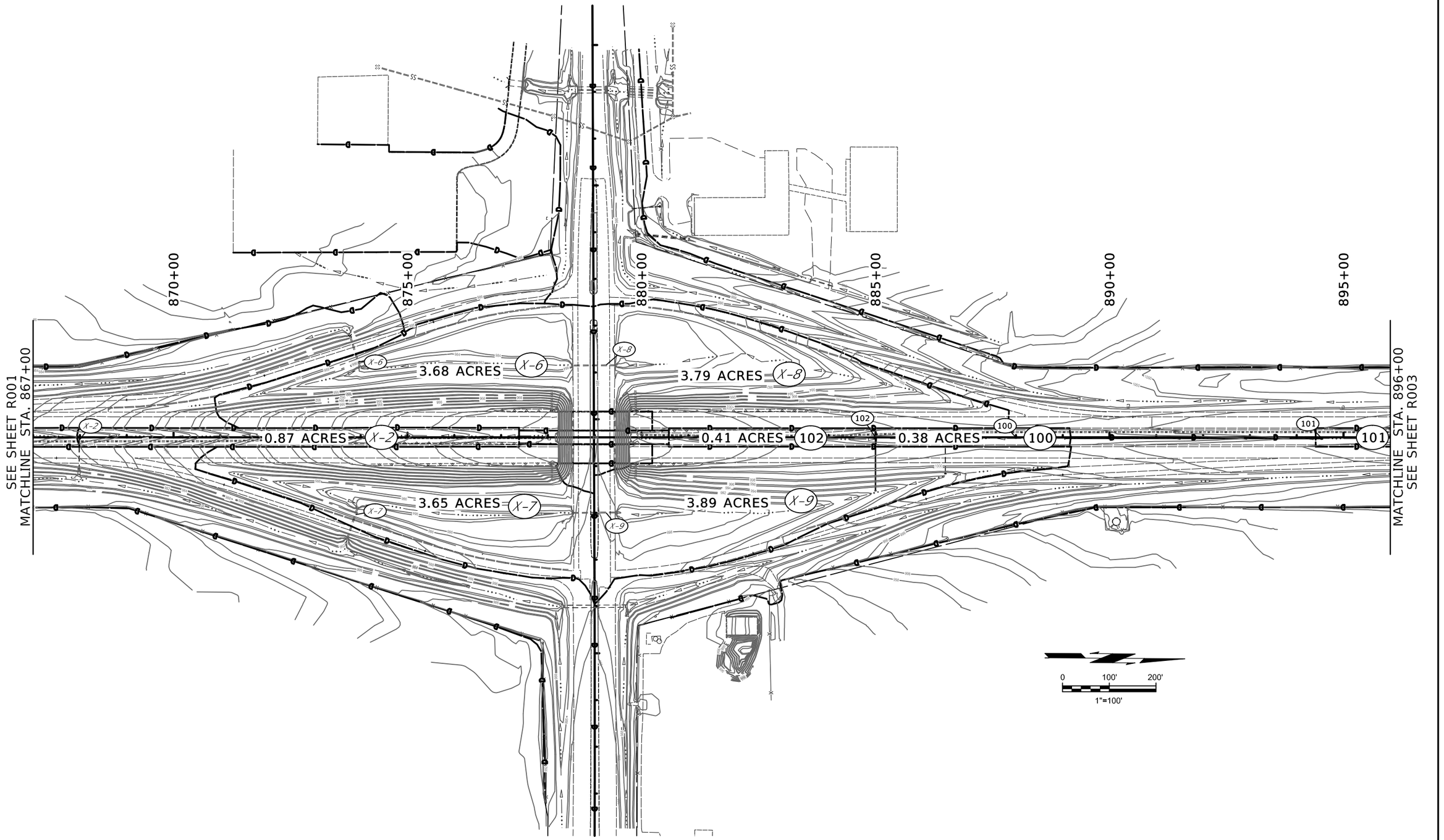
STR. NO.	DESIGN YEAR	ALIGNMENT	STATION	DESCRIPTION	DRAINAGE AREA	ANTICIPATED LAND USE	C, RUNOFF COEFFICIENT WEIGHTED (ANTICIPATED)	AVG. SLOPE OF WATERSHED	LENGTH OF OVERLAND FLOW	SLOPE OF OVERLAND FLOW	LENGTH OF CHANNEL FLOW	SLOPE OF CHANNEL	Tc, TIME OF CONCENTRATION	INTENSITY OF DESIGN YEAR RAINFALL		DESIGN YEAR DISCHARGE		Tw, DESIGN TAILWATER	ELEV. TOP MANHOLE OR GRATE	INLET FL IN	INLET FL OUT	CAPTURED "Q"	TOTAL "Q" IN STRUCTURE	CAPTURED "Q"	TOTAL "Q" IN STRUCTURE	HYDRAULIC GRADELINE		FL INLET	FL OUTLET	STRUCTURE SLOPE	MAX ALLOWABLE HEADWATER	FLOW VELOCITY		TYPE OF HYDRAULIC CONTROL	COMMENTS
														10	50	10	50					10-YEAR		50-YEAR		10-YEAR	50-YEAR					10	50		
					ACRE			%	FT	%	FT	%	MIN	IN/HR		CFS		FT	ELEV			Cfs.	Cfs.	Cfs.	Cfs.	FT	FT	ELEV	ELEV	FT/FT	ELEV	FT/S			
100	50	I-35	888+00.00	CONST. INLET (SMD-TYPE 2) W/ 18" X 298' LG RCP SD	0.38	80.96% PASTURE, 19.04% PAVED	0.28	2.40	20.00	18.50	300.00	1.33	10.00	6.24	8.22	0.66	0.86	---	998.38	995.80	995.70	2.47	2.47	3.34	3.34	996.79	996.84	---	---	0.005	999.88	3.77	4.09	INLET	
101	50	I-35	894+53.75	CONST. INLET (SMD-TYPE 2) W/ 22" X 13" X 549' LG RCPA SD AND PCES	1.41	81.31% PASTURE, 18.69% PAVED	0.30	0.46	21.68	4.80	1541.11	0.40	25.90	4.21	5.55	1.65	2.21	0.62	1002.23	---	999.67	1.65	1.65	2.21	2.21	1000.42	1000.45	---	998.90	0.001	1002.40	2.06	2.25	INLET	
102	50	I-35	885+00.00	CONST. INLET (SMD-TYPE 2) W/ 18" X 114' LG RCP XD AND PCES	0.41	70.44% PASTURE, 29.56% PAVED	0.35	1.34	14.00	4.71	460.00	1.24	10.00	6.24	8.22	0.90	1.18	0.81	1002.41	994.21	992.97	0.74	3.21	0.91	4.25	995.26	995.31	---	992.40	0.005	1003.91	4.04	4.34	INLET	
X-1	50	I-35	854+00.00	EX. 18" X 56' LG RCP XD	1.34	79.23% PASTURE, 20.77% PAVED	0.30	0.88	20.22	9.94	1393.48	0.75	19.50	4.82	6.35	1.88	2.49	1.10	---	---	---	---	---	---	---	---	---	973.12	972.12	0.018	975.70	1.37	1.78	OUTLET	
X-2	50	I-35	867+98.00	EX. CDI W/ 18" X 70' LG RCP XD	0.94	80.24% PASTURE, 19.76% PAVED	0.28	2.16	24.43	2.17	997.70	2.16	14.70	5.43	7.16	1.45	1.90	0.63	983.83	---	980.93	---	---	---	---	---	---	---	980.75	0.003	985.70	2.52	2.71	INLET	
X-4	50	I-35	910+68.60	EX. CDI W/ 18" CMP STUBBED INTO X-5	1.92	82.94% PASTURE, 17.06% PAVED	0.28	0.47	21.53	3.99	2056.24	0.43	29.70	3.92	5.16	2.02	2.69	0.56	1008.67	---	1004.97	---	---	---	---	---	---	---	1004.60	0.023	1009.70	3.70	4.09	INLET	
X-5	50	I-35	910+48.80	EX. 4' X 2' X 127' LG RCB XD	3.74	74.45% PASTURE, 25.55% PAVED	0.32	0.72	108.33	1.65	1165.67	0.63	26.90	4.13	5.45	4.96	6.53		---	---	---	---	---	---	---	---	---	1004.84	1004.35	0.0039	1009.00			OUTLET	
X-6	50	I-35	873+87.00	EX. 30" X 67' LG RCP SD	3.68	70.95% PASTURE, 29.05% PAVED	0.42	2.81	316.51	6.26	445.40	0.35	15.30	5.36	7.05	8.32	10.95	1.11	---	---	---	---	---	---	---	---	---	981.35	981.00	0.005	988.45	4.79	5.22	OUTLET	
X-7	50	I-35	873+81.00	EX. 30" X 96' LG RCP SD	3.65	68.49% PASTURE, 31.51% PAVED	0.44	3.77	234.07	9.86	419.14	0.37	15.60	5.31	6.99	8.35	11.05	1.11	---	---	---	---	---	---	---	---	---	982.46	982.41	0.001	990.40	4.80	5.23	OUTLET	
X-8	50	US 60	23+84.80	EX. 24" X 91' LG RCP XD	3.79	67.46% PASTURE, 32.54% PAVED	0.44	2.16	172.97	2.14	731.41	2.17	13.70	5.59	7.37	9.32	12.28	1.26	---	---	---	---	---	---	---	---	---	982.06	981.94	0.001	986.15	5.32	5.89	OUTLET	
X-9	50	US 60	26+99.50	EX. 24" X 91' LG RCP XD	3.89	68.28% PASTURE, 31.72% PAVED	0.44	1.78	46.57	3.24	970.90	1.71	12.10	5.85	7.70	9.89	13.07	1.30	---	---	---	---	---	---	---	---	---	983.38	983.05	0.004	987.60	5.43	6.04	OUTLET	

LEGEND

- DRAINAGE BOUNDARY
- XX.XX ACRES — DRAINAGE AREA
- (100) — DRAINAGE AREA NUMBER
- (100) — DRAINAGE STRUCTURE NUMBER

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**DRAINAGE AREA MAP (1)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R001

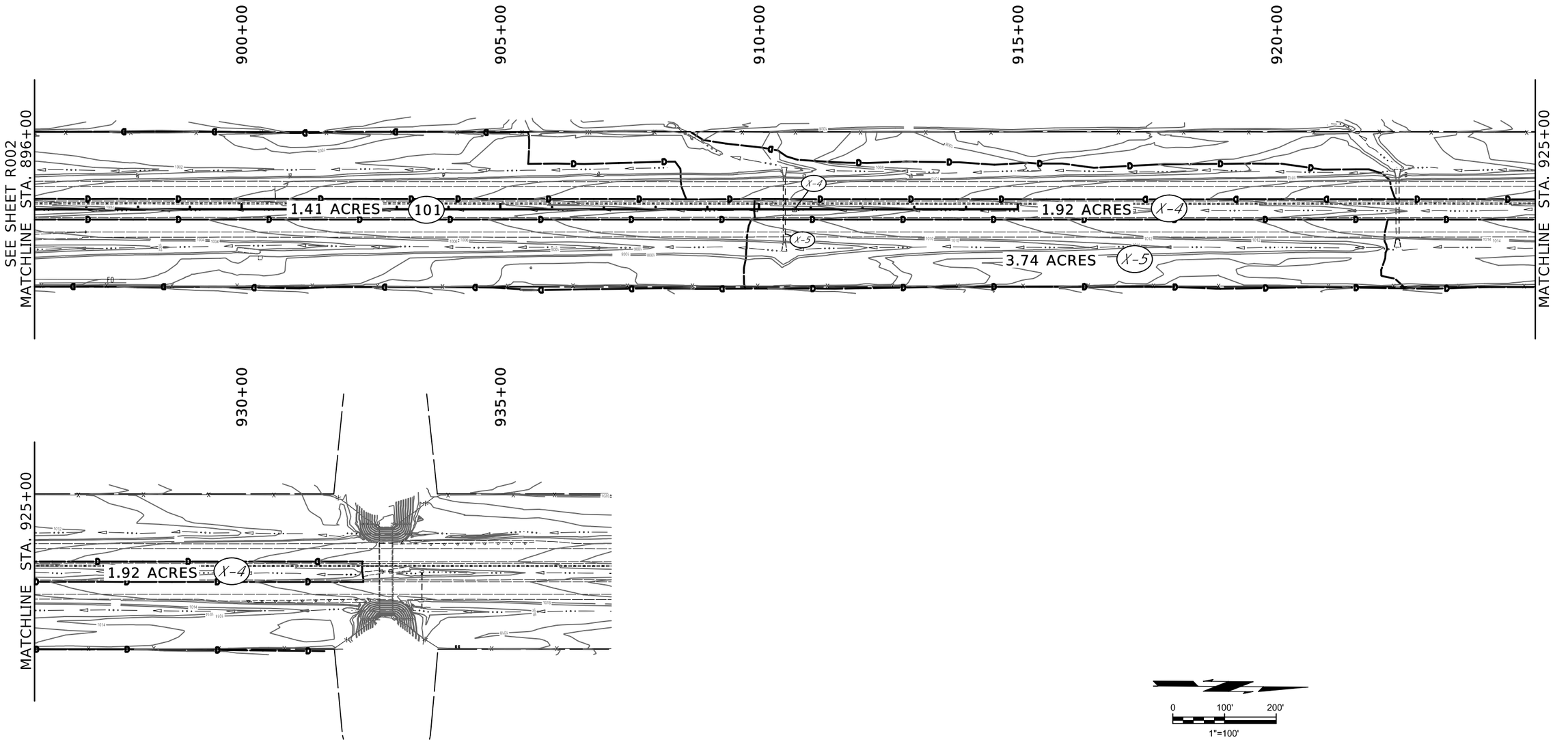


LEGEND

——D——	DRAINAGE BOUNDARY
XX.XX ACRES	DRAINAGE AREA
(100)	DRAINAGE AREA NUMBER
100	DRAINAGE STRUCTURE NUMBER

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**DRAINAGE AREA MAP (2)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R002



LEGEND

—D—	DRAINAGE BOUNDARY
XX.XX ACRES	DRAINAGE AREA
(100)	DRAINAGE AREA NUMBER
(100)	DRAINAGE STRUCTURE NUMBER

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			DRAINAGE AREA MAP (3)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R003

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: I-35 FROM APPROXIMATLEY 1000 FEET SOUTH AND 1000 FEET NORTH FROM US-60.

PROJECT DESCRIPTION: BRIDGE AND APPROACHES FOR I-35 OVER US-60.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1) PLACE TEMPORARY SEDIMENT CONTROL DEVICES AT ALL OFF SITE DRAINAGE LOCATIONS.
2) PERFORM CLEARING & GRUBBING OPERATIONS, PRESERVING ANY EXISTING VEGETATION NOT IMPEDING CONSTRUCTION.
3) SALVAGE ALL AVAILABLE TOPSOIL IN THE AREA OF OPERATION AND STABILIZE THE STOCKPILED AREA.
4) AS GRADING OPERATIONS PROCEED, INSTALL TEMPORARY SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER. THESE DEVICES SHALL BE MAINTAINED AS REQUIRED BY THE O.D.O.T. STANDARD SPECIFICATIONS AND THE WEEKLY INSPECTION REPORTS.
5) PLACE TEMPORARY SEEDING AND/OR MULCHING OR PERMANENT GRASSING DEPENDING ON ULTIMATE SLOPES.
6) THE PERMANENT SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED AS DESCRIBED IN SECTIONS 230, 232, 233, & 234 OF THE O.D.O.T. STANDARD SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
7) IN AREAS WHERE PERMANENT SEDIMENT CONTROL DEVICES HAVE BEEN INSTALLED, THE TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

SOIL TYPE: SANDY LEAN CLAY

TOTAL AREA OF THE CONSTRUCTION SITE: 9.48 ACRES

ESTIMATED AREA TO BE DISTURBED: 5.42 ACRES

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 4.06 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 4.57 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.72

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36° 41'43"N; 97° 20'45"W

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: SALT FORK ARKANSAS RIVER

SENSITIVE WATERS OR WATERSHEDS: YES [ ] NO [X]

303(d) IMPAIRED WATERS: YES [X] NO [ ]

IF YES, LIST IMPAIRMENT: ENTEROCOCCI, LEAD, TURBIDITY

LOCATED IN A TMDL: YES [X] NO [ ]

LAKE THUNDERBIRD TMDL: YES [ ] NO [X]

MS4 ENTITY YES [ ] NO [X]

IF YES, LOCATION:

NOTE:
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS FOR THIS PROJECT. THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- [X] TEMPORARY SEEDING
- [X] PERMANENT SODDING, SPRIGGING OR SEEDING
- [X] VEGETATIVE MULCHING
- [ ] SOIL RETENTION BLANKET
- [X] PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- [X] STABILIZED CONSTRUCTION EXIT
- [X] TEMPORARY SILT FENCE
- [X] TEMPORARY SILT DIKES
- [ ] TEMPORARY FIBER LOG
- [ ] DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- [ ] DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- [ ] ROCK FILTER DAMS
- [ ] TEMPORARY SLOPE DRAIN
- [X] PAVED DITCH W/ DITCH LINER PROTECTION
- [ ] TEMPORARY DIVERSION CHANNELS
- [ ] TEMPORARY SEDIMENT BASINS
- [ ] TEMPORARY SEDIMENT TRAPS
- [X] TEMPORARY SEDIMENT FILTERS
- [X] TEMPORARY SEDIMENT REMOVAL
- [ ] RIP RAP
- [X] INLET SEDIMENT FILTER
- [ ] TEMPORARY BRUSH SEDIMENT BARRIERS
- [ ] SANDBAG BERMS
- [ ] TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- [X] HAUL ROADS DAMPENED FOR DUST CONTROL
- [X] LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- [X] EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

NO DISTURBED AREA TO ONE PROJECT OUTFALL EXCEEDS 5 ACRES.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

103.05	BONDING REQUIREMENTS
104.10	FINAL CLEANING UP
104.12	CONTRACTOR'S RESPONSIBILITY FOR WORK
104.13	ENVIRONMENTAL PROTECTION
106.08	STORAGE AND HANDLING OF MATERIAL
107.01	LAWS, RULES AND REGULATIONS TO BE OBSERVED
107.20	STORM WATER MANAGEMENT
220	MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL
221	TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 13, 2017.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			STORM WATER MANAGEMENT PLAN
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R004

REVISED 08 / 18 / 2017

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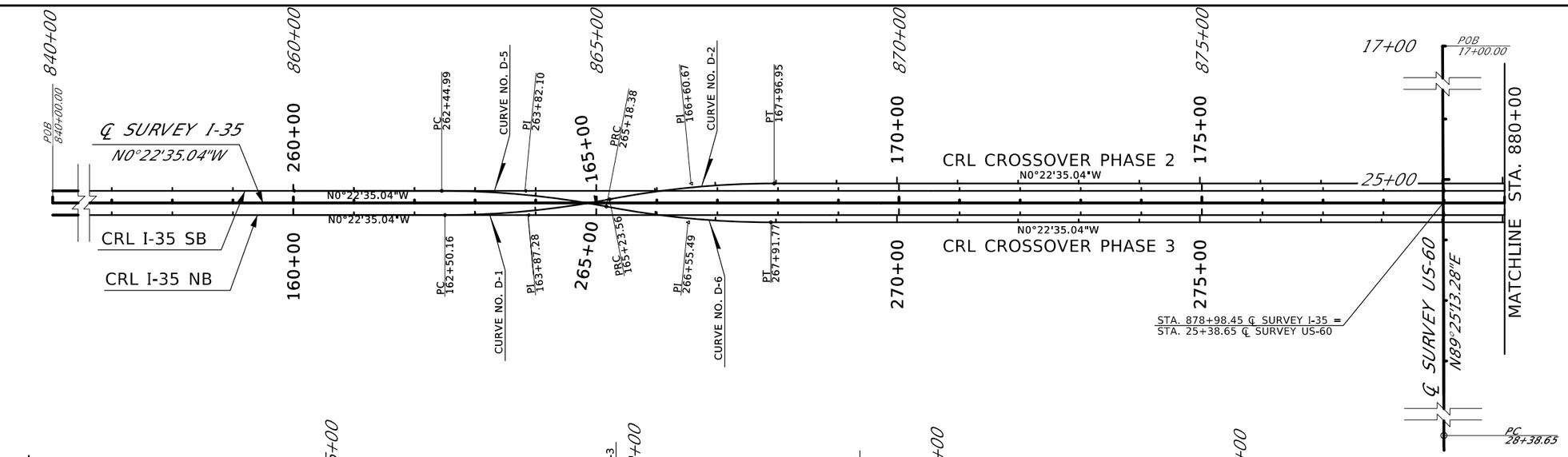

℄ SURVEY I-35

	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	BEARING
	POB 840+00.00	613899.6787	2160320.1645	
	PI 1010+99.76	630999.0717	2160207.8296	N 0°22'35.04" W

CRL I-35 NB

	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	BEARING
	POB 840+00.00	613899.8101	2160340.1641	
	PI 1010+99.76	630999.1630	2160227.8294	N 0°22'35.04" W

CRL I-35 SB

	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	BEARING
	POB 840+00.00	613899.5474	2160300.1650	
	PI 1010+99.76	630998.9804	2160187.8298	N 0°22'35.04" W

℄ SURVEY US-60

	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	BEARING
	POB 17+00.00	617789.5604	2159455.9470	
	PC 28+38.65	617801.0796	2160594.5388	N 89°25'13.28" E

CRL CROSSOVER PHASE 2

CURVE NO.	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	CURVE DATA DELTA	DEGREE	RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	SUPER ELEVATION V (MPH)	E (FT/FT)	S (FT/FT)
	POB 160+00.00	615899.7670	2160327.0253									
D-1	PC 162+50.16	616149.9264	2160325.3819	10°55'51.61" LT	3°59'53,92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 163+87.28	616287.0348	2160324.4812									
	PRC 165+23.56	616421.4849	2160297.5973									
D-2	PRC 165+23.56	616421.4849	2160297.5973	10°55'51.61" RT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 166+60.67	616555.9349	2160270.7135									
	PT 167+96.95	616693.0434	2160269.8128									
D-3	PC 189+03.54	618799.5902	2160255.9737	10°55'51.61" RT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 190+40.65	618936.6987	2160255.0730									
	PRC 191+76.93	619071.4903	2160280.1881									
D-4	PRC 191+76.93	619071.4903	2160280.1881	10°55'51.61" LT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 193+14.04	619206.2819	2160305.3031									
	PT 194+50.32	619343.3904	2160304.4024									
	POE 195+46.89	619439.9561	2160303.7680									

CRL CROSSOVER PHASE 3

CURVE NO.	STATION	CARDINAL POINTS NORTHING (FEET)	CARDINAL POINTS EASTING (FEET)	CURVE DATA DELTA	DEGREE	RADIUS (FEET)	TANGENT (FEET)	ARC LENGTH (FEET)	EXTERNAL (FEET)	SUPER ELEVATION V (MPH)	E (FT/FT)	S (FT/FT)
	POB 260+00.00	615899.5042	2160287.0262									
D-5	PC 262+44.99	616144.4882	2160285.4168	10°55'51.61" RT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 263+82.10	616281.5967	2160284.5160									
	PRC 265+18.10	616416.3883	2160309.6311									
D-6	PRC 265+18.10	616416.3883	2160309.6311	10°55'51.61" LT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 266+55.49	616551.1799	2160334.7461									
	PT 267+91.77	616688.2884	2160333.8454									
D-7	PC 289+03.54	618800.0107	2160319.9724	10°55'51.61" LT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 290+40.65	618937.1191	2160319.0716									
	PRC 291+76.93	619071.5691	2160292.1878									
D-8	PRC 291+76.93	619071.5691	2160292.1878	10°55'51.61" RT	3°59'53.92"	1433.00	137.111	273.391	6.545	55	NA	NC
	PI 293+14.04	619206.0192	2160265.3040									
	PT 294+50.32	619343.1276	2160264.4032									
	POE 295+46.89	619439.6933	2160263.7688									

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**GEOMETRIC DATA**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R005

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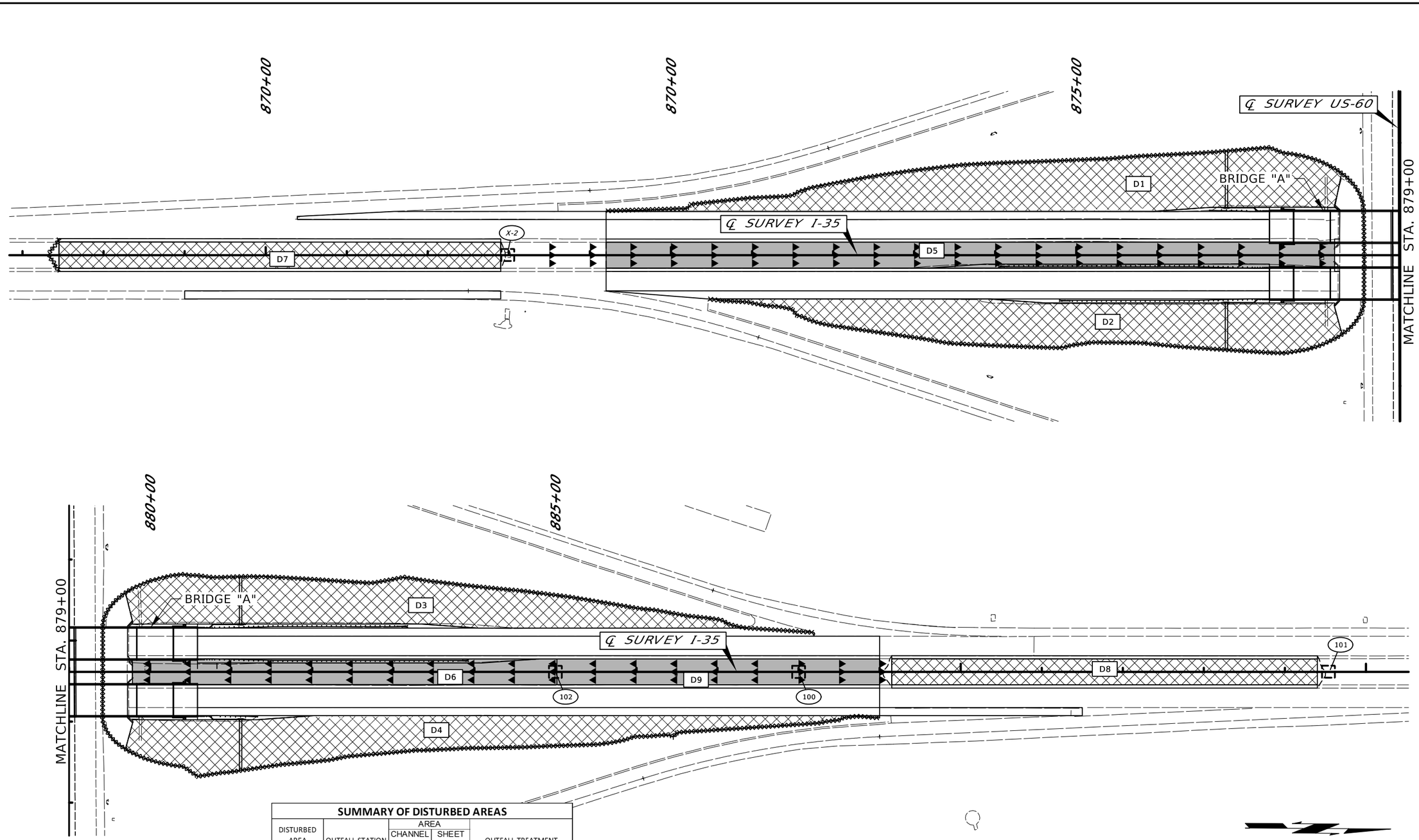

SUMMARY OF DISTURBED AREAS

DISTURBED AREA NUMBER	OUTFALL STATION	AREA (AC) CHANNEL FLOW	AREA (AC) SHEET FLOW	OUTFALL TREATMENT
D1	N/A		0.95	NORMAL EROSION CONTROL
D2	N/A		0.79	NORMAL EROSION CONTROL
D3	N/A		0.77	NORMAL EROSION CONTROL
D4	N/A		0.79	NORMAL EROSION CONTROL
D5	869+20	0.68		NORMAL EROSION CONTROL
D6	885+00	0.35		NORMAL EROSION CONTROL
D7	N/A		0.41	NORMAL EROSION CONTROL
D8	N/A		0.39	NORMAL EROSION CONTROL
D9	888+00	0.29		NORMAL EROSION CONTROL
	SUBTOTALS	1.32	4.10	
	TOTALS	**5.42**		

0 60' 120'

1"=60'

LEGEND

- (XXX) DRAINAGE STRUCTURE NUMBER
- TEMPORARY SILT FENCE
- TEMPORARY SILT DIKE
- SEDIMENT FILTER
- SHEET FLOW
- CHANNEL FLOW
- DX DISTURBED AREA NUMBER

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**EROSION CONTROL**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R006

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SEC. 31, T26N, R1W

860+00 | 865+00 | 870+00

Pres. R/W | Exist. Fence | Asphalt

CRL I-35 SB | CRL I-35 NB | ℄ SURVEY I-35

N 0°22'35.04" W

STA. 862+30.00
INSTALL CABLE
BARRIER SYSTEM
END ANCHOR

STA. 865+39.00
BEGIN SHOULDER REHAB

STA. 869+20.00
END SHOULDER REHAB

MATCH EXIST. LANE EDGE

Exist. SB Entrance Ramp

Exist. NB Exit Ramp

TOE OF SLOPE

BM 46

BM 47

FO | TUG | Exist. Fence

STA. 862+45.00
BEGIN INCIDENTAL CONST.

STA. 864+00.00
BEGIN SHOULDER REHAB

STA. 867+90.00
END SHOULDER REHAB

STA. 869+20.00
BEGIN I-35 CONST.
J/P NO. 24432(14)
END INCIDENTAL
CONST.

MATCHLINE STA. 872+00
SEE SHEET R008

0 50' 100'
1"=50'

LEGEND
PROPOSED PAVEMENT

BM 47 - R.R. SPIKE IN N. BRACE POST
STA. 860+07, 148' RT ℄ SURVEY I-35
ELEV=978.05'

BM 46 - "[ ]" IN NE CORNER OF E. CONC. DRAIN
STA. 868+01, 79' RT ℄ SURVEY I-35
ELEV=980.79

PROFILE GRADE LINES FOR NB AND SB I-35 ARE IDENTICAL.

UTILITY OWNERS

CITY OF TONKAWA
580-628-2508

KAY ELECTRIC CO-OP
BLACKWELL, OKLA. 580-363-1260

AT&T
800-852-3786

INDIAN NATIONS FIBER OPTIC
SULPHER, OKAL. 800-622-6702

LIGHT CARE
TULSA, OKLA. 918-585-9855

LONE CHIMNEY WATER ASSC.
GLENCOE, OKLA. 918-762-3581

Exist. Ground @ PGL

PVI 865+90.94
ELEV 982.48

1.53%

PVC 866+99.93
ELEV 984.15

+02.00 LT
℄ 983.80

STA. 867+98.00
EX. INLET W/
18" RCP
TG=983.83
℄=980.93
OUTLET ℄=980.75

PVI 868+99.93
ELEV 987.22

SP. DT. 1.49%

+70.00 LT
℄ 986.30

Exist. Ground @ ℄ SURVEY

PVT 870+99.93
ELEV 993.77

3.28%

PVC 871+99.93
ELEV 997.04

I-35 NB & SB
PROFILE GRADE LINE

L=400.00'
K=230
V=75 MPH

857+00	858+00	859+00	860+00	861+00	862+00	863+00	864+00	865+00	866+00	867+00	868+00	869+00	870+00	871+00	872+00
975.47	976.02	976.33	976.73	977.34	977.76	978.30	979.04	980.09	981.08	982.78	983.83	986.40	990.71	988.39	993.77	991.44	997.05 994.39

1005 | 1000 | 995 | 990 | 985 | 980 | 975 | 970 | 965

PLAN & PROFILE I-35 (1)

COUNTY KAY | HIGHWAY I-35 | STATE JOB NO. 24432(14) | SHEET NO. R007

7/26/2018

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SEC. 31, T26N, R1W

SEC. 30, T26N, R1W

CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 877+20.99 ℄ SURVEY I-35

CAUTION: EXIST. UNDERGROUND COMMUNICATIONS CROSSING AT APPROX. STA. 877+13.18 ℄ SURVEY I-35

CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 880+00.01 ℄ SURVEY I-35 TO BE RELOCATED BY THE CITY OF TONKAWA APPROX. 100' TO THE NORTH AS PUG

CAUTION: EXIST. POWER UNDERGROUND CROSSING AT APPROX. STA. 879+47.74 ℄ SURVEY I-35 TO BE RELOCATED DURING CONSTRUCTION

SEE SHEET R007 MATCHLINE STA. 872+00

MATCHLINE STA. 887+00 SEE SHEET R009

875+00

880+00

885+00

Pres. R/W

Exist. SB Entrance Ramp

Exist. SB Exit Ramp

Exist. NB Exit Ramp

Exist. NB Entrance Ramp

CRL I-35 SB

CRL I-35 NB

℄ SURVEY I-35

N 0°22'35.04" W

BRIDGE "A"

BRIDGE "B"

BEGIN APPROACH SLAB BRIDGE "A" STA. 877+38.38

BEGIN BRIDGE "A" STA. 877+68.38

END BRIDGE "A" STA. 880+28.38

END APPROACH SLAB BRIDGE "A" STA. 880+58.38

BEGIN APPROACH SLAB BRIDGE "B" STA. 877+38.52

BEGIN BRIDGE "B" STA. 877+68.52

END BRIDGE "B" STA. 880+28.52

END APPROACH SLAB BRIDGE "B" STA. 880+58.52

PAVED FLUME

GUARDRAIL

TOE OF SLOPE

ASPHALT

24" RCP

18" RCP

30" RCP

12" RCP

N 89°25'13.28" E

Concrete

BM 45

BM 43

Exist. Fence

0 50' 100'

1"=50'

LEGEND

PROPOSED PAVEMENT

BRIDGE LENGTH = 260'

BM 45 - "[ ]" IN SE CORNER OF E. HDWL STA. 873+69, 216' RT ℄ SURVEY I-35 ELEV=986.23

BM 43 - "X" IN CONC. BASE OF LIGHT POLE STA. 883+83, 216' RT ℄ SURVEY I-35 ELEV=992.52

INSIDE SHOULDER SLOPE TRANSITION

+88.45 S=-2.00%

+38.45 S=2.00%

+58.45 S=2.00%

+08.45 S=-2.00%

PROFILE GRADE LINES FOR NB AND SB I-35 ARE IDENTICAL.

PVI 878+49.93 ELEV 1018.33

HI 880+22.80 ELEV 1010.52

3.28%

-1.90%

L=1300.00' K=251 V=70 MPH

L=400.00' K=186 V=70 MPH

I-35 NB & SB PROFILE GRADE LINE

Exist. Ground @ ℄ SURVEY

Exist. Ground @ PGL

PVC 871+99.93 ELEV 997.04

PVC 885+49.93 ELEV 1005.04

PVT 884+99.93 ELEV 1005.99

BRIDGE A=18'-2"
BRIDGE B=17'-8"

US-60

TUG

PUG

STA. 885+00.00
CONST. INLET (SMD-TYPE 2)
TG=1002.41
FL 22"x13"=994.21
FL 18"=992.97
OUTLET FL=992.40

STA. 886+49.00
12" RCP
Lt. ℄ 998.30
Rt. ℄ 995.60

300 LF 22"x13" RCPA @ 0.64%

℄ 992.40

℄ 994.21

18" RCP

997.05 994.39 | 1000.12 997.30 | 1002.80 999.80 | 1005.08 1001.92 | 1006.96 1003.14 | 1008.45 1004.30 | 1009.53 1005.65 | 1010.22 988.02 | 1010.51 1005.38 | 1010.40 1003.91 | 1009.90 1002.95 | 1008.99 1002.41 | 1007.69 1001.97 | 1005.99 1001.21 | 1004.16 1000.05 | 1002.79 1000.08

872+00 873+00 874+00 875+00 876+00 877+00 878+00 879+00 880+00 881+00 882+00 883+00 884+00 885+00 886+00 887+00

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PLAN & PROFILE I-35 (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R008

7/26/2018

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SEC. 30, T26N, R1W

CAUTION: EXIST. WATERLINE CROSSING AT APPROX. STA. 890+24.17 ℄ SURVEY I-35

SEE SHEET R008
MATCHLINE STA. 887+00

Pres. R/W
Exist. Fence
Exist. SB Exit Ramp
Exist. NB Entrance Ramp
Asphalt
Concrete
℄ SURVEY I-35
CRL I-35 SB
CRL I-35 NB
N 0°22'35.04" W
MATCH EXIST. LANE EDGE
STA. 894+55.00
INSTALL CABLE BARRIER SYSTEM END ANCHOR
18" RCP
22"x13" RCPA
TOE OF SLOPE
BM 42
BM 41
Exist. Fence
WV(6)
STA. 889+00.00
BEGIN SHOULDER REHAB
STA. 891+50.00
END SHOULDER REHAB
STA. 889+00.00
END I-35 CONST.
J/P NO. 24432(14)
BEGIN INCIDENTAL CONST.
STA. 894+40.00
END INCIDENTAL CONST.

0 50' 100'
1"=50'

LEGEND
PROPOSED PAVEMENT

BM 42 - "X" IN CONC. BASE OF LIGHT POLE
STA. 889+10, 93' RT ℄ SURVEY I-35
ELEV=999.33

BM 41 - R.R. SPIKE IN 10" FENCE POST
STA. 894+99, 148' RT ℄ SURVEY I-35
ELEV=1006.81

PROFILE GRADE LINES FOR NB AND SB I-35 ARE IDENTICAL.

I-35 NB & SB PROFILE GRADE LINE
0.25%
Exist. Ground @ ℄ SURVEY
Exist. Ground @ PGL
SP. DT. 0.50%
EX WATER 6"
22"x13" RCPA @ 0.64%
549 LF 22"x13" RCPA @ 0.14%
+03.90 LT
FL 998.90
LO 889+03.90
ELEV 1001.68
PVT 889+49.93
ELEV 1001.74
PVI 890+34.07
ELEV 1001.94
PVI 887+49.93
ELEV 1001.24
L=400.00'
K=186
V=70 MPH
(100) STA. 888+00.00
CONST. INLET (SMD-TYPE 2)
TG=998.38
FL 22"x13"=996.13
(101) STA. 894+53.75
CONST. INLET (SMD-TYPE 2)
TG=1002.23
FL=999.67

1020 1015 1010 1005 1000 995 990 985 980

1002.79 1000.08 1001.97 1000.36 1001.68 1000.28 1000.82 1001.14 1001.34 1001.70 1002.18 1002.63 1002.97 1003.38 1003.86 1004.16 1004.54 1004.97 1005.49

887+00 888+00 889+00 890+00 891+00 892+00 893+00 894+00 895+00 896+00 897+00 898+00 899+00 900+00 901+00 902+00

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PLAN & PROFILE I-35 (3)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R009

CAUTION: EXIST. SANITARY SEWER CROSSING AT APPROX. STA. 18+23.27 ℄ SURVEY US-60

CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 21+16.04 ℄ SURVEY US-60

CAUTION: EXIST. POWER UNDERGROUND CROSSING AT APPROX. STA. 27+16.60 ℄ SURVEY US-60

SEC. 30, T26N, R1W

SEC. 31, T26N, R1W

20+00 25+00 30+00

Exist. Fence
Pres R/W
Exist. 5B Exit Ramp
Exist. 5B Entrance Ramp
Exist. NB Entrance Ramp
Exist. NB Exit Ramp
GUARDRAIL
BRIDGE "A"
BRIDGE "B"
2'-8" COMB. CURB & GUTTER (MATCH EXIST. EDGE)
℄ SURVEY US-60
N 89°25'13.28" E
N 0°27'35.04" W
24" RCP
5'X2' RCB
STA. 24+83.00 BEGIN CURB & GUTTER
STA. 25+94.00 END CURB & GUTTER
℄ SURVEY I-35
Asphalt
Concrete
BM 44
WV
WM
FH
PP
LP
LP(2)
PP(2)
PUG
TUG
FO
SS

LEGEND
SLOPEWALL
WORK AREA

0 50' 100'

CAUTION: EXIST. UNDERGROUND COMMUNICATIONS CROSSING AT APPROX. STA. 29+43.15 ℄ SURVEY US-60

CAUTION: EXIST. UNDERGROUND FIBER OPTICS CROSSING AT APPROX. STA. 29+29.39.15 ℄ SURVEY US-60

BM 44 - "X" IN CENTER OF S. HDWL.
STA. 878+33, 361' RT ℄ SURVEY I-35
ELEV=987.50

BRIDGE "A" — Exist. I-35 Bridge
BRIDGE "B" — Exist. I-35 Bridge

Exist. Ground @ ℄ SURVEY

X-8 STA. 23+84.80
EX 24" RCP
Lt. ℄ 982.06
Rt. ℄ 981.94

X-9 PUG
STA. 26+99.50
EX 24" RCP
Lt. ℄ 983.38
Rt. ℄ 983.05

TUG
FO
STA. 28+99.80
EX 5'x2' RCB
Lt. ℄ 984.29
Rt. ℄ 983.77

EX SANITARY SEWER 6"

986.88 986.94 987.00 987.06 987.18 987.42 987.77 988.24 988.82 989.47 990.11 990.75

1015 1010 1005 1000 995 990 985 980 975

18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00

PLAN & PROFILE US-60 COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R010

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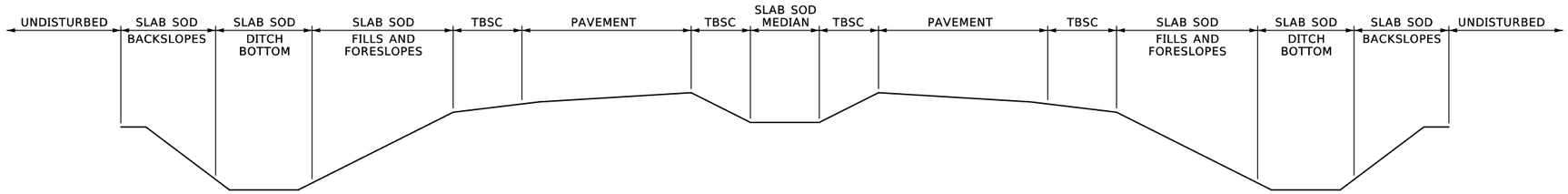
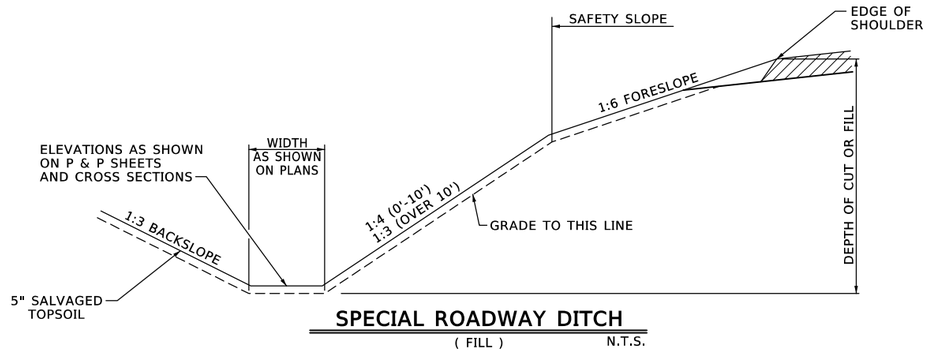


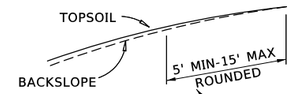
PERMANENT SLOPE PROTECTION

I-35 N.T.S.



SPECIAL ROADWAY DITCH

(FILL) N.T.S.



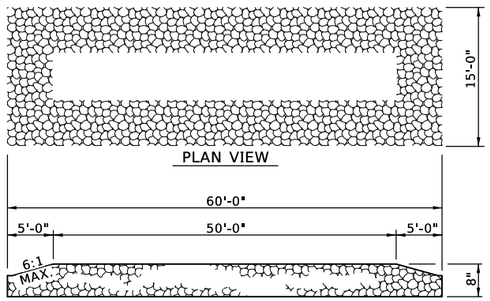
TOP OF CUT ROUNDING

INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDING SHALL BE 5' MIN. FOR SMALLER CUTS AND FILLS TO 15' MAX. FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS OF WORK.

TOE OF SLOPE ROUNDING

ROUNDING DETAIL

N.T.S.



NOTES:

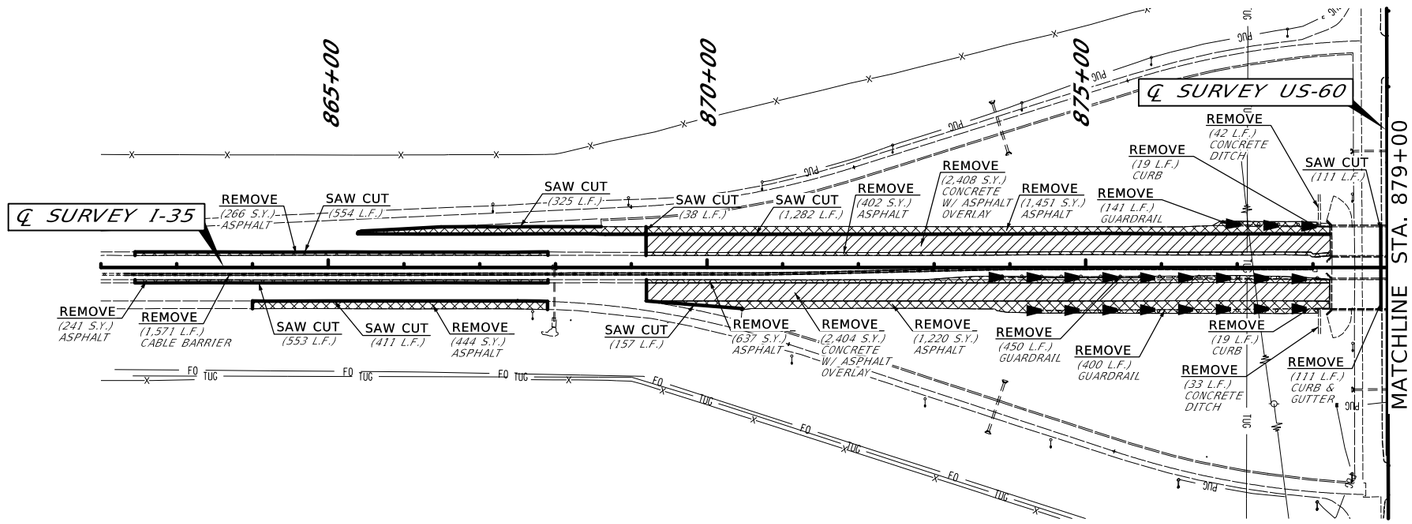
1. MATERIALS FOR THE ROCK BASE SHALL BE IN ACCORDANCE WITH 2009 STANDARD SPECIFICATIONS SEC. 713.03 STONE FILL FOR GABIONS, REVETMENT MATTRESSES, AND ROCK FILTER DAMS.
2. SEPARATOR FABRIC SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO STONE FILL.
3. LOCATION OF STABILIZED CONSTRUCTION EXIT TO BE AS APPROVED BY THE ENGINEER.

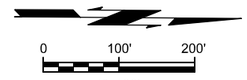
STABILIZED CONSTRUCTION EXIT (TYPE 1)

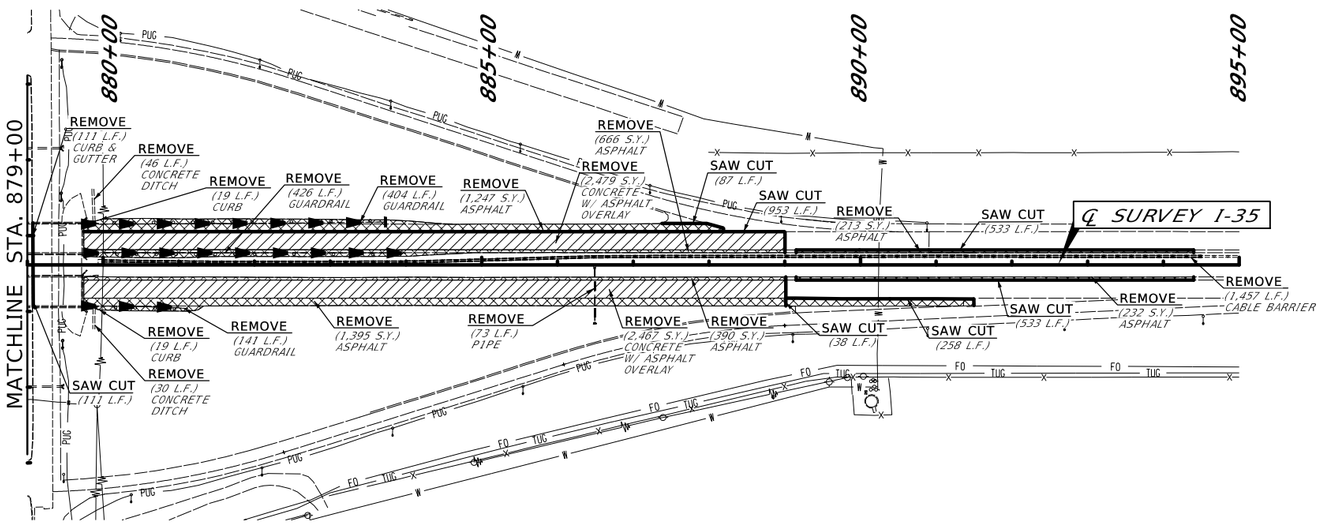
N.T.S.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			MISCELLANEOUS DETAILS
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R011







NOTE:

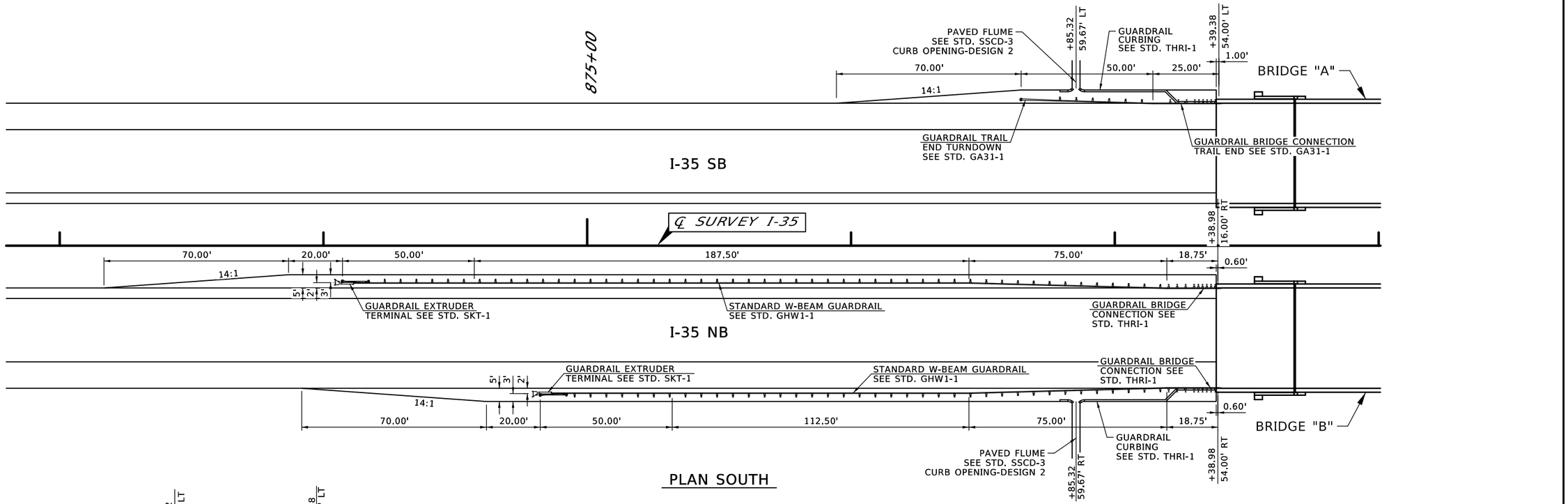
REMOVAL OF 1,955 SY CONCRETE PAVEMENT IS INCLUDED FOR TEMPORARY SHOULDER REHABILITATION. REFER TO SHEETS T006-T008.

REMOVAL LEGEND

- CONCRETE W/ ASPHALT OVERLAY
- ASPHALT
- PIPE
- GUARDRAIL
- SAWCUT

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**REMOVALS**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R012



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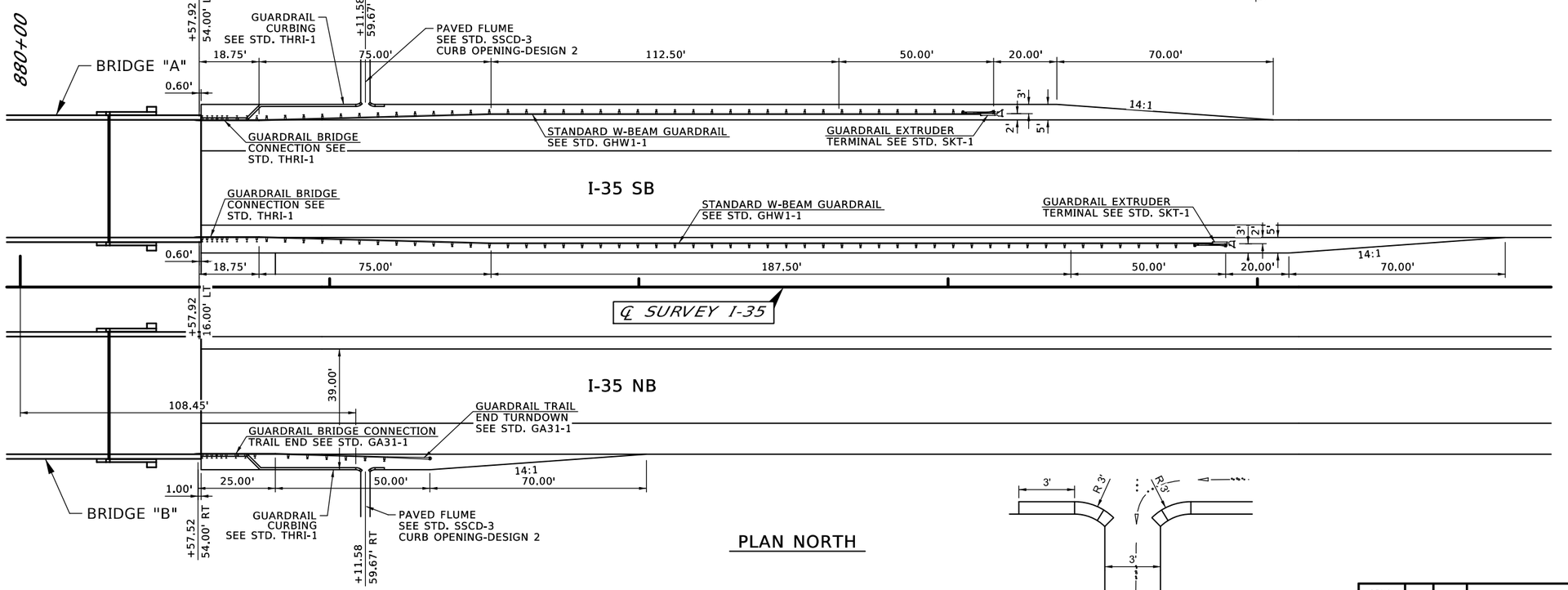
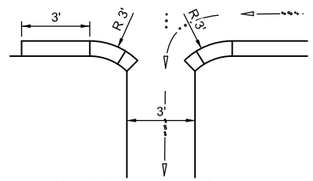
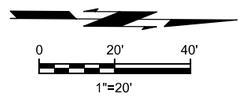


PLAN NORTH



CURB/FLUME DETAIL



DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			GUARDRAIL LAYOUT
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. R013

7/26/2018

4:57:32 PM

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STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SWO 5061(1) J/P 24432(05) ; _____ CO. KAY

HORIZONTAL CONTROL:
( ) Oklahoma Coordinate System of 1927 _____ Zone.
(X) Oklahoma Coordinate System of 1983 (93) North Zone. 09 GEOID
( ) Oklahoma Dept. of Transportation Plane Coordinate System of 1927 _____ Zone.
( ) Oklahoma Dept. of Transportation Plane Coordinate System of 1983 _____ Zone.
( ) Arbitrary Coordinate System

HORIZONTAL PLANE DATUM DEFINITION:
Oklahoma Department of Transportation coordinates were derived by multiplying the Oklahoma Coordinate Systems of 1927 or 1983 by the combined adjustment factor of 1.00010. The ODOT Coordinate System is 2350 feet above sea level.

1. Primary Control adjusted to CORS OKPR, OKTU & (B) Order
Stations REFERENCE STA. LMNO A & LMNO B TO LMNO AND HARN M131
A) Closure before adjustment X _____ ; Y _____ Angles _____
Trav. Length _____ No. Angles _____ ; 1: _____
B) _____ ; is ( ) Order before adjustment.
C) Method of Distance Measurement:
( ) Electronic (X) GPS ( ) Triangulation ( ) :hained
D) Instrument used for angles _____

2. Secondary Control adjusted to Primary Control ( ) Order
Stations K-36-418, 421, 688, 689 and 690
A) Closure before adjustment X _____ ; Y _____ Angles _____
B) _____ ; is Order; Tied to _____
C) of Distance Measurement:
( ) Electronic (X) GPS ( ) Triangulation ( ) :hained
D) Instrument used for angles _____

VERTICAL CONTROL IS (2nd)order. Level Line taken from STATIC ADJUSTMENT
( ) order and tied to _____ ( ) order.
( ) NGVD 29 datum
(X) NAVD 88 datum

ACCURACY DEFINITION:
(1) HORIZONTAL: (3rd Order = Class I = 1 : 10,000')
(3rd Order = Class II = 1 : 5,000')
(2) VERTICAL: (1st Order = 0.017 Ft. x sqrt. of Mi.) (2nd Order = 0.035 Ft. x sqrt. of Mi.)
(3rd Order = 0.050 Ft. x sqrt. of Mi.)

Distribution:
Copy w/survey reports
Copy in each Alignment and level book

RONALD D. SEIM
Professional Land Surveyor

March 3, 2015
Date

(FORM SD #20)
Rev. 11/03

UTILITIES LIST

CITY OF TONKAWA
580-628-2508

KAY ELECTRIC CO-OP
BLACKWELL,OKLA. 580-363-1260

AT&T
800-852-3786

INDIAN NATIONS FIBER OPTIC
SULPHER,OKAL. 800-622-6702

LIGHT CARE
TULSA,OKLA. 918-585-9855

LONE CHIMNEY WATER ASSC.
GLENCOE,OKLA. 918-762-3581

THIS SURVEY MEETS THE OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING AS ADOPTED BY THE OKLAHOMA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS, MAY 17, 2010.

SPECIFICATIONS FOR SURVEYS FOR PRIMARY AND SECONDARY HIGHWAYS DATED MAY 1, 1999 GOVERN.

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

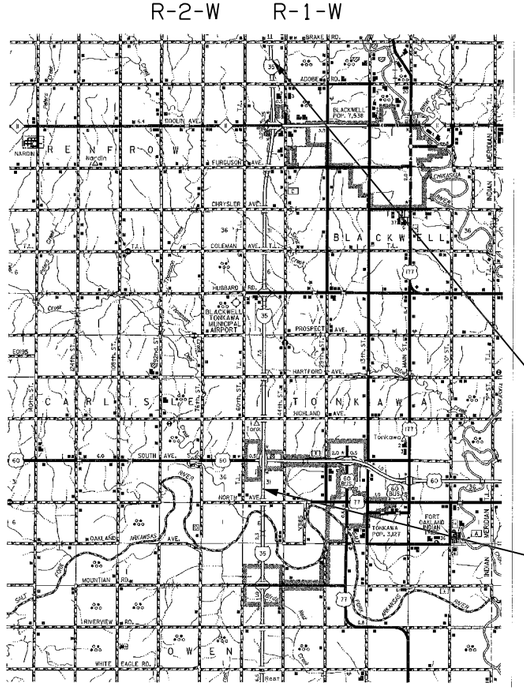
SURVEY OF

I-35

SWO 5061(1)
J/P NO. 24332(05)

KAY

INTERCHANGE & BRIDGES OVER US 60, AND PAVEMENT REHABILITATION , FROM MP 214 TO MP 220, EXTENDED NORTH TO E-W 12.5 SEC. LINE



PROJECT LENGTH 54,102.47 Ft. 10.25 MI.

BEGINNING SATTION : 840+00.00
ENDING STATION : 1381+02.47

Electronic File Transfer Disclaimer:

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BEFORE YOU DIG CALL OKIE

INDEX OF SHEET

SURVEY BEGAN: JAN. 27, 2014
SURVEY COMPLETED: MARCH 3, 2015

PERSONNEL:	TITLE:
R.D. SEIM	PROF. LAND SURVEYOR
T.E.D. MILLER	TRANS. SPEC. LEVEL V
Z.S. MOSES	TRANS. SPEC. LEVEL IV
R.W. JACKSON	TRANS. SPEC. LEVEL IV
A.J. GRAVES	TRANS. SPEC. LEVEL IV

EQUIPMENT:	ODOT NUMBER:
LEICA TCRA 1203 TOTAL STATION	ET-0527
LEICA TC 1800 TOTAL STATION	ET-0496
LEICA TC 1000 TOTAL STATION	ET-407
LEICA DNA10 DIGITAL LEVEL	EL-0588
LEICA SR 530 GPS RECEIVER	EE-0123
LEICA 1230 GPS RECEIVER	EE-210
LEICA GS15 VIVA GPS RECEIVER	EE-266
LEICA GS15 VIVA GPS RECEIVER	EE-267

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SWO 5061(1) Job/Piece 24432 (05) Engr. Contract No. _____

LAND SURVEYOR'S CERTIFICATION

I hereby certify that all land and property sub-division distances, angles, corners and monumentation made or used in conjunction with this survey and depicted or recorded herein or hereon were recovered, established or re-established in substantial conformity with:

- applicable instructions contained in the U.S. Government Bureau of Land Management publication "Manual of Surveying Instructions";
- its supplement, "Restoration of Lost or Obliterated Corners and Subdivision of Sections";
- "Oklahoma Minimum Standards for the Practice of Land Surveying" as adopted by the State Board of Registration for Professional Engineers and Land Surveyors; and
- sound land surveying practices;

including a thorough search, study, analysis and consideration of all existing records and field evidence.

I further certify that all survey monuments depicted exist and that all land survey work was done by me or under my direct supervision and that it is true, accurate and correct to the best of my knowledge and belief.

Dated this 10th day of February , 2015.

Land Surveyor Ronald D. Seim (seal)
Signature
RONALD D. SEIM
Printed Name

REGISTERED PROFESSIONAL LAND SURVEYOR — RONALD D SEIM — L.S. 1365 — OKLAHOMA

Oklahoma Registered Land Surveyor No. 1365

Certificate of Authorization No. _____ Exp. Date _____

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (1)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S001

D.T. FORM 7-1
Rev. 7-88

Oklahoma Dept. of Transportation

Date March 3, 2015

To Mr. Leroy Tackett, Chief of Surveys

From Ronald D. Seim, Professional Land Surveyor

Subject SWO 5061(1) - J.P. No. 24432(05) - I-35 – Kay County
Interchange & Bridges over US 60 and Pavement Rehabilitation, from MP 214
To MP 220. Project extended north, 3.5 miles, to E-W 12.5 Section Line.

1. ASSIGNMENT:

This survey was assigned to me by Mr. Kyle K. King, Transportation Survey Manager. The Perry Crew did the survey. All measurements are in U.S. Survey Foot.

2. PURPOSE:

The purpose of this survey was to obtain necessary information for the design and construction of a new I-35 and US 60 interchange and the pavement rehabilitation of I-35.

3. SURVEY LIMITS:

This survey begins approx. 0.75 mile south of US 60 and extends northerly along I-35 to E-W 12.5 Sec. Line, 1.5 miles north of SH 11.
An Exception was made from Sta. 1069+50 to Sta. 118+00.00 due to SWO 4898(1) Contract Survey at the I-35 & Hubbard Road interchange.

4. ALIGNMENT:

The Centerline of Survey is taken from FAP No. I-456(33) Plans, FAP No. I-456(6) (7) Plans, SWO 2153(1) and SWO 2154(1).
The I-35 & SH 11 interchange was surveyed in 2003 under SWO 4046(1). FAP No. IMY-035-4(168)222 Plans were used to calculate the new SH 11 interchange. Some changes to the SW ramp were made to make it fit.
A #4 Rebar, POT Sta. 878+98.45, was found in place at the intersection of I-35 & US 60 during this survey. This Rebar was also found in the year 2000 during the SWO 2323(1) survey. This Rebar is accepted and used. A #5 Rebar was found in place in the year 2008 at PI Sta. 1010+99.76. This position was located by RTK at that time. An original reference to the PI was also found 150' east.

The #5 Rebar was destroyed when the Cable Barrier was constructed . This position has been Re-established setting a #4 Rebar and used by this survey.
A #3 Rebar was found in place at PC Sta. 1200+70.50 along with a reference 150' east.
These Rebars are thought to be original. This is PC Sta. 189+73.20 on SWO 2154(1).
This Rebar is accepted and used by this survey.
At PC Sta. 440+52.31, SWO 2154(1) & FAP No. I-456(4)(5) Plans, 2 references were found to the east to re-affirm the tangent to the north of SH 11.
This information was use to establish centerline of I-35.

References at PC Sta. 28+38.65 and PI Sta. 70+84.40 from FAP F-283(5) Plans along with the #4 Rebar at the intersection of I-35 & U.S. 60 were used to set up US 60.

The ramps at the I-35 & U.S. 60 interchange are calculated using FAP I-456(33) Plans.
The ramps at the weigh station, Sta. 948+00 to 982+00, are calculated using the same plans.
The on ramps to I-35, at the weigh station, are built on a different alignments than what the plans show.

5. STATIONING:

POT Sta. 878+98.45, the intersection of I-35 & US 60, taken from FAP No. I-456(33) Plans is assigned to this survey and extends southerly to the beginning of this survey and northerly along the centerline of survey to the end of this survey without equations.

6. HORIZONTAL CONTROL:

Horizontal Control for this project is the National Geodetic Survey's Oklahoma State Plane Coordinate System NAD83(93),GEOD09, North Zone.

Primary control is established by GPS Static sessions adjusted to CORS – OKPR, OKTU and References Sta. LMNO A & LMNO B TO LMNO and HARN Mon. – M131
Control monuments established are O.D.O.T. Monument Numbers K-36-418, Steel Rod, K-36-688 & 690, #4 Rebar, and K-36-421 & 689, Feno Marker with Brass Cap.
Monuments K-36-418 & 421 were set under SWO 4003(1), 2000.

7. VERTICAL CONTROL:

A) Level datum is NAVD 1988 datum.
B) Vertical Control for this project is established by the Static adjustment using Leica Geo Office software. Elevations from CORS Mon. OKPR, Reference Sta. LMNO A & LMNO B to LMNO and NGS Mon. M 131 were used in the adjustment. Differential Leveling was used to establish elevations on Benchmarks along this project.

8. PHOTO CONTROLS:

No Photo controls were established for this project.

9. TOPOGRAPHY:

A) Field work consisted of establishing centerline, obtaining topography and level data via the Break Line Method.

B) All data obtained in the field was recorded in a digital format and archived. Topo was obtained from R/W to R/W along I-35 and additional topo around the I-35 & US 60 interchange.

10. CROSS SECTION / DTM

Two DTM's have made for this project by the field crew.
One from the beginning of the Survey, north to the south side of the SWO 4898(1) Exception.
Another from the north side of the exception, north to the end of the Survey.

11. LAND SURVEYS:

Land ties were made on Sections 30 & 31, T26N-R1W, South side & Center Section Corner of Sec. 18, T26N-R1W and the South side & Center Section Corner of Sec. 30, T27N-R1W.

12. RIGHT-OF-WAY:

The Right-of-Way at the I-35 & US 60 intersection is calculated using deeds obtained from the Kay County Court House and ODOT Right of Way Division, Engineering Branch.
The rest of the Right-of-Way, along I-35, was calculated using Plans.

13. UTILITIES:

All utilities shown on this survey were located by owning company or contractors of the owning company. A depth of utilities were provided by the owning company and is approx. only.

14. ENVIRONMENTAL CONCERNS:

There are Convenient Stores W. of I-35 and on both sides of US 60.

15. DRAINAGE:

No Drainage map has been made for this project.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (2)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S002

16. OSSDA TEST:

No OSSDA points were collected on this project.

17. EQUIPMENT USED:

All data obtained was made with a LEICA TC1800 Total Station, LEICA TC1000 Total Station, LEICA TCRA 1203 Total Station, LEICA NA 2002 Level and LEICA SYSTEM 500, 1200 and GS 15 GPS Receivers.

18. TIME CHARGES:

This survey began Jan. 27, 2014 and was completed March 3, 2015.
A total of 156.81 Four Man Party Days were spent.
Also worked on other projects during this time.

19. DATA SUBMITTED:

A PDF File of the following :

A. REPORTS:
1. Historical Letter & Written Report
2. ODOT form SD-1, Transmittal Letter w/index of computer files
3. ODOT form SD-7, Public and Privately owned utilities list
4. ODOT form SD-9, Final Cost Report
5. ODOT form SD-20, Survey Control Data Statement
6. ODOT form SD- 41, Surveyor's Certification
7. Cogo Data
8. Benchmarks & Check Levels list

B. COMPUTER FILES:
http://intranet/engrgrp/survey/fsvarch/SWO5061_1_jp24322_05/

1. SWO5061_1_V1_INDEX.DOC - File of index detailing archived files
2. CIVIL/SWO5061_1_V1.ALG - Intergraph binary file containing project coordinates and alignments.
SWO5061_1_V1_ALG.XML - An XML File
SWO5061_1_V1_SOUTH.DTM – Digital Terrain created by the field crew. South of Hubbard Road
SWO5061_1_V1_NORTH.DTM – Digital Terrain created by the field crew. North of Hubbard Road
3. DGN/SWO5061_1_V1.DGN - Microstation design file containing the geometric and land tie data.
SWO5061_1_V1_SOUTH_TRI.DGN – DGN file showing the triangles generated From the DTM file – South of Hubbard Road

SWO5061_1_V1_NORTH_TRI.DGN – DGN file showing the triangles generated From the DTM file – North of Hubbard Road
SWO5061_1_V1_TOPO.DGN – DGN file showing the Topography Collected by the field crew.
SWO5061_1_V1_SOUTH_SFF.DGN – DGN file showing the Surface features Generated from the DTM File – South of Hubbard Road.
SWO5061_1_V1_NORTH_SFF.DGN – DGN file showing the Surface features Generated from the DTM File – North of Hubbard Road
SWO5061_1_V1_PERI.DGN – DGN file showing the Perimeter of the Project.
4. GPS/SWO5061_1_V1.ZIP – Zipped files from the Static sessions.
5. RAW_DATA/SWO5061_1_V1_TDS.ZIP - Binary WinZip file containing data files collected with the Totalstation.
SWO5061_1_V1_LEV.ZIP - Binary WinZip file containing files collected with the Leica Digital Level
SWO5061_1_V1_RTK.ZIP - Binary WinZip file containing files collected with the Data Collectors
SWO5061_1_V1_FWD.ZIP - Binary winZip file containing ascii files created with Survey SelectCadd.
6. REPORTS/SWO5061_1_HISTORICAL LETTER.PDF - Historical letter in PDF format.
SWO5061_1_COGO LIST – List of Coordinates for the project.

C. CORNERS SUBMITTED:

5 SD 11'S, K-36-418, 421 & 688 to 690. Okla. Certified Corners. K-36-691 to 710.

20. PERSONNEL:

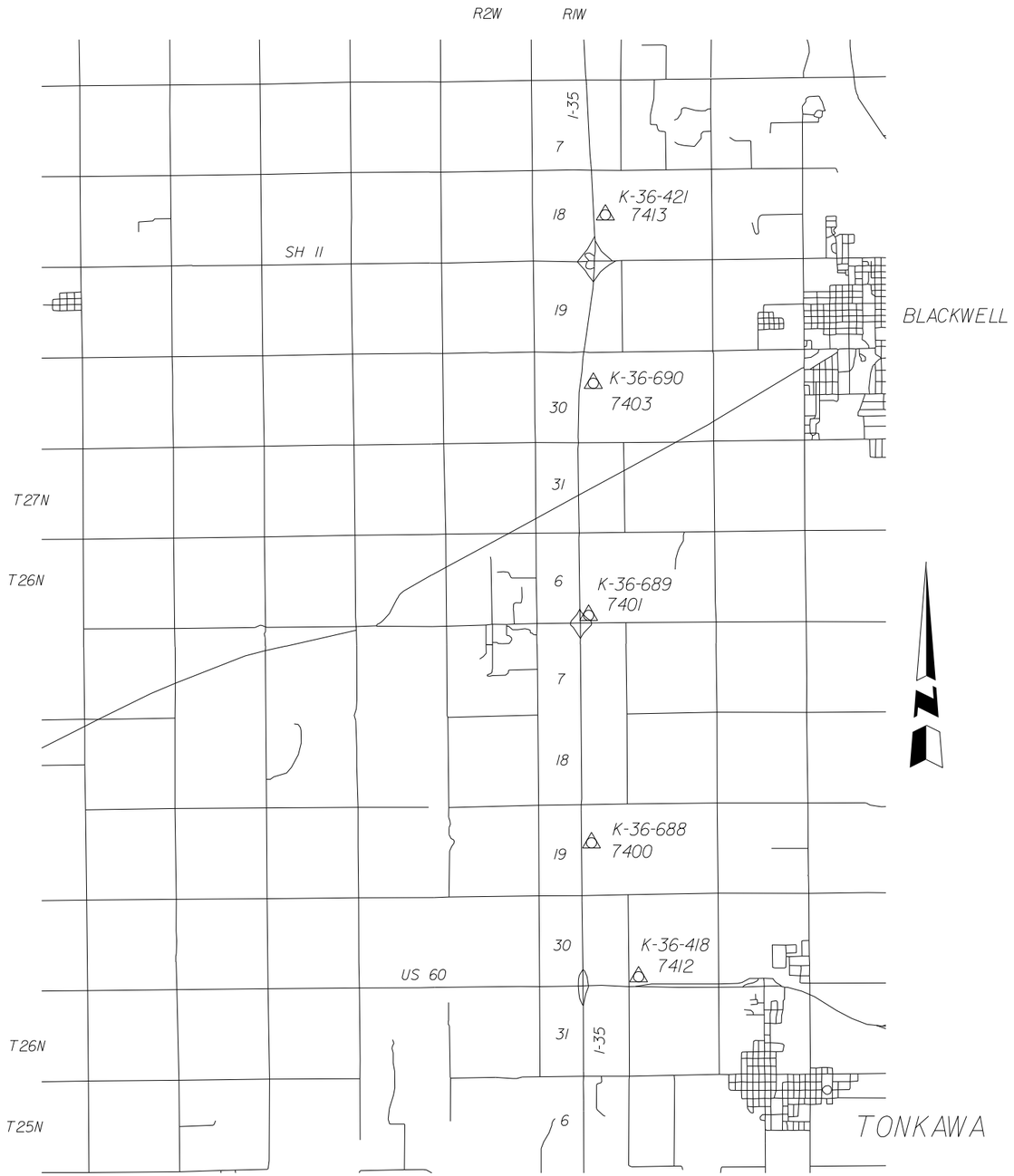
Other than myself, the following listed personnel worked on this survey;

T.E. Miller	Trans. Spec. V
Z.S. Moses	Trans. Spec. III
R.W. Jackson	Trans. Spec. III
A.J. Graves	Trans. Spec. II

Ronald D. Seim
Professional Land Surveyor

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (3)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S003




```
        Network Adjustment
        www.MOVE3.com
        (c) 1993-2012 Grontmij
        Licensed to Leica Geosystems AG

        Created:  03/03/2014 12:29:23

Project Information
        Project name: SW05061 HORZ
        Date created: 02/27/2014 14:04:51
        Time zone: -6h 00'
        Coordinate system name: OK N NAD83 G09
        Application software: LEICA Geo Office 8.3
        Processing kernel: MOVE3 4.1

General Information
        Adjustment
        Type: Constrained
        Dimension: 3D
        Coordinate system: WGS 1984
        Height mode: Ellipsoidal

        Number of iterations: 1
        Maximum coord correction in last iteration: 0.0000 m(tolerance is met)

        Stations
        Number of (partly) known stations: 4
        Number of unknown stations: 5
        Total: 9

        Observations
        GPS coordinate differences: 237 (79 baselines)
        Known coordinates: 9
        Total: 246

        Unknowns
        Coordinates: 27
        Total: 27

        Degrees of freedom: 219

        Testing
        Alfa (multi dimensional): 0.6849
        Alfa 0 (one dimensional): 5.0 %
        Beta: 80.0 %
        Sigma a-priori (GPS): 10.0

        Critical value W-test: 1.96
        Critical value T-test (2-dimensional): 2.42
        Critical value T-test (3-dimensional): 1.89
        Critical value F-test: 0.95
        F-test: 0.43(accepted)

        Results based on a-posteriori variance factor

Adjustment Results
        Coordinates

        Station            Coordinate              Corr        Sd
        7301    Latitude   36° 41' 42.86923" N     0.0000 m    -       fixed
                Longitude  97° 28' 48.60448" W     0.0000 m    -       fixed
                Height     280.9196 m              0.0000 m    0.0051 m
        7302    Latitude   36° 40' 50.11353" N    -0.0004 m    0.0040 m
                Longitude  97° 28' 45.84916" W    -0.0040 m    0.0040 m
                Height     278.8808 m              0.0000 m    0.0050 m
        7303    Latitude   36° 45' 11.98095" N     0.0000 m    -       fixed
                Longitude  97° 15' 16.82235" W     0.0000 m    -       fixed
                Height     275.1289 m             -0.0006 m    0.0049 m
        7400    Latitude   36° 43' 08.21211" N    -0.0003 m    0.0032 m
                Longitude  97° 20' 43.20573" W    -0.0025 m    0.0032 m
                Height     278.6298 m             -0.0001 m    0.0043 m
        7401    Latitude   36° 45' 14.31219" N    -0.0003 m    0.0031 m
                Longitude  97° 20' 41.96207" W    -0.0023 m    0.0031 m
                Height     280.9487 m             -0.0001 m    0.0043 m
        7403    Latitude   36° 47' 29.48592" N    -0.0001 m    0.0041 m
                Longitude  97° 20' 42.17099" W    -0.0013 m    0.0041 m
                Height     290.2990 m             -0.0001 m    0.0050 m
        7412    Latitude   36° 41' 44.30900" N    -0.0003 m    0.0032 m
                Longitude  97° 20' 11.46003" W    -0.0024 m    0.0031 m
                Height     273.1630 m             -0.0001 m    0.0043 m
        OKPR    Latitude   36° 16' 34.46475" N     0.0000 m    -       fixed
                Longitude  97° 19' 17.97563" W     0.0000 m    -       fixed
                Height     326.3038 m              0.0000 m    -       fixed
        OKTU    Latitude   36° 12' 38.11390" N     0.0000 m    -       fixed
                Longitude  95° 51' 15.78258" W     0.0000 m    -       fixed
                Height     169.2148 m             -0.0001 m    0.0048 m
```

DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		
CHECKED		**SURVEY DATA (4)**
APPROVED		
SQUAD		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S004

7/26/2018

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7	2160520.59960	656536.85500	1048.53
8	2160692.55490	655750.95240	1050.83
9	2160281.98860	654803.56500	1037.34
10	2159996.15300	653484.65900	1046.71
11	2160004.19240	652884.44290	1049.94
12	2159931.34650	651903.56990	1048.67
13	2159991.28400	651499.13200	1045.76
14	2159885.78070	650644.03520	1045.52
15	2159924.26710	649509.20480	1042.77
16	2159975.40770	648790.92360	1038.52
18	2159982.30670	647593.63040	1037.14
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29	2160083.70780	636898.48490	1018.91
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38	2160402.66510	623906.84690	1022.25
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41	2160431.54310	619399.63160	1006.81
42	2160380.59710	618810.12910	999.33
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44	2160656.38430	617735.33160	987.50
45	2160513.72230	617270.34010	986.23
46	2160380.29830	616700.66030	980.79
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51	2161175.17250	661063.46220	1064.11
52	2161131.93700	661541.51930	1064.84
54	2161107.64450	662691.29640	1064.09
55	2161054.74910	663466.80820	1063.81
56	2161008.18590	664241.35870	1066.39
57	2160872.60130	665233.71680	1063.11
58	2160906.38420	665947.13650	1062.19
59	2160808.08240	666279.84070	1062.69
61	2161394.73190	617890.19980	991.25
62	2160838.03210	667086.14390	1063.25
63	2160727.56110	667549.12900	1065.57
300	2161113.92850	659998.19420	
301	2160294.55412	617798.04460	
302	2160320.16455	613899.67873	
303	2160311.88819	615159.48818	
304	2160277.21037	620438.07402	
305	2160183.37711	633639.80673	
307	2160955.18908	662650.73000	
308	2160032.17318	649969.00133	
309	2188678.83484	650234.26167	
310	2160207.82960	630999.07170	
311	2160036.94421	649453.75673	
312	2160304.56709	654184.26379	
313	2160819.53700	657883.47553	
314	2139538.83618	660845.97712	
315	2160986.38221	662129.49271	
316	2160226.91852	628093.39613	
317	2160158.92231	636280.79106	
318	2160249.25443	624693.46949	
319	2160153.66030	636849.05895	
320	2160110.04598	641559.16614	
321	2160108.75254	641698.85103	
322	2160065.28264	646393.36157	
323	2160061.36316	646816.64343	
324	2160747.56751	657366.49310	
325	2160795.98209	665311.07887	
326	2160639.13165	667932.04975	
327	2160259.86492	623078.36284	
328	2160225.15175	628362.33032	
329	2160085.70641	644187.70613	
330	2161007.99527	659997.53687	
331	2161009.23648	660029.54952	
350	2160012.56386	652086.70090	
360	2160329.24170	612517.97381	

POINT	EASTING	NORTHING
365	2160218.30988	674963.98160
366	2160085.95445	677175.64088
400	2168195.43163	617783.64346
401	2164839.42024	617751.80491
403	2160594.53877	617801.07956
404	2162022.30396	617815.52433
406	2160379.59540	654723.21880
410	2163449.77996	617783.23672
411	2166229.35200	617764.99122
412	2165407.88469	704353.52651
413	2161477.08237	530567.77823
414	2159994.56947	617795.00965
415	2159455.94704	617789.56039
416	2161155.87444	617804.95245
420	2160221.11505	616799.09060
421	2160262.36446	616000.15475
422	2160188.74191	618593.27207
423	2160244.18785	618766.96075
424	2159097.09923	618941.75276
425	2160213.34432	616949.59734
426	2159076.72406	616740.00521
427	2159936.75107	617803.89138
428	2160166.92259	617092.97686
429	2160050.22993	617453.39724
430	2161140.42876	617806.36898
431	2160048.78609	618154.84970
432	2160242.99009	618949.28072
433	2160346.09778	616649.90844
434	2160344.89187	616833.47037
435	2161491.98514	616657.43636
436	2160326.72342	619599.03439
437	2160375.67043	618651.00822
438	2160652.29819	617789.46130
439	2160401.08518	617008.22376
440	2160539.58278	617438.93203
441	2159448.67948	617789.72048
442	2160539.73375	618140.03907
443	2160421.30982	618508.86601
444	2161512.36410	618859.18460
445	2160367.97279	618800.09917
450	2160205.25538	624693.18044
451	2160293.25348	624693.75855
452	2160202.85275	625058.90418
453	2160153.96918	625421.35421
454	2160137.67466	625542.17088
455	2160136.87378	625664.07880
456	2154475.80106	624655.54071
457	2162046.69189	625676.62537
458	2160127.29989	627121.39409
459	2160126.49901	627243.30200
460	2160141.20479	627364.32234
461	2160185.32210	627727.38333
462	2160182.91947	628093.10707
463	2160270.91757	628093.68518
464	2162037.11800	627133.94067
465	2154453.46516	628055.46734
466	2160290.85086	625059.48228
467	2160334.96817	625422.54328
468	2166022.70780	624731.39827
469	2160349.67394	625543.56362
470	2160348.87307	625665.47153
471	2158439.05496	625652.92495
472	2160339.29916	627122.78682
473	2160338.49829	627244.69474
474	2160322.20376	627365.51141
475	2166000.37188	628131.32491
476	2160273.32020	627727.96144
477	2158429.48106	627110.24025
500	2160768.46602	646774.84962
501	2159362.09926	646011.87352
520	2159915.60371	660022.76350
521	2162515.55366	660038.89627
600	2160863.92213	657885.01819
601	2160932.65523	658320.83868
602	2160963.20775	658594.14529
603	2161030.67557	659086.59283
604	2161576.71793	659688.67452
605	2160862.63029	657877.48371
606	2182083.33220	654239.05421
607	2160865.21931	657892.55175
608	2160916.28514	658189.12251
609	2160947.40100	658452.74658
610	2139538.83488	660845.97727
611	2160982.52035	658735.10796
612	2172335.63824	657179.67304
613	2161269.00661	659349.38335
614	2162117.83030	658579.56472
615	2161574.58102	660033.05750
616	2161422.95424	659519.13035

POINT	EASTING	NORTHING	ELEVATION
617	2161575.29772	659917.55545	
618	2160987.66004	659913.90915	
619	2161572.80905	660318.62816	
620	2161095.63181	660929.46977	
621	2161059.08333	661815.41821	
622	2161026.50828	662195.54150	
623	2161573.88610	660145.05107	
624	2161465.95124	660455.41842	
625	2161064.60007	660141.89092	
626	2161322.35322	660639.24036	
627	2161080.45157	661297.44431	
628	2161062.44619	661733.90123	
629	2161055.10310	661896.90738	
630	2162225.39331	661344.67721	
631	2139538.86818	660845.97757	
632	2160764.03094	657891.14847	
633	2160814.03192	658250.07780	
634	2160894.89832	659020.34335	
635	2160431.50971	659718.67745	
636	2160429.60307	660025.95288	
637	2160734.59293	657592.40766	
638	2160539.48006	659555.96439	
639	2161085.09434	659918.01379	
640	2160430.29804	659913.95077	
641	2160851.87007	658610.49234	
642	2159712.21782	658730.13884	
643	2160667.04281	659363.72528	
644	2139535.94370	660848.34650	
645	2160924.55385	662426.08931	
646	2160427.61590	660346.20359	
647	2160972.87838	661100.17332	
648	2160946.47855	661858.84697	
649	2160930.48207	662126.14789	
650	2160428.90814	660137.94645	
651	2161065.51566	660141.89663	
652	2160549.65801	660514.95911	
653	2160684.94257	660702.02584	
654	2159524.26285	661541.41643	
655	2160955.79092	661591.22980	
656	2139538.85067	660845.97743	
700	2160151.87372	636998.91763	
701	2160133.94093	638919.78393	
702	2160109.30031	641559.15891	
703	2158135.82768	638901.15294	
704	2162135.65067	638938.78508	
906	2161025.11729	628369.75565	
907	2159425.18621	628354.90497	
909	2160995.18347	633646.62565	
910	2159383.42232	633633.11606	
913	2160885.77912	644192.32517	
914	2159285.80579	644183.08809	
950	2158734.58900	649452.70030	
952	2161435.00270	649454.89080	
7400	2160381.74980	626392.81110	1008.10
7401	2160396.96390	639146.16060	1015.72
7403	2160287.73960	652816.51490	1046.52
7412	2163024.31870	617925.21330	990.17
7413	2161082.79700	662970.22250	1060.49
7600	2160170.16778	613898.69332	
7601	2160470.16131	613900.66413	
7602	2160461.88120	615161.04572	
7603	2160161.89519	615157.93065	
7604	2160151.77350	616698.63290	
7605	2160451.11009	616800.60156	
7606	2159901.06654	617702.00756	
7607	2160732.68842	617692.36379	
7608	2161056.40646	617694.52822	
7609	2161106.30035	617704.75492	
7610	2161855.43832	617704.72237	
7611	2160695.68465	617895.18187	
7612	2160760.15774	617892.60091	
7613	2161455.85184	617895.54121	
7614	2159256.56426	617727.54015	
7615	2159255.35028	617847.53401	
7616	2159876.06301	617885.12725	
7617	2160138.63473	618698.58974	
7618	2160437.64285	618850.55732	
7619	2160427.20331	620439.64145	
7620	2160127.21743	620436.50659	
7621	2160110.52888	622976.80450	
7622	2159621.79936	623021.72496	
7623	2159620.75953	623121.71956	
7624	2160109.21499	623176.80165	
7625	2160410.51486	622979.92403	
7626	2160577.11168	622996.65726	
7627	2160725.69979	623133.20972	
7628	2160575.34396	623166.64807	
7629	2160409.20097	623179.92118	
7630	2160399.25120	624694.45490	

POINT	EASTING	NORTHING
7631	2160395.30956	625294.44195
7632	2160505.51143	626025.18168
7633	2160502.88368	626425.17305
7634	2160380.85691	627494.39448
7635	2160376.09411	628219.37884
7636	2160576.08549	628221.23517
7637	2160882.31754	628318.42803
7638	2160099.25767	624692.48409
7639	2160092.03134	625792.46035
7640	2159973.28928	626361.69257
7641	2159970.66152	626761.68394
7642	2160080.86339	627492.42366
7643	2160075.65386	628285.40655
7644	2159633.55133	628306.83690
7645	2159483.40001	628322.44392
7646	2159482.78742	628388.44107
7647	2159632.62317	628406.83259
7648	2160074.55678	628452.40295
7649	2160057.83416	630997.88454
7650	2160033.68785	633605.55360
7651	2159733.69834	633603.04455
7652	2160881.38937	628418.42372
7653	2160374.64884	628439.37409
7654	2160357.82504	631000.25886
7655	2160333.67743	633608.06769
7656	2160633.66694	633610.57674
7657	2160633.05582	633676.57394
7658	2160333.06632	633674.06488
7659	2159733.08723	633669.04174
7660	2160033.07674	633671.55080
7661	2160008.92776	636279.50795
7662	2160003.66673	636847.67005
7663	2160308.91686	636282.07417
7664	2160303.65387	636850.44784
7665	2159938.75982	641697.27695
7666	2160278.74525	641700.42512
7667	2160274.11309	642200.67279
7668	2160253.18802	642300.48332
7669	2160236.44557	644108.57506
7670	2160543.39046	644110.34713
7671	2159928.57207	642797.49890
7672	2159947.64528	642897.67980
7673	2159936.72653	644076.84420
7674	2159813.67858	644076.13381
7675	2159428.24046	644150.90985
7676	2159427.09247	644216.90432
7677	2159811.64152	644296.12571
7678	2159934.68947	644296.83610
7679	2160541.90896	644270.34125
7680	2160234.96407	644268.56917
7681	2160219.88874	645896.62183
7682	2160238.96195	645996.80273
7683	2160234.96425	646428.53235
7684	2160498.65802	646571.59037
7685	2159919.90161	645893.84403
7686	2159898.97653	645993.65456
7687	2159896.64922	646244.99112
7688	2159632.95545	646101.93311
7689	2159631.90725	646215.13277
7690	2159895.60102	646358.19079
7691	2159891.33626	646818.76211
7692	2159911.33942	646818.51285
7693	2159887.86487	649353.63577
7694	2159770.33491	649353.54044
7695	2160497.60982	646684.79004
7696	2160233.91606	646541.73202
7697	2160231.39007	646814.52475
7698	2160211.38690	646814.77401
7699	2160187.59769	649383.87892
7700	2160500.06758	649384.13239
7701	2159433.59097	649420.26730
7702	2159433.53743	649486.26728
7703	2160685.03751	649421.28245
7704	2160684.98397	649487.28243
7705	2160398.58607	649544.05012
7706	2160186.11614	649543.87777
7707	2159886.01294	649553.63434
7708	2159768.48298	649553.53900
7709	2159882.17961	649967.61243
7710	2160182.16675	649970.39023
7711	2160241.20402	652086.52343
7712	2160453.13441	654163.58163
7713	2160514.31650	654603.07432
7714	2160711.43639	654602.86298
7715	2161111.52944	654689.43405
7716	2159940.59001	652086.75676
7717	2160003.11806	652884.11480
7718	2159986.88574	654254.44796
7719	2159924.52101	654453.72325

POINT	EASTING	NORTHING
7720	2159922.15207	654653.70922
7721	2159700.80220	654653.94653
7722	2159515.84197	654691.14485
7723	2159565.91270	654757.09120
7724	2159979.90838	654833.63666
7725	2159947.86280	657316.76981
7726	2160547.86277	657316.56220
7727	2161111.60019	654755.43402
7728	2160926.63997	654792.63234
7729	2160560.95246	654793.02443
7730	2160912.23840	657316.43612
7731	2161212.23838	657316.33231
7732	2159946.62095	657416.77024
7733	2160546.62091	657416.56263
7734	2161246.35068	657416.32052
7735	2160946.35070	657416.42432
7736	2159916.98279	659900.76538
7737	2159524.16792	659903.59316
7738	2161007.59266	657856.34710
7739	2161020.53641	658225.69895
7740	2161058.65558	658819.06720
7741	2161499.31181	659472.11579
7742	2161785.78565	659670.63594
7743	2161879.37071	659711.15551
7744	2161899.36290	659725.00967
7745	2162506.48980	658848.89725
7746	2162499.87588	659914.79232
7747	2162519.37209	659914.91329
7748	2159125.33630	660066.48374
7749	2160109.90246	660151.96727
7750	2160334.43021	660404.41599
7751	2160432.23843	660625.63059
7752	2160757.09577	660985.45433
7753	2160867.72133	661393.72340
7754	2160836.65009	662120.53208
7755	2160804.92483	662650.66125
7756	2162517.06849	660162.90377
7757	2162291.38931	660161.50342
7758	2162287.05036	660860.76551
7759	2161895.90747	660281.11602
7760	2161864.15199	660302.54436
7761	2161770.07205	660341.90123
7762	2161617.98168	660444.53061
7763	2162225.39339	661344.67709
7764	2161613.31790	660447.69533
7765	2161389.33757	660691.56719
7766	2161256.30693	660888.90117
7767	2161177.40917	661060.17449
7768	2161141.41712	661279.80712
7769	2161125.57232	661544.57349
7770	2161157.75053	661776.91066
7771	2161105.45333	662650.79874
7772	2160952.31854	665209.68111
7773	2161163.77594	665207.79591
7774	2161414.21175	665255.56519
7775	2160651.62138	665212.36191
7776	2160164.41298	665283.70818
7777	2160165.00137	665349.70556
7778	2160400.41103	665394.60868
7779	2160640.84321	665392.46516
7780	2160488.89594	667931.50414
7781	2161315.10722	665356.45271
7782	2161165.38063	665387.78875
7783	2160941.54037	665389.78435
7784	2160789.36736	667932.59537
7785	2160498.80237	665213.72434
7786	2160726.73962	623033.21512
8000	2159006.61420	612505.54453
8001	2159013.34389	617785.08256
8002	2158959.44563	623064.83991
8003	2157781.96810	613813.62245
8004	2157764.97510	616452.74795
8005	2160365.84273	613839.17796
8006	2160344.79897	616479.19285
8007	2159008.29703	613825.75131
8008	2159009.97988	615145.96909
8009	2159011.66189	616465.52731
8010	2157747.85205	619091.95940
8011	2157730.74880	621731.76335

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (5)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S005

POINT	EASTING	NORTHING
8012	2160320.35043	619118.41290
8013	2160292.76133	621758.47108
8014	2158999.87124	619104.83416
8015	2158986.39860	620424.58501
8016	2158972.92212	621744.71240
9005	2162791.71869	638944.95071
9006	2157615.25269	638896.24971
9007	2157651.99269	633618.63471
9008	2162841.68969	633662.13671
9017	2162879.06460	628386.96410
9018	2157683.60140	628338.73950
9019	2157722.35040	623051.97550
9020	2162924.87530	623106.07600
9028	2168193.64820	617900.03980
9029	2162974.81580	617825.16090
9030	2157756.55690	617772.36760
9031	2157790.54290	612494.11660
9032	2163009.84900	612543.16460
9106	2160149.98369	638920.12371
9107	2160195.21169	633639.90571
9118	2160222.24958	628362.30338
9119	2160279.01389	623078.56197
9129	2165585.27535	617862.67978
9130	2160334.19209	617798.44562
9131	2160376.27962	612518.41585
9205	2162758.41216	641584.84908
9206	2157589.04000	641534.72000
9207	2157632.68969	636259.18071
9208	2162816.58469	636303.52571
9229	2162949.92980	620466.00400
9230	2157739.14720	620411.55120
9231	2157773.39330	615133.12830
9232	2162993.04730	615187.32950
9306	2160118.10989	641559.24434
9307	2160172.59004	636280.90768
9318	2160207.82960	630999.07170
9330	2160306.50877	620438.38019
9331	2160355.40585	615159.94007
9408	2162510.99870	665295.78900
9417	2162551.25530	660007.11284
9418	2157406.67720	660008.92000
9419	2157445.12730	654726.36490
9420	2162612.84495	654720.82454
9430	2157514.17913	649451.71034
9431	2157556.74069	644173.10571
9432	2162725.38069	644202.94571
9507	2159866.58650	665319.36470
9518	2159915.90900	659990.76045
9519	2159981.32784	654723.64581
9530	2160044.20420	649453.76262
9531	2160079.54501	644187.67056
9617	2162531.12700	662651.45095
9619	2157425.90225	657367.64245
9620	2162583.31765	657365.85790
9629	2162643.12390	652087.37700
9630	2157479.65140	652088.97110
9658	2157615.25269	638896.24971
9659	2160149.98369	638920.12371
9660	2162791.71869	638944.95071
9718	2159890.53904	662650.24294
9719	2159947.21753	657366.77003
9730	2160012.56386	652086.70090

Project Name: SW05061 1
Description: I-35
Horizontal Alignment Name: A001
Description: I-35
Style: Centerline

	STATION	EASTING	NORTHING
Element: Linear			
POB (302)	840+00.00	2160320.1645	613899.6787
PI (301)	878+98.45	2160294.5541	617798.0446
Tangent Direction:	N 0°22'35.04" W		
Tangent Length:	3898.450		
Element: Linear			
PI (301)	878+98.45	2160294.5541	617798.0446
PI (310)	1010+99.76	2160207.8296	630999.0717
Tangent Direction:	N 0°22'35.04" W		
Tangent Length:	13201.312		
Element: Linear			
PI (310)	1010+99.76	2160207.8296	630999.0717
PC (308)	1200+70.50	2160032.1732	649969.0013
Tangent Direction:	N 0°31'49.90" W		
Tangent Length:	18970.743		
Element: Circular			
PC (308)	1200+70.50	2160032.1732	649969.0013
PI (350)	1221+88.30	2160012.5639	652086.7009
CC (309)	2188678.8348	650234.2617	
PT (312)	1242+98.40	2160304.5671	654184.2638
Radius:	28647.890		
Delta:	8°27'20.81" Right		
Degree of Curvature(Arc):	0°12'00.00"		
Length:	4227.890		
Tangent:	2117.790		
Chord:	4224.054		
Middle Ordinate:	77.959		
External:	78.172		
Tangent Direction:	N 0°31'49.90" W		
Radial Direction:	N 89°28'10.10" E		
Chord Direction:	N 3°41'50.50" E		
Radial Direction:	S 82°04'29.09" E		
Tangent Direction:	N 7°55'30.91" E		
Element: Linear			
PT (312)	1242+98.40	2160304.5671	654184.2638
PC (313)	1280+33.28	2160819.5370	657883.4755
Tangent Direction:	N 7°55'30.91" E		
Tangent Length:	3734.884		
Element: Circular			
PC (313)	1280+33.28	2160819.5370	657883.4755
PI (300)	1301+68.39	2161113.9285	659998.1942
CC (314)	2139538.8362	660845.9771	
PT (315)	1322+89.53	2160986.3822	662129.4927
Radius:	21485.917		
Delta:	11°21'00.00" Left		
Degree of Curvature(Arc):	0°16'00.00"		
Length:	4256.250		
Tangent:	2135.112		
Chord:	4249.294		
Middle Ordinate:	105.307		
External:	105.825		
Tangent Direction:	N 7°55'30.91" E		
Radial Direction:	S 82°04'29.09" E		
Chord Direction:	N 2°15'00.91" E		
Radial Direction:	N 86°34'30.91" E		
Tangent Direction:	N 3°25'29.09" W		
Element: Linear			
PT (315)	1322+89.53	2160986.3822	662129.4927
POE (326)	1381+02.47	2160639.1316	667932.0498
Tangent Direction:	N 3°25'29.09" W		
Tangent Length:	5812.938		

Project Name: SW05061 1
Description: I-35
Horizontal Alignment Name: A005
Description: US 60
Style: Centerline

	STATION	EASTING	NORTHING
Element: Linear			
POB (415)	17+00.00	2159455.94704	617789.56039
PI (301)	25+38.65	2160294.55412	617798.04460
Tangent Direction:	N 89°25'13.28" E		
Tangent Length:	838.650		
Element: Linear			
PI (301)	25+38.65	2160294.55412	617798.04460
PC (403)	28+38.65	2160594.53877	617801.07956
Tangent Direction:	N 89°25'13.28" E		
Tangent Length:	300.000		
Element: Circular			
PC (403)	28+38.65	2160594.53877	617801.07956
PI (404)	42+66.49	2162022.30396	617815.52433
CC (413)	2161477.08237	530567.77823	
PT (410)	56+94.07	2163449.77996	617783.23672
Radius:	87237.766		
Delta:	1°52'31.36" Right		
Degree of Curvature(Arc):	0°03'56.44"		
Length:	2855.424		
Tangent:	1427.840		
Chord:	2855.297		
Middle Ordinate:	11.683		
External:	11.684		
Tangent Direction:	N 89°25'13.28" E		
Radial Direction:	S 0°34'46.72" E		
Chord Direction:	S 89°38'31.04" E		
Radial Direction:	S 1°17'44.64" W		
Tangent Direction:	S 88°42'15.36" E		

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (6)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S006

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CHECK LEVELS SWO 5061(1) — BENCH MARK LIST — NAVD 88 DATUM

sheet 1 of 3

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	BM DESCRIPTION
7412						990.17	STEEL ROD - MONUMENT No. K-36-418 133' LT STA 52+66 US 60
TO	-4.03	-4.03	-4.03				
BM 60					986.14		"X" IN CENTER OF N. HDWL. 84' LT STA 47+25
TO	5.11	5.10	5.11				
BM 61					991.25		"X" IN CONC. DRIVE. 85' LT STA 36+39 US 60
TO	-3.75	-3.76	-3.75				
BM 44					987.50		"X" IN CENTER OF S. HDWL. 66' RT STA 29+00 US 60 361' RT STA 878+33 I-35
TO	-1.27	-1.28	-1.27				
BM 45					986.23		"[]" IN SE CORNER OF E HDWL. 216' RT STA 873+69
TO	-5.44	-5.44	-5.44				
BM 46					980.79		"[]" IN NE CORNER OF E CONC DRAIN. 79' RT STA 868+01
TO	-2.74	-2.74	-2.74				
BM 47					978.05		R.R. SPIKE IN N. BRACE POST. 148' RT STA 860+07
TO	-3.01	-3.02	-3.02				
BM 48					975.03		80D SPIKE IN S. BRACE POST. 148' RT STA 850+00
TO	-8.30	-8.30	-8.30				
BM 49					966.73		"X" IN CENTER OF E. HDWL. 75' RT STA 841+01
BM 44						987.50	"X" IN CENTER OF S. HDWL. I-35 AND US60. 361' RT STA 878+33 I-35 66' RT STA 29+00 US 60
TO	5.02	5.02	5.02				
BM 43					992.52		"X" IN CONC. BASE OF LIGHT POLE. 216' RT STA 883+83
TO	6.80	6.81	6.81				
BM 42					999.33		"X" IN CONC. BASE OF LIGHT POLE. 93' RT STA 889+10
TO	7.48	7.48	7.48				
BM 41					1006.81		R.R. SPIKE IN 10" FENCE POST. 148' RT STA 894+99
TO	1.04	1.04	1.04				
BM 40					1007.85		"[]" IN SOUTHEAST CORNER OF E. HDWL. 65' RT STA 910+46
TO	5.56	5.54	5.55				
BM 39					1013.40		"[]" IN CENTER OF E. HDWL. 57' RT STA 922+34
TO	8.84	8.85	8.85				
BM 38					1022.25		R.R. SPIKE IN BRACE POST. 148' RT STA 940+06
TO	-14.15	-14.15	-14.15				
7400					1008.10	1008.10	#4 REBAR MONUMENT No. K-36-688 144' RT STA 964+92
TO	3.55	3.56	3.56				
BM 37					1011.66		"[]" IN NW CORNER OF W. HDWL. 62' LT STA 960+31
TO	-8.98	-8.98	-8.98				
BM 36					1002.68		"[]" IN NW CORNER OF W. HDWL. 68' LT STA 976+25
TO	-4.29	-4.31	-4.30				
BM 35					998.38		"[]" IN NW CORNER OF W. HDWL. 75' LT STA 994+99
TO	6.31	6.29	6.30				
BM 34					1004.68		80D SPIKE IN BRACE POST. 149' RT STA 1011+09
TO	-0.16	-0.17	-0.16				
BM 33					1004.52		R.R. SPIKE IN BRACE POST. 148' LT STA 1026+07
TO	1.09	1.08	1.09				
BM 32					1005.61		80D SPIKE IN BRACE POST. 148' LT STA 1041+00
TO	-0.02	-0.02	-0.02				
BM 31					1005.59		"[]" ON W. SIGN BASE. 87' LT STA 1050+96
TO	6.49	6.49	6.49				
BM 30					1012.08		80D SPIKE IN BRACE POST. 148' LT STA 1060+92
TO	6.83	6.83	6.83				
BM 29					1018.91		"[]" IN HDWL. 69' LT STA 1070+00
TO	1.80	1.80	1.80				
BM 28					1020.71		"X" ON W. SIGN BASE. 86' LT STA 1081+26

CHECK LEVELS SWO 5061(1) — BENCH MARK LIST — NAVD 88 DATUM

sheet 2 of 3

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	BM DESCRIPTION
BM 28					1020.71		"X" ON W. SIGN BASE. 86' LT STA 1081+26
TO	-1.56	-1.57	-1.56				
BM 27					1019.15		"[]" IN CENTER OF HDWL. 72' LT STA 1090+99
TO	2.69	2.69	2.69				
BM 26					1021.84		"[]" IN NE CORNER OF HDWL. 74' LT STA 1101+31
TO	12.91	12.92	12.91				
BM 25					1034.76		80D SPIKE IN BRACE POST. 169' LT STA 1113+06
TO	-0.36	-0.36	-0.36				
BM 24					1034.40		80D SPIKE IN BRACE POST. 168' LT STA 1123+00
TO	-0.42	-0.42	-0.42				
BM 23					1033.98		"[]" IN NE CORNER OF N. WING WALL. 68' LT STA 1132+01
TO	1.36	1.36	1.36				
BM 22					1035.34		60D IN FENCE POST. 148' LT STA 1139+49
TO	-2.03	-2.04	-2.03				
BM 21					1033.31		"X" ON W. SIGN BASE. 88' LT STA 1149+13
TO	3.32	3.32	3.32				
BM 20					1036.63		80D SPIKE IN BRACE POST. 149' LT STA 1154+99
TO	22.40	22.40	22.40				
BM 19					1059.03		"[]" ON NE CORNER OF S. LANE HUBGUARD. 15' LT STA 1165+66
TO	-21.90	-21.89	-21.89				
BM 18					1037.14		"X" IN SE CORNER OF RCP. 72' LT STA 1176+96
TO	1.37	1.38	1.38				
BM 16					1038.52		"[]" IN SE CORNER OF WING WALL. 68' LT STA 1188+93
TO	4.23	4.25	4.24	4.25			
BM 15					1042.77		"[]" IN NE CORNER OF N. HDWL. 112' LT STA 1196+12
TO	2.75	2.75	2.75				
BM 14					1045.52		60D SPIKE IN FENCE POST. 148' LT STA 1207+43
TO	0.24	0.24	0.24				
BM 13					1045.76		"X" IN CENTER OF HDWL. 68' LT STA 1215+98
TO	2.89	2.91	2.90	2.91			
BM 12					1048.67		80D SPIKE IN BRACE POST. 148' LT STA 1219+97
TO	-2.15	-2.15	-2.15				
7403					1046.52	1046.52	#4 REBAR. MONUMENT No. K-36-690 140' RT STA 1229+34
TO	3.42	3.42	3.42				
BM 11					1049.94		80D SPK IN BRACE POST. 149' LT STA 1229+76
TO	-3.23	-3.23	-3.23				
BM 10					1046.71		80D SPK. IN NORTH BRACE POST. 218' LT STA 1235+68
TO	-9.38	-9.37	-9.37				
BM 9					1037.34		"X" IN CENTER OF HDWL ON N. SIDE OF OVERPASS. 108' LT STA 1249+09
TO	13.50	13.49	13.49				
BM 8					1050.83		80D SPK. IN SOUTH BRACE POST. 168' RT STA 1259+04
TO	-2.30	-2.30	-2.30				
BM 7					1048.53		"X" IN HDWL ON WEST SIDE OF I-35. 110' LT STA 1266+58
TO	31.41	31.40	31.41				
BM 6					1079.94		"[]" NW WINGWALL OF NORTH BOUND BRIDGE. 12' RT STA 1275+80
TO	-12.84	-12.84	-12.84				
BM 5					1067.10		"X" IN CONC. BASE OF LIGHT POLE. 70' RT STA 1282+77
TO	-7.10	-7.11	-7.11				
BM 4					1059.99		"[]" IN CONC. RCBA. BY EXIT 222. 240' RT STA 1294+00

DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		
CHECKED		**SURVEY DATA (7)**
APPROVED		
SQUAD		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S007

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	BM DESCRIPTION
BM 4						1059.99	"[]" IN CONC. RCPA. BY EXIT 222. 240' RT STA 1294+00
TO	-0.05	-0.06	-0.05				
BM 3					1059.94		"[]" IN CENTER OF RCP ON N. SIDE OF OVERPASS. 236' RT STA 1303+37
TO	4.18	4.17	4.17				
BM 51					1064.11		80D SPK. IN BRACE POST BY N. BOUND ON-RAMP. 152' RT STA 1312+21
TO	0.73	0.73	0.73				
BM 52					1064.84		80D SPK. IN BRACE POST BY STRIP MALL. 118' RT STA 1316+97
TO	-0.74	-0.76	-0.75				
BM 54					1064.09		80D SPK. IN SOUTH POW. POLE. 155' RT STA 1328+43
TO	-3.60	-3.61	-3.60				
7413					1060.49		BRASS CAP MONUMENT No. K-36-421 146' RT STA 1331+23
TO	3.32	3.32	3.32				
BM 55					1063.81		60D SPK. IN FENCE POST. 148' RT STA 1336+20
TO	2.58	2.58	2.58				
BM 56					1066.39		80D SPK. IN BRACE POST. 148' RT STA 1343+96
TO	-3.27	-3.28	-3.28				
BM 57					1063.11		"X" IN CONC. IN SOUTHEAST WINGWALL. 72' RT STA 1353+95
TO	-0.92	-0.93	-0.92				
BM 58					1062.19		80D SPK. IN BRACE POST. 148' RT STA 1361+05
TO	0.50	0.50	0.50				
BM 59					1062.69		"X" IN CENTER OF EAST HDWL. 70' RT STA 1364+43
TO	0.56	0.56	0.56				
BM 62					1063.25		60D SPK. IN FENCE POST. 148' RT STA 1372+46
TO	2.32	2.32	2.32				
BM 63					1065.57		"X" IN NORTH END OF EAST HDWL. 65' RT STA 1377+15
BM 27						1019.15	"[]" IN CENTER OF HDWL. 72' LT STA 1090+99
TO	-3.43	-3.43	-3.43				
7401					1015.72		BRASS CAP. MONUMENT No. K-36-689 265' RT STA 1092+45

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**SURVEY DATA (8)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S008

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OKLAHOMA DEPARTMENT
OF TRANSPORTATION
SURVEY DIVISION
POSITION AND DESCRIPTION OF SURVEY MONUMENTS

S.D. FORM NO. 11

COUNTY KAY | STATION NUMBER K-36-688 | SWO 506(I) | DATE 10-20-2014

TYPE OF MONUMENT *4 REBAR | MONUMENT SET FOR VERT.& HORZ.CONTROL

METHOD ESTABLISHED: STATIC-GPS X, TRIANGULATION ____, TRAVERS ____, OTHER (SPECIFY)

HEIGHT OF INSTRUMENT ABOVE MONUMENT: 5 FEET, TYPE OF WITNESS POST NONE

WRITTEN DESCRIPTION OF LOCATION: FROM THE INTERSECTION OF U.S.60 AND I-35,GO NORTH APPROXIMATELY 1.5 MILES.MONUMENT IS NORTH OF A WEIGHT STATION.ON THE EAST SIDE OF I-35.

GEOID MODEL - 09 | ESTABLISHED BY: RONALD D.SEIM

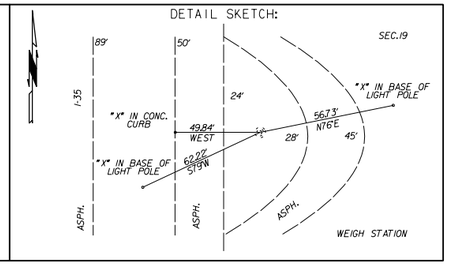
COORDINATE SYSTEM: [X] NAD83(93) [ ] OHD, [ ] OTHER (SPECIFY)

GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE B ORDER ACCURACY:	X 2,160,381.7498 Y 626,392.8111			ELEVATION - FEET
GEODETIC DATA	POSITION			ELIP.HGT.= 914.22
ANGLE OF VARIANCE (θ) 0°23'10.86"	LATITUDE 36°43'8.21212" NORTH LONGITUDE 97°20'43.20573" WEST			ORTHO.HGT.= 1008.10 SOURCE NAVD88 ACCURACY: 3rd ORDER

GENERAL VICINITY:
SEC 19
R 1W
T 26 N

△ = CONTROL MONUMENT
⊙ = LAND CORNER
⊡ = OTHER

DETAIL SKETCH:



7401

OKLAHOMA DEPARTMENT
OF TRANSPORTATION
SURVEY DIVISION
POSITION AND DESCRIPTION OF SURVEY MONUMENTS

S.D. FORM NO. 11

COUNTY KAY | STATION NUMBER K-36-689 | SWO 506(I) | DATE 10-20-2014

TYPE OF MONUMENT Feno Marker w/ Brass Cap | MONUMENT SET FOR VERT.& HORZ.CONTROL

METHOD ESTABLISHED: STATIC-GPS X, TRIANGULATION ____, TRAVERS ____, OTHER (SPECIFY)

HEIGHT OF INSTRUMENT ABOVE MONUMENT: 5 FEET, TYPE OF WITNESS POST NONE

WRITTEN DESCRIPTION OF LOCATION: AT THE INTERSECTION OF HUBBARD ROAD AND I-35.THE MONUMENT IS LOCATED ON THE NORTHEAST QUADRANT OF THE HUBBARD ROAD INTERCHANGE.

GEOID MODEL - 09 | ESTABLISHED BY: RONALD D.SEIM

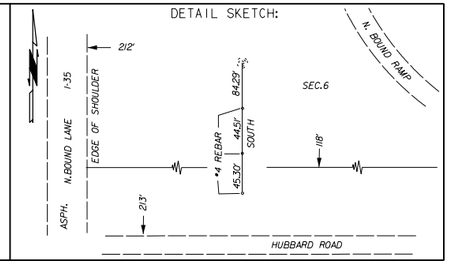
COORDINATE SYSTEM: [X] NAD83(93) [ ] OHD, [ ] OTHER (SPECIFY)

GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE B ORDER ACCURACY:	X 2,160,396.9639 Y 639,146.1606			ELEVATION - FEET
GEODETIC DATA	POSITION			ELIP.HGT.= 921.82
ANGLE OF VARIANCE (θ) 0°23'11.59"	LATITUDE 36°45'14.31219" NORTH LONGITUDE 97°20'41.96207" WEST			ORTHO.HGT.= 1015.72 SOURCE NAVD88 ACCURACY: 3rd ORDER

GENERAL VICINITY:
SEC 6
R 1W
T 26 N

△ = CONTROL MONUMENT
⊙ = LAND CORNER
⊡ = OTHER

DETAIL SKETCH:



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OKLAHOMA DEPARTMENT
OF TRANSPORTATION
SURVEY DIVISION
POSITION AND DESCRIPTION OF SURVEY MONUMENTS

S.D. FORM NO. 11

COUNTY KAY | STATION NUMBER K-36-690 | SWO 506(I) | DATE 10-20-2014

TYPE OF MONUMENT *4 REBAR | MONUMENT SET FOR VERT.& HORZ.CONTROL

METHOD ESTABLISHED: STATIC-GPS X, TRIANGULATION ____, TRAVERS ____, OTHER (SPECIFY)

HEIGHT OF INSTRUMENT ABOVE MONUMENT: 5 FEET, TYPE OF WITNESS POST NONE

WRITTEN DESCRIPTION OF LOCATION: FROM THE INTERSECTION OF S.H.11 AND I-35,GO SOUTH APPROXIMATELY 1.35 MILES TO A MONUMENT LOCATED ON THE EAST SIDE OF I-35

GEOID MODEL - 09 | ESTABLISHED BY: RONALD D.SEIM

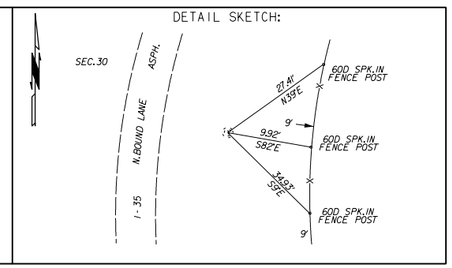
COORDINATE SYSTEM: [X] NAD83(93) [ ] OHD, [ ] OTHER (SPECIFY)

GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE B ORDER ACCURACY:	X 2,160,287.7396 Y 652,816.5149			ELEVATION - FEET
GEODETIC DATA	POSITION			ELIP.HGT.= 952.52
ANGLE OF VARIANCE (θ) 0°23'11.47"	LATITUDE 36°47'29.48592" NORTH LONGITUDE 97°20'42.17099" WEST			ORTHO.HGT.= 1046.52 SOURCE NAVD88 ACCURACY: 3rd ORDER

GENERAL VICINITY:
SEC 30
R 1W
T 27 N

△ = CONTROL MONUMENT
⊙ = LAND CORNER
⊡ = OTHER

DETAIL SKETCH:



DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (9)
APPROVED			
SQUAD			

COUNTY KAY | HIGHWAY I-35 | STATE JOB NO. 24432(14) | SHEET NO. S009

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REVISED

OKLAHOMA DEPARTMENT
OF TRANSPORTATION
SURVEY DIVISION
POSITION AND DESCRIPTION OF SURVEY MONUMENTS

S.D. FORM NO. 11

COUNTY KAY | STATION NUMBER K-36-418 | SWO 506(1) 4003(1) | DATE 10-20-14

TYPE OF MONUMENT STEEL ROD | MONUMENT SET FOR CONTROL MONUMENT HARN DENSIFICATION

METHOD ESTABLISHED: STATIC-GPS X, TRIANGULATION ____, TRAVERS ____, OTHER (SPECIFY)

HEIGHT OF INSTRUMENT ABOVE MONUMENT: 5' FEET, TYPE OF WITNESS POST 6" GUARD POSTS 3' E.& W. DELINEATOR POST W/ SIGN 3.5' N.

WRITTEN DESCRIPTION OF LOCATION: MONUMENT IS 4.5' S. OF NORTH R/W FENCE TO U.S.60. 48' EAST OF SECTION LINE ROAD AND APPROX. 0.5 MILE EAST OF I-35.

GEOID MODEL - 09 | ESTABLISHED BY: RONALD D. SEIM

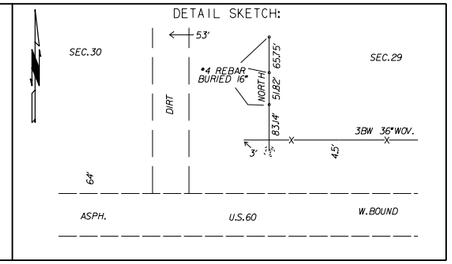
COORDINATE SYSTEM: X NAD83(93) ☐ OHD, ☐ OTHER (SPECIFY)

GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE ACCURACY: B ORDER	X 2,163,024.3122 Y 617,925.2437			
				ELEVATION - FEET
GEODETIC DATA	POSITION			ELIP. HGT. = 896.20
ANGLE OF VARIANCE (Θ) 0°23'29.59"	LATITUDE 36°41'44.30930" NORTH LONGITUDE 97°20'11.46011" WEST			ORTHO. HGT. = 990.17 SOURCE NAVD88 GPS STATIC ADJUSTED ACCURACY: 3rd ORDER

GENERAL VICINITY:
SEC 29
R 1W
T 26 N

△ = CONTROL MONUMENT
⊙ = LAND CORNER
▫ = OTHER

DETAIL SKETCH:



7413

REVISED

OKLAHOMA DEPARTMENT
OF TRANSPORTATION
SURVEY DIVISION
POSITION AND DESCRIPTION OF SURVEY MONUMENTS

S.D. FORM NO. 11

COUNTY KAY | STATION NUMBER K-36-421 | SWO 506(1) 4003(1) | DATE 10-20-14

TYPE OF MONUMENT Feno Marker w/ Brass Cap | MONUMENT SET FOR CONTROL MONUMENT HARN DENSIFICATION

METHOD ESTABLISHED: STATIC-GPS X, TRIANGULATION ____, TRAVERS ____, OTHER (SPECIFY)

HEIGHT OF INSTRUMENT ABOVE MONUMENT: 5' FEET, TYPE OF WITNESS POST DELINEATOR POST W/ SIGN 2.5' E.

WRITTEN DESCRIPTION OF LOCATION: MONUMENT IS 3' W. OF EAST R/W FENCE TO I-35, AND APPROX. 0.6 MILE NORTH OF SH 11.

GEOID MODEL - 09 | ESTABLISHED BY: RONALD D. SEIM

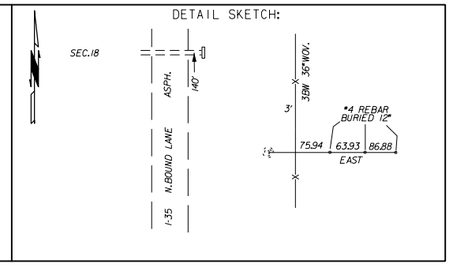
COORDINATE SYSTEM: X NAD83(93) ☐ OHD, ☐ OTHER (SPECIFY)

GRID DATA:	COORDINATES (FEET)	GRID BEARING	DISTANCE	POINTS OBSERVED
NORTH ZONE ACCURACY: B ORDER	X 2,161,082.7970 Y 662,970.2225			
				ELEVATION - FEET
GEODETIC DATA	POSITION			ELIP. HGT. = 966.438
ANGLE OF VARIANCE (Θ) 0°23'17.733"	LATITUDE 36°49'09.82697" NORTH LONGITUDE 97°20'31.55101" WEST			ORTHO. HGT. = 1060.49 SOURCE NAVD88 ACCURACY: 3rd ORDER

GENERAL VICINITY:
SEC 18
R 1W
T 27 N

△ = CONTROL MONUMENT
⊙ = LAND CORNER
▫ = OTHER

DETAIL SKETCH:



DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (10)
APPROVED			
SQUAD			

COUNTY KAY | HIGHWAY I-35 | STATE JOB NO. 24432(14) | SHEET NO. S010

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7/26/2018

Begin Project:
POT Sta.840+00.00
(#4 Rebar)
-POT Sta.840+00.00 on
FAP No.I-456(33) Plans
and SWO 2153(1)

SECTION 31
T-26-N, R-1-W

845+00

850+00

POT Sta.852+59.84
(#4 Rebar)
on E-W 22.5 Sec.Line
2538.32' W.to 1/4 Cor.
43.520' E.to Cen.Sec.Cor.

855+00

860+00

POT Sta.865+00.00
(#4 Rebar)

865+00

866+00

1345.50'
N 89°24'18.21" E

7600

PRESENT R/W

1259.26'
N 0°22'35.04" W

#4 Rebar
61.03
83.07
East

150'

180°

302

2641.61'
N 0°27'09.91" W

N-S 317.5 ℄

#4 Rebar
55.41
90.89
East

150'

7601

PRESENT R/W

1260.41'
N 0°22'35.04" W

A001 ℄ SURVEY ℄ I-35

7603

#4 Rebar
40.00
90.00
East

303

180°

9331

#4 Rebar
90.00
East

7602

1540.74'
N 0°22'35.04" W

421

PRESENT R/W

150'

N 2°57'20.09" W

#4 Rebar
54.72
90.36
East

180°

N 0°22'35.04" W

2638.59'
N 0°27'38.35" W

150'

#4 Rebar
48.26
96.36
East

1639.59'
N 0°22'35.04" W

PRESENT R/W

GN TN
θ

Angle Of Variance
At Center Section Cor.
X= 2,160,355.4058
Y= 615,159.9401
Lat.= 36°41'17.14555"
Long.= 97°20'44.45911"
θ = 0°23'10.12"

0 100' 200'
1"=100'

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (11)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S011

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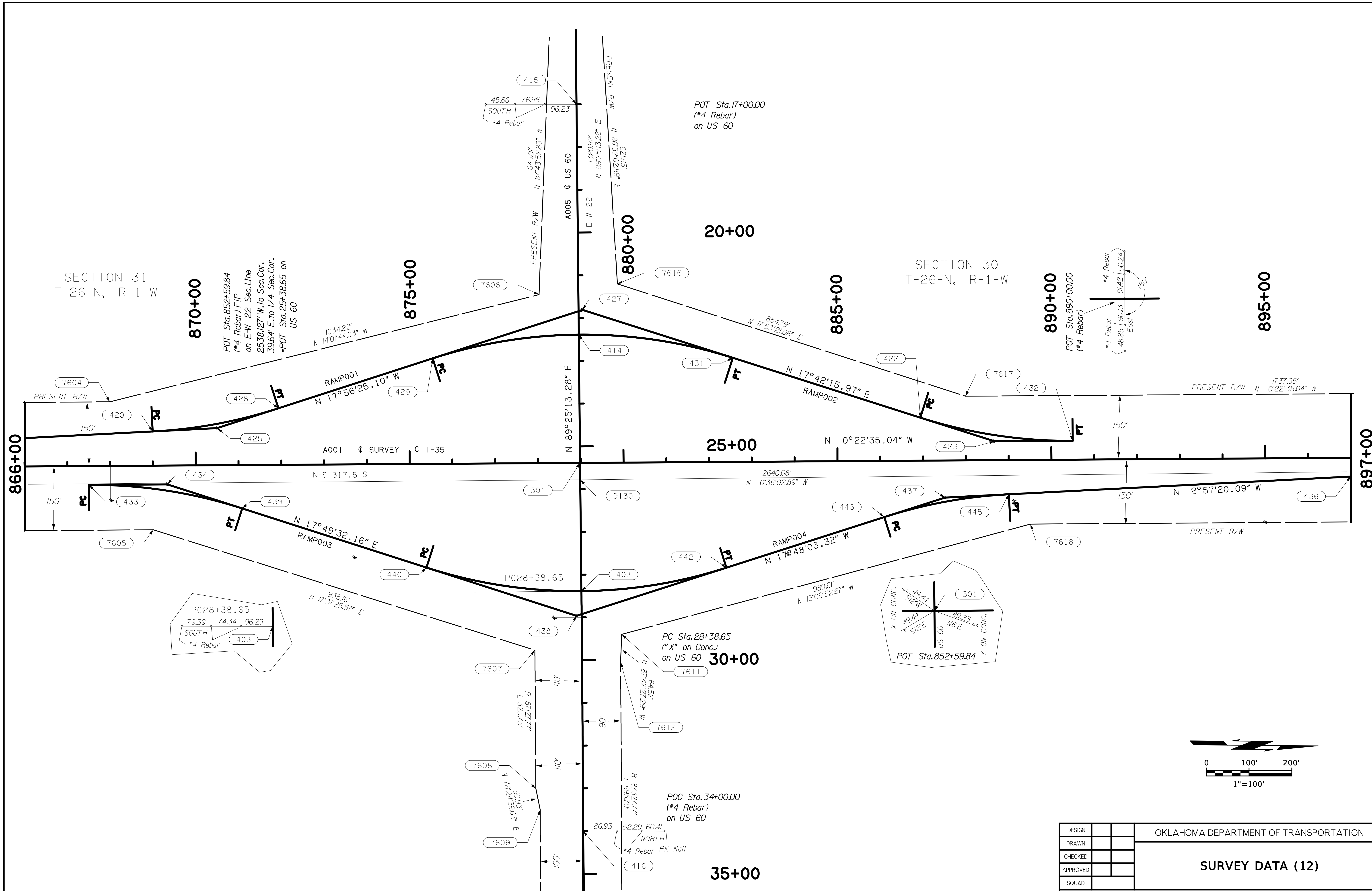

SECTION 31
T-26-N, R-1-W
SECTION 30
T-26-N, R-1-W
870+00
875+00
880+00
885+00
890+00
895+00
866+00
897+00
20+00
25+00
30+00
35+00
A005 ℄ US 60
E-W 22
A001 ℄ SURVEY ℄ I-35
N-S 317.5 ℄
N 89°25'13.28" E
N 0°22'35.04" W
N 2°57'20.09" W
RAMP001
N 17°56'25.10" W
RAMP002
N 17°42'15.97" E
RAMP003
N 17°49'32.16" E
RAMP004
N 17°48'03.32" W
PC28+38.65
POT Sta.17+00.00
(#4 Rebar)
on US 60
POT Sta.852+59.84
(#4 Rebar) FIP
on E-W 22 Sec.Line
2538.127' W. to Sec.Cor.
39.64' E. to 1/4 Sec.Cor.
=POT Sta.25+38.65 on
US 60
POT Sta.890+00.00
(#4 Rebar)
PC Sta.28+38.65
("X" on Conc.)
on US 60
POC Sta.34+00.00
(#4 Rebar)
on US 60
POT Sta.852+59.84
PRESENT R/W
1034.22'
N 14°01'44.03" W
854.79'
N 17°53'21.08" E
1737.95'
N 0°22'35.04" W
2640.08'
N 0°36'02.89" W
935.16'
N 17°31'25.57" E
989.61'
N 15°06'52.67" W
645.01'
N 87°43'52.89" W
1320.92'
N 89°25'13.28" E
621.85'
N 86°32'02.89" E
R 87.121.77'
L 323.73'
64.52'
N 87°42'27.29" W
R 87.321.77'
L 695.70'
50.93'
N 78°24'59.65" E
150'
110'
90'
100'
1"=100'
0 100' 200'

			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN			
DRAWN			
CHECKED			SURVEY DATA (12)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S012

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900+00

905+00

910+00

915+00

920+00

925+00

928+00

897+00

SECTION 30
T-26-N, R-1-W

POT Sta.905+38.54
(#4 Rebar)
on E-W 21.5 Sec.Line
2538.202' W.to 1/4 Cor.
29.300' E.to Cen.Sec.Cor.

1320.18'
N 89°24'04.81" E

POT Sta.918+00.00
(#4 Rebar)

1737.95'
N 0°22'35.04" W

PRESENT R/W

2540.35'
N 0°22'35.04" W

PRESENT R/W

150'

150'

A001 ℄ SURVEY ℄ I-35

N 0°22'35.04" W

#4 Rebar
40.00
90.00
East

#4 Rebar
102.58
91.41
East

#4 Rebar
55.36

180°

180°

304

9330

N-S 317.5 ℄

2640.32'
N 0°35'47.97" W

150'

150'

1589.12'
N 0°22'35.04" W

PRESENT R/W

2540.34'
N 0°22'35.04" W

PRESENT R/W

7620

7619

GN TN

θ

Angle Of Variance
At Center Section Cor.
X= 2,160,306.5088
Y= 620,438.3802
Lat.= 36°42'09.34108"
Long.= 97°20'44.62271"
θ = 0°23'10.02"

0 100' 200'

1"=100'

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (13)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S013

7/26/2018

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SECTION 30
T-26-N, R-1-W

SECTION 19
T-26-N, R-1-W

928+00 | 930+00 | 935+00 | 940+00 | 945+00 | 950+00 | 955+00 | 959+00

1319.64'
N 89°24'15.15" E

7622 — 50' — 50' — 7623

490.79'
N 84°45'54.78" W

491.55'
N 83°35'50.80" E

POT Sta.931+78.88
("X" on conc.Br.deck)
on E-W 21 Sec.Line
2537.652' W.to Sec.Cor.
19.150' E.to 1/4 Sec.Cor.

POT Sta.945+00.00
(#4 Rebar)

POT Sta.958+00.00
(#4 Rebar)

7621 — 100' — 100' — 7624

PRESENT R/W

1515.72'
N 0°22'35.04" W

1100.00'
N 0°22'35.04" W

150' | 150' | 150' | 150' | 150'

A001 ℄ SURVEY ℄ I-35

N 0°22'35.04" W

#4 Rebar
91.33' | 54.87'
180°
107.63'
East
#4 Rebar

450 — 7638 — PC — 452 — PRC — 453 — 454 — 455 — 7639 — PT

466 — PC — PRC — 469 — PT

86.22'
159.57'
65.42'
East
#4 Rebar

7625 — 100' — 100' — 7629

N 84°15'51.10" E
167.44'

N 85°25'56.50" W
166.67'

7626 — 85' — 85' — 7628

N 76°16'12.67" E
154.03'

N 77°27'42.37" W
154.03'

7786 — 50' — 50' — 7627

E-W 21

1514.57'
N 0°22'35.04" W

PRESENT R/W

451 — 7630 — 600.00' N 0°22'35.04" W — 7631 — 467 — 470

739.00'
N 8°34'33.86" E

"X" ON CONC.
BRIDGE HUB GUARD

PK NAIL IN CONC.
BRIDGE HUB GUARD

19.92'
N53°W

327

86.35'
N82°E

86.15'
S82°E

PK NAIL IN CONC.
BRIDGE HUB GUARD

0 100' 200'
1"=100'

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (14)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S014

7/26/2018

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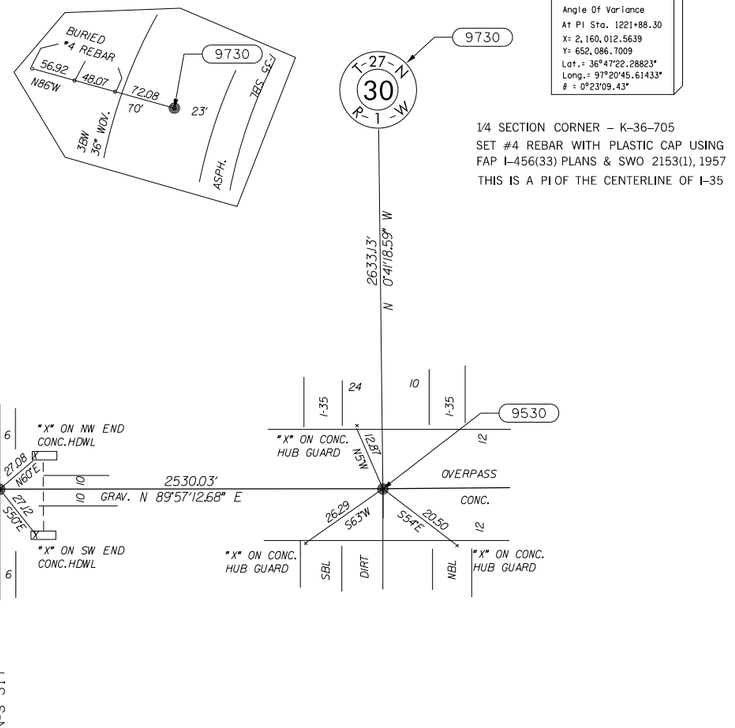


SECTION CORNER – K–36–706
#4 REBAR WITH PLASTIC CAP – FIP – USED AS FOUND
FITS REFERENCES ON CORNER FILED BY
RLS #1528, 2–2006, SET 1/2" IRON PIN
FITS REFERNECES OF SWO 2154(1), 1957, 3/8" IRON PIN

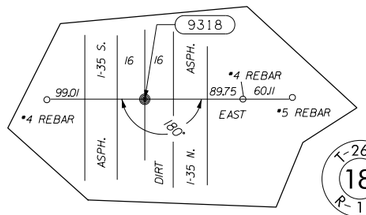
1/4 SECTION CORNER – K–36–705
SET #4 REBAR WITH PLASTIC CAP USING
FAP I–456(33) PLANS & SWO 2153(1), 1957
THIS IS A PI OF THE CENTERLINE OF I–35

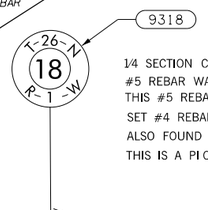
1/4 SECTION CORNER – K–36–707
CUT "X" ON CONC. BRIDGE DECK 7.26' EAST OF
THE CENTERLINE OF I–35 AS STATED IN
FAP I–456(6)(7) PLANS & SWO 2154(1), 1957
FOUND "X" ON CONC. SET & FILED BY RLS #1538, 2–2006
AND USED BY RLS #1468, 11–2013, 3.8' W. & 0.2' N. OF POSITION USED
ALSO FOUND ANOTHER "X" 6.8' W. & 0.1' S. OF POSITION USED

0 500' 1000'
1"=500'

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**SURVEY DATA (15)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S015

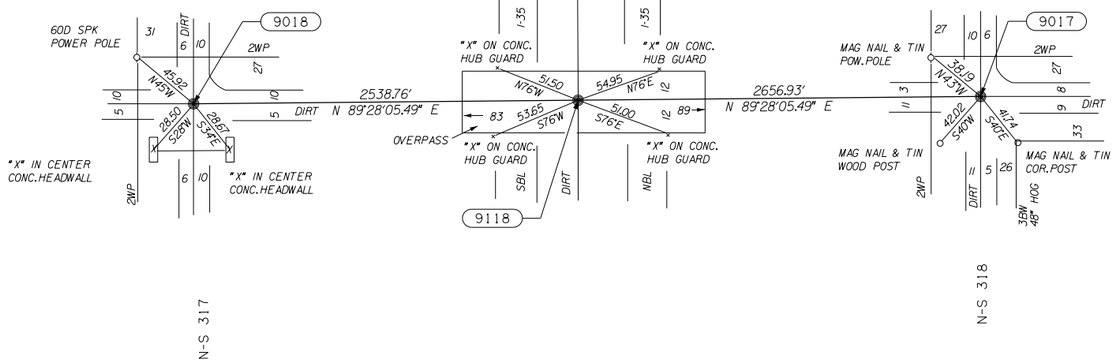




1/4 SECTION CORNER – K–36–710
#5 REBAR WAS FOUND IN 2008 AND POSITION WAS LOCATED VIA RTK
THIS #5 REBAR WAS DESTROYED BY CABLE BARRIER CONSTRUCTION
SET #4 REBAR WITH PLASTIC CAP IN POSITION OF #5 REBAR
ALSO FOUND ORIGINAL REFERENCE 150' EAST
THIS IS A PI OF THE CENTERLINE OF I–35

SECTION CORNER – K–36–711
1" IRON PIN – FIP – USED AS FOUND
FITS REFERENCES ON CORNER FILED BY
RLS #1552, 10–2011, 1" IRON PIN FIP

E-W 20

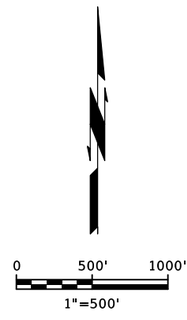


N-S 317

N-S 318

1/4 SECTION CORNER – K–36–709
"X" ON CONC. BRIDGE DECK – FIP – USED AS FOUND
CUT AND FILED BY RLS #1552, 10–2011
THIS "X" IS 2.90' WEST FROM THE CENTERLINE OF I–35
SWO 2153(1), 1957, STATES CORNER IS 3.27' WEST FROM
THE CENTERLINE OF I–35

SECTION CORNER – K–36–708
#4 REBAR – FIP – USED AS FOUND
FITS REFERENCES ON CORNERS FILED BY
RLS #1552, 10–2011, 3/4" IRON PIN BESIDE STONE FIP,
AND RLS #1468, 7–2008, STONE WITH BAR FIP



DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**SURVEY DATA (16)**
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S016

7/26/2018

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SECTION CORNER – K–36–691
#4 REBAR – FIP – USED AS FOUND
FITS REFERENCES OF CORNER FILED
BY RLS #1083, 6–2005, 5⁄8" IRON PIN FIP
SWO 2153(1), 1957, 5⁄8" IRON PIN FIP

1⁄4 SECTION CORNER – K–36–692
SET "X" ON CONC. BRIDGE DECK
USING FAP No. I–456(33) PLANS AND
SWO 2153(1), 1957, 5⁄8" IRON PIN FIP
19.15' EAST FROM THE CENTERLINE OF I–35

SECTION CORNER – K–36–693
1" IRON PIN – FIP – USED AS FOUND
DUG OUT 1⁄2" X 6" LONG IRON PIN
THAT WAS ON TOP OF 1" PIN
CORNER FILED BY RLS #1083, 6–2005, 1⁄2" IRON PIN FIP
ALSO FILED BY RLS #1397, 12–1999, 1⁄2" IRON PIPE FIP

1⁄4 SECTION CORNER – K–36–696
#6 REBAR – FIP – USED AS FOUND
CORNER FILED BY RLS #1083, 6–2005, 1⁄2" PIPE FIP
NO REFERENCES IN VICINITY OF CORNER

1⁄4 SECTION CORNER – K–36–694
#4 REBAR WITH PLASTIC CAP, #1083 – FIP – USED AS FOUND
CORNER FILED BY RLS #1083, 6–2005, SET 1⁄2" IRON PIN

1⁄4 SECTION CORNER – K–36–695
SET MAIL PK NAIL USING
FAP No. I–456(33) PLANS AND
SWO 2153(1), 1957
29.30' E. FROM THE CENTERLINE OF I–35

SECTION CORNER – K–36–697
MAG NAIL – FIP – USED AS FOUND
FITS REFERNECES ON CORNER FILED BY
RLS #1528, 1–2009, MAG NAIL FIP
ALSO FILED BY RLS #968, 9–2005, PK NAIL & TIN FIP
ALSO FILED BY RLS #1083, 6–2005, SET MAG NAIL WITH SHINER
SWO 2153(1), 1957, "X" IN CONC.

CORNER NOT SET, POSITION IN CONC. PIER
SWO 2153(1), 1957, "X" IN CONC.
39.64' EAST FROM THE CENTERLINE OF I–35
IMPRACTABLE TO SET IN NORTH
BOUND BRIDGE OF I–35

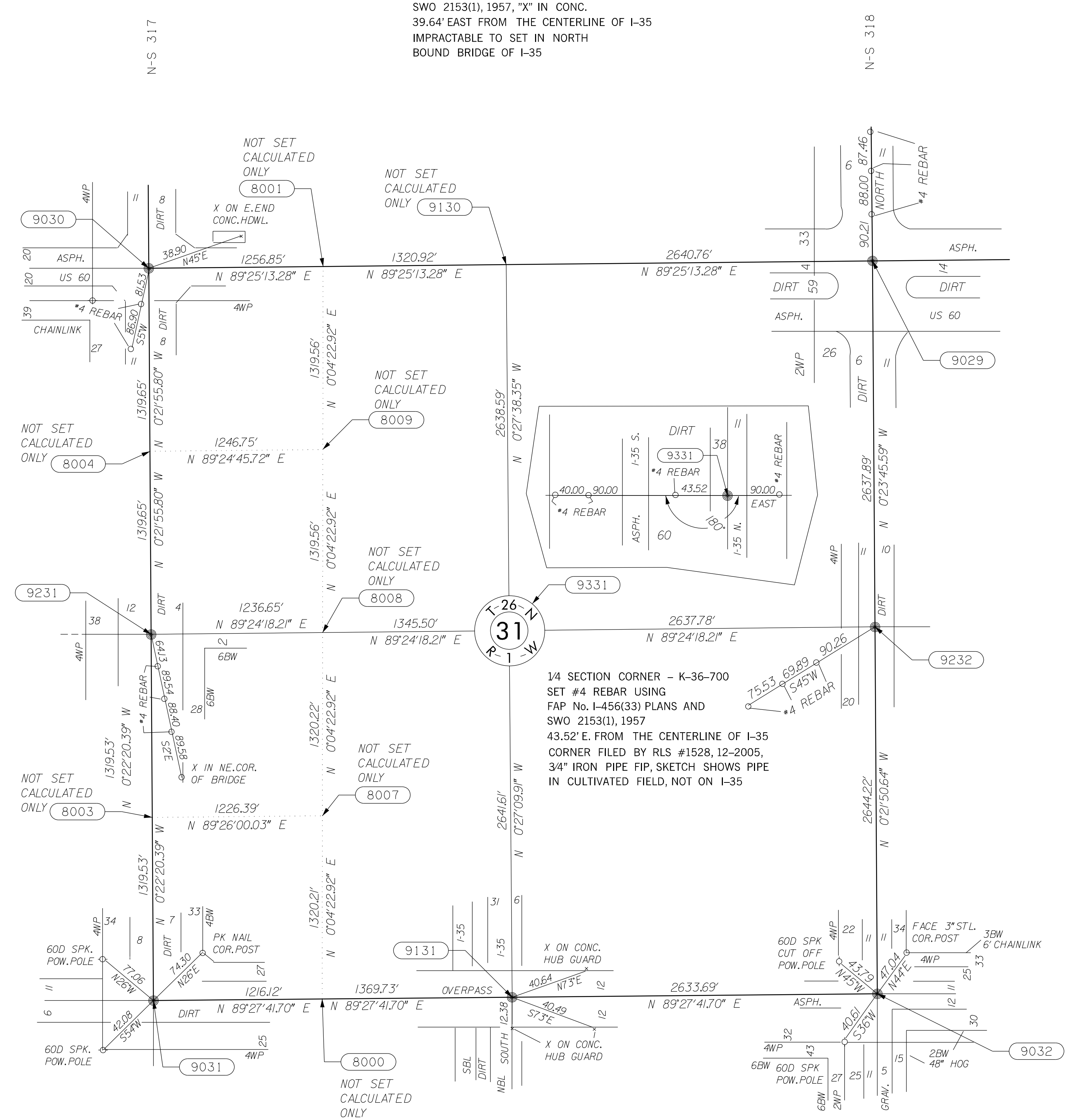
SECTION CORNER – K–36–698
PK NAIL – FIP – USED AS FOUND
FILED BY RLS #968, 9–2005, PK NAIL FIP
ALSO FILED BY RLS #1528, 6–2003, PK NAIL FIP
ALSO FILED BY RLS #151, 4–2002, PK NAIL FIP
SWO 2153(1), 1957, "X" IN CONC.

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			**SURVEY DATA (17)**
APPROVED			
SQUAD			
COUNTY KAY	HIGHWAY I-35	STATE JOB NO. 24432(14)	SHEET NO. S017

CORNER NOT SET, POSITION IN CONC. PIER
SWO 2153(1), 1957, "X" IN CONC.
39.64' EAST FROM THE CENTERLINE OF I-35
IMPRACTABLE TO SET IN NORTH
BOUND BRIDGE OF I-35

SECTION CORNER – K-36-697
MAG NAIL – FIP – USED AS FOUND
FITS REFERENECES ON CORNER FILED BY
RLS #1528, 1-2009, MAG NAIL FIP
ALSO FILED BY RLS #968, 9-2005, PK NAIL & TIN FIP
ALSO FILED BY RLS #1083, 6-2005, SET MAG NAIL WITH SHINER
SWO 2153(1), 1957, "X" IN CONC.

SECTION CORNER – K-36-698
PK NAIL – FIP – USED AS FOUND
FILED BY RLS #968, 9-2005, PK NAIL FIP
ALSO FILED BY RLS #1528, 6-2003, PK NAIL FIP
ALSO FILED BY RLS #151, 4-2002, PK NAIL FIP
SWO 2153(1), 1957, "X" IN CONC.

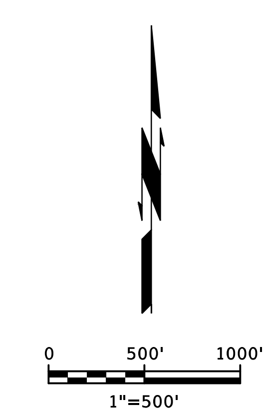


1/4 SECTION CORNER – K-36-701
1" IRON PIPE WITH PLASTIC CAP INSIDE – FIP – USED AS FOUND
FITS REFERENCES ON CORNER FILED BY
RLS #968, 9-2005, SET 1/2" BAR & CAP

1/4 SECTION CORNER – K-36-700
SET #4 REBAR USING
FAP No. I-456(33) PLANS AND
SWO 2153(1), 1957
43.52' E. FROM THE CENTERLINE OF I-35
CORNER FILED BY RLS #1528, 12-2005,
3/4" IRON PIPE FIP, SKETCH SHOWS PIPE
IN CULTIVATED FIELD, NOT ON I-35

1/4 SECTION CORNER – K-36-699
SET #4 REBAR WITH PLASTIC CAP
USING REFERENCE AND TOPO FROM CORNERS FILED BY
RLS #968, 9-2005, SET 1/2" REBAR, AND
RLS #151, 4-2002, 3/8" IRON PIN FIP

SECTION CORNER – K-36-702
3/4" IRON PIN – FIP – USED AS FOUND
FITS REFERENCES ON CORNER FILED BY
RLS #968, 9-2005, 3/4" I. PIN FIP
AND ON CORNER FILED BY
RLS #1528, 7-2004, 3/4" I. PIN FIP



1/4 SECTION CORNER – K-36-703
SET "X" ON CONC. BRIDGE DECK USING
FAP I-456(33) PLANS & SWO 2153(1), 1957
47.04' EAST FROM THE CENTERLINE OF I-35
FOUND "X" ON CONC. SET & FILED BY
RLS #968, 9-2005, USED GLO PRORATION
BETWEEN SEC. COR.,,S. E. & W., 5.8' W. OF POSITION USED

SECTION CORNER – K-36-704
#5 REBAR – FIP – USED AS FOUND
FITS REFERENCES ON CORNERS FILED BY
RLS #1082, 1-2011, 5/8" IP FIP,
RLS #968, 9-2005, 5/8" REBAR FIP,
RLS #151, 4-2002, 3/4" IRON PIN FIP

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			
CHECKED			SURVEY DATA (18)
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. S018

NW/4 SEC. 31
T-26-N, R-1-W

855+00

860+00

865+00

STA. 854+00.00

STA. 869+00.00

STA: 861+00.01
BEGIN DOTTED LANE LINE

6" DOTTED LANE LINE

STA: 865+39.00
END DOTTED LANE LINE

6" YELLOW BARRIER LINE

6" DASHED LANE LINE (12' WHITE, 12' BLACK)

6" WHITE EDGE LINE

CL SURVEY I-35

STA: 867+50.07
BEGIN DOTTED LANE LINE

6" DOTTED LANE LINE

+04.43 NEW SPECIAL SIGN 78.53RT
INSTALL NEW SIGN AND POLE
"TONKAWA PONCA CITY"
(SEE SIGN DETAILS)

+17.98 NEW W8-13F SIGN 77.10RT
INSTALL NEW SIGN AND POLE

+44.83 NEW W13-2F SIGN 76.50RT
INSTALL NEW SIGN AND POLE
"50 MPH"

NE/4 SEC. 31
T-26-N, R-1-W

NW/4 SEC. 31
T-26-N, R-1-W

870+00

STA. 869+00.00

STA. 872+00.00

10'
12'
12'
4'
4'
12'
12'
10'

STA: 869+17.55
END DOTTED LANE LINE

+60.44 NEW E5-1α SIGN 62.32RT
INSTALL NEW SIGN AND POLE
"EXIT 214"

NE/4 SEC. 31
T-26-N, R-1-W

N

0 25 50 100

SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN W. FLETCHER
24921
OKLAHOMA

7/26/2018

DESIGN	BWF	2/18
DRAWN	BWF	2/18
CHECKED	ATD	3/18
APPROVED	BWF	3/18
SQUAD	MESHEK	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FINAL
STRIPING (1)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO T001

PRINT DATE: 07/17/2018 M:\BENHAM\16BEN01\DESIGN\DRAWINGS\16BEN01_STRIPING.DWG

NW/4 SEC. 31
T-26-N, R-1-W

SW/4 SEC. 30
T-26-N, R-1-W

STA. 872+00.00

STA. 887+00.00

875+00

880+00

885+00

CL SURVEY US-60

CL SURVEY I-35

+83.61 NEW W4-1E(R) SIGN 76.83LT
INSTALL NEW SIGN AND POLE

+92.41 NEW D10-3F SIGN 61.43LT
INSTALL NEW SIGN AND POLE
"MILE 215"

6" YELLOW BARRIER LINE

6" DASHED LANE LINE
(12' WHITE, 12' BLACK)

10'
12'
12'
4'
4'
12'
12'
10'

6" WHITE EDGE LINE

+12.97 NEW D8-1 SIGN 72.24RT
INSTALL NEW SIGN AND POLE
"1 1/2 MILE"

+07.74 NEW W4-1E(R) SIGN 76.83RT
INSTALL NEW SIGN AND POLE

+00.08 NEW SPECIAL SIGN 80.50RT
INSTALL NEW SIGN AND POLE
"PREPASS SITE FOLLOW IN-CAB SIGNALS"
(SEE SIGN DETAILS)

+92.28 NEW D10-3F SIGN 60.50RT
INSTALL NEW SIGN AND POLE
"MILE 215"

NE/4 SEC. 31
T-26-N, R-1-W

SE/4 SEC. 30
T-26-N, R-1-W

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN W. FLETCHER
24921
OKLAHOMA

7/26/2018

N

0 25 50 100

SCALE IN FEET

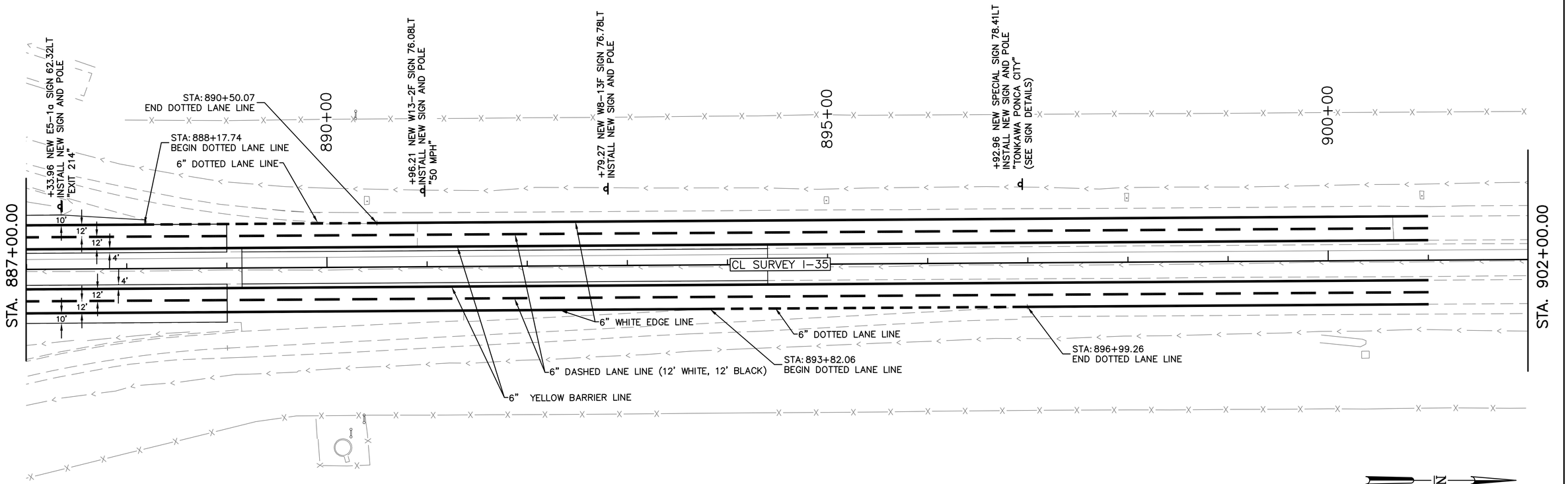
DESIGN	BWF	2/18
DRAWN	BWF	2/18
CHECKED	ATD	3/18
APPROVED	BWF	3/18
SQUAD	MESHEK	

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FINAL
STRIPING (2)

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T002

PRINT DATE: 07/17/2018 M:\BENHAM\16BEN01\DESIGN\DRAWINGS\16BEN01_STRIPING.DWG



N

0 25 50 100

SCALE IN FEET

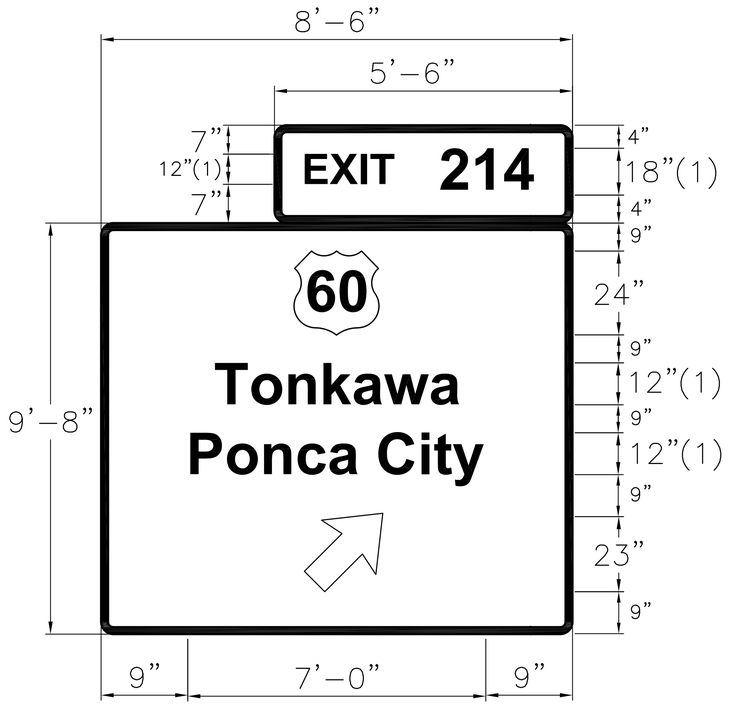
REGISTERED PROFESSIONAL ENGINEER
BENJAMIN W. FLETCHER
24921
OKLAHOMA

7/26/2018

DESIGN	BWF	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	BWF	2/18	
CHECKED	ATD	3/18	FINAL STRIPING (3)
APPROVED	BWF	3/18	
SQUAD	MESHEK		

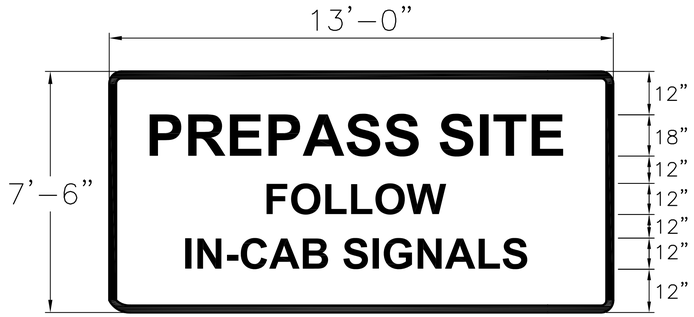
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T003

PRINT DATE: 07/17/2018 M:\BENHAM\16BEN01\DESIGN\DRAWINGS\16BEN01_STRIPING.DWG



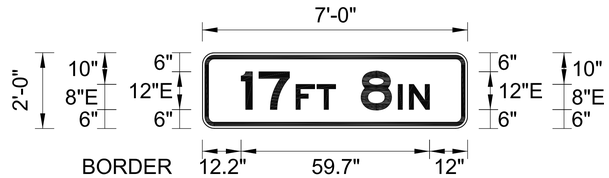
SPECIAL SIGN ①

FONT: (1) Series D
PANEL STYLE: guide_con_street.ssi
M.U.T.C.D.: 2009 EDITION
BORDER: R=1.75" TH=1"



SPECIAL SIGN ②

FONT: (1) Series D
PANEL STYLE: guide_con_street.ssi
M.U.T.C.D.: 2009 EDITION
BORDER: R=1.75" TH=1"



Panel Style: Bridge Clearance.ssi
M.U.T.C.D.: 2009 Edition

BRIDGE "B" CONTROLS THE VERTICAL CLEARANCE OVER US–60. SEE GENERAL PLAN & ELEVATION IN THE BRIDGE "B" PLANS FOR THE CALCULATED THEORETICAL VERTICAL CLEARANCE. THE CONTRACTOR SHALL CONTACT ODOT DIV. 4 FOR FINAL MEASUREMENT OF VERTICAL CLEARANCES.

HARDWARE AND CONNECTION DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

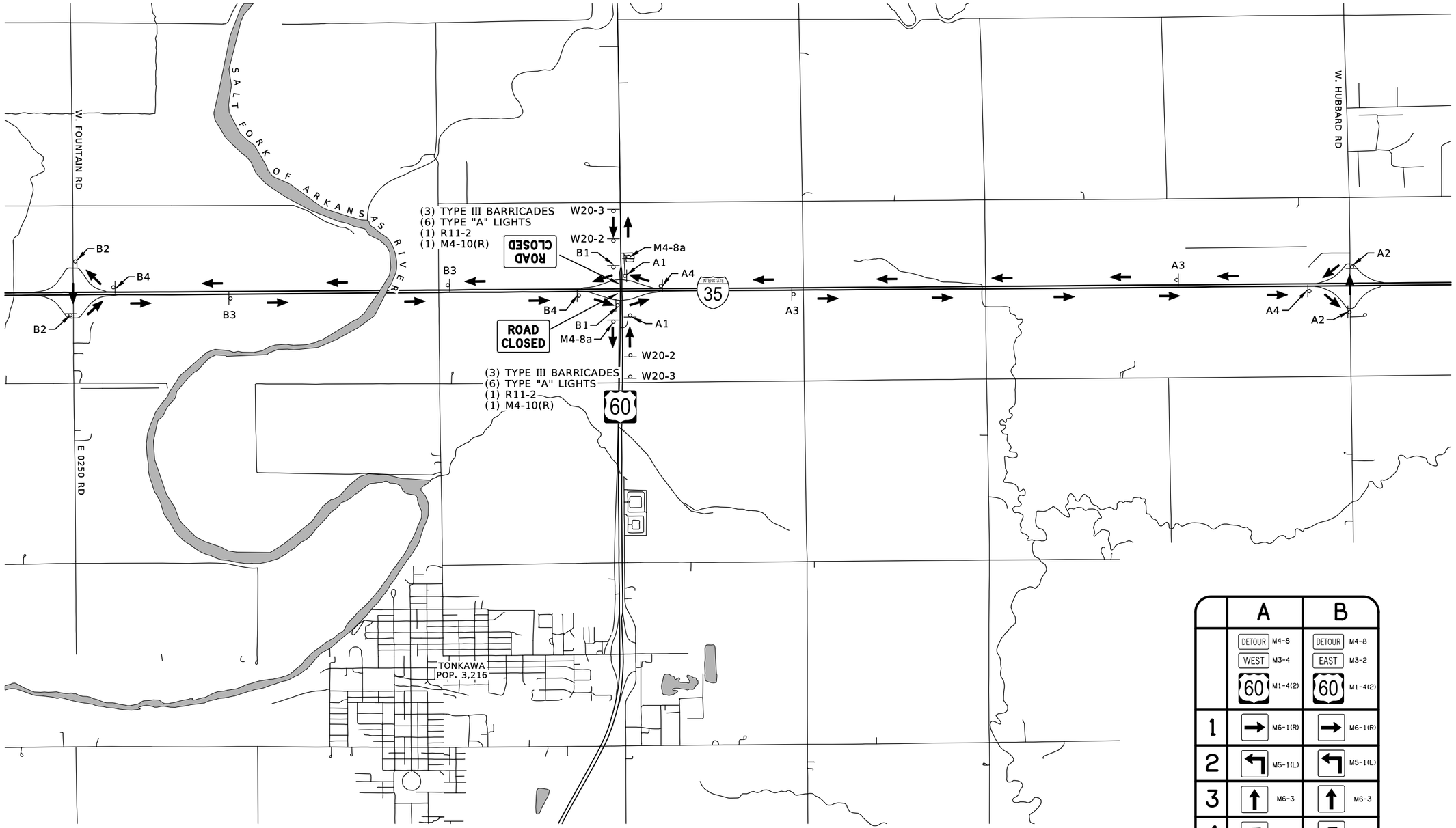
ALL COST FOR FABRICATION, LABOR, MATERIALS, HARDWARE, AND INSTALLATION OF THE VERTICAL CLEARANCE SIGNS, COMPLETE–IN–PLACE, SHALL BE INCLUDED IN THE PRICE BID FOR "SHEET ALUMINUM SIGNS", PER SQ. FT. (TRAFFIC ITEM).

THE INSTALLATION OF THE PERMANENT VERTICAL CLEARANCE SIGNS DOES NOT RELIEVE THE CONTRACTOR OF MAINTAINING APPROPRIATE VERTICAL CLEARANCE SIGNS DURING CONSTRUCTION. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

DESIGN	BWF	2/18	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	BWF	2/18	SPECIAL SIGN DETAILS
CHECKED	ATD	3/18	
APPROVED	BWF	3/18	
SQUAD	MESHEK		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T004

PRINT DATE: 07/25/2018 M:\BENHAM\16BEN01\DESIGN\DRAWINGS\16BEN01_STRIPING.DWG



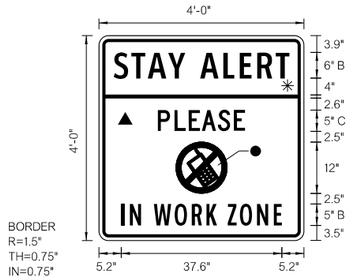
	A	B
	DETOUR M4-8 WEST M3-4 60 M1-4(2)	DETOUR M4-8 EAST M3-2 60 M1-4(2)
1	M6-1(R)	M6-1(R)
2	M5-1(L)	M5-1(L)
3	M6-3	M6-3
4	M5-2(R)	M5-2(R)

NOTE: THRU TRAFFIC FOR US 60 WILL BE REQUIRED TO USE I-35 DETOUR DURING I-35 BRIDGE DEMOLITIONS, ONE NIGHT PER BRIDGE. DURING I-35 BRIDGE BEAM HANGING, ONE NIGHT PER BRIDGE.

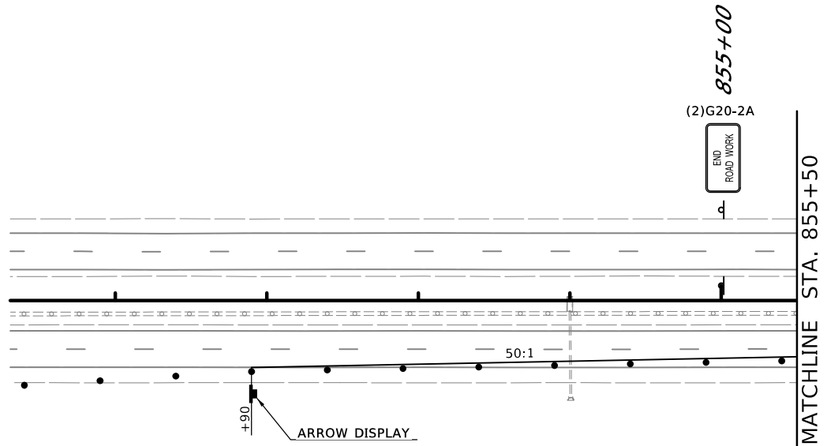
DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		
CHECKED		**TEMPORARY DETOUR ROUTE US 60 ROAD CLOSURE**
APPROVED		
SQUAD		

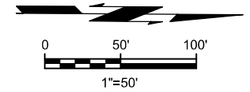
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T005

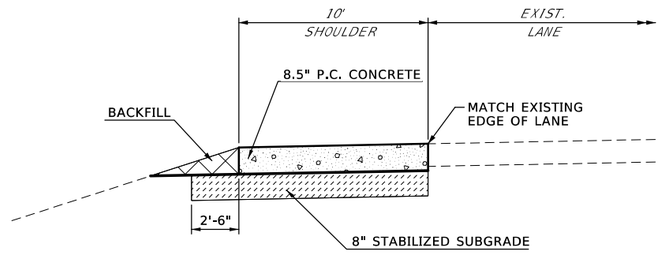
P:\FDB\1650-TUL\CIV\140052_EC1839_I35_US60\20_DESGN\40_CAD\C\EC_1839_C_Temp_Detour_Route_01.dgn 4:57:46 PM 7/26/2018



COLOR:
LEGEND, SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
▲ FLUORESCENT ORANGE (REFLECTORIZED)
✳ FLUORESCENT YELLOW (REFLECTORIZED)
● WHITE (REFLECTORIZED)



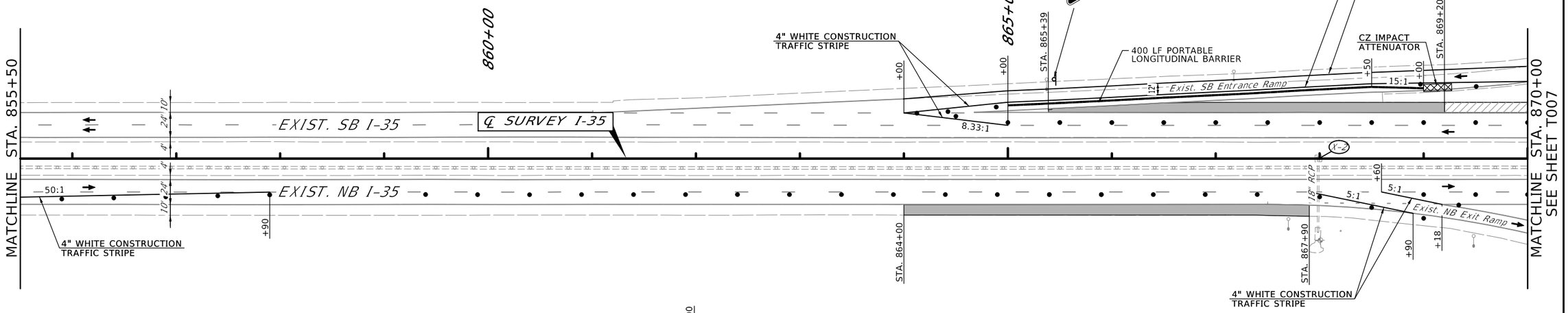


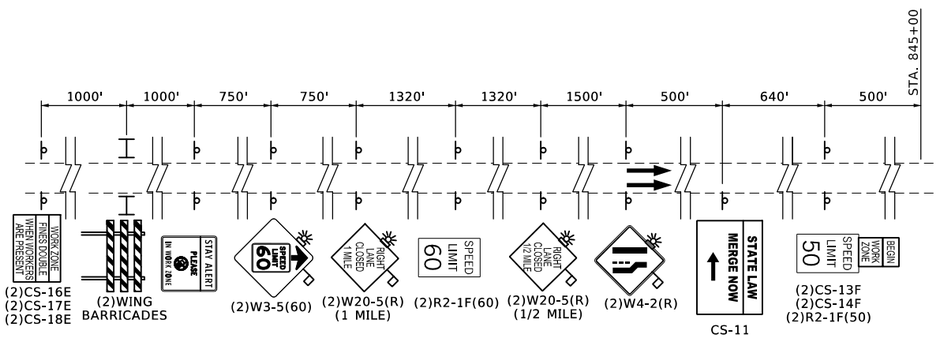


TEMPORARY TYPICAL SECTION - I-35 SHOULDER REHABILITATION

N.T.S.

STA. 869+20.00 TO STA. 878+23.00
STA. 879+74.00 TO STA. 888+20.00





NB I-35 ADVANCED WARNING SIGNING DETAIL

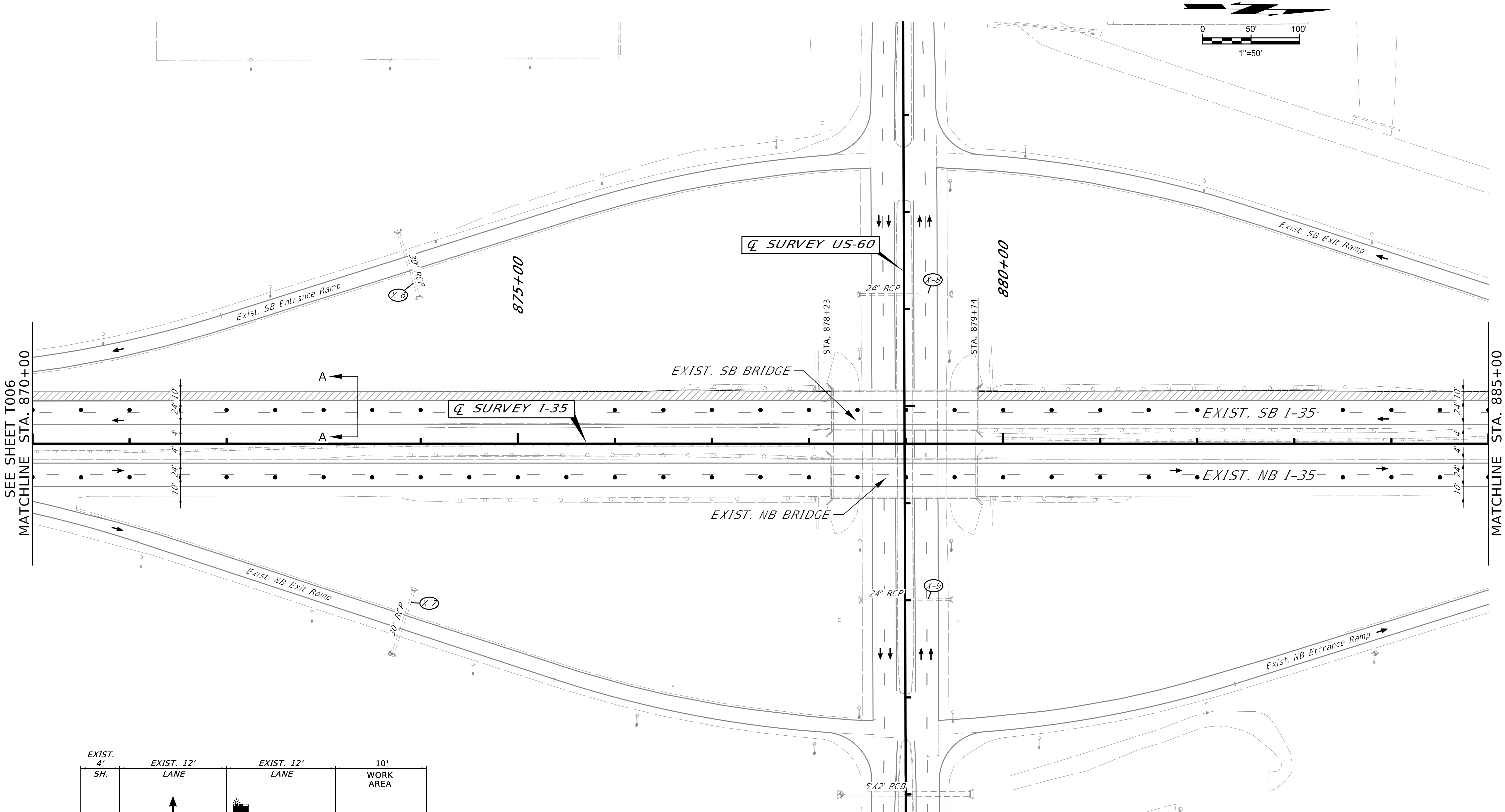
PHASE 0		
ITEM	**CONSTRUCTION**	**TRAFFIC**
I-35 Northbound	Construct Outside Shoulder: Sta. 865+39 to Sta. 878+23 and Sta. 879+74 to Sta. 888+20	One-way traffic on existing I-35 Northbound
I-35 Southbound	Construct Outside Shoulder: Sta. 864+00 to Sta. 867+90 and Sta. 889+00 to Sta. 891+50	One-way traffic on existing I-35 Southbound
I-35 Median		
Bridge A		One-way traffic on existing Bridge A
Bridge B		One-way traffic on existing Bridge B
US-60		Two-way traffic on existing US-60

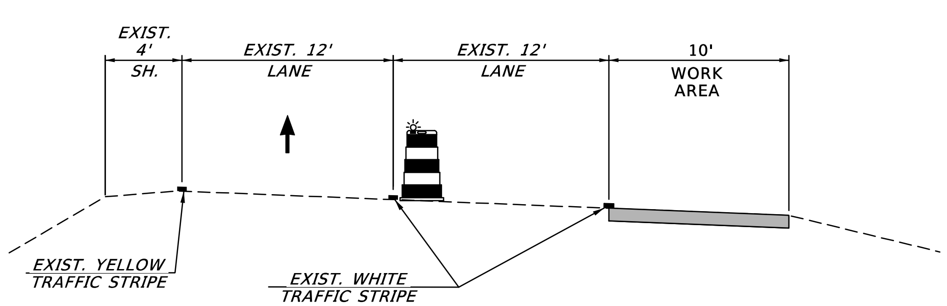
LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C,Z, IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			**SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (1) PHASE 0**
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T006





PHASE 0 - SECTION A-A

N.T.S.

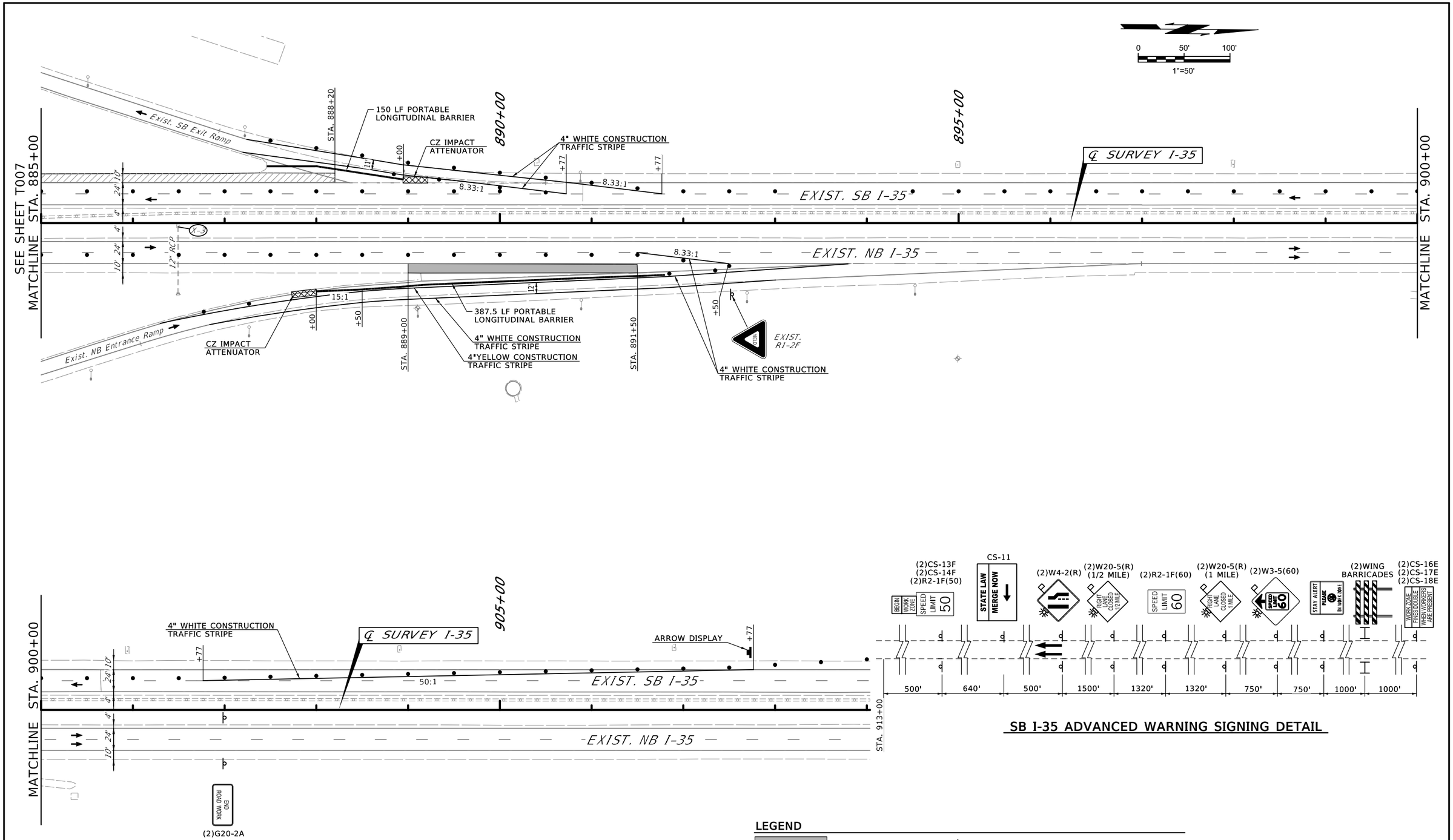
LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (2) PHASE 0
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T007

7/26/2018 4:57:47 PM P:\FDB\650-TUL\CIV\40052_EC1839_I35_US60\20_DESGN\40_CAD\C\EC_1839_C_ConstSeq_Ph0_02.dgn



SB I-35 ADVANCED WARNING SIGNING DETAIL

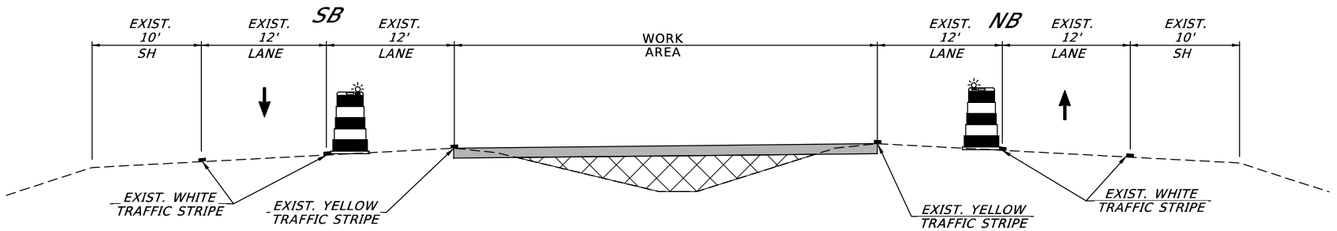
LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

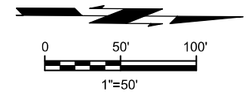
DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (3) PHASE 0
CHECKED		
APPROVED		
SQUAD		

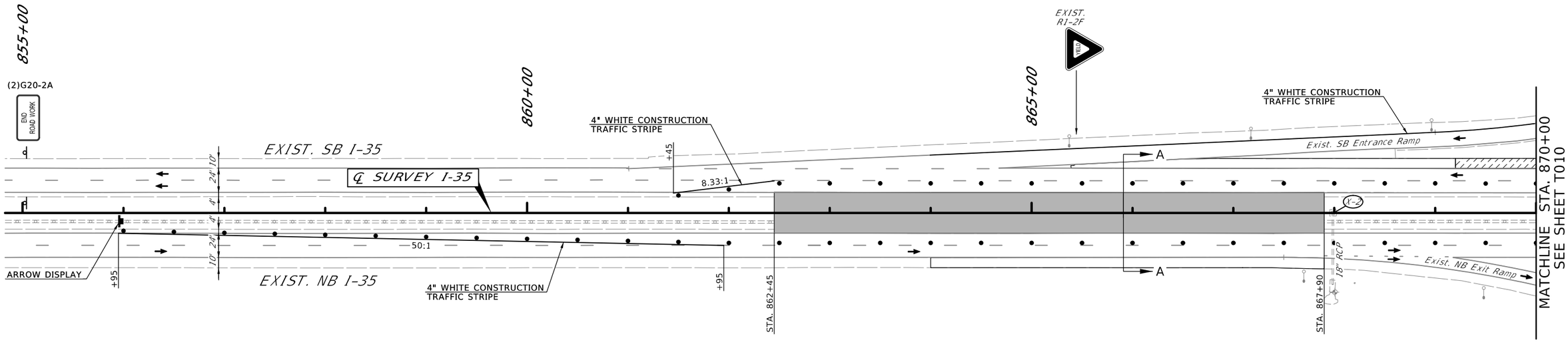
COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T008

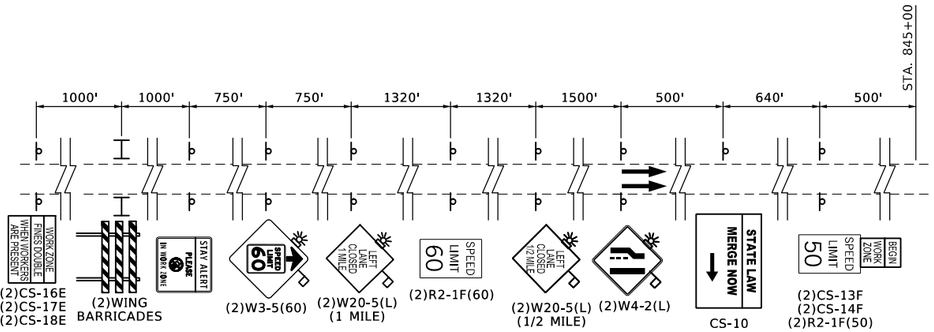
7/26/2018



PHASE 1 - SECTION A-A
NTS







NB I-35 ADVANCED WARNING SIGNING DETAIL

PHASE 1

ITEM	CONSTRUCTION	TRAFFIC
I-35 Northbound		One-way traffic on existing I-35 Northbound
I-35 Southbound		One-way traffic on existing I-35 Southbound
I-35 Median	Construct Crossovers: Sta. 862+45 to Sta. 867+90 and Sta. 889+15 to Sta. 894+40	Closed
Bridge A		One-way traffic on existing Bridge A
Bridge B		One-way traffic on existing Bridge B
US-60		Two-way traffic on existing US-60

LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (4) PHASE 1
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T009

4:57:48 PM

P:\FDB\650-TUL\CIV\40052_ECI839_I35_US60\20_DESGN\40_CAD\C\EC_1839_C_Const+Seq_Phl_01.dgn

7/26/2018

4:57:49 PM

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0 50' 100'

1"=50'

Exist. SB Entrance Ramp

30" RCP

X-6

875+00

880+00

24" RCP

X-8

Exist. SB Exit Ramp

℄ SURVEY US-60

EXIST. SB BRIDGE

SEE SHEET T009
MATCHLINE STA. 870+00

EXIST. SB I-35

EXIST. NB I-35

℄ SURVEY I-35

EXIST. NB BRIDGE

MATCHLINE STA. 885+00
SEE SHEET T011

24' 10'

4'

Exist. NB Exit Ramp

30" RCP

X-7

24" RCP

X-9

Exist. NB Entrance Ramp

5'X2' RCB

LEGEND

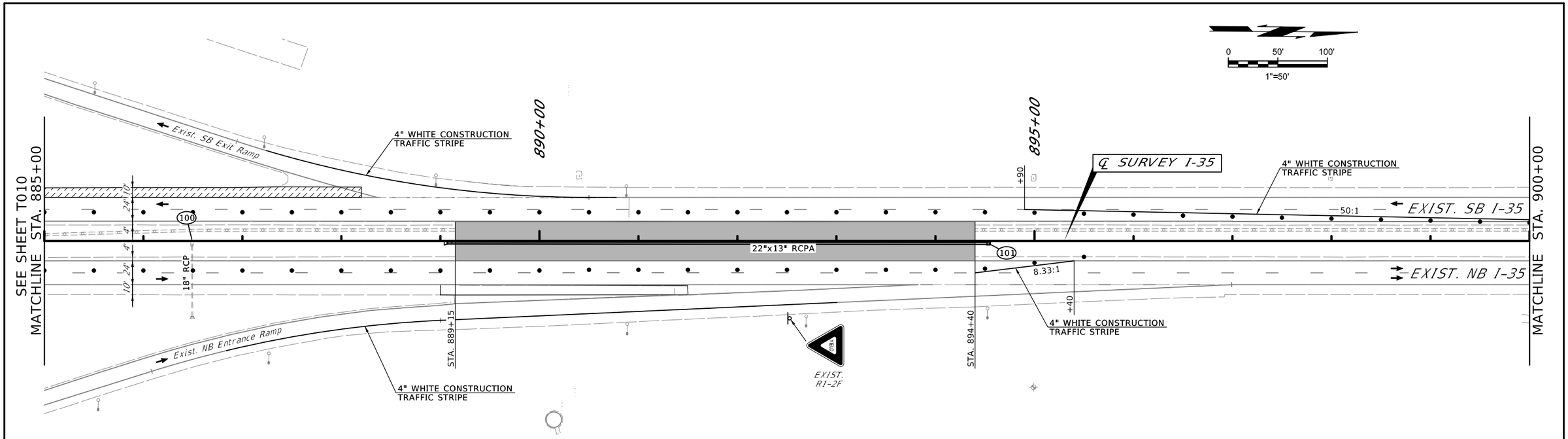
- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

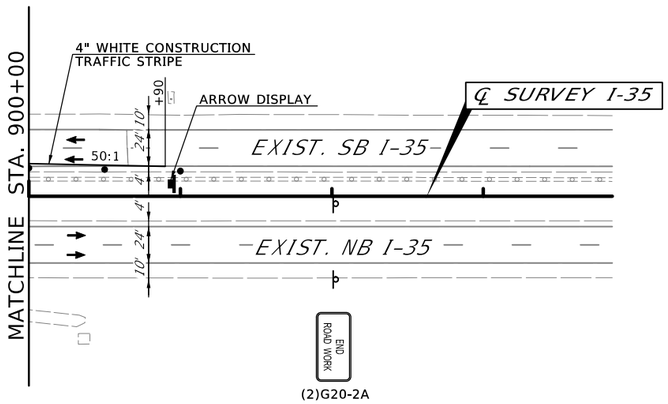
DESIGN		
DRAWN		
CHECKED		
APPROVED		
SQUAD		

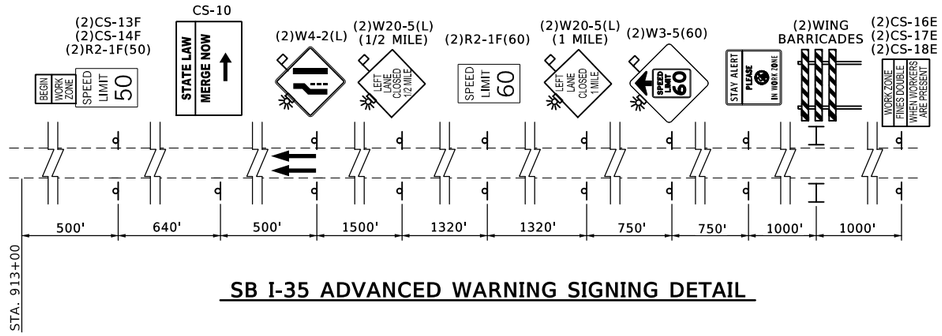
OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (5) PHASE 1

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T010







SB I-35 ADVANCED WARNING SIGNING DETAIL

LEGEND

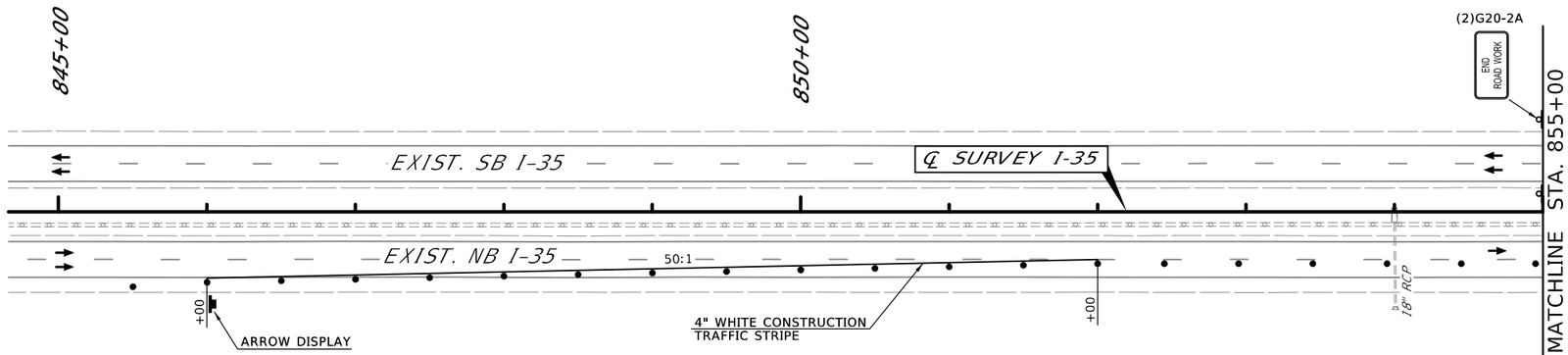
- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

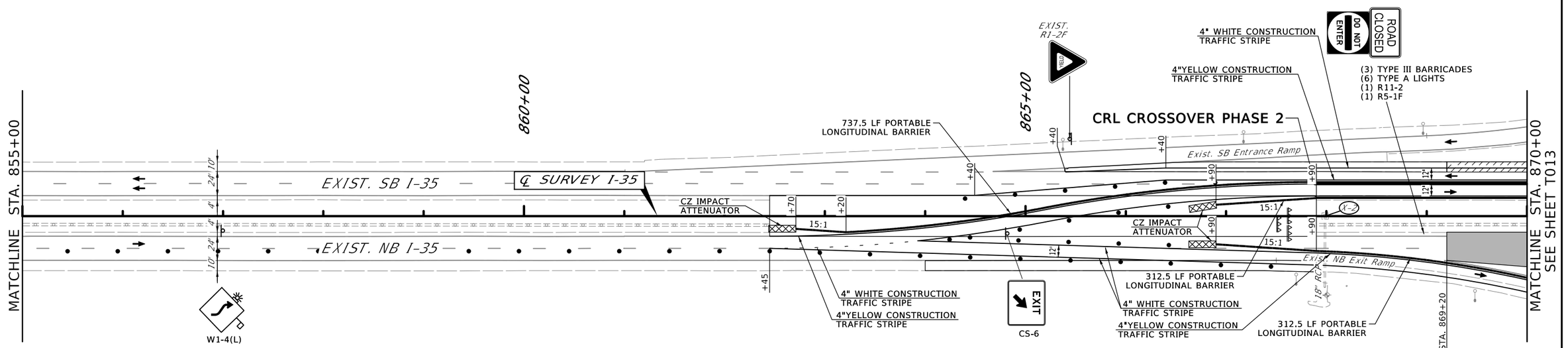
DESIGN		
DRAWN		
CHECKED		
APPROVED		
SQUAD		

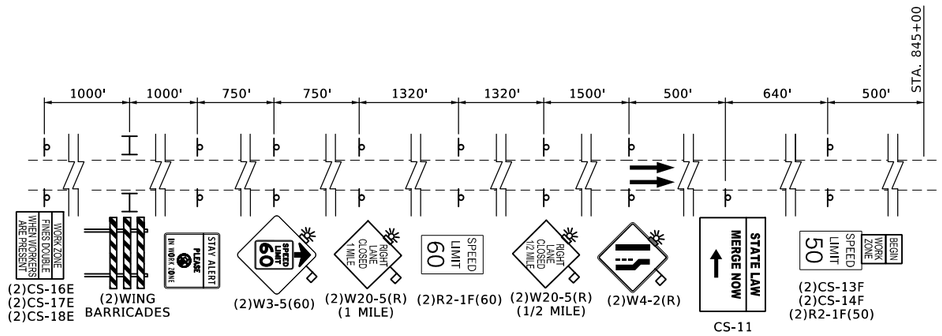
OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (6) PHASE 1

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T011







NB I-35 ADVANCED WARNING SIGNING DETAIL

PHASE 2

ITEM	CONSTRUCTION	TRAFFIC
I-35 Northbound	Construct: Sta. 869+20 to Sta. 889+00	Closed
I-35 Southbound		Two-way traffic on existing I-35 Southbound
I-35 Median		I-35 Northbound traffic using Crossovers
Bridge A		Two-way traffic on existing I-35 Southbound Bridge
Bridge B	Construct	Closed
US-60	Construct Median: Sta. 25+39 to Sta. 25+94	One-lane traffic on existing US-60

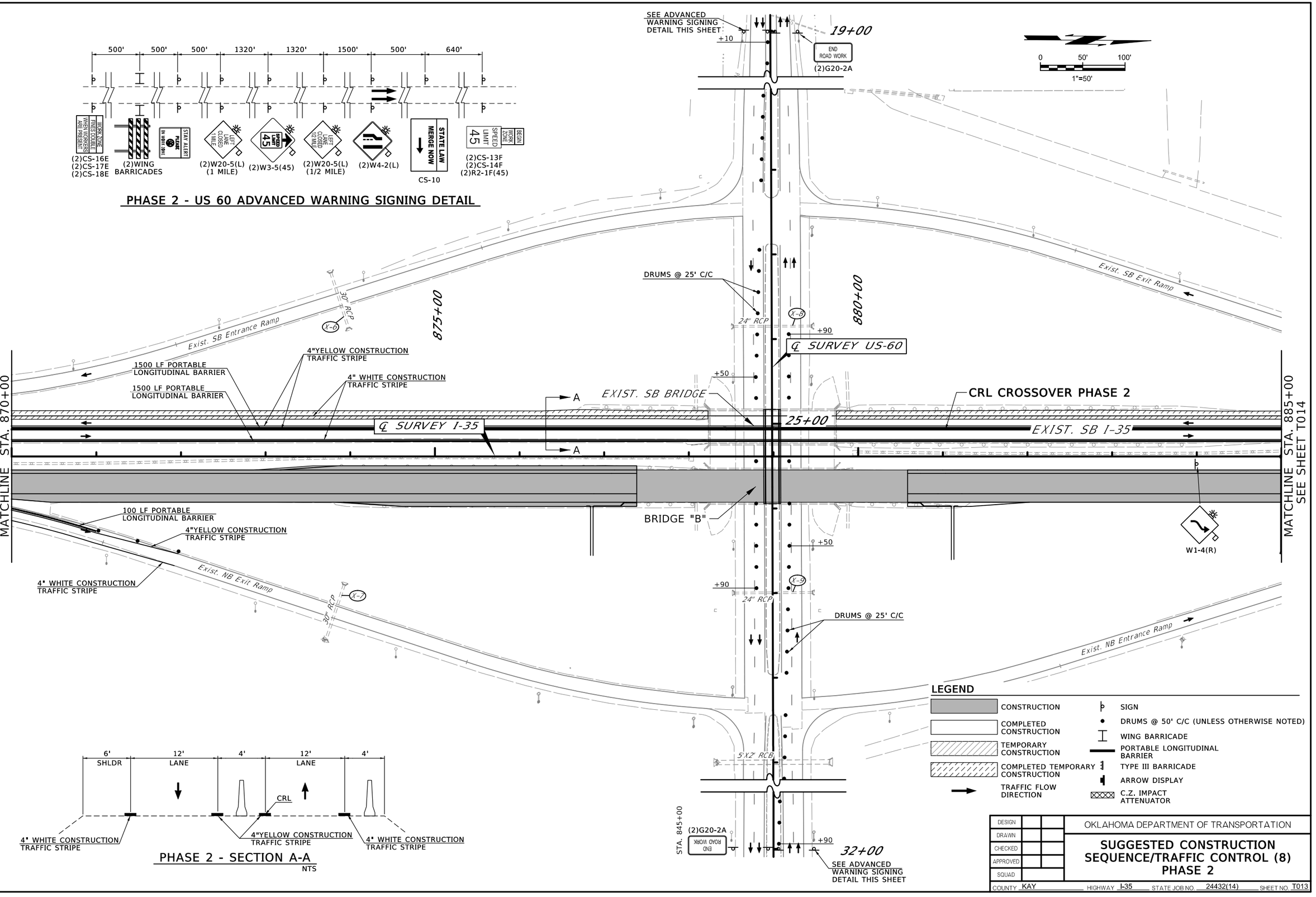
LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			**SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (7) PHASE 2**
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T012

PHASE 2 - US 60 ADVANCED WARNING SIGNING DETAIL



PHASE 2 - SECTION A-A

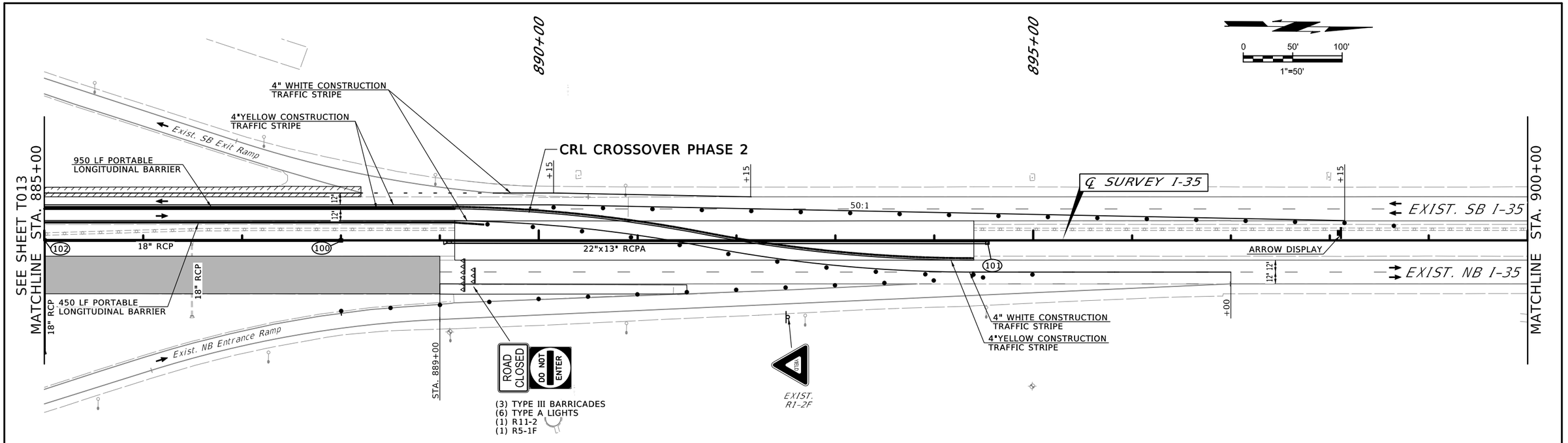
NTS

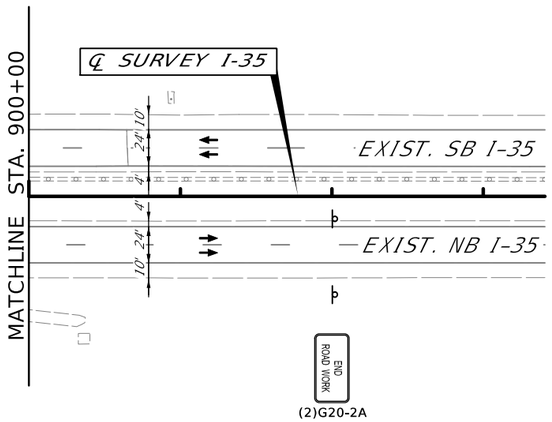
LEGEND

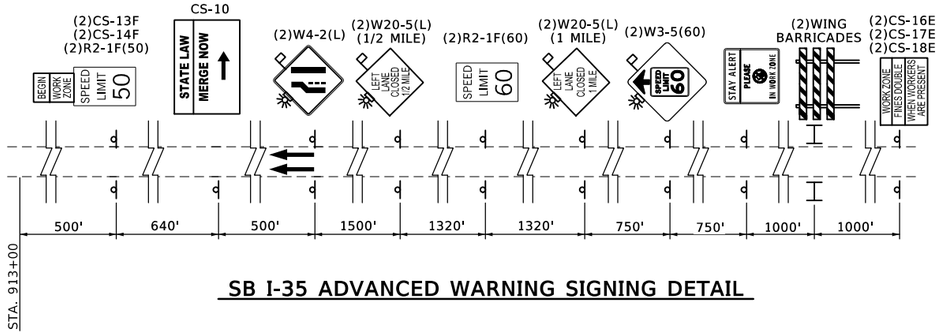
- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (8) PHASE 2
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T013







SB I-35 ADVANCED WARNING SIGNING DETAIL

LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN		
DRAWN		
CHECKED		
APPROVED		
SQUAD		

OKLAHOMA DEPARTMENT OF TRANSPORTATION

SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (9) PHASE 2

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T014

7/26/2018

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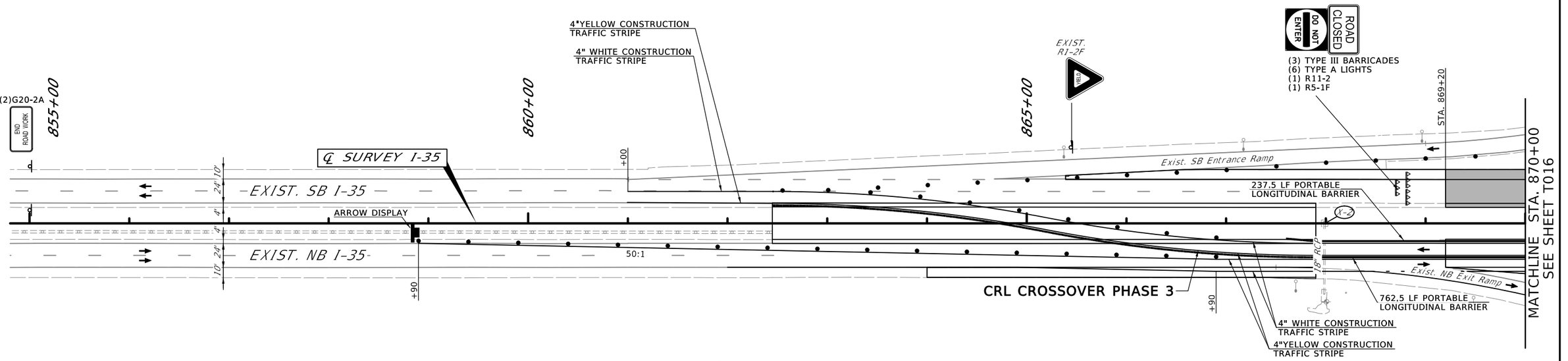
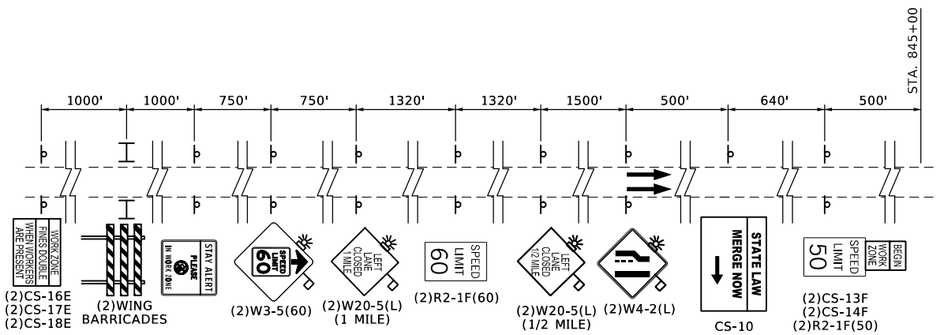
0 50' 100'

1"=50'





NB I-35 ADVANCED WARNING SIGNING DETAIL

PHASE 3

ITEM	CONSTRUCTION	TRAFFIC
I-35 Northbound		Two-way traffic on I-35 Northbound
I-35 Southbound	Construct: Sta. 869+20 to Sta. 889+00	Closed
I-35 Median		I-35 Southbound traffic using Crossovers
Bridge A	Construct	Closed
Bridge B		Two-way traffic on Bridge B
US-60	Construct Median: Sta. 24+83 to Sta. 25+39	One-lane traffic on existing US-60

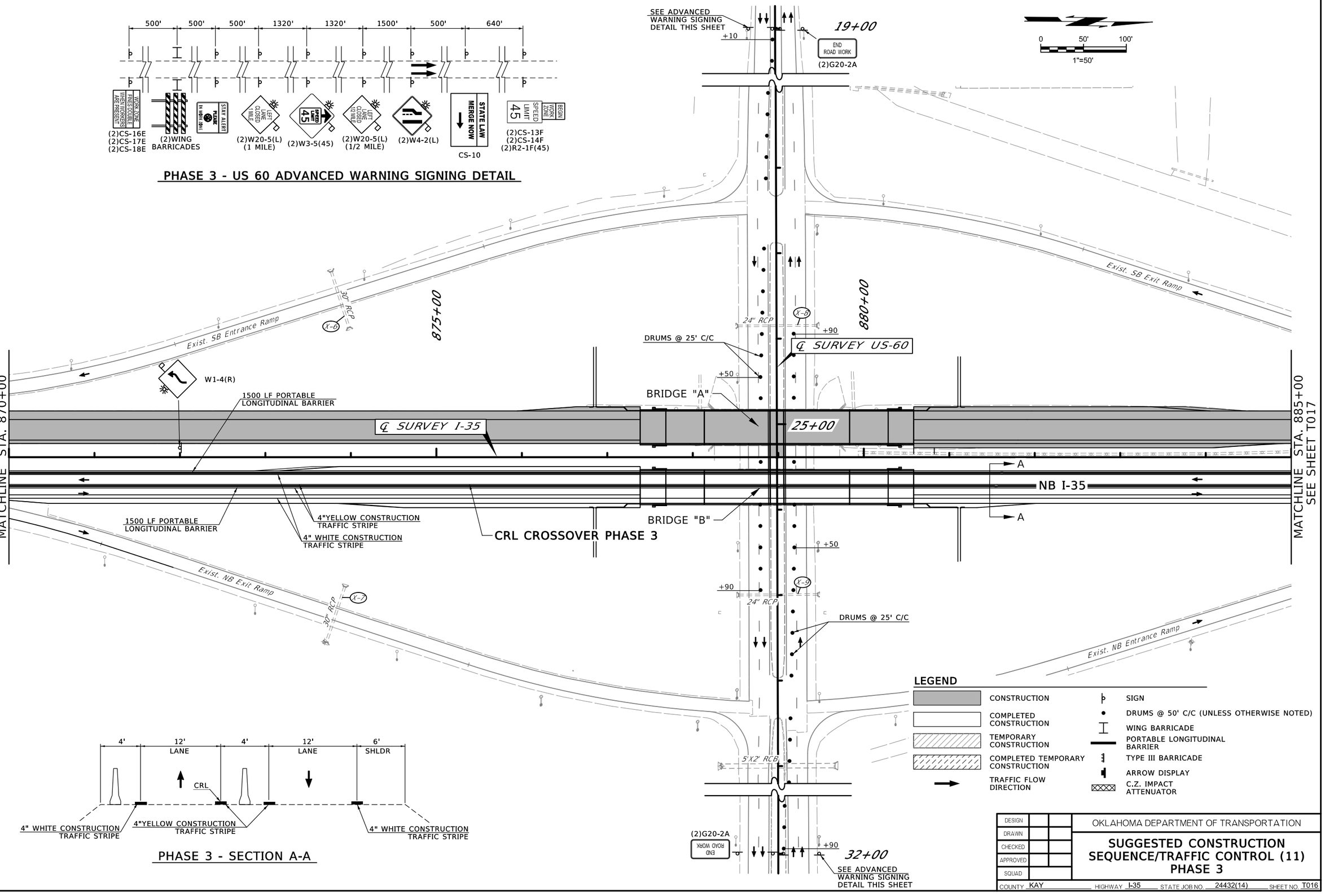
LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN		OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN		SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (10) PHASE 3
CHECKED		
APPROVED		
SQUAD		

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T015

PHASE 3 - US 60 ADVANCED WARNING SIGNING DETAIL



PHASE 3 - SECTION A-A

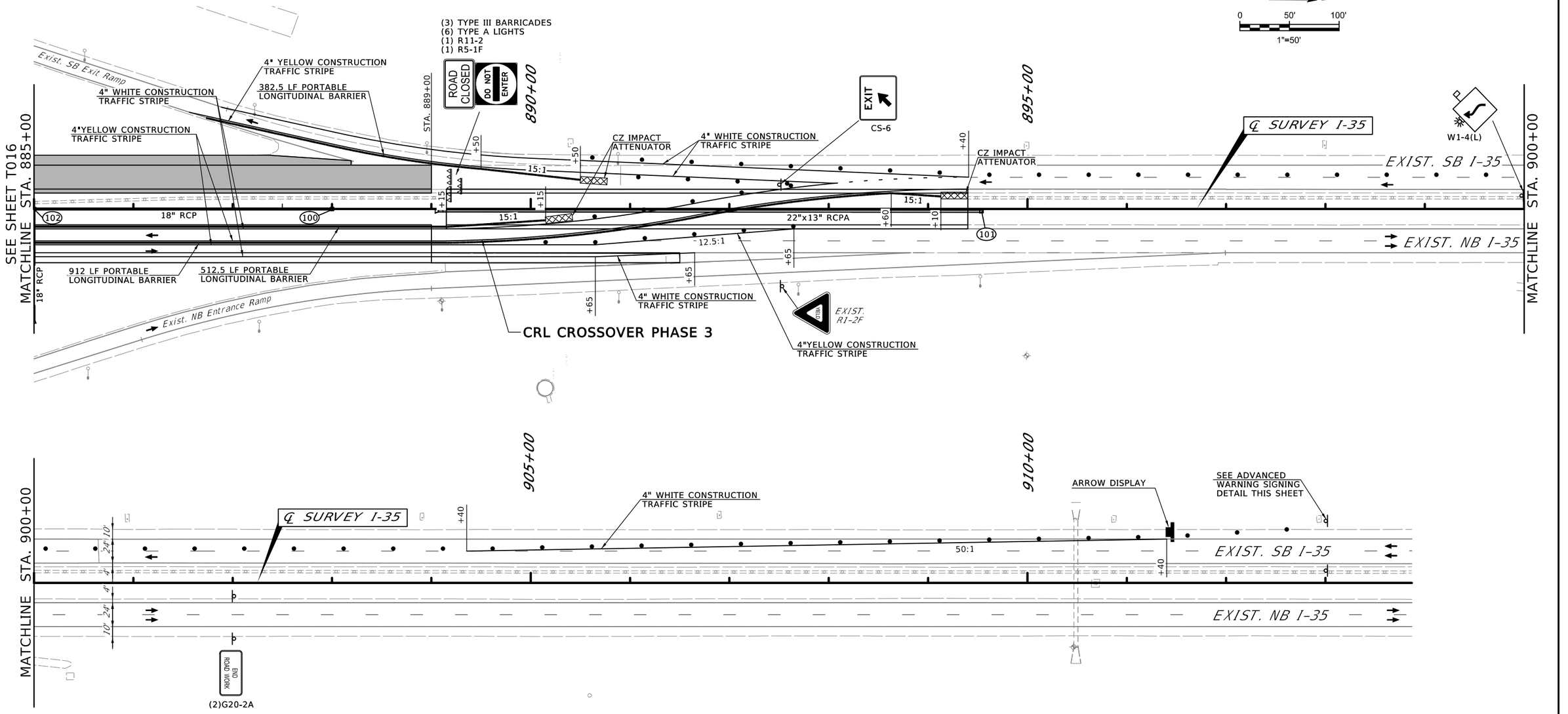
LEGEND

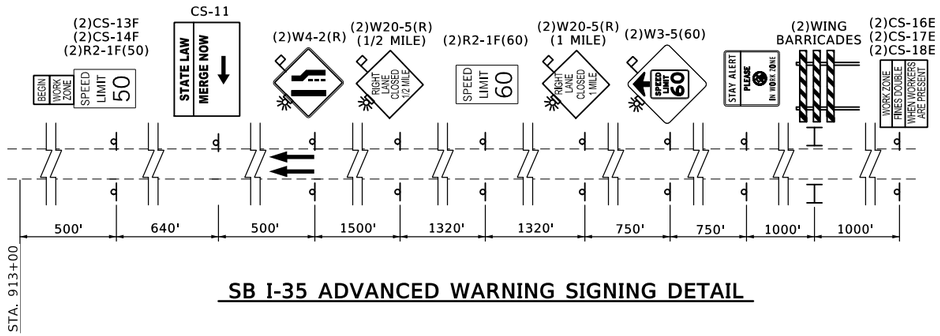
- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (11) PHASE 3
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T016

7/26/2018





SB I-35 ADVANCED WARNING SIGNING DETAIL

LEGEND

- CONSTRUCTION
- COMPLETED CONSTRUCTION
- TEMPORARY CONSTRUCTION
- COMPLETED TEMPORARY CONSTRUCTION
- TRAFFIC FLOW DIRECTION
- SIGN
- DRUMS @ 50' C/C (UNLESS OTHERWISE NOTED)
- WING BARRICADE
- PORTABLE LONGITUDINAL BARRIER
- TYPE III BARRICADE
- ARROW DISPLAY
- C.Z. IMPACT ATTENUATOR

DESIGN			OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN			SUGGESTED CONSTRUCTION SEQUENCE/TRAFFIC CONTROL (12) PHASE 3
CHECKED			
APPROVED			
SQUAD			

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. T017

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7/26/2018

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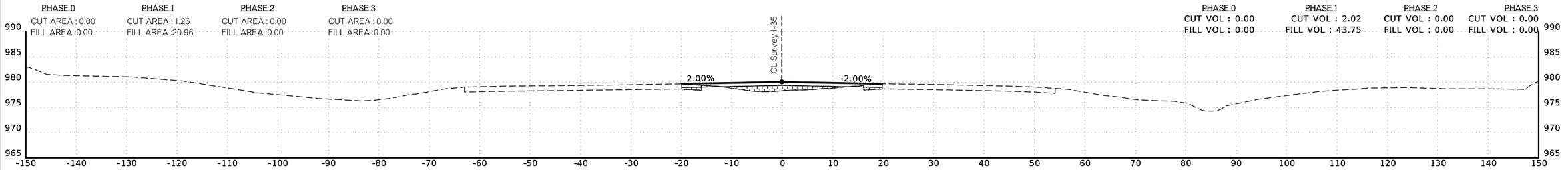
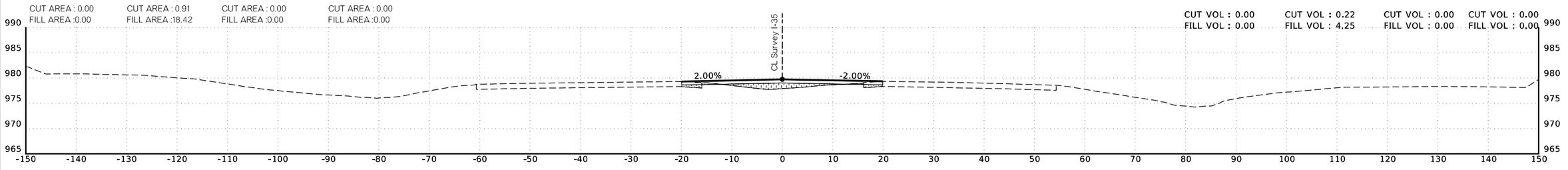
END AREAS (SF)

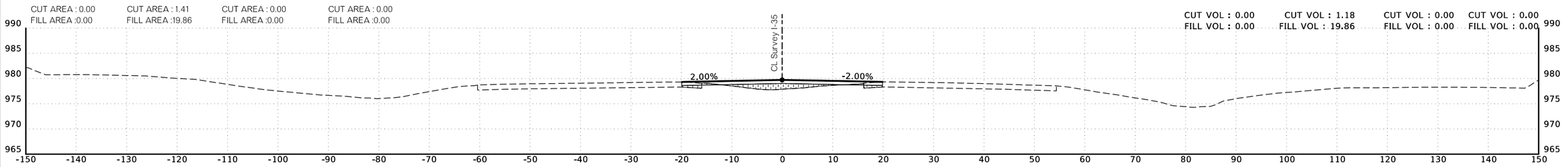
VOLUMES (CY)



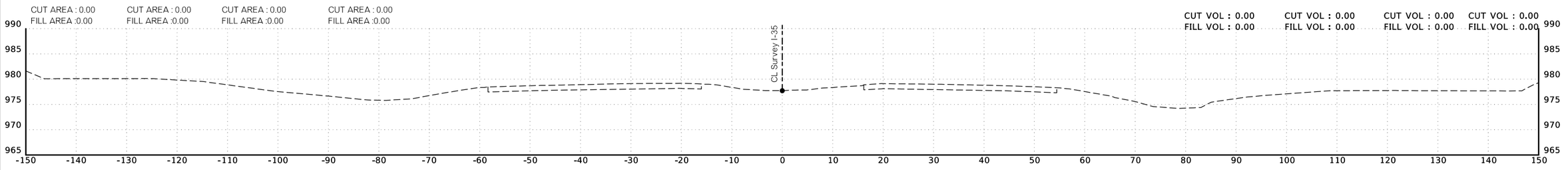
863+00



862+50



862+45 BEGIN INCIDENTAL CONSTRUCTION



862+00

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 862+00 TO STA. 863+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X001

7/26/2018

4:59:19 PM

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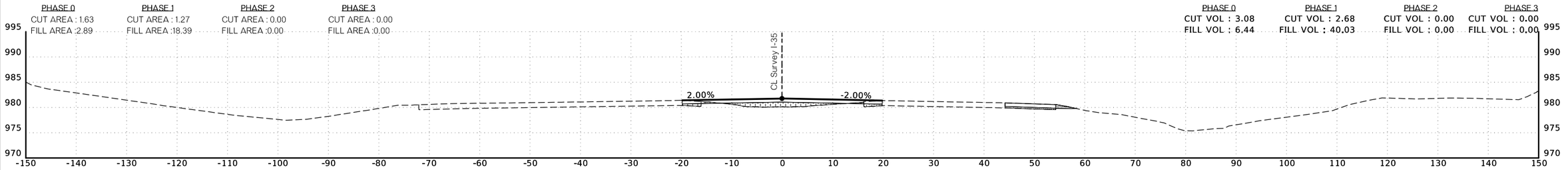
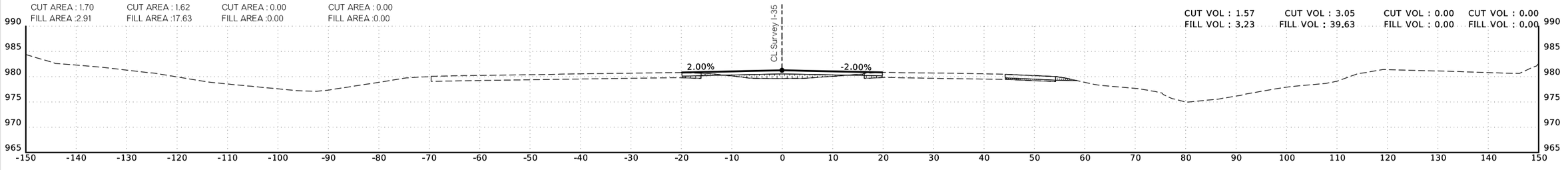
END AREAS (SF)

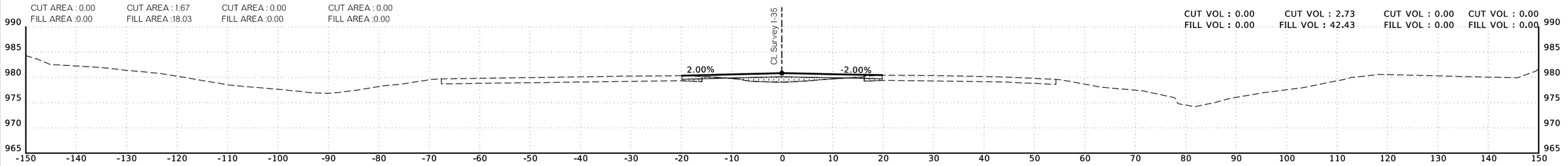
VOLUMES (CY)



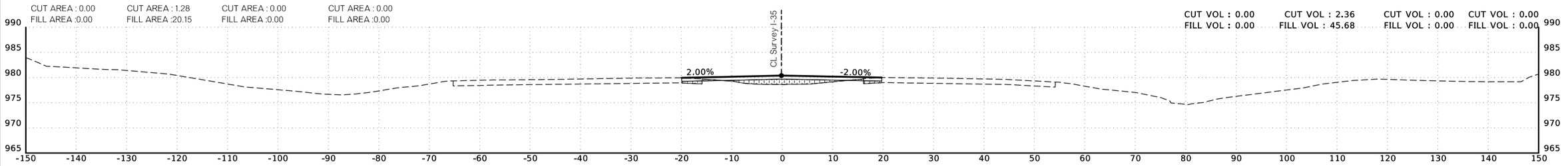
865+00



864+50



864+00



863+50

PHASE 0 CUT FILL

PHASE 1 CUT FILL

PHASE 2 CUT FILL

PHASE 3 CUT FILL

STA. 863+50 TO STA. 865+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X002

7/26/2018

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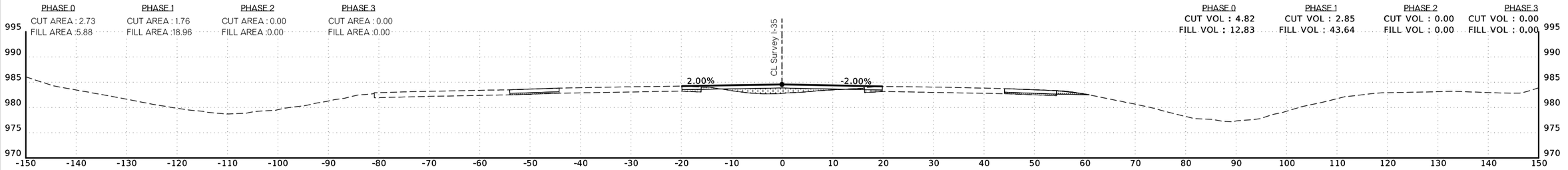
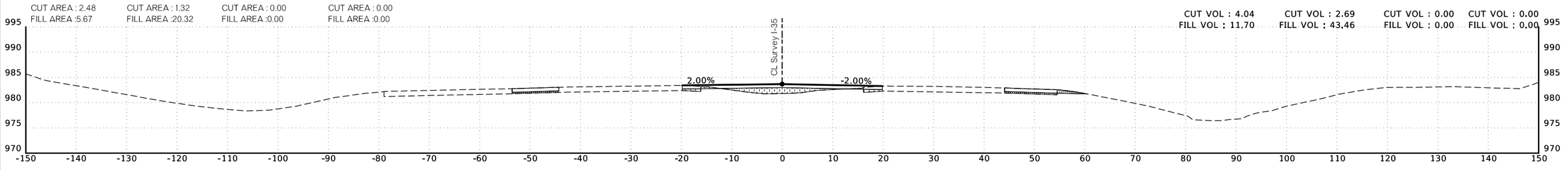
END AREAS (SF)

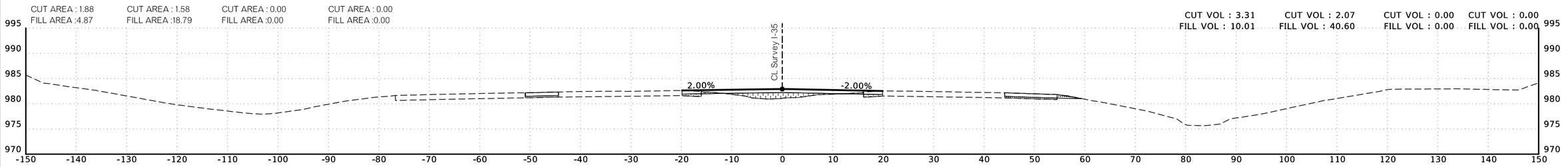
VOLUMES (CY)



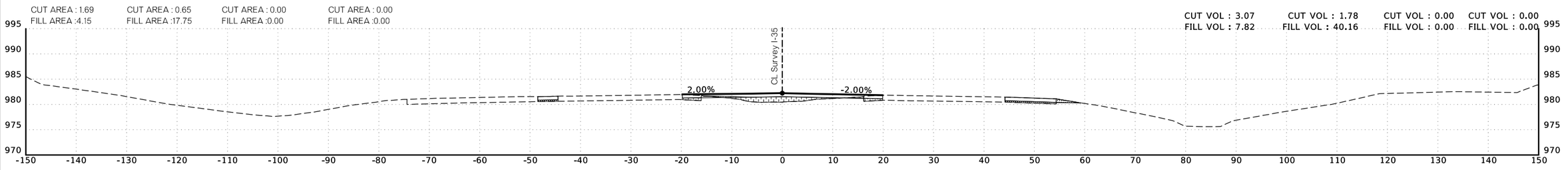
867+00



866+50



866+00



865+50

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 865+50 TO STA. 867+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X003

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7/26/2018

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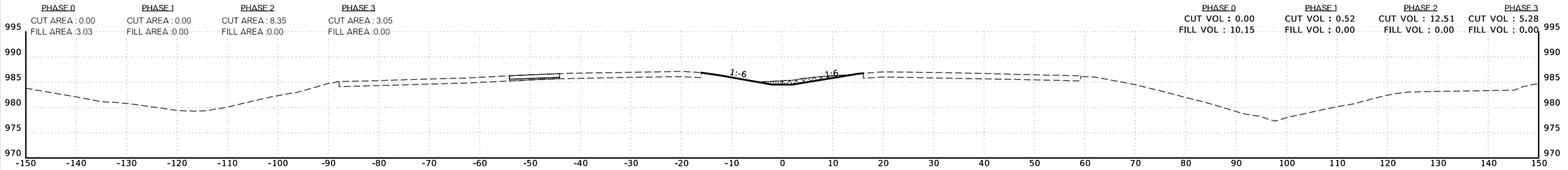
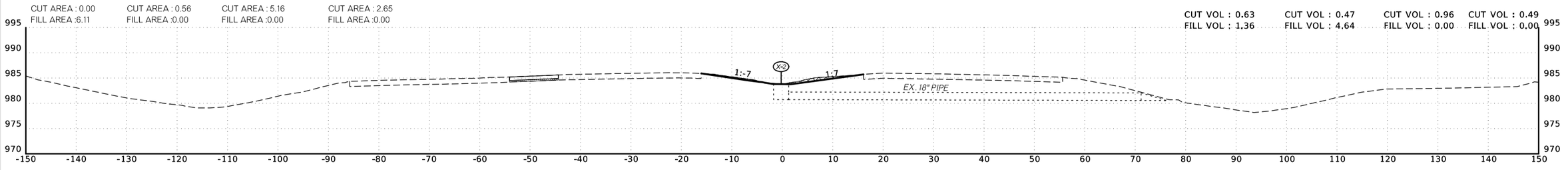
END AREAS (SF)

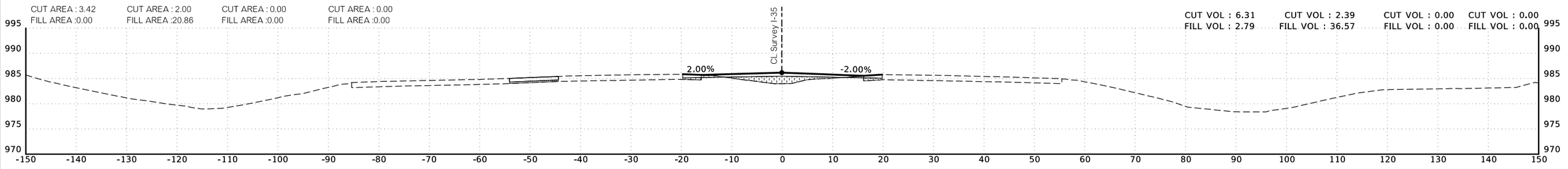
VOLUMES (CY)



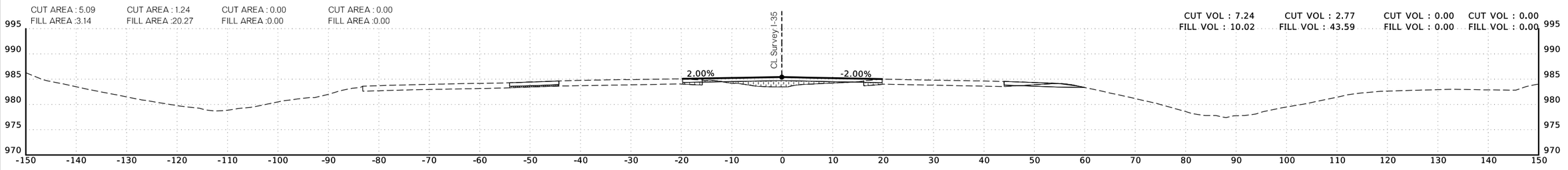
868+50



868+00



867+90



867+50

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 867+50 TO STA. 868+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X004

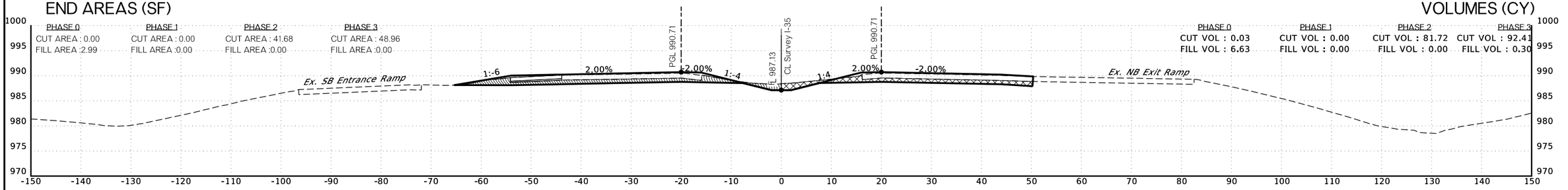
7/26/2018

END AREAS (SF)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 0.00	CUT AREA : 0.00	CUT AREA : 41.68	CUT AREA : 48.96
FILL AREA :2.99	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00

VOLUMES (CY)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 0.03	CUT VOL : 0.00	CUT VOL : 81.72	CUT VOL : 92.41
FILL VOL : 6.63	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.30

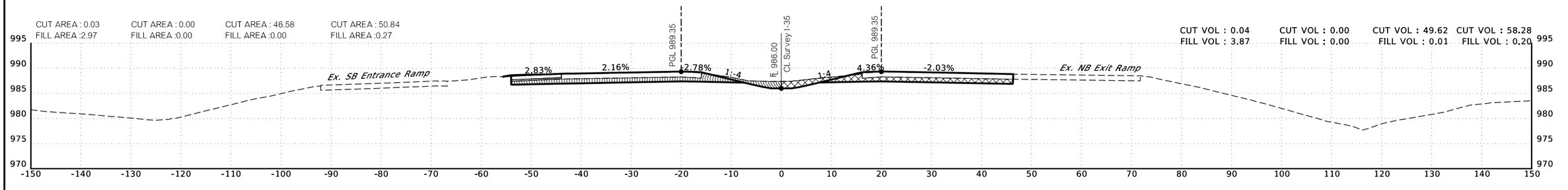


870+00

4:59:20 PM

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 0.03	CUT AREA : 0.00	CUT AREA : 46.58	CUT AREA : 50.84
FILL AREA :2.97	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.27

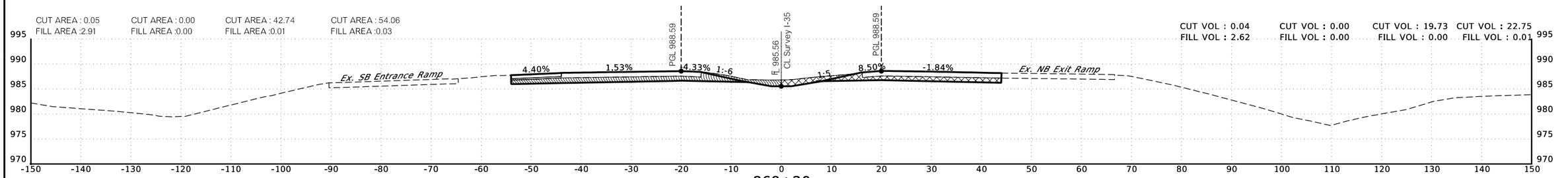
PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 0.04	CUT VOL : 0.00	CUT VOL : 49.62	CUT VOL : 58.28
FILL VOL : 3.87	FILL VOL : 0.00	FILL VOL : 0.01	FILL VOL : 0.20



869+50

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 0.05	CUT AREA : 0.00	CUT AREA : 42.74	CUT AREA : 54.06
FILL AREA :2.91	FILL AREA :0.00	FILL AREA :0.01	FILL AREA :0.03

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 0.04	CUT VOL : 0.00	CUT VOL : 19.73	CUT VOL : 22.75
FILL VOL : 2.62	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.01

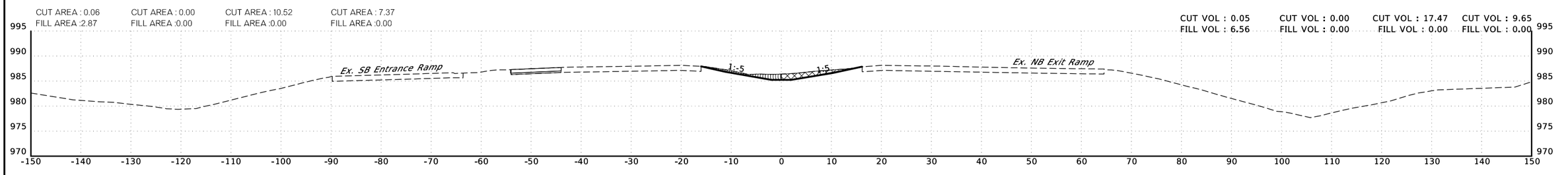


869+20

END INCIDENTAL CONSTRUCTION
BEGIN PROJECT

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 0.06	CUT AREA : 0.00	CUT AREA : 10.52	CUT AREA : 7.37
FILL AREA :2.87	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 0.05	CUT VOL : 0.00	CUT VOL : 17.47	CUT VOL : 9.65
FILL VOL : 6.56	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00



869+00

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 869+00 TO STA. 870+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X005

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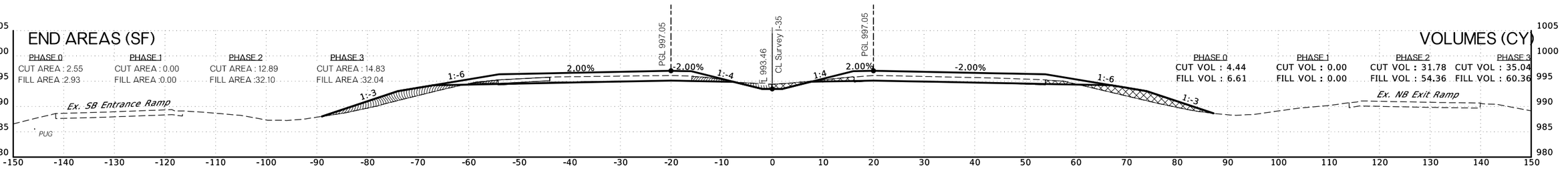
7/26/2018

END AREAS (SF)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 2.55	CUT AREA : 0.00	CUT AREA : 12.89	CUT AREA : 14.83
FILL AREA :2.93	FILL AREA :0.00	FILL AREA :32.10	FILL AREA :32.04

VOLUMES (CY)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 4.44	CUT VOL : 0.00	CUT VOL : 31.78	CUT VOL : 35.04
FILL VOL : 6.61	FILL VOL : 0.00	FILL VOL : 54.36	FILL VOL : 60.36

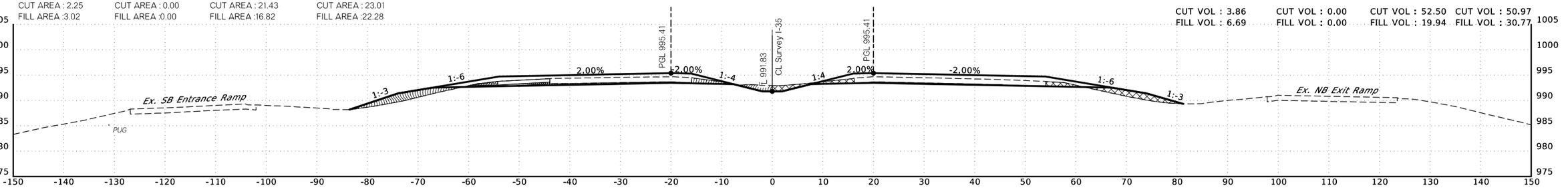


872+00

4:59:20 PM

CUT AREA : 2.25	CUT AREA : 0.00	CUT AREA : 21.43	CUT AREA : 23.01
FILL AREA :3.02	FILL AREA :0.00	FILL AREA :16.82	FILL AREA :22.28

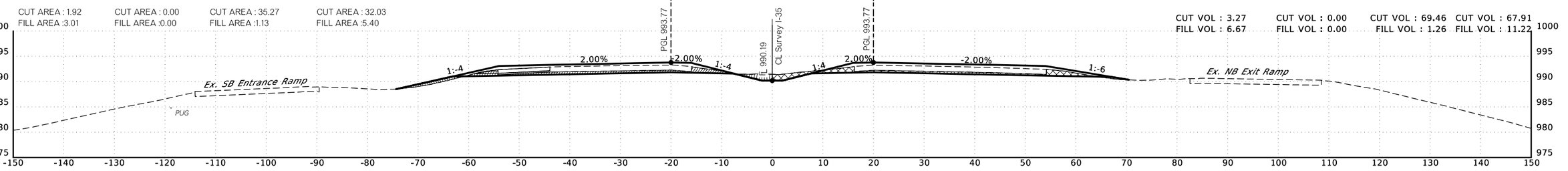
CUT VOL : 3.86	CUT VOL : 0.00	CUT VOL : 52.50	CUT VOL : 50.97
FILL VOL : 6.69	FILL VOL : 0.00	FILL VOL : 19.94	FILL VOL : 30.77



871+50

CUT AREA : 1.92	CUT AREA : 0.00	CUT AREA : 35.27	CUT AREA : 32.03
FILL AREA :3.01	FILL AREA :0.00	FILL AREA :1.13	FILL AREA :5.40

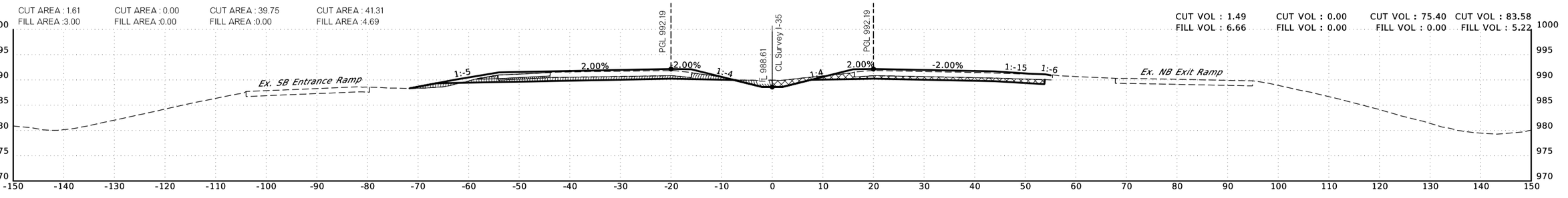
CUT VOL : 3.27	CUT VOL : 0.00	CUT VOL : 69.46	CUT VOL : 67.91
FILL VOL : 6.67	FILL VOL : 0.00	FILL VOL : 1.26	FILL VOL : 11.22



871+00

CUT AREA : 1.61	CUT AREA : 0.00	CUT AREA : 39.75	CUT AREA : 41.31
FILL AREA :3.00	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :4.69

CUT VOL : 1.49	CUT VOL : 0.00	CUT VOL : 75.40	CUT VOL : 83.58
FILL VOL : 6.66	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 5.22



870+50

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 870+50 TO STA. 872+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X006

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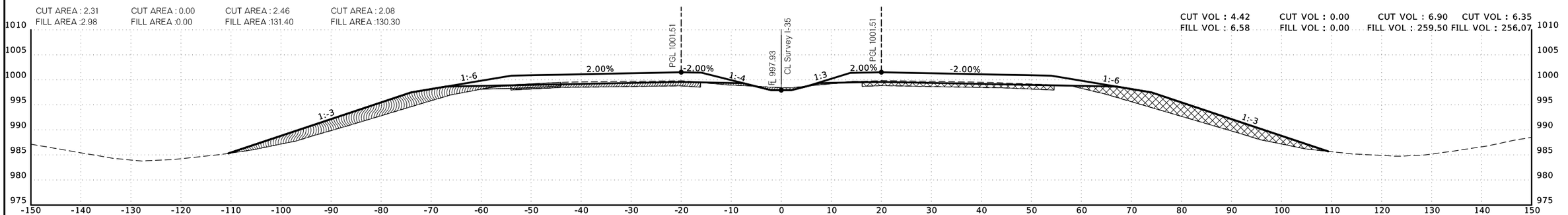
END AREAS (SF)

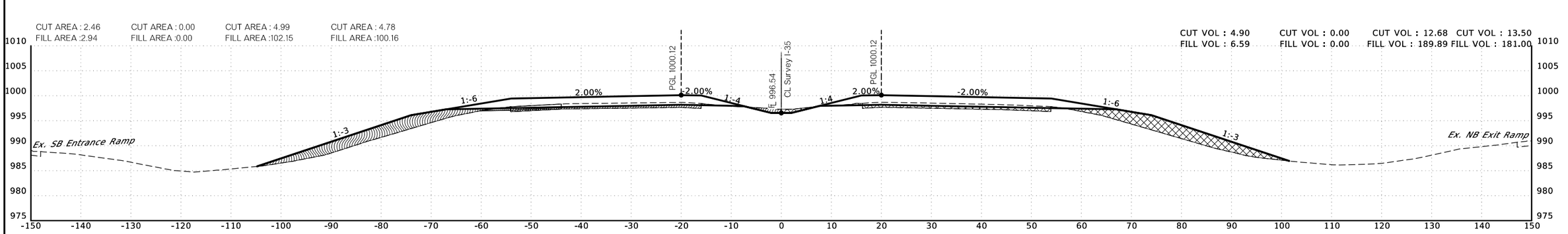
	PHASE 0	PHASE 1	PHASE 2	PHASE 3
873+50	CUT AREA : 2.31 FILL AREA :2.98	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.46 FILL AREA :131.40	CUT AREA : 2.08 FILL AREA :130.30
873+00	CUT AREA : 2.46 FILL AREA :2.94	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 4.99 FILL AREA :102.15	CUT AREA : 4.78 FILL AREA :100.16
872+50	CUT AREA : 2.84 FILL AREA :2.99	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 8.70 FILL AREA :68.75	CUT AREA : 9.80 FILL AREA :62.74

VOLUMES (CY)

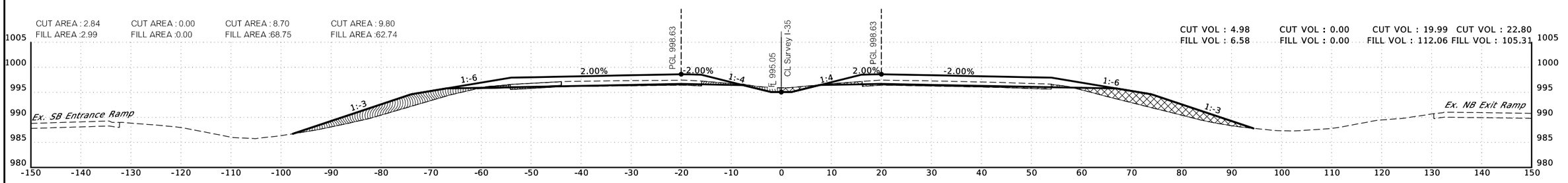
	PHASE 0	PHASE 1	PHASE 2	PHASE 3
873+50	CUT VOL : 4.42 FILL VOL : 6.58	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 6.90 FILL VOL : 259.50	CUT VOL : 6.35 FILL VOL : 256.07
873+00	CUT VOL : 4.90 FILL VOL : 6.59	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 12.68 FILL VOL : 189.89	CUT VOL : 13.50 FILL VOL : 181.00
872+50	CUT VOL : 4.98 FILL VOL : 6.58	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 19.99 FILL VOL : 112.06	CUT VOL : 22.80 FILL VOL : 105.31



873+50



873+00



872+50

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 872+50 TO STA. 873+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X007

7/26/2018

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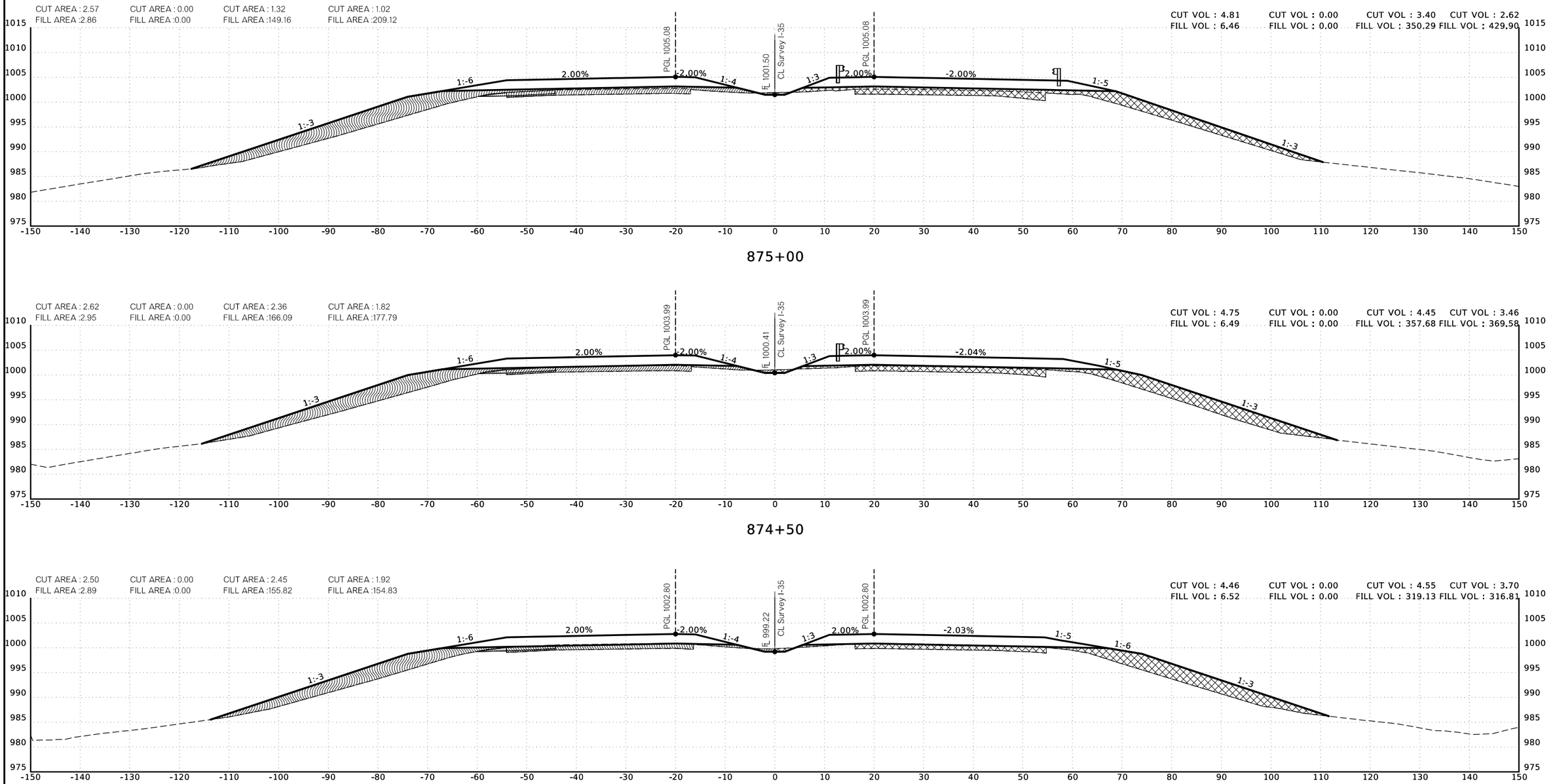
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
875+00	CUT AREA : 2.57 FILL AREA :2.86	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 1.32 FILL AREA :149.16	CUT AREA : 1.02 FILL AREA :209.12
874+50	CUT AREA : 2.62 FILL AREA :2.95	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.36 FILL AREA :166.09	CUT AREA : 1.82 FILL AREA :177.79
874+00	CUT AREA : 2.50 FILL AREA :2.89	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.45 FILL AREA :155.82	CUT AREA : 1.92 FILL AREA :154.83

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
875+00	CUT VOL : 4.81 FILL VOL : 6.46	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 3.40 FILL VOL : 350.29	CUT VOL : 2.62 FILL VOL : 429.90
874+50	CUT VOL : 4.75 FILL VOL : 6.49	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 4.45 FILL VOL : 357.68	CUT VOL : 3.46 FILL VOL : 369.58
874+00	CUT VOL : 4.46 FILL VOL : 6.52	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 4.55 FILL VOL : 319.13	CUT VOL : 3.70 FILL VOL : 316.81



875+00

874+50

874+00

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 874+00 TO STA. 875+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X008

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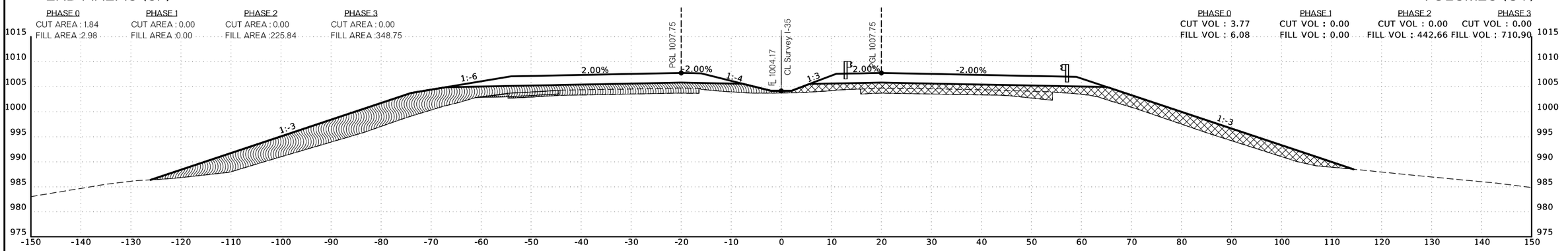
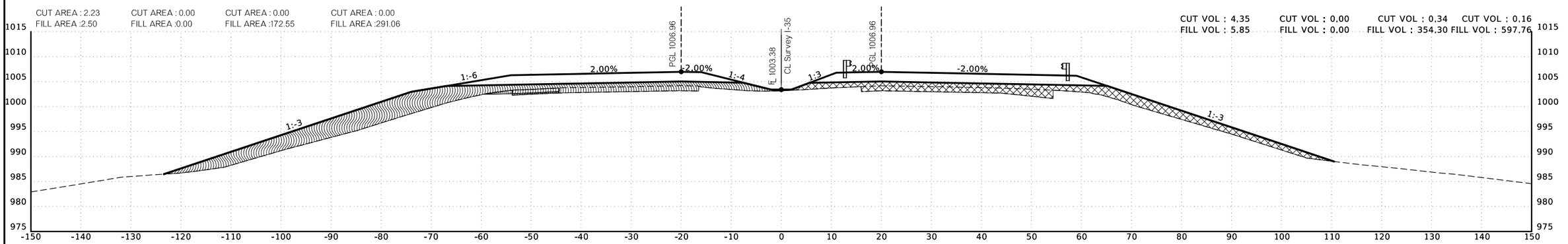
END AREAS (SF)

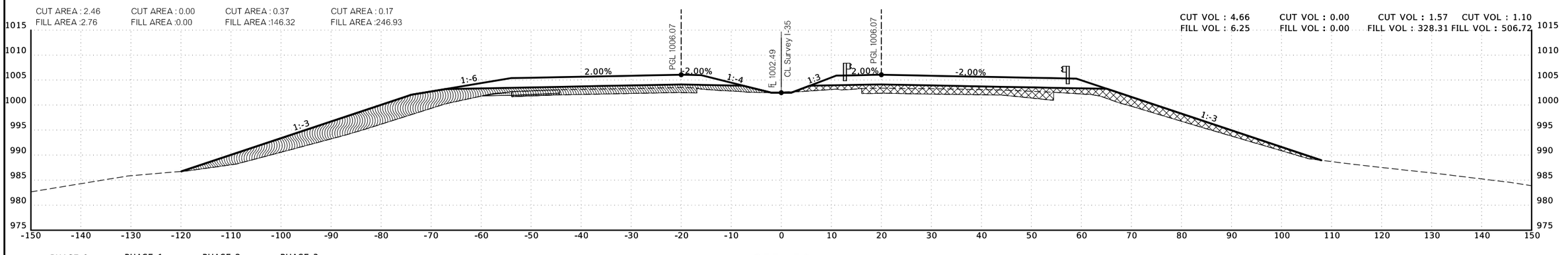
VOLUMES (CY)



876+50



876+00



875+50

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 875+50 TO STA. 876+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X009

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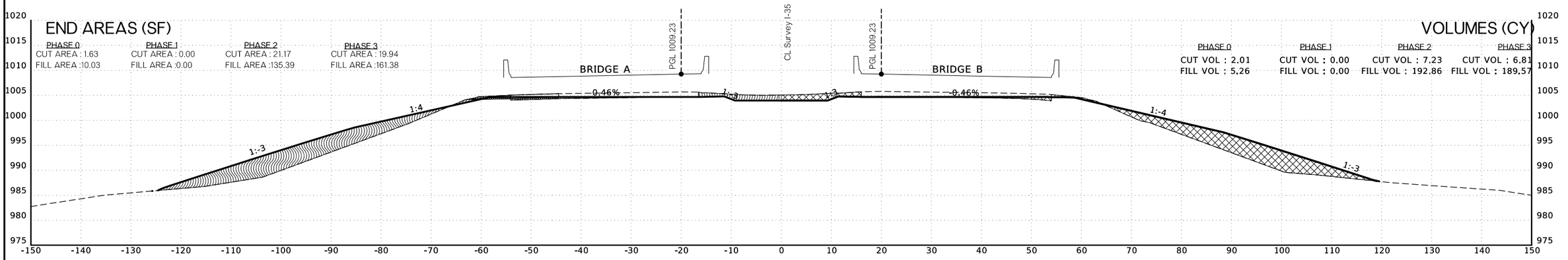
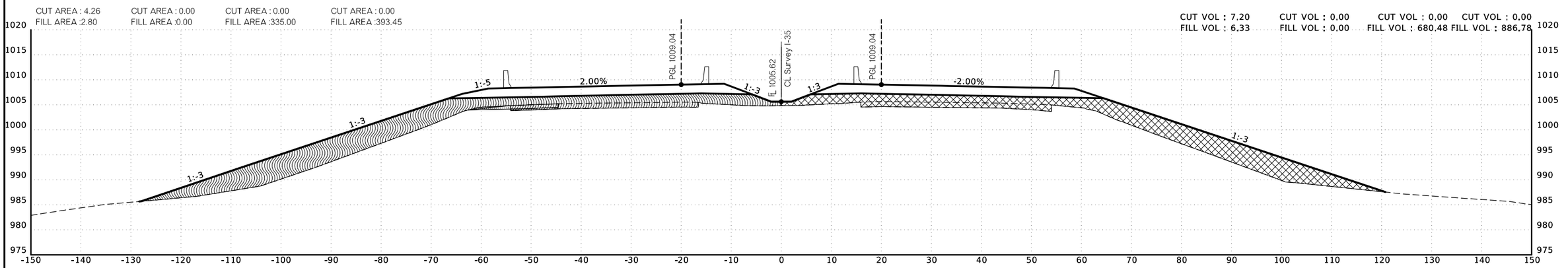
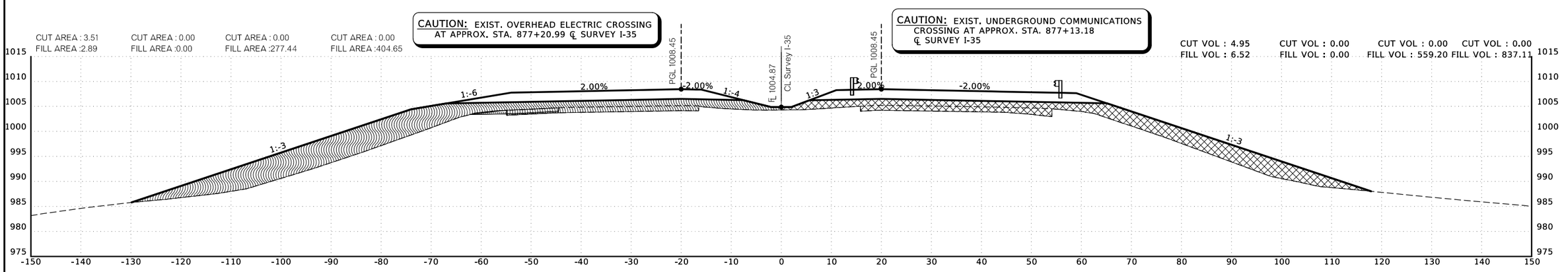
877+68.52 BEGIN BRIDGE "B"



877+68.38 BEGIN BRIDGE "A"



877+50



877+00

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 877+00 TO STA. 877+68

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X010

7/26/2018

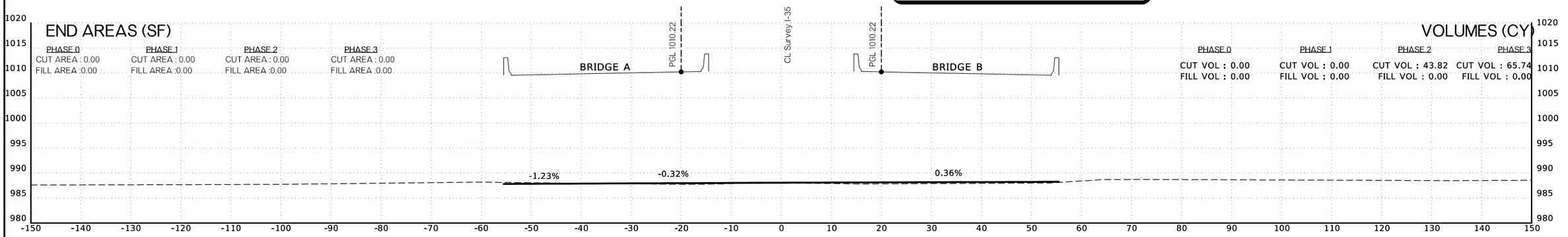
CAUTION: EXIST. POWER UNDERGROUND CROSSING AT APPROX. STA. 879+47.74 ℄ SURVEY I-35

END AREAS (SF)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 0.00	CUT AREA : 0.00	CUT AREA : 0.00	CUT AREA : 0.00
FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00

VOLUMES (CY)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 0.00	CUT VOL : 0.00	CUT VOL : 43.82	CUT VOL : 65.74
FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00



879+00

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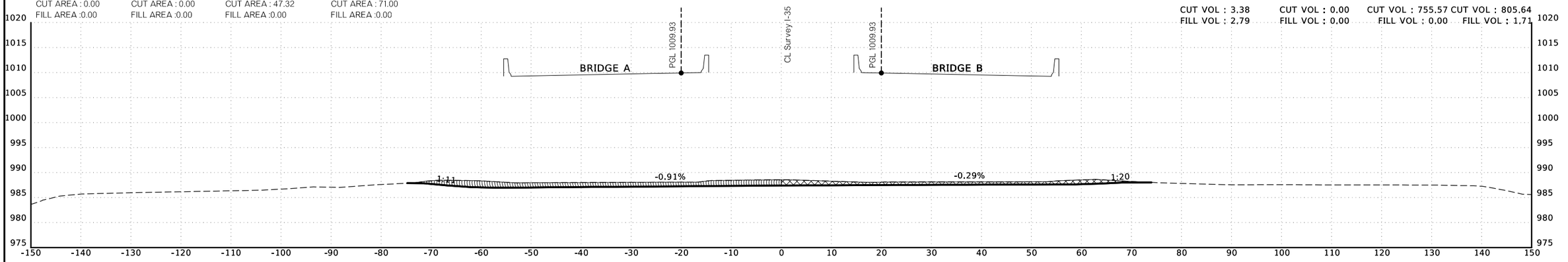
CUT AREA : 0.00	CUT AREA : 0.00	CUT AREA : 47.32	CUT AREA : 71.00
FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00

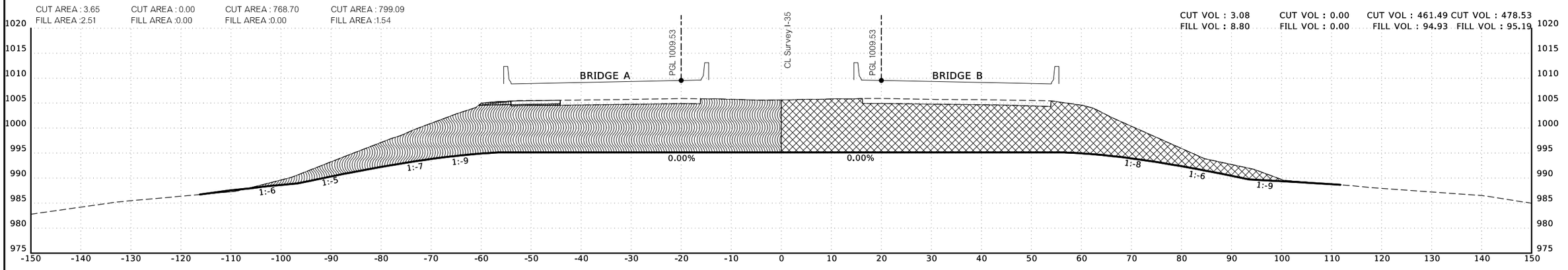
CUT VOL : 3.38	CUT VOL : 0.00	CUT VOL : 755.57	CUT VOL : 805.64
FILL VOL : 2.79	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 1.71



878+50

CUT AREA : 3.65	CUT AREA : 0.00	CUT AREA : 768.70	CUT AREA : 799.09
FILL AREA :2.51	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :1.54

CUT VOL : 3.08	CUT VOL : 0.00	CUT VOL : 461.49	CUT VOL : 478.53
FILL VOL : 8.80	FILL VOL : 0.00	FILL VOL : 94.93	FILL VOL : 95.19



878+00

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 878+00 TO STA. 879+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X011

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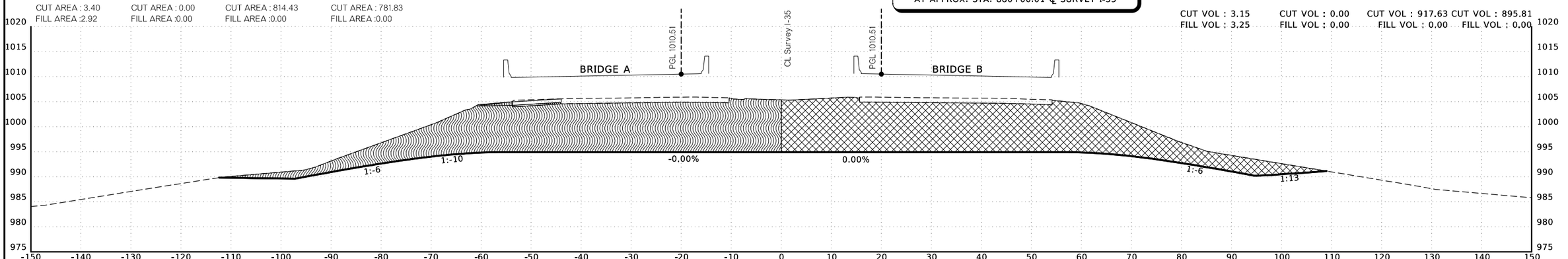
END AREAS (SF)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT AREA : 3.40	CUT AREA : 0.00	CUT AREA : 814.43	CUT AREA : 781.83
FILL AREA :2.92	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00

VOLUMES (CY)

PHASE 0	PHASE 1	PHASE 2	PHASE 3
CUT VOL : 3.15	CUT VOL : 0.00	CUT VOL : 917.63	CUT VOL : 895.81
FILL VOL : 3.25	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00

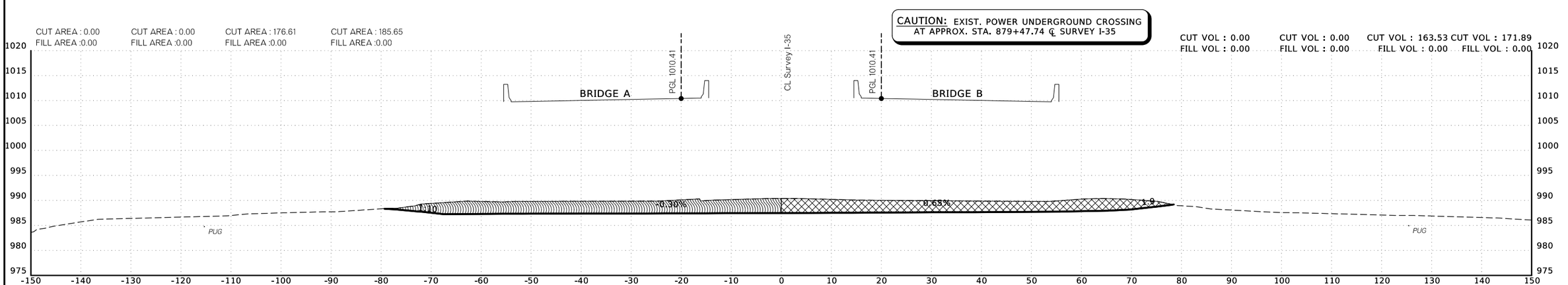
CAUTION: EXIST. OVERHEAD ELECTRIC CROSSING AT APPROX. STA. 880+00.01 ℄ SURVEY I-35



880+00

CAUTION: EXIST. POWER UNDERGROUND CROSSING AT APPROX. STA. 879+47.74 ℄ SURVEY I-35

CUT AREA : 0.00	CUT AREA : 0.00	CUT AREA : 176.61	CUT AREA : 185.65
FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00	FILL AREA :0.00
CUT VOL : 0.00	CUT VOL : 0.00	CUT VOL : 163.53	CUT VOL : 171.89
FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00	FILL VOL : 0.00



879+50

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 879+50 TO STA. 880+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X012

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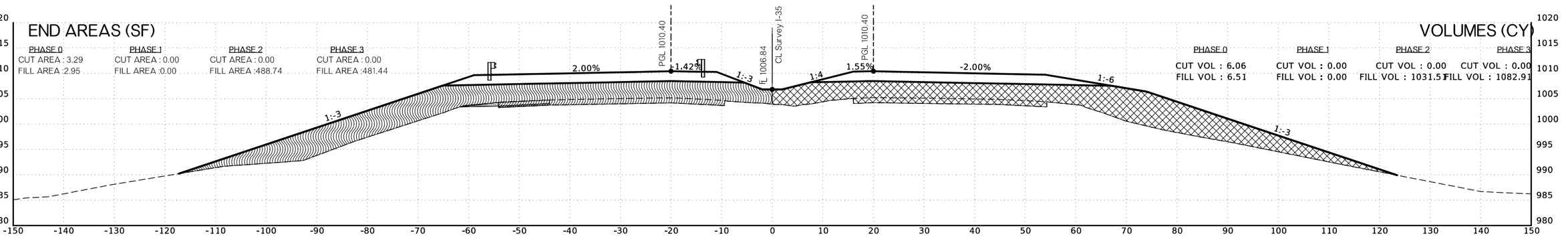
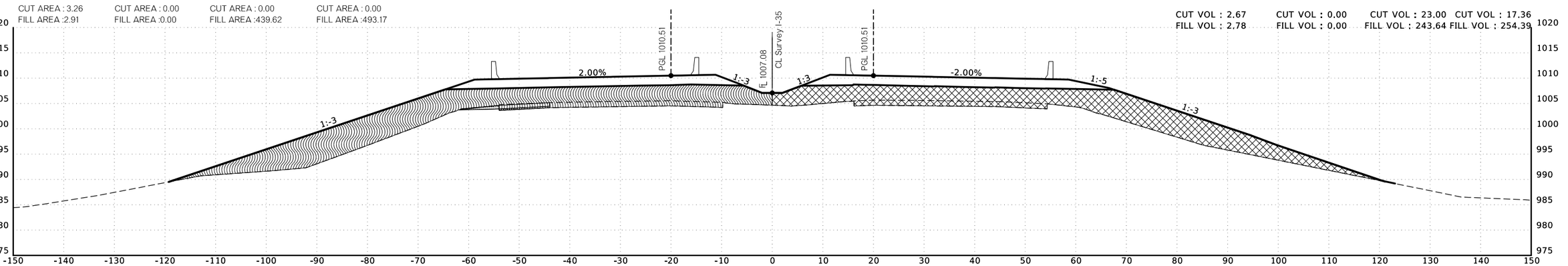
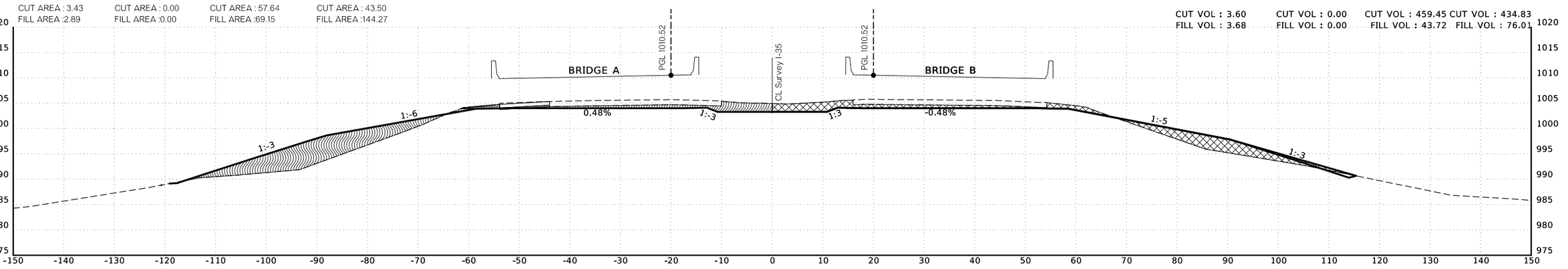


881+00



880+50

880+28.52 END BRIDGE "B"



880+28.38 END BRIDGE "A"

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 880+28 TO STA. 881+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X013

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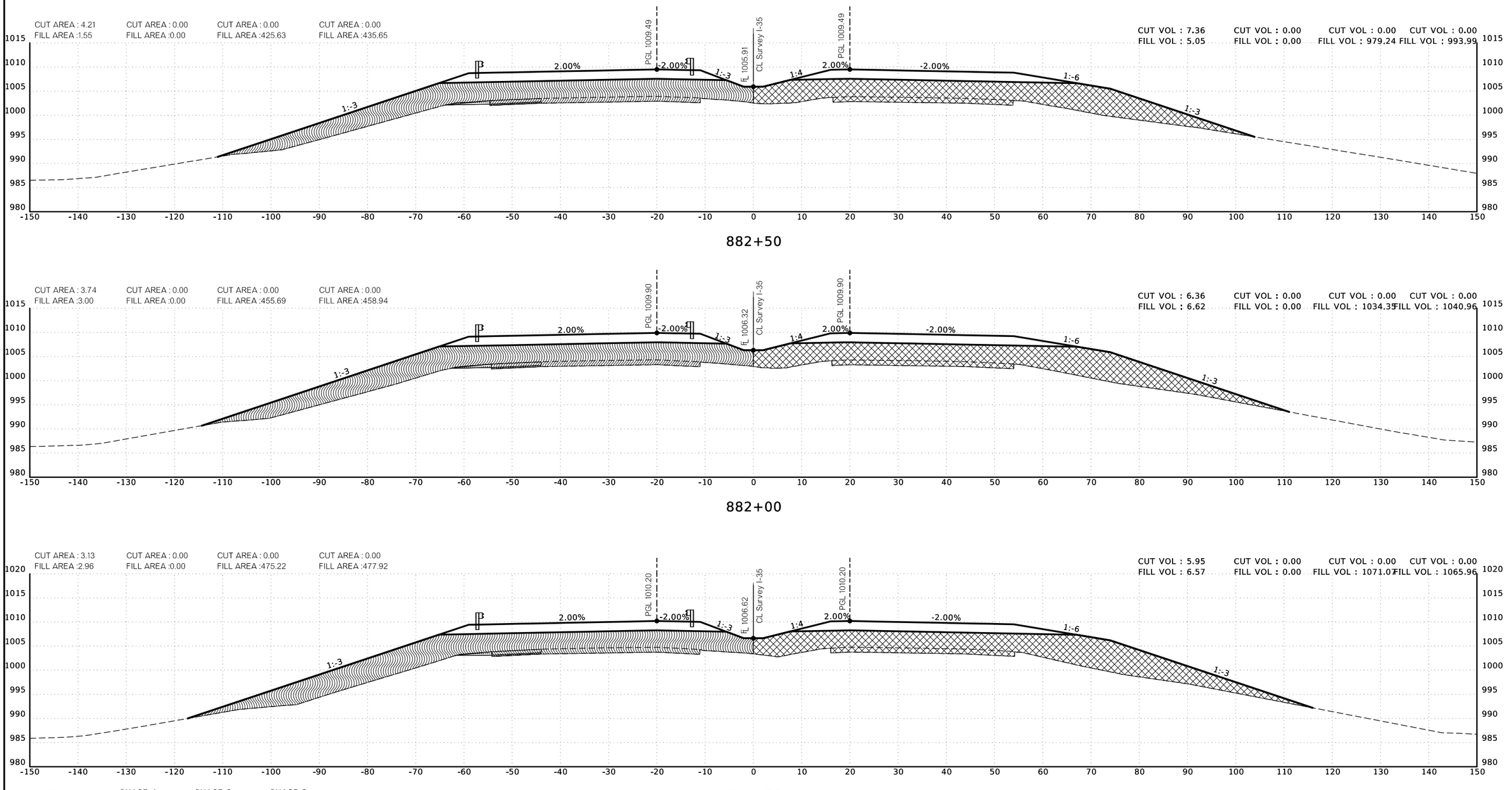
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
882+50	CUT AREA : 4.21 FILL AREA :1.55	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :425.63	CUT AREA : 0.00 FILL AREA :435.65
882+00	CUT AREA : 3.74 FILL AREA :3.00	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :455.69	CUT AREA : 0.00 FILL AREA :458.94
881+50	CUT AREA : 3.13 FILL AREA :2.96	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :475.22	CUT AREA : 0.00 FILL AREA :477.92

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
882+50	CUT VOL : 7.36 FILL VOL : 5.05	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 979.24	CUT VOL : 0.00 FILL VOL : 993.99
882+00	CUT VOL : 6.36 FILL VOL : 6.62	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 1034.35	CUT VOL : 0.00 FILL VOL : 1040.96
881+50	CUT VOL : 5.95 FILL VOL : 6.57	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 1071.07	CUT VOL : 0.00 FILL VOL : 1065.96



882+50

882+00

881+50

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 881+50 TO STA. 882+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X014

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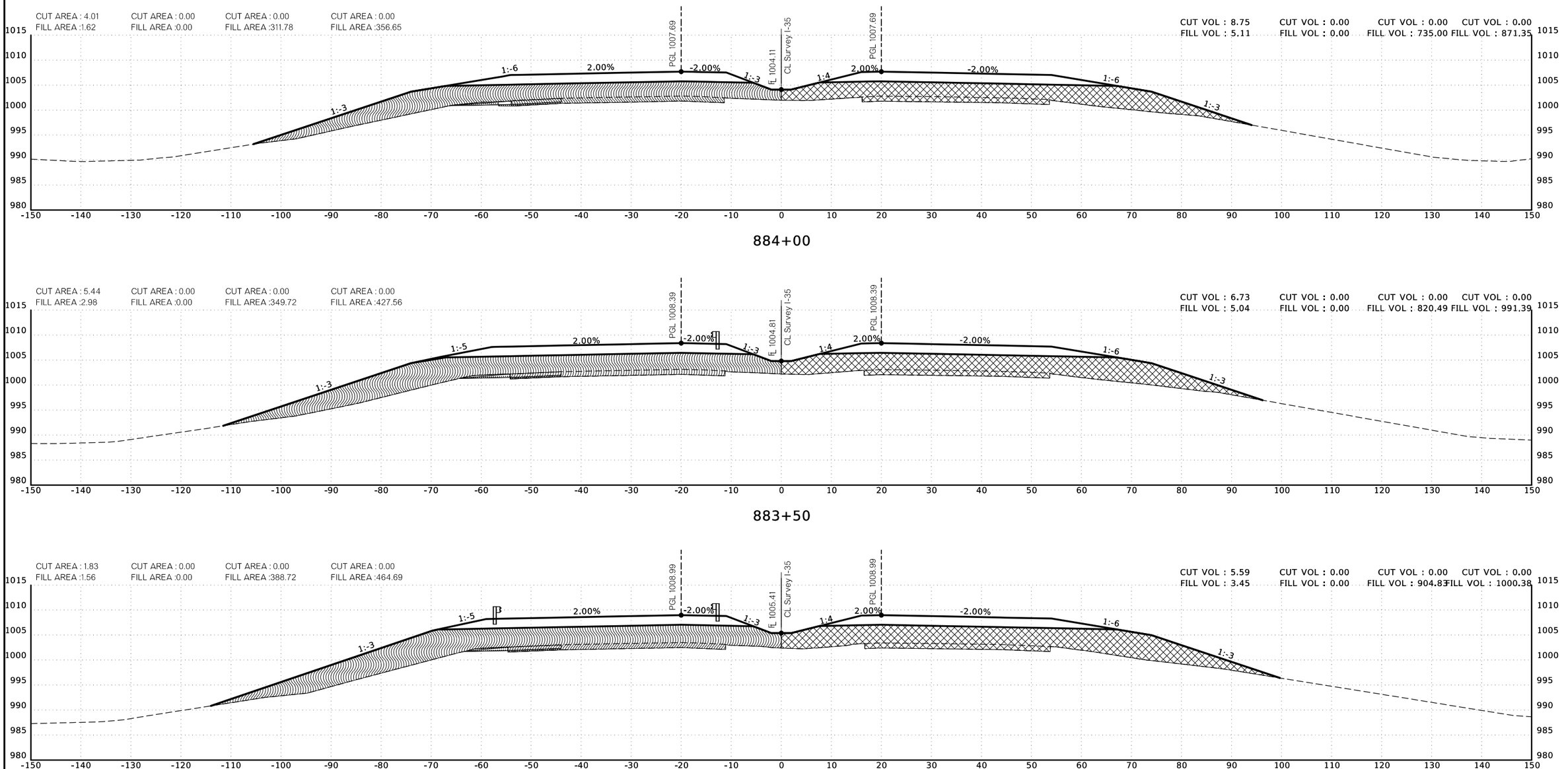
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
884+00	CUT AREA : 4.01 FILL AREA :1.62	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :311.78	CUT AREA : 0.00 FILL AREA :356.65
883+50	CUT AREA : 5.44 FILL AREA :2.98	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :349.72	CUT AREA : 0.00 FILL AREA :427.56
883+00	CUT AREA : 1.83 FILL AREA :1.56	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :388.72	CUT AREA : 0.00 FILL AREA :464.69

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
884+00	CUT VOL : 8.75 FILL VOL : 5.11	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 735.00	CUT VOL : 0.00 FILL VOL : 871.35
883+50	CUT VOL : 6.73 FILL VOL : 5.04	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 820.49	CUT VOL : 0.00 FILL VOL : 991.39
883+00	CUT VOL : 5.59 FILL VOL : 3.45	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 904.83	CUT VOL : 0.00 FILL VOL : 1000.38



884+00

883+50

883+00

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 883+00 TO STA. 884+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X015

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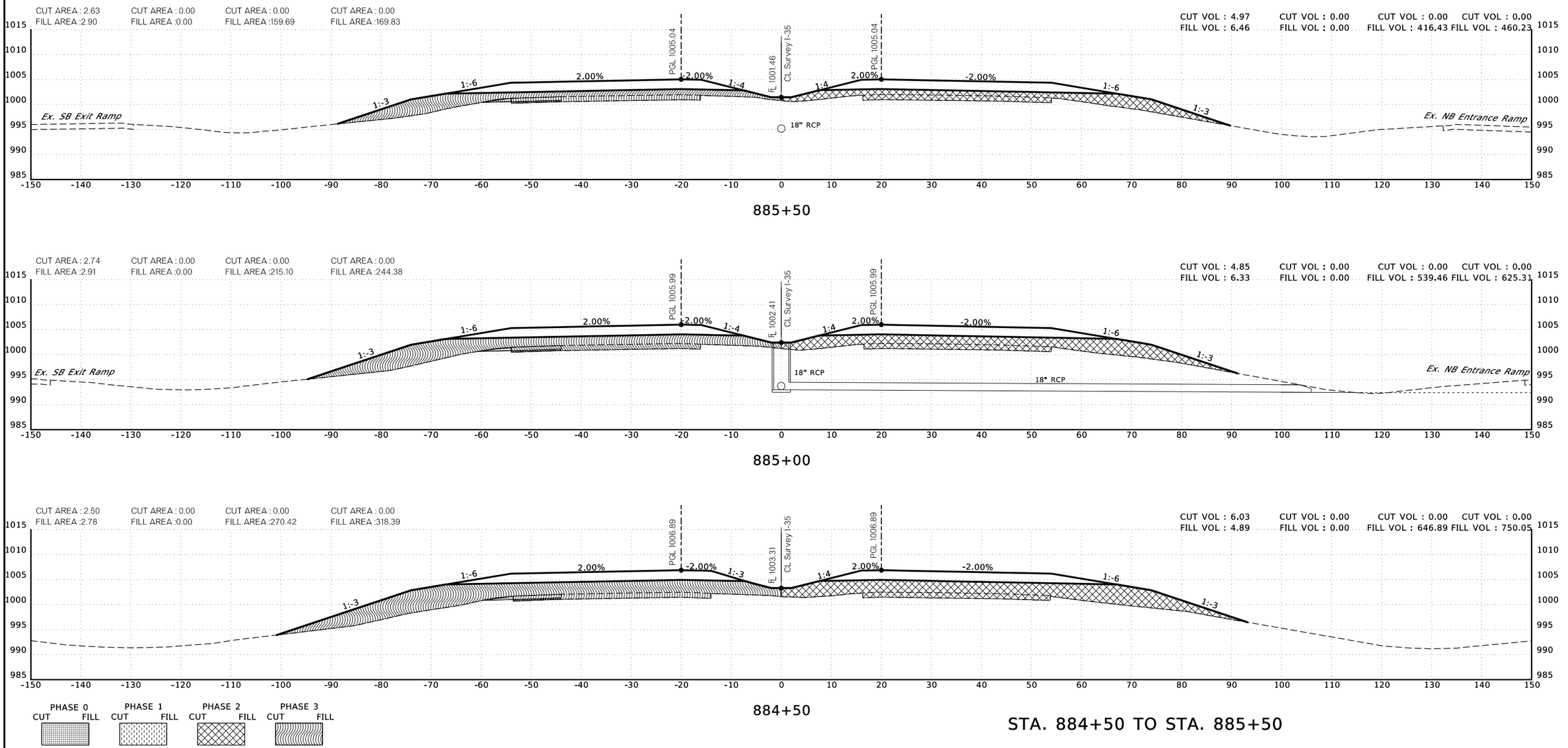
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
885+50	CUT AREA : 2.63 FILL AREA :2.90	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :159.69	CUT AREA : 0.00 FILL AREA :169.83
885+00	CUT AREA : 2.74 FILL AREA :2.91	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :215.10	CUT AREA : 0.00 FILL AREA :244.38
884+50	CUT AREA : 2.50 FILL AREA :2.78	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :270.42	CUT AREA : 0.00 FILL AREA :318.39

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
885+50	CUT VOL : 4.97 FILL VOL : 6.46	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 416.43	CUT VOL : 0.00 FILL VOL : 460.23
885+00	CUT VOL : 4.85 FILL VOL : 6.33	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 539.46	CUT VOL : 0.00 FILL VOL : 625.31
884+50	CUT VOL : 6.03 FILL VOL : 4.89	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 646.89	CUT VOL : 0.00 FILL VOL : 750.05



885+50

885+00

884+50

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 884+50 TO STA. 885+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X016

7/26/2018

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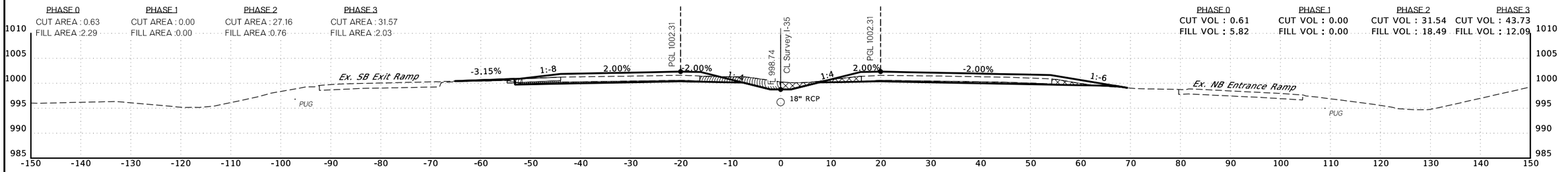
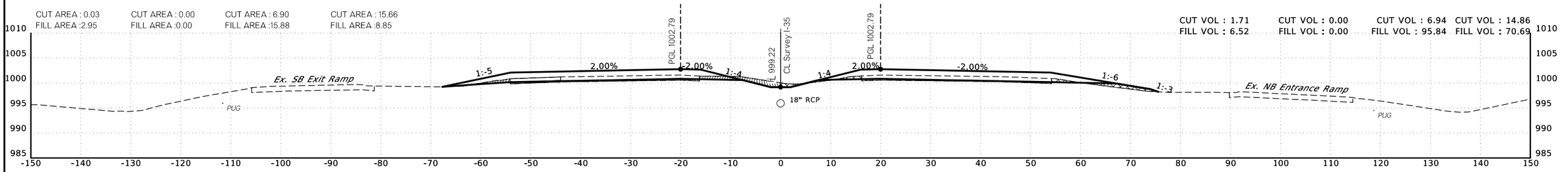
END AREAS (SF)

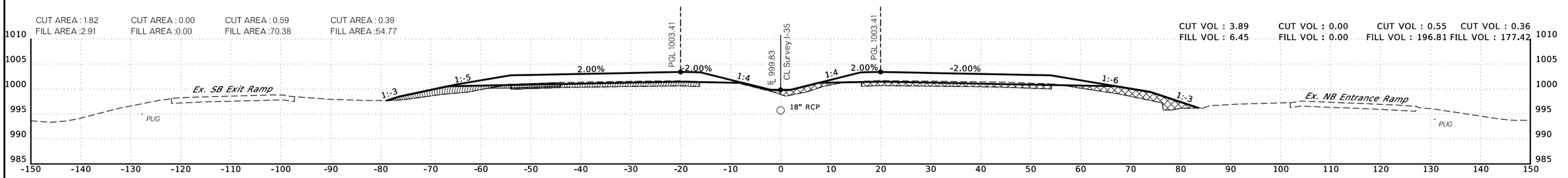
VOLUMES (CY)



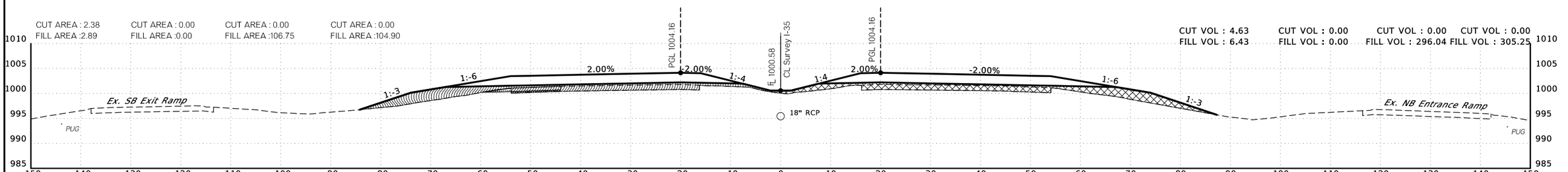
887+50



887+00



886+50



886+00

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 886+00 TO STA. 887+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X017

7/26/2018

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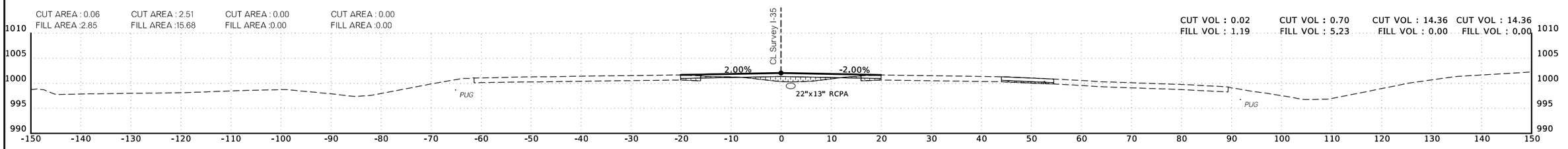
END AREAS (SF)

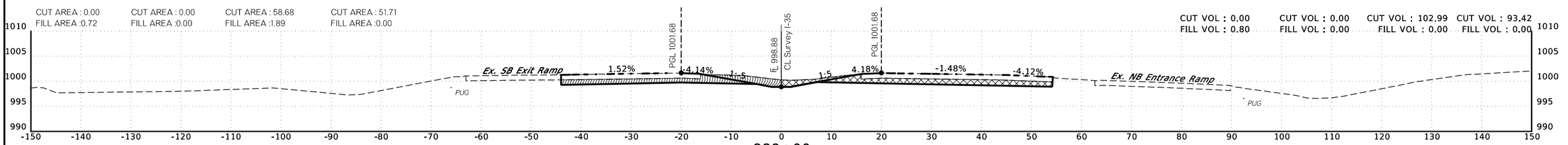
	PHASE 0	PHASE 1	PHASE 2	PHASE 3
889+15	CUT AREA : 0.06 FILL AREA :2.85	CUT AREA : 2.51 FILL AREA :15.68	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
889+00	CUT AREA : 0.00 FILL AREA :0.72	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 58.68 FILL AREA :1.89	CUT AREA : 51.71 FILL AREA :0.00
888+50	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 59.52 FILL AREA :0.00	CUT AREA : 49.18 FILL AREA :0.00
888+00	CUT AREA : 0.00 FILL AREA :3.10	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 43.70 FILL AREA :0.00	CUT AREA : 45.99 FILL AREA :0.00

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
889+15	CUT VOL : 0.02 FILL VOL : 1.19	CUT VOL : 0.70 FILL VOL : 5.23	CUT VOL : 14.36 FILL VOL : 0.00	CUT VOL : 14.36 FILL VOL : 0.00
889+00	CUT VOL : 0.00 FILL VOL : 0.80	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 102.99 FILL VOL : 0.00	CUT VOL : 93.42 FILL VOL : 0.00
888+50	CUT VOL : 0.00 FILL VOL : 3.45	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 95.57 FILL VOL : 0.00	CUT VOL : 88.12 FILL VOL : 0.00
888+00	CUT VOL : 0.58 FILL VOL : 5.99	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 65.61 FILL VOL : 0.84	CUT VOL : 71.81 FILL VOL : 2.92



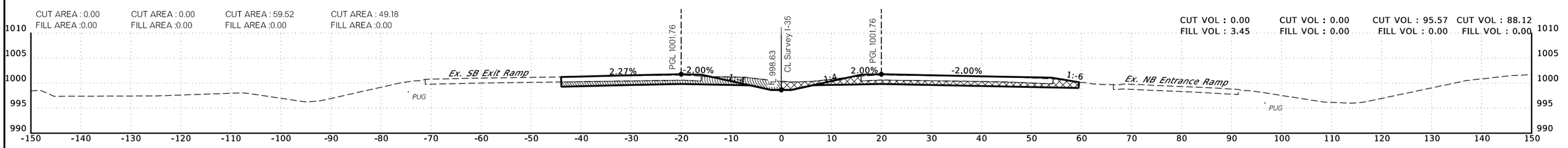
889+15



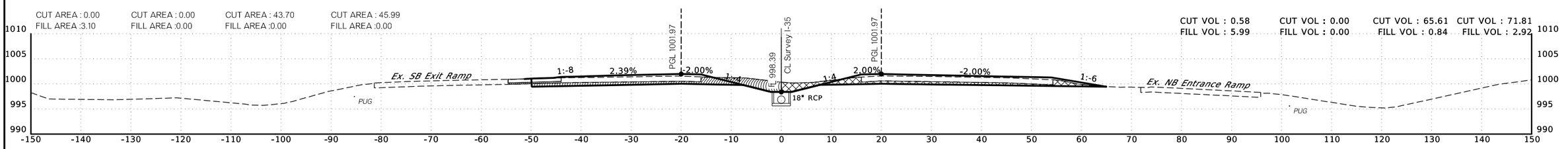
889+00

END PROJECT

BEGIN INCIDENTAL CONSTRUCTION



888+50



888+00

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 888+00 TO STA. 889+15

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X018

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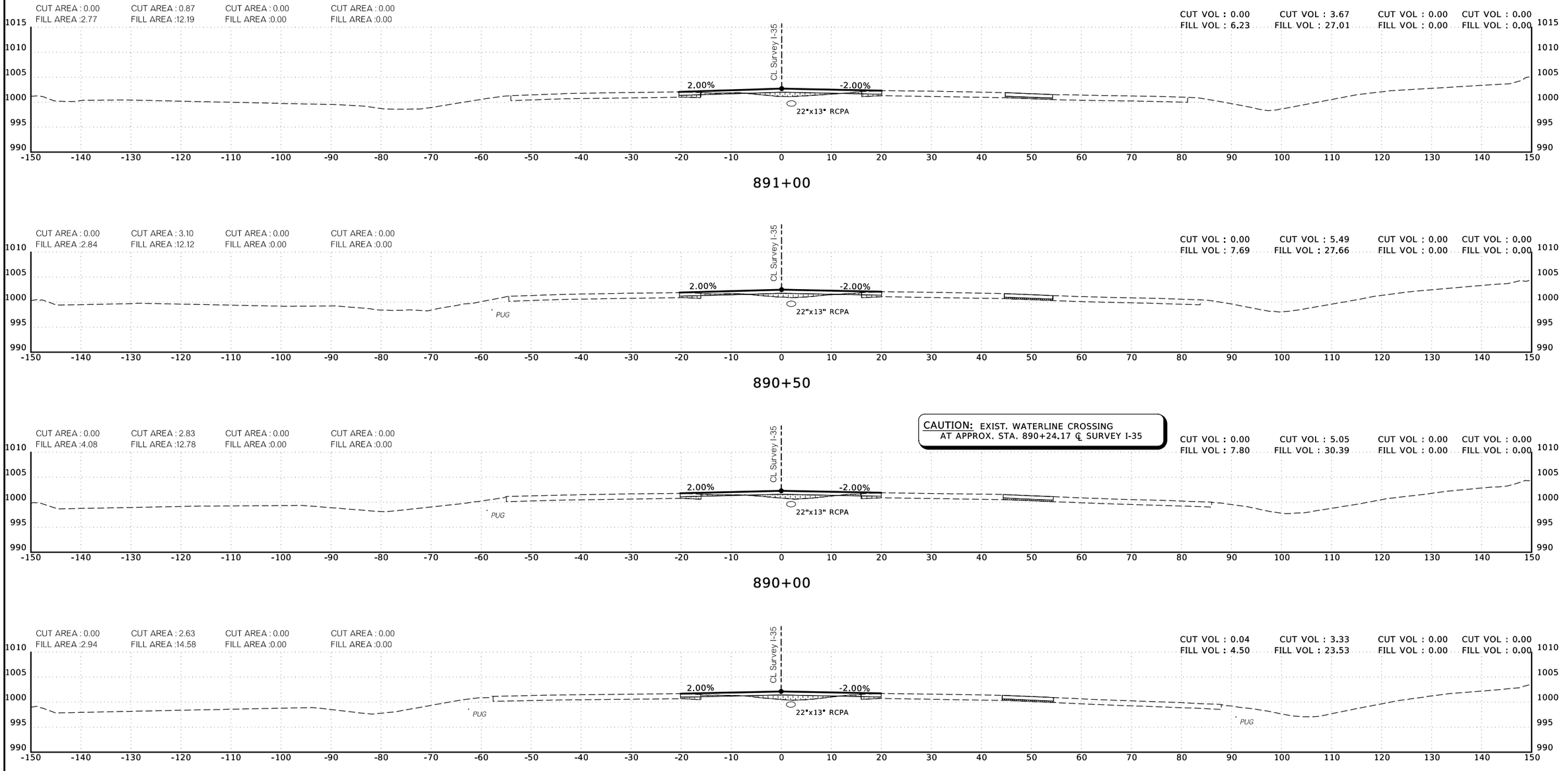
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
891+00	CUT AREA : 0.00 FILL AREA :2.77	CUT AREA : 0.87 FILL AREA :12.19	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
890+50	CUT AREA : 0.00 FILL AREA :2.84	CUT AREA : 3.10 FILL AREA :12.12	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
890+00	CUT AREA : 0.00 FILL AREA :4.08	CUT AREA : 2.83 FILL AREA :12.78	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
889+50	CUT AREA : 0.00 FILL AREA :2.94	CUT AREA : 2.63 FILL AREA :14.58	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
891+00	CUT VOL : 0.00 FILL VOL : 6.23	CUT VOL : 3.67 FILL VOL : 27.01	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
890+50	CUT VOL : 0.00 FILL VOL : 7.69	CUT VOL : 5.49 FILL VOL : 27.66	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
890+00	CUT VOL : 0.00 FILL VOL : 7.80	CUT VOL : 5.05 FILL VOL : 30.39	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
889+50	CUT VOL : 0.04 FILL VOL : 4.50	CUT VOL : 3.33 FILL VOL : 23.53	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00



891+00

890+50

890+00

889+50

CAUTION: EXIST. WATERLINE CROSSING AT APPROX. STA. 890+24.17 ℄ SURVEY I-35

PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 889+50 TO STA. 891+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X019

7/26/2018

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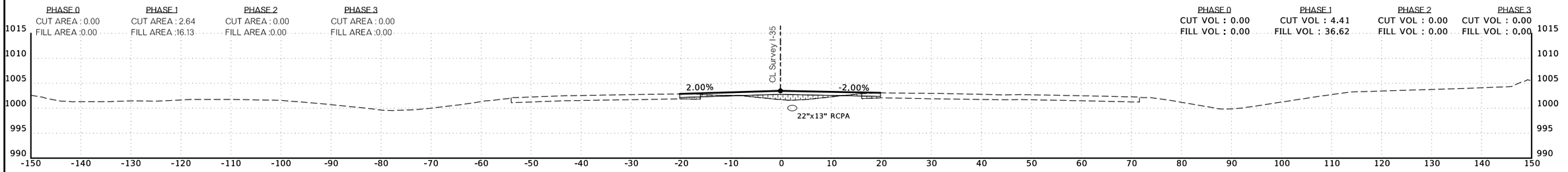
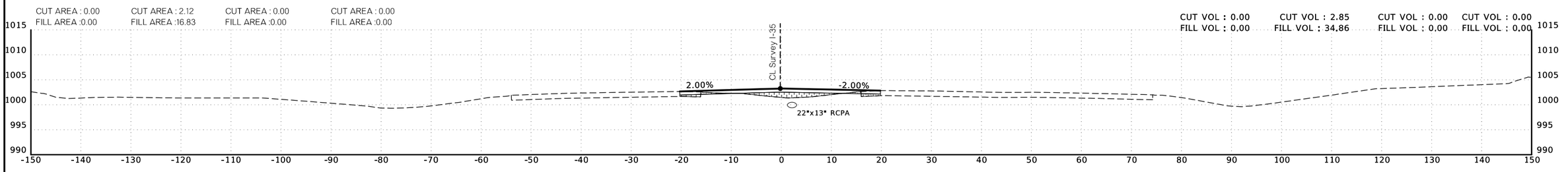
END AREAS (SF)

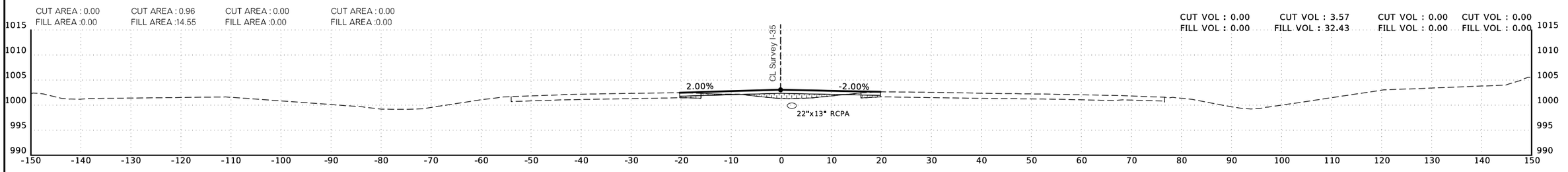
VOLUMES (CY)



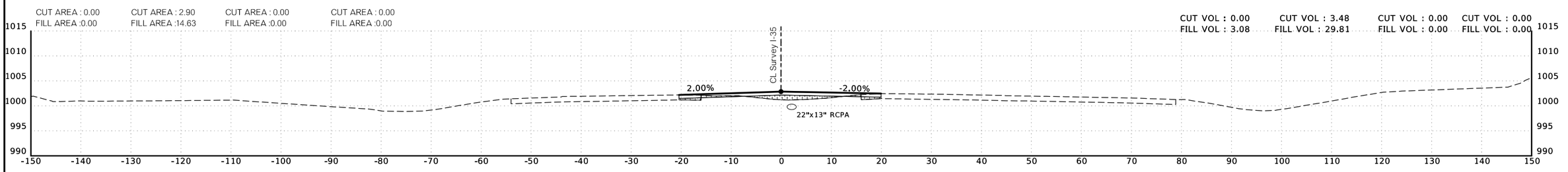
893+00



892+50



892+00



891+50

PHASE 0 CUT FILL
PHASE 1 CUT FILL
PHASE 2 CUT FILL
PHASE 3 CUT FILL

STA. 891+50 TO STA. 893+00

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X020

7/26/2018

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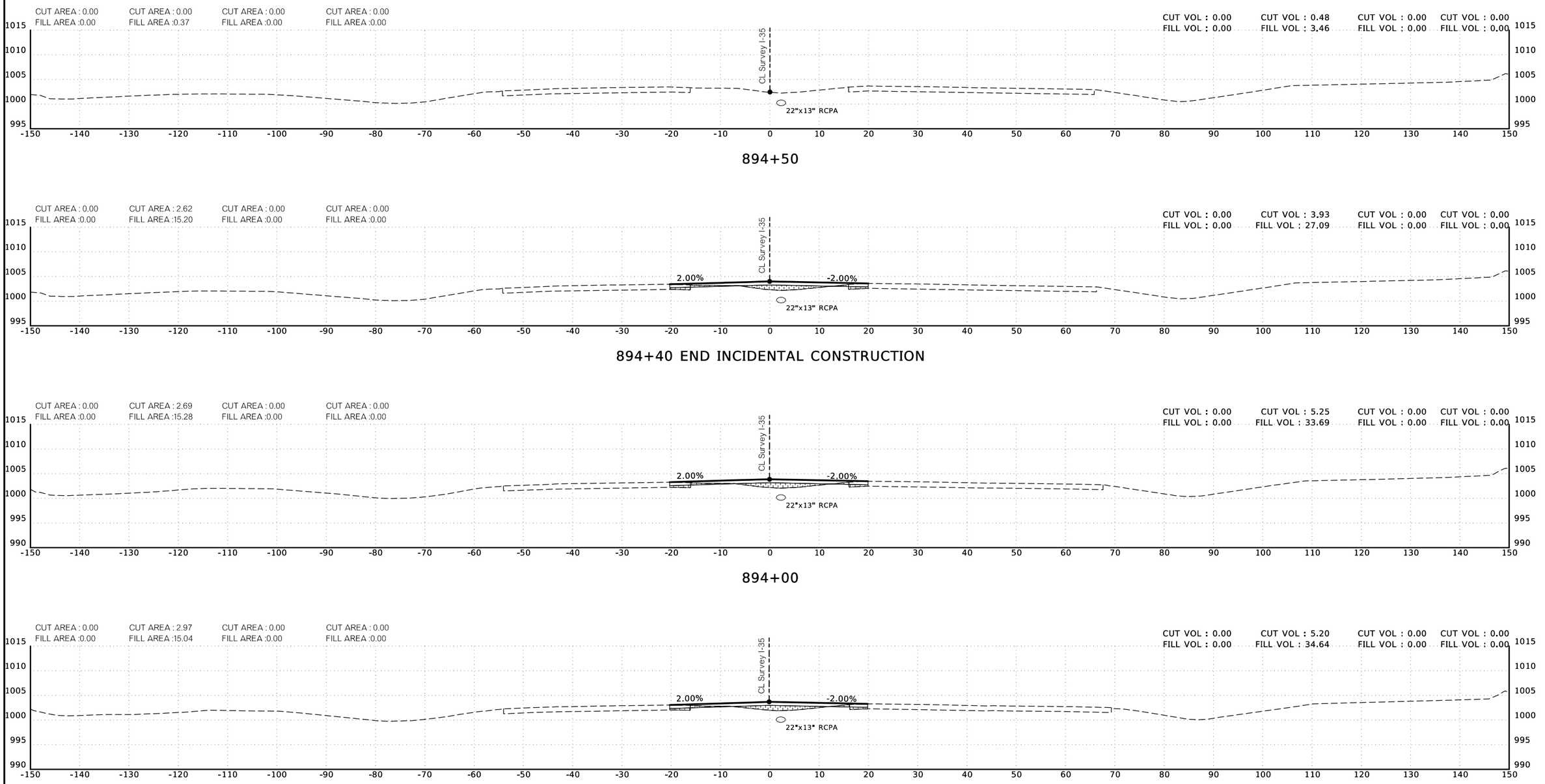
END AREAS (SF)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
894+50	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.37	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
894+40 END INCIDENTAL CONSTRUCTION	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.62 FILL AREA :15.20	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
894+00	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.69 FILL AREA :15.28	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00
893+50	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 2.97 FILL AREA :15.04	CUT AREA : 0.00 FILL AREA :0.00	CUT AREA : 0.00 FILL AREA :0.00

VOLUMES (CY)

	PHASE 0	PHASE 1	PHASE 2	PHASE 3
894+50	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.48 FILL VOL : 3.46	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
894+40 END INCIDENTAL CONSTRUCTION	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 3.93 FILL VOL : 27.09	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
894+00	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 5.25 FILL VOL : 33.69	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00
893+50	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 5.20 FILL VOL : 34.64	CUT VOL : 0.00 FILL VOL : 0.00	CUT VOL : 0.00 FILL VOL : 0.00



PHASE 0 CUT FILL | PHASE 1 CUT FILL | PHASE 2 CUT FILL | PHASE 3 CUT FILL

STA. 893+50 TO STA. 894+50

I-35

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X021

7/26/2018

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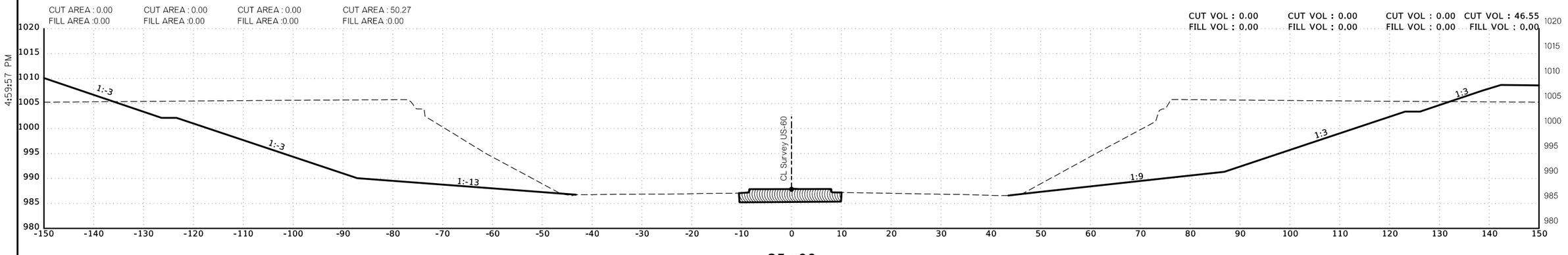
EARTHWORK BEYOND US-60 PAVEMENT TO BE ACCOUNTED FOR IN I-35 CROSS SECTIONS.

END AREAS (SF)

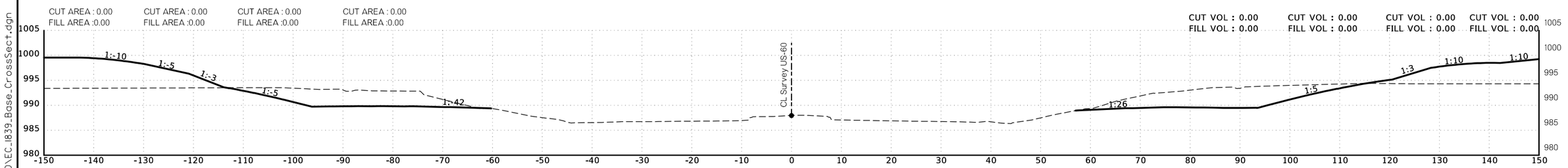
PHASE 0	PHASE 1	PHASE 2	PHASE 3

VOLUMES (CY)

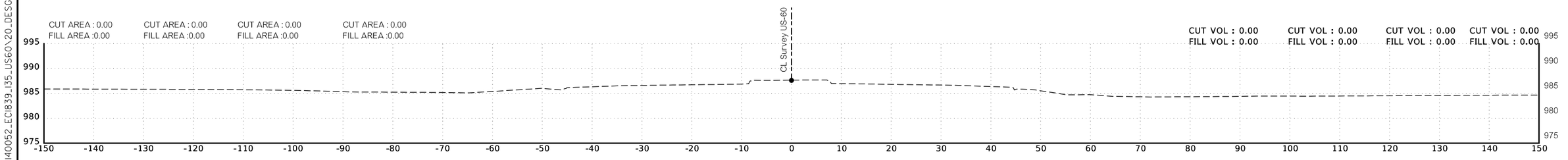
PHASE 0	PHASE 1	PHASE 2	PHASE 3



25+00



24+50



24+00

PHASE 0		PHASE 1		PHASE 2		PHASE 3	
CUT	FILL	CUT	FILL	CUT	FILL	CUT	FILL

STA. 24+00 TO STA. 25+00

US-60

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X022

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EARTHWORK BEYOND US-60 PAVEMENT TO BE ACCOUNTED FOR IN I-35 CROSS SECTIONS.

END AREAS (SF)

VOLUMES (CY)

STA. 25+50 TO STA. 27+00

US-60

SCALE: 1"=10'

COUNTY KAY HIGHWAY I-35 STATE JOB NO. 24432(14) SHEET NO. X023