

CLEARING AND GRUBBING DETAIL

CLEARING AND GRUBBING DETAIL

State Job No. 24428(20) Sheet No. 0002

	REVISION	DATE
△	REVISED SWPPP PAY ITEM	03/31/2020
△	REMOVED SWPPP PAY ITEM	05/12/2020
③	ADDED PAY NOTE	06/15/2020

PAY QUANTITY NOTES

- (R-15) QUANTITY BASED ON TWO APPLICATIONS.
- (R-37) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-40) INCLUDES 2% FOR GROUND MEASUREMENT.
- (R-41) ALL GATES AND GATE END POSTS FOR STRANDED WIRE FENCE (SWF) SHALL BE CONSTRUCTED AT THE SAME WIDTH AS THE EXISTING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- (1) CLEARING AND GRUBBING ESTIMATED AT 30.39 AC. WHICH INCLUDES AN ESTIMATED 3.18 AC. OF TREE REMOVAL.
- (2) INCLUDES REMOVAL OF ALL EXISTING ROADWAY FENCES AND OTHER STRUCTURES WITHIN THE LIMITS OF CLEARING AND GRUBBING PER THE CLEARING AND GRUBBING DETAIL ON SHEET 0002 OR AS DEEMED NECESSARY TO CONSTRUCT THE PROPOSED FENCE.
- (3) CORNER, STRETCHER, AND END POSTS SHALL BE CONSTRUCTED OF SCH. 40 STEEL USING DIMENSIONS SPECIFIED IN STANDARD RWF-1-2. PIPE WILL BE WELDED AND TENSION WIRES OMITTED. THE CORNER AND STRETCHER POST WILL BE PAINTED WITH ZINC RICH PAINT AFTER WELDING. GALVANIZED POSTS ARE NOT REQUIRED.
- (4) IN ADDITION TO SECTION 642.04(B), THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING: SURVEY CONTROL POINTS, REFERENCE POINTS AND BENCHMARKS NOTED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND REFRESHING THE CENTERLINE OF PERMANENT CONSTRUCTION, AND SETTING ALL OTHER CONTROL POINTS AND REFERENCE POINTS REQUIRED FOR CONSTRUCTION AND INSPECTION OF CONSTRUCTION REFERENCE LINES (CRL) AND THE PROPOSED RIGHT-OF-WAY. THE SURVEYOR WILL PROVIDE THE RESIDENT ENGINEER WITH A COMPUTERIZED DISK OF THE SURVEY DATA. THE SURVEYOR WILL IDENTIFY AND VERIFY BENCHMARKS SET, AND MAINTAIN ADDITIONAL BENCHMARKS WITHIN THE PROJECT UNITS AT A MINIMUM OF 500'. THE SURVEYOR WILL PROVIDE A COPY OF CHECKED BENCHMARKS TO THE RESIDENT ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO BEGINNING ANY FENCING PAY ITEMS. THE CONTRACTOR SHALL PROVIDE FOR THE RESIDENT ENGINEER'S USE A ROVING CABLE FREE INTEGRATED GPS & RTK SYSTEM WITH FIELD CONTROLLER. THIS SYSTEM SHALL BE COMPATIBLE WITH THE SURVEY BASE STATION USED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN THE BASE STATION DURING WORK HOURS FROM THE BEGINNING OF FENCING ACTIVITIES UNTIL SUBSTANTIAL COMPLETION IS ACHIEVED. THE CONTRACTOR SHALL PROVIDE A ONE WEEK TRAINING COURSE FOR THIS EQUIPMENT FOR UP TO FOUR (4) ODOT INSPECTORS. THIS TRAINING WILL BE CONDUCTED PRIOR TO COMMENCING FENCING ACTIVITIES. AT A MINIMUM TRAINING ACTIVITIES SHALL CONSIST OF UNIT OPERATION, SETUP, TAKEDOWN, STATION, OFFSET, ELEVATION, PROJECT LINE WORK, AND DISTANCE. THE CONTRACTOR SHALL ALSO SET UP TWO (2) POLES AT EACH BASE LOCATION TO ALLOW INSPECTION AND CONTRACTOR TO OPERATE UNITS SIMULTANEOUSLY.
- ③ (5) WOOD POSTS WILL NOT BE ALLOWED ON THIS PROJECT.

SUMMARY OF PAY QUANTITIES - ROADWAY				
ROADWAY 100				
ITEM		DESCRIPTION	UNIT	QUANTITY
201(A)	0102	CLEARING AND GRUBBING (1)	LSUM	1.0
241	2832	MOWING (R-15)	AC	62.0
619(A)	0920	REMOVAL OF STRUCTURES & OBSTRUCTIONS (2)(R-37)	LSUM	1.0
△ 624(A)	4281	FENCE-STYLE WWF (3)(5)(R-40)	LF	84,794.0
△ 624(B)	4467	GATES-STYLE WWF (4.5'HIGH X 18" LONG) (5)	EA	28.0
△ 624(C)	4458	FENCE-STYLE SWF (4 BARBED WIRE) (5)(R-40,41)	LF	7,018.0

SUMMARY OF PAY QUANTITIES (STAKING)				
STAKING 600				
ITEM		DESCRIPTION	UNIT	QUANTITY
642(B)	0096	CONSTRUCTION STAKING LEVEL II (4)	LSUM	1

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SUMMARY OF PAY QUANTITIES (CONSTRUCTION)				
CONSTRUCTION 640				
ITEM		DESCRIPTION	UNIT	QUANTITY
641	1552	MOBILIZATION	LSUM	1

GENERAL CONSTRUCTION NOTES

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.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING THE EXISTING SECTION LINE ROADS TO LOCAL AND THROUGH TRAFFIC. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL AND THROUGH TRAFFIC.

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.

THE CONTRACTOR SHALL REMOVE AND RESET MAILBOXES AS NECESSARY. MAILBOXES ARE TO BE MAINTAINED IN AN UPRIGHT POSITION AND ACCESSIBLE TO MAIL CARRIER'S CAR DURING CONSTRUCTION. ANY DAMAGE TO BOXES OR SUPPORTS SHALL BE REPAIRED BY THE CONTRACTOR. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

PAY QUANTITIES AND NOTES

- PAY QUANTITY NOTES
- (R-15)

QUANTITY BASED ON TWO APPLICATIONS.
- (R-37)

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STAKING 600				
ITEM		DESCRIPTION	UNIT	QUANTITY
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SUMMARY OF PAY QUANTITIES (CONSTRUCTION)				
CONSTRUCTION 640				
ITEM		DESCRIPTION	UNIT	QUANTITY
641	1552	MOBILIZATION	LSUM	1

PAY QUANTITIES AND NOTES

SUMMARY OF FENCE				
STATION EXTENTS AND LOCATION	FENCE - STYLE WWF 624(A)	GATES- STYLE WWF (4.5' HIGH x 18' LG.) 624(B)	FENCE- STYLE SWF (4 BARBED WIRE) 624(C)	GATES- STYLE SWF (4.5' HIGH x 18' LG.) ●
	LF	EA	LF	EA
US 81				
STA. 100+50 TO STA. 100+76 - LT.	28			
STA. 100+75 TO STA. 113+52 - RT.	1,373			
STA. 100+85 - LT.		1		
STA. 100+94 TO STA. 113+00 - LT.	1,210			
STA. 113+60 RT.		1		
STA. 113+68 TO STA. 114+15 - RT.	47			
STA. 114+15 TO STA. 116+50 - RT.			378	
STA. 116+20 RT.				1
STA. 116+50 TO STA. 120+39 - RT.	391			
STA. 120+39 TO STA. 122+15 - RT.			220	
STA. 121+88 - RT.		2		
STA. 127+47 TO STA. 133+75 - LT.	629			
STA. 133+75 TO STA. 137+50 - LT.			506	
STA. 136+50 - LT.				1
STA. 137+50 TO STA. 141+48 - LT.	361			
STA. 139+79 TO STA. 142+44 - RT.	452			
STA. 142+44 TO STA. 143+43 - RT.			153	
STA. 143+43 TO STA. 149+48 - RT.	682			
STA. 144+53 TO STA. 168+31 - LT.	2,358			
STA. 149+35 TO STA. 168+00 - RT.	2,558			
STA. 168+00 TO STA. 172+25 - RT.			766	
STA. 168+22 - RT.				1
STA. 168+40 - LT.		1		
STA. 168+49 TO STA. 179+41 - LT.	1,091			
STA. 172+25 TO STA. 195+07 - RT.	2,818			
STA. 179+50 - LT.		1		
STA. 179+59 TO STA. 194+43 - LT.	1,976			
STA. 198+51 TO STA. 214+55 - LT.	2,295			
STA. 199+55 TO STA. 236+26 - RT.	5,116			
STA. 214+55 TO STA. 216+20 - LT.			244	
STA. 216+20 TO STA. 217+44 - LT.	125			
STA. 217+53 - LT.		1		
STA. 217+62 TO STA. 234+73 - LT.	1,722			
STA. 234+22 - LT.		1		
STA. 236+35 - RT.		1		
STA. 234+91 TO STA. 249+60 - LT.	1,478			
STA. 236+44 TO STA. 250+78 - RT.	1,451			
STA. 251+52 TO STA. 257+91 - LT.	640			
STA. 252+67 TO STA. 257+91 - RT.	532			
STA. 258+00 - LT.		1		
STA. 258+00 - RT.		1		
STA. 258+09 TO STA. 285+00 - LT.	3,043			
STA. 258+09 TO STA. 260+91 - RT.	284			
STA. 261+00 - RT.		1		
STA. 260+09 TO STA. 279+00 - RT.	1,789			
STA. 281+00 TO STA. 296+91 - RT.	1,605			
STA. 288+00 TO STA. 306+14 - LT.	1,941			
STA. 306+14 TO STA. 306+74 - LT. & RT.			496	
STA. 306+39 - LT.				1
STA. 297+00 - RT.		1		
STA. 297+09 TO STA. 306+74 - RT.	947			
STA. 308+45 TO STA. 309+41 - LT. & RT.			462	
STA. 308+82 - LT.				1
STA. 308+45 TO STA. 324+50 - LT.	1,657			
STA. 309+41 TO STA. 316+26 - RT.	695			
STA. 316+35 - RT.		1		
STA. 316+44 TO STA. 338+94 - RT.	2,310			
STA. 324+50 TO STA. 326+50 - LT.			302	
STA. 326+50 TO STA. 338+59 - LT.	1,269			
STA. 339+20 TO STA. 358+89 - LT.	2,040			
STA. 339+50 TO STA. 359+06 - RT.	1,997			
STA. 358+98 - LT.		1		
STA. 359+15 - RT.		1		
STA. 359+07 TO STA. 390+74 - LT.	3,208			
STA. 359+24 TO STA. 365+52 - RT.	634			
STA. 365+52 TO STA. 393+14 - RT.			2,892	
STA. 391+97 TO STA. 408+72 - LT.	1,838			

SUMMARY OF FENCE				
STATION EXTENTS AND LOCATION	FENCE - STYLE WWF 624(A)	GATES- STYLE WWF (4.5' HIGH x 18' LG.) 624(B)	FENCE- STYLE SWF (4 BARBED WIRE) 624(C)	GATES- STYLE SWF (4.5' HIGH x 18' LG.) ●
	LF	EA	LF	EA
STA. 393+32 TO STA. 395+61 - RT.	215			
STA. 395+70 - RT.		1		
STA. 395+84 TO STA. 411+00 - RT.	1,413			
STA. 408+80 - LT.		1		
STA. 408+88 TO STA. 411+25 - LT.	266			
STA. 412+75 TO STA. 443+91 - RT.	2,977			
STA. 412+80 TO STA. 414+42 - LT.	183			
STA. 414+50 - LT.		1		
STA. 414+58 TO STA. 420+96 - LT.	1,192			
STA. 421+26 TO STA. 432+04 - LT.	1,192			
STA. 432+31 TO STA. 432+67 - LT.	152			
STA. 432+30 TO STA. 433+06 - LT.	236			
STA. 433+08 LT.		1		
STA. 433+11 TO STA. 433+13 - LT.	79			
STA. 432+30 TO STA. 437+57 - LT.	546			
STA. 437+65 LT.		1		
STA. 437+73 TO STA. 441+84 - LT.	416			
STA. 441+92 LT.		1		
STA. 442+00 TO STA. 445+91 - LT.	391			
STA. 444+00 - RT.		1		
STA. 444+09 TO STA. 457+86 - RT.	1,423			
STA. 446+00 LT.		1		
STA. 446+09 TO STA. 459+82 - LT.	1,337			
STA. 458+50 TO STA. 483+23 - RT.	2,620			
STA. 460+70 TO STA. 480+41 - LT.	1,893			
STA. 481+27 TO STA. 483+03 - LT.	180			
QUAIL RD.				
STA. 23+25 TO STA. 26+25 - RT.	308			
STA. 24+50 TO STA. 26+51 - LT.	206			
STA. 26+25 TO STA. 27+25 - RT.			317	
STA. 26+60 - LT.		1		
STA. 26+68 - RT.				1
STA. 26+69 TO STA. 28+82 - LT.	217			
STA. 27+25 TO STA. 31+31 - RT.	407			
STA. 28+90 - LT.		1		
STA. 28+99 TO STA. 32+63 - LT.	367			
STA. 31+40 - RT.		1		
STA. 31+50 TO STA. 33+52 - RT.	203			
I-44				
STA. 256+04 TO STA. 257+09 - RT.	118			
STA. 256+12 TO STA. 273+65 - LT.	1,788			
STA. 257+18 - RT.		1		
STA. 257+27 TO STA. 263+53 - RT.	637			
COUNTRY CLUB RD.				
STA. 100+17 TO STA. 103+45 - LT.	355			
STA. 100+32 TO STA. 102+99 - RT.	359			
STA. 103+81 TO STA. 103+99 - LT. & RT.			36	
STA. 103+90 - LT. & RT.				2
STA. 113+96 TO STA. 120+78 - RT.	710			
STA. 113+91 TO STA. 114+09 - LT. & RT.			36	
STA. 114+00 - LT. & RT.				2
STA. 115+66 TO STA. 126+20 - LT.	1,087			
GRAND AVE.				
STA. 115+01 TO STA. 115+19 - LT. & RT.			36	
STA. 115+10 - LT. & RT.				2
STA. 123+06 TO STA. 123+24 - LT. & RT.			36	
STA 123+15 - LT. & RT.				2
IDAHO AVE.				
STA. 1805+79 TO STA. 1808+87 - LT.	314			
STA. 1806+00 TO STA. 1808+85 - RT.	290			
STA. 1814+53 TO STA. 1817+19 - LT.	266			
STA. 1818+00 TO STA. 1818+38 - RT.	38			
IOWA AVE.				
STA. 32+01 TO STA. 38+21 - LT.	568			
STA. 32+01 TO STA. 38+36 - RT.	693			
STA. 47+31 TO STA. 60+67 - LT.	1,318			
STA. 47+50 TO STA. 60+70 - RT.	1,581			
TOTALS	83,131	28	6,880	14

● FOR INFORMATIONAL PURPOSES ONLY COST OF SWF GATES INCLUDED IN THE PRICE BID FOR FENCE.

SUMMARY OF REMOVAL QUANTITIES	
STATION EXTENTS	REMOVAL OF FENCE
	◆ LF
US 81	
STA. 87+22.00 TO STA. 105+00.00	234
STA. 105+00.00 TO STA. 135+00.00	83
STA. 135+00.00 TO STA. 165+00.00	810
STA. 165+00.00 TO STA. 195+00.00	0
STA. 195+00.00 TO STA. 225+00.00	82
STA. 225+00.00 TO STA. 255+00.00	73
STA. 255+00.00 TO STA. 285+00.00	19
STA. 285+00.00 TO STA. 315+00.00	75
STA. 315+00.00 TO STA. 345+00.00	297
STA. 345+00.00 TO STA. 375+00.00	227
STA. 375+00.00 TO STA. 405+00.00	69
STA. 405+00.00 TO STA. 435+00.00	986
STA. 435+00.00 TO STA. 465+00.00	164
STA. 465+00.00 TO STA. 495+00.00	228
QUAIL RD.	
STA. 25+00.00 TO STA. 52+00.00	628
I-44	
STA. 254+00.00 TO STA. 284+00.00	121
STA. 284+00.00 TO STA. 314+00.00	300
COUNTRY CLUB RD.	
STA. 98+00.00 TO STA. 126+19.75	190
GRAND AVENUE	
STA. 105+00.00 TO STA. 130+00.00	72
IDAHO AVENUE	
STA. 105+00.00 TO STA. 120+00.00	148
IOWA AVE.	
STA. 30+70.44 TO STA. 62+88.51	93
TOTALS	4,899

◆ FOR INFORMATION PURPOSES ONLY. COST TO BE INCLUDED IN PRICE BID FOR REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
NOTE: ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED LOCATION.

SUMMARIES

<div>REV. NO. DESCRIPTION DATE</div> <div>REVISIONS</div>		
U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT CONDITIONS		
404 PERMIT INFORMATION	PERMIT GENERAL CONDITIONS	PERMIT GENERAL CONDITIONS
<div>NATIONWIDE PERMIT NO. <u>N/A</u></div> <div><input type="checkbox"/> TO BE PROVIDED AT A LATER DATE</div> <div>SECTION 404 OF THE CLEAN WATER ACT REQUIRES PRIOR AUTHORIZATION FROM SECRETARY OF THE ARMY (CORPS) FOR THE DISCHARGE OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES.</div> <div><input type="checkbox"/> NO PRE-CONSTRUCTION NOTIFICATION REQUIRED: PROJECT DOES NOT REQUIRE NOTIFICATION TO THE US ARMY CORPS OF ENGINEERS (USACE) IN ORDER TO COMMENCE.</div> <div><input type="checkbox"/> PRE-CONSTRUCTION NOTIFICATION REQUIRED: RESIDENT ENGINEER MUST NOTIFY THE USACE WITHIN 30 DAYS OF THE START OF CONSTRUCTION AND 30 DAYS PRIOR TO COMPLETION OF CONSTRUCTION, FORMS LOCATED IN THE CONTRACT.</div> <div><input type="checkbox"/> INDIVIDUAL PERMIT: WILL BE MONITORED CLOSELY BY THE USACE.</div> <div><input type="checkbox"/> GENERAL PERMIT: PROJECT WITHIN A DESIGNATED CRITICAL RESOURCE WATER AND WILL REQUIRE PRE-CONSTRUCTION NOTIFICATION SEE ABOVE FOR EXPLANATION OF PRE-CONSTRUCTION NOTIFICATION.</div> <div><input checked="" type="checkbox"/> NO PERMIT REQUIRED</div> <div>SWT TRACKING NO. <u>N/A</u></div>	<div>THE CONTRACTOR SHALL BE RESPONSIBLE BUT NOT LIMITED TO THE FOLLOWING HIGHLIGHTS OF THE 404 PERMIT (SEE CONTRACT FOR COMPLETE LIST):</div> <div>TEMPORARY FILLS: APPROPRIATE MEASURES MUST BE TAKEN TO MAINTAIN NORMAL DOWNSTREAM FLOWS AND MINIMIZE FLOODING TO THE MAXIMUM EXTENT PRACTICABLE. WHEN TEMPORARY STRUCTURES (WORK ROADS, WORK PADS, ETC.) WORK, AND DISCHARGES, INCLUDING COFFERDAMS, ARE NECESSARY FOR CONSTRUCTION ACTIVITIES, ACCESS FILLS, OR DE WATERING OF CONSTRUCTION SITES. TEMPORARY FILLS MUST CONSIST OF MATERIALS, AND BE PLACED IN A MANNER, THAT WILL NOT BE ERODED BY EXPECTED HIGH FLOWS. TEMPORARY FILLS MUST BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS. THE AREAS AFFECTED BY TEMPORARY FILLS MUST BE RE VEGETATED, AS APPROPRIATE.</div> <div>NAVIGATION: NO ACTIVITY MAY CAUSE MORE THAN A MINIMAL ADVERSE EFFECT ON NAVIGATION WITHIN A NAVIGABLE WATER OF THE U.S. IF THIS PROJECT IS LOCATED WITHIN A NAVIGABLE WATER OF THE U.S., IT WILL BE IDENTIFIED IN THE SPECIAL CONDITIONS.</div> <div>AQUATIC LIFE MOVEMENTS & ADVERSE EFFECTS FROM IMPOUNDMENTS: NO ACTIVITY MAY LARGELY DISRUPT THE NECESSARY LIFE CYCLE MOVEMENTS OF THOSE SPECIES INDIGENOUS TO THE BODY OF WATER, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA. CULVERTS WILL BE DESIGNED TO PROVIDE SUFFICIENT PASSAGE FOR AQUATIC LIFE AND INSTALLED TO MAINTAIN LOW FLOW. RATE OF FLOW CANNOT BE MADE HIGHER THAN WHAT WAS PRIOR TO THE START OF CONSTRUCTION. EROSION CONTROL MEASURES SHOULD BE UTILIZED AROUND THE PERIMETER OF NEW STRUCTURES TO AVOID SILT BUILD UP. CAUTION SHOULD BE TAKEN TO MINIMIZE HARM IF CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN A STREAM OR RIVER CHANNEL AND CREATE A CONFINED BODY OF WATER, CAUSE ADVERSE EFFECTS TO THE AQUATIC SYSTEM IN ANY WAY, AND/OR RESTRICTING ITS FLOW.</div> <div>MANAGEMENT OF WATER FLOWS: CONSTRUCTION ACTIVITIES MAY NOT IMPEDE THE PASSAGE OF NORMAL OR HIGH FLOWS. TO THE GREATEST EXTENT POSSIBLE, THE PRE- CONSTRUCTION COURSE, CONDITIONS,CAPACITY AND LOCATION OF OPEN WATERS MUST BE MAINTAINED. THIS INCLUDES STREAM CANALIZATION AND STORM WATER MANAGEMENT.</div> <div>SUITABLE MATERIAL: NO ACTIVITY MAY USE UNSUITABLE MATERIAL (E.G., TRASH, DEBRIS, CAR BODIES, ASPHALT, ETC.). MATERIALS USED FOR CONSTRUCTION OR DISCHARGED MUST BE FREE FROM TOXIC POLLUTANTS IN TOXIC AMOUNTS (SEE SECTION 307 OF CLEAN WATER ACT).</div> <div>PROPER MAINTENANCE: ANY AUTHORIZED STRUCTURE OR FILL SHALL BE PROPERLY MAINTAINED, INCLUDING MAINTENANCE TO ENSURE PUBLIC SAFETY AND COMPLIANCE WITH APPLICABLE NATION WIDE PERMIT GENERAL CONDITIONS, AS WELL AS ANY ACTIVITY- SPECIFIC CONDITIONS ADDED BY THE DISTRICT ENGINEER TO AN NATIONWIDE PERMIT AUTHORIZATION</div> <div>HAZARDOUS MATERIALS: HAZARDOUS MATERIALS, CHEMICALS, FUELS, LUBRICATING OILS AND OTHER SUCH SUBSTANCES SHOULD BE STORED AWAY FROM ANY STREAM OR RIVERCHANNEL (SEE SECTION 307 OF CLEAN WATER ACT)</div> <div>EQUIPMENT: HEAVY EQUIPMENT WORKING IN WETLANDS OR MUDFLATS MUST BE PLACED ON MATS, OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE; FOR EXAMPLE IF WETLANDS ARE PRESENT WITHIN THE CONSTRUCTION, THE FOOTPRINT WILL BE SHOWN ON THE PLANS. MEASURES SHOULD BE TAKEN TO PREVENT DISCHARGE INTO ANY WATERS OF THE STATE (e.g. CONCRETE WASHOUT).</div> <div>SOIL EROSION AND SEDIMENT CONTROLS: APPROPRIATE SOIL EROSION AND SEDIMENT CONTROLS MUST BE USED AND MAINTAINED IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION, AND ALL EXPOSED SOILS AND OTHER FILLS, AS WELL AS ANY WORK WITHIN STREAM OR RIVER CHANNELS OR BANKS, MUST BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE.</div> <div>404 COMPLIANCE: IN ORDER TO REMAIN COMPLIANT WITH THE 404 PERMIT, THE PROJECT MUST COMPLY WITH ALL FEDERAL ENVIRONMENTAL PROTECTION LAWS ASSOCIATED AND, THE ENVIRONMENTAL COMMITMENTS AS SHOWN ON THE PLANS. THIS INCLUDES BUT IS NOT LIMITED TO COMPLIANCE WITH ALL ENVIRONMENTAL NOTES IN THE PLANS, INCLUDING CULTURAL RESOURCES, HAZARDOUS WASTE, BIOLOGICAL FOR PROTECTED SPECIES, AND DEQ STORM WATER REGULATIONS AS THEY PERTAIN TO THE SWMP SHEET WITHIN THE PLANS. ALL OF THE 404 PERMIT GENERAL AND SPECIFIC CONDITIONS MUST BE ADHERED TO. A COPY OF THESE CONDITIONS CAN BE FOUND IN THE CONTRACT WITH THE 404 PERMIT.</div>	<div>FUELING: ALL FUELING AND SERVICING OF VEHICLES AND EQUIPMENT SHALL BE DONE ABOVE THE ORDINARY HIGH WATER MARK (OHWM).</div> <div>MATERIAL STORAGE: STORE MATERIAL AND FUEL OUTSIDE OF THE ORDINARY HIGH WATER MARK OR ANY AREA LIKELY TO FLOOD.</div> <div>DEBRIS STORAGE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MATERIALS, DEBRIS, OR REFUSE WHICH HAS FALLEN INTO ANY STREAM OR RIVER CHANNELS RESULTING FROM THE EXECUTION OF THE PROJECT AS SOON AS POSSIBLE</div> <div>SEE NATIONWIDE PERMIT 14 IN THE CONTRACT</div>
		401 CERTIFICATION CONDITIONS
<div>THE CONTRACTOR SHALL BE RESPONSIBLE BUT NOT LIMITED TO THE FOLLOWING HIGHLIGHTS OF THE 401 CERTIFICATION (SEE CONTRACT FOR COMPLETE LIST):</div> <div><input type="checkbox"/> ALL SPILLS OF FUEL OR POLLUTANTS IN EXCESS OF FIVE GALLONS SHALL BE REPORTED TO ODEQ WITHIN 24 HRS AND REPORTED TO POLLUTION PREVENTION HOTLINE (1-800-522-0206)</div> <div><input type="checkbox"/> ALL FUELING AND SERVICING OF VEHICLES AND EQUIPMENT SHALL BE DONE OUTSIDE THE ORDINARY HIGH WATER MARK</div> <div><input type="checkbox"/> THE PERMITTEE SHALL PROVIDE ACCESS TO THE PROPERTY TO ODEQ FOR INSPECTIONS.</div> <div><input type="checkbox"/> ANY STOCKPILE SHALL BE ABOVE ORDINARY HIGH WATER MARK AND REMOVED FROM LIKELY FLOOD ZONE</div> <div><input type="checkbox"/> BEST MANAGEMENT PRACTICES SHOULD BE USED TO CONTROL SOIL EROSION AND MAINTAIN COMPLIANCE WITH WATER QUALITY STANDARDS.</div> <div><input type="checkbox"/> FOR ANY PROJECT THAT INVOLVES BANK STABILIZATION, THE PERMITTEE SHALL CONSIDER INSTALLING BIOENGINEERING PRACTICES IN PLACE OF STRUCTURAL PRACTICES (RIPRAP) TO MINIMIZE IMPACTS TO AQUATIC RESOURCES</div>		
<div><div>SECTION 404 PERMIT COMPLIANCE</div><div>STATE OF OKLAHOMA DEPARTMENT OF TRANSPORTATION</div><div>JOB/PIECE NO. 24428(20) SHEET NO. E001</div></div> <div><div>DETAIL</div><div>REVIEW</div><div>APPROVED</div><div>ENVIRONMENTAL DIVISION</div></div>		

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: FROM 0.25 MI. NORTH OF OLD FRED'S RD. EXT. NORTH 7.25 MI TO US-62

PROJECT DESCRIPTION: RIGHT-OF-WAY FENCING PROJECT

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES: CLEAR AND GRUB ONLY IN NECESSARY AREAS, PRESERVING AS MUCH NATIVE VEGETATION AS POSSIBLE.

SOIL TYPE: SILT LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 702.29 AC.

ESTIMATED AREA TO BE DISTURBED: 0.00 AC.

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 35.17 AC.

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 35.17 AC.

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: 0.52

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 35.02298 N, 97.98847 W

PROJECT WILL DISCHARGE TO: LINE CREEK, TRIBUTARY OF LINE CREEK,

NAME OF RECEIVING WATERS: UNNAMED CREEK AND ROCK HOLLOW CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303(d) IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY: YES NO

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:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

WASTE MATERIALS:

HAZARDOUS MATERIALS:

GENERAL NOTES:

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

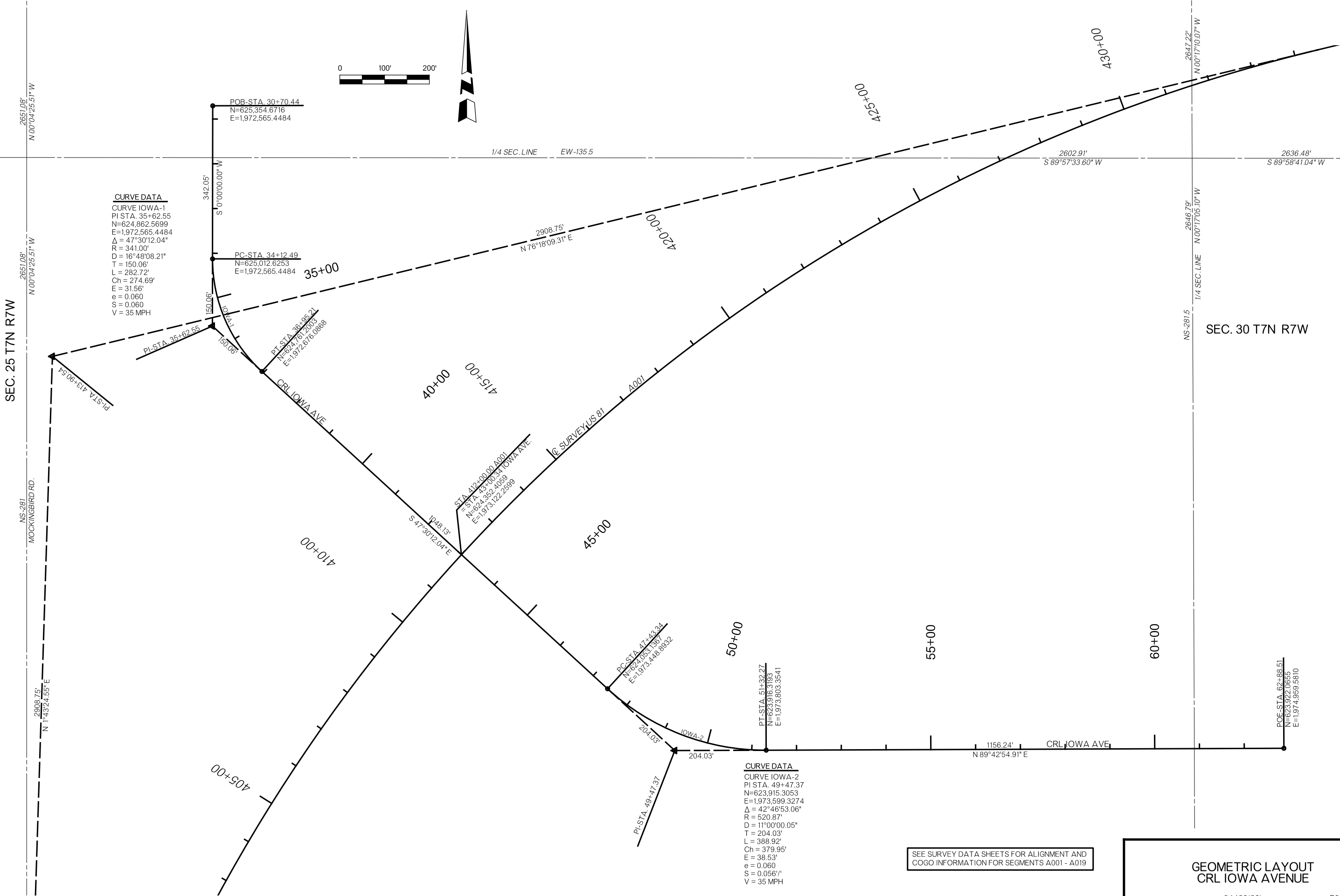
OFFSITE VEHICLE TRACKING:

NOTES:

STORM WATER MANAGEMENT PLAN

State Job No. 24428(20) Sheet No. R001

US 81 RIGHT-OF-WAY FENCE
GRADY COUNTY



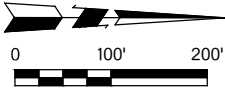
SEC. 20 T6N R7W

SEC. 21 T6N R7W

BM#207 - "X" ON CTR. W. HDWL.
RCB CROSS DRAIN
Q SURVEY U.S. 81
STA. NA, NA' L.T.
ELEV. =1182.3820

BM#208 - "T" ON S.W. WINGWALL
OF CONC. RCB CROSS DRAIN
Q SURVEY U.S. 81
STA. 87+50.10, 69.67' L.T.
ELEV. =1185.0190

SEE SURVEY DATA SHEET FOR ALIGNMENT
AND COGO INFORMATION FOR SEGMENTS
A001 - A019.



LEGEND

FENCE REMOVAL

REMOVAL QUANTITIES		
FENCE	L.F.	234

NOTE:
ALL BENCHMARKS, UTILITY AND R/W
DIMENSIONS SHOWN ARE FROM THE
Q SURVEY U.S. 81 ALIGNMENT UNLESS
OTHERWISE NOTED.

US 81 PLAN

State Job No. 24428(20) Sheet No. R003

US 81 RIGHT-OF-WAY FENCE

GRADY COUNTY

SEC. 20 T6N R7W

BM#213 - N.W. COR. W. CONC. HDWL.
CGMP CROSS DRAIN
Q SURVEY U.S. 81
STA. 127+52.29, 176.47' LT.
ELEV. =1197.3790

BM#210 - "X" ON CTR. W. HDWL.
RCB CROSS DRAIN
Q SURVEY U.S. 81
STA. 108+67.70, 66.14' LT.
ELEV. =1196.1440

BM#211 - "I" ON N.E. WINGWALL
W. SIDE DRAIN
Q SURVEY U.S. 81
STA. 114+06.93, 68.77' LT.
ELEV. =1200.6510

STA. 133+75 TO 137+50
CONST. 506 L.F.
TYPE SWF (4WB FENCE)

STA. 127+47 TO 133+75
CONST. 629 L.F.
TYPE WWF FENCE

0.08 AC.
TREE REMOVAL
+75
290.00'

0.12 AC.
TREE REMOVAL

BM#212 - 80D SPIKE IN POWER POLE
ON E. EDGE OF 16TH STREET
Q SURVEY U.S. 81
STA. 123+39.68, 114.46' LT.
ELEV. =1203.9780

BM#11 - 100D NAIL SET S.W.
FACE 8" ELM
Q SURVEY U.S. 81
STA. 134+50.38, 59.92' RT.
ELEV. =1183.3562

BM#86 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 127+31.24, 591.98' RT.
ELEV. =1196.0211

LEGEND

FENCE REMOVAL

REMOVAL QUANTITIES

FENCE	L.F.	83
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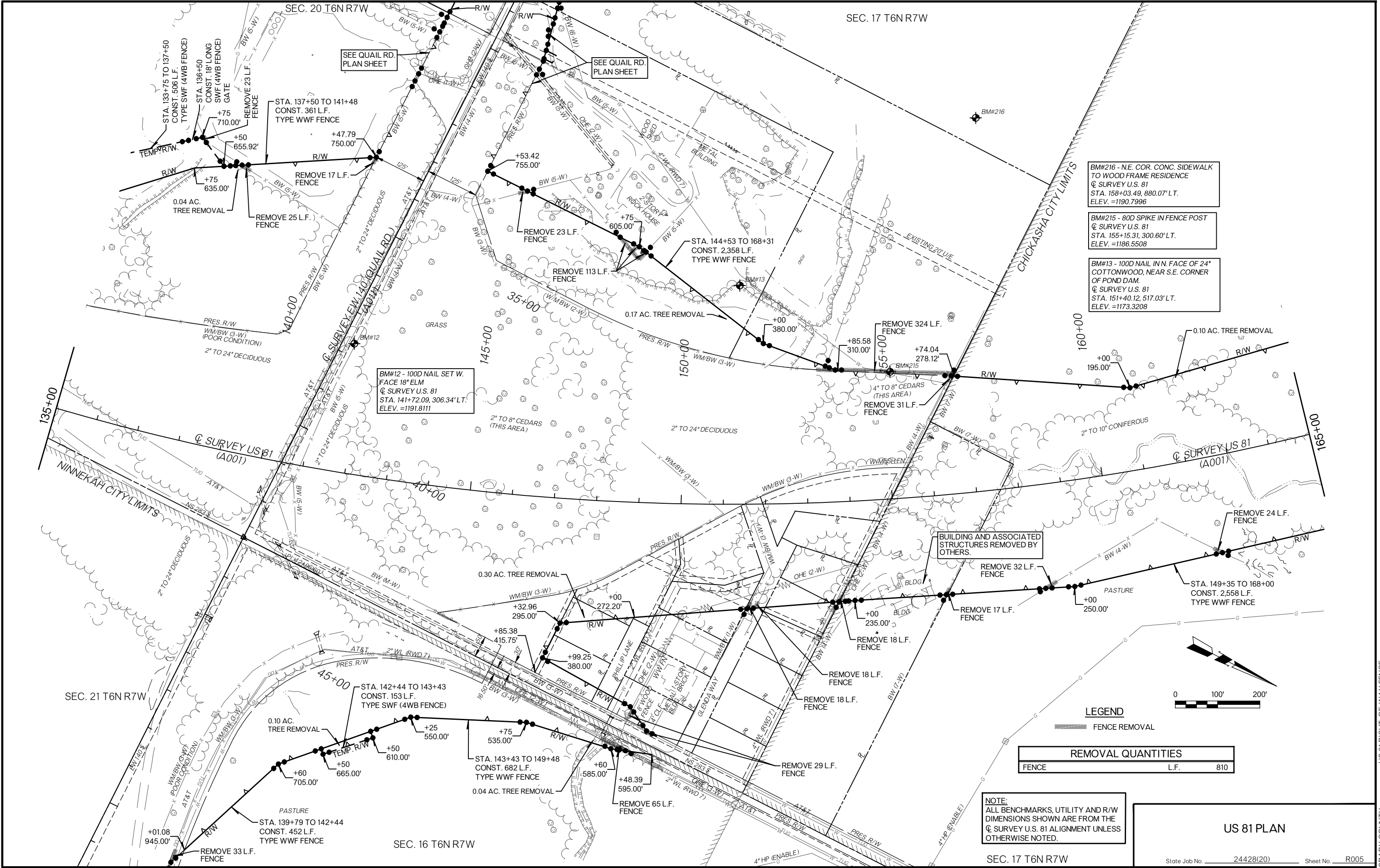
NOTE:
ALL BENCHMARKS, UTILITY AND R/W
DIMENSIONS SHOWN ARE FROM THE
Q SURVEY U.S. 81 ALIGNMENT UNLESS
OTHERWISE NOTED.

SEC. 21 T6N R7W

US 81 PLAN

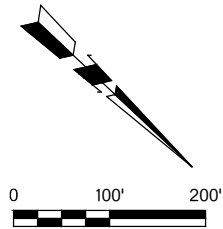
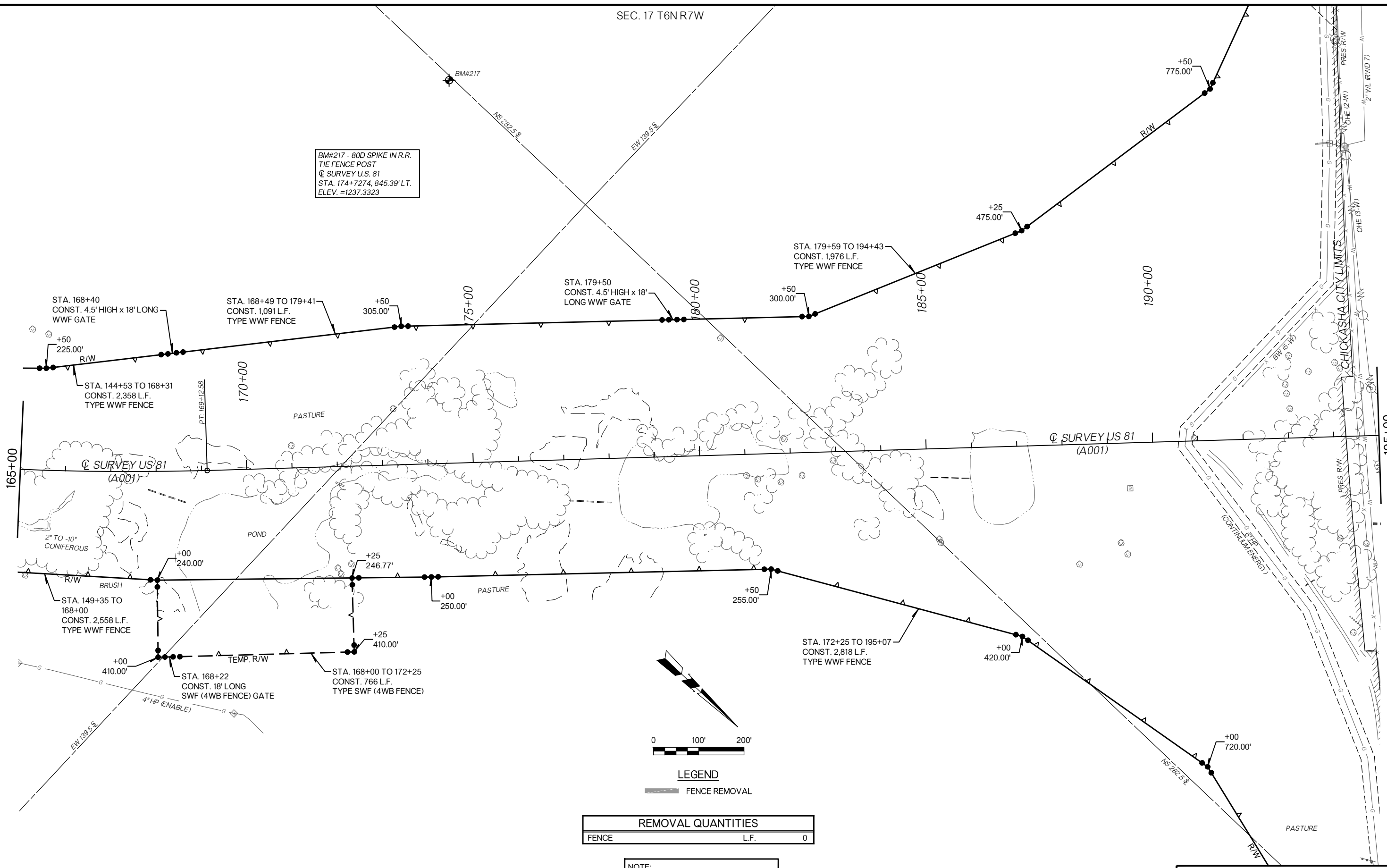
State Job No. 24428(20) Sheet No. R004

US 81 RIGHT-OF-WAY FENCE
GRADY COUNTY



SEC. 17 T6N R7W

BM#217 - 80D SPIKE IN R.R.
TIE FENCE POST
Q SURVEY U.S. 81
STA. 174+7274, 845.39' LT.
ELEV. =1237.3323



LEGEND

FENCE REMOVAL

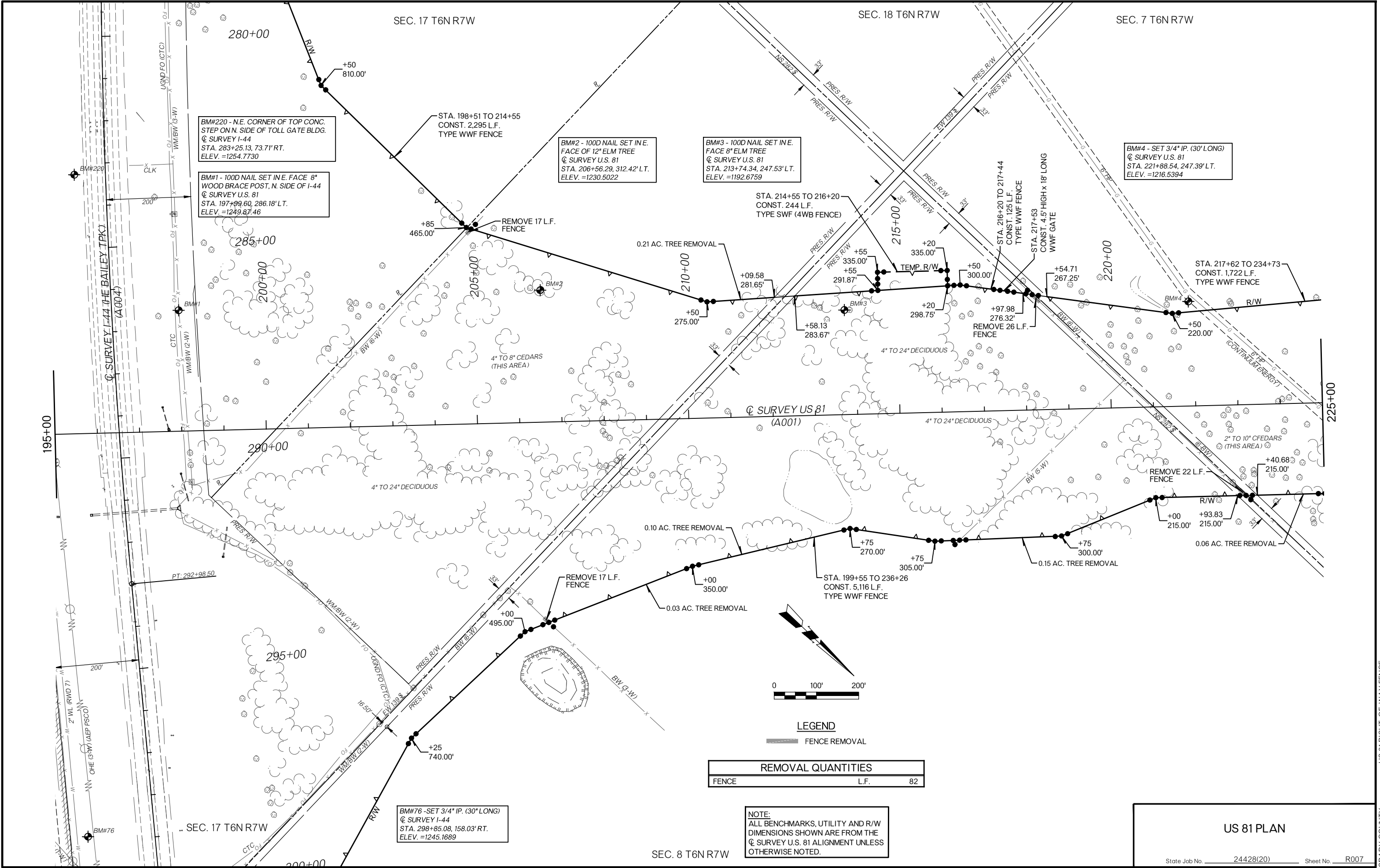
REMOVAL QUANTITIES

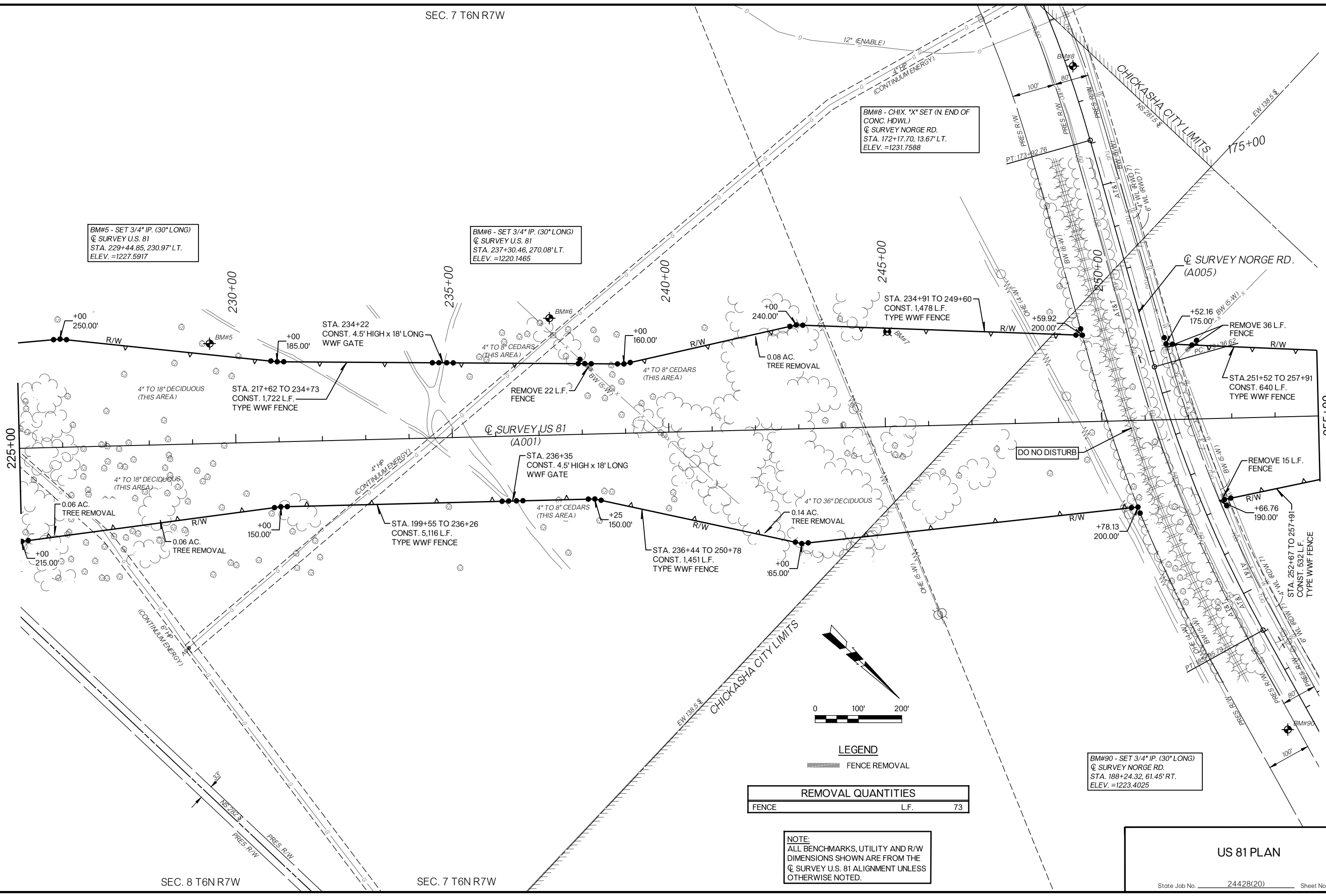
FENCE	L.F.	0
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NOTE:
ALL BENCHMARKS, UTILITY AND R/W
DIMENSIONS SHOWN ARE FROM THE
Q SURVEY U.S. 81 ALIGNMENT UNLESS
OTHERWISE NOTED.

SEC. 17 T6N R7W

US 81 PLAN





BM#5 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 229+44.85, 230.97' LT.
ELEV. =1227.5917

BM#6 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 237+30.46, 270.08' LT.
ELEV. =1220.1465

BM#8 - CHIX. "X" SET (N. END OF
CONC. HDWL.)
Q SURVEY NORGE RD.
STA. 172+17.70, 13.67' LT.
ELEV. =1231.7588

BM#90 - SET 3/4" IP. (30" LONG)
Q SURVEY NORGE RD.
STA. 188+24.32, 61.45' RT.
ELEV. =1223.4025

LEGEND

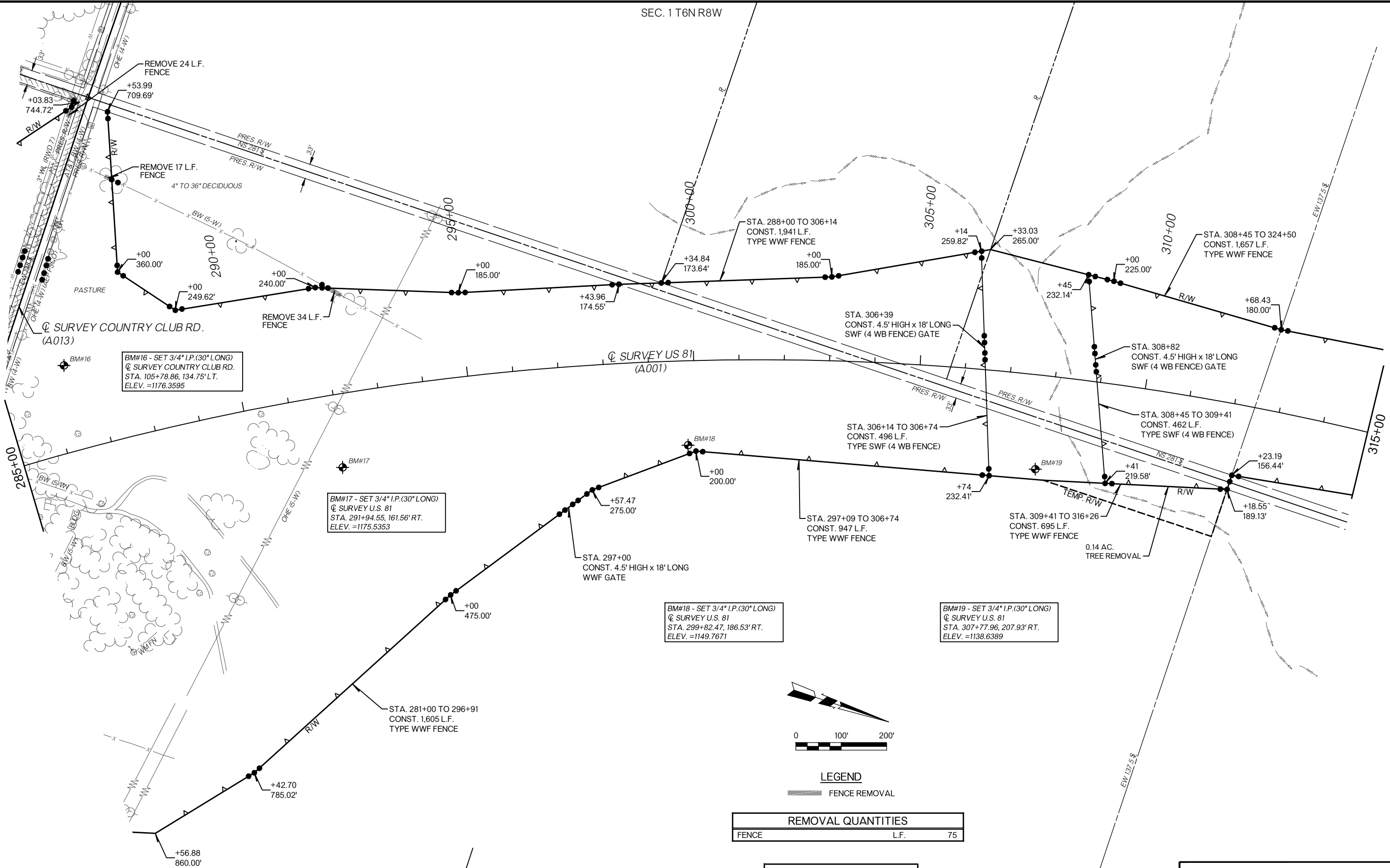
— FENCE REMOVAL

REMOVAL QUANTITIES		
FENCE	L.F.	73

NOTE:
ALL BENCHMARKS, UTILITY AND R/W
DIMENSIONS SHOWN ARE FROM THE
Q SURVEY U.S. 81 ALIGNMENT UNLESS
OTHERWISE NOTED.

SEC. 1 T6N R8W

SEC. 6 T6N R7W



US 81 PLAN

SEC. 1 T6N R8W

SEC. 36 T7N R8W
110+00

BM#91 - SET 3/4" I.P. (30" LONG)
Q SURVEY GRAND AVE.
STA. 111+74.40, 213.43' LT.
ELEV. = 1150.3224

BM#91

STA. 339+20 TO 358+89
CONST. 2,040 L.F.
TYPE WWF FENCE

+93.88
480.39'

115+00

SEE GRAND AVENUE PLAN

BW (5-W)

REMOVE 26 L.F.
FENCE

Q SURVEY GRAND AVE
(A014)

120+00

345+00

315+00

BM#20 - SET 3/4" I.P. (30" LONG)
1' UNDERGROUND
Q SURVEY U.S. 81
STA. 315+73.98, 173.94' RT.
ELEV. = 1135.8839

BM#21 - SET 3/4" I.P. (30" LONG)
1' UNDERGROUND
Q SURVEY U.S. 81
STA. 323+71.24, 162.63' RT.
ELEV. = 1143.2519

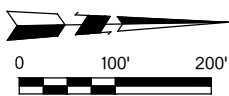
BM#23 - SET 3/4" I.P. (30" LONG)
Q SURVEY U.S. 81
STA. 331+35.67, 232.88' RT.
ELEV. = 1132.0986

BM#24 - SET 3/4" I.P. (30" LONG)
Q SURVEY GRAND AVE.
STA. 121+84.30, 37.10' LT.
ELEV. = 1132.6589

SEC. 31 T7N R7W

US 81 PLAN

State Job No. 24428(20) Sheet No. R011



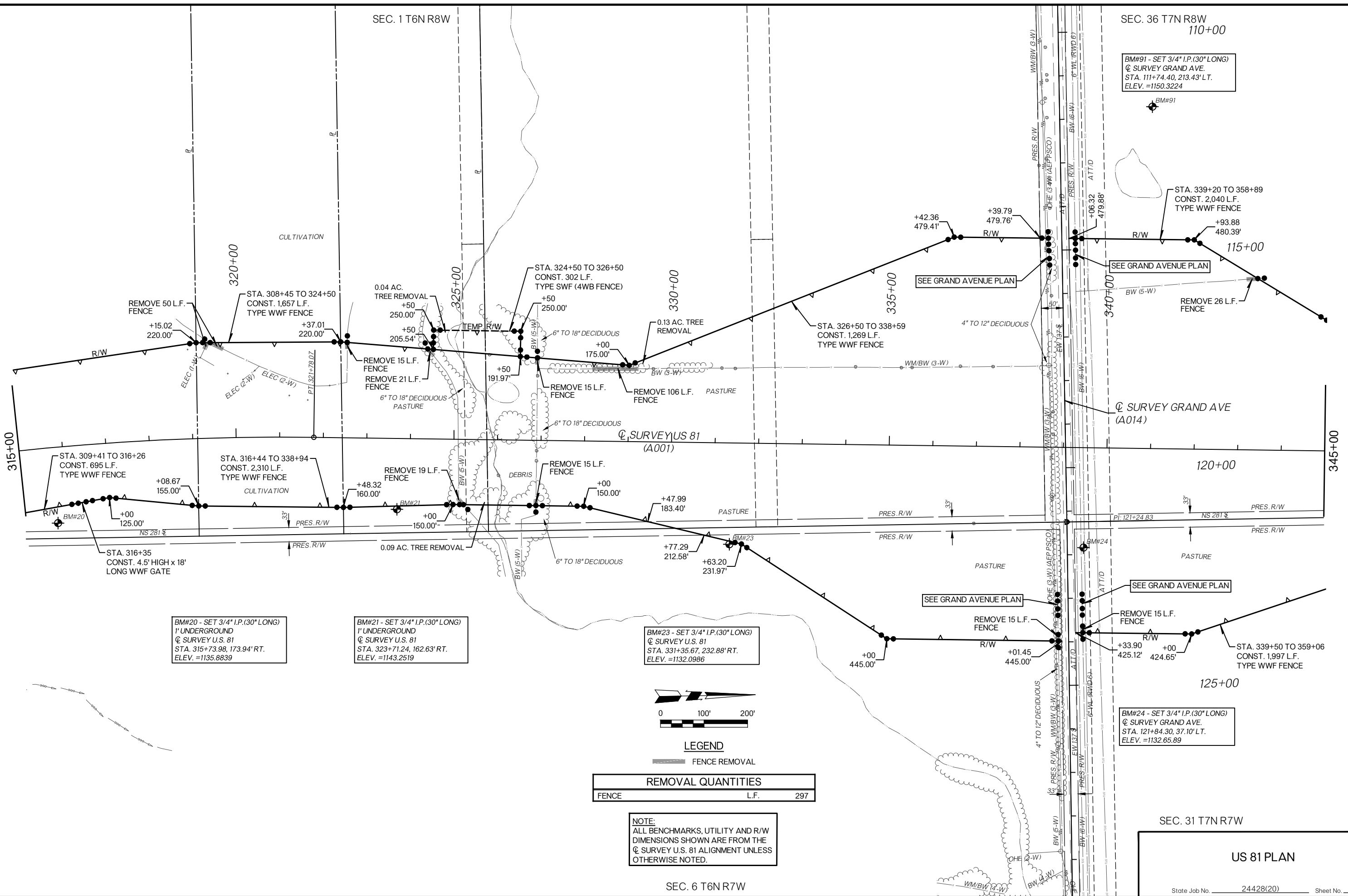
LEGEND

FENCE REMOVAL

REMOVAL QUANTITIES	
FENCE	L.F. 297

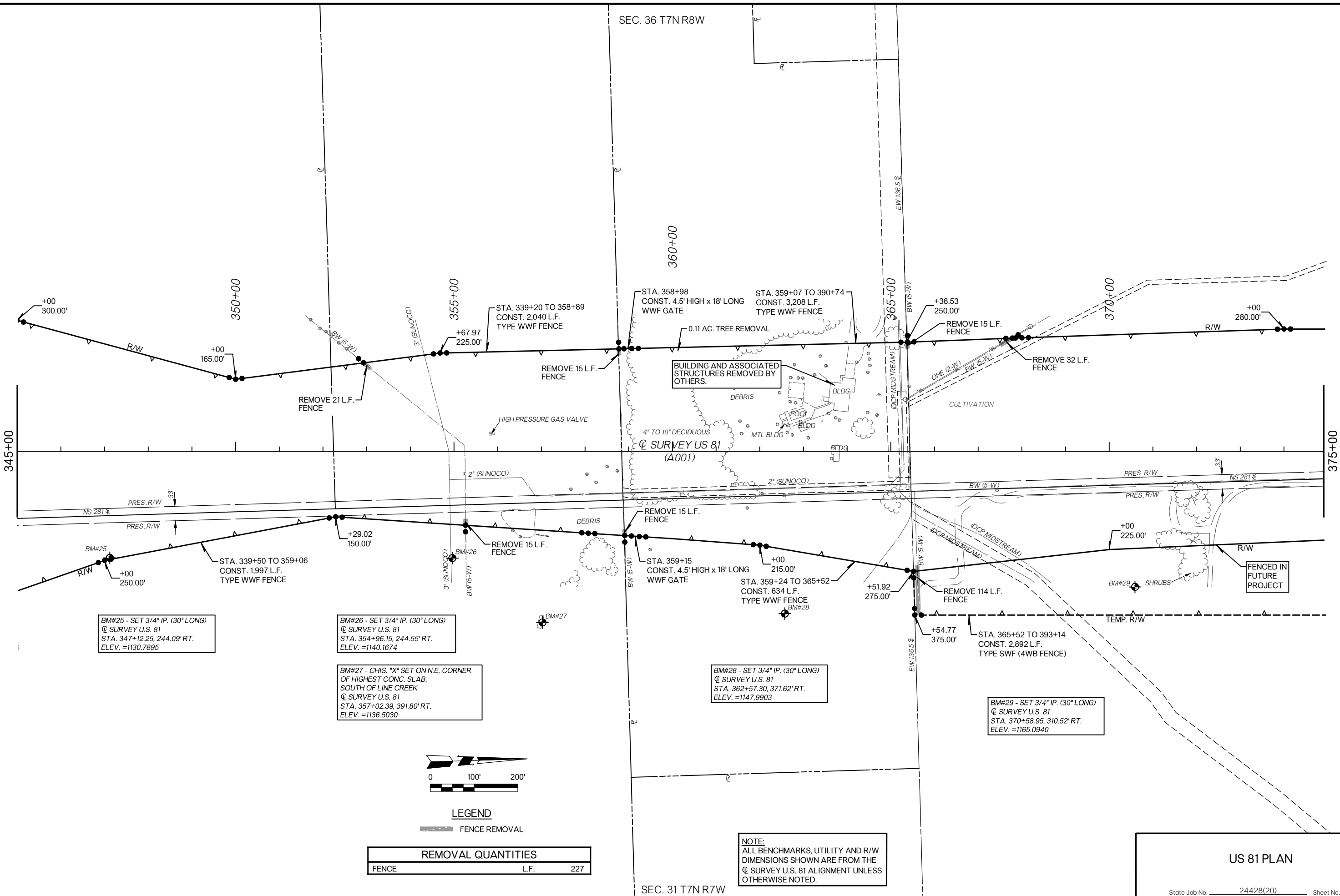
NOTE:
ALL BENCHMARKS, UTILITY AND R/W
DIMENSIONS SHOWN ARE FROM THE
Q SURVEY U.S. 81 ALIGNMENT UNLESS
OTHERWISE NOTED.

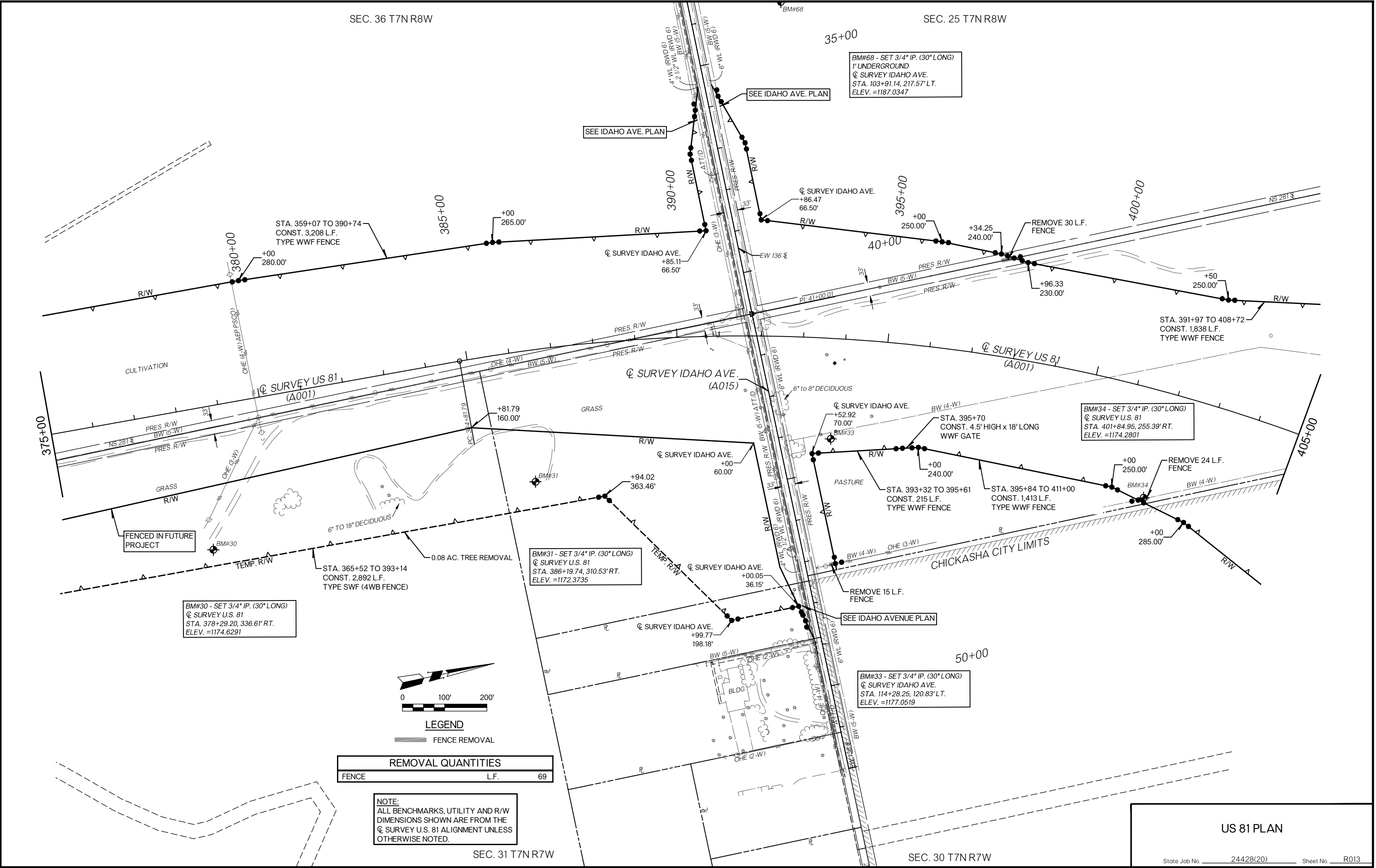
SEC. 6 T6N R7W

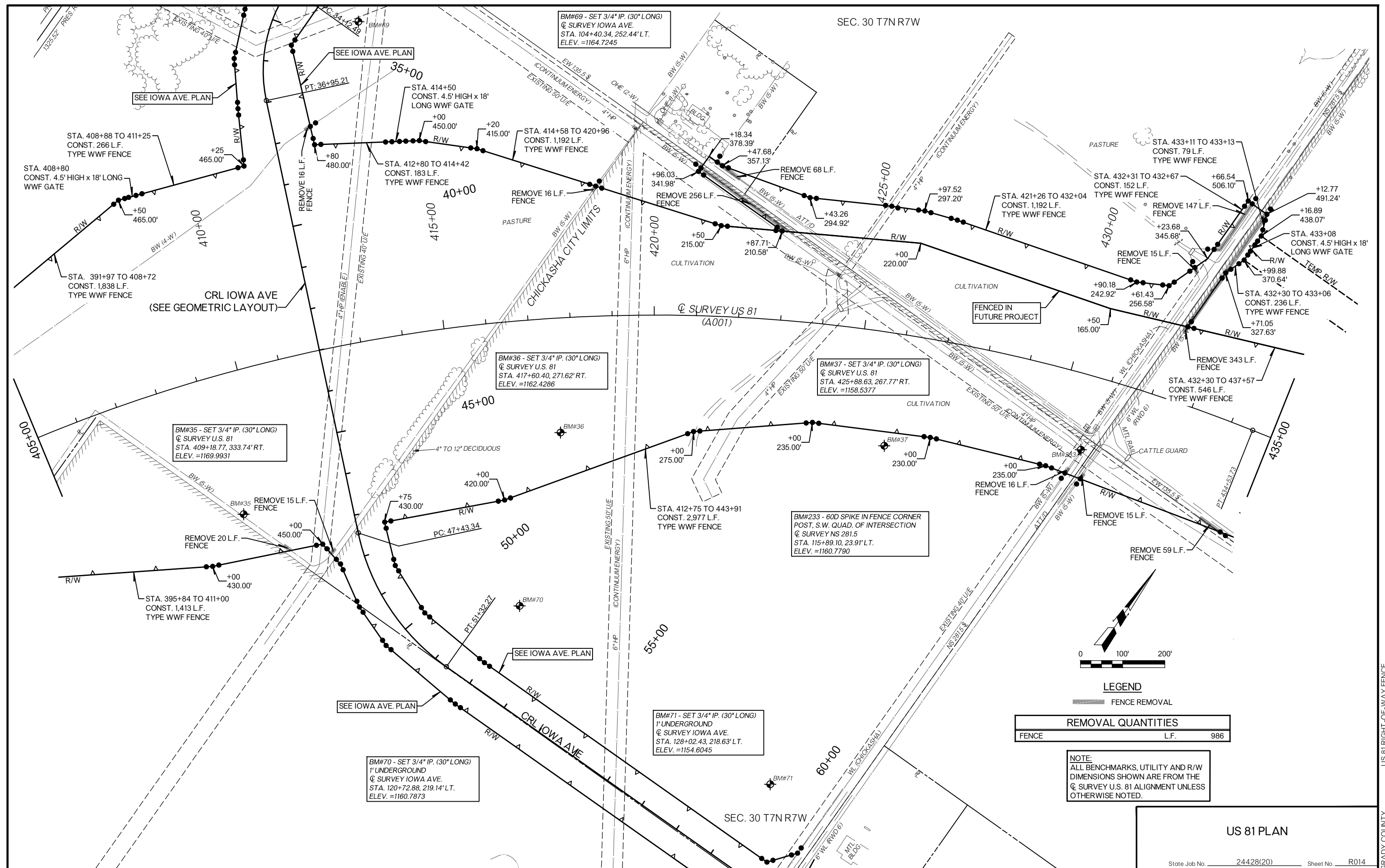


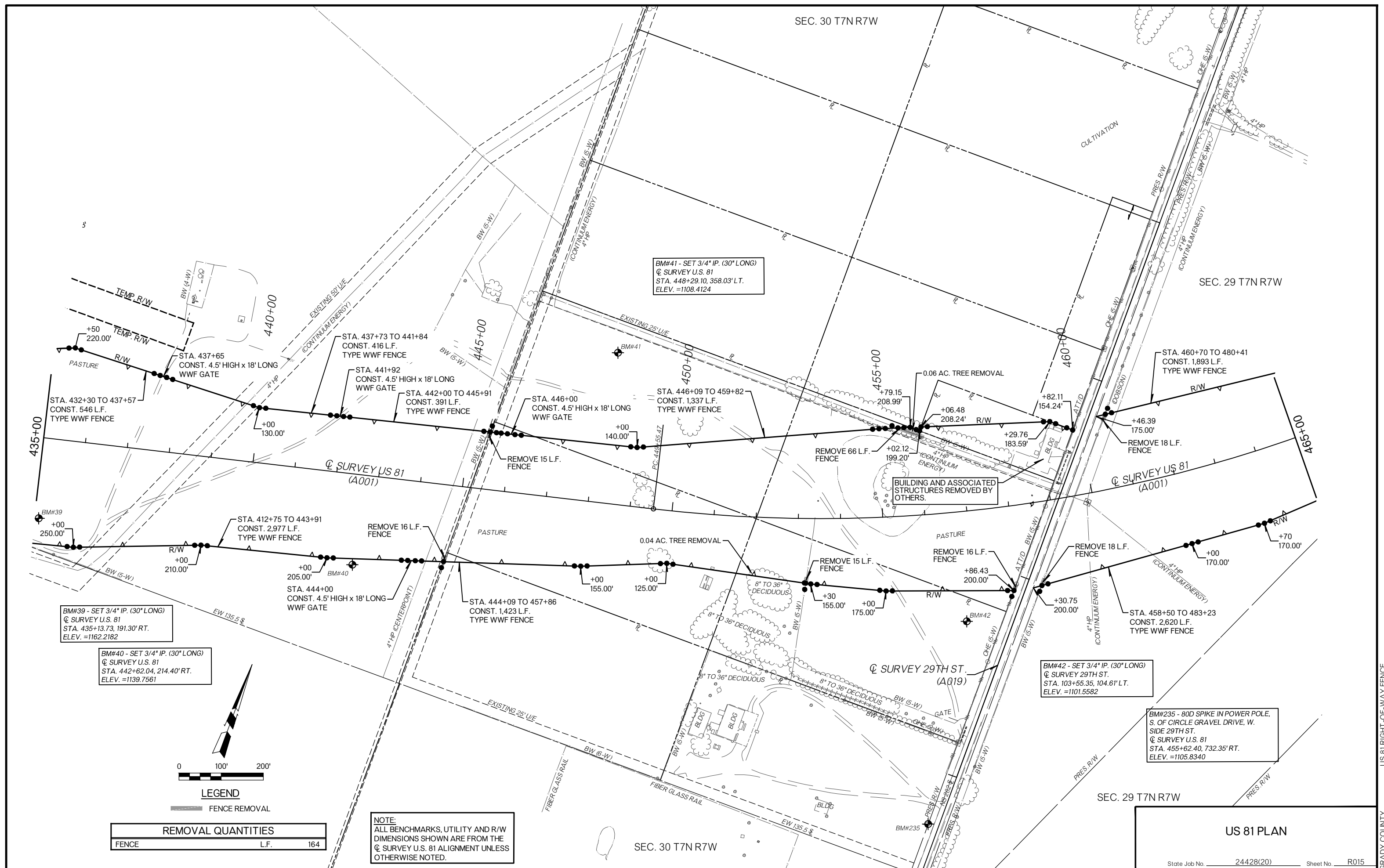
SEC. 36 T7N R8W

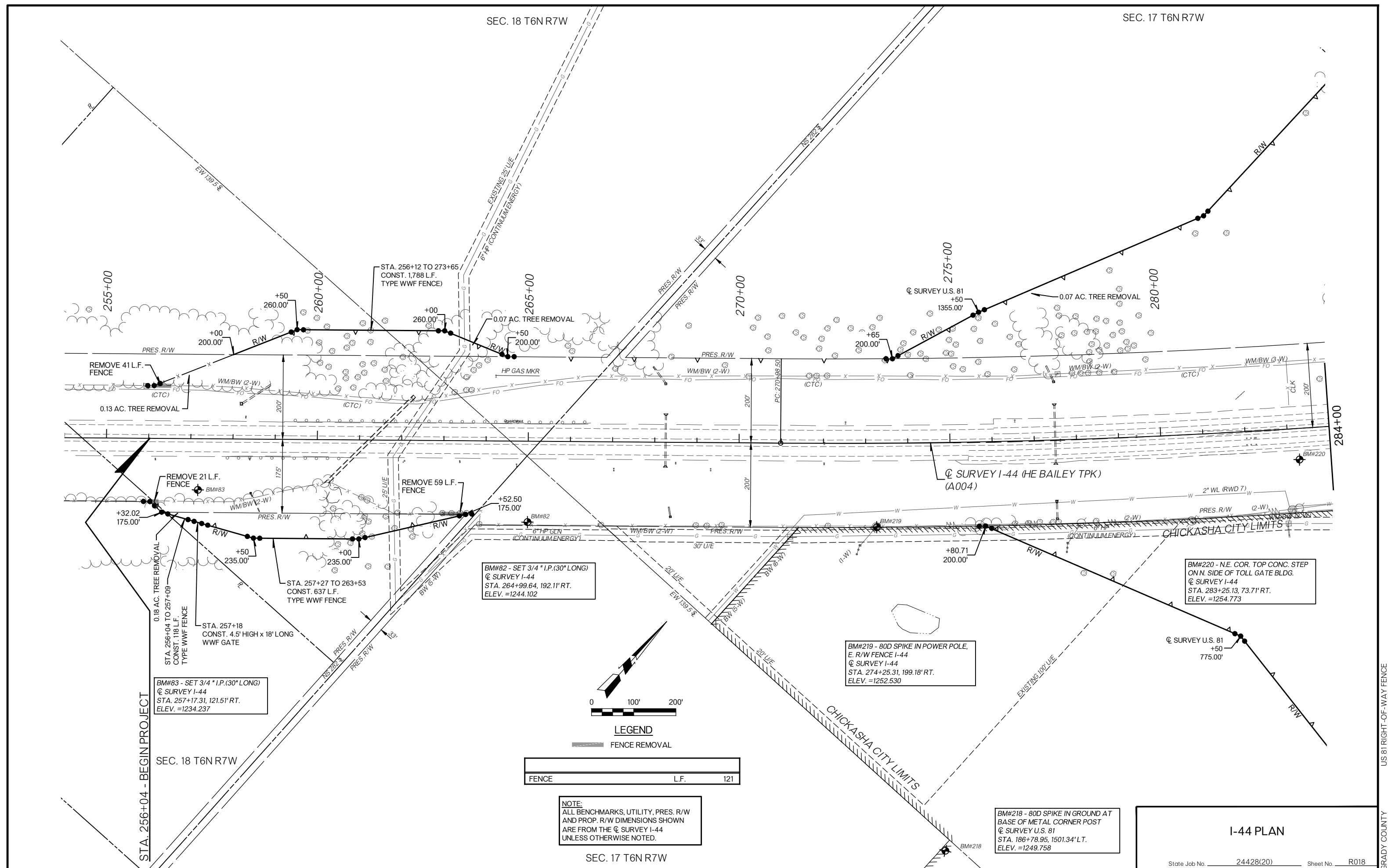
SEC. 31 T7N R7W





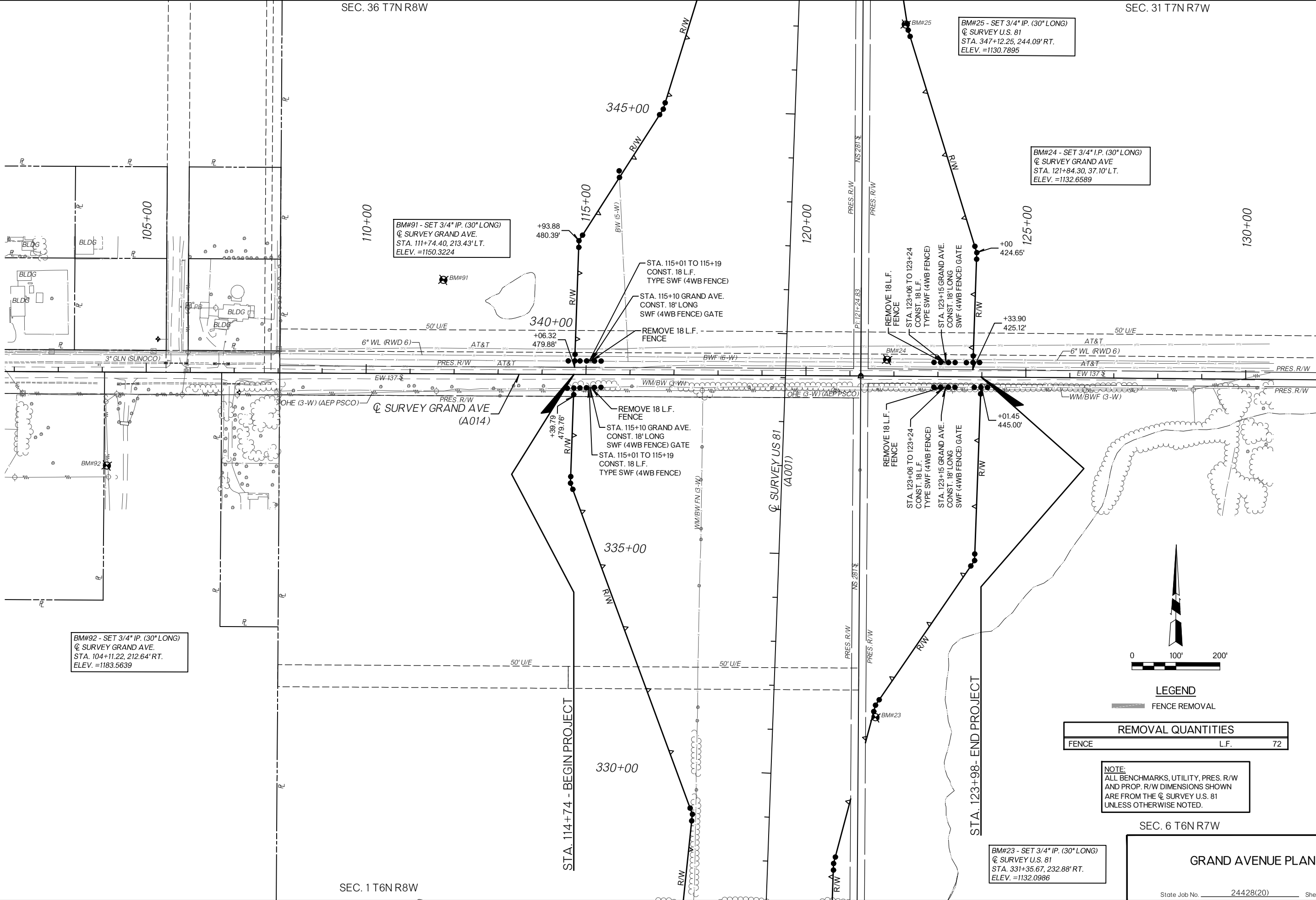






SEC. 36 T7N R8W

SEC. 31 T7N R7W



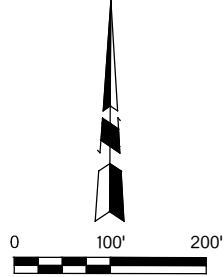
BM#92 - SET 3/4" IP. (30" LONG)
Q SURVEY GRAND AVE.
STA. 104+11.22, 212.64' RT.
ELEV. =1183.5639

BM#91 - SET 3/4" IP. (30" LONG)
Q SURVEY GRAND AVE.
STA. 111+74.40, 213.43' LT.
ELEV. =1150.3224

BM#25 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 347+12.25, 244.09' RT.
ELEV. =1130.7895

BM#24 - SET 3/4" I.P. (30" LONG)
Q SURVEY GRAND AVE
STA. 121+84.30, 37.10' LT.
ELEV. =1132.6589

BM#23 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 331+35.67, 232.88' RT.
ELEV. =1132.0986



LEGEND

FENCE REMOVAL

REMOVAL QUANTITIES

FENCE	L.F.	72
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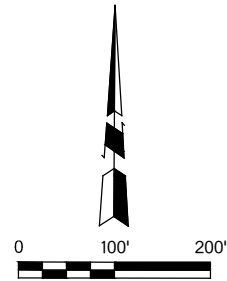
NOTE:
ALL BENCHMARKS, UTILITY, PRES. R/W
AND PROP. R/W DIMENSIONS SHOWN
ARE FROM THE Q SURVEY U.S. 81
UNLESS OTHERWISE NOTED.

SEC. 6 T6N R7W

GRAND AVENUE PLAN

SEC. 25 T7N R8W

SEC. 30 T7N R7W



BM#68 - SET 3/4" IP. (30" LONG)
1' UNDERGROUND
Q SURVEY IDAHO AVE.
STA. 103+91.14, 217.57' LT.
ELEV. =1187.0347

BM#34 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 401+84.95, 255.39' RT.
ELEV. =1174.2801

BM#33 - SET 3/4" IP. (30" LONG)
Q SURVEY IDAHO AVE.
STA. 114+28.25, 120.83' LT.
ELEV. =1177.0519

BM#31 - SET 3/4" IP. (30" LONG)
Q SURVEY U.S. 81
STA. 386+19.74, 310.53' RT.
ELEV. =1172.3735

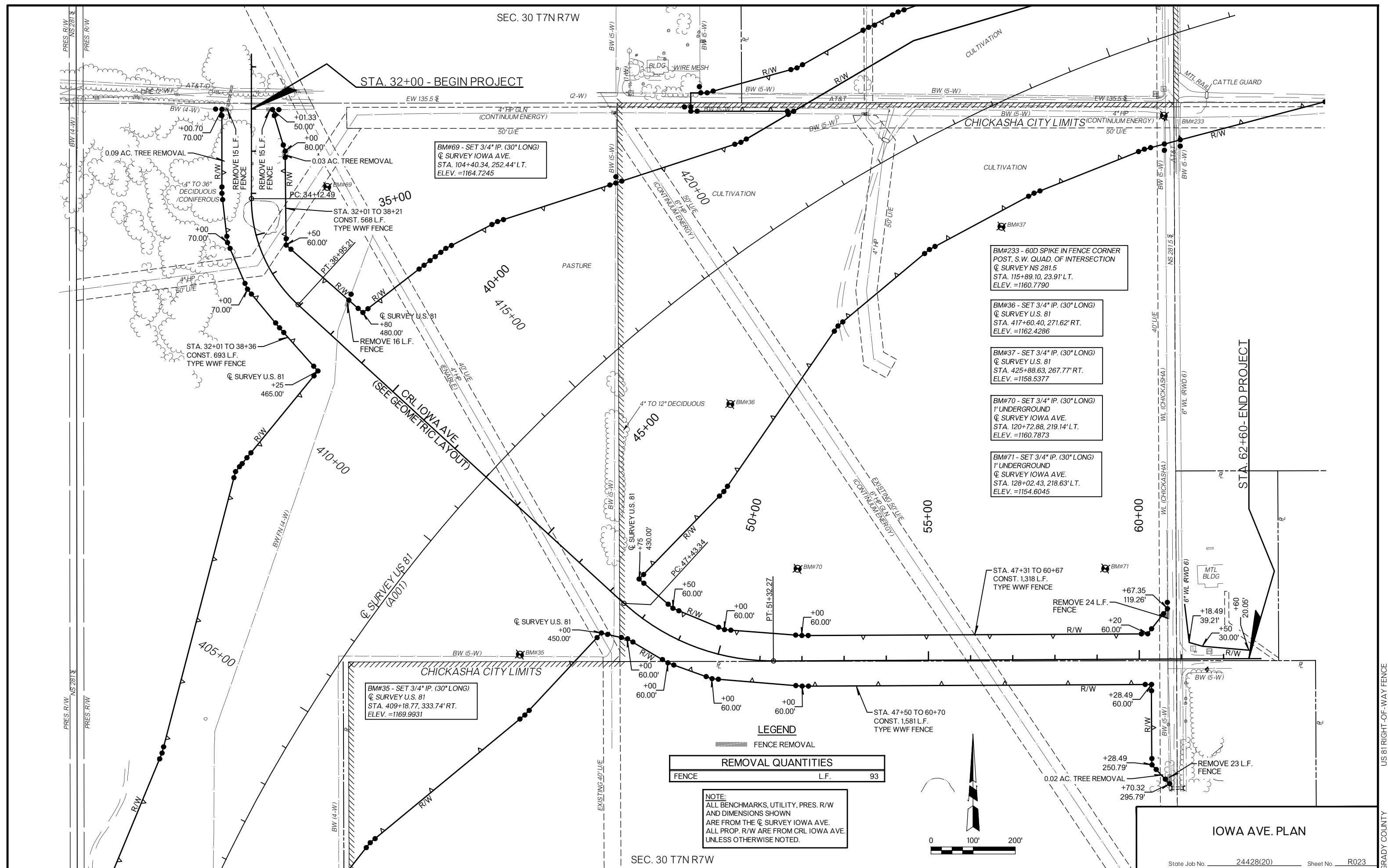
LEGEND
FENCE REMOVAL

REMOVAL QUANTITIES		
FENCE	L.F.	148

NOTE:
ALL BENCHMARKS, UTILITY, PRES. R/W
AND PROP. R/W DIMENSIONS SHOWN
ARE FROM THE Q SURVEY IDAHO AVE.
UNLESS OTHERWISE NOTED.

SEC. 31 T7N R7W

IDAHO AVENUE PLAN



STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SURVEY OF
U.S. 81, CHICKASHA WEST BYPASS
SWO 4380(1)
J/P NO. 24428(04)
GRADY COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION		REVISIONS		DATE	

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SWO 4380(1) J/P 24428(04) CO. Grady

HORIZONTAL CONTROL:
() Oklahoma Coordinate System of 1927 Zone.
(x) Oklahoma Coordinate System of 1983 South Zone. (CORS96)
() 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. GPS Network adjusted to CORS (1st) Order
Stations okoa, okar, okol, okdt, oktw, wmkok
A) Closure before adjustment X Y Angles 1
Trav. Length is Order before adjustment.
C) Method of Distance Measurement:
() Electronic (x) GPS () Triangulation () chained
D) Instrument used for angles

2. Stations adjusted to Order
A) Closure before adjustment X Y Angles
B) is Order.
C) Method of Distance Measurement:
() Electronic () GPS () Triangulation () chained
D) Instrument used for angles

VERTICAL CONTROL IS (3rd) order. Level Line taken from BM 7 & BMS SWO 4380 (1)
(3rd) order and tied to BM 35 & BM37 SWO 4380 (1) (3rd) 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 sq. of Mi.) (2nd Order = 0.035 Ft. x sq. of Mi.)
(3rd Order = 0.050 Ft. x sq. of Mi.)

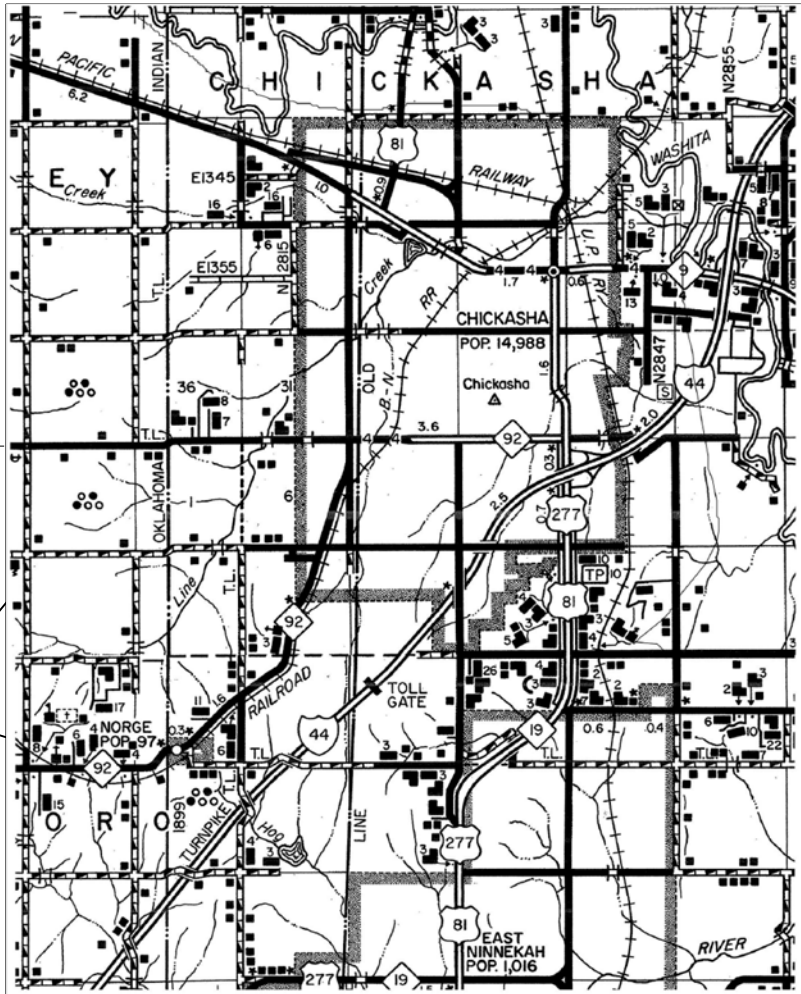
Distribution:
Copy w/survey reports
Copy in each Alignment
and level book

Bill R. Webb
Professional Land Surveyor

12/21/2015
Date

(FORM SD #20)
Rev. 11/03

PROJECT EXTENTS



U.S. 81, WEST BYPASS,
MAIN SURVEY PROJECT LENGTH: 45,577.58 Ft. 8.63 MI.

BEGINNING STATION : 87+22.42
ENDING STATION : 543+00.00

Electronic File Transfer Disclaimer:

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INDEX OF SHEETS

1. TITLE SHEET
2. KEY PLAN
- 3-4. HISTORICAL LETTER & WRITTEN REPORT
- 4-6. LEVEL REPORT
- 7-9. ALIGNMENT REPORT
- 10-13. COORDINATE GEOMETRY REPORT
- 14-18. SURVEY CONTROL NETWORK
- 19-59. SURVEY DATA SHEETS
- 60-76. GEOMETRIC DATA SHEETS

SURVEY BEGAN: FEBRUARY 17, 2011
SURVEY COMPLETED: JUNE 17, 2016

BENHAM DESIGN, LLC

PERSONNEL:
JOHN T. BIRKHAHN, PROFESSIONAL LAND SURVEYOR
ANDREW KIS, PARTY CHIEF
JAMES JACKSON, SURVEY TECHNICIAN
DANIEL BENNETT, PARTY CHIEF
CHRIS SHIPMAN, SURVEY TECHNICIAN
BRANDON HOLLAND, SURVEY TECHNICIAN
JOHN OKON, SURVEY TECHNICIAN

EQUIPMENT:
TRIMBLE R8 MODEL 3 RECEIVER
SOKKIA SET3 TOTAL STATION
TRIMBLE DINI DIGITAL LEVEL

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SWO 4380(1) Job/Piece 24428(04) Engr. Contract No. 1218

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 Survey Instruction";
- Its supplement, "Restoration of Lost or Obliterated Corners and Sub-division of Sections";
- "Oklahoma Minimum Standards for the Practice of Land Surveying" as adopted by the State Board of Licensure 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.

Dated this 24th day of June, 2016.

Land Surveyor John T. Birkhahn (seal)

John T. Birkhahn

Printed Name

Oklahoma Licensed Land Surveyor No. 1738

Certificate of Authorization No. 3722



UTILITIES

Company Name	Phone No.
Communication Lines:	
Chickasaw Telephone Co.	580-618-5455
Southwestern Bell	800-522-6543
AT&T	800-778-9140
Dobson Technologies	800-778-9140
Inteliq Communications	800-335-4343
Medicine Park Telephone Co.	580-529-2700
Electric Lines:	
AEP Public Service Co. of Oklahoma	888-216-3523
Oklahoma Electric Cooperative	405-321-2024
Water & Sewer Lines:	
City of Chickasha Public Works	405-222-6080
Rural Water District # 6	405-459-6626
Rural Water District # 7	405-779-6224
Natural Gas Lines:	
Centerpoint Energy	866-275-5265
Natural Gas / Petroleum Pipelines:	
Enable Midstream	800-522-8048
Continuum Energy	877-587-0026
DCP Midstream	800-435-1679
Unit Petroleum	918-493-7700
Sunoco Logistics	800-753-5531
Kepco Operating Inc.	855-421-2088

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 JAN 1, 2011 GOVERN. WHERE THERE IS A CONFLICT BETWEEN THESE SPECIAL PROVISIONS AND THE SPECIFICATIONS, THE SPECIAL PROVISIONS SHALL TAKE PRECEDENCE.



PLS		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		SURVEY DIVISION	
CHECKED		SURVEY DATA SHEET	
APPROVED		SDS <u>1</u> OF <u>76</u>	
CREW		SWO <u>4380 (1)</u> PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S001</u>	

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS		DATE	

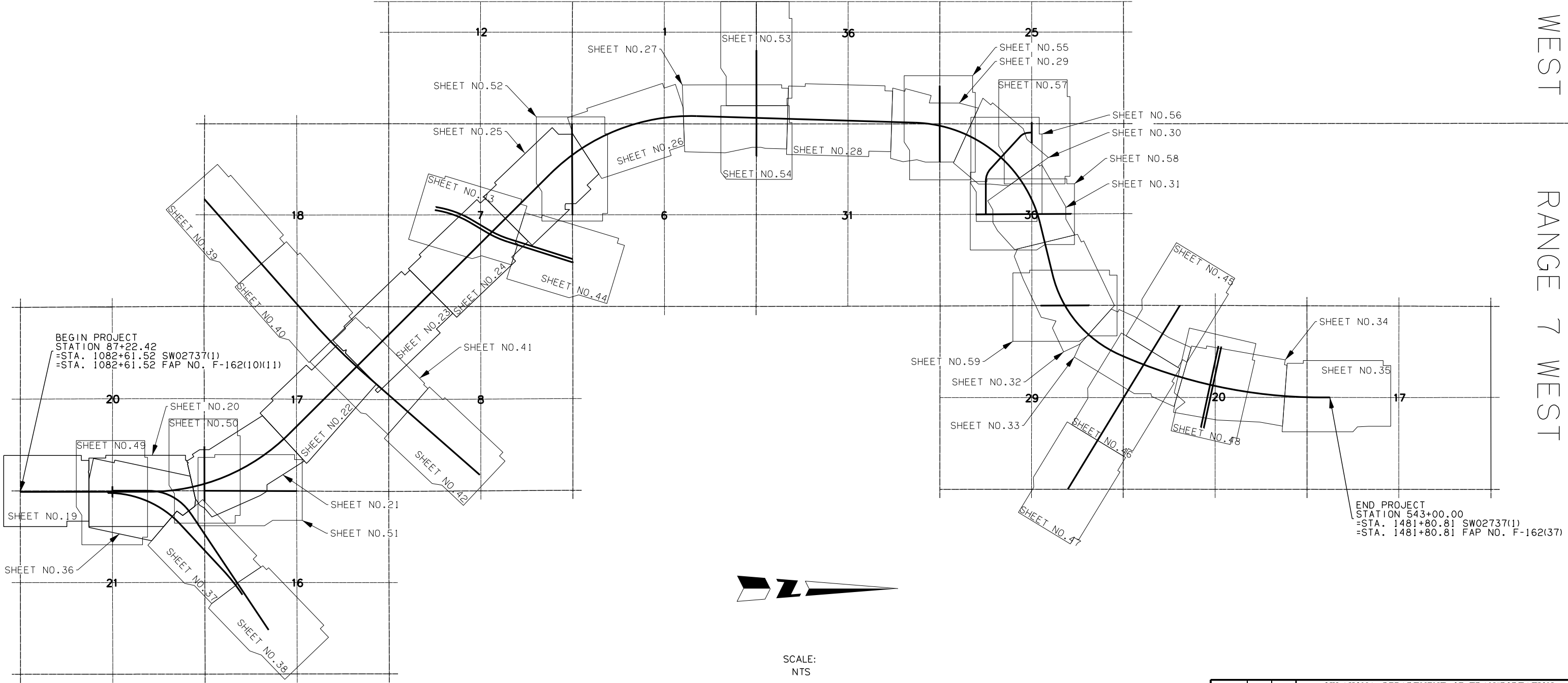
RANGE 8 WEST

RANGE 7 WEST

TOWNSHIP 6 NORTH

TOWNSHIP 7 NORTH

98TH MERIDIAN



END PROJECT
STATION 543+00.00
=STA. 1481+80.81 SW02737(1)
=STA. 1481+80.81 FAP NO. F-162(37)

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	APK		SURVEY DIVISION			
CHECKED	JTB		SURVEY DATA SHEET			
APPROVED	JTB		SDS <u>2</u> OF <u>76</u>			
CREW	BENHAM		SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S002</u>			

OKLAHOMA DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

(405) 521-2621

FAX 405-522-0364

Date: July 6, 2016

To: Mr. William Tackett, Chief of Surveys
From: John Birkhahn, Professional Land Surveyor
Subject: SWO 4380(1) J/P 24428(04) – Grady County
U.S. 81 Chickasha West Bypass.

HISTORICAL LETTER & WRITTEN REPORT

1. GENERAL:

- A. Survey began: February 17, 2011.
Survey completion: June 17, 2016.
B. The measurement unit for this project will be the U.S. Survey Foot.

2. SURVEY ASSIGNMENT:

The above survey was assigned to me by Mr. Larry Reser, Chief of Surveys in September 2010, and then again by Mr. William Tackett, Chief of Surveys, with revised Survey Special Provisions in November 2014.

3. PURPOSE OF SURVEY:

The purpose of this survey is to develop plans to design a highway on a new highway alignment, to include all road crossings, interchanges, bridges, frontage roads, and other facilities required by the design. The survey will also include sufficient data to design the connections to the existing highway at the beginning and end of the project. The survey will include the Alignment, Topographic/Planimetric data, Surface Features/Digital Terrain Model Data, Land and Property Ties, Utilities, Drainage and all other pertinent information needed to aid in the design.

4. SURVEY LIMITS:

West Bypass Main Survey: Beginning at P.O.T. Sta. 1082+61.52 (on EW-141 Section Line) as established under SWO 2737(1) Section One survey and shown on FAP No. F-162(10)(11) plans, and extending northerly along US 81, then northwesterly on a new alignment (one of two similar alternatives selected on October 29, 2014) continuing Northwesterly, Northeasterly, and finally Northerly, tying back to existing US 81, near the present junction of US 81 & US 62, Northwest of Chickasha. From there, the survey continues to and ends at P.T. Sta. 1481+80.81 as established under SWO 2737(1) Section 2 survey and shown on FAP No. F-162(37) plans (approximate centerline length=6.63 miles).

US 81 Northbound Survey: Beginning at P.C. Sta. 1107+80.13 as shown on FAP No. F-162(10)(11) plans, and extending northeasterly along existing US 81 for approximately 4300 feet.

US 81 Southbound Survey: Beginning at P.O.T. Sta. 1109+14.72 as shown on FAP No. F-162(10)(11) plans, and extending northeasterly along existing US 81 for approximately 4500 feet.

H.E. Bailey Turnpike Connection Survey: Beginning approximately 4840 feet Southwest of the centerline of the Main survey and extending Northeast along H.E. Bailey Turnpike approximately 9700 feet

Historical Letter & Written Report
Page 1 of 9

EW-136 Section Line (Idaho Ave.) Connection Survey: The Centerline of Survey will be along and identical to EW-136 Section Line.

Iowa Ave. Connection Survey: This Centerline of Survey is along the proposed alignment submitted to ODOT by Benham Design, LLC (one of two similar alternatives selected on October 29, 2014).

EW-135.5 Section Line (C.R. 1355) Connection Survey: The Centerline of Survey will be along and identical to EW-135.5 ¼ Section Line.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: The Centerline of Survey will be along and identical to NS-281.5 ¼ Section Line.

NS-282 Section line (29th St.) Connection Survey: The Centerline of Survey will be along and identical to NS-282 Section Line.

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: N/A.

6. STATIONING:

West Bypass Main Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.O.T. Sta. 1082+61.52 (at the EW-141 Section Line). Stationing increases Northerly from this point, field measured distance, to the End of Survey without equation, except with previous surveys and plans.

US 81 Northbound Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.C. Sta. 1107+80.13. Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

US 81 Southbound Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.O.T. Sta. 1109+14.72 (at the EW-140.5 ¼ Section Line). Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

H.E. Bailey Turnpike Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey.

S.H. 92 (Norge Rd.): Stationing for this survey is taken from FAS No. S-219(1) plans at P.C. Sta. 162+81.10. Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

BNSF Railroad Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases Northeast to the End of Survey without equation, except with other surveys and plans.

U.S. 62 Connection Survey: Stationing for this survey is taken from SWO 2738(1) Section 1 survey.

Old U.S. 62 Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section 2 survey.

Union Pacific Railroad Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section 2 survey.

Historical Letter & Written Report
Page 4 of 9

S.H. 92 (Norge Rd.) & BNSF Railroad Connection Survey: Beginning 600 feet Southwest of the centerline of the Main Survey and extending Northeast along S.H. 92 & BNSF Railroad approximately 1200 feet.

U.S. 62 Connection Survey: Beginning at P.O.T. Sta. 385+47.37 (NS-282 Section Line) as established under SWO 2738(1) Section 1 survey & SWO 3609(1) survey and shown on FAP No. STPY-026B(240) plans, and extending Southeasterly along U.S. 62 approximately 6200 feet.

Old U.S. 62 Connection Survey: Beginning 1150 feet Northwest of the centerline of the Main Survey and extending Southeast along Old U.S. 62 approximately 2400 feet.

Union Pacific Railroad Connection Survey: Beginning 1150 feet Northwest of the centerline of the Main Survey and extending Southeast along Old U.S. 62 approximately 2400 feet.

EW-140.5 Section Line Connection Survey: Beginning 300 feet West of the centerline of the Main Survey and extending East 600 feet along Section Line.

EW-140 Section Line Connection Survey: Beginning 1100 feet West of the centerline of the Main Survey and extending East approximately 3400 feet along Section Line.

NS-283 Section Line (16th St.) Connection Survey: Beginning at EW-140 Section Line, extending North approximately 400 feet along Section Line.

EW-138 Section Line (Country Club Rd.) Connection Survey: Beginning at NS-281 Section Line and extending East to NS-281.5 ¼ Section Line, approximately 2620 feet.

EW-137 Section Line (Grand Ave.) Connection Survey: Beginning approximately 1950 feet West of the centerline of the Main Survey and extending East approximately 3050 feet along Section Line.

EW-136 Section Line (Idaho Ave.) Connection Survey: This survey will begin approximately 1150 feet West of the centerline of the Main Survey and will extend East approximately 2200 feet along Section Line..

Iowa Ave. Connection Survey: Beginning at EW-135.5 ¼ Section Line, approximately 250 feet East of NS-281 Section Line, then extending Southeasterly for approximately 3000 feet to the present intersection of Iowa Ave. and C.S. 2815 Rd.

EW-135.5 Section Line (C.R. 1355) Connection Survey: Beginning at NS-281 Section Line and extending East, approximately 600 feet along Section Line.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: Beginning approximately 300 feet South of the centerline of the Main Survey and extending North approximately 1300 feet along Section Line.

NS-282 Section line (29th St.) Connection Survey: Beginning approximately 700 feet South of the centerline of the Main Survey and extending North approximately 1400 feet along Section Line.

Historical Letter & Written Report
Page 2 of 9

EW-140.5 Section Line Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-140 Section Line Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

NS-283 Section Line (16th St.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases North to the End of Survey without equation, except with other surveys and plans.

EW-138 Section Line (Country Club Rd.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-137 Section Line (Grand Ave.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-136 Section Line (Idaho Ave.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases East to the End of Survey without equation, except with other surveys and plans.

Iowa Ave. Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases Southeast to the End of Survey without equation, except with other surveys and plans.

EW-135.5 Section Line (C.R. 1355) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases North to the End of Survey without equation, except with other surveys and plans.

NS-282 Section line (29th St.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases North to the End of Survey without equation, except with other surveys and plans.

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: N/A.

7. HORIZONTAL CONTROL:

- A. Horizontal control for this survey is NGS Oklahoma State Plane Coordinate System NAD83 (CORS 96) (EPOCH: 2002), Lambert Projection, South Zone (3502). Primary Control points for this survey are the following:

Existing Monuments

"UNION" (From N.G.S. Data Sheet, NAD 83 (2007), PID-FJ1044)
"1 TF" (From N.G.S. Data Sheet, NAD 83 (1993), PID-EL1033)
"CHICK" (From N.G.S. Data Sheet, NAD 83 (1993), PID-FJ1049)
"D 214" (From N.G.S. Data Sheet, NAD 83, PID-EL0693)
"POCASSET" (From N.G.S. Data Sheet, NAD 83 (1993), PID-FJ0789)

Historical Letter & Written Report
Page 5 of 9

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: Parallel flight lines, parallel to U.S. 62, are to be laid out by the Aerial Photo/Mapping sub-consultant to cover the flood plain area approved by ODOT.

5. ALIGNMENTS:

West Bypass Main Survey: This Centerline of Survey is along the proposed alignment submitted to ODOT by Benham Design, LLC (one of two similar alternatives selected on October 29, 2014).

US 81 Northbound Survey: The Centerline of Survey will be along and identical to the Centerline of Survey as shown on FAP No. F-162(10)(11) plans.

US 81 Southbound Survey: The Centerline of Survey will be along and identical to the Centerline of Survey as shown on FAP No. F-162(10)(11) plans.

H.E. Bailey Turnpike Connection Survey: The Centerline of Survey will be along and identical to the Centerline of Survey established under SWO 2737(1) Section One survey and shown in Alignment Book 2.

S.H. 92 (Norge Rd.) & BNSF Railroad Connection Survey: The Centerline of Survey will be along and identical to the centerline of S.H. 92 as established under SWO 1148 survey & SWO 1148(REV.) survey and shown as FAS No. S-219(1) plans. Note: Reference points were found for two P.I.'s at Sta. 146+17.19 and Sta. 182+70.95 from said plans. All curve data and tangent angles were held between these points to determine alignment.

U.S. 62 Connection Survey: The Centerline of Survey will be along and identical to the Centerline of Survey established under SWO 2738(1) Section 1 survey and SWO 3609(1) survey and shown on FAP No. STPY-026B(240) plans.

Old U.S. 62 Connection Survey: The Centerline of Survey will be along and identical to the centerline of Old U.S. 62 as established under SWO 2737(1) Section 2 survey and shown in Alignment Book No. 2.

Union Pacific Railroad Connection Survey: The Centerline of Survey will be along and identical to the centerline of the former C.R.I. & P. Railway as established under SWO 2737(1) Section 2 survey and shown in Alignment Book No. 2.

EW-140.5 Section Line Connection Survey: The Centerline of Survey will be along and identical to EW-140.5 ¼ Section Line.

EW-140 Section Line Connection Survey: The Centerline of Survey will be along and identical to EW-140 Section Line.

NS-283 Section Line (16th St.) Connection Survey: The Centerline of Survey will be along and identical to NS-283 Section Line.

EW-138 Section Line (Country Club Rd.) Connection Survey: The Centerline of Survey will be along and identical to EW-138 Section Line.

EW-137 Section Line (Grand Ave.) Connection Survey: The Centerline of Survey will be along and identical to EW-137 Section Line.

Historical Letter & Written Report
Page 3 of 9

"K 41 1953" (From N.G.S. Data Sheet, NAD 83, PID-FJ0528)

Set Monuments

ODOT monuments "G-26-865 thru G-26-868" NAD 83 (CORS 96) (by Benham Design, LLC)
ODOT monuments "G-26-1032 thru G-26-1039" (CORS 96) (by Aerial Data Services, Inc.)

ODOT monuments "G-26-865 thru G-26-868" were set 5/8" iron pins with stamped aluminum cap in concrete. They were established using GPS, for three separate static survey data occupations for a minimum of two hours, on three separate days, at different times of day. All data was uploaded to <http://www.ngs.noaa.gov/OPUS/>. The solutions were then averaged to obtain coordinates in NAD 83 (CORS96)(EPOCH: 2002).

ODOT monuments "G-26-1032 thru G-26-1039" were set chiseled "X"s in concrete. They were set using GPS from selected points from OPUS Projects network adjustment shown in SWO4380_1_v2.dgn. Existing N.G.S. monuments listed above were used as a check for primary and secondary control.

A coordinate shift of $\Delta N = 0.002$, $\Delta E = -0.129$ was applied to all NAD 83 (CORS 2011) coordinate solutions to conform to NAD 83 (CORS 96) horizontal datum. This was calculated by uploading identical static sessions for ODOT Monuments "G-26-865 thru G-26-868" to <http://www.ngs.noaa.gov/OPUS/>, and subtracting resulting coordinate differences between CORS 96 and CORS 2011 solutions.

- B. Secondary Control for this survey was established using GPS RTK, based off of primary control points.

8. VERTICAL CONTROL:

Level datum for this survey is NAVD 88. Benchmarks for this survey were set by Aerial Data Services Inc. All bench marks were tied to the following ODOT bench marks from SWO 4380(1): BM 7-13, 15-20, 24-28, 30, 32-34, & 37. Bench marks established or used on this survey meet the requirements of the N.G.S. 3rd order standards as a minimum.

9. PHOTO CONTROLS:

A total of 110 Aerial Targets were set and tied on this project. Aerial targets were set and measured by Aerial Data Service, Inc. Aerial targets are shown in SWO4380_1_v2.dgn, Cogo Points List, and X,Y,Z coordinates were placed in the following file: SWO4380_1_v2_targets.txt

10. TOPOGRAPHY:

The majority of the topography on this survey was obtained from aerial photogrammetry survey data by Aerial Data Service, Inc. The date of flight for the aerial survey was March 11, 2015. GPS RTK and conventional field methods were used to survey the following:

1. Drainage structures
2. Creek flow lines.
3. Ponds

Historical Letter & Written Report
Page 6 of 9

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION		REVISIONS			DATE	

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
DRAWN	JTB		SURVEY DATA SHEET			
CHECKED	JTB		SDS 3 OF 76			
APPROVED	JTB					
CREW	BENHAM		SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S003			

4. Underground utilities
5. Overhead wires and cables
6. Meters, valves, hydrants, etc.
7. Mail boxes
8. Entities that were covered by water, timber, or dense vegetation at the time of the aerial flight.

Topography information was placed in the following file: SWO4380_1_v2_Topo.dgn.

11. DTM:

DTM information was collected from aerial mapping by Aerial Data Service, Inc. Additional flow line information for Rock Hollow Creek, Line Creek, and other tributaries was collected using GPS and conventional field methods at locations where creeks crossed existing and proposed alignments. Flow line measurements were taken 500 feet upstream and downstream at 25 feet intervals at these locations. The bottom surface of ponds, within 300 feet of existing and proposed alignments, was also surveyed with GPS and conventional field methods. This information was combined with the surface from the aerial survey and placed in the following file: SWO4380_1_v2.dtm.

12. LAND TIES:

Complete land tie information was obtained by GPS RTK and conventional field methods for the following sections.

T-6-N, R-7-W, I.M.; All of Sections 6, 7, 8, 16, 17, 18, 20, & 21
T-7-N, R-7-W, I.M.; All of Sections 17, 20, 29, 30, & 31
T-6-N, R-8-W, I.M.; All of Sections 1 & 12 lying East of the 98th Meridian
T-7-N, R-8-W, I.M.; All of Sections 25 & 36 lying East of the 98th Meridian

Corner records were researched from the Department of Libraries in Oklahoma City, OK. GLO Notes were obtained from the following website: www.glorerecords.blm.gov.

Land corners from ODOT Survey 2737(1) were recovered and/or re-established and used on this survey. See a full description of land corner recovery and restoration on the Land Tie survey data sheets for this survey, located in SWO4380_1_v2.dgn.

13. EXISTING RIGHT-OF-WAY AND PROPERTY LINES

Present right-of-way, utility easements, and property line information was obtained from the following sources:

- Two separate title searches for right-of-way, utility easements, and ownership deeds from Cochran Abstract Company.
- ODOT Plans
FAP No. F-162 (9),(10),(11),(31),(35),(37)
FAP No. STPY-26B (240)
FAS No. S-219 (1)
- Oklahoma Turnpike Authority Plans
Contract No. 206
- Existing Plats
Burch's Sixth Addition
Chickasha Industrial Park

Historical Letter & Written Report
Page 7 of 9

Chickasha Industrial Park Block I Revised
Conrad Heights Addition
Creek Haven Estates
Harden's Acres
Hillsboro Heights Revised Addition
• Supplemental research at Grady County Assessor's website.

Ownership information could not be determined, from the above research, for three areas along the south side of U.S. 62. These areas are annotated, along with all other found information, in the survey data sheets located in SWO4380_1_v2.dgn. All property and easement lines are shown mathematically and diagrammatically in survey data sheets. If no right-of-way documentation was found along section lines within the survey limits, statutory right-of-way was annotated. Statutory right-of-way for this survey falls within the Chickasaw Nation boundary, which is 33 feet (16.5 feet each side of section line).

14. UTILITIES

The assistance of "Oklahoma One-Call System, Inc." was used to locate utilities. Utility locations for this survey were derived from a combination of utility markings, surface evidence, utility easement descriptions, and utility maps provided by the following utility companies:

- AEP Public Service Company of Oklahoma
- City of Chickasha Public Works
- Rural Water District #6
- Rural Water District #7
- Centerpoint Energy
- Enable Midstream
- DCP Midstream
- Continuum Energy
- Sunoco Logistics
- USIC locating services

There are no depths on any lines except for sanitary and storm sewer flow lines. Low-wire elevations were obtained on overhead power lines that crossed the main survey alignment and stub alignments. Outside temperatures were recorded for that process. All utility locations should be verified in the field before construction. All utilities, flow line and low wire elevations, and three-dimensional sanitary sewer entities, are located in SWO4380_1_v2_TOPO.DGN

15. POTENTIAL ENVIROMENTAL CONTAMINATION

During the course of this survey there were no Underground Storage Tanks or Hazardous Waste Sites found.

16. DRAINAGE INFORMATION

Drainage and Hydraulic data are located in SWO4380_1_v2_DRA.DGN. Three-dimensional drainage structures are located in SWO4380_1_v2_TOPO.DGN.

Historical Letter & Written Report
Page 8 of 9

17. SURVEY DATA SHEETS

Survey datasheets were submitted in the form of a Microstation Design File to be archived on the ODOT Mainframe Computer, as per ODOT Survey Division Standards. These will be incorporated into the set of design drawings and will be in substantial conformity with the ODOT Survey Division Standards for Survey Data Sheets, as maintained on the ODOT(s) Intranet.

18. SUBMISSION OF SURVEY DATA

- A. Historical Letter & Written Report
- B. Form SD-1 Transmittal letter
- C. Form SD-7 Public and Privately Owned Utilities List
- D. Form SD-11 Position and Description of Survey Monuments
- E. Form SD-20 Survey Control Data Statement
- F. Form SD-41 Surveyors Certification
- G. Coordinate Geometry List
- H. Bench Marks and Check Levels list
- I. Alignment Reports
- J. 113 copies of Certified Corner Records
- K. Microstation files for Survey Data Sheets, Contours, Drainage, Perimeter, Surface Features, Topography, and Triangles
- L. Inroads files for Geometry and Surface
- M. Full size and Half size PDF's of Survey Data Sheets.

19. PERSONNEL

Benham Design, LLC

John T. Birkhahn, Professional Land Surveyor
Andrew Kis, Party Chief
James Jackson, Survey Technician
Daniel Bennett, Party Chief
Chris Shipman, Survey Technician
Brandon Holland, Survey Technician
John Okon, Survey Technician

Aerial Data Services

Bill Webb, Professional Land Surveyor
Other Technicians (Not listed)

If you have any questions or need further information, please contact John Birkhahn, PLS.

Historical Letter & Written Report
Page 9 of 9

U.S. 81 CHICKASHA BYPASS
GRADY COUNTY
SWO4380(1) J/P 24428(04)

BENCHMARK AND CHECK LEVEL LIST				NAVD 88 DATUM						
BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION	
BM #207				1182.3820	1182.382	A001	N/A	N/A	"X" ON CTR. W. HDWL. RCB CROSS DRAIN	
TO	2.6361	2.6403	2.6382							
BM #208				1185.0190	1185.019	A001	87+50.10	69.87 L	"J" ON S.W. WINGWALL OF CONC. RCB CROSS DRAIN	
TO	8.7372	8.7401	8.7387							
BM #209				1193.7700	1193.770	A001	102+78.31	98.50 R	NGS MONUMENT "H-214" ENCASED STEEL ROD W/ METAL LID. THIS MONUMENT IS 5.8 MI. SOUTHERLY ALONG U.S. 81 FROM THE FEDERAL BUILDING IN CHICKASHA, 66.9 FT. EAST OF THE CENTERLINE OF THE NORTH BOUND LANES OF THE HIGHWAY, 18.4 FT. SOUTH OF THE GUY WIRE ANCHOR, AND 5.9 FT. NORTH OF A UTILITY POLE.	
TO	2.3674	2.3760	2.3717							
BM #210				1196.1440	1196.144	A001	108+67.70	66.14 L	"X" ON CENTER W. HDWL. RCB CROSS DRAIN	
TO	4.5142	4.5121	4.5132							
BM #211				1200.6510	1200.651	A001	114+06.93	68.77 L	"J" ON N.E. WINGWALL W. SIDE DRAIN	
TO	3.3253	3.3313	3.3283							
BM #212				1203.9780	1203.978	A001	123+39.68	114.46 L	80D SPIKE IN POWER POLE ON EAST EDGE OF 16TH STREET	
TO	-6.6022	-6.5997	-6.6010							
BM #213				1197.3790	1197.379	A001	127+52.29	176.47 L	N.W. COR. W. CONC. HDWL. CGMP CROSS DRAIN	
TO	-14.0288	-14.0271	-14.0279							
BM #11				1183.3562		A001	134+50.38	58.92 R	100D NAIL SET S.W. FACE 8" ELM	
TO	8.4489	8.4508	8.4498							
BM #12				1191.8111		A001	141+72.09	306.34 L	100D NAIL SET W. FACE 18" ELM	
TO	-18.4913	-18.4996	-18.4955							
BM #13				1173.3208		A001	151+40.21	517.03 L	100D NAIL IN N. FACE OF 24" COTTONWOOD, NEAR S.E. CORNER OF POND DAM.	
TO	13.2228	13.2270	13.2249							
BM #215				1186.5508		A001	155+15.31	300.60 L	80D SPIKE IN FENCE POST	
TO	4.2439	4.2435	4.2437							
BM #216				1190.7996		A001	158+03.48	880.07 L	N.E. CORNER CONC. SIDEWALK TO WOOD FRAME RESIDENCE	
TO	46.5327	46.5226	46.5277							
BM #217				1237.3323		A001	174+72.74	845.39 L	80 D SPIKE IN R.R. TIE FENCE POST	
TO	12.4241	12.4181	12.4211							
BM #218				1249.7585		A001	186+78.95	1501.34 L	80D SPIKE IN GROUND AT BASE OF METAL CORNER POST	
TO	2.7674	2.7647	2.7660							
BM #219				1252.5297		A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE - EAST R/W FENCE I-44	
TO	2.2406	2.2352	2.2379							
BM #220				1254.7730	1254.773	A004	283+25.13	73.71 R	N.E. CORNER OF TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.	
TO	-4.9001	-4.8975	-4.8988							
BM #1				1249.8746		A001	197+99.60	286.18 L	100D NAIL SET IN E. FACE 8" WOOD BRACE POST, N. SIDE OF I-44	
TO	-19.3697	-19.3758	-19.3728							
BM #2				1230.5022		A001	206+56.29	312.42 L	100D NAIL SET IN E. FACE OF 12" ELM TREE	
TO	-37.8283	-37.8251	-37.8267							
BM #3				1192.6759		A001	213+74.34	247.53 L	100D NAIL SET IN E. FACE 8" ELM TREE	
TO	23.8587	23.8676	23.8632							
BM #4				1216.5394		A001	221+88.54	247.39 L	SET 3/4" I.P. (30" LONG)	
TO	11.0538	11.0500	11.0519							
BM #5				1227.5917		A001	229+44.85	230.97 L	SET 3/4" I.P. (30" LONG)	
TO	-7.4454	-7.4456	-7.4455							
BM #6				1220.1465		A001	237+30.46	270.08 L	SET 3/4" I.P. (30" LONG)	
TO	-4.7502	-4.7548	-4.7525							
BM #7				1215.3944		A001	245+09.56	219.21 L	SET 3/4" I.P. (30" LONG)	
TO	16.3605	16.3676	16.3641							
BM #8				1231.7588		A005	172+17.70	13.67 L	CHIX. "X" SET (N. END OF CONC. HDWL.)	
TO	7.0540	7.0450	7.0495							
BM #9				1238.8087		A001	260+20.24	215.00 R	SET 3/4" I.P. (30" LONG)	
TO	-2.8200	-2.8176	-2.8188							
BM #10				1235.9903		A001	268+76.80	217.22 R	SET 3/4" I.P. (30" LONG)	
TO	-7.2407	-7.2400	-7.2404							
BM #224				1228.7503		A001	269+87.18	660.24 R	80D SPIKE IN POWER POLE, W. OF CHAIN LINK FENCE	
TO	-8.5019	-8.5025	-8.5022							
BM #14				1220.2484		A001	277+08.81	222.72 R	SET 3/4" I.P. (30" LONG)	
TO	-72.5185	-72.5050	-72.5118							
BM #15				1147.7371		A001	289+80.35	1024.54 L	CHIS. "X" SET ON TOP CENTER OF SOUTH HEADWALL, 300' +/- WEST OF INT. MOCKINGBIRD & CR 1380.	
TO	28.6203	28.6238	28.6220							
BM #16				1176.3595		A013	105+78.86	134.75 L	SET 3/4" I.P. (30" LONG)	
TO	-0.8233	-0.8258	-0.8245							
BM #17				1175.5353		A001	291+94.55	161.56 R	SET 3/4" I.P. (30" LONG)	
TO	-25.7638	-25.7734	-25.7686							
BM #18				1149.7671		A001	299+82.47	186.53 R	SET 3/4" I.P. (30" LONG)	
TO	-11.1276	-11.1295	-11.1286							
BM #19				1138.6389		A001	307+77.96	207.93 R	SET 3/4" I.P. (30" LONG)	
TO	-2.7523	-2.7585	-2.7554							
BM #20				1135.8839		A001	315+73.98	173.94 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND	
TO	7.3685	7.3669	7.3677							
BM #21				1143.2519		A001	323+71.24	162.63 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND	
TO	-10.7954	-10.7841	-10.7898							
BM #22				1132.4626		A001	339+41.63	1401.09 R	CHIS. "X" SET ON TOP - WEST END OF SOUTH WALL OF BRIDGE OVER LINE CREEK	

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
BM #228	44.6668	44.6616	44.6642	1177.1270	1177.127	A001	328+31.01	2986.12 R	"X" ON S.E. EDGE OF SANITARY SEWER MANHOLE
TO	-45.0259	-45.0198	-45.0229						
BM #23				1132.0986		A001	331+35.67	232.88 R	SET 3/4" I.P. (30" LONG)
TO	0.5628	0.5690	0.5659						
BM #24				1132.6589		A014	121+84.30	37.10 L	SET 3/4" I.P. (30" LONG)
TO	-1.8574	-1.8702	-1.8638						
BM #25				1130.7895		A001	347+12.25	244.09 R	SET 3/4" I.P. (30" LONG)
TO	9.3828	9.3843	9.3836						
BM #26				1140.1674		A001	354+96.15	244.55 R	SET 3/4" I.P. (30" LONG)
TO	7.4180	7.4400	7.4290						
BM #230				1147.5910	1147.591	A001	359+92.92	3390.76 R	80D SPIKE IN 10" FENCE CORNER POST
TO	-11.0928	-11.0866	-11.0897						
BM #27				1136.5030		A001	357+02.39	391.80 R	CHIS. "X" SET ON N.E. CORNER OF HIGHEST CONC. SLAB, SOUTH OF LINE CREEK
TO	11.4861	11.4853	11.4857						
BM #28				1147.9903		A001	362+57.30	371.62 R	SET 3/4" I.P. (30" LONG)
TO	17.1013	17.1026	17.1020						
BM #29				1165.0940		A001	370+58.95	310.52 R	SET 3/4" I.P. (30" LONG)
TO	9.5380	9.5288	9.5334						
BM #30				1174.6291		A001	378+29.20	336.61 R	SET 3/4" I.P. (30" LONG)
TO	-2.2641	-2.2504	-2.2573						
BM #31				1172.3735		A001	386+19.74	310.53 R	SET 3/4" I.P. (30" LONG)
TO	4.2783	4.2873	4.2828						
BM #32				1176.6579		A001	399+38.08	1873.77 R	CHIS. "X" SET, N.W. COR. CONC. PAD OF WATER VAULT
TO	-16.0683	-16.0684	-16.0683						
BM #232				1160.5913		A001	406+08.72	2379.36 R	80D SPIKE IN POWER POLE ON SOUTH EDGE OF RD. AT INTERSECTION OF CS 2815 AND CR 1360
TO	16.4558	16.4620	16.4589						
BM #33				1177.0519		A015	114+28.25	120.83 L	SET 3/4" I.P. (30" LONG)
TO	-2.7761	-2.7706	-2.7734						
BM #34				1174.2801		A001	401+84.95	255.39 R	SET 3/4" I.P. (30" LONG)
TO	-4.2906	-4.2887	-4.2896						
BM #35				1169.9922		A001	409+18.77	333.74 R	SET 3/4" I.P. (30" LONG)
TO	-7.5702	-7.5625	-7.5663						
BM #36				1162.4276		A001	417+60.46	271.62 R	SET 3/4" I.P. (30" LONG)
TO	-3.8914	-3.8937	-3.8926						
BM #37				1158.5366		A001	425+88.69	267.77 R	SET 3/4" I.P. (30" LONG)
TO	2.2423	2.2392	2.2407						
BM #233				1160.7790		A018	115+89.10	23.91 L	60D SPIKE IN FENCE CORNER POST, S.W. QUADRANT OF INTERSECTION
TO	1.4349	1.4402	1.4375						
BM #39				1162.2182		A001	435+13.73	191.30 R	SET 3/4" I.P. (30" LONG)
TO	-22.4610	-22.4665	-22.4638						
BM #40				1139.7561		A001	442+62.04	214.40 R	SET 3/4" I.P. (30" LONG)
TO	2.6942	2.6954	2.6948						
BM #234				1142.4525		A001	444+05.54	480.86 R	80D SPIKE IN SOUTH BRACE POST OF FENCE CORNER POST
TO	-34.0483	-34.0352	-34.0418						
BM #41				1108.4124		A001	448+29.10	358.03 L	SET 3/4" I.P. (30" LONG)
TO	-6.8526	-6.8592	-6.8559						
BM #42				1101.5582		A019	103+55.35	104.61 L	SET 3/4" I.P. (30" LONG)
TO	4.2737	4.2746	4.2741						
BM #235				1105.8340	1105.834	A001	455+62.40	732.35 R	80D SPIKE IN POWER POLE, SOUTH OF CIRCLE GRAVEL DRIVE, WEST SIDE 29TH ST.
TO	-6.8580	-6.8646	-6.8613						
BM #43				1098.9817		A001	465+43.47	284.38 R	SET 3/4" I.P. (30" LONG)
TO	-0.1867	-0.1867	-0.1867						
BM #44				1098.8040		A001	473+41.96	307.35 R	SET 3/4" I.P. (30" LONG)
TO	-5.1050	-5.0889	-5.0970						
BM #45				1093.7161		A001	480+83.78	283.55 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	9.5741	9.5759	9.5750						
BM #237				1103.3000	1103.300	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN OF U.S. 62
TO	-2.8455	-2.8426	-2.8440						
BM #47				1100.4535		A007	408+70.68	75.84 R	CHIS. BOX SET ON TOP CENTER OF HDWL, SOUTH SIDE HWY 62, APPROX. 500' +/- EAST OF HWY 81
TO	-0.8708	-0.8706	-0.8707						
BM #48				1099.5803		A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)
TO	-3.7094	-3.7148	-3.7121						
BM #49				1095.8857		A001	503+82.60	227.46 R	SET 3/4" I.P. (30" LONG)
TO	-2.9876	-2.9819	-2.9847						
BM #50				1092.8784		A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)
TO	0.5777	0.5839	0.5808						
BM #51				1093.4567		A001	519+62.64	230.00 R	SET 3/4" I.P. (30" LONG)
TO	-0.1968	-0.1979	-0.1974						
BM #52				1093.2569		A001	527+58.98	209.80 R	SET 3/4" I.P. (30" LONG)
TO	-0.1486	-0.1499	-0.1493						
BM #53				1093.1051		A001	535+55.51	210.93 R	SET 3/4" I.P. (30" LONG)
TO	2.0849	2.0906	2.0878						
BM #54				1095.1904		A001	542+99.05	221.48 R	SET 3/4" I.P. (30" LONG)
TO	16.8700	16.8734	16.8717						
BM #238				1112.0600	1112.060	A001	N/A	N/A	THIS NATIONAL GEODETIC SURVEY MONUMENT (NGS "W") IS APPROXIMATELY 3/4 MILE NORTH OF THE MOST NORTHERLY BENCHMARK SET FOR THE PROJECT, (ADS BM 54), BEYOND STATIONING LIMITS.

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
BM #224				1228.7503		A001	289+87.18	680.24 R	80D SPIKE IN POWER POLE, W. OF CHAIN LINK FENCE
TO	-13.1070	-13.1085	-13.1077						
BM #225				1215.8424		A013	125+48.17	44.82 R	80D SPIKE IN POWER POLE IN S.E. QUADRANT INTERSECTION OF COUNTRY CLUB AND HILL RD.
TO	-14.0185	-14.0261	-14.0223						
BM #226				1201.6199		A001	284+47.01	2182.28 R	BENT 80D SPIKE IN GATE POST APPROX. 20' N. OF N/S AND E/W FENCE LINE INTERSECTION
TO	-11.5288	-11.5189	-11.5239						
BM #227				1190.0958		A001	302+90.70	3267.36 R	80D SPIKE IN POWER POLE, S. EDGE GRAVEL DRIVE ON WEST SIDE 29TH STREET
TO	-12.9654	-12.9721	-12.9688						
BM #228				1177.1270	1177.127	A001	328+31.01	2986.12 R	"X" ON S.E. EDGE OF SANITARY SEWER MANHOLE

U.S. 81 CHICKASHA BYPASS
GRADY COUNTY
SWO4380(1) J/P 24428(04)

BENCHMARK AND CHECK LEVEL LIST			NAVD 88 DATUM					
BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION

GRAND AVE.

BM #24 TO	17.6650	17.6608	17.6629	1132.6589	A014	121+84.30	37.10 L	SET 3/4" I.P. (30" LONG)
BM #91 TO	33.2406	33.2414	33.2410	1150.3224	A014	111+74.40	213.43 L	SET 3/4" I.P. (30" LONG)
BM #92 TO	-51.4608	-51.4709	-51.4659	1183.5639	A014	104+11.22	212.64 R	SET 3/4" I.P. (30" LONG)
BM #23				1132.0986	A001	331+35.67	232.88 R	SET 3/4" I.P. (30" LONG)

S.H. 92

BM #8 TO	-8.3495	-8.3484	-8.3490	1231.7588	A005	172+17.70	13.67 L	CHIX. "X" SET (N. END OF CONC. HDWL.)
BM #90 TO	15.4124	15.4145	15.4135	1223.4025	A005	188+24.32	61.45 R	SET 3/4" I.P. (30" LONG)
BM #9				1238.8087	A001	260+20.24	215.00 R	SET 3/4" I.P. (30" LONG)

N.B. U.S. 81

BM #212 TO	-7.9579	-7.9584	-7.9582	1203.9780	A001	123+39.68	114.46 L	80D SPIKE IN POWER POLE ON EAST SIDE OF 16TH STREET
BM #86 TO	-13.3237	-13.3191	-13.3214	1196.0211	A002	1124+46.43	95.92 R	SET 3/4" I.P. (30" LONG)
BM #87 TO	-3.1818	-3.1770	-3.1794	1182.7010	A002	1133+42.40	96.38 R	SET 3/4" I.P. (30" LONG)
BM #88 TO	0.8077	0.8102	0.8089	1179.5229	A002	1140+21.86	95.46 R	SET 3/4" I.P. (30" LONG)
BM #89 TO	17.0502	17.0394	17.0448	1180.3331	A002	1145+30.53	180.36 L	SET 3/4" I.P. (30" LONG)
BM #213				1197.3790	A001	127+52.38	176.47 L	N.W. COR. OF W. CONC. HDWL. CGMP CROSS DRAIN

U.S. 62 (N.W.)

BM #237 TO	-3.0553	-3.0493	-3.0523	1103.3000	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN OF U.S. 62
BM #60 TO	-0.2098	-0.2101	-0.2099	1100.2491	A007	397+63.99	244.47 R	SET 3/4" I.P. (30" LONG)
BM #61 TO	1.2618	1.2671	1.2645	1100.0406	A007	389+65.23	281.40 L	SET 3/4" I.P. (30" LONG)
BM #62 TO	-0.8952	-0.8952	-0.8952	1101.3065	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #63 TO	1.5374	1.5377	1.5376	1100.4127	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #64 TO	-1.9369	-1.9357	-1.9363	1101.9517	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #65 TO	1.2218	1.2265	1.2242	1100.0168	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #66 TO	0.3224	0.3283	0.3254	1101.2424	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #67 TO	1.1359	1.1373	1.1366	1101.5692	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #74 TO	1.6896	1.7028	1.6962	1102.7072	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
BM #75 TO	-4.8159	-4.8362	-4.8260	1104.4048	A007	N/A	N/A	80D NAIL SET W/ BRACE NAIL IN N.W. FACE OF 15" TREE - BM BEYOND STATIONING LIMITS
BM #48				1099.5803	A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)

U.S. 62 (S.E.)

BM #237 TO	-8.4625	-8.4688	-8.4656	1103.3000	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN OF U.S. 62
BM #55 TO	4.8364	4.8325	4.8344	1094.8369	A007	386+78.63	5138.29 L	CHIS. BOX SET, TOP CURB, N. SIDE OF CURB INLET
BM #56 TO	-3.7519	-3.7732	-3.7626	1099.6738	A007	421+19.53	278.63 L	CHIS. BOX SET, TOP CURB @ P.C., NW OF AEP BLDG.
BM #57 TO	3.0570	3.0524	3.0547	1095.9138	A007	429+32.54	227.20 R	CHIS. BOX SET ON N.W. COR. OF AC CONC. PAD
BM #58 TO	10.3774	10.3772	10.3773	1098.9710	A007	437+83.65	420.30 R	CHIS. BOX SET ON TOP CENTER @ W. END OF A 24" R.C.P., NEXT TO PLAYGROUND EQUIP.
BM #59 TO	-9.7710	-9.7750	-9.7730	1109.3508	A007	444+44.64	282.84 R	CHIS. BOX SET ON THE S.E.S. CURB RETURN @ HARLY DR. & 17TH ST.
BM #48				1099.5803	A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
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OLD U.S. 62 (N.W.)

BM #49 TO	4.0860	4.0831	4.0846	1095.8657	A001	503+82.60	227.46 R	SET 3/4" I.P. (30" LONG)
BM #73 TO	-7.0613	-7.0709	-7.0661	1099.9474	A008	103+43.30	168.26 R	CHIS. BOX SET, TOP CURB, WEST SIDE OF ROAD ENTRY TO FACTORY ENTRANCE
BM #50				1092.8784	A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)

OLD U.S. 62 (S.E.)

BM #49 TO	-3.0997	-3.0985	-3.0991	1095.8657	A001	503+82.60	227.46 R	SET 3/4" I.P. (30" LONG)
BM #72 TO	0.1168	0.1170	0.1169	1092.7641	A008	119+46.13	146.73 R	SET 3/4" I.P. (30" LONG)
BM #50				1092.8784	A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)

I-44 H.E. BAILEY TPK. (N.E.)

BM #220 TO	-9.6066	-9.6026	-9.6046	1254.7730	A004	283+25.13	73.71 R	N.E. COR. TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.
BM #76 TO	-17.7011	-17.7064	-17.7038	1245.1689	A004	298+85.08	158.03 R	SET 3/4" I.P. (30" LONG)
BM #77 TO	-12.7253	-12.7281	-12.7267	1227.4655	A004	307+00.59	200.57 R	SET 3/4" I.P. (30" LONG)
BM #78 TO	-8.3884	-8.3917	-8.3900	1214.7393	A004	314+30.67	184.43 R	SET 3/4" I.P. (30" LONG)
BM #99 TO	-0.0764	-0.0737	-0.0750	1206.3497	A004	320+53.51	168.85 R	CHIX. "X" SET, TOP CENTER HEADWALL
BM #79 TO	-8.5709	-8.5783	-8.5746	1206.2752	A004	322+38.88	141.94 R	SET 3/4" I.P. (30" LONG)
BM #80 TO	-4.0590	-4.0591	-4.0591	1197.7010	A004	330+30.42	142.27 R	SET 3/4" I.P. (30" LONG)
BM #81 TO	58.8690	58.9048	58.8869	1193.6424	A004	N/A	N/A	SET 3/4" I.P. (30" LONG)
BM #219				1252.5297	A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE, E. R/W FENCE I-44

I-44 H.E. BAILEY TPK. (S.W.)

BM #220 TO	-10.6684	-10.6757	-10.6721	1254.7730	A004	283+25.13	73.71 R	N.E. CORNER OF TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.
BM #82 TO	-9.8726	-9.8574	-9.8650	1244.1017	A004	264+99.64	192.11 R	SET 3/4" I.P. (30" LONG)
BM #83 TO	21.2560	21.2687	21.2624	1234.2375	A004	257+17.31	121.51 R	SET 3/4" I.P. (30" LONG)
BM #84 TO	21.5506	21.5566	21.5536	1255.5007	A004	249+19.21	136.16 R	SET 3/4" I.P. (30" LONG)
BM #85 TO	-24.5263	-24.5262	-24.5263	1277.0551	A004	241+58.38	197.59 R	SET 3/4" I.P. (30" LONG)
BM #219				1252.5297	A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE, E. R/W FENCE I-44

IOWA AVE.

BM #37 TO	-3.9362	-3.9283	-3.9323	1158.5377	A001	425+88.63	267.77 R	SET 3/4" I.P. (30" LONG)
BM #71 TO	6.1837	6.1836	6.1837	1154.6045	A016	128+02.43	218.63 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
BM #70 TO	9.2073	9.2058	9.2066	1160.7873	A016	120+72.88	219.14 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
BM #35				1169.9931	A001	409+18.77	333.74 R	SET 3/4" I.P. (30" LONG)

IOWA AVE.

BM #37 TO	6.1841	6.1917	6.1879	1158.5377	A001	425+88.63	267.77 R	SET 3/4" I.P. (30" LONG)
BM #69 TO	-2.2968	-2.2928	-2.2948	1164.7245	A016	104+40.34	252.44 L	SET 3/4" I.P. (30" LONG)
BM #36				1162.4286	A001	417+60.40	271.62 R	SET 3/4" I.P. (30" LONG)

IDAHO AVE.

BM #33 TO	9.9920	9.9895	9.9908	1177.0526	A015	114+28.25	120.83 L	SET 3/4" I.P. (30" LONG)
BM #68 TO	-14.6544	-14.6496	-14.6520	1187.0347	A015	103+91.14	217.57 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
BM #31				1172.3739	A001	386+19.68	310.53 R	SET 3/4" I.P. (30" LONG)

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SWO 4380(1)

ALIGNMENT REPORT

J/P 24428(04)

Project Name: SWO_4380_1_V2
Description: US81 Existing Alignments
Horizontal Alignment Name: A001
Description: CRL Prop US81 Bypass
Style: proposed-100

STATIONEASTINGNORTHING

Element: Linear
POB (300)87+22.421982754.9150596110.5945
PC (302)124+31.691982750.4840599819.8646
Tangent Direction: N 0°04'06.40" W
Tangent Length: 3709.27

Element: Circular
PC (302)124+31.691982750.4840599819.8646
PI (309)147+93.781982747.6623602181.9456
CC ()1977020.5080599813.0202
PT (311)169+12.581981080.9973603855.7622
Radius: 5729.58
Delta: 44°48'32.01" Left
Degree of Curvature(Arc): 1°00'00.00"
Length: 4480.89
Tangent: 2362.08
Chord: 4367.57
Middle Ordinate: 432.49
External: 467.80
Tangent Direction: N 0°04'06.40" W
Radial Direction: N 89°55'53.60" E
Chord Direction: N 22°28'22.40" W
Radial Direction: N 45°07'21.59" E
Tangent Direction: N 44°52'38.41" W

Element: Linear
FT (311)169+12.581981080.9973603855.7622
PC (324)275+17.981973597.9198611370.9495
Tangent Direction: N 44°52'38.41" W
Tangent Length: 10605.40

Element: Circular
PC (324)275+17.981973597.9198611370.9495
PI (328)299+85.581971856.8057613119.5346
CC ()1977659.0089613413.6913
PT (332)321+78.071971931.0210615586.0139
Radius: 5729.58
Delta: 46°36'02.96" Right
Degree of Curvature(Arc): 1°00'00.00"
Length: 4660.08
Tangent: 2467.69
Chord: 4532.69
Middle Ordinate: 467.28
External: 508.78
Tangent Direction: N 44°52'38.41" W

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SWO 4380(1)

ALIGNMENT REPORT

J/P 24428(04)

Radial Direction: N 45°07'21.59" E
Chord Direction: N 21°34'36.93" W
Radial Direction: S 88°16'35.45" E
Tangent Direction: N 1°43'24.55" E

Element: Linear
FT (332)321+78.071971931.0210615586.0139
PC (335)384+81.791972120.6116621886.8868
Tangent Direction: N 1°43'24.55" E
Tangent Length: 6303.72

Element: Circular
PC (335)384+81.791972120.6116621886.8868
PI (340)413+90.541972208.0949624794.3170
CC ()1975938.6036621772.0050
PT (346)434+53.731975034.1157625483.0915
Radius: 3819.72
Delta: 74°34'44.76" Right
Degree of Curvature(Arc): 1°30'00.00"
Length: 4971.94
Tangent: 2908.75
Chord: 4628.30
Middle Ordinate: 780.81
External: 981.43
Tangent Direction: N 1°43'24.55" E
Radial Direction: S 88°16'35.45" E
Chord Direction: N 39°00'46.93" E
Radial Direction: S 13°41'50.69" E
Tangent Direction: N 76°18'09.31" E

Element: Linear
FT (346)434+53.731975034.1157625483.0915
PC ()449+55.471976493.1401625838.6935
Tangent Direction: N 76°18'09.32" E
Tangent Length: 1501.73

Element: Circular
PC (347)449+55.471976493.1401625838.6935
PI (350)466+28.631978118.7183624234.8890
CC ()1975686.8730629146.7828
PCC (352)480+65.801978798.2960627763.8264
Radius: 3404.93
Delta: 52°20'18.72" Left
Degree of Curvature(Arc): 1°40'57.84"
Length: 3110.33
Tangent: 1673.16
Chord: 3003.31
Middle Ordinate: 349.02
External: 388.88
Tangent Direction: N 76°18'09.31" E
Radial Direction: S 13°41'50.69" E
Chord Direction: N 50°07'59.95" E
Radial Direction: S 66°02'09.41" E

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SWO 4380(1)

ALIGNMENT REPORT

J/P 24428(04)

Tangent Direction: N 23°57'50.59" E

Element: Circular
PCC (352)480+65.801978798.2960627763.8264
PI (366)510+85.301980024.7080630523.0503
CC ()1965711.8941633580.4331
PT (368)540+17.631980032.6969633542.5435
Radius: 14320.85
Delta: 23°48'44.87" Left
Degree of Curvature(Arc): 0°24'00.31"
Length: 5951.83
Tangent: 3019.50
Chord: 5909.09
Middle Ordinate: 308.09
External: 314.86
Tangent Direction: N 23°57'50.59" E
Radial Direction: S 66°02'09.41" E
Chord Direction: N 12°03'28.16" E
Radial Direction: S 89°50'54.27" E
Tangent Direction: N 0°09'05.73" E

Element: Linear
FT (368)540+17.631980032.6969633542.5435
POE (369)543+00.001980033.4440633824.9174
Tangent Direction: N 0°09'05.73" E
Tangent Length: 282.37

Project Name: SWO_4380_1_V2
Description: US81 Existing Alignments
Horizontal Alignment Name: A002
Description: Exist NB US 81
Style: Existing 100

STATIONEASTINGNORTHING

Element: Circular
PC (372)1107+80.131982783.9067598628.9899
PI (375)1120+29.701982782.4140599878.4680
CC ()1985648.6937598632.3211
PT (376)1131+36.731983697.2355600729.6592
Radius: 2864.79
Delta: 47°07'55.00" Right
Degree of Curvature(Arc): 2°00'00.00"
Length: 2356.60
Tangent: 1249.57
Chord: 2290.71
Middle Ordinate: 238.92
External: 260.66
Tangent Direction: N 0°04'06.40" W
Radial Direction: N 89°55'53.60" E

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SWO 4380(1)

Chord Direction: N 23°29'51.10" E

Radial Direction: S 42°56'11.40" E

Tangent Direction: N 47°03'48.60" E

Element: Linear

PT (376)1131+36.731983697.2355600729.6592

PC (378)1149+12.471984997.2710601939.2709

Tangent Direction: N 47°03'48.61" E

Tangent Length: 1775.74

Element: Circular

PC (378)1149+12.471984997.2710601939.2709

PT (379)1153+72.271985333.8969602252.4828

CC ()1980900.1895597744.5930

PT (382)1158+30.111985716.1640602508.0030

Radius: 5729.58

Delta: 9°10'35.00" Right

Degree of Curvature(Arc): 1°00'00.00"

Length: 917.64

Tangent: 459.80

Chord: 916.66

Middle Ordinate: 18.36

External: 18.42

Tangent Direction: N 47°03'48.61" E

Radial Direction: S 42°56'11.39" E

Chord Direction: N 51°39'06.11" E

Radial Direction: S 33°45'36.39" E

Tangent Direction: N 56°14'23.61" E

Project Name: SWO 4380 I V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A003

Description: Exist_SB US 81

Style: Existing 100

STATION

EASTING

NORTHING

Element: Linear

POB (383)1109+14.731982719.7460598763.4060

TS (384)1117+63.021982718.7326599611.6990

Tangent Direction: N 0°04'06.40" W

Tangent Length: 848.29

Element: Clothoid

TS (384)1117+63.021982718.7326599611.6990

SPI (386)1120+29.721982718.4138599878.6393

SC (388)1121+63.021982736.8467600010.9418

Entrance Radius: 0.00

Exit Radius: 1432.39

SWO 4380(1)

Length: 400.00

Angle: 8°00'00.00" Right

Constant: 756.94

Long Tangent: 266.94

Short Tangent: 133.58

Long Chord: 399.65

Xs: 399.22

Ys: 18.59

Pi: 4.65

Ki: 199.87

Tangent Direction: N 0°04'06.40" W

Radial Direction: N 89°55'53.60" E

Chord Direction: N 2°54'52.02" E

Radial Direction: S 82°04'06.40" E

Tangent Direction: N 7°55'53.60" E

Element: Circular

SC (388)1121+63.021982736.8467600010.9418

ET (389)1126+88.741982809.3905600531.6306

CC ()1984155.5393599813.2806

CS (392)1131+70.731983201.5446600881.7658

Radius: 1432.39

Delta: 40°18'30.01" Right

Degree of Curvature(Arc): 4°00'00.00"

Length: 1007.71

Tangent: 525.72

Chord: 987.06

Middle Ordinate: 87.71

External: 93.43

Tangent Direction: N 7°55'53.60" E

Radial Direction: S 82°04'06.40" E

Chord Direction: N 28°05'09.61" E

Radial Direction: S 41°45'36.39" E

Tangent Direction: N 48°14'23.61" E

Element: Clothoid

CS (392)1131+70.731983201.5446600881.7658

SPI (393)1133+04.031983301.1893600970.7327

ST (394)1135+70.731983523.1142601119.0755

Entrance Radius: 1432.39

Exit Radius: 0.00

Length: 400.00

Angle: 8°00'00.00" Right

Constant: 756.94

Long Tangent: 266.94

Short Tangent: 133.58

Long Chord: 399.65

Xs: 399.22

Ys: 18.59

Pi: 4.65

Ki: 199.87

Tangent Direction: N 48°14'23.61" E

Radial Direction: S 41°45'36.39" E

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PLS	JTB	<div><div>OKLAHOMA DEPARTMENT OF TRANSPORTATION</div><div>SURVEY DIVISION</div><div>SURVEY DATA SHEET</div><div>SDS 7 OF 76</div></div>
DRAWN	JTB	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. 5007

SWO 4380(1)

ALIGNMENT REPORT

I/P 24428(04)

Chord Direction: N 53°34'25.20" E

Radial Direction: S 33°45'36.39" E

Tangent Direction: N 56°14'23.61" E

Element: Linear

ST (394) 1135+70.73 1983523.1142 601119.0755

POE (397) 1174+28.12 1986730.0384 603262.6923

Tangent Direction: N 56°14'23.61" E

Tangent Length: 3857.39

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A004

Description: I-44 H.E. Bailey Tpk.

Style: Existing 100

	STATION	EASTING	NORTHING
Element: Linear			
POB (400)	224+16.63	1974322.9807	601411.6615
PC (404)	270+98.50	1977834.8922	604507.8469
Tangent Direction: N 48°35'59.38" E			
Tangent Length: 4681.87			
Element: Circular			
PC (404)	270+98.50	1977834.8922	604507.8469
PI (406)	282+00.00	1978661.1403	605236.2869
CC ()	1966467.7422	617401.2691	
PT (407)	292+98.50	1979387.6506	606064.2323
Radius: 17188.73			
Delta: 7°20'00.00" Left			
Degree of Curvature(Arc): 0°20'00.00"			
Length: 2200.00			
Tangent: 1101.50			
Chord: 2198.50			
Middle Ordinate: 35.19			
External: 35.26			
Tangent Direction: N 48°35'59.38" E			
Radial Direction: S 41°24'00.62" E			
Chord Direction: N 44°55'59.38" E			
Radial Direction: S 48°44'00.62" E			
Tangent Direction: N 41°15'59.38" E			
Element: Linear			
PT (407)	292+98.50	1979387.6506	606064.2323
POE (410)	336+62.15	1982265.7510	609344.1717
Tangent Direction: N 41°15'59.38" E			
Tangent Length: 4363.65			

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SWO 4380(1)

ALIGNMENT REPORT

I/P 24428(04)

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A005

Description: NorgeRd S.H. 92

Style: Existing 100

	STATION	EASTING	NORTHING
Element: Circular			
PC (423)	162+81.10	1974551.0482	608080.1439
PI (424)	168+44.01	1974634.2886	608636.8678
CC ()	1977384.3431	607656.5147	
PT (427)	173+92.76	1974921.9921	609120.7037
Radius: 2864.79			
Delta: 22°13'59.66" Right			
Degree of Curvature(Arc): 2°00'00.00"			
Length: 1111.66			
Tangent: 562.91			
Chord: 1104.70			
Middle Ordinate: 53.75			
External: 54.78			
Tangent Direction: N 8°30'13.56" E			
Radial Direction: S 81°29'46.44" E			
Chord Direction: N 19°37'13.39" E			
Radial Direction: S 59°15'46.78" E			
Tangent Direction: N 30°44'13.22" E			
Element: Linear			
PT (427)	173+92.76	1974921.9921	609120.7037
PC (429)	179+36.62	1975199.9584	609588.1642
Tangent Direction: N 30°44'13.22" E			
Tangent Length: 543.86			
Element: Circular			
PC (429)	179+36.62	1975199.9584	609588.1642
PI (430)	182+67.67	1975369.1550	609872.7050
CC ()	1972737.6074	611052.3531	
PT (431)	185+95.79	1975468.9980	610188.3351
Radius: 2864.79			
Delta: 13°11'00.00" Left			
Degree of Curvature(Arc): 2°00'00.00"			
Length: 659.17			
Tangent: 331.05			
Chord: 657.71			
Middle Ordinate: 18.94			
External: 19.06			
Tangent Direction: N 30°44'13.22" E			
Radial Direction: S 59°15'46.78" E			
Chord Direction: N 24°08'43.22" E			

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SWO 4380(1)

ALIGNMENT REPORT

I/P 24428(04)

Radial Direction: S 72°26'46.78" E

Tangent Direction: N 17°33'13.22" E

Element: Linear

PT (431) 185+95.79 1975468.9980 610188.3351

POE (432) 205+14.96 1976047.8167 612018.1349

Tangent Direction: N 17°33'13.22" E

Tangent Length: 1919.17

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A006

Description: BNSF Railroad

Style: Existing 100

	STATION	EASTING	NORTHING
Element: Circular			
PC (413)	100+00.00	1974637.4401	608049.3148
PI (415)	105+62.94	1974720.6841	608606.0692
CC ()	1977470.8781	607625.6689	
PT (417)	111+11.72	1975008.4033	609089.9315
Radius: 2864.93			
Delta: 22°14'00.00" Right			
Degree of Curvature(Arc): 1°59'59.64"			
Length: 1111.72			
Tangent: 562.94			
Chord: 1104.76			
Middle Ordinate: 53.76			
External: 54.78			
Tangent Direction: N 8°30'13.22" E			
Radial Direction: S 81°29'46.78" E			
Chord Direction: N 19°37'13.22" E			
Radial Direction: S 59°15'46.78" E			
Tangent Direction: N 30°44'13.22" E			
Element: Linear			
PT (417)	111+11.72	1975008.4033	609089.9315
PC (419)	116+48.25	1975282.6223	609551.0902
Tangent Direction: N 30°44'13.22" E			
Tangent Length: 536.53			
Element: Circular			
PC (419)	116+48.25	1975282.6223	609551.0902
PI (420)	119+79.31	1975451.8275	609835.6453
CC ()	1972820.1476	611015.3527	
PT (421)	123+07.45	1975551.6754	610151.2912
Radius: 2864.93			
Delta: 13°11'00.00" Left			

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SWO 4380(1)

ALIGNMENT REPORT

I/P 24428(04)

Degree of Curvature(Arc): 1°59'59.64"
Length: 659.20
Tangent: 331.06
Chord: 657.75
Middle Ordinate: 18.94
External: 19.06
Tangent Direction: N 30°44'13.22" E
Radial Direction: S 59°15'46.78" E
Chord Direction: N 24°08'43.22" E
Radial Direction: S 72°26'46.78" E
Tangent Direction: N 17°33'13.22" E

Element: Linear
PT (421) 123+07.45 1975551.6754 610151.2912
POE (422) 142+65.97 1976142.3619 612018.6081
Tangent Direction: N 17°33'13.22" E
Tangent Length: 1958.52

Project Name: SWO 4380_1 V2
Description: US81 Existing Alignments

Horizontal Alignment Name: A007

Description: US 62
Style: Existing 100

	STATION	EASTING	NORTHING
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Element: Linear			
POB (451)	385+47.37	1977383.1249	629504.0692
PI (355)	405+43.89	1979087.9771	628465.0413
Tangent Direction: S 58°38'22.71" E			
Tangent Length: 1996.52			

Element: Linear			
PI (355)	405+43.89	1979087.9771	628465.0413
POE (454)	447+48.56	1982678.3889	626276.8528
Tangent Direction: S 58°38'22.71" E			
Tangent Length: 4204.67			

Project Name: SWO 4380_1 V2
Description: US81 Existing Alignments

Horizontal Alignment Name: A008

Description: Old US Hwy 62
Style: Existing 100

	STATION	EASTING	NORTHING
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SWO 4380(1)

ALIGNMENT REPORT

I/P 24428(04)

Element: Linear
POB (455) 100+00.00 1978550.0910 630618.0045
POE (458) 124+00.00 1980896.1336 630111.9570
Tangent Direction: S 77°49'39.53" E
Tangent Length: 2400.00

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A009

Description: Union Pacific Railroad

Style: Existing 100

	STATION	EASTING	NORTHING
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Element: Linear			
POB (459)	100+00.00	1978567.5918	630699.1385
POE (462)	124+00.00	1980913.6344	630193.0910
Tangent Direction: S 77°49'39.53" E			
Tangent Length: 2400.00			

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A010

Description: CR 1405

Style: Existing 100

	STATION	EASTING	NORTHING
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Element: Linear			
POB (370)	100+00.00	1982591.7456	598763.6511
PI (463)	101+31.93	1982723.6760	598763.4050
Tangent Direction: S 89°53'35.30" E			
Tangent Length: 131.93			

Element: Linear			
PI (463)	101+31.93	1982723.6760	598763.4050
POE (371)	103+15.30	1982907.0488	598763.6609
Tangent Direction: N 89°55'12.12" E			
Tangent Length: 183.37			

Project Name: SWO 4380_1 V2

Description: US81 Existing Alignments

Horizontal Alignment Name: A011

Description: CR1400

Style: Existing 100

	STATION	EASTING	NORTHING
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<div><div>SWO 4380(1)</div><div>ALIGNMENT REPORT</div><div>I/P 24428(04)</div></div> <div><div>Element: Linear</div><div>POB (398) 100+00.00 1981439.5820 601412.0549</div><div>PI (464) 112+81.65 1982721.2230 601415.5070</div><div>Tangent Direction: N 89°50'44.43" E</div><div>Tangent Length: 1281.65</div></div> <div><div>Element: Linear</div><div>PI (464) 112+81.65 1982721.2230 601415.5070</div><div>POE (399) 115+87.04 1983026.6137 601416.6165</div><div>Tangent Direction: N 89°47'30.67" E</div><div>Tangent Length: 305.39</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A012</div><div>Description: 16thSt</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (464) 100+00.00 1982721.2230 601415.5070</div><div>POE (465) 126+53.46 1982731.3420 604068.9490</div><div>Tangent Direction: N 0°13'06.60" E</div><div>Tangent Length: 2653.46</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A013</div><div>Description: Country Club Rd</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (466) 100+00.00 1972152.1270 611997.4360</div><div>POE (467) 126+19.75 1974771.8420 612011.7490</div><div>Tangent Direction: N 89°41'13.07" E</div><div>Tangent Length: 2619.75</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A014</div><div>Description: Grand Ave</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>11</div></div>	<div><div>SWO 4380(1)</div><div>ALIGNMENT REPORT</div><div>I/P 24428(04)</div></div> <div><div>Element: Linear</div><div>POB (433) 100+00.00 1970029.5777 617309.4145</div><div>PI (468) 121+24.83 1972154.4060 617312.2990</div><div>Tangent Direction: N 89°55'19.99" E</div><div>Tangent Length: 2124.83</div></div> <div><div>Element: Linear</div><div>PI (468) 121+24.83 1972154.4060 617312.2990</div><div>POE (434) 130+53.40 1973082.9725 617310.3684</div><div>Tangent Direction: S 89°52'51.14" E</div><div>Tangent Length: 928.57</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A015</div><div>Description: Idaho Ave</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (435) 100+00.00 1971053.5069 622589.7015</div><div>PI (469) 111+00.01 1972153.5150 622587.5440</div><div>Tangent Direction: S 89°53'15.44" E</div><div>Tangent Length: 1100.01</div></div> <div><div>Element: Linear</div><div>PI (469) 111+00.01 1972153.5150 622587.5440</div><div>POE (436) 122+00.01 1973253.5119 622590.1401</div><div>Tangent Direction: N 89°51'53.20" E</div><div>Tangent Length: 1100.00</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A016</div><div>Description: Iowa Ave</div><div>Style: proposed 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (439) 100+00.00 1972401.2398 625238.7968</div><div>PC (440) 101+15.64 1972411.4002 625123.6043</div><div>Tangent Direction: S 5°02'26.40" E</div><div>Tangent Length: 115.64</div></div> <div><div>12</div></div>	<div><div>SWO 4380(1)</div><div>ALIGNMENT REPORT</div><div>I/P 24428(04)</div></div> <div><div>Element: Circular</div><div>PC (440) 101+15.64 1972411.4002 625123.6043</div><div>PI (441) 102+46.58 1972422.9049 624993.1717</div><div>CC () 1972747.1308 625153.2170</div><div>PT (442) 103+65.42 1972519.4484 624904.7162</div><div>Radius: 337.03</div><div>Delta: 42°27'45.65" Left</div><div>Degree of Curvature(Arc): 16°59'59.99"</div><div>Length: 249.78</div><div>Tangent: 130.94</div><div>Chord: 244.10</div><div>Middle Ordinate: 22.88</div><div>External: 24.54</div><div>Tangent Direction: S 5°02'26.40" E</div><div>Radial Direction: S 84°57'33.60" W</div><div>Chord Direction: S 26°16'19.22" E</div><div>Radial Direction: S 42°29'47.95" W</div><div>Tangent Direction: S 47°30'12.05" E</div></div> <div><div>Element: Linear</div><div>PT (442) 103+65.42 1972519.4484 624904.7162</div><div>PI (341) 111+82.99 1973122.2599 624352.4060</div><div>Tangent Direction: S 47°30'12.05" E</div><div>Tangent Length: 817.57</div></div> <div><div>Element: Linear</div><div>PI (341) 111+82.99 1973122.2599 624352.4060</div><div>PC (443) 116+27.03 1973449.6530 624052.4406</div><div>Tangent Direction: S 47°30'12.02" E</div><div>Tangent Length: 444.03</div></div> <div><div>Element: Circular</div><div>PC (443) 116+27.03 1973449.6530 624052.4406</div><div>PI (444) 118+30.03 1973599.3274 623915.3053</div><div>CC () 1973801.5258 624436.4873</div><div>PT (445) 120+14.16 1973802.3261 623915.6172</div><div>Radius: 520.87</div><div>Delta: 42°35'04.90" Left</div><div>Degree of Curvature(Arc): 11°00'00.00"</div><div>Length: 387.13</div><div>Tangent: 203.00</div><div>Chord: 378.28</div><div>Middle Ordinate: 35.55</div><div>External: 38.16</div><div>Tangent Direction: S 47°30'12.02" E</div><div>Radial Direction: S 42°29'47.95" W</div><div>Chord Direction: S 68°47'44.49" E</div><div>Radial Direction: S 0°05'16.92" E</div><div>Tangent Direction: N 89°54'43.08" E</div></div> <div><div>Element: Linear</div><div>PT (445) 120+14.16 1973802.3261 623915.6172</div><div>POE (446) 129+71.43 1974759.5890 623917.0880</div></div> <div><div>13</div></div>
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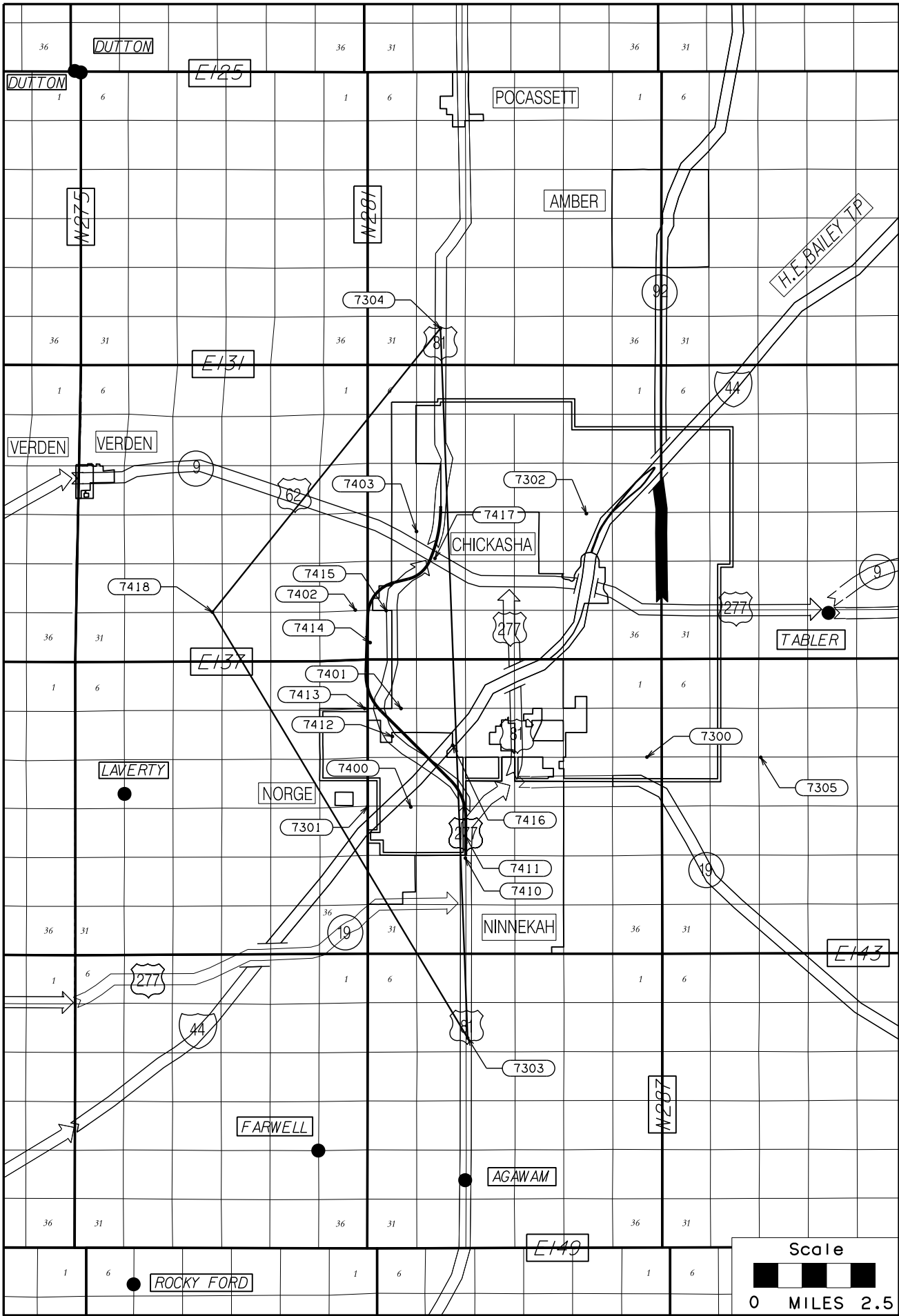
<div><div>SWO 4380(1)</div><div>ALIGNMENT REPORT</div><div>I/P 24428(04)</div></div> <div><div>Tangent Direction: N 89°54'43.08" E</div><div>Tangent Length: 957.26</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A017</div><div>Description: CR 1355</div><div>Style: Default</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (437) 100+00.00 1972102.8245 625238.6000</div><div>PI (470) 100+47.28 1972150.1025 625238.6185</div><div>Tangent Direction: N 89°58'39.45" E</div><div>Tangent Length: 47.28</div></div> <div><div>Element: Linear</div><div>PI (470) 100+47.28 1972150.1025 625238.6185</div><div>POE (438) 105+98.10 1972700.9205 625239.0095</div><div>Tangent Direction: N 89°57'33.60" E</div><div>Tangent Length: 550.82</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A018</div><div>Description: CS 2815 Rd.</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (447) 100+00.00 1974761.0641 623620.2837</div><div>PI (471) 116+20.20 1974753.0120 625240.4660</div><div>Tangent Direction: N 0°17'05.10" W</div><div>Tangent Length: 1620.20</div></div> <div><div>Element: Linear</div><div>PI (471) 116+20.20 1974753.0120 625240.4660</div><div>POE (448) 127+55.13 1974747.3442 626375.3838</div><div>Tangent Direction: N 0°17'10.07" W</div><div>Tangent Length: 1134.93</div></div> <div><div>Project Name: SWO_4380_1_V2</div><div>14</div></div>	<div><div>SWO 4380(1)</div><div>ALIGNMENT REPORT</div><div>I/P 24428(04)</div></div> <div><div>Description: US81 Existing Alignments</div><div>Horizontal Alignment Name: A019</div><div>Description: 29thSt</div><div>Style: Existing 100</div><div>STATION EASTING NORTHING</div></div> <div><div>Element: Linear</div><div>POB (449) 100+00.00 1977388.4353 625492.1445</div><div>POE (450) 113+99.84 1977382.5628 626891.9712</div><div>Tangent Direction: N 0°14'25.31" W</div><div>Tangent Length: 1399.84</div></div> <div><div>15</div></div>
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COORDINATE POINT LIST						COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)						SWO 4380(1)						SWO 4380(1)					
J/P 24428(04)						J/P 24428(04)						J/P 24428(04)					
PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING
Benchmarks																	
1	1978841.1480	605699.6310	25	1972251.2150	618111.7170	51	1980107.6360	631461.5060	75	1972111.6950	631702.9640	212	1982636.1500	599729.5560	309	1982747.6623	602181.9456
	(ADS BM #1)	Elev =1249.875		(ADS BM #25)	Elev = 1130.790		(ADS BM #51)	Elev = 1093.457		(ADS BM #75)	Elev = 1104.405		(ODOT BM #12)	Elev =1203.978	310	1982724.2356	602205.4728
2	1978218.0860	606288.1870	26	1972275.2520	618895.2520	52	1980183.0320	632266.7050	76	1979893.3290	606400.9110	213	1982564.9500	600130.2130	311	1981080.9973	603855.7622
	(ADS BM #2)	Elev = 1230.502		(ADS BM #26)	Elev = 1140.167		(ADS BM #52)	Elev = 1093.257		(ADS BM #76)	Elev = 1245.169		(ODOT BM #13)	Elev =1197.379	312	1980872.2330	604065.4223
3	1977757.4090	606842.7990	27	1972428.6430	619096.9680	53	1980234.8240	633073.1720	77	1980463.1810	606985.8320	215	1981679.1000	602601.4050	313	1980087.2029	604853.8210
	(ADS BM #3)	Elev = 1192.676		(ADS BM #27)	Elev = 1136.503		(ADS BM #53)	Elev = 1093.105		(ADS BM #77)	Elev = 1227.466		(ODOT BM #15)	Elev =1186.551	314	1979150.7670	605794.2751
4	1977183.0180	607419.8540	28	1972425.1570	619652.2330	54	1980254.9160	633823.3880	78	1980932.5840	607545.2410	216	1981051.4160	602509.8200	315	1979148.1169	605796.9365
	(ADS BM #4)	Elev = 1216.539		(ADS BM #28)	Elev = 1147.990		(ADS BM #54)	Elev = 1095.190		(ADS BM #78)	Elev = 1214.739		(ODOT BM #16)	Elev =1190.800	316	1978230.2833	606718.7086
5	1976681.0070	607967.3760	29	1972388.1950	620455.3600	55	1980169.3000	628661.8070	79	1981433.7120	608180.7580	217	1980086.6950	603656.2010	317	1977420.3831	607532.0840
	(ADS BM #5)	Elev = 1227.592		(ADS BM #29)	Elev = 1165.094		(ADS BM #55)	Elev = 1094.837		(ADS BM #79)	Elev = 1206.275		(ODOT BM #17)	Elev =1237.332	318	1975593.1950	609367.1125
6	1976078.9750	608496.4700	30	1972437.4420	621224.4710	56	1980578.4370	627882.9710	80	1981956.0260	608775.4940	218	1978770.7790	604048.1160	319	1975330.2498	609631.1860
	(ADS BM #6)	Elev = 1220.147		(ADS BM #30)	Elev = 1174.829		(ADS BM #56)	Elev = 1099.674		(ADS BM #80)	Elev = 1197.701		(ODOT BM #18)	Elev =1249.759	320	1975329.1362	609632.3044
7	1975565.3010	609084.4550	31	1972437.1030	622004.1350	57	1981009.4350	627027.9370	81	1982471.9980	609367.1330	219	1978137.7440	604511.3410	321	1975264.6910	609697.0261
	(ADS BM #7)	Elev = 1215.394		(ADS BM #31)	Elev = 1172.374		(ADS BM #57)	Elev = 1095.914		(ADS BM #81)	Elev = 1193.642		(ODOT BM #19)	Elev =1252.530	322	1975262.6271	609699.0989
8	1974825.0230	608973.8620	32	1974154.9710	622550.0650	58	1981635.7080	626420.1070	82	1977512.7310	603967.7060	220	1978777.8360	605299.4730	323	1974773.9107	610189.9123
	(ADS BM #8)	Elev = 1231.759		(ADS BM #32)	Elev = 1176.658		(ADS BM #58)	Elev = 1098.971		(ADS BM #82)	Elev = 1244.102		(ODOT BM #20)	Elev =1254.773	324	1973597.9198	611370.9495
9	1974807.0600	610461.3240	33	1972481.4690	622709.1440	59	1982271.678	626193.4960	83	1976879.2060	603503.3060	224	1974440.3040	611460.6790	325	1973054.6458	612002.3670
	(ADS BM #9)	Elev = 1238.809		(ADS BM #33)	Elev = 1177.052		(ADS BM #59)	Elev = 1109.351		(ADS BM #83)	Elev = 1234.238		(ODOT BM #24)	Elev =1228.750	326	1972969.6624	612001.9027
10	1974204.2510	611069.8640	34	1972770.4470	623405.1760	60	1978294.7840	628662.1560	84	1976290.2350	602964.5200	225	1974700.5050	611966.5420	327	1972152.4808	612822.5907
	(ADS BM #10)	Elev = 1235.990		(ADS BM #34)	Elev = 1174.280		(ADS BM #60)	Elev = 1100.249		(ADS BM #84)	Elev = 1255.501		(ODOT BM #25)	Elev =1215.642	328	1971856.8057	613119.5346
11	1982716.9260	600843.5790	35	1973202.0670	623931.5060	61	1977886.3850	629526.8930	85	1975760.1550	602415.2950	226	1974773.2270	613349.3770	329	1972152.9109	613825.6164
	(ADS BM #11)	Elev = 1183.356		(ADS BM #35)	Elev = 1169.992		(ADS BM #61)	Elev = 1100.041		(ADS BM #85)	Elev = 1277.055		(ODOT BM #26)	Elev =1201.620	330	1971978.8697	614655.0982
12	1982193.9250	601441.3300	36	1973701.0720	624525.6350	62	1976968.7150	629469.4640	86	1983333.3360	600150.9120	227	1975305.2680	614687.6410	331	1971903.0132	614655.1986
	(ADS BM #12)	Elev = 1191.811		(ADS BM #36)	Elev = 1162.428		(ADS BM #62)	Elev = 1101.307		(ADS BM #86)	Elev = 1196.021		(ODOT BM #27)	Elev =1190.096	332	1971931.0210	615586.0139
13	1981658.9650	602191.9150	37	1974344.1450	624945.9720	63	1976306.7050	629896.9480	87	1983913.4650	600799.2070	228	1974935.4320	616148.8610	333	1971982.9572	617312.0663
	(ADS BM #13)	Elev = 1173.321		(ADS BM #37)	Elev = 1158.537		(ADS BM #63)	Elev = 1100.413		(ADS BM #87)	Elev = 1182.701		(ODOT BM #28)	Elev =1177.127	334	1972062.3300	619949.9492
14	1973628.5160	611660.2010	39	1975134.7890	625310.7540	64	1975861.7200	630667.0870	88	1984410.2850	601262.7180	230	1975434.9870	619297.1650	335	1972120.6116	621886.8868
	(ADS BM #14)	Elev = 1220.248		(ADS BM #39)	Elev = 1162.218		(ADS BM #64)	Elev = 1101.952		(ADS BM #88)	Elev = 1179.523		(ODOT BM #30)	Elev =1147.591	336	1972153.5660	622285.5724
15	1971835.6870	611990.4310	40	1975870.2120	625466.1970	65	1975247.5890	631261.3150	89	1984594.8020	601811.1580	232	1974739.2790	622569.6650	337	1972206.9885	622587.6702
	(ADS BM #15)	Elev = 1147.737		(ADS BM #40)	Elev = 1139.756		(ADS BM #65)	Elev = 1100.017		(ADS BM #89)	Elev = 1180.333		(ODOT BM #32)	Elev =1160.591	338	1972141.6948	622587.5672
16	1972730.2480	612135.3450	41	1976285.5930	626156.6140	66	1974445.1560	631403.2850	90	1975596.5090	610387.6980	233	1974729.2520	625209.2460	339	1972153.0301	622964.2851
	(ADS BM #16)	Elev = 1176.360		(ADS BM #41)	Elev = 1108.412		(ADS BM #66)	Elev = 1101.242		(ADS BM #90)	Elev = 1223.403		(ODOT BM #33)	Elev =1160.779	340	1972208.0949	624794.3170
17	1972748.8400	612790.0870	42	1977282.3320	625847.0560	67	1973712.3230	631708.4000	91	1971203.6930	617524.4430	234	1976072.7260	625241.2960	341	1973122.2599	624352.4060
	(ADS BM #17)	Elev = 1175.535		(ADS BM #42)	Elev = 1101.558		(ADS BM #67)	Elev = 1101.569		(ADS BM #91)	Elev = 1150.322		(ODOT BM #34)	Elev =1142.453	342	1974337.9528	625240.1714
18	1972456.9750	613496.7430	43	1978078.9390	626338.0440	68	1971445.0770	622806.5960	92	1970441.0940	617097.3300	235	1977363.7580	625364.5710	343	1974036.5443	625239.9575
	(ADS BM #18)	Elev = 1149.767		(ADS BM #43)	Elev = 1098.982		(ADS BM #68)	Elev = 1187.035		(ADS BM #92)	Elev = 1183.564		(ODOT BM #35)	Elev =1105.834	344	1974752.2013	625402.8053
19	1972262.6480	614239.5260	44	1978684.6660	626957.2040	69	1972745.2320	625040.2230	99	1981331.6670	608023.6740	237	1979079.3070	628476.7410	345	1974752.1435	625414.3675
	(ADS BM #19)	Elev = 1138.639		(ADS BM #44)	Elev = 1098.804		(ADS BM #69)	Elev = 1164.725		(ADS BM #99)	Elev = 1206.350		(ODOT BM #37)	Elev =1103.300	346	1975034.1157	625483.0915
20	1972118.1330	614995.4590	45	1979064.8430	627665.4310	70	1973860.7150	624134.8490	207	1982694.3780	595847.9470				347	1976493.1401	625838.6935
	(ADS BM #20)	Elev = 1135.884		(ADS BM #45)	Elev = 1093.716		(ADS BM #70)	Elev = 1160.787		(ODOT BM #7)	Elev =1182.382		Centerline		348	1977385.4833	626195.8093
21	1972099.3890	615774.2160	47	1979412.9510	628178.1720	71	1974590.2650	624135.4590	208	1982685.2120	596138.1950	300	1982754.9150	596110.5945	349	1977386.0685	626056.3233
	(ADS BM #21)	Elev = 1143.252		(ADS BM #47)	Elev = 1100.454		(ADS BM #71)	Elev = 1154.605		(ODOT BM #8)	Elev =1185.019	301	1982751.7460	598763.4442	350</		

COORDINATE POINT LIST						COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)			J/P 24428(04)			SWO 4380(1)			J/P 24428(04)			SWO 4380(1)			J/P 24428(04)		
PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING
7622	1975123.1416	601425.5522	7671	1977407.5625	603864.4748	7723	1974548.7836	607118.2321	7772	1970574.4069	617777.5532	7823	1980038.4430	625234.9380	7872	1981661.3088	629143.1796
7623	1975123.2525	601459.0520	7672	1977407.5207	603897.7665	7724	1974689.5096	608059.4392	7773	1970624.4069	617777.6221	7824	1980241.6040	627710.7130	7873	1980241.6040	629141.7299
7624	1977394.1282	601418.0348	7673	1977424.0443	603879.0055	7725	1974590.6090	608074.2265	7774	1970624.4382	617360.2221	7825	1982421.7373	626257.6077	7874	1980240.5068	630161.3075
7625	1977427.1283	601418.0227	7674	1977392.4385	604384.3970	7726	1974511.4885	608086.0563	7775	1970833.1380	617360.5054	7826	1982078.1015	626257.9435	7875	1980190.4952	630172.0951
7626	1980067.7933	601391.8600	7675	1977425.5998	604413.6327	7727	1975042.3265	609049.1520	7776	1970833.1405	617327.0054	7827	1982094.1334	626207.9278	7876	1981661.7618	627924.6797
7627	1980067.8557	601424.8603	7676	1977702.6294	604657.8687	7728	1974956.3742	609100.2618	7778	1972137.9032	617328.7766	7828	1982228.1334	626207.7969	7877	1980641.7651	627927.2614
7628	1981394.5384	601395.4336	7677	1977834.8952	604507.8494	7729	1974887.6124	609141.1497	7779	1972170.9032	617328.7647	7829	1982228.2451	626032.7970	7878	1980242.4542	628351.7415
7629	1981394.4940	601411.9335	7678	1977967.1551	604357.8251	7730	1975320.2915	609516.6104	7780	1974771.7874	617323.3571	7830	1982288.2452	626032.7383	7879	1980241.7116	629041.7300
7630	1981394.5708	601428.4338	7679	1978598.3906	604942.7259	7731	1975234.3393	609567.7203	7781	1972137.4605	619949.9265	7831	1982288.1334	626207.7382	7880	1981661.4109	629043.1797
7631	1981395.0761	601536.9321	7680	1978681.1403	605236.2889	7732	1975165.5775	609608.6081	7782	1972170.4605	619949.8948	7832	1982407.6791	626207.6214	7881	1982627.6752	628653.8348
7632	1981750.0748	601537.8883	7681	1978426.4004	605334.4783	7733	1975602.4788	610146.1112	7783	1969511.9765	622576.2250	7833	1982638.2228	626067.1157	7882	1982200.9614	629474.7264
7633	1984570.9434	601405.7256	7682	1979218.2206	605541.1135	7734	1975507.1353	610176.2711	7784	1972137.0178	622571.0763	7834	1982638.2450	626032.3662	7883	1981802.7007	629754.0603
7634	1985361.0400	601408.5971	7683	1979199.9154	605558.1405	7735	1975430.8606	610200.3991	7785	1972170.0178	622571.0829	7835	1982678.2766	626452.5835	7884	1981300.3821	629973.6096
7635	1984606.2495	601438.8552	7684	1979388.8547	605727.2448	7736	1977400.7540	609370.7399	7786	1974766.1836	622577.2100	7836	1981861.0755	626560.6295	7885	1981291.9479	629934.5089
7636	1985361.0242	601441.5972	7685	1979109.4975	606052.1296	7737	1977433.7540	609370.7870	7787	1969511.9657	622609.2251	7837	1981804.8385	627002.4696	7886	1980190.4919	630175.1649
7637	1985065.3897	601866.0600	7686	1979387.6481	606064.2294	7738	1972135.0600	609360.2095	7788	1972136.9937	622604.0764	7838	1980417.2330	627848.1504	7887	1980034.8867	630208.7293
7638	1985362.2304	602123.5226	7687	1979556.7719	605915.8308	7739	1972168.0600	609360.2025	7789	1972169.9937	622604.0829	7839	1980448.4581	627899.3851	7888	1980034.9010	630195.4272
7639	1981865.9992	601651.7825	7688	1979623.7192	605992.1253	7740	1969512.4938	611993.7083	7790	1974766.0840	622610.2099	7840	1980192.7732	628055.2131	7889	1978632.0257	630498.0311
7639a	1981868.0676	601885.9119	7689	1979604.9279	606008.6143	7741	1969512.4860	612026.7087	7791	1972133.6025	625238.6121	7841	1980153.7449	627991.1678	7890	1978643.2009	630549.8395
7640	1981620.0739	602739.6886	7690	1974777.8646	606698.9560	7742	1972135.6235	611981.0157	7792	1972166.6025	625238.6302	7842	1979536.6234	628367.2746	7891	1977403.4349	630817.2603
7640a	1981746.8205	602459.7544	7691	1974777.8373	606731.9560	7743	1972135.6341	612014.0160	7793	1969508.4251	627865.9449	7843	1979577.7642	628642.9492	7892	1977386.9449	630820.8172
7641	1981862.6842	602740.2456	7692	1977405.1772	606701.6762	7744	1972168.6235	611981.0259	7794	1972130.2113	627873.1477	7844	1979540.7539	628893.7160	7893	1982678.1077	629761.3396
7641a	1982405.6766	602232.3974	7693	1977405.2402	606734.6763	7745	1972168.6341	612014.0264	7795	1972163.2113	627873.1800	7845	1979529.2522	629012.4891	7894	1977387.1760	630902.6073
7642	1982673.0909	601905.4178	7694	1977438.1779	606701.7038	7746	1974438.9295	611993.4299	7796	1974739.7790	627871.1520	7846	1979585.3834	629392.4060	7895	1982678.1476	629863.6309
7642a	1982519.5262	602119.8596	7695	1977438.2402	606734.7039	7747	1974438.9713	611985.0828	7797	1976059.1688	627870.1619	7847	1979832.7571	630239.0302	7896	1977387.4648	631004.8449
7643	1982673.7385	602075.1165	7696	1979108.6348	606702.7682	7748	1974647.6687	611986.1272	7798	1976059.2079	627861.6619	7848	1979461.3004	630319.1544	7897	1982661.6490	629867.1897
7644	1982693.7384	602075.1624	7697	1979108.6132	606719.2682	7749	1974697.6681	611986.3775	7799	1977353.4986	627860.6907	7849	1979292.6424	629670.8935	7898	1982661.9040	630520.1414
7645	1982131.2046	602424.1783	7698	1979763.2404	606719.6853	7750	1974771.8428	612028.2493	7800	1977364.4867	625241.4657	7850	1979102.4758	629222.8892	7899	1982663.9412	633151.6318
7646	1983765.3543	606656.4483	7699	1979777.7270	606736.1945	7751	1974771.8437	612044.7494	7801	1977405.9867	625241.5445	7851	1978818.8318	628804.7351	7900	1980176.3602	633150.5439
7649	1982696.2820	602742.1598	7700	1980214.6565	606703.4729	7752	1975997.8757	611992.8847	7802	1977394.9635	627869.1291	7852	1977383.6374	629679.4192	7901	1979884.6255	630466.2009
7650	1982701.3416	604068.8921	7701	1980229.1432	606719.9822	7753	1976005.7966	612017.9246	7803	1977394.9422	627902.1292	7853	1977382.6123	629328.7193	7902	1979890.8552	630494.6895
7852a	1977400.1082	629669.3810	7702	1980758.6128	606720.3195	7754	1976089.8368	612018.3452	7804	1977513.1467	625241.1701	7854	1978602.0827	628585.5090	7903	1979897.0276	630523.1906
7653	1982747.8423	604069.0032	7703	1980758.4455	606736.8194	7755	1976016.2521	612050.9774	7805	1977841.1457	625240.3606	7855	1982626.2574	626483.0679	7904	1980034.5485	630523.0395

COORDINATE POINT LIST						COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)			J/P 24428(04)			SWO 4380(1)			J/P 24428(04)			SWO 4380(1)			J/P 24428(04)		
PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING
8267	1973166.1029	622225.9331	8316	1976063.6634	626891.9737	8365	1981703.9928	624932.7104	8414	1980680.1995	627318.9937	8463	1977384.0235	629811.4886	8512	1982634.1226	596773.8904
8268	1973166.0415	622589.9336	8317	1977256.5643	626891.5821	8366	1981685.4828	624932.7285	8415	1980594.8084	627371.0356	8464	1977384.6227	630016.4812	8513	1982654.1226	596773.8635
8269	1973396.0898	622590.4765	8318	1977256.4848	626910.5414	8367	1981685.9546	624332.7287	8416	1980454.2953	627140.4796	8465	1977417.6228	630016.4449	8514	1982633.3303	597437.1190
8270	1973396.4781	622226.4768	8319	1977357.4848	626910.5080	8368	1980751.1650	624333.6423	8417	1980358.4958	627175.4433	8466	1977434.6228	630016.4262	8515	1982883.3184	597447.1996
8271	1973446.8751	621929.8987	8320	1977356.1798	627221.5623	8369	1980750.8309	624758.6422	8418	1980509.4173	627423.0775	8467	1977714.8857	630106.1183	8516	1982714.9755	597436.9952
8272	1973626.5174	622227.0197	8321	1978770.3612	605685.3443	8370	1980523.4310	624758.8645	8419	1980411.2176	627482.9256	8468	1977715.5872	630346.1172	8517	1982883.3304	597437.1996
8273	1973626.1292	622591.0195	8322	1976059.0930	627886.6620	8371	1982710.9210	608919.9761	8420	1980329.5118	627348.8616	8469	1977418.5874	630346.4435	8518	1982854.9141	596110.7323
8274	1974106.1678	622592.1524	8323	1977920.1353	625240.1657	8372	1982677.9695	626933.5092	8421	1980240.8324	627203.3552	8470	1980191.3502	629377.7675	8519	1982874.9149	596110.7599
8275	1974106.8736	621930.7974	8324	1977933.4184	626562.2322	8373	1982177.6860	626943.9940	8422	1980037.6437	627249.4831	8471	1977996.9660	630525.2779	8520	1981927.9269	598101.5394
8276	1973446.1697	622590.5947	8325	1977948.6321	627884.1963	8374	1981861.0755	626950.6295	8423	1980244.1207	627400.9035	8472	1978710.3494	630524.4942	8521	1981927.9438	598111.5394
8277	1973439.5757	623915.0599	8326	1978713.7429	625238.2072	8375	1982708.9901	609205.2196	8424	1980141.0536	627463.7181	8473	1978628.4824	630524.5842	8522	1982724.3159	598110.1925
8278	1974759.5890	623917.0880	8327	1978710.8361	626560.2493	8376	1982092.4661	609374.1164	8425	1980325.8265	627534.9675	8474	1978628.5304	630541.5941	8523	1981398.1359	598700.8775
8279	1975001.6888	623917.4199	8328	1978707.9295	627882.2314	8377	1980096.2470	607099.1862	8426	1980171.9194	627534.1518	8475	1977999.6901	630677.1681	8524	1981398.0649	598730.8773
8280	1974763.5236	623125.4006	8329	1979446.5248	625236.9888	8378	1978776.1934	606702.5564	8427	1980216.7820	627601.4250	8476	1979056.1671	630644.9015	8525	1981398.0175	598750.8774
8281	1975089.0188	623917.5397	8330	1979570.1006	625564.3733	8379	1978776.1953	606735.5564	8428	1980037.4746	627675.5721	8477	1979696.8549	629773.9118	8526	1981398.0057	598755.8799
8282	1974999.4524	624367.4144	8331	1979817.6801	625619.3497	8380	1977595.6114	606701.8042	8429	1979702.6085	627879.6574	8478	1979583.3193	629378.4354	8527	1981397.9556	598785.8775
8283	1974757.3526	624367.0824	8332	19779906.4016	625576.8627	8381	1977596.3442	606734.8046	8430	1981310.9247	630022.4855	8479	1983358.0651	596872.2079	8528	1981448.1358	598700.7843
8284	1973432.9816	625239.5291	8333	1979982.8154	625580.8930	8382	1977436.0111	608044.4954	8431	1980192.9635	627878.3972	8480	1983558.0649	596872.4835	8529	1981448.0174	598750.7842
8285	1973426.3870	626564.1082	8334	1980038.3210	625542.4280	8383	1974505.1080	608043.3819	8432	1981586.9801	627135.2441	8481	1980190.9253	629773.3672	8530	1982631.7875	598728.5763
8286	1972148.3963	626564.1557	8335	1980038.2787	625648.9580	8384	1974585.5731	608040.5451	8433	1981583.6435	627874.8773	8482	1980140.9252	629773.4239	8531	1982651.7637	598748.5391
8287	1976857.4237	603412.7890	8336	1980190.8479	625600.7640	8385	1974568.9670	608371.6778	8434	1981860.8726	627874.1756	8483	1979755.2737	629973.8473	8532	1982693.6761	598763.4610
8288	1977391.6278	603413.3455	8337	1980097.7087	606570.1968	8386	1974651.5871	608371.6926	8435	1981910.9725	627874.0488	8484	1980140.4813	630185.9523	8533	1982713.6289	598753.4238
8289	1977050.6659	604083.0985	8338	1980038.2058	624665.6480	8387	1974775.8930	608444.2109	8436	1982177.3716	627873.3745	8485	1980190.3961	630264.1865	8534	1982723.6575	598783.4050
8290	1973431.5129	625534.5254	8339	1980438.2057	624665.2570	8388	1974674.5631	608702.8871	8437	1981911.0513	627641.0488	8486	1979619.0047	630523.4960	8535	1982871.7459	598763.6117
8291	1973726.5129	625534.7348	8340	1980437.8932	623915.2571	8389	1982094.2452	626032.9279	8438	1982627.3818	627902.2356	8487	1979884.6255	630466.2009	8536	1982917.0595	598763.6749
8292	1973727.9815	625239.7385	8341	1981829.9724	623913.7304	8390	1975021.2944	609365.9649	8439	1982327.3820	627902.9949	8488	1979897.0276	630523.1906	8537	1982927.0733	598763.6889
8293	1977409.0191	604399.0112	8342	1982709.9081	625116.4274	8391	1975114.4806	609366.1519	8440	1982327.4999	628202.9949	8489	1974967.8437	612045.7304	8538	1981397.1364	599407.3915
8294	1977543.0744	604517.2012	8343	1982067.6888	625115.4933	8392	1975230.9632	609366.3856	8441	1982627.4989	628202.2356	8490	1981838.1401	629790.2761	8539	1981397.0968	599437.3915
8295	1978489.5602	605397.4030	8344	1982067.5035	625360.4932	8393	1982177.4504	627640.3746	8442	1982327.6300	628537.9963	8491	1981831.4118	629794.9952	8540	1981397.0705	599457.3915
8296	1975399.4425	627887.1570	8345	1982712.3340	608711.2309	8394	1976110.3147	612348.3342	8443	1982627.6290	628537.2369	8492	1982679.4290	631844.1370	8541	1982022.5165	599436.9382
8297	1975402.6146	627225.5473	8346	1982078.1091	626246.0735	8395	1982077.9679	626467.1191	8444	1978283.9710	627883.3285	8493	1980078.3077	631844.9952	8542	1982022.4722	599470.1692
8298	1976062.1321	627225.2392	8347	1982042.5851	626236.8851	8396	1981173.8535	626783.9182	8445	1978334.9308	628748.3256	8494	1978711.5591	631845.4491	8543	1982598.1958	599466.8309
8299	1976071.2494	625240.9706	8348	1981959.0121	626209.3252	8397	1981205.0786	626835.1528	8446	1977870.7447	629031.2253	8495	1977389.8405	631845.8880	8544	1982723.0350	

COORDINATE POINT LIST						COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)						SWO 4380(1)						SWO 4380(1)					
J/P 24428(04)						J/P 24428(04)						J/P 24428(04)					
PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING	PT NO.	EASTING	NORTHING
8855	1972946.2158	622324.4037	8904	1976069.7783	624006.7792	8953	1979997.3944	627878.2168	8003a	1982382.1366	626202.6463	8055a	1982695.7100	602592.1602	8104a	1978712.7538	633149.9039
8856	1972173.8464	626214.4647	8905	1976079.6571	624006.8206	8954	1979998.4431	625235.0367	8004a	1979321.7650	628980.1987	8056a	1982695.5575	602552.1598	8105a	1979070.8322	633150.0605
8857	1972173.3963	626564.1542	8906	1977364.3639	625266.4698	8955	1980037.3671	627903.7910	8005a	1979321.7903	628990.1986	8057a	1984048.5145	604073.2745	8106a	1981356.1065	633184.0599
8858	1972213.3963	626564.1532	8907	1976096.1348	625265.9802	8956	1980313.6476	627868.0918	8006a	1980191.7622	628977.9966	8058a	1977529.9725	603972.3944	8107a	1982754.9755	597437.0216
8859	1972213.8353	626223.9610	8908	1976063.8308	626855.5323	8957	1980313.6476	627878.0918	8007a	1980191.7875	628987.9966	8059a	1977425.4682	602742.6925	8108a	1978760.2968	596114.9403
8860	1972791.5734	625229.0738	8909	1976053.5059	627856.7448	8958	1980422.4349	627856.6858	8008a	1977999.9837	630688.5832	8060a	1977392.4682	602742.7404	8109a	1978756.6723	597439.2957
8861	1972791.6046	625219.1137	8910	1976063.5058	627856.7868	8959	1978710.4343	630617.1771	8009a	1978001.3053	630770.1380	8061a	1977431.0277	605401.0337	8110a	1977431.4320	597437.6265
8862	1972791.7300	625179.0739	8911	1976084.2082	627861.6431	8960	1980436.0462	627836.7034	8010a	1977387.4424	630994.6198	8062a	1977434.6483	606059.6525	8111a	1977428.0000	598097.4652
8863	1972721.9229	625122.4154	8912	1977385.4382	626206.5638	8961	1980672.4361	627855.9575	8012a	1978710.3593	630535.3533	8063a	1982716.8235	608048.0116	8112a	1977436.0370	598758.8922
8864	1978666.4840	605009.3916	8913	1977385.3335	626231.5092	8962	1981643.6433	627864.7254	8013a	1978634.7903	630510.7337	8064a	1974446.2909	606716.4052	8113a	1978753.0480	598763.6171
8865	1973433.0242	625179.5303	8914	1977400.1765	626982.7610	8963	1981677.5111	627874.6397	8014a	1978632.0257	630498.0311	8065a	1974339.5450	606716.7108	8114a	1978749.4337	600084.3001
8866	1973433.4110	625153.2915	8915	1977383.6572	626986.1820	8964	1981645.3168	627874.5146	8015a	1979067.8906	630642.3727	8066a	1974253.5692	606716.9569	8115a	1977452.0936	600080.3165
8867	1973475.9992	625179.5561	8916	1982756.2750	596110.5964	8965	1981643.6433	627874.7023	8016a	1979075.7034	633166.5605	8067a	1974251.5496	608052.3210	8116a	1978745.8194	601404.9371
8868	1974071.2072	624587.8098	8917	1977383.6110	626966.8034	8966	1982677.3798	627897.1090	8017a	1979491.5489	630523.4443	8068a	1974251.1871	608371.6208	8117a	1977468.1488	601401.6289
8869	1974095.3331	624631.6031	8918	1978011.5320	629287.4736	8967	1982627.3702	627872.2356	8018a	1979491.5651	630493.6360	8069a	1973455.9858	608371.4781	8118a	1977481.1360	601941.6638
8870	1974064.7138	624648.4710	8919	1978002.5561	629273.6245	8968	1978710.5279	630719.4568	8019a	1980034.6555	630423.6090	8070a	1973455.2356	609032.3736	8119a	1978209.9696	601943.5510
8871	1974017.7414	624617.2626	8920	1978144.2089	629215.8864	8969	1980194.5708	627568.1185	8020a	1980034.6445	630433.8414	8071a	1974115.2293	609033.2961	8120a	1978753.4705	602739.3853
8872	1974049.2102	624794.7503	8921	1978152.6930	629210.7157	8970	1981088.0462	627076.2856	8022a	1980034.8867	630208.7293	8072a	1974115.8049	608702.4463	8121a	1973453.3539	601414.4643
8873	1973998.8859	624795.1676	8922	1978309.7964	629468.3956	8971	1981082.8420	627067.7465	8023a	1980034.8517	630195.4379	8073a	1972168.3435	610678.8826	8122a	1973454.4838	602744.3021
8874	1973999.0982	625190.5907	8923	1978309.7964	629487.6123	8972	1981086.3383	627024.6277	8024a	1980184.8694	630176.3776	8074a	1975332.5775	610581.6785	8123a	1972151.6315	602744.7382
8875	1973992.4405	625209.9262	8924	1978524.1931	629116.5746	8973	1981769.2443	599758.0497	8025a	1980200.2654	630169.9877	8075a	1975284.9366	610596.8543	8124a	1973455.6138	604074.1399
8876	1974004.0617	625229.9344	8925	1978524.1931	629135.7913	8974	1981258.8284	626972.2018	8026a	1981291.9479	629934.5089	8076a	1975830.5707	611463.9892	8125a	1973456.7376	605396.6873
8877	1974054.0621	625229.9696	8926	1978567.4913	629187.6261	8975	1981253.6242	626963.6627	8027a	1981300.3821	629973.6096	8077a	1975631.7156	611527.3334	8126a	1972151.2155	605396.8967
8878	1974093.0118	625151.4863	8927	1978558.9520	629192.8299	8976	1982694.6918	602325.1636	8029a	1980200.1002	630295.8522	8078a	1975578.0228	611523.3776	8127a	1971505.7940	606721.8419
8879	1974040.8704	625137.1038	8928	1978807.2605	628811.7873	8977	1981257.0878	626920.5639	8030a	1980184.7878	630299.1552	8079a	1974440.7349	611517.6857	8128a	1968632.5197	608041.2095
8880	1974047.3957	625209.9652	8929	1978817.6689	628828.8655	8978	1982010.9862	626946.2038	8031a	1980190.1507	630492.8686	8080a	1974441.0603	611567.6880	8129a	1969513.8981	608041.3061
8881	1974054.0077	625239.9699	8930	1978804.8142	628794.3397	8979	1982038.8967	626957.2039	8032a	1980190.1453	630497.8685	8081a	1974649.7577	611568.7325	8130a	1972151.2765	608041.5910
8882	1974039.0123	625239.9592	8931	1978816.5907	628806.1010	8980	1981936.1759	626553.5347	8033a	1980190.1177	630522.8686	8082a	1974699.7570	611568.9827	8131a	1973456.3609	608041.0303
8883	1974035.6412	625914.9936	8932	1978832.2033	628831.7183	8981	1982077.9128	626553.2860	8034a	1982678.3942	630495.1350	8083a	1975650.7604	611573.7422	8132a	1981403.1679	609373.7426
8884	1974015.6414	625914.8938	8933	1979138.4089	628593.2434	8982	1982694.8520	602367.1611	8035a	1980034.3316	630724.5841	8084a	1975845.6507	611511.6610	8133a	1980113.1681	609373.0429
8885	1974019.0571	625239.9451	8934	1979146.5008	628607.6281	8983	1982046.4512	626394.1812	8036a	1980034.2187	630829.4946	8085a	1974230.2327	611992.2896	8134a	1978104.5715	609371.3541
8886	1974004.0120	625239.9344	8935	1979802.9221	628185.5262	8984	1982044.3586	626403.9598	8037a	1982060.8413	631369.8139	8086a	1972154.3846	617262.2989	8135a	1977650.0239	609370.9698
8887	1974694.8569	623271.4999	8936	1979810.4680	628200.3791	8985	1981901.1244	626363.0855	8038a	1982679.0450	631369.1348	8087a	1972164.8963	626564.1551	8136a	1977659.0493	609821.9777
8888	1974733.1233	623303.9935															



Network Adjustment for "D 214" (7303)

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information: geodesy.noaa.gov/OPUS/using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: bwebb
SOLUTION FILE NAME: network-D214Final.sum
SOLUTION SOFTWARE: GPSCOM(1210.24)
SOLUTION DATE: 2015-05-13T10:31:17 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.677
TOTAL NUMBER OF OBSERVATIONS: 60076
TOTAL NUMBER OF MARKS: 9
NUMBER OF CONSTRAINED MARKS: 8

START TIME: 2015-04-09T17:39:00 GPS
STOP TIME: 2015-04-09T21:31:00 GPS
FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL: 30 s
ELEVATION CUTOFF: 15 deg
TROPIC INTERVAL: 1800 s [STEP-OFFSET PARAMETERIZATION]
DO CORRELATIONS: ON

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
1) 2015-09-09 D214	1.2 cm	pages(1404.11)	2015-05-13T10:05 UTC
2) 2015-09-09 D214	1.2 cm	pages(1404.11)	2015-05-13T10:15 UTC

BASELINE	LENGTH	RMS	OBS	OMITTED	FIXED IN SOLUTION(S)
7125-5978	13.342 km	1.8 cm	4130	4.7%	100.0% 1, 2
pkao-5978	33.356 km	1.0 cm	7976	1.4%	100.0% 1, 2
okao-5978	32.132 km	1.3 cm	8248	1.3%	100.0% 1, 2
oklw-5978	56.750 km	1.2 cm	7298	10.6%	100.0% 1, 2
okrt-5978	75.334 km	1.1 cm	8098	2.2%	100.0% 1, 2
wnok-5978	78.382 km	1.0 cm	8256	1.1%	94.4% 1, 2
okar-5978	109.824 km	1.4 cm	8152	2.3%	95.0% 1, 2
oncl-5978	112.090 km	1.4 cm	7938	2.9%	100.0% 1, 2

UNCONSTRAINED MARKS

MARK: 5978 (5978 1)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
X: -724344.945 m 0.001 m -724345.753 m 0.001 m
Y: -5185621.433 m 0.004 m -5185620.031 m 0.004 m
Z: 3690542.442 m 0.004 m 3690542.292 m 0.004 m
LAT: 34 55 02.21320 0.002 m 34 55 02.23293 0.002 m
E LONG: 262 02 53.46469 0.001 m 262 02 53.42551 0.001 m
W LONG: 97 57 06.53531 0.001 m 97 57 06.57449 0.001 m
EL HGT: 343.311 m 0.005 m 342.179 m 0.005 m
ORTHO HGT: 369.539 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES	STATE PLANE COORDINATES
UTM (Zone 14)	SPC (3502 OK S)
NORTHING (Y)	3864371.293 m
EASTING (X)	595746.595 m
CONVERGENCE	0.60001940 deg
POINT SCALE	0.99971298
COMBINED FACTOR	0.99965911

US NATIONAL GRID DESIGNATOR: 14SDN9574664371 (NAD 83)

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Network Adjustment for "D 214" (7303)

CONSTRAINED MARKS

MARK: 7125 (7125 1)
CONSTR: VER-ONLY NORMAL
ADJUST X: -0.004m (0.001m) Y: -0.045m (0.004m) Z: 0.042m (0.003m)
ADJUST N: 0.008m (0.002m) E: 0.002m (0.001m) H: 0.061m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2710)
X: -714059.069 m 0.001 m -714059.878 m 0.001 m
Y: -5181677.945 m 0.004 m -5181676.544 m 0.004 m
Z: 3636070.518 m 0.003 m 3636070.370 m 0.003 m
LAT: 35 00 01.31683 0.002 m 35 00 01.33667 0.002 m
E LONG: 262 09 13.66416 0.001 m 262 09 13.62501 0.001 m
W LONG: 97 50 46.33584 0.001 m 97 50 46.37499 0.001 m
EL HGT: 297.023 m 0.005 m 295.892 m 0.005 m
ORTHO HGT: 323.343 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES	STATE PLANE COORDINATES
UTM (Zone 14)	SPC (3502 OK S)
NORTHING (Y)	3873691.742 m
EASTING (X)	605287.744 m
CONVERGENCE	0.66185685 deg
POINT SCALE	0.99973662
COMBINED FACTOR	0.99969001

US NATIONAL GRID DESIGNATOR: 14SPD0528773691 (NAD 83)

MARK: okao (okao a 2)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.010m (0.001m) Y: -0.042m (0.004m) Z: 0.027m (0.004m)
ADJUST N: -0.003m (0.002m) E: -0.004m (0.001m) H: 0.051m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
X: -749498.285 m 0.001 m -749499.090 m 0.001 m
Y: -5171812.793 m 0.004 m -5171811.389 m 0.004 m
Z: 3645002.537 m 0.004 m 3645002.390 m 0.004 m
LAT: 35 04 35.04542 0.002 m 35 04 35.06527 0.002 m
E LONG: 261 45 14.79978 0.001 m 261 45 14.76038 0.001 m
W LONG: 98 14 45.20022 0.001 m 98 14 45.23962 0.001 m
EL HGT: 340.497 m 0.005 m 339.370 m 0.005 m
ORTHO HGT: 367.304 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES	STATE PLANE COORDINATES
UTM (Zone 14)	SPC (3502 OK S)
NORTHING (Y)	3881775.765 m
EASTING (X)	568750.537 m
CONVERGENCE	0.43338065 deg
POINT SCALE	0.99965825
COMBINED FACTOR	0.99960482

US NATIONAL GRID DESIGNATOR: 14SDN6875081775 (NAD 83)

MARK: okar (okar a 3)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.007m (0.001m) Y: -0.039m (0.004m) Z: 0.027m (0.004m)
ADJUST N: 0.000m (0.002m) E: -0.002m (0.001m) H: 0.048m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
X: -5241679.389 m 0.001 m -5241679.782 m 0.001 m
Y: -5241679.389 m 0.004 m -5241677.972 m 0.004 m
Z: 3562055.730 m 0.004 m 3562055.575 m 0.004 m
LAT: 34 10 06.45046 0.002 m 34 10 06.47030 0.002 m
E LONG: 262 49 50.74924 0.001 m 262 49 50.71110 0.001 m
W LONG: 97 10 09.25076 0.001 m 97 10 09.28890 0.001 m
EL HGT: 236.971 m 0.005 m 235.804 m 0.005 m
ORTHO HGT: 263.085 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES	STATE PLANE COORDINATES
UTM (Zone 14)	SPC (3502 OK S)
NORTHING (Y)	3881775.765 m
EASTING (X)	568750.537 m
CONVERGENCE	0.43338065 deg
POINT SCALE	0.99965825
COMBINED FACTOR	0.99960482

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OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
PLS	JTB	SURVEY DATA SHEET SDS 14 OF 76	
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S014			

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				

DESCRIPTION	REVISIONS	DATE

Network Adjustment for "D 214" (7303)

```
NORTHING (Y) 3782348.990 m 92950.122 m
EASTING (X) 668743.272 m 676594.319 m
CONVERGENCE 1.02845104 deg 0.47155532 deg
POINT SCALE 0.99995101 0.99996210
COMBINED FACTOR 0.99991381 0.99992490

US NATIONAL GRID DESIGNATOR: 14SPC6874382348 (NAD 83)
*****
MARK: okc1 (okc1 a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.004m (0.001m) Y: -0.049m (0.004m) Z: 0.030m (0.004m)
ADJUST N: -0.003m (0.002m) E: 0.004m (0.001m) H: 0.057m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -810881.810 m 0.001 m -810882.622 m 0.001 m
Y: -5136265.213 m 0.004 m -5136263.819 m 0.004 m
Z: 3681919.306 m 0.004 m 3681919.167 m 0.004 m
LAT: 35 28 59.34891 0.002 m 35 28 59.36880 0.002 m
E LONG: 261 01 42.73365 0.001 m 261 01 42.71322 0.001 m
W LONG: 98 58 17.24635 0.001 m 98 58 17.28678 0.002 m
EL HGT: 470.750 m 0.005 m 469.651 m 0.005 m
ORTHOG HT: 497.952 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK N)
NORTHING (Y) 3926425.352 m 54048.585 m
EASTING (X) 502589.165 m 511841.910 m
CONVERGENCE 0.01856799 deg -0.57330269 deg
POINT SCALE 0.99960008 1.00001621
COMBINED FACTOR 0.99952623 0.99994233

US NATIONAL GRID DESIGNATOR: 14SNE0258926625 (NAD 83)
*****
MARK: okdt (okdt a 4)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.005m (0.001m) Y: -0.040m (0.004m) Z: 0.032m (0.004m)
ADJUST N: 0.002m (0.002m) E: 0.000m (0.001m) H: 0.051m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -679342.228 m 0.001 m -679343.043 m 0.001 m
Y: -5154773.611 m 0.004 m -5154772.208 m 0.004 m
Z: 3682488.902 m 0.004 m 3682488.747 m 0.004 m
LAT: 35 29 24.45381 0.002 m 35 29 24.47392 0.002 m
E LONG: 262 29 32.33664 0.001 m 262 29 32.29433 0.001 m
W LONG: 97 30 27.66636 0.001 m 97 30 27.70567 0.001 m
EL HGT: 366.628 m 0.005 m 365.492 m 0.005 m
ORTHOG HT: 393.628 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK N)
NORTHING (Y) 3926421.957 m 54494.520 m
EASTING (X) 635364.257 m 644673.366 m
CONVERGENCE 0.06651394 deg 0.29053820 deg
POINT SCALE 0.99982581 1.00001477
COMBINED FACTOR 0.99976828 0.99995723

US NATIONAL GRID DESIGNATOR: 14SPE3536428421 (NAD 83)
*****
MARK: oklw (oklw a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.006m (0.001m) Y: -0.037m (0.004m) Z: 0.032m (0.004m)
ADJUST N: 0.005m (0.002m) E: -0.001m (0.001m) H: 0.049m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -768964.438 m 0.001 m -768965.241 m 0.001 m
Y: -5201189.562 m 0.004 m -5201188.165 m 0.004 m
Z: 3599120.822 m 0.004 m 3599120.674 m 0.004 m
LAT: 34 34 21.98765 0.001 m 34 34 22.00698 0.002 m
E LONG: 261 35 24.31094 0.001 m 261 35 24.27175 0.001 m
W LONG: 98 24 35.68906 0.001 m 98 24 35.72825 0.001 m
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Network Adjustment for "Pocasset" (7304)

```
NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT
*****
all coordinate accuracies reported here are 1 times the formal
uncertainties from the solution. For additional information:
geodesy.noaa.gov/OPUS/using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National
Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: bwebb
SOLUTION FILE NAME: network-PocaFinal.sum
SOLUTION SOFTWARE: GPSCON(1210.24)
SOLUTION DATE: 2015-05-13T11:10:06 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.671
TOTAL NUMBER OF OBSERVATIONS: 81106
TOTAL NUMBER OF MARKS: 9
NUMBER OF CONSTRAINED MARKS: 8

START TIME: 2015-04-09T15:27:00 GPS
STOP TIME: 2015-04-09T23:31:00 GPS
FREQUENCY: 30 s
OBSERVATION INTERVAL: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
ELEVATION CUTOFF: 15 deg
TROPIC INTERVAL: 1800 s [STEP-OFFSET PARAMETERIZATION]
DD CORRELATIONS: ON

INCLUDED SOLUTION RMS SOFTWARE RUN DATE
1) 2015-099 Poca 1.2 cm pages(1404.11) 2015-05-13T11:27 UTC
2) 2015-099 Poca 1.2 cm pages(1404.11) 2015-05-13T11:36 UTC

BASELINE LENGTH RMS OBS OMITTED FIXED IN SOLUTION(S)
7125-poca 17.609 km 1.9 cm 4380 2.2% 100.0% 1 2
poca-5978 23.356 km 1.0 cm 7992 1.2% 100.0% 1 2
okao-poca 26.544 km 1.1 cm 11896 0.6% 96.2% 1 2
okdt-poca 57.629 km 1.1 cm 11490 3.0% 100.0% 1 2
oklw-poca 73.968 km 1.2 cm 10392 9.9% 91.7% 1 2
wmo1-poca 86.425 km 0.9 cm 11848 0.9% 96.2% 1 2
okao-poca 99.966 km 1.0 cm 11346 3.5% 100.0% 1 2
okao-poca 128.836 km 1.4 cm 11762 1.3% 92.6% 1 2

UNCONSTRAINED MARKS
*****
MARK: poca (poca 1)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2708)
X: -723367.281 m 0.001 m -723368.091 m 0.001 m
Y: -5172226.607 m 0.004 m -5172225.300 m 0.004 m
Z: 3649650.888 m 0.003 m 3649650.741 m 0.003 m
LAT: 35 07 39.52758 0.002 m 35 07 39.54745 0.002 m
E LONG: 262 02 18.48104 0.001 m 262 02 18.48104 0.001 m
W LONG: 97 57 41.47963 0.001 m 97 57 41.51896 0.001 m
EL HGT: 334.990 m 0.005 m 333.864 m 0.005 m
ORTHOG HT: 361.690 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3887692.146 m 199036.797 m
EASTING (X) 594617.194 m 603507.044 m
CONVERGENCE 0.59758450 deg 0.02184069 deg
POINT SCALE 0.99971033 0.99998082
COMBINED FACTOR 0.99965777 0.99995824

US NATIONAL GRID DESIGNATOR: 14SDN9461787692 (NAD 83)
*****
MARK: 5978 (5978 1)
CONSTRN: VER-ONLY NORMAL
ADJUST X: -0.004m (0.001m) Y: -0.051m (0.004m) Z: 0.043m (0.003m)
ADJUST N: 0.006m (0.002m) E: 0.003m (0.001m) H: 0.066m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -724344.947 m 0.001 m -724345.755 m 0.001 m
Y: -5185621.442 m 0.004 m -5185620.041 m 0.004 m
Z: 3630542.449 m 0.003 m 3630542.300 m 0.003 m
LAT: 34 55 02.21322 0.002 m 34 55 02.23293 0.002 m
E LONG: 262 02 53.46466 0.001 m 262 02 53.42549 0.001 m
W LONG: 97 57 06.53534 0.001 m 97 57 06.57451 0.001 m
EL HGT: 343.322 m 0.005 m 342.191 m 0.005 m
ORTHOG HT: 369.550 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3864371.254 m 175699.869 m
EASTING (X) 595746.594 m 604402.900 m
CONVERGENCE 0.60001939 deg 0.02735040 deg
POINT SCALE 0.99971298 0.99995779
COMBINED FACTOR 0.99965911 0.99998990

US NATIONAL GRID DESIGNATOR: 14SDN9574664371 (NAD 83)
*****
MARK: 7125 (7125 1)
CONSTRN: VER-ONLY NORMAL
ADJUST X: -0.004m (0.001m) Y: -0.051m (0.004m) Z: 0.047m (0.003m)
ADJUST N: 0.010m (0.002m) E: 0.003m (0.001m) H: 0.069m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2710)
X: -714059.069 m 0.001 m -714059.878 m 0.001 m
Y: -5181877.951 m 0.004 m -5181876.550 m 0.004 m
Z: 3638070.524 m 0.003 m 3638070.375 m 0.003 m
LAT: 35 00 01.31688 0.002 m 35 00 01.33671 0.002 m
E LONG: 262 09 13.66419 0.001 m 262 09 13.62506 0.001 m
W LONG: 97 50 46.33581 0.001 m 97 50 46.37494 0.001 m
EL HGT: 297.032 m 0.005 m 295.900 m 0.005 m
ORTHOG HT: 323.352 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3873691.743 m 184926.483 m
EASTING (X) 605287.745 m 614039.122 m
CONVERGENCE 0.66185686 deg 0.08729695 deg
POINT SCALE 0.99973662 0.99996225
COMBINED FACTOR 0.99965901 0.99991563

US NATIONAL GRID DESIGNATOR: 14SPD0528773691 (NAD 83)
*****
MARK: okao (okao a 2)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.011m (0.001m) Y: -0.050m (0.004m) Z: 0.033m (0.003m)
ADJUST N: -0.003m (0.002m) E: -0.004m (0.001m) H: 0.060m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -749498.387 m 0.001 m -749499.091 m 0.001 m
Y: -5171812.800 m 0.004 m -5171811.397 m 0.004 m
Z: 3645002.543 m 0.003 m 3645002.396 m 0.003 m
LAT: 35 04 35.04544 0.001 m 35 04 35.06521 0.002 m
E LONG: 261 45 14.79974 0.001 m 261 45 14.76037 0.001 m
W LONG: 98 14 45.20026 0.001 m 98 14 45.23963 0.001 m
EL HGT: 340.506 m 0.005 m 339.379 m 0.005 m
ORTHOG HT: 367.313 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3881775.765 m 193378.325 m
EASTING (X) 568750.536 m 577574.764 m
CONVERGENCE 0.43338064 deg -0.13957068 deg
```

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Network Adjustment for "Pocasset" (7304)

```
POINT SCALE 0.99965825 0.99997275
COMBINED FACTOR 0.99960482 0.99991931

US NATIONAL GRID DESIGNATOR: 14SND6875081775 (NAD 83)
*****
MARK: okar (okar a 3)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.010m (0.001m) Y: -0.050m (0.004m) Z: 0.036m (0.004m)
ADJUST N: 0.001m (0.002m) E: -0.004m (0.001m) H: 0.062m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -659318.978 m 0.001 m -659319.784 m 0.001 m
Y: -5241679.399 m 0.004 m -5241677.982 m 0.004 m
Z: 3562055.738 m 0.004 m 3562055.584 m 0.004 m
LAT: 34 10 06.45069 0.002 m 34 10 06.47034 0.002 m
E LONG: 262 49 50.74921 0.001 m 262 49 50.71106 0.001 m
W LONG: 97 10 09.25079 0.001 m 97 10 09.28894 0.001 m
EL HGT: 236.984 m 0.005 m 235.817 m 0.005 m
ORTHOG HT: 263.098 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3782348.990 m 92950.122 m
EASTING (X) 668743.271 m 676594.319 m
CONVERGENCE 1.02845104 deg 0.47155531 deg
POINT SCALE 0.99995101 0.99996210
COMBINED FACTOR 0.99991381 0.99992490

US NATIONAL GRID DESIGNATOR: 14SPC6874382348 (NAD 83)
*****
MARK: okc1 (okc1 a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.006m (0.001m) Y: -0.061m (0.004m) Z: 0.037m (0.004m)
ADJUST N: -0.005m (0.002m) E: 0.004m (0.001m) H: 0.071m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -810881.812 m 0.001 m -810882.623 m 0.001 m
Y: -5136265.215 m 0.004 m -5136263.811 m 0.004 m
Z: 3681919.313 m 0.004 m 3681919.174 m 0.004 m
LAT: 35 28 59.34887 0.002 m 35 28 59.36874 0.002 m
E LONG: 261 01 42.73365 0.001 m 261 01 42.71323 0.001 m
W LONG: 98 58 17.24635 0.001 m 98 58 17.28677 0.001 m
EL HGT: 470.764 m 0.005 m 469.665 m 0.005 m
ORTHOG HT: 497.966 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK N)
NORTHING (Y) 3926425.351 m 54048.584 m
EASTING (X) 502589.165 m 511841.910 m
CONVERGENCE 0.01856799 deg -0.57330269 deg
POINT SCALE 0.99960008 1.00001621
COMBINED FACTOR 0.99952622 0.99994232

US NATIONAL GRID DESIGNATOR: 14SNE0258926625 (NAD 83)
*****
MARK: okdt (okdt a 4)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.006m (0.001m) Y: -0.052m (0.004m) Z: 0.040m (0.003m)
ADJUST N: 0.002m (0.002m) E: 0.001m (0.001m) H: 0.066m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -679342.229 m 0.001 m -679343.044 m 0.001 m
Y: -5154773.623 m 0.004 m -5154772.221 m 0.004 m
Z: 3682488.911 m 0.003 m 3682488.756 m 0.003 m
LAT: 35 29 24.45382 0.002 m 35 29 24.47390 0.002 m
E LONG: 262 29 32.33366 0.001 m 262 29 32.29435 0.001 m
W LONG: 97 30 27.66634 0.001 m 97 30 27.70565 0.001 m
EL HGT: 366.643 m 0.005 m 365.507 m 0.005 m
ORTHOG HT: 393.643 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK N)
NORTHING (Y) 3926421.957 m 54494.520 m
EASTING (X) 635364.257 m 644673.366 m
CONVERGENCE 0.06651394 deg 0.29053820 deg
POINT SCALE 0.99982581 1.00001477
COMBINED FACTOR 0.99976828 0.99995722

US NATIONAL GRID DESIGNATOR: 14SPE3536428421 (NAD 83)
*****
MARK: oklw (oklw a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.008m (0.001m) Y: -0.048m (0.004m) Z: 0.039m (0.004m)
ADJUST N: 0.005m (0.002m) E: -0.001m (0.001m) H: 0.062m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -768964.441 m 0.001 m -768965.244 m 0.001 m
Y: -5201189.573 m 0.004 m -5201188.175 m 0.004 m
Z: 3599120.829 m 0.004 m 3599120.681 m 0.004 m
LAT: 34 34 21.98763 0.001 m 34 34 22.00696 0.002 m
E LONG: 261 35 24.31089 0.001 m 261 35 24.27172 0.001 m
W LONG: 98 24 35.68911 0.001 m 98 24 35.72828 0.001 m
EL HGT: 314.765 m 0.005 m 313.639 m 0.005 m
ORTHOG HT: 340.391 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3825825.192 m 137559.215 m
EASTING (X) 554125.069 m 562388.795 m
CONVERGENCE 0.33485414 deg -0.23207382 deg
POINT SCALE 0.99963611 0.99993596
COMBINED FACTOR 0.99958672 0.99988656

US NATIONAL GRID DESIGNATOR: 14SND5412525825 (NAD 83)
*****
MARK: wmo1 (wmo1 a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.007m (0.001m) Y: -0.059m (0.004m) Z: 0.040m (0.004m)
ADJUST N: -0.002m (0.002m) E: 0.002m (0.001m) H: 0.072m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2707)
X: -802018.802 m 0.001 m -802020.610 m 0.001 m
Y: -5185937.843 m 0.004 m -5185936.443 m 0.004 m
Z: 3614276.361 m 0.004 m 3614276.210 m 0.004 m
LAT: 34 44 16.39680 0.002 m 34 44 16.41608 0.002 m
E LONG: 261 13 10.14604 0.001 m 261 13 10.10627 0.001 m
W LONG: 98 46 49.85396 0.001 m 98 46 49.89373 0.001 m
EL HGT: 468.580 m 0.005 m 467.459 m 0.005 m
ORTHOG HT: 493.960 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3843998.397 m 156074.790 m
EASTING (X) 520092.044 m 528526.788 m
CONVERGENCE 0.12506804 deg -0.44303333 deg
POINT SCALE 0.99960498 0.99993953
COMBINED FACTOR 0.99953446 0.99986599

US NATIONAL GRID DESIGNATOR: 14SDN2009243998 (NAD 83)
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Network Adjustment for "D 214" (7303)

```
EL HGT: 314.751 m 0.005 m 313.626 m 0.005 m
ORTHOG HT: 340.377 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3926425.352 m 54048.585 m
EASTING (X) 554125.070 m 562388.796 m
CONVERGENCE 0.33485415 deg -0.44303333 deg
POINT SCALE 0.99963611 0.99993596
COMBINED FACTOR 0.99958672 0.99988656

US NATIONAL GRID DESIGNATOR: 14SND5412525825 (NAD 83)
*****
MARK: poca (poca 1)
CONSTRN: VER-ONLY NORMAL
ADJUST X: -0.005m (0.001m) Y: -0.043m (0.004m) Z: 0.031m (0.003m)
ADJUST N: 0.000m (0.002m) E: 0.001m (0.001m) H: 0.053m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -723367.276 m 0.001 m -723368.088 m 0.001 m
Y: -5172226.594 m 0.004 m -5172225.195 m 0.004 m
Z: 3649650.880 m 0.003 m 3649650.733 m 0.003 m
LAT: 35 07 39.52761 0.002 m 35 07 39.54748 0.002 m
E LONG: 262 02 18.52041 0.001 m 262 02 18.48109 0.001 m
W LONG: 97 57 41.47959 0.001 m 97 57 41.51891 0.001 m
EL HGT: 334.975 m 0.005 m 333.849 m 0.005 m
ORTHOG HT: 361.675 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3887692.147 m 199036.798 m
EASTING (X) 594617.195 m 603507.046 m
CONVERGENCE 0.59758451 deg 0.02184069 deg
POINT SCALE 0.99971033 0.99998082
COMBINED FACTOR 0.99965777 0.99995824

US NATIONAL GRID DESIGNATOR: 14SDN9461787692 (NAD 83)
*****
MARK: wmo1 (wmo1 a 1)
CONSTRN: HOR-ONLY NORMAL
ADJUST X: -0.007m (0.001m) Y: -0.048m (0.004m) Z: 0.034m (0.004m)
ADJUST N: -0.000m (0.002m) E: 0.000m (0.001m) H: 0.059m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -801019.801 m 0.001 m -801020.609 m 0.001 m
Y: -5185937.833 m 0.004 m -5185936.433 m 0.004 m
Z: 3614276.354 m 0.004 m 3614276.203 m 0.004 m
LAT: 34 44 16.39680 0.002 m 34 44 16.41609 0.002 m
E LONG: 261 13 10.14602 0.001 m 261 13 10.10622 0.001 m
W LONG: 98 46 49.85398 0.001 m 98 46 49.89378 0.001 m
EL HGT: 468.568 m 0.005 m 467.446 m 0.005 m
ORTHOG HT: 493.948 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3843998.397 m 156074.790 m
EASTING (X) 520092.044 m 528526.788 m
CONVERGENCE 0.12506804 deg -0.44303333 deg
POINT SCALE 0.99960498 0.99993953
COMBINED FACTOR 0.99953446 0.99986599

US NATIONAL GRID DESIGNATOR: 14SDN2009243998 (NAD 83)
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Network Adjustment for "Pocasset" (7304)

```
MARK: 5978 (5978 1)
CONSTRN: VER-ONLY NORMAL
ADJUST X: -0.004m (0.001m) Y: -0.051m (0.004m) Z: 0.043m (0.003m)
ADJUST N: 0.006m (0.002m) E: 0.003m (0.001m) H: 0.066m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGSO8 (2015.2709)
X: -724344.947 m 0.001 m -724345.755 m 0.001 m
Y: -5185621.442 m 0.004 m -5185620.041 m 0.004 m
Z: 3630542.449 m 0.003 m 3630542.300 m 0.003 m
LAT: 34 55 02.21322 0.002 m 34 55 02.23293 0.002 m
E LONG: 262 02 53.46466 0.001 m 262 02 53.42549 0.001 m
W LONG: 97 57 06.53534 0.001 m 97 57 06.57451 0.001 m
EL HGT: 343.322 m 0.005 m 342.191 m 0.005 m
ORTHOG HT: 369.550 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK
```


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				

DESCRIPTION	REVISIONS	DATE

Network Adjustment for "CP 115" (7418)

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information: geodesy.noaa.gov/OPUS/using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: bwebb
SOLUTION FILE NAME: network-115final.sum
SOLUTION SOFTWARE: GPSCON(1210.24)
SOLUTION DATE: 2015-05-13T13:49:07 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.687
TOTAL NUMBER OF OBSERVATIONS: 34926
TOTAL NUMBER OF MARKS: 10
NUMBER OF CONSTRAINED MARKS: 9

START TIME: 2015-04-09T21:24:30 GPS
STOP TIME: 2015-04-09T23:55:00 GPS
FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL: 30 s
ELEVATION CUTOFF: 15 deg
TROPIC INTERVAL: 1800 s [STEP-OFFSET PARAMETERIZATION]
DO CORRELATIONS: ON

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
1) 2015-099 115A	1.2 cm	page5(1404.11)	2015-05-13T13:28 UTC
2) 2015-099 115B	1.2 cm	page5(1404.11)	2015-05-13T13:37 UTC

BASELINE	LENGTH	RMS	OBS	OMITTED	FIXED IN SOLUTION(S)
POCA-0115	11.971 km	1.0 cm	3490	0.8%	100.0% 1, 2
5978-0115	16.330 km	1.0 cm	3518	0.9%	100.0% 1, 2
7125-0115	18.654 km	1.8 cm	4096	1.0%	100.0% 1, 2
OKAW-0115	18.788 km	1.2 cm	4084	1.7%	100.0% 1, 2
OKLW-0115	62.051 km	1.2 cm	3644	8.6%	91.7% 1, 2
OKDT-0115	69.531 km	1.2 cm	3960	2.2%	100.0% 1, 2
36NO-0115	75.406 km	0.9 cm	4082	1.5%	100.0% 1, 2
OKCL-0115	97.499 km	1.1 cm	3942	2.0%	100.0% 1, 2
OKAR-0115	125.929 km	1.1 cm	4110	0.8%	100.0% 1, 2

UNCONSTRAINED MARKS

MARK: 0115 (0115 1)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -731540.593 m 0.001 m -731540.593 m 0.001 m
Y: -5176505.319 m 0.004 m -5176505.319 m 0.004 m
Z: 3642021.900 m 0.003 m 3642021.752 m 0.003 m
LAT: 35 02 36.71781 0.001 m 35 02 36.73759 0.002 m
E LON: 261 57 22.53418 0.001 m 261 57 22.49487 0.001 m
W LON: 98 02 37.46582 0.001 m 98 02 37.50513 0.001 m
EL HGT: 348.132 m 0.004 m 347.003 m 0.004 m
ORTHO HGT: 374.685 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3878288.625 m 189705.466 m
EASTING (X) 588215.413 m 586009.253 m
CONVERGENCE 0.54911756 deg -0.02482784 deg
POINT SCALE 0.99969374 0.99967899
COMBINED FACTOR 0.99963911 0.99951335

US NATIONAL GRID DESIGNATOR: 145ND8721578288 (NAD 83)

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Network Adjustment for "CP 115" (7418)

NORTHING (Y) 3881775.762 m 193376.321 m
EASTING (X) 568750.538 m 577574.766 m
CONVERGENCE 0.4338066 deg -0.1395706 deg
POINT SCALE 0.99965825 0.99997275
COMBINED FACTOR 0.99960483 0.99991911

US NATIONAL GRID DESIGNATOR: 145ND6875081775 (NAD 83)

MARK: OKAR (OKAR 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.0006 (0.001m) Y: -0.024m (0.004m) Z: 0.016m (0.003m)
ADJUST N: -0.000m (0.002m) E: -0.003m (0.001m) H: 0.030m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -659318.974 m 0.001 m -659319.780 m 0.001 m
Y: -5241679.374 m 0.004 m -5241677.957 m 0.004 m
Z: 3562055.719 m 0.003 m 3562055.564 m 0.003 m
LAT: 34 10 06.45064 0.002 m 34 10 06.47028 0.002 m
E LON: 262 49 50.74924 0.001 m 262 49 50.71109 0.001 m
W LON: 97 10 09.25076 0.001 m 97 10 09.28891 0.001 m
EL HGT: 263.952 m 0.004 m 235.785 m 0.004 m
ORTHO HGT: 263.066 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3782348.989 m 92950.122 m
EASTING (X) 668743.272 m 676594.319 m
CONVERGENCE 1.02845104 deg 0.47155532 deg
POINT SCALE 0.99995101 0.99996210
COMBINED FACTOR 0.99991382 0.99992491

US NATIONAL GRID DESIGNATOR: 145PC6874382348 (NAD 83)

MARK: OKCL (OKCL 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.001m (0.001m) Y: -0.036m (0.004m) Z: 0.022m (0.003m)
ADJUST N: -0.003m (0.002m) E: 0.005m (0.001m) H: 0.042m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -810881.807 m 0.001 m -810882.619 m 0.001 m
Y: -5136265.201 m 0.004 m -5136263.806 m 0.004 m
Z: 3681919.298 m 0.003 m 3681919.158 m 0.003 m
LAT: 35 28 59.34893 0.002 m 35 28 59.36880 0.002 m
E LON: 261 01 42.71370 0.001 m 261 01 42.71327 0.001 m
W LON: 98 58 17.24630 0.001 m 98 58 17.28673 0.001 m
EL HGT: 470.735 m 0.004 m 469.636 m 0.004 m
ORTHO HGT: 497.937 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3501 OK N)
NORTHING (Y) 3926625.353 m 54048.586 m
EASTING (X) 502589.166 m 511841.912 m
CONVERGENCE 0.01656799 deg -0.5730269 deg
POINT SCALE 0.99960008 1.00001621
COMBINED FACTOR 0.99952623 0.99994233

US NATIONAL GRID DESIGNATOR: 145NE0258926625 (NAD 83)

MARK: OKCT (OKCT 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
ADJUST N: 0.000m (0.002m) E: 0.001m (0.001m) H: 0.021m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -679342.225 m 0.001 m -679343.039 m 0.001 m
Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
Z: 3682488.883 m 0.003 m 3682488.728 m 0.003 m
LAT: 35 29 24.45375 0.002 m 35 29 24.47364 0.002 m
E LON: 262 29 32.33364 0.001 m 262 29 32.29434 0.001 m
W LON: 97 30 27.66636 0.001 m 97 30 27.70566 0.001 m

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Network Adjustment for "CP 115" (7418)

Y: -5185937.809 m 0.004 m -5185936.409 m 0.004 m
Z: 3614276.338 m 0.003 m 3614276.187 m 0.003 m
LAT: 34 44 16.39683 0.002 m 34 44 16.41610 0.002 m
E LON: 261 13 10.14611 0.001 m 261 13 10.10630 0.001 m
W LON: 98 46 49.55389 0.001 m 98 46 49.59370 0.001 m
EL HGT: 468.538 m 0.004 m 467.416 m 0.004 m
ORTHO HGT: 493.918 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3843998.398 m 156074.790 m
EASTING (X) 520092.046 m 528526.790 m
CONVERGENCE 0.12506805 deg -0.44303331 deg
POINT SCALE 0.99960488 0.99993553
COMBINED FACTOR 0.99953147 0.99986599

US NATIONAL GRID DESIGNATOR: 145ND2009243998 (NAD 83)

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Network Adjustment for "CP 115" (7418)

CONSTRANED MARKS

MARK: 5978 (5978 1)

CONSTRAN: VER-ONLY NORMAL
ADJUST X: 0.002m (0.001m) Y: -0.022m (0.004m) Z: 0.022m (0.003m)
ADJUST N: 0.006m (0.002m) E: 0.005m (0.001m) H: 0.030m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -724344.941 m 0.001 m -724345.749 m 0.001 m
Y: -5185621.413 m 0.004 m -5185620.012 m 0.004 m
Z: 3630542.426 m 0.003 m 3630542.278 m 0.003 m
LAT: 34 55 02.21321 0.002 m 34 55 02.23295 0.002 m
E LON: 262 02 53.46474 0.001 m 262 02 53.42556 0.001 m
W LON: 97 57 06.53526 0.001 m 97 57 06.57448 0.001 m
EL HGT: 343.286 m 0.004 m 342.155 m 0.004 m
ORTHO HGT: 369.514 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3864371.293 m 175699.868 m
EASTING (X) 595746.596 m 604402.902 m
CONVERGENCE 0.60001941 deg 0.02735041 deg
POINT SCALE 0.99971296 0.99985279
COMBINED FACTOR 0.99965911 0.99989891

US NATIONAL GRID DESIGNATOR: 145ND9574664371 (NAD 83)

MARK: 7125 (7125 1)

CONSTRAN: VER-ONLY NORMAL
ADJUST X: -0.000m (0.001m) Y: -0.032m (0.004m) Z: 0.033m (0.003m)
ADJUST N: 0.008m (0.002m) E: 0.004m (0.001m) H: 0.045m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -714059.066 m 0.001 m -714059.874 m 0.001 m
Y: -5181677.932 m 0.004 m -5181676.531 m 0.004 m
Z: 3638070.509 m 0.003 m 3638070.361 m 0.003 m
LAT: 35 00 01.31684 0.002 m 35 00 01.33667 0.002 m
E LON: 262 09 13.66421 0.001 m 262 09 13.62509 0.001 m
W LON: 97 50 46.33579 0.001 m 97 50 46.37491 0.001 m
EL HGT: 297.007 m 0.004 m 295.876 m 0.004 m
ORTHO HGT: 323.327 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3873691.742 m 184926.481 m
EASTING (X) 605187.745 m 614039.122 m
CONVERGENCE 0.66181686 deg 0.08729685 deg
POINT SCALE 0.99973662 0.99996225
COMBINED FACTOR 0.99969001 0.99991563

US NATIONAL GRID DESIGNATOR: 145PD0528773691 (NAD 83)

MARK: OKAO (OKAO 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.006m (0.001m) Y: -0.027m (0.004m) Z: 0.013m (0.003m)
ADJUST N: -0.006m (0.002m) E: -0.001m (0.001m) H: 0.030m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -749498.282 m 0.001 m -749499.087 m 0.001 m
Y: -5171812.778 m 0.004 m -5171811.374 m 0.004 m
Z: 3645002.523 m 0.003 m 3645002.376 m 0.003 m
LAT: 35 04 35.04533 0.002 m 35 04 35.06518 0.002 m
E LON: 261 45 14.79981 0.001 m 261 45 14.76043 0.001 m
W LON: 98 14 45.20019 0.001 m 98 14 45.23957 0.001 m
EL HGT: 340.476 m 0.004 m 339.349 m 0.004 m
ORTHO HGT: 367.283 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)

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Network Adjustment for "CP 115" (7418)

EL HGT: 366.598 m 0.004 m 365.462 m 0.004 m
ORTHO HGT: 393.598 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3501 OK N)
NORTHING (Y) 3928421.955 m 54494.518 m
EASTING (X) 635364.257 m 644673.365 m
CONVERGENCE 0.86651393 deg 0.29053820 deg
POINT SCALE 0.99982581 1.00001477
COMBINED FACTOR 0.99976828 0.99995723

US NATIONAL GRID DESIGNATOR: 145PE356428421 (NAD 83)

MARK: OKLW (OKLW 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.003m (0.001m) Y: -0.007m (0.004m) Z: 0.012m (0.003m)
ADJUST N: 0.006m (0.002m) E: -0.001m (0.001m) H: 0.013m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -679342.225 m 0.001 m -679343.039 m 0.001 m
Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
Z: 3682488.883 m 0.003 m 3682488.728 m 0.003 m
LAT: 35 29 24.45375 0.002 m 35 29 24.47364 0.002 m
E LON: 262 29 32.33364 0.001 m 262 29 32.29434 0.001 m
W LON: 97 30 27.66636 0.001 m 97 30 27.70566 0.001 m

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3825825.193 m 137559.217 m
EASTING (X) 554125.069 m 562388.795 m
CONVERGENCE 0.31484144 deg -0.32087382 deg
POINT SCALE 0.99963611 0.99993596
COMBINED FACTOR 0.99958673 0.99988656

US NATIONAL GRID DESIGNATOR: 145ND5412525825 (NAD 83)

MARK: POICA (POICA 1)

CONSTRAN: VER-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.029m (0.004m) Z: 0.016m (0.003m)
ADJUST N: -0.003m (0.002m) E: 0.002m (0.001m) H: 0.033m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -723387.276 m 0.001 m -723388.081 m 0.001 m
Y: -5172226.580 m 0.004 m -5172225.181 m 0.004 m
Z: 3649650.866 m 0.003 m 3649650.718 m 0.003 m
LAT: 35 07 39.52750 0.002 m 35 07 39.54786 0.002 m
E LON: 262 02 18.52042 0.001 m 262 02 18.48111 0.001 m
W LON: 97 57 41.47958 0.001 m 97 57 41.51889 0.001 m
EL HGT: 334.955 m 0.004 m 333.829 m 0.004 m
ORTHO HGT: 361.655 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
NORTHING (Y) 3887692.144 m 199036.794 m
EASTING (X) 5946157.185 m 601507.046 m
CONVERGENCE 0.59758450 deg 0.02184069 deg
POINT SCALE 0.99971033 0.99988082
COMBINED FACTOR 0.99965777 0.99982825

US NATIONAL GRID DESIGNATOR: 145ND9461787692 (NAD 83)

MARK: UMOK (UMOK 1)

CONSTRAN: MOR-ONLY NORMAL
ADJUST X: -0.001m (0.001m) Y: -0.025m (0.004m) Z: 0.017m (0.003m)
ADJUST N: -0.000m (0.002m) E: 0.002m (0.001m) H: 0.030m (0.004m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -801019.795 m 0.001 m -801020.603 m 0.001 m

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PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 16 OF 76 SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S016
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		

NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 47050680.11o 000184978 (Session 1)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4705068r.11o TIME: 18:57:23 UTC

SOFTWARE: page5 1009.28 master50.pl 121510 START: 2011/03/09 17:27:00
EPHEMERIS: tgr16263.eph [rapid] STOP: 2011/03/09 19:33:00
NAV FILE: brdc0680.11n OBS USED: 6122 / 6279 : 97%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 33 / 35 : 94%
ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1857)

X: -725592.234(m) 0.020(m) -725592.975(m) 0.020(m)
Y: -5181067.518(m) 0.051(m) -5181066.124(m) 0.051(m)
Z: 3636785.113(m) 0.047(m) 3636784.950(m) 0.047(m)

LAT: 34 59 8.86732 0.031(m) 34 59 8.86676 0.031(m)
E LON: 262 1 39.92301 0.013(m) 262 1 39.88645 0.013(m)
W LON: 97 58 20.07699 0.013(m) 97 58 20.11355 0.013(m)
EL HGT: 364.667(m) 0.066(m) 363.527(m) 0.066(m)
ORTHO HGT: 391.009(m) 0.113(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.358 183299.871
Easting (X) [meters] 593802.412 602334.168
Convergence [degrees] 0.58933113 0.01575499
Point Scale 0.99970844 0.99996043
Combined Factor 0.99965122 0.99990320

US NATIONAL GRID DESIGNATOR: 14SND9380271950(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 40865.8
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 26919.8
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 56193.1

NEAREST NGS PUBLISHED CONTROL POINT
EL1033 1 TF USGS 1957 N345909.072 W0975916.406 1427.1

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 47460741.11o 000184911 (Session 2)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4746074r.11o TIME: 18:10:19 UTC

SOFTWARE: page5 1009.28 master2.pl 1215103 START: 2011/03/15 18:23:00
EPHEMERIS: tgr16272.eph [rapid] STOP: 2011/03/15 21:15:00
NAV FILE: brdc0740.11n OBS USED: 7308 / 7859 : 93%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 63 / 65 : 97%
ARP HEIGHT: 2.25 OVERALL RMS: 0.015(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2023)

X: -725592.239(m) 0.016(m) -725592.980(m) 0.016(m)
Y: -5181067.531(m) 0.028(m) -5181066.157(m) 0.028(m)
Z: 3636785.132(m) 0.007(m) 3636784.969(m) 0.007(m)

LAT: 34 59 8.86721 0.014(m) 34 59 8.86665 0.014(m)
E LON: 262 1 39.92299 0.018(m) 262 1 39.88644 0.018(m)
W LON: 97 58 20.07701 0.018(m) 97 58 20.11356 0.018(m)
EL HGT: 364.705(m) 0.024(m) 363.565(m) 0.024(m)
ORTHO HGT: 391.047(m) 0.041(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.358 183299.868
Easting (X) [meters] 593802.412 602334.167
Convergence [degrees] 0.58933113 0.01575499
Point Scale 0.99970844 0.99996043
Combined Factor 0.99965121 0.99990319

US NATIONAL GRID DESIGNATOR: 14SND9380271950(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 40865.8
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 26919.8
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 56193.1

NEAREST NGS PUBLISHED CONTROL POINT
EL1033 1 TF USGS 1957 N345909.072 W0975916.406 1427.1

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 48820770.11o 000184736 (Session 3)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4882077r.11o TIME: 16:08:53 UTC

SOFTWARE: page5 1009.28 master11.pl 121510 START: 2011/03/18 14:39:00
EPHEMERIS: tgr16275.eph [rapid] STOP: 2011/03/18 17:51:30
NAV FILE: brdc0770.11n OBS USED: 8023 / 8553 : 94%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 48 / 50 : 96%
ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2101)

X: -725592.231(m) 0.016(m) -725592.972(m) 0.016(m)
Y: -5181067.535(m) 0.040(m) -5181066.141(m) 0.040(m)
Z: 3636785.122(m) 0.020(m) 3636784.959(m) 0.020(m)

LAT: 34 59 8.86726 0.008(m) 34 59 8.88669 0.008(m)
E LON: 262 1 39.92322 0.014(m) 262 1 39.88666 0.014(m)
W LON: 97 58 20.07678 0.014(m) 97 58 20.11394 0.014(m)
EL HGT: 364.686(m) 0.046(m) 363.546(m) 0.046(m)
ORTHO HGT: 391.028(m) 0.078(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.358 183299.869
Easting (X) [meters] 593802.417 602334.173
Convergence [degrees] 0.58933117 0.01575502
Point Scale 0.99970844 0.99996043
Combined Factor 0.99965122 0.99990320

US NATIONAL GRID DESIGNATOR: 14SND9380271950(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 40865.8
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 26919.8
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 56193.1

NEAREST NGS PUBLISHED CONTROL POINT
EL1033 1 TF USGS 1957 N345909.072 W0975916.406 1427.1

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 48820682.11o 000184732 (Session 1)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4882068r.11o TIME: 16:06:43 UTC

SOFTWARE: page5 1009.28 master.pl 1215103 START: 2011/03/09 18:13:00
EPHEMERIS: tgr16263.eph [rapid] STOP: 2011/03/09 20:23:00
NAV FILE: brdc0680.11n OBS USED: 5853 / 6121 : 96%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 39 / 40 : 98%
ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1858)

X: -725649.266(m) 0.015(m) -725650.007(m) 0.015(m)
Y: -5179165.634(m) 0.004(m) -5179164.240(m) 0.004(m)
Z: 3639421.172(m) 0.011(m) 3639421.010(m) 0.011(m)

LAT: 35 0 53.84063 0.009(m) 35 0 53.86011 0.009(m)
E LON: 262 1 27.29177 0.015(m) 262 1 27.25495 0.006(m)
W LON: 97 58 32.70823 0.015(m) 97 58 32.74480 0.015(m)
EL HGT: 340.282(m) 0.007(m) 339.143(m) 0.007(m)
ORTHO HGT: 366.604(m) 0.015(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.900 186534.611
Easting (X) [meters] 593449.004 602213.047
Convergence [degrees] 0.58774591 0.01378341
Point Scale 0.99970763 0.99996412
Combined Factor 0.99965423 0.99991072

US NATIONAL GRID DESIGNATOR: 14SND9344975180(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 63129.9
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25573.3
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 59431.7

NEAREST NGS PUBLISHED CONTROL POINT
F31053 CHICKASHA KNDR RADIO MAST N350037.113 W0975838.818 539.9

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 47050741.11o 000184982 (Session 2)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4705074r.11o TIME: 18:57:44 UTC

SOFTWARE: page5 1009.28 master29.pl 121510 START: 2011/03/15 17:41:00
EPHEMERIS: tgr16272.eph [rapid] STOP: 2011/03/15 20:48:30
NAV FILE: brdc0740.11n OBS USED: 8270 / 8727 : 95%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 63 / 65 : 97%
ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2022)

X: -725649.262(m) 0.012(m) -725650.003(m) 0.012(m)
Y: -5179165.655(m) 0.018(m) -5179164.261(m) 0.018(m)
Z: 3639421.166(m) 0.014(m) 3639421.004(m) 0.014(m)

LAT: 35 0 53.84009 0.006(m) 35 0 53.85957 0.006(m)
E LON: 262 1 27.29200 0.014(m) 262 1 27.25447 0.014(m)
W LON: 97 58 32.70796 0.014(m) 97 58 32.74453 0.014(m)
EL HGT: 340.295(m) 0.021(m) 339.156(m) 0.021(m)
ORTHO HGT: 366.707(m) 0.036(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.884 186534.594
Easting (X) [meters] 593449.011 602213.054
Convergence [degrees] 0.58774595 0.01378345
Point Scale 0.99970763 0.99996412
Combined Factor 0.99965423 0.99991071

US NATIONAL GRID DESIGNATOR: 14SND9344975180(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 63129.8
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25573.3
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 59431.6

NEAREST NGS PUBLISHED CONTROL POINT
F31053 CHICKASHA KNDR RADIO MAST N350037.113 W0975838.818 539.9

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 47050770.11o 000184983 (Session 3)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.html#accuracy>

USER: John.T.Birkhahn@safc.com DATE: March 21, 2011
RINEX FILE: 4705077r.11o TIME: 18:57:58 UTC

SOFTWARE: page5 1009.28 master.pl 1215103 START: 2011/03/18 14:15:00
EPHEMERIS: tgr16275.eph [rapid] STOP: 2011/03/18 17:25:00
NAV FILE: brdc0770.11n OBS USED: 7765 / 8315 : 93%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 45 / 48 : 94%
ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2100)

X: -725649.270(m) 0.010(m) -725650.011(m) 0.010(m)
Y: -5179165.617(m) 0.029(m) -5179164.223(m) 0.029(m)
Z: 3639421.144(m) 0.032(m) 3639420.982(m) 0.032(m)

LAT: 35 0 53.84019 0.013(m) 35 0 53.85967 0.013(m)
E LON: 262 1 27.29152 0.006(m) 262 1 27.25495 0.006(m)
W LON: 97 58 32.70848 0.006(m) 97 58 32.74505 0.006(m)
EL HGT: 340.253(m) 0.043(m) 339.113(m) 0.043(m)
ORTHO HGT: 366.665(m) 0.073(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.886 186534.597
Easting (X) [meters] 593448.998 602213.041
Convergence [degrees] 0.58774586 0.01378337
Point Scale 0.99970763 0.99996412
Combined Factor 0.99965424 0.99991072

US NATIONAL GRID DESIGNATOR: 14SND9344875180(NAD 83)

PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 63129.9
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25573.3
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 59431.6

NEAREST NGS PUBLISHED CONTROL POINT
F31053 CHICKASHA KNDR RADIO MAST N350037.113 W0975838.818 539.9

This position and the above vector components were computed without any knowledge by the national Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 48820683.11o 000184734 (Session 1)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 4882068v.11o TIME: 16:07:49 UTC

SOFTWARE: page5 1009.28 master28.pl 121510 START: 2011/03/09 21:06:00
EPHEMERIS: tgr16263.eph [rapid] STOP: 2011/03/09 23:16:00
NAV FILE: brdc0680.11n OBS USED: 5816 / 6129 : 95%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 51 / 55 : 93%
ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1861)
X: -726879.951(m) 0.021(m) -726880.692(m) 0.021(m)
Y: -5177113.536(m) 0.025(m) -5177112.142(m) 0.025(m)
Z: 3642070.762(m) 0.034(m) 3642070.600(m) 0.034(m)
LAT: 35 2 38.90696 0.016(m) 35 2 38.92646 0.016(m)
E LON: 262 0 27.97098 0.022(m) 262 0 27.93438 0.022(m)
W LON: 97 59 32.02902 0.022(m) 97 59 32.06562 0.022(m)
EL HGT: 337.032(m) 0.040(m) 335.893(m) 0.040(m)
ORTHO HGT: 363.528(m) 0.068(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3878402.305 189772.089
Easting (X) [meters] 591912.871 600708.896
Convergence [degrees] 0.57870932 0.00441022
Point Scale 0.99970412 0.99996808
Combined Factor 0.99965123 0.99991518

US NATIONAL GRID DESIGNATOR: 14SDN9191278402(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.2

NEAREST NGS PUBLISHED CONTROL POINT
PJ0783 R 214 N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

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NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 47050740.11o 000184981 (Session 2)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 47050740.11o TIME: 18:57:07 UTC

SOFTWARE: page5 1009.28 master.pl 1215103 START: 2011/03/15 14:07:00
EPHEMERIS: tgr16272.eph [rapid] STOP: 2011/03/15 17:20:00
NAV FILE: brdc0740.11n OBS USED: 7677 / 8241 : 93%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 52 / 57 : 91%
ARP HEIGHT: 2.25 OVERALL RMS: 0.012(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2018)
X: -726879.936(m) 0.027(m) -726880.677(m) 0.027(m)
Y: -5177113.505(m) 0.044(m) -5177112.111(m) 0.044(m)
Z: 3642070.770(m) 0.052(m) 3642070.608(m) 0.052(m)
LAT: 35 2 38.92778 0.037(m) 35 2 38.92728 0.037(m)
E LON: 262 0 27.97140 0.028(m) 262 0 27.93480 0.028(m)
W LON: 97 59 32.02860 0.028(m) 97 59 32.06520 0.028(m)
EL HGT: 337.010(m) 0.051(m) 335.867(m) 0.051(m)
ORTHO HGT: 363.506(m) 0.086(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3878402.330 189772.114
Easting (X) [meters] 591912.881 600708.896
Convergence [degrees] 0.57870939 0.00441029
Point Scale 0.99970412 0.99996808
Combined Factor 0.99965123 0.99991518

US NATIONAL GRID DESIGNATOR: 14SDN9191278402(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.1

NEAREST NGS PUBLISHED CONTROL POINT
PJ0783 R 214 N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SWO 4380(1)

Page 2

NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 47050771.11o 000184984 (Session 3)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 4705077v.11o TIME: 18:58:23 UTC

SOFTWARE: page5 1009.28 master.pl 1215103 START: 2011/03/18 18:07:00
EPHEMERIS: tgr16275.eph [rapid] STOP: 2011/03/18 21:14:00
NAV FILE: brdc0770.11n OBS USED: 7425 / 7957 : 93%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 58 / 63 : 92%
ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2105)
X: -726879.932(m) 0.021(m) -726880.673(m) 0.021(m)
Y: -5177112.503(m) 0.028(m) -5177112.109(m) 0.028(m)
Z: 3642070.767(m) 0.060(m) 3642070.605(m) 0.060(m)
LAT: 35 2 38.92725 0.036(m) 35 2 38.92725 0.036(m)
E LON: 262 0 27.97154 0.021(m) 262 0 27.93494 0.021(m)
W LON: 97 59 32.02846 0.021(m) 97 59 32.06506 0.021(m)
EL HGT: 337.006(m) 0.054(m) 335.867(m) 0.054(m)
ORTHO HGT: 363.502(m) 0.091(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3878402.329 189772.114
Easting (X) [meters] 591912.885 600708.894
Convergence [degrees] 0.57870941 0.00441031
Point Scale 0.99970412 0.99996808
Combined Factor 0.99965124 0.99991518

US NATIONAL GRID DESIGNATOR: 14SDN9191278402(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.1

NEAREST NGS PUBLISHED CONTROL POINT
PJ0783 R 214 N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SWO 4380(1)

Page 3

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 47050681.11o 000184979 (Session 1)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 4705068u.11o TIME: 18:56:52 UTC

SOFTWARE: page5 1009.28 master28.pl 121510 START: 2011/03/09 20:02:00
EPHEMERIS: tgr16263.eph [rapid] STOP: 2011/03/09 22:17:00
NAV FILE: brdc0680.11n OBS USED: 5111 / 5798 : 88%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 49 / 51 : 96%
ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1860)
X: -724677.684(m) 0.038(m) -724678.425(m) 0.038(m)
Y: -5175901.599(m) 0.027(m) -5175900.206(m) 0.027(m)
Z: 3644168.015(m) 0.033(m) 3644167.855(m) 0.033(m)
LAT: 35 4 2.68057 0.045(m) 35 4 2.70007 0.045(m)
E LON: 262 1 47.39127 0.034(m) 262 1 47.35468 0.034(m)
W LON: 97 58 12.60873 0.034(m) 97 58 12.64532 0.034(m)
EL HGT: 308.855(m) 0.015(m) 307.717(m) 0.015(m)
ORTHO HGT: 335.354(m) 0.026(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3881003.622 192354.046
Easting (X) [meters] 591898.372 602720.896
Convergence [degrees] 0.59122122 0.01693252
Point Scale 0.99970866 0.99997141
Combined Factor 0.99966020 0.99992294

US NATIONAL GRID DESIGNATOR: 14SDN9389881003(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.5
DG0755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23169.0
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

NEAREST NGS PUBLISHED CONTROL POINT
PJ0784 S 214 N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SWO 4380(1)

Page 1

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 47460740.11o 000184910 (Session 2)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 47460740.11o TIME: 18:10:36 UTC

SOFTWARE: page5 1009.28 master40.pl 121510 START: 2011/03/15 14:42:00
EPHEMERIS: tgr16272.eph [rapid] STOP: 2011/03/15 17:58:30
NAV FILE: brdc0740.11n OBS USED: 7964 / 8491 : 94%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 51 / 57 : 89%
ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2019)
X: -724677.699(m) 0.009(m) -724678.440(m) 0.009(m)
Y: -5175901.597(m) 0.056(m) -5175900.204(m) 0.056(m)
Z: 3644167.895(m) 0.044(m) 3644167.835(m) 0.044(m)
LAT: 35 4 2.68003 0.016(m) 35 4 2.69953 0.016(m)
E LON: 262 1 47.39087 0.016(m) 262 1 47.35469 0.016(m)
W LON: 97 58 12.60933 0.016(m) 97 58 12.64591 0.016(m)
EL HGT: 308.843(m) 0.070(m) 307.705(m) 0.070(m)
ORTHO HGT: 335.382(m) 0.118(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3881003.606 192354.030
Easting (X) [meters] 591898.357 602720.891
Convergence [degrees] 0.59122102 0.01693243
Point Scale 0.99970866 0.99997141
Combined Factor 0.99966020 0.99992294

US NATIONAL GRID DESIGNATOR: 14SDN9389881003(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.5
DG0755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23169.0
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

NEAREST NGS PUBLISHED CONTROL POINT
PJ0784 S 214 N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SWO 4380(1)

Page 2

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 48820771.11o 000184737 (Session 3)

NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: John.T.Birkhahn@saic.com DATE: March 21, 2011
RINEX FILE: 4882077v.11o TIME: 16:09:17 UTC

SOFTWARE: page5 1009.28 master10.pl 121510 START: 2011/03/18 18:21:00
EPHEMERIS: tgr16275.eph [rapid] STOP: 2011/03/18 21:05:00
NAV FILE: brdc0770.11n OBS USED: 6401 / 6952 : 92%
ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 55 / 60 : 92%
ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2105)
X: -724677.712(m) 0.018(m) -724678.453(m) 0.018(m)
Y: -5175901.628(m) 0.041(m) -5175900.235(m) 0.041(m)
Z: 3644168.016(m) 0.038(m) 3644167.854(m) 0.038(m)
LAT: 35 4 2.69999 0.009(m) 35 4 2.69949 0.009(m)
E LON: 262 1 47.39033 0.024(m) 262 1 47.35375 0.024(m)
W LON: 97 58 12.60967 0.024(m) 97 58 12.64625 0.024(m)
EL HGT: 308.882(m) 0.053(m) 307.744(m) 0.053(m)
ORTHO HGT: 335.421(m) 0.090(m) [NAV088 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3881003.604 192354.028
Easting (X) [meters] 591898.349 602720.872
Convergence [degrees] 0.59122197 0.01693237
Point Scale 0.99970866 0.99997141
Combined Factor 0.99966019 0.99992293

US NATIONAL GRID DESIGNATOR: 14SDN9389881003(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE8099 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.4
DG0755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23169.0
DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

NEAREST NGS PUBLISHED CONTROL POINT
PJ0784 S 214 N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SWO 4380(1)

Page 3

UNLESS OTHERWISE SPECIFIED, ALL RP'S
ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 20
T-6-N, R-7-W

Station comparison
Station 87+22.42 on this survey*
Station 1082+61.52 on SW02737(1) survey*
Station 1082+61.52 on FAP No. F-162(10X11) plans

Danny Glass
Quit Claim Deed
Rec'd. Bk. 4785, Pg. 258
Filed: July 11, 2014

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(E/2, NE/4, SE/4, SEC 20
Obscure Description)
Bk. 569, Pg. 485
Filed 12/29/1953

Buck G. Hudson &
Carmen Hudson
Quit Claim Deed
Rec'd. Bk. 3028, Pg. 599
Filed: May 11, 1998

Morgan Cattle Company
Rec'd. Bk. 3116, Pg. 243

BOP Sta. 87+22.42
Set 1/2" I.P.
on EW-141 $\frac{1}{4}$
28.64' W. to sec. corl
2612.11 E. to 1/4 cor.

$$00+06$$

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(SE/4, SE/4, SEC 20
Obscure Description)
Bk. 569, Pg. 485
Filed 12/29/1953

Morgan Cattle Company
Warranty Deed
Rec'd. Bk. 3199, Pg. 551
Filed: May 23, 2000

Ninnekah Water Corp.
20' Right-of-Way Easement
Bk. 882, Pg. 887
Filed October 8, 1970

$$95 + 00$$

Public
30' Roadway Easement
Rec'd. Bk. 395, Pg. 199
Filed March 1, 1939

Ninnekah Water Corp.
20' Right-of-Way Easement
Bk. 882, Pg. 883
Filed October 8, 1970

CAN-OK Oil Field Services Co.
Rec'd. Bk. 4728, Pg. 112
Special Warranty Deed
Filed: February 27/2014

Ninnekah Water Corp.
20' Right-of-Way Easement
Bk. 882, Pg. 884
Filed 10/08/1970

SECTION 21
T-6-N, R-7-W



SCALE
1" = 100'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION	
DRAWN	CBM		SURVEY DATA SHEET	
CHECKED	JTB			
APPROVED	JTB			
CREW	BDG		SWO <u>4925</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>5019</u>	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

Station comparison
Mstr. PI Station 1127+31.95 on this survey
Mstr. PI Station 1127+31.95 on SW02737(1) survey
Mstr. PI Station 1127+31.95 on FAP No. F-16210(XII) plans

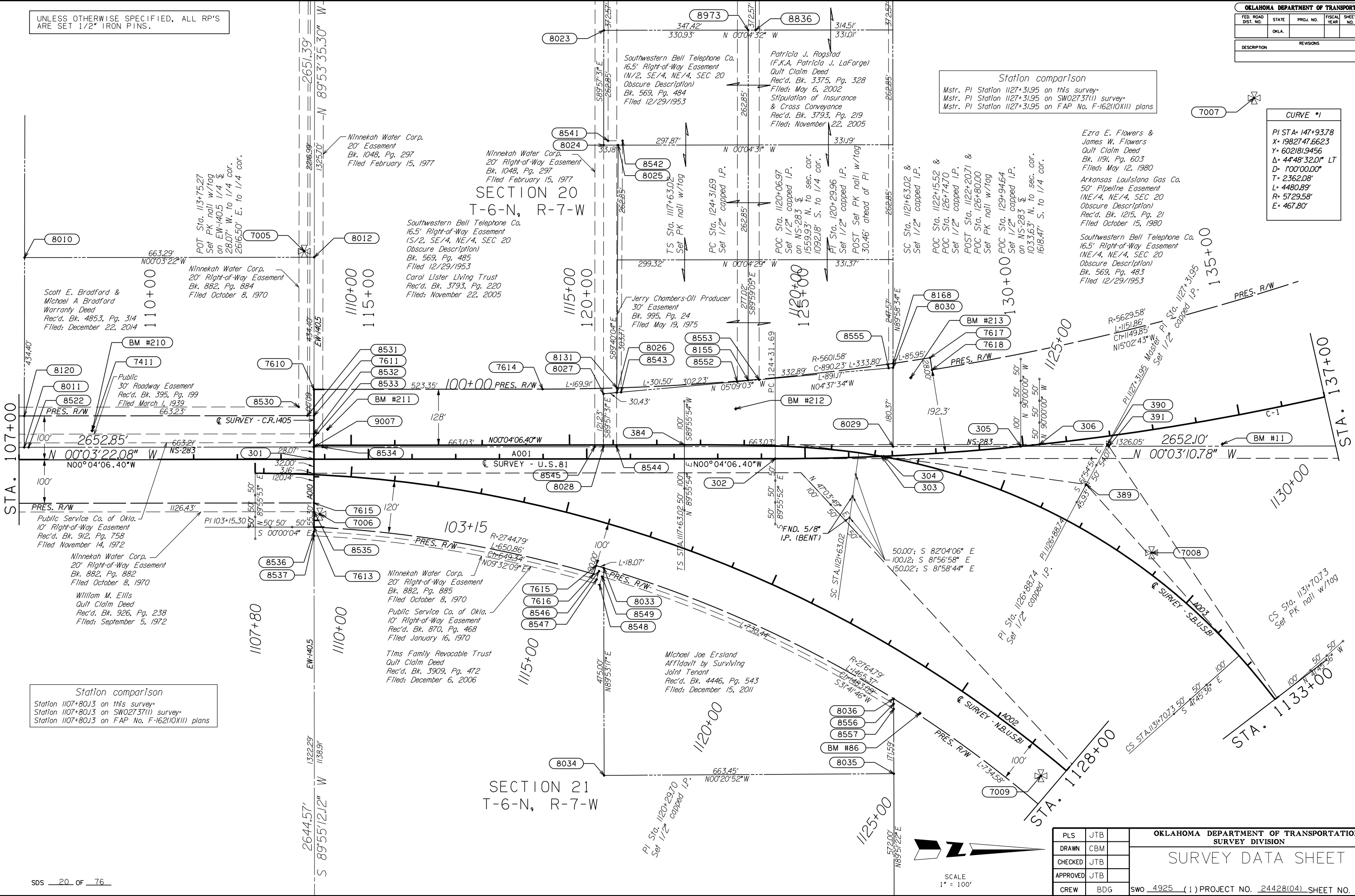
CURVE #1

PI STA+147+93.78
X= 1982747.6623
Y= 602181.9456
Δ= 44°48'32.0" LT
D= 1°00'00.00"
T= 2362.08'
L= 4480.89'
R= 5729.58'
E= 467.80'

Ezra E. Flowers &
James W. Flowers
Quit Claim Deed
Bk. 1191, Pg. 603
Filed: May 12, 1980

Arkansas Louisiana Gas Co.
50' Pipeline Easement
(NE 1/4, NE 1/4, SEC 20
Obscure Description)
Rec'd. Bk. 1215, Pg. 21
Filed October 15, 1980

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(NE 1/4, NE 1/4, SEC 20
Obscure Description)
Bk. 569, Pg. 483
Filed 12/29/1953



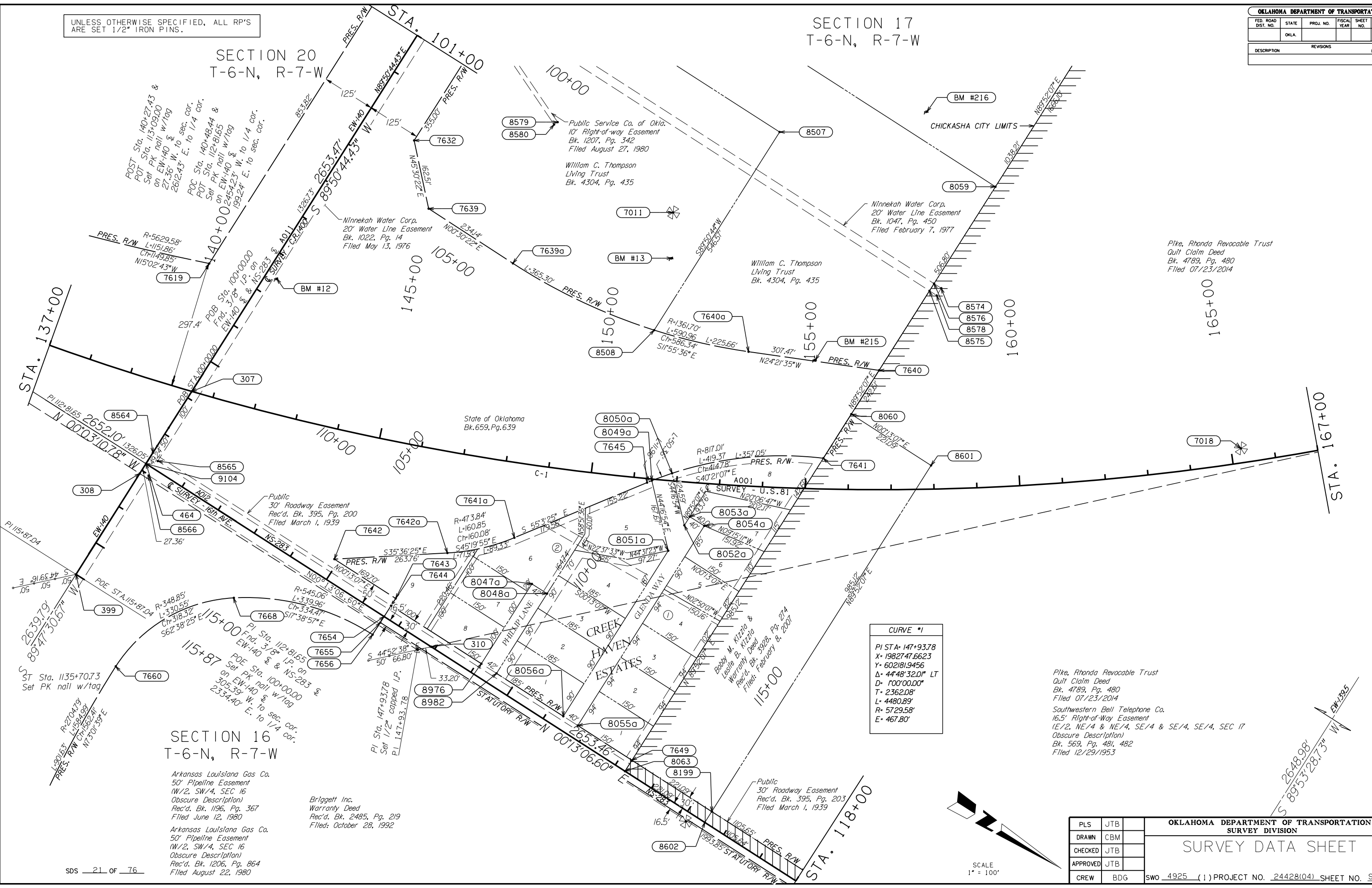
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S020			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

SECTION 20
T-6-N, R-7-W

SECTION 17
T-6-N, R-7-W



SECTION 16
T-6-N, R-7-W

Arkansas Louisiana Gas Co.
50' Pipeline Easement
W/2, SW/4, SEC 16
Obscure Description
Rec'd. Bk. 1196, Pg. 367
Filed June 12, 1980

Arkansas Louisiana Gas Co.
50' Pipeline Easement
W/2, SW/4, SEC 16
Obscure Description
Rec'd. Bk. 1206, Pg. 864
Filed August 22, 1980

Briggett Inc.
Warranty Deed
Rec'd. Bk. 2485, Pg. 219
Filed: October 28, 1992

CURVE #1	
PI STA+ 147+93.78	
X+ 1982747.6623	
Y+ 602181.9456	
Δ+ 44°48'32.01" LT	
D+ 100°00.00"	
T+ 2362.08'	
L+ 4480.89'	
R+ 5729.58'	
E+ 467.80'	

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(E/2, NE/4 & NE/4, SE/4 & SE/4, SE/4, SEC 17
Obscure Description)
Bk. 569, Pg. 481, 482
Filed 12/29/1953

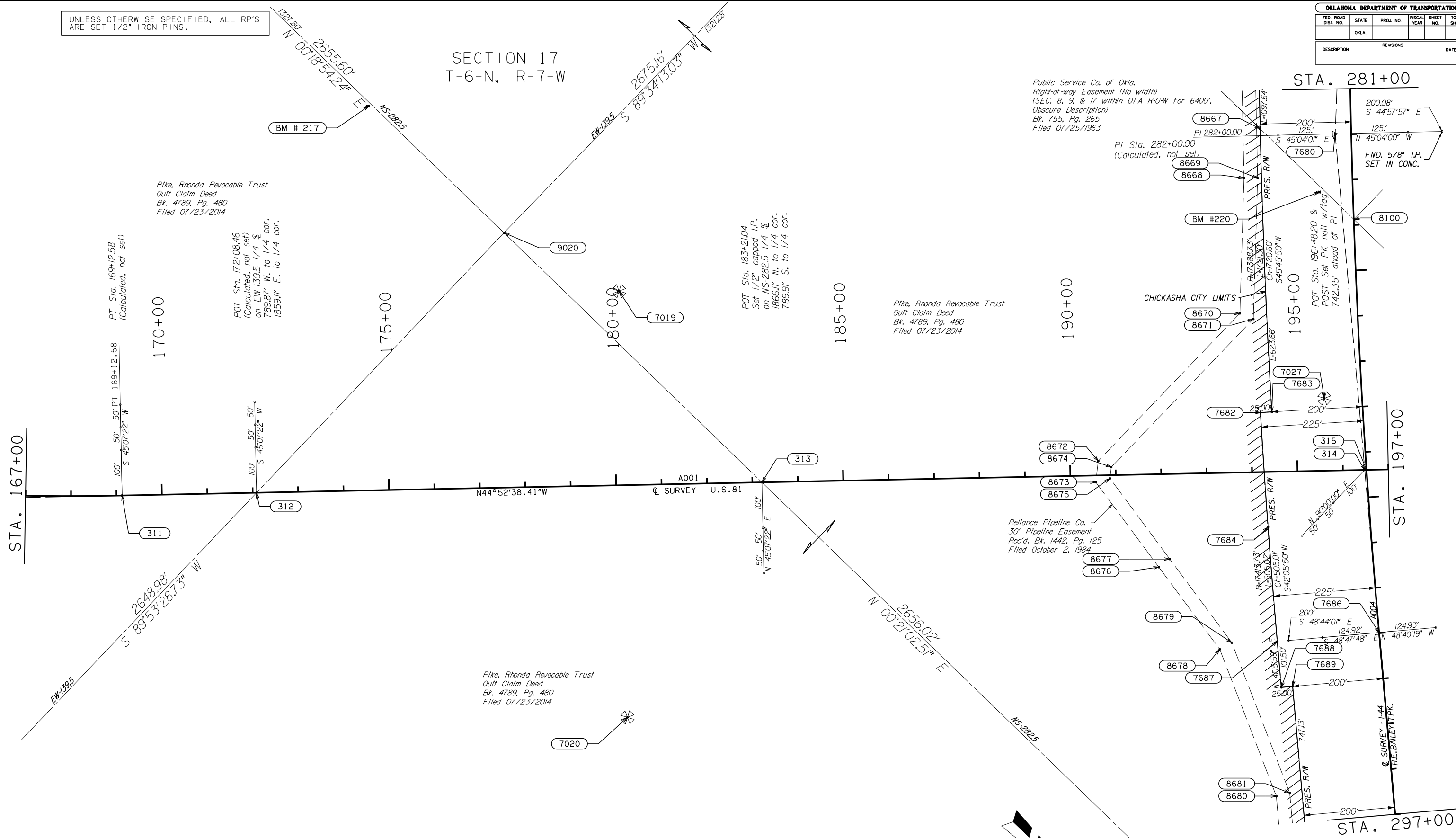
OKLAHOMA DEPARTMENT OF TRANSPORTATION	
SURVEY DIVISION	
SURVEY DATA SHEET	
PLS	JTB
DRAWN	CBM
CHECKED	JTB
APPROVED	JTB
CREW	BDG
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. 5021	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

SECTION 17
T-6-N, R-7-W

SECTION 17
T-6-N, R-7-W



PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	CBM	SURVEY DIVISION	
CHECKED	JTB	SURVEY DATA SHEET	
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S022	

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2506, Pg. 268
Filed Date: December 31, 1992

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2506, Pg. 268
Filed Date: December 31, 1992

Sisexua Trust
Quit Claim Deed
Rec'd. Bk. 4308, Pg. 438
Filed Date: September 29, 2010

Sisexua Trust
Quit Claim Deed
Rec'd. Bk. 4308, Pg. 438
Filed Date: September 29, 2010

Reliance Pipeline Co.
25' Pipeline Easement
Rec'd. Bk. 1442, Pg. 120
Filed October 2, 1984

GOV'T.
LOT 16

GOV'T.
LOT 15

GOV'T.
LOT 11

SECTION 8
T-6-N, R-7-W

SECTION 18
T-6-N, R-7-W

SECTION 17
T-6-N, R-7-W

SECTION 7
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S023			

SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S
ARE SET 1/2" IRON PINS.

7681

280+00

8295

200.08'
S 44°57'57" E
FND. 5/8" I.P.
SET IN CONC.

285+00

8321

BM #1

8069

290+00

7685

8012

295+00

7696

7697

8378

8015

8379

7035

7034

8380

8079

8381

7694

7695

8628

8627

7692

7697

9029

8630

8629

BM #4

317

8153

8382

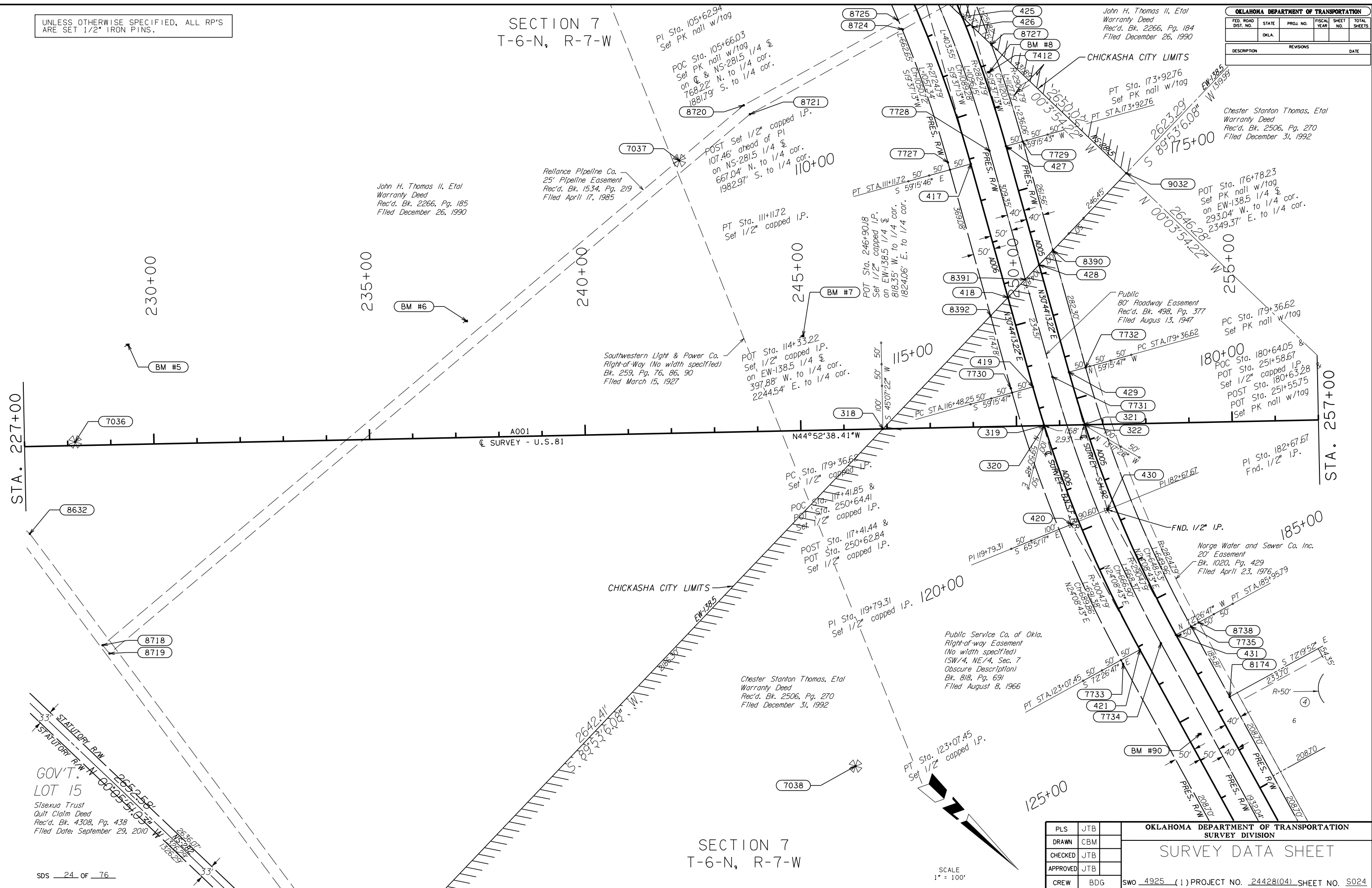
8080

8631

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 7
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	



SECTION 7
T-6-N, R-7-W

SCALE
1" = 100'

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		CBM		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB			
CREW		BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S024	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

POT Sta. 258+51.31
Set 1/2" capped I.P.
on NS-281.5 1/4 S.
1821.84' N. to 1/4 cor.
824.44' S. to 1/4 cor.

POC Sta. 283+51.69 &
POT Sta. 109+02.53
Set PK nail w/tag
on EW-138 S. &
902.53' W. to sec. cor.
177.22' E. to 1/4 cor.

POST Sta. 284+08.38 &
POT Sta. 108+17.55
Set PK nail w/tag
on EW-138 S. &
817.55' W. to sec. cor.
1802.20' E. to 1/4 cor.

GOV'T.
LOT 5

GOV'T.
LOT 11

Sharon K. Powell Living Trust
Quit Claim Deed
Bk. 4342, Pg. 258
Filed 01/18/2011

Southwestern Light & Power Co.
Right-of-Way (No width specified)
(SE 1/4, SW 1/4, Sec. 6,
Obscure Description)
Rec'd. Bk. 284, Pg. 75
Filed November 7, 1928

PLS		JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN		CBM	SURVEY DIVISION		
CHECKED		JTB	SURVEY DATA SHEET		
APPROVED		JTB			
CREW		BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S025		

SECTION 7
T-6-N, R-7-W

SECTION 7
T-6-N, R-7-W

HILLSBORO
HEIGHTS
REVISED ADDITION

STA. 257+00

STA. 287+00

STA. 123+00

STA. 103+00

115+00

110+00

120+00

CHICKASHA CITY LIMITS

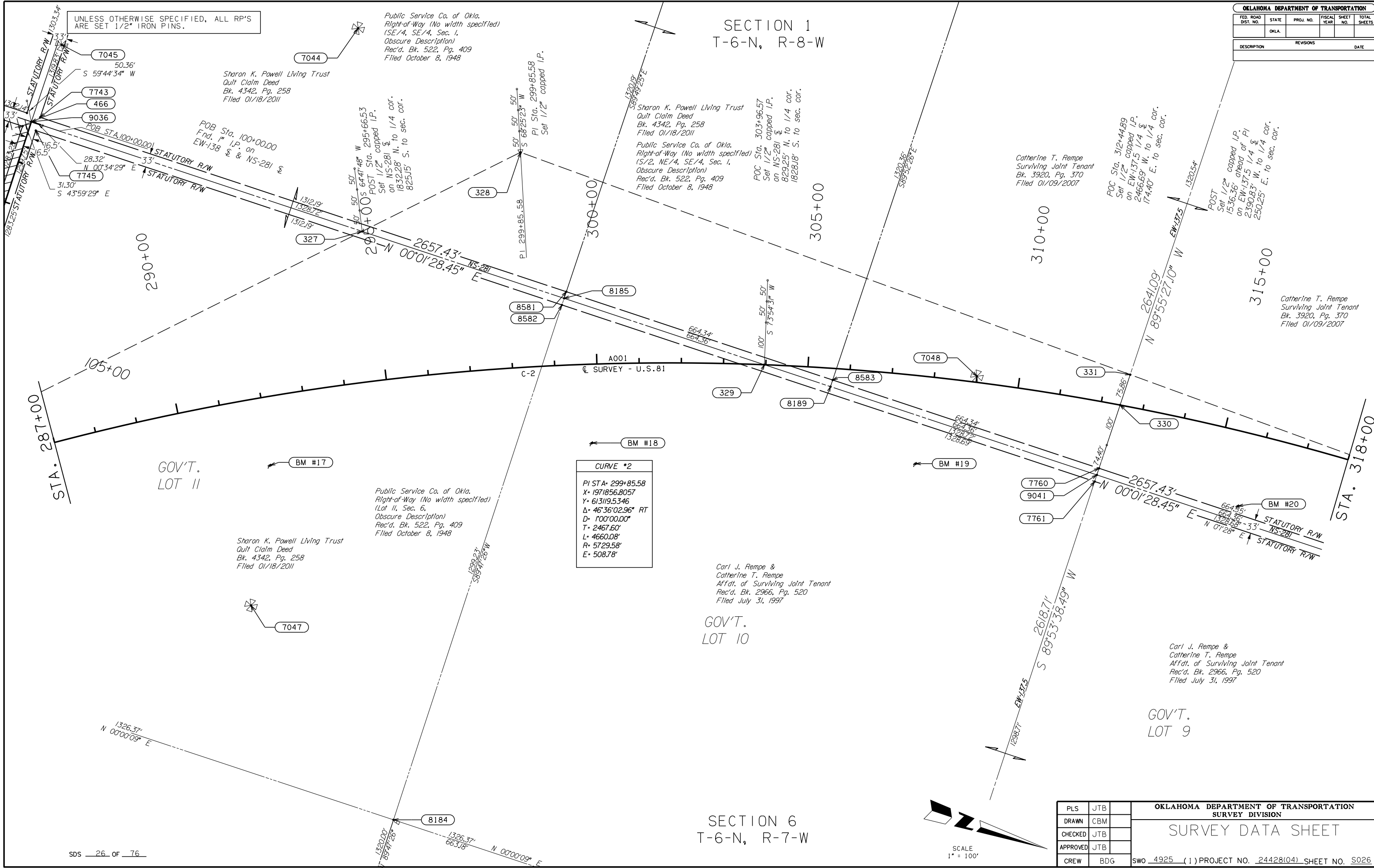
CHICKASHA CITY LIMITS

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

Randal S. Harwell
Bonnie D. Harwell
Warranty Deed
Rec'd. Bk. 3999, Pg. 49
Filed September 27, 2007

SDS 25 OF 76

SCALE
1" = 100'



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S026			

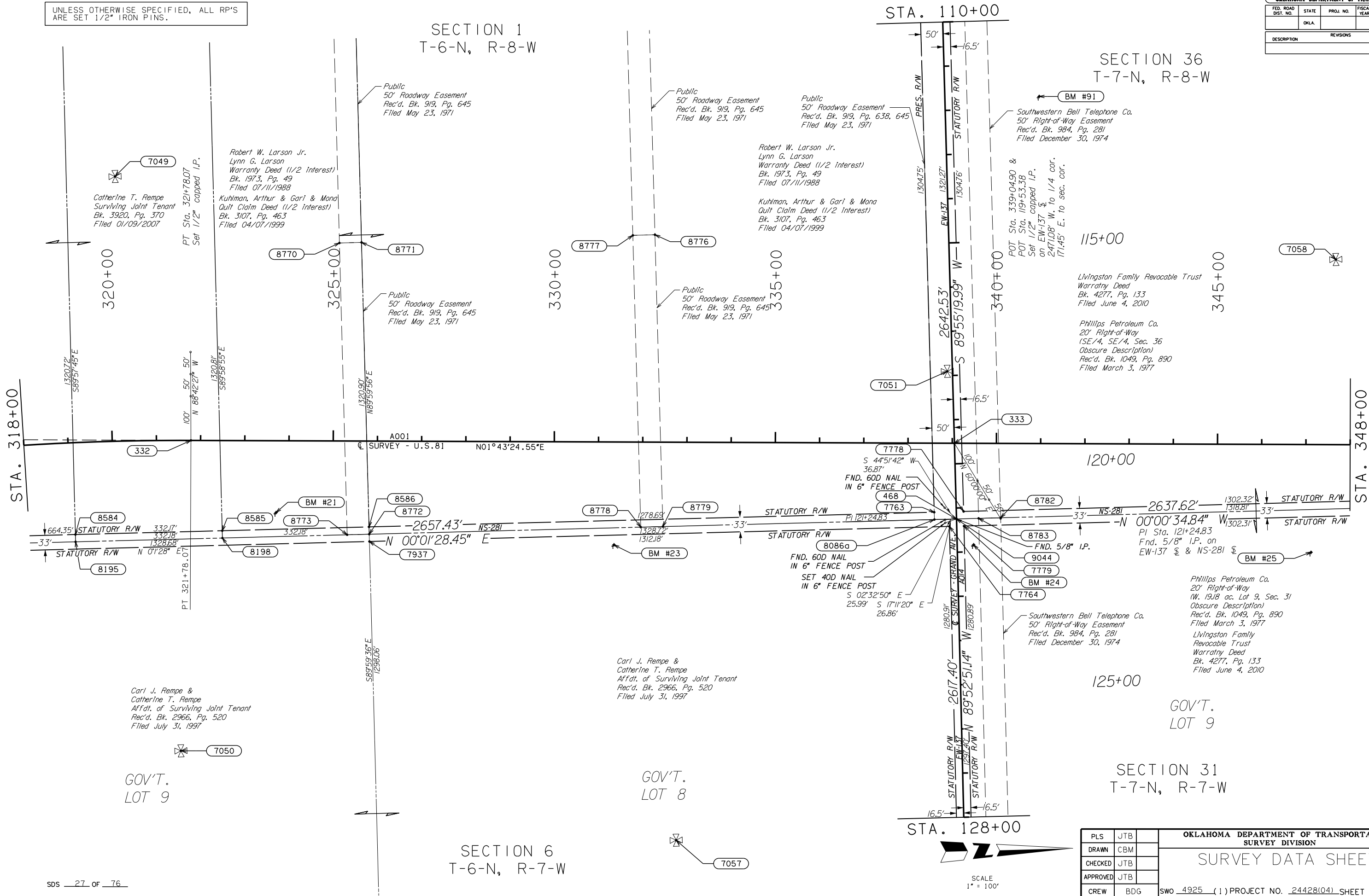
UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 1
T-6-N, R-8-W

STA. 110+00

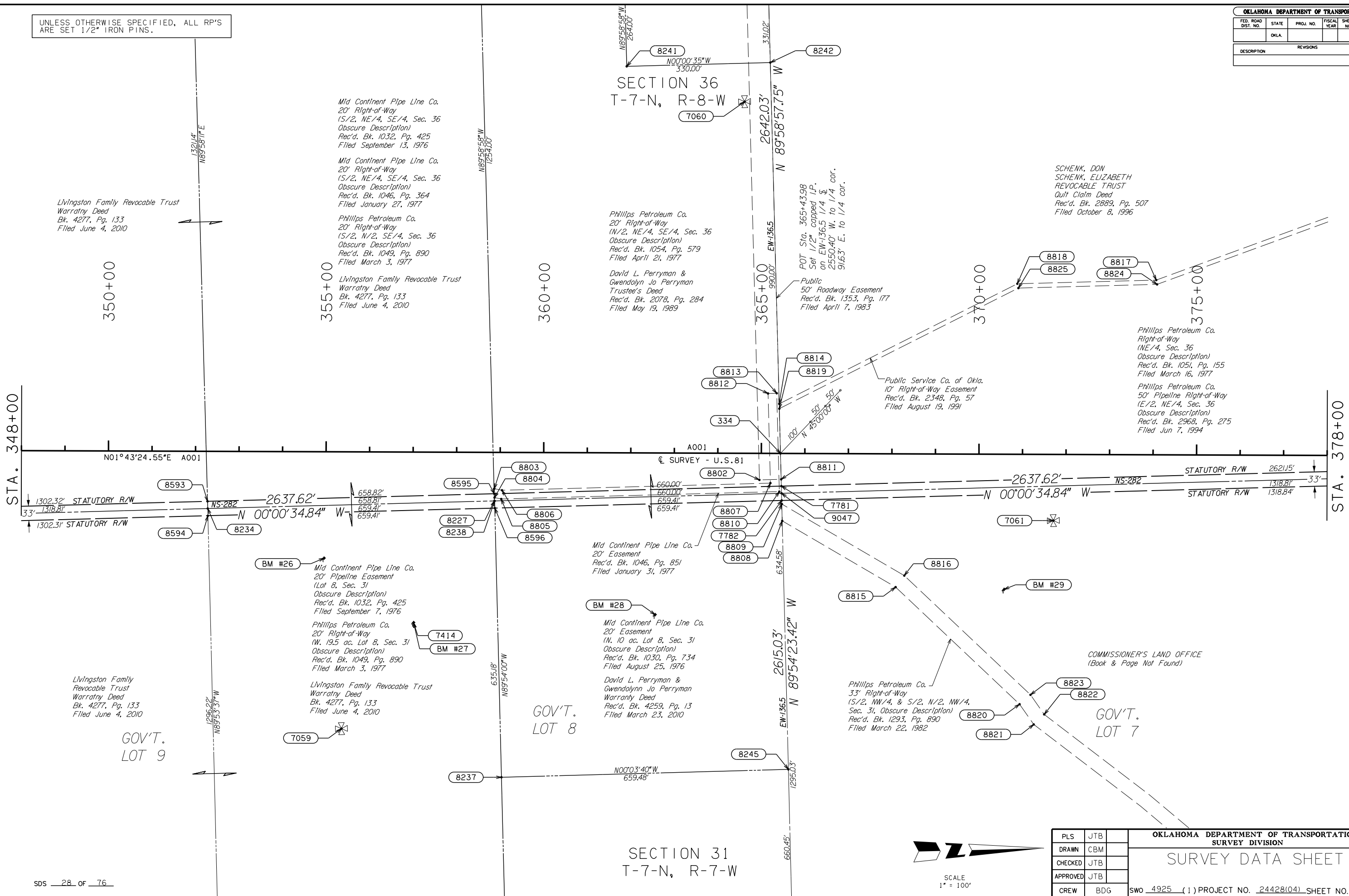
SECTION 36
T-7-N, R-8-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			DATE



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	



SDS 28 OF 76



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. 5028			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

Raw Crude, L.L.C.
25' Pipeline Easement
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 3451, Pg. 386
Filed Jun 22, 2003

UMC Petroleum Corporation
Pipeline Right-of-Way
(No width specified)
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 2857, Pg. 556
Filed May 3, 1996

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996

Public Service Co. of Okla.
10' Right-of-Way Easement
Rec'd. Bk. 2348, Pg. 57
Filed August 19, 1991

Mid Continent Pipe Line Co.
50' Right-of-Way
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1046, Pg. 366
Filed January 27, 1977

Koch Industries Inc.
Right-of-Way
(No width specified)
(NE/4, Sec. 6,
Obscure Description)
Rec'd. Bk. 896, Pg. 23
Filed May 10, 1971

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
(NE/4, Sec. 36
Obscure Description)
Bk. 1018, Pg. 314
Filed April 1, 1976

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
Bk. 1323, Pg. 545
Filed 09/28/1982

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
Bk. 1323, Pg. 539, 542
Filed 09/28/1982

COMMISSIONER'S LAND OFFICE
(Book & Page Not Found)
Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Easement
(W/2 Lot 6, Sec. 31
Obscure Description)
Bk. 1018, Pg. 279
Filed April 1, 1976

Public Service Co. of Okla.
5' Right-of-Way Easement
Rec'd. Bk. 1743, Pg. 72
Filed Sept 25, 1986

Gary Don Whitaker &
Donna Fay Whitaker
Quit Claim Deed
Rec'd. Bk. 4329, Pg. 590
Filed December 16, 2010

Phillips Petroleum Co.
33' Right-of-Way
(S/2, NW/4, & S/2, N/2, NW/4,
Sec. 31, Obscure Description)
Rec'd. Bk. 1293, Pg. 890
Filed March 22, 1982

Johnny Paul Franklin &
Holly F. Franklin
Warranty Deed
Rec'd. Bk. 3171, Pg. 165
Filed January 28, 2000

SECTION 25
T-7-N, R-8-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS		DATE	

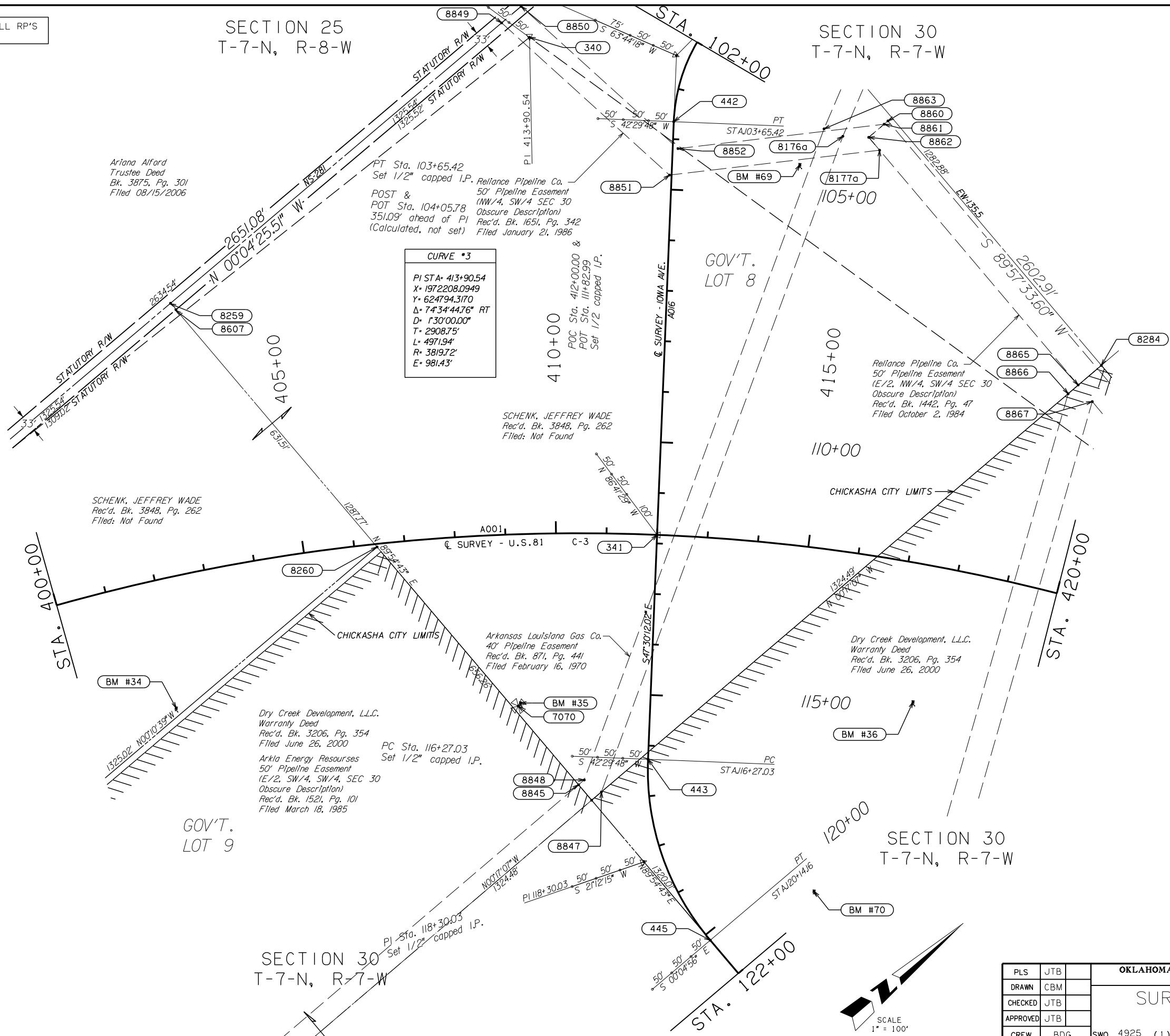
CURVE #3	
PI STA	413+90.54
X	1972208.0949
Y	624794.3170
Δ	74°34'44.76" RT
D	130°00.00'
T	2908.75'
L	4971.94'
R	3819.72'
E	981.43'

SECTION 30
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. 5029			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

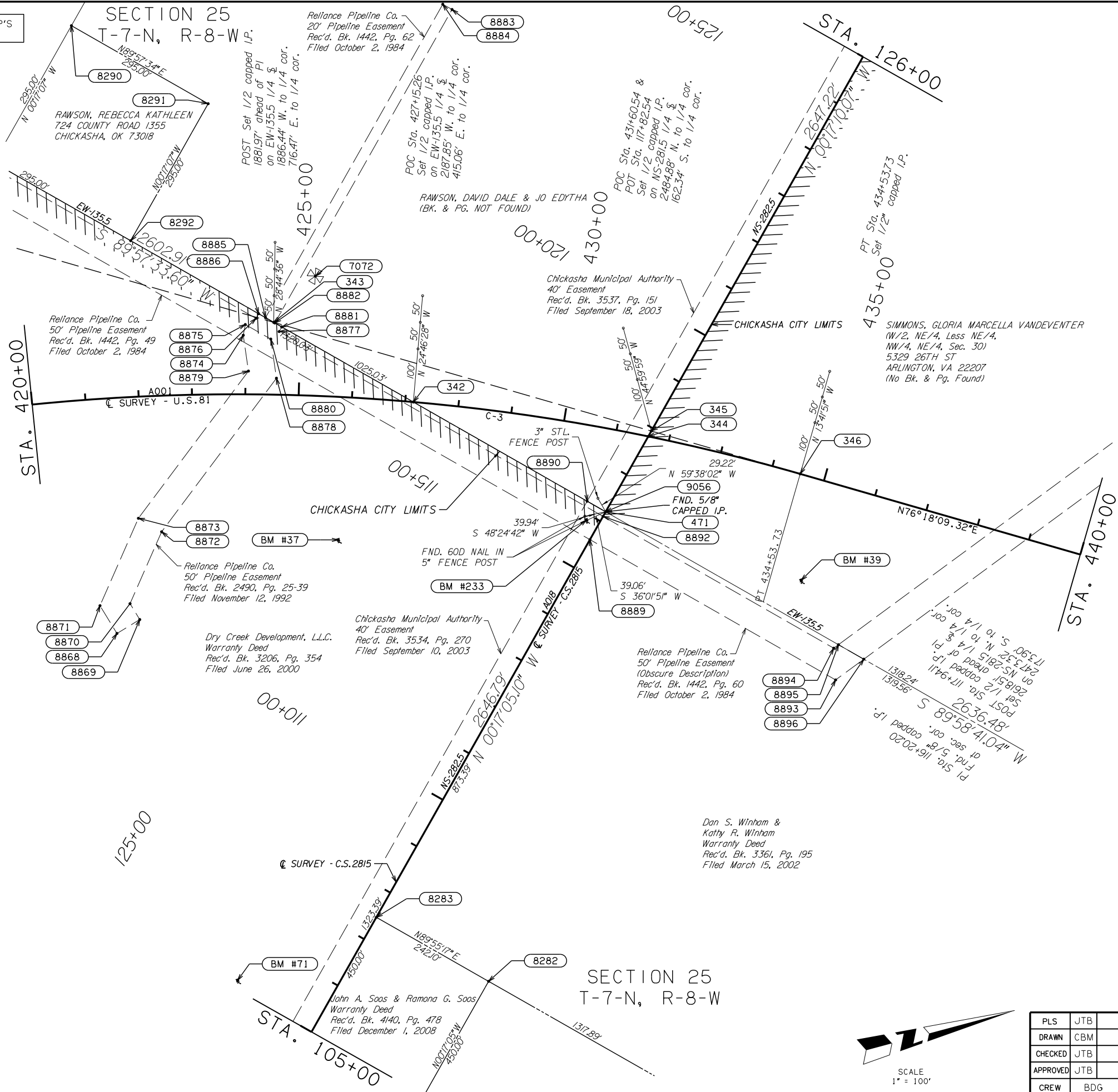


SDS 30 OF 76

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	CBM	SURVEY DIVISION	
CHECKED	JTB	SURVEY DATA SHEET	
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S030	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

CURVE #3
PI STA. 413+90.54
X= 1972208.0949
Y= 624794.3170
Δ= 74°34'44.76" RT
D= 1°30'00.00"
T= 2908.75'
L= 4971.94'
R= 3819.72'
E= 981.43'



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION		REVISIONS		DATE	

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		CBM		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB			
CREW		BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S031	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 29
T-7-N, R-7-W

GOV'T.
LOT 10

GOV'T.
LOT 6

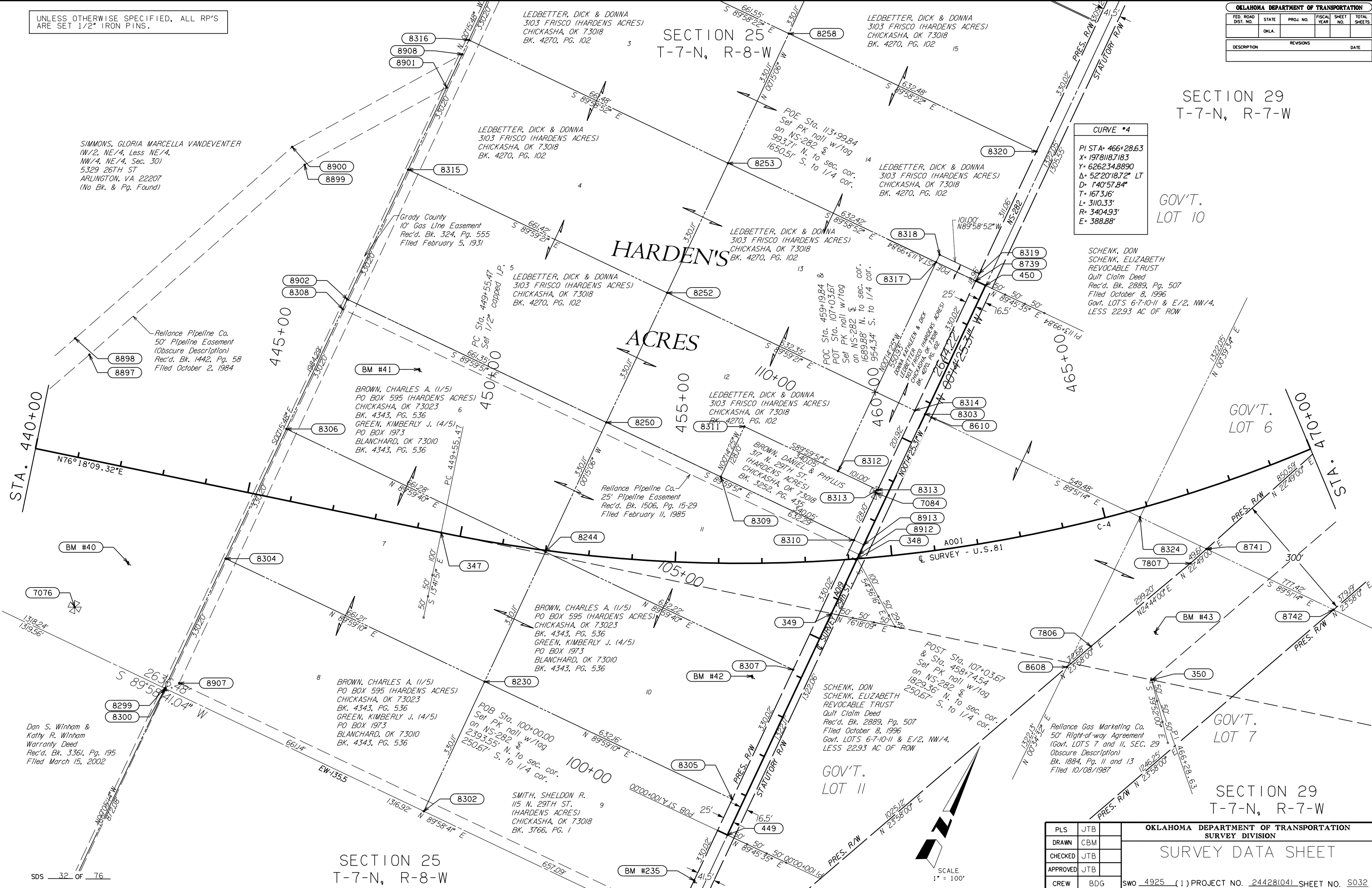
GOV'T.
LOT 7

SECTION 29
T-7-N, R-7-W

CURVE #4
PI STA+ 466+28.63
X= 1978118.7183
Y= 626234.8890
Δ= 52°20'18.72" LT
D= 140°57.84"
T= 1673.16'
L= 3110.33'
R= 3404.93'
E= 388.88'

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996
Govt. LOTS 6-7-10-11 & E/2, NW/4,
LESS 22.93 AC OF ROW

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		CBM		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB			
CREW		BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S032	



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 29
T-7-N, R-7-W

GOV'T.
LOT 10

GOV'T.
LOT 13

GOV'T.
LOT 9

GOV'T.
LOT 8

GOV'T.
LOT 6

SECTION 20
T-7-N, R-7-W

SECTION 20
T-7-N, R-7-W

SECTION 29
T-7-N, R-7-W

SDS 33 OF 76

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

Frac Tech Services, LTD.
Warranty Deed
Rec'd. Bk. 3955, Pg. 473
Filed May 16, 2007

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996
Govt. LOTS 6-7-10-II & E/2, NW/4,
LESS 22.93 AC OF ROW

Andra McNeil
Deed (Type not found)
Bk. & Pg. (Not found)
Filed (Not found)

Public Service Co. of Okla.
10' Right-of-Way Easement
Rec'd. Bk. 894, Pg. 100
Filed April 12, 1971

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
Bk. 664, Pg. 442
Filed 06/12/1958

City of Chickasha
20' Easement
Rec'd. Bk. 2840, Pg. 595
Filed February 20, 1996

Industrial Compounding, LLC
Warranty Deed
Rec'd. Bk. 3950, Pg. 34
Filing date not listed

Hudson Gas Systems
50' Right-of-Way Easement
(E/2, SW/4, Sec. 20
N. of Hwy 62, E. of Hwy 81,
Obscure Description)
Rec'd. Bk. 1988, Pg. 299
Filed August 25, 1988

State of Oklahoma
Report of Commissioners
Bk. 842, Pg. 240
Filed 02/21/1968

Public Service Co. of Okla.
20' Right-of-Way Easement
Rec'd. Bk. 852, Pg. 306
Filed December 9, 1968

State of Oklahoma
Report of Commissioners
Bk. 842, Pg. 240
Filed 02/21/1968

City of Chickasha
Easement & Right-of-Way Agreement
Rec'd. Bk. 1004, Pg. 407
Filed September 22, 1975

Arkansas Louisiana Gas Co.
10' Pipeline Easement
Rec'd. Bk. 1014, Pg. 132
Filed February 9, 1976

City of Chickasha
Warranty Deed
Rec'd. Bk. 3921, Pg. 135
Filed November 11, 2007

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996
Govt. LOTS 6-7-10-II & E/2, NW/4,
LESS 22.93 AC OF ROW

POT Sta. 481+94.71
Set 1/2" capped I.P.
on EW-135 & to sec. cor.
147.17' W. to 1/4 cor.
1187.27' E. to 1/4 cor.

POT Sta. 481+94.97
Set 1/2" capped I.P.
on EW-135 & to sec. cor.
147.23' W. to 1/4 cor.
1186.64' E. to 1/4 cor.

Public Service Co. of Okla.
20' Right-of-Way Easement
Rec'd. Bk. 852, Pg. 306
Filed December 9, 1968

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
SURVEY DIVISION				
SURVEY DATA SHEET				
PLS	JTB			
DRAWN	CBM			
CHECKED	JTB			
APPROVED	JTB			
CREW	BDG			
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S033				

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			DATE

SECTION 20
T-7-N, R-7-W

Maribeth Smith
Decree of Distribution & Discharge
Rec'd. Bk. 3247, Pg. 533
Filed December 20, 2000

Hadson Gas Systems
50' Right-of-Way Easement
(Lots 6 & 7, & E/2, NW/4, Sec. 20
Obscure Description)
Rec'd. Bk. 1988, Pg. 301
Filed August 25, 1988

Louise Turley
Warranty Deed
Rec'd. Bk. 700, Pg. 530
Filed November 17, 1960

Public Service Co. of Okla.
Right-of-Way Easement
(Blanket Easement E/2, NW/4, Sec. 20)
Rec'd. Bk. 810, Pg. 402
Filed March 4, 1966

Intersearch Gas Corp.
Right-of-Way Easement
(No width specified)
Rec'd. Bk. 2169, Pg. 173
Filed February 26, 1990

State of Oklahoma
80' Right-of-Way Easement
Rec'd. Bk. 187, Pg. 591
Filed August 6, 1929

Public Service Co. of Okla.
100' Right-of-Way Easement
Rec'd. Bk. 814, Pg. 173
Filed April 22, 1966

Industrial Compounding, LLC
Warranty Deed
Rec'd. Bk. 3950, Pg. 34
Filing date not listed

POT Sta. 104+44.92
Set PK nail w/tag
on EW-134.5 1/4 S
1598.89' W. to 1/4 cor.
1049.54' E. to 1/4 cor.

Hadson Gas Systems
50' Right-of-Way Easement
(E/2, SW/4, Sec. 20
N. of Hwy 62, E. of Hwy 81,
Obscure Description)
Rec'd. Bk. 1988, Pg. 299
Filed August 25, 1988

State of Oklahoma
120' Right-of-Way Easement
Rec'd. Bk. 187, Pg. 601
Filed September 5, 1929

State of Oklahoma
13' Right-of-Way Easement
Rec'd. Bk. 334, Pg. 248
Filed December 5, 1936

City of Chickasha
10' Waterline Easement
Rec'd. Bk. 751, Pg. 581
Filed May 8, 1963

State of Oklahoma
Report of Commissioners
Bk. 860, Pg. 880
Filed 06/03/1969

City of Chickasha
30' Easement
Rec'd. Bk. 745, Pg. 37
Filed January 4, 1963

State of Oklahoma
Report of Commissioners
Bk. 842, Pg. 240
Filed 02/21/1968

State of Oklahoma
Quitclaim Deed
Bk. 864, Pg. 491
Filed 09/08/1969

POST Sta. 509+47.28 &
POT Sta. 114+33.28
Set PK nail w/tag 984.35'
N00°03'42"W

POST Sta. 114+90.26
Set PK nail w/tag
3687.97' ahead of Mstr. Pl

POT Sta. 115+00.85
Set 1/2" capped I.P.
on NS-282.5 1/4 S
140.36' N. to 1/4 cor.
2503.89' S. to 1/4 cor.

City of Chickasha
30' Easement
Rec'd. Bk. 745, Pg. 37
Filed January 4, 1963

Henry and Jo Ann
Hoffman Rev. Trust
Warranty Deed
Bk. 3972, Pg. 56
Filed 07/05/2007

Gerdas, Steven & Barbara
Warranty Deed
Bk. 3002, Pg. 72
Filed 01/29/1998

CURVE #5
PI STA+ 510+85.30
X= 1980024.7080
Y= 630523.0503
Δ= 23°48'44.87" LT
D= 0°24'00.31"
T= 3019.50'
L= 5951.83'
R= 14320.85'
E= 314.86'

Station comparison (UP RR)
Station 115+00.85 on this survey
Station 86+00.00 on SW02737(1) survey

SECTION 20
T-7-N, R-7-W



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		

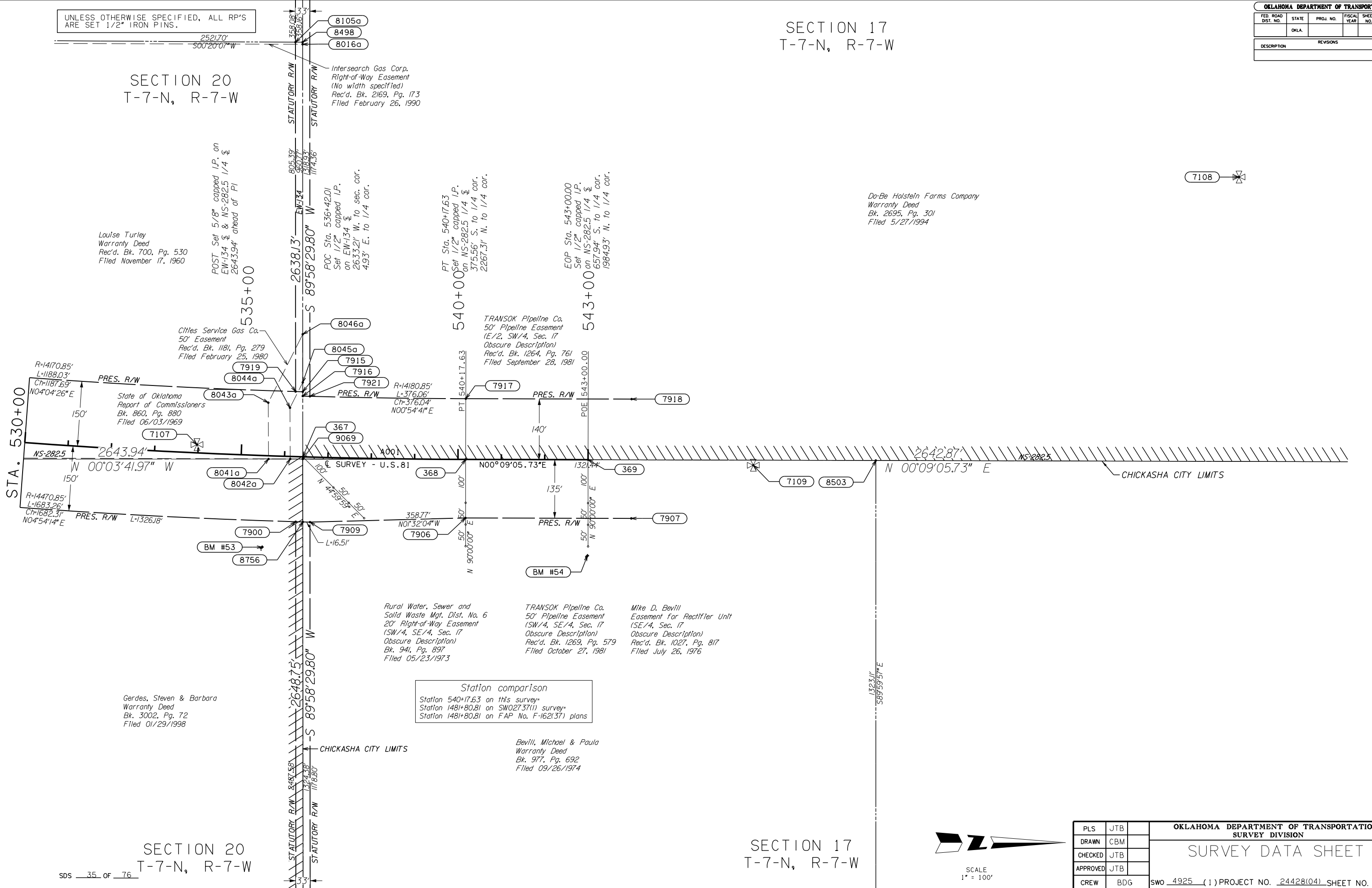
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S034

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20
T-7-N, R-7-W

SECTION 17
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS		DATE	



SDS 35 OF 76

SECTION 20
T-7-N, R-7-W

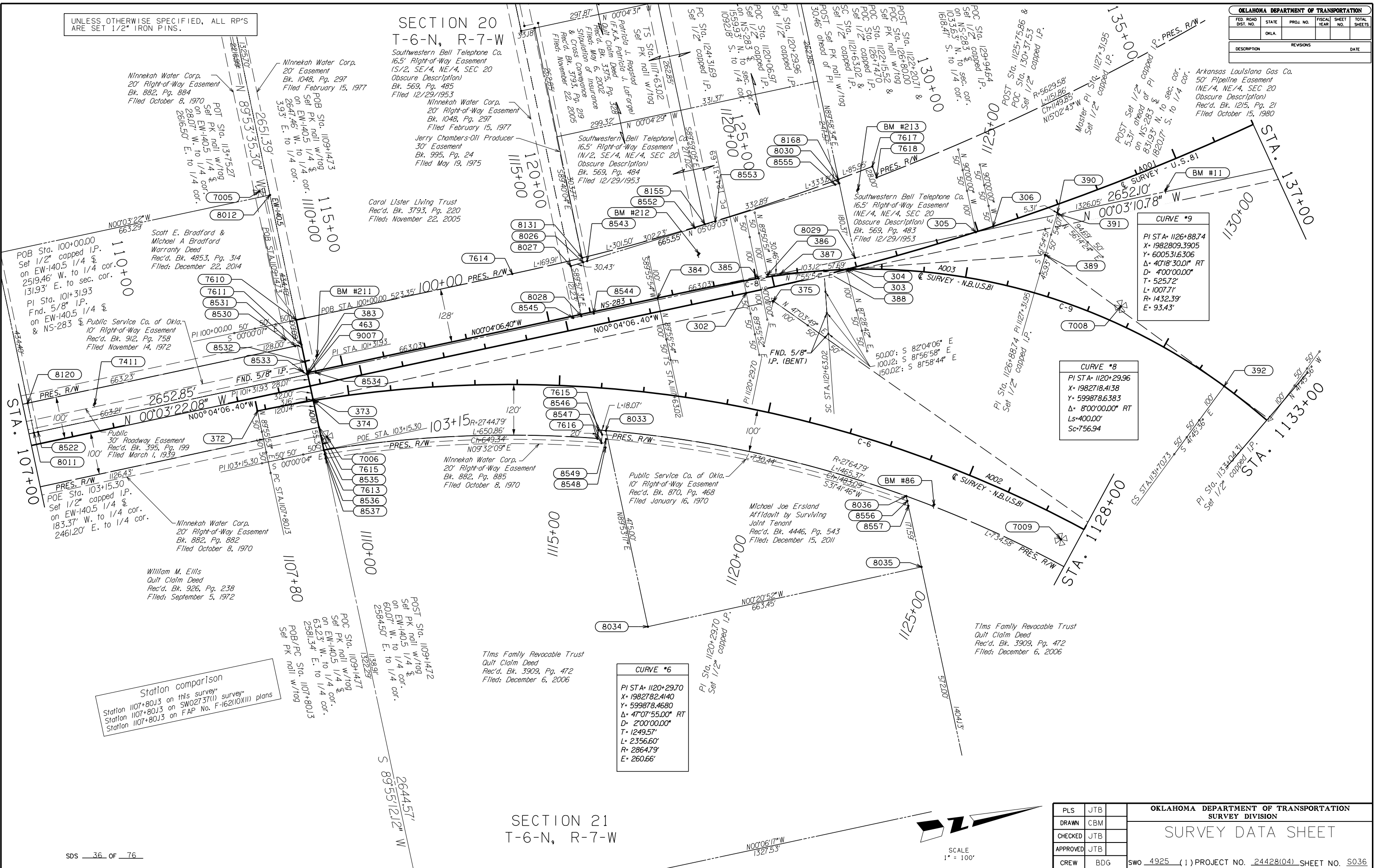
SECTION 17
T-7-N, R-7-W



OKLAHOMA DEPARTMENT OF TRANSPORTATION			SURVEY DIVISION		
PLS	JTB		SURVEY DATA SHEET		
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S035		

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

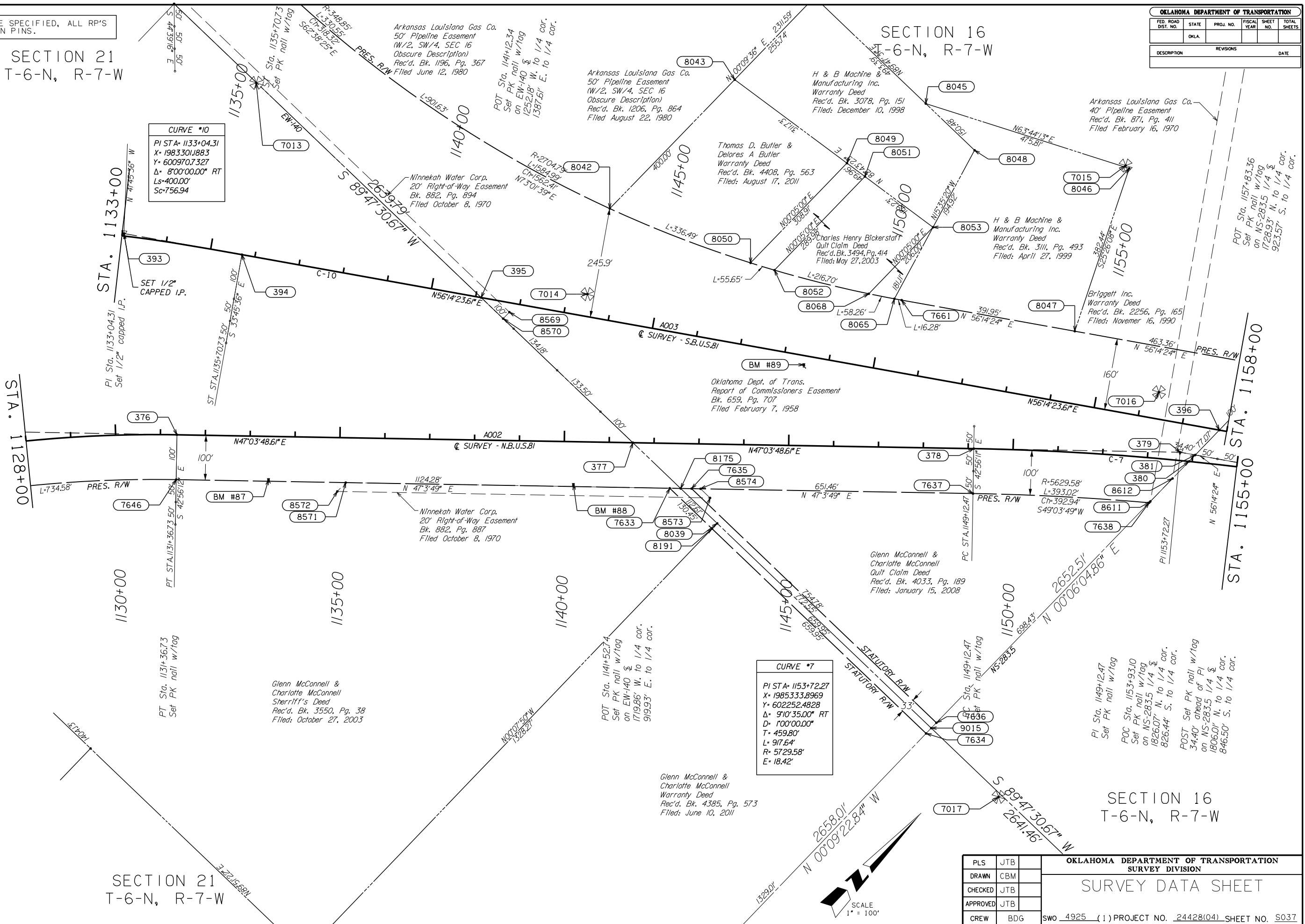


OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S036			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 21
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	



SECTION 21
T-6-N, R-7-W

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S037			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION		REVISIONS		DATE	

Briggett Inc.
Warranty Deed
Rec'd. Bk. 2256, Pg. 165
Filed: Novemer 16, 1990

POT Sta. 1157+83.36
Set PK nail w/tag
on NS-283.5 1/4 §
1728.93' N. to 1/4 §
923.57' S. to 1/4 cor.

POST Set PK nail w/tag
34.40' ahead of PI
on NS-283.5 1/4 §
1806.01' N. to 1/4 §
846.50' S. to 1/4 cor.

POE/PT Sta. 1158+30.11
Set PK nail w/tag

STA. 1155+00
STA. 1158+00

PRES. R/W
7662

A002
Q SURVEY - N.B.U.S.BI
382

PT STA. 1158+30.11
S. 33°45'36" E
50' 50' 100'

1158+30

A003
Q SURVEY - S.B.U.S.BI
N56°14'23.61" E

1170+00

397

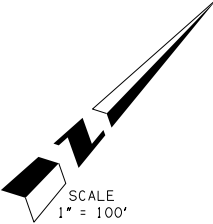
1174+28
POE Sta. 1174+28.12
Set PK nail w/tag

N 33°45'36" W POE STA. 1174+28.12
100' 50' 50'

CHICKASHA CITY LIMITS

S 89°48'50.82" W
2632.95'

EW 1395

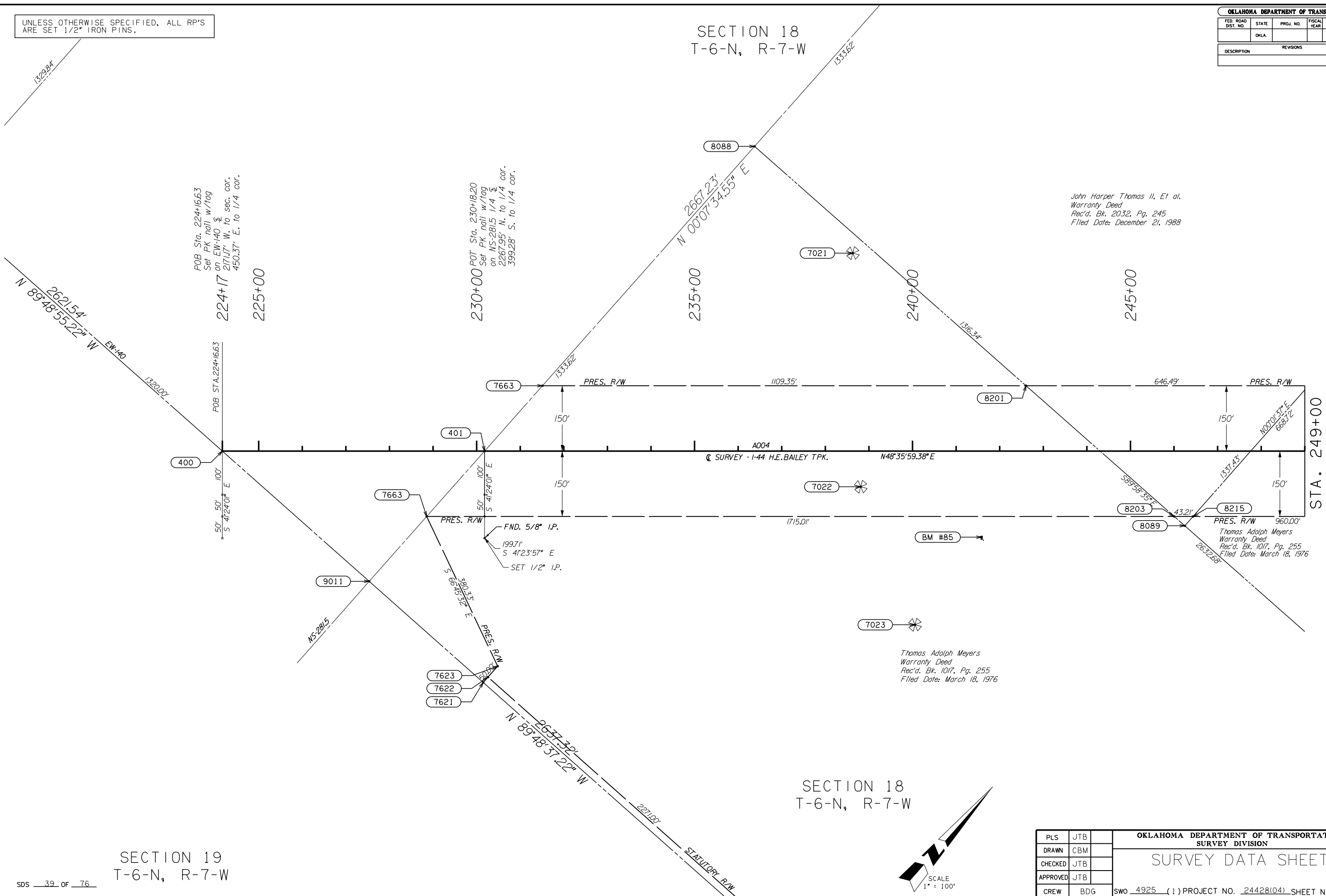


PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	CBM	SURVEY DIVISION			
CHECKED	JTB	SURVEY DATA SHEET			
APPROVED	JTB				
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S038			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2032, Pg. 245
Filed Date: December 21, 1988



SECTION 19
T-6-N, R-7-W

SDS 39 OF 76

SECTION 18
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION	
SURVEY DIVISION	
SURVEY DATA SHEET	
PLS	JTB
DRAWN	CBM
CHECKED	JTB
APPROVED	JTB
CREW	BDG
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S039	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 18
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2032, Pg. 245
Filed Date: December 21, 1988

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2032, Pg. 245
Filed Date: December 21, 1988

Reliance Pipeline Co.
25' Pipeline Easement
Rec'd. Bk. 1442, Pg. 120
Filed October 2, 1984

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2506, Pg. 268
Filed Date: December 31, 1992

John H. Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2032, Pg. 245
Filed Date: December 21, 1988

Thomas Adolph Meyers
Warranty Deed
Rec'd. Bk. 1017, Pg. 255
Filed Date: March 18, 1976

Mike & Darlene Crawford
Warranty Deed
Rec'd. Bk. 2906, Pg. 196
Filed Date: December 13, 1996

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

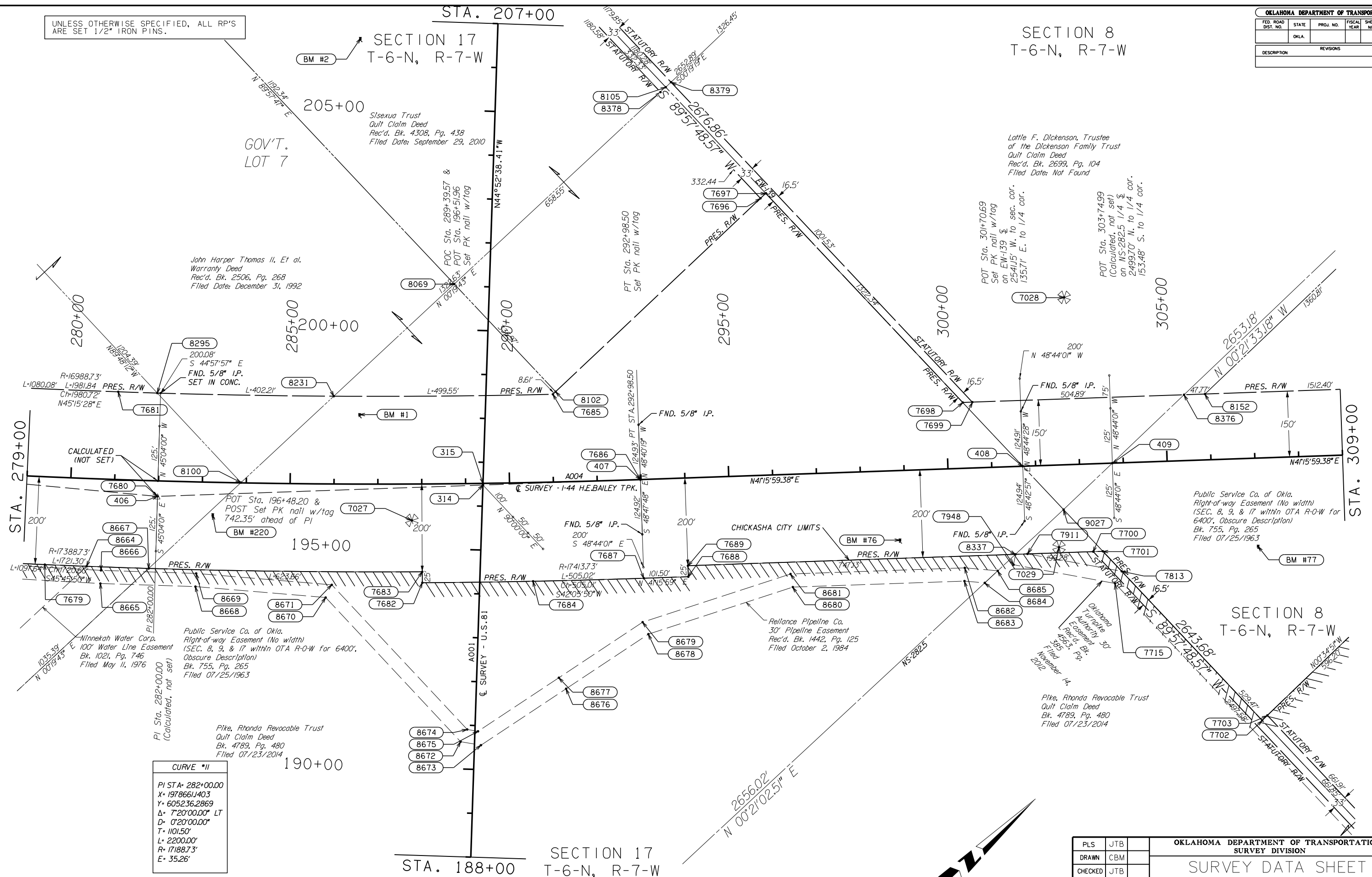
Station comparison
PI Station 282+00.00 on this survey*
PI Station 282+00.00 on SW02737(1) survey
PI Station 282+00.00 on Sec. 1-B, No. 206 plans

SECTION 17
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S040			

UNLESS OTHERWISE SPECIFIED, ALL RP'S
ARE SET 1/2" IRON PINS.

SECTION 8
T-6-N, R-7-W



SDS 41 OF 76

SCALE
1" = 100'

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</div>	
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO <u>4925</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S041</u>	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

Station comparison

Station 162+81.0 on this survey
Station 162+81.0 on SW02737(1) survey
Station 162+81.0 on FAS No. 219(1) plans

CURVE #14

PI STA+ 168+44.01
X= 1974634.2886
Y= 608636.8678
Δ= 22°13'59.66" RT
D= 2'00"00.00"
T= 562.91'
L= 1111.66'
R= 2864.79'
E= 54.78'

Bertha B. Thomas
Warranty Deed
Rec'd. Bk. 2831, Pg. 482
Filed January 4, 1996

SECTION 7
T-6-N, R-7-W

CURVE #15

PI STA+ 182+67.67
X= 1975369.1550
Y= 609872.7050
Δ= 13°11'00.00" LT
D= 2'00"00.00"
T= 331.05'
L= 659.17'
R= 2864.79'
E= 19.06'

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				

REVISIONS

DESCRIPTION	REVISIONS	DATE

CURVE #12

PI STA+ 105+62.94
X= 1974720.6841
Y= 608606.0692
Δ= 22°14'00.00" RT
D= 1°59'59.64"
T= 562.94'
L= 1111.72'
R= 2864.93'
E= 54.78'

CURVE #13

PI STA+ 119+79.31
X= 1975451.8275
Y= 609835.6453
Δ= 13°11'00.00" LT
D= 1°59'59.64"
T= 331.06'
L= 659.20'
R= 2864.93'
E= 19.06'

PLS	JTB
DRAWN	CBM
CHECKED	JTB
APPROVED	JTB
CREW	BDG

OKLAHOMA DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SURVEY DATA SHEET

SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S043

SECTION 7
T-6-N, R-7-W

SECTION 6
T-6-N, R-7-W

SECTION 7
T-6-N, R-7-W

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

HILLSBORO HEIGHTS REVISD ADDITION

LOT 1: 8078a, 219.24, N 17°33'44" E, 153.00'

LOT 2: 8077a, 151.69', 204.54, S 72°19'52" E, 208.70'

LOT 3: 8083a, 228.64, S 23°49'13.65" W, 208.70'

LOT 4: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 5: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 6: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 7: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 8: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 9: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 10: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 11: 208.70', 204.54, S 72°19'52" E, 208.70'

LOT 12: 208.70', 204.54, S 72°19'52" E, 208.70'

Public Service Co. of Okla.
200' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Perdue Housing Ind. Inc.
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Perdue Housing Ind. Inc.
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Public Service Co. of Okla.
15' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Public Service Co. of Okla.
15' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Station comparison
 Station 142+65.97 on this survey=
 Station 7106+52.42 on SW02737(1) survey

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

$$\begin{array}{r} 2640.95 \\ 89.42'47.7'' \text{ W} \\ \hline S \end{array}$$

8759
Norge Water and Sewer Co. Inc.
20' Easement
Bk. 1020, Pg. 429
Filed April 23, 1976

POE Sta. 142+65.97
Set PK nail w/tag
on EW-138 &
370.54' W. to 1/4 c
270.39' E. to 1/4 c

- Southwestern Light & Power Co.
Right-of-Way (No width specified)
Bk. 259, Pg. 76, 86, 90
Filed March 15, 1927

SECTION 6
T-6-N, R-7-W

SECTION 7
T-6-N, R-7-W

SDS 44 OF 76

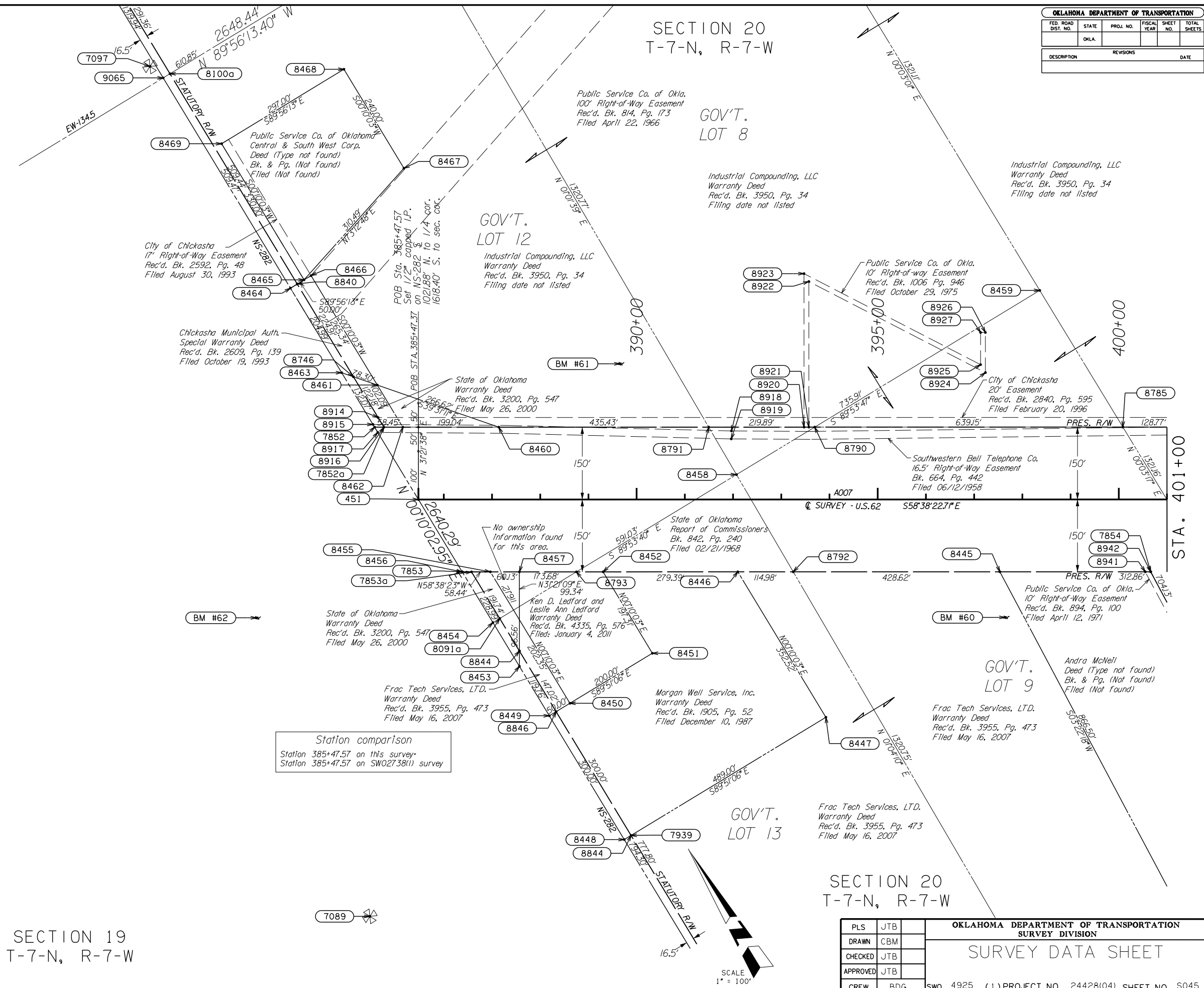
SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEE
	OKLA.				
DESCRIPTION			REVISIONS		DATE

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</div> <div>SURVEY DATA SHEET</div>
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BDG	SWO <u>4925</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>504</u>

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	



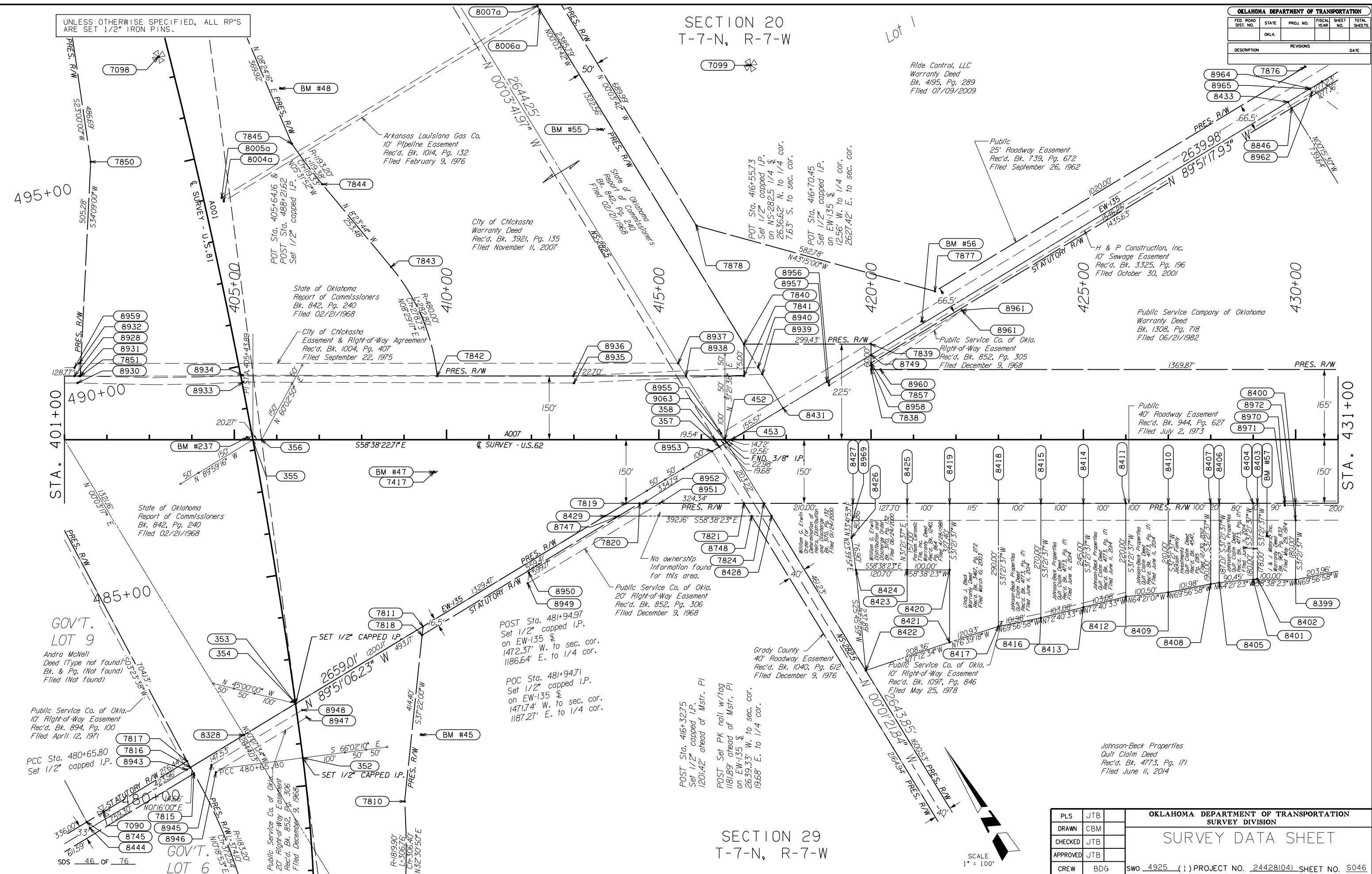
SECTION 19
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S045			

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 20
T-7-N, R-7-W

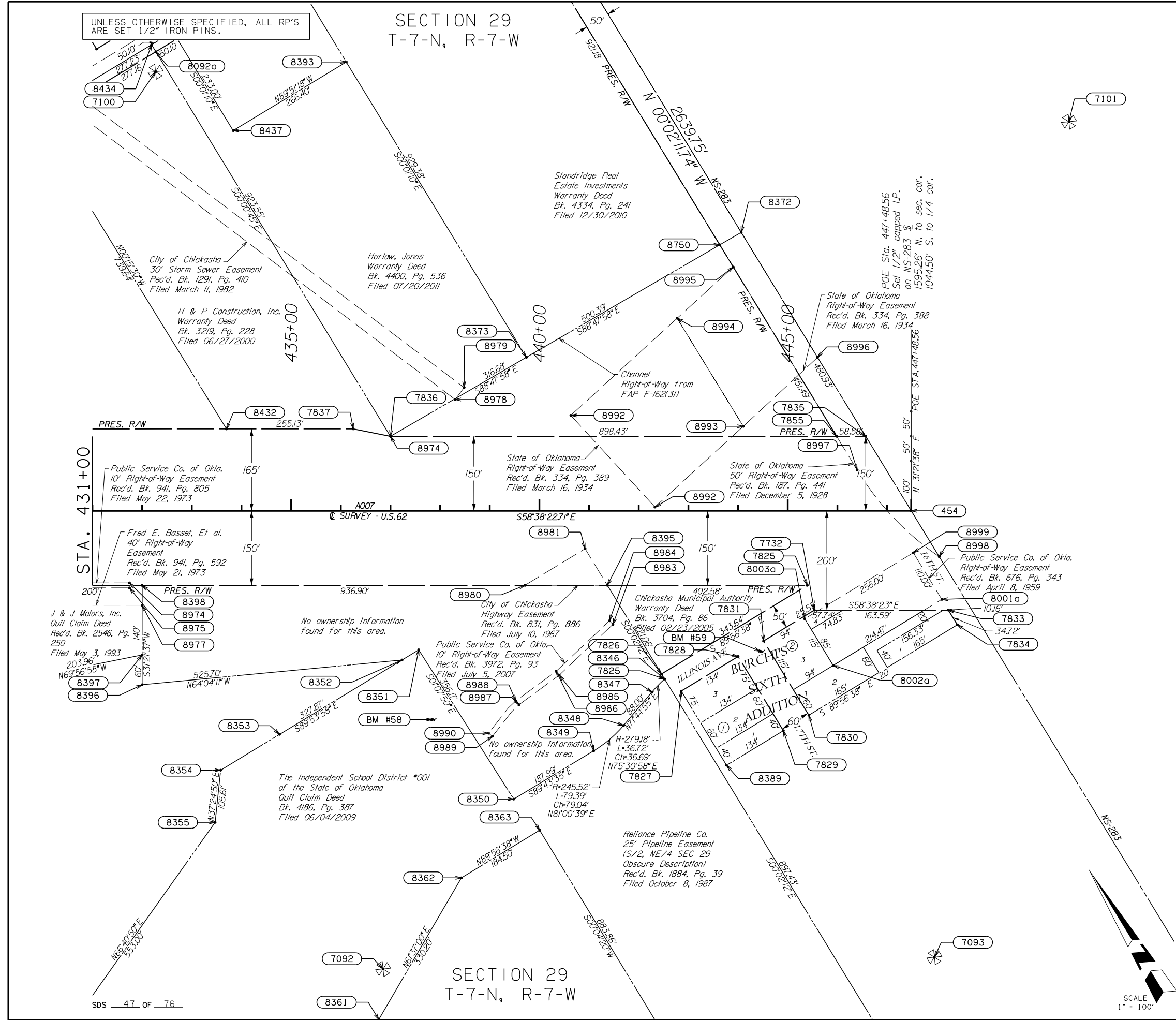
Lot 1



SECTION 29
T-7-N, R-7-W

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	CBM	SURVEY DIVISION	
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. 5046	

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION		REVISIONS		DATE	



PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	CBM	SURVEY DIVISION	
CHECKED	JTB	SURVEY DATA SHEET	
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S047	

Station 115+00.85 on this survey*
Station 86+00.00 on SW02737(1) survey

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

Maribeth Smith
Decree of Distribution & Discharge
Rec'd. Bk. 3247, Pg. 533
Filed December 20, 2000

GOV'T.
LOT 7

GOV'T.
LOT 8

SDS 48 OF 76

SECTION 20
T-7-N, R-7-W

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</div> <div>SURVEY DATA SHEET</div>
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BGG	SWO <u>4925</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>5048</u>

UNLESS OTHERWISE SPECIFIED, ALL RP'S
ARE SET 1/2" IRON PINS.

SECTION 17
T-6-N, R-7-W

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			DATE

POT Sta. 114+33.28 &
POST Set 1/2" capped I.P.
33.20' ahead of PI
on NS-283 §
1863.49' N. to 1/4 cor.
789.97' S. to sec. cor.

Briggett Inc.
Warranty Deed
Rec'd. Bk. 2485, Pg. 219
Filed: October 28, 1992

+00.00
w/tag
sec. cor.
to 1/4 cor.

Arkansas Louisiana Gas Co.
50' Pipeline Easement
(W/2, SW/4, SEC 16
Obscure Description)
Rec'd. Bk. 1196, Pg. 367
Filed June 12, 1980

Arkansas Louisiana Gas Co.
50' Pipeline Easement
(W/2, SW/4, SEC 16
Obscure Description)
Rec'd. Bk. 1206, Pg. 864
Filed August 22, 1980

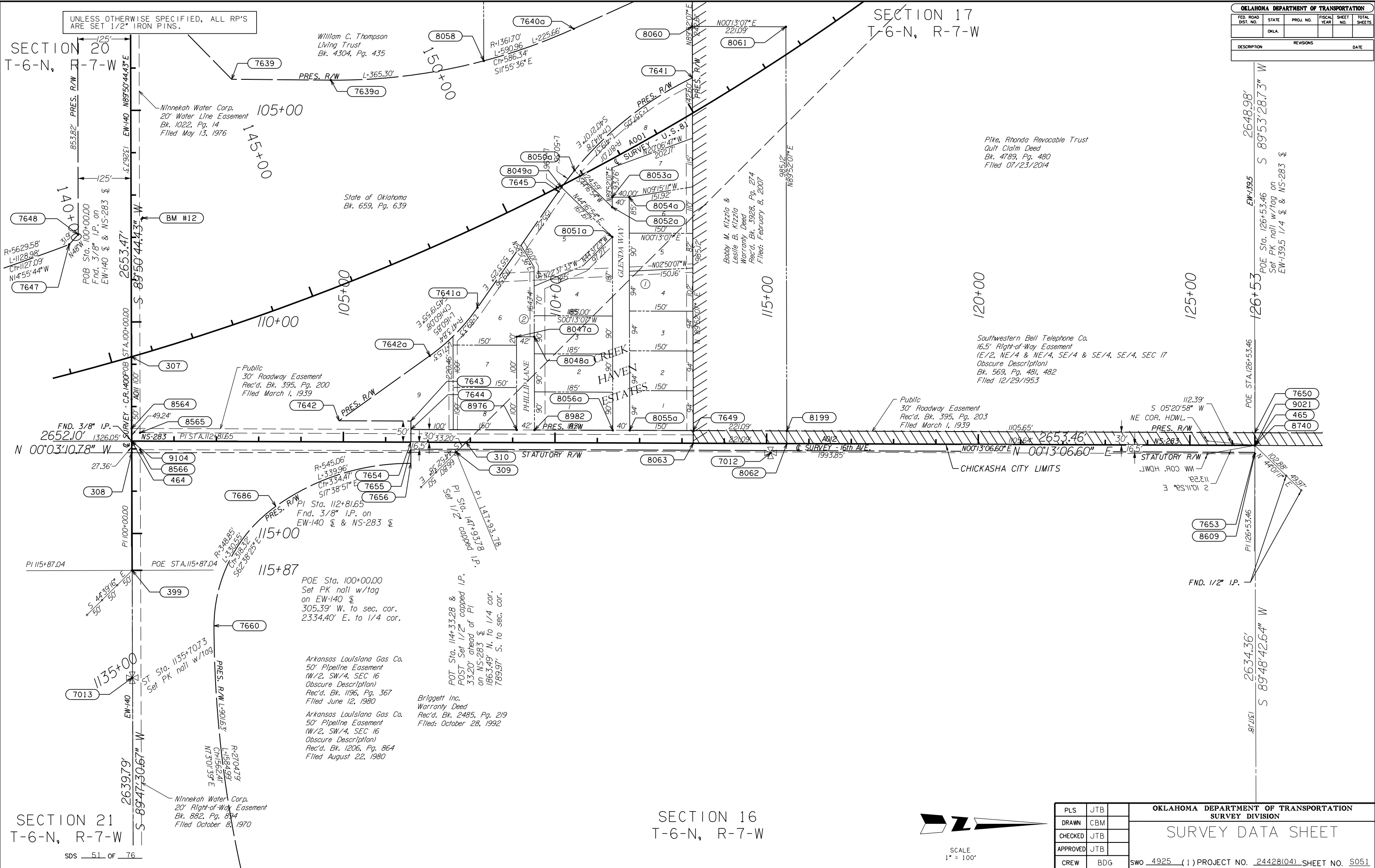
1135-70.73
nail w/tag

Ninnekah Water Corp.
20' Right-of-Way Easement
Bk. 882, Pg. 894
Filed October 8, 1970

SECTION 20
T-6-N, R-7-W

SECTION 21
T-6-N, R-7-W

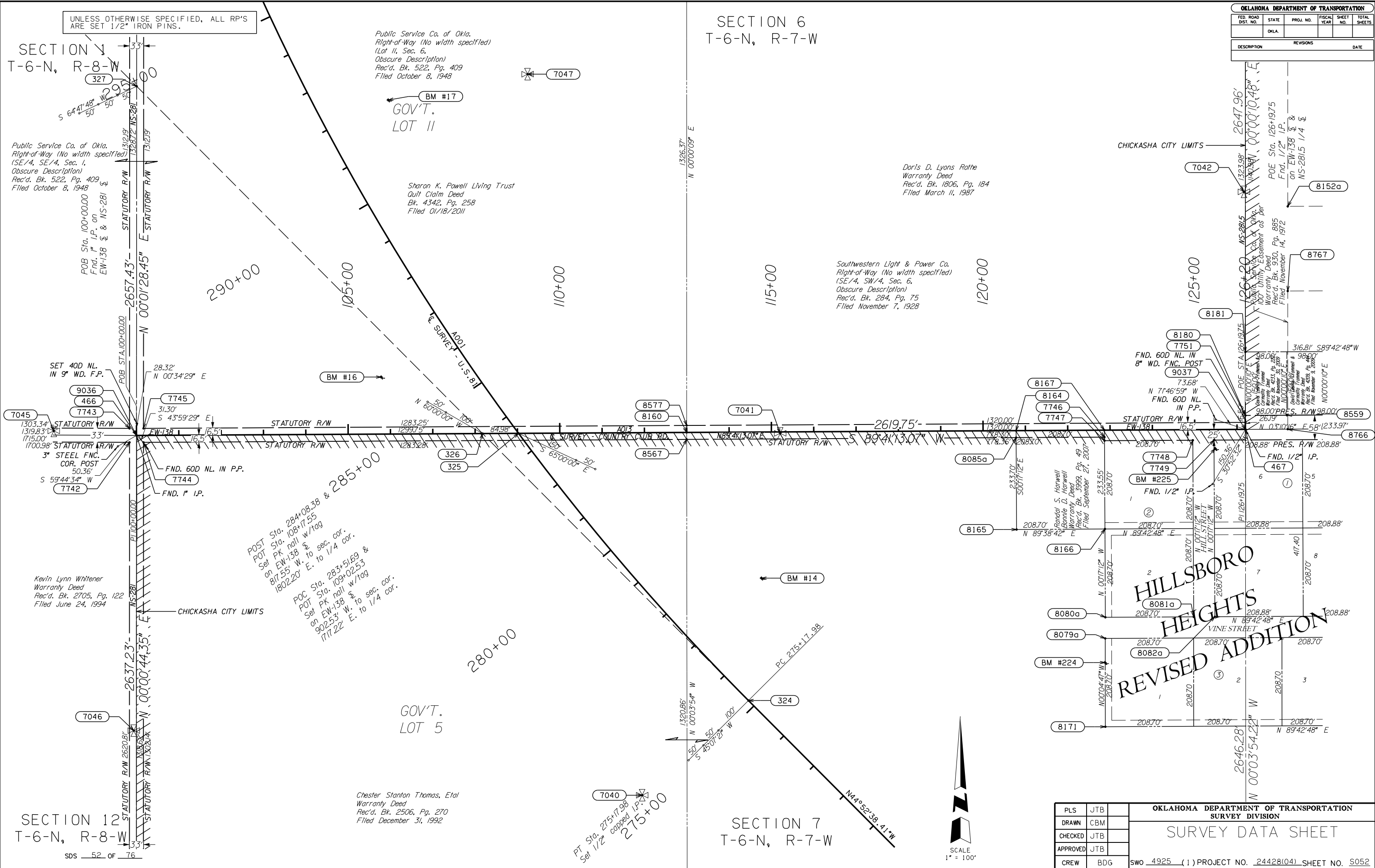
PLS	JTB	<div style="text-align: center;"> OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION </div> <div style="text-align: center; font-size: 2em; margin-top: 20px;"> SURVEY DATA SHEET </div>
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BDG	
		SWO <u>4925</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S050</u>



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		CBM		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB			
CREW		BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S051	





OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		CBM		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB			
CREW		BDG		SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S052	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION		REVISIONS		DATE	

7058

SECTION 36
T-7-N, R-8-W

GOV'T.
LOT 4

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

Phillips Petroleum Co.
20' Right-of-Way
(SE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(SW/4, SE/4, SEC 36
Obscure Description)
Bk. 985, Pg. 32
Filed 1/8/1975

Mid Continent Pipe Line Co.
20' Right-of-Way
(SW/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1032, Pg. 411
Filed September 13, 1976

Phillips Petroleum Co.
20' Right-of-Way
(W/2, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1054, Pg. 579
Filed April 21, 1977

Public
15' Roadway Easement
Rec'd. Bk. 400, Pg. 187
Filed September 18, 1939

POT Sta. 339+04.90 &
POT Sta. 119+53.38
Set 1/2" capped I.P.
on EW-137 &
2471.08' W. to 1/4 cor.
171.45' E. to sec. cor.

Southwestern Bell Telephone Co.
50' Right-of-Way Easement
Rec'd. Bk. 984, Pg. 281
Filed December 30, 1974

Robert W. Larson Jr.
Lynn G. Larson
Warranty Deed (1/2 Interest)
Bk. 1973, Pg. 49
Filed 07/11/1988

Kuhlman, Arthur & Gari & Mona
Quit Claim Deed (1/2 Interest)
Bk. 3107, Pg. 463
Filed 04/07/1999

Catherine T. Rempe
Surviving Joint Tenant
Bk. 3920, Pg. 370
Filed 01/09/2007

Public
50' Roadway Easement
Rec'd. Bk. 1408, Pg. 797
Filed March 15, 1984

Mary Catherine Rempe
Warranty Deed
Bk. 1436, Pg. 297
Filed 09/11/1984

Public
50' Roadway Easement
Rec'd. Bk. 919, Pg. 645
Filed May 23, 1971

Public
50' Roadway Easement
Rec'd. Bk. 919, Pg. 645
Filed May 23, 1971

SECTION 1
T-6-N, R-8-W

GOV'T.
LOT 1

SDS 53 OF 76

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	CBM	SURVEY DIVISION	
CHECKED	JTB	SURVEY DATA SHEET	
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S053	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 36
T-7-N, R-8-W

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

345+00

Phillips Petroleum Co.
20' Right-of-Way
(SE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

Phillips Petroleum Co.
20' Right-of-Way
(W. 19/8 ac, Lot 9, Sec. 31
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

Livingston Family
Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

GOV'T.
LOT 9

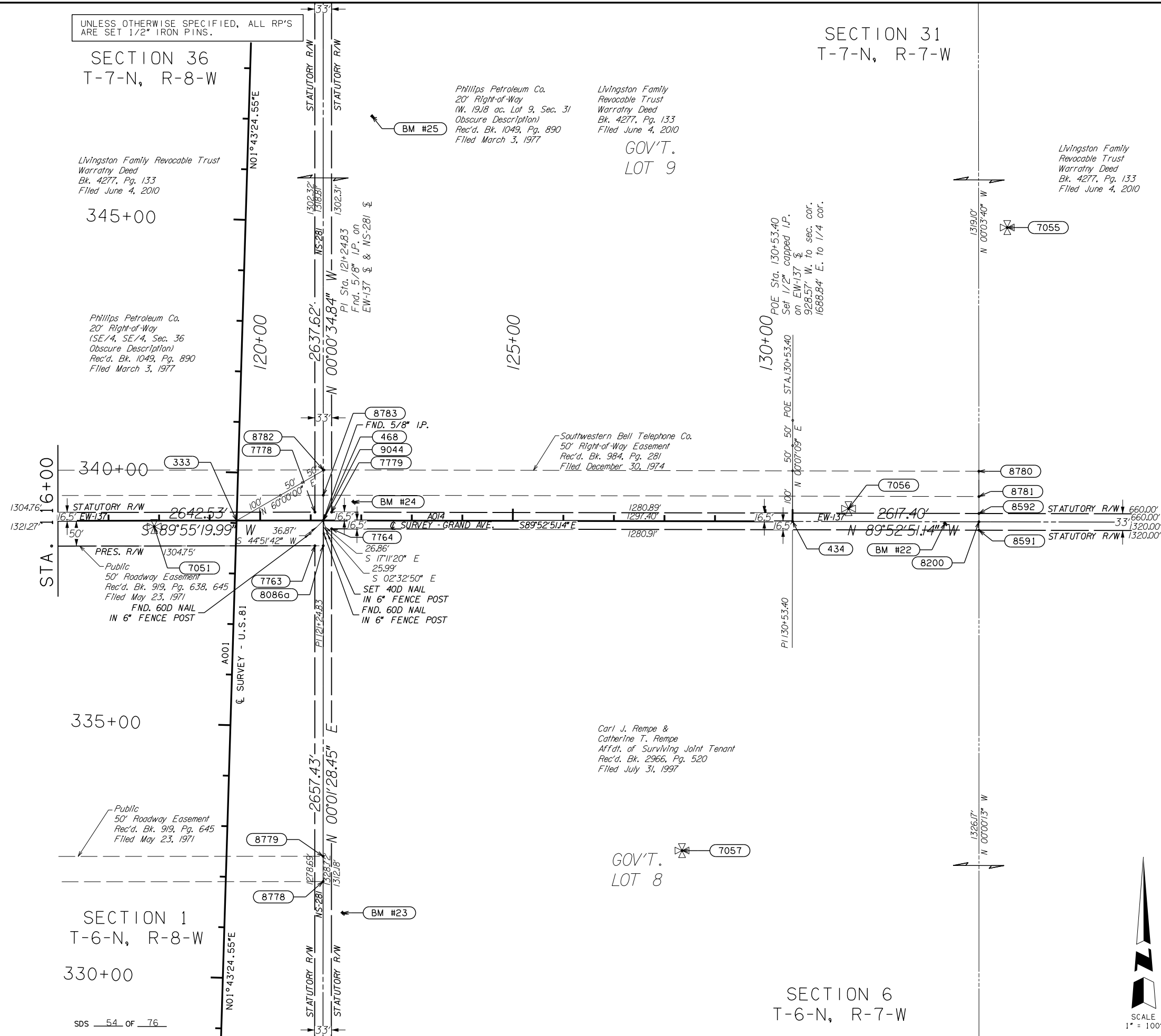
Livingston Family
Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

SECTION 31
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				

DESCRIPTION	REVISIONS	DATE

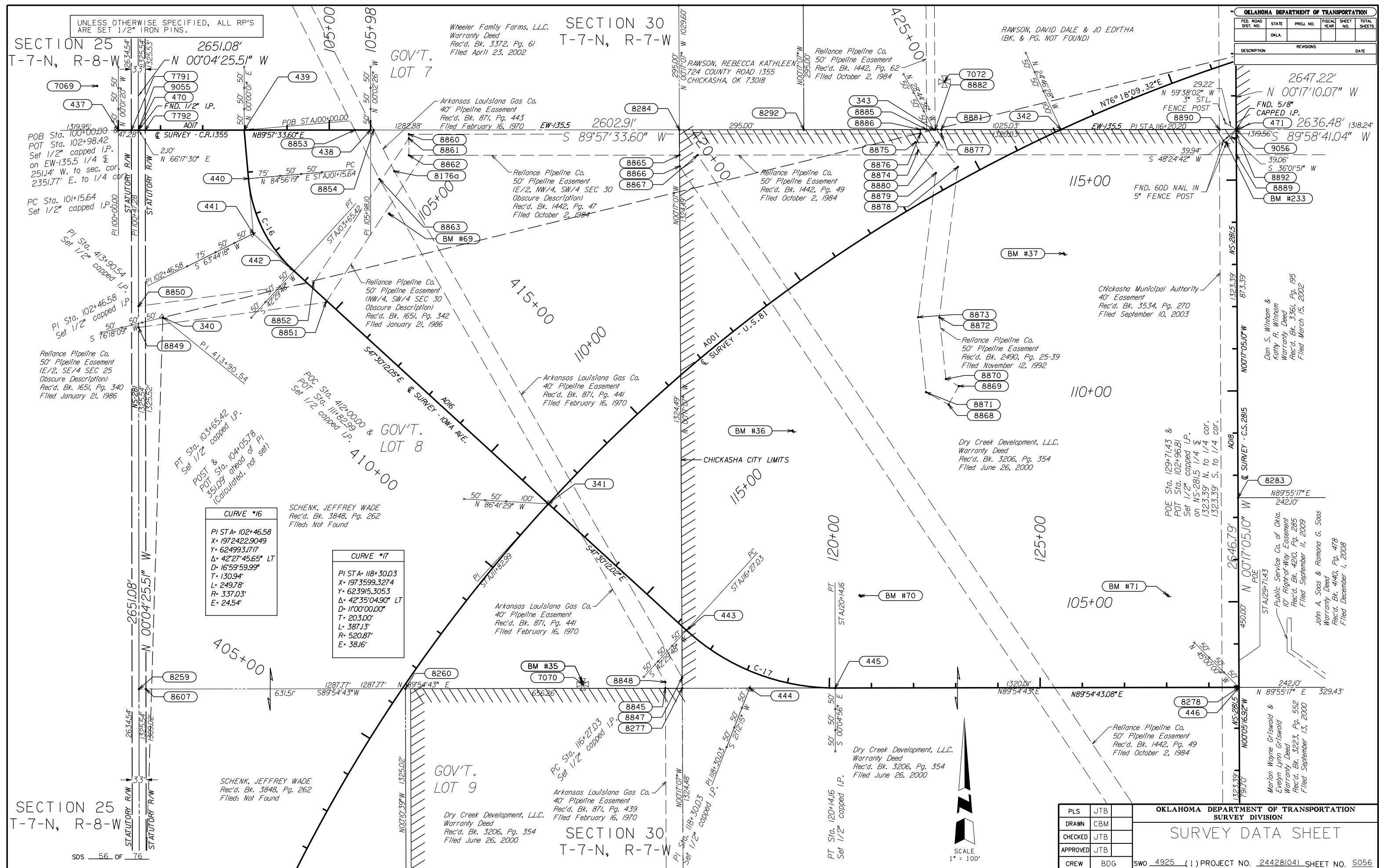


SDS 54 OF 76

SECTION 6
T-6-N, R-7-W



PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	CBM	SURVEY DIVISION			
CHECKED	JTB	SURVEY DATA SHEET			
APPROVED	JTB				
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S054			



SECTION 25
T-7-N, R-8-W

SECTION 30
T-7-N, R-7-W

CURVE *16
PI STA= 102+46.58
X= 1972422.9049
Y= 624993.1717
Δ= 42°27'45.65" LT
D= 16°59'59.99"
T= 130.94'
L= 249.78'
R= 337.03'
E= 24.54'

$$\frac{2639.90'}{S \ 89^{\circ}58'39.45'' \ W}$$

1319.95'

POB Sta. 100+00.00 &
 POT Sta. 102+98.42 43
 Set 1/2" capped I.P.
 on EW-135.5 1/4 \$
 251.14' W. to sec. cor.
 2351.77' E. to 1/4 cor.
 PC Sta. 101+15.64
 Set 1/2" capped I.P.

Reliance Pipeline Co.
50' Pipeline Easement
(E/2, SE/4 SEC 25
Obscure Description)
Rec'd. Bk. 1651, Pg. 340
Filed January 21, 1986

Ariana Alford
Trustee Deed
Bk. 3875, Pg. 301
Filed 08/15/2006

SECTION 25
T-7-N, R-8-W

SDS 57 OF 76

SCHENK, JEFFREY WADE
Rec'd. Bk. 3848, Pg. 262
Filed: Not Found

Sta. 103+65.42
Set 1/2" capped I.P.
POST & Sta. 104+05.78
POT 351.09' ahead of PI
(Calculated, not set)

SECTION 30
T-7-N, R-7-W

GOV'T.
LOT 7

Wheeler Family Farms, L.L.C.
Warranty Deed
Rec'd. Bk. 3372, Pg. 61
Filed April 23, 2002

RAWSON, DAVID DALE & JO EDYTHA
(BK. & PG. NOT FOUND)

POST Set 1/2 capped I.P.
180:51.1355 to 1/4 cor
00 EN-N. to 1/4 cor
1806.44
716.47

8290 8291
N89°57'34"E
295.00'
RAWSON, REBECCA KATHLEEN
(BK. & PG. NOT FOUND)

CHICKASHA CITY LIMITS —

GOV'T.
LOT 8

Arkansas Louisiana Gas Co.
40' Pipeline Easement
Rec'd. Bk. 871, Pg. 441
Filed February 16, 1970

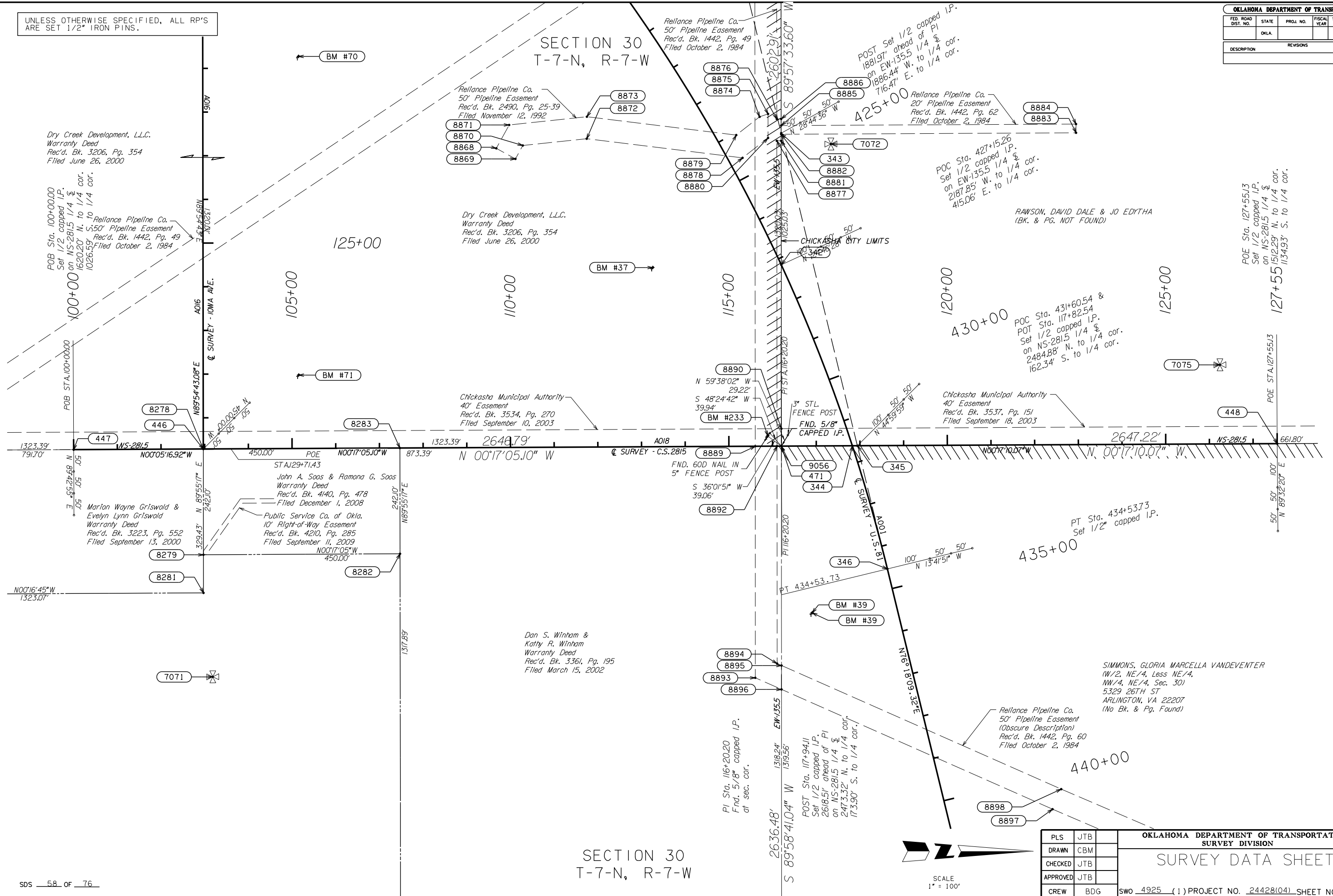
Dry Creek Development, L.L.C.
Warranty Deed
Rec'd. Bk. 3206, Pg. 354
Filed June 26, 2000

SCALE
1" = 100'

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</div> <div>SURVEY DATA SHEET</div>
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BDG	SWO <u>4925</u> (<u>1</u>) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S057</u>

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS		DATE	

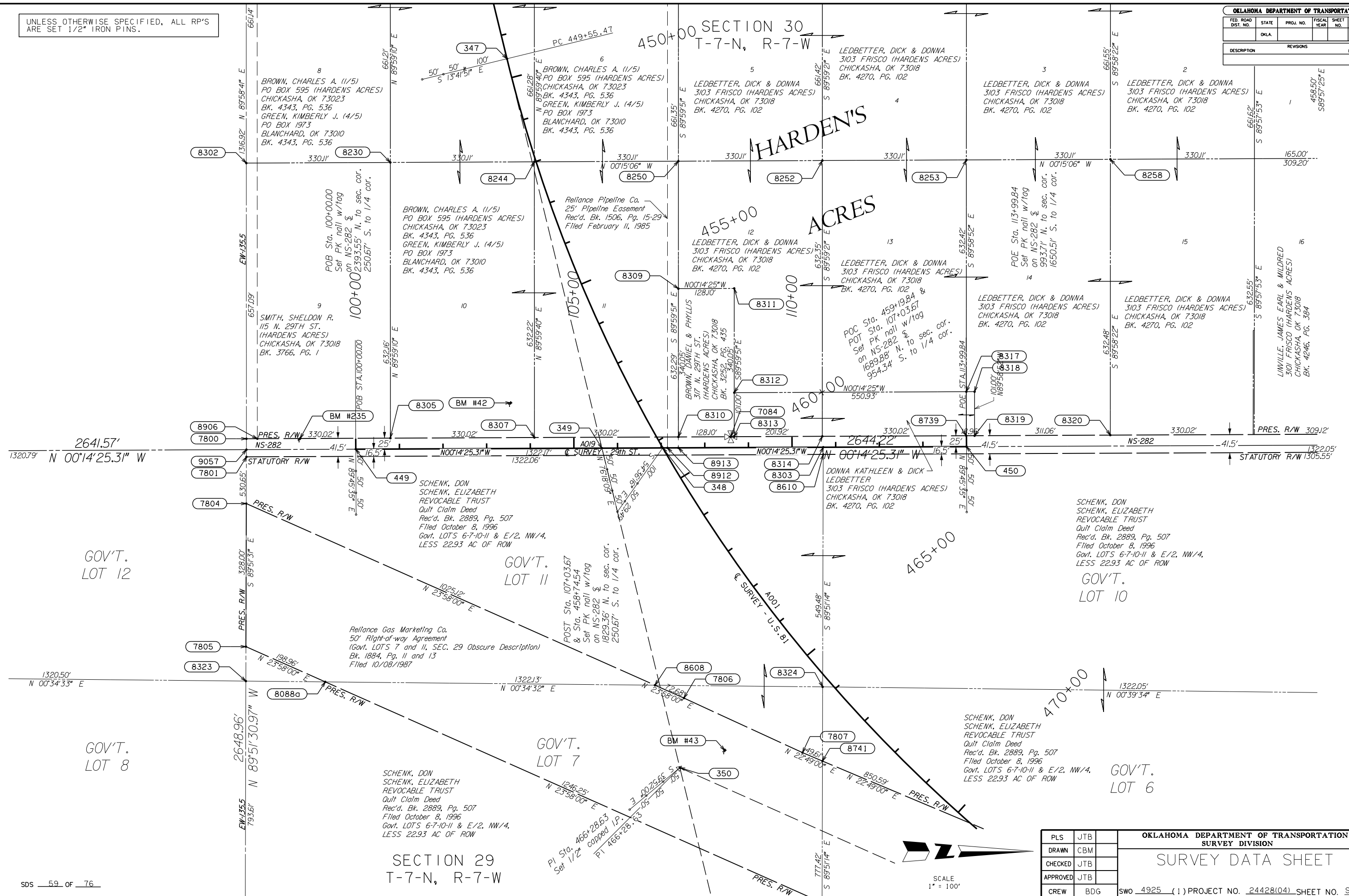


SDS 58 OF 76

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S058			

UNLESS OTHERWISE SPECIFIED, ALL RP'S
ARE SET 1/2" IRON PINS.

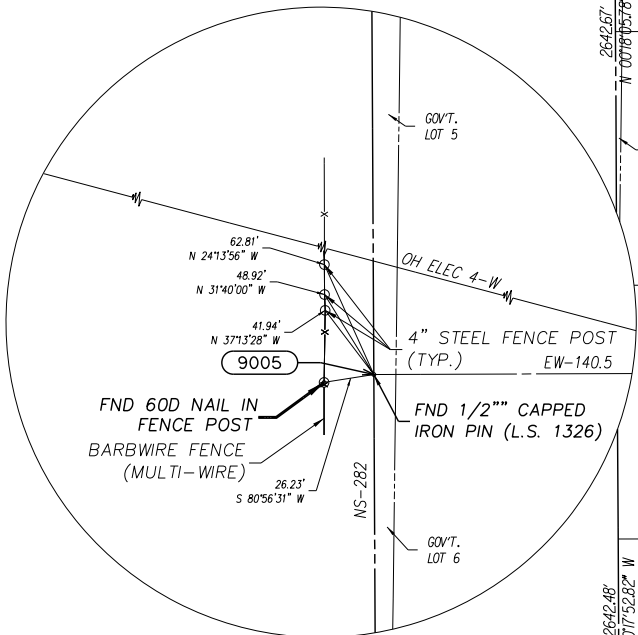
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			DATE



SDS 59 OF 76

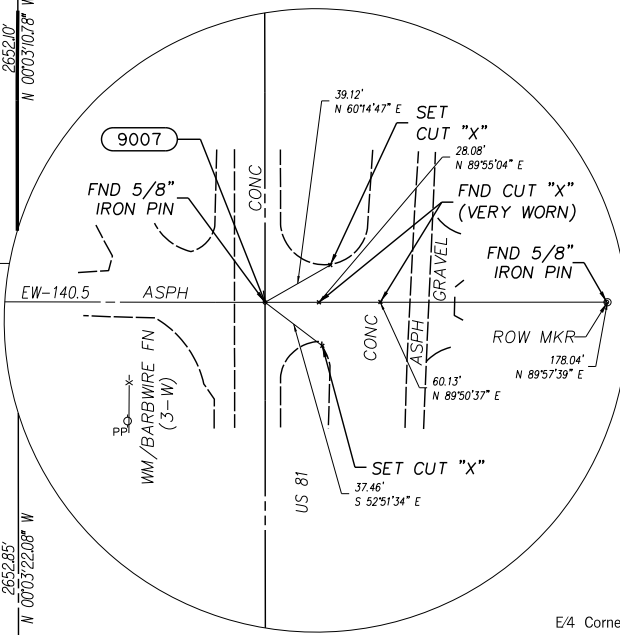
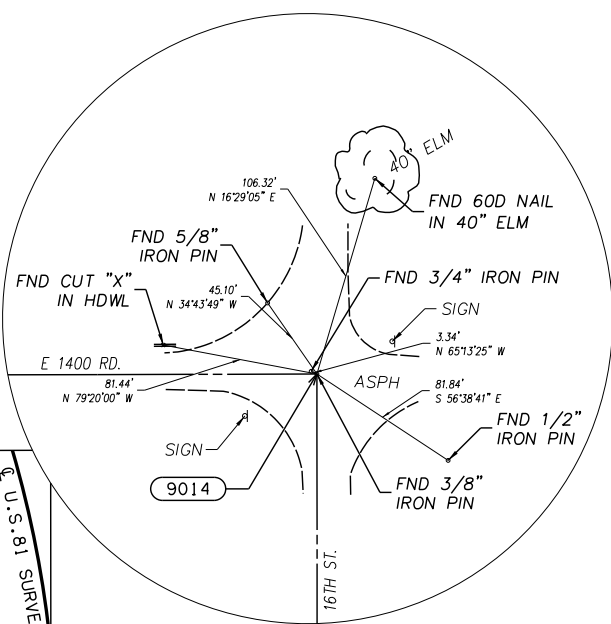
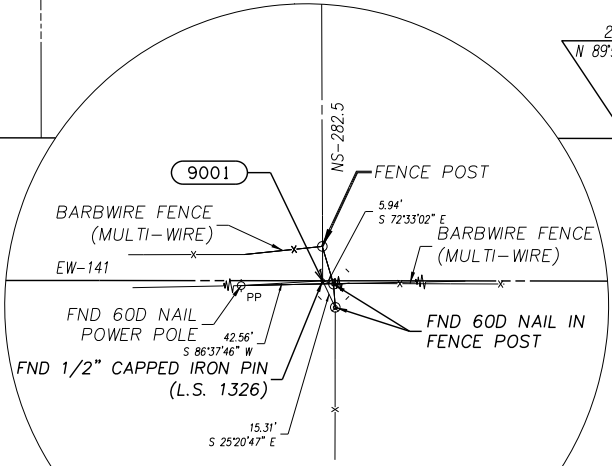
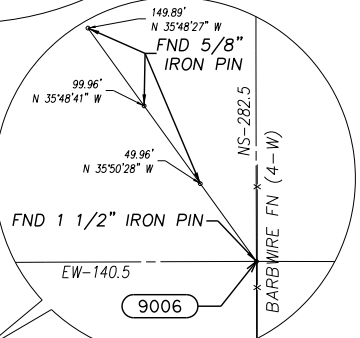
PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(04) SHEET NO. S059			

A diagram of a V-shaped notch. The left side of the notch is labeled 'GN' and the right side is labeled 'TN'. The angle between the two sides at the vertex is labeled θ .



Survey map showing the intersection of E 1400 Rd and NS-282.5. The map includes the following features and measurements:

- 9013** (Point)
- FND RAILROAD SPIKE** (Point)
- FND 1/2" IRON PIN** (Point)
- FND 60D NAIL IN XFMR POLE** (Point)
- 7" STL FENCE POST** (Point)
- BARB WIRE FN (M-W)** (Line)
- NS-282.5** (Road)
- E 1400 RD.** (Road)
- ASPH** (Surface)
- WM FN** (Line)
- 3.53'** (Distance)
- N 75°36'35" W** (Bearing)
- 33.77'** (Distance)
- S 55°41'32" W** (Bearing)
- 99.9'** (Distance)
- N 41°04'05" E** (Bearing)
- 30.03'** (Distance)
- S 45°57'23" E** (Bearing)
- 149.89'** (Distance)
- 110°** (Angle)



SCALE:
1" = 500'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	JSO		SURVEY DIVISION	
CHECKED	JTB		<div style="text-align: center;"> <h1>SURVEY DATA SHEET</h1> <p>SDS <u>60</u> OF <u>76</u></p> </div>	
APPROVED	JTB			
CREW	BENHAM		SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S060</u>	

A diagram of a V-shaped notch. The left side of the notch is labeled 'GN' and the right side is labeled 'TN'. The angle between the two sides at the vertex is labeled θ .

SW Corner of Section 21, T-6N, R-7W ODOT G-26-162
I found 5/8" iron pin. Monument and reference point fits ODOT
survey, SWO 2737(1). Nothing set. I used 5/8" iron pin.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

NE Corner of Section 21, T-6N, R-7W ODOT G-26-877
I found R.R. Spike. Monument and references do not fit ODOT survey,
SWO 2028(1). Monument and references fit the following C.C.R.'s:

L.S. 1071 found PK nail in 1989 survey
L.S. 1272 found R.R. Spike in 1997 survey
L.S. 696 found R.R. Spike in 1999 survey.

I set PK nail with tag using measurements from said ODOT survey. I did not accept R.R. Spike since it did not fit G.L.O. Notes or ODOT survey.

C/4 Corner of Section 21, T-6N, R-7W ODOT G-26-875

I found 1" iron pin. Monument fits measurements from ODOT survey, SWO 2737(1). Monument position fits existing fence lines. Nothing set. I used 1" iron pin and set reference points

E/4 Corner of Section 21, T-6N, R-7W ODOT G-26-876

I found PK nail. Monument and reference points fit corner record in which L.S. 1326 set PK nail in 2001 survey. Monument had been set using single proportionate method using a questionable railroad spike at the Northeast corner of Section 21. Monument does not fit measurements from ODOT survey, SWO 2028(1), or existing fence lines. I set PK nail with tag. I set monument using single proportionate method using the northeast and southeast corners of Section 21. Monument location fits said ODOT survey and existing fence lines.

SE Corner of Section 21, T-6N, R-7W ODOT G-26-869

I found 1/2" iron pin. Monument and references fit corner record in which L.S. 1272 found 1/2" iron pin in 1997 survey. Nothing set. I used 1/2" iron pin.

S/4 Corner of Section 21, T-6N, R-7W ODOT G-26-870

I found 1" iron pin and railroad spike. The railroad spike fits corner record in which L.S. 1326 set railroad spike in 2001 survey. The 1" iron pin and reference points fit ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

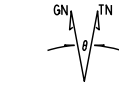
SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION</div> <div>SURVEY DIVISION</div> <div>SURVEY DATA SHEET</div> <div>SDS <u>61</u> OF <u>76</u></div>
DRAWN	JSO	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S061</u>

NW Corner of Section 18, T-6N, R-7W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the following corner records. L.S. 449 found iron pin in 1982 survey. L.S. 1272 found 3/8" iron pin in 1998 survey. L.S. 1272 found iron pin in 2001 survey. Nothing set. I used 3/4" iron pin.

N4 Corner of Section 18, T-6N, R-7W ODOT G-26-896
I found original stone. No certified corner records found, although monument is referenced on C.C.R.'s filed on the SW and N4 corner of Section 7. No original reference points were found. The stone was marked "1/4" on the north face and looked undisturbed. Nothing set. I used original stone and set reference points.

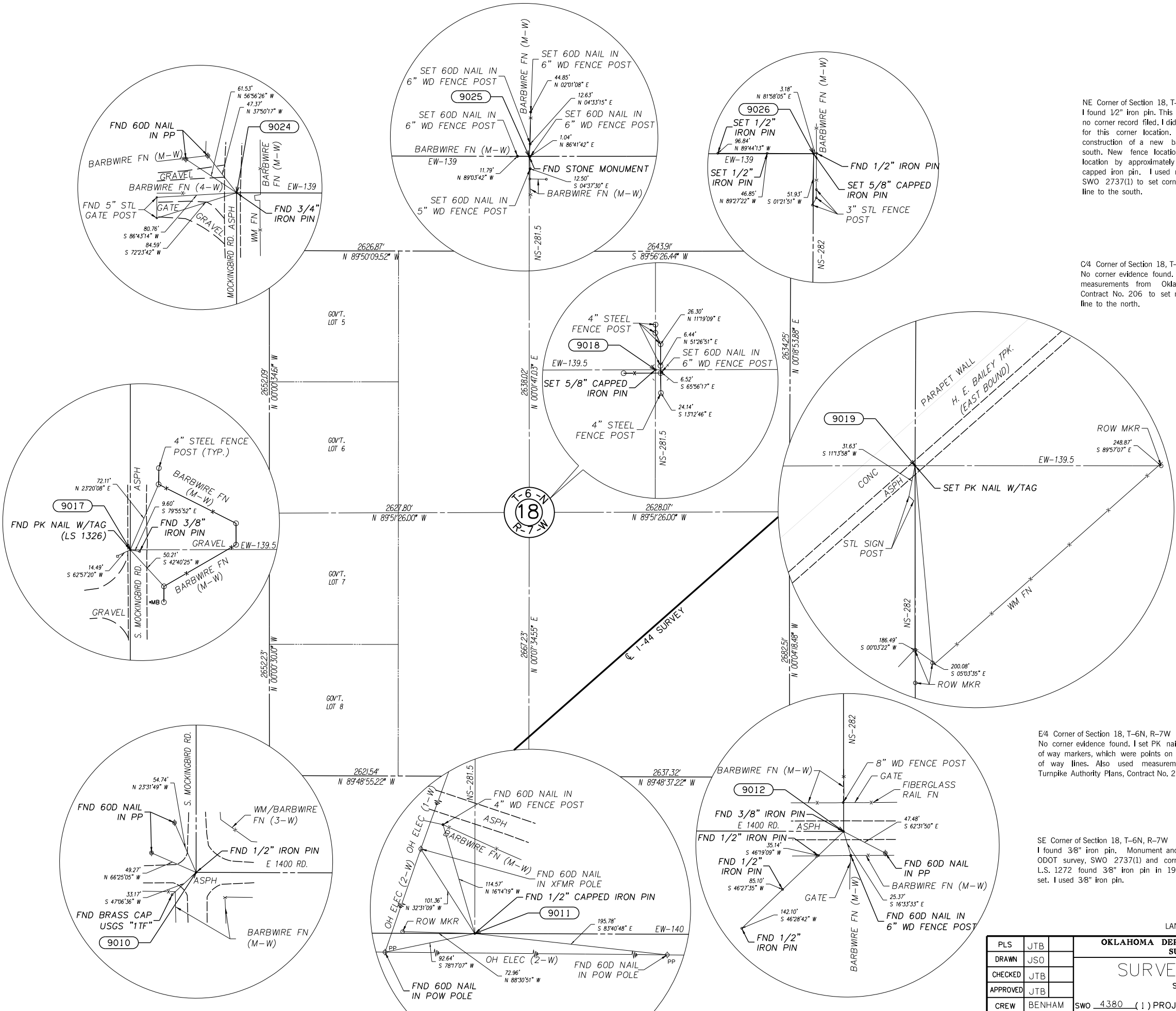


Angle Of Variance
At Sta. 9018 (C/4 Cor.)
X= 1974779.2248
Y= 604077.4383
Lat.= 34°59'35.58920"
Long.= 97°58'44.52714"
θ = 0°00'42.83966"

W4 Corner of Section 18, T-6N, R-7W ODOT G-26-884
I found PK nail with tag set by L.S. 1326. Monument and reference points fit corner record in which L.S. 615 found a 1/2" iron pin and set another 1/2" iron pin in 2001 survey. Monument fits single proportionate method measurements to NW and SW corners of Section 18. Nothing set. I used PK nail with tag.

SW Corner of Section 18, T-6N, R-7W ODOT G-26-883
I found 1/2" iron pin. Monument and reference points fit the following corner records. L.S. 449 found iron pin in 1981 survey. L.S. 1082 found iron pin in 1994 survey. L.S. 1272 found 3/8" iron pin in 1998 survey. Monument also fits measurements from Oklahoma Turnpike Authority Plans, Contract 206. No Corner evidence found. I used 1/2" iron pin.

S/4 Corner of Section 18, T-6N, R-7W ODOT G-26-882
I found 1/2" capped iron pin. Monument and references fit corner record in which L.S. 1326 set 1/2" iron pin with cap in 2012 survey. Monument also fits single proportionate method from G.L.O. Notes. Nothing set. I used 1/2" capped iron pin.



NE Corner of Section 18, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barb-wire fence running north & south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1) to set corner. Corner location fits old fence line to the south.

C/4 Corner of Section 18, T-6N, R-7W ODOT G-26-885
No corner evidence found. I set 5/8" capped iron pin. I used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument. Position fits old fence line to the north.

E/4 Corner of Section 18, T-6N, R-7W ODOT G-26-886
No corner evidence found. I set PK nail with tag. I used right of way markers, which were points on section lines and right of way lines. Also used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument.

SE Corner of Section 18, T-6N, R-7W ODOT G-26-881
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1) and corner record in which L.S. 1272 found 3/8" iron pin in 1998 survey. Nothing set. I used 3/8" iron pin.

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	JSO		SURVEY DIVISION			
CHECKED	JTB		SURVEY DATA SHEET			
APPROVED	JTB		SDS 62 OF 76			
CREW	BENHAM		SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S062			

SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

N/4 Corner of Section 17, T-6N, R-7W ODOT G-26-892
I found 1/2" iron pin. Monument and references fit the following C.C.R.'s:

L.S. 1326 found 12" iron pin in 2005 survey
L.S. 189 found #3 rebar in 2009 survey.

Nothing set. I used 1/2" iron pin.

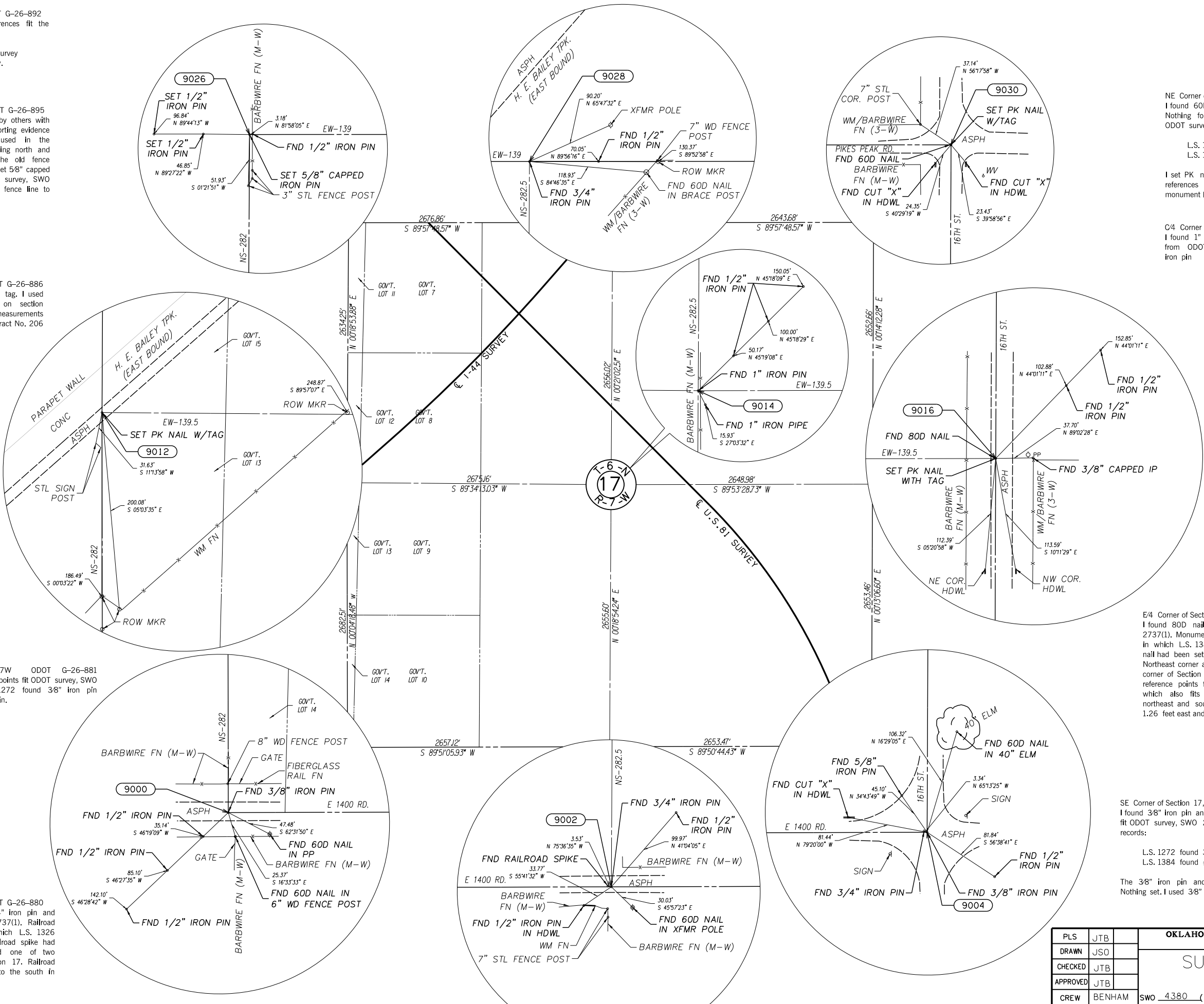
NW Corner of Section 17, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barbed-wire fence running north and south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1), to set corner. Corner location fits old fence line to the south

W/4 Corner of Section 17, T-6N, R-7W ODOT G-26-886
No corner evidence found. I set PK nail with tag. I used right of way markers, which were points on section lines and right of way lines. Also used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument.

Angle Of Variance
At Sta. 9020 (C/4 Cor.)
X= 1980082.3680
Y= 604063.9240
Lat.= 34°59'35.44004"
Long.= 97°57'40.78631"
θ = 0°01'19.02001"

SW Corner of Section 17, T-6N, R-7W ODOT G-26-881
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1) and corner record in which L.S. 1272 found 3/8" iron pin in 1998 survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 17, T-6N, R-7W ODOT G-26-880
I found 3/4" iron pin and railroad spike. 3/4" iron pin and reference points fit ODOT survey, SWO 2737(1). Railroad spike and reference fit corner record in which L.S. 1326 found railroad spike in 2012 survey. The railroad spike had been set using the southwest corner and one of two monuments at the southeast corner of Section 17. Railroad spike was set by others for new fence line to the south in 2011. Nothing set. I used 3/4" iron pin.



NE Corner of Section 17, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin. Nothing found below nail. Monument and references fit ODOT survey and the following C.C.R.'s:

L.S. 1272 found 3/8" iron pin in 1998 survey
L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.

C/4 Corner of Section 17, T-6N, R-7W ODOT G-26-887
I found 1" iron pin. Found monument and reference points from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin

E/4 Corner of Section 17, T-6N, R-7W ODOT G-26-888
I found 80D nail. Monument does not fit ODOT survey, SWO 2737(1). Monument and reference points fit the corner record in which L.S. 1384 set 80D nail in 2008 survey. The 80D nail had been set using single proportionate method using the Northeast corner and one of two monuments at the southeast corner of Section 17. I set PK nail with tag. I used existing reference points from said ODOT survey to set monument, which also fits single proportionate method between the northeast and southeast corners of Section 17. Monument is 1.26 feet east and 0.48 feet south of found 80D nail.

SE Corner of Section 17, T-6N, R-7W ODOT G-26-879
I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin does not fit ODOT survey, SWO 2737(1), but it does fit the following corner records:

L.S. 1272 found 3/4" iron pin in 1998 survey
L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. Nothing set. I used 3/8" iron pin.

SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=500'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION			
DRAWN	JSO		SURVEY DIVISION			
CHECKED	JTB		SURVEY DATA SHEET			
APPROVED	JTB					
CREW	BENHAM					
			SDS 63 OF 76			
			SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S063			

L.S. 1326 found 1/2" iron pin in 2005 survey
L.S. 189 found #3 rebar in 2009 survey.

NW Corner of Section 16, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin.
Nothing found below nail. Monument and references fit ODOT
survey and the following C.C.R.'s:

L.S. 1272 found 3/8" iron pin in 1998 survey
L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.



Angle Of Variance
At Sta. 9022 (C/4 Cor.)
X= 1985365.6870
Y= 604077.6000
Lat.= 34°59'35.55072"
Long.= 97°56'37.28364"
 $\theta = 0^{\circ}01'55.06519^{\circ}$

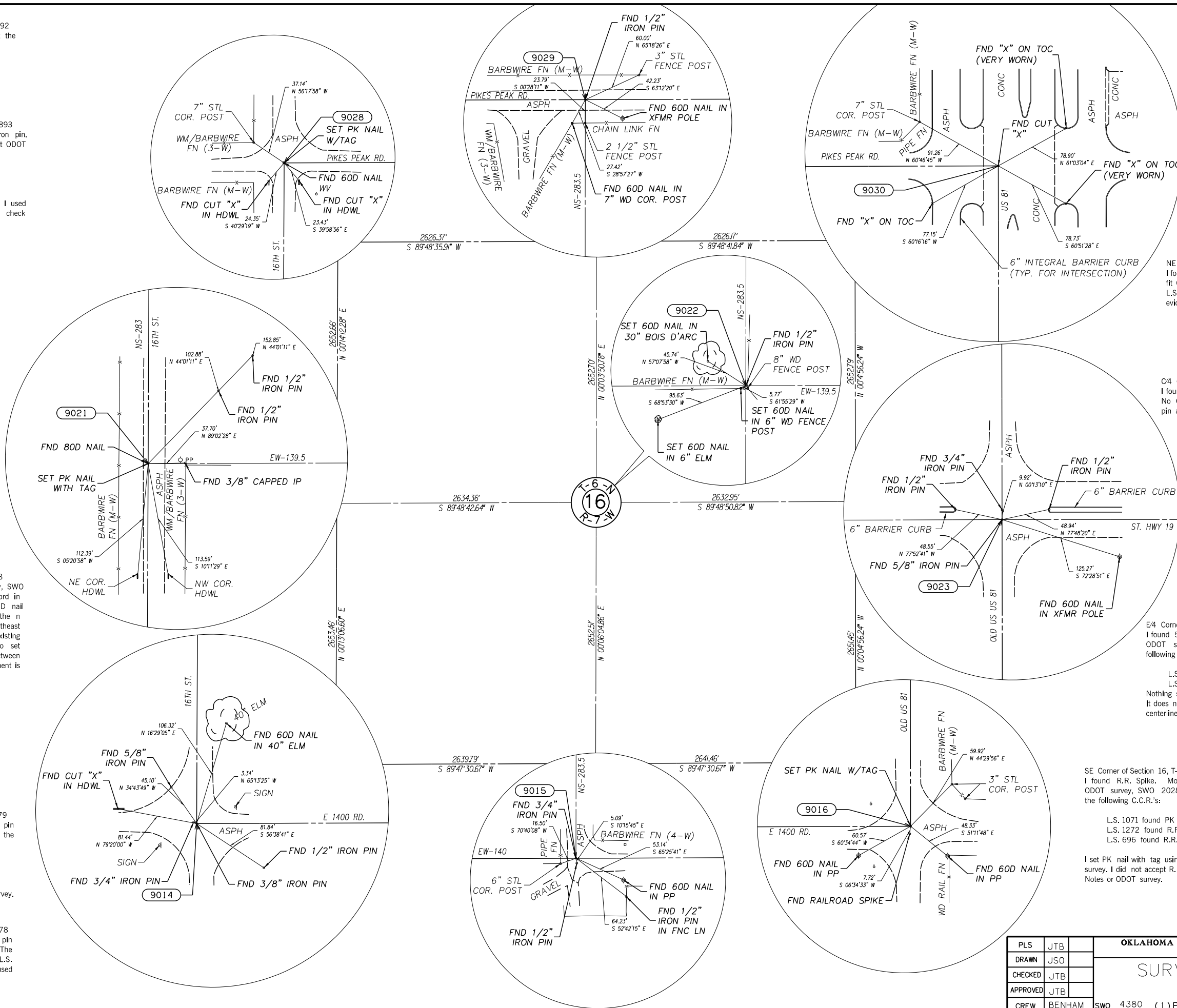
W/4 Corner of Section 16, T-6N, R-7W ODOT G-26-888
I found 80D nail. Monument does not fit ODOT survey, SW/4
2737(1). Monument and reference points fit the corner record in
which L.S. 1384 set 80D nail in 2008 survey. The 80D nail
had been set using single proportionate method using the n
ortheast corner and one of two monuments at the southeast
corner of Section 17. I set PK nail with tag. I used existing
reference points from ODOT survey, SWO 2737(1), to set
monument, which also fits single proportionate method between
the northeast and southeast corners of Section 17. Monument is
1.26 feet east and 0.48 feet south of found 80D nail.

SW Corner of Section 16, T-6N, R-7W ODOT G-26-879
I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin
does not fit ODOT survey, SWO 2737(1), but it does fit the
following corner records:

L.S. 1272 found 3/4" iron pin in 1998 survey
L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 16, T-6N, R-7W ODOT G-26-878
I found 3/4" iron pin and 1/2" iron pin. The 3/4" iron pin
and reference point fit ODOT survey, SWO 2737(1). The
1/2" iron pin and reference points fit C.C.R. in which L.S.
found 3/8" iron pin in 1997 survey. Nothing set. I used
3/4" iron pin.



NE Corner of Section 16, T-6N, R-7W ODOT G-26-891
I found cut "X" in concrete. Monument and references
fit ODOT survey, SWO 2028(1), and the C.C.R. in which
L.S. 696 found cut "X" in 1999 survey. No corner
evidence set. I used cut "X".

C4 Corner of Section 16, T-6N, R-7W ODOT G-26-889
I found 1/2" iron pin. Monument fits ODOT survey 2737 (1)
No C.C.R.'s found for corner. Nothing set. I used 1/2" iron
pin and set references.

E/4 Corner of Section 16, T-6N, R-7W ODOT G-26-890
I found 5/8" iron pin and 3/4" iron pin. The 5/8" iron pin fits
ODOT survey, SWO 2028(1). The 3/4" iron pin fits the
following C.C.R.'s:

L.S. 1071 found 5/8" iron pin in 1989 survey
L.S. 696 found R.R. spike in 1999 survey.
Nothing set. I used 5/8" iron pin. I did not accept 3/4" iron pin.
It does not fit with G.L.O. notes or ODOT survey. It is possibly a
centerline control point for S.H. 19.

SE Corner of Section 16, T-6N, R-7W ODOT G-26-877
I found R.R. Spike. Monument and references do not fit
ODOT survey, SWO 2028(1). Monument and references fit
the following C.C.R.'s:

L.S. 1071 found PK nail in 1989 survey
L.S. 1272 found R.R. Spike in 1997 survey
L.S. 696 found R.R. Spike in 1999 survey.

I set PK nail with tag using measurements from said ODOT survey. I did not accept R.R. Spike, since it did not fit G.L.O. Notes or ODOT survey.

PLS	JTB	<div style="text-align: center;"> OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION <div style="font-size: 2em; margin: 10px 0;">SURVEY DATA SHEET</div> SDS <u>64</u> OF <u>76</u> </div>
DRAWN	JSO	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	
		SWO <u>4380</u> (<u>1</u>) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>5064</u>

SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

NW Corner of Section 7, T-6N, R-7W ODOT G-26-907
I found 1/2" iron pin, railroad spike, and 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey with no supporting evidence listed. No corner record was found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

N4 Corner of Section 7, T-6N, R-7W ODOT G-26-908
I found 1/2" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey. Nothing set. I used 1" iron pin.

Angle Of Variance
At Sta. 9032 (C/4 Cor.)
X= 1974774.8469
Y= 609365.4703
Lat.= 35°00'27.89363"
Long.= 97°58'44.56656"
θ = 0°00'42.81728"

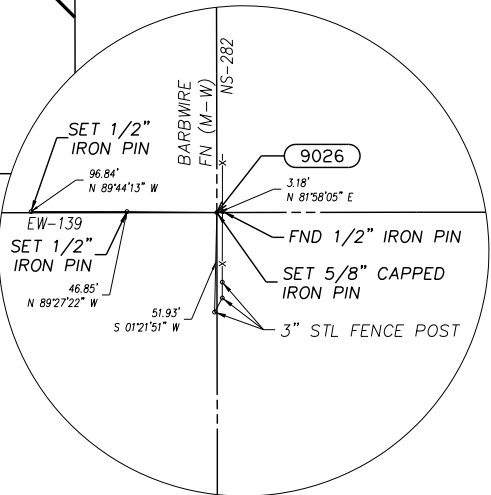
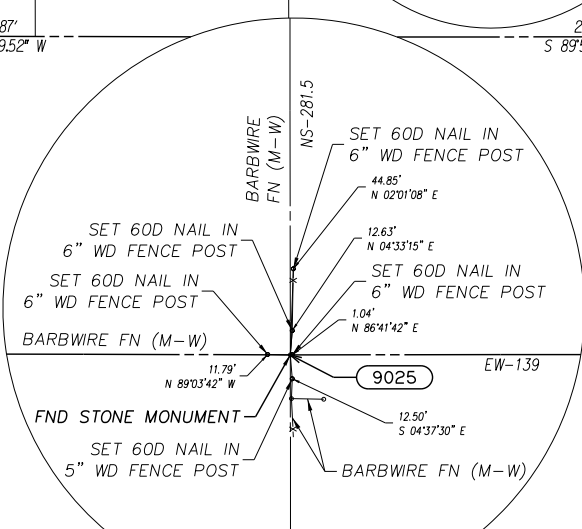
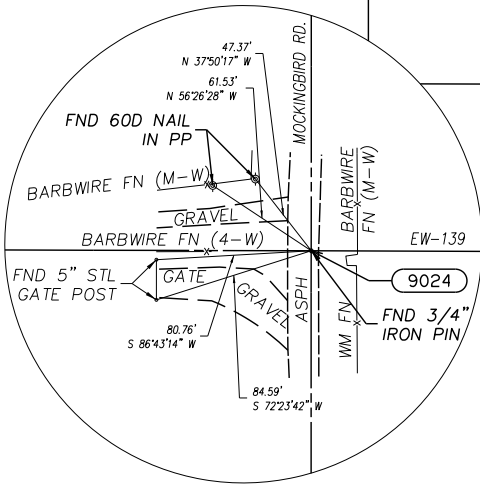
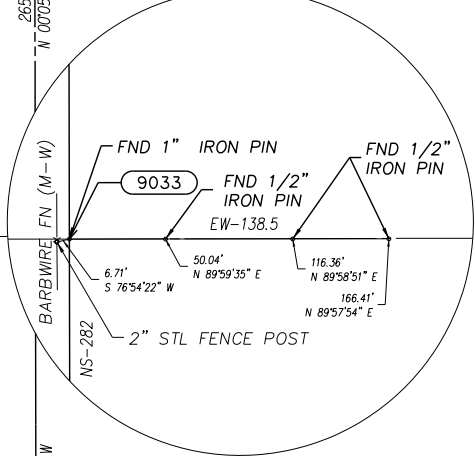
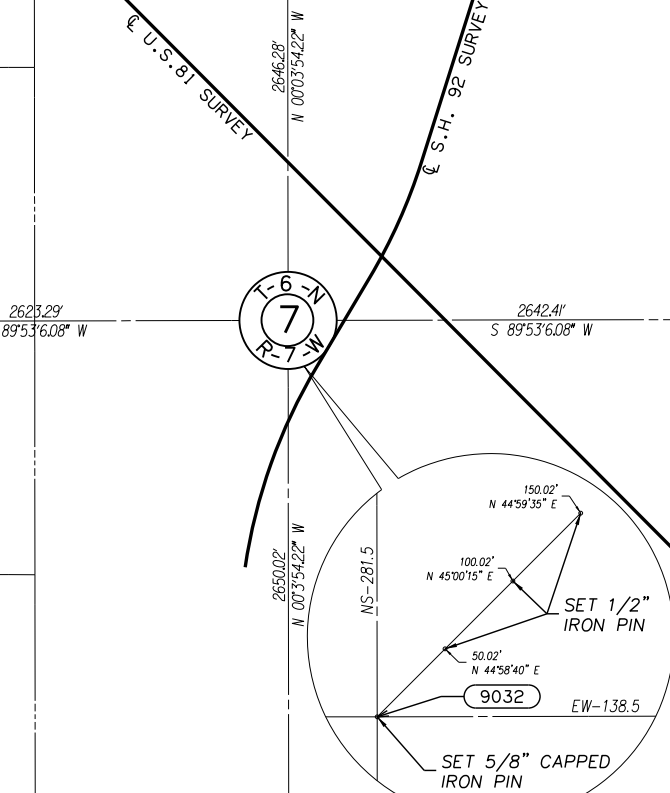
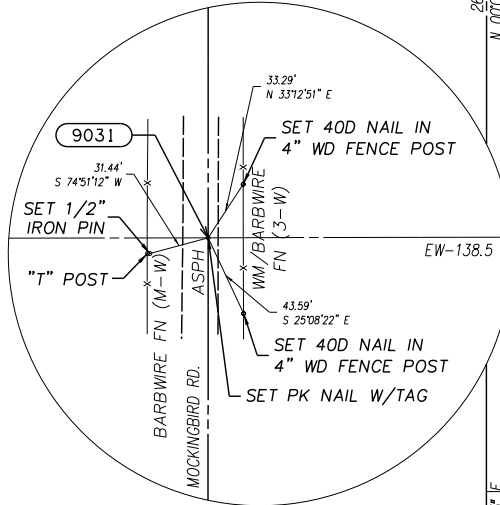
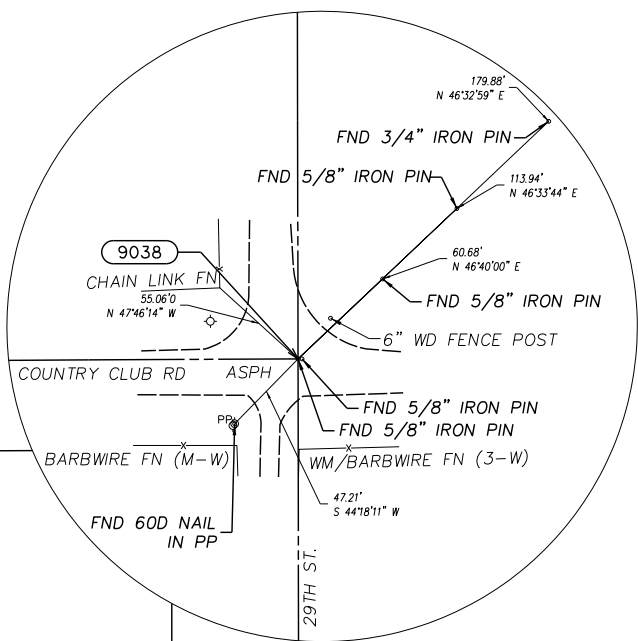
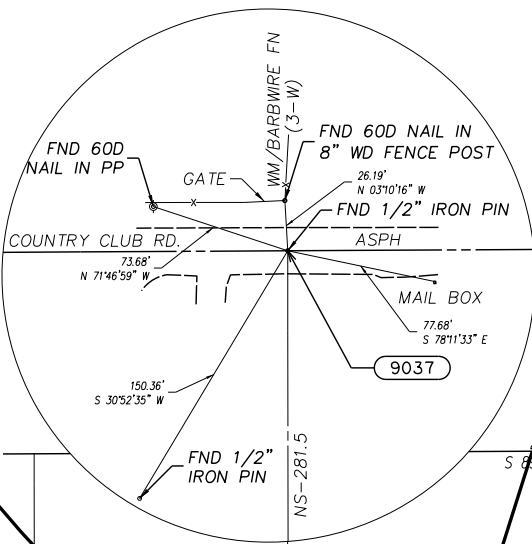
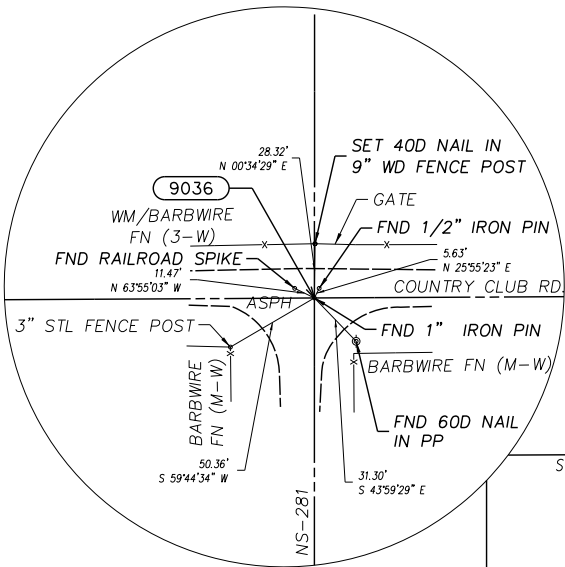
W4 Corner of Section 7, T-6N, R-7W ODOT G-26-898
No corner evidence found. I set PK nail with tag. I used single proportion method to set the corner between the northwest and southwest corner of Section 7.

SW Corner of Section 7, T-6N, R-7W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the following corner records:

L.S. 449 found iron pin (CCR filed June 8, 1982)
L.S. 1082 found 3/4" iron pin (CCR filed APR 18, 1994)
L.S. 1272 found 3/8" iron pin (CCR filed Dec 7, 1998)
L.S. 1272 found iron pin (CCR filed Aug 31, 2001).

Nothing set. I used 3/4" iron pin.

S4 Corner of Section 7, T-6N, R-7W ODOT G-26-896
I found original stone. No certified corner records found, although monument is referenced on C.C.R.'s filed on the southwest and N4 corner of Section 7. No original reference points were found. Stone was marked, "14" on n orth face, and looked undisturbed. Nothing set. I used original stone and set reference points.



SE Corner of Section 7, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barbed-wire fence running north and south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1), to set corner. Corner location fits old fence line to the south

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS		DATE	

NE Corner of Section 7, T-6N, R-7W ODOT G-26-905
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1). Also found 5/8" iron pin 2 feet east of corner, which is a P.O.T. point for Country Club Road Alignment from same survey. Corner location and found reference points do not fit the following corner records, in which supporting evidence was not listed:

L.S. 449 found 1/2" iron pin in 1981 survey
L.S. 1272 found R.R. spike in 1998 survey.

C/4 Corner of Section 7, T-6N, R-7W ODOT G-26-899
No corner evidence found. No corner records found. I set 5/8" iron pin. I used the intersection of lines between opposite quarter section corners to set center of section.

E/4 Corner of Section 7, T-6N, R-7W ODOT G-26-900
I found 1" iron pin. Monument and found reference points match ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin



SCALE:
1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION				
DRAWN	JSO	SURVEY DIVISION				
CHECKED	JTB	SURVEY DATA SHEET				
APPROVED	JTB	SDS 65 OF 76				
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S065				

L.S. 449 found 1/2" iron pin (CCR filed Apr 23, 1981)
L.S. 1272 found railroad spike (CCR filed June 26, 1998).

N/4 Corner of Section 8, T-6N, R-7W ODOT G-26-904
I found 5/8" iron pin. Corner and found reference points fit
ODOT survey, SWO 2737(1). No previous corner records
found. Nothing set. I used 5/8" iron pin.

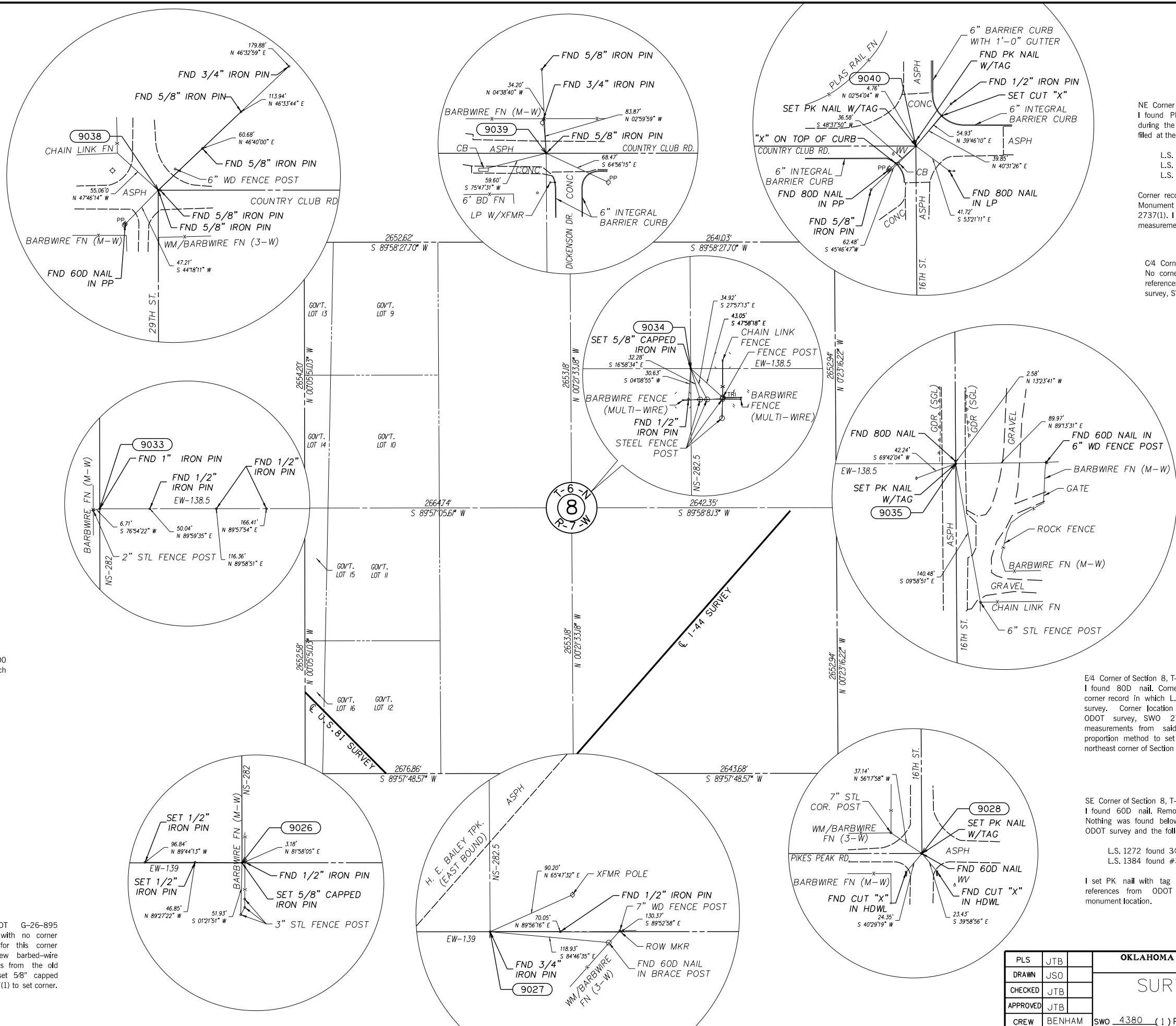


Angle Of Variance
At Sta. 9034 (C/4 Cor.)
X= 1980081.9910
Y= 609373.0260
Lat.= 35°00'27.95285"
Long.= 97°57'40.76639"
 $\theta = 0^{\circ}01'19.03132^{\circ}$

W/4 Corner of Section 8, T-6N, R-7W ODOT G-26-900
I found 1" iron pin. Monument and found reference points match
ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

S/4 Corner of Section 8, T-6N, R-7W ODOT G-26-894
I found 3/4" iron pin. Corner location and reference points
fits ODOT survey, SWO 2737(1), and corner record in which
L.S. 1706 found 3/4" iron pin in 2011 survey. Nothing set.
I used 3/4" iron pin.

SW Corner of Section 8, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner
record filed. I did not find any supporting evidence for this corner
location. This corner was used in the construction of a new barbed-wire
fence running north and south. New fence location deviates from the old
fence location by approximately 4 feet to the east. I set 58" capped
iron pin. I used measurements from ODOT survey, SWO 2737(1) to set corner.
Corner location fits old fence line to the south



NE Corner of Section 8, T-6N, R-7W ODOT G-26-903
I found PK nail with tag (C.A. 3949). Monument was set
during the course of this survey. No corner record had been
filed at the time. Monument fit corner records listed below:

L.S. 449 found iron pin (CCR filed Aug 15, 1984)
L.S. 1272 found PK nail in 1998 survey
L.S. 1407 found PK nail in 2002 survey.

Corner records did not have any supporting evidence listed. Monument and corner records did not fit ODOT survey, SWO 2737(1). I set PK nail with tag. I used reference points and measurements from said ODOT survey to set corner.

C/4 Corner of Section 8, T-6N, R-7W ODOT G-26-901
No corner evidence found. I set 5/8" capped iron pin and
references as shown. I used measurements from ODOT
survey, SWO 2737(1), to set center of section.

E/4 Corner of Section 8, T-6N, R-7W ODOT G-26-902
I found 80D nail. Corner and found references matched corner record in which L.S. 1326 found 80D nail in 2005 survey. Corner location does not fit measurements from ODOT survey, SWO 2737(1). I set PK nail. I used measurements from said ODOT survey and used single proportion method to set corner between the southeast and northeast corner of Section 8.

SE Corner of Section 8, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin.
Nothing was found below nail. Monument and references fit
ODOT survey and the following CCR's:

L.S. 1272 found 3/8" iron pin in 1998 survey
L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.

SCALE:
1" = 500'

PLS	JTB	<div>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</div> <div>SURVEY DATA SHEET</div> <div>SDS 66 OF 76 </div>
DRAWN	JSO	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S066</u>

N/4 Corner of Section 6, T-6N, R-7W ODOT G-26-912
I found 3/4" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S.1200 found 5/8" iron pin in 2012 survey. Nothing set. I used 3/4" iron pin.

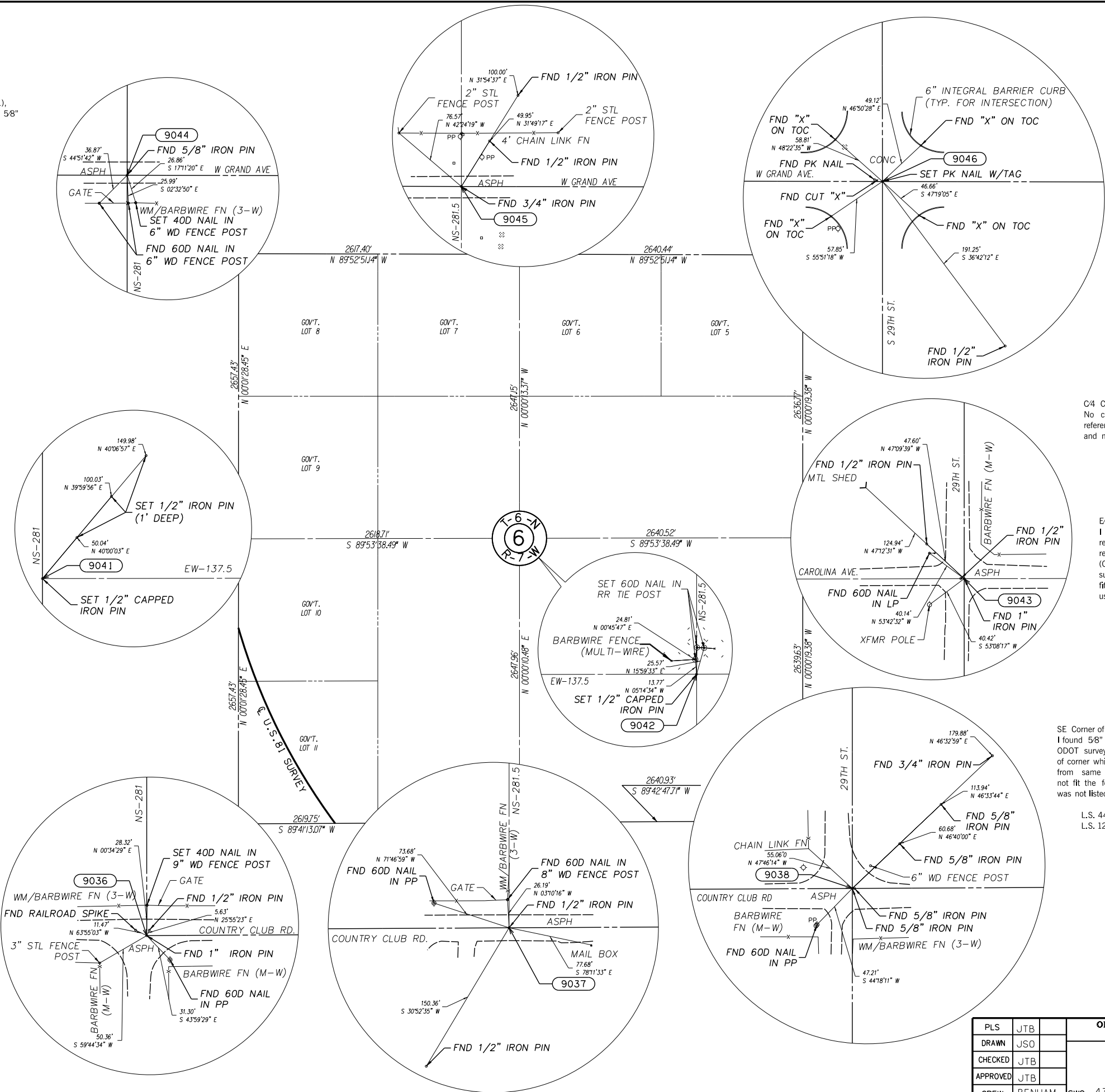
NW Corner of Section 6, T-6N, R-7W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S.1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

GN TN
Angle Of Variance
At Sta. 9042 (C/4 Cor.)
X= 1974771.9766
Y= 614659.7111
Lat.= 35°01'20.25923"
Long.= 97°58'44.58786"
θ = 0°00'42.80519"

W/4 Corner of Section 6, T-6N, R-7W ODOT G-26-908
No corner evidence found. I set 5/8" iron pin and references.
I set corner using single proportionate method.

SW Corner of Section 6, T-6N, R-7W ODOT G-26-907
I found 1/2" iron pin, railroad spike, and 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

S/4 Corner of Section 6, T-6N, R-7W ODOT G-26-908
I found 1/2" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey. Nothing set. I used 1" iron pin.



NE Corner of Section 6, T-6N, R-7W ODOT G-26-911
I found a chiseled "X" and nail. Monuments and reference points do not fit ODOT survey, SWO 2737(1), or the following corner records. L.S. 955 found 1" iron pin in 1985 survey. L.S. 1272 found an iron pin in 1988 survey. Monuments and reference points fit the following corner records. L.S. 1272 found a chiseled "X" in 1998 survey, with no supporting evidence listed. L.S. 1200 found a nail at an "X" in intersection in 2012 survey. I set a PK nail with tag. I used found reference points and measurements from said ODOT survey to set monument. I did not find supporting evidence for the chiseled "X", although it was used for subdivision surveys to the Southwest. I did not find supporting evidence for the nail that was found at the intersection of two paving joints, which was placed there by others during the course of this survey.

C/4 Corner of Section 6, T-6N, R-7W ODOT G-26-909
No corner evidence found. I set 1/2" capped iron pin and references. I used the intersection of opposite quarter corners, and measurements from ODOT Survey, SWO 2737(1).

E/4 Corner of Section 6, T-6N, R-7W ODOT G-26-910
I found 1/2" iron pin & 1" iron pin. 1/2" iron pin and found reference points fit the following corner records. L.S. 449 found 1/2" rebar in 1981 survey. L.S. 1272 found iron pin in 1998 survey (C.C.R. filed June 26, 1998). These corner records did not have any supporting evidence listed. 1" iron pin and found reference points fit measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

SE Corner of Section 6, T-6N, R-7W ODOT G-26-905
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1). Also found 5/8" iron pin 2 feet east of corner which is a P.O.T. point for Country Club Road alignment from same survey. Corner location and found reference points do not fit the following corner records, in which supporting evidence was not listed:

L.S. 449 found 1/2" iron pin (C.C.R. filed Apr 23, 1981)
L.S. 1272 found railroad spike (C.C.R. filed June 26, 1998).

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 67 OF 76
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S067			

N/4 Corner of Section 31, T-7N, R-7W ODOT G-26-919
I found 3/4" iron pin. Corner location and found references fit ODOT survey, SWO 2737(1) and the following corner records: L.S. 1281 found 3/4" rebar in 1994 survey and L.S. 1378 found R.R. Spike in 1996 survey. Nothing set. I used 3/4" iron pin.

NW Corner of Section 31, T-7N, R-7W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

L.S. 1378 found 1" iron pin in 1996 survey
L.S. 1272 found iron pin in 1998 survey
L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin

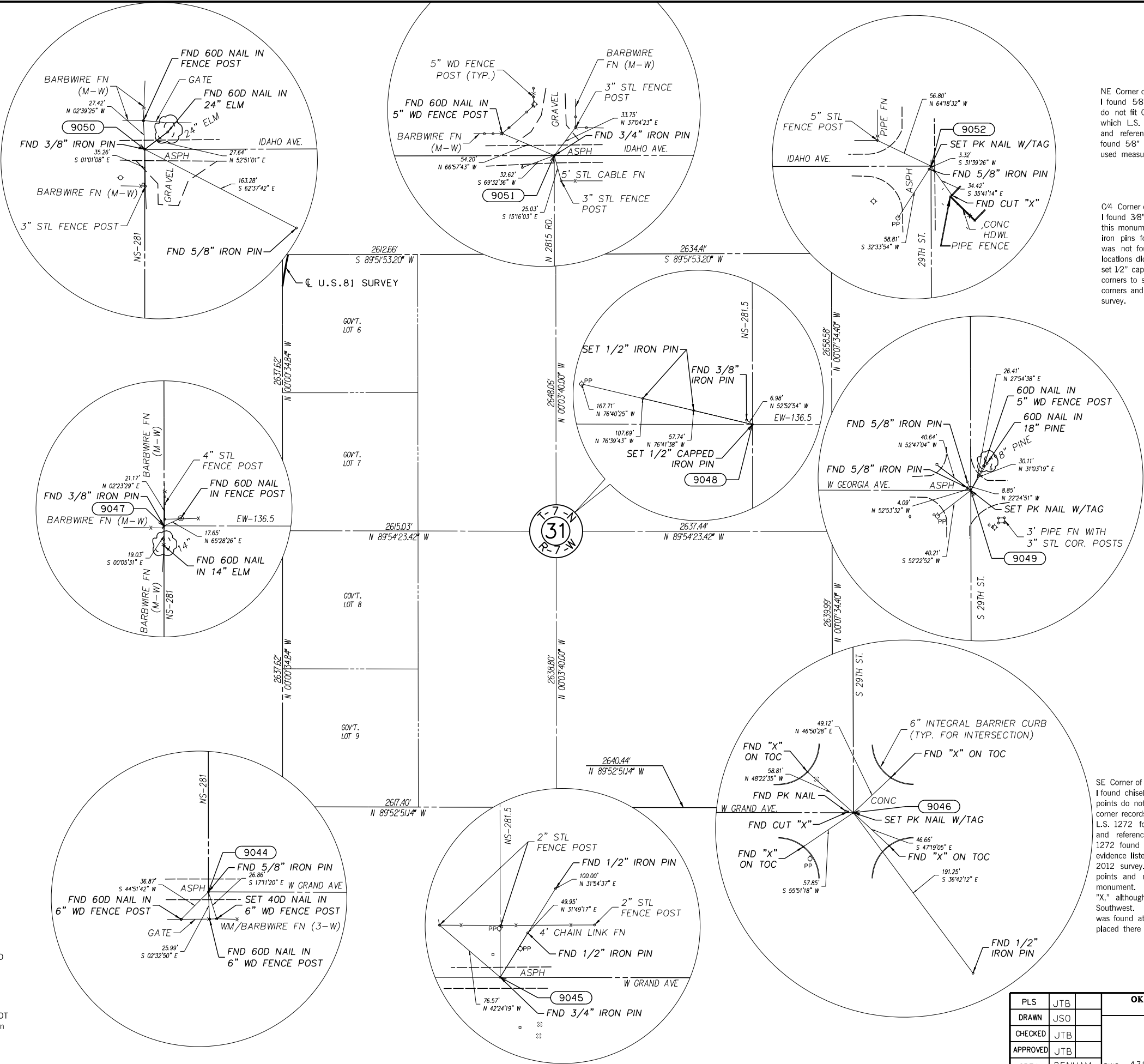


Angle Of Variance
At Sta. 9048 (C/4 Cor.)
X= 1974768.9904
Y= 619945.6544
Lat.= 35°02'12.54254"
Long.= 97°58'44.61058"
θ = 0°00'42.79229"

W/4 Corner of Section 31, T-7N, R-7W ODOT G-26-914
I found 3/8" iron pin. Monument and references fit corner record in which L.S. 1200 set 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 31, T-7N, R-7W ODOT G-26-912
I found 3/4" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. Nothing set. I used 3/4" iron pin.

SW Corner of Section 31, T-7N, R-7W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.



NE Corner of Section 31, T-7N, R-7W ODOT G-26-918
I found 5/8" iron pin. This monument and found references do not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.

C/4 Corner of Section 31, T-7N, R-7W ODOT G-26-915
I found 3/8" iron pin. No corner record or supporting evidence found for this monument. This iron pin appeared to be set from one of the two iron pins found at the E/4 corner of Section 31. Supporting evidence was not found for the iron pins at the said E/4 corner, and their locations did not fit measurements from ODOT survey, SWO 2737(1). I set 1/2" capped iron pin. I used the intersection of opposite 1/4 section corners to set center of section. The E-W 1/4 section line also fits 1/16 corners and P.O.T. iron pins (on Georgia Ave.) Found from said ODOT survey.

E/4 Corner of Section 31, T-7N, R-7W ODOT G-26-916
I found two 5/8" iron pins. One monument was set by others, and one was found by L.S. 449 in 1984 survey (no supporting evidence listed). These monuments do not fit ODOT survey, SWO 2737(1). I set PK nail with tag. I used measurements from said ODOT survey to set corner.

SE Corner of Section 31, T-7N, R-7W ODOT G-26-911
I found chiseled "X" and nail. Monuments and reference points do not fit ODOT survey, SWO 2737(1), or the following corner records. L.S. 955 found 1" iron pin in 1985 survey. L.S. 1272 found an iron pin in 1988 survey. Monuments and reference points fit the following corner records. L.S. 1272 found chiseled "X" in 1998 survey, with no supporting evidence listed. L.S. 1200 found nail at "X" in intersection in 2012 survey. I set PK nail with tag. I used found reference points and measurements from said ODOT survey to set monument. I did not find supporting evidence for the chiseled "X," although it was used for subdivision surveys to the Southwest. I did not find supporting evidence for the nail that was found at the intersection of two paving joints, which was placed there by others during the course of this survey.



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DRAWN	JSO		SURVEY DIVISION		
CHECKED	JTB		SURVEY DATA SHEET		
APPROVED	JTB		SDS 68 OF 76		
CREW	BENHAM		SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S068		

N/4 Corner of Section 30, T-7N, R-7W ODOT G-26-445
I found PK nail & 1/2" iron pin no corner record was found for PK nail (lines up with property fence to the north). 1/2" iron pin fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1), and reference points from the following corner record. 1/2" iron pin set by L.S. 1155 in 1991 survey. Nothing set. I used 1/2" iron pin.

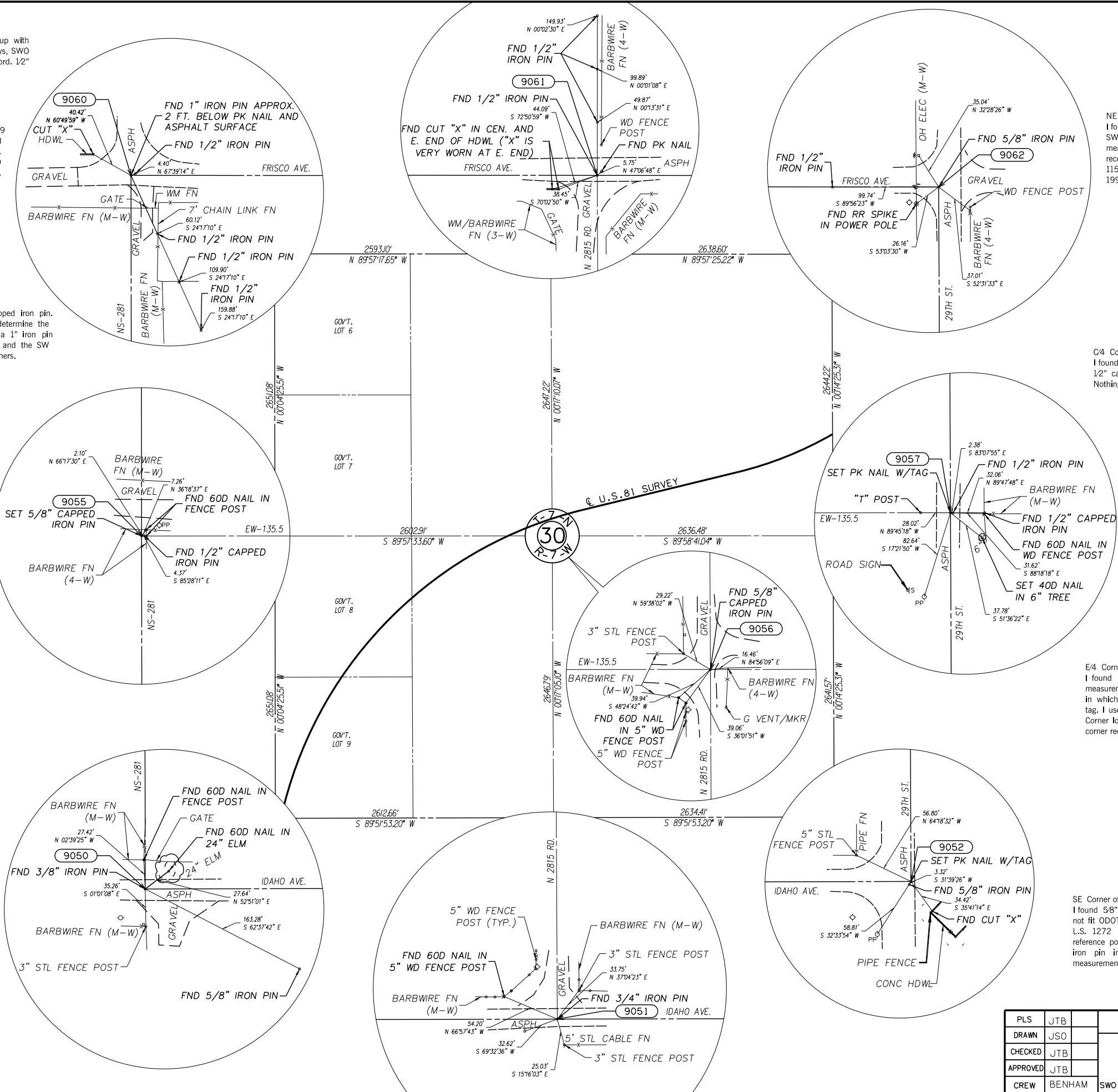
NW Corner of Section 30, T-7N, R-7W ODOT G-26-444
I found 1" iron pin, PK nail, & 1/2" iron pin. 1/2 iron pin was found by L.S. 189 in 1984 survey, with no supporting evidence listed. No corner record was filled for PK nail, which I removed to find 1" iron pin two feet below asphalt surface. 1" iron pin and found references fit measurements from ODOT survey, SWO 3609(1), and corner record which L.S. 1155 found 1" iron pin in 1991 survey. Nothing set. I used 1" iron pin.

W/4 Corner of Section 30, T-7N, R-7W ODOT G-26-921
I found 1/2" capped iron pin set by L.S. 1326 in 2005 survey. I set 5/8" capped iron pin. L.S. 1326 used a 1/2" iron pin, located at the NW corner of Section 30 to determine the W/4 corner. I did not find supporting evidence for that 1/2" iron pin. I used a 1" iron pin found at the NW corner of Section 30, which fits ODOT survey, SWO 3609(1), and the SW corner. I used single proportion method to set point on line and between said corners.

Angle Of Variance
At Sta. 9056 (C/4 Cor.)
X= 1974753.0120
Y= 625240.4660
Lat.= 35°03'04.91337"
Long.= 97°58'44.78955"
θ = 0°00'42.69070"

SW Corner of Section 30, T-7N, R-7W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records. L.S. 1378 found 1" iron pin in 1996 survey. L.S. 1272 found iron pin in 1998 survey. L.S. 1200 found 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 30, T-7N, R-7W ODOT G-26-919
I found 3/4" iron pin. Corner location and found references fit ODOT survey, SWO 2737(1), and the following corner records. L.S. 1281 found 3/4" rebar in 1994 survey. L.S. 1378 found R.R. Spike in 1996 survey. Nothing set. I used 3/4" iron pin.



NE Corner of Section 30, T-7N, R-7W ODOT G-26-450
I found 5/8" iron pin. Monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). It also fits found reference points and measurements from the following corner records: 1/2" iron pin was recovered by L.S. 449 in 1979 survey, 1" iron pin was recovered by L.S. 1155 in 1991 survey, and 1" iron pin was recovered by L.S. 696 in 1997 survey. Nothing set. I used 5/8" iron pin.

C/4 Corner of Section 30, T-7N, R-7W ODOT G-26-922
I found 5/8" capped iron pin. Corner location and reference points fit 1/2" capped iron pin set by L.S. 1326 in 2000 and 2001 survey. Nothing set. I used 5/8" capped iron pin.

E/4 Corner of Section 30, T-7N, R-7W ODOT G-26-923
I found 1/2" iron pin. Monument and reference points do not fit measurements from ODOT survey, SWO 2737(1), or corner record in which L.S. 1089 set PK nail in 1994 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner. Corner location fits existing fence lines and reference points from corner record by L.S. 1089.

SE Corner of Section 30, T-7N, R-7W ODOT G-26-918
I found 5/8" iron pin. This monument and found references does not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.

SCALE:
1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
	OKLA		
DESCRIPTION		REVISIONS	DATE
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 69 OF 76			
SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S069			

NW Corner of Section 29, T-7N, R-7W ODOT G-26-450
I found 5/8" iron pin. Monument fits measurements from ODOT survey, SWO 2737(1) and SWO 3609(1), and fits found reference points and measurements from the following corner records:

- 1/2" iron pin was recovered by L.S. 449 in 1979 survey
- 1" iron pin was recovered by L.S. 1155 in 1991 survey
- 1" iron pin was recovered by L.S. 696 in 1997 survey.

Nothing set. I used 5/8" iron pin.

N4 Corner of Section 29, T-7N, R-7W ODOT G-26-451
I found 5/8" iron pin and 3/8" iron pin. Monuments are only 0.2 feet apart. The 3/8" monument fits measurements from ODOT survey, SWO 2737(1) and SWO 3609(1), and fits found reference points and measurements from the following corner record: L.S. 1155 set a 5/8" capped iron pin in 1991 ODOT survey. Nothing set. I used 3/8" iron pin.

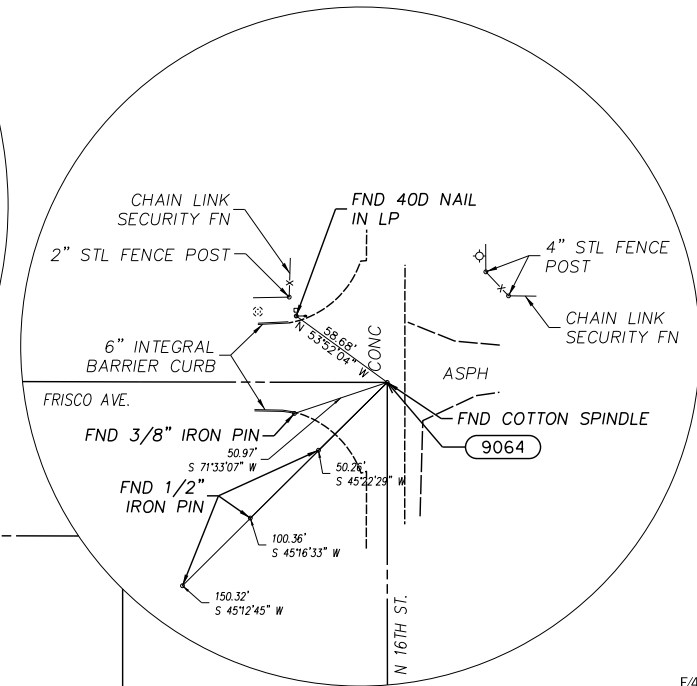
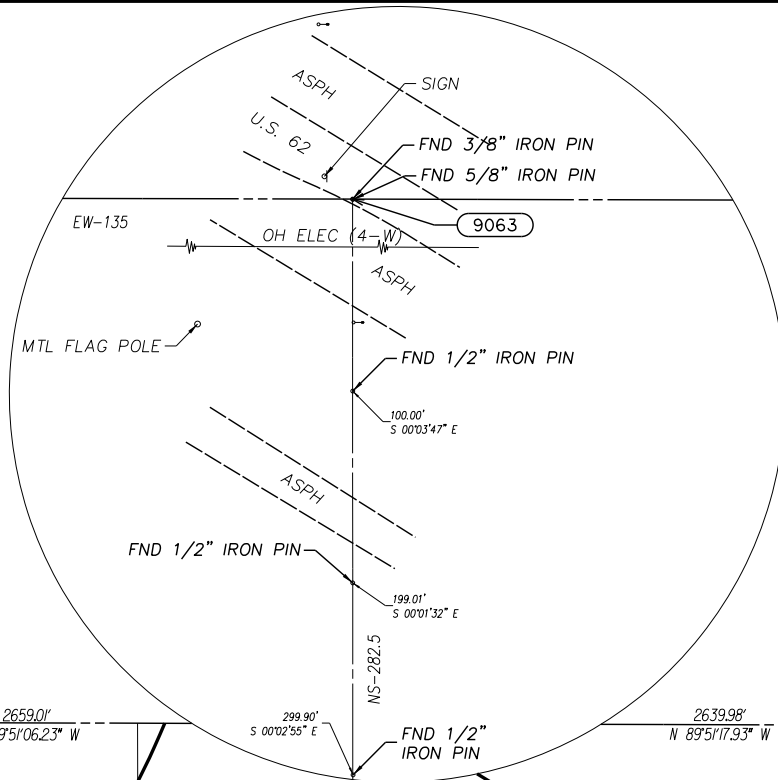
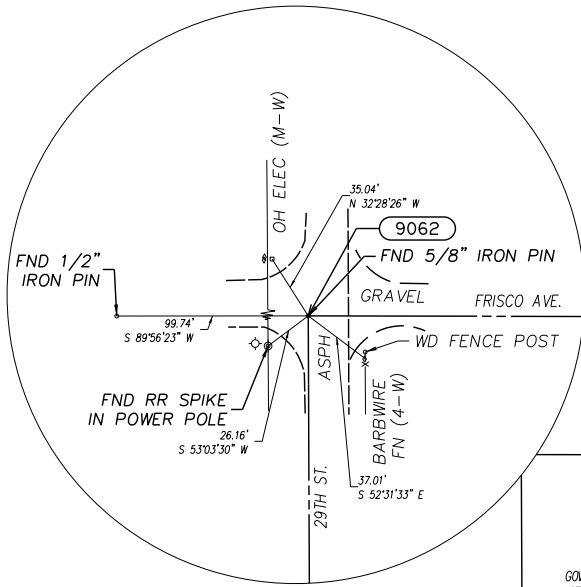


Angle Of Variance
At Sta. 9058 (C/4 Cor.)
X= 1980038.4430
Y= 625234.9380
Lat.= 35°03'04.84330"
Long.= 97°57'41.21708"
θ = 0°01'18.77550"

W/4 Corner of Section 29, T-7N, R-7W ODOT G-26-923
I found 1/2" iron pin. Monument and reference points do not fit measurements from ODOT survey, SWO 2737(1), or corner record in which L.S. 1089 set PK nail in 1994 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner. Corner location fits existing fence lines and reference points from corner record by L.S. 1089.

SW Corner of Section 29, T-7N, R-7W ODOT G-26-918
I found 5/8" iron pin. This monument and found references do not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.

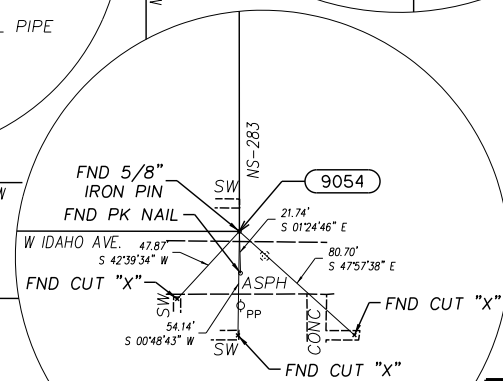
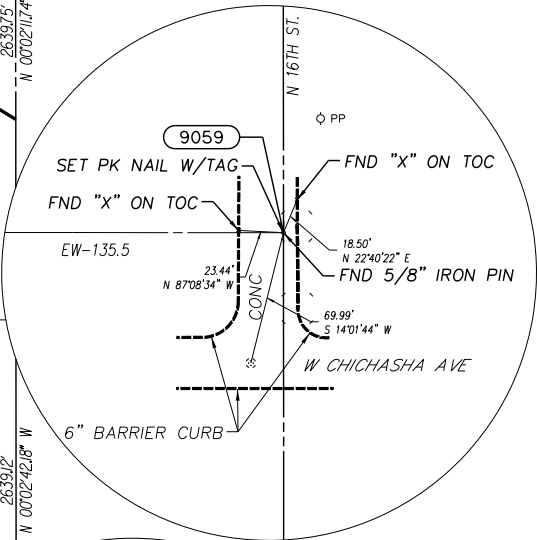
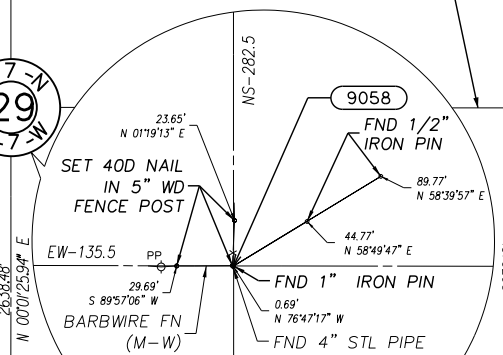
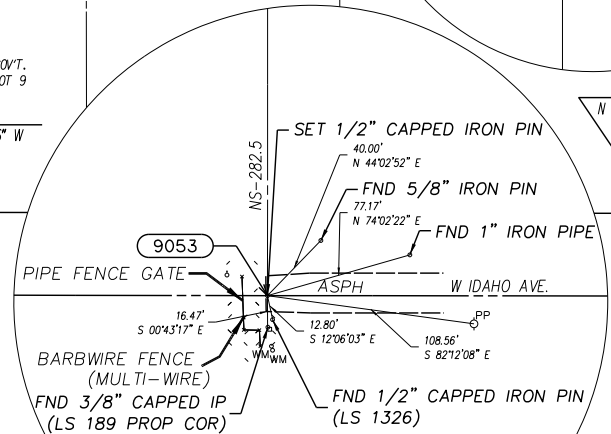
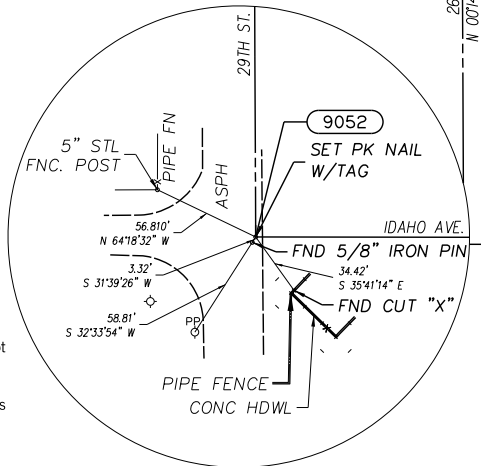
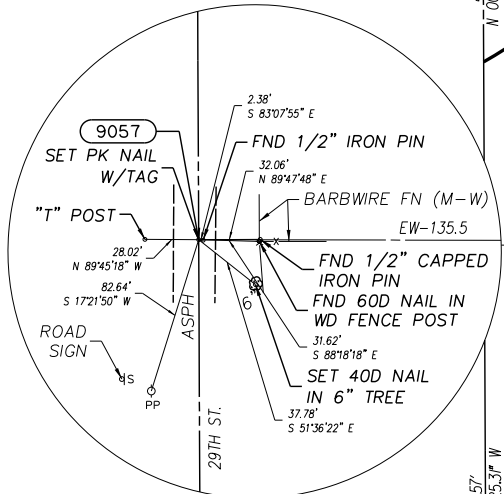
S/4 Corner of Section 29, T-7N, R-7W ODOT G-26-917
I found 1/2" capped iron pin, set by L.S. 1326 in 2004 survey. I could not accept this monument, because the method used to calculate this point, involved using a PK nail at the SE corner of Section 29, which was found to be 21.74 feet south of actual corner. I set PK nail with tag using found reference points from ODOT survey, SWO 2737(1), and a corner record where L.S. 189 found a car axle in 2006 survey.



NE Corner of Section 29, T-7N, R-7W ODOT G-26-48
I found cotton spindle. Monument was found inside an impression of concrete made by a brass cap, and it fits found references and measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). ODOT brass cap was recovered by L.S. 1155 in 1991 ODOT survey and by L.S. 1407 in 1997 survey. Nothing set. I used cotton spindle.

C/4 Corner of Section 29, T-7N, R-7W ODOT G-26-924
I found 1" iron pin monument. It fits found reference points and measurements from ODOT survey, SWO 2738(1). No C.C.R.'s found for this corner. Nothing set. I used 1" iron pin.

E/4 Corner of Section 29, T-7N, R-7W ODOT G-26-925
I found 5/8" iron pin. It was later obliterated during the course of this survey. I also found references from corner record in which L.S. 1326 set mag nail in 2012. Survey mag nail not found. I set PK nail with tag. I used previously measured coordinates and reference points to restore the location of the 5/8" iron pin. This monument fits ODOT survey, SWO 2738(1). Monument location is 0.32 feet south and 0.19 feet west of the mid-point between the northeast and southeast corner of Section 29.



SE Corner of Section 29, T-7N, R-7W ODOT G-26-154
I found PK nail and 5/8" iron pin. PK nail that was found was set by L.S. 1407 in 1997 survey but found none of the supporting evidence listed. 5/8" iron pin matches measurements from ODOT survey, SWO 2737(1) and found reference points from the following corner records:

- 5/8" iron pin recovered by Mr. J. P. Andrews, location engineer (SD 11 form dated April 3, 1967)
- 5/8" iron pin recovered by L.S. 189 in 2006 survey.

Nothing set. I used 5/8" iron pin.



SCALE:
1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
	OKLA.		
DESCRIPTION		REVISIONS	DATE
SURVEY DATA SHEET			
SDS 70 OF 76			
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(04) SHEET NO. 5070

NW Corner of Section 20, T-7N, R-7W ODOT G-26-448
I found 1" iron pin that was recovered by L.S. 1155 in 1991 ODOT survey. Reference points were not found. Monument fits measurements to other section corners, from ODOT surveys, SWO 2737(1) and 3609(1). Nothing set. I used 1" iron pin.

[illegible]

SW Corner of Section 20, T-7N, R-7W ODOT G-26-450
I found 5/8" iron pin. Monument fits measurements from ODOT survey SWO
2737(1) and SWO 3609(1) and fits found reference points and
measurements from the following corner records:

Nothing set. I used 5/8" iron pin.

LOT 13

29TH ST.

OH ELEC (M-W)

35.04' N 32°28'26" W

FND 5/8" IRON PIN

9062

GRAVEL

FRISCO AVE.

WD FENCE POST

ASPH

BARB WIRE FN (4-W)

37.01' S 52°31'33" E

26.16' S 53°03'30" W

FND RR SPIKE IN POWER POLE

99.74' S 89°56'23" W

FND 1/2" IRON PIN

CHAIN LINK SECURITY FN

2" STL FENCE POST

6" INTEGRAL BARRIER CURB

FND 3/8" IRON PIN

FND 1/2" IRON PIN

N 16TH ST.

CONC

ASPH

FRISCO AVE.

9064

FND 40D NAIL IN LP

4" STL FENCE POST

CHAIN LINK SECURITY FN

FND COTTON SPINDLE

58°08' 53°04' W

50.97'

S 71°33'07" W

100.36'

S 45°16'33" W

150.32'

S 45°12'45" W

50.26'

S 45°22'29" W

NE Corner of Section 20, T-7N, R-7W ODOT G-26-454
I found 1/2" iron pin that was set by L.S. 1155 in 1991 survey.
Corner location and reference points fit ODOT surveys, SWO
2737(1) and SWO 3609(1). Nothing set. I used 1/2" iron pin.

C4 Corner of Section 20, T-7N, R-7W ODOT G-26-452
No corner evidence found. I set 5/8" iron pin using intersecting
lines from 1/4 corners and measurements from ODOT surveys.
SWO 2737(1) and SWO 3609(1). Calculated point fits found
reference point and 5/8" iron pin that was set by L.S. 1155 in
1991 ODOT survey. Set reference points.

E/4 Corner of Section 20, T-7N, R-7W ODOT G-26-455
I found 3/4" iron pin. Current monument fits measurements from ODOT
surveys, SWO 2737(1) and SWO 3609(1). It also fits found reference
points and measurements from the following corner records:

OHD brass MON recovered by Mr. J.P. Andrews, location engineer
(SD form 11, dated Aug 10, 1966)
3/4" iron pin was recovered by L.S. 1155 1991 survey.

Nothing set. I used 3/4" iron pin

SE Corner of Section 20, T-7N, R-7W ODOT G-26-48
I found cotton spindle. Monument was found inside
an impression of concrete made by a brass cap, and fits
found references and measurements from ODOT surveys,
SWO 2737(1) and SWO 3609(1). ODOT brass cap was
recovered by L.S. 1155 in 1991 ODOT survey and by L.S.
1407 in 1997 survey. Nothing set. I used cotton spindle.



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB		<div style="text-align: center;"> OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION <h1 style="margin: 0;">SURVEY DATA SHEET</h1> SDS <u>71</u> OF <u>76</u> </div>
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
			SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S071</u>

N4 Corner of Section 17, T-7N, R-7W ODOT G-26-930
I set 3/4" iron pin. Monument and reference points fit corner
record in which L.S. 1272 found 3/4" iron pin in 2003
survey. Monument and reference points fit measurements from
ODOT, SWO survey 2737(1). Nothing set. I used 3/4" iron
pin.

A diagram of a V-shaped notch. The left side of the notch is labeled 'GN' and the right side is labeled 'TN'. The angle between the two sides at the vertex is labeled with the Greek letter θ .

SW Corner of Section 17, T-7N, R-7W ODOT G-26-448
I found 1" iron pin that was recovered by L.S. 1155 in 1991 ODOT survey.
Reference points were not found. Monument fits measurements
to other section corners from ODOT surveys, SWO 2737(1)
and 3609(1). Nothing set. I used 1" iron pin.

9076

FND 3/4" IRON PIN
(3 FT. DEEP)

EW-133

FND 1/2" CAPPED
IRON PIN

FND 60D NAIL IN
POLE

17.50"
N 20'34'34" E

24"

12"

13.09'
S 19'25'50" W

10.25'
S 72'23'00" E

38.07'
S 19'28'01" W

CP

NE Corner of Section 17, T-7N, R-7W ODOT G-26-929
I found 1/2" capped iron pin and 3/4" iron pin. The 1/2" capped iron pin and reference points fit corner record in which L.S. 1326 set 1/2" capped iron pin in 2012 survey using double proportionate method. The 3/4" iron pin was found in place three feet below surface. The measurements fit ODOT survey, SWO 2737(1). Nothing set. I used 3/4" iron pin.

C/4 Corner of Section 17, T-7N, R-7W ODOT G-26-927
No corner evidence found. I set 1/2" capped iron pin.
Monument was set using measurements from ODOT survey
SWO 2737(1).

E/4 Corner of Section 17, T-7N, R-7W ODOT G-26-928
I found 1/2" capped iron pin. I did not find supporting
evidence for this monument or any corner records. The
information on the cap could not be determined. I set 1/2"
capped iron pin. Monument was set with single
proportionate method between the northeast and southeast
corners of Section 17. I used the measurements from ODOT
survey, SWO 2737(1).

SE Corner of Section 17, T-7N, R-7W ODOT G-26-454
I found 1/2" iron pin that was set by L.S. 1155 in 199
survey. Corner location and reference points fit ODO
surveys, SWO 2737(1) and SWO 3609(1). Nothing set.
used 1/2" iron pin.

SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS <u>72</u> OF <u>76</u>
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		SWO <u>4380</u> (1) PROJECT NO. <u>24428(04)</u> SHEET NO. <u>S072</u>

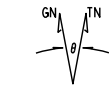
NW Closing Corner of Section 25, T-7N, R-8W ODOT G-26-964
No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I set 1/2" capped iron pin and reference points as shown. I used found reference points from C.C.R. filed by L.S. 1155 to set monument. However, the distance between the northwest closing corner of Section 25 and milepost 72 should be 2.39 chains, according to the May 22, 1900 G.L.O. Plat, instead of 2.59 chains, which had been used in the 1991 ODOT survey.

Milepost 72 Corner of Section 25, T-7N, R-8W ODOT G-26-436
I found ODOT brass cap set in concrete L.S. 1155 set monument and filed C.C.R. in 1991 ODOT survey. I used ODOT brass monument and set reference points as shown.

NE Closing Corner of Section 25, T-7N, R-8W ODOT G-26-437
No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I set 1/2" capped iron pin and reference points as shown.

W Closing Corner of Section 25, T-7N, R-8W ODOT G-26-961
Nothing set in 1900 or 1901 survey. No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71 1/2.

Milepost 71.5 Corner of Section 25, T-7N, R-8W ODOT G-26-43
I found 4" iron pipe with brass cap set in concrete marked "MP 71 1/2," and reference points. L.S. 1155 found monument and filed C.C.R. in 1991 ODOT survey. I used brass cap and set reference points as shown.



Angle Of Variance
At Sta. 9108 (C/4 Cor.)
X= 1969510.2000
Y= 625237.5875
Lot.= 35°03'04.89113"
Long.= 97°59'47.84944"
θ = 0°00'06.89686"

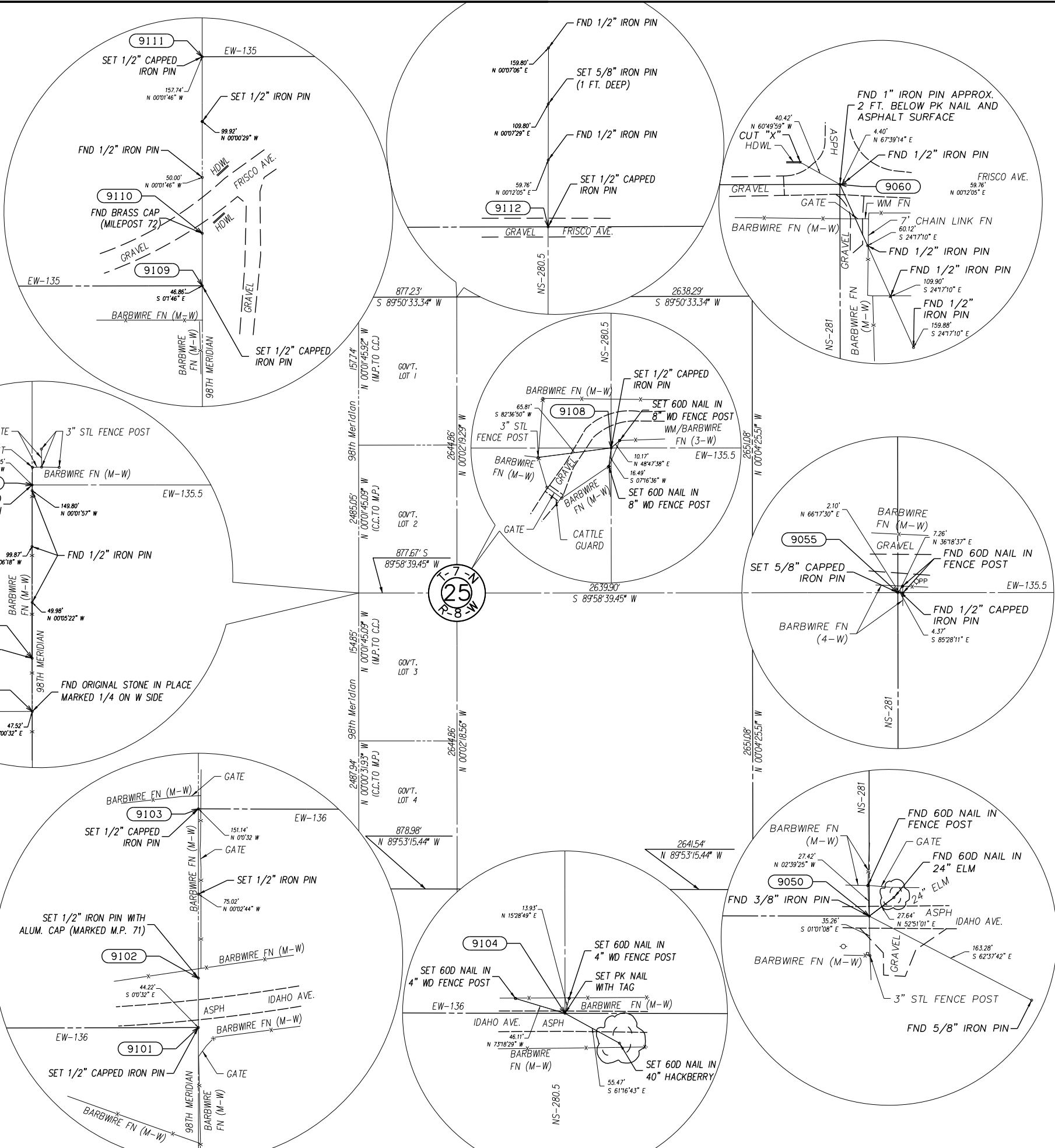
E Closing Corner of Section 25, T-7N, R-8W ODOT G-26-962
I found original stone in place. Stone was marked with "1/4" on west side of stone. Pits and mound were worn away but still evident. Monument fits distance to milepost 71 1/2 from G.L.O. notes and Plat. I used original stone and set reference points as shown.

SW Closing Corner of Section 25, T-7N, R-8W ODOT G-26-957
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71.

Milepost 71 Corner of Section 25, T-7N, R-8W ODOT G-26-958
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped, "MP 71" and "G-26-958." I set reference points as shown. I set monument using single proportionate method between found mileposts 70 1/2 and 71 1/2.

SE Closing Corner of Section 25, T-7N, R-8W ODOT G-26-959
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 71.

S4 Corner of Section 25, T-7N, R-8W ODOT G-26-956
No corner evidence found. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 25 using distances from G.L.O. Notes and Plat.



N4 Corner of Section 25, T-7N, R-8W ODOT G-26-963
No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I did not agree with the position of this monument. It was based on an incorrectly placed monument milepost 72 instead of 2.39 chains as shown on May 22, 1900 G.L.O. Plat. This affected the position of the north quarter corner of Section 25. Therefore I did not use reference points to reset the monument. I set 1/2" capped iron pin and reference point as shown. I used single proportionate method between the northwest closing corner and northeast corner of Section 25 using distances from G.L.O. Notes and Plat.

NE Corner of Section 25, T-7N, R-8W ODOT G-26-444
I found 1" iron pin, PK nail, and 1/2" iron pin. 1/2" iron pin was found by L.S. 189 in 1984 survey with no supporting evidence listed. No corner record was filed for PK nail, which I removed to find 1" iron pin two feet below asphalt surface. 1" iron pin and found references fit measurements from ODOT survey, SWO 3609(1), and corner record which L.S. 1155 found 1" iron pin in 1991 survey. Nothing set. I used 1" iron pin.

C/4 Corner of Section 25, T-7N, R-8W ODOT G-26-960
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 25.

E/4 Corner of Section 25, T-7N, R-8W ODOT G-26-921
I found 1/2" capped iron pin set by L.S. 1326 in 2005 survey. I set 5/8" capped iron pin. L.S. 1326 used a 1/2" iron pin located at the NW corner of Section 30 to determine the W/4 corner. I did not find supporting evidence for that 1/2" iron pin. I used a 1" iron pin found at the NW corner of section 30 (fits ODOT survey, SWO 3609), and the SW corner, and used single proportion method to set point on line and between said corners.

SE Corner of Section 25, T-7N, R-8W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

L.S. 1378 found 1" iron pin in 1996 survey
L.S. 1272 found iron pin in 1998 survey
L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin.



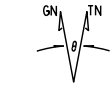
SCALE:
1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
	OKLA.		
DESCRIPTION		REVISIONS	DATE
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 73 OF 76			
SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. S073			

NW Closing Corner of Section 36, T-7N, R-8W ODOT G-26-957
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71.

Milepost 71 Corner of Section 36, T-7N, R-8W ODOT G-26-958
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 71 and G-26-958. I set reference points as shown. I set monument using single proportionate method between found mileposts 70 1/2 and 71 1/2.



Angle Of Variance
At Sta. 9100 (C/4 Cor.)
X= 1969511.9271
Y= 619950.7188
Lat.= 35°02'12.59890"
Long.= 97°59'47.83080"
θ = 0°00'06.90744"

NE Closing Corner of Section 36, T-7N, R-8W ODOT G-26-959
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 71.

W Closing Corner of Section 36, T-7N, R-8W ODOT G-26-953
Nothing set in 1900 or 1901 survey. No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70 1/2.

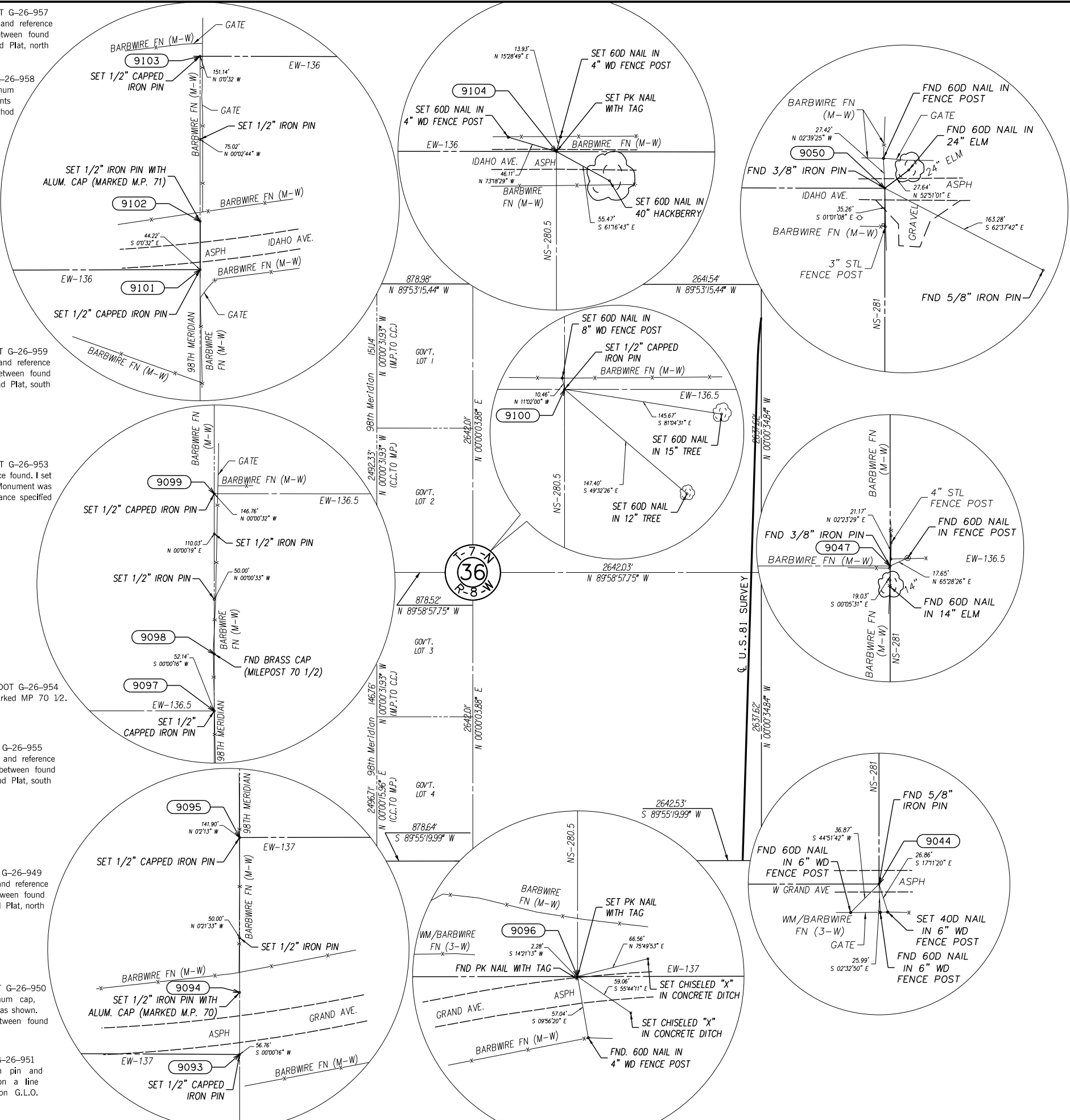
Milepost 70.5 Corner of Section 36, T-7N, R-8W ODOT G-26-954
I found 4" iron pipe with brass cap set in concrete marked MP 70 1/2. I used brass cap and set reference points as shown.

E Closing Corner of Section 36, T-7N, R-8W ODOT G-26-955
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70 1/2.

SW Closing Corner of Section 36, T-7N, R-8W ODOT G-26-949
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70.

Milepost 70 Corner of Section 36, T-7N, R-8W ODOT G-26-950
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 70 and G-26-950. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

SE Closing Corner of Section 36, T-7N, R-8W ODOT G-26-951
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70.



N/4 Corner of Section 36, T-7N, R-8W ODOT G-26-956
No corner evidence found. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 25 using distances from G.L.O. Notes and Plat.

NE Corner of Section 36, T-7N, R-8W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

L.S. 1378 found 1" iron pin in 1996 survey
L.S. 1272 found iron pin in 1998 survey
L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin

C/4 Corner of Section 36, T-7N, R-8W ODOT G-26-952
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 36.

E/4 Corner of Section 36, T-7N, R-8W ODOT G-26-914
I found 3/8" iron pin. Monument and references fit corner record in which L.S. 1200 set 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.

SE Corner of Section 36, T-7N, R-8W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

S/4 Corner of Section 36, T-7N, R-8W ODOT G-26-948
I found PK nail with tag. L.S. 1326 set PK nail and filed C.C.R. in 2003 survey. Monument did not fit proportionate distances between southwest closing corner and southeast corner of Section 36. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 36 using distances from G.L.O. Notes and Plat.



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
	OKLA.		
DESCRIPTION		REVISIONS	DATE
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 74 OF 76			
SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. 5074			

NW Closing Corner of Section 1, T-6N, R-8W ODOT G-26-949
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70.

Milepost 70 Corner of Section 1, T-6N, R-8W ODOT G-26-950
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 70 and G-26-950. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

NE Closing Corner of Section 1, T-6N, R-8W ODOT G-26-951
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70.

W Closing Corner of Section 1, T-6N, R-8W ODOT G-26-945
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69 1/2.

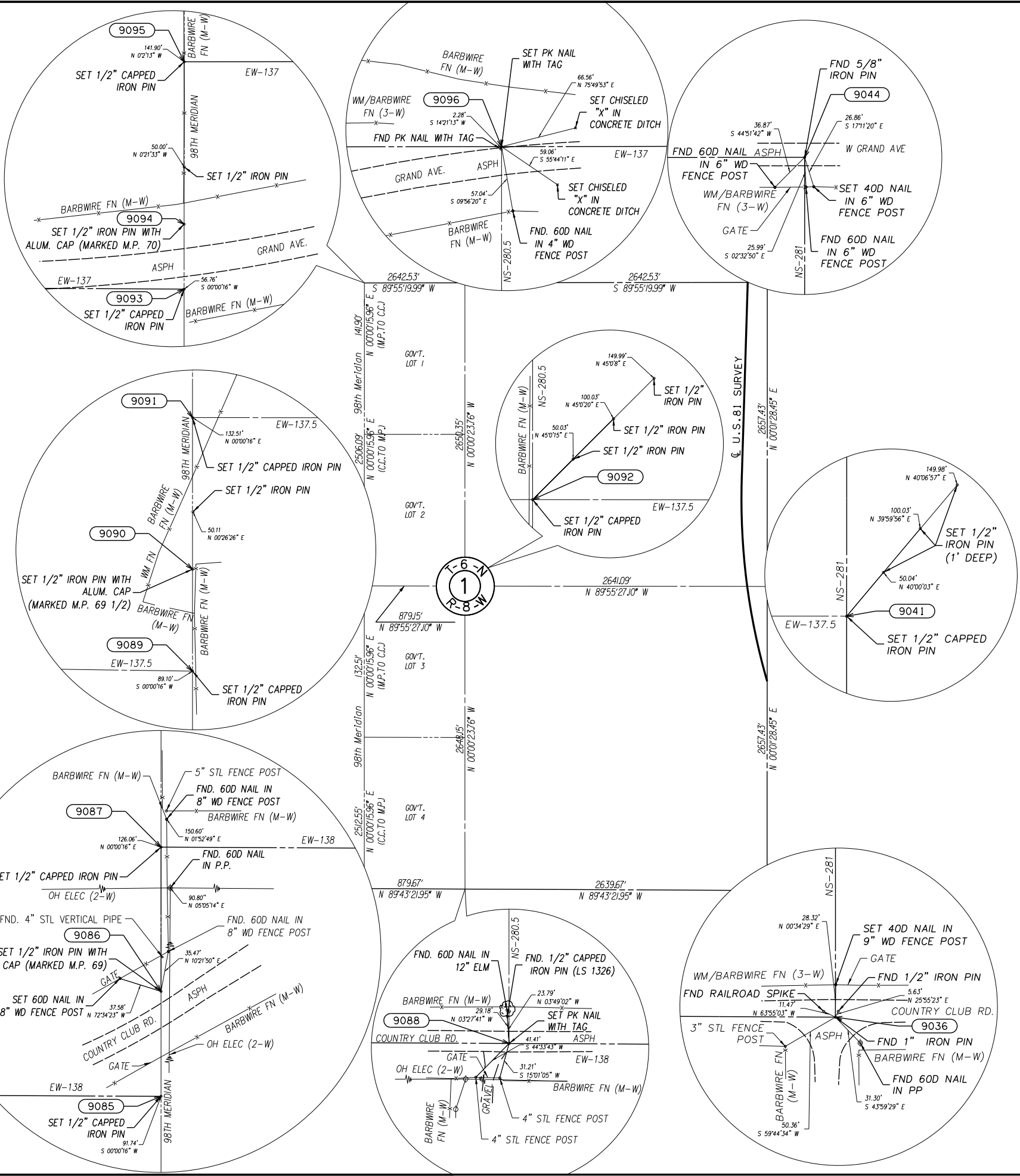
Milepost 69.5 Corner of Section 1, T-6N, R-8W ODOT G-26-946
No Corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 69 1/2 and G-26-946. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

E Closing Corner of Section 1, T-6N, R-8W ODOT G-26-947
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69 1/2.

SW Closing Corner of Section 1, T-6N, R-8W ODOT G-26-941
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69

Milepost 69 Corner of Section 1, T-6N, R-8W ODOT G-26-942
I found 4" steel post with no brass cap that was found by L.S. 1082 in 1994 survey. The C.C.R. by L.S. 1082 did not list any supporting evidence. I found milepost 68 to the south and milepost 70 1/2 to the north and the 4" steel post did not fit the proportionate distance by nearly 30 feet. I determined that the 4" steel post was most likely a fence post that used to be connected to old fence line to the north. I set 1/2" iron pin with aluminum cap, stamped MP 69 and G-26-942. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

SE Closing Corner of Section 1, T-6N, R-8W ODOT G-26-943
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69.



OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

N/4 Corner of Section 1, T-6N, R-8W ODOT G-26-948
I found PK nail with tag. L.S. 1326 set PK nail and filed C.C.R. in 2003 survey. Monument did not fit proportionate distances between southwest closing corner and southeast corner of Section 36. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 36 using distances from G.L.O. Notes and Plat.

NE Corner of Section 1, T-6N, R-8W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

C/4 Corner of Section 1, T-6N, R-8W ODOT G-26-944
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section One.

E/4 Corner of Section 1, T-6N, R-8W ODOT G-26-908
No corner evidence found. I set 5/8" iron pin and references. I set corner using single proportionate method.

SE Corner of Section 1, T-6N, R-8W ODOT G-26-907
I found 1/2" iron pin, railroad spike, & 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

S/4 Corner of Section 1, T-6N, R-8W ODOT G-26-940
Found 1/2" capped iron pin marked L.S. 1326. This monument is from a C.C.R. in which L.S. 1326 set a 1/2" capped iron pin in a 2014 survey. The monument was set using an incorrectly identified monument at milepost 69 in a C.C.R. by L.S. 1082 in a 1994 survey. This is further evidenced by the monument at the south quarter corner of Section One not fitting the section line road and fences. Set PK nail with tag. I set monument using single proportionate method between the southwest closing corner and southeast corner of Section One using distances from G.L.O. Notes and Plat.



Angle Of Variance
At Sta. 9092 (C/4 Cor.)
X= 1969512.1828
Y= 614658.3618
Lat.= 35°01'20.25216"
Long.= 97°59'47.82985"
θ = 0°00'06.90798"



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN	JSO		SURVEY DIVISION	
CHECKED	JTB		SURVEY DATA SHEET	
APPROVED	JTB		SDS 75 OF 76	
CREW	BENHAM		SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. 5075	

NW Closing Corner of Section 12, T-6N, R-8W ODOT G-26-941
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69

Milepost 69 Corner of Section 12, T-6N, R-8W ODOT G-26-942
I found 4" steel post with no brass cap that was found by L.S. 1082 in 1994 survey. The C.C.R. by L.S. 1082 did not list any supporting evidence. I found milepost 68 to the south and milepost 70 1/2 to the north and the 4" steel post did not fit the proportionate distance by nearly 30 feet. I determined that the 4" steel post was most likely a fence post that used to be connected to old fence line to the north. I set 1/2" iron pin with aluminum cap, stamped MP 69 and G-26-942. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

NE Closing Corner of Section 12, T-6N, R-8W ODOT G-26-943
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69.

W Closing Corner of Section 12, T-6N, R-8W ODOT G-26-937
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 68 1/2

Milepost 68.5 Corner of Section 12, T-6N, R-8W ODOT G-26-938
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 68 1/2 and G-26-938. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

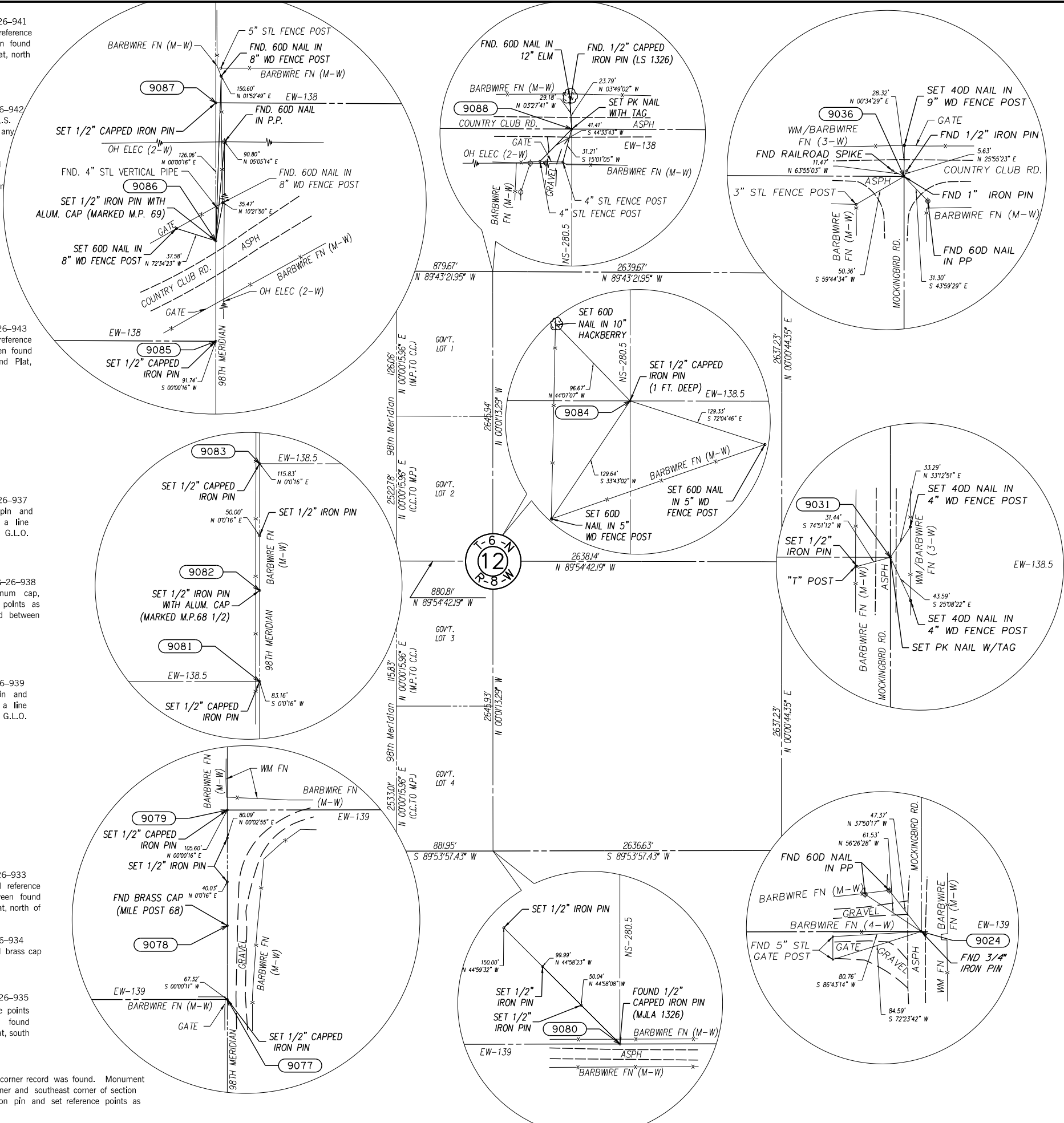
E Closing Corner of Section 12, T-6N, R-8W ODOT G-26-939
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 68 1/2.

SW Closing Corner of Section 12, T-6N, R-8W ODOT G-26-933
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 68

Milepost 68 Corner of Section 12, T-6N, R-8W ODOT G-26-934
Corner evidence found brass cap, marked, "MILE 68." I used brass cap and set reference points as shown.

SE Closing Corner of Section 12, T-6N, R-8W ODOT G-26-935
No evidence found. Set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 68.

S4 Corner of Section 12, T-6N, R-8W ODOT G-26-932
I found 1/2" capped iron pin marked, "MJLA 1326". No corner record was found. Monument fits proportionate distances between southwest closing corner and southeast corner of section 12, from G.L.O. notes and Plat. I used 1/2" capped iron pin and set reference points as shown.



N4 Corner of Section 12, T-6N, R-8W ODOT G-26-940
Found 1/2" capped iron pin marked L.S. 1326. This monument is from a C.C.R. in which L.S. 1326 set a 1/2" capped iron pin in a 2014 survey. The monument was set using an incorrectly identified monument at milepost 69 in a C.C.R. by L.S. 1082 in a 1994 survey. This is further evidenced by the monument at the south quarter corner of section one not fitting the section line road and fences. Set PK nail with tag. I set monument using single proportionate method between the southwest closing corner and southeast corner of Section One using distances from G.L.O. Notes and Plat.

NE Corner of Section 12, T-6N, R-8W ODOT G-26-907
I found 1/2" iron pin, railroad spike, & 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737 (1). Nothing set. I used 1" iron pin.

C/4 Corner of Section 12, T-6N, R-8W ODOT G-26-936
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 12.

E/4 Corner of Section 12, T-6N, R-8W ODOT G-26-898
No corner evidence found. I set PK nail with tag. I used single proportion method to set the corner between the northwest and southwest corner of Section 7.

SE Corner of Section 12, T-6N, R-8W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the corner records filed by the following surveyors:

L.S. 449 found iron pin (C.C.R. filed June 8, 1982)
L.S. 1082 found 3/4" iron pin (C.C.R. filed APR 18, 1994)
L.S. 1272 found 3/8" iron pin (C.C.R. filed Dec 7, 1998)
L.S. 1272 found iron pin (C.C.R. filed Aug 31, 2001).

Nothing set. I used 3/4" iron pin.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	



Angle Of Variance
At Sta. 9084 (C/4 Cor.)
X= 1969513.4280
Y= 609364.2708
Lat.= 35°00'27.88803"
Long.= 97°59'47.81702"
θ = 0°00'06.91526"



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS		JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION	
DRAWN		JSO		SURVEY DIVISION	
CHECKED		JTB		SURVEY DATA SHEET	
APPROVED		JTB		SDS 76 OF 76	
CREW		BENHAM		SWO 4380 (1) PROJECT NO. 24428(04) SHEET NO. 5076	