

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
INTERSECTION MODIFICATION & TRAFFIC SIGNALS

STATE AID PROJECT NO. SSP-3500 (043) SS
ROADWAY, PAVEMENT MARKING, & SIGNALS
WATERLOO ROAD AT I-35

OKLAHOMA & LOGAN COUNTIES

STATE JOB NO. 29843(08)

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4	OKLA.	29843(08)				
REVISIONS					DATE	
DESCRIPTION						

INDEX OF SHEETS

- TITLE SHEET
- TYPICAL SECTION
- SUMMARY OF PAY QUANTITIES AND NOTES (ROADWAY)
- SUMMARY OF PAY QUANTITIES AND NOTES (TRAFFIC)
- SUMMARY OF PAY QUANTITIES AND NOTES (TRAFFIC SIGNALS)
- SUMMARY SHEET (ROADWAY)
- SUMMARY SHEET (TRAFFIC)
- PLAN AND SPOT ELEVATION PLAN
- ADVANCED WARNING
- SUGGESTED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL
- PAVEMENT MARKING PLAN
- SIGNAL PLAN (I-35 SB RAMP AT WATERLOO RD.)
- SIGNAL WIRING (I-35 SB RAMP AT WATERLOO RD.)
- SIGNAL PHASING (I-35 SB RAMP AT WATERLOO RD.)
- SIGNAL SIGN SUMMARY (I-35 SB RAMP AT WATERLOO RD.)
- SIGNAL PLAN (I-35 NB RAMP AT WATERLOO RD.)
- SIGNAL WIRING (I-35 NB RAMP AT WATERLOO RD.)
- SIGNAL PHASING (I-35 NB RAMP AT WATERLOO RD.)
- SIGNAL SIGN SUMMARY (I-35 NB RAMP AT WATERLOO RD.)

THE FOLLOWING STANDARDS WILL BE REQUIRED:
ODOT STANDARDS

ROADWAY	TRAFFIC SIGNING	TRAFFIC CONTROL	TRAFFIC SIGNALS
SSS-1-1	PM1-1-02	TCS1-1-01	PMAP1-2-00
TCS2-3-2	PM2-1-01	TCS2-1-00	SA1-1-02
TSD-2-0	PM3-1-02	TCS3-1-01	ID1-1-00
ASCD-5-2	PM5-1-00	TCS5-1-00	SNS1-1-02
LECS-4-1	PM6-1-00	TCS6-1-02	TSSS1-1-00
PSE-1-0		TCS7-1-02	PWD1-2-00
RDI-3-1		TCS8-1-00	CFD1-1-01
PDT-1-3		TCS9-1-01	CC1-1-00
		TCS11-1-01	TSSP1-1-00
		TCS14-1-00	SWD1-1-00
		TCS19-1-01	
		TCS20-1-00	
		TCS21-1-02	

PREPARED BY:



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Digitally signed by Jenny
Sallee
Date: 2016.08.11
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JENNY E. SALLEE, P.E.
OKLA. REG. NO. 20675
RESPONSIBLE FOR SHEETS:
1-4, 6-11



Digitally signed by Nicci
Tiner
Date: 2016.08.11
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NICCI D. TINER, P.E.
OKLA. REG. NO. 20572
RESPONSIBLE FOR SHEETS:
5, 12-19

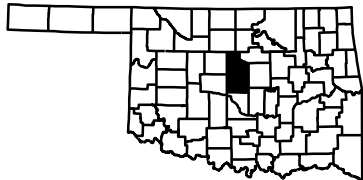
CERTIFICATE OF AUTHORIZATION NO. 4193 P.E., L.S. RENEWAL DATE: 6-30-2018

OKLAHOMA DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED		DATE APPROVED	
BY		BY	
CHIEF ENGINEER		DIVISION ADMINISTRATOR	
SWO	4989(1)	PROJECT NO.	SSP-3500 (043) SS
COUNTY	OKLAHOMA & LOGAN	HIGHWAY	WATERLOO RD AT I-35 SHEET NO. 1

8/11/2016

OKLAHOMA AND LOGAN COUNTIES

FOR SURVEY CONTROL DATA,
SEE ODOT SVO 4989(1)
FOR SURVEY DATA SHEETS.
COMPLETE SURVEY DATA SHEETS
NOT INCLUDED IN THIS SET
OF PLANS.



LOCATION MAP

DESIGN DATA

AADT 2016	=	12,420
AADT 2025	=	21,810
DHV (2-WAY)	=	2,181
K (DHV/ADT)	=	10%
D	=	65%
T (% DHV)	=	12%
T (% ADT)	=	10%
T ³ (% ADT)	=	6%
V	=	45MPH
9 YR FLEXALS	=	5.5M

SCALES 1" = 50'

PLAN 1" = 50'

PROFILE HOR. 1" = 50'

VER. 1" = 5'

LAYOUT MAP 1" = 2,640'

CONVENTIONAL SYMBOLS

	PROPOSED ROAD
	RAILROADS
	RANGE & TOWNSHIP
	SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE & TELEGRAPH
	POWER LINES
	BUILDINGS
	OIL WELL
	DRAINAGE STRUCTURES - IN PLACE
	DRAINAGE STRUCTURES - NEW
	RIGHT-OF-WAY LINES - EXISTING
	RIGHT-OF-WAY LINES - NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE
	BRIDGE

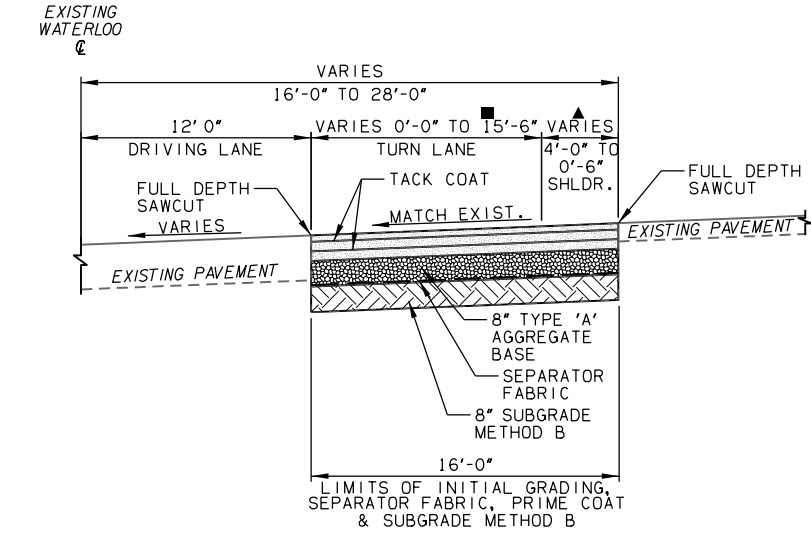
2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY
THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, JANUARY 4, 2010.

ROADWAY LENGTH	276	FT.	0.052	MI.
BRIDGE LENGTH	0.00	FT.	0.000	MI.
PROJECT LENGTH			0.052	MI.

EQUATIONS : NONE
EXCEPTIONS : NONE

P.E. NO.: 29843(01)

4:05:01 PM L:\2014\14037270 - ODOT EC-1500N I-35 over Waterloo Rd\Drawings\INTERIM\7270-Title.dgn



- STA. 19+31.37 TO STA. 20+14.04 - TRANSITION 0'-0" TO 15'-6"
STA. 20+14.04 TO STA. 22+07.37 - 15'-6"
- ▲ STA. 19+31.37 TO STA. 20+14.04 - TRANSITION 4'-0" TO 0'-6"
STA. 20+14.04 TO STA. 22+07.37 - 0'-6"

PAVEMENT REQUIREMENT		
8" PAVT. STRUCTURE	TURNING LANE	PAVED SHOULDER
SURFACE COURSE	2" TYPE S4 (PG 70-28 OK)	2" TYPE S4 (PG 70-28 OK)
BASE COURSE	3" TYPE S3 (64-22 OK)	3" TYPE S3 (64-22 OK)
	3" TYPE S3 (64-22 OK)	3" TYPE S3 (64-22 OK)

TYPICAL SECTION NO. 1 - WATERLOO INTERIM
STA. 19+31.37 TO STA 22+07.37

GENERAL CONSTRUCTION NOTES

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

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

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

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

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

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

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

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

DEBRIS SHALL NOT BE BURIED WITHIN LIMITS OF RIGHT OF WAY.

THE STORM WATER MANAGEMENT PLAN CONFIRMED IN THE PRE-WORK MEETING SHALL BE MADE AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT.

CONTRACTOR TO MAKE EVERY EFFORT TO LOCATE AND PROTECT ALL UTILITIES AND STRUCTURES, WHETHER SHOWN OR NOT, PRIOR TO ANY CONSTRUCTION OPERATIONS. CONTRACTOR SHALL CARRY ON CONSTRUCTION SUCH THAT NO DAMAGE WILL OCCUR TO ANY UTILITIES OR STRUCTURES REMAINING IN PLACE.

PAY QUANTITIES					JP 29843(08)
0100 ROADWAY					
ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY	
201(A)	0102	CLEARING AND GRUBBING	LSUM		1
202(A)	0183	UNCLASSIFIED EXCAVATION	(2) CY		200
202(D)	0184	UNCLASSIFIED BORROW	(2) CY		200
221(C)	2801	TEMPORARY SILT FENCE	(1) LF		146
221(F)	0100	TEMPORARY SILT DIKE	(1) LF		21
230(A)	2806	SOLID SLAB SODDING	(2)(R-7,8) SY		50
303(A)	2100	AGGREGATE BASE TYPE A	CY		100.5
310(B)	0149	SUBGRADE, METHOD B	SY		452.1
325	5271	SEPARATOR FABRIC	SY		452.1
411(B)	5945	SUPERPAVE, TYPE S3(PG 64-22 OK)	(4)(R-30,31,32) TON		173.8
411(C)	5955	SUPERPAVE, TYPE S4(PG 70-28 OK)	(R-30,31,32) TON		50.7
616(I)	0125	12" STEEL CASING	(5) LF		80.0
619(B)	4727	REMOVAL OF CONCRETE PAVEMENT	(3)(R-49,50) SY		36.3
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(3)(R-49,50) SY		544.2
619(B)	5918	REMOVAL OF EXISTING PIPE	(R-49) LF		80.0
PAY QUANTITIES					JP 29843(08)
0600 STAKING					
642(B)	0096	CONSTRUCTION STAKING LEVEL II	LSUM		1
PAY QUANTITIES					JP 29843(08)
0640 CONSTRUCTION					
220	2800	SWPPP DOCUMENTATION AND MANAGEMENT	LSUM		1
641	1552	MOBILIZATION	LSUM		1

PAY ITEM NOTES

- (R-7) FOR SOLID SLAB SODDING PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER, ESTIMATED AT 200 POUNDS PER 1,000 SQ.YD. OF SODDING.
- (R-8) PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 40 GALLONS PER SQ.YD.
- (R-30) PRICE BID TO INCLUDE COST OF 77.8 GALLONS OF TACK COAT, MEETING THE REQUIREMENTS OF SECTION 407 OF THE STANDARD SPECIFICATIONS.
- (R-31) PRICE BID TO INCLUDE COST OF 271.3 GALLONS OF PRIME COAT, MEETING THE REQUIREMENTS OF SECTION 408 OF THE STANDARD SPECIFICATIONS, AND ESTIMATED AT 0.35 GAL. PER SQ. YD. ON TOP OF COMPLETED SUBGRADE, AND 0.25 GAL. PER SQ. YD. ON TOP OF AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR, AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS
- (R-32) ESTIMATED AT 112 LBS. PER S.Y. PER 1" THICK.
- (R-49) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-50) MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.
- (1) PRICE BID SHALL INCLUDE COST OF MAINTENANCE AND REMOVAL OF SILT DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
- (2) ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER.
- (3) PRICE BID TO INCLUDE COST OF SAWING PAVEMENT.
- (4) QUANTITIES INCLUDE:

WATERLOO ROAD

DRIVES

(SUMMARY OF SURFACING)

(SUMMARY OF DRIVEWAYS)
- (5) STEEL CASING TO BE USED FOR DRAINAGE CONDUIT UNDER THE FRONTAGE ROAD. FLOWLINES TO BE DETERMINED IN THE FIELD, AS DIRECTED BY THE ENGINEER, TO INSURE DRAINAGE FLOW TO THE EAST.

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES SUMMARY OF PAY QUANTITIES AND NOTES (ROADWAY) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>3</u>
DRAWN	TML	5/16	
CHECKED	JES	5/16	
APPROVED			
SQUAD	GARVER		

TRAFFIC GENERAL CONSTRUCTION NOTES

ANY SIGNS AND/OR DELINEATORS WHICH ARE TO BE REMOVED DURING THIS PROJECT WILL BE STORED IN A PROTECTED AREA DESIGNATED BY THE RESIDENT ENGINEER, UNTIL SUCH A TIME THAT THEY ARE TO BE RESET BY THE CONTRACTOR. COST OF THIS WORK TO BE INCLUDED IN OTHER ITEMS OF WORK.

EXISTING ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING TRAFFIC ON CROSS STREETS. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.

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

ANY DAMAGE CAUSED BY THE CONTRACTOR TO ANY STRUCTURES, ROADWAY, SURFACES, STRIPING, RAISED PAVEMENT MARKERS, GUARDRAIL, SLOPES, AND SIGNS SHALL BE REPAIRED AT CONTRACTORS EXPENSE TO THE SATISFACTION OF THE ENGINEER.

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

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

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

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

CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN SUCH A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION", AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK IF A CHANGE TO THE TRAFFIC CONTROL IS PROPOSED.

ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL MEET ODOT'S "QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES".

TRAFFIC SIGNING & STRIPING PAY QUANTITY NOTES

(TS-24) QUANTITY SHOWN INCLUDES 1,130 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 962 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF FOUR INCH (4") WIDE TRAFFIC STRIPE.

(TS-25) QUANTITY SHOWN INCLUDES 1,652 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 1,169 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF SIX INCH (6") WIDE TRAFFIC STRIPE.

(TS-26) QUANTITY SHOWN INCLUDES 136 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 0 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF EIGHT INCH (8") WIDE TRAFFIC STRIPE.

(TS-27) QUANTITY SHOWN INCLUDES 80 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 0 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF TWELVE INCH (12") WIDE TRAFFIC STRIPE.

(TS-28) QUANTITY SHOWN INCLUDES 108 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND WILL BE MEASURED BY THE LINEAR FOOT OF TWENTY-FOUR INCH (24") WIDE TRAFFIC STRIPE.

(TS-41) "REMOVAL OF EXISTING SIGNS" SHALL INCLUDE THE REMOVAL OF A COMPLETE SIGN ASSEMBLY WHICH MAY INCLUDE MULTIPLE SIGNS, POSTS, FOOTINGS, AND ANY FOOTINGS ADJACENT TO THE SIGN ASSEMBLY. WHEN APPROVED BY THE ENGINEER, FOOTINGS MAY BE OBLITERATED TO A POINT BELOW GROUND LEVEL IN LIEU OF BEING COMPLETELY REMOVED. SEE GENERAL CONSTRUCTION NOTES FOR DISPOSAL OF OLD CONCRETE FOOTING MATERIAL.

(TC-14) SEE STANDARD DRAWING PM1-1, PM2-1, PM3-1, PM4-1, PM5-1, PM6-1, PM7-1, PM8-1 (LATEST REVISION). A PART, OR ALL, OF THE QUANTITY SHOWN IS TO BE USED AS FINAL PAVEMENT MARKING.

TRAFFIC CONTROL PAY QUANTITY NOTES

(TC-20) ALL STRIPING TO BE PLACED ON TEMPORARY SURFACES OR ON SURFACES SCHEDULED TO BE REMOVED SHALL BE DONE WITH PAINT UNLESS OTHERWISE NOTED ON THE PLANS OR STANDARD DRAWINGS. TEMPORARY PAVEMENT MARKINGS PLACED ON FINISHED PAVEMENT OR EXISTING PAVEMENT TO REMAIN IN PLACE SHALL USE ONE OF THE FOLLOWING METHODS:
REMOVABLE PAVEMENT MARKING TAPE
CLASS A PAVEMENT MARKERS

(TC-21) INCLUDED IN THE COST OF THIS ITEM SHALL BE INSTALLATION, MAINTENANCE, AND REMOVAL. THIS ITEM SHALL BE BID ACCORDINGLY.

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

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

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

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

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

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

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

PAY QUANTITIES					JP 29843(08)
ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY	
805(A)	8724	(PL)REMOVAL OF EXISTING SIGNS (TS-41)	EA	9	
856(A)	8530	TRAFFIC STRIPE(MULTI-POLYMER)(4" WIDE) (TS-24)(TC-14)	LF	2092	
856(A)	8535	TRAFFIC STRIPE(MULTI-POLY.) (6" WIDE) (TS-25)(TC-14)	LF	2821	
856(A)	8540	TRAFFIC STRIPE(MULTI-POLY.) (8" WIDE) (TS-26)(TC-14)	LF	136	
856(A)	8548	TRAFFIC STRIPE(MULTI-POLY.) (12" WIDE) (TS-27)(TC-14)	LF	80	
856(A)	8555	TRAFFIC STRIPE(MULTI-POLY.) (24" WIDE) (TS-28)(TC-14)	LF	108	
856(B)	8860	TRAFFIC STRIPE(MULTI-POLY.) (ARROWS) (TC-14)	EA	9	
856(B)	8880	TRAFFIC STRIPE(MULTI-POLY.) (WORDS) (TC-14)	EA	1	

PAY QUANTITIES					JP 29843(08)
ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY	
857(E)	8881	(PL)CONSTRUCTION ZONE PAVEMENT MARKERS (TC-20,21,61,70,73,75)	EA	400	
857(F)	8006	PAVEMENT MARKING REMOVAL(TRAFFIC STRIPE) (TC-22,70)	LF	3880	
880(B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 SF (TC-26,33,84)	SD	450	
880(B)	8821	CONSTRUCTION SIGNS 6.26 SF TO 15.99 SF (TC-26,33,84)	SD	180	
880(B)	8824	CONSTRUCTION SIGNS 16.0 SF TO 32.99 SF (TC-26,30,33,84)	SD	390	
880(E)	8860	WARNING LIGHTS(TYPE A) (TC-26,84)	SD	330	
880(F)	8878	DRUMS (SP-1)(TC-26,61,84)	SD	470	
880(G)	8890	CHANNELIZER CONES (SP-1)(TC-26,61,70,84)	SD	200	
882(A)	8306	PORT.CHANGEABLE MESSAGE SIGN (SP-2)(TC-26,52,70,84,85)	SD	60	

(TC-61) ANY DAMAGE TO A FINISHED OR EXISTING SURFACE RESULTING FROM THE CONTRACTORS NEGLIGENCE IN THE REMOVAL OF CONSTRUCTION ZONE PAVEMENT MARKERS OR CHANNELIZING DEVICES AND THE BITUMINOUS ADHESIVE USED IN THEIR INSTALLATION, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

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

(TC-73) QUANTITY SHOWN INCLUDES 200 EA. (WHITE) AND 200 EA. (YELLOW) CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS). THESE CONSTRUCTION ZONE PAVEMENT MARKERS SHALL BE EITHER "DAVIDSON PLASTICS: MODEL TOM", OR AN APPROVED EQUAL. PRICE BID FOR THIS ITEM SHALL INCLUDE THE INITIAL PLACEMENT, SUBSEQUENT REPLACEMENT, AND REMOVAL. THE CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON STANDARD DRAWING TCS21-1-(LATEST REVISION).

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

(TC-84) 30 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.

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

(SP-1) TYPE "C" WARNING LIGHTS NOT REQUIRED.

(SP-2) MESSAGE SIGNS TO BE IN PLACE 14 DAYS IN ADVANCE OF CONSTRUCTION ACTIVITIES.

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES SUMMARY OF PAY QUANTITIES AND NOTES (TRAFFIC) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>4</u>
DRAWN	TML	5/16	
CHECKED	JES	5/16	
APPROVED			
SQUAD	GARVER		

GENERAL CONSTRUCTION NOTES

THE STRUCTURAL DESIGN OF ALL POLES, HIGH-MAST POLES, AND OTHER SUPPORTS FOR SIGNS, LUMINAIRES, AND SIGNALS AS WELL AS THEIR CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE MANUFACTURER SHALL ENSURE THE FOLLOWING ARE APPLIED TO THE DESIGN:

THE MINIMUM DESIGN WIND SPEED AND DESIGN LIFE AS REQUIRED IN THE AASHTO SPECIFICATIONS;

THE CALCULATED STRESSES AND FORCES FROM THE DESIGN LOADINGS DO NOT EXCEED THOSE REQUIRED IN THE AASHTO SPECIFICATIONS;

A CATEGORY I FATIGUE IMPORTANCE FACTOR (I_F) FOR ALL STRUCTURES; NO VIBRATORY MITIGATION SHALL BE ALLOWED. TRUCK-INDUCED GUSTS SHALL BE APPLIED TO ALL OVERHEAD TRAFFIC SIGNAL SUPPORTS.

ALL MEMBERS ARE AT LEAST THE MINIMUM THICKNESS AS REQUIRED IN THE AASHTO SPECIFICATIONS;

LUMINAIRE MAST ARMS SHALL BE DESIGNED TO SUPPORT AT LEAST A 50 LB. (22.7 KG) LUMINAIRE WITH AN EFFECTIVE PROJECTED AREA OF 2.5 FT² (0.23 M²;)

THE ANCHOR BOLT DESIGN AND AMOUNT OF ANCHOR BOLTS TO BE USED SHALL BE AS REQUIRED IN THE AASHTO SPECIFICATIONS.

UNLESS SITE SPECIFIC GEOTECHNICAL DATA IS AVAILABLE, FOUNDATIONS SHALL BE DESIGNED UTILIZING THESE PARAMETERS; SHEAR STRENGTH OF COHESIVE SOIL (C) OF 500 PSF, ANGLE OF INTERNAL FRICTION (Φ) OF 22 DEGREES, AND EFFECTIVE UNIT WEIGHT OF SOIL (Γ) OF 120 PCF.

TRAFFIC SIGNAL PAY QUANTITY NOTES

- (TP-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY. SEE THE 2009 SPECIFICATION FOR HIGHWAY CONSTRUCTION.
- (TR-6) THE CONTROLLERS TO BE FURNISHED ON THIS PROJECT SHALL BE 8 PHASE VEHICLE ACTUATED SOLID STATE DIGITAL TRAFFIC SIGNAL CONTROLLERS. A MINIMUM OF 16 LOAD SWITCH RECEPTACLES SHALL BE FURNISHED AND WIRED TO THE MOUNTING FRAMES. ALL WIRING FROM THE FIELD TERMINALS SHALL BE WIRED TO THE MOUNTING FRAME FOR AN 4 PHASE OPERATION. NO CABINET OR CONTROLLER WIRING SHALL BE REQUIRED EXCEPT FOR ADDITIONAL DETECTOR CONNECTING CABLES WHEN CONTROLLER IS EXPANDED FOR AN 8 PHASE OPERATION. THE CONTROLLER SHALL BE CAPABLE OF PERFORMING AS SHOWN ON THE PHASE AND SEQUENCE DIAGRAM.

PEDESTRIAN ISOLATION SHALL BE PROVIDED IN THE CONTROLLER CABINET. ALL N.E.M.A. FUNCTIONS SHALL TERMINATE IN THE CONTROLLER CABINET.
- (TR-8) THE CONTROLLER AND CONFLICT MONITOR SHALL MEET THE LATEST N.E.M.A. SPECIFICATION. THE CONTRACTOR SHALL FURNISH A PRETIMED SOLID STATE DIGITAL MICRO-PROCESSOR CONTROLLER WITH C.M.O.A. LOGIC CIRCUITRY. THE CONTROLLER TO BE FURNISHED SHALL BE DESIGNED TO FUNCTION AT AN ISOLATED INTERSECTION OR IN A COORDINATED SYSTEM OR AS A MASTER CONTROLLER. THE UNIT SHALL FEATURE FOUR DIAL FUNCTIONS WITH THREE OFFSETS, AND UP TO 24 INTERVALS PER DIAL.
- (TL-24) 4 - ROADWAY LUMINAIRES SHALL BE 250 WATT HIGH PRESSURE SODIUM, WITH CLEAR LAMP OF 28,000 LUMENS, ILLUMINATION ENGINEERING SOCIETY DISTRIBUTION AS FOLLOWS:

VERTICAL = MEDIUM; LATERAL = TYPE 3; CONTROL = SEMICUTOFF;
ODOT FIXTURE STYLE = A1. SEE STD. HLD1-1-(LATEST REVISION).
- (1) A GPS CLOCK SHALL BE PROVIDED IN EACH CABINET. ALL NECESSARY LABOR AND MATERIALS TO ACCOMPLISH FUNCTIONAL GPS-BASED TIME SYNC SHALL BE INCLUDED IN THIS PAY ITEM.
- (2) THE CONTROLLER SHALL BE AN ECONOLITE ASC2/s-2100.
- (3) TRAFFIC SIGNAL HEADS SHALL BE DURALIGHT.
- (4) SP IS NOT REQUIRED FOR THIS ITEM. SEE STANDARD DRAWING SWD1-1 FOR ITEMS NECESSARY FOR CONSTRUCTION OF THE SPAN WIRE SIGNAL.

PAY QUANTITIES						JP 29843(08)
0302	TRAFFIC SIGNALS					
ITEM NO.	CODE NO	DESCRIPTION	UNIT	SB Ramps	NB Ramps	TOTAL
802(B)	8346	3" PVC SCH.40 PLASTIC CONDUIT TRENCHED (TP-1)	LF	11	13	24
809(A)	8090	ROADWAY LUMINAIRE (TL-24)	EA	4	4	8
810(A)	3118	SERVICE POLE	EA	1	1	2
811	8040	1/C NO.6 ELECT.COND. (TP-1)	LF	14	13	27
811	8044	1/C NO.10 ELECT.COND. (TP-1)	LF	959	1252	2211
823	8482	(SP) TRAFFIC SIGNAL SPAN WIRE EQUIPMENT (4)	LSUM	1	1	2
825	8550	TRAFFIC SIGNAL CONTROLLER ASSEMBLY (1, 2) (TR-6) (TR-8)	EA.	1	1	2
828	8132	(PL)DETECTION SYSTEM (VIDEO)	LSUM	1	1	2
831	8231	1 WAY 3 SEC. ADJ. SIG. HD. S-6 (3)	EA.	5	5	10
831	8262	1 WAY 3 SEC. ADJ. SIG. HD. S-10 (3)	EA.	1	0	1
831	8286	1 WAY 5 SEC. ADJ. SIG. HD. (S-19) (3)	EA.	1	1	2
833	3030	BACKPLATE	EA.	6	6	12
834(A)	8207	5/C TRAFFIC SIGNAL ELECTRICAL CABLE (TP-1)	LF	913	1630	2543
834(A)	8208	7/C TRAFFIC SIGNAL ELECTRICAL CABLE (TP-1)	LF	344	123	467
850(A)	8110	SHEET ALUMINUM SIGNS	LF	18.75	18.75	37.5

SUMMARY OF SURFACING QUANTITIES							
EXISTING WATERLOO C.R.L. STATION TO STATION	AGGREGATE BASE TYPE A 303(A)	SUBGRADE METHOD B 310(B)	SEPARATOR FABRIC 325	TACK COAT * 407(B) (1)	PRIME COAT * 408	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)	SUPERPAVE, TYPE S4 (PG 70-28 OK) 411(C)
	CY	SY	SY	GAL	GAL	TON	TON
RIGHT TURN LANE							
19+31.37 TO 23+14.37	100.5	452.1	452.1	67.9	271.3	152.0	50.7
TOTALS:	100.5	452.1	452.1	67.9	271.3	152.0	50.7

* FOR CONTRACTORS INFORMATION, COST TO BE INCLUDED IN PRICE BID FOR ASPHALT.
(1) ESTIMATED AT 0.075 GAL DILUTED EMULSION PER SQ. YD. OF ASPHALT.

SUMMARY OF DRIVEWAYS							
EXISTING WATERLOO C.R.L. STATION TO STATION	SIDE	TYPE	WIDTH	LENGTH	RADIUS	TACK COAT * 407(B) (1)	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)
			FT	FT	FT	GAL	TON
21+42.92	RT	ASPHALT	24	29	50 LT, 25 RT	9.9	21.8
TOTALS:						9.9	21.8

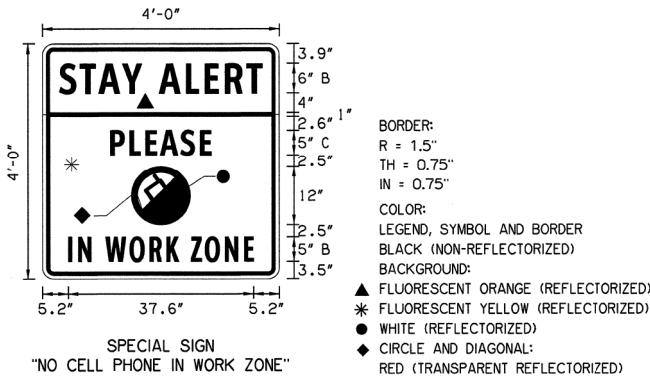
* FOR CONTRACTORS INFORMATION, COST TO BE INCLUDED IN PRICE BID FOR ASPHALT.
(1) ESTIMATED AT 0.075 GAL DILUTED EMULSION PER SQ. YD. OF ASPHALT.

SUMMARY OF EROSION CONTROL			
EXISTING WATERLOO C.R.L. STATION TO STATION	TEMPORARY		
	SILT FENCE 221(C)	SILT DIKE 221(F)	
	LF	LF	
RIGHT TURN LANE			
19+31.37 TO 23+14.37	146.0	21.0	
TOTALS:	146.0	21.0	

SUMMARY OF REMOVALS				
EXISTING WATERLOO C.R.L. STATION TO STATION	REMOVAL OF CONCRETE PAVEMENT 619(B)	REMOVAL OF ASPHALT PAVEMENT 619(B)	REMOVAL OF EXISTING PIPE 619(B)	SAVING PAVEMENT 619(C)*
	SY	SY	LF	LF
RIGHT TURN LANE				
19+31.37 TO 23+14.37	36.3	415.9	-	577.8
DRIVEWAYS				
21+42.92	-	128.3	80.0	-
TOTALS:	36.3	544.2	80.0	577.8

* FOR CONTRACTOR INFORMATION ONLY. COST SUBSIDIARY TO OTHER ITEMS OF WORK.

SUMMARY OF STRIPING		
TYPE	L.F.	EACH
YELLOW(MULTI-POLYMER)		
4" SOLID	962	-
6" SOLID	1,169	-
WHITE (MULTI-POLYMER)		
24" SOLID	108	-
12" SOLID	80	-
8" SOLID	136	-
6" SOLID	1,316	-
6" DASHED	288	-
6" DOTTED	48	-
4" SOLID	1,130	-
ARROWS	-	9
WORDS	-	1
856(A) TRAFFIC STRIPE (MULTI-POLYMER)(4" WIDE)	2,092	-
856(A) TRAFFIC STRIPE (MULTI-POLY.)(6" WIDE)	2,821	-
856(A) TRAFFIC STRIPE (MULTI-POLY.)(8" WIDE)	136	-
856(A) TRAFFIC STRIPE (MULTI-POLY)(12" WIDE)	80	
856(A) TRAFFIC STRIPE (MULTI-POLY.)(24" WIDE)	108	-
856(B) TRAFFIC STRIPE (MULTI-POLY.)(ARROWS)	-	9
856(B) TRAFFIC STRIPE (MULTI-POLY.)(WORDS)	-	1



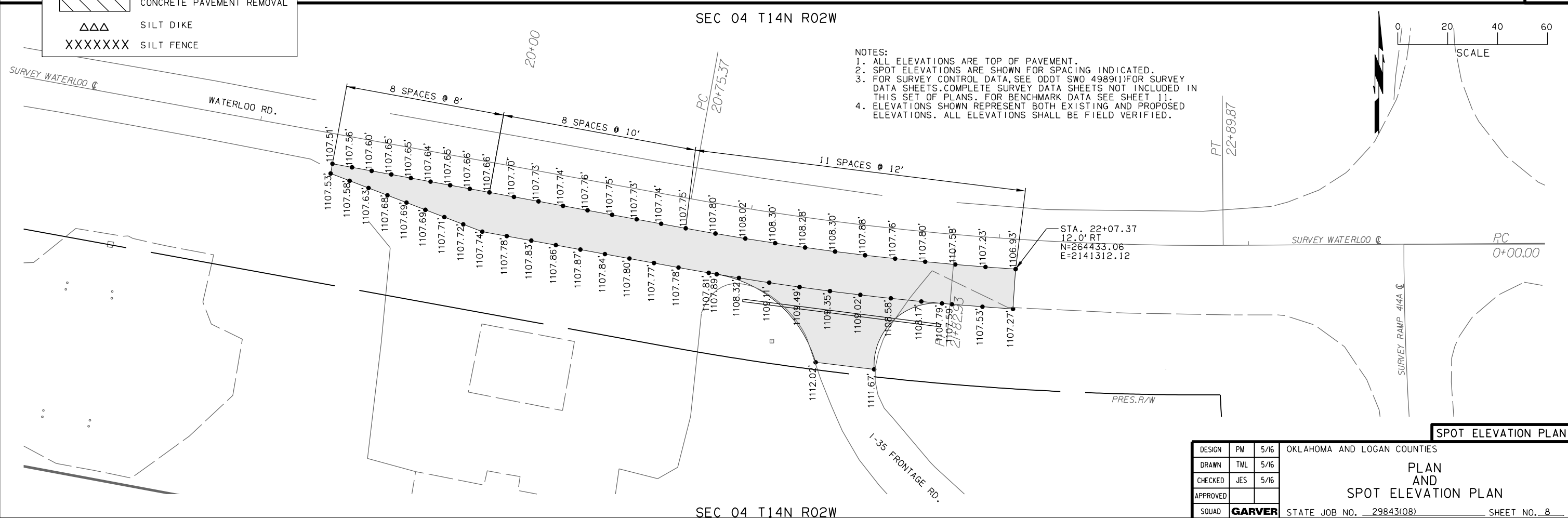
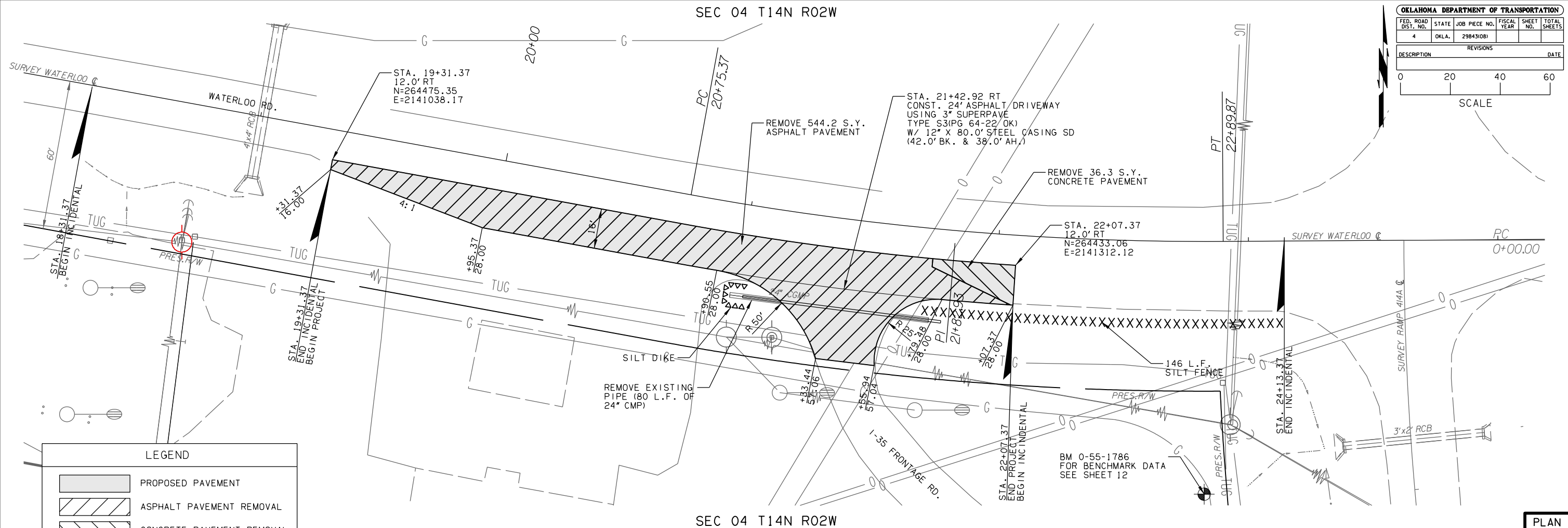
OKLAHOMA DEPARTMENT OF TRANSPORTATION

FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			

REVISIONS		DATE
DESCRIPTION		

0 20 40 60

SCALE



SEC 04 T14N R02W

- NOTES:
1. CONSTRUCTION SIGNS SHALL BE VISIBLE ONLY WHEN ACTIVITIES WARRANT. TO BE COVERED OR REMOVED WHEN NOT IN USE.
 2. EXISTING SIGNS THAT WOULD INTERFERE WITH CONSTRUCTION ZONE SIGNS BE REMOVED OR COVERED.
 3. GUIDELINES FROM 2009 MUTCD SHALL GOVERN.
 4. ANY CONFLICTING STRIPING SHALL BE REMOVED PRIOR TO SHIFTING TRAFFIC.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			

REVISIONS

DESCRIPTION	DATE
-------------	------

0 20 40 60

SCALE

- PHASE 1 (10 DAYS)
1. MAINTAIN TRAFFIC ON EXISTING WATERLOO RD. ALIGNMENT.
2. CONSTRUCT PROTION OF PROPOSED RIGHT TURN LANE FROM STA. 21+11.69 TO STA. 22+07.37.
- PHASE 2 (20 DAYS)
1. MAINTAIN TRAFFIC ON EXISTING WATERLOO RD. ALIGNMENT.
2. CONSTRUCT PROTION OF PROPOSED RIGHT TURN LANE FROM STA. 19+31.37 TO STA. 21+44.69.

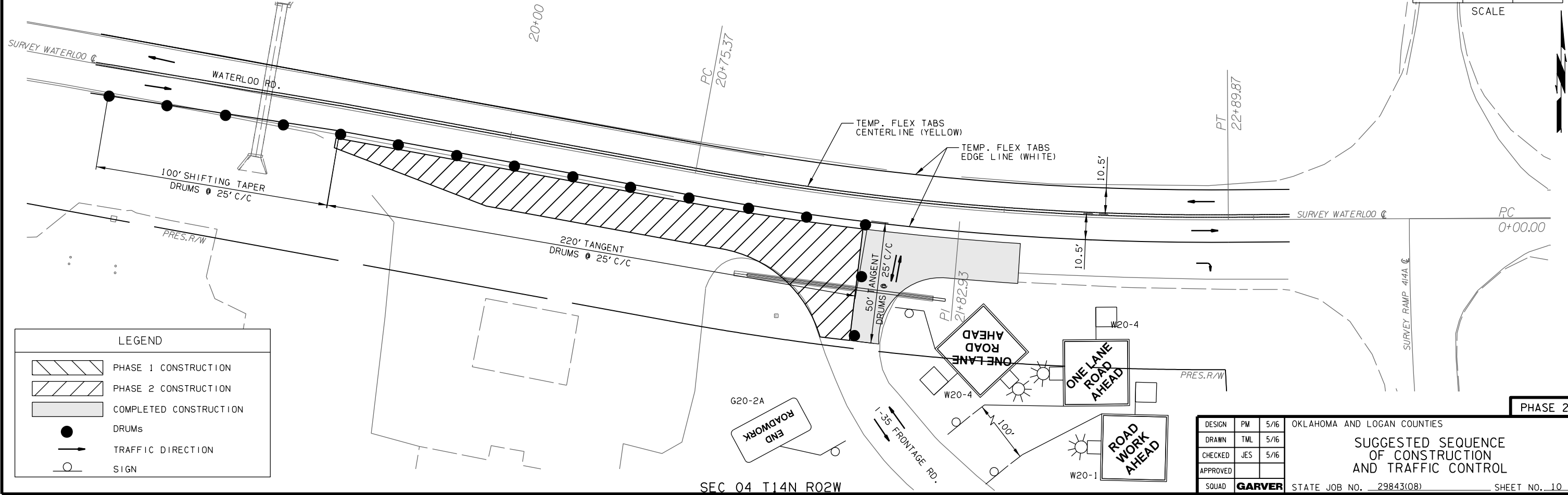
SEC 04 T14N R02W

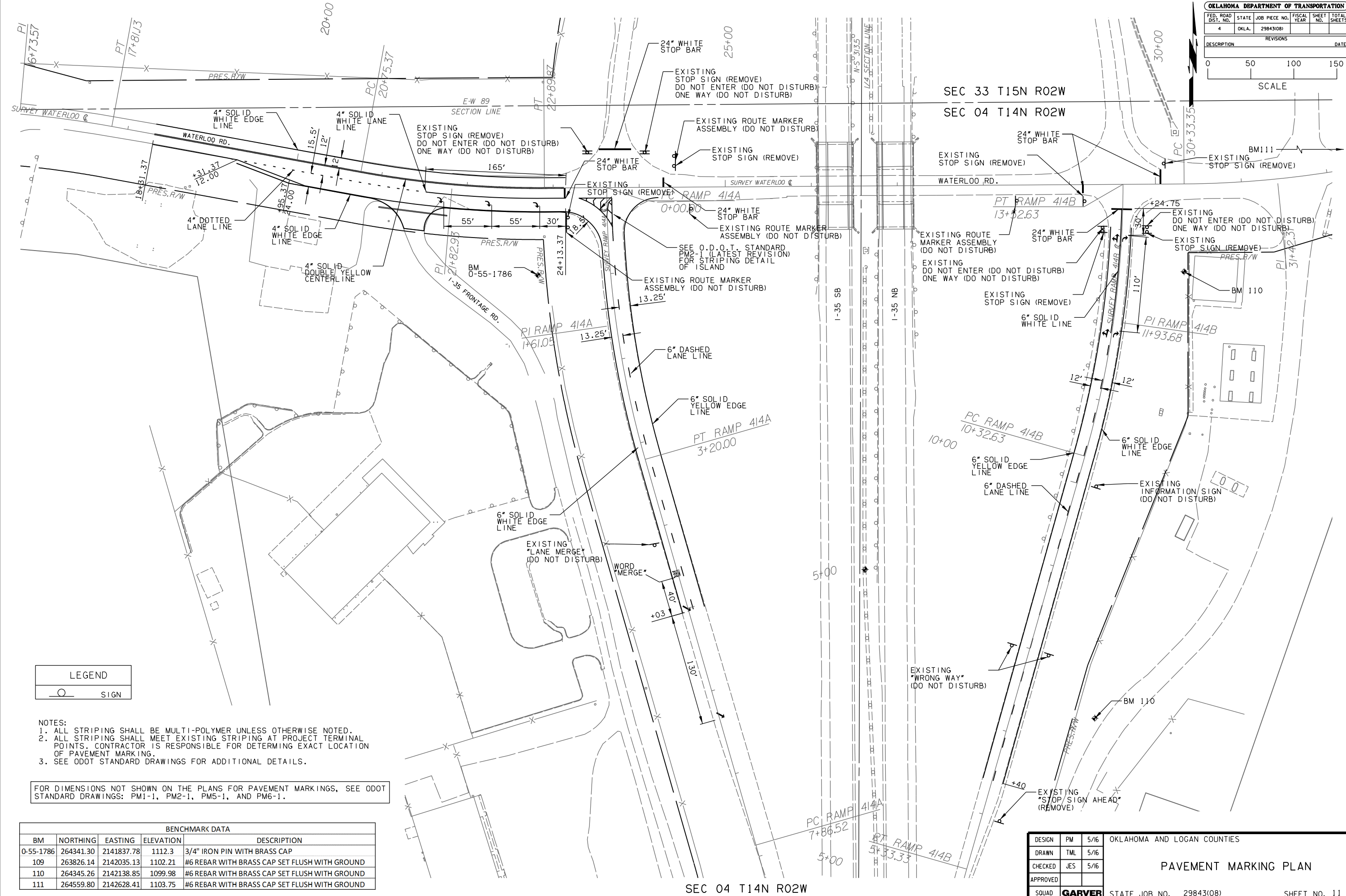
PHASE 1

SEC 04 T14N R02W

PHASE 2

SEC 04 T14N R02W





LEGEND	
	SIGN

- NOTES:
- ALL STRIPING SHALL BE MULTI-POLYMER UNLESS OTHERWISE NOTED.
 - ALL STRIPING SHALL MEET EXISTING STRIPING AT PROJECT TERMINAL POINTS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATION OF PAVEMENT MARKING.
 - SEE ODOT STANDARD DRAWINGS FOR ADDITIONAL DETAILS.

FOR DIMENSIONS NOT SHOWN ON THE PLANS FOR PAVEMENT MARKINGS, SEE ODOT STANDARD DRAWINGS: PM1-1, PM2-1, PM5-1, AND PM6-1.

BENCHMARK DATA				
BM	NORTHING	EASTING	ELEVATION	DESCRIPTION
0-55-1786	264341.30	2141837.78	1112.3	3/4" IRON PIN WITH BRASS CAP
109	263826.14	2142035.13	1102.21	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND
110	264345.26	2142138.85	1099.98	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND
111	264559.80	2142628.41	1103.75	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES	
DRAWN	TML	5/16	PAVEMENT MARKING PLAN	
CHECKED	JES	5/16		
APPROVED			STATE JOB NO. 29843(08) SHEET NO. 11	
SQUAD	GARVER			

TABLE #1 SIGNAL HEADS				
SIGNAL HEAD NUMBER	NUMBER & TYPE	MOUNTING	VISOR	BACKPLATE
1	1 - ONE WAY (S-19L)	SPAN WIRE	V-1	B-2
2, 3, 4, 6 & 7	5 - ONEWAY (S-6)	SPAN WIRE	V-1	B-2
5	1 - ONE WAY (S-10)	SPAN WIRE	V-1	B-2

TRAFFIC SIGNAL LEGEND	
PROPOSED	
	TRAFFIC SIGNAL CONTROLLER
	ELEC. CONDUIT (SIZE NOTED ON PLANS)
	SPAN WIRE ASSEMBLY WITH WOOD POLES AND LUMINAIRE
	VEHICULAR SIGNAL HEAD WITH BACKPLATE
	VIDEO DETECTION CAMERA
	SPAN WIRE MOUNTED SIGN
	SERVICE POLE
	SIGNAL HEAD NUMBER (SEE TABLE #1)
	VIDEO DETECTION AREA
	VIDEO DETECTION AREA

NOTES:
1.VIDEO VEHICLE DETECTION WILL BE PROVIDED FOR THIS INTERSECTION. THE DETECTOR LOOPS SHOWN ON THE PAVEMENT ARE SHOWN ONLY TO DEPICT THE AREAS OF DETECTION FOR THE VIDEO.
2.DUE TO INADEQUATE SIGHT DISTANCE FROM VDI, THE WB VIDEO ZONE WAS PLACED AT 175' RATHER THAN THE STANDARD 273' FOR 45 MPH.
3.THE PROPOSED CABINET, CONTROLLER, AND SIGNAL HEADS SHALL BE USED FOR FINAL PHASE.

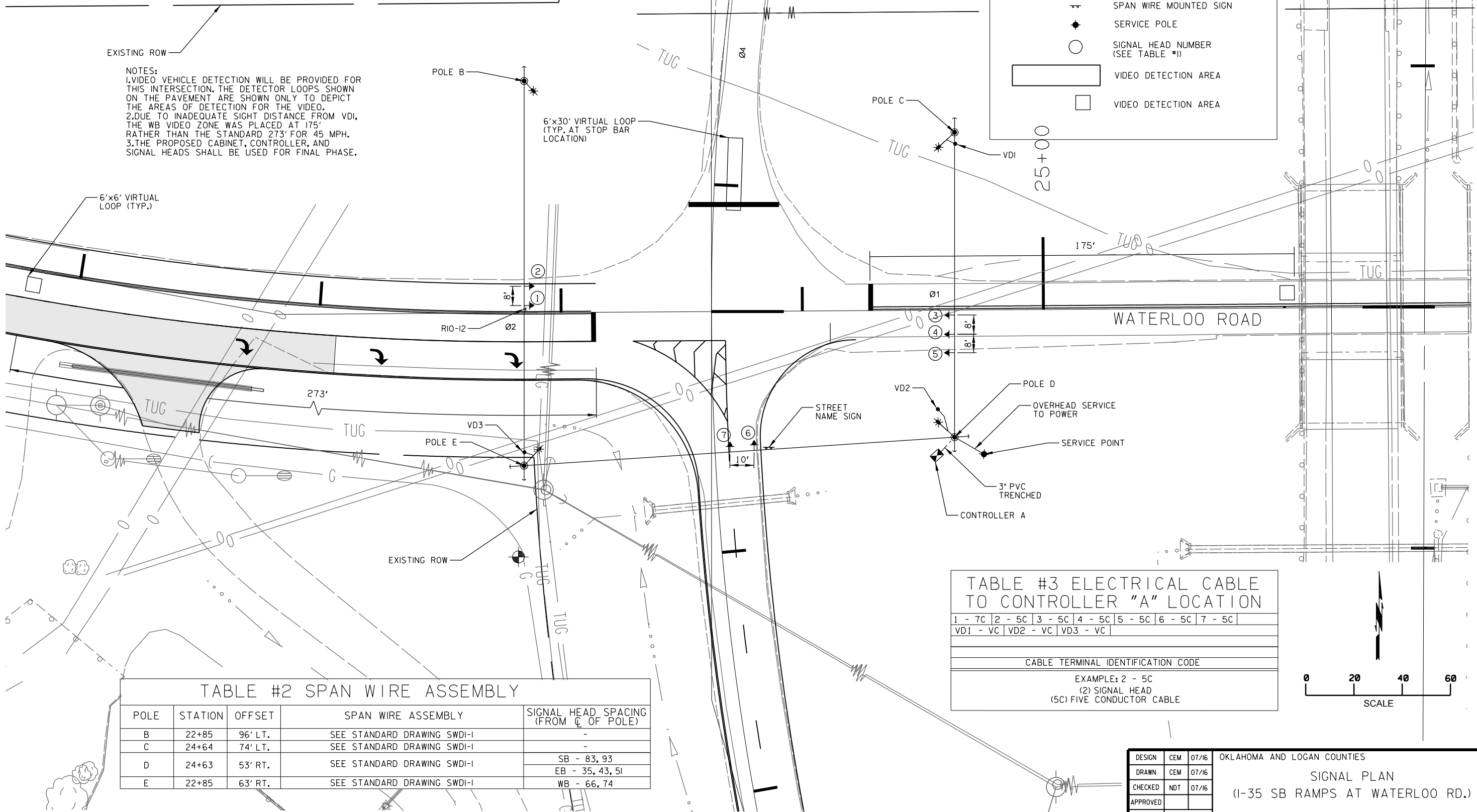
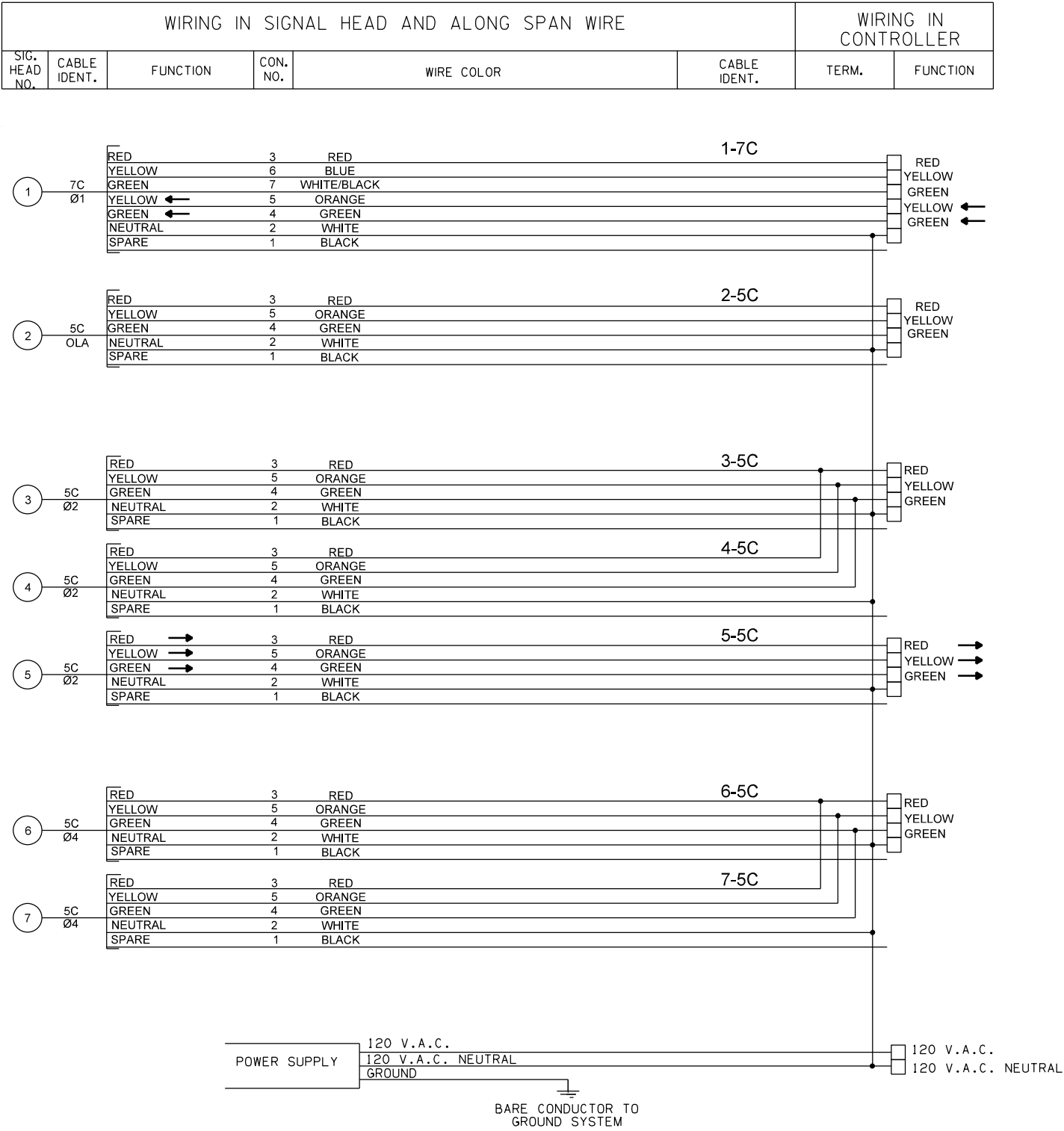


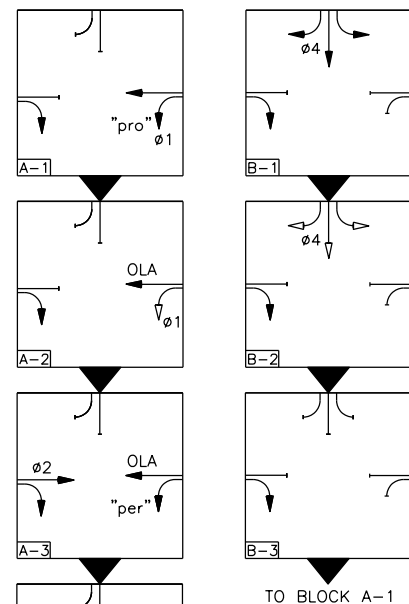
TABLE #2 SPAN WIRE ASSEMBLY				
POLE	STATION	OFFSET	SPAN WIRE ASSEMBLY	SIGNAL HEAD SPACING (FROM C OF POLE)
B	22+85	96' LT.	SEE STANDARD DRAWING SWDI-1	-
C	24+64	74' LT.	SEE STANDARD DRAWING SWDI-1	-
D	24+63	53' RT.	SEE STANDARD DRAWING SWDI-1	SB - 83, 93 EB - 35, 43, 51
E	22+85	63' RT.	SEE STANDARD DRAWING SWDI-1	WB - 66, 74

TABLE #3 ELECTRICAL CABLE TO CONTROLLER "A" LOCATION						
1 - 7C	2 - 5C	3 - 5C	4 - 5C	5 - 5C	6 - 5C	7 - 5C
VD1 - VC	VD2 - VC	VD3 - VC				
CABLE TERMINAL IDENTIFICATION CODE						
EXAMPLE: 2 - 5C (2) SIGNAL HEAD (5C) FIVE CONDUCTOR CABLE						

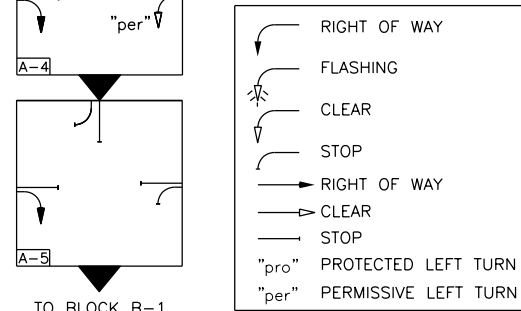
DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES			
DRAWN	CEM	07/16	SIGNAL PLAN			
CHECKED	NDT	07/16	(I-35 SB RAMP AT WATERLOO RD.)			
APPROVED						
SQUAD	GARVER		STATE JOB NO. 29843(08)	SHEET NO. 12		



PHASE DIAGRAM



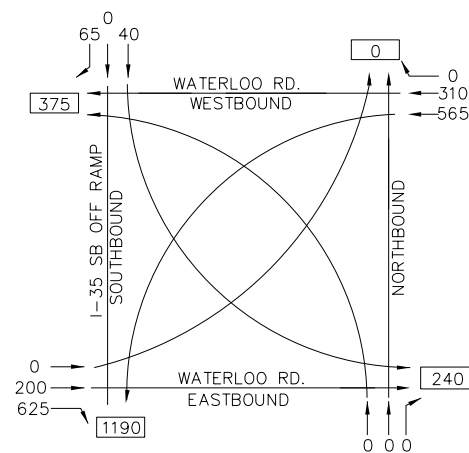
LEGEND



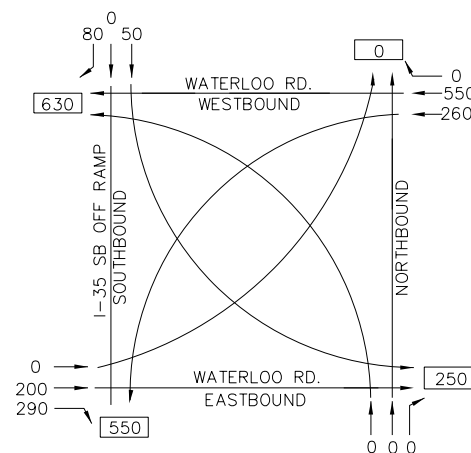
SEQUENCE

SEQUENCE						
BLOCK NO.	PHASE DESIGNATION	SIGNAL HEAD NO.				
		1	2	3&4	5	6&
A1	Ø1 ROW		G	R		R
A2	Ø1 CLR		G	R		R
A3	OLA ROW	G	G	G		R
A4	OLA CLR	Y	Y	Y		R
A5	ALL RED	R	R	R		R
B1	Ø4 ROW	R	R	R		G
B2	Ø4 CLR	R	R	R		Y
B3	ALL RED	R	R	R		R
	FLASHING RED	FR	FR	FR	FR	FR

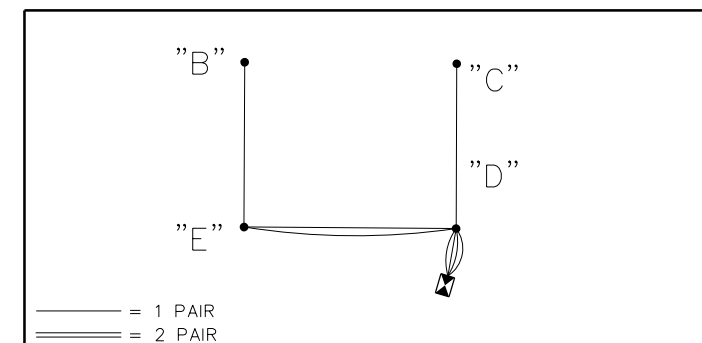
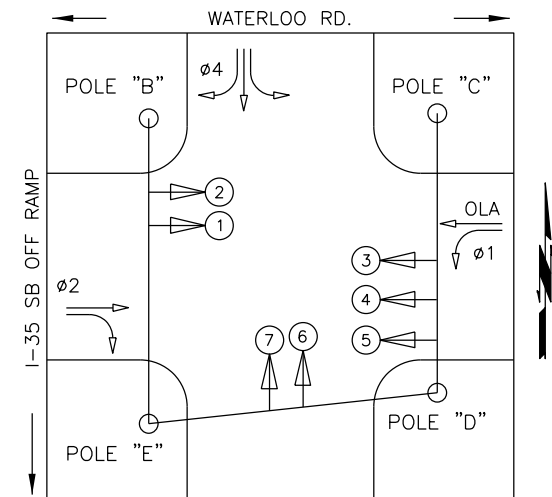
NOTE: $OLA = \emptyset_1 + \emptyset_2$



I-35 SB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
AM PEAK



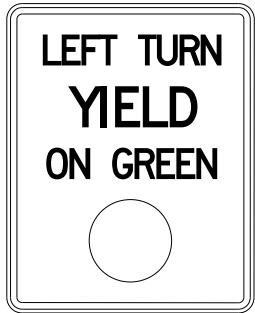
I-35 SB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
PM PEAK



NOTE: STREET LIGHTING WIRING

ONE PAIR EQUALS TWO CONDUCTORS (1/C-10AWG COPPER) ONE BLACK, ONE WHITE. CONDUCTORS SHALL BE SPLICED ONLY AT THE TERMINAL BLOCK AT EACH POLE BASE. A FUSE HOLDER SHALL BE PROVIDED IN THE HANDHOLE OF EACH COMBINATION TRAFFIC SIGNAL AND STREET LIGHT POLE. THE FUSE HOLDER SHALL BE INSTALLED IN THE LINE SIDE CONDUCTOR FOR THE LUMINAIRE. THE FUSE HOLDER SHALL BE A WATERPROOF INLINE FUSE HOLDER. IT SHALL BE SIMILAR TO BUSSMAN MFG. CO. TYPE "IRON" HEB. OR OTHER APPROVED EQUAL. COMPLETE WITH A PROPERLY SIZED TYPE KTK FUSE.

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES SIGNAL PHASING (I-35 SB RAMPS AT WATERLOO RD.) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>14</u>
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		

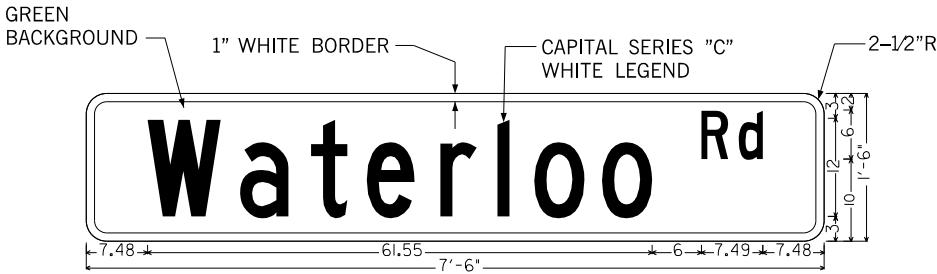


30"X36"
MUTCD R10-12

SIGN DETAIL
1:12

SIGN NUMBER	NAME
WIDTH X HEIGHT	7'-6" X 1'-6"
BORDER WIDTH	1"
CORNER RADIUS	2.5"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFELCTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT



LETTER POSITIONS (X)															LENGTH	SERIES/SIZE
W	a	t	e	r	l	o	o									
7.48	18.77	27.41	34.21	43.19	49.95	54.65	62.91								61.55	C12
R	d														7.49	C6
75.03	79.58															

SUMMARY OF SPAN WIRE MOUNTED SIGNS *

MESSAGE	LOCATION	NO. OF SIGNS	A	HEIGHT	B	SQ. FT. SIGN AREA	TOTAL AREA SQ. FT.
WATERLOO RD	SEE PLAN SHEET	1	90"	18"	75.04"	11.25	11.25
R10-12	SEE PLAN SHEET	1	30"	36"		7.50	7.50
						TOTAL	18.75

✱ TYPE IX REFLECTIVE SHEETING SHALL BE USED

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES SIGNAL SIGN SUMMARY (I-35 SB RAMPS AT WATERLOO RD.) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>15</u>
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		

TABLE #1 SIGNAL HEADS				
SIGNAL HEAD NUMBER	NUMBER & TYPE	MOUNTING	VISOR	BACKPLATE
1, 2, 3, 4, & 6	7 - ONEWAY (S-6)	SPAN WIRE	V-1	B-2
5	1 - ONE WAY (S-19L)	SPAN WIRE	V-1	B-2

TRAFFIC SIGNAL LEGEND

PROPOSED

TRAFFIC SIGNAL CONTROLLER

ELEC. CONDUIT
(SIZE NOTED ON PLANS)

SPAN WIRE ASSEMBLY WITH
WOOD POLES AND LUMINAIRE

VEHICULAR SIGNAL HEAD
WITH BACKPLATE

VIDEO DETECTION CAMERA

SPAN WIRE MOUNTED SIGN

SERVICE POLE

SIGNAL HEAD NUMBER
(SEE TABLE #1)

VIDEO DETECTION AREA

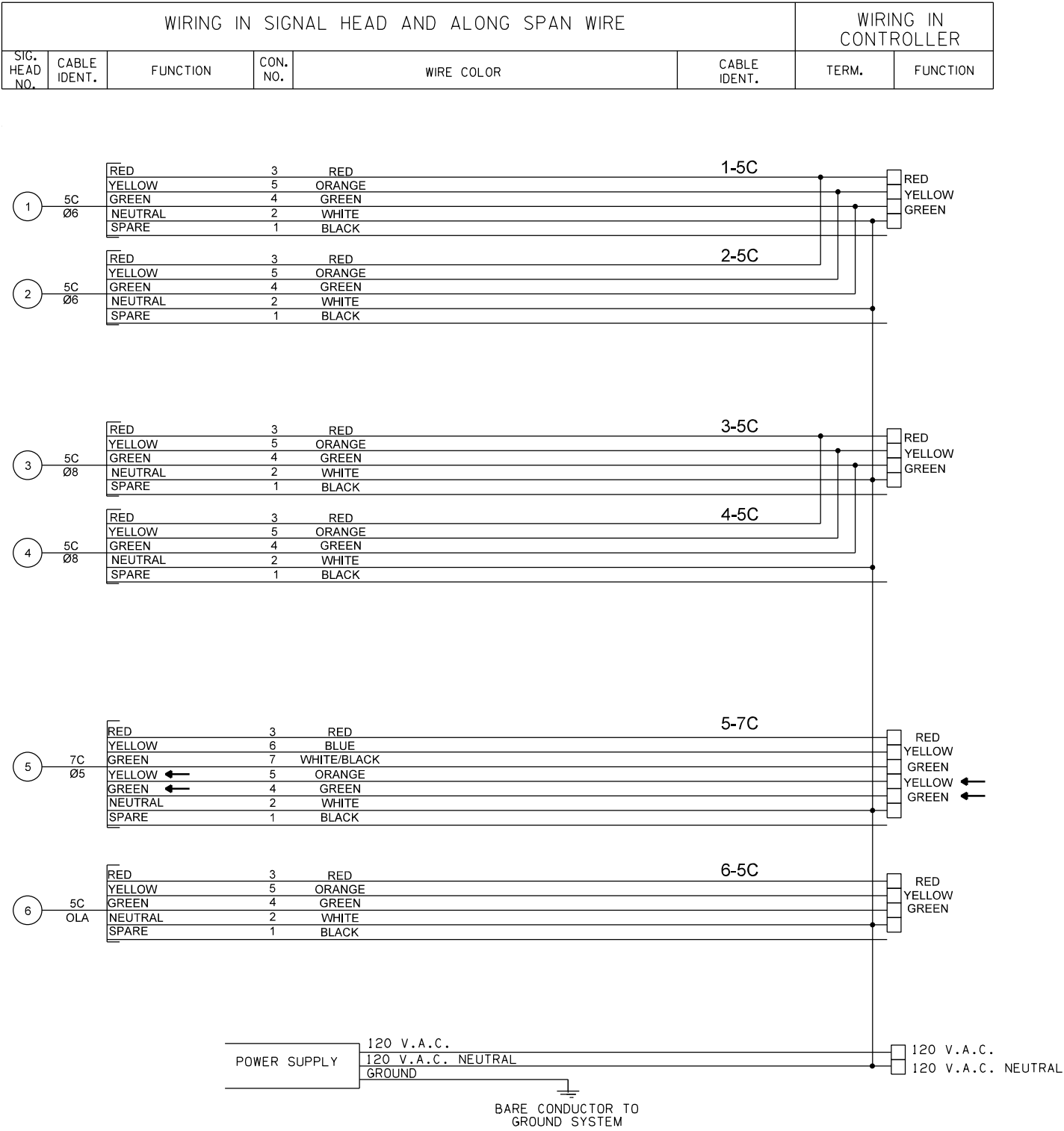
VIDEO DETECTION AREA

NOTES:
1. VIDEO VEHICLE DETECTION WILL BE PROVIDED FOR THIS INTERSECTION. THE DETECTOR LOOPS SHOWN ON THE PAVEMENT ARE SHOWN ONLY TO DEPICT THE AREAS OF DETECTION FOR THE VIDEO.
2. DUE TO INADEQUATE SIGHT DISTANCE FROM VD3, THE EB VIDEO ZONE WAS PLACED AT 190' RATHER THAN THE STANDARD 273' FOR 45 MPH.
3. THE PROPOSED CABINET, CONTROLLER, AND SIGNAL HEADS SHALL BE USED FOR FINAL PHASE.

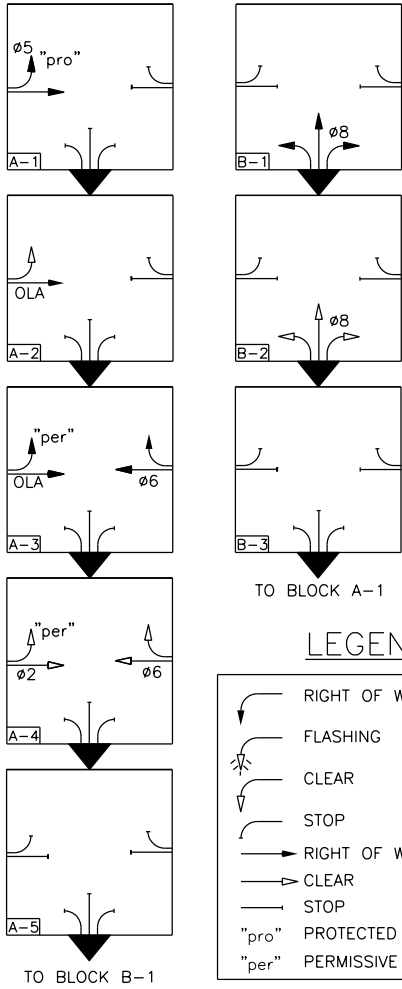
TABLE #3 ELECTRICAL CABLE TO CONTROLLER "A" LOCATION					
1 - 5C	2 - 5C	3 - 5C	4 - 5C	5 - 7C	6 - 5C
VD1 - VC VD2 - VC VD3 - VC					
CABLE TERMINAL IDENTIFICATION CODE					
EXAMPLE: 2 - 5C (2) SIGNAL HEAD (5C) FIVE CONDUCTOR CABLE					

TABLE #2 SPAN WIRE ASSEMBLY				
POLE	STATION	OFFSET	SPAN WIRE ASSEMBLY	SIGNAL HEAD SPACING (FROM C OF POLE)
B	28+76	84' LT.	SEE STANDARD DRAWING SWDI-1	WB - 68, 78
C	30+54	84' LT.	SEE STANDARD DRAWING SWDI-1	NB - 88, 100
D	30+50	57' RT.	SEE STANDARD DRAWING SWDI-1	EB - 47, 57
E	28+74	69' RT.	SEE STANDARD DRAWING SWDI-1	-

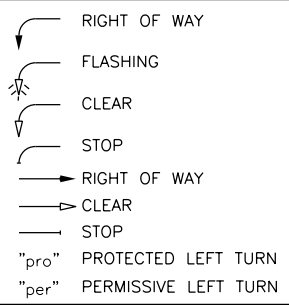
DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES		
DRAWN	CEM	07/16	SIGNAL PLAN		
CHECKED	NDT	07/16	(I-35 NB RAMP AT WATERLOO RD.)		
APPROVED					
SQUAD	GARVER		STATE JOB NO. 29843(08)	SHEET NO. 16	



PHASE DIAGRAM

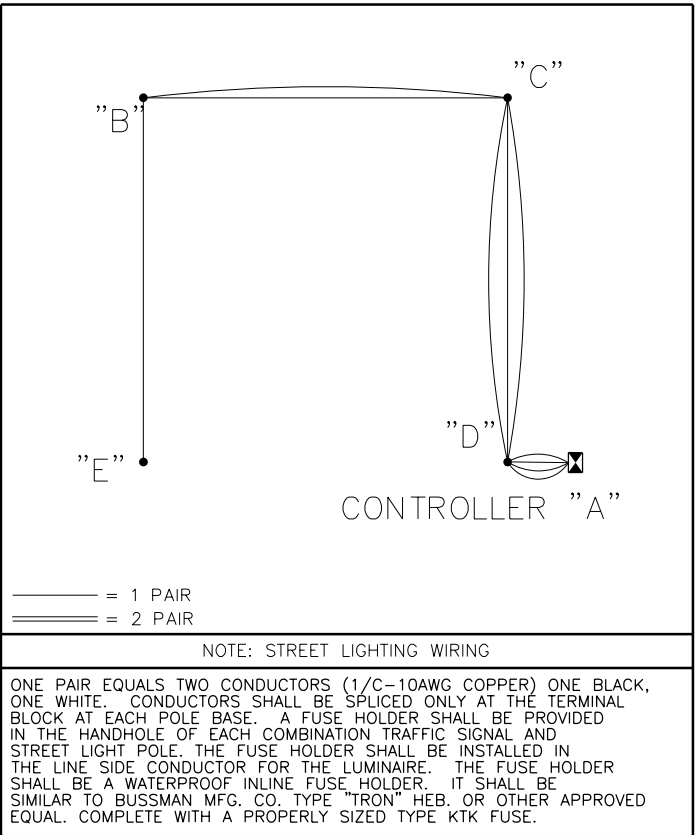
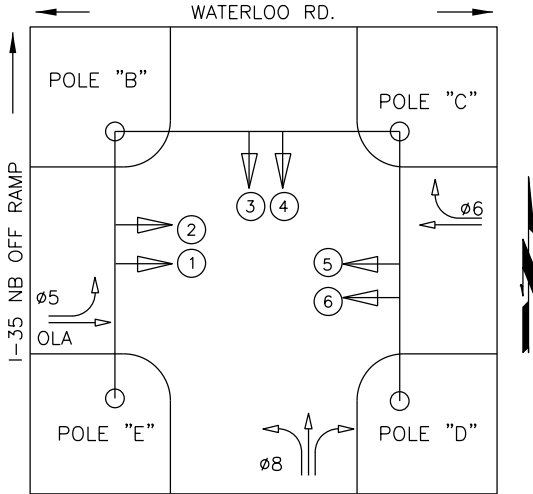


LEGEND



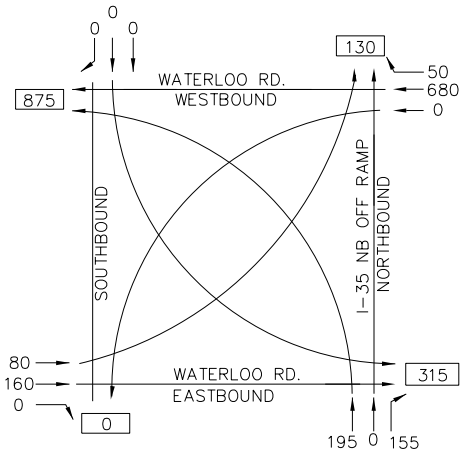
BLOCK NO.	PHASE DESIGNATION	SIGNAL HEAD NO.			
		1&2	3&4	5	6
A1	Ø5 ROW	R	R	C	G
A2	Ø5 CLR	R	R	C	G
A3	ØLA ROW	G	R	G	G
A4	ØLA CLR	Y	R	Y	Y
A5	ALL RED	R	R	R	R
B1	Ø8 ROW	R	G	R	R
B2	Ø8 CLR	R	Y	R	R
B3	ALL RED	R	R	R	R
	FLASHING RED	FR	FR	FR	FR

NOTE: ØLA = Ø5+Ø6

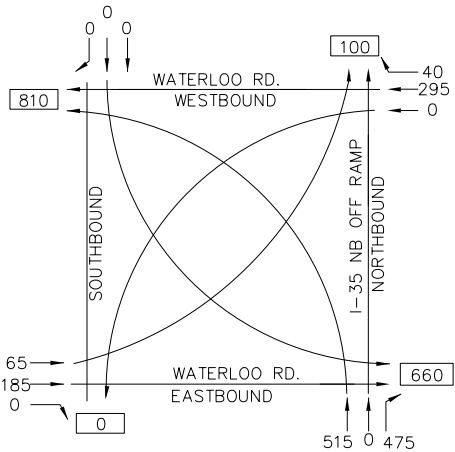


NOTE: STREET LIGHTING WIRING

ONE PAIR EQUALS TWO CONDUCTORS (1/C-10AWG COPPER) ONE BLACK, ONE WHITE. CONDUCTORS SHALL BE SPICED ONLY AT THE TERMINAL BLOCK AT EACH POLE BASE. A FUSE HOLDER SHALL BE PROVIDED IN THE HANDHOLE OF EACH COMBINATION TRAFFIC SIGNAL AND STREET LIGHT POLE. THE FUSE HOLDER SHALL BE INSTALLED IN THE LINE SIDE CONDUCTOR FOR THE LUMINAIRE. THE FUSE HOLDER SHALL BE A WATERPROOF INLINE FUSE HOLDER. IT SHALL BE SIMILAR TO BUSSMAN MFG. CO. TYPE "TRON" HEB. OR OTHER APPROVED EQUAL. COMPLETE WITH A PROPERLY SIZED TYPE KTK FUSE.



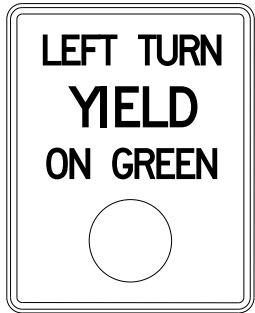
I-35 NB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
AM PEAK



I-35 NB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
PM PEAK

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		
			STATE JOB NO. 29843(08)
			SHEET NO. 18

SIGNAL PHASING
(I-35 NB RAMPS AT WATERLOO RD.)

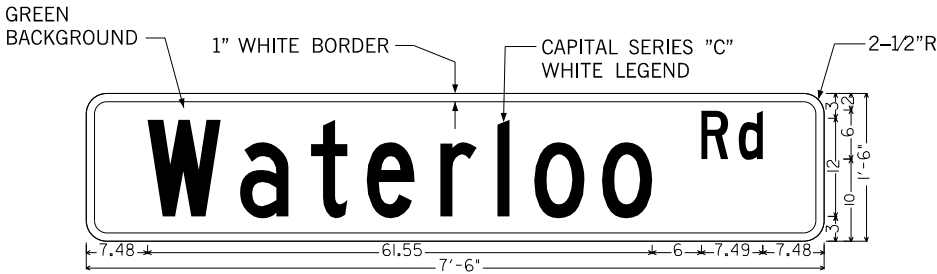


30"X36"
MUTCD R10-12

SIGN DETAIL
1:12

SIGN NUMBER	NAME
WIDTH X HEIGHT	7'-6" X 1'-6"
BORDER WIDTH	1"
CORNER RADIUS	2.5"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFELCTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT



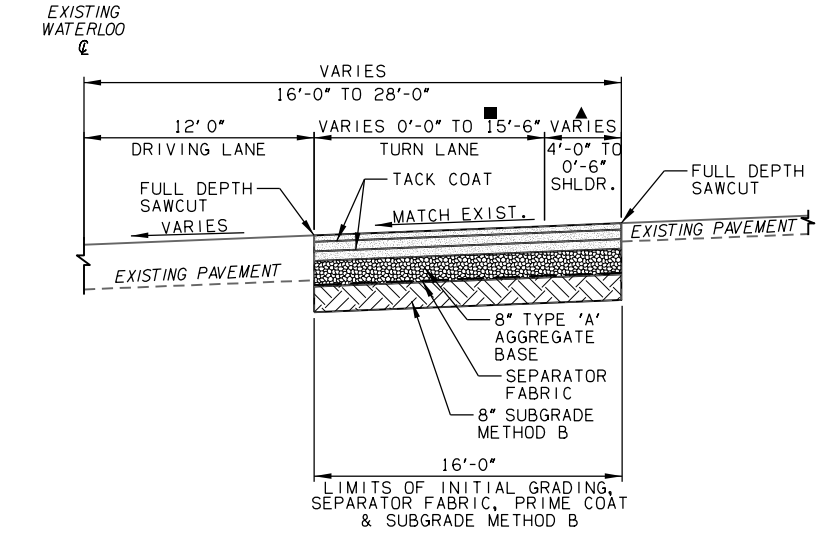
LETTER POSITIONS (X)															LENGTH	SERIES/SIZE
W	a	t	e	r	l	o	o									
7.48	18.77	27.41	34.21	43.19	49.95	54.65	62.91								61.55	C12
R	d														7.49	C6
75.03	79.58															

SUMMARY OF SPAN WIRE MOUNTED SIGNS *

MESSAGE	POLE LOCATION	NO. OF SIGNS	A	HEIGHT	B	SQ. FT. SIGN AREA	TOTAL AREA SQ. FT.
WATERLOO RD	SEE PLAN SHEET	1	90"	18"	75.04"	11.25	11.25
R10-12	SEE PLAN SHEET	1	30"	36"		7.50	7.50
						TOTAL	18.75

✱ TYPE IX REFLECTIVE SHEETING SHALL BE USED

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES SIGNAL SIGN SUMMARY (I-35 NB RAMPS AT WATERLOO RD.) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>19</u>
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		



- STA. 19+31.37 TO STA. 20+14.04 - TRANSITION 0'-0" TO 15'-6"
STA. 20+14.04 TO STA. 22+07.37 - 15'-6"
- ▲ STA. 19+31.37 TO STA. 20+14.04 - TRANSITION 4'-0" TO 0'-6"
STA. 20+14.04 TO STA. 22+07.37 - 0'-6"

PAVEMENT REQUIREMENT		
8" PAVT. STRUCTURE	TURNING LANE	PAVED SHOULDER
SURFACE COURSE	2" TYPE S4 (PG 70-28 OK)	2" TYPE S4 (PG 70-28 OK)
BASE COURSE	3" TYPE S3 (64-22 OK)	3" TYPE S3 (64-22 OK)
	3" TYPE S3 (64-22 OK)	3" TYPE S3 (64-22 OK)

TYPICAL SECTION NO. 1 - WATERLOO INTERIM
STA. 19+31.37 TO STA 22+07.37

GENERAL CONSTRUCTION NOTES

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

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

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

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

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

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

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

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

DEBRIS SHALL NOT BE BURIED WITHIN LIMITS OF RIGHT OF WAY.

THE STORM WATER MANAGEMENT PLAN CONFIRMED IN THE PRE-WORK MEETING SHALL BE MADE AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT.

CONTRACTOR TO MAKE EVERY EFFORT TO LOCATE AND PROTECT ALL UTILITIES AND STRUCTURES, WHETHER SHOWN OR NOT, PRIOR TO ANY CONSTRUCTION OPERATIONS. CONTRACTOR SHALL CARRY ON CONSTRUCTION SUCH THAT NO DAMAGE WILL OCCUR TO ANY UTILITIES OR STRUCTURES REMAINING IN PLACE.

PAY QUANTITIES					JP 29843(08)
0100	ROADWAY				
ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY	
201(A)	0102	CLEARING AND GRUBBING	LSUM	1	
202(A)	0183	UNCLASSIFIED EXCAVATION	(2) CY	200	
202(D)	0184	UNCLASSIFIED BORROW	(2) CY	200	
221(C)	2801	TEMPORARY SILT FENCE	(1) LF	146	
221(F)	0100	TEMPORARY SILT DIKE	(1) LF	21	
230(A)	2806	SOLID SLAB SODDING	(2)(R-7.8) SY	50	
303(A)	2100	AGGREGATE BASE TYPE A	CY	100.5	
310(B)	0149	SUBGRADE, METHOD B	SY	452.1	
325	5271	SEPARATOR FABRIC	SY	452.1	
411(B)	5945	SUPERPAVE, TYPE S3(PG 64-22 OK)	(4)(R-30,31,32) TON	173.8	
411(C)	5955	SUPERPAVE, TYPE S4(PG 70-28 OK)	(R-30,31,32) TON	50.7	
616(I)	0125	12" STEEL CASING	(5) LF	80.0	
619(B)	4727	REMOVAL OF CONCRETE PAVEMENT	(3)(R-49,50) SY	36.3	
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	(3)(R-49,50) SY	544.2	
619(B)	5918	REMOVAL OF EXISTING PIPE	(R-49) LF	80.0	
PAY QUANTITIES					JP 29843(08)
0600	STAKING				
642(B)	0096	CONSTRUCTION STAKING LEVEL II	LSUM	1	
PAY QUANTITIES					JP 29843(08)
0640	CONSTRUCTION				
641	1552	MOBILIZATION	LSUM	1	

PAY ITEM NOTES

- (R-7) FOR SOLID SLAB SODDING PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER, ESTIMATED AT 200 POUNDS PER 1,000 SQ.YD. OF SODDING.
- (R-8) PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 40 GALLONS PER SQ.YD.
- (R-30) PRICE BID TO INCLUDE COST OF 77.8 GALLONS OF TACK COAT, MEETING THE REQUIREMENTS OF SECTION 407 OF THE STANDARD SPECIFICATIONS.
- (R-31) PRICE BID TO INCLUDE COST OF 271.3 GALLONS OF PRIME COAT, MEETING THE REQUIREMENTS OF SECTION 408 OF THE STANDARD SPECIFICATIONS, AND ESTIMATED AT 0.35 GAL. PER SQ. YD. ON TOP OF COMPLETED SUBGRADE, AND 0.25 GAL. PER SQ. YD. ON TOP OF AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR, AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS
- (R-32) ESTIMATED AT 112 LBS. PER S.Y. PER 1" THICK.
- (R-49) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-50) MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.
- (1) PRICE BID SHALL INCLUDE COST OF MAINTENANCE AND REMOVAL OF SILT DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
- (2) ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER.
- (3) PRICE BID TO INCLUDE COST OF SAWING PAVEMENT.
- (4) QUANTITIES INCLUDE:

WATERLOO ROAD

DRIVES

(SUMMARY OF SURFACING)

(SUMMARY OF DRIVEWAYS)
- (5) STEEL CASING TO BE USED FOR DRAINAGE CONDUIT UNDER THE FRONTAGE ROAD. FLOWLINES TO BE DETERMINED IN THE FIELD, AS DIRECTED BY THE ENGINEER, TO INSURE DRAINAGE FLOW TO THE EAST.

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES SUMMARY OF PAY QUANTITIES AND NOTES (ROADWAY) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>3</u> 8/26/2016 OKLAHOMA AND LOGAN COUNTIES
DRAWN	TML	5/16	
CHECKED	JES	5/16	
APPROVED			
SQUAD	GARVER		

TRAFFIC GENERAL CONSTRUCTION NOTES

ANY SIGNS AND/OR DELINEATORS WHICH ARE TO BE REMOVED DURING THIS PROJECT WILL BE STORED IN A PROTECTED AREA DESIGNATED BY THE RESIDENT ENGINEER, UNTIL SUCH A TIME THAT THEY ARE TO BE RESET BY THE CONTRACTOR. COST OF THIS WORK TO BE INCLUDED IN OTHER ITEMS OF WORK.

EXISTING ROADWAY SHALL REMAIN OPEN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING TRAFFIC ON CROSS STREETS. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.

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

ANY DAMAGE CAUSED BY THE CONTRACTOR TO ANY STRUCTURES, ROADWAY, SURFACES, STRIPING, RAISED PAVEMENT MARKERS, GUARDRAIL, SLOPES, AND SIGNS SHALL BE REPAIRED AT CONTRACTORS EXPENSE TO THE SATISFACTION OF THE ENGINEER.

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

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

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

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

CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN SUCH A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION", AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK IF A CHANGE TO THE TRAFFIC CONTROL IS PROPOSED.

ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL MEET ODOT'S "QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES".

TRAFFIC SIGNING & STRIPING PAY QUANTITY NOTES

- (TS-24) QUANTITY SHOWN INCLUDES 1,130 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 962 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF FOUR INCH (4") WIDE TRAFFIC STRIPE.
- (TS-25) QUANTITY SHOWN INCLUDES 1,652 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 1,169 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF SIX INCH (6") WIDE TRAFFIC STRIPE.
- (TS-26) QUANTITY SHOWN INCLUDES 136 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 0 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF EIGHT INCH (8") WIDE TRAFFIC STRIPE.
- (TS-27) QUANTITY SHOWN INCLUDES 80 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND 0 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF TWELVE INCH (12") WIDE TRAFFIC STRIPE.
- (TS-28) QUANTITY SHOWN INCLUDES 108 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) AND WILL BE MEASURED BY THE LINEAR FOOT OF TWENTY-FOUR INCH (24") WIDE TRAFFIC STRIPE.
- (TS-41) "REMOVAL OF EXISTING SIGNS" SHALL INCLUDE THE REMOVAL OF A COMPLETE SIGN ASSEMBLY WHICH MAY INCLUDE MULTIPLE SIGNS, POSTS, FOOTINGS, AND ANY FOOTINGS ADJACENT TO THE SIGN ASSEMBLY. WHEN APPROVED BY THE ENGINEER, FOOTINGS MAY BE OBLITERATED TO A POINT BELOW GROUND LEVEL IN LIEU OF BEING COMPLETELY REMOVED. SEE GENERAL CONSTRUCTION NOTES FOR DISPOSAL OF OLD CONCRETE FOOTING MATERIAL.
- (TC-14) SEE STANDARD DRAWING PM1-1, PM2-1, PM3-1, PM4-1, PM5-1, PM6-1, PM7-1, PM8-1 (LATEST REVISION). A PART, OR ALL, OF THE QUANTITY SHOWN IS TO BE USED AS FINAL PAVEMENT MARKING.

TRAFFIC CONTROL PAY QUANTITY NOTES

- (TC-20) ALL STRIPING TO BE PLACED ON TEMPORARY SURFACES OR ON SURFACES SCHEDULED TO BE REMOVED SHALL BE DONE WITH PAINT UNLESS OTHERWISE NOTED ON THE PLANS OR STANDARD DRAWINGS. TEMPORARY PAVEMENT MARKINGS PLACED ON FINISHED PAVEMENT OR EXISTING PAVEMENT TO REMAIN IN PLACE SHALL USE ONE OF THE FOLLOWING METHODS:
REMOVABLE PAVEMENT MARKING TAPE
CLASS A PAVEMENT MARKERS
- (TC-21) INCLUDED IN THE COST OF THIS ITEM SHALL BE INSTALLATION, MAINTENANCE, AND REMOVAL. THIS ITEM SHALL BE BID ACCORDINGLY.
- (TC-22) AMOUNT SHOWN IS AN APPROXIMATION AND THE ACTUAL AMOUNT OF REMOVAL, IF NECESSARY, SHALL BE DETERMINED BY THE ENGINEER. PRICE BID FOR PAVEMENT MARKING REMOVAL SHALL INCLUDE THE COST OF REMOVING STRIPE, ARROWS, WORDS, AND SYMBOLS, AS SHOWN IN THE PLANS. THESE ITEMS MAY CONSIST OF PLASTIC, PAINT OR NON-REMOVABLE MARKING TAPE.
- (TC-26) ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MAUNAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THE PROJECT.
- ALL SIGNS AND BARRICADES WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.
- (TC-30) INCLUDED IN THIS ITEM ARE ALL S.C.S (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 16.00 S.F. AND 32.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-33) ALL CONSTRUCTION WORK ZONE SIGNS SHALL HAVE FLUORESCENT SHEETING. THE FLUORESCENT SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956 (LATEST REVISION).
- THE MANUFACTURER SHALL FURNISH A TYPE 'D' CERTIFICATION IN ACCORDANCE WITH O.D.O.T. STANDARD SPECIFICATIONS (CURRENT EDITION) SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON MATERIAL SUBMITTED FOR APPROVAL.
- (TC-52) ANY USED CHANGEABLE MESSAGE SIGN TO BE PLACED ON THIS PROJECT SHALL BE SUBJECT TO INSPECTION AND APPROVAL, BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, TO ASSURE THAT THEY ARE IN GOOD WORKING CONDITION, PRIOR TO PLACEMENT ON THE PROJECT.

PAY QUANTITIES

JP 29843(08)

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY
805(A)	8724	(PL)REMOVAL OF EXISTING SIGNS (TS-41)	EA	9
856(A)	8530	TRAFFIC STRIPE(MULTI-POLYMER)(4" WIDE) (TS-24)(TC-14)	LF	2092
856(A)	8535	TRAFFIC STRIPE(MULTI-POLY.) (6" WIDE) (TS-25)(TC-14)	LF	2821
856(A)	8540	TRAFFIC STRIPE(MULTI-POLY.) (8" WIDE) (TS-26)(TC-14)	LF	136
856(A)	8548	TRAFFIC STRIPE(MULTI-POLY.) (12" WIDE) (TS-27)(TC-14)	LF	80
856(A)	8555	TRAFFIC STRIPE(MULTI-POLY.) (24" WIDE) (TS-28)(TC-14)	LF	108
856(B)	8860	TRAFFIC STRIPE(MULTI-POLY.) (ARROWS) (TC-14)	EA	9
856(B)	8880	TRAFFIC STRIPE(MULTI-POLY.) (WORDS) (TC-14)	EA	1

PAY QUANTITIES

JP 29843(08)

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	QUANTITY
857(E)	8881	(PL)CONSTRUCTION ZONE PAVEMENT MARKERS (TC-20,21,61,70,73,75)	EA	400
857(F)	8006	PAVEMENT MARKING REMOVAL(TRAFFIC STRIPE) (TC-22,70)	LF	3880
880(B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 SF (TC-26,33,84)	SD	1500
880(B)	8821	CONSTRUCTION SIGNS 6.26 SF TO 15.99 SF (TC-26,33,84)	SD	600
880(B)	8824	CONSTRUCTION SIGNS 16.0 SF TO 32.99 SF (TC-26,30,33,84)	SD	1300
880(E)	8860	WARNING LIGHTS(TYPE A) (TC-26,84)	SD	1100
880(F)	8878	DRUMS (SP-1)(TC-26,61,84)	SD	1600
880(G)	8890	CHANNELIZER CONES (SP-1)(TC-26,61,70,84)	SD	650
882(A)	8306	PORT.CHANGEABLE MESSAGE SIGN (SP-2)(TC-26,52,70,84,85)	SD	200

(TC-61) ANY DAMAGE TO A FINISHED OR EXISTING SURFACE RESULTING FROM THE CONTRACTORS NEGLIGENCE IN THE REMOVAL OF CONSTRUCTION ZONE PAVEMENT MARKERS OR CHANNELIZING DEVICES AND THE BITUMINOUS ADHESIVE USED IN THEIR INSTALLATION, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

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

(TC-73) QUANTITY SHOWN INCLUDES 200 EA. (WHITE) AND 200 EA. (YELLOW) CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS). THESE CONSTRUCTION ZONE PAVEMENT MARKERS SHALL BE EITHER "DAVIDSON PLASTICS: MODEL TOM", OR AN APPROVED EQUAL. PRICE BID FOR THIS ITEM SHALL INCLUDE THE INITIAL PLACEMENT, SUBSEQUENT REPLACEMENT, AND REMOVAL. THE CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON STANDARD DRAWING TCS21-1-(LATEST REVISION).

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

△ (TC-84) 100 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.

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

(SP-1) TYPE "C" WARNING LIGHTS NOT REQUIRED.

(SP-2) MESSAGE SIGNS TO BE IN PLACE 14 DAYS IN ADVANCE OF CONSTRUCTION ACTIVITIES.

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES SUMMARY OF PAY QUANTITIES AND NOTES (TRAFFIC) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>4</u> 11/16/2016 OKLAHOMA AND LOGAN COUNTIES
DRAWN	TML	5/16	
CHECKED	JES	5/16	
APPROVED			
SQUAD	GARVER		

GENERAL CONSTRUCTION NOTES

THE STRUCTURAL DESIGN OF ALL POLES, HIGH-MAST POLES, AND OTHER SUPPORTS FOR SIGNS, LUMINAIRES, AND SIGNALS AS WELL AS THEIR CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE MANUFACTURER SHALL ENSURE THE FOLLOWING ARE APPLIED TO THE DESIGN:

THE MINIMUM DESIGN WIND SPEED AND DESIGN LIFE AS REQUIRED IN THE AASHTO SPECIFICATIONS;

THE CALCULATED STRESSES AND FORCES FROM THE DESIGN LOADINGS DO NOT EXCEED THOSE REQUIRED IN THE AASHTO SPECIFICATIONS;

A CATEGORY I FATIGUE IMPORTANCE FACTOR (I_F) FOR ALL STRUCTURES; NO VIBRATORY MITIGATION SHALL BE ALLOWED. TRUCK-INDUCED GUSTS SHALL BE APPLIED TO ALL OVERHEAD TRAFFIC SIGNAL SUPPORTS.

ALL MEMBERS ARE AT LEAST THE MINIMUM THICKNESS AS REQUIRED IN THE AASHTO SPECIFICATIONS;

LUMINAIRE MAST ARMS SHALL BE DESIGNED TO SUPPORT AT LEAST A 50 LB. (22.7 KG) LUMINAIRE WITH AN EFFECTIVE PROJECTED AREA OF 2.5 FT² (0.23 M²;)

THE ANCHOR BOLT DESIGN AND AMOUNT OF ANCHOR BOLTS TO BE USED SHALL BE AS REQUIRED IN THE AASHTO SPECIFICATIONS.

UNLESS SITE SPECIFIC GEOTECHNICAL DATA IS AVAILABLE, FOUNDATIONS SHALL BE DESIGNED UTILIZING THESE PARAMETERS; SHEAR STRENGTH OF COHESIVE SOIL (C) OF 500 PSF, ANGLE OF INTERNAL FRICTION (Φ) OF 22 DEGREES, AND EFFECTIVE UNIT WEIGHT OF SOIL (γ) OF 120 PCF.

TRAFFIC SIGNAL PAY QUANTITY NOTES

- (TP-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITY. SEE THE 2009 SPECIFICATION FOR HIGHWAY CONSTRUCTION.
- (TR-6) THE CONTROLLERS TO BE FURNISHED ON THIS PROJECT SHALL BE 8 PHASE VEHICLE ACTUATED SOLID STATE DIGITAL TRAFFIC SIGNAL CONTROLLERS. A MINIMUM OF 16 LOAD SWITCH RECEPTACLES SHALL BE FURNISHED AND WIRED TO THE MOUNTING FRAMES. ALL WIRING FROM THE FIELD TERMINALS SHALL BE WIRED TO THE MOUNTING FRAME FOR AN 4 PHASE OPERATION. NO CABINET OR CONTROLLER WIRING SHALL BE REQUIRED EXCEPT FOR ADDITIONAL DETECTOR CONNECTING CABLES WHEN CONTROLLER IS EXPANDED FOR AN 8 PHASE OPERATION. THE CONTROLLER SHALL BE CAPABLE OF PERFORMING AS SHOWN ON THE PHASE AND SEQUENCE DIAGRAM.

PEDESTRIAN ISOLATION SHALL BE PROVIDED IN THE CONTROLLER CABINET. ALL N.E.M.A. FUNCTIONS SHALL TERMINATE IN THE CONTROLLER CABINET.
- (TR-8) THE CONTROLLER AND CONFLICT MONITOR SHALL MEET THE LATEST N.E.M.A. SPECIFICATION. THE CONTRACTOR SHALL FURNISH A PRETIMED SOLID STATE DIGITAL MICRO-PROCESSOR CONTROLLER WITH C.M.O.A. LOGIC CIRCUITRY. THE CONTROLLER TO BE FURNISHED SHALL BE DESIGNED TO FUNCTION AT AN ISOLATED INTERSECTION OR IN A COORDINATED SYSTEM OR AS A MASTER CONTROLLER. THE UNIT SHALL FEATURE FOUR DIAL FUNCTIONS WITH THREE OFFSETS, AND UP TO 24 INTERVALS PER DIAL.
- (TL-24) 4 - ROADWAY LUMINAIRES SHALL BE 250 WATT HIGH PRESSURE SODIUM, WITH CLEAR LAMP OF 28,000 LUMENS, ILLUMINATION ENGINEERING SOCIETY DISTRIBUTION AS FOLLOWS:

VERTICAL = MEDIUM; LATERAL = TYPE 3; CONTROL = SEMICUTOFF;
ODOT FIXTURE STYLE = A1. SEE STD. HLD1-1-(LATEST REVISION).
- (1) A GPS CLOCK SHALL BE PROVIDED IN EACH CABINET. ALL NECESSARY LABOR AND MATERIALS TO ACCOMPLISH FUNCTIONAL GPS-BASED TIME SYNC SHALL BE INCLUDED IN THIS PAY ITEM.
- (2) THE CONTROLLER SHALL BE AN ECONOLITE ASC3/2100.
- (3) TRAFFIC SIGNAL LED LENSES SHALL BE DURALIGHT.
- (4) SP IS NOT REQUIRED FOR THIS ITEM. SEE STANDARD DRAWING SWD1-1 FOR ITEMS NECESSARY FOR CONSTRUCTION OF THE SPAN WIRE SIGNAL.
- (5) 40' WOOD POLES ARE REQUIRED FOR THE SPAN WIRE INSTALLATION. SIGNAL MOUNTING HEIGHTS WILL NEED TO BE ADJUSTED IN THE FIELD BASED ON ACTUAL CONDITIONS AND SAG OF THE LINE.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			
REVISIONS					DATE
PAY QUANTITIES					8/26/16
NOTES AND PAY QUANTITIES					10/04/16
PAY QUANTITIES					11/03/16

PAY QUANTITIES							JP 29843(08)
0302	TRAFFIC SIGNALS						
ITEM NO.	CODE NO	DESCRIPTION	UNIT	SB Ramps	NB Ramps	TOTAL	
802(B)	8334	1" PVC SCH.40 PLASTIC CONDUIT TRENCHED (TP-1)	LF	15	11	26	△ △
802(B)	8346	3" PVC SCH.40 PLASTIC CONDUIT TRENCHED (TP-1)	LF	14	17	31	△
809(A)	8090	ROADWAY LUMINAIRE (TL-24)	EA	4	4	8	
810(A)	3118	SERVICE POLE	EA	1	1	2	
811	8040	1/C NO.6 ELECT.COND. (TP-1)	LF	35	27	62	△ △
811	8044	1/C NO.10 ELECT.COND. (TP-1)	LF	656	858	1514	△ △
823	8482	(SP) TRAFFIC SIGNAL SPAN WIRE EQUIPMENT (4)(5)	LSUM	0.50	0.50	1.00	△ △
825	8550	TRAFFIC SIGNAL CONTROLLER ASSEMBLY (1, 2) (TR-6) (TR-8)	EA	1	1	2	
828	8132	(PL)DETECTION SYSTEM (VIDEO)	LSUM	0.50	0.50	1.00	△
831	8231	1 WAY 3 SEC. ADJ. SIG. HD. S-6 (3)	EA	5	5	10	
831	8262	1 WAY 3 SEC. ADJ. SIG. HD. S-10 (3)	EA	1	0	1	
831	8286	1 WAY 5 SEC. ADJ. SIG. HD. (S-19) (3)	EA	1	1	2	
833	3030	BACKPLATE	EA	7	6	13	
834(A)	8207	5/C TRAFFIC SIGNAL ELECTRICAL CABLE (TP-1)	LF	693	1065	1758	△ △
834(A)	8208	7/C TRAFFIC SIGNAL ELECTRICAL CABLE (TP-1)	LF	209	99	308	△ △
850(A)	8110	SHEET ALUMNUM SIGNS	SF	18.75	18.75	37.5	

DESIGN	CEM	11/16	OKLAHOMA AND LOGAN COUNTIES SUMMARY OF PAY QUANTITIES AND NOTES (TRAFFIC SIGNALS) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>5</u> 11/4/2016 OKLAHOMA AND LOGAN COUNTIES
DRAWN	CEM	11/16	
CHECKED	NDT	11/16	
APPROVED			
SQUAD	GARVER		

SUMMARY OF SURFACING QUANTITIES							
EXISTING WATERLOO C.R.L. STATION TO STATION	AGGREGATE BASE TYPE A 303(A)	SUBGRADE METHOD B 310(B)	SEPARATOR FABRIC 325	TACK COAT * 407(B) (1)	PRIME COAT * 408	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)	SUPERPAVE, TYPE S4 (PG 70-28 OK) 411(C)
	CY	SY	SY	GAL	GAL	TON	TON
RIGHT TURN LANE							
19+31.37 TO 23+14.37	100.5	452.1	452.1	67.9	271.3	152.0	50.7
TOTALS:	100.5	452.1	452.1	67.9	271.3	152.0	50.7

* FOR CONTRACTORS INFORMATION, COST TO BE INCLUDED IN PRICE BID FOR ASPHALT.
(1) ESTIMATED AT 0.075 GAL DILUTED EMULSION PER SQ. YD. OF ASPHALT.

SUMMARY OF DRIVEWAYS							
EXISTING WATERLOO C.R.L. STATION TO STATION	SIDE	TYPE	WIDTH	LENGTH	RADIUS	TACK COAT * 407(B) (1)	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)
			FT	FT	FT	GAL	TON
21+42.92	RT	ASPHALT	24	29	50 LT, 25 RT	9.9	21.8
TOTALS:						9.9	21.8

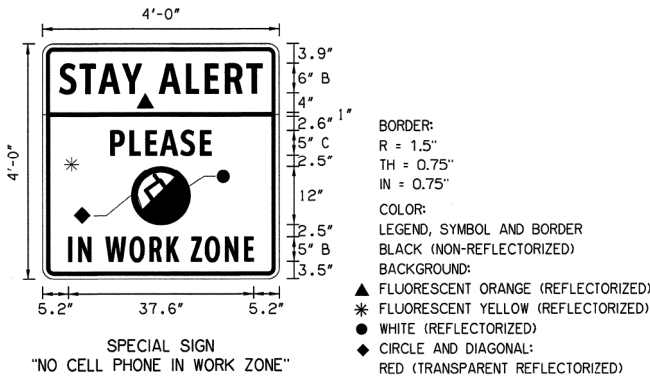
* FOR CONTRACTORS INFORMATION, COST TO BE INCLUDED IN PRICE BID FOR ASPHALT.
(1) ESTIMATED AT 0.075 GAL DILUTED EMULSION PER SQ. YD. OF ASPHALT.

SUMMARY OF EROSION CONTROL			
EXISTING WATERLOO C.R.L. STATION TO STATION	TEMPORARY		
	SILT FENCE 221(C)	SILT DIKE 221(F)	
	LF	LF	
RIGHT TURN LANE			
19+31.37 TO 23+14.37	146.0	21.0	
TOTALS:	146.0	21.0	

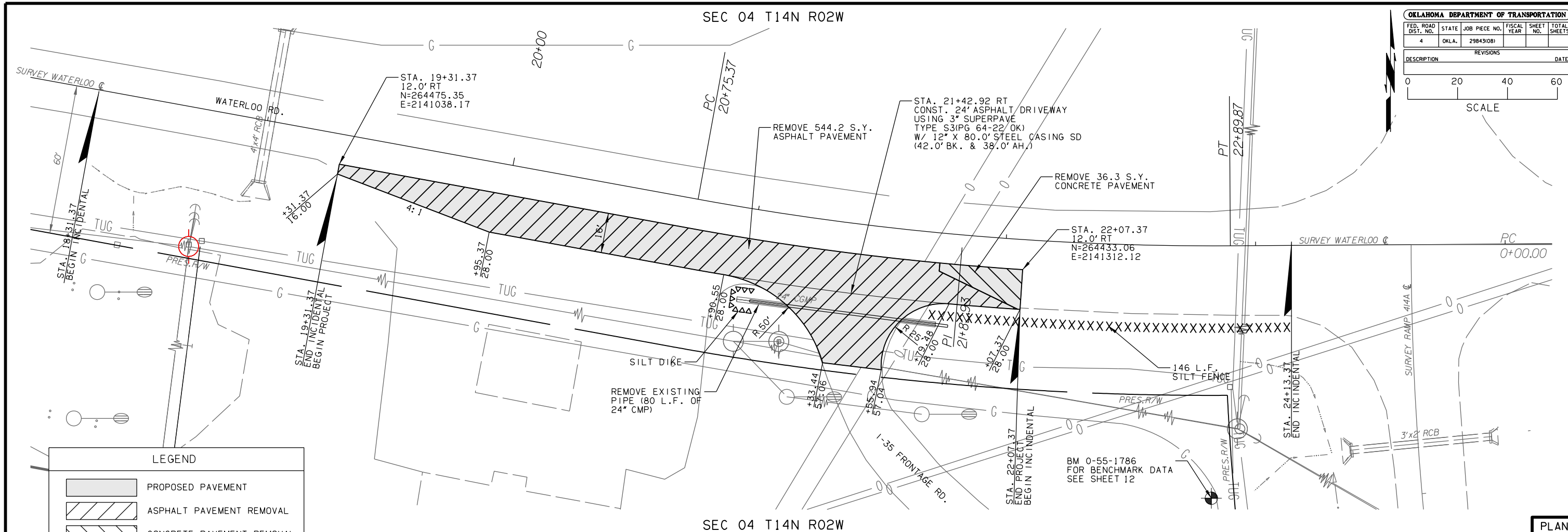
SUMMARY OF REMOVALS				
EXISTING WATERLOO C.R.L. STATION TO STATION	REMOVAL OF CONCRETE PAVEMENT 619(B)	REMOVAL OF ASPHALT PAVEMENT 619(B)	REMOVAL OF EXISTING PIPE 619(B)	SAVING PAVEMENT 619(C)*
	SY	SY	LF	LF
RIGHT TURN LANE				
19+31.37 TO 23+14.37	36.3	415.9	-	577.8
DRIVEWAYS				
21+42.92	-	128.3	80.0	-
TOTALS:	36.3	544.2	80.0	577.8

* FOR CONTRACTOR INFORMATION ONLY. COST SUBSIDIARY TO OTHER ITEMS OF WORK.






SUMMARY OF STRIPING		
TYPE	L.F.	EACH
YELLOW(MULTI-POLYMER)		
4" SOLID	962	-
6" SOLID	1,169	-
WHITE (MULTI-POLYMER)		
24" SOLID	108	-
12" SOLID	80	-
8" SOLID	136	-
6" SOLID	1,316	-
6" DASHED	288	-
6" DOTTED	48	-
4" SOLID	1,130	-
ARROWS	-	9
WORDS	-	1
856(A) TRAFFIC STRIPE (MULTI-POLYMER)(4" WIDE)	2,092	-
856(A) TRAFFIC STRIPE (MULTI-POLY.)(6" WIDE)	2,821	-
856(A) TRAFFIC STRIPE (MULTI-POLY.)(8" WIDE)	136	-
856(A) TRAFFIC STRIPE (MULTI-POLY)(12" WIDE)	80	
856(A) TRAFFIC STRIPE (MULTI-POLY.)(24" WIDE)	108	-
856(B) TRAFFIC STRIPE (MULTI-POLY.)(ARROWS)	-	9
856(B) TRAFFIC STRIPE (MULTI-POLY.)(WORDS)	-	1



REVISIONS	
DESCRIPTION	DATE



LEGEND

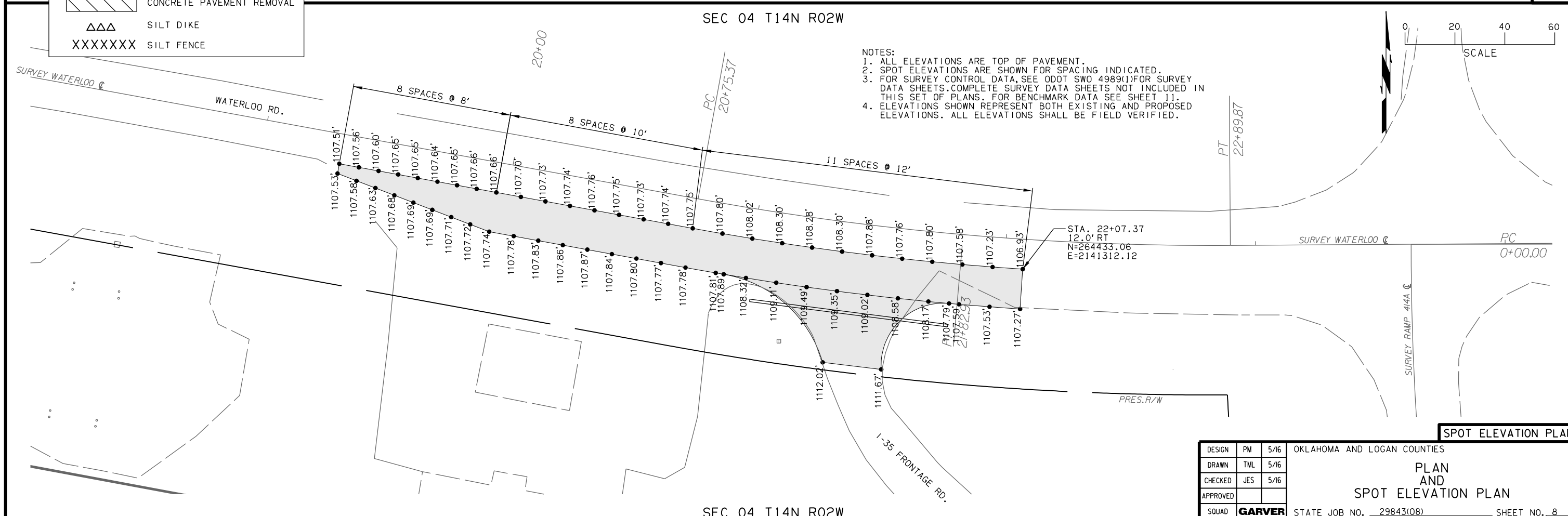
	PROPOSED PAVEMENT
	ASPHALT PAVEMENT REMOVAL
	CONCRETE PAVEMENT REMOVAL
	SILT DIKE
	SILT FENCE

SEC 04 T14N R02W

SEC 04 T14N R02W

NOTES:

1. ALL ELEVATIONS ARE TOP OF PAVEMENT.
2. SPOT ELEVATIONS ARE SHOWN FOR SPACING INDICATED.
3. FOR SURVEY CONTROL DATA, SEE ODOT SMO 4989(J) FOR SURVEY DATA SHEETS. COMPLETE SURVEY DATA SHEETS NOT INCLUDED IN THIS SET OF PLANS. FOR BENCHMARK DATA SEE SHEET 11.
4. ELEVATIONS SHOWN REPRESENT BOTH EXISTING AND PROPOSED ELEVATIONS. ALL ELEVATIONS SHALL BE FIELD VERIFIED.



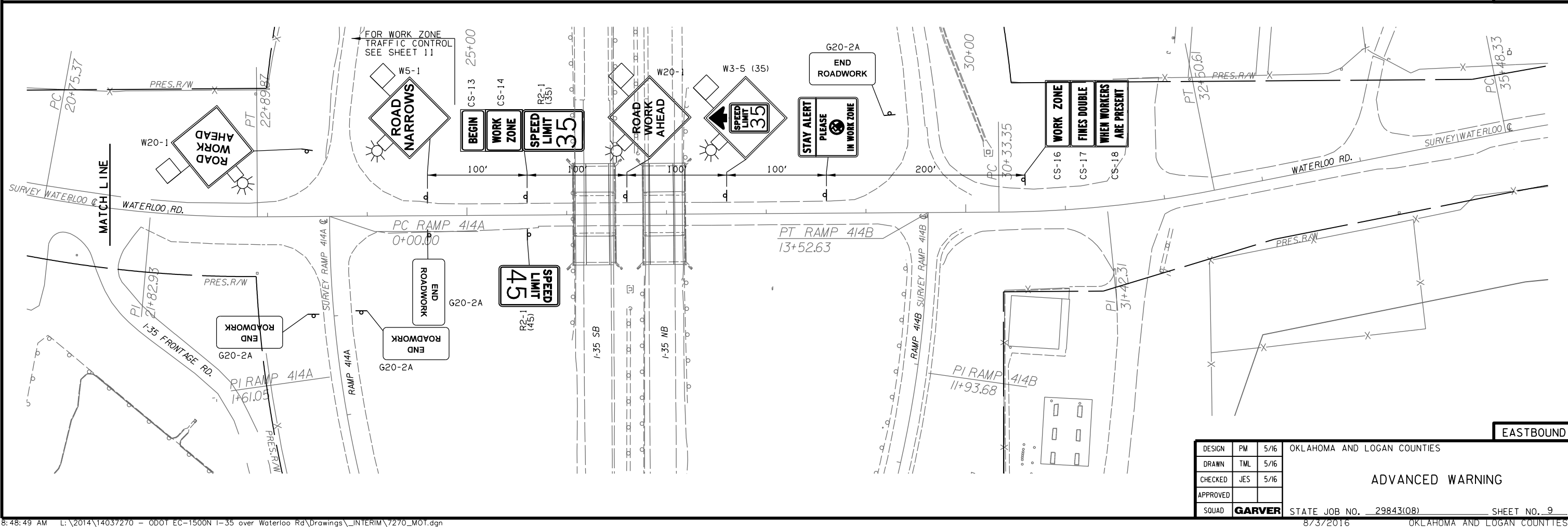
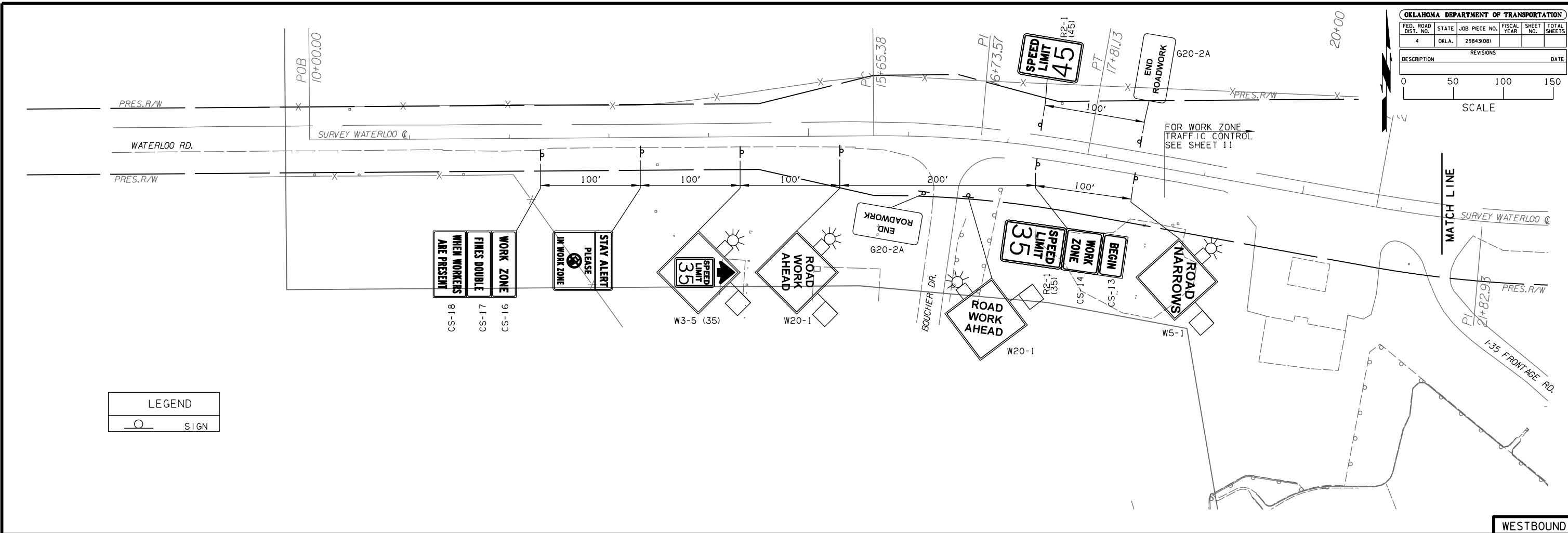
SPOT ELEVATION PLAN

DESIGN	PM	5/16
DRAWN	TML	5/16
CHECKED	JES	5/16
APPROVED		
SQUAD	GARVER	

OKLAHOMA AND LOGAN COUNTIES

PLAN
AND
SPOT ELEVATION PLAN

STATE JOB NO. 29843(08) SHEET NO. 8



SEC 04 T14N R02W

- NOTES:
1. CONSTRUCTION SIGNS SHALL BE VISIBLE ONLY WHEN ACTIVITIES WARRANT. TO BE COVERED OR REMOVED WHEN NOT IN USE.
 2. EXISTING SIGNS THAT WOULD INTERFERE WITH CONSTRUCTION ZONE SIGNS BE REMOVED OR COVERED.
 3. GUIDELINES FROM 2009 MUTCD SHALL GOVERN.
 4. ANY CONFLICTING STRIPING SHALL BE REMOVED PRIOR TO SHIFTING TRAFFIC.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

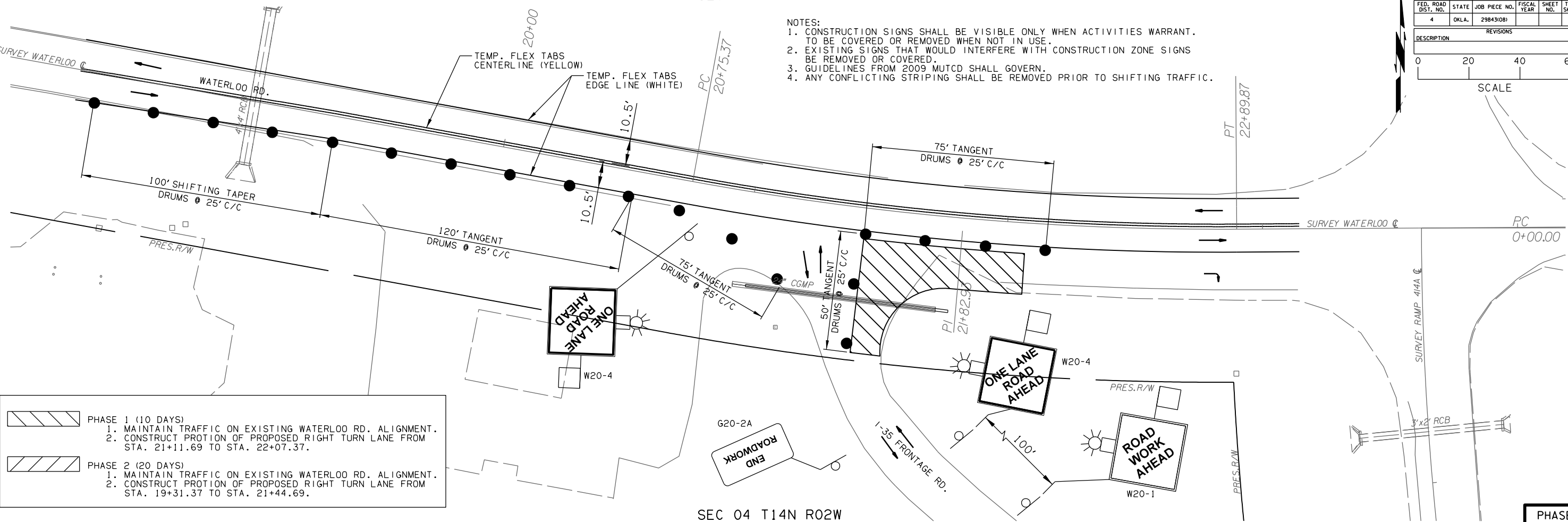
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			

REVISIONS

DESCRIPTION	DATE
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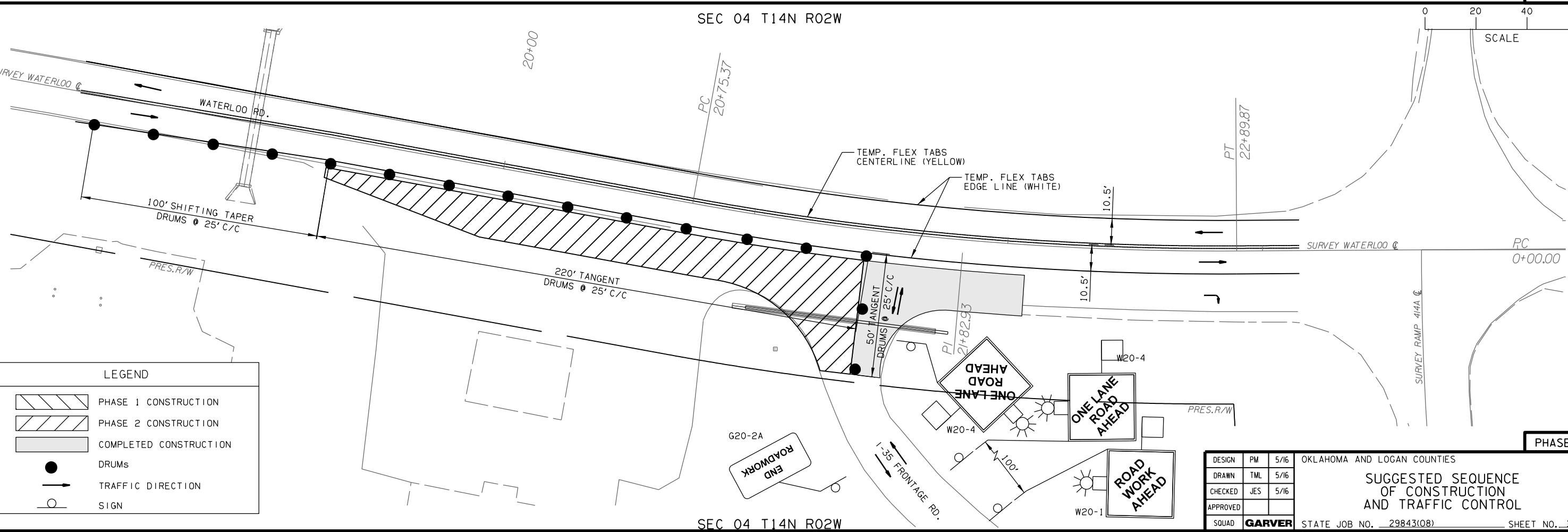
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SCALE



SEC 04 T14N R02W

SEC 04 T14N R02W



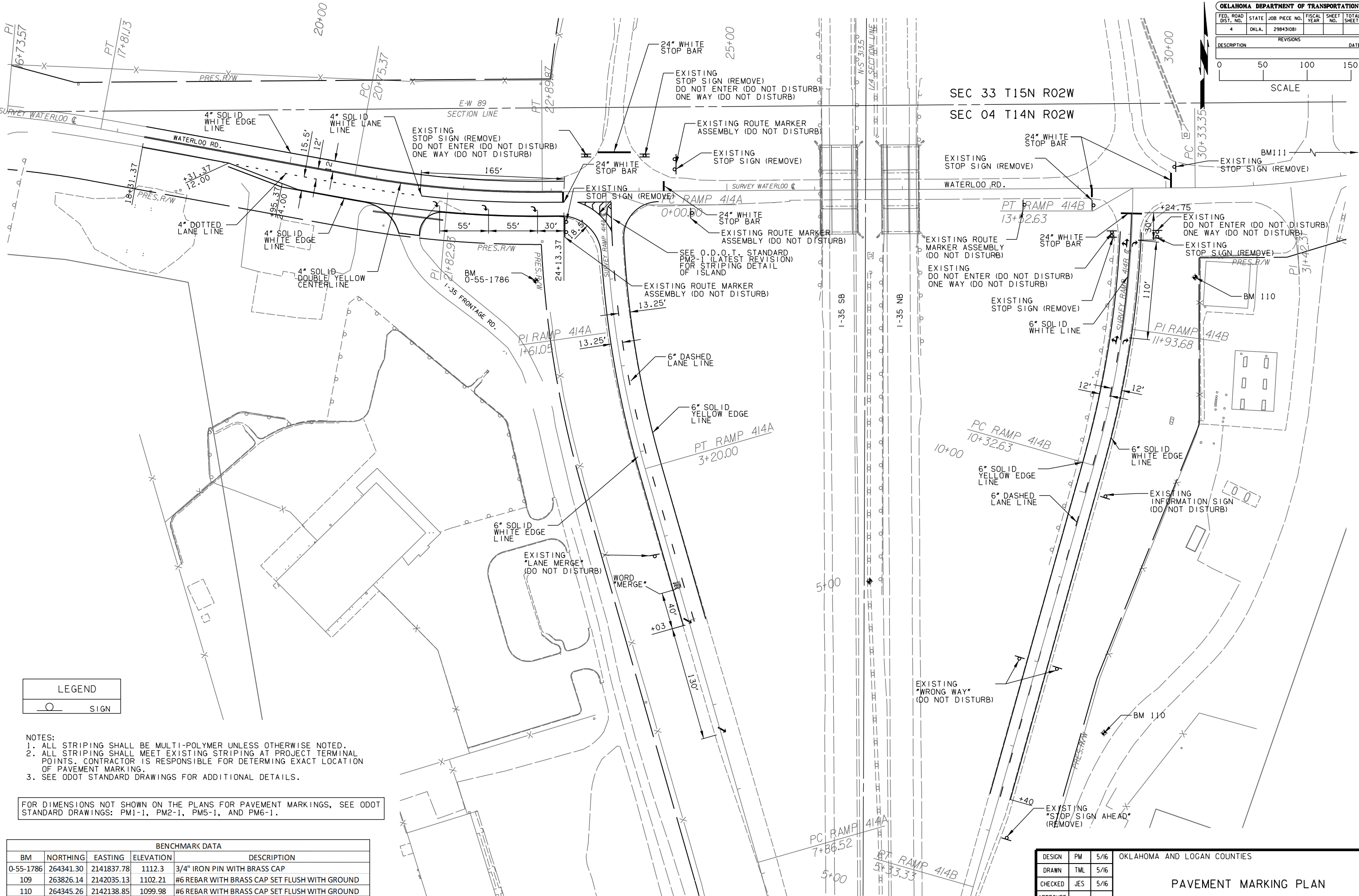
SEC 04 T14N R02W

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES
DRAWN	TML	5/16	
CHECKED	JES	5/16	
APPROVED			
SQUAD	GARVER		

SUGGESTED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL

STATE JOB NO. 29843(08) SHEET NO. 10

8/3/2016 OKLAHOMA AND LOGAN COUNTIES



LEGEND	
	SIGN

- NOTES:
- ALL STRIPING SHALL BE MULTI-POLYMER UNLESS OTHERWISE NOTED.
 - ALL STRIPING SHALL MEET EXISTING STRIPING AT PROJECT TERMINAL POINTS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATION OF PAVEMENT MARKING.
 - SEE ODOT STANDARD DRAWINGS FOR ADDITIONAL DETAILS.

FOR DIMENSIONS NOT SHOWN ON THE PLANS FOR PAVEMENT MARKINGS, SEE ODOT STANDARD DRAWINGS: PM1-1, PM2-1, PM5-1, AND PM6-1.

BENCHMARK DATA				
BM	NORTHING	EASTING	ELEVATION	DESCRIPTION
0-55-1786	264341.30	2141837.78	1112.3	3/4" IRON PIN WITH BRASS CAP
109	263826.14	2142035.13	1102.21	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND
110	264345.26	2142138.85	1099.98	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND
111	264559.80	2142628.41	1103.75	#6 REBAR WITH BRASS CAP SET FLUSH WITH GROUND

DESIGN	PM	5/16	OKLAHOMA AND LOGAN COUNTIES	
DRAWN	TML	5/16	PAVEMENT MARKING PLAN	
CHECKED	JES	5/16		
APPROVED			STATE JOB NO. 29843(08) SHEET NO. 11	
SQUAD	GARVER			

TABLE #1 SIGNAL HEADS				
SIGNAL HEAD NUMBER	NUMBER & TYPE	MOUNTING	VISOR	BACKPLATE
1	1 - ONE WAY (S-19L)	SPAN WIRE	V-1	B-2
2, 3, 4, 6 & 7	5 - ONEWAY (S-6)	SPAN WIRE	V-1	B-2
5	1 - ONE WAY (S-10)	SPAN WIRE	V-1	B-2

NOTES:
1.VIDEO VEHICLE DETECTION WILL BE PROVIDED FOR THIS INTERSECTION. THE DETECTOR LOOPS SHOWN ON THE PAVEMENT ARE SHOWN ONLY TO DEPICT THE AREAS OF DETECTION FOR THE VIDEO.
2.DUE TO INADEQUATE SIGHT DISTANCE FROM VDI, THE WB VIDEO ZONE WAS PLACED AT 175' RATHER THAN THE STANDARD 273' FOR 45 MPH.
3.THE PROPOSED CABINET, CONTROLLER, AND SIGNAL HEADS SHALL BE USED FOR FINAL PHASE.

TRAFFIC SIGNAL LEGEND

- PROPOSED
- TRAFFIC SIGNAL CONTROLLER
 - ELEC. CONDUIT (SIZE NOTED ON PLANS)
 - SPAN WIRE ASSEMBLY WITH WOOD POLES AND LUMINAIRE
 - VEHICULAR SIGNAL HEAD WITH BACKPLATE
 - VIDEO DETECTION CAMERA
 - SPAN WIRE MOUNTED SIGN
 - SERVICE POLE
 - SIGNAL HEAD NUMBER (SEE TABLE #1)
 - VIDEO DETECTION AREA
 - VIDEO DETECTION AREA

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			
REVISIONS					DATE
DESCRIPTION					
LOCATION OF POLE E, POWER SERVICE DIRECTLY TO CONTROLLER					10/04/16
UPDATED POLE LOCATIONS					10/26/16

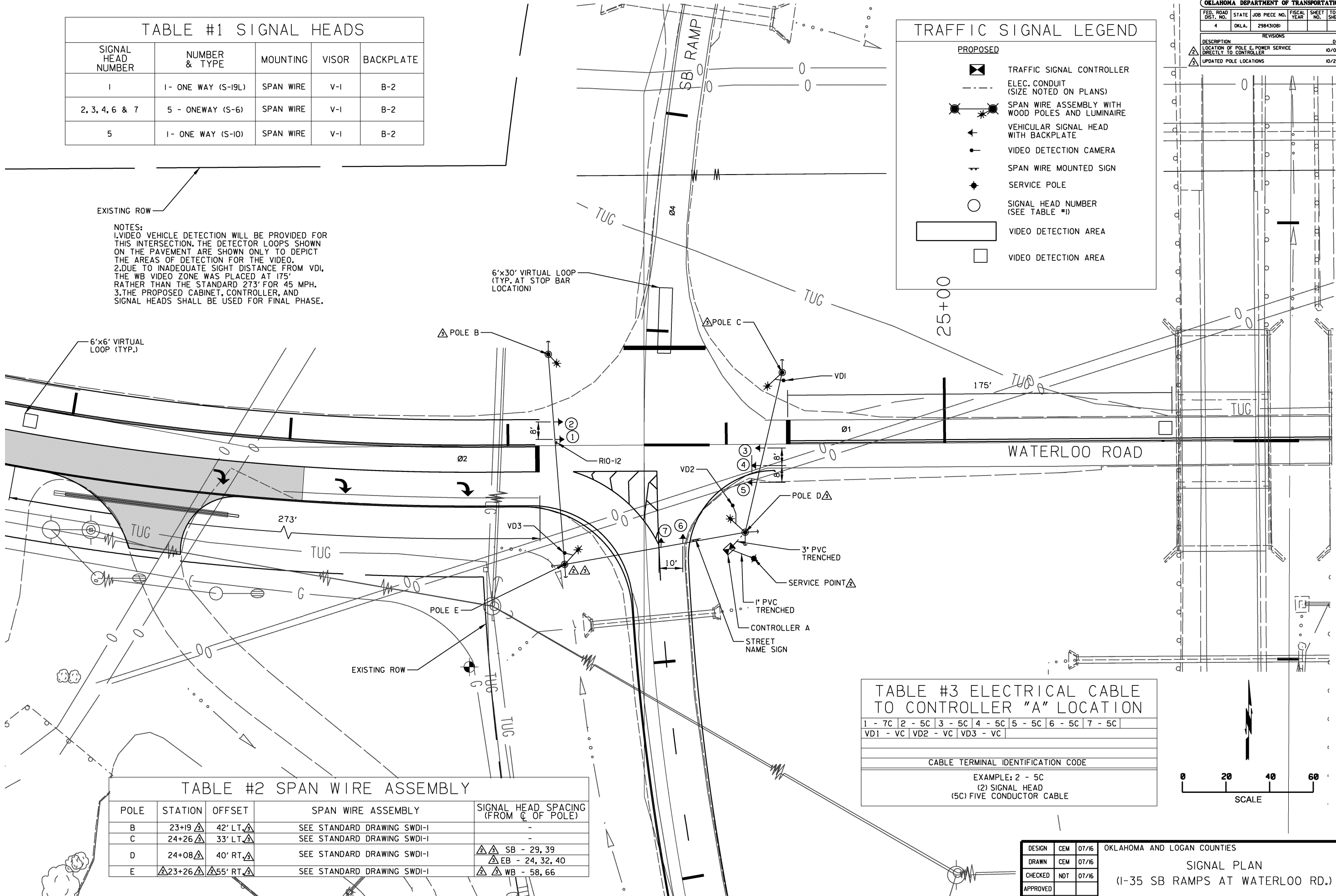
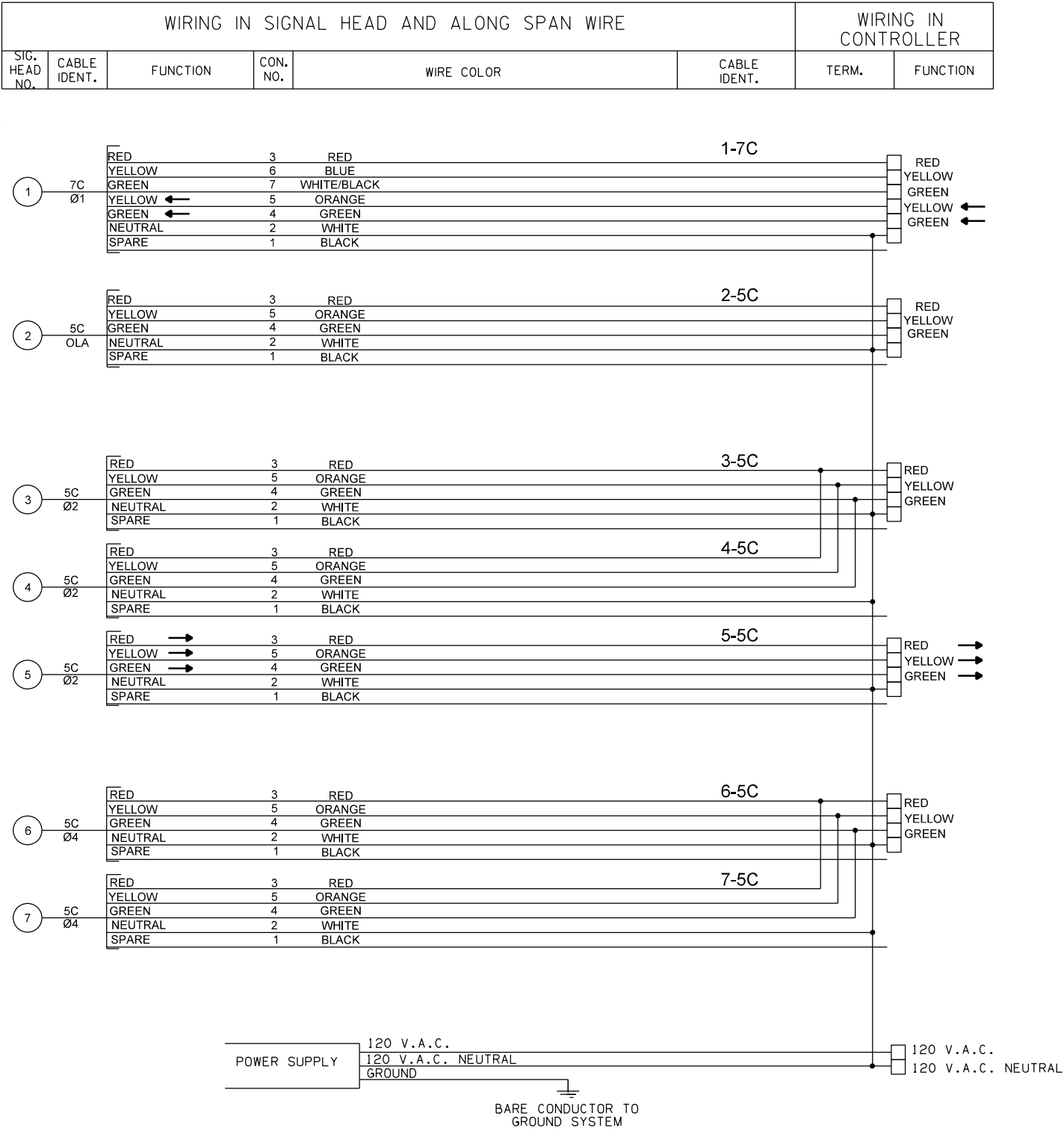
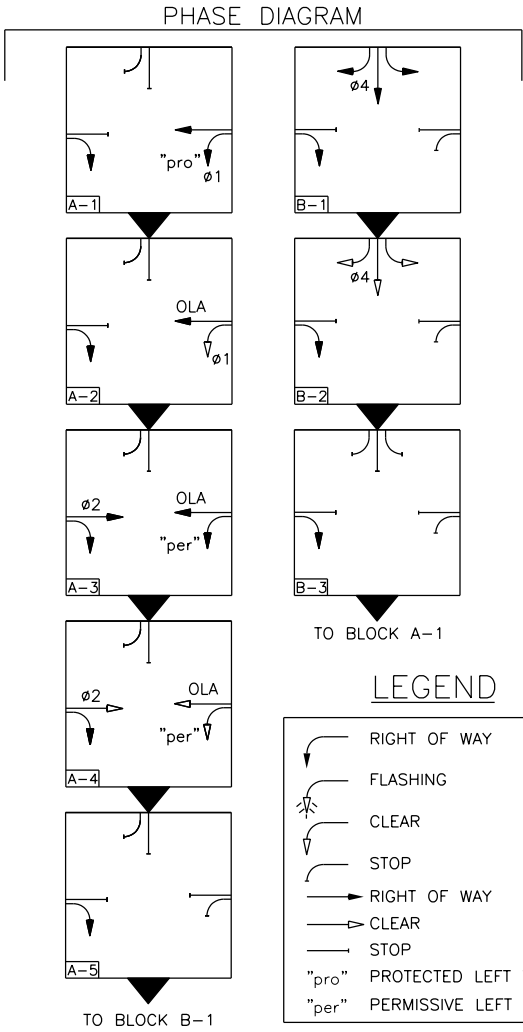


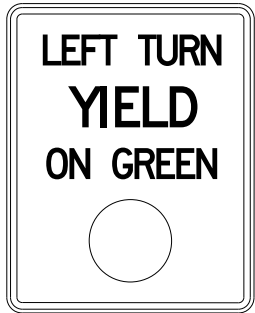
TABLE #2 SPAN WIRE ASSEMBLY				
POLE	STATION	OFFSET	SPAN WIRE ASSEMBLY	SIGNAL HEAD SPACING (FROM C OF POLE)
B	23+19	42' LT.	SEE STANDARD DRAWING SWDI-1	-
C	24+26	33' LT.	SEE STANDARD DRAWING SWDI-1	-
D	24+08	40' RT.	SEE STANDARD DRAWING SWDI-1	SB - 29, 39 EB - 24, 32, 40
E	23+26	55' RT.	SEE STANDARD DRAWING SWDI-1	WB - 58, 66

TABLE #3 ELECTRICAL CABLE TO CONTROLLER "A" LOCATION						
1 - 7C	2 - 5C	3 - 5C	4 - 5C	5 - 5C	6 - 5C	7 - 5C
VD1 - VC	VD2 - VC	VD3 - VC				
CABLE TERMINAL IDENTIFICATION CODE						
EXAMPLE: 2 - 5C						
(2) SIGNAL HEAD						
(5C) FIVE CONDUCTOR CABLE						

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES		
DRAWN	CEM	07/16	SIGNAL PLAN		
CHECKED	NDT	07/16	(I-35 SB RAMPS AT WATERLOO RD.)		
APPROVED					
SQUAD	GARVER		STATE JOB NO. 29843(08)	SHEET NO. 12	





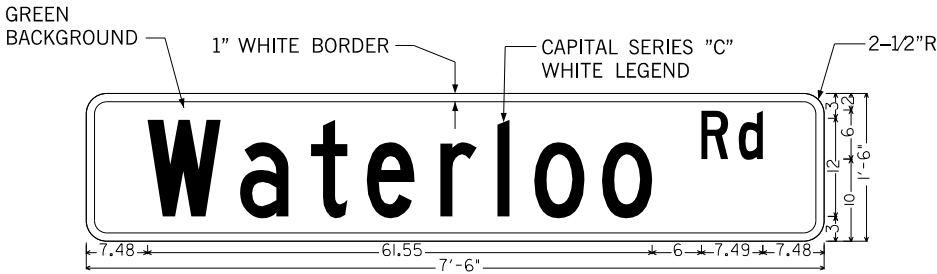


30"X36"
MUTCD R10-12

SIGN DETAIL
1:12

SIGN NUMBER	NAME
WIDTH X HEIGHT	7'-6" X 1'-6"
BORDER WIDTH	1"
CORNER RADIUS	2.5"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFELCTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT



LETTER POSITIONS (X)															LENGTH	SERIES/SIZE
W	a	t	e	r	l	o	o									
7.48	18.77	27.41	34.21	43.19	49.95	54.65	62.91								61.55	C12
R	d														7.49	C6
75.03	79.58															

SUMMARY OF SPAN WIRE MOUNTED SIGNS *

MESSAGE	LOCATION	NO. OF SIGNS	A	HEIGHT	B	SQ. FT. SIGN AREA	TOTAL AREA SQ. FT.
WATERLOO RD	SEE PLAN SHEET	1	90"	18"	75.04"	11.25	11.25
R10-12	SEE PLAN SHEET	1	30"	36"		7.50	7.50
						TOTAL	18.75

✱ TYPE IX REFLECTIVE SHEETING SHALL BE USED

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES SIGNAL SIGN SUMMARY (I-35 SB RAMPS AT WATERLOO RD.) STATE JOB NO. <u>29843(08)</u> SHEET NO. <u>15</u>
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		

TABLE #1 SIGNAL HEADS				
SIGNAL HEAD NUMBER	NUMBER & TYPE	MOUNTING	VISOR	BACKPLATE
1, 2, 3, 4, & 6	7 - ONEWAY (S-6)	SPAN WIRE	V-1	B-2
5	1 - ONE WAY (S-19L)	SPAN WIRE	V-1	B-2

NOTES:
1.VIDEO VEHICLE DETECTION WILL BE PROVIDED FOR THIS INTERSECTION. THE DETECTOR LOOPS SHOWN ON THE PAVEMENT ARE SHOWN ONLY TO DEPICT THE AREAS OF DETECTION FOR THE VIDEO.
2.DUE TO INADEQUATE SIGHT DISTANCE FROM VD3, THE EB VIDEO ZONE WAS PLACED AT 190' RATHER THAN THE STANDARD 273' FOR 45 MPH.
3.THE PROPOSED CABINET, CONTROLLER, AND SIGNAL HEADS SHALL BE USED FOR FINAL PHASE.

TRAFFIC SIGNAL LEGEND

- PROPOSED
- TRAFFIC SIGNAL CONTROLLER
 - ELEC. CONDUIT (SIZE NOTED ON PLANS)
 - SPAN WIRE ASSEMBLY WITH WOOD POLES AND LUMINAIRE
 - VEHICULAR SIGNAL HEAD WITH BACKPLATE
 - VIDEO DETECTION CAMERA
 - SPAN WIRE MOUNTED SIGN
 - SERVICE POLE
 - SIGNAL HEAD NUMBER (SEE TABLE #1)
 - VIDEO DETECTION AREA
 - VIDEO DETECTION AREA

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	OKLA.	29843(08)			
REVISIONS					DATE
DESCRIPTION					
POWER SERVICE DIRECTLY TO CONTROLLER					10/04/16
UPDATED POLE LOCATIONS					10/26/16

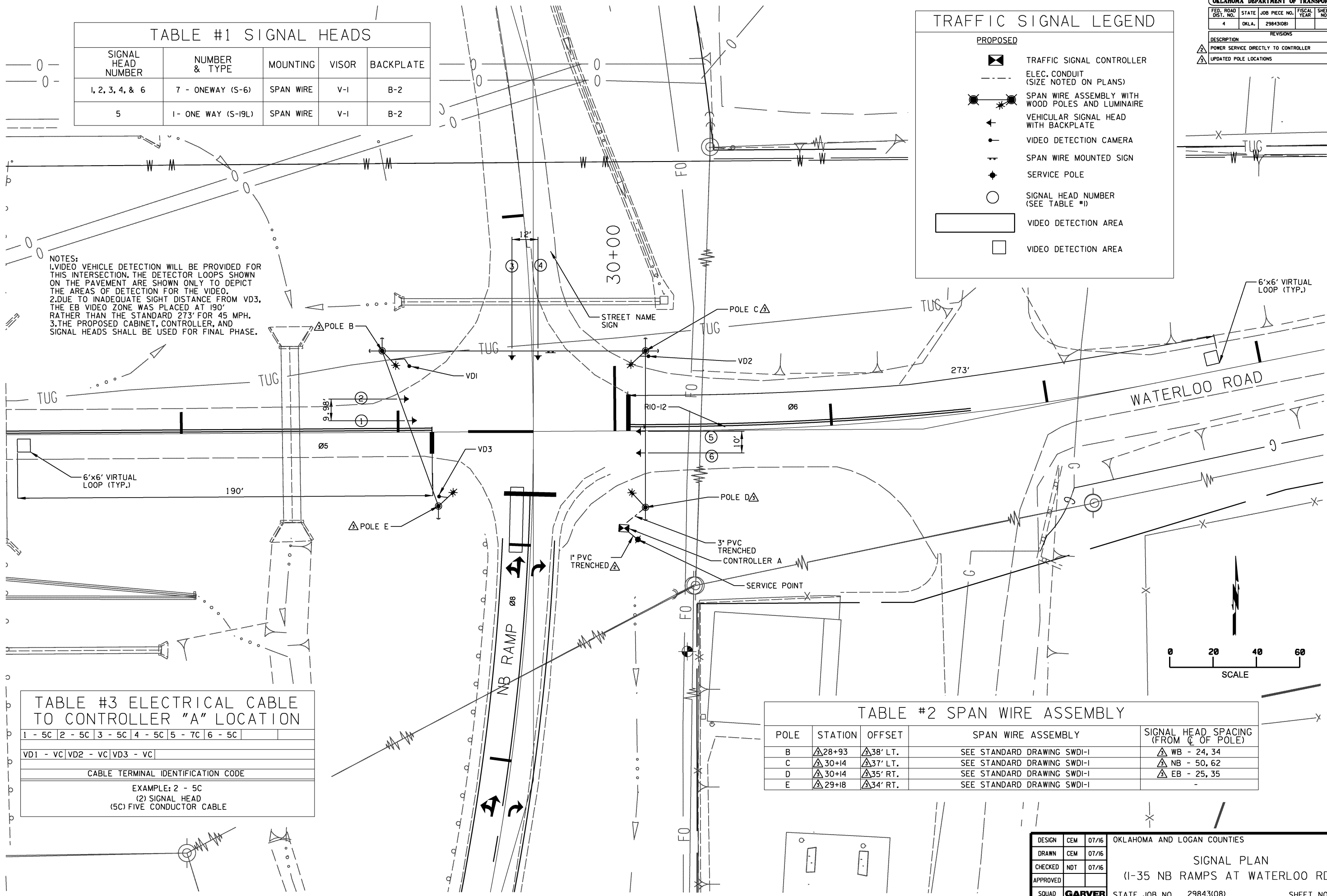


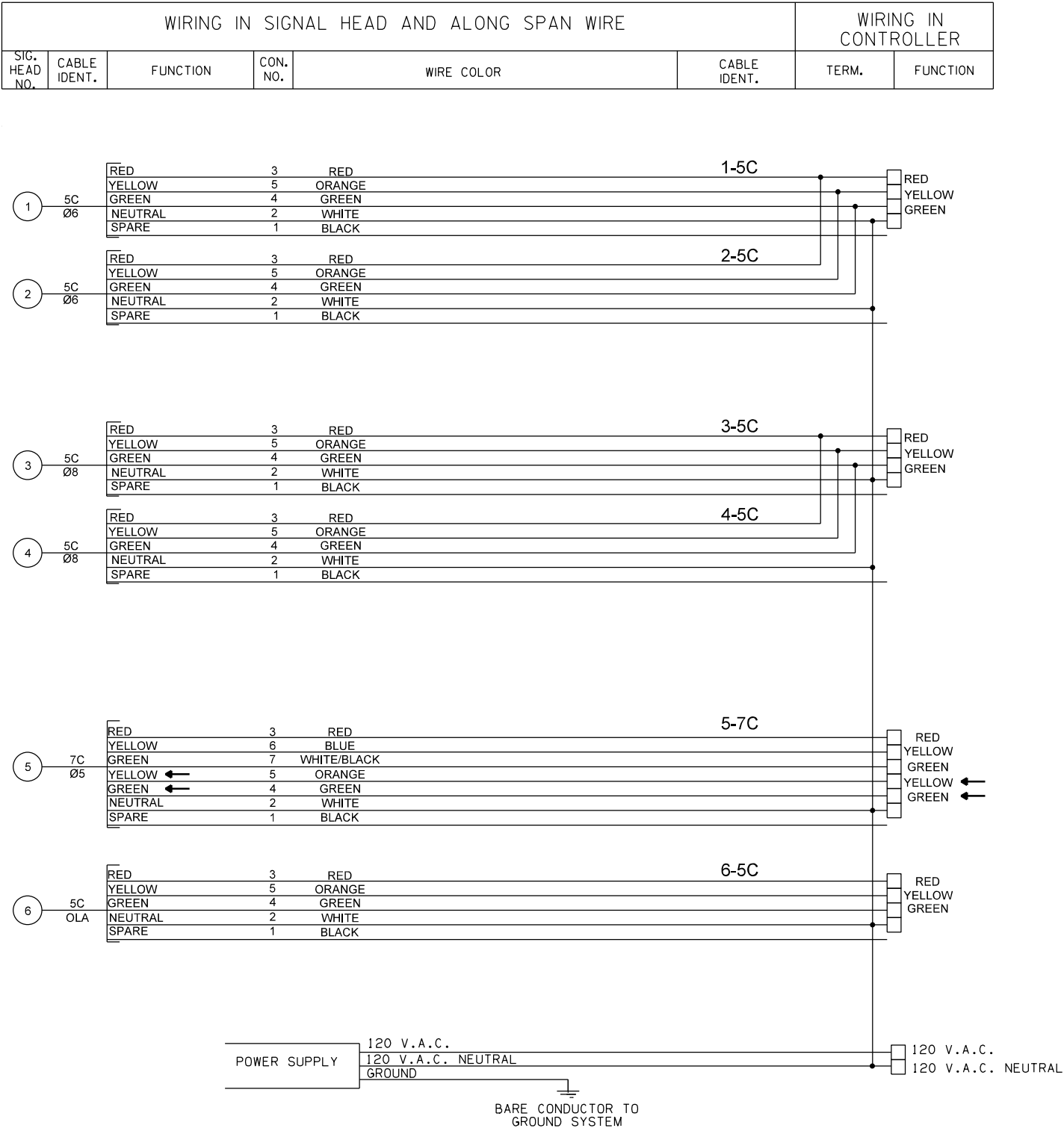
TABLE #3 ELECTRICAL CABLE TO CONTROLLER "A" LOCATION

1 - 5C	2 - 5C	3 - 5C	4 - 5C	5 - 7C	6 - 5C
VD1 - VC VD2 - VC VD3 - VC					
CABLE TERMINAL IDENTIFICATION CODE					
EXAMPLE: 2 - 5C (2) SIGNAL HEAD (5C) FIVE CONDUCTOR CABLE					

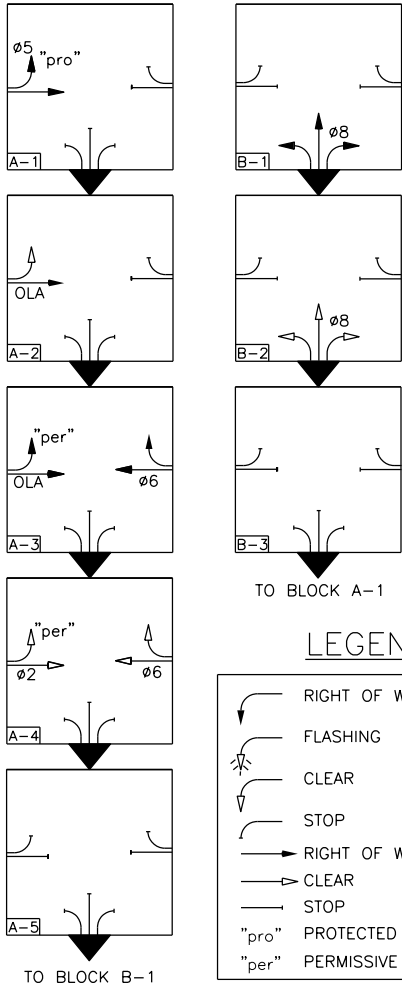
TABLE #2 SPAN WIRE ASSEMBLY

POLE	STATION	OFFSET	SPAN WIRE ASSEMBLY	SIGNAL HEAD SPACING (FROM C OF POLE)
B	Δ28+93	Δ38' LT.	SEE STANDARD DRAWING SWDI-1	Δ WB - 24, 34
C	Δ30+14	Δ37' LT.	SEE STANDARD DRAWING SWDI-1	Δ NB - 50, 62
D	Δ30+14	Δ35' RT.	SEE STANDARD DRAWING SWDI-1	Δ EB - 25, 35
E	Δ29+18	Δ34' RT.	SEE STANDARD DRAWING SWDI-1	-

DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES		
DRAWN	CEM	07/16	SIGNAL PLAN		
CHECKED	NDT	07/16	(I-35 NB RAMP AT WATERLOO RD.)		
APPROVED					
SQUAD	GARVER		STATE JOB NO. 29843(08)	SHEET NO. 16	

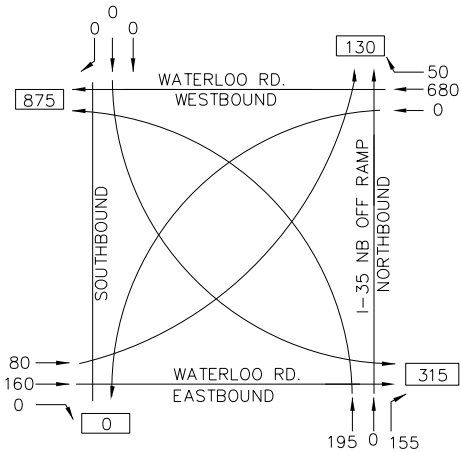
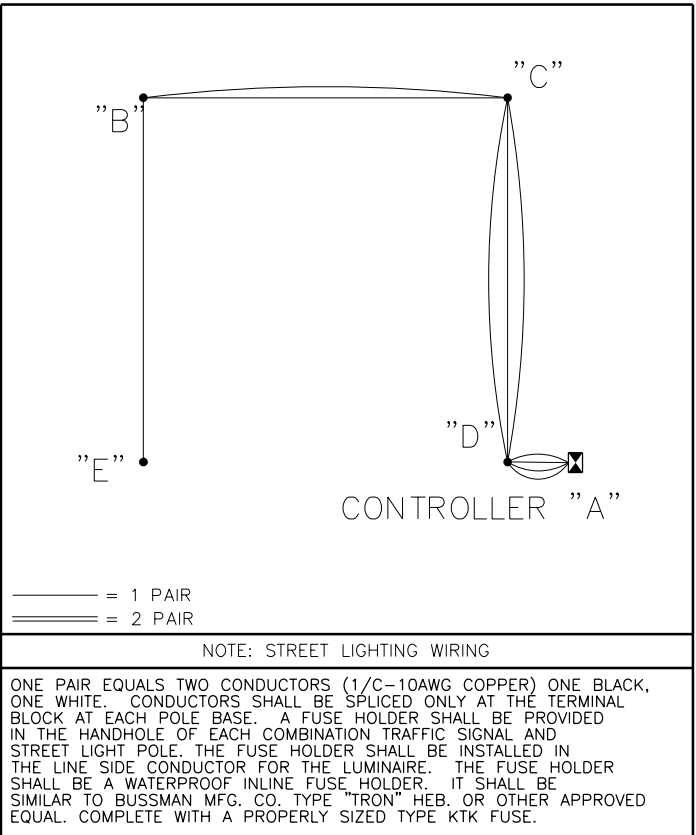
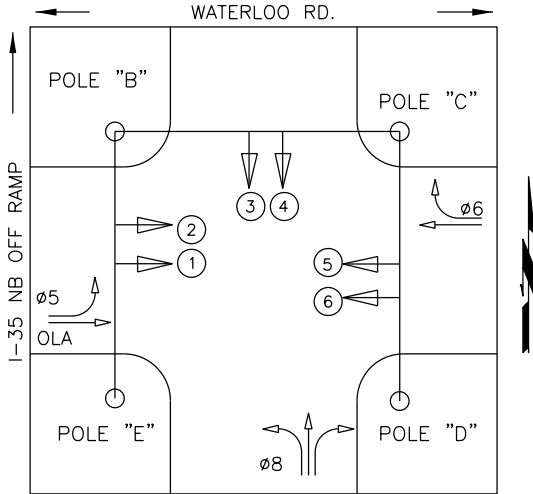


PHASE DIAGRAM

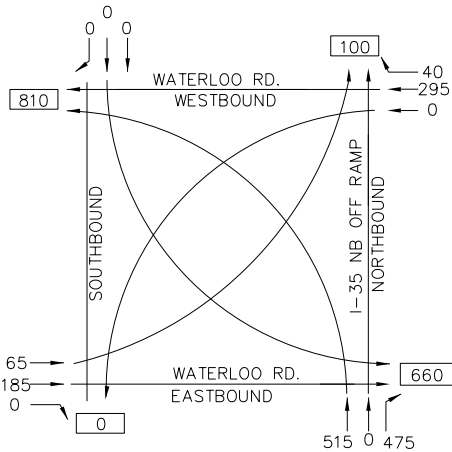


BLOCK NO.	PHASE DESIGNATION	SIGNAL HEAD NO.			
		1&2	3&4	5	6
A1	Ø5 ROW	R	R	C	G
A2	Ø5 CLR	R	R	C	G
A3	OLA ROW	G	R	G	G
A4	OLA CLR	Y	R	Y	Y
A5	ALL RED	R	R	R	R
B1	Ø8 ROW	R	G	R	R
B2	Ø8 CLR	R	Y	R	R
B3	ALL RED	R	R	R	R
	FLASHING RED	FR	FR	FR	FR

NOTE: OLA = Ø5+Ø6



I-35 NB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
AM PEAK

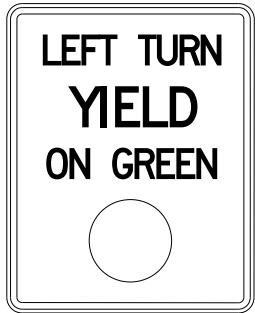


I-35 NB OFF RAMP AT WATERLOO RD.
TRAFFIC FLOW DIAGRAM
2014 TRAFFIC VOLUME
PM PEAK

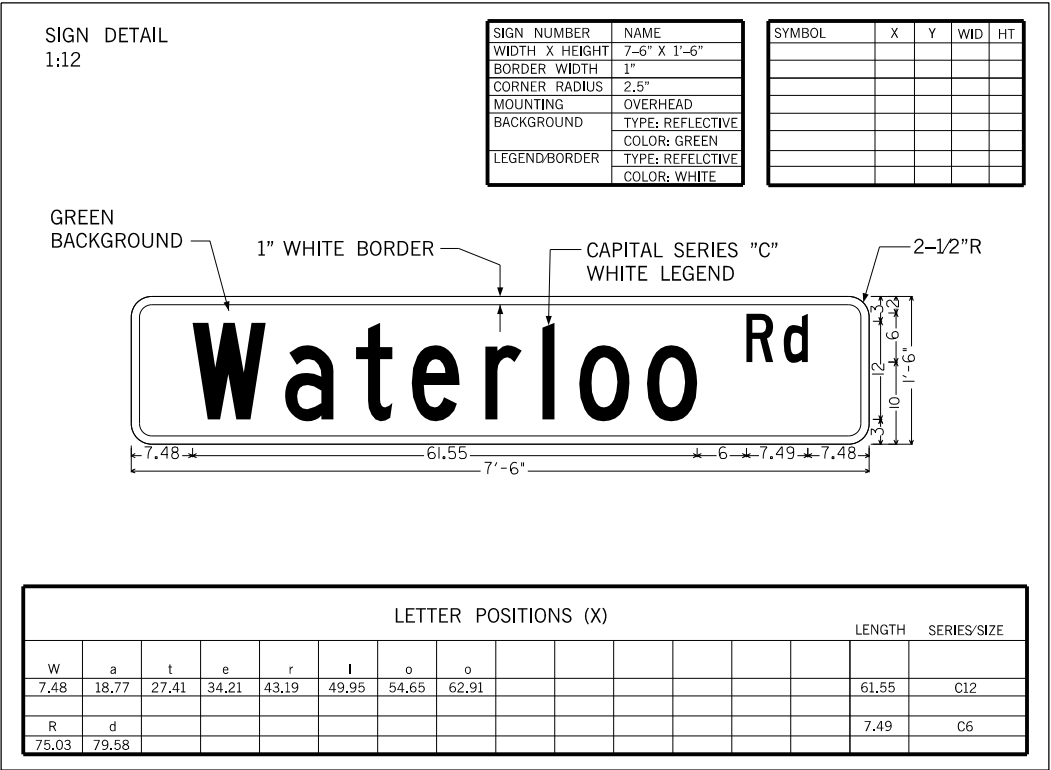
DESIGN	CEM	07/16	OKLAHOMA AND LOGAN COUNTIES
DRAWN	CEM	07/16	
CHECKED	NDT	07/16	
APPROVED			
SQUAD	GARVER		

SIGNAL PHASING
(I-35 NB RAMPS AT WATERLOO RD.)

STATE JOB NO. 29843(08) SHEET NO. 18



30"X36"
MUTCD R10-12



SUMMARY OF SPAN WIRE MOUNTED SIGNS *							
MESSAGE	POLE LOCATION	NO. OF SIGNS	A	HEIGHT	B	SQ. FT. SIGN AREA	TOTAL AREA SQ. FT.
WATERLOO RD	SEE PLAN SHEET	1	90"	18"	75.04"	11.25	11.25
R10-12	SEE PLAN SHEET	1	30"	36"		7.50	7.50
						TOTAL	18.75

✱ TYPE IX REFLECTIVE SHEETING SHALL BE USED