



Oklahoma Department of Transportation

Environmental Programs Division

Office 521-3050 Fax 522-5193

Programmatic/Individual Categorical Exclusion

	PCE	X	ICE
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Date	August 21, 2015	Project Number	SSP-103C(091)SS
County	Atoka	State Job Piece No:	24066(04)
NEPA Project Manager	David Saulsberry	Phone Number	(405) 521-2315
ODOT Field Division	Division 2	Bridge NBI No. (For County & State Projects) & Location No. (County Projects Only)	06295 06532
Project Description from JPINFO	Grade, Draining, Bridge and Surface on SH-7 from 6.0 miles east of Johnston County line extend east 5.40 miles.		
This project is included in: (Check all applicable ones)	X	State 8 Year Construction Program	
		County 5 Year Construction Program	
	X	State Transportation Improvement Program	
This project is in the Metropolitan Transportation Improvement Program (If applicable) (Check applicable one)		YES	
	X	NOT APPLICABLE	

The Oklahoma Department of Transportation (ODOT) has completed the environmental analysis and review of the referenced project. ODOT has determined that this project does not individually or cumulatively have a significant impact of the environment as defined by the National Environmental Policy Act (NEPA) or involve unusual circumstances as defined in 23 CFR 771.117(b) and is therefore excluded from the requirements to prepare an Environmental Assessment or Environmental Impact Assessment.

Existing Conditions (Describe existing bridge width, approach roadway width, etc., traffic (current and projected), Existing Problems such as sufficiency rating):
The existing SH-7 roadway has two 12 ft wide driving lanes with 1 ft sod shoulders and substandard vertical and horizontal curves with inadequate sight distance. There are six county road at-grade intersections within the project area. The intersection at WG Bar Road connects with SH-7 at an approximate 70 degree skew angle creating inadequate sight distance.
There are two bridge structures within the project area. The existing bridge (NBI number 06295) is 32 ft long with an approach roadway width of 26 ft and has a sufficiency rating of 86.8. The existing bridge (NBI number 06532) has a clear roadway width of 40.5 ft with an approach roadway width of 40.5 ft and has a sufficiency rating of 94.8 and was reconstructed in 2010.

The current Annual Average Daily Traffic (AADT) is 1,300 vehicles per day (vpd) with future 20 year traffic of 1,900 vpd.

Purpose & Need (Why the project is needed such as structural deficiency or bridge does not meet current state/federal standards for width or vertical clearance or the roadway has sharp horizontal curves or sight distance problems or narrow shoulders which do not meet current standards):

To correct a narrow roadway.

Alternatives considered & Proposed Improvement (Provide reason why an offset alignment to one side is selected vs the other side, Proposed construction such as roadway and bridge widths, AND mention whether the road will be open to traffic during construction.):

An alignment study was completed in 2012. Total offset reconstruction to the north 40 ft was evaluated and rejected due to new right-of-way requirements, wetland impacts and relocations. An option of using the existing alignment and providing offset reconstruction at the curves was rejected due to new right-of-way requirements and construction costs. Adding shoulders and resurfacing the existing roadway minimized new right-of-way and cost; thus was selected as the preferred option.

The proposed improvement consists of providing two 12 ft wide driving lanes with 8 ft wide paved shoulders on existing alignment. The shoulders will be added symmetrical to the roadway and the existing roadway will be resurfaced. The existing bridge (NBI number 06295) will be extended to 72.6 ft long. Auxiliary/turn lanes are planned at six county road locations. A new intersection at WG Bar Road will be constructed to remove the skew angle of the existing intersection. Improved side slopes will be provided for safety.

The existing bridge (NBI number 06532) was reconstructed in 2010. A bridge exception has been provided for this bridge from Station 1139+17.75 to Station 1146+48.78.

The existing roadway will be utilized to maintain traffic during construction.

Did the project have public involvement (Check the applicable items and include public involvement summary and supporting documents in the appendix)

<input checked="" type="checkbox"/>	Property Owner Notification	<input type="checkbox"/>	Road Closure Letter	<input type="checkbox"/>	Public/Stakeholder Meeting
<input type="checkbox"/>	Legal Notice/Website Posting	<input type="checkbox"/>	Small City Letter	<input type="checkbox"/>	None

All documentation, analyses, and agency coordination regarding this Categorical Exclusion are attached to this document and maintained in the project file at the Oklahoma Department of Transportation, Environmental Programs Division.

Criteria Identified in Section III.b.3. of the 2011 FHWA/ODOT Programmatic Agreement for Processing Categorical Exclusions that would require Individual Review and Approval by FHWA:

Check Yes or No below. If the answer to any of the questions below is Yes, an Individual CE will be required.

Description/Question	Yes	No
Item(a)		
1. Does the project involve residential or commercial relocation?	X	
2. Does the project involve acquisition of right-of-way not adjacent to the existing facility?		X
3. Does the project involve property in which another Federal Agency or Federally Recognized Tribe has ownership, oversight or any other encumbrance?		X
Item(b)		
Does the project involve a determination of adverse effect by Oklahoma State Preservation Office		X

Criteria Identified in Section III.b.3. of the 2011 FHWA/ODOT Programmatic Agreement for Processing Categorical Exclusions that would require Individual Review and Approval by FHWA:		
Check Yes or No below. If the answer to any of the questions below is Yes, an Individual CE will be required.		
Description/Question	Yes	No
(SHPO) or a designated Tribal Historic Preservation (THPO) in accordance with Section 106? An exception to this would apply if adverse effects are addressed programmatically as part of a previously executed general Section 106 Programmatic Agreement with SHPO, FHWA and others, and a project-specific MOA will not be required.		
Item (c)		
Does the project involve a Programmatic Section 4(f) or <i>de minimis</i> finding which has not been previously approved by FHWA?		X
Item (d)		
Does the project involve a Section 6(f) property?		X
Item (e)		
Does the project involve any impact on Noise Abatement Criteria (NAC) Category A, B, C or D receptors?		X
Item (f)		
1. Does the project involve a finding of “may effect, likely to adversely affect” to a federally listed endangered or threatened species or its critical habitat determined during the Section 7 Informal Consultation Process? The exception to this is the American Burying Beetle or any other species which has been addressed under a separate formal programmatic agreement.		X
2. Does the project involve a Section 7 Formal Consultation Process?		X
Item (g)		
Does the project require an Individual Section 404 Permit (This is for major River Crossings, waters or wetlands impact greater than 0.5 AC, Projects with Formal Consultation, or others as determined by USACE)?		X
Item (h)		
Does the project require a Coast Guard Permit?		X
Item (i)		
Does the project involve construction across or adjacent to a river designated as a component in the National System of Wild and Scenic Rivers?		X
Item (j)		
Does the project involve an adverse impact on prime farmland where Natural Resources Conservation Agency (NRCS) has required consideration of alternatives and measures to avoid and minimize impacts?		X
Item (k)		
Does the project involve increase to the base 100 Year floodplain in a regulatory floodway (Zone A-E in a FEMA Map) that will require a flood map revision as determined by the appropriate state or local authority?		X
Item (l)		
Does the project involve any known Superfund site?		X
Item (m)		
Does the project involve any permanent changes to the operation of an Interstate highway, associated interchanges or ramps?		X
Item (n)		
Does the project have potential for disproportionately high and adverse impact on minority or		X

Criteria Identified in Section III.b.3. of the 2011 FHWA/ODOT Programmatic Agreement for Processing Categorical Exclusions that would require Individual Review and Approval by FHWA:		
Check Yes or No below. If the answer to any of the questions below is Yes, an Individual CE will be required.		
Description/Question	Yes	No
low income populations, based on known demographics in the project vicinity, extent of R/W, relocations, and other identified impacts?		
Item (o)		
Does the project have any substantial or public controversy on environmental grounds?		X
Item (p)		
If the project involves road closure or ramp closure, do any of the following conditions apply? (<i>Check the boxes ONLY if the project involves road closure</i>)		
i. No Access will be provided to local traffic or posted		
ii. Through traffic dependent businesses will be affected		
iii. The detour closure will interfere with special events or activities		
iv. The detour or closure will substantially alter the environmental consequences of the action, such as by creating unsafe conditions on the detour route or requiring additional work or expansion to detour routes to carry the additional traffic.		
v. There is a public controversy associated with the detour or closure		
Explanation for Individual CE (If any of the answers above are YES):		
Item for which the answer is YES	(a)1	
Explanation that CE Classification is appropriate		
A relocation plan was completed March 18, 2015. The preliminary study determined that 1-residential relocation and 1-commercial relocation will be necessary based on R/W plans dated November 1, 2014. Acquisition and relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, effective February 3, 2005.		
Item for which the answer is YES		
Explanation that CE Classification is appropriate		
Commitments (Check Applicable ones)		
X	Plan notes requiring avoidance of cultural resources in off-project areas will be added to the final project plans under "Environmental Mitigation Notes" per policy Directive C-201-2D(2).	
	Properties eligible for the National Register of Historic Places (NRHP) have been identified within the project area. Plans need to be submitted to Environmental Programs Division by the Designer for further coordination with the State Historic Preservation Office (SHPO) prior to the bid solicitation process or construction.	
	Properties eligible for the National Register of Historic Places (NRHP) have been identified within the project area. The State Historic Preservation Office (SHPO)'s approval is based on the project as currently proposed. The following Plan notes will be added to the final project plans under "Environmental Mitigation Notes" per policy Directive C-201-2D(2). Properties eligible for the National Register of Historic Places (NRHP) have been identified within the project area. The State Historic Preservation Office (SHPO)'s approval is based on the project as currently proposed. If there are any changes to the project plans, further coordination with the SHPO will be required through the Environmental Programs Division prior to the bid solicitation process or field changes during construction.	
	(Only for Special Projects) Properties eligible for the National Register of Historic Places (NRHP) have been identified within the project area. Further coordination with the State Historic Preservation Office (SHPO) is required by the ODOT Project Management's Special Projects Branch prior to the bid solicitation process or construction. The SHPO letter which cites the information needed to proceed is included in the Appendix. The file number from the SHPO letter should be referenced in all	

Commitments (<i>Check Applicable ones</i>)	
	correspondence with SHPO. Copies of such coordination should be provided to the Environmental Programs Division for the project record.
	(Only for Special Projects) Properties eligible for the National Register of Historic Places (NRHP) have been identified within the project area. The State Historic Preservation Office (SHPO)'s approval is based on the project as currently proposed. The following Plan notes will be added to the final project plans under "Environmental Mitigation Notes" per policy Directive C-201-2D(2). If there are any changes to the project plans, further coordination with the SHPO will be required by the ODOT Project Management's Special Projects Branch prior to the bid solicitation process or field changes during construction. Please reference the SHPO letter which cites the conditions of approval and reference the file number from SHPO letter in all correspondence. Copies of such coordination should be provided to the Environmental Programs Division for the project record.
X	The project occurs in an area where the American burying beetle (ABB) occurs. Special Provision 656-4 for ABB will be added to the final project plans/contract per policy Directive C-201-2D(2). The American Burying Beetle is protected by the Endangered Species Act. Suitable habitat for this species occurs within the immediate vicinity of the proposed project. In order to avoid adverse impacts to the ABB, the Designer needs to submit Micro-station or shape-files to the ODOT Biologist immediately. For all projects within a U.S. Fish and Wildlife Service defined conservation priority area, ODOT will mitigate incidental take of ABB by withdrawing credits from ODOT's pre-approved mitigation bank account. Plan notes will be provided to the Design Engineer to be added to the plans.
X	Survey for the following species need to be completed prior to constructions and plan notes will be provided after the completion of the survey(<i>List species survey requirements below</i>) <u>Bat Bridge Survey</u> The gray bat, Ozark big-eared bat and Indiana bat are migratory, insect eating bats protected by the Endangered Species Act. These species can use bridges as summer roosting sites. In order to avoid impacts to bats, the ODOT Environmental Programs Division shall conduct a bat survey <u>between May 15 and August 15</u> within one year prior to the start of construction as currently listed in the 8 Year Construction Program. Plan notes will be provided to the Design Engineer to be added to the plans following the survey. <u>If the project schedule should change, it is the responsibility of the Project Manager to contact the ODOT Biologist in writing to request a survey in time for the let date.</u>
X	Plan notes requiring construction season restrictions for the following species will be added to the final project plans under "Environmental Mitigation Notes" per policy Directive C-201-2D(2). (<i>List species or notes below</i>) <u>Northern Long Eared Bat</u> The northern long eared bat, an insectivorous migratory bat species protected by the Endangered Species Act, occurs within this County. Biological studies have identified suitable summer roosting or foraging habitat within the project's action area. In order to avoid adverse impacts to northern long eared bats the following measures shall be taken. 1. All removal of live or dead trees, greater than 3 inches diameter at breast height (dbh), necessary for construction or utilities shall be conducted between November 15 and March 31. 2. If removal of trees cannot be done between November 15 and March 31, the Project Manager or the Utilities Coordinator or the Resident Engineer needs to contact the ODOT Biologist at (405) 521-2515 to schedule a species survey prior to start of work. The survey can only take place between May 15 and August 15. The survey and associated USFWS consultation could take 60 days or more to complete. If bats are found to be using the trees for roosting, the trees cannot be removed until November 15.



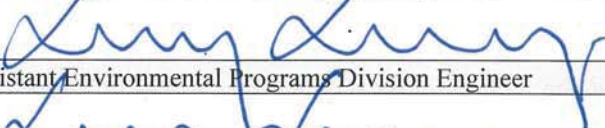

Commitments (<i>Check Applicable ones</i>)	
	Plan notes requiring avoidance and minimization of impacts for the following species will be added to the final project plans under “Environmental Mitigation Notes” per policy Directive C-201-2D(2). (<i>List species below</i>)
X	<p><u>Riparian Vegetation For Bats</u></p> <p>The removal of trees and shrubs shall be restricted to areas within the actual limits of construction (toe of slope/top of cut).</p> <p><u>ABB</u></p> <p>No artificial lighting shall be used during construction. Carcasses and all food trash shall be removed from the permanent and temporary Right-of-Way throughout the duration of the project activities.</p>
	The following Plan notes requiring construction season restrictions for the migratory birds will be added to the final project plans under “Environmental Mitigation Notes” per policy Directive C-201-2D(2). (<i>List notes below</i>)
X	<p><u>Cliff and Barn Swallows</u></p> <p>Cliff Swallows and Barn Swallows are small colonial nesting birds protected by the federal Migratory Bird Treaty Act. These species commonly use bridges and culverts for nesting. The nesting season for the swallows runs from April 1 to August 31. Swallow use of four (4) culverts at Station 1083+30.00, Station 1109+25.00, Station 1116+30.50, and Station 1160+30.00 has been observed during the initial surveys conducted as part of the biological studies in 2015. The one (1) bridge location NBI No.12472 (Watson Creek) has a design exception. Any activities which would destroy active nests or harm eggs or birds would violate the Migratory Bird Treaty Act. The Resident Engineer will evaluate the contractor's proposed work methods and conclude whether the proposed work would harm the nesting birds before work near the structure is authorized. If the proposed work will harm the nesting birds, the bridge may be netted prior to April 1 or the work delayed until the nesting season is complete. Methods other than netting must be pre-approved by the ODOT Biologist.</p>
X	The action may involve work in potentially jurisdictional waters and potentially jurisdictional wetlands. For State Projects, the 404 permit application form needs to be submitted by the Designer through Project Management Division to Environmental Programs Division at the time of Right-of-Way submittal for evaluation and determination of the appropriate Clean Water Act Section 404 permit application for the project. For Local Government Projects or Special Projects, a copy of the 404 permit obtained by the County/City should be submitted by Local Government Division or Special Projects to Environmental Programs Division for the Project File.
	The action involves work in Critical Resource Waters and requires Pre Construction Notification (PCN) to USACE regardless of the area of impact. For Local Government Projects or Special Projects, a copy of the PCN by the County should be submitted by Local Government Division or Special Projects Branch to Environmental Programs Division for the Project File.
	The action will require a FEMA Map revision.
	Plan notes requiring avoidance of potential hazardous materials remains areas will be added to the final project plans under “Environmental Mitigation Notes” per policy Directive C-201-2D(2).
	The Department’s Hazardous Coordinator has determined that a Preliminary Site Investigation (PSI) is required for this project. Construction Plans need to be submitted by the Designer to Environmental Programs Division at the time of Right-of-Way submittal for the PSI.
	The following plan note regarding Road Closure will be added to the plans (<i>Add plan notes restricting road closure</i>).
	(<i>Only for Local Government Projects</i>) The roadway will be closed to traffic during construction. The County or City will be responsible for notifying all local residential and commercial property owners, schools, and emergency services providers prior to construction. The County or City will be responsible for posting the detour routes. The Contractor will provide access to local property owners at all times during construction.

Commitments (<i>Check Applicable ones</i>)	
	<i>(Only for Local Government Projects)</i> The Local Government Project Manager shall coordinate any required species surveys with Environmental Programs Division prior to letting the project. Note the seasonal restrictions for surveys in the biological studies summary.
X	The following Airport/Airfield located within 4 miles of this project. This action may require notifying the Federal Aviation Administration (FAA) of proposed construction via FAA Form 7460-1 prior to construction. (<i>List the name of the Airport below</i>)
	Atoka Municipal Airport
	Other (<i>List Commitment below</i>)
	Other (<i>List Commitment below</i>)

The mitigation measures above should be discussed at all Pre-work conferences per Policy Directive C-201-2E(1). The Designer shall provide a **copy of the final plans with the mitigation notes** to Environmental Programs Division for the project Records.

Development of the project including coordination and assessment of potential social, economic and environmental impacts has been considered in accordance with DOT ORDER 5610.1C, and CEQ REGULATIONS 40 CFR 1500 -1508 as amended, 23 CFR 771.117 and the 2011 FHWA/ODOT Programmatic Agreement for processing of categorical exclusions. Implementation of this action as a “Categorical Exclusion” will satisfy the requirements of the National Environmental Policy Act.

Preparer/Reviewer Signatures

	8/21/15				
Environmental Consultant Project Manager (If Applicable)	Date				
Able Consulting	August 21, 2015				
Environmental Consultant Firm Name (If Applicable)	Date				
N/A					
County Commissioner or City Manager (For Local Government Projects)	Date				
	8/25/2015				
ODOT Environmental Project Manager	Date				
	8/28/15				
Assistant Environmental Programs Division Engineer	Date				
	8/26/15				
Environmental Programs Division Engineer	Date				
CONCLUSION:					
ODOT has reviewed the conditions identified in Section IIIb.3 of Federal Highway Administration (FHWA)/ODOT Programmatic Agreement for Processing Categorical Exclusions (CE) and determined that an Individual CE must be submitted to FHWA for approval.	<table border="1"> <tr> <td>X</td> <td>YES</td> </tr> <tr> <td></td> <td>NO</td> </tr> </table>	X	YES		NO
X	YES				
	NO				

For Individual CEs requiring FHWA Approval:

Concur that this project qualifies for a Categorical Exclusion:

	
2015.09.08 10:08:47 -05'00'	Date

- Attachments:
- Location Map
 - Memos with Plan Notes
 - Plans and Footprint Studies

Distribution List (Check Applicable Ones)

<input checked="" type="checkbox"/>	Project Management Division (All State Projects)
<input checked="" type="checkbox"/>	Roadway Design Division (All State projects with the exception of projects from Traffic Division and Special Projects)
<input checked="" type="checkbox"/>	Bridge Division (All State Bridge Projects)
<input type="checkbox"/>	Traffic Division (For projects from Traffic Division)
<input type="checkbox"/>	Local Government Division (County or City Projects)
<input type="checkbox"/>	Special Projects (Special Projects Only)
<input type="checkbox"/>	Safe Routes to School Coordinator (SRTS Projects Only)
<input checked="" type="checkbox"/>	Field Division Engineer (All Projects)
<input checked="" type="checkbox"/>	Right-of-Way Division (All Projects)
<input checked="" type="checkbox"/>	Office Engineer Division (All Projects)
<input checked="" type="checkbox"/>	FHWA (All Projects. Place Copy of Complete Document on FHWA's Directory)

Copy to: Reading File

NS 376 RD

NS 378 RD

NS 380 RD

NS 382 RD

EW 181 RD

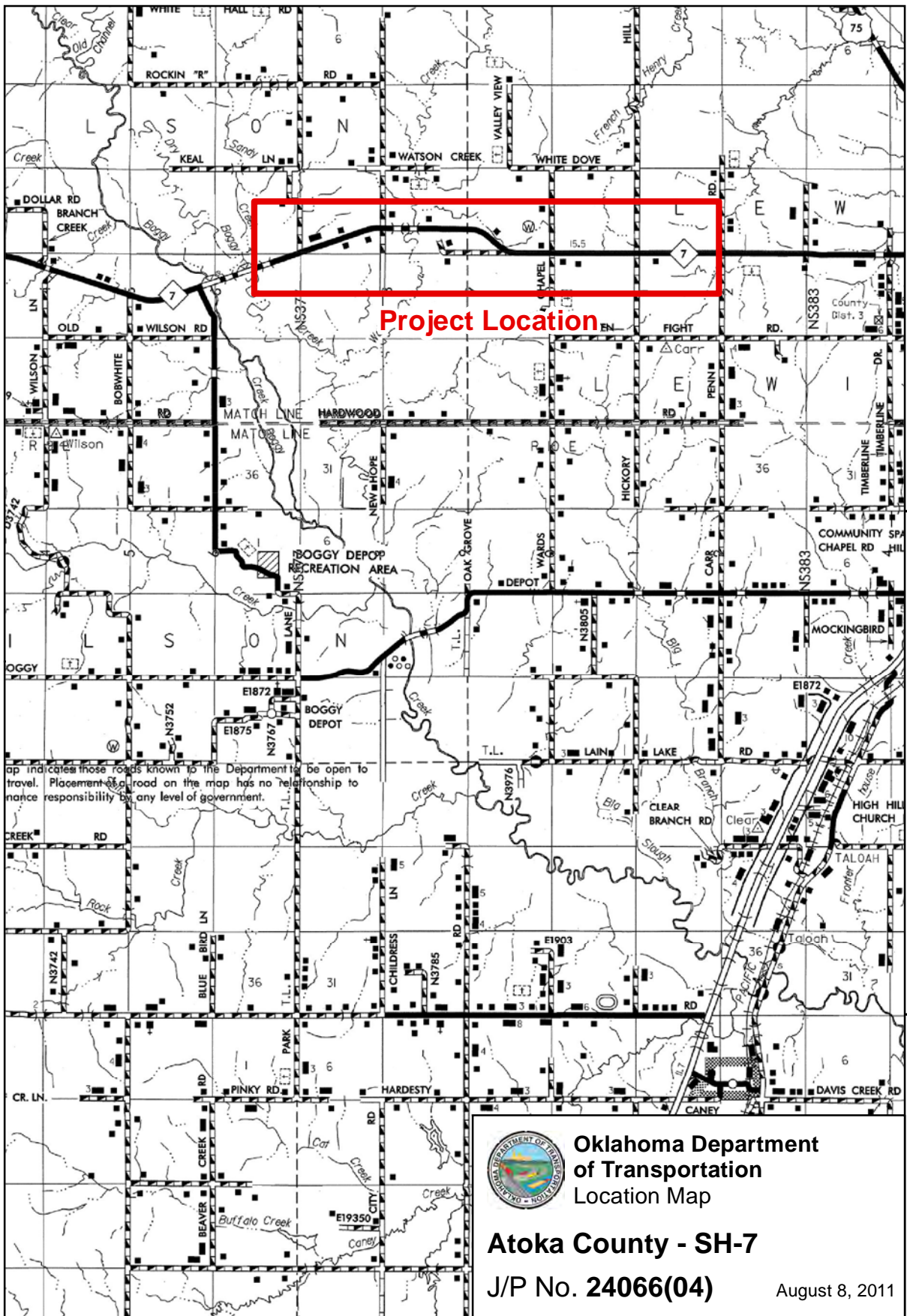
EW 182 RD

EW 183 RD

T 2 S

T 3 S

T 4 S



Project Location

Map indicates those roads known to the Department to be open to travel. Placement of a road on the map has no relationship to maintenance responsibility by any level of government.



Oklahoma Department
of Transportation
Location Map

Atoka County - SH-7

J/P No. 24066(04)

August 8, 2011

R 9 E

R 10 E



Oklahoma Department of Transportation

Environmental Programs Division

Office 521-3050 Fax 522-5193

DATE: October 2, 2012

TO: Project Management Division

FROM: Environmental Programs Division

SUBJECT: Atoka County Project: J/P 24066(04). Proposed roadway improvements and bridge replacement on SH-7 over an unnamed creek.

There are potentially significant archaeological sites within the general vicinity of the referenced project. Please have the following note added to a section of the project plans entitled "Environmental Mitigation Notes" per Policy Directive C-201-2D(2):

"Locations outside the project area in the following area must not be utilized for borrow, equipment staging, haul roads, spoil dumps or any off-site project-related activity.

T2S R9E:

Section 13: SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ Site 34AT84

T2S R10E:

Section 22: SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ Site 34AT76

Section 18: N $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ Site 34AT85

NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Site 34AT691

SAS

Cc:
Division II Engineer
Roadway Division
Bridge Division

PLANS OR FOOTPRINTS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY
GRADE, DRAIN, BRIDGE AND SURFACE
(3R RESURFACE AND REHABILITATION PROJECT)
STATE HIGHWAY SH-7

ATOKA COUNTY

STPY-103C(142)EC
CONTROL SECTION NO. 07-03-14
STATE JOB PIECE NO. 24066(04)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	TYPICAL SECTIONS (1) - (2)
4-24	SURVEY DATA SHEETS (1) - (21)
25-47	PLAN AND PROFILE SHEETS (1) - (23)
48-53	COUNTY ROAD PROFILE SHEETS (1) - (6)
54	GENERAL PLAN AND ELEVATION (BRIDGE 'A')
55	CONSTRUCTION SEQUENCE PHASING (BRIDGE 'A')
56-60	STRIPING DETAIL (1) - (5)
X1 - X83	CROSS SECTIONS
X84 - X96	COUNTY ROAD CROSS SECTIONS

RECEIVED

JUL 15 2015

**ENVIRONMENTAL PROGRAMS
DIVISION**

SEE SURVEY DATA SHEETS FOR SURVEY CONTROL DATA.

JP NO. 24066(04)

JP NO. 24066(07)

DESIGN DATA

AAADT 2011	= 1300
AAADT 2031	= 1900
K (DHV/ADT)	= 11%
D	= 56%
DHV (ONE WAY)	= XXX
T (% DHV)	= 14%
T (% AADT)	= 18%
T3 (% AADT)	= 12%
T3 Overload(Axles)	= XXX AXLES
V	= 65 MPH
ESALS	= X.XXM

DESIGN DATA

AAADT 2011	= 2800
AAADT 2031	= 4000
K (DHV/ADT)	= 10%
D	= 55%
DHV (ONE WAY)	= XXX
T (% DHV)	= 12%
T (% AADT)	= 16%
T3 (% AADT)	= 10%
T3 Overload(Axles)	= XXX AXLES
V	= 65 MPH
ESALS	= X.XXM

SCALES

PLAN 1" = 50'

PROFILE HOR. 1" = 50'

VERT. 1" = 5'

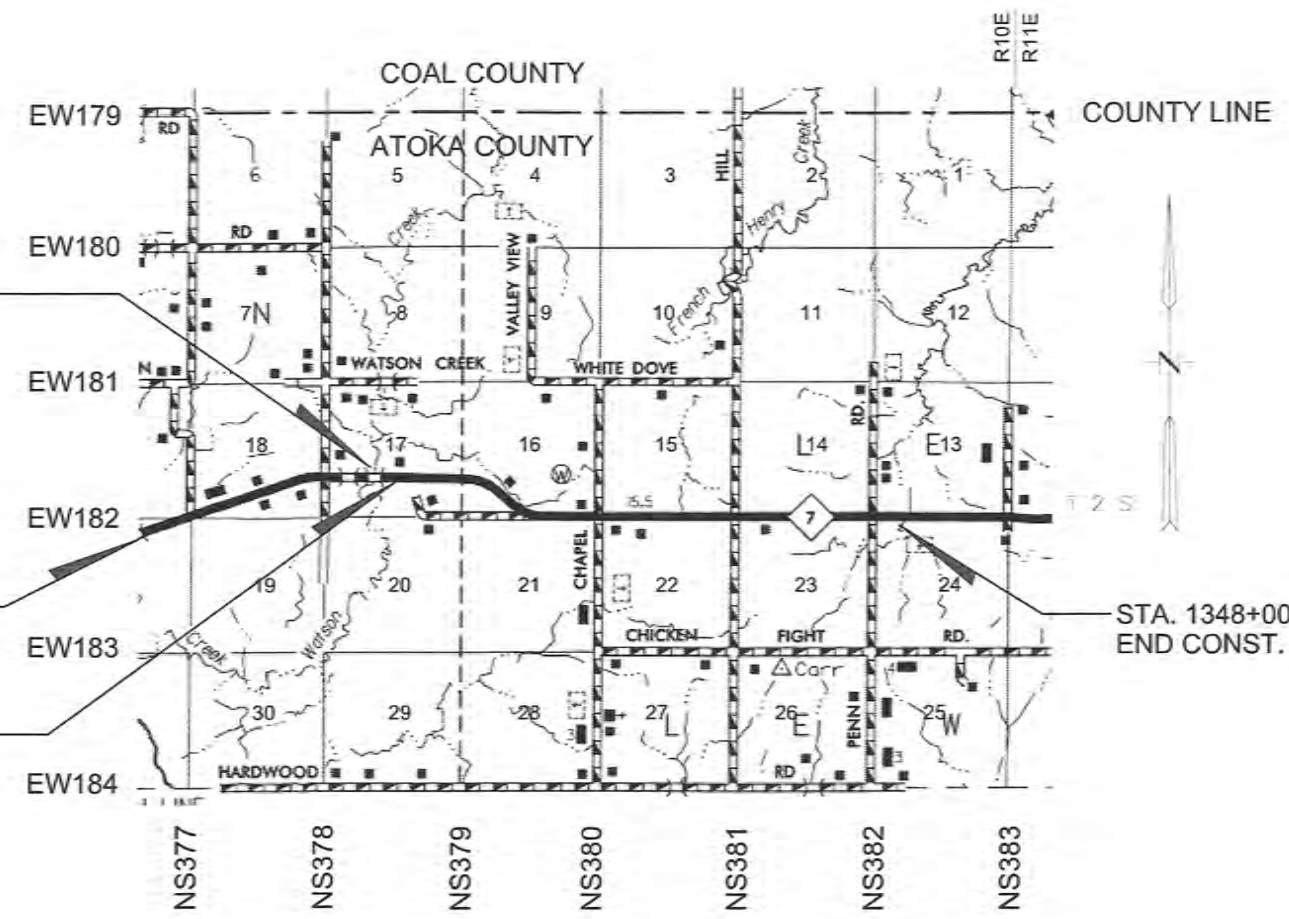
LAYOUT MAP 1" = 3000'

BRIDGE 'A'
Q STATION 1138+46.18
CONSTRUCT 3 - 10' X 7' RCB

STA. 1061+49.80
BEGIN CONST. J/P NO. 24066(04)
SUBSECTION NO. 6.00.

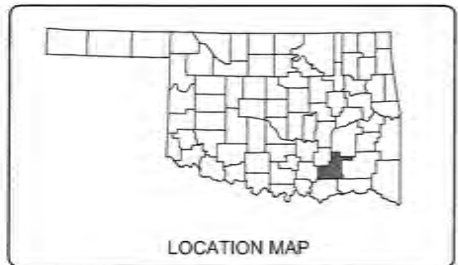
PROJ. EXCEPTION
STA. 1139+17.75 TO STA. 1146+48.78

STA. 1348+00.00
END CONST. J/P NO. 24066(04)



CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROAD
- RANGE & TOWNSHIP
- SECTION LINES
- QUARTER SECTION LINES
- FENCES
- SPRING LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER LINES
- BUILDINGS
- DUMPS
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- RIGHT-OF-WAY LINES - EXISTING
- RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- RIGHT-OF-WAY FENCE



PROJECT LENGTH BASED
ON Q SURVEY STATIONING

ROADWAY LENGTH	28650.20 FT.	5.426 MI.
BRIDGE LENGTH	0000.00 FT.	0.000 MI.
PROJECT LENGTH	28650.20 FT.	5.426 MI.

EQUATIONS: NONE

EXCEPTIONS: STA. 1139+17.75 TO STA. 1146+36.98
719.23'

BKL
incorporated

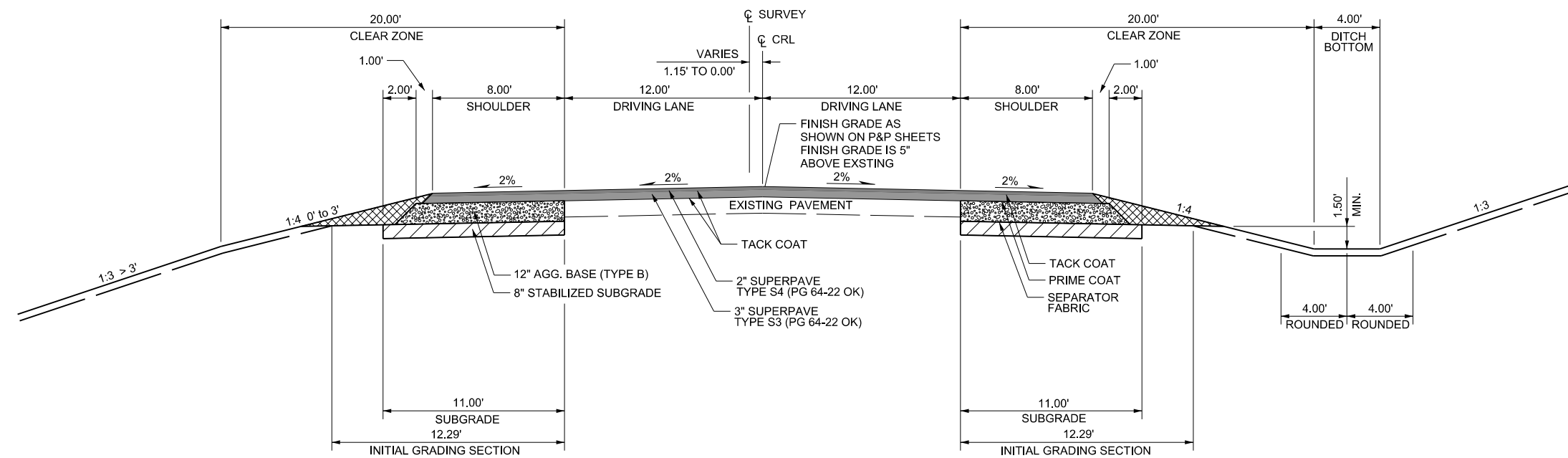
CA. 262 (PE) 6-30-2014
1623 E 6TH STREET
TULSA, OKLAHOMA 74120
TEL: 918-835-9588
FAX: 918-835-9119
MAIL@BKLINC.COM

**PROPOSED
R/W**

 JULY 14, 2015

PREPARED BY: BKL INC. FOR THE OKLAHOMA DEPARTMENT OF TRANSPORTATION		
DATE: _____ OKLA. REG. NO. 20245		
OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED: _____ BY: _____ CHIEF ENGINEER	DATE APPROVED: _____ BY: _____ DIVISION ADMINISTRATOR	
J.P. NO. 24066(04)	STPY - 103C(142)EC	SHEET NO. 1

PRINT DATE: 7/15/2015 C:\Projects\6560-SH-7\06GNASH7.TITLE.dwg

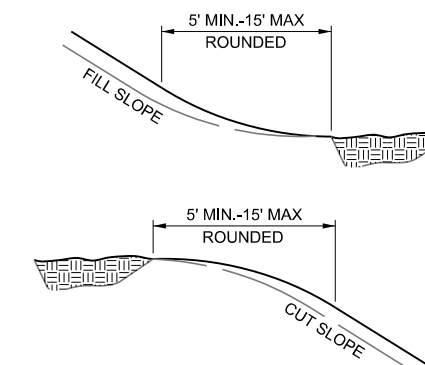


TYPICAL SECTION 1
N.T.S.

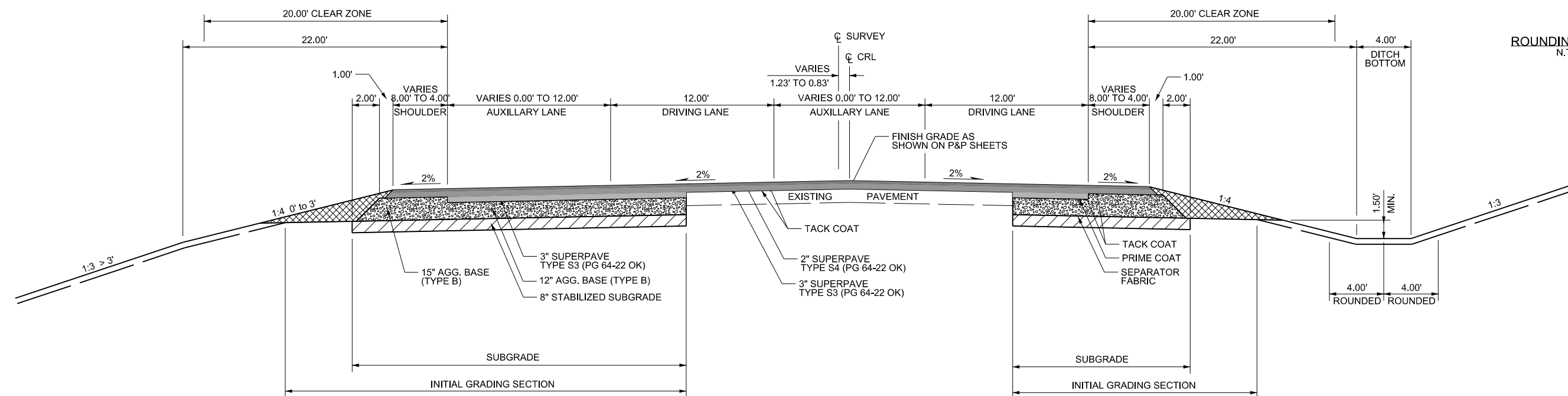
STA. 1061+49.80 TO 1062+13.58
 STA. 1076+49.82 TO 1115+92.05
 STA. 1130+28.11 TO 1139+17.75
 STA. 1146+48.78 TO 1197+72.83
 STA. 1212+07.17 TO 1225+89.04
 STA. 1242+05.02 TO 1278+78.21
 STA. 1294+87.22 TO 1331+79.36

- NOTES:
- (1) TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, APPROXIMATELY 5" THICK, STOCKPILE IT AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR TYPE SALVAGED TOPSOIL. LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASS LINE BALANCE.
 - (2) SEE ROUNDING DETAIL SHEET 3.
 - (3) DISTANCES ARE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED SHOULDER.
 - (4) BACK FILL TBSC TYPE "E".



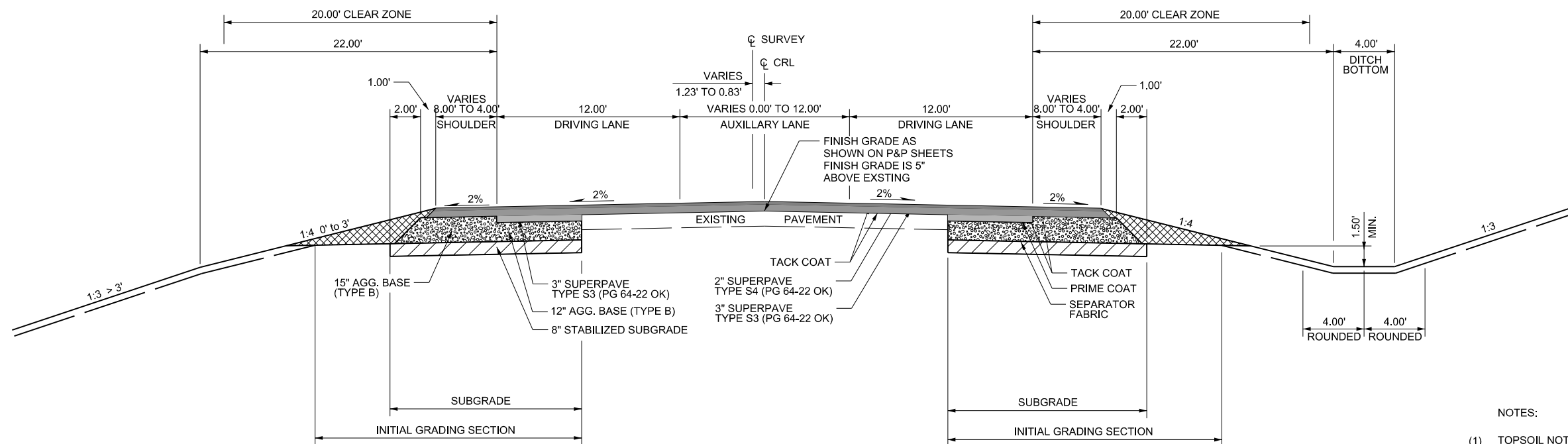
ROUNDING DETAIL
N.T.S.



TYPICAL SECTION 2
N.T.S.

STA. 1062+13.58 TO 1076+49.82
 STA. 1225+89.04 TO 1242+05.02

DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MM		
CHECKED	RB		
APPROVED	SL		
SQUAD	BKL, Inc.		
TYPICAL SECTIONS 1 OF 2			
JOB PIECE NO. 24066 (04)			SHEET NO. 2



TYPICAL SECTION 3

N.T.S.

STA. 1115+92.05 TO 1130+28.11
 STA. 1197+72.83 TO 1212+07.17
 STA. 1278+78.21 TO 1294+87.22
 STA. 1331+79.36 TO 1348+00.00

NOTES:

- TOPSOIL NOTE:
 THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, APPROXIMATELY 5" THICK, STOCKPILE IT AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATION. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATION SHALL BE INCLUDED IN THE PAY ITEM FOR TYPE SALVAGED TOPSOIL. LUMP SUM.

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

- SEE ROUNDING DETAIL SHEET 3.
- DISTANCES ARE MEASURED VERTICALLY FROM THE EDGE OF THE FINISHED SHOULDER.

PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7\W_Typical2.dwg

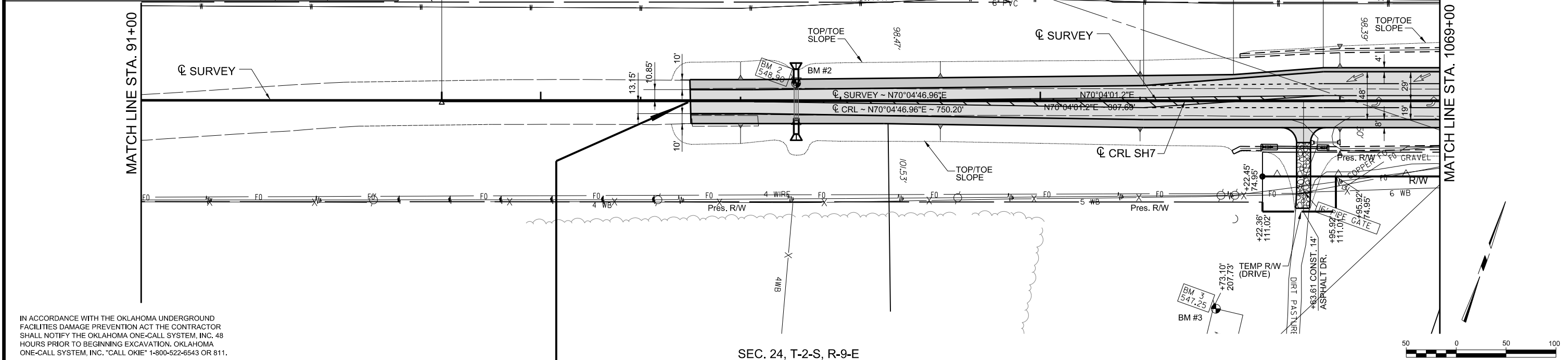
DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TYPICAL SECTIONS 2 OF 2 JOB PIECE NO. 24066 (04) SHEET NO. 3
DRAWN	MM		
CHECKED	RB		
APPROVED	SL		
SQUAD	BKL, Inc.		

UTILITY COORDINATION

UTILITY	PHONE	NOTIFIED	RESPONDED
ATOKA RURAL WATER DIST. #4	580-889-5949		
SOUTHEASTERN ELECTRIC COOP			
AT&T			
WESTERN FARMERS ELECTRIC COOP			
CITY OF ATOKA	580-889-2675		
SCISSOR TAIL	580-320-3141		
ENOGEX	580-364-0392		
ANTERO	580-927-9133		
MARKWEST	918-389-5100		
CENTER POINT ENERGY	580-889-3429		
ENABLE MIDSTREAM PARTNERS	405-525-7788		
ATLAS PIPELINE	580-883-2273		
KINDER-MORGAN	713-369-9000		

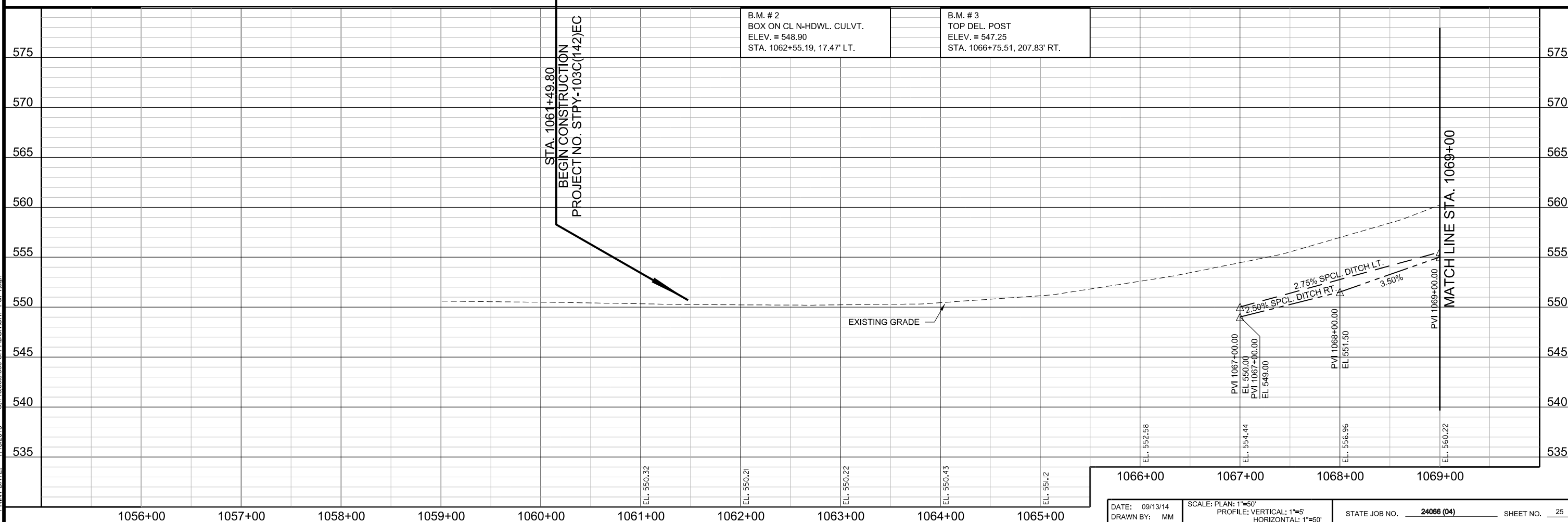
PROPOSED R/W

JULY 14, 2015

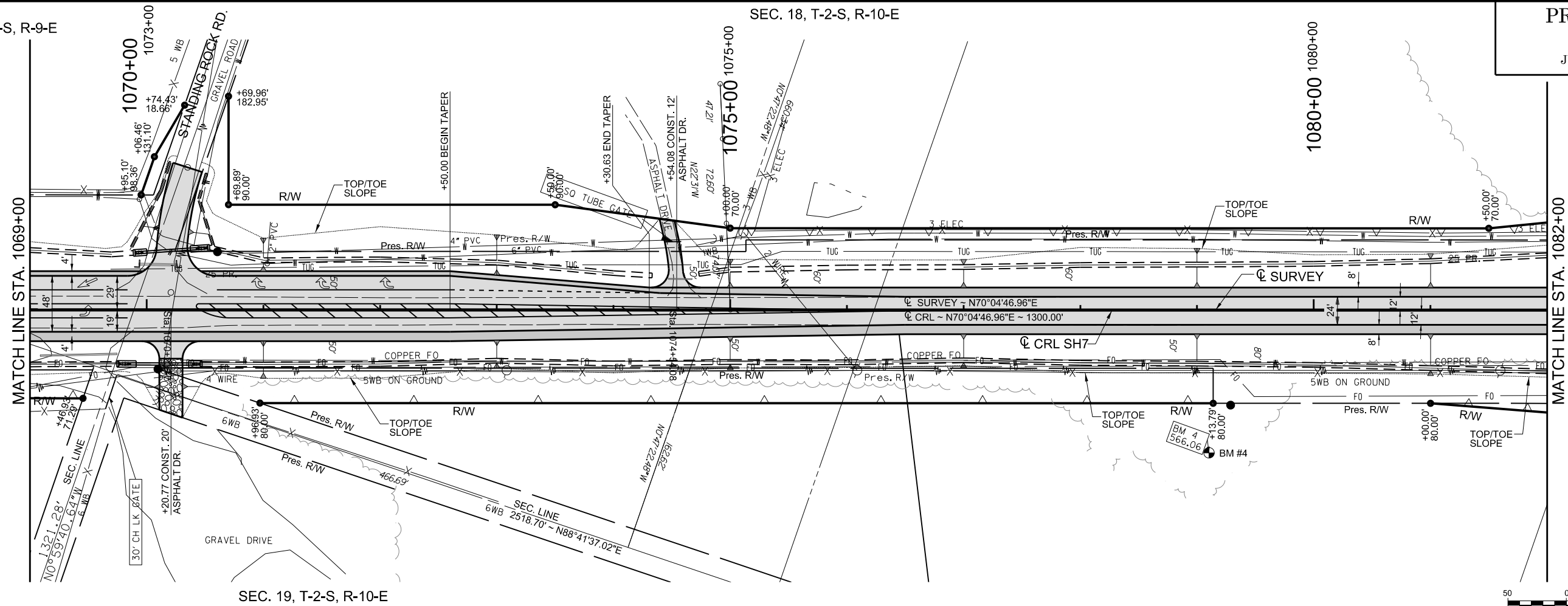


IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC. "CALL OKIE" 1-800-522-6543 OR 811.

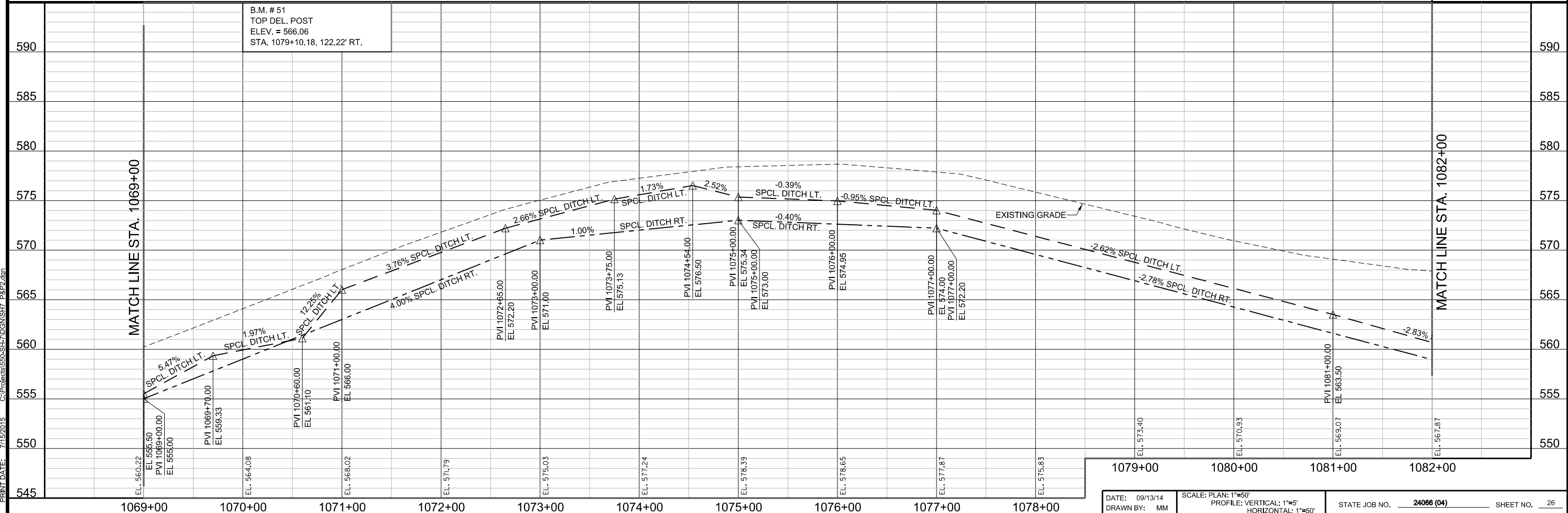
SEC. 24, T-2-S, R-9-E



PRINT DATE: 7/15/2015 C:\Projects\1500-SH-7\DWG\SH7_P&P1.dwg



SEC. 19, T-2-S, R-10-E

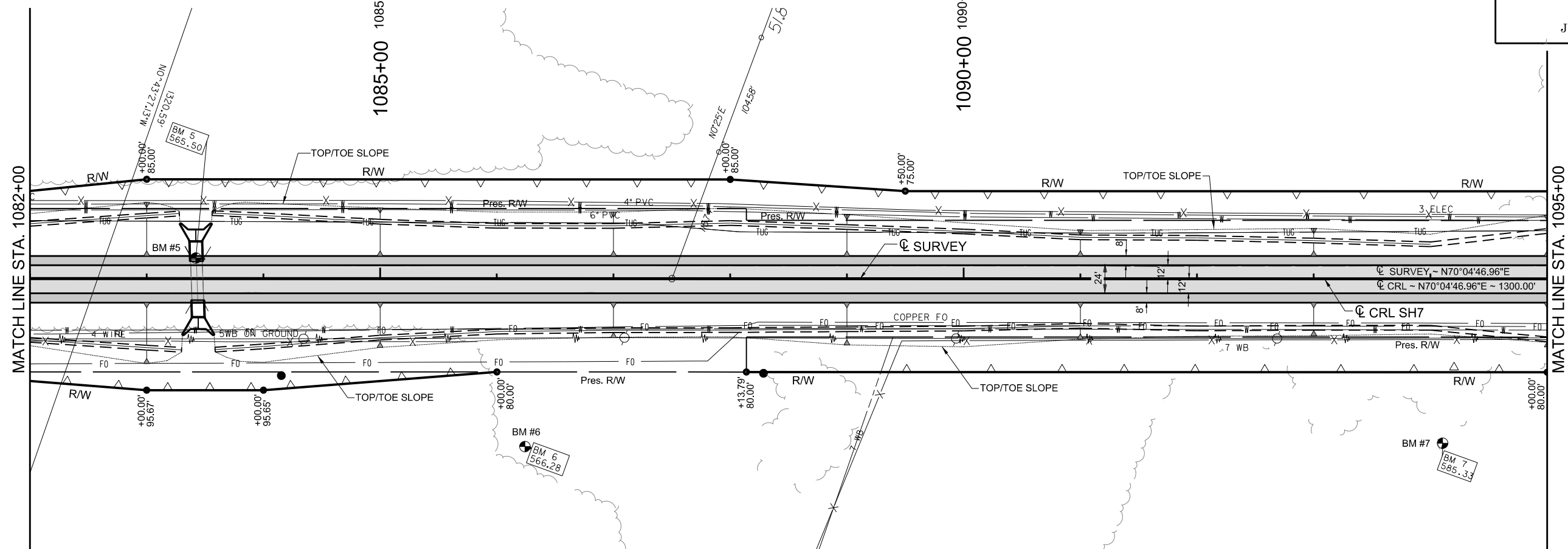


B.M. # 51
 TOP DEL. POST
 ELEV. = 566.06
 STA. 1079+10.18, 122.22' RT.

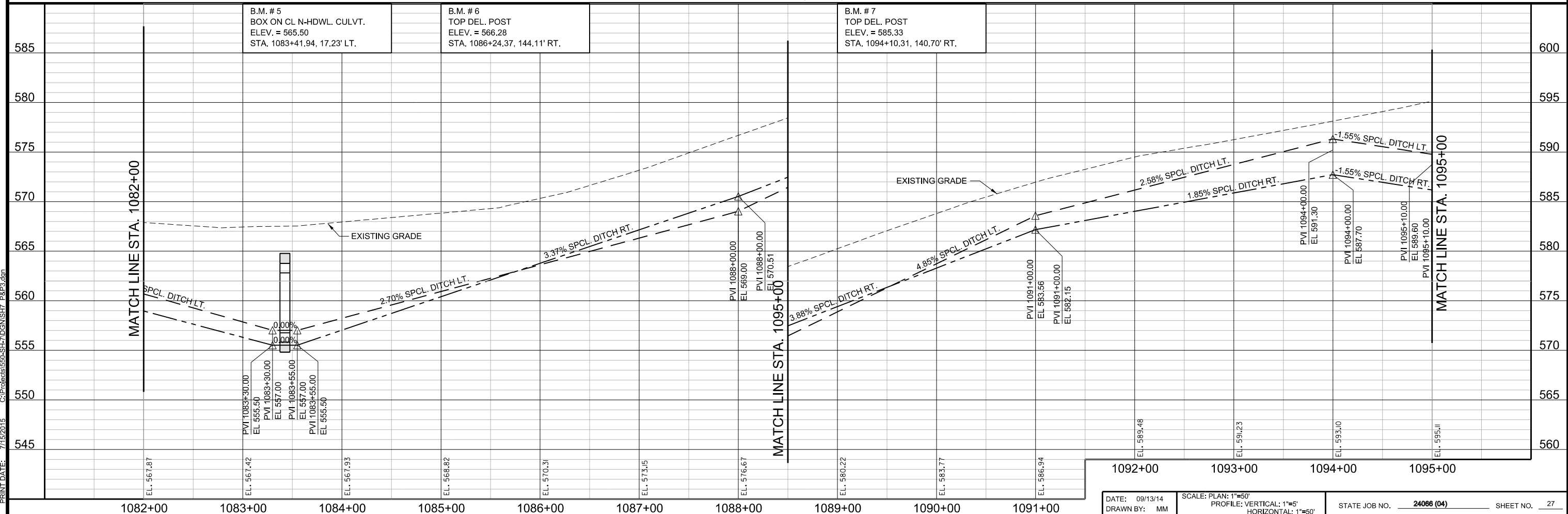
PRINT DATE: 7/15/2015 C:\Projects\15050-SH7\DOGN\SH7_P&E2.dwg

SEC. 18, T-2-S, R-10-E

1085+00 1090+00



SEC. 18, T-2-S, R-10-E



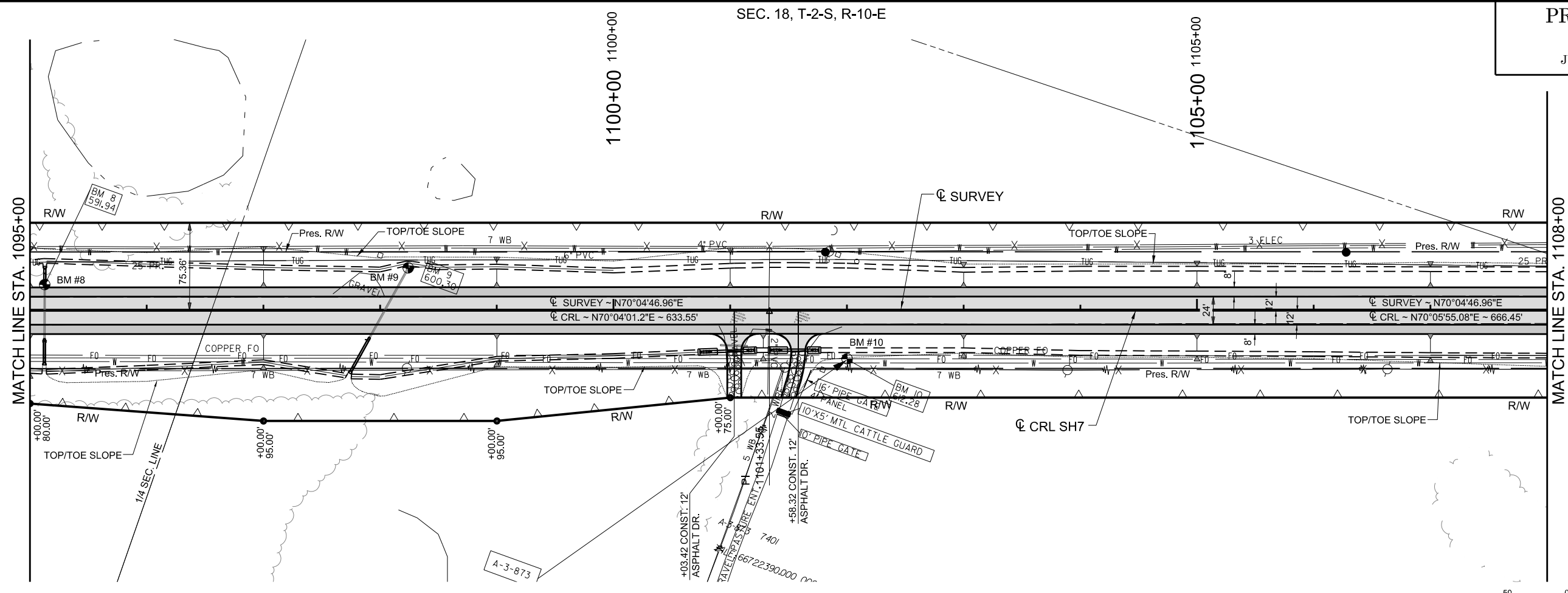
B.M. # 5
BOX ON CL N-HDWL. CULVT.
ELEV. = 565.50
STA. 1083+41.94, 17.23' LT.

B.M. # 6
TOP DEL. POST
ELEV. = 566.28
STA. 1086+24.37, 144.11' RT.

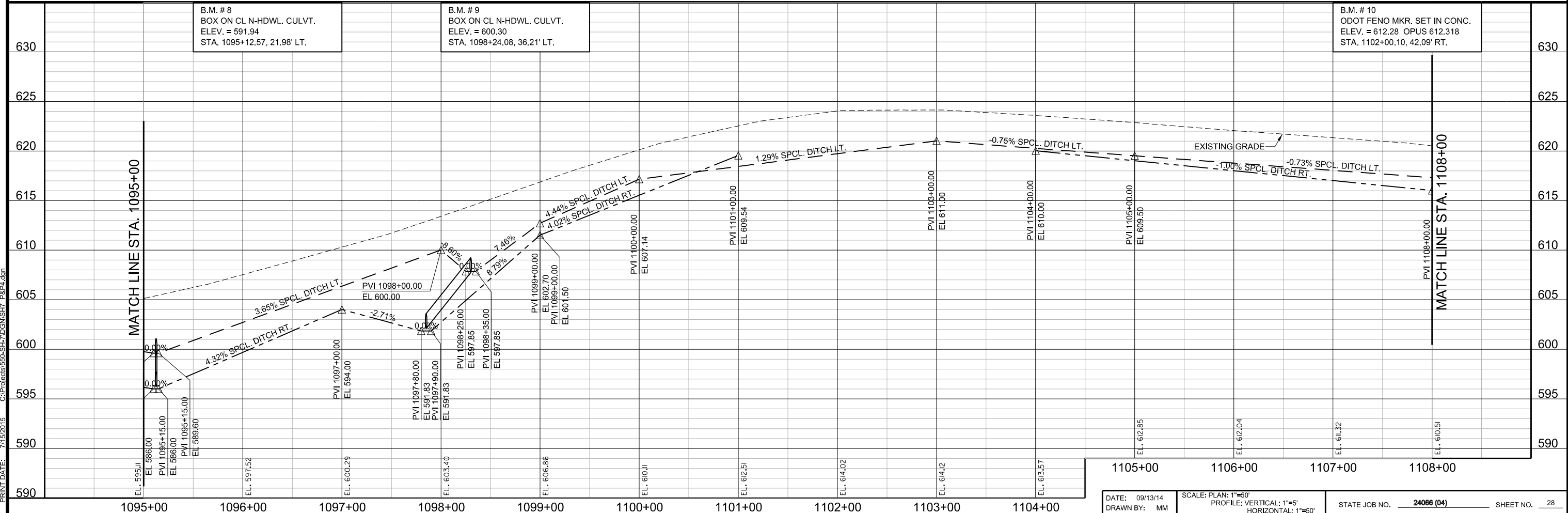
B.M. # 7
TOP DEL. POST
ELEV. = 585.33
STA. 1094+10.31, 140.70' RT.

PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7_P&P3.dwg

SEC. 18, T-2-S, R-10-E



SEC. 18, T-2-S, R-10-E

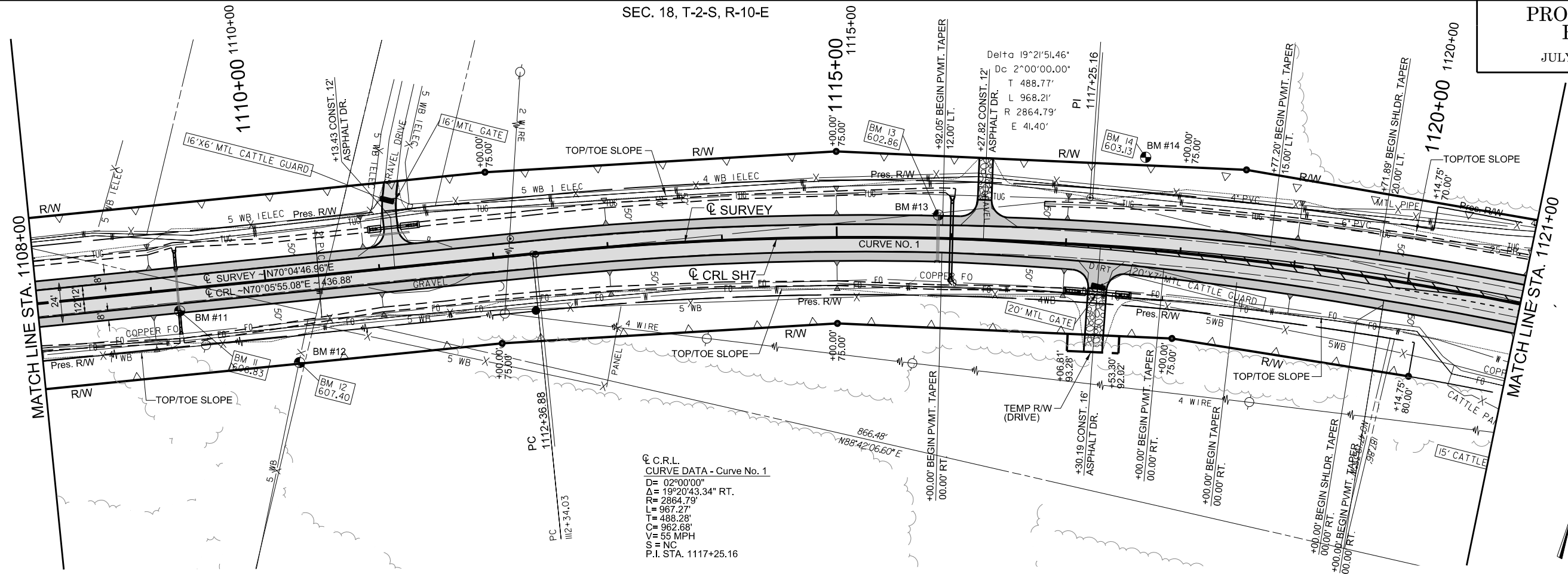


B.M. # 8
BOX ON CL N-HDWL. CULVT.
ELEV. = 591.94
STA. 1095+12.57, 21.98' LT.

B.M. # 9
BOX ON CL N-HDWL. CULVT.
ELEV. = 600.30
STA. 1098+24.08, 36.21' LT.

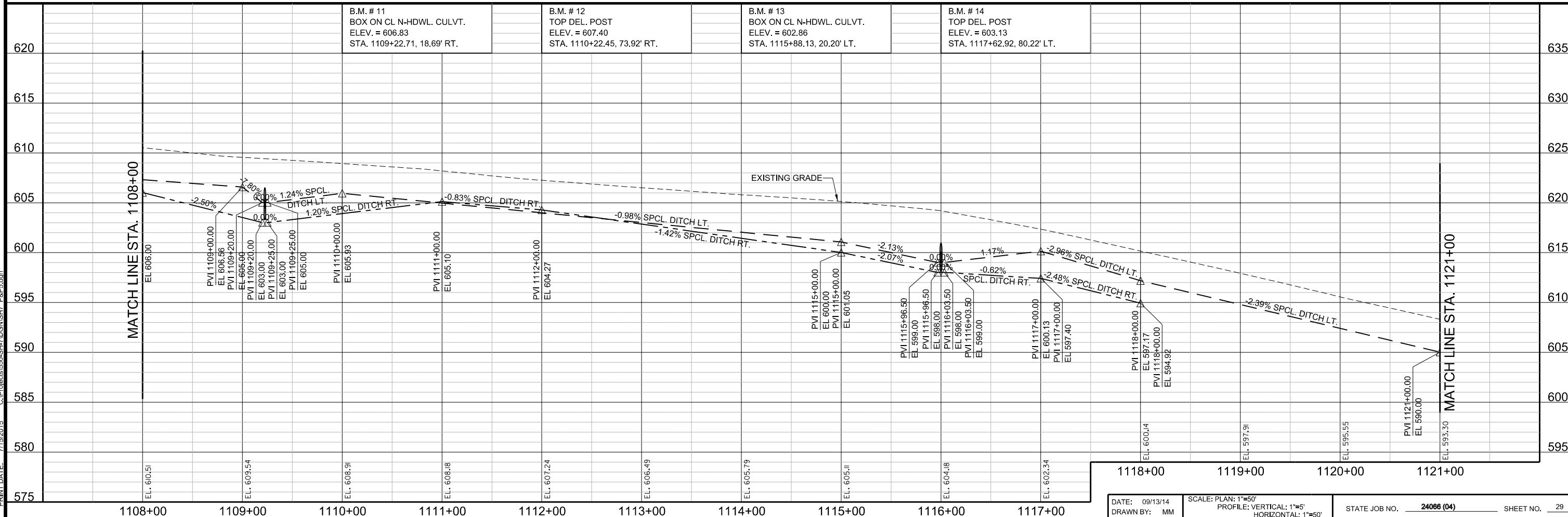
B.M. # 10
ODOT FENO MKR. SET IN CONC.
ELEV. = 612.28 OPUS 612.318
STA. 1102+00.10, 42.09' RT.

PRINT DATE: 7/15/2015 C:\Projects\15050-SH7\DOGN\SH7_P&P.dgn



Curve No. 1
 D= 02°00'00"
 Δ= 139°20'43.34" RT.
 R= 2864.79'
 L= 967.27'
 T= 488.28'
 C= 962.68'
 V= 55 MPH
 S= NC
 P.I. STA. 1117+25.16

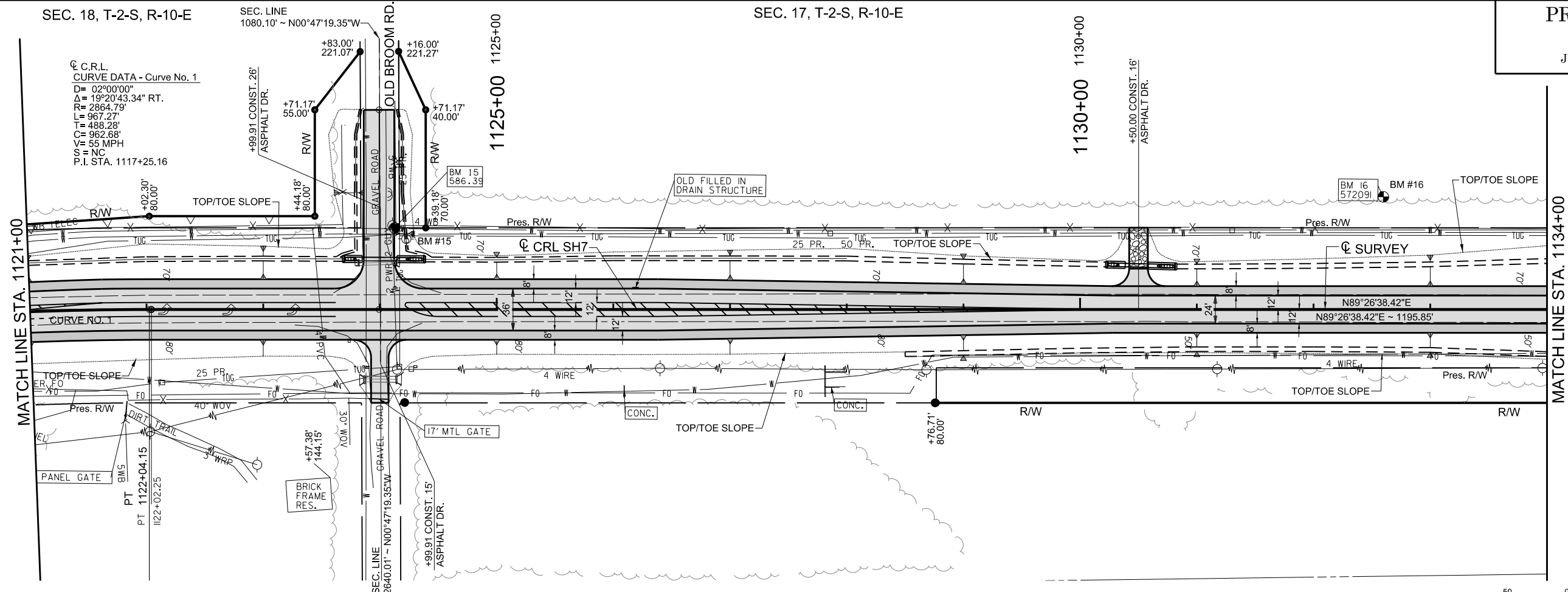
SEC. 18, T-2-S, R-10-E



PRINT DATE: 7/15/2015 C:\p\proj\15050-SH-7\DWG\SH7_P&F5.dwg

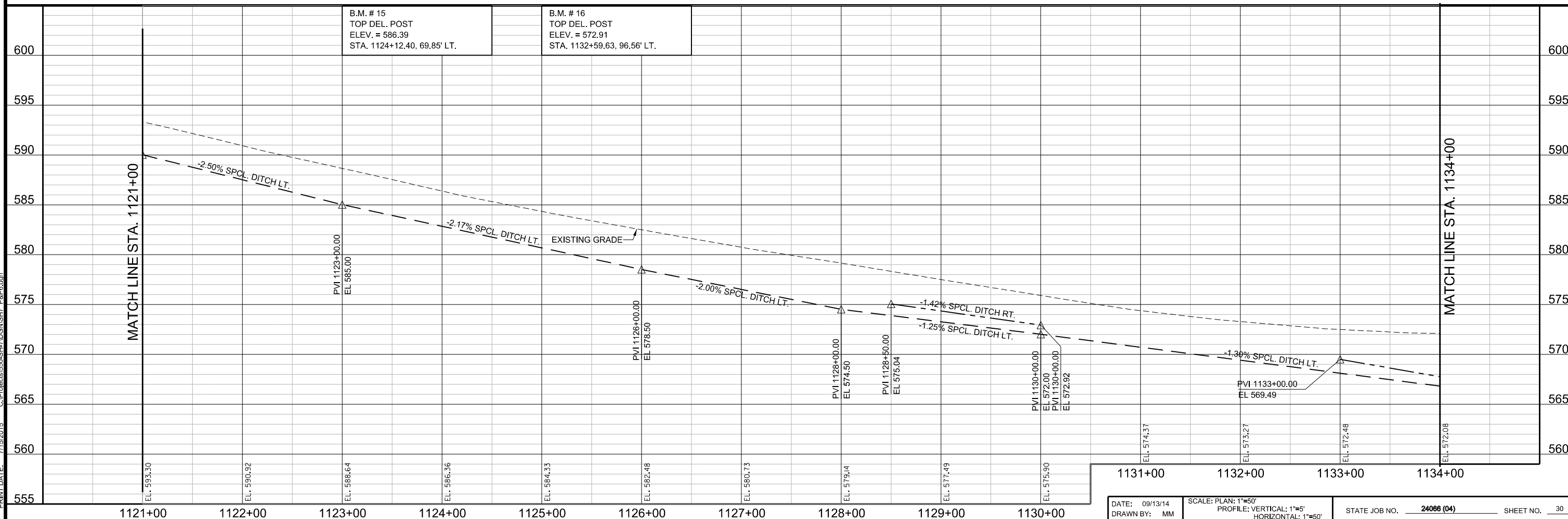
SEC. 18, T-2-S, R-10-E

SEC. 17, T-2-S, R-10-E



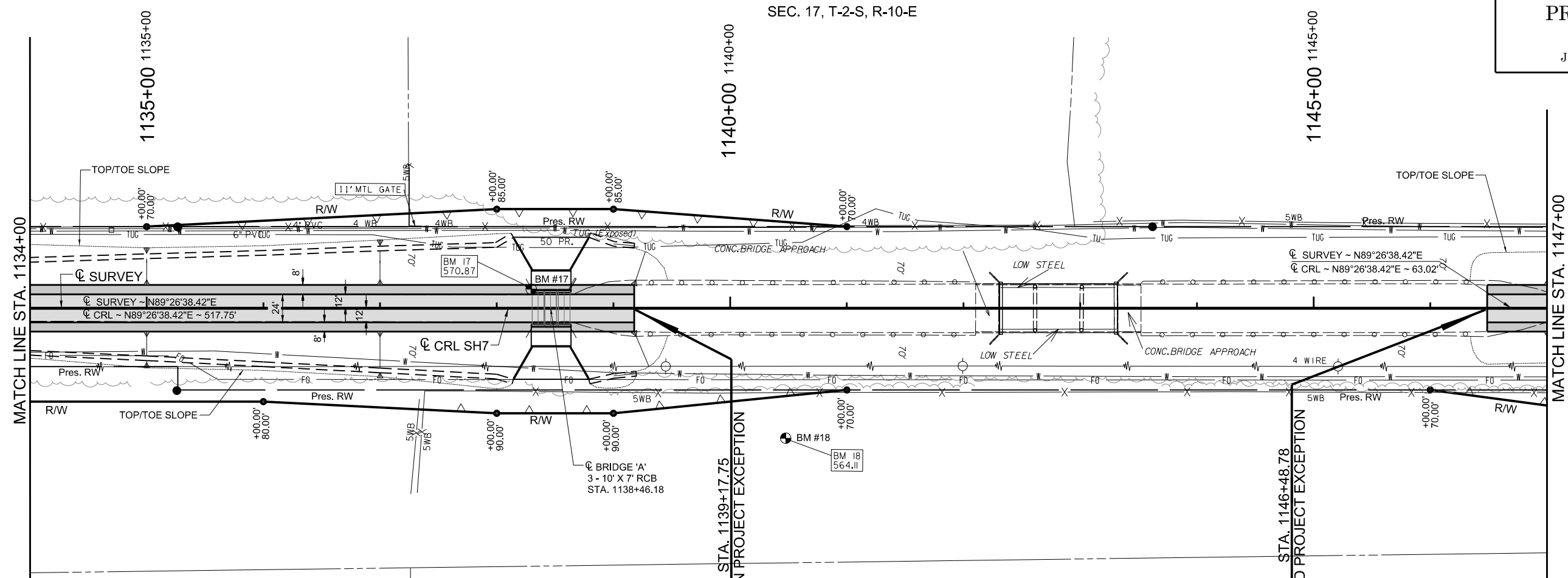
SEC. 18, T-2-S, R-10-E

SEC. 17, T-2-S, R-10-E



PRINT DATE: 7/15/2015 C:\Projects\1505-SH-7\DWG\SH7_P&P.dwg

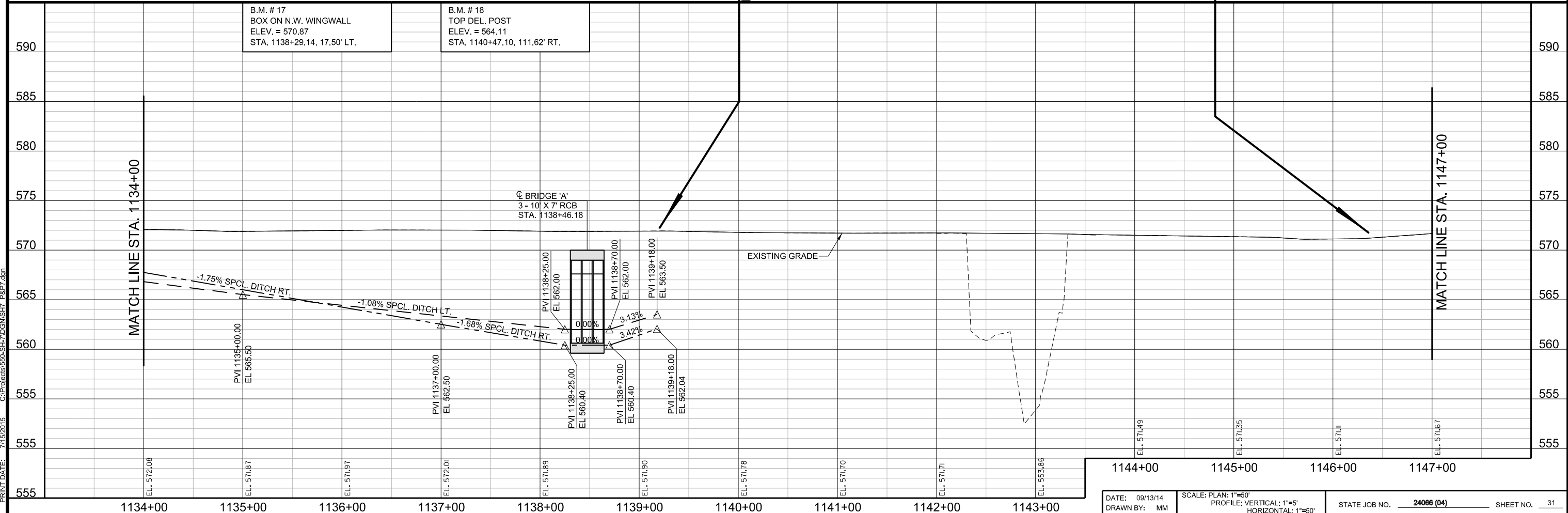
SEC. 17, T-2-S, R-10-E



STA. 1139+17.75
BEGIN PROJECT EXCEPTION

STA. 1146+48.78
END PROJECT EXCEPTION

SEC. 17, T-2-S, R-10-E



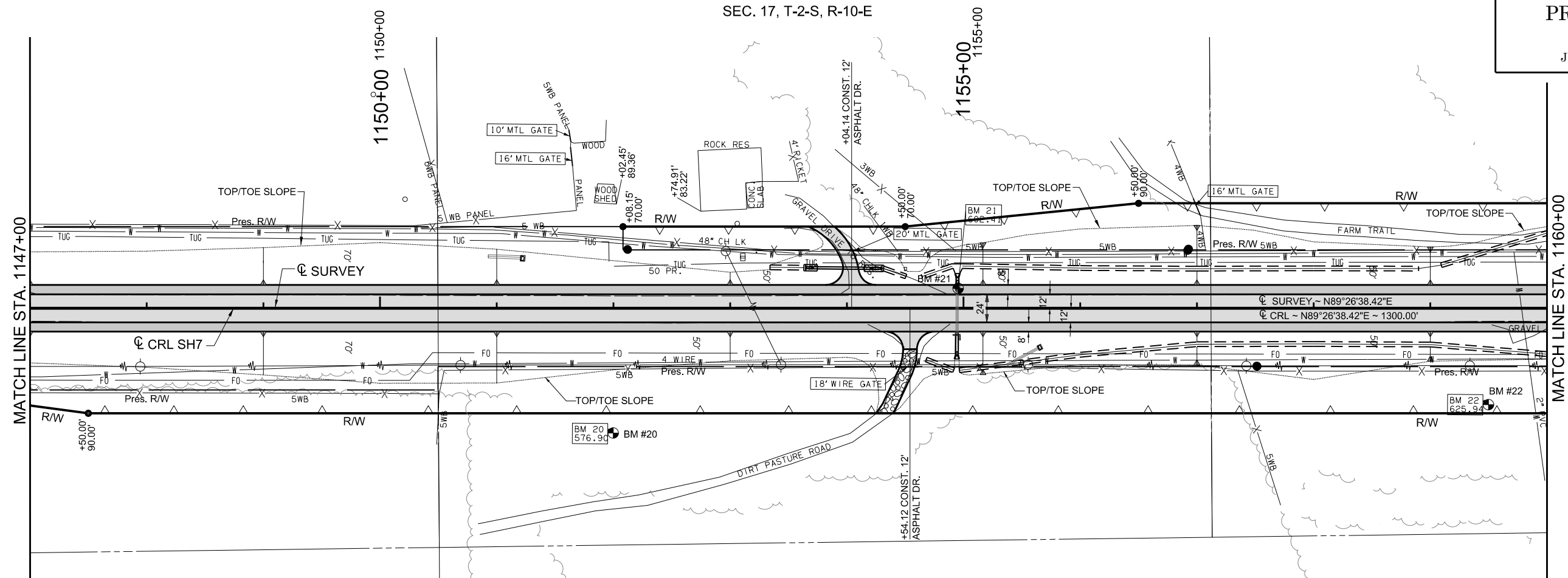
B.M. # 17
BOX ON N.W. WINGWALL
ELEV. = 570.87
STA. 1138+29.14, 17.50' LT.

B.M. # 18
TOP DEL. POST
ELEV. = 564.11
STA. 1140+47.10, 111.62' RT.

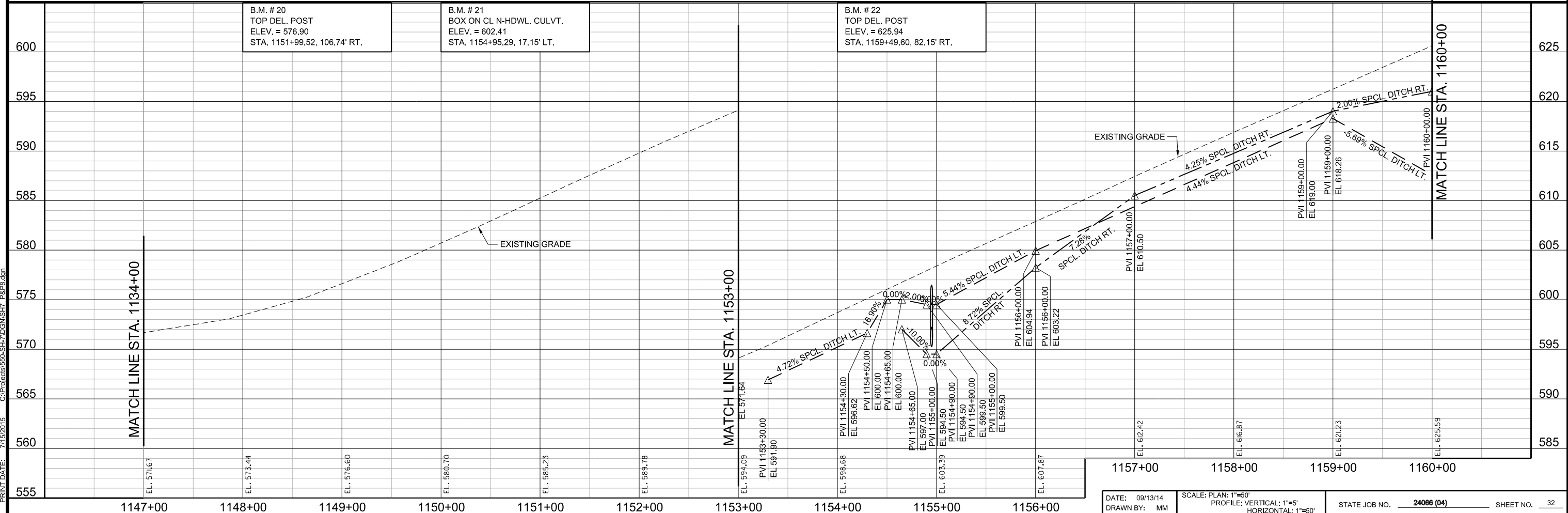
BRIDGE 'A'
3 - 10' X 7' RCB
STA. 1138+46.18

PRINT DATE: 7/15/2015 C:\Projects\150-SH7\DOGN\SH7_P&T.dgn

SEC. 17, T-2-S, R-10-E



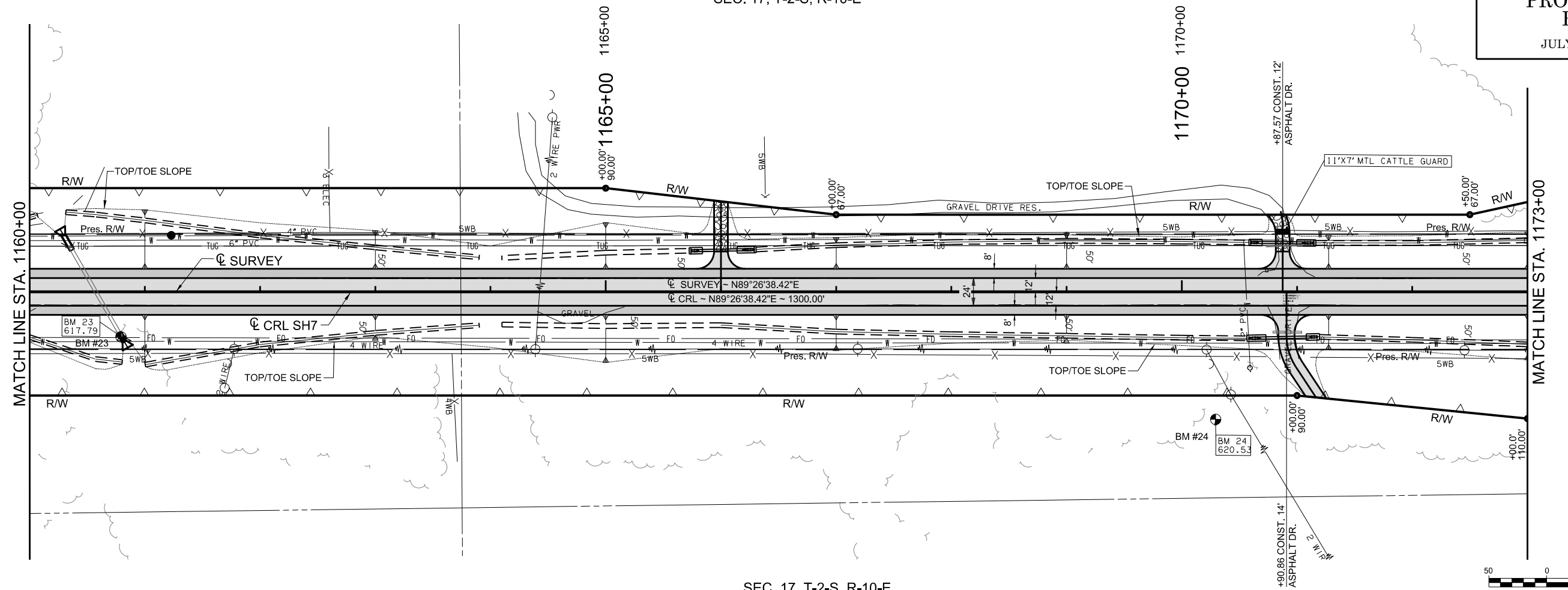
SEC. 17, T-2-S, R-10-E



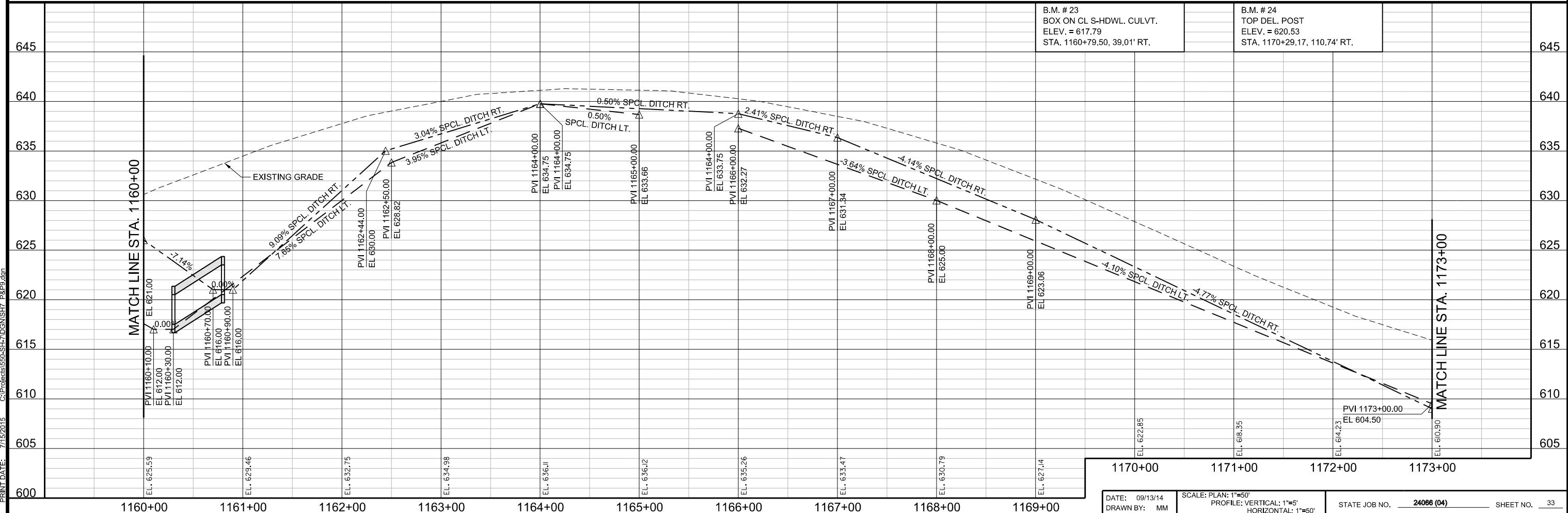
EL. 625.59

PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DOGN\SH7_P&P.dgn

SEC. 17, T-2-S, R-10-E



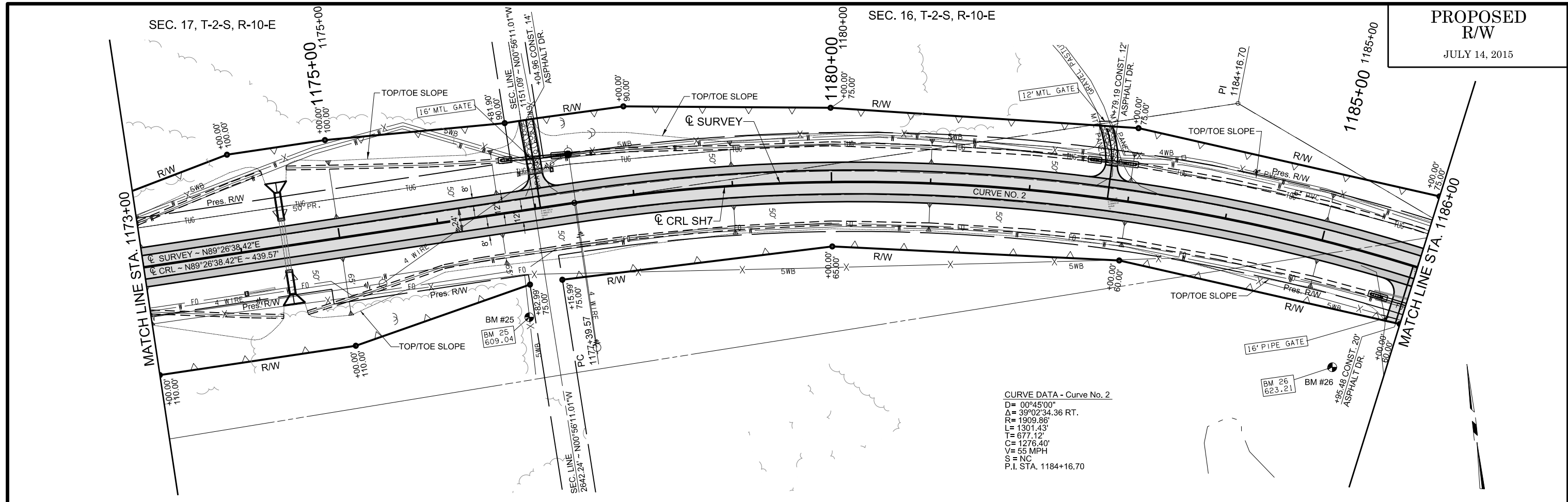
SEC. 17, T-2-S, R-10-E



B.M. # 23
BOX ON CL S-HDWL. CULVT.
ELEV. = 617.79
STA. 1160+79.50, 39.01' RT.

B.M. # 24
TOP DEL. POST
ELEV. = 620.53
STA. 1170+29.17, 110.74' RT.

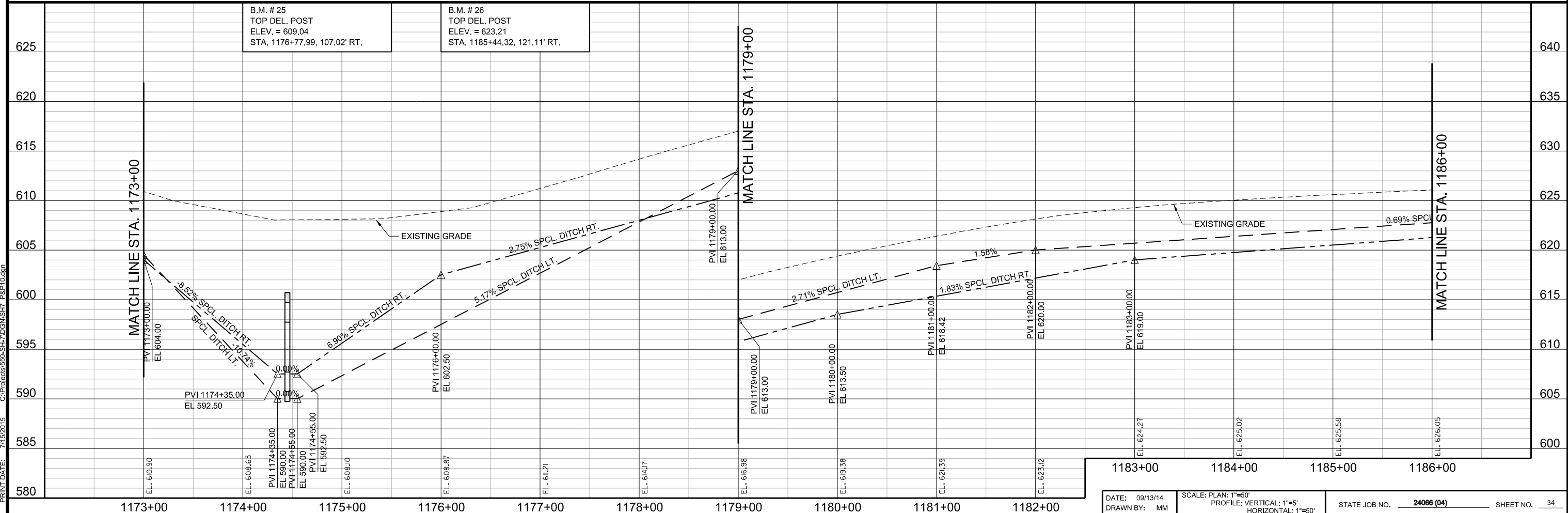
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CURVE DATA - Curve No. 2
 D = 00°45'00"
 Δ = 39°02'34.36 RT.
 R = 1909.86'
 L = 1301.43'
 T = 677.12'
 C = 1276.40'
 V = 55 MPH
 S = NC
 P.I. STA. 1184+16.70

SEC. 17, T-2-S, R-10-E

SEC. 16, T-2-S, R-10-E



B.M. # 25
 TOP DEL. POST
 ELEV. = 609.04
 STA. 1176+77.99, 107.02' RT.

B.M. # 26
 TOP DEL. POST
 ELEV. = 623.21
 STA. 1185+44.32, 121.11' RT.

PRINT DATE: 7/15/2015 C:\Projects\650-SH7\DOGN\SH7_P&P\10.dwg

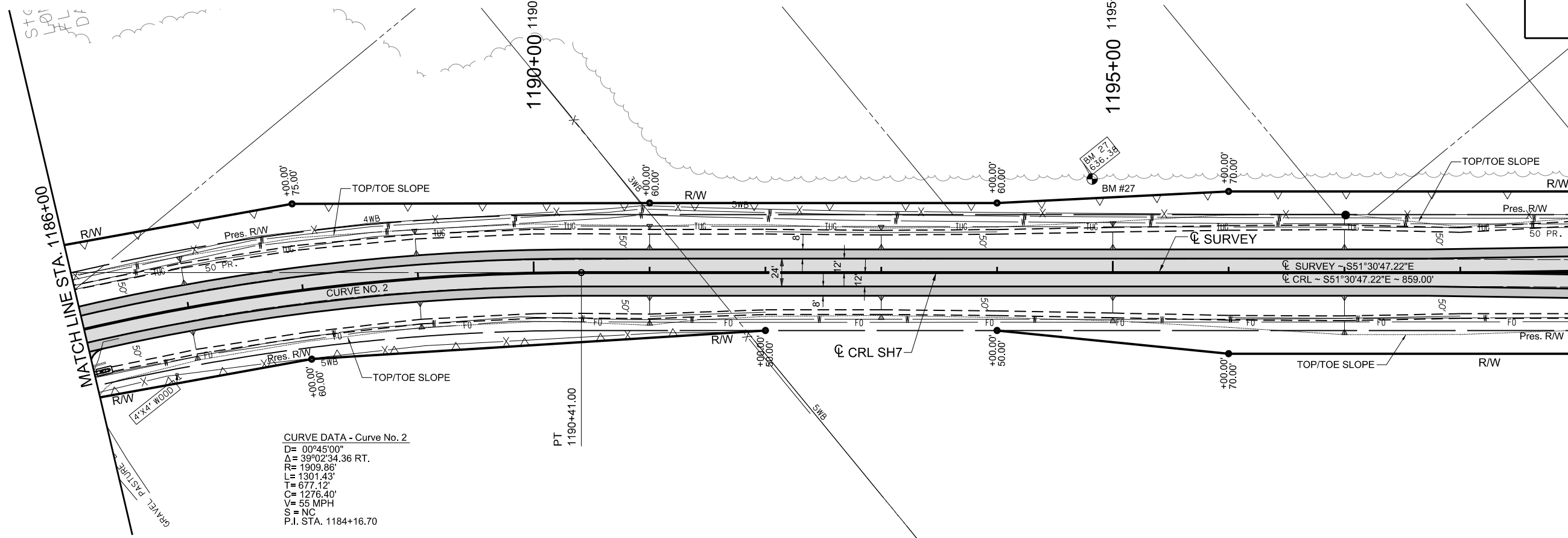
SEC. 16, T-2-S, R-10-E

1195+00 1195+00

1190+00 1190+00

MATCH LINE STA. 1186+00

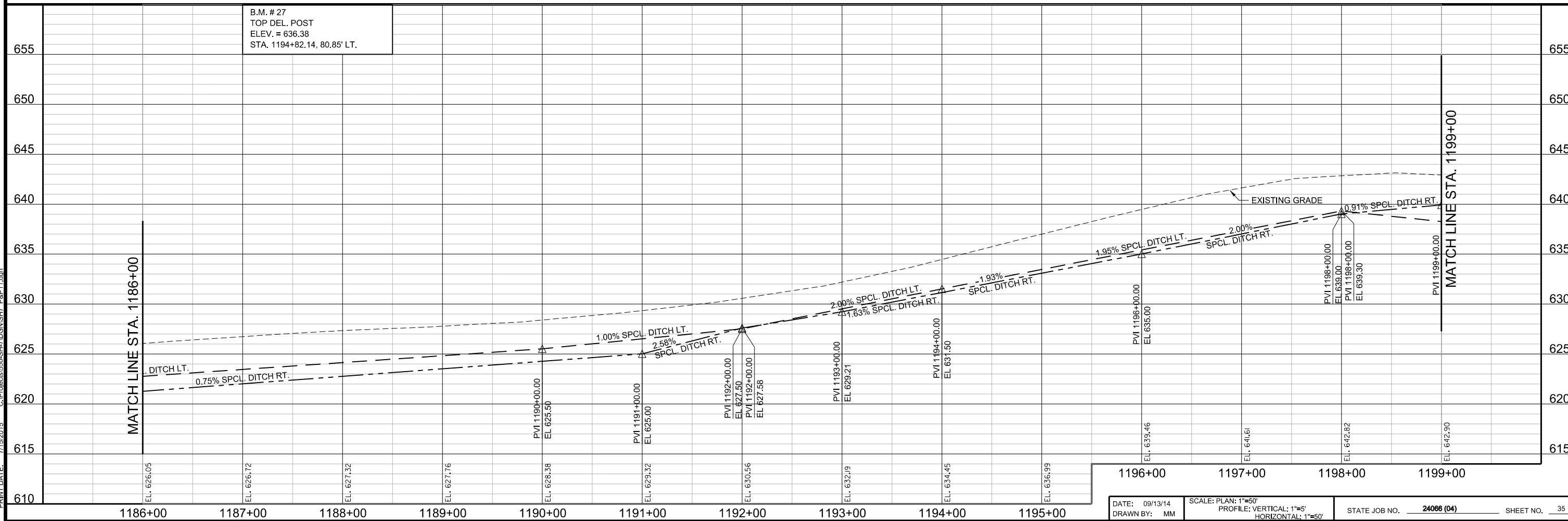
MATCH LINE STA. 1199+00



CURVE DATA - Curve No. 2
 D= 00°45'00"
 Δ= 39°02'34.36 RT.
 R= 1909.86'
 L= 1301.43'
 T= 677.12'
 C= 1276.40'
 V= 55 MPH
 S= NC
 P.I. STA. 1184+16.70

PT
1190+41.00

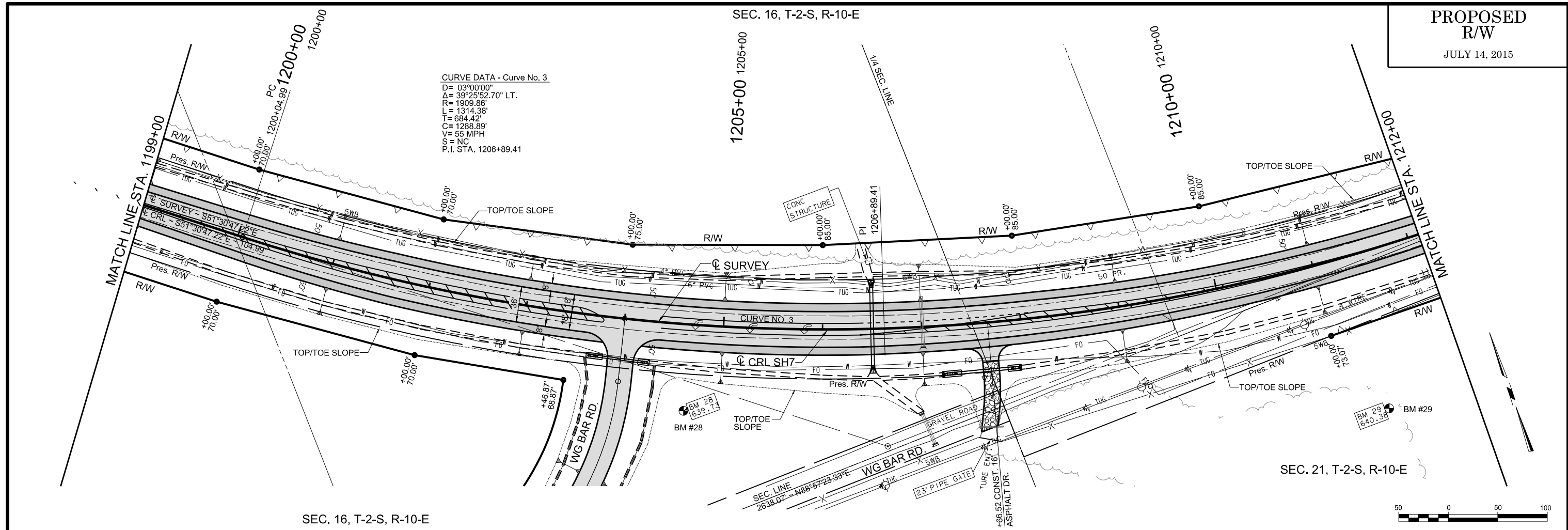
SEC. 16, T-2-S, R-10-E



B.M. # 27
 TOP DEL. POST
 ELEV. = 636.38
 STA. 1194+82.14, 80.85' LT.

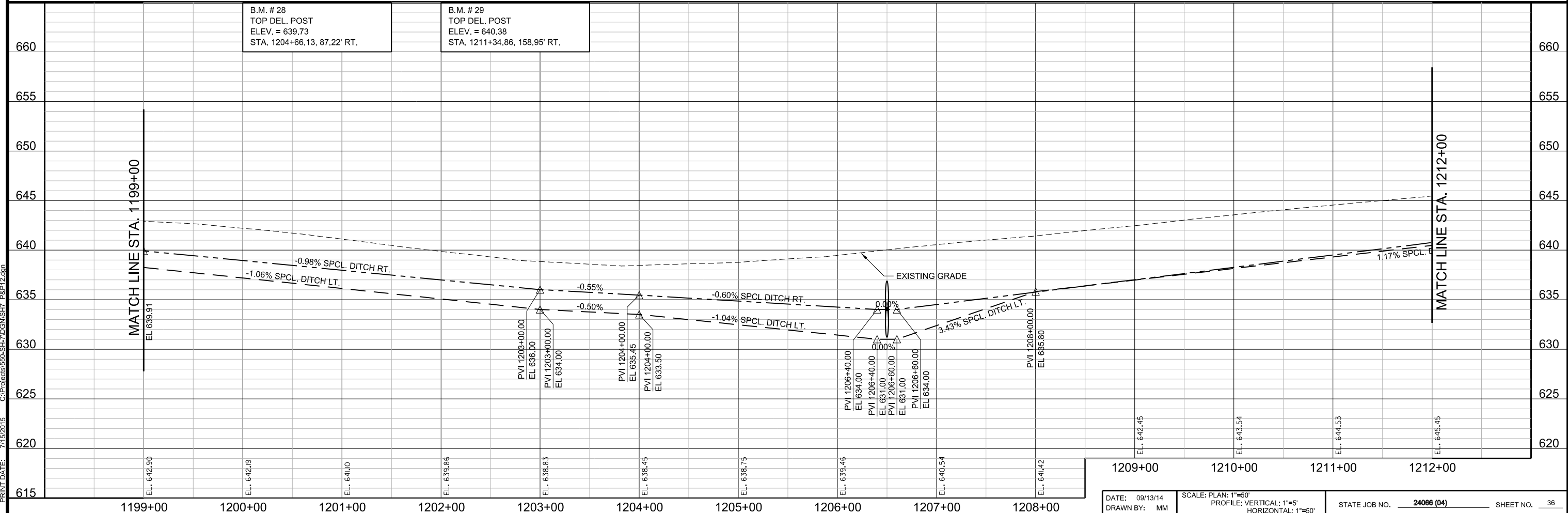
SEC. 16, T-2-S, R-10-E

CURVE DATA - Curve No. 3
 D= 03°00'00"
 Δ= 39°25'52.70" LT.
 R= 1909.86'
 L= 1314.38'
 T= 684.42'
 C= 1288.89'
 V= 55 MPH
 S= NC
 P.I. STA. 1206+89.41



SEC. 16, T-2-S, R-10-E

SEC. 21, T-2-S, R-10-E



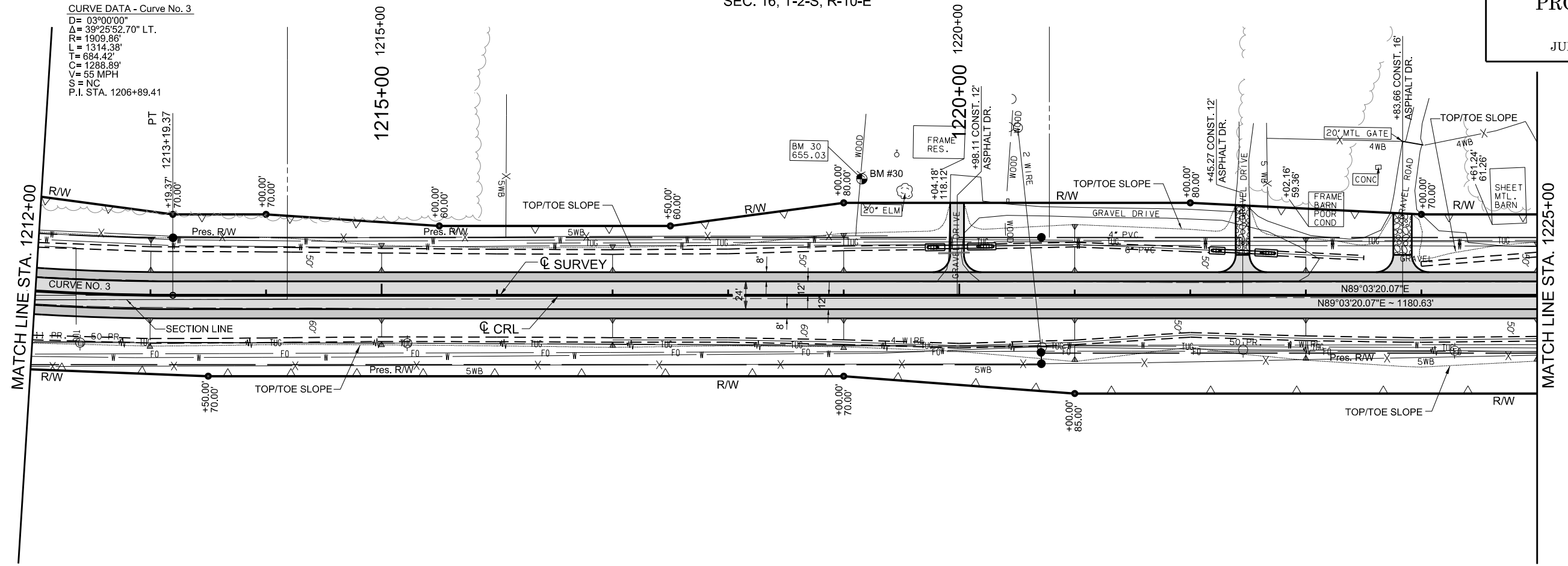
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CURVE DATA - Curve No. 3
 D = 03°00'00"
 A = 39°25'52.70" LT.
 R = 1909.86'
 L = 1314.38'
 T = 684.42'
 C = 1288.89'
 V = 55 MPH
 S = NC
 P.I. STA. 1206+89.41

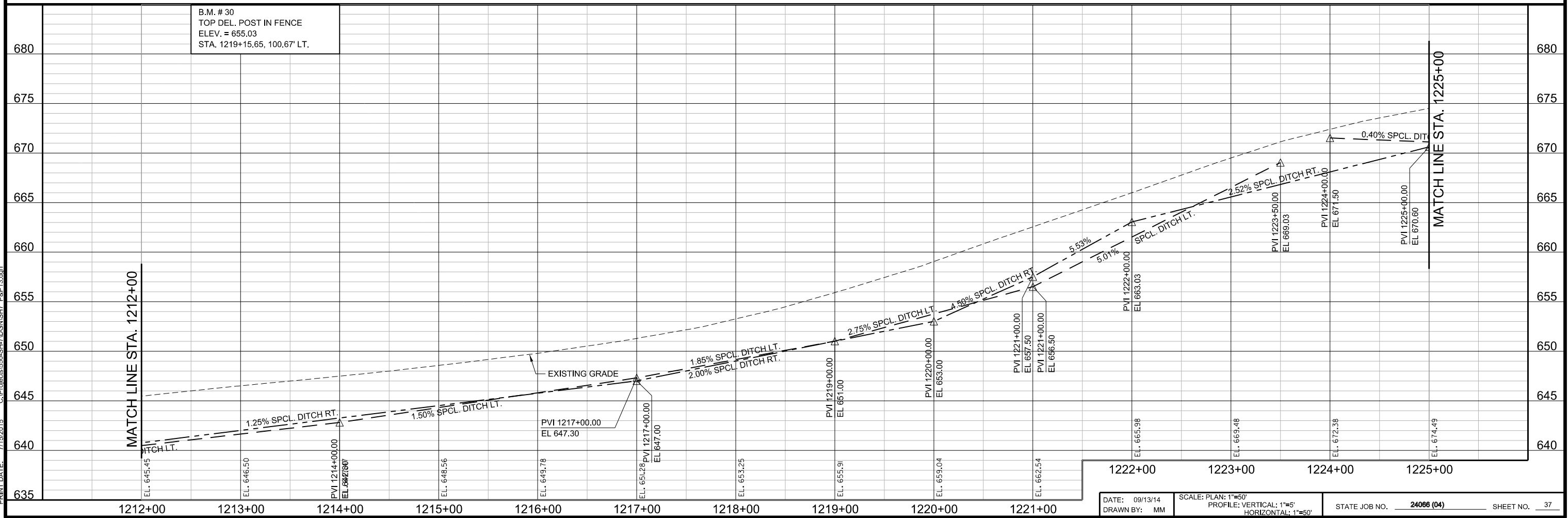
SEC. 16, T-2-S, R-10-E

PROPOSED
R/W

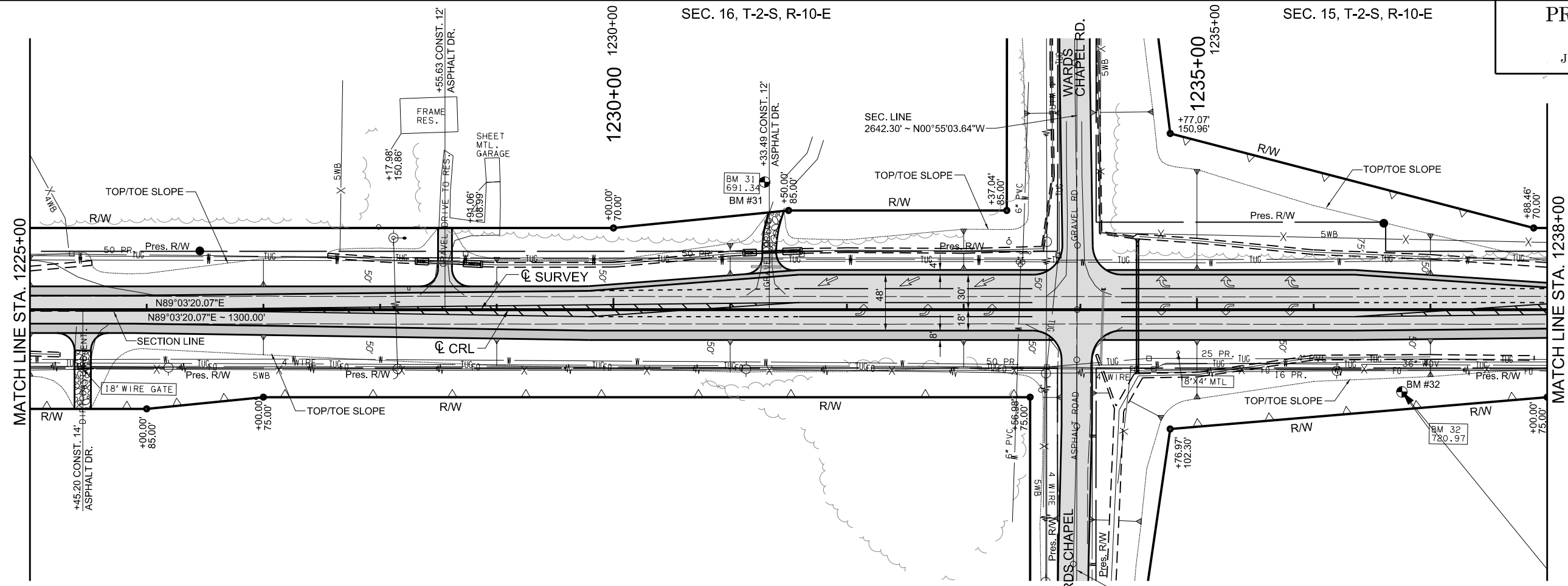
JULY 14, 2015



SEC. 21, T-2-S, R-10-E

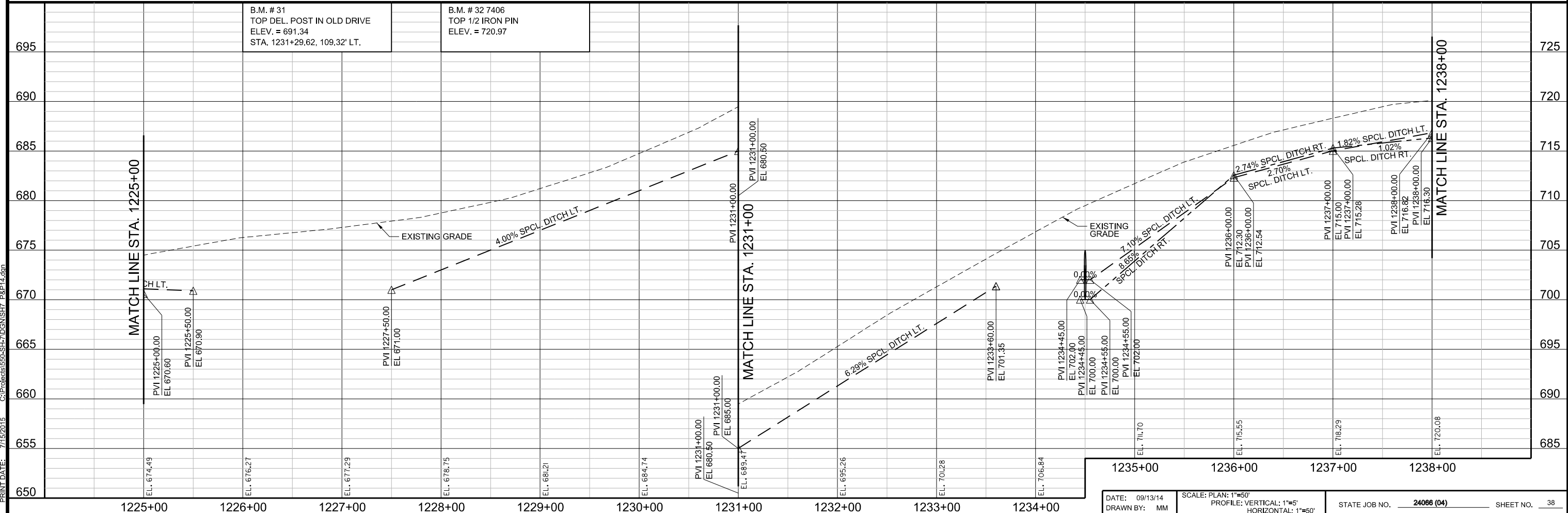


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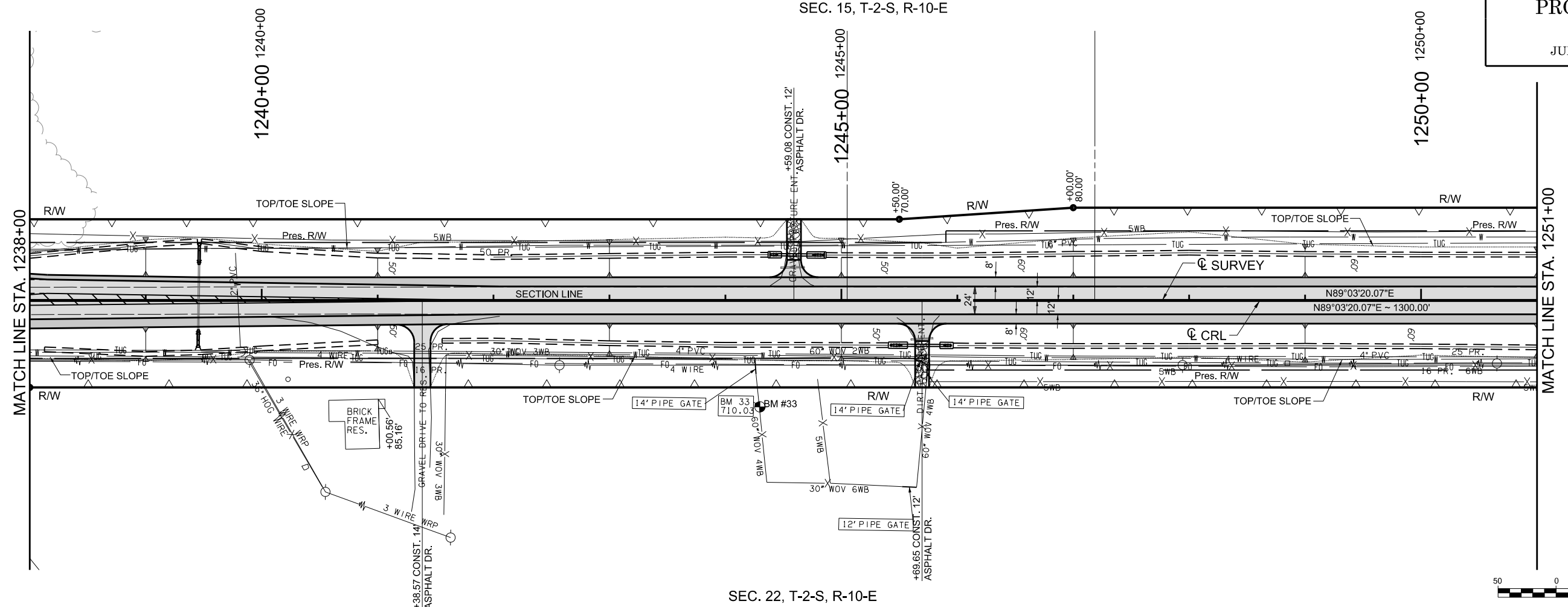
SEC. 21, T-2-S, R-10-E

SEC. 22, T-2-S, R-10-E

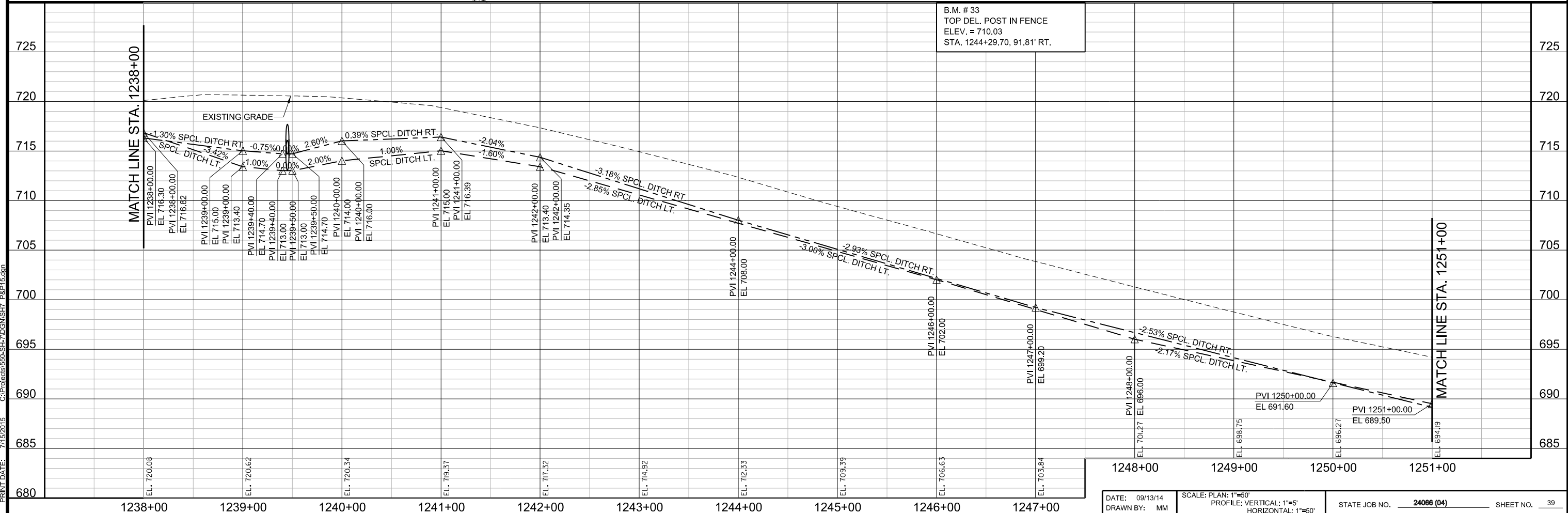


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SEC. 15, T-2-S, R-10-E



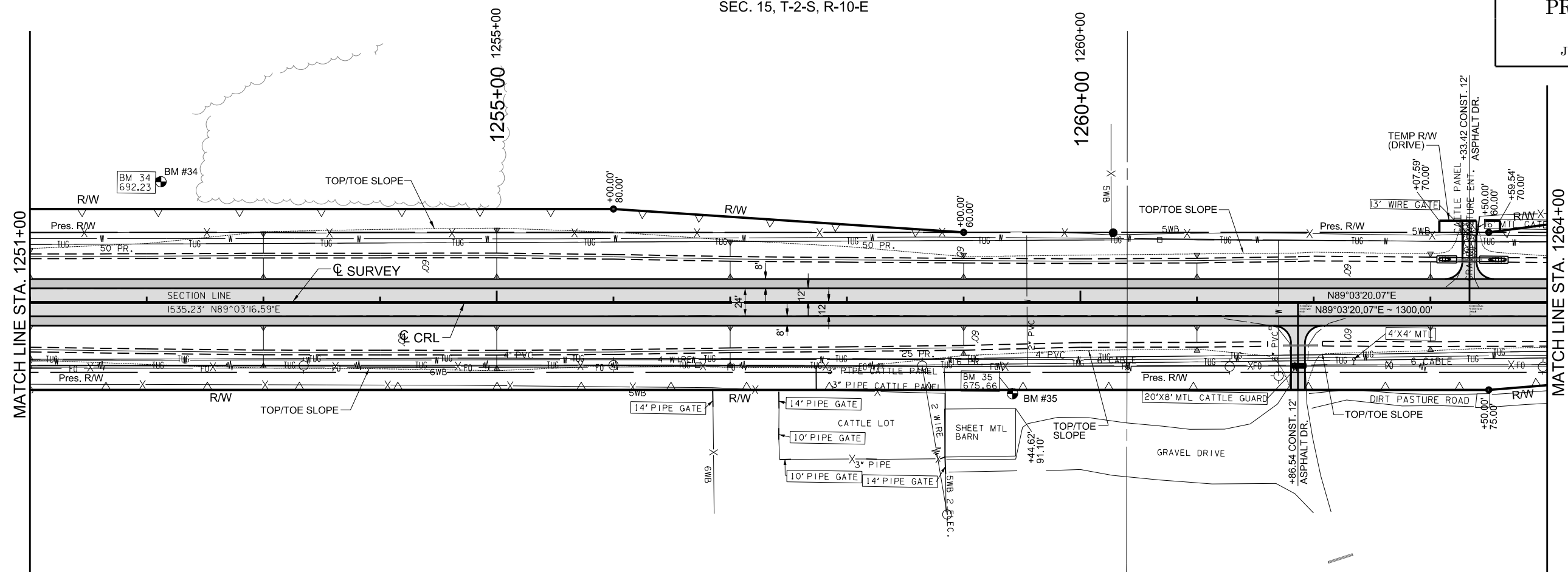
SEC. 22, T-2-S, R-10-E



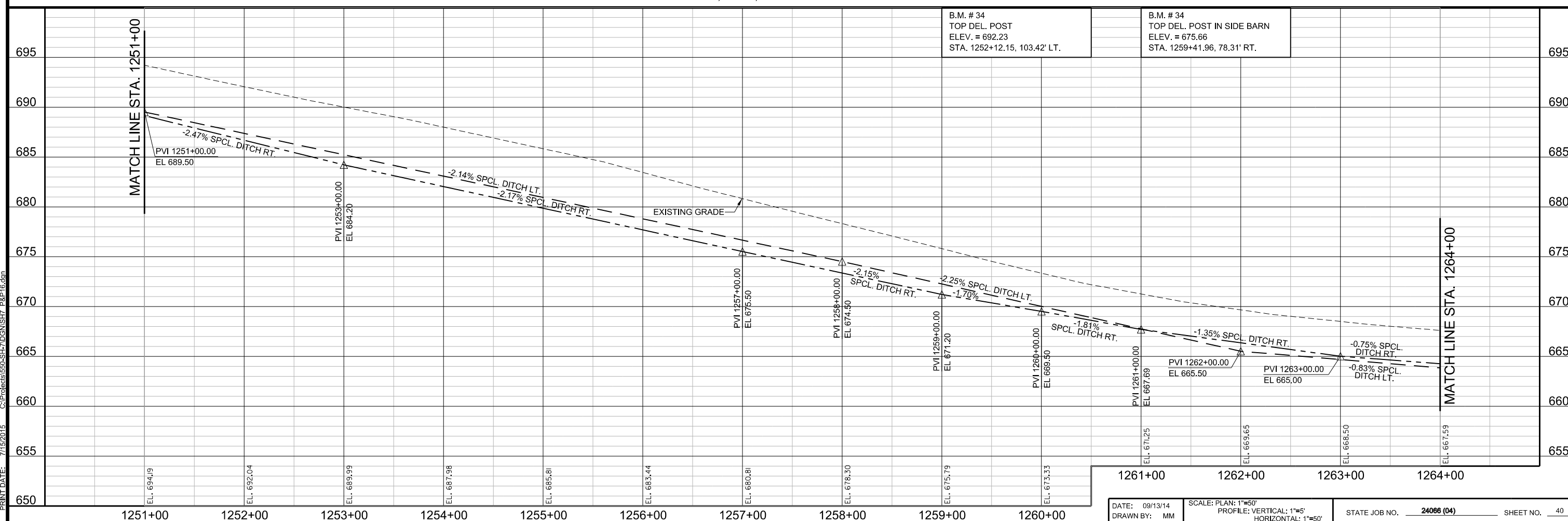
B.M. # 33
TOP DEL. POST IN FENCE
ELEV. = 710.03
STA. 1244+29.70, 91.81' RT.

PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7_P&P15.dwg

SEC. 15, T-2-S, R-10-E



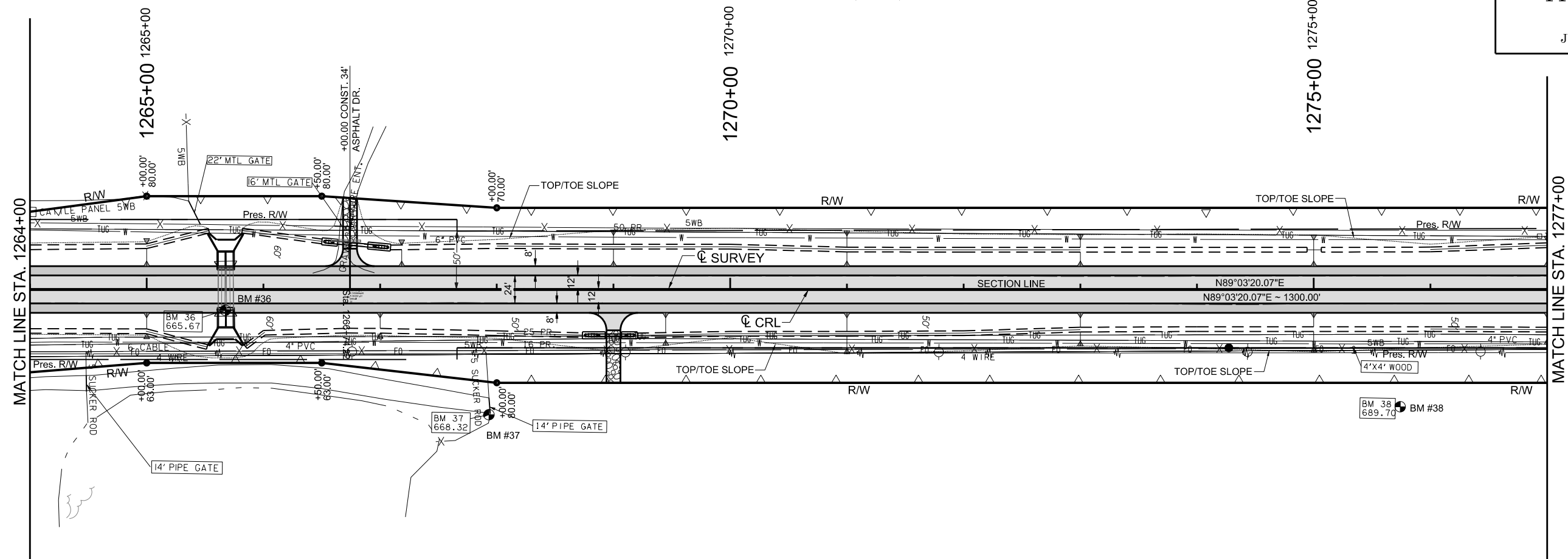
SEC. 22, T-2-S, R-10-E



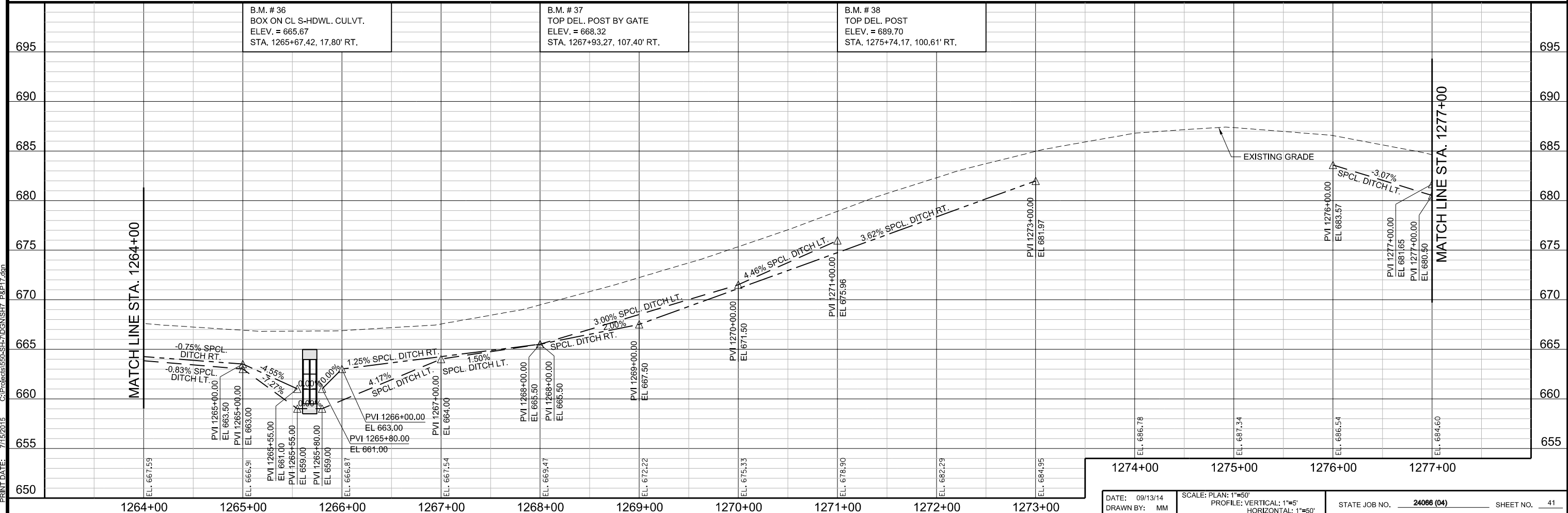
B.M. # 34 TOP DEL. POST ELEV. = 692.23 STA. 1252+12.15, 103.42' LT.	B.M. # 34 TOP DEL. POST IN SIDE BARN ELEV. = 675.66 STA. 1259+41.96, 78.31' RT.
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PRINT DATE: 7/15/2015 C:\Projects\15050-SH-7\DWG\SH7_P&P16.dwg



SEC. 22, T-2-S, R-10-E



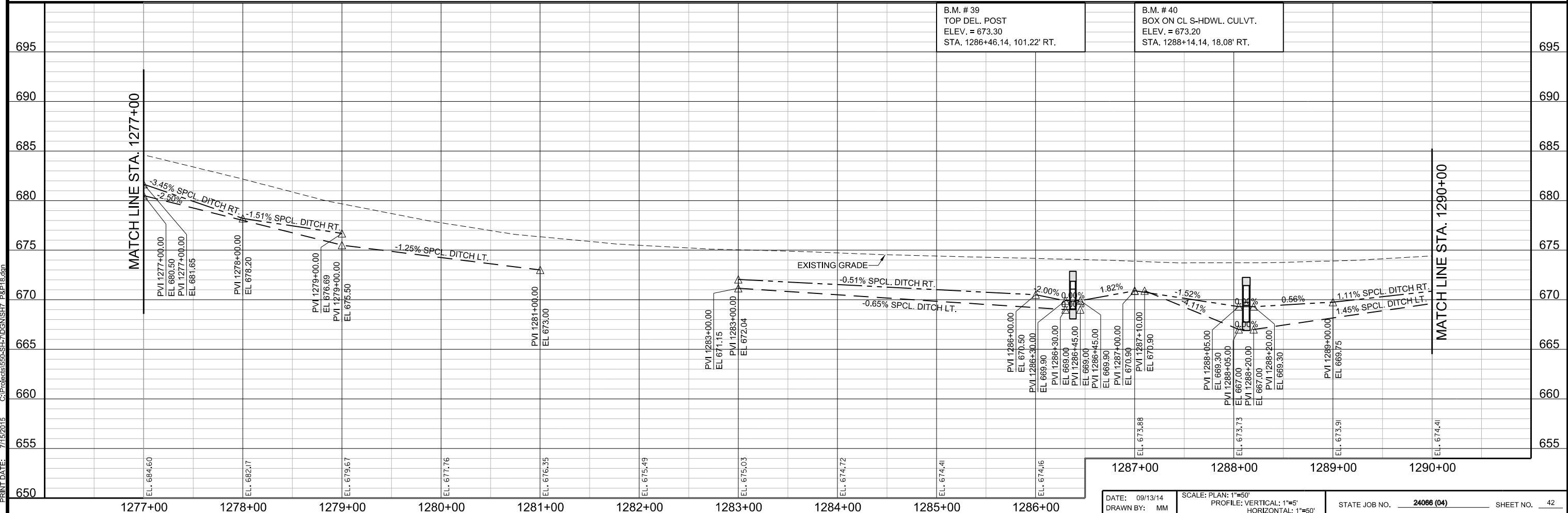
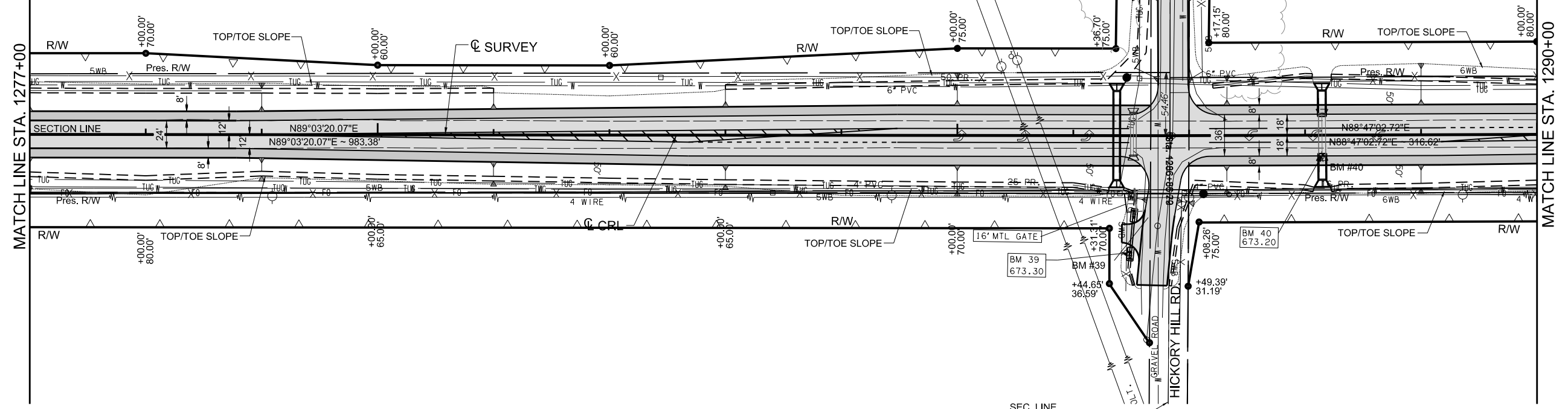
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SEC. 15, T-2-S, R-10-E

SEC. 14, T-2-S, R-10-E

SEC. 22, T-2-S, R-10-E

SEC. 23, T-2-S, R-10-E

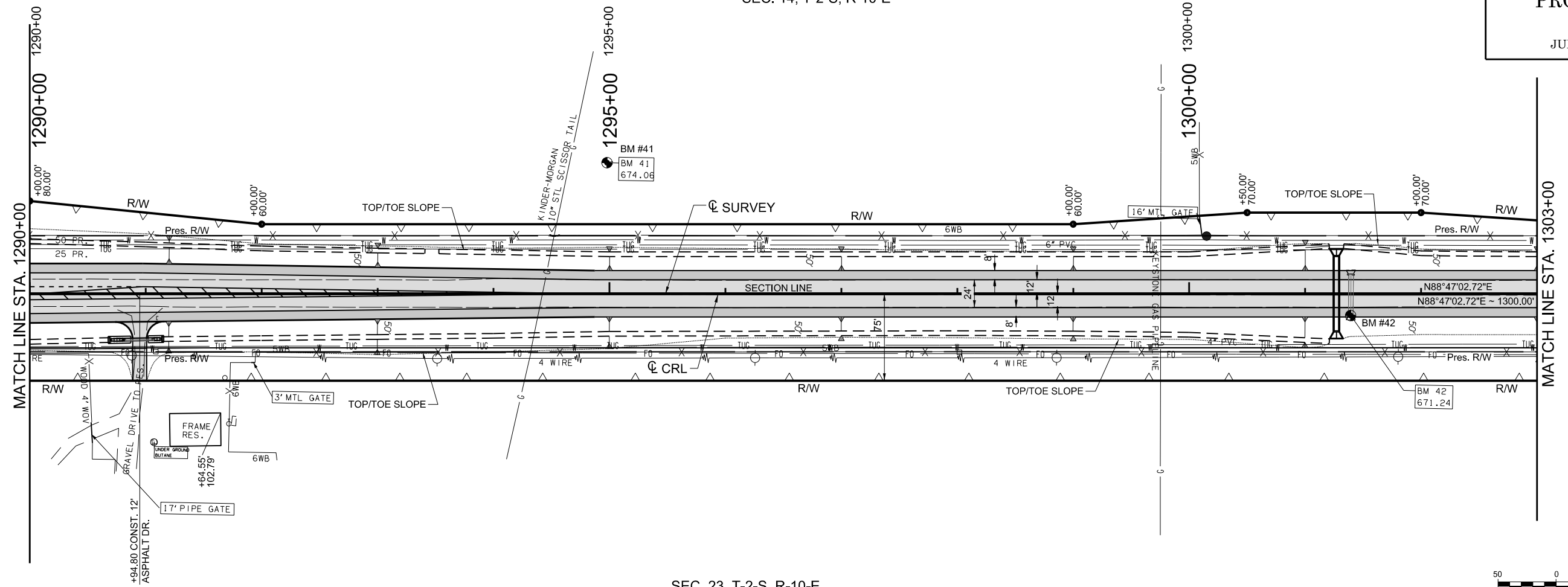


B.M. # 39
TOP DEL. POST
ELEV. = 673.30
STA. 1286+46.14, 101.22' RT.

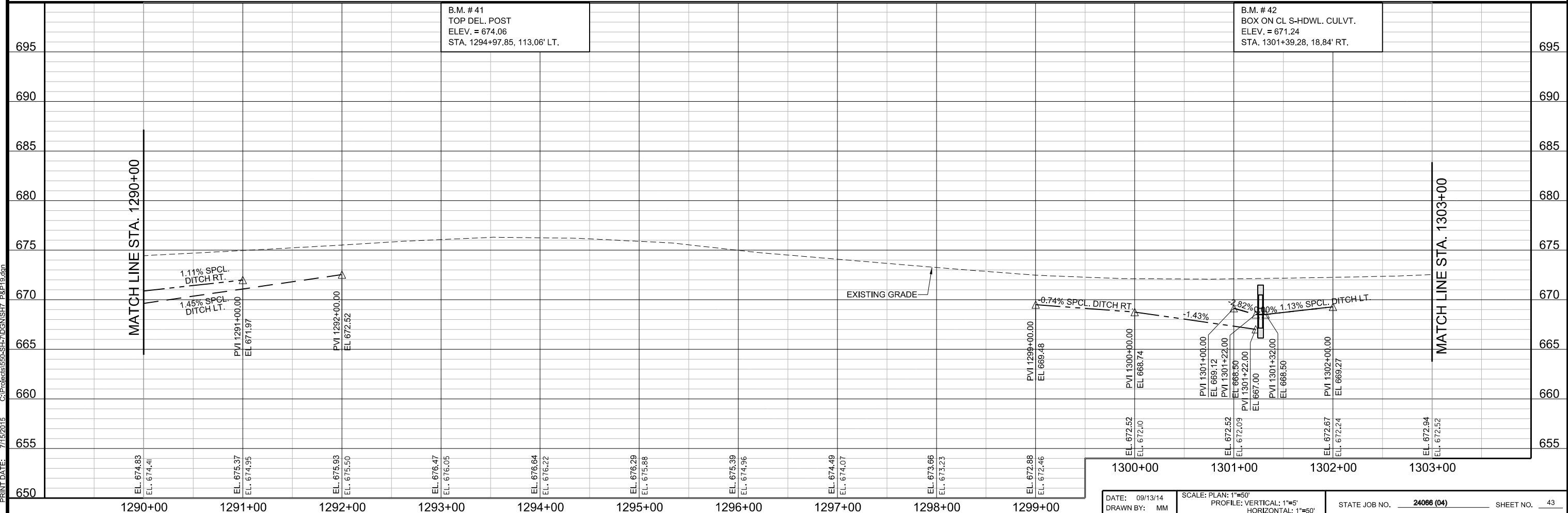
B.M. # 40
BOX ON CL S-HDWL. CULVT.
ELEV. = 673.20
STA. 1288+14.14, 18.08' RT.

PRINT DATE: 7/15/2015 C:\Projeas\650-SH-7\DOGN\SHZ_P&P18.dgn

SEC. 14, T-2-S, R-10-E



SEC. 23, T-2-S, R-10-E

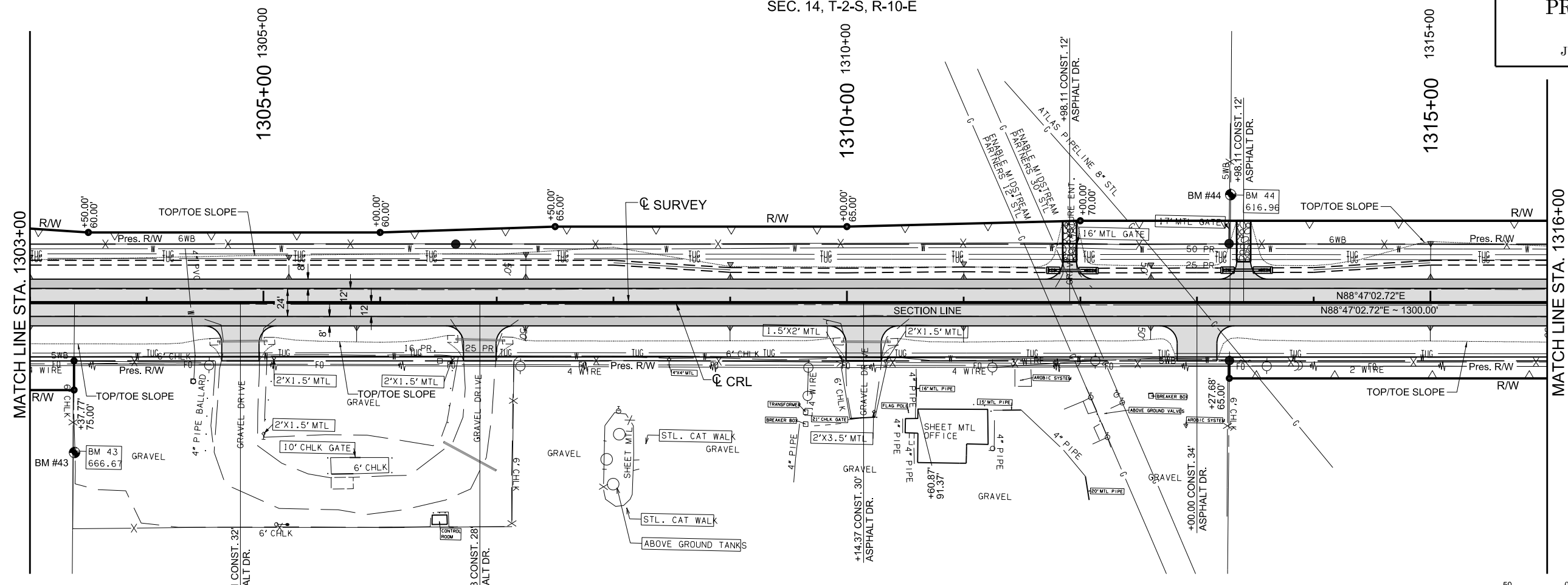


B.M. # 41
TOP DEL. POST
ELEV. = 674.06
STA. 1294+97.85, 113.06' LT.

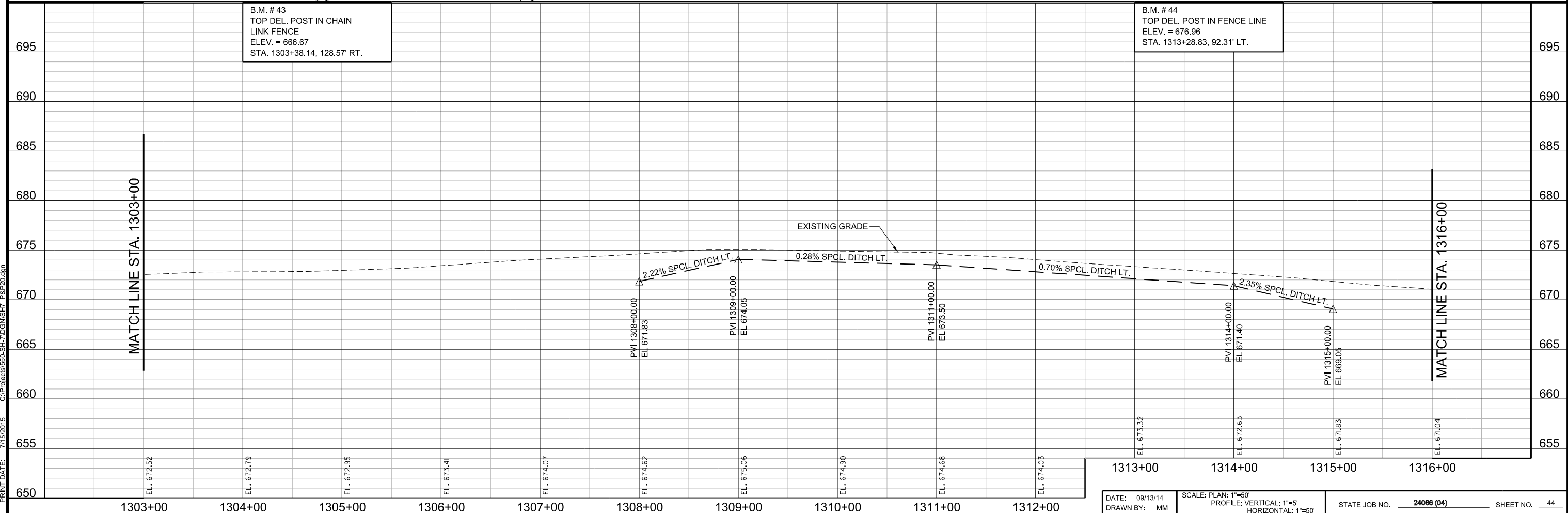
B.M. # 42
BOX ON CL S-HDWL. CULVT.
ELEV. = 671.24
STA. 1301+39.28, 18.84' RT.

PRINT DATE: 7/15/2015 C:\Projects\15050-SH-7\DWG\SH7_P&P19.dwg

SEC. 14, T-2-S, R-10-E



SEC. 23, T-2-S, R-10-E



B.M. # 43
TOP DEL. POST IN CHAIN
LINK FENCE
ELEV. = 666.67
STA. 1303+38.14, 128.57' RT.

B.M. # 44
TOP DEL. POST IN FENCE LINE
ELEV. = 676.96
STA. 1313+28.83, 92.31' LT.

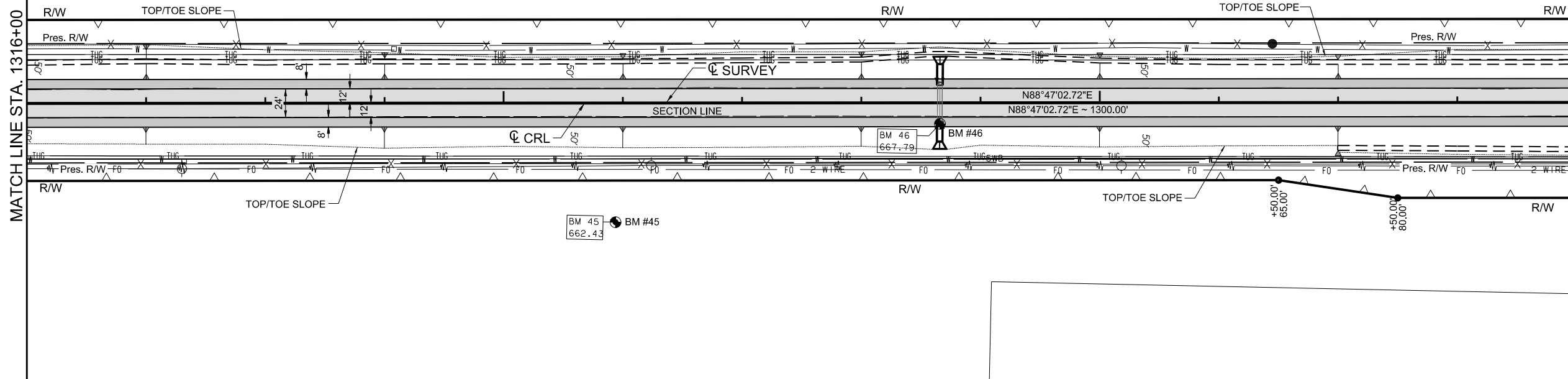
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SEC. 14, T-2-S, R-10-E

1320+00 1320+00

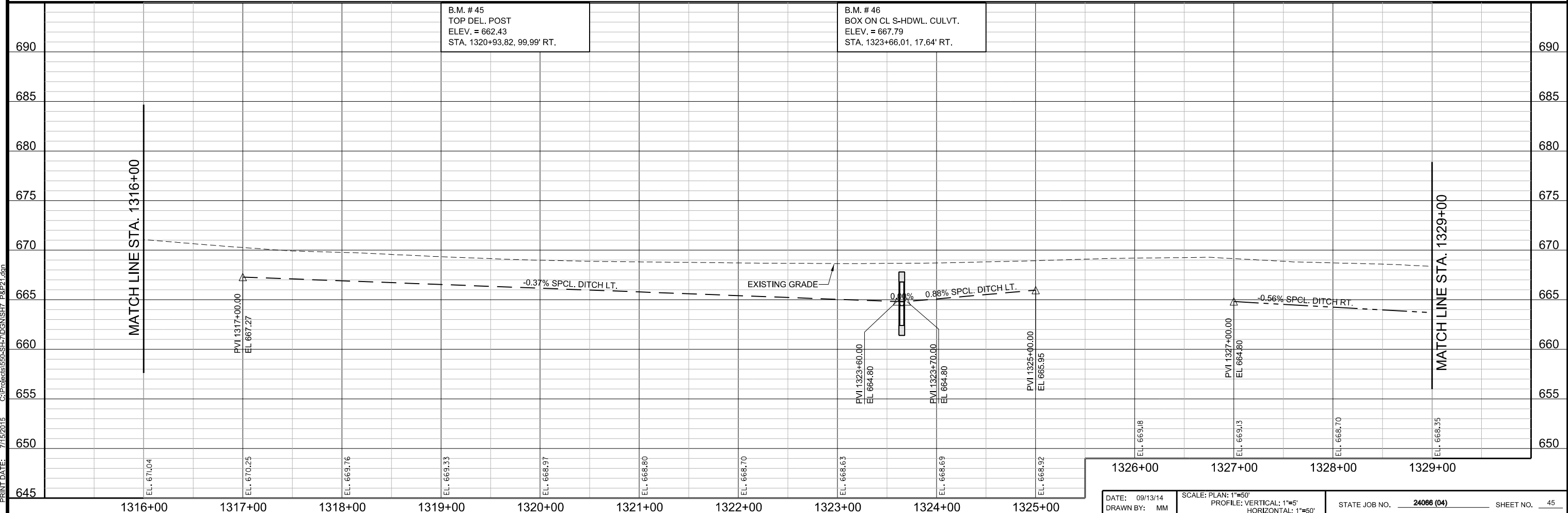
1325+00 1325+00

MATCH LINE STA. 1316+00

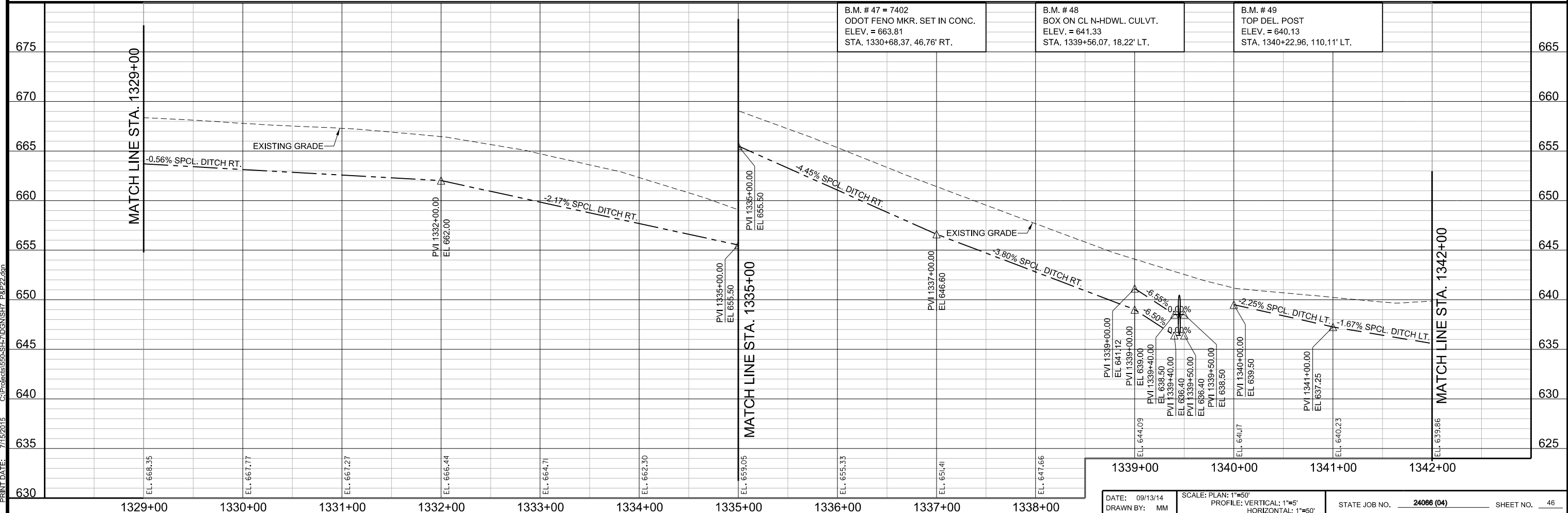
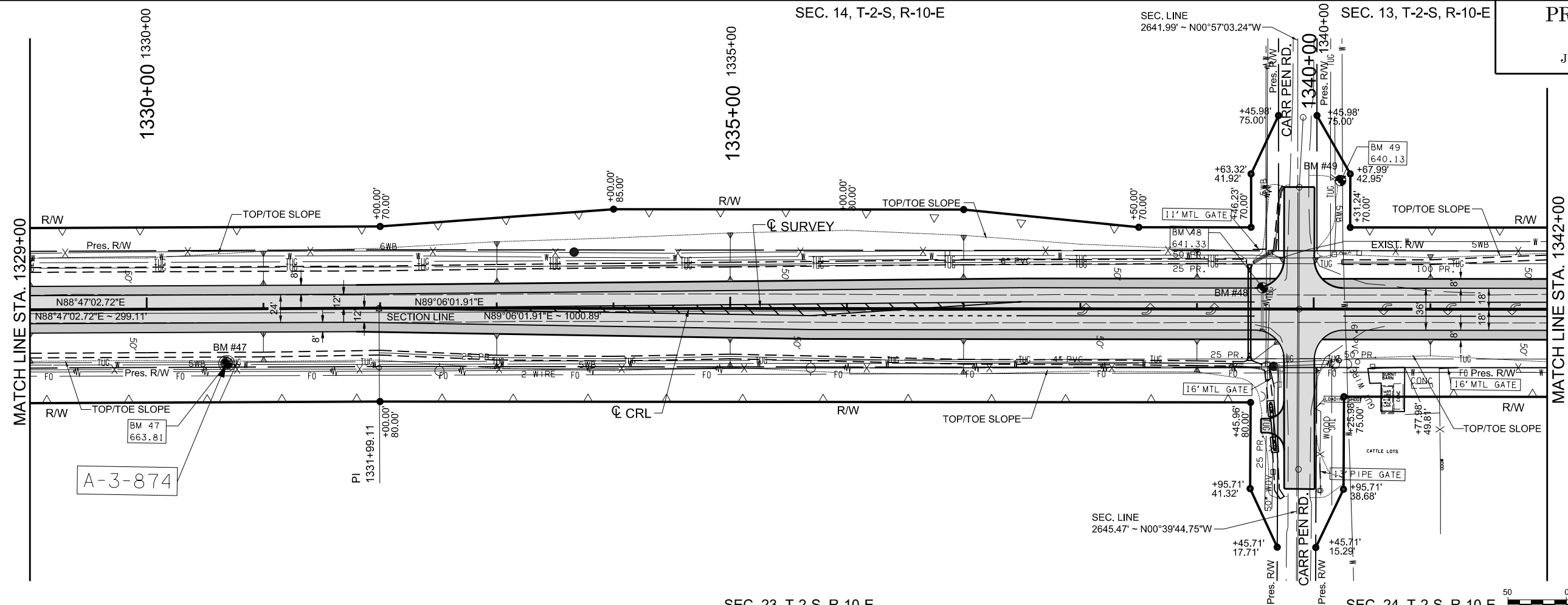


MATCH LINE STA. 1329+00

SEC. 23, T-2-S, R-10-E



PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7_P&P21.dwg



PRINT DATE: 7/15/2015 C:\Projects\15050-SH-7\DWG\SH7_P&P22.dwg

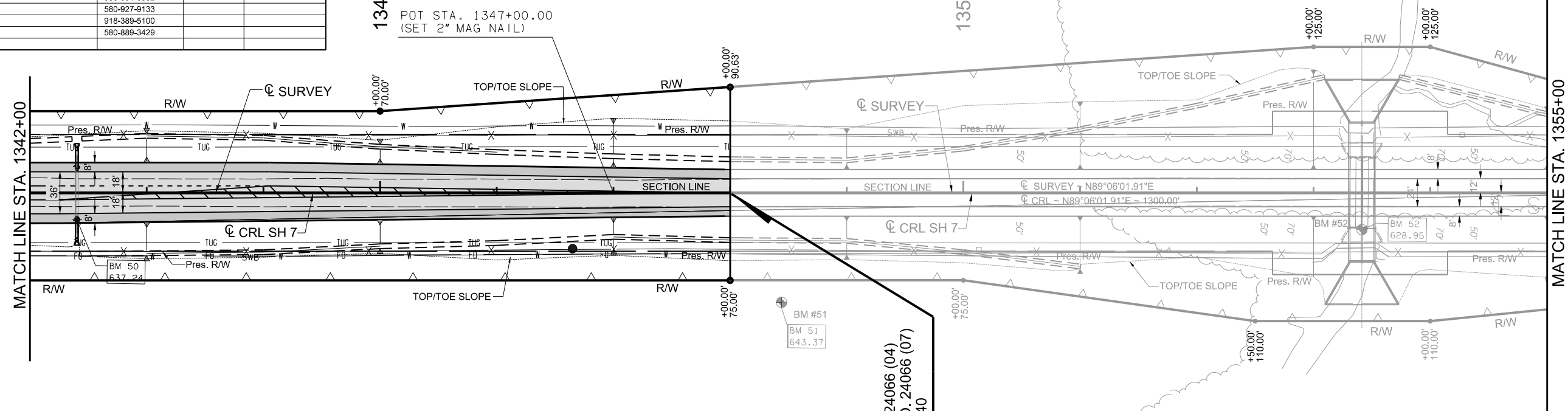
UTILITY COORDINATION

UTILITY	PHONE	NOTIFIED	RESPONDED
ATOKA RURAL WATER DIST. #4	580-889-5949		
SOUTHEASTERN ELECTRIC COOP			
AT&T			
WESTERN FARMERS ELECTRIC COOP			
CITY OF ATOKA	580-889-2675		
SCISSOR TAIL	580-320-3141		
ENOGEX	580-364-0392		
ANTERO	580-927-9133		
MARKWEST	918-389-5100		
CENTER POINT ENERGY	580-889-3429		

SEC. 13, T-2-S, R-10-E

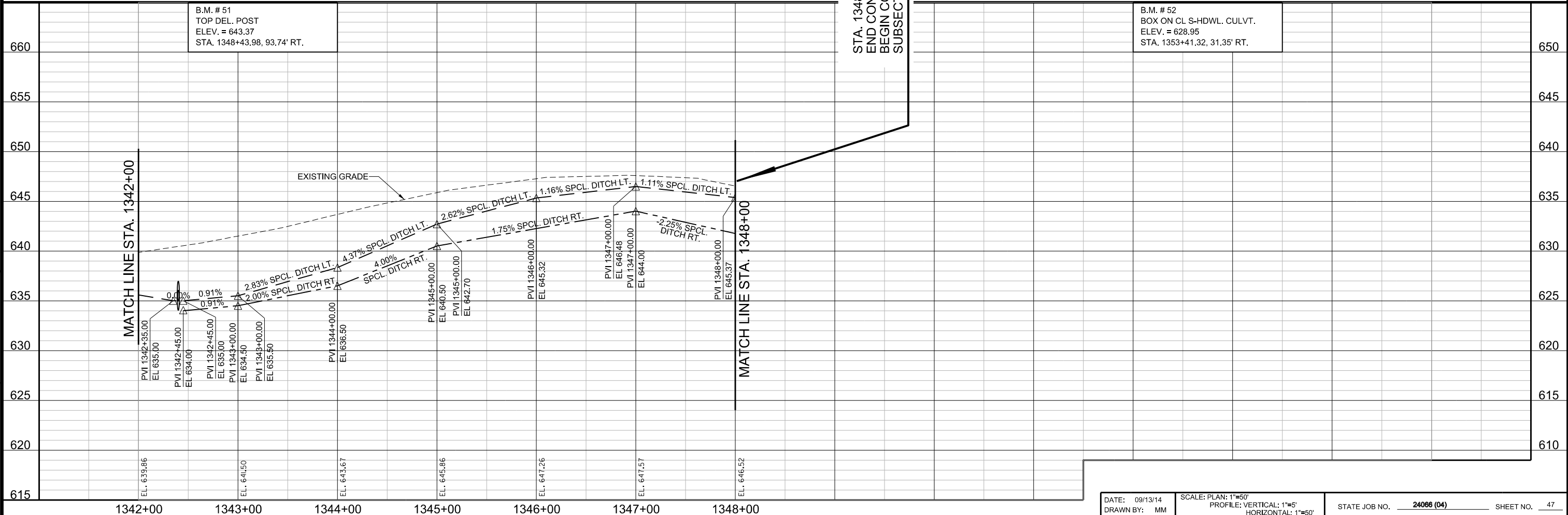
PROPOSED R/W

JULY 14, 2015



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.

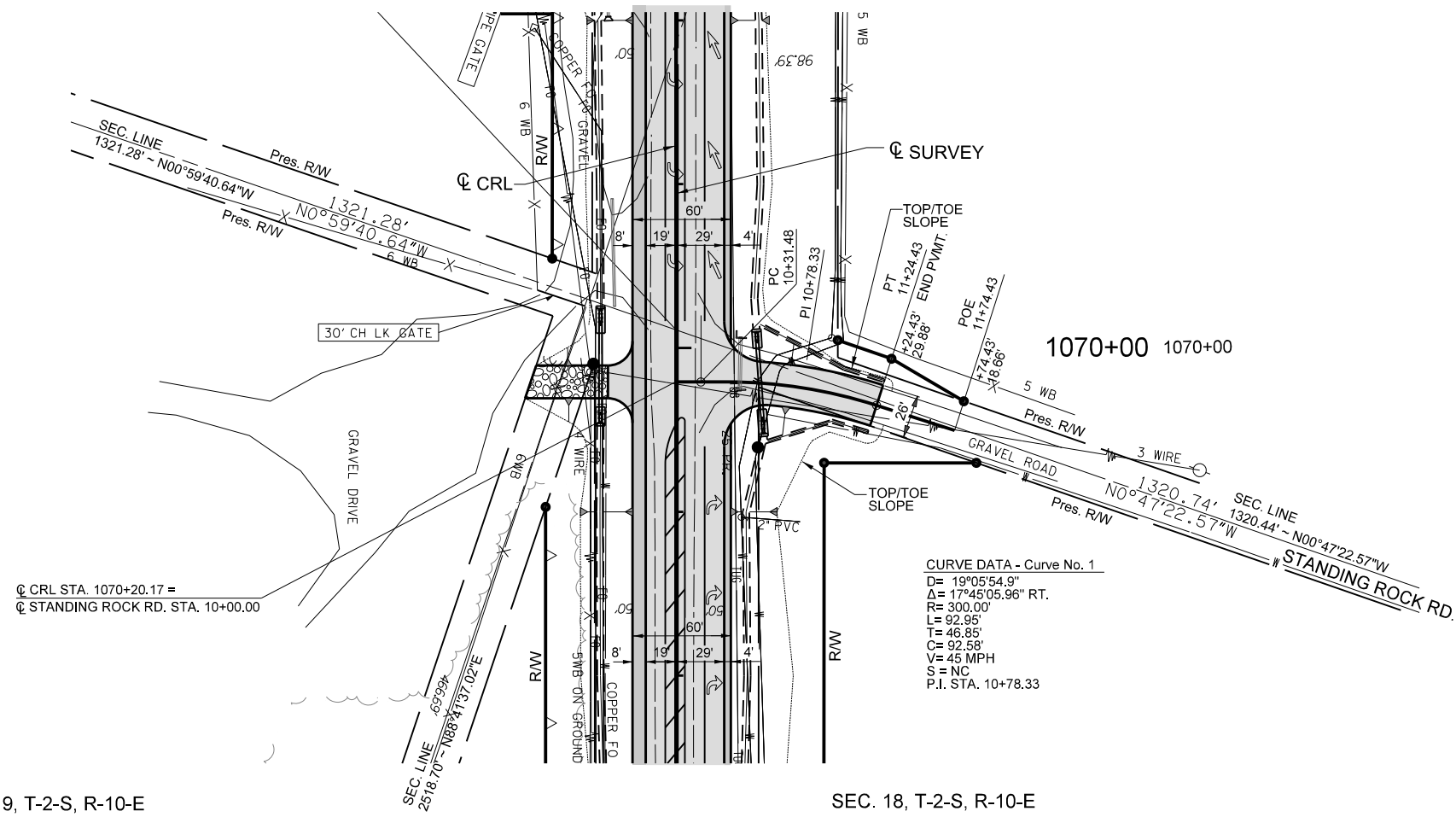
SEC. 24, T-2-S, R-10-E



B.M. # 51
TOP DEL. POST
ELEV. = 643.37
STA. 1348+43.98, 93.74' RT.

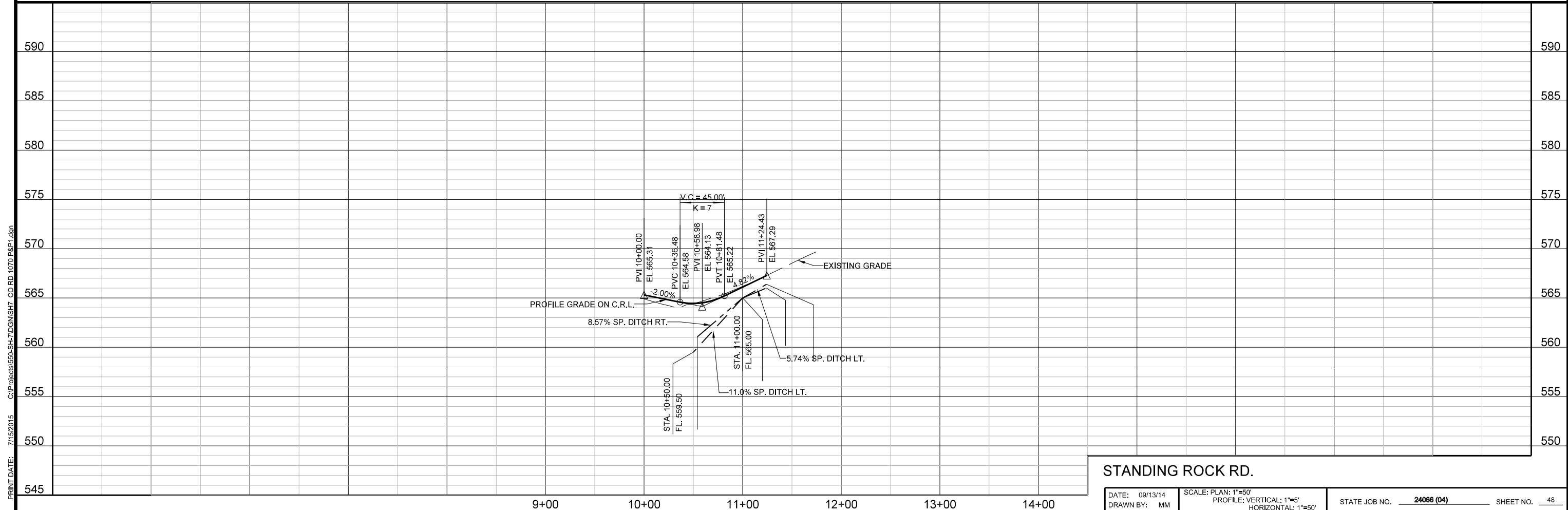
B.M. # 52
BOX ON CL S-HDWL. CULVT.
ELEV. = 628.95
STA. 1353+41.32, 31.35' RT.

PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7_P&P23.dwg



SEC. 19, T-2-S, R-10-E

SEC. 18, T-2-S, R-10-E



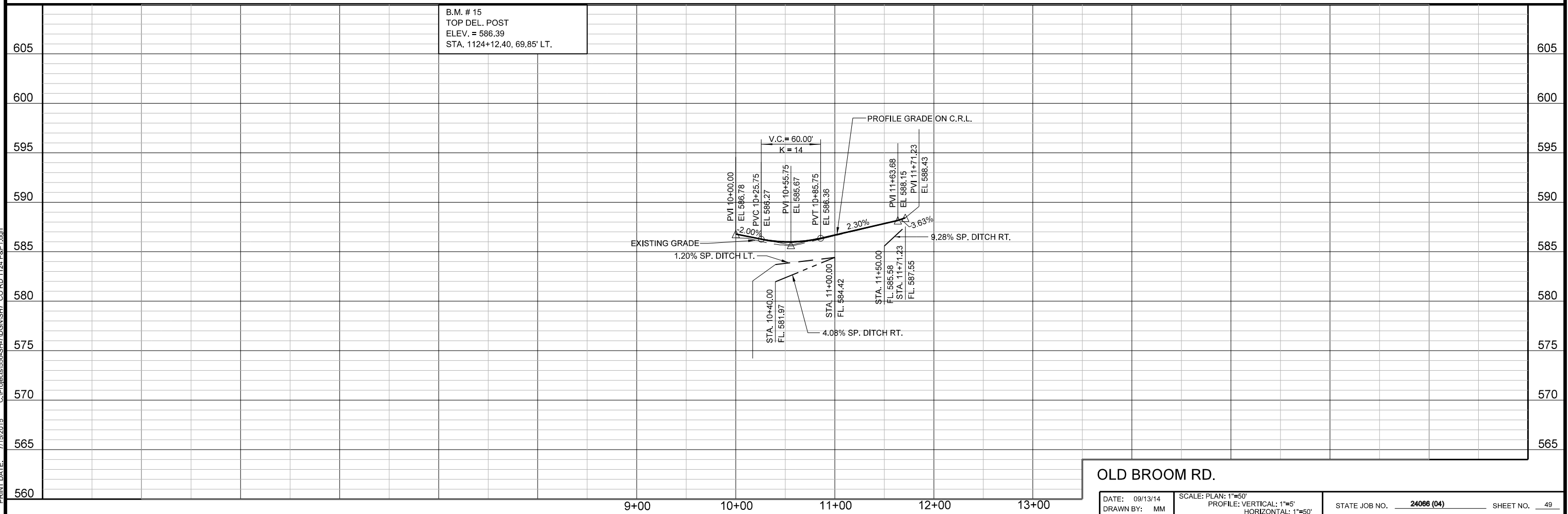
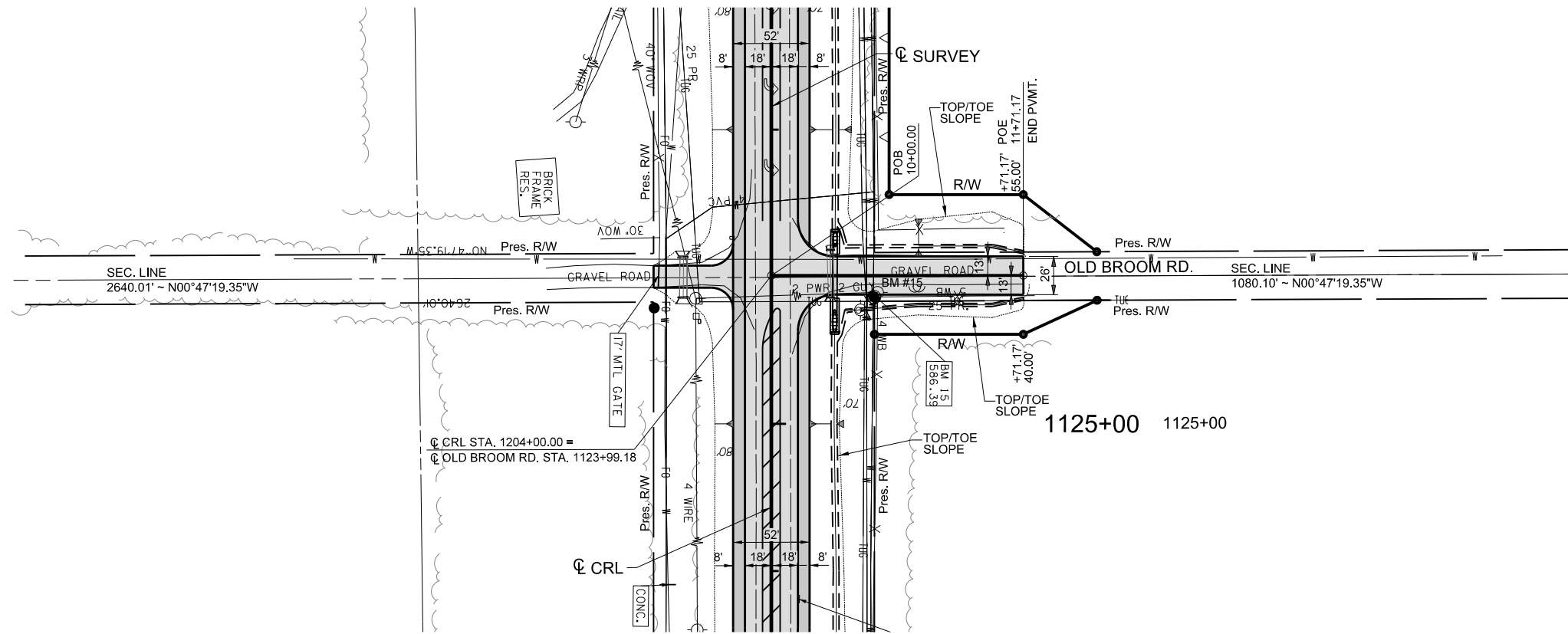
STANDING ROCK RD.

DATE: 09/13/14
DRAWN BY: MM

SCALE: PLAN: 1"=50'
PROFILE: VERTICAL: 1"=5'
HORIZONTAL: 1"=50'

STATE JOB NO. 24086 (04) SHEET NO. 48

PRINT DATE: 7/15/2015 C:\Projects\1500-SH-7\DWG\SHZ_CO RD 1070 P&P1.dgn



OLD BROOM RD.

PRINT DATE: 7/15/2015 C:\Projects\15050-SH-7\DWG\SH7_CO RD 1124 P&P1.dgn

SEC. 16, T-2-S, R-10-E

SEC. LINE
2638.07' - N88°57'23.33"E

10+00
+00.00' 12.23'
+00.00' 20.77'

CURVE DATA - Curve No. 1
D = 00°45'00"
Δ = 02°26'18.5" RT.
R = 7639.44'
T = 325.13'
T = 162.59'
C = 325.10'
V = 45 MPH
S = NC
P.I. STA. 31+08.10

☉ CRL STA. 1204+00.00 =
☉ WG BAR RD. STA. 15+66.13

1204+00
1204+00

CONC
STRUCTURE
☉ SURVEY

BM #28
639.73

Pres. R/W
WG BAR RD.

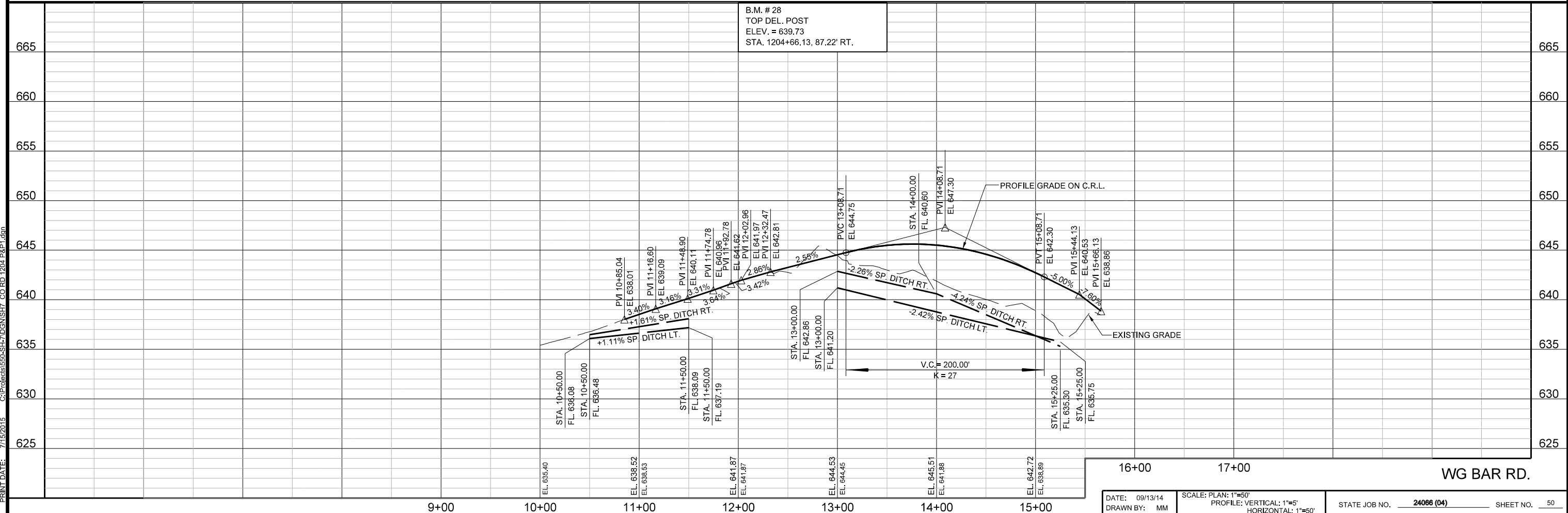
GRAVEL ROAD

23' PIPE GATE

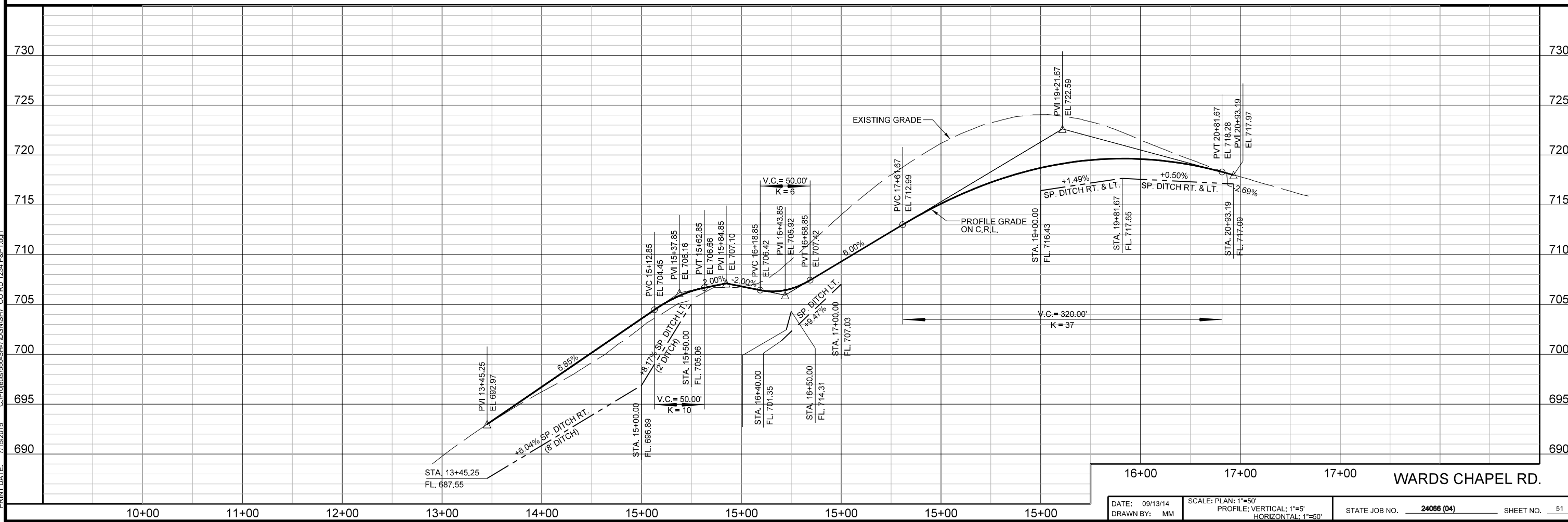
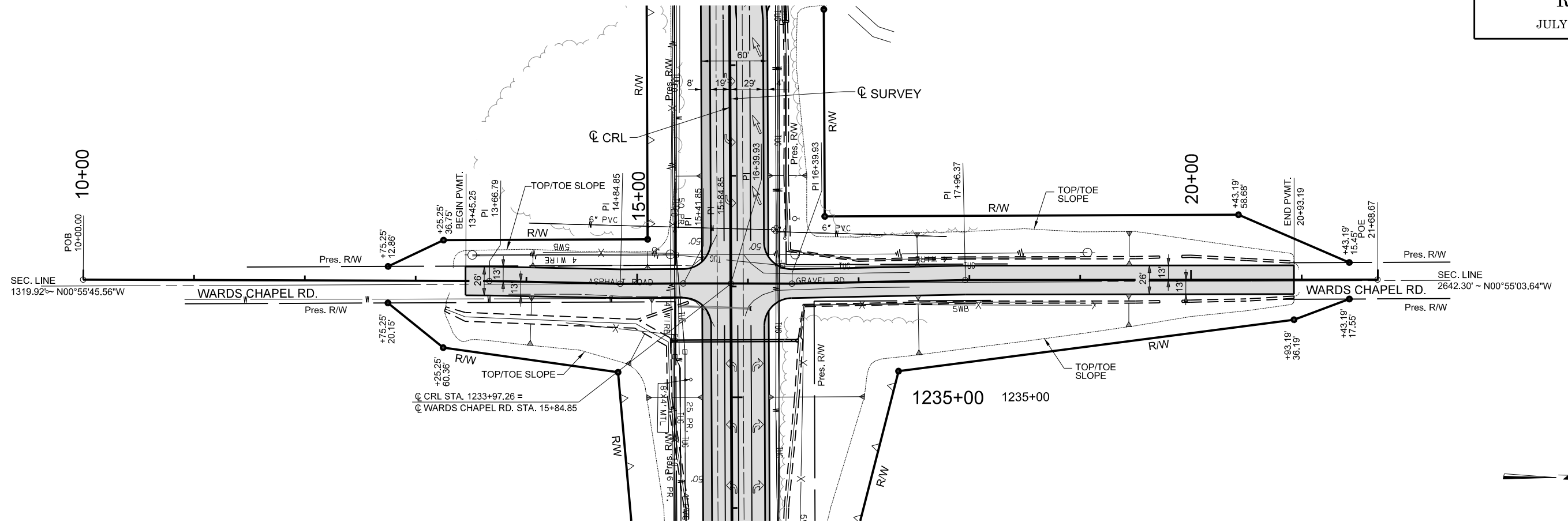
DIRT PASTURE ENT.

SEC. 21, T-2-S, R-10-E

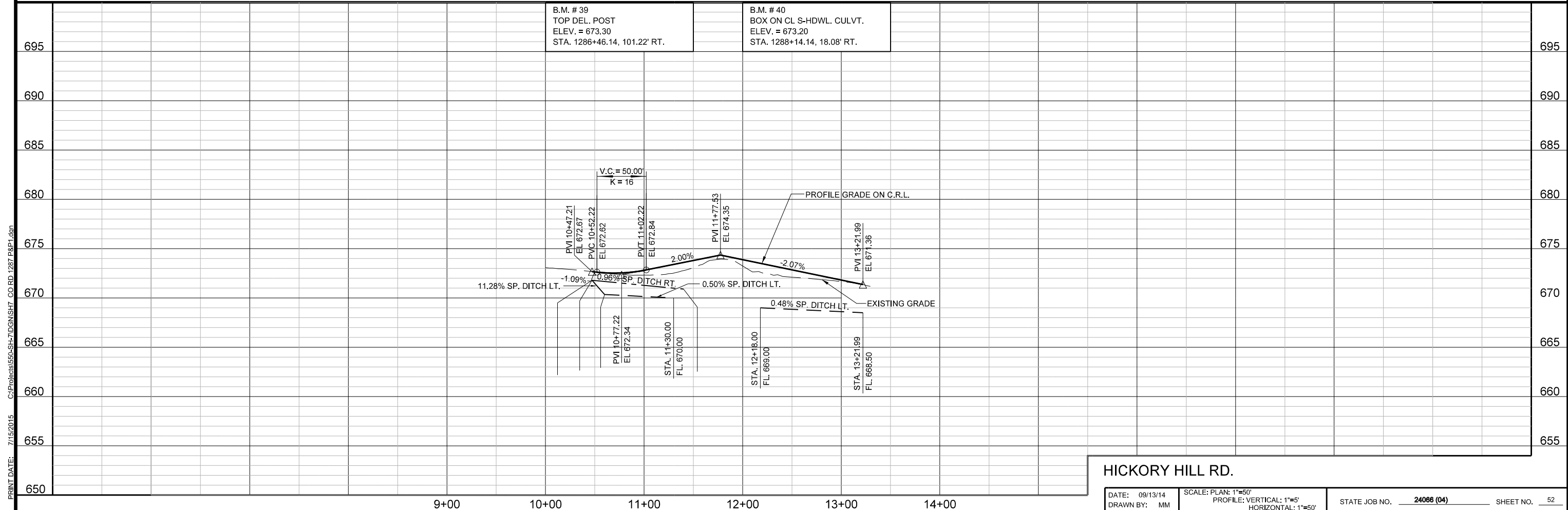
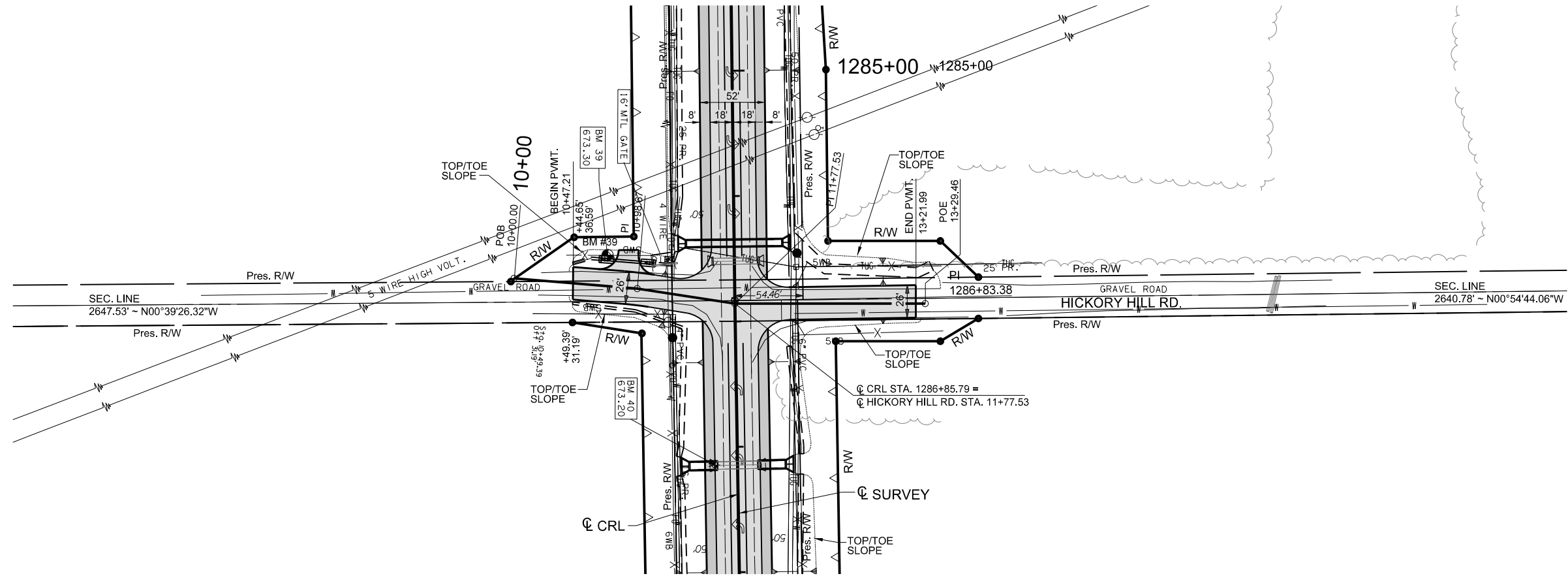
B.M. # 28
TOP DEL. POST
ELEV. = 639.73
STA. 1204+66.13, 87.22' RT.



PRINT DATE: 7/15/2015 C:\Projects\15050-SH7\DWG\SH7_CO RD 1204 P&P1.dgn



PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7_CO RD 1234 P&P1.dwg



HICKORY HILL RD.

PRINT DATE: 7/15/2015 C:\ProgramData\AutoCAD\2014\Drawings\24086\24086-SH-7\DWG\SH7_CO RD 1287 P&P1.dwg

PROPOSED R/W

JULY 14, 2015

STANDARDS:

- BRIDGE
- RCB-C3-10(2-12)-02E
- RCB-CW3-D6-0-01E
- RCB-E3-H7-0-1-01E
- RCB-E3-H7-0-2-01E
- PUD-3-2
- SB1-4-2

DESIGN DATA LRFD

DESIGN SPECIFICATIONS: 2007 EDITION OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH INTERIMS FROM 2008

LOADING: HL93 AND ODOT OVERLOAD TRUCK

CLASS AA CONCRETE F'C = 4,000 psi
 REINFORCING STEEL (GR. 60) FY = 60,000 psi

HYDRAULIC SUMMARY

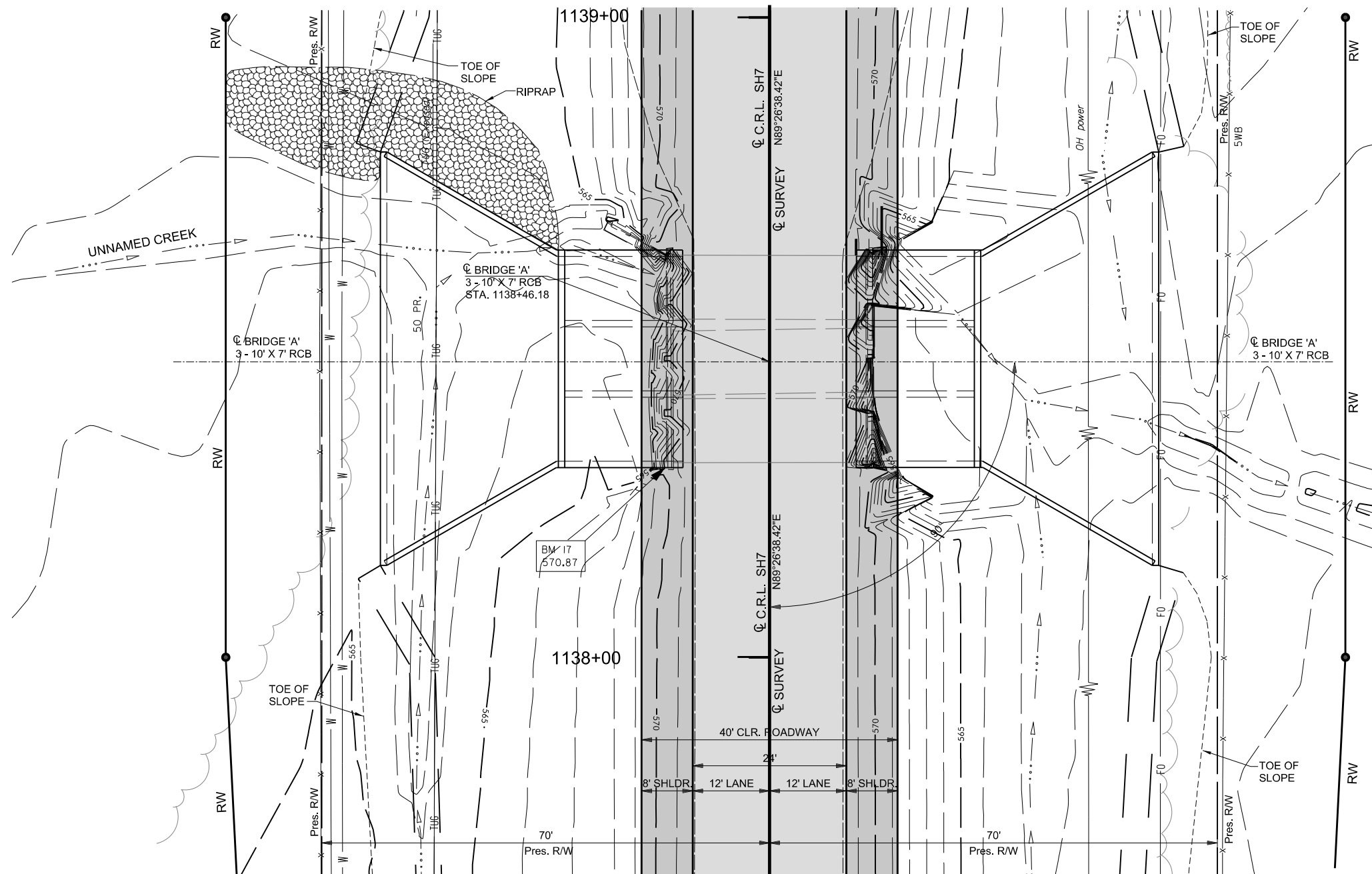
PROPOSED STRUCTURE: CRL STATION 1138+46.18
 3 - 10' X 7' RCB, 40'-0" CLEAR ROADWAY
 ROADWAY ELEVATION = 572.30

TOTAL DRAINAGE AREA = 0.145 SQ. MI.
 CONTROLLED DA = 0.00 SQ. MI.
 EFFECTIVE DA = 0.145 SQ. MI.

Q2 = 112 cfs	Q50 = 582 cfs
V2 = 2.10 fps	V50 = 7.29 fps
CHW2 = 562.11 ft.	CHW50 = 569.42 ft.
Q5 = 220 cfs	Q100 = 720 cfs
V5 = 3.03 fps	V100 = 18.27 fps
CHW5 = 565.50 ft.	CHW100 = 570.47 ft.
Q10 = 312 cfs	Q500 = 1,119 cfs
V10 = 4.11 fps	V500 = 21.10 fps
CHW10 = 566.40 ft.	CHW500 = 572.84 ft.
Q25 = 455 cfs	QOT = 203
V25 = 6.28 fps	
CHW25 = 568.11 ft.	

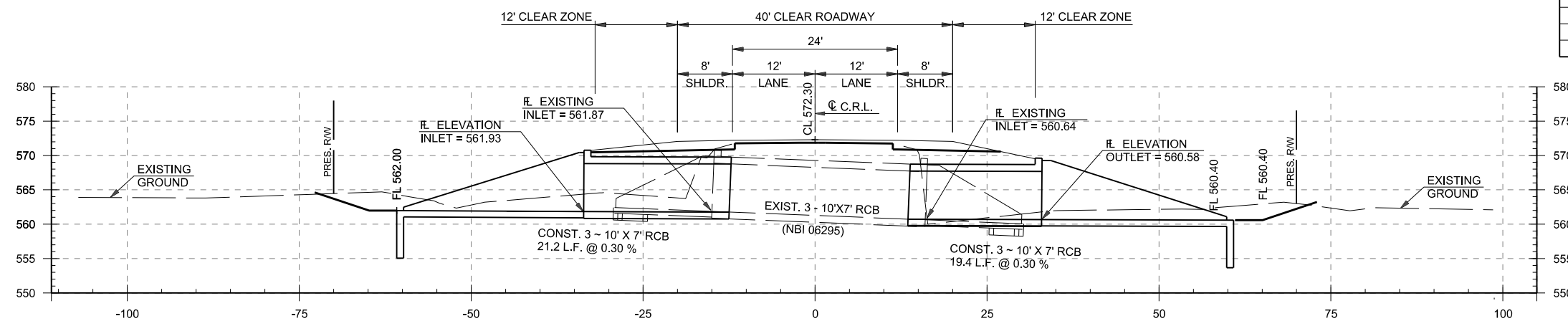
UTILITY COORDINATION

UTILITY	PHONE	NOTIFIED	RESPONDED
ATOKA RURAL WATER DIST. #4	580-889-5949		
SOUTHEASTERN ELECTRIC COOP			
AT&T			
WESTERN FARMERS ELECTRIC COOP			
CITY OF ATOKA	580-889-2675		
SCISSOR TAIL	580-320-3141		
ENOGEX	580-364-0392		
ANTERO	580-927-9133		
MARKWEST	918-389-5100		
CENTER POINTE ENERGY	580-889-3429		



PLAN

SCALE: 1" = 10'



PROFILE - STA. 1138+46.18

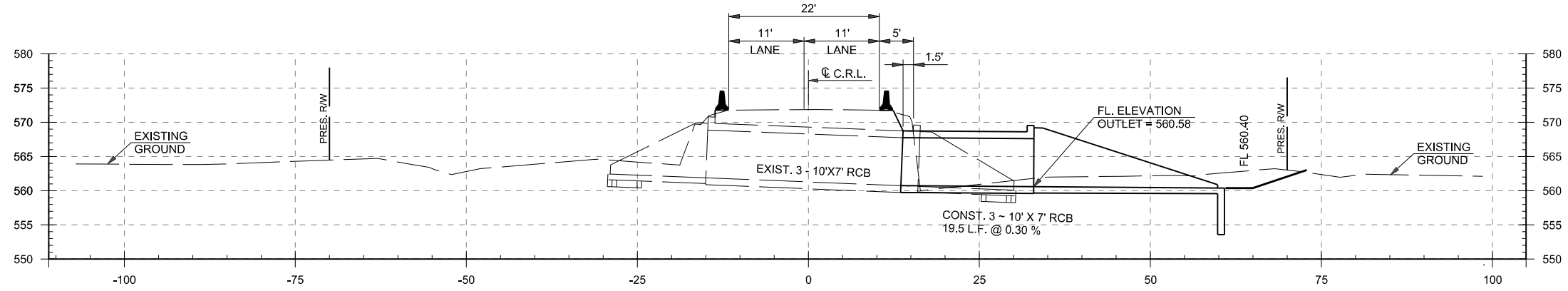
SCALE: 1" = 10'

C.R.L. PROFILE DATA

SH7 OVER UNNAMED CREEK - BRIDGE "A"

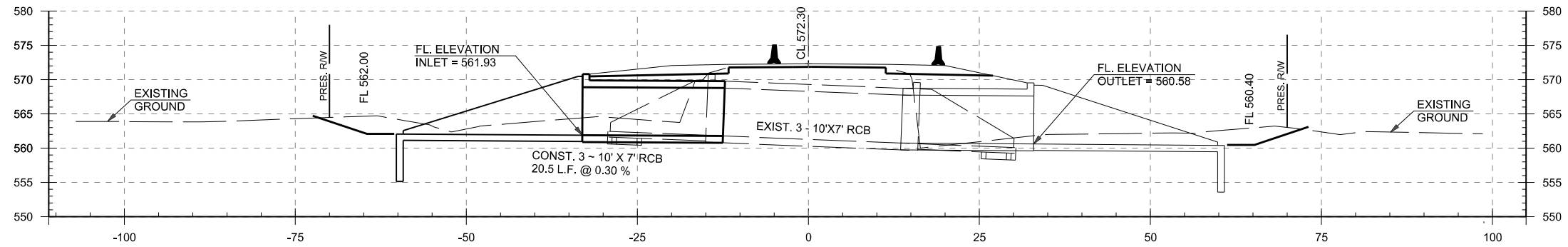
DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION GENERAL PLAN AND ELEVATION @ STATION 1138+46.18 CONSTRUCT 3 - 10' X 7' RCB OVER UNNAMED CREEK 40' CLR. ROADWAY JOB PIECE NO. 24066 (04) SHEET NO. 54
DRAWN	MM		
CHECKED	RB		
APPROVED	SL		
SQUAD	BKL, Inc.		

PRINT DATE: 7/15/2015 C:\Projeas\650-SH7\DWG\SH7 BRIDGE A.dwg



CONSTRUCTION SEQUENCE - PHASE 1

SCALE: 1" = 10'



CONSTRUCTION SEQUENCE - PHASE 2

SCALE: 1" = 10'

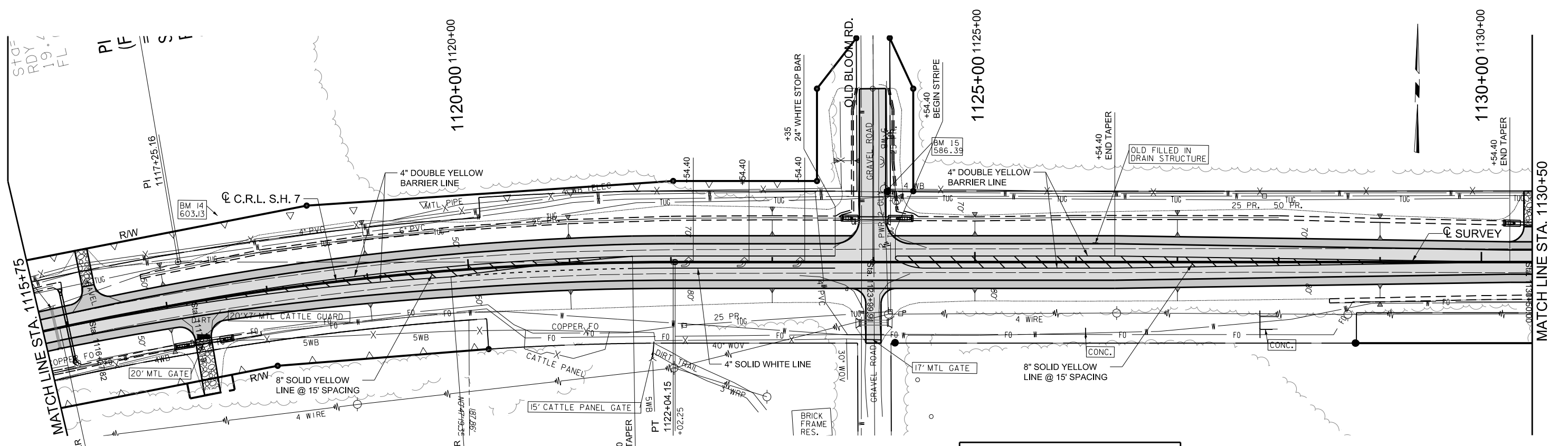
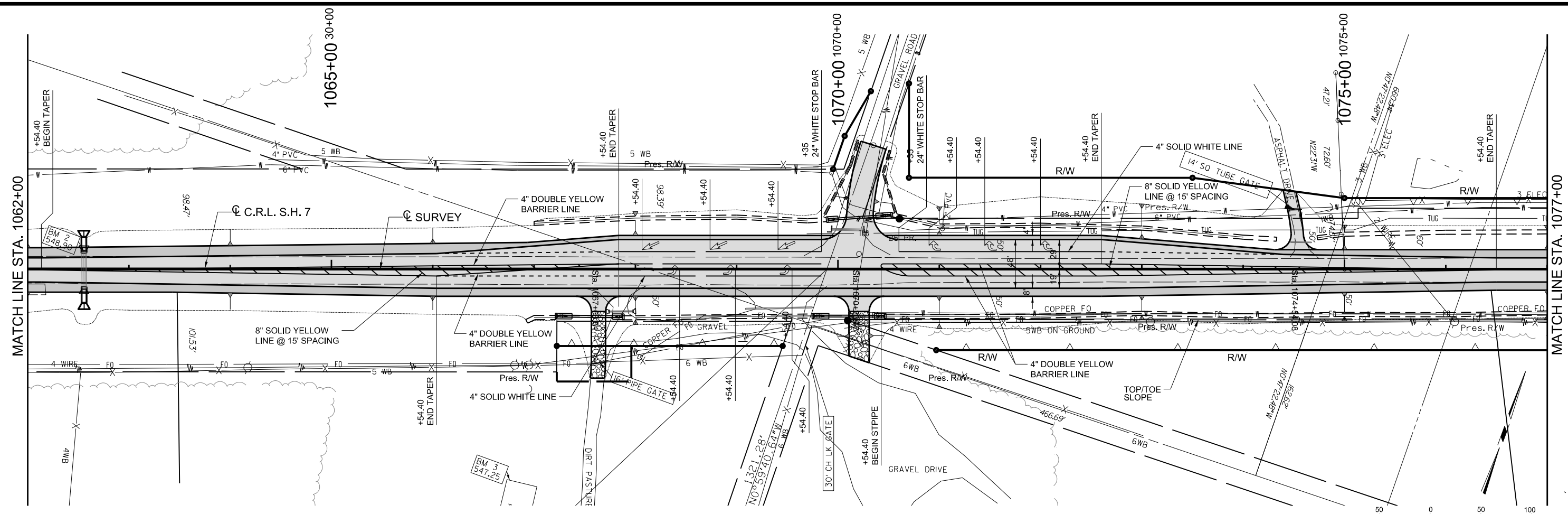
PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DWG\SH7 BRIDGE A Const.Sec.dwg

**PROPOSED
R/W**
JULY 14, 2015

SH7 OVER UNNAMED CREEK - BRIDGE "A"

DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION BRIDGE 'A' CONSTRUCTION SEQUENCE PHASING JOB PIECE NO. 24066 (04) SHEET NO. 55
DRAWN	MM		
CHECKED	RB		
APPROVED	SL		
SQUAD	BKL, Inc.		

PRINT DATE: 7/15/2015 C:\Projects\650-SH-7\DWG\SH7_S51.dwg

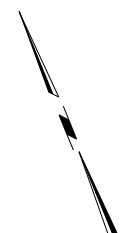
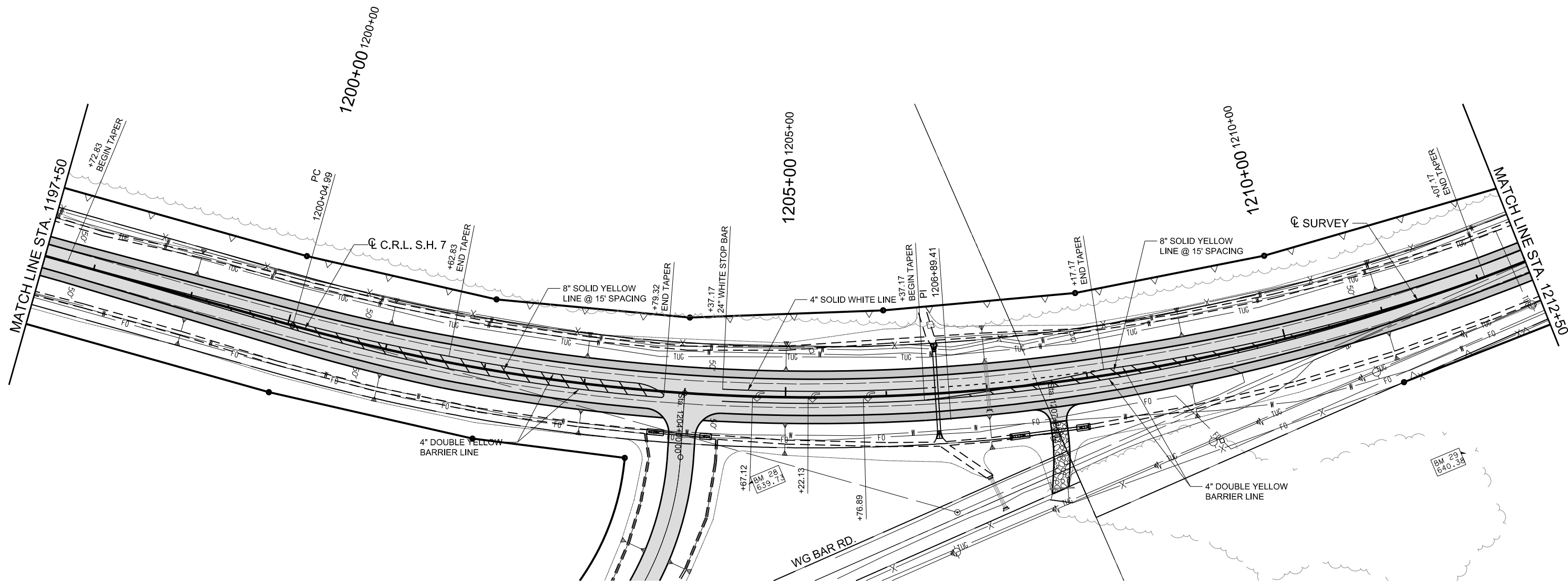


**PROPOSED
R/W**
JULY 14, 2015

DESIGN	RB	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION
DRAWN	MM	
CHECKED	RB	
APPROVED	SL	
SQUAD	BKL, Inc.	
STRIPING DETAIL (1)		JOB PIECE NO. 24066 (04) SHEET NO. 56

PROPOSED
R/W

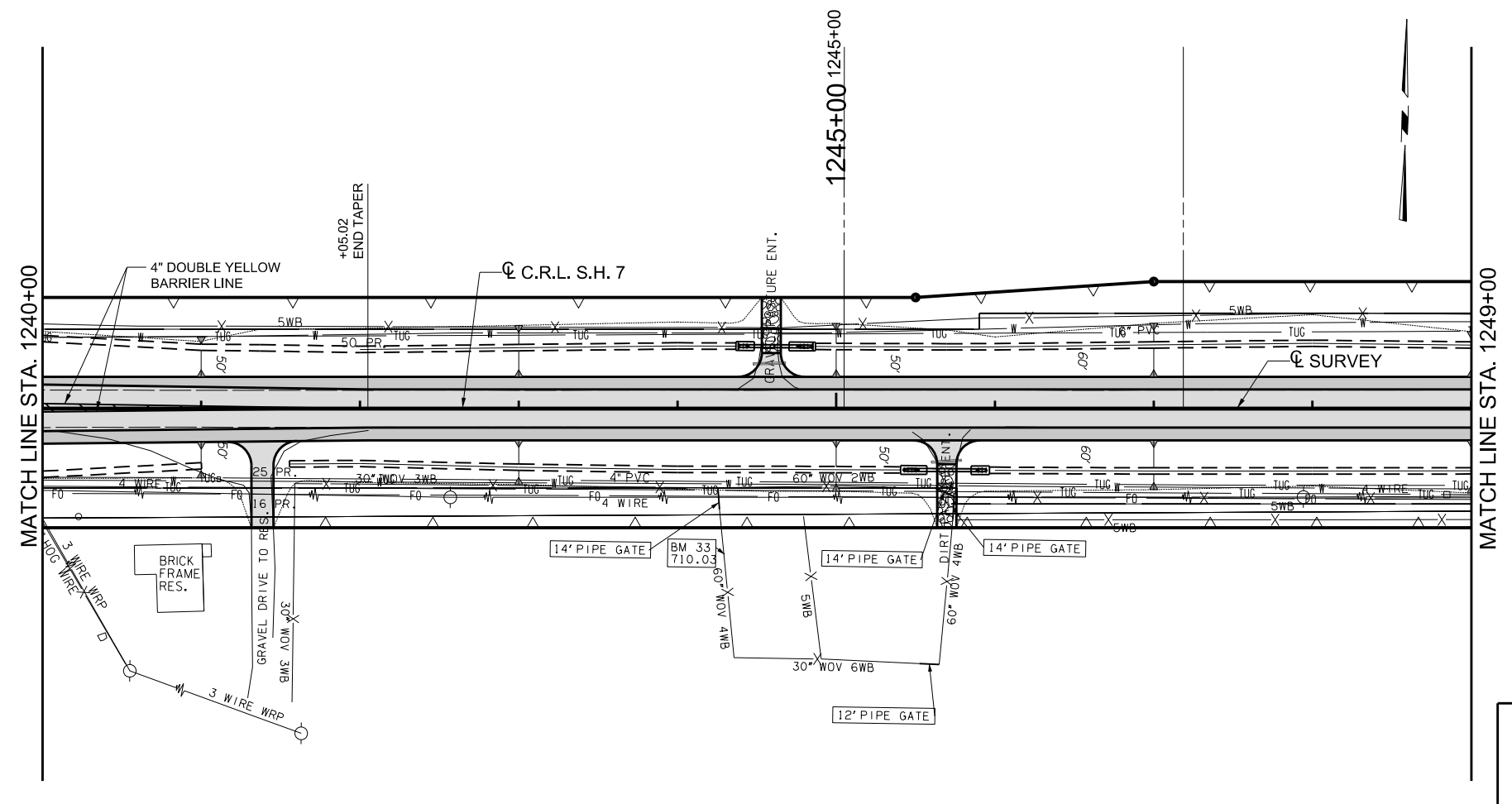
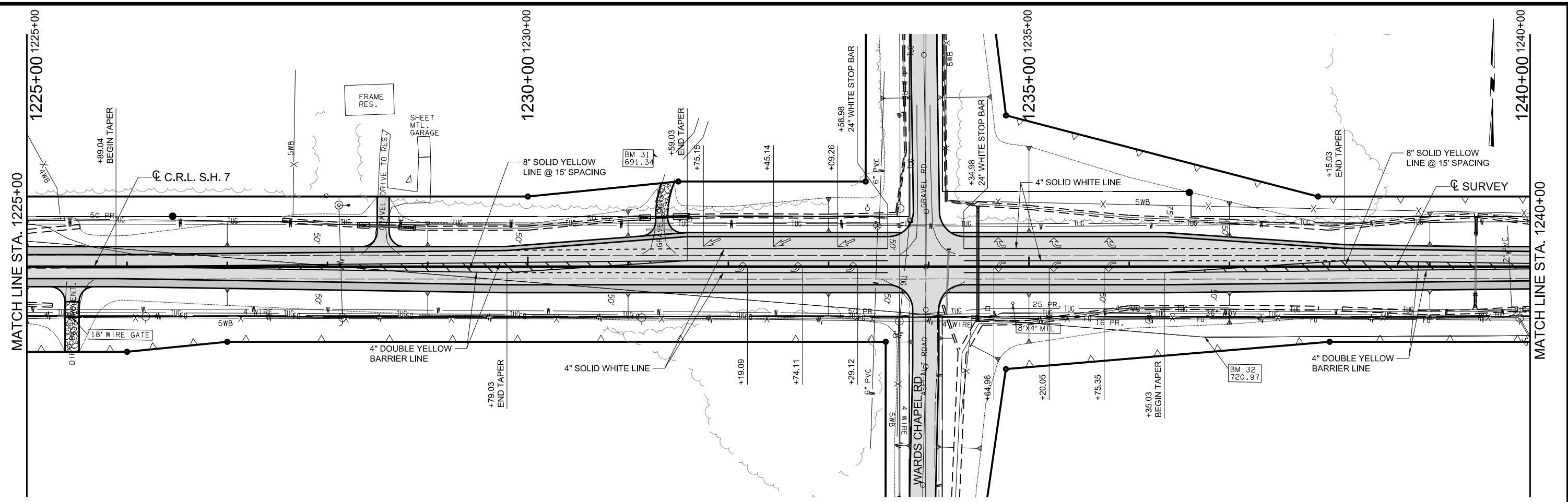
JULY 14, 2015



PRINT DATE: 7/15/2015 C:\Projects\150-SH-7\DGN\SH7_SS2.dgn

DESIGN	RB		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION STRIPING DETAIL (2) JOB PIECE NO. 24066 (04) SHEET NO. 57
DRAWN	MM		
CHECKED	RB		
APPROVED	SL		
SQUAD	BKL, Inc.		

PRINT DATE: 7/15/2015 C:\Projects\650-SH-7\DOGN\SH7_S53.dwg



PROPOSED R/W
JULY 14, 2015

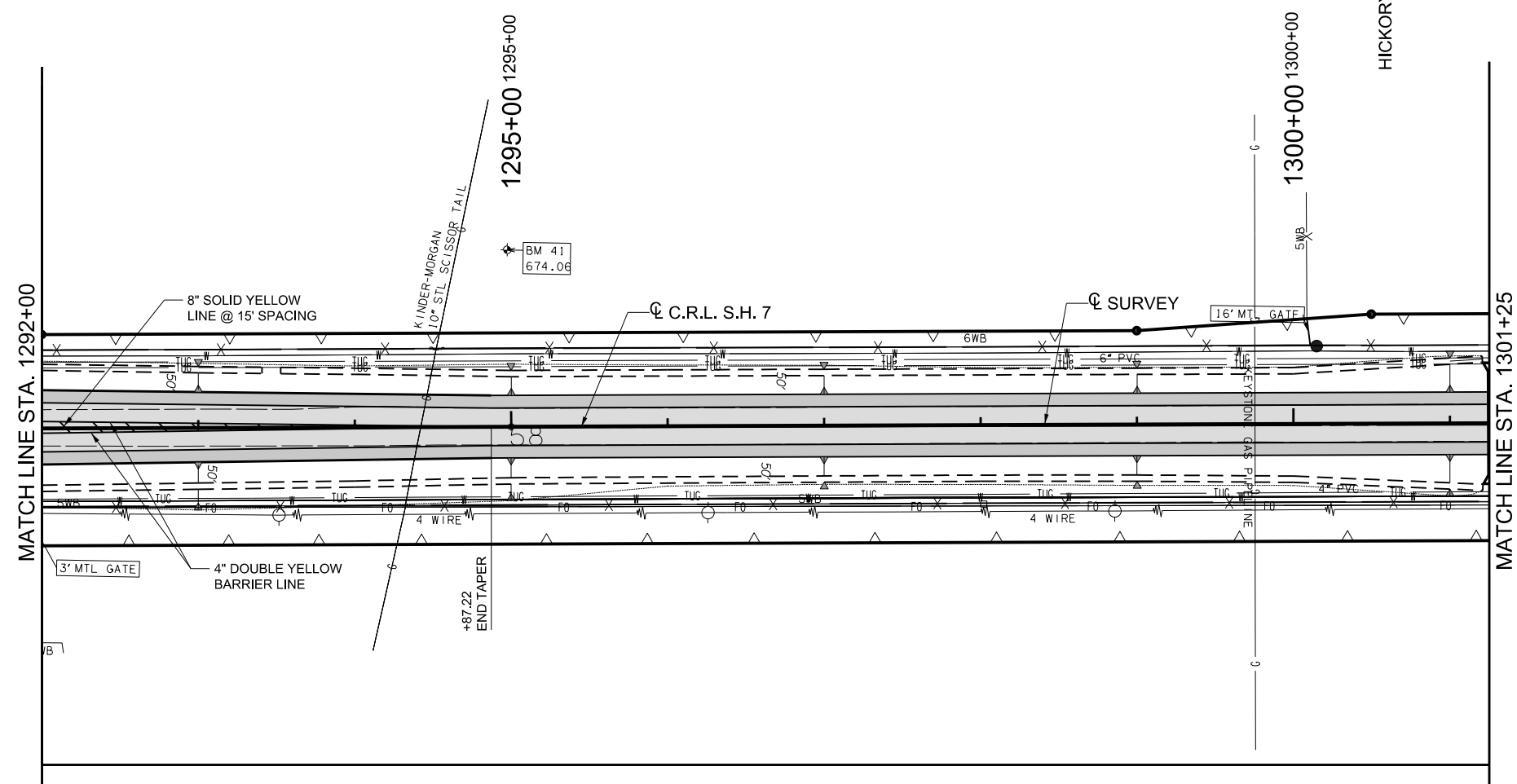
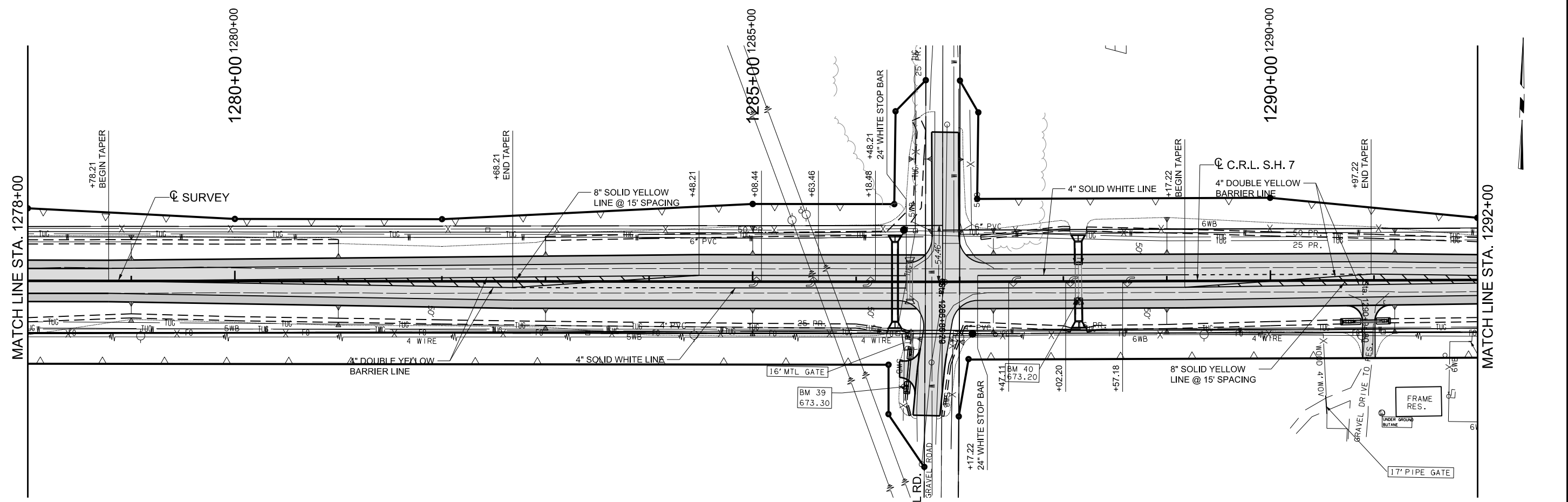
DESIGN	RB
DRAWN	MM
CHECKED	RB
APPROVED	SL
SQUAD	BKL, Inc.

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

STRIPING DETAIL (3)

JOB PIECE NO. 24066 (04) SHEET NO. 58

PRINT DATE: 7/15/2015 C:\Projects\650-SH-7\DOGN\SH7_S54.dgn

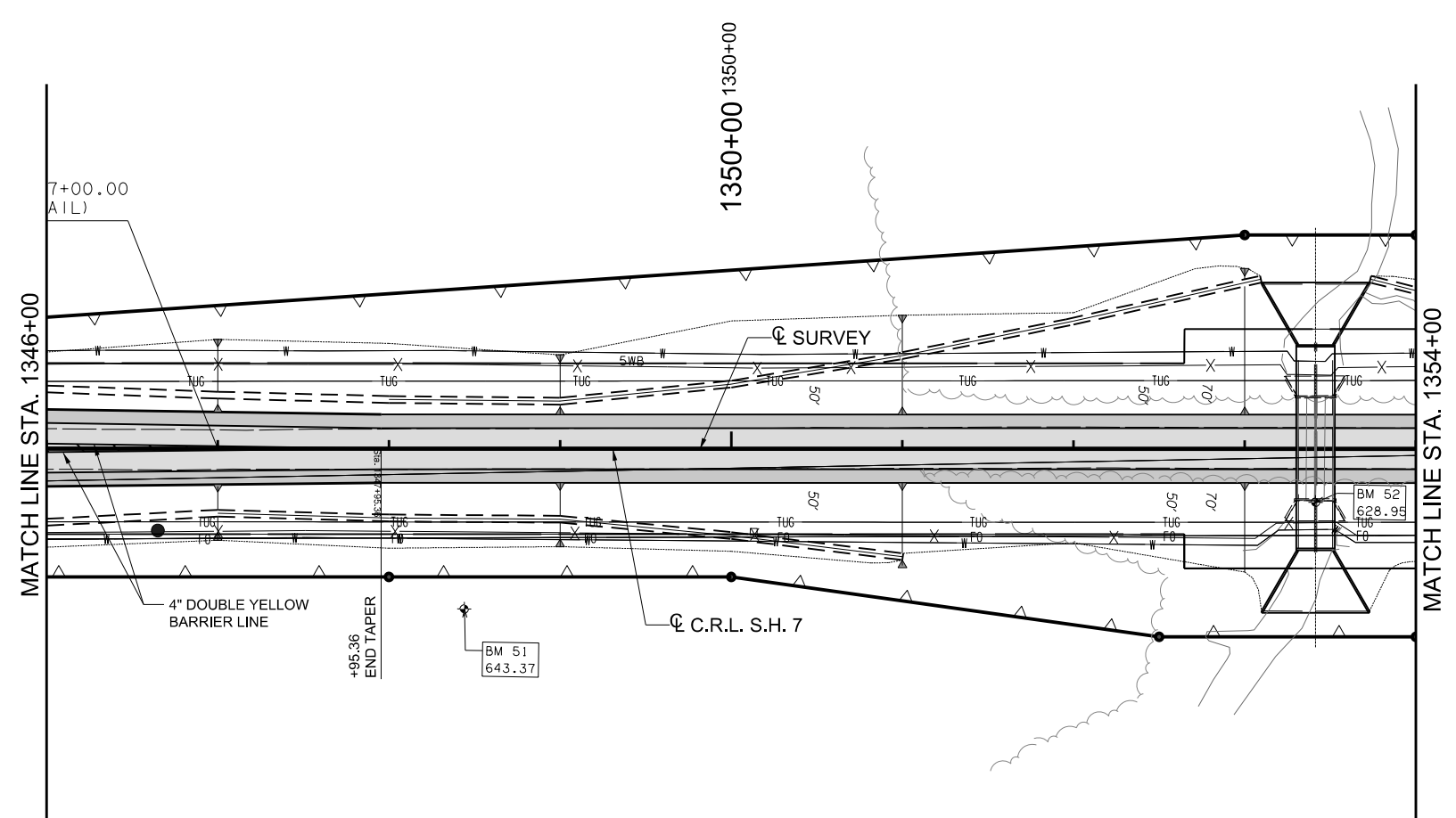
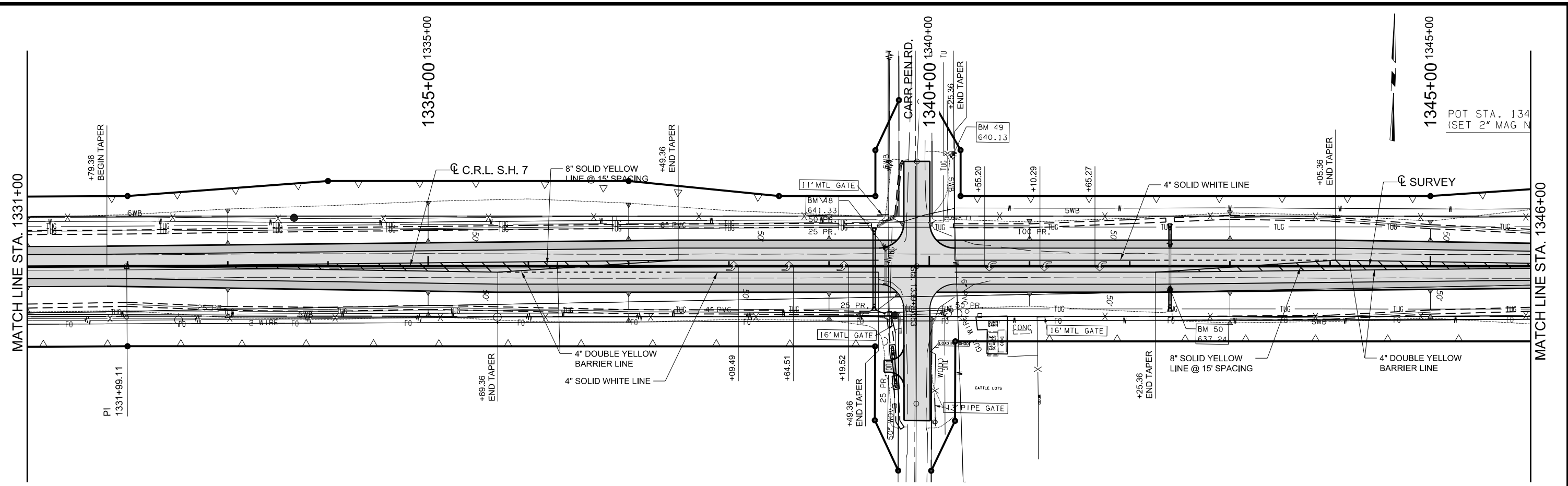


**PROPOSED
R/W**
JULY 14, 2015



DESIGN	RB	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION STRIPING DETAIL (4) JOB PIECE NO. 24066 (04) SHEET NO. 59
DRAWN	MM	
CHECKED	RB	
APPROVED	SL	
SQUAD	BKL, Inc.	

PRINT DATE: 7/15/2015 C:\Projects\650-SH-7\Drawings\SS5.dwg



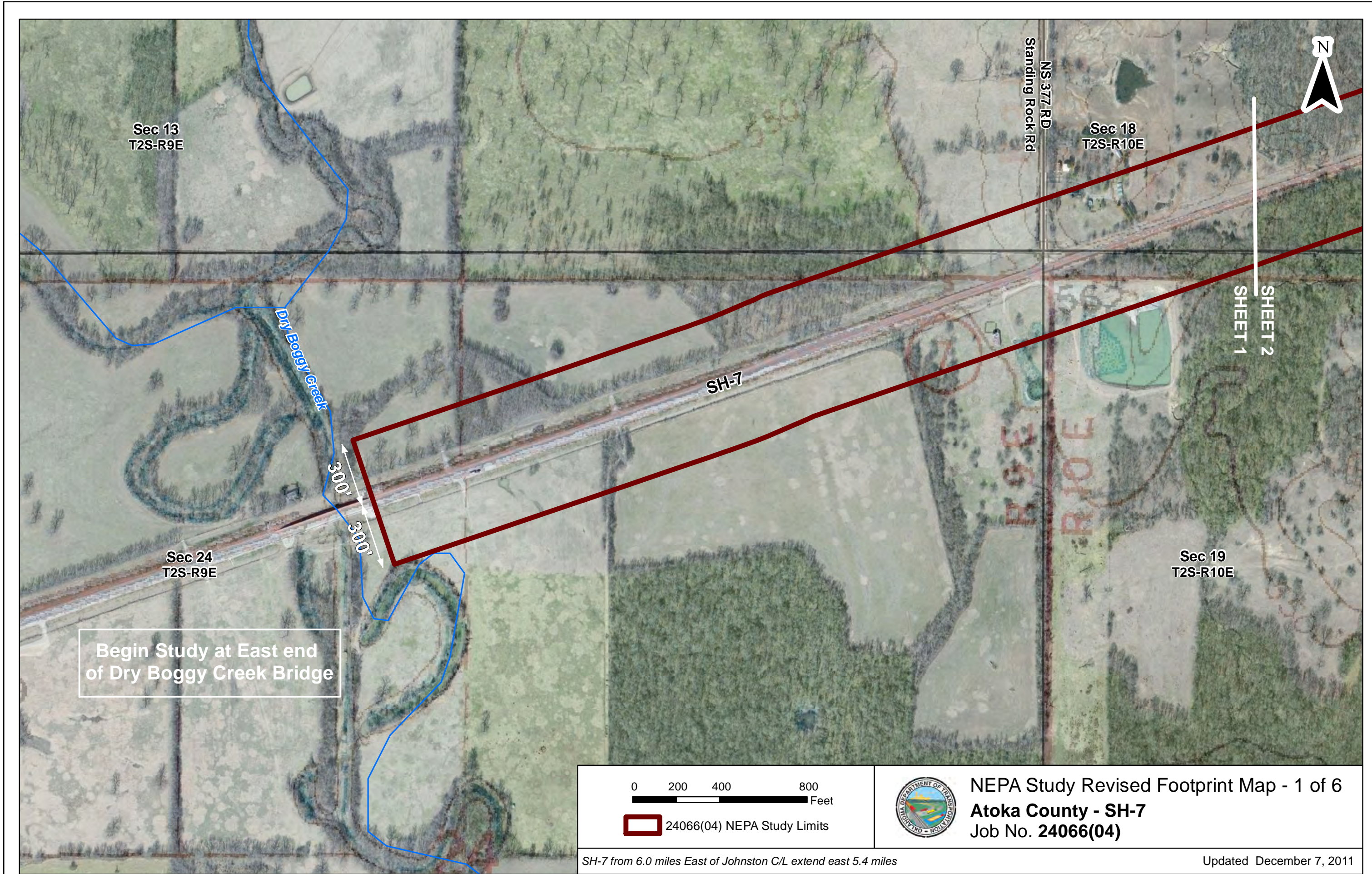
**PROPOSED
R/W**
JULY 14, 2015

DESIGN	RB
DRAWN	MM
CHECKED	RB
APPROVED	SL
SQUAD	BKL, Inc.

OKLAHOMA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION

STRIPING DETAIL (5)

JOB PIECE NO. 24066 (04) SHEET NO. 60



Sec 13
T2S-R9E

Sec 18
T2S-R10E

Sec 24
T2S-R9E

Sec 19
T2S-R10E

NS 377 RD
Standing Rock Rd

Dry Boggy Creek

SH-7

SHEET 1
SHEET 2



Begin Study at East end
of Dry Boggy Creek Bridge

300'
300'

0 200 400 800 Feet

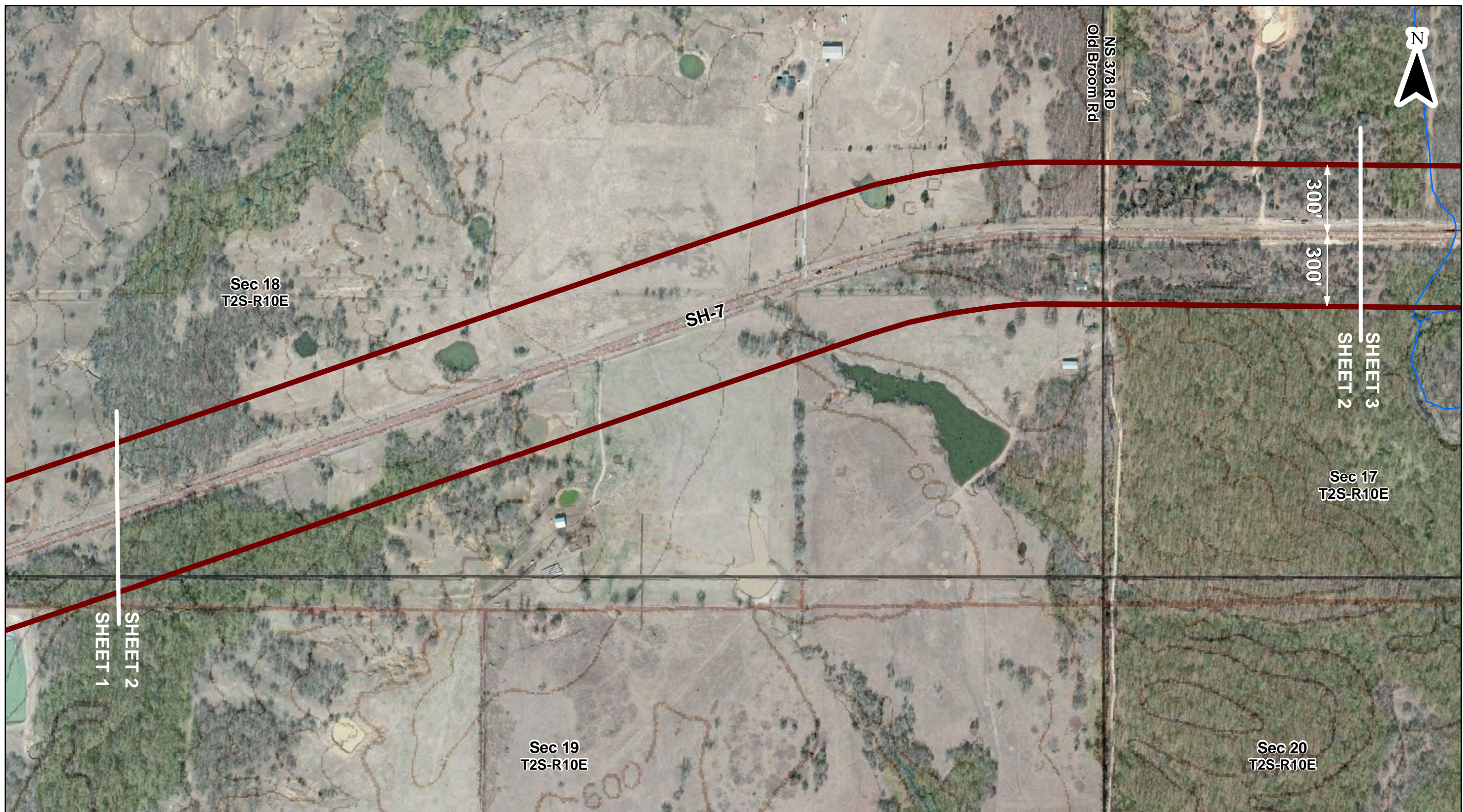
24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 1 of 6
Atoka County - SH-7
Job No. **24066(04)**

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011



Sec 18
T2S-R10E

SH-7

SHEET 3
SHEET 2

Sec 17
T2S-R10E

SHEET 2
SHEET 1

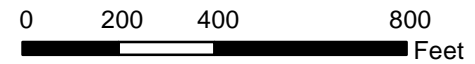
Sec 19
T2S-R10E

Sec 20
T2S-R10E

NS 378 RD
Old Broom Rd



300'
300'



24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 2 of 6
Atoka County - SH-7
Job No. **24066(04)**

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011



Bridge Location
NBI #06295 Bridge Location
NBI #06532



SH-7

300'
300'

SHEET 2
SHEET 3

Watson Creek

Sec 17
T2S-R10E

Sec 16
T2S-R10E

SHEET 3
SHEET 4

Sec 20
T2S-R10E

NS 379 RD

Sec 21
T2S-R10E

0 200 400 800
Feet

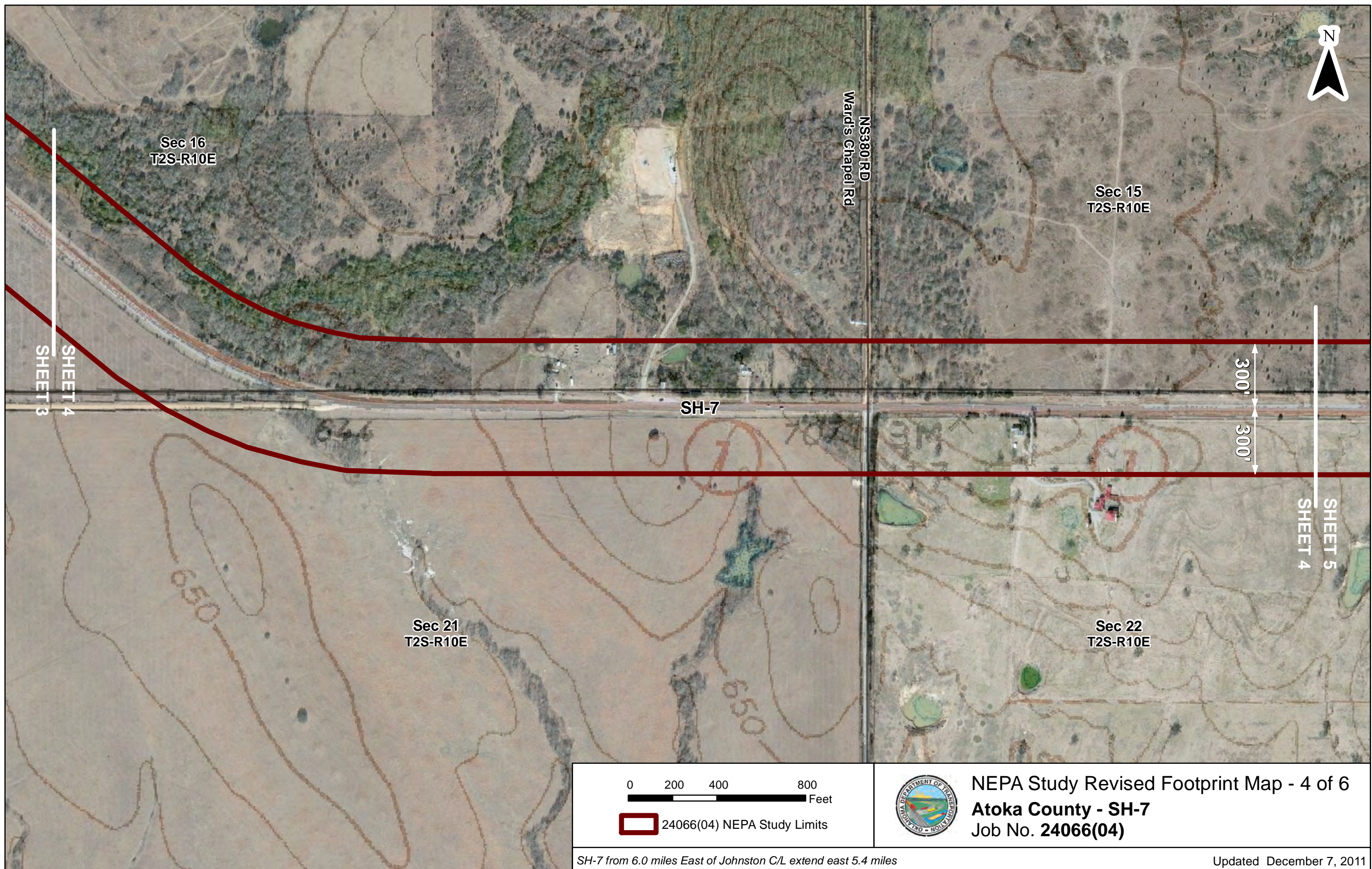
24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 3 of 6
Atoka County - SH-7
Job No. **24066(04)**

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011



Sec 16
T2S-R10E

Sec 15
T2S-R10E

NS380 RD
Ward's Chapel Rd

SH-7

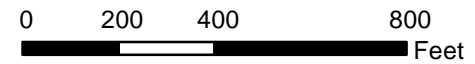
300'
300'

Sec 21
T2S-R10E

Sec 22
T2S-R10E

SHEET 3
SHEET 4

SHEET 4
SHEET 5



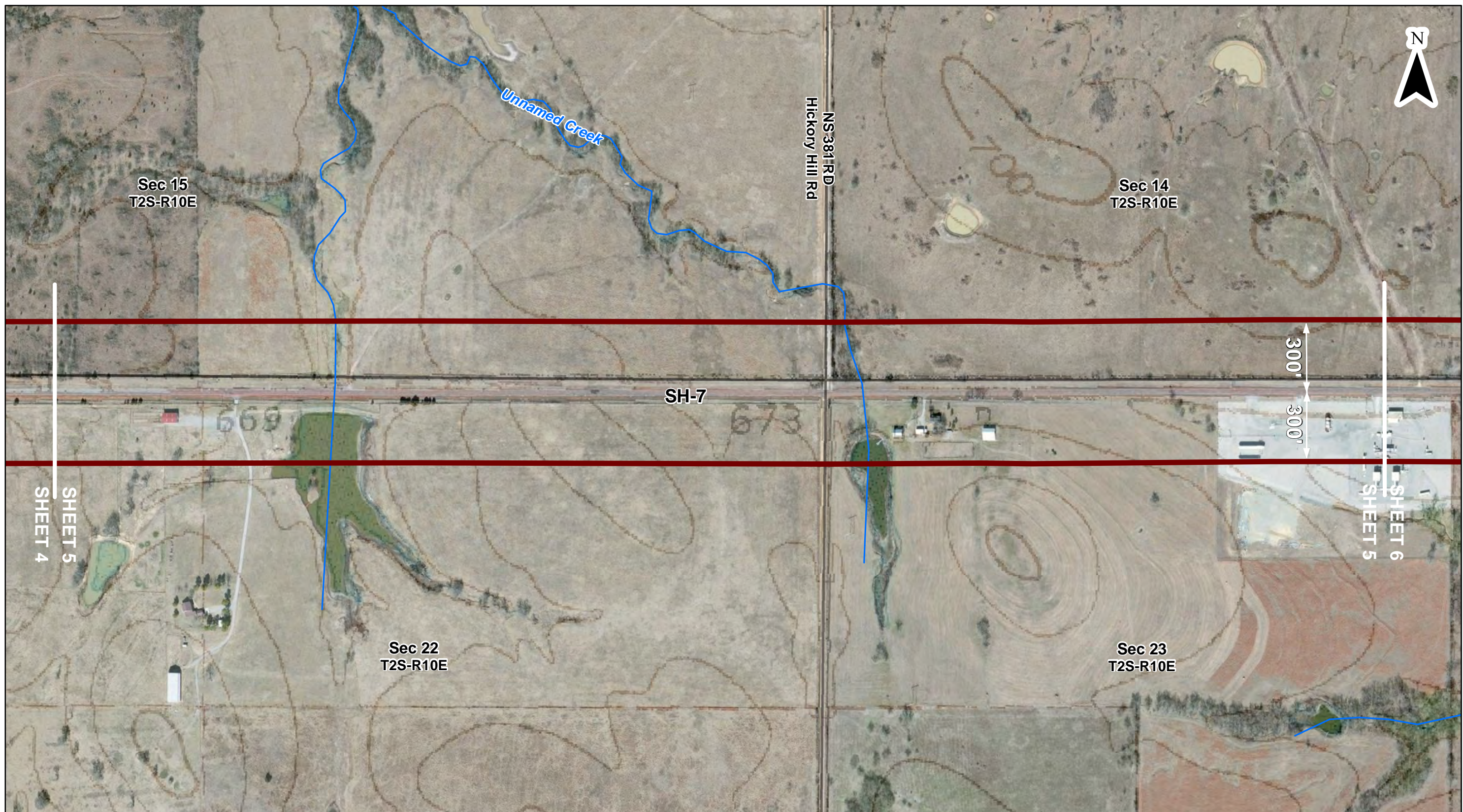
24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 4 of 6
Atoka County - SH-7
Job No. **24066(04)**

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011



Sec 15
T2S-R10E

Sec 14
T2S-R10E

NS 381 RD
Hickory Hill Rd

SH-7

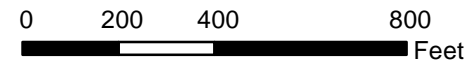
300'
300'

SHEET 4
SHEET 5

SHEET 5
SHEET 6

Sec 22
T2S-R10E

Sec 23
T2S-R10E



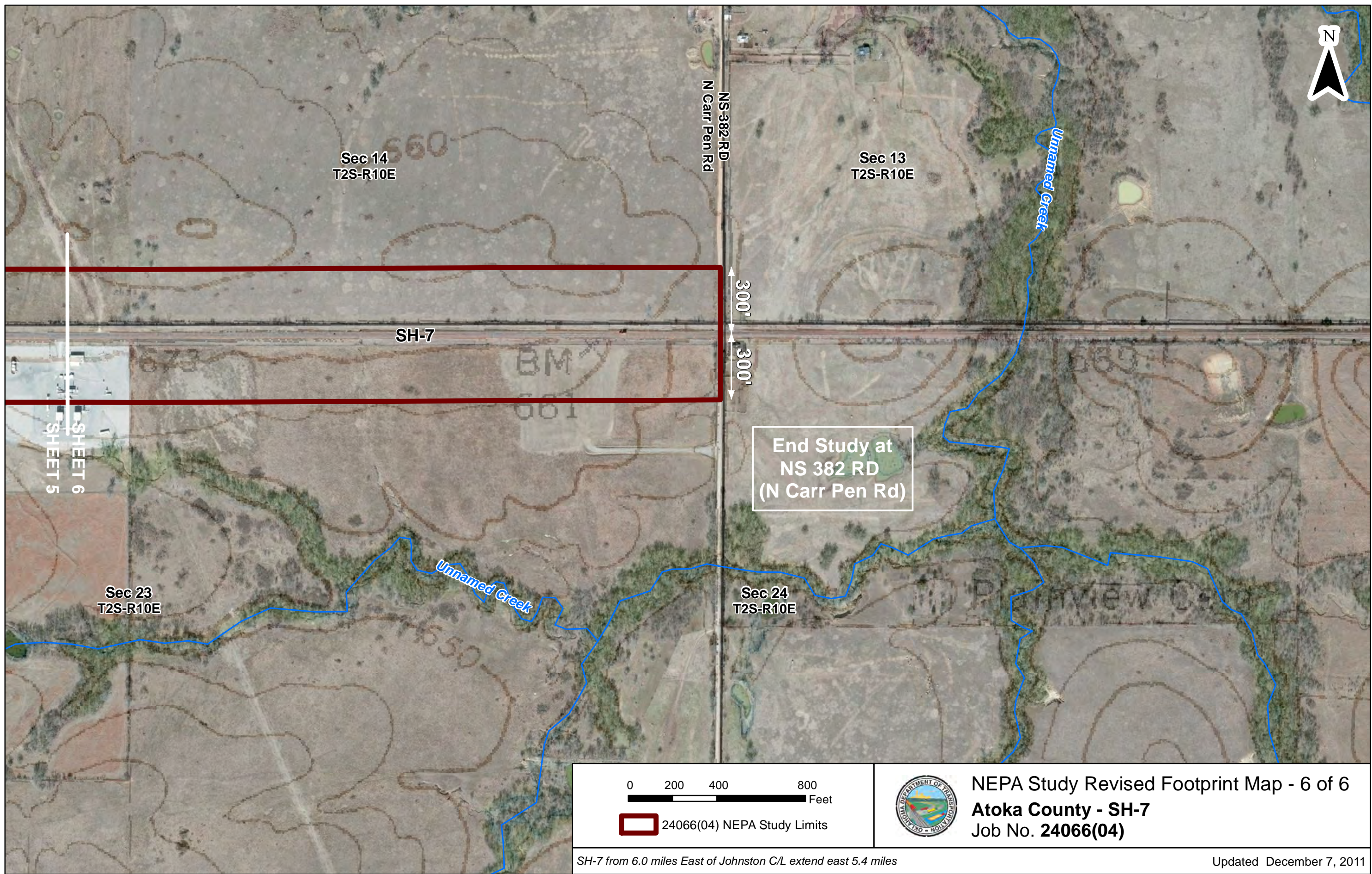
24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 5 of 6
Atoka County - SH-7
Job No. 24066(04)

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011



Sec 14
T2S-R10E

Sec 13
T2S-R10E

SH-7

NS 382 RD
N Carr Pen Rd

Unnamed Creek

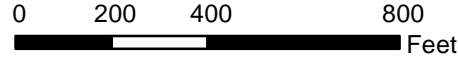
300'
300'

End Study at
NS 382 RD
(N Carr Pen Rd)

Sec 23
T2S-R10E

Sec 24
T2S-R10E

Unnamed Creek



24066(04) NEPA Study Limits



NEPA Study Revised Footprint Map - 6 of 6
Atoka County - SH-7
Job No. 24066(04)

SH-7 from 6.0 miles East of Johnston C/L extend east 5.4 miles

Updated December 7, 2011

SHEET 5
SHEET 6

RELOCATION

Oklahoma Department of Transportation – Right-of-Way Division
Relocation Branch Room C7 Third Floor Office 521-2648 Fax 522-1858

March 18, 2015

To: **Environmental Programs Division**

Thru: Project Management Branch



From: Diana Barlow, Manager, Relocation Branch

Subject: Relocation Plan –
JP 24066(04)Cons.(05)RW(06)Util., a.k.a. SSP-103C(091)SS, Atoka Co.,
SH-7 From 6.4 Miles East of the Johnston C/L, East 5.0 Miles.

Attached is the Relocation Plan for the above referenced project to be included in the Environmental Document.

RECEIVED
MAR 18 2015
ENVIRONMENTAL
PROGRAMS DIV.

RELOCATION PLAN

JP 24066(04)(05)(06), Atoka County

This Pre-planning information is provided to the Environmental Programs Division to be included in the Environmental Document to satisfy Pre-planning requirements of the Federal Regulations 49 CFR, § 24.205, relocation planning, advisory services and coordination.

The proposed study was done based on Preliminary Right of Way Construction Plans dated November 1, 2014, for SH-7, from 6.4 miles east of the Johnston County Line, extending East 5.0 miles.

At the time of this report, there is 1 residence being impacted by the proposed project, and a potential, Commercial Personal Property (PP) move. The residence is located at approximate station location: 1153+00L, and the PP is located at station location: 1224+50L, as shown on the "Marked-Up" Relocation Plan Plans. The affected house appears to be a "One Story Traditional Rock House", approximately 1800 Square Feet (SF). It is assumed only 1 residential household occupies the house. Relocation Housing Payment (RHP) and / or Rental Assistance Payment (RAP), and Move Payment for the potential displacees are shown below:

Estimated Residential Relocation Cost:

RHP or RAP: \$8,000.00 to \$25,000.00

Move Payment: \$1,500.00 to \$3,000.00

Total estimated Residential Relocation Costs: \$9,500.00 to \$28,000.00

Multiple Listing Service (MLS) is not used or available by Realtorsⁱ in Atoka County. Web base realtor services supplied the most listings of available properties in the Atoka area (with some duplication of listings). The web based realtor services utilized are listed in the RPRSⁱⁱ. Active local realtors, Patti Dingle Homes and World Class Ranches, were contacted to determine what suitable properties may be available on the market. The displacement site is approximately 8.0 miles to the West of Atoka, Ok. The following is a list of some available comparable residential properties at the time of this report: \$165,000.00, 4 bedrooms, 2 baths, 2100 SF at 360 S. Blackberry Lane, Atoka, Ok. 74525; \$169,900.00, 3 bedrooms, 3 baths, 1920 SF at 1303 S. Push Co. Line Rd., Atoka, Ok. 74525; \$185,000.00, 3 bedrooms, 1.75 baths, 2100 SF at 202 S. Kilmer Lane, Atoka, Ok. 74525.

The sheet metal barn, at station location: 1224+50L, contents are unknown but is assumed to contain Personal Property.

Estimated Commercial Relocation Cost:

Move Payment: \$3,500.00 to \$7,000.00

RELOCATION PLAN

JP 24066(04)(05)(06), Atoka County

Relocation estimated payments are from current activity experienced by the planning agent at the time of this report.

The Code of Federal Regulations (CFR) 49, Part 24, limits a payment not to exceed \$7,200.00 for rental assistance (RAP) or down payment assistance; and homeowner-occupant (RHP) payment may not exceed \$31,000.00. Last Resort Housing (LRH) allows for these amounts to be exceeded, and could be necessary to relocate persons affected by the proposed plans.

If a residential or commercial property is occupied when this project begins, full relocation benefits and relocation advisory assistance will be offered to all affected eligible displacees as stated in the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs.

The proposed alignment on the project does not appear to have any adverse impacts on minority or low income persons.

Solutions: None needed at this time.

Relocation Plan prepared by:
Nicholas Granko
ODOT Right of Way and Utilities Division
Relocation Branch
3/18/2015

Relocation Plan Resources Summary:

i Realtor solicited in the Atoka, Ok. 74525 zip code area:

World Class Ranches, 1405 S. George Nigh Expy, McAlester, Ok. 74501, (918) 426-6006
Kelly Albrecht
Patti Dingle Home & Land Co., 621 W. 13th St., Atoka, Ok., 74525 (580) 889-7977
Patti Dingle

ii Web based Realtor sites:

Worldclassranches.com
Pattydingle.com
Realtor.com
Zillow.com
Trulia.com

REFERENCE PROJECTS	
FEDERAL AID PROJECT NO.	CONTROL SECTION NOS.

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY 7
ALIGNMENT STUDY-ALTERNATE NO. 1A
WIDEN & OVERLAY AND GEOMETRIC
CORRECTIONS ON EXISTING ALIGNMENT

ATOKA COUNTY

STPY-103C(142)EC
CONTROL SECTION NO. 07-03-14
STATE JOB PIECE NO. 24066(04)

RELOCATION PLAN
"MARKED-UP" PLAN SHEETS 3-18-2015
1 RESIDENTIAL RELOCATION SHEET #32
1 COMMERCIAL RELOCATION SHEET #37

JP NO. 24066(04)

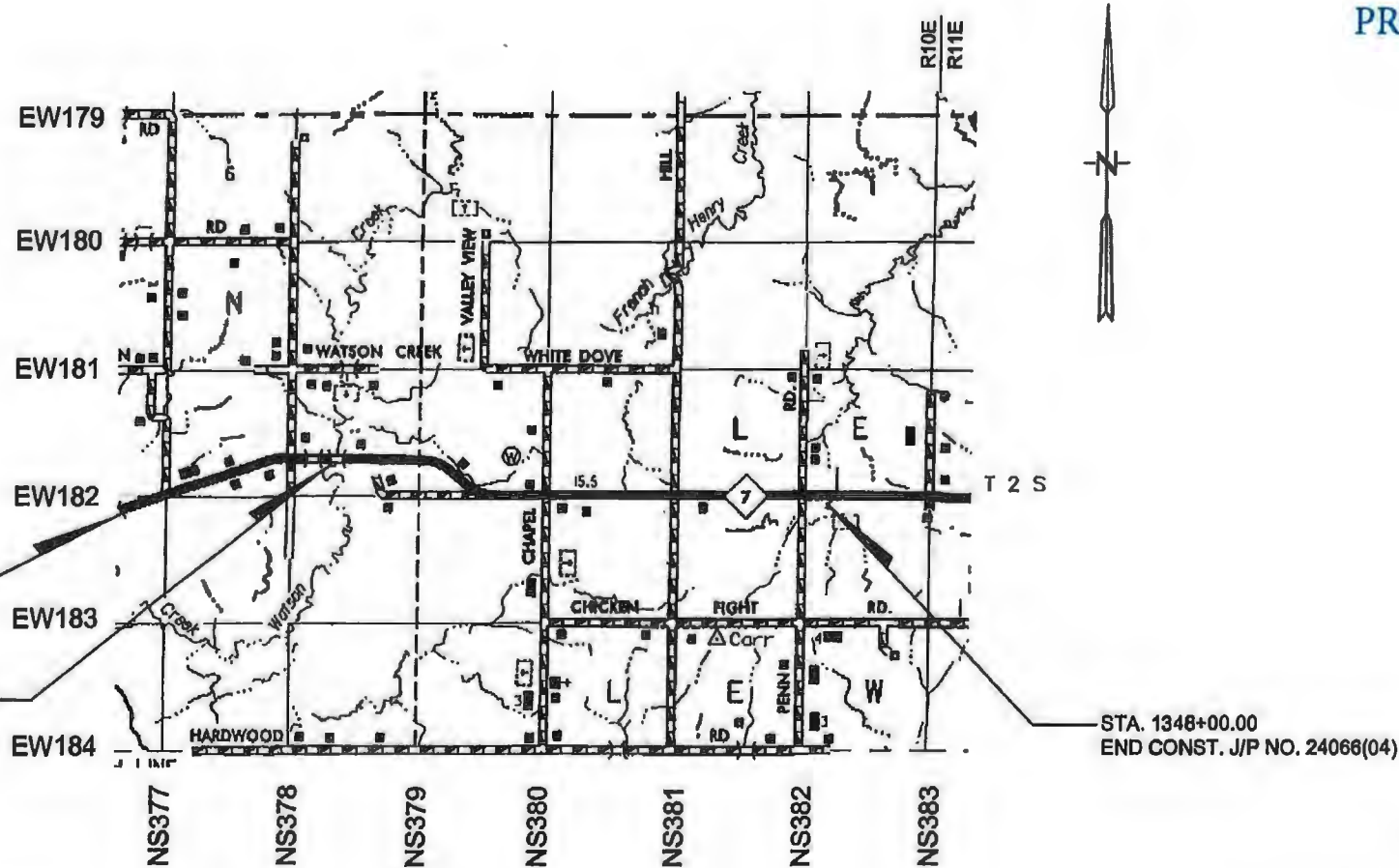
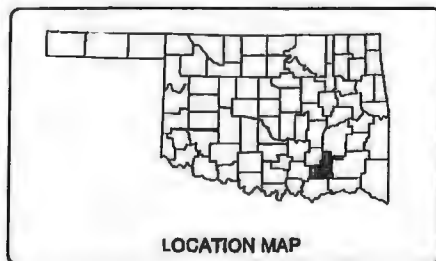
JP NO. 24066(07)

DESIGN DATA	
AADT 2011	= 1500
AADT 2031	= 1900
K (DHV/AADT)	= 11%
D	= 55%
DHV (ONE WAY)	= XXX
T (% DHV)	= 14%
T (% AADT)	= 18%
T3 (% AADT)	= 12%
T3 Overload(Axes)	= XXX AXLES
V	= 65 MPH
ESALS	= X.XXM

DESIGN DATA	
AADT 2011	= 2800
AADT 2031	= 4000
K (DHV/AADT)	= 10%
D	= 55%
DHV (ONE WAY)	= XXX
T (% DHV)	= 12%
T (% AADT)	= 16%
T3 (% AADT)	= 10%
T3 Overload(Axes)	= XXX AXLES
V	= 65 MPH
ESALS	= X.XXM

SEE SURVEY DATA SHEETS FOR
SURVEY CONTROL DATA

SCALES
PLAN 1" = 60'



STA. 1061+49.80
BEGIN CONST. J/P NO. 24066(04)
SUBSECTION NO. 6.00.

PROJ. EXCEPTION
STA. 1139+17.75 TO STA. 1146+36.98

STA. 1348+00.00
END CONST. J/P NO. 24066(04)

CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROADS
- RAVINE & TORN-UP
- SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER
- BUILDINGS
- OILWELL
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- RIGHT-OF-WAY LINES - EXISTING
- RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- RIGHT-OF-WAY FENCE

UTILITY	PHONE	NOTIFIED	RESPONDED
ATOKA RURAL WATER DIST. #1	800-448-6441		
SOUTHEASTERN ELECTRIC COOP			
AT&T			
WESTERN FARMER ELECTRIC COOP			
CITY OF ATOKA	800-860-2875		
WAGON TAIL	800-520-3141		
EVOCOX	800-504-0802		
ANTERO	800-627-0123		
MANVILLE	800-510-5100		
CLAYTON POWER SYSTEM	800-000-7429		

ROADWAY LENGTH 28650.20 FT. 5.426 MI.
BRIDGE LENGTH 0000.00 FT. 0.000 MI.
PROJECT LENGTH 28650.20 FT. 5.426 MI.

EQUATIONS : NONE
EXCEPTIONS : STA. 1139+17.75 TO STA. 1146+36.98
719.23'

BKL
Incorporated
CA. 262 (PE) 6-30-2014
1623 E 6TH STREET
TULSA, OKLAHOMA 74120
TEL: 918-835-9500
FAX: 918-835-9119
MAIL@BKLLINC.COM

PREPARED BY:
BKL, INC.
FOR THE OKLAHOMA
DEPARTMENT OF TRANSPORTATION

DATE _____ OKLA. REG. NO. 20245

DATE APPROVED _____
BY _____
G.M.C.F. ENGINEER

DATE APPROVED _____
BY _____
DIVISION ADMINISTRATOR

J.P. NO. 24066(04) & (07) STPY-103C(142)EC SHEET NO. 1

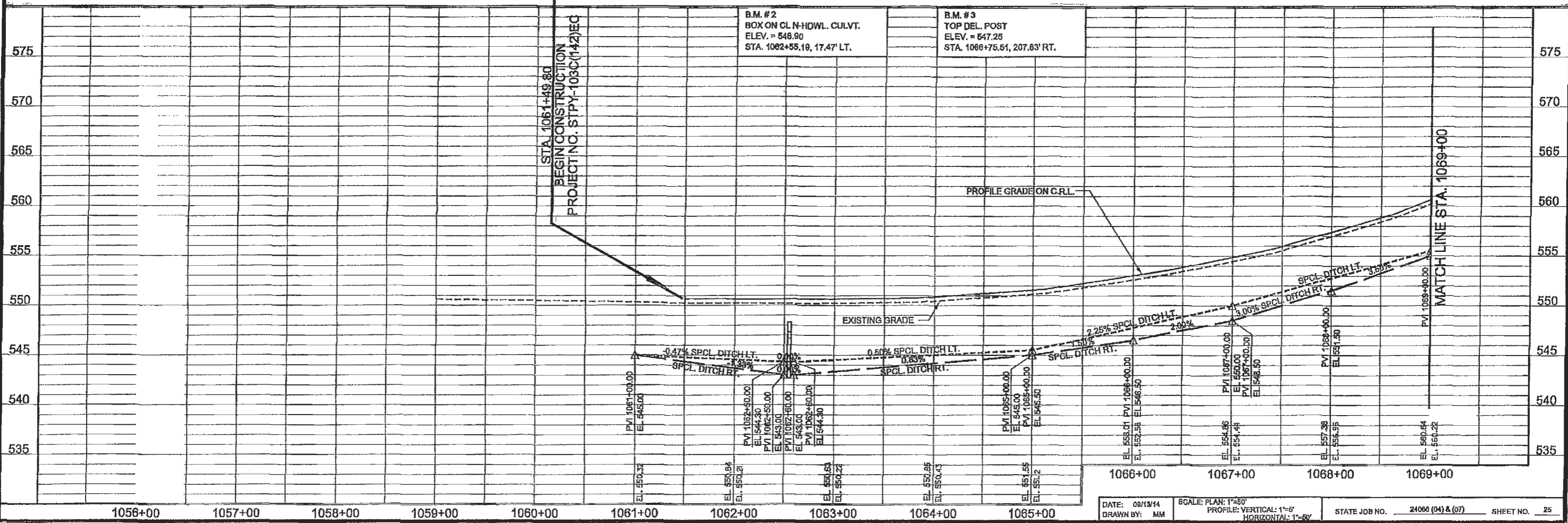
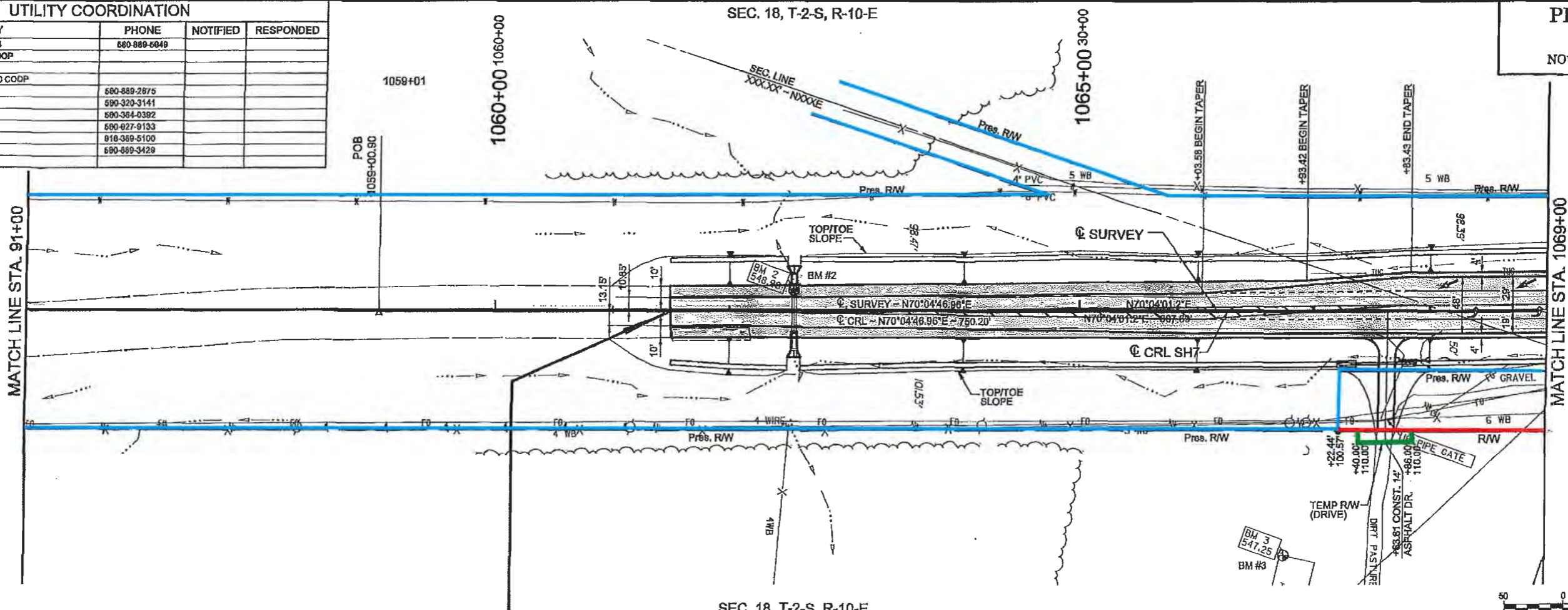
RECEIVED
11-4-2014
ENVIRONMENTAL
PROGRAMS DIVISION

PROPOSED
R/W
NOVEMBER 1, 2014

UTILITY COORDINATION

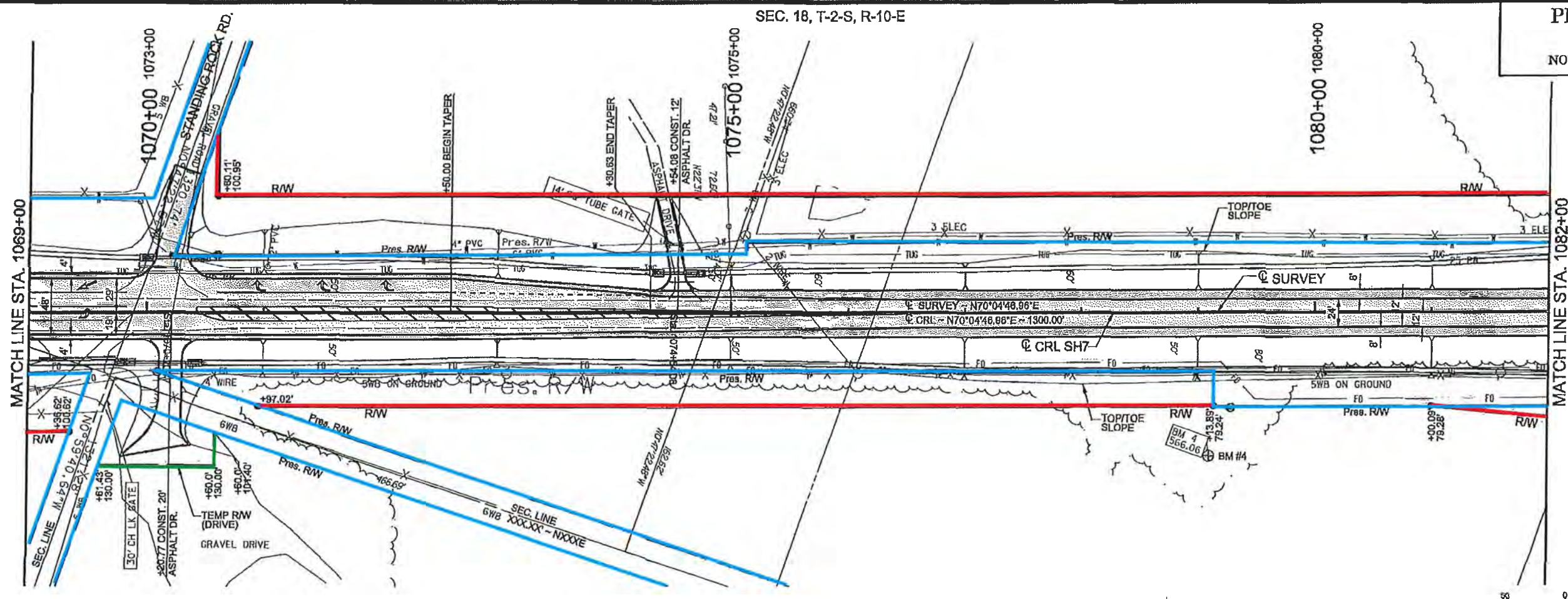
UTILITY	PHONE	NOTIFIED	RESPONDED
ATOKA RURAL WATER DIST. #4	680-889-6049		
SOUTHEASTERN ELECTRIC COOP			
AT&T			
WESTERN FARMERS ELECTRIC COOP			
CITY OF ATOKA	680-889-2875		
SCISSOR TAIL	680-320-3141		
ENOGEX	680-384-0392		
ANTERO	680-027-9133		
MARKWEST	816-389-5100		
CENTER POINT ENERGY	680-889-3429		

PROPOSED R/W
NOVEMBER 1, 2014

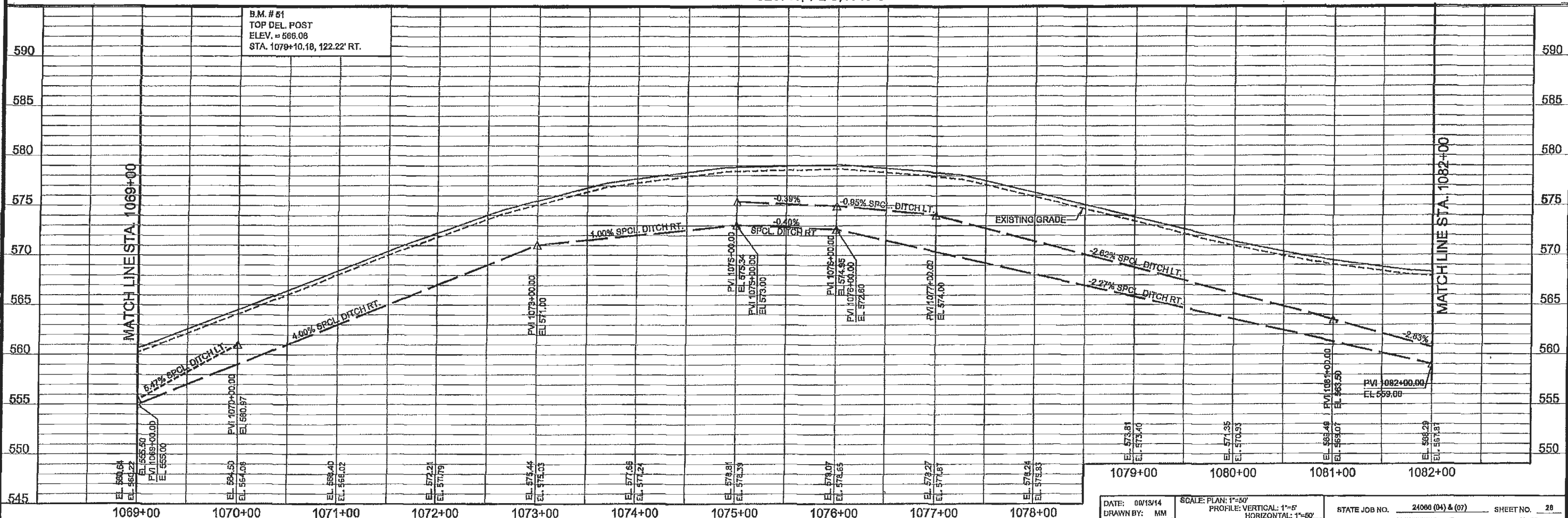


B.M. #2
BOX ON CL N-HOWL. CULVT.
ELEV. = 548.90
STA. 1062+55.19, 17.47' LT.

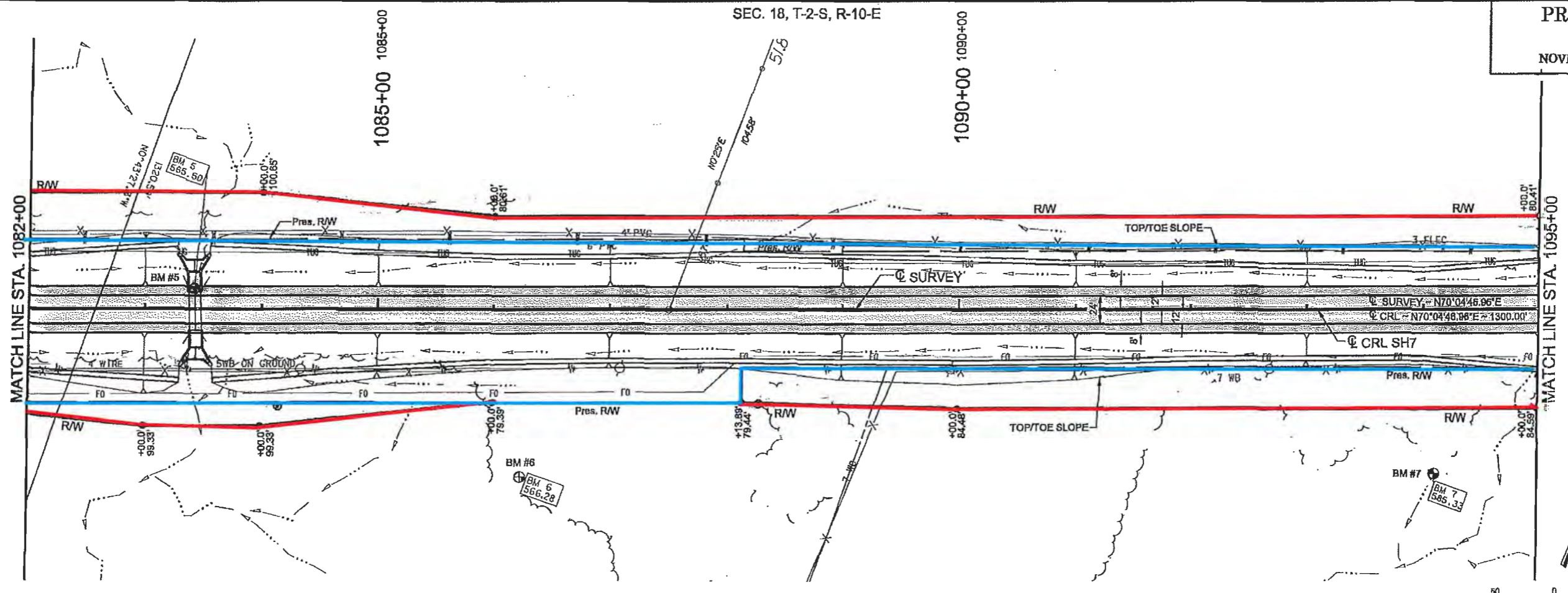
B.M. #3
TOP DEL. POST
ELEV. = 547.25
STA. 1066+75.51, 207.83' RT.



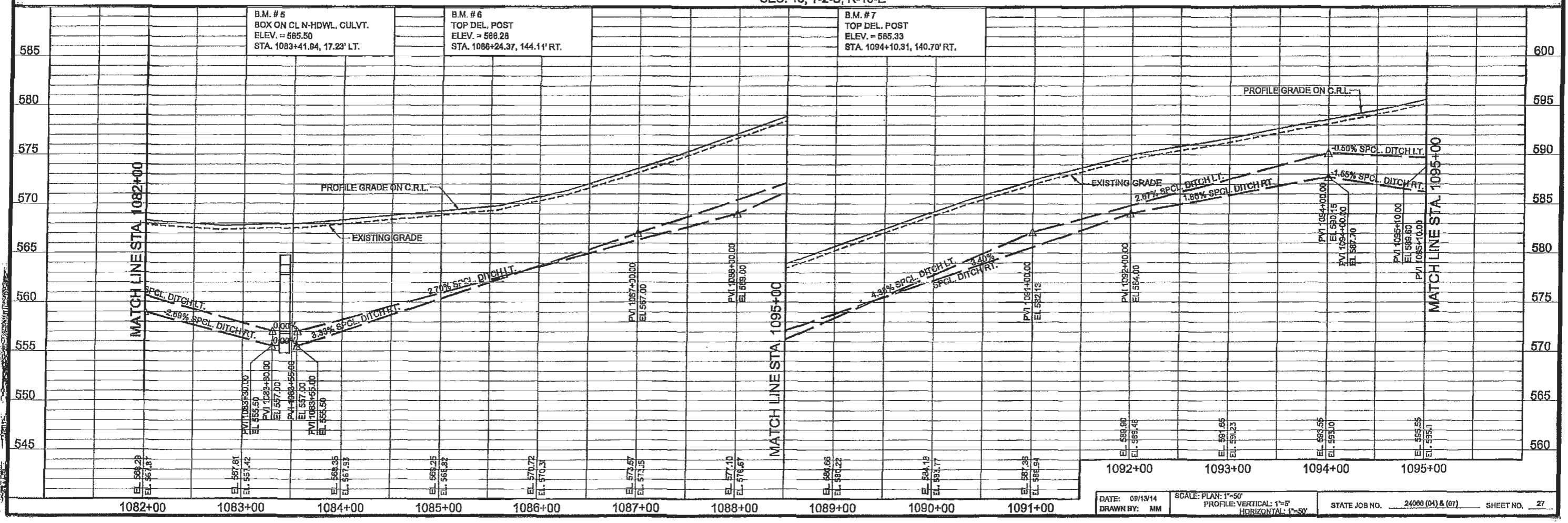
SEC. 18, T-2-S, R-10-E



SEC. 18, T-2-S, R-10-E

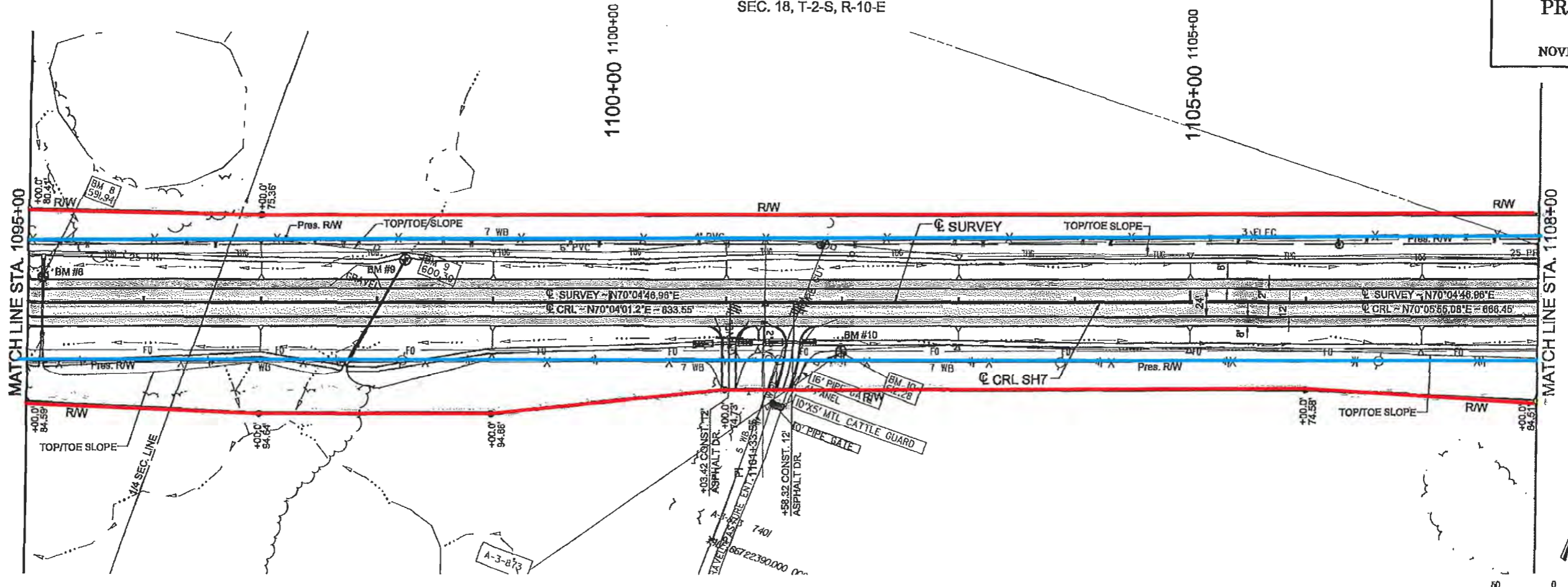


SEC. 18, T-2-S, R-10-E

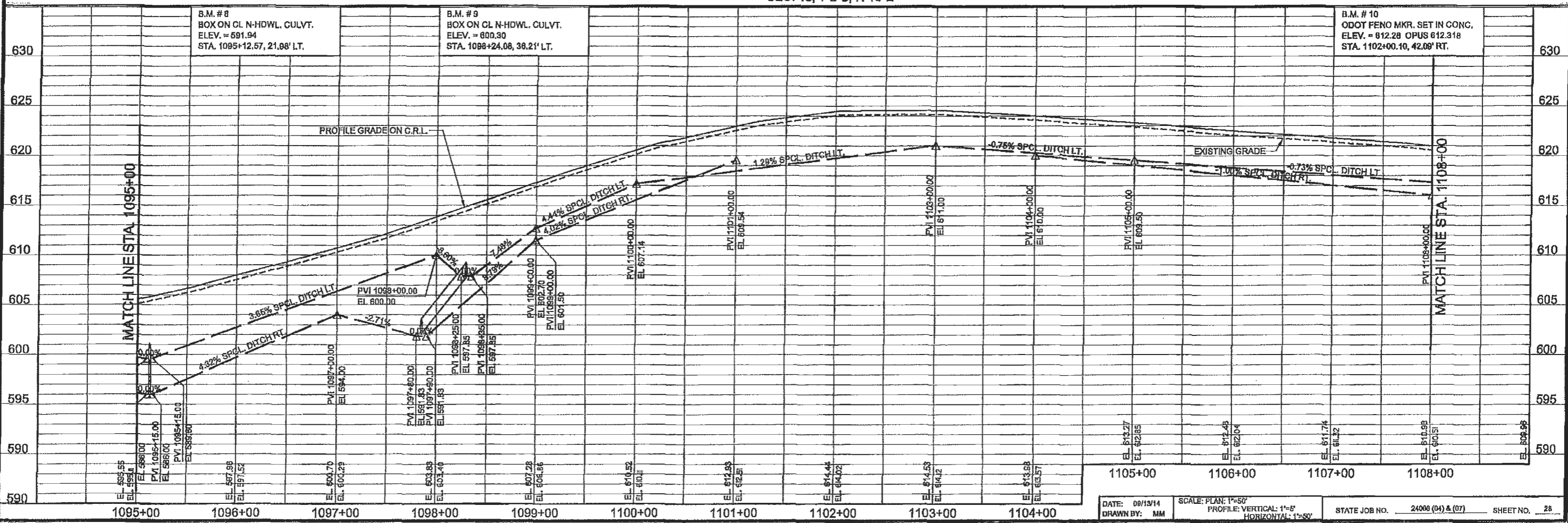


SEC. 18, T-2-S, R-10-E

PROPOSED
R/W
NOVEMBER 1, 2014

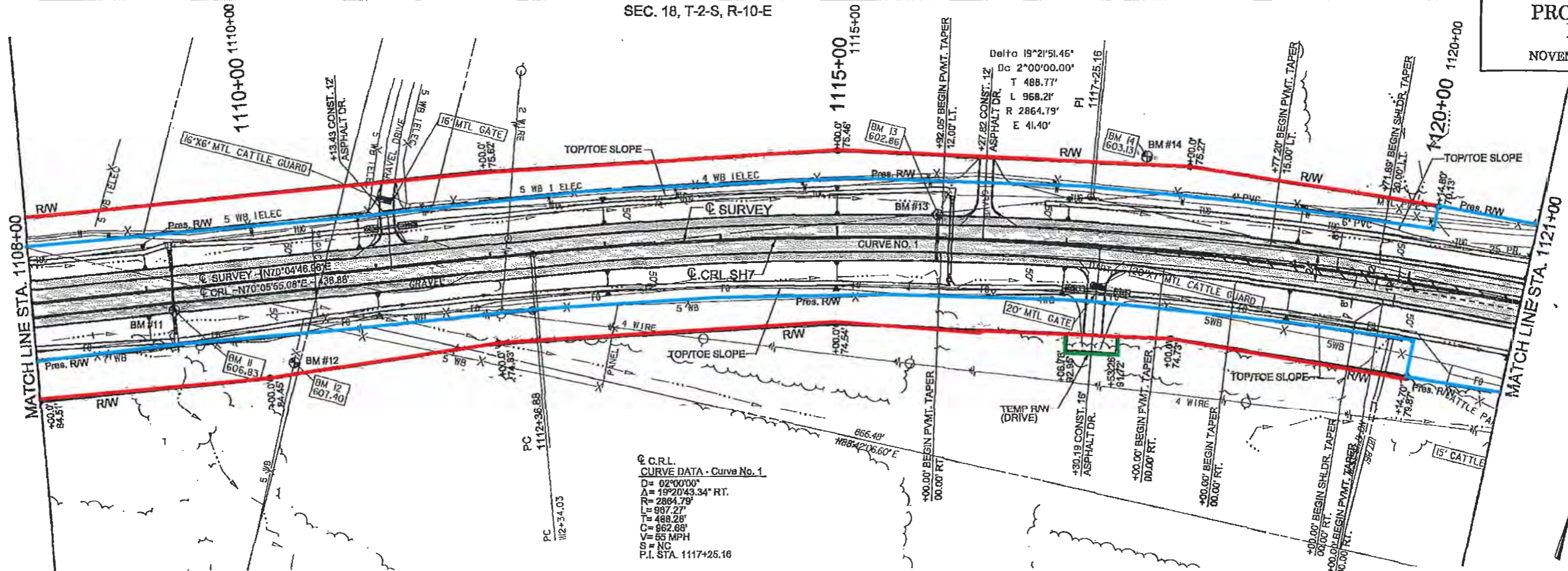


SEC. 18, T-2-S, R-10-E

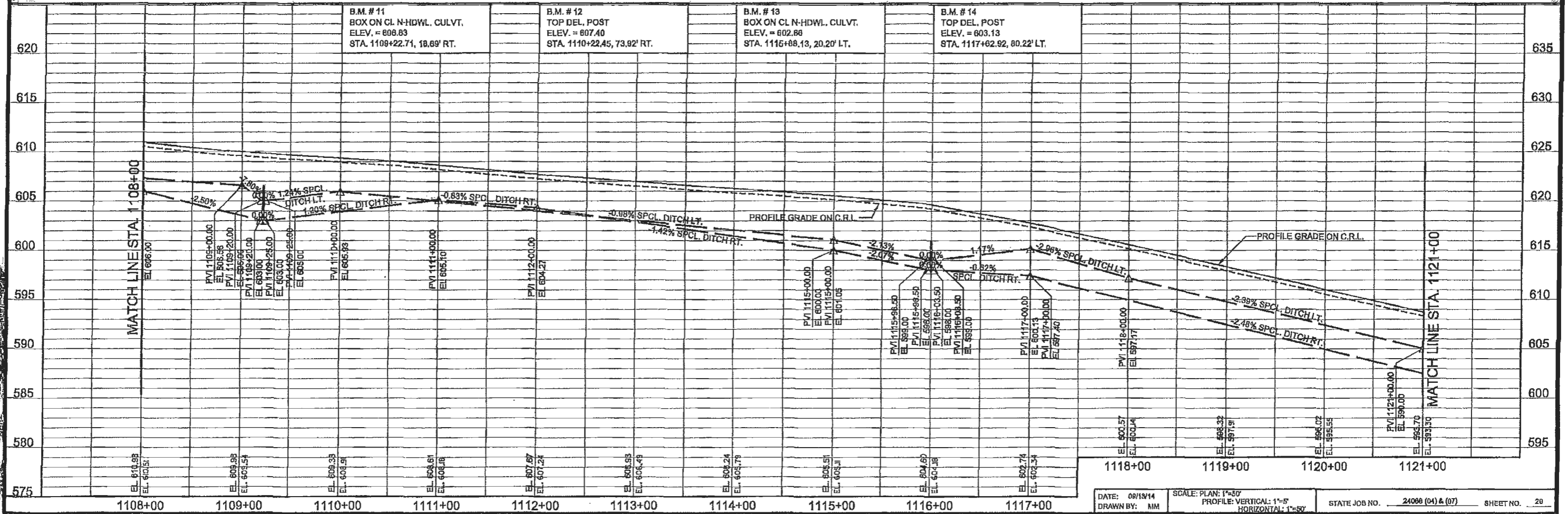


SEC. 18, T-2-S, R-10-E

PROPOSED R/W
NOVEMBER 1, 2014



SEC. 18, T-2-S, R-10-E



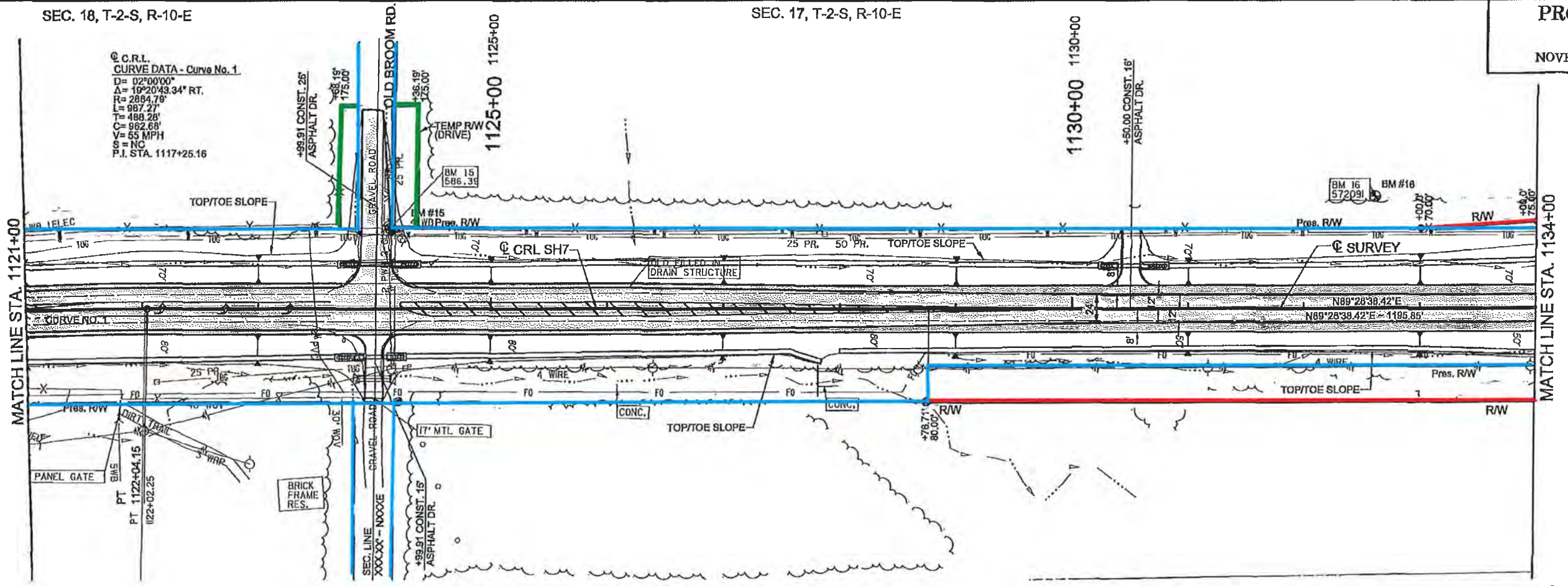
SEC. 18, T-2-S, R-10-E

SEC. 17, T-2-S, R-10-E

PROPOSED R/W

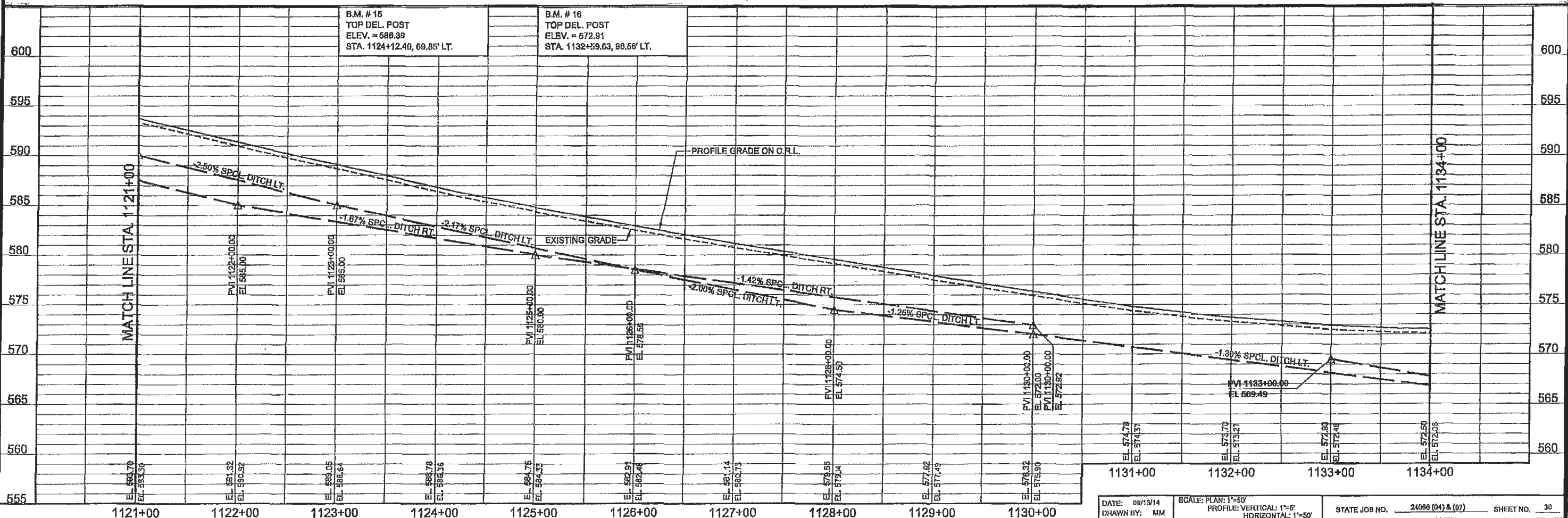
NOVEMBER 1, 2014

© C.R.L.
 CURVE DATA - Curve No. 1
 D = 02°00'00"
 Δ = 10°20'43.34" RT.
 R = 2884.78'
 L = 987.27'
 C = 488.28'
 P = 962.68'
 V = 55 MPH
 NC
 P.I. STA. 1117+25.16

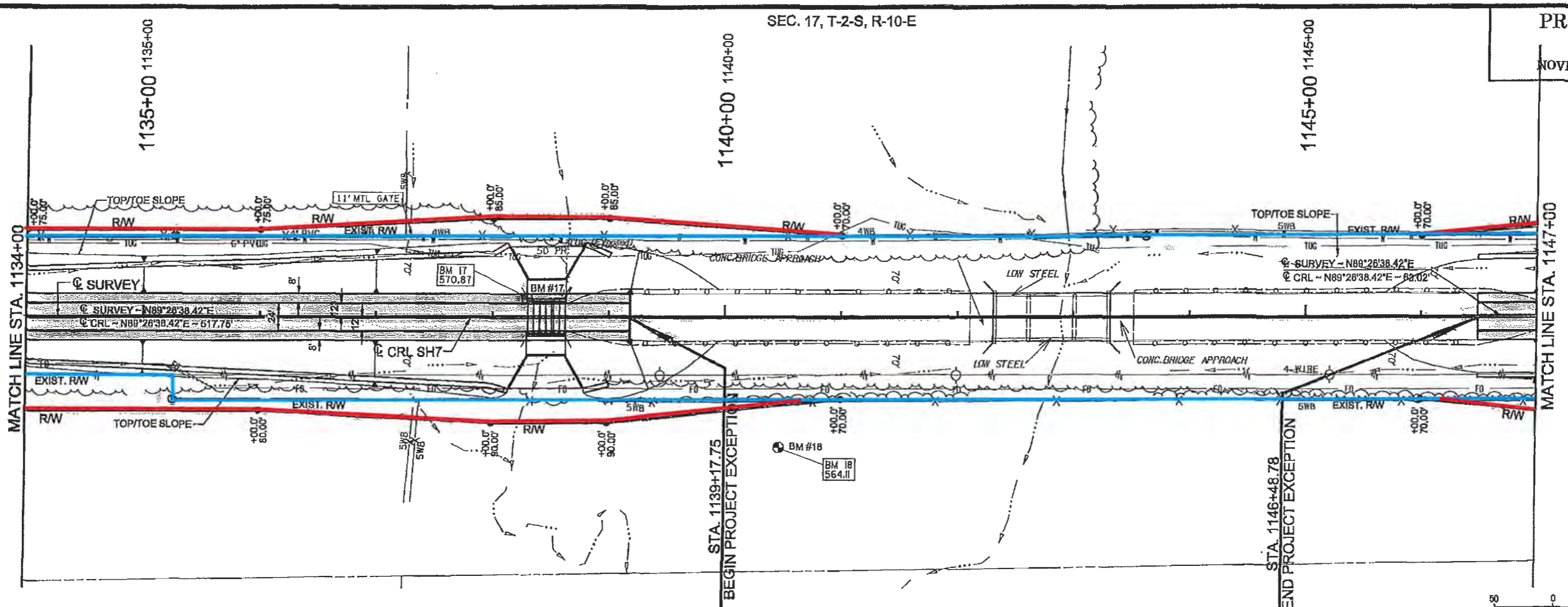


SEC. 18, T-2-S, R-10-E

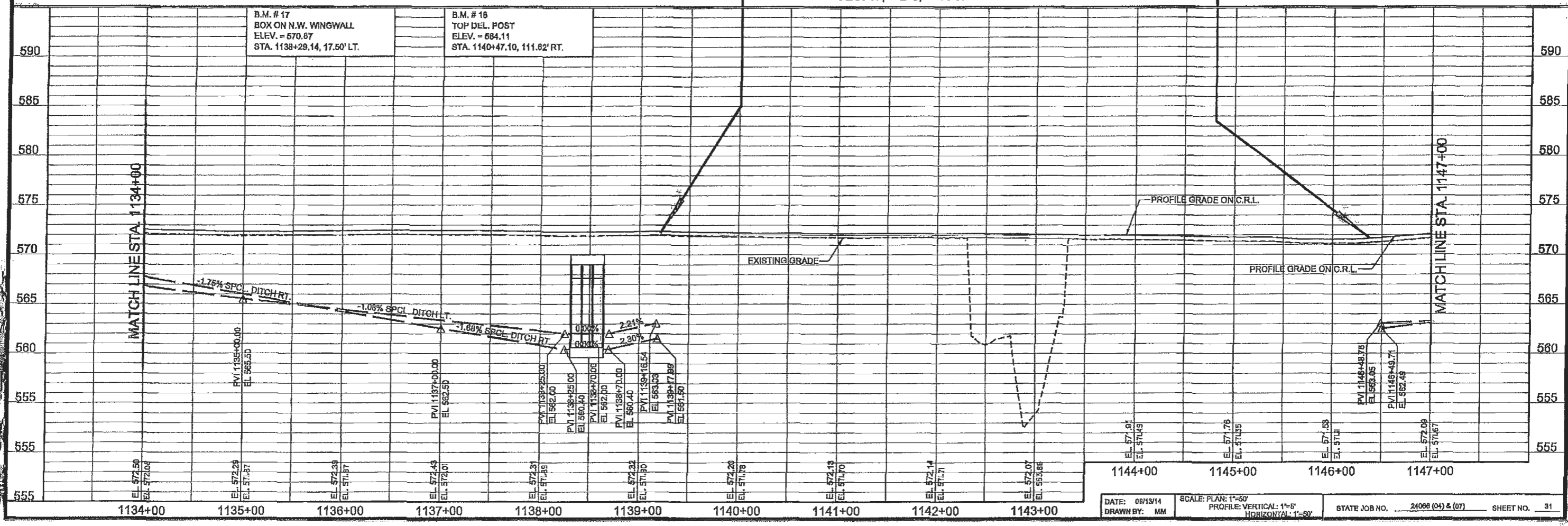
SEC. 17, T-2-S, R-10-E



SEC. 17, T-2-S, R-10-E



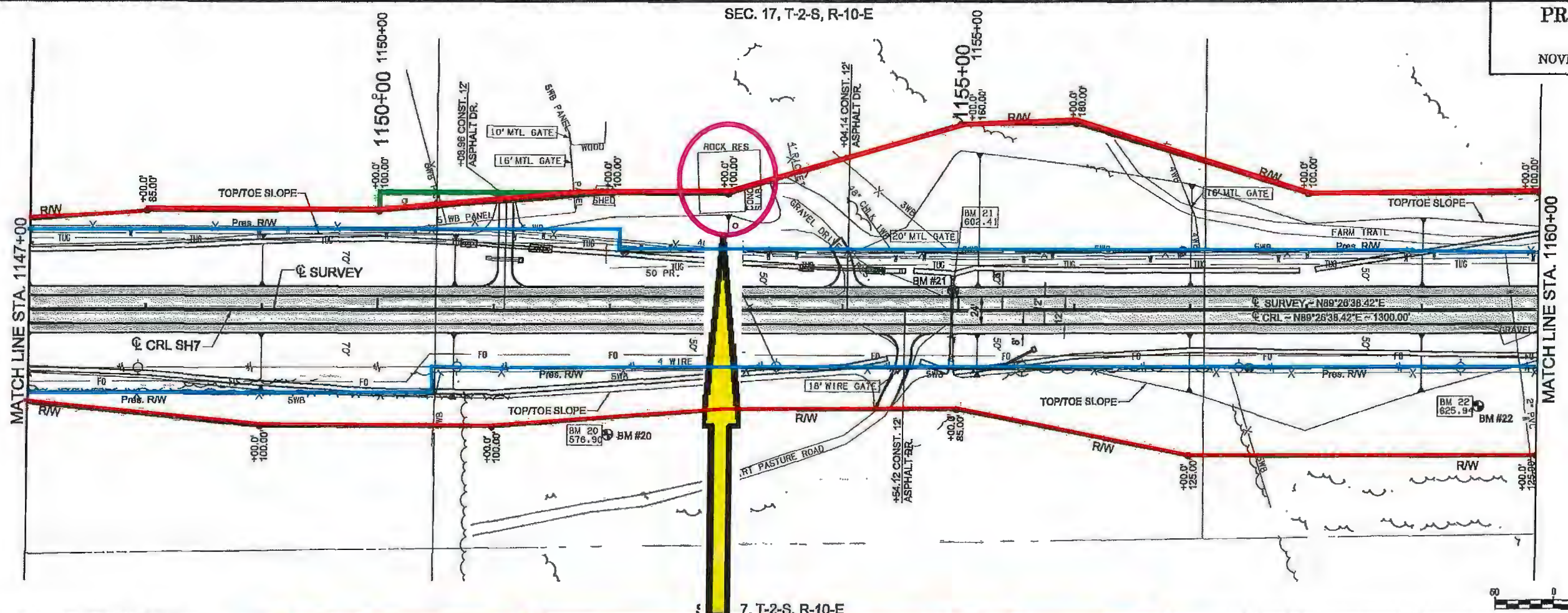
SEC. 17, T-2-S, R-10-E



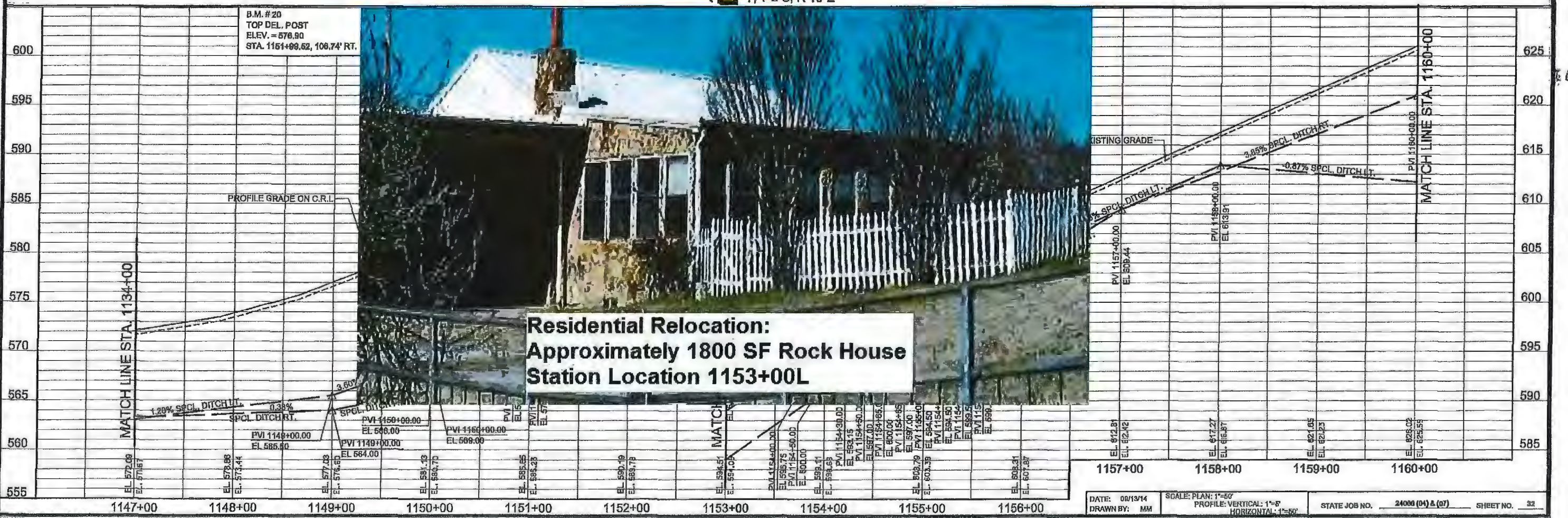
B.M. # 17
BOX ON N.W. WINGWALL
ELEV. = 570.87
STA. 1138+29.14, 17.50' LT.

B.M. # 18
TOP DEL. POST
ELEV. = 564.11
STA. 1140+47.10, 111.02' RT.

SEC. 17, T-2-S, R-10-E

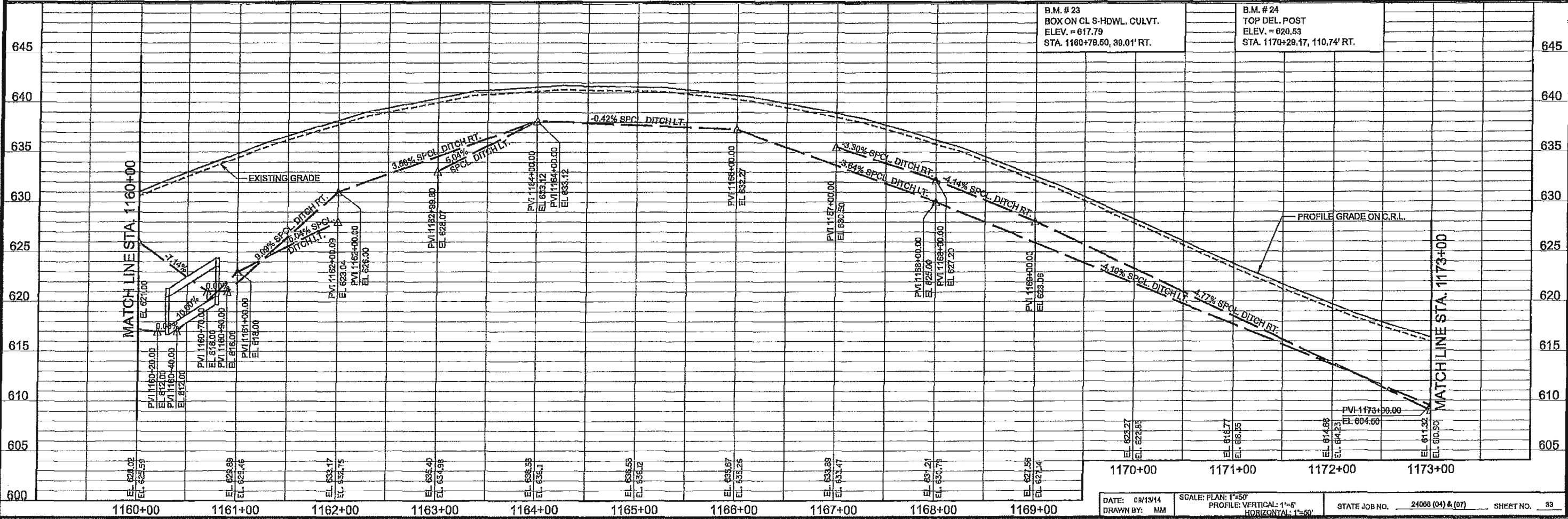
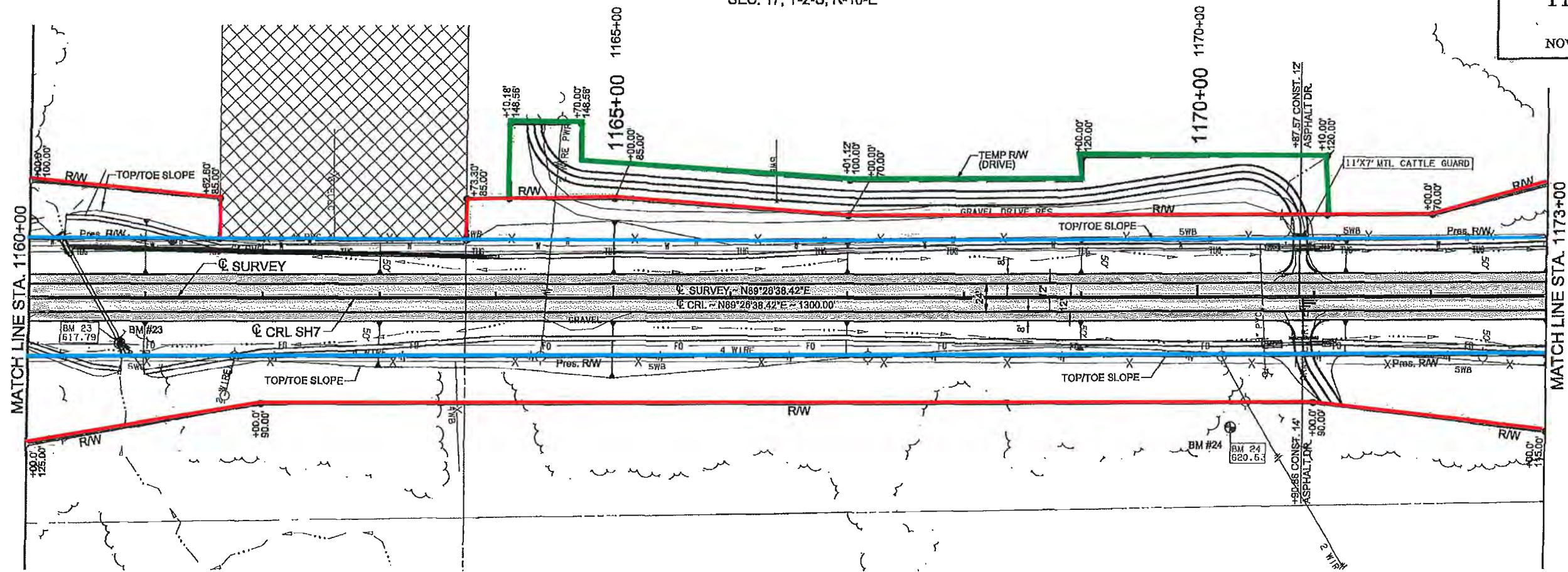


7, T-2-S, R-10-E



B.M. #20
TOP DEL. POST
ELEV. = 578.90
STA. 1151+99.62, 108.74' RT.

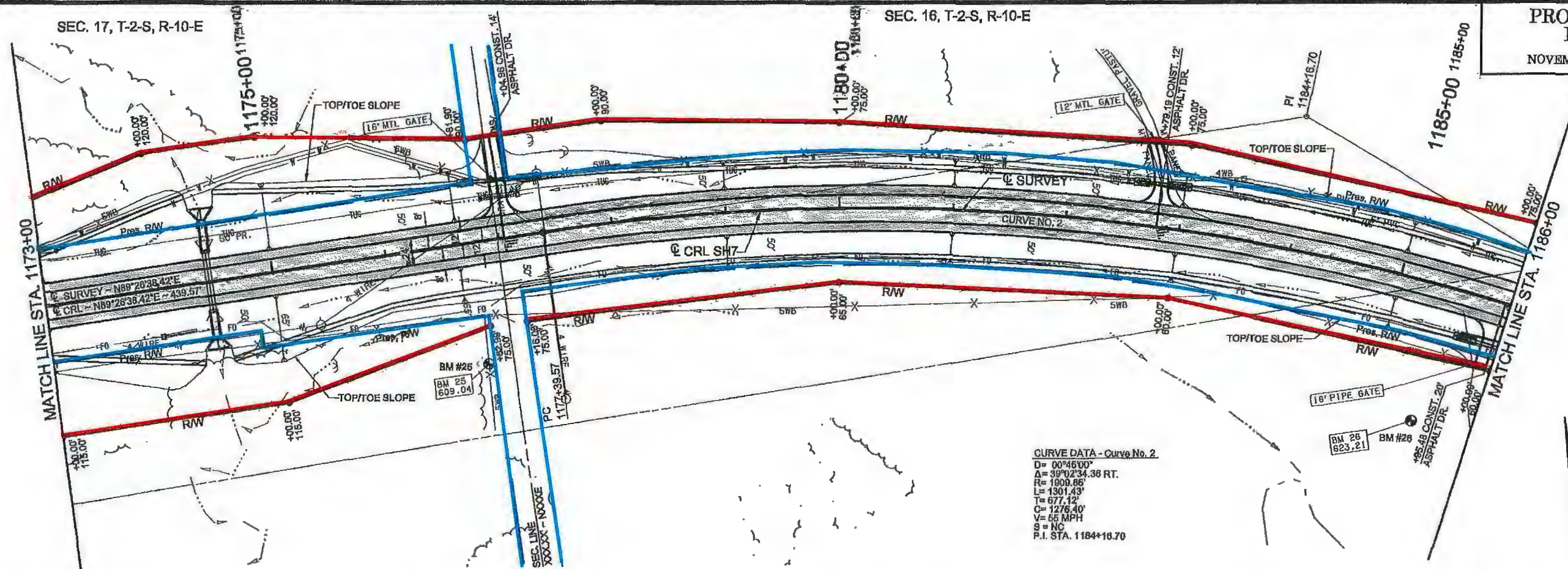
**Residential Relocation:
Approximately 1800 SF Rock House
Station Location 1153+00L**



SEC. 17, T-2-S, R-10-E

SEC. 16, T-2-S, R-10-E

PROPOSED R/W
NOVEMBER 1, 2014

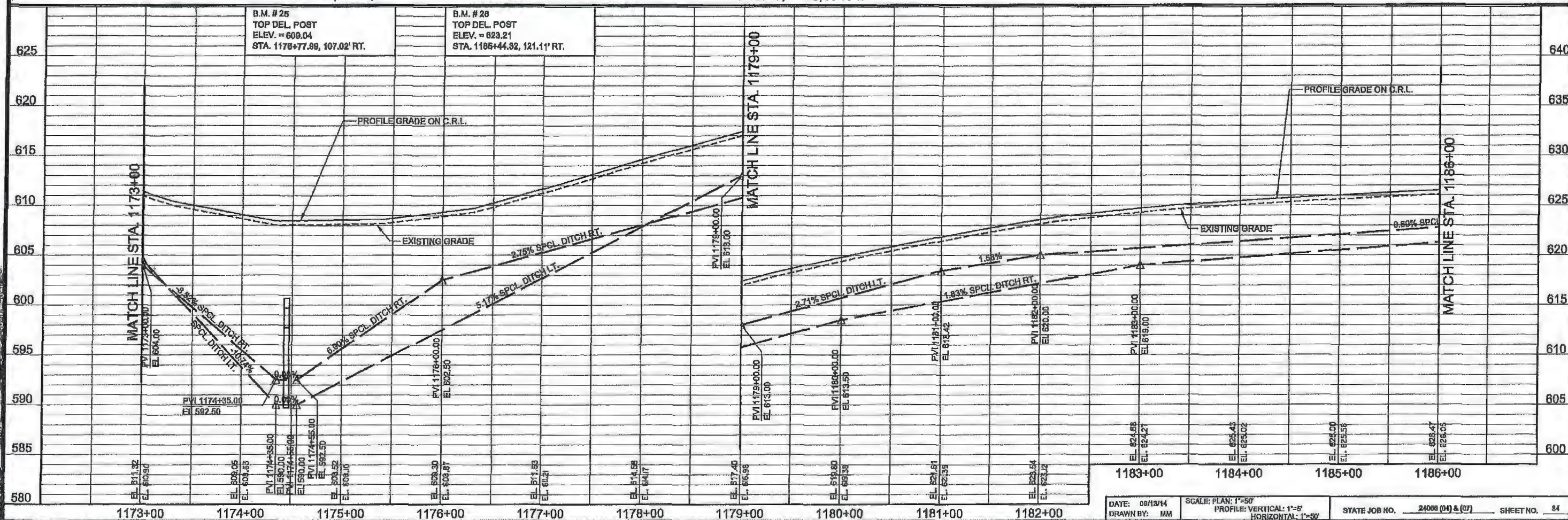


CURVE DATA - Curve No. 2
 D = 00°46'00"
 Δ = 39°02'34.38 RT.
 R = 1009.86'
 L = 1301.43'
 T = 677.12'
 C = 1275.40'
 V = 55 MPH
 S = NC
 P.I. STA. 1184+16.70

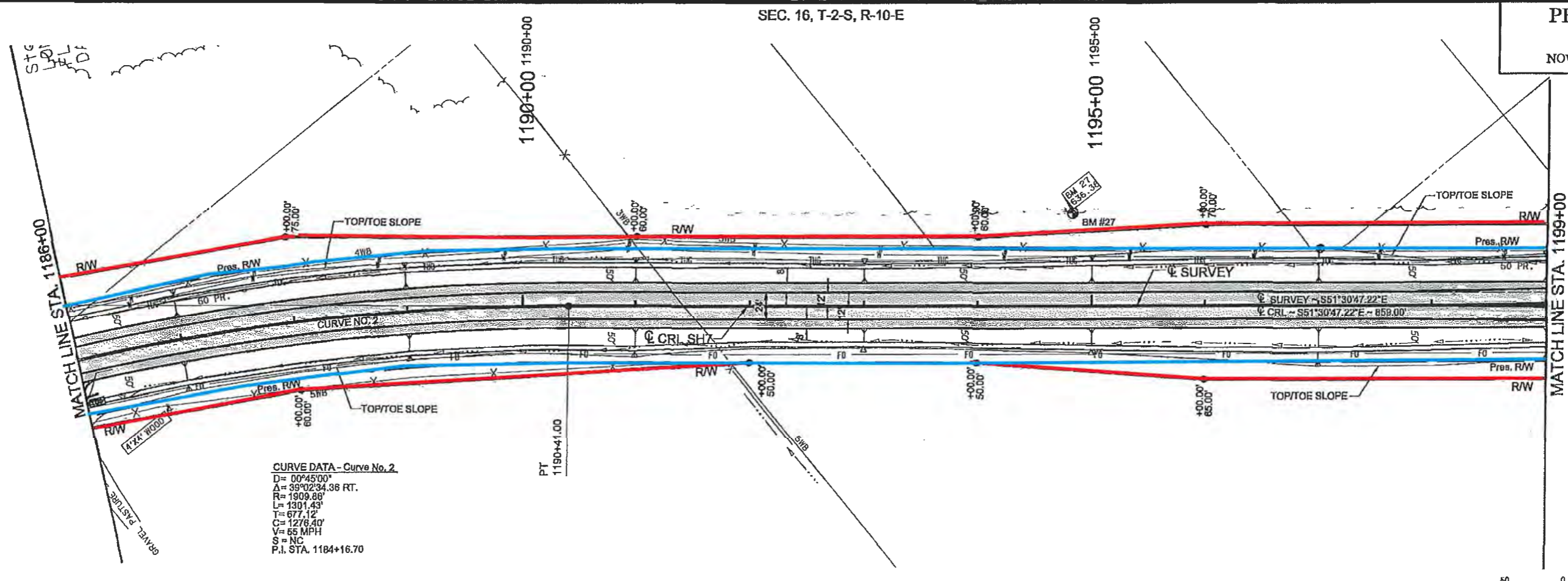


SEC. 17, T-2-S, R-10-E

SEC. 16, T-2-S, R-10-E

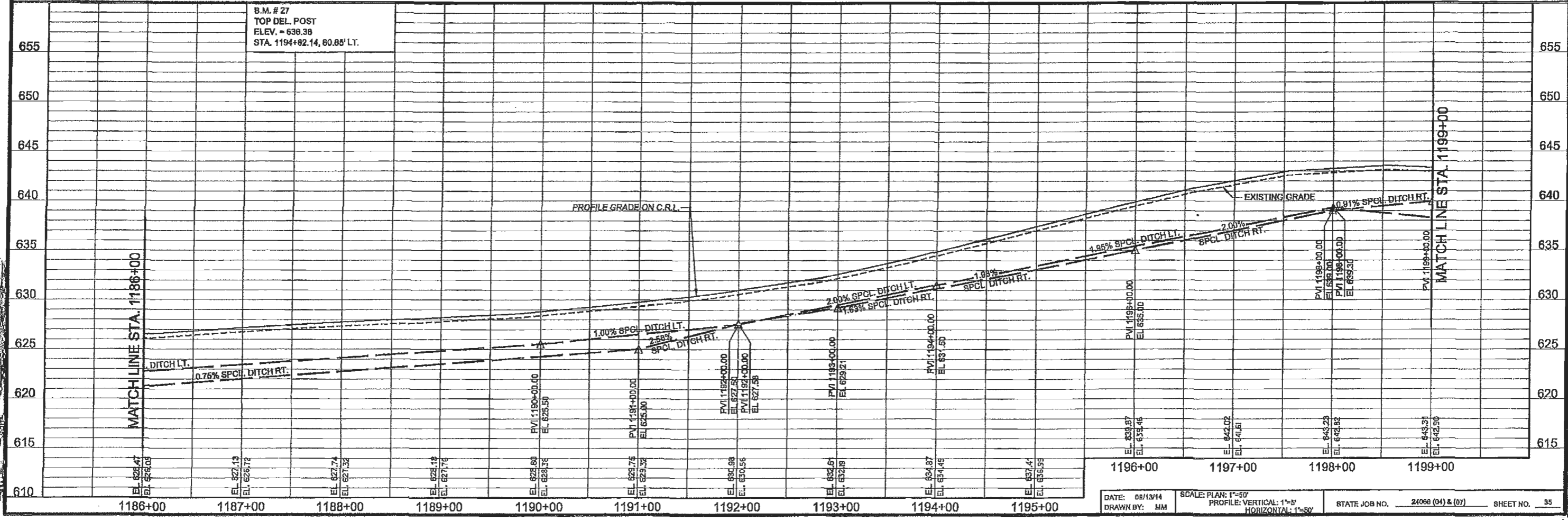


SEC. 16, T-2-S, R-10-E



CURVE DATA - Curve No. 2
 D = 00°45'00"
 Δ = 39°02'34.36 RT.
 R = 1909.89'
 L = 1301.43'
 T = 677.12'
 C = 1278.40'
 V = 65 MPH
 S = NC
 P.I. STA. 1184+16.70

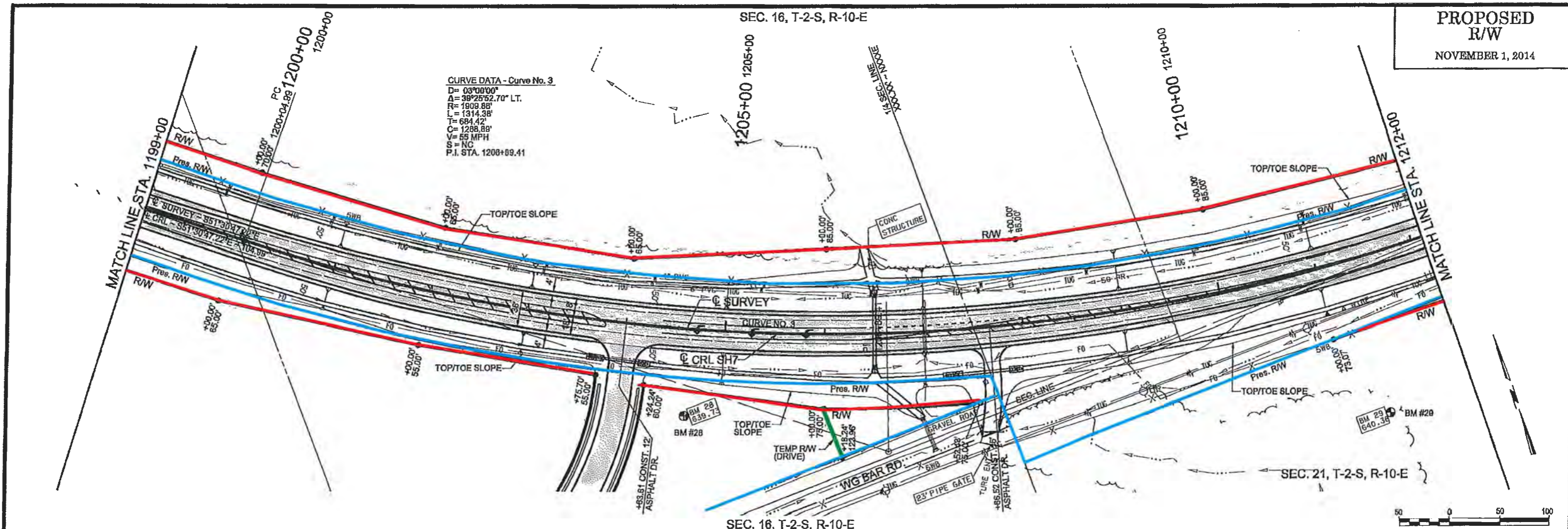
SEC. 16, T-2-S, R-10-E



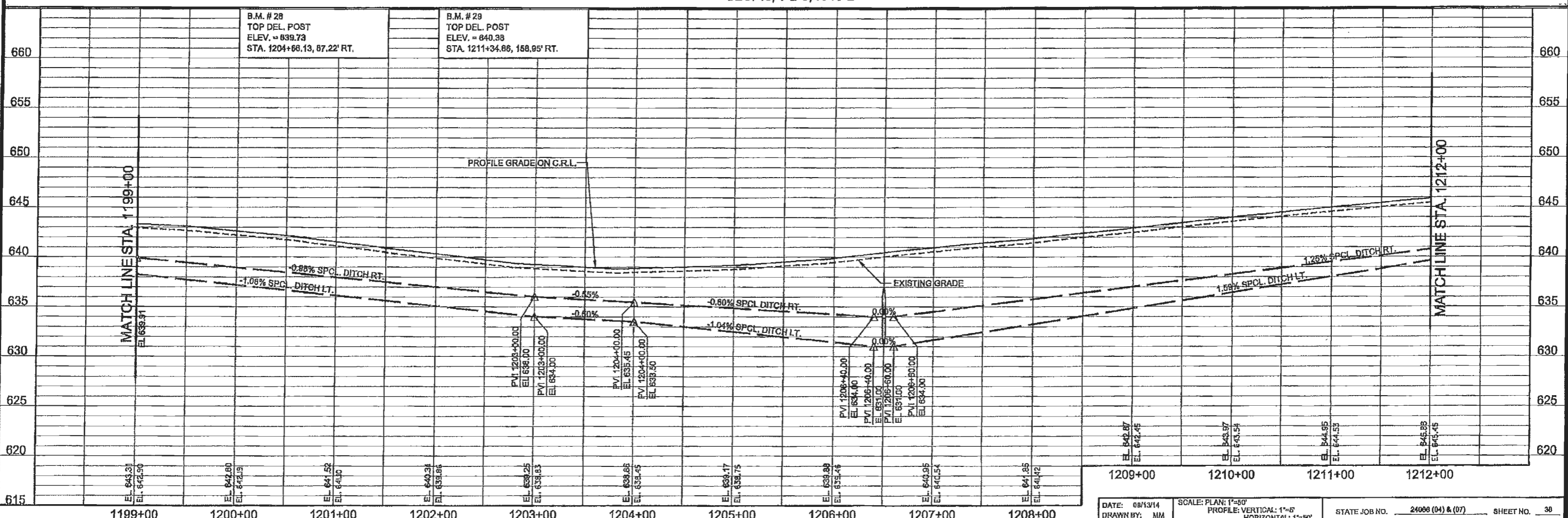
B.M. # 27
 TOP DEL. POST
 ELEV. = 636.38
 STA. 1194+82.14, 80.85' LT.

SEC. 16, T-2-S, R-10-E

CURVE DATA - Curve No. 3
 D= 03°00'00"
 Δ= 39°25'52.70" LT.
 R= 1908.88'
 L= 1314.38'
 T= 684.42'
 C= 1288.85'
 S= NC
 P.I. STA. 1206+89.41



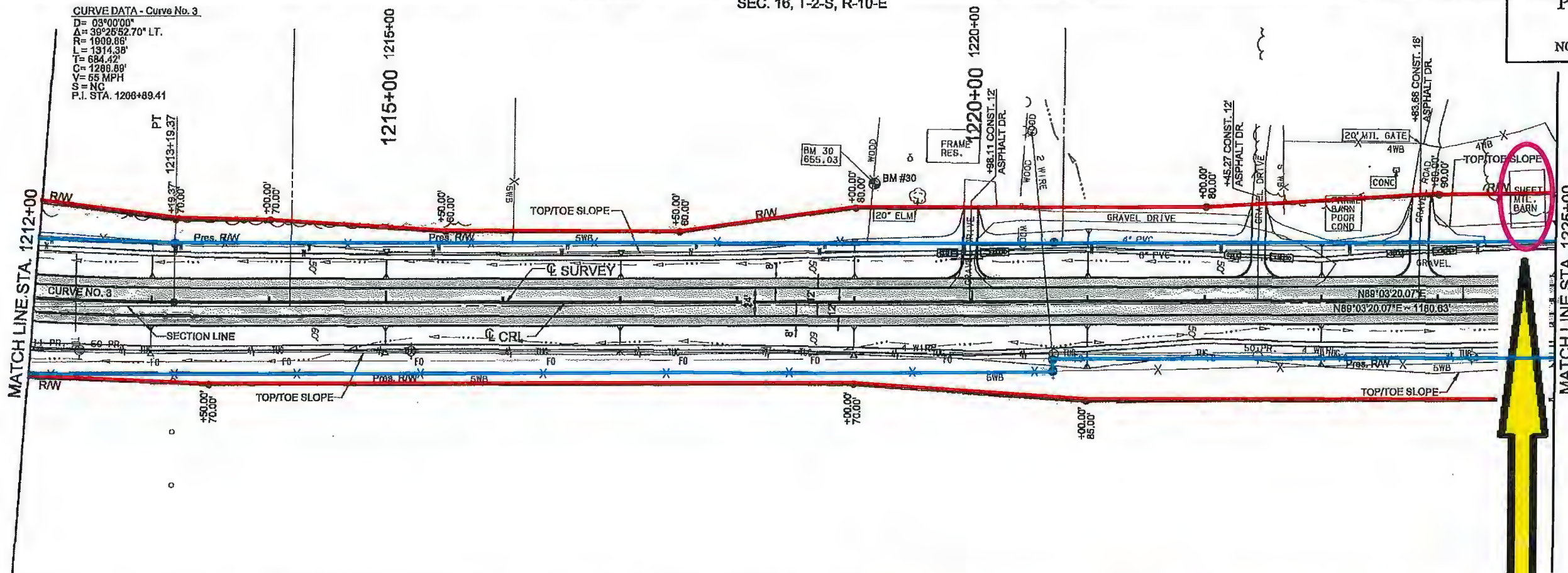
SEC. 16, T-2-S, R-10-E



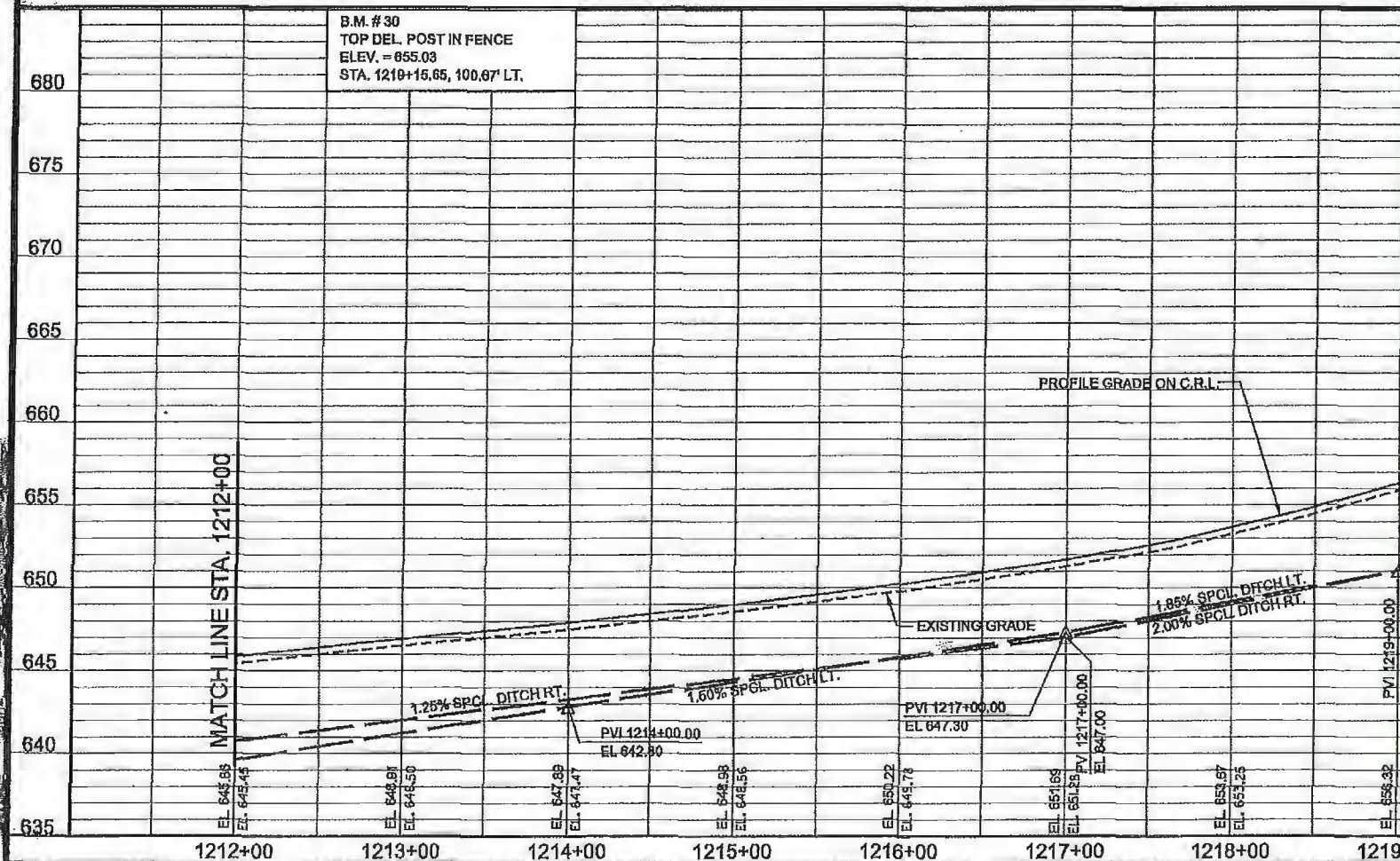
CURVE DATA - Curve No. 3
 D= 03°00'00"
 A= 39°25'52.70" LT.
 R= 1909.86'
 L= 1314.38'
 T= 684.42'
 C= 1200.80'
 V= 55 MPH
 S= NC
 P.I. STA. 1208+89.41

SEC. 16, T-2-S, R-10-E

PROPOSED
 R/W
 NOVEMBER 1, 2014

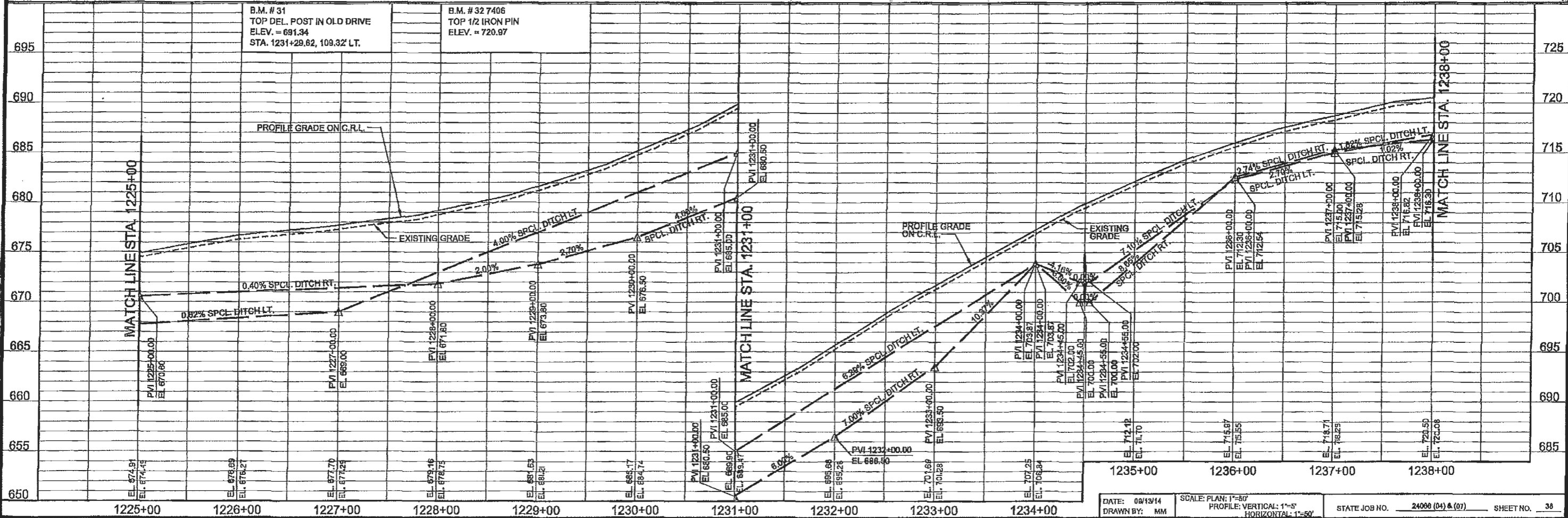
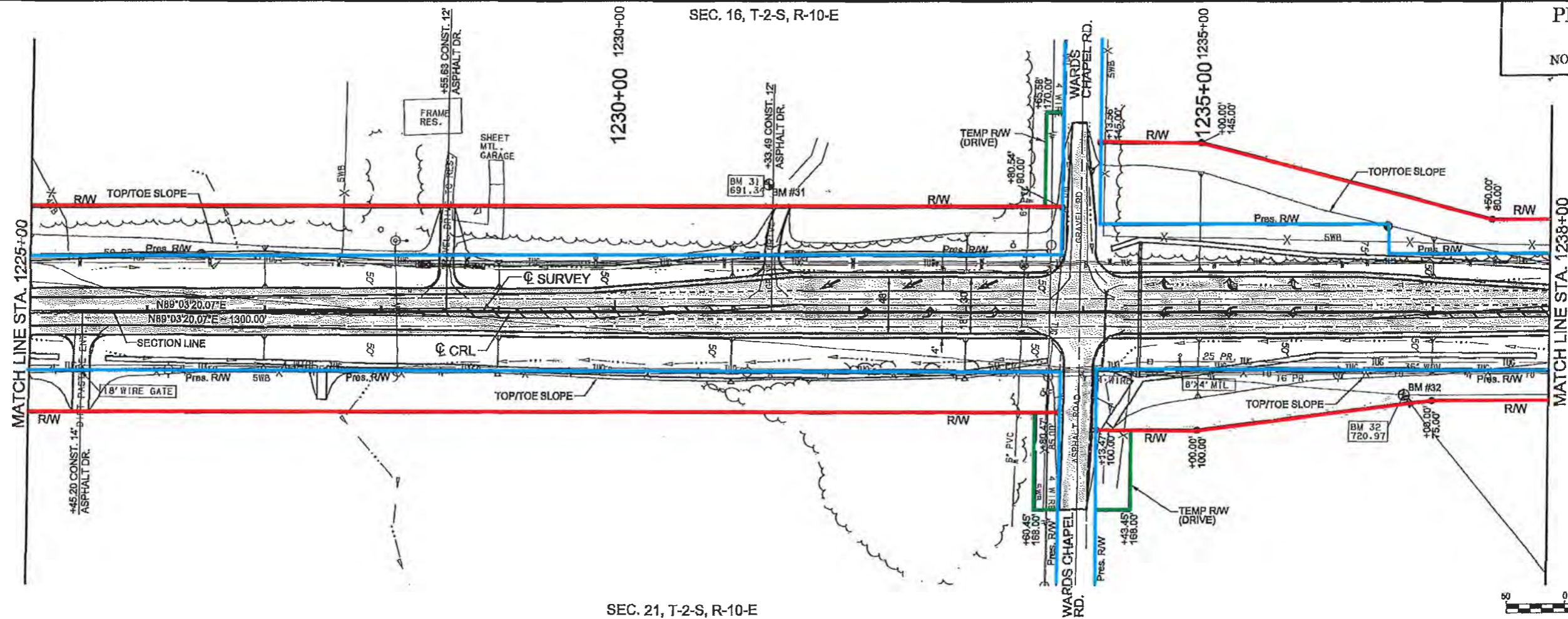


SEC. 21, T-2-S, R-10-E

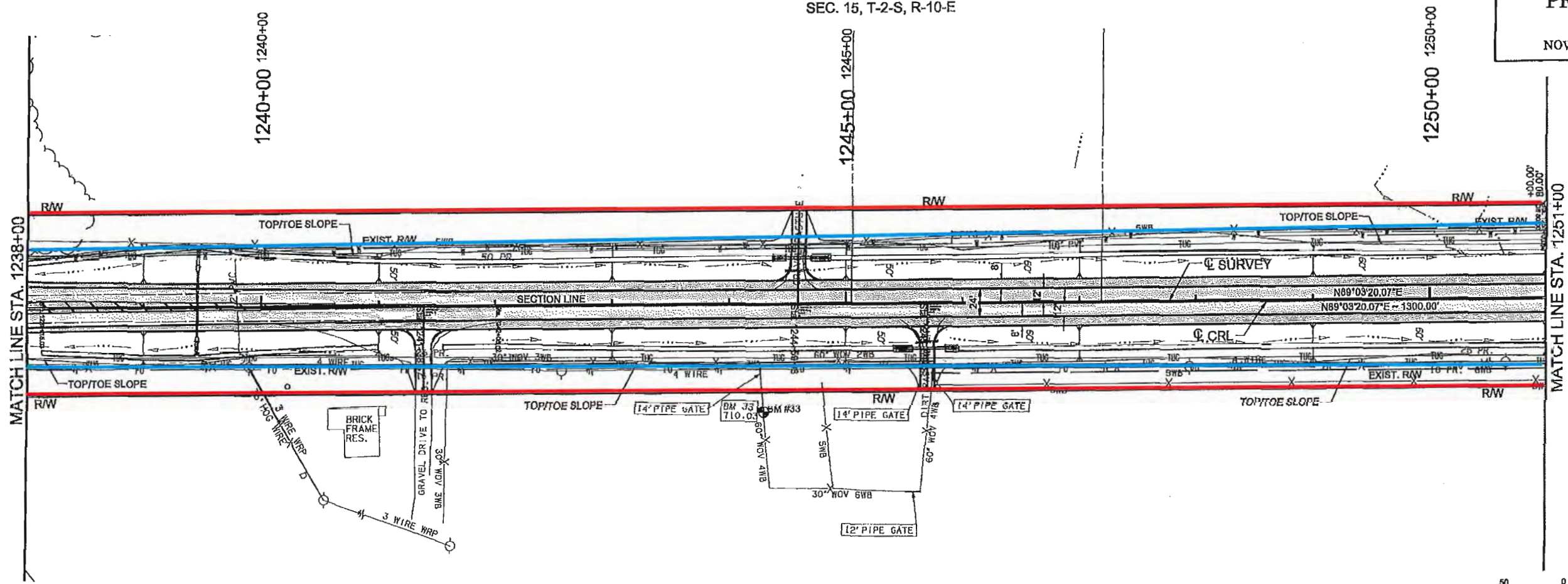


**Approx. 1800 SF Sheet Metal Barn
 Possible Personal Property Move
 Station 1224+50L**

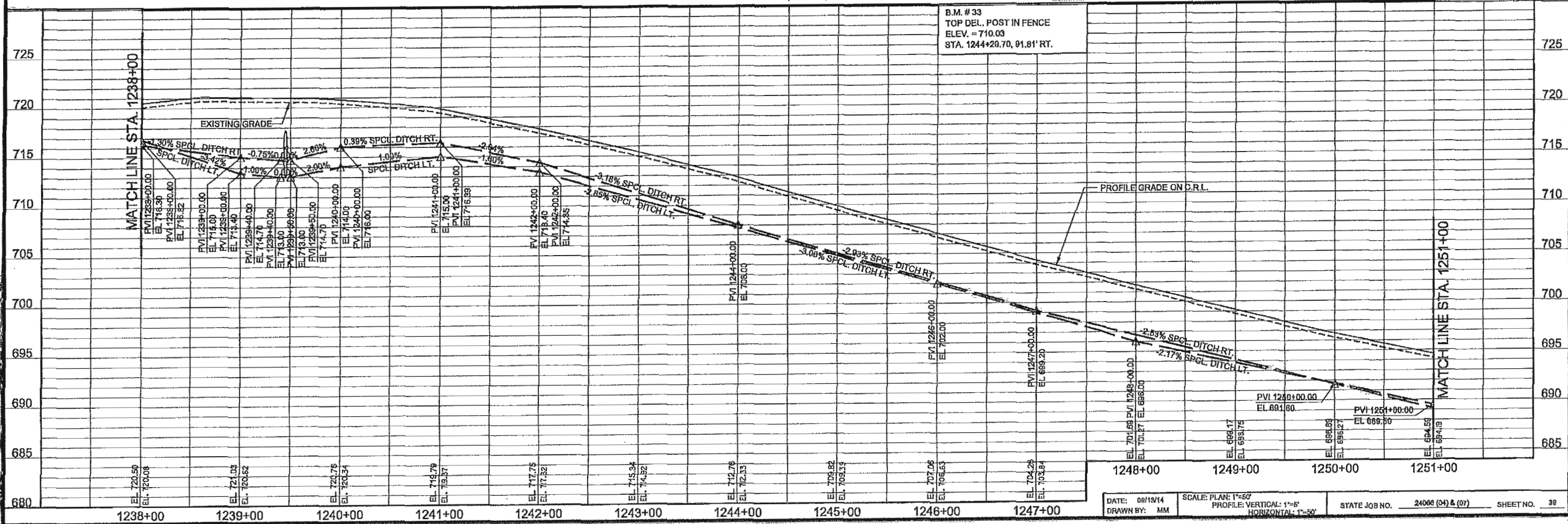
DATE: 09/13/14	SCALE: PLAN: 1"=50'	STATE JOB NO. 24088 (04) & (07)	SHEET NO. 37
DRAWN BY: MM	PROFILE: VERTICAL: 1"=6'		
	HORIZONTAL: 1"=50'		



SEC. 15, T-2-S, R-10-E

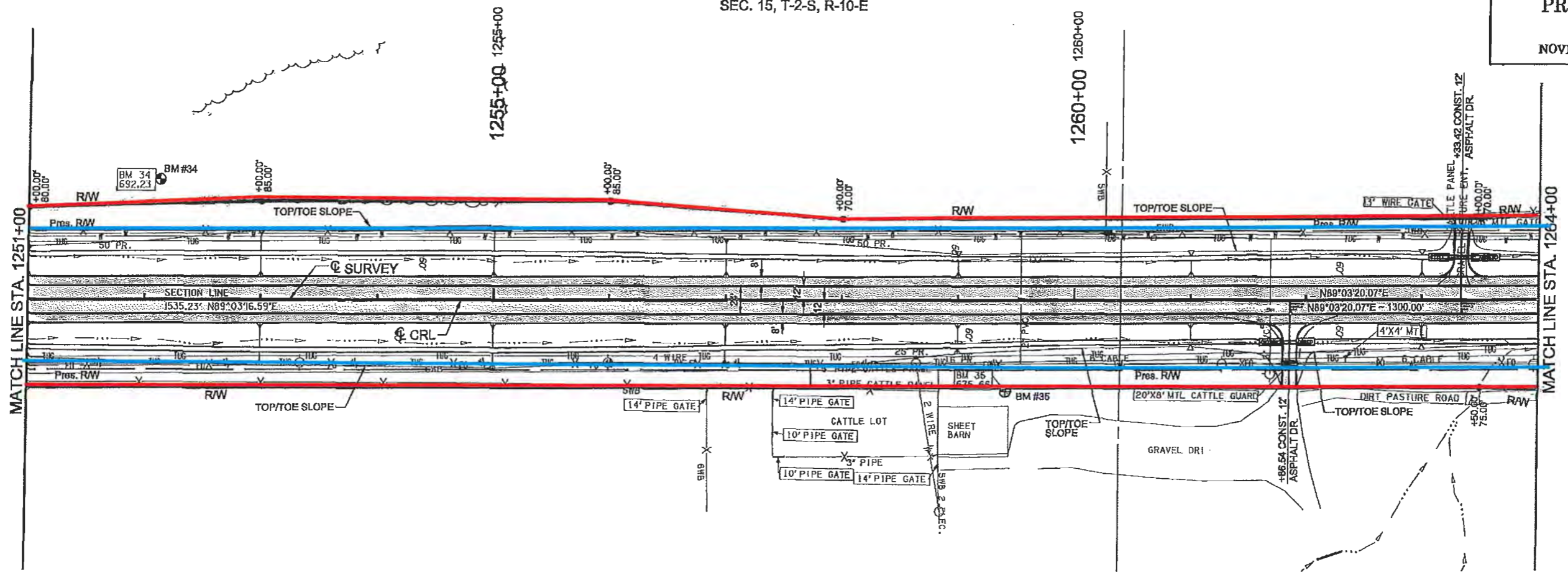


SEC. 22, T-2-S, R-10-E

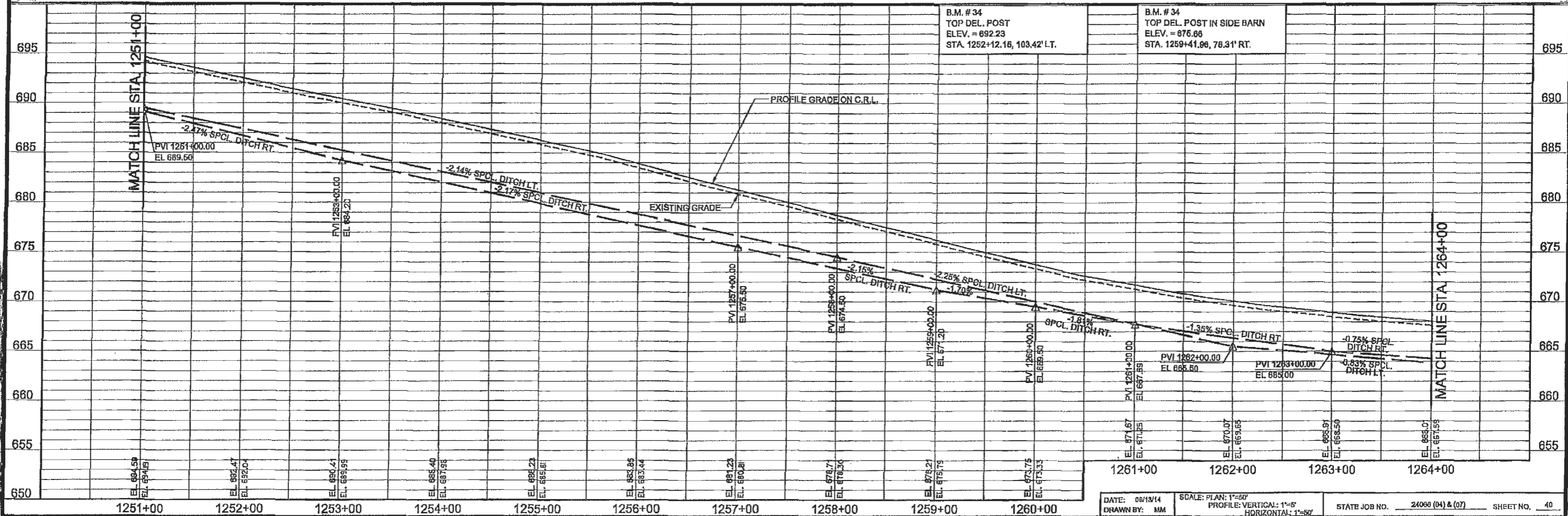


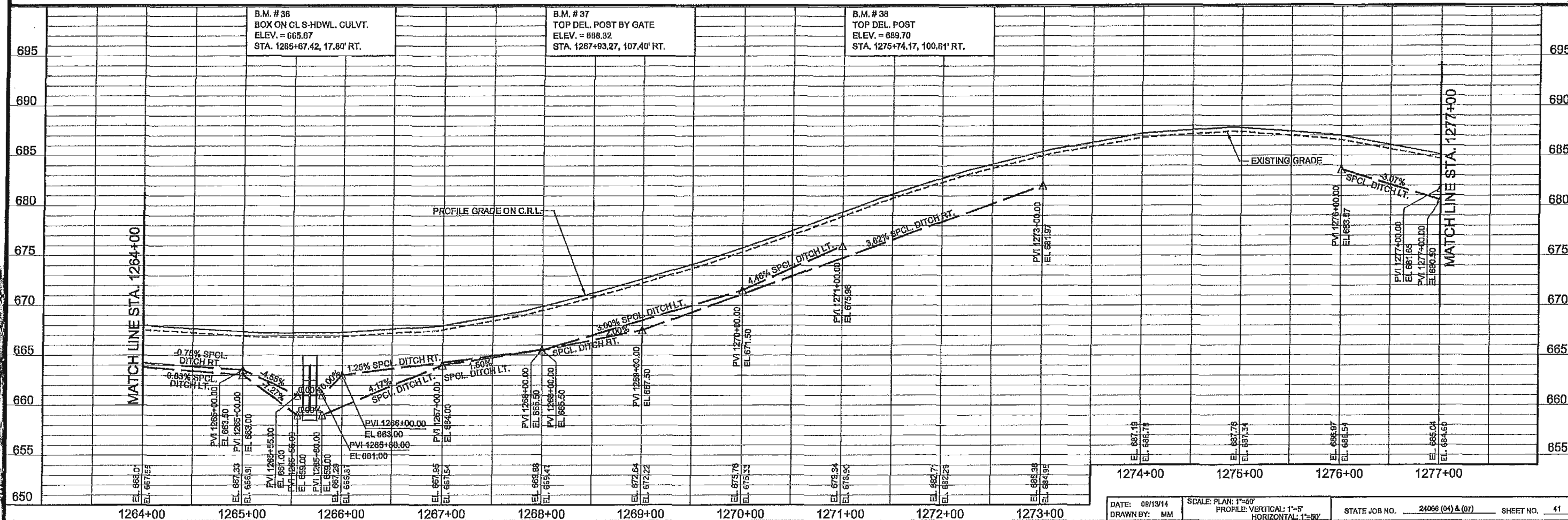
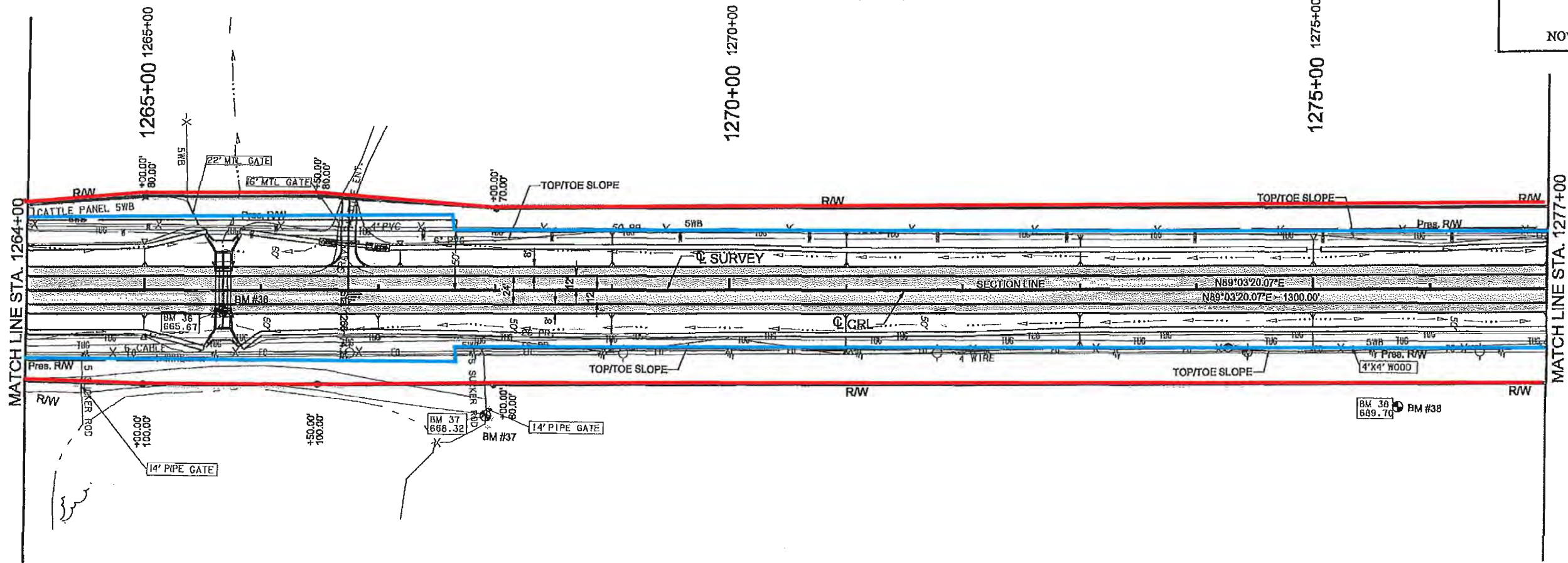
SEC. 15, T-2-S, R-10-E

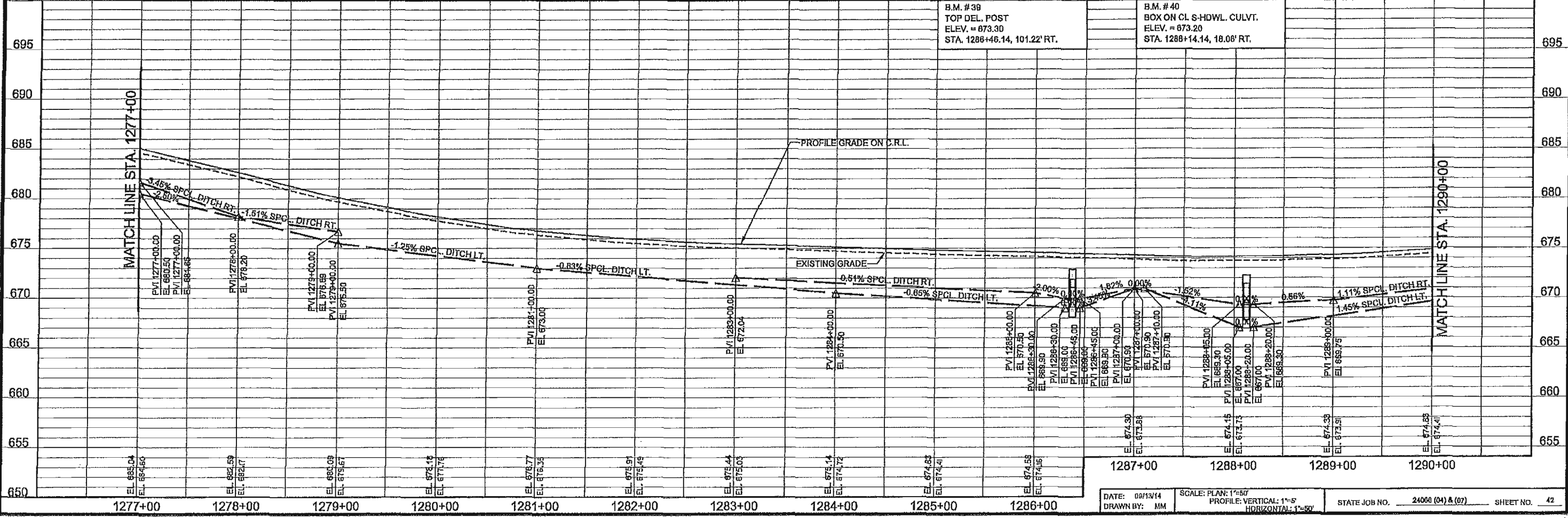
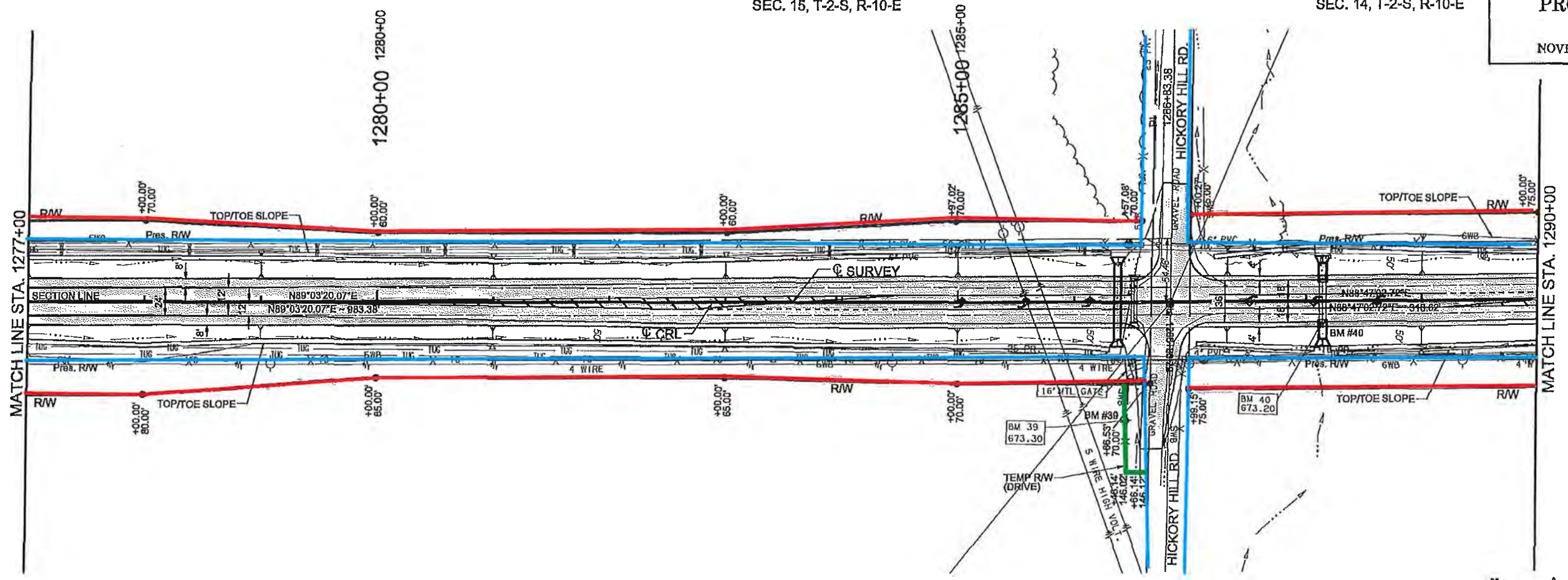
PROPOSED
R/W
NOVEMBER 1, 2014



SEC. 22, T-2-S, R-10-E



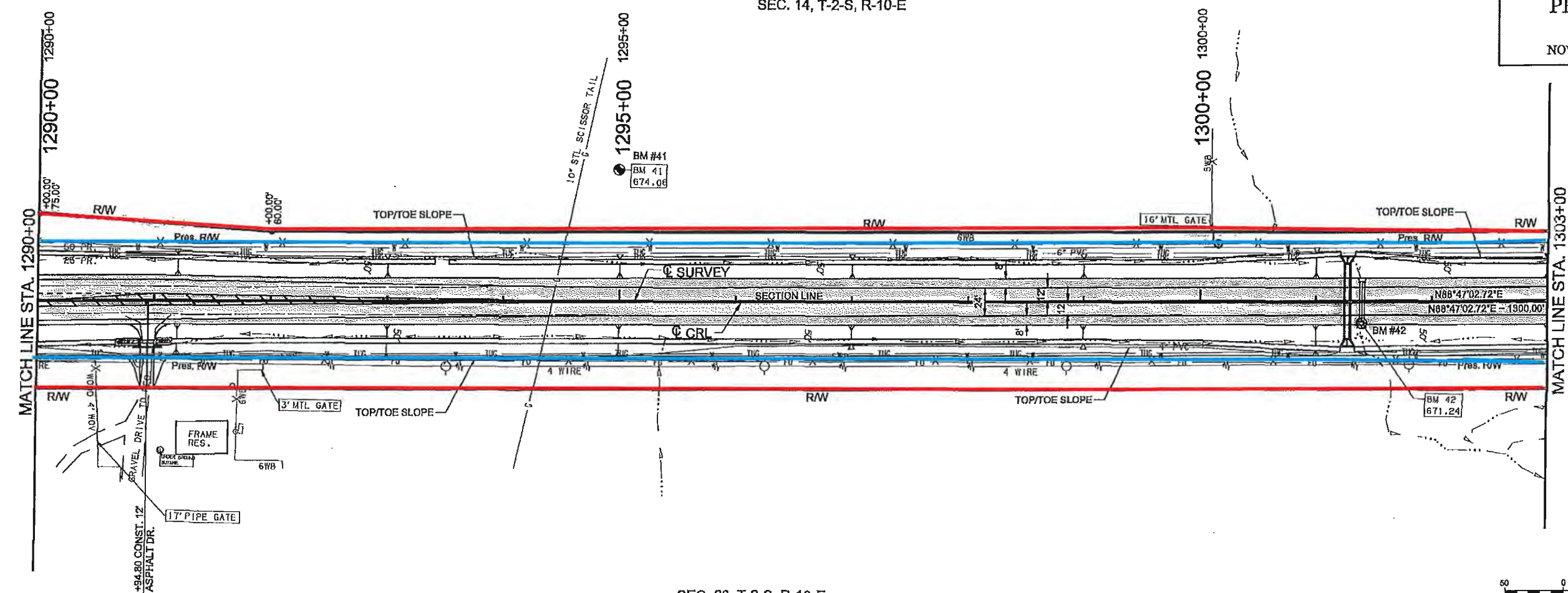




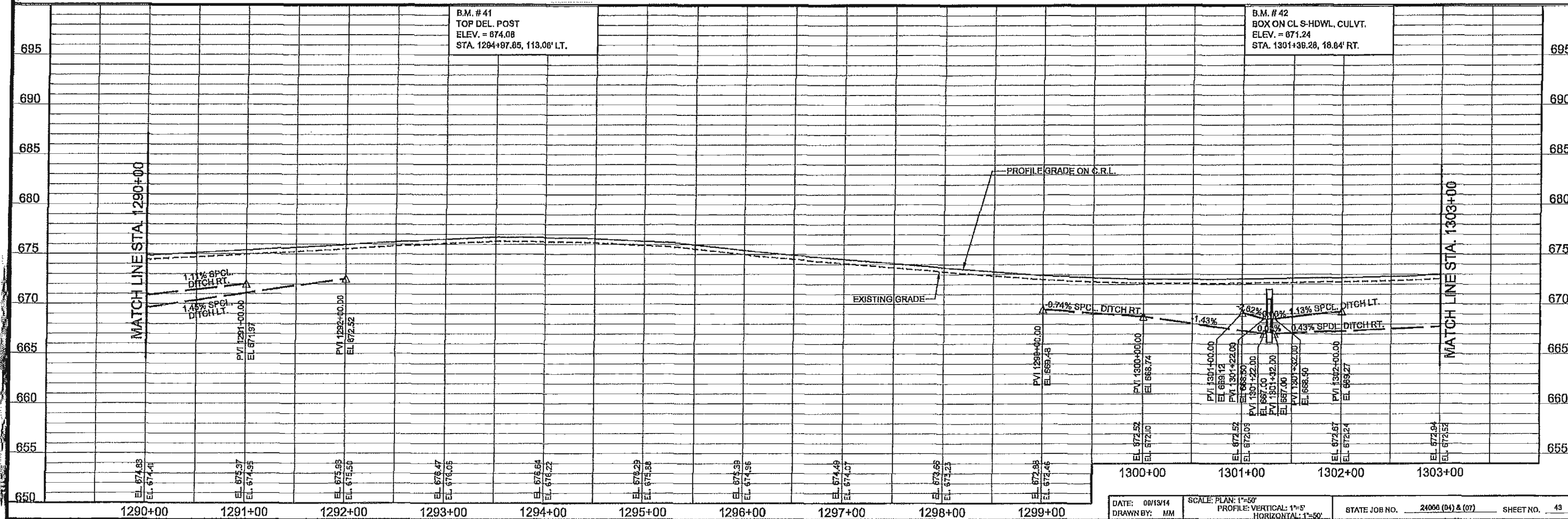
B.M. #39
TOP DEL. POST
ELEV. = 673.30
STA. 1286+46.14, 101.22' RT.

B.M. #40
BOX ON CL. S-HDWL. CULVT.
ELEV. = 673.20
STA. 1288+14.14, 18.06' RT.

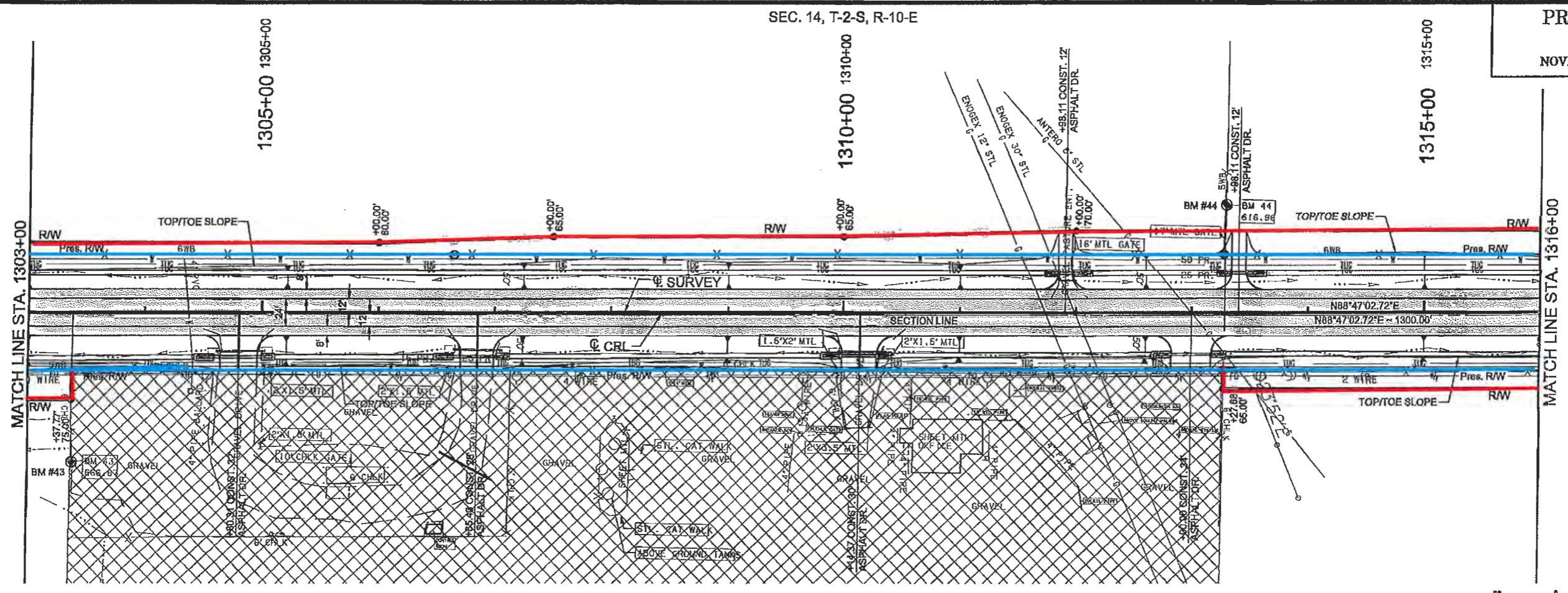
SEC. 14, T-2-S, R-10-E



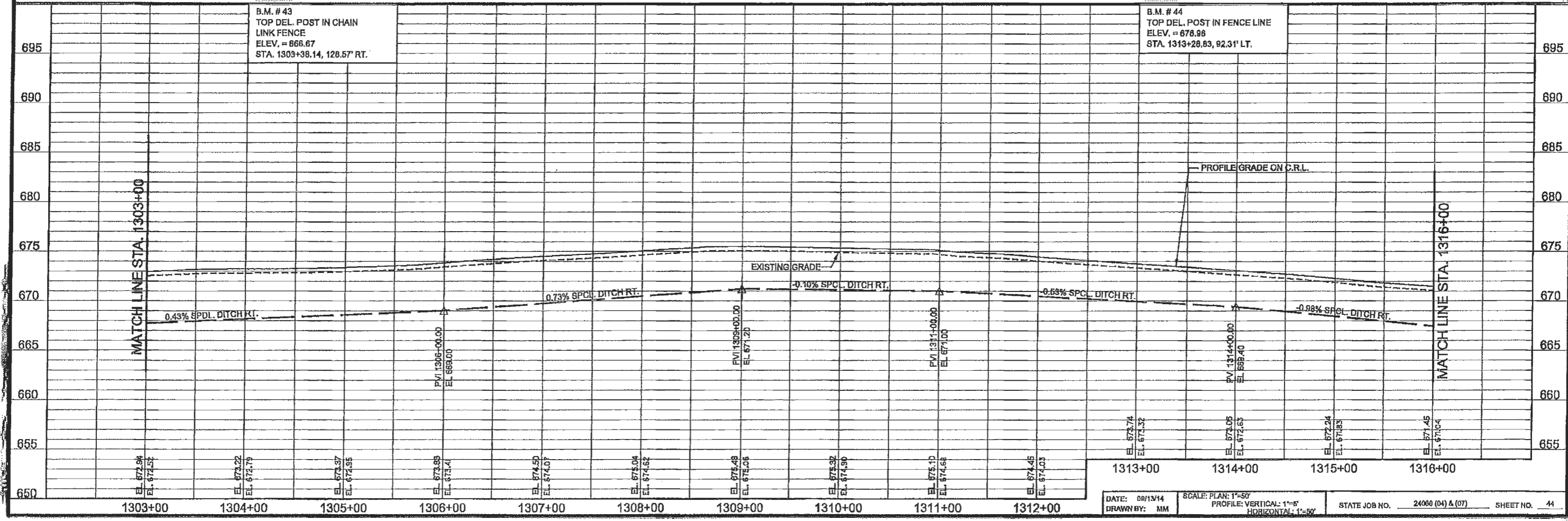
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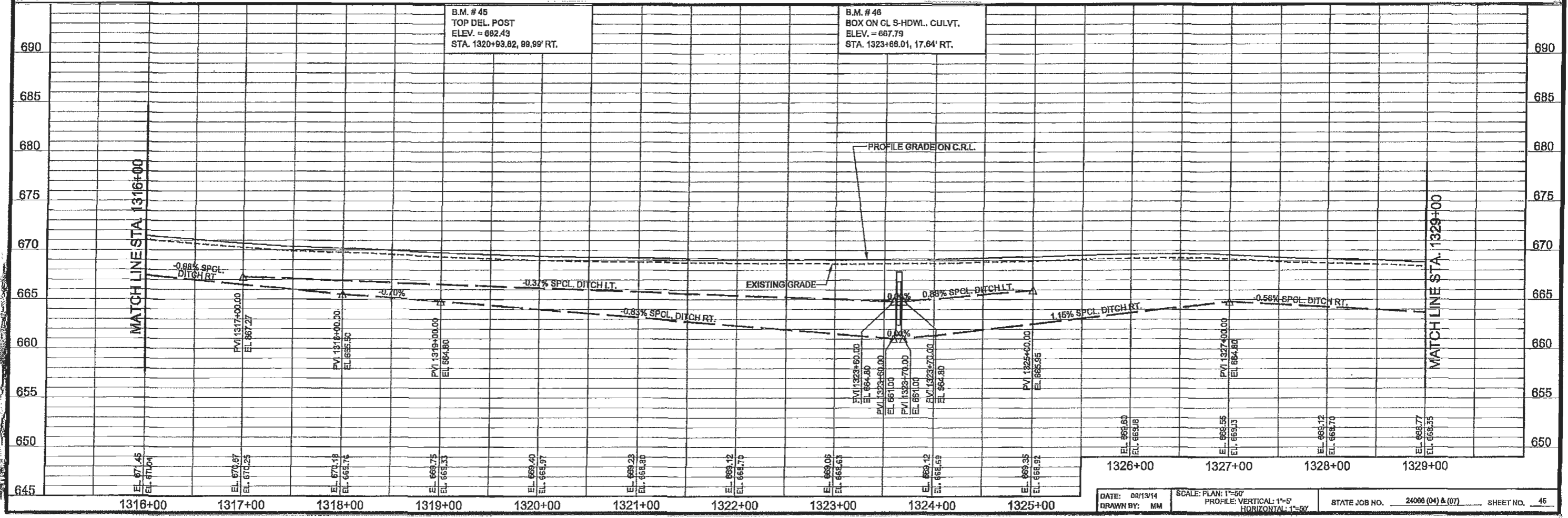
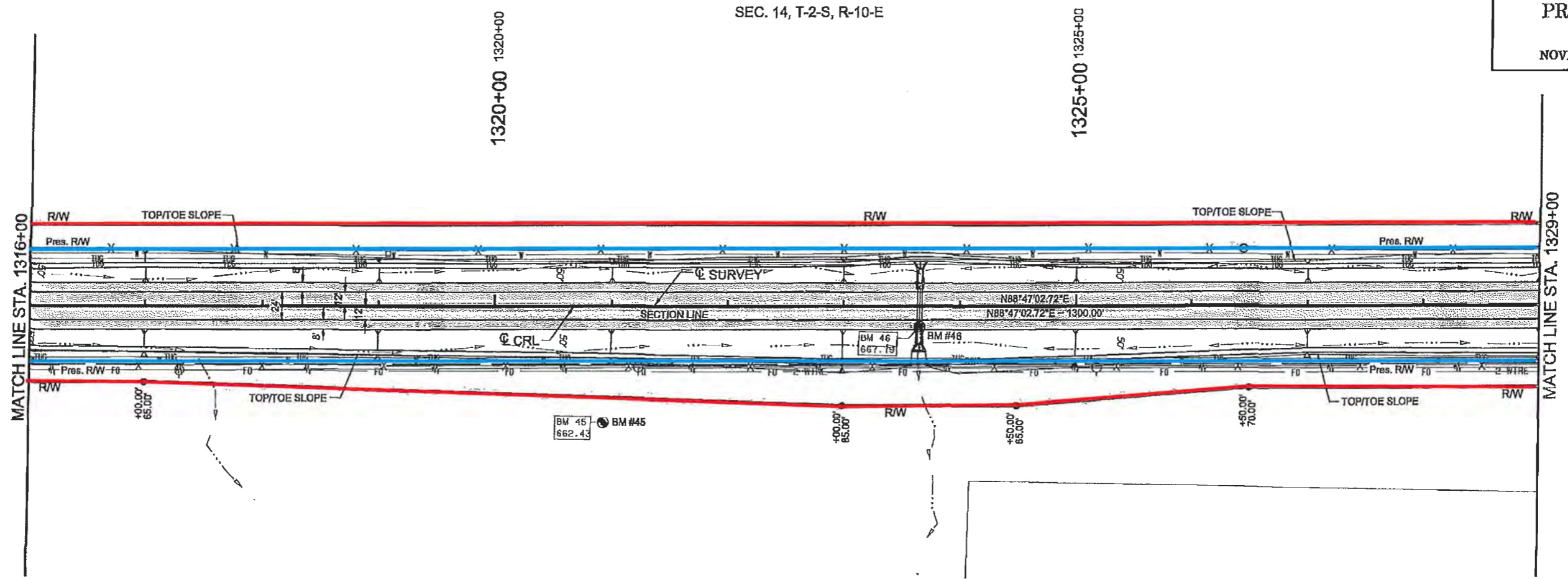


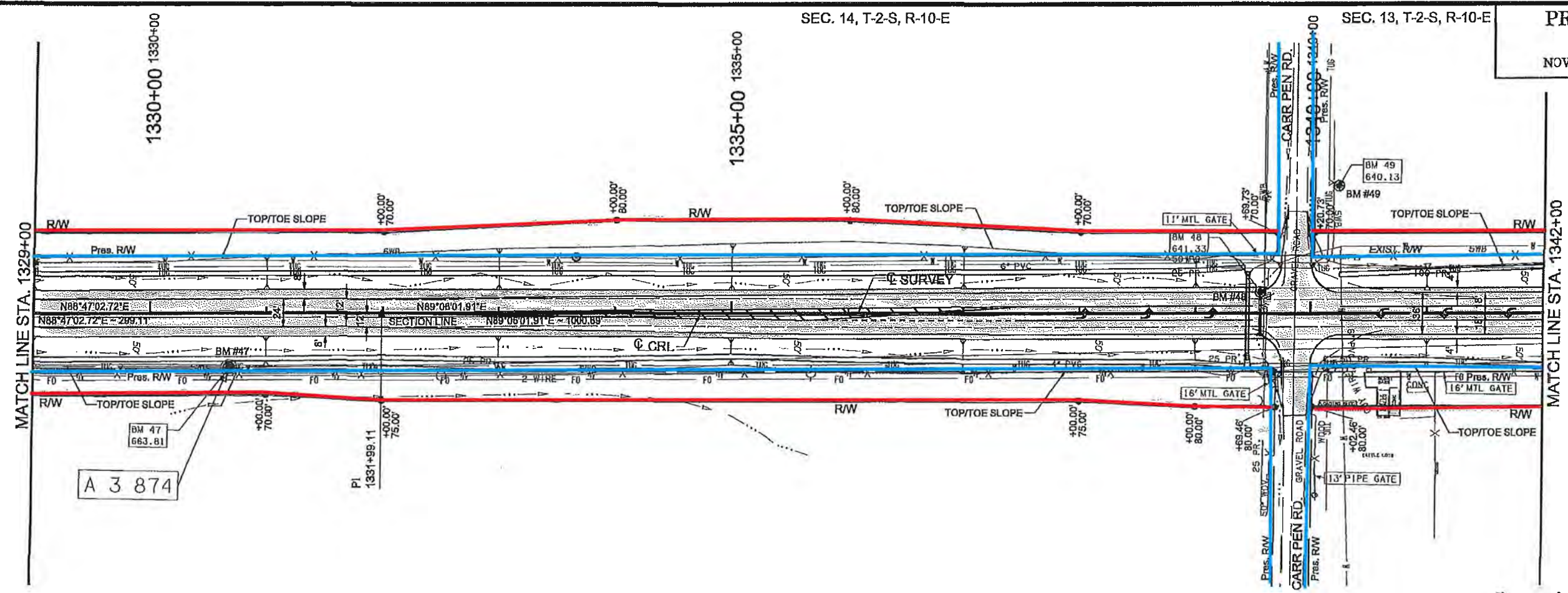
SEC. 14, T-2-S, R-10-E



SEC. 23, T-2-S, R-10-E

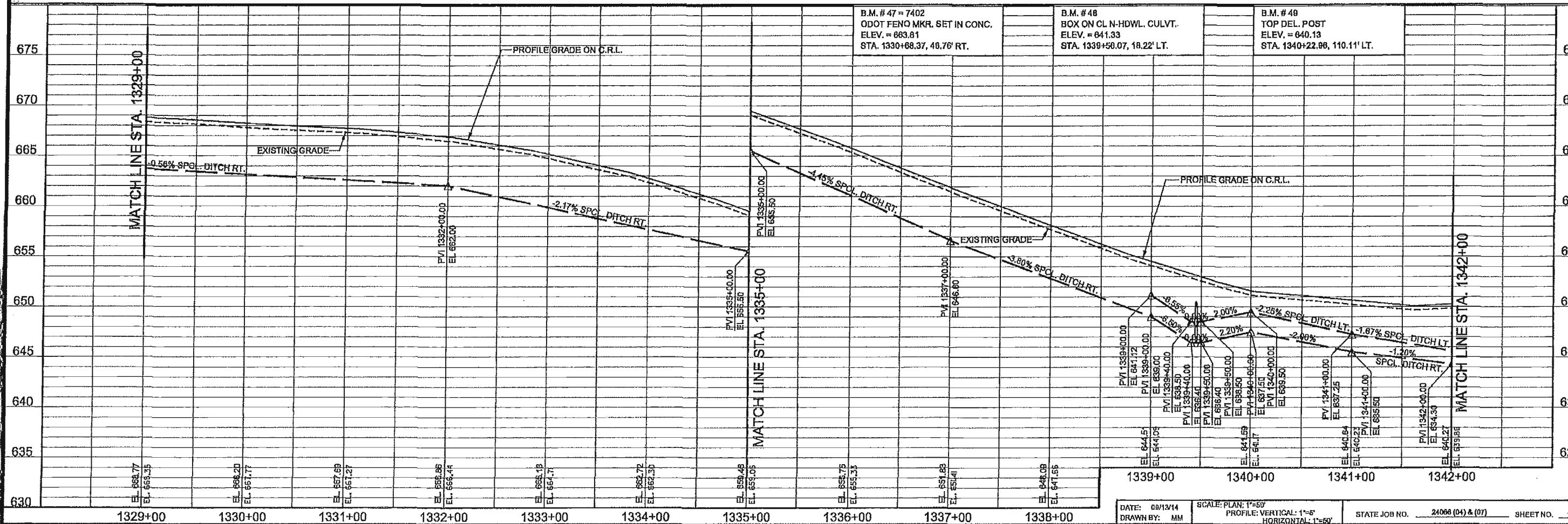




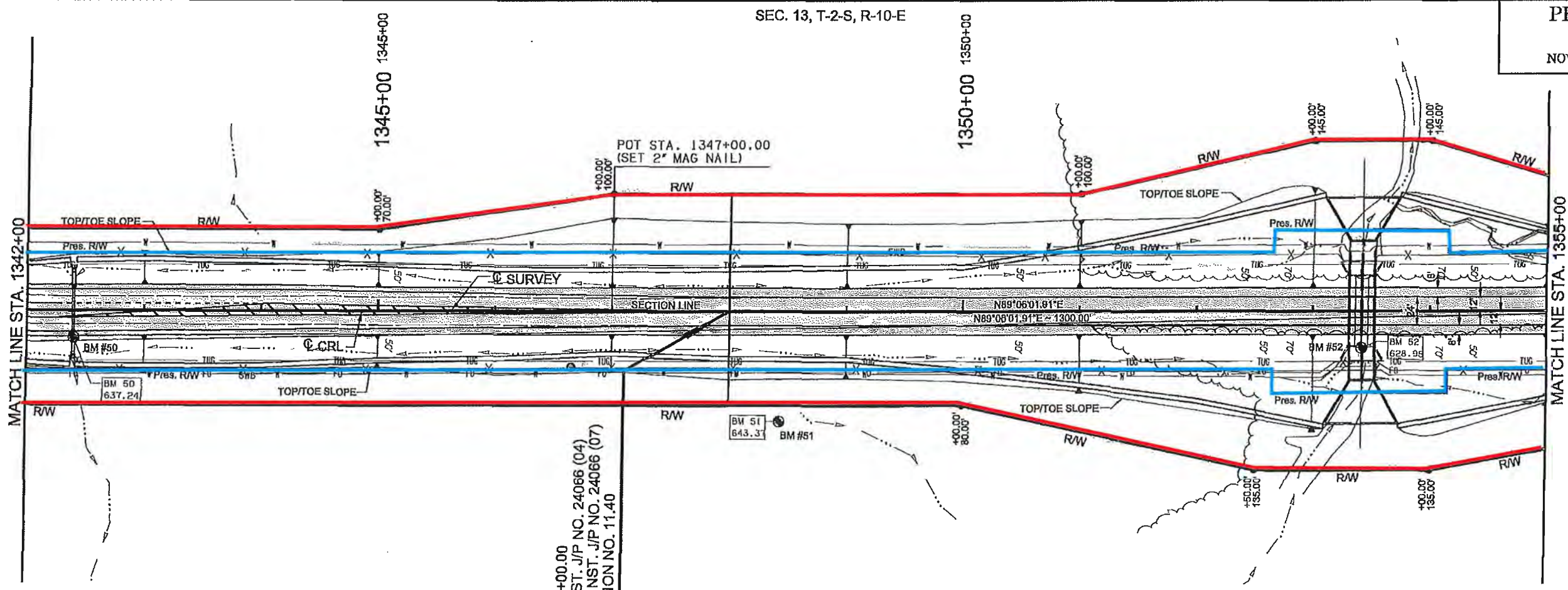


SEC. 23, T-2-S, R-10-E

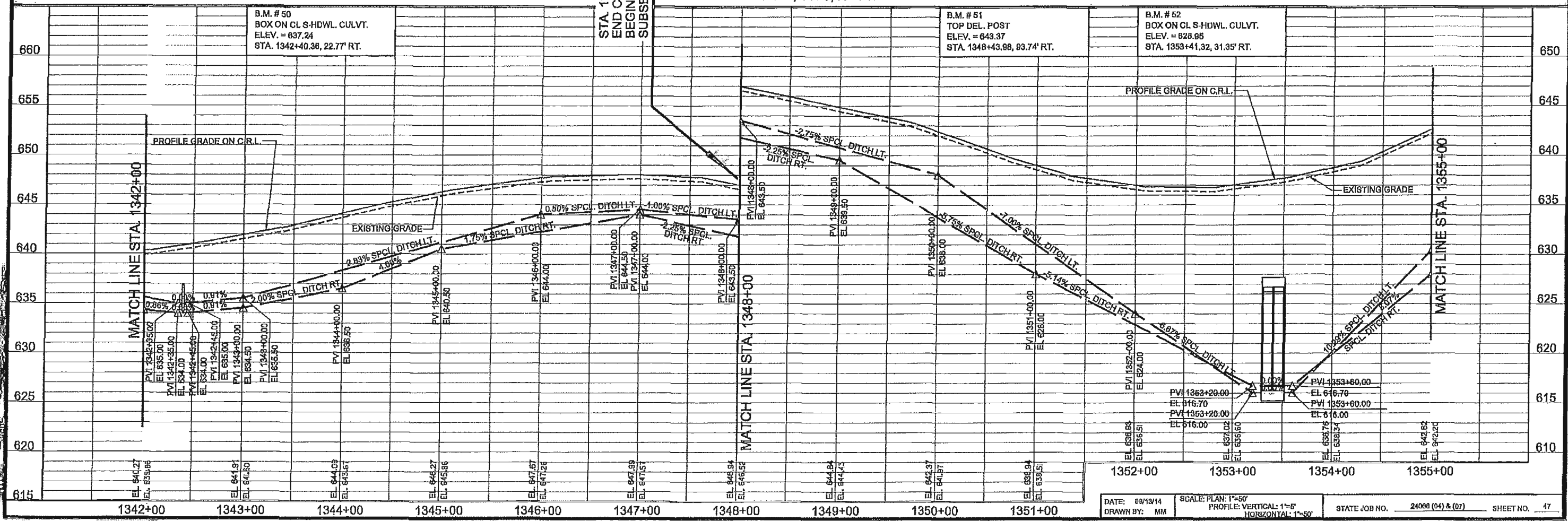
SEC. 24, T-2-S, R-10-E



SEC. 13, T-2-S, R-10-E



SEC. 24, T-2-S, R-10-E



CULTURAL RESOURCES STUDIES



Oklahoma Department of Transportation

Environmental Programs Division

Office 521-3050 Fax 522-5193

DATE: October 2, 2012

TO: Project Management Division

FROM: Environmental Programs Division

SUBJECT: Atoka County Project: J/P 24066(04). Proposed roadway improvements and bridge replacement on SH-7 over an unnamed creek.

There are potentially significant archaeological sites within the general vicinity of the referenced project. Please have the following note added to a section of the project plans entitled "Environmental Mitigation Notes" per Policy Directive C-201-2D(2):

"Locations outside the project area in the following area must not be utilized for borrow, equipment staging, haul roads, spoil dumps or any off-site project-related activity.

T2S R9E:

Section 13: SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ Site 34AT84

T2S R10E:

Section 22: SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ Site 34AT76

Section 18: N $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ Site 34AT85

NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Site 34AT691

SAS

Cc:
Division II Engineer
Roadway Division
Bridge Division



Oklahoma Historical Society
State Historic Preservation Office

Founded May 27, 1893

Oklahoma History Center • 800 Nazih Zuhdi Drive • Oklahoma City, OK 73105-7917
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

June 21, 2012

Mr. Scott Sundermeyer, Asst. Director
ODOT Cultural Resources Program
111 East Chesapeake, Room 102, OU
Norman, OK 73019

RE: File #1582-12; SH-7 Roadway Improvements & Bridge Replacement Project; JP#24066(04)
(Properties Listed on Attachment)

Dear Mr. Sundermeyer:

We have received and reviewed the documentation concerning the referenced project in Atoka County. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no historic properties affected by the referenced project.

Thank you for the opportunity to comment on this project. We look forward to working with you in the future.

If you have any questions, please contact Timothy G. Baugh, Ph.D., Historical Archaeologist, at 405/521-6381.

Should further correspondence pertaining to this project be necessary, please reference the above underlined file number. Thank you.

Sincerely,

Melvena Hejlich
Deputy State Historic
Preservation Officer

MH:bh

Attachment

FILE # LIST OF PROPERTIES

1582-12 SH-7 ROADWAY IMPROVEMENTS
& BRIDGE REPLACEMENT,
ATOKA VICINITY, ATOKA COUNTY

STRUCTURES:

1. #1, SEC18 T2S R10E
2. #2A, SEC17 T2S R10E
3. #2B, SEC17 T2S R10E
4. #2C, SEC17 T2S R10E
5. #3, SEC16 T2S R10E
6. #4, SEC16 T2S R10E
("WAREHOUSE")
7. #5A, SEC16 T2S R10E
8. #5B, SEC16 T2S R10E
9. #6, SEC22 T2S R10E
10. #7A, SEC23 T2S R10E
11. #7B, SEC23 T2S R10E
12. #7C, SEC23 T2S R10E
13. #7D, SEC23 T2S R10E
14. #7E, SEC23 T2S R10E

SITES:

15. 34AT689
16. 34AT690
17. 34AT691
18. 34AT692
19. 34AT693
20. 34AT694
21. 34AT695

ROAD/BRIDGE:

22. SH-7, SEC24 T2S R9E,
SECS 14,15,16,17,18,
21.22.23 T2S R10E
23. BRIDGE #03140771X
OVER UNNAMED CREEK



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

June 4, 2012

Scott Sundermeyer
Assistant Director
Cultural Resources Program
Oklahoma Department of Transportation
111 East Chesapeake
University of Oklahoma
Norman, OK 73019-5111

Re: Proposed improvements to SH-7 from the Dry Boggy Creek bridge east 5.4 miles to County Road NS-382. Legal Description: Origin Point- N ½ Section 24 T2S R9E; Termination Point-Sectionline between Sections 14/23 T2S R10E, Atoka County, Oklahoma. J/P 24066 (04)

Dear Mr. Sundermeyer:

I have received a report documenting the results of a cultural resource inventory for the above referenced action. Diane Cargill and associates conducted this work on September 22-24, 26 and December 7, 2011. The field inspection of some 419 acres representing the area of potential effect resulted in the documentation of seven historic residential archaeological sites (34AT689-34AT695) and seven buildings/building complexes. **I defer opinion on the potential eligibility of 34AT689-34AT695 and the seven historic buildings/building complexes as well as project effect to the Historical Archaeologist with the State Historic Preservation Office.**

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society. You must also have a letter from that office to document your consultation pursuant to Section 106 of the National Historic Preservation Act

Sincerely,

Robert L. Brooks
State Archaeologist

Cc: SHPO





**OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM**

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

May 31, 2012

Ms. Melvena Heisch
Deputy State Historic Preservation Officer
Oklahoma History Center
800 Nazih Zuhdi Drive
Oklahoma City, Oklahoma 73105

Dear Ms. Heisch:

Re: Atoka County Federal Highway Administration Funded Project: J/P 24066(04);
Proposed roadway improvements and bridge replacement on SH-7 over an unnamed
creek.

Attached is a cultural resources report and Historic Preservation Resource Identification forms for seven building or building complexes for the above-referenced project completed by Cargill Archaeological Services, consultant to Able Consulting. In addition, seven 20th century archeological site, 34AT689 through 34AT695, were also recorded. The buildings consist of mid-century bungalow or National Folk-style structures. The archeological sites consist of early- to mid 20th century occupations are have been largely disturbed by modern activities or razing of the original buildings and do not contain significant archeological deposits, associations, or features. Pursuant to 36 CFR 60.4, the referenced resources do not exhibit distinctive style, characteristics, or associations, nor do they contain data necessary for inclusion in the National Register of Historic Places. Based upon the results of this study, it is our opinion that the project as proposed will have no effect to historic properties. If you have any questions regarding this project, please contact me at 325-7201.

Sincerely,

Scott Sundermeyer
Assistant Director, ODOT Cultural Resources Program
cc: State Archeologist

"The mission of the Oklahoma Department of Transportation is to provide a safe, economical, and effective transportation network for the people, commerce and communities of Oklahoma."

AN EQUAL OPPORTUNITY EMPLOYER

OKLAHOMA DEPARTMENT OF TRANSPORTATION CULTURAL RESOURCES SURVEY REPORT

Prepared by: Cargill Archaeological Services for Able Consulting, Oklahoma City, OK.

County: Atoka
Project No: N/A
J/P Number: 24066(04)
Surveyed By: Diane Cargill, Michael Myers and Rose Botone
Prepared By: Diane Cargill and Michael Myers
Survey Date: September 22 – 24 and 26, and December 7, 2011
Report Date: February 29, 2012

1. PROJECT DESCRIPTION:

Cultural resources survey for road improvements in Atoka County along SH-7 from approximately 5.4 miles east of the Johnston C/L at the east end of the Dry Boggy Creek bridge extending east approximately 5.6 miles to NS-382. The proposed improvements to SH-7 include grading, draining, bridge replacement, and reconstructing horizontal and vertical curves from the beginning of the project for approximately 7,000 feet then widening and resurfacing up to Watson Creek. East of Watson Creek, widening, resurfacing, and curve evaluation and improvement are proposed. The Watson Creek crossing is an exception to the project as construction has been completed on a new Watson Creek bridge using SBR funds.

The study area is approximately 5.6 miles in length. The width of the study area is a consistent 300 feet from the existing centerline on the north and south sides of SH-7. The total acreage of the study area is approximately 419 acres.

The existing bridge over an unnamed creek (ODOT Structure #03140771X) is a poured concrete triple-cell 10'x7'x30' reinforced concrete box (RCB) bridge constructed in 1938, with no Works Progress Administration (WPA) markings. Documentation regarding the bridge was submitted to the Oklahoma Department of Transportation Cultural Resources Program and the bridge is considered to be **not eligible** for inclusion in the NRHP.

Legal Location: Parts of the: N/2 Section 24, T2S R9E, NW/4 NW/4 NW/4 Section 19, S/2 Sections 17 & 18, SW/4 Section 16; and the south 300' SE/4 Section 16 and of the S/2 Sections 14 & 15; and the north 300' of Sections 21, 22, & 23, T2S R10E, Atoka County, Oklahoma.

U.S.G.S. Quadrangle: Olney (1969), Boggy Depot (1969), Tushka (1969), and Lehigh (1957, photorevised 1979) Oklahoma, 7.5' USGS quadrangles.

2. TOPOGRAPHY AND VEGETATION:

The study area is mapped within the southern margin of the Sandstone Hills Geographic Region of Oklahoma and within the southwestern margin of the McAlester Marginal Hills Belt Geomorphic Province. This Province consists of resistant sandstones of Pennsylvanian age that cap broad hills and mountains that rise above wide, hilly plains. In the field, the study area is in gently rolling hills presumably within the wide, hilly plains of the Province. The study area runs E-W across N-S drainages. The principal drainage of the general area, Clear Boggy Creek, runs south/southeast just to the west of the study area corridor where it is joined by parallel Dry Boggy Creek, which is at the western margin of the study area, and by Watson Creek which intersects the study area and is the main study area drainage. Watson Creek is mapped as intermittent. These drainages run eventually into Muddy Boggy Creek and on to the Red River. The natural vegetation of the study area is mapped as both Tall Grasses and Cross Timbers (post and blackjack oak and eastern red cedar dominant). Landuse was dominated by pasture and hay fields. Pasture was diverse including cattle, horse, sheep, and goat pasture, in that order of

importance. Fields were notably overgrazed, which provided good ground surface visibility; few areas were overgrown and these were generally floodplain environment. The floodplain around Watson Creek included many winding channels that apparently converged near SH-7. Most forest was near drainages. The eastern study area had more erosion and overgrazing than the study area to the west. The study area begins on the west at just under 540-ft amsl on former floodplain and terrace of Dry Boggy Creek, rising to a maximum of approximately 645-ft amsl and then farther eastward to 720-ft amsl and ends on the east at 650-ft amsl.

Vegetation Coverage:

<u>XXX</u>	0-25%	Overgrazed goat and sheep pasture.
<u>XXX</u>	25-50%	Overgrazed horse and cattle pasture.
<u>XXX</u>	50-75%	Short grass pasture, grazed.
<u>XXX</u>	75-100%	Apparently disturbed areas in thickets especially around drainages. Minor areas of ungrazed tall grasses.

General Soils Observations: Dark and especially light brown sandy clay loams, loams, and fine sandy loams depending on location. Some soils eroded. Orange clay mottling in subsoils in some shovel tests. Clay content increases with depth.

USDA/ASCA/SCS Associations: The western ¼ mile of the study area is mapped as *Wynona-Verdigris-Kaufman-Dela*; the remaining study area to the east (5 miles) is located within the soil association *Verdigris-Toloka-Dennis-Bates*.

3. PROJECT METHODOLOGY:

A. Background Research:

- XXX State Site Files at Oklahoma Archeological Survey
- XXX SHPO NRHP and DOE Files
- XXX Native American Tribes and Nations Consulted by Procedures Established with FHWA and ODOT: Caddo Nation, Choctaw Nation, Osage Nation, and the Wichita and Affiliated Tribes.
- XXX Other sources: 1898 GLO Township map; Atoka, Oklahoma (1900) 30' USGS quadrangle map; Boggy Depot, Oklahoma (1969) 7.5' USGS quadrangle map; Olney, Oklahoma (1969) 7.5' USGS quadrangle map; Lehigh, Oklahoma (1957, photorevised) 1979) 7.5' USGS quadrangle map; Tushka, Oklahoma (1969) 7.5' USGS quadrangle map; 1939, 1956, 1966, 1982, 1991, and more recent aerial photographs.

RESULTS OF BACKGROUND RESEARCH:

No previously recorded cultural resources are located within the study area; however, three previously recorded archaeological sites (34AT76, 34AT84, and 34AT85) are located within one mile of the study area boundaries.

Site 34AT76 is located approximately 4,750 feet south of the study area (Figures 1 and 3). The site was recorded by Charles Neel in 1980 and described as a multi-component site represented by a prehistoric and a

late 19th/early 20th century component. No intact features were reported. The surface scatter of prehistoric material was limited to five “flakes”, and the historic-period scatter included glass fragments, crockery, metal fragments, one pre-1901 bottle neck, one post-1901 bottle neck, and one double-bit steel axe. The site remains unassessed for the NRHP.

Site 34AT84 is located approximately 3,450 feet north/northwest of the study area (Figures 1 and 2). The site was recorded by Charles Wallis, Jr. in 1975 and is described as a possible small campground or activity area. The site is located on the eastern slope of a high ridgeline terrace overlooking a small tributary and consists of lithic flakes, including utilized flakes, a perform fragment, and core debris. The site is further described as a “shallow site” that is badly disturbed and will be destroyed by the planned construction of an impoundment dam. The author reports that the site may extend to the east but that the possible eastern-extent area was not investigated during the survey. The site is considered not eligible for listing in the NRHP; however, the possible eastern extent of the site should be considered unassessed for the NRHP.

Site 34AT85 is located approximately 2,800 feet north/northwest of the study area (Figures 1 and 2). The site was recorded in 1975 by Charles Wallis, Jr. and described as a late 19th/early 20th century homestead. Two probable cellar depressions, and a scatter of domestic material including aqua-colored screw topped canning jar fragments, clear bottle glass, and ironstone ceramic ware fragments were identified. It was determined that the site was located outside the proposed impoundment dam area and would not be impacted by construction activities. The site remains unassessed for the NRHP.

B. Field Investigation Methodology:

- 100% Windshield Survey
- Windshield survey with sample pedestrian survey
- 100% pedestrian survey
- Subsurface Testing. Describe methodology of testing under comments, below:

GENERAL COMMENTS:

A 100% pedestrian survey was conducted for the study area. Ground surface visibility was generally between 35% and 50% and even 75% in generally overgrazed fields. Visibility generally improved from west to east. Random shovel turns were performed to expose surface soils in areas where denser grasses, brush or understory obstructed surface visibility. Deeper shovel testing was performed on occasion on higher probability landforms and drainage cuts were inspected along the courses of the drainage banks within the study area. Previously recorded sites in the area include late 19th and early 20th century occupations as well as light lithic scatters of unidentified prehistoric. Within the study area, several of the newly identified sites contained purple solarized glass indicating a similar historic-period time frame as those previously recorded. Higher landforms near the intermittent Watson Creek were considered the area’s best opportunity for prehistoric occupation. These areas were overgrown in brush but shovel testing and surface scraping revealed no artifacts.

4. RESULTS OF INVESTIGATION:

- No cultural resources recorded in study area (No-find report).
- Resources recorded in study area assessed as not NRHP eligible. Forms being submitted for agency review.
- Oklahoma Archeological Site Survey Form(s) for State Archeologist files.

- XXX Historic Preservation Resource Identification Form(s) for SHPO files.
- NRHP - eligible properties recorded in study area. Forms being submitted for agency review
- Oklahoma Archeological Site Survey Form(s) for State Archeologist files.
- Historic Preservation Resource Identification Form(s) for SHPO files.
- Archeological sites requiring further assessment (i.e. evaluative testing)

COMMENTS AND DESCRIPTION OF FINDINGS:

A total of fifteen (15) cultural resources were newly identified and recorded within the study area. These include one bridge, seven archaeological sites, and the seven standing structure properties. None of these resources appear to exhibit characteristics that meet NRHP criteria for significance and all are recommended not eligible for the NRHP. None of the newly identified archaeological sites were depicted as structures on the 1898 GLO Township map or on the Atoka, Oklahoma (1900) 30' USGS quadrangle. Some were depicted on the later 7.5' USGS quadrangles. A series of sequential aerial photographs beginning in 1939 depicted structures at some of these locations.

The existing bridge over an unnamed creek (ODOT Structure #03140771X) is a poured concrete triple-cell 10'x7'x30' RCB constructed in 1938, with no WPA markings. Documentation regarding the bridge was submitted to the Oklahoma Department of Transportation Cultural Resources Program and the bridge is considered to be **not eligible** for inclusion in the NRHP.

Site 34AT689 represents a (possibly) early-20th century to mid 20th century occupation identified by a light surface scatter of artifacts located within the study area within short-grass pasture. The site measures approximately 80 feet N-S by 135 feet E-W, and the site boundary was established by the presence of visible surface artifacts. The artifact scatter begins approximately 70-ft south of the existing centerline of SH-7 and extends south. No features were identified. Ground surface visibility was very good, approximately 50 per cent, and artifacts included clear, brown, cobalt blue, and solarized (purple) glass container fragments, undecorated whiteware and porcelain sherds, aqua and clear canning jar mouth fragments, canning jar lid liner fragment, three brick fragments, and one broken tertiary flake. The site area appears disturbed and slightly hummocky along the eastern edge of the site and a contour terrace runs north/south along the western edge. A two-track road is located just west of the terrace, also running north/south. Shovel tests and probes revealed either mottled orange and brown clay or light brown to gray silt loam to a depth of 30 cms but revealed no subsurface features or deposits. Shovel tests were negative.

No structures are depicted on the 1898 GLO map. The site is visible on the 1939 aerial as a single structure located in the extreme northeast corner of Section 24. It appears missing on the 1956 aerial photograph and is definitely absent on the 1966 aerial. The current landowner stated that an "old house" use to be present in this area but hasn't been standing for "50 to 60 years".

Site 34AT689 contains no visible intact features and appears disturbed based on hummocky areas and given mottled soils identified during shovel testing. Site 34AT689 is limited to a light surface scatter, lacks features, has been disturbed by recent activities, and appears razed to clear the area for pasture. Given that the site has no features, archival research was not conducted. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT690 is an early through late 20th century farmstead represented by several intact features. The site measures approximately 190 ft N-S by 460 ft E-W and the site boundary was established by the presence of visible features and surface artifacts. Surface artifacts begin approximately 90-ft north of the existing

centerline of SH-7 and extend north, with the entire site situated within the study area. Ground surface visibility was good, ranging between 30 and 40 percent due to the presence of rodent mounds and short-grass pasture. Artifacts observed on the ground included a few fragments of solarized (purple) glass; clear, green, and aqua container fragments; brick fragment; porcelain plate ring sherd; and a wire nail. Six features were identified including a cistern, two water wells, cellar, ceramic and concrete drainage pipe, a segment of concrete wall, and a cinder block feature associated with a stock pond. The cistern depression measures approximately five to six feet in diameter and is constructed of fieldstone and concrete. The depression is filled with soil so only the rock and concrete at the ground surface is visible. The cistern feature is located 185 feet north of the SH-7 centerline. Hand dug water well #1 measures approximately four feet in diameter and is constructed of fieldstone and concrete. This feature has been filled with soil so only the rock and concrete at the surface is visible. Water well #1 is located 130 feet north of centerline. Hand dug water well #2 measures approximately three feet in diameter and is constructed of fieldstone and concrete. This depression is filled with soil so only the rock and concrete at the ground surface are visible. Water well #2 is located 200 feet north of the SH-7 centerline. The cellar depression measures approximately 17 feet E-W by 9 feet N-S. One shovel test was dug in the southeast interior corner of the depression revealing fieldstone and concrete walls. The shovel test was terminated at 40 cmbs as rock and concrete were encountered making it impossible to dig deeper. Soil was brown, sandy clay loam and no artifacts were recovered. The cellar depression is located 220 feet north of the existing road centerline. A partially buried concrete and ceramic pipe was identified near the concrete wall (probably related to water diversion) and this pipe extended east toward an intermittent drainage. The exposed pipe within a shallow ditch is approximately 220 feet in length and is constructed of ceramic tiles and concrete. The pipe is located between 190 and 115 feet north of the existing centerline as it runs northwest to southeast. The concrete wall was partially exposed at the ground surface and measured approximately four feet in length with an unknown depth. The location of this concrete wall was in a shallow gully and the drainage pipe appeared to begin at this feature. The wall may have been related to the water control/drainage function. The concrete wall is located 195 feet north of centerline. The cinder block feature is located on the exterior side of an earthen dam for a stock pond and appears to be a retaining wall related to pond drainage as a black plastic tube about ½ inch in diameter runs from the interior of the pond attached to rebar and then runs under the earthen dam to the center of the retaining wall. The cinder block feature is located 180 feet north of existing SH-7 centerline.

No structures are depicted on the 1898 GLO map. The site is present on the 1939, 1956 and 1966 aerial photographs and absent on the 1982 photograph. A search was conducted for names of persons associated with the SW/4 NE/4 SE/4 of Section 18 at the Atoka County Courthouse Deed Records Office from 1904 (allotment patent) through 1986 (Table 1). From 1918 through 1963, the land was in the possession of the Atteberry family, including first F.M. and Martha Atteberry followed by additional Atteberry family members (Table 1). Based on the artifacts inventory coupled with the archival and map research, the site is likely attributed to the Atteberry family as the owners of the site during its occupation. An online search within the Chronicles of Oklahoma and the Indian-Pioneer Papers for names of all land owners (1904 – 1986) did not indicate any persons of historical significance.

Site 34AT690 appears to have been occupied for approximately 60 years and archival research shows no apparent association with persons of historical significance. The site appears to have been razed and features filled to clear the area for pasture, implying a disturbed and mixed context. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT691 reflects early to mid 20th century occupation of the area. The site within the study area measures approximately 100 feet N-S by 125 feet E-W with the site boundary established by the presence of surface artifacts. The artifact scatter begins approximately 200-ft south of the existing centerline of SH-7 and extends south to the study area boundary. The site has been heavily disturbed by bulldozing across the entire surface and trees have been bulldozed into a pile near the site center. A moderate surface scatter of domestic artifacts was identified within the disturbed areas with approximately 40 percent ground surface visibility. Artifacts include aqua, solarized (purple), clear and milk glass container fragments, and porcelain, whiteware and stoneware sherds. One solarized bottle neck with a stopper-type finish was also observed. No intact features were identified within the study area but the site appears to extend south and outside the study area

given a shallow depression visible from but outside the study area boundary.

No structures are depicted on the 1898 GLO map. The site is present on the 1939 aerial photograph but is no longer standing on the 1956 aerial. The 1939 aerial photograph depicts two buildings; however, the site may have already been abandoned at that time judging from the apparent growth of vegetation around the buildings including the lack of a discernable drive.

Site 34AT691 appears to have been razed sometime in the past, is heavily disturbed by bulldozing activities, has no intact features within the study area and appears to be a surface scatter confined to a disturbed context. The site within the study area is recommended not eligible for inclusion in the NRHP.

Site 34AT692 reflects an early-to-mid 20th century trash dump. The site is located within the study area along the edge of an upland ridge on a steep southwest facing slope. Domestic debris extends along this slope for approximately 360 feet NW-SE and 150 feet NE-SW. The site is exclusively a surface expression on shallow soils and exposed bedrock. Surface artifacts begin approximately 90-ft north of the existing centerline of SH-7 and extend north to the study area boundary. Ground surface visibility was excellent and no artifacts or features were identified there. It is assumed that the domestic artifacts are a result of “dumping” down the side of the ridge. Artifacts include cobalt blue, brown, solarized (purple), and clear container glass fragments, porcelain, whiteware and stoneware sherds, iron hinge, and sheet metal. Weathered bedrock is exposed at the surface in some locations and one shovel test revealed soil to a depth of 20 cmbs. No structures are depicted on the 1898 GLO map, and no structures are present on the 1939 or 1956 aerial photographs.

Site 34AT692 appears to represent an early-to-mid 20th century trash dump with domestic artifacts. No intact features were identified within the study area. The source location for the domestic materials is unknown and the site has no context or integrity of deposits. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT693 may represent two separate occupations comprised of an earlier 20th century, and a later, mid-20th century occupation. The site is located within the study area within dense cattle pasture and measures approximately 200 feet N-S by 270 feet E-W with boundaries drawn around the site's features. This places the site beginning approximately 100-ft north of the existing centerline of SH-7 extending north to near the study area boundary. No artifacts were observed on the surface. The possible earlier occupation is represented by an intact hand-dug cistern or water well located 120 feet north of the existing SH-7 centerline. This feature measures approximately three feet in diameter and is constructed of fieldstone and concrete. It has been filled with wood, soil and rocks so it is not possible to determine its function (well versus cistern). Ground surface visibility was poor so several shovel tests were excavated around the feature. Soil consisted of light brown silt loam to 25 cmbs and yellow clay subsoil to 35 cmbs. No artifacts were recovered from any of the shovel tests. If a house or other features were ever associated with the well/cistern they were razed sometime in the past. The second feature is a poured concrete stemwall foundation. It measures approximately 48 feet N-S and 25 feet E-W. The foundation is located approximately 125 feet north/northeast of the cistern/well and 250 feet north of the existing SH-7 centerline. A third feature, a drilled water well is located 180 feet east of the stemwall foundation and is presumably associated with this later, mid-20th century occupation. The drilled water well is located 290 feet north of the existing centerline. There were no construction materials found at the site and both the stemwall house and well house were razed down to their foundations sometime in the past.

No structures are depicted on the 1898 GLO map. The site is not present on the 1939 aerial photograph; however, a house is present on the 1956 aerial photograph in the same location and alignment as the stemwall foundation. The house is present on the 1966 aerial photograph and may be present on the 1982 aerial; however, due to poor resolution on the 1982 aerial it is difficult to discern.

A search was conducted for names of persons associated with the SW/4 NW/4 SW/4 of Section 16 at the Atoka County Courthouse Deed Records Office from 1919 (Choctaw & Chickasaw Nations sells portion of

unallotted land) through 1975 (Table 1). The majority of the site features appear to be associated with the Presbyterian Church as the land was willed to the church in 1945. In 1948 the church transfers the land “for \$1 and other considerations” to a Lon R. Fink who apparently possesses the land with Anna J. Fink until 1975, likely in some continued association with the Presbyterian Church given the nature of the transaction. An online search of the associated names (1919 – 1975) in the Chronicles of Oklahoma and the Indian-Pioneer Papers did not indicate any persons of historical significance.

Site 34AT693 possesses a hand-dug water well or cistern. No additional features were identified that would clearly be associated with the well/cistern and shovel testing did not recover any artifacts. The site is also represented by a mid-20th century stemwall foundation and drilled water well. Overall, the site appears to be confined to the surface except for the hand-dug well or cistern, but that was filled post-occupation and includes modern debris. Except for the well/cistern, any possible early 20th century occupation has been razed and destroyed, and the mid-20th century occupation has been razed down to the foundations of the house and well. The site also has no apparent association with persons of historical significance. Site 34AT693 is recommended not eligible for inclusion in the NRHP.

Site 34AT694 is a mid-20th century site comprised of the structural remains of two buildings and an associated standing structure (SS #4) all located within the study area. The site measures approximately 135 feet N-S by 210 feet E-W with boundaries drawn around the site’s features. This places the site beginning approximately 65 feet north of the existing centerline of SH-7 and extending north. The first structural ruins consist of a collapsed building with a relatively intact roof which has been painted with the words “KEEP OUT”. An intact stem wall is visible along the west side of this once-standing building and a concrete slab is visible beneath the collapsed roof. This structure is not present on the 1939 aerial photograph; however, it is depicted on the 1956 aerial. The second, former building is represented by a concrete foundation wall that is approximately 25 feet in length and 10 inches in width. Approximately 20 feet south of the concrete foundation wall is a row of cinder blocks level with the ground surface that is 8 feet in length with a 5 x 4-ft concrete slab located on the east end of the row of cinder blocks. This building is not present on the 1956 aerial photograph but it is present on the 1966 aerial. The area appears to have been the location for three to four commercial buildings, perhaps auto repair given the number of abandoned cars and trucks located just to the north. Standing Structure #4, located 150 feet to the east is described as a “warehouse” by the Atoka County Tax Assessor’s Office. That standing structure is actually visible on the 1939 aerial photograph and is the only structure in the immediate area at the time. According to the Atoka County Tax Assessor’s Office, the property associated with these buildings is currently owned by the resident of Standing Structure #5 located approximately 400 feet to the east, a domestic structure also visible on the 1939 aerial photo.

A search was conducted for names of persons associated with the SE/4 SE/4 of Section 16 at the Atoka County Courthouse Deed Records Office from 1905 through 1976 (Table 1). The land associated with the archival records fell, through tax and/or mortgage default, to the State of Oklahoma, Atoka County, in 1931, with interest by a mortgage company and a securities company, and was then sold through a Sheriff’s Deed in the 1930s and entered the ownership of Samuel Arch Lovelace, Sr. and Nita Evangeline Lovelace, who eventually deeded the land in 1976 to S.A. Lovelace Jr. The time period that would reflect activity at the site based on map and aerial photo evidence and site features would therefore fall under the Lovelace family ownership. An online search within the Chronicles of Oklahoma and the Indian-Pioneer Papers for the Lovelace family names and for all land owners (1905 – 1976) did not indicate any persons of historical significance.

Site 34AT694 represents a mid-20th century commercial site probably associated with auto and truck repair. The site shows disturbance in the partial remains of one of the foundations, and is also limited to surface features and one standing structure. The site and standing structure exhibit no stylistic or structural elements that meet NRHP criteria of significance and archival research shows no apparent association with persons of historical significance. Site 34AT694 is recommended not eligible for inclusion in the NRHP.

Site 34AT695 is a mid-20th century site extant by the mid 1930s or early 1940s and may have an earlier (early-mid) 20th century component. The site is located within the study area within a wooded lot on a

southwest facing slope. It measures approximately 200 feet N-S by 160 feet E-W with boundaries drawn around the site's features and artifact scatter. The site begins approximately 90 feet north of the existing centerline of SH-7 and extends north to near the study area boundary. The site is comprised of three features. Feature #1 is a small masonry structure of fieldstone and mortar that may have functioned as a cellar or dugout given its size and partial subterranean aspect having been dug partially out of the side of a hill. The structure has a sheet metal roof and is relatively intact although its east wall has partially collapsed. It is located 265 feet north of the existing SH-7 centerline. Feature #2 is a collapsed wood-frame/plank and sheet metal-roofed outhouse structure with a poured concrete, oval privy base typical of some constructed by Depression-era Federal Works Programs for community/rural sanitation; however, there are no visible markings on the base. The privy is located approximately 35 feet west of Feature #1 and 265 feet north of the existing SH-7 centerline. Feature #3 is the remains of a collapsed house represented by wooden planks, green asphalt shingles, and bricks, including either a broken, collapsed brick-and-mortar chimney or broken brick-and-mortar piers. Feature #3 is located down slope and 115 feet southwest of Features #1 and #2. The collapsed house structure is 175 feet north of the existing centerline. A large metal container, interpreted to be an above-ground cistern is just north of the collapsed house. Numerous modern bottles, rusted cans and bedsprings are scattered on top and around the remains of this structure, including beer cans dating to the early 1970s. Given the prevalence of beer bottles and cans on the surface of the collapsed structure, the area appears to have been used for trash disposal unrelated to the original occupants. There are also several dilapidated, simply-constructed animal pens with wood frame construction and sheet metal roofs located to the southeast of the collapsed house.

No structures are depicted on the 1898 GLO map. Do to tree cover, it is unclear whether the site appears on the 1939 aerial photograph or on the 1982 aerial photograph; however, the house does appear on the 1956 aerial (at least the drive is clearly visible) and the house is clearly visible on the 1966 aerial, and is clearly absent on the 1991 aerial. The house is also depicted as a residence on the Olney, Oklahoma (1969) 7.5' USGS quadrangle map.

A search was conducted for names of persons associated with the SE/4 SE/4 of Section 16 at the Atoka County Courthouse Deed Records Office from 1905 through 1976 (Table 1). This land fell, through tax and/or mortgage default, to the State of Oklahoma, Atoka County, in 1931, with interest by a mortgage company and a securities company, and was then sold through a Sheriff's Deed in the 1930s and entered the ownership of Samuel Arch Lovelace, Sr. and Nita Evangeline Lovelace, who eventually deeded the land in 1976 to S.A. Lovelace Jr. The time period that would reflect activity at the site based on map and aerial photo evidence and site features would fall under the Lovelace family ownership after 1931. However, prior to 1931, the land belonged to a Robert F. Rose (Homestead Patent 1905) who took out a mortgage on the property in 1921 before eventually forfeiting the deed in 1931. If Feature #1, the stone masonry structure, represents an earlier occupation than the post 1931 occupation, given construction method, it would likely have been associated with Robert F. Rose. An online search within the Chronicles of Oklahoma and the Indian-Pioneer Papers for all land owners (1905 – 1976) did not indicate any persons of historical significance.

Site 34AT695 is a mid-20th century site with a possible early-to-mid 20th century component. This is based on its representation on 1956 and 1966 aerial photographs and on the 1969 7.5' USGS quadrangle map, and on the presence of the oval privy feature common to the Depression-era for the mid 20th century component; the stone masonry style construction of the cellar or dugout feature is considered for the possible early-to-mid 20th century component. The site has mixed deposits including modern trash from the 1970s and would have been associated with different individuals/families pre- and post 1931, with no apparent association with persons of historical significance. The site and its features also lack stylistic or structural elements that meet NRHP criteria for significance. The site is recommended not eligible for inclusion in the NRHP.

Seven (7) properties containing a total of fourteen (14) standing structures greater than 45 years of age were recorded within the study area (Table 2). Seven of these were recorded as primary structures and the remaining were recorded as secondary structures. All were located within the study area. In addition, several modern buildings are mixed among the older buildings on several of the properties. None of the structures

appear to exhibit stylistic or structural elements that meet NRHP criteria for significance and none are recommended eligible for the NRHP.

5. RECOMMENDATIONS:

_____ **Approval to proceed** with the proposed project as planned with no additional research or revision to project plans. If subsurface archaeological materials are exposed during construction, the Contractor and Resident Engineer shall notify the Department Archaeologist in accordance with Section 202.04(a), Standard Specifications for Highway Construction.

XXX **Approval to proceed**, pending completion of one or more of the following requirements:

_____ **Revise design** to avoid/protect resources (If prudent or feasible)

XXX **Plan Notes** requiring avoidance of cultural resources in off-project areas.

_____ **Approval NOT Recommended**, until one or more of the following measures are completed.

_____ **NRHP Eligibility Archaeological Test Excavations** as determined by Department Archaeologist and State Archaeologist

_____ **Implementation of MOA** with SHPO regarding Mitigation of Adverse Effects to NRHP-eligible cultural resources

COMMENTS REGARDING RECOMMENDATIONS:

All of the cultural resources identified during the survey, including one RCB bridge, seven archaeological sites, and seven standing structure properties, are recommended not eligible for the NRHP. None of these resources appear to exhibit characteristics, associations to meet NRHP criteria for significance.

The existing bridge over an unnamed creek (ODOT Structure #03140771X) is a poured concrete triple-cell 10'x7'x30' RCB constructed in 1938, with no WPA markings. Documentation regarding the bridge was submitted to the Oklahoma Department of Transportation Cultural Resources Program and the bridge is considered to be **not eligible** for inclusion in the NRHP.

Site 34AT689 represents a (possibly) early 20th century to mid 20th century occupation identified by a light surface scatter of artifacts. It contains no visible features and appears disturbed based on hummocky areas and mottled soils. All shovel tests were negative. The site is limited to a light surface scatter, lacks features, has been disturbed by recent activities, and appears to have been razed to clear the area for pasture. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT690 is an early through late 20th century farmstead represented by a light surface scatter of artifacts located within short grass pasture with good ground surface visibility. The site appears to have been occupied for approximately 60 years and archival research shows no apparent association with persons of historical significance. The site appears to have been razed and features filled to clear the area for pasture, implying a disturbed and mixed context. Although intact features were identified, none of these exhibit any stylistic or structural characteristics that meet NRHP criteria for significance. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT691 reflects early to mid 20th century occupation of the area identified by a very light surface scatter of artifacts. The site has been intensively disturbed by bulldozing activities. Although a possible

depression feature is visible outside of the study area, no features are present within the study area. The site appears to have been razed sometime in the past, is heavily disturbed by bulldozing activities, has no intact features within the study area and appears to be limited to a surface scatter confined to a disturbed context. The site within the study area is recommended not eligible for inclusion in the NRHP.

Site 34AT692 appears to represent an early-to-mid 20th century trash dump with domestic artifacts. The site is located along the edge of an upland ridge on a steep ridge slope. No features were identified within the study area. No structures are depicted on any available historical resource. The source location for the domestic materials is therefore unknown and the site has no context or integrity of deposits. The site is recommended not eligible for inclusion in the NRHP.

Site 34AT693 may represent two separate occupations comprised of a (possibly) early 20th century, and a later, mid-20th century occupation. The possible earlier occupation is represented by one intact field-stone-and-mortar cistern or well feature, and the later occupation is represented by a concrete stem wall house foundation and drilled well with well-house foundation. No other features were identified and shovel tests near the cistern/well feature were all negative. The cistern/well feature has been filled post-occupation and includes modern debris. Any possible early 20th century occupation has been razed except for the well/cistern, and the mid-20th century occupation has been razed down to the foundations of the house and drilled well. No association with persons of historical significance was found during archival investigations. The site is considered not eligible for the NRHP.

Site 34AT694 represents a mid-20th century commercial site probably associated with auto and truck repair. It is a mid-20th century site comprised of the structural remains of two buildings, and an associated standing structure. The site shows disturbance in the partial remains of one of the foundations, and is also limited to surface features along with the one standing structure. The site and standing structure exhibit no stylistic or structural elements that meet NRHP criteria of significance and archival research shows no apparent association with persons of historical significance. Site 34AT694 is recommended not eligible for inclusion in the NRHP.

Site 34AT695 is a mid-20th century site possibly reflecting two different occupations, given archival research and structural remains. The site includes a small structure of fieldstone-and-mortar that has been partially dug out of the side of a hill slope; an oval privy feature common to the Depression-era; a wood-framed home now completely collapsed and in ruins; and other dilapidated structures of simple construction. The site has mixed deposits including modern trash from the 1970s and would have been associated with different individuals/families pre- and post 1931, with no apparent association with persons of historical significance. The site and its features also lack stylistic or structural elements that meet NRHP criteria for significance. The site is therefore recommended not eligible for inclusion in the NRHP.

The seven standing structure properties include fourteen structures greater than 45 years of age. None of these structures exhibit distinctive stylistic or structural elements or characteristics that meet NRHP criteria for significance. The structures have been documented on Oklahoma Resource Identification Forms which have been submitted to the Oklahoma Department of Transportation Cultural Resource program with the recommendation that none of the structures are eligible for inclusion on the NRHP.

In order to avoid impact to non NRHP-assessed cultural resources in the project vicinity by off-project activities such as borrow pits or staging areas, it is recommended that the following areas be avoided for all off-project facilities:

T2S R9E:

Site 34AT84:

Section 13: SE¼ NE¼ NE¼

T2S R10E:

Site 34AT76:

Section 22: SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$

Site 34AT85:

Section 18: N $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$

Site 34AT691:

Section 18: NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$

Report Preparer/Principal Investigator



Diane A. Cargill (Principal Investigator)

Report Preparers: Diane A. Cargill & Dr. Michael D. Myers

Cargill Archaeological Services, Inc.,

550 W. Hawthorn St.

Louisville, CO 80027

303.284.4725

dacargill@comcast.net

Table 1: Names associated with the quarter/quarter section for the newly identified sites with features.

Site Trinomial	Legal	Associated Names in Chronological Order
34AT690	NE/4 SE/4 Section 18 T2S R10E	Chickasaw & Choctaw Nations to Jessie Nail, Allotment Patent (1904) Chas J. Hubbard to F.M. Atteberry, Warranty Deed (1918) F.M. Atteberry to Martha Atteberry, Warranty Deed Frank McGraw Atteberry, etux to Norma Ann Atteberry, Warranty Deed (1954) Orval M. Atteberry et al to Donald J. Sanders, etux, Warranty Deed (1963) John Massey to Kathleen Sanders, Warranty Deed (1986)
34AT693	NW/4 SW/4 Section 16 T2S R10E	Chickasaw & Choctaw Nations –Sale of a portion of unallotted lands to Sam Butler, 1919 Sam Butler to R. W. Dashner, Warranty Deed (1919) Sam Butler to Alex M. Templeton, Warranty Deed (1928) A.M. Templeton willed to wife Sarah, and Margaretta Parkinson (1932) S. Parkinson willed to Presbyterian Church (1945) Presbyterian Church to Lon R. Fink (1948) Lon R. Fink & Anna J. Fink (1948-1975)
34AT694 & 34AT695	SE/4 SE/4 Section 16 T2S R10E	Choctaw & Chickasaw Nations to Robert F. Rose, Homestead Patent (1905) Robert F. Rose and Clement Mortgage Co (1921) T.E. Clement and New Milford Security Co (1929) State of Oklahoma, Atoka County (1931) C. G. Maxwell (Sheriff) and T.E. Clement R.I. Jordan to S. A. Lovelace Nita Evangeline Lovelace to Samuel Arch Lovelace, Jr, Warranty Deed (1976)

Table 2: Standing Structure Inventory.

Structure #	Date of Construction	Architectural/Roof Style/Comment	Study Area
1	1937	Bungalow Craftsman	Yes
2A	1963	National Folk Front Gabled Massed Plan	Yes
2B	1939	Shotgun	Yes
2C	ca 1939	National Folk Barn	Yes
3	1956	National Folk Massed Plan Side-Hipped	Yes
4	ca 1939	National Folk Gabled-Front Massed Plan	Yes
5A	ca 1939	National Folk Side-Gabled Massed-Plan	Yes
5B	ca 1956	National Folk Front-Gabled Garage	Yes
6	1901	National Folk Gabled Front and Wing	Yes
7A	ca 1939	National Folk Side-Hipped Hall and Parlor	Yes
7B	ca 1939	National Folk Shed	Yes
7C	ca 1939	National Folk Gabled-Front Shed	Yes
7D	ca 1939	National Folk Gabled-Front Shed	Yes
7E	ca 1939	National Folk Gabled-Front Barn	Yes

Figure 1: Copy of the Olney, Boggy Depot, Tushka (1969), and Lehigh (1957, photorevised 1979) Oklahoma 7.5' USGS quadrangle maps showing the study area in blue, newly identified archaeological resources in red, standing structure properties in magenta, and previously recorded archaeological sites in gold. Parts of the: N/2 Section 24, T2S R9E, NW/4 NW/4 NW/4 Section 19, S/2 Sections 17 & 18, SW/4 Section 16; and the south 300' of the SE/4 Section 16 and of the S/2 Sections 14 & 15; and the north 300' of Sections 21, 22, & 23, T2S R10E, Atoka County. Background: 2003 aerial.

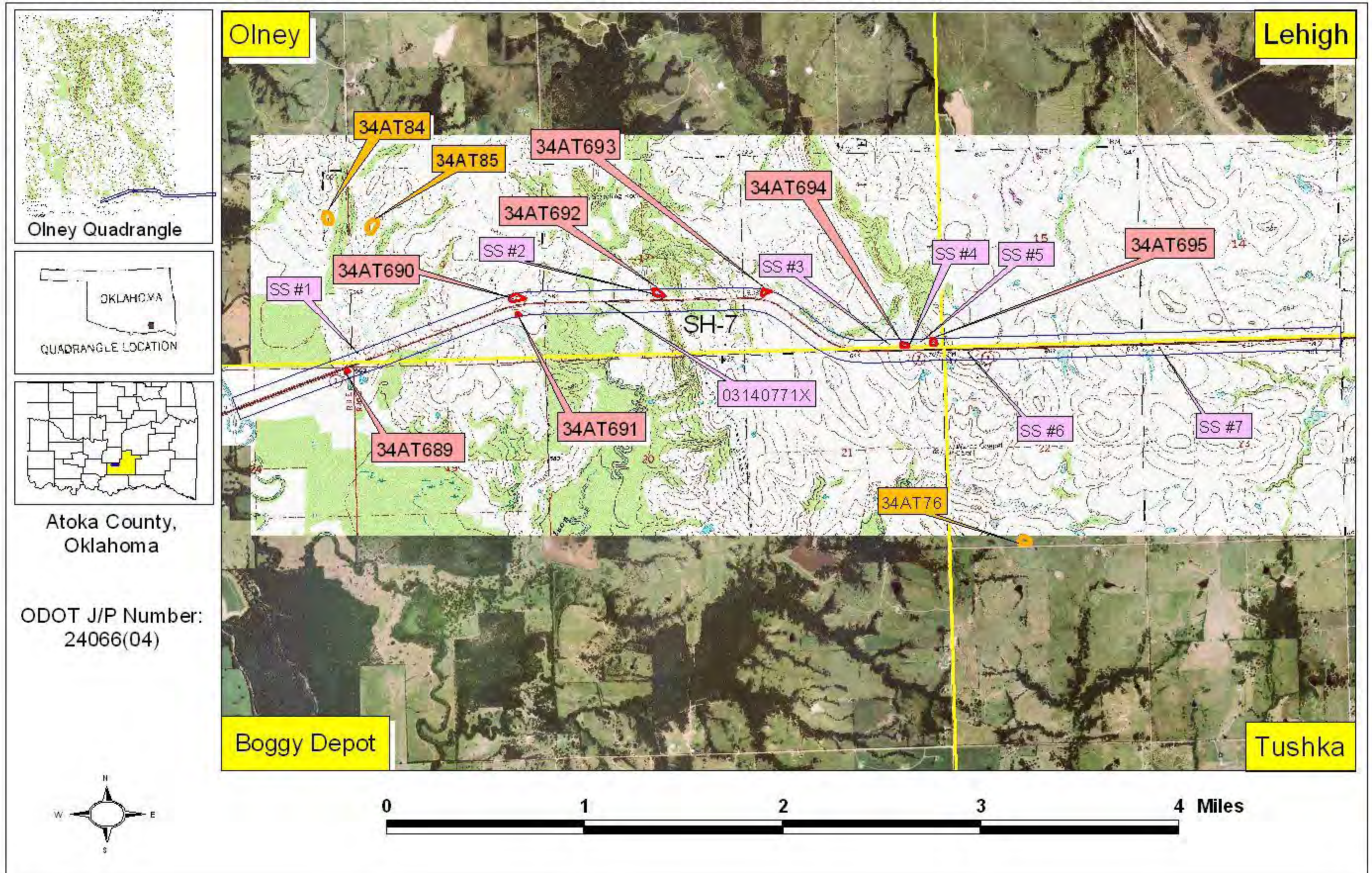


Figure 2: Copy of the Olney and Boggy Depot (1969), Oklahoma 7.5' USGS quadrangle maps showing the study area in blue, newly identified archaeological resources in red, standing structure properties in magenta, and previously recorded archaeological sites in gold. Scale = 1:24,000.

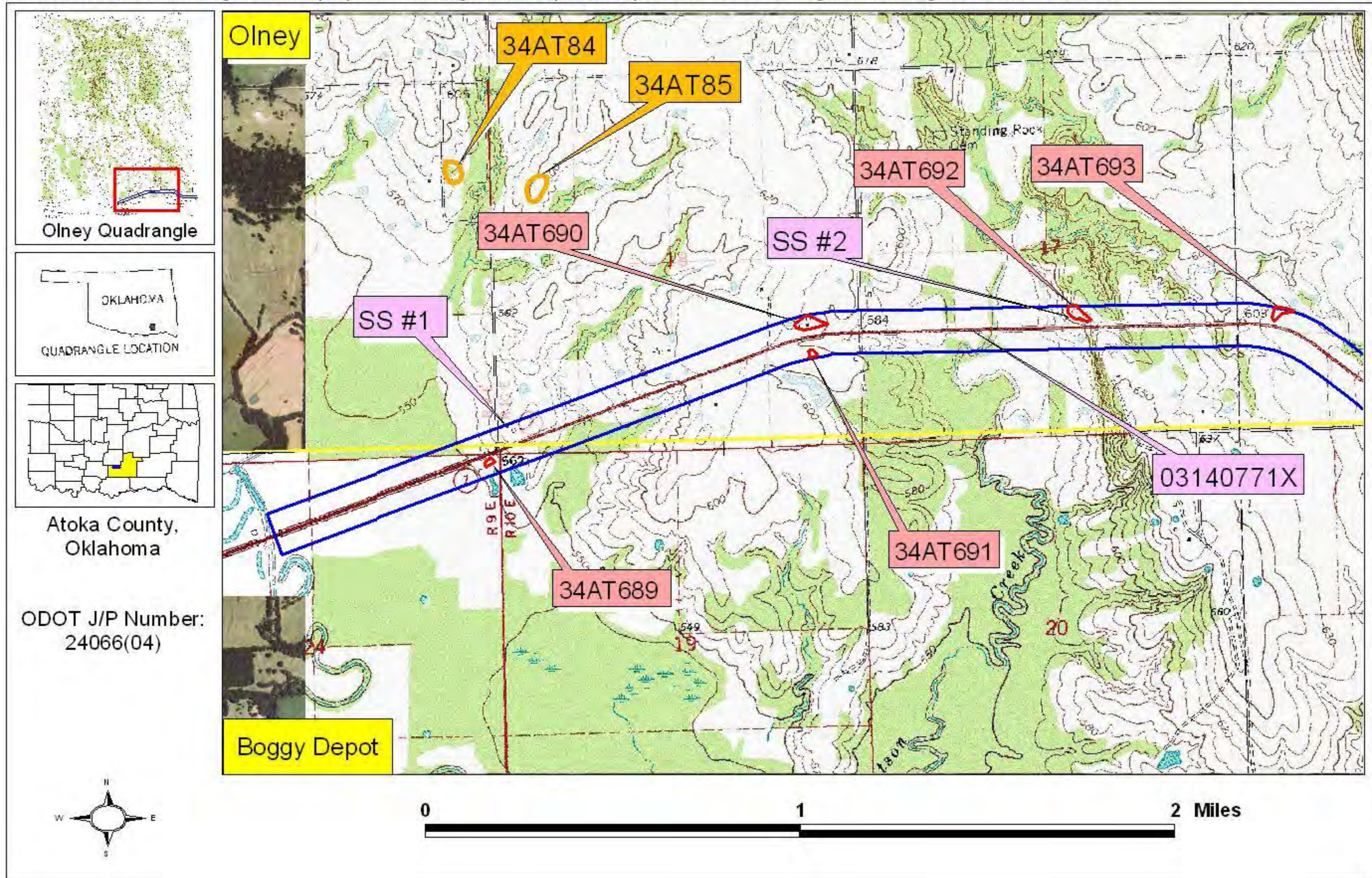
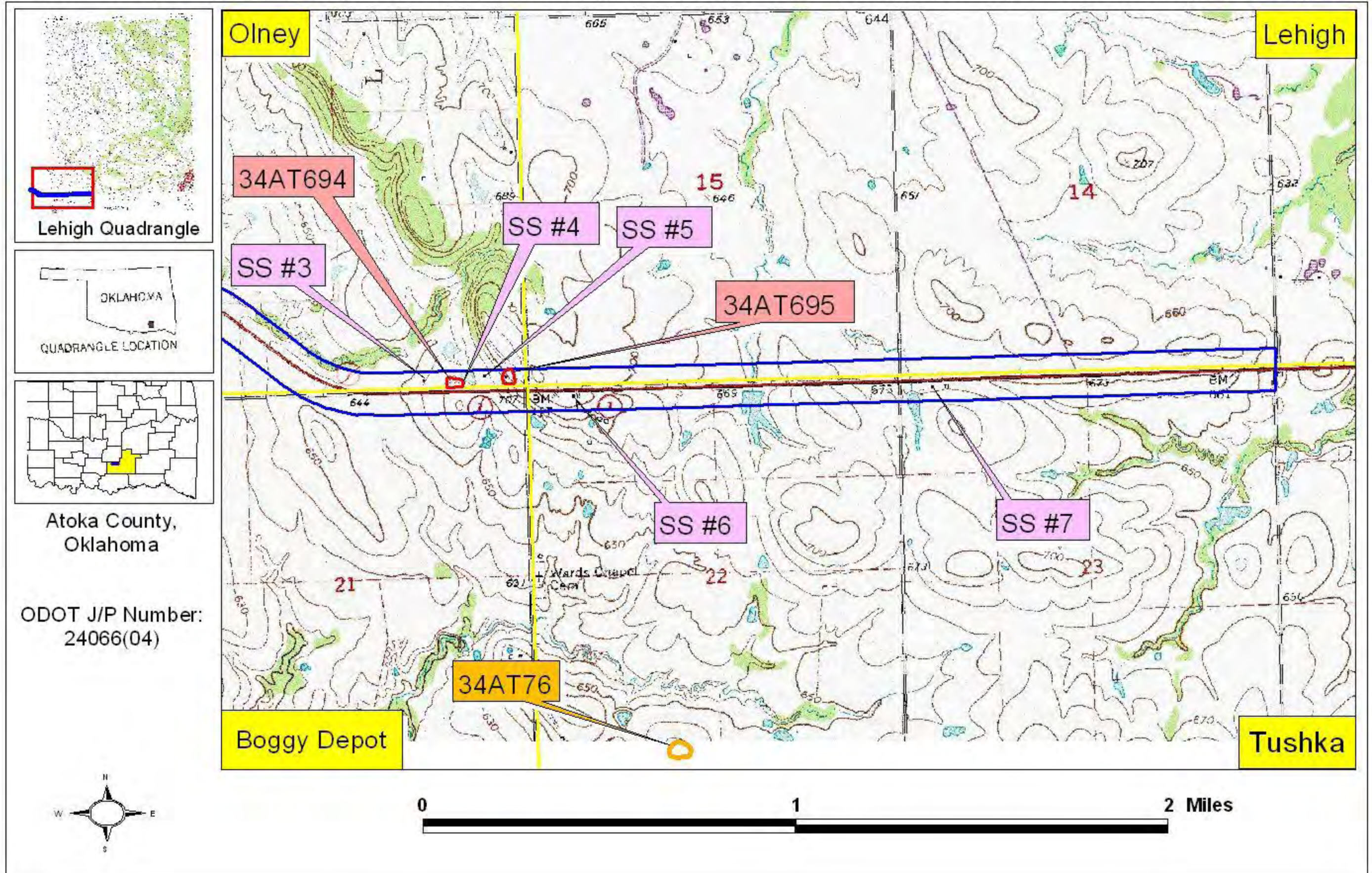


Figure 3: Copy of the Olney and Boggy Depot, Tushka (1969), and Lehigh (1957, photorevised 1979) Oklahoma 7.5' USGS quadrangle maps showing the study area in blue, newly identified archaeological resources in red, standing structure properties in magenta, and previously recorded archaeological sites in gold.





TRIBAL HISTORIC PRESERVATION OFFICE

Date: June 22, 2012

File: 1112-1006OK-6

RE: ODOT JP# 24066(04); proposed improvements and bridge replacement on State Hwy. 7 in Atoka County

Cultural Resources Office
Rhonda S. Fair
111 E. Chesapeake, Room 102
Norman, OK 73019-5111

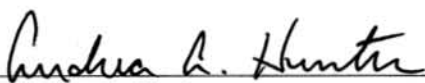
Dear Dr. Fair,


The Osage Nation Historic Preservation Office has evaluated your submission and concurs that the proposed ODOT JP# 24066(04); proposed improvements and bridge replacement on State Hwy. 7 in Atoka County most likely will **not adversely affect properties of cultural or sacred significance to the Osage Nation.** The finding of this S106 review has resulted in a determination of "No Properties."

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969). **The Osage Nation concurs that as a part of the scoping process the Oklahoma Department of Transportation fulfilled NHPA and NEPA compliance by consulting with the Osage Nation Historic Preservation Office in regard to the proposed project referenced as ODOT JP# 24066(04); proposed improvements and bridge replacement on State Hwy. 7 in Atoka County.**

The Osage Nation has vital interests in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law. **If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office be contacted.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.


Dr. Andrea A. Hunter
Tribal Historic Preservation Officer


Barker Fariss, Ph.D.
Archaeologist I



OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

31 May 2012

Osage Nation
Attn: Chief John Red Eagle
627 Grandview
Pawhuska, OK 74056

Dear Chief Red Eagle:

RE: Atoka County proposed improvements and bridge replacement on State Highway 7 over an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is pursuing consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. For your review, we are providing a copy of the cultural resources report that was prepared by an independent consultant. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,

Rhonda S. Fair, Ph.D.
Tribal Liaison
ODOT Cultural Resources Program

cc: Andrea Hunter



**OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM**

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

10 August 2011

Osage Nation
Attn: Chief John Red Eagle
627 Grandview
Pawhuska, OK 74056

Dear Chief Red Eagle:

Re: Atoka County improvements (widen and resurface) on State Highway 7 from 6.0 miles east of the Johnson County Line and extending east 5.4 miles, including potential bridge replacements over Watson Creek and an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is initiating consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

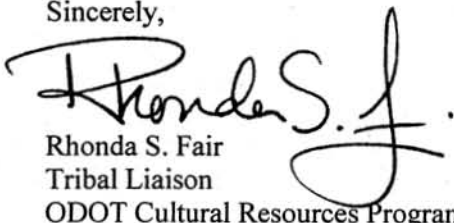
In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

On behalf of the Oklahoma Department of Transportation, an independent consulting firm will perform a cultural resources survey in consultation with the Oklahoma State Historic Preservation Office and/or the Oklahoma State Archaeologist. You will be provided a copy of the cultural resources report to review upon its completion.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,


Rhonda S. Fair
Tribal Liaison
ODOT Cultural Resources Program

cc: Andrea Hunter

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OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

31 May 2012

Choctaw Nation
Attn: Ian Thompson
Historic Preservation Department
Post Office Drawer 1210
Durant, OK 74702

Dear Dr. Thompson:

RE: Atoka County proposed improvements and bridge replacement on State Highway 7 over an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is pursuing consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. For your review, we are providing a copy of the cultural resources report that was prepared by an independent consultant. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,

Rhonda S. Fair, Ph.D.
Tribal Liaison
ODOT Cultural Resources Program

Sundermeyer, Scott

From: Fair, Rhonda S.
Sent: Wednesday, October 05, 2011 1:08 PM
To: Sundermeyer, Scott
Subject: FW: JP # 24066(07).

Another response from the Choctaw on a consultant project.

From: Ian Thompson [<mailto:ithompson@choctawnation.com>]
Sent: Monday, October 03, 2011 10:36 AM
To: Fair, Rhonda S.
Cc: Caren Johnson
Subject: Re: JP # 24066(07).

Rhonda,

Thank you for your consultation regarding improvements on State Hwy. 7 in Atoka County, JP # 24066(07). The Choctaw Nation of Oklahoma Historic Preservation Department is not immediately aware of any cultural or historical sites within the immediate project area, although it is located within our general area of interest. We look forward to seeing a copy of the cultural resources survey report that you mentioned in your letter and to consulting on this project as it moves forward.

Also, there are three Choctaw Nation Housing sites located near or adjacent to the project area. Two of these are in 19-2S-11E, right along the highway. A third is at 20-2S-11E between Chicken Fight Road and E1829. For more specific information about these housing sites, please contact Shreda Graham at 1-800-522-6170 ext. 4018.

Thank you for your time and effort in consultation.

Sincerely,

Ian Thompson PhD, RPA
Director Historic Preservation Dept.,
Tribal Archaeologist, NAGPRA Specialist
Choctaw Nation of Oklahoma
PO Drawer 1210
Durant, OK 74701
1-800-522-6170 ext. 2216

From: Shreda Graham
Sent: Tuesday, September 27, 2011 10:08 AM
To: Ian Thompson
Subject: RE: Atoka County Alotment Land

Ian,

I found NO Restricted land and NO Tribal land in 2 South-10 East.

There are the following in 2 South-11 East;

Section 16 Choctaw Nation Headstart building; located in the NE NE SE of 16-2S-11E, (containing 1 acre more or less).

Section 19 There are 3 Choctaw Nation Housing Houses. 2 of them are on Hwy 7 These 1 acres tracts are not Restricted to us but are shown to still be restricted by Housing.

Section 20 There is 1 Choctaw Housing House in this section. It sits between Chicken Fight Road and E1829 Road. This shows Restricted to Housing.

I have legal descriptions and maps if you need them .

Shreda M. Graham, Administrative Assistant

Choctaw Nation of Oklahoma

Real Property Management

(580) 924-8280 ext. 4018

(800) 522-6170 ext. 4018

Fax: (580) 924-2398

sgraham@choctawnation.com

From: Ian Thompson

Sent: Monday, September 26, 2011 3:12 PM

To: Shreda Graham

Subject: Atoka County Alotment Land

Hi Shreda,

The project is located in Atoka County, along Hwy, 7, beginning just west of Hwy 69, and extending 4.05 miles to the west. This includes parts of T2S R10E Sections 13,14,15,22,23, and 24; also T2S R11E Sections 16-21. I was interested to know if any allotments or other current Tribal land holdings border Hwy 7 on the north or south within this 4.05 mile strip.

Thank you for your time and assistance.

Sincerely,

Ian Thompson PhD, RPA

Director Historic Preservation Dept.,

Tribal Archaeologist, NAGPRA Specialist

Choctaw Nation of Oklahoma

PO Drawer 1210

Durant, OK 74701

1-800-522-6170 ext. 2216

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure. If you have received this message in error, you are hereby notified that we do not consent to any reading, dissemination, distribution or copying of this message. If you have received this communication in error, please notify the sender immediately and destroy the transmitted information. Please note that any view or opinions presented in this email are solely those of the author and do not necessarily represent those of the Choctaw Nation.



**OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM**

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

10 August 2011

Choctaw Nation
Attn: Chief Gregory E. Pyle
Post Office Drawer 1210
Durant, OK 74702

Dear Chief Pyle:

Re: Atoka County improvements (widen and resurface) on State Highway 7 from 6.0 miles east of the Johnson County Line and extending east 5.4 miles, including potential bridge replacements over Watson Creek and an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is initiating consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

On behalf of the Oklahoma Department of Transportation, an independent consulting firm will perform a cultural resources survey in consultation with the Oklahoma State Historic Preservation Office and/or the Oklahoma State Archaeologist. You will be provided a copy of the cultural resources report to review upon its completion.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,

Rhonda S. Fair
Tribal Liaison
ODOT Cultural Resources Program

cc: Terry Cole, THPO

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CULTURAL RESOURCES PROGRAM

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

31 May 2012

Caddo Nation
Attn: Chairperson Brenda Edwards
P.O. Box 487
Binger, OK 73009

Dear Chairperson Edwards:

RE: Atoka County proposed improvements and bridge replacement on State Highway 7 over an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is pursuing consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. For your review, we are providing a copy of the cultural resources report that was prepared by an independent consultant. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,

Rhonda S. Fair, Ph.D.
Tribal Liaison
ODOT Cultural Resources Program

cc: Robert Cast, THPO



**OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM**

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

10 August 2011

Caddo Nation
Attn: Chairperson Brenda Edwards
P.O. Box 487
Binger, OK 73009

Dear Chairperson Edwards:

Re: Atoka County improvements (widen and resurface) on State Highway 7 from 6.0 miles east of the Johnson County Line and extending east 5.4 miles, including potential bridge replacements over Watson Creek and an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is initiating consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

On behalf of the Oklahoma Department of Transportation, an independent consulting firm will perform a cultural resources survey in consultation with the Oklahoma State Historic Preservation Office and/or the Oklahoma State Archaeologist. You will be provided a copy of the cultural resources report to review upon its completion.

If this project is likely to affect individual Native American allotments, tribally owned land, tribal cemeteries, cultural or religious sites, or lands held in trust for Native tribes by the United States government, please notify me as soon as possible. Rest assured that the Oklahoma Department of Transportation will respect all wishes regarding the confidentiality of information provided in response to this request.

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Sincerely,

Rhonda S. Fair
Tribal Liaison
ODOT Cultural Resources Program

cc: Robert Cast, THPO

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AN EQUAL OPPORTUNITY EMPLOYER



OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

31 May 2012

Wichita and Affiliated Tribes
Attn: President Leslie Standing
Post Office Box 729
Anadarko, OK 73005

Dear President Standing:

RE: Atoka County proposed improvements and bridge replacement on State Highway 7 over an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is pursuing consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

In order to provide the most thorough consideration of traditional cultural properties, we would appreciate your response to this request within 30 days. For your review, we are providing a copy of the cultural resources report that was prepared by an independent consultant. When responding, please include the county in which the project is taking place and the Job Piece number (JP#) on all correspondence.

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If you have any questions or would like to meet regarding this project, please contact me by telephone at 405.325.8665 or by email at rsfair@ou.edu.

Sincerely,

A handwritten signature in black ink that reads "Rhonda S. Fair".

Rhonda S. Fair, Ph.D.
Tribal Liaison
ODOT Cultural Resources Program

cc: Historic Preservation Office



**OKLAHOMA DEPARTMENT OF TRANSPORTATION
CULTURAL RESOURCES PROGRAM**

111 E. Chesapeake, Room 102, University of Oklahoma
Norman, OK 73019-5111
Phone: 405-325-7201/325-8665; FAX: 405-325-7604

10 August 2011

Wichita and Affiliated Tribes
Attn: President Leslie Standing
Post Office Box 729
Anadarko, OK 73005

Dear President Standing:

Re: Atoka County improvements (widen and resurface) on State Highway 7 from 6.0 miles east of the Johnson County Line and extending east 5.4 miles, including potential bridge replacements over Watson Creek and an unnamed creek; JP# 24066(04)

Pursuant to Section 800.2(c)(3) of the 1999 Rules and Regulations implementing Section 106 of the National Historic Preservation Act, the Department of Transportation is initiating consultation on behalf of the Federal Highway Administration regarding places of traditional cultural value which may be affected by the above referenced Federal-Aid undertaking.

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Sincerely,

Rhonda S. Fair
Tribal Liaison
ODOT Cultural Resources Program

cc: Historic Preservation Office

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BIOLOGICAL STUDIES

**Oklahoma Department of Transportation
NEPA SUMMARY FORM
Endangered Species Act Section 7 Biological Assessment
Bald Eagle Assessment,
Swallow Assessment
and
Jurisdictional Waters and Wetlands Evaluation**

County: Atoka
J/P Number: 24066(04)
Report Prepared by: Enercon

NEPA PM: David Saulsberry
Project Number: Js-4066(004)
Report Submitted Date: 1/20/2012
Updated: 6/15/2015

USFWS Concurrence Date: 7/8/2015 FHWA PA for NLEB ROW / Let Date: 2012/2016
Form Prepared by: Elizabeth Nichols Date: 7/8/2015; Revised: 7/20/2015

1. Project Description:

- a. Project Name: Grader, Drain, Surface and Bridge on SH-7
- b. Work Description: Pavement reconstruction, add shoulders, widen boxes and replace bridges on existing alignment, from 6 miles east of the Johnston County line extending east 5.4 miles. Shooflies may be required in order to keep the roadway open to traffic during construction. Additional ROW will likely be required. NBI:06532 over Watson Creek is an exception and will not be worked on.
- c. Footprint acreage: 104

2. Federally Listed Species Effect Determinations: **USFWS Number: 02EKOK00-2015-SLI-1183**

NOTE: Within 90 days of construction, a current species list must be requested to determine if any changes to federally-listed species have occurred since the original ESA section 7 consultation. If changes have occurred, further consultation may be required.

<u>Species</u>	<u>Listing Status</u>	<u>Effect Determination & Concurrence</u>	<u>USFWS Concurrence Requirements</u>
American Burying Beetle	Endangered	May Affect, likely to adversely affect	Mitigate
Interior Least Tern	Endangered	No Effect	None
Whooping Crane	Endangered	No Effect	None
Piping Plover	Threatened	No Effect	None
Red Knot	Threatened	No Effect	None
Northern Long-eared bat	Threatened	May Affect, not likely to adversely affect - FHWA PA	Survey or Avoid, Bridge Survey, Riparian Commitment

3. Acres of ABB suitable habitat: 11.94

4. Bald Eagle Assessment: not expected to impact *or* may impact
5. Swallow Assessment: may not impact *or* will likely impact
6. Migratory Birds: species that are present during the breeding season will be addressed by implementing measures, designed in coordination with the USFWS, to avoid impacts to active nests. This will be done prior to project letting and any appropriate plan notes will be provided at that time.
7. NEPA Commitments:
 - a. Surveys

Species Survey Type	Survey Season Survey Dates (must be conducted within 1 year of start of construction)	Check if Survey to be Completed
Bat Bridge	May 15 – August 15	X
Northern Long-eared Bat	May 15 – August 15	X

b. Habitat Conservation

Conservation Measure	NEPA Section 7 Consultation Commitment
Riparian Vegetation	<p>Suitable endangered bat riparian foraging habitat was observed within the proposed project's action area. The removal of riparian vegetation shall be limited to what is necessary for project construction and restricted to the actual limits of construction. In addition, if sufficient ODOT permanent right of way exists, any woody riparian vegetation lost due to construction in areas lying outside of the final highway clear zone, shall be replaced with native riparian tree species.</p> <p>CONSTRUCTION PLAN NOTE: The removal of trees and shrubs shall be restricted to areas within the actual limits of construction (toe of slope/top of cut).</p>
All bridge roosting bats if bridge is suitable	<p>The gray bat, Indiana bat, northern long-eared bat and Ozark big-eared bat are migratory, insect-eating bats protected by the Endangered Species Act. These species can use bridges as summer roosting sites. If bridge removal or modification is to occur during these species' active/maternity season (between April 1 and November 15), an evaluation of the existing structure shall be made by the ODOT Environmental Programs Division between May 15 and August 15, no more than one year prior to initiation of project construction. If evidence of use by the gray bat, Indiana bat or Ozark big-eared bat is observed, the ODOT Environmental Programs Division shall further consult with the USFWS.</p>

Conservation Measure	NEPA Section 7 Consultation Commitment
Seasonal Avoidance measures - NLEB	<p>The northern long-eared bat is an insectivorous migratory bat species protected by the Endangered Species Act. Suitable summer roosting habitat for this species occurs within the proposed project's action area. In order to avoid adverse impacts to northern long-eared bats, the ODOT Environmental Programs Division shall survey the construction action area to determine the presence of the northern long-eared bat prior to construction. If the species is detected, removal of suitable roost trees shall only be permitted between November 16 – March 31, during its non-active season. If suitable roost trees must be removed during the active season (April 1 – November 15), the trees shall be surveyed for bats within 24 hours prior to their removal. All presence/absence surveys must be scheduled between May 15 – August 15 only, and will be valid for 2 years. If survey reveals the presence of the Northern long-eared bat, tree removal shall be permitted no earlier than November 16, and no later than March 31.</p>
Mitigation for ABB habitat impacts	<p>Because the project is within a conservation priority area for the American Burying Beetle, presence within the action area is assumed. The approved amount of take will be mitigated by purchasing mitigation bank credits from a USFWS approved American burying beetle conservation bank. In addition to mitigation, no artificial lighting shall be used during construction. Carcasses and all food trash shall be removed from the permanent and temporary ROW throughout project activities. Following construction, the soil shall be ripped, to relieve compaction, prior to re-vegetation with sod in the clear zone, and native plant species within permanent ROW but outside of the clear zone.</p> <p>CONSTRUCTION PLAN NOTE: No artificial lighting shall be used during construction. Carcasses and all food trash shall be removed from the permanent ROW and temporary ROW throughout the duration of the project activities. Following construction, the soil shall be ripped to a depth of 12 inches prior to re-vegetation. The clear zone shall be re-vegetated with sod. The permanent ROW outside of the clear zone shall be re-vegetated with the native plant species.</p>

c. Swallow and other migratory bird nesting on transportation structures

NBI/Station number/ Coordinates	NEPA Migratory Bird Treaty Act Commitment
NBI:06532 (exception); 34.3761, -96.2806; 34.3791, -96.2806; 34.3790, -96.2687; 34.3752, -96.2592	<p>Cliff Swallows and Barn Swallows are small colonial nesting birds protected by the federal Migratory Bird Treaty Act. These species commonly use bridges and culverts for nesting. Swallow use of the <i>structures</i> involved in this project has been observed. In order to avoid impacts to swallows, work on these structures must be completed between September 1, and March 31, when nests are not occupied. If work cannot be completed between September 1 and March 31, the <i>structures</i> must be protected from new nest establishment prior to April 1, by means that do not result in death or injury to these birds. Options include the exclusion of adult birds from suitable nest sites on or within a structure by the placement of netting prior to April 1. Methods other than netting must be pre-approved by the ODOT Biologist.</p>

8. Waters and Wetlands Evaluation:

Wetlands and Ponds:

Total Field Sites	Type	Cowardin Classification	Potential Jurisdictional Status	Acres within study footprint
1	Forested Wetland	PFO1A	Likely	0.007
2	Emergent Wetlands	PEM1A	Likely	0.074
Total				0.081

Streams and Drainages:

Total Field Sites	Water Body Name	USGS Designation	Potential Jurisdictional Status	Acres within study footprint	Linear Feet within study footprint
1	Watson Creek	Mapped intermittent	Likely	0.03	145
1	Unnamed tributary	Mapped intermittent	Likely	0.06	226
2	Ephemeral drainages	Mapped intermittent	Likely	n/a	259
3	Unnamed channel	Unmapped intermittent	Likely	0.06	394
Total Likely Jurisdictional				0.06	1024
10	Ephemeral drainages	Unmapped	Unlikely	n/a	957



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Division of Ecological Services
9014 East 21st Street
Tulsa, Oklahoma 74129
918/581-7458 / (FAX) 918/581-7467



Online Project Review Concurrence Letter

To:

Project Name:

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office online project review process. By providing this letter in conjunction with your project review package, you are certifying that you have accurately completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. Concurrence with “not likely to adversely affect” determinations does not provide any exemption for violations of section 9 of the ESA or “take” of federally-listed species. The Federal action agency is ultimately responsible for ensuring compliance with the ESA and any take that occurs due to your proposed action would be considered a violation under section 9 of the ESA.

This letter and the enclosed project review package complete the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act (National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be emailed to okprojectreview@fws.gov for this certification to be valid. This letter and the project review package will be maintained in Service records. **Please allow the OKESFO 60 days to review your information. If the OKESFO determines that the package is not complete, or that additional coordination is necessary, we will contact your office. If after 60 days from the time you emailed your project review package the OKESFO has not contacted your office, consider your section 7 consultation complete.**

The proposed action consists of

The project is expected to be completed:

This project review is needed for:

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in “not likely to adversely affect/modify” determinations for listed species and critical habitat in relation to potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with determinations of “not likely to adversely affect” for listed species and critical habitat reached by proper use of this process. For projects where this particular determination is reached, additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages efforts to avoid or minimize adverse impacts to them from project effects. Some federal agencies have standing policies that grant limited protections to candidate species. Conservation of candidate species now may preclude future needs to federally list them as endangered or threatened, at which point their legal protection would become required. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. You should re-visit the Service's Information, Planning, and Conservation (IPaC) website at <http://ecos/fws.gov/ipac/> within 90 days of project initiation to ensure species information is correct. If new species or critical habitat is identified, this letter is no longer valid and a new project package should be submitted to the OKESFO.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Oklahoma is available at our website: <<http://www.fws.gov/southwest/es/oklahoma/>>. If you have any questions, please call 918-581-7458 or send an email message to OKProjectReview@fws.gov.

Sincerely,
/s/ Jontie Aldrich
Acting Field Supervisor
Oklahoma Ecological Services Field Office

Enclosures:

- 1) ENTIRE PROJECT REVIEW PACKAGE:
 - Species Conclusion Table
 - IPaC Species List and Action Area map
 - This letter (Online Concurrence Letter)
 - (Optional) Additional maps
- 2) Other relevant project data/documents

**ENDANGERED, THREATENED AND CANDIDATE SPECIES, DESIGNATED
CRITICAL HABITAT, BALD EAGLE AND SWALLOW ASSESSMENT**

For

County	Atoka	JP Number	24066(04)	Project Number	J2-4066(004)
Road Number	SH-7	Water Body Name		Unnamed tributary to Watson Creek	
ROW Date	2012	Let Date	2016	Project Length	28,681 feet
Project General Location		State Highway 7 from 6.0 miles east of the Johnson County line extending east 5.4 miles (from just west of Standing Rock Road east to just east of North Carr Pen Road)			
Project Statement		Grade, Drain, Bridge and Surface SH-7			

Prepared for:
Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, OK 73105

Prepared by:

Biologist Name	Rebecca A. Carroll & Dr. David X Williams
Company/Agency Name	Enercon Services, Inc.
Address	5100 E. Skelly Dr., Ste 450
City, State Zip	Tulsa, OK 74135

Report Date:	June 15, 2015
Field Survey Date	May 5, 2015
Field Survey Biologist(s)	Dr. David X Williams & Joshua P. Schatte

1. PROJECT OVERVIEW

1.1 Federal Nexus

This biological assessment, prepared by the above named Company/Agency for the Oklahoma Department of Transportation (ODOT), addresses the above named project in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. Section 7 of the ESA requires that, through consultation with the U.S. Fish and Wildlife Service (Service), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat. This assessment evaluates the potential effects of the proposed transportation project on species that are federally listed under the ESA. Specific project design elements are identified that avoid or minimize adverse effects of the proposed project on listed species and designated critical habitat.

1.2. Project Description

Project Type	Check <input checked="" type="checkbox"/>
Bridge and Approaches or bridge widening/structure extension	
Grade, Drain, Surface and Bridge	✓
Grade, Drain and Surface	
Asphalt Overlay Resurfacing	
Widen and Resurface existing lanes	
Pavement Reconstruction or rehabilitation	
Bridge Rehabilitation	
Safety Improvements (Cable Barrier, Guardrail, signage)	
Intersection Modifications	
Safe Routes to School (Describe)	
Enhancements (Describe)	
Other (Describe)	

Description of the existing bridge/roadway facility and reason for proposed project

This segment of SH-7 consists of two 12-foot asphalt lanes with a current ADT of 2,800 vpd. The pavement is in poor condition. Bridge One (NBI# 06532) is a 30-40-30 I-Beam over Watson Creek. It was built in 1938 and has a sufficiency rating of 52.2. Bridge One is 27 feet wide by 101 feet in length. Bridge Two (NBI# 06295) is a 10 x 7 x 30 RCB with handrails. It was built in 1938 and has a sufficiency rating of 67.7. Bridge Two is 32 feet wide by 34 feet in length. The purpose of the project is to provide infrastructure improvement. The project will result in improved traffic flow and increased safety for motorists.

Description of proposed improvements

The proposed project is to widen and resurface the existing roadway with two 12-foot lanes and 8-foot shoulders. Most of the reconstruction will occur on existing roadway with the exception of areas requiring vertical or horizontal curve corrections. Some of the existing bridges or boxes may be replaced or extended in length. Shoo-flies may be required either to the north or south side of the existing facility to keep the roadway open to traffic during construction. The bridge (NBI# 06532) over Watson Creek is an exception for this project. It was constructed with SBR funds. Additional ROW will likely be required.

In-water Work Expected as part of the proposed action	YES √	NO
Project is an off-set alignment	YES	NO √

1.3. Project Area and Setting

Project Location		Environmental Study Footprint		Ecoregion & Game Type	
<u>Section Range & Township</u>	<u>Lat/Long (NAD 83)</u>	<u>Dimensions</u>	<u>Acreage</u>	<u>Level IV Ecoregion (Woods et al. 2005)</u>	<u>Game Type (Duck and Fletcher 1943)</u>
Sections 13 and 24, T2S, R9E and Sections 13, 14, 15, 16, 17, 18, 19, 21, 22, and 23, T2S, R10E	34.3750 x -96.2562	28,681 feet long by 110 to 338 feet wide	104 acres	Lower Canadian Hills subset of the Arkansas Valley ecoregion (37e)	Tallgrass Prairie

Action Area:

The project action area includes those areas that will be directly affected by construction activities as well as a 0.25 mile area surrounding the project study area.

2. FEDERALLY LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Species Range and Occurrence Evaluation (Check all that apply)

Species	Action Area is within a watershed associated with occupied water bodies		Action Area includes an occupied water body		Project site within 5 miles of known records	
	YES	NO	YES	NO	YES	NO
American Burying Beetle						<input checked="" type="checkbox"/>
Interior Least Tern		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Whooping Crane		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Piping Plover						<input checked="" type="checkbox"/>
Red Knot						<input checked="" type="checkbox"/>
Northern Long-Eared Bat						<input checked="" type="checkbox"/>

Legally Designated Critical Habitat	Action Area includes Designated Critical Habitat (Check <input "="" checked="" type="checkbox"/>	
-------------------------------------	--	--

For the American Burying Beetle (Check <input 2"="" checked="" type="checkbox/>)</th> </tr> <tr> <th colspan="/> Action area is within current or historic range										Action area is within a conservation priority area		Action area is within 5 miles of a positive survey			Action area is within 5 miles of a negative survey		
Current Range	Historic Range	YES	NO	YES	NO	Most Recent year	YES	NO	Most Recent year								
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	N/A		<input checked="" type="checkbox"/>	N/A								

For Bats Bridge Assessment (Check <input 2"="" checked="" type="checkbox/>)</th> </tr> <tr> <th colspan="/> Guano present						Urine/body oil stains present		Moth wings present	
YES	NO	YES	NO	YES	NO				
	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				

IPaC Special Conditions Identified – wind energy projects or cell towers				
Interior Least Tern		YES	<input checked="" type="checkbox"/>	NO
Piping Plover		YES		NO <input checked="" type="checkbox"/>

For the Whooping Crane (Check <input checked="" type="checkbox"/>)							
Action area is in which percentage Whooping Crane migratory corridor						Action area is within 15 miles of Salt Plains National Wildlife Refuge, Hackberry Flat, or Foss Reservoir.	
<5%	10%	15%	20%	25%	75%	YES	NO
<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>

3. ENVIRONMENTAL BASELINE

3.1. Ecological Processes and Conditions

Soils (Use Soil Map of Oklahoma by Carter and Gregory 2008)

Soil Class	Cherokee Prairies
Soil Name	Dennis-Bates-Taloka-Parsons
Soil Type	Clayey and Loamy
Soil Characteristics	Humus-rich soils on very gentle slopes (3%) [Mollisols; Alfisols]

Climate (Use Woods et al. 2005)

Precipitation	Mean annual inches	46.57
Growing Season	Number of days	220
Mean Temperatures	Summer min/max	80 – 82
	Winter min/max	40 – 42

River System

Six (6) intermittent streams and 11 ephemeral drainages were identified in the project study area. Four (4) of the identified streams are mapped on the US Geological Survey (USGS) topographic quadrangle.

Land Use and Land Ownership

From Woods et al. 2005	Steep slopes are wooded and used for timber, woodland grazing, or recreation. Gently sloping uplands are used as pastureland or hayland. Cropland or pastureland occur on bottomlands. Other land uses include poultry farming, coal mining, and natural gas production.
From Field investigation	The project study area was primarily comprised of maintained highway ROW, mixed grass pastureland, row crop agricultural fields, upland forest, and riparian forest. Forested wetlands and emergent wetlands were also identified in the project study area.

Terrestrial and Aquatic Community Descriptions (based on field site visit)

Mixed Grass Pasture: Dominant vegetation in this community type included Bermudagrass (*Cynodon dactylon*), tall fescue (*Schedonorus phoenix*), broomweed (*Amphiachyris dracunculoides*), and little bluestem.

Maintained Highway ROW and Residential Lawn: Dominant vegetation in this community type was Bermudagrass.

Agricultural Field: At the time of our site visit, dominant vegetation in this community type was wheat (*Triticum* spp.). This community type was used for row crop agriculture in past years but is most likely used currently for livestock grazing.

Upland Forest: Dominant vegetation in this community type included post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), winged elm (*Ulmus alata*), black hickory (*Carya texana*), and eastern red cedar (*Juniperus virginiana*).

Riparian Forest: Dominant vegetation in this community type included American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), honey locust (*Gleditsia triacanthos*), water oak (*Quercus nigra*), Shumard oak (*Quercus shumardii*), and bois d'arc (*Maclura pomifera*).

Forested Wetland: Dominant vegetation in this community type included green ash, black willow (*Salix nigra*), common persimmon (*Diospyros virginiana*), pecan (*Carya illinoensis*), and American elm.

Emergent Wetland: Dominant vegetation within this community type included swamp smartweed (*Polygonum hydropiperoides*), tall fescue (*Schedonorus phoenix*), and barnyardgrass (*Echinochloa crus-galli*).

3.2 Species Habitat Analysis

Pedestrian survey of entire study footprint	YES	√	NO	
Bridge inspection for bat use and suitability as bat roosting habitat	YES	√	NO	

SPECIES	HABITAT	YES	NO
American Burying Beetle	Numbers of acres of native perennial plant vegetation (where native perennials are the dominant vegetation) within the NEPA Environmental Study Footprint	11.94 Acres	
Whooping Crane	Shallowly-submerged sandbars in large river channels occur within the action area.		√
	If within the 75% migration corridor, provide the number of acres of emergent wetlands that occur within the NEPA Environmental Study Footprint.	0 Acres	
	Croplands suitable for foraging occur within the action area and are within 15 miles of Salt Plains National Wildlife Refuge, Hackberry Flat, or Foss Reservoir		√
Interior Least Tern	Sparsely vegetated islands or sandbars along large rivers, with nearby areas of shallow water, occur within the action area.		√
Piping Plover	Sparsely vegetated sandy or gravelly shorelines and islands associated with the major river systems occur within the action area.		√
	Salt flats and mudflats associated with reservoirs occur within the action area.		√
Red Knot	Mudflats associated with reservoirs occur within the action area.		√
Northern Long-Eared Bat	Limestone caves occur within 300 feet of the expected construction footprint.		√
	Live or dead trees/and or snags with a DBH of >= 3 inches that exhibit exfoliating bark, crevices, cavities, or cracks, occur within the NEPA Environmental Study Footprint.	√	
	Barns or sheds occur within the NEPA Environmental Study Footprint	√	
	Upland and lowland woodlots and tree-lined corridors occur within the action area	√	
All Bats Species	The existing bridge is made of concrete, contains vertical crevices that are 0.5 to 1.25 inches wide, is 10 or more feet above the ground or water, has a water-tight sealed surface, and is in full sun.		√
	The existing bridge is situated over a busy roadway.	√	
	Existing concrete box culverts within the NEPA Environmental Study Footprint are between 5&10 feet tall and >300 feet long.		√

4. ANALYSIS OF EFFECTS

4.1 Direct Effects

Species/ Resource	Habitat impacts expected from project activities		Describe the specific impacts from the action
	Yes	No	
American Burying Beetle	√		ABBs and their habitat could potentially be impacted by the proposed project if construction activities (including grubbing and grading) take place outside the maintained highway ROW and lawns within areas where suitable habitat occurs.
Northern Long-Eared Bat	√		Trees with exfoliating bark or hollow spaces were observed throughout the project study area. These trees provide potentially suitable habitat for Northern long-eared bats. If they are removed during construction activities, direct effects to bat roosting habitat could occur. Temporary effects would include noise and movement of construction equipment and workers, which could potentially disturb bats if they occur in the area and cause them to temporarily avoid their habitat.

4.2 Indirect Effects

Long-term habitat alterations

Species/ Resource	Long-term habitat alterations (describe the specific impacts)
American Burying Beetle	If construction activities take place outside of existing ROW, suitable ABB would be permanently converted into new maintained ROW.
Northern Long-Eared Bat	Suitable roosting trees will likely be removed, resulting in permanent loss of this habitat for bat use, if they occur in the area.

Indirect land use impacts

Because this project involves the replacement of bridges and roadway improvement with only the addition of shoulders, no indirect changes in land use are anticipated.

4.3 Interrelated and Interdependent Actions and Activities

Since the project involves the replacement of bridges and roadway improvements, with no expansion in capacity, and will not change land use in the area, no interrelated and interdependent actions are expected.

Species Conclusion Table (Check which apply)

SPECIES / DESIGNATED CRITICAL HABIT	CONCLUSION				ESA SECTION 7		NOTES AND DOCUMENTATION Check <input checked="" type="checkbox"/> all that apply			
	Species Habitat present within the action area		Project Activities expected to impact habitat		No Effect	May affect, unlikely to adversely affect	Field Studies	ONHI rare species / ABB database review	USFWS occupied water bodies and associate watershed maps	Whooping Crane Migration Corridor Map; LPC Habitat Model
	YES	NO	YES	NO						
American Burying Beetle	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			Adverse	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Interior Least Tern		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Whooping Crane		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Piping Plover		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Red Knot		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Northern Long-Eared Bat	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

CONCLUSIONS

The proposed project will have no effect on the Interior Least Tern, Whooping Crane, Piping Plover, and Red Knot. The proposed project may affect, unlikely to adversely affect, the Northern long-eared bat. Because the project occurs within an American burying beetle conservation priority area, no pre-construction survey will be done. Instead, it is assumed the project may affect, likely to adversely affect the species.

RECOMMENDED CONSERVATION MEASURES

Because the project is within a conservation priority area for the **American Burying Beetle**, presence within the action area is assumed. Therefore, the following conservation measures will be followed.

1. The areas of suitable habitat will be field mapped and verified.
2. The amount of ground disturbance to suitable ABB habitat within the construction footprint will be minimized to only what is necessary for project construction,
3. Construction requiring artificial lighting will be minimized. If night construction is necessary, direct light will be shielded to the work area and prevent light from projecting upwards
4. Carcasses and trash will continuously be removed from the new permanent, and any construction temporary, ROW.
5. Following construction, areas of ground disturbance – outside of the safety clear zone - will have the soil ripped and then be re-vegetated with native plant species.
6. The final acreage of suitable ABB habitat impacts will be categorized as temporary, permanent cover change or permanent. Mitigation ratios for impacts to ABB habitat will be as follows:

Impact duration	Within a conservation priority area
Temporary	1:05
Permanent Cover Change	1:1
Permanent	1:2

A survey to detect the presence of the **northern long-eared bat** will be conducted prior to construction. If the species is detected, removal of suitable roost trees will only be permitted between November 1 – April 15, during its non-active season. If suitable roost trees must be removed during the roosting season (April 16 – September 30), the trees will be surveyed for bats within 24 hours prior to their removal. Any trees used by northern long-eared bats will not be removed between June 1 – July 31.

Suitable endangered **bat riparian foraging habitat** was observed within the proposed project area. The removal of riparian vegetation shall be limited to what is necessary for project construction and restricted to the actual limits of construction. In addition, if sufficient ODOT permanent right of way exists, any woody riparian vegetation lost due to construction in areas lying outside of the final highway clear zone, shall be replaced with native riparian tree species.

~~If **bridge removal** will occur during between April 1 and September 30, the ODOT Environmental Programs Division will survey the bridge to ensure the northern long-eared bat is not using the structure within one year prior to construction. If evidence of use is observed, removal of the bridge will occur between October 1 and March 31.~~

5. BALD EAGLE AND SWALLOW ASSESSMENT

5.1. Bald Eagle Assessment

The Bald Eagle (*Haliaeetus leucocephalus*) is a large predatory bird protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Activities that would disturb eagles are prohibited under the Bald and Golden Eagle Protection Act. “Disturb” means to agitate an eagle to the degree that causes or is likely to (1) cause injury, (2) interfere with breeding, feeding or sheltering behavior, or (3) nest abandonment.

Bald Eagle Habitat Present	Suitable habitat for the Bald Eagle was <u>not</u> observed in the project action area.
Bald Eagle Nests Observed	None
Bald Eagles Observed	None

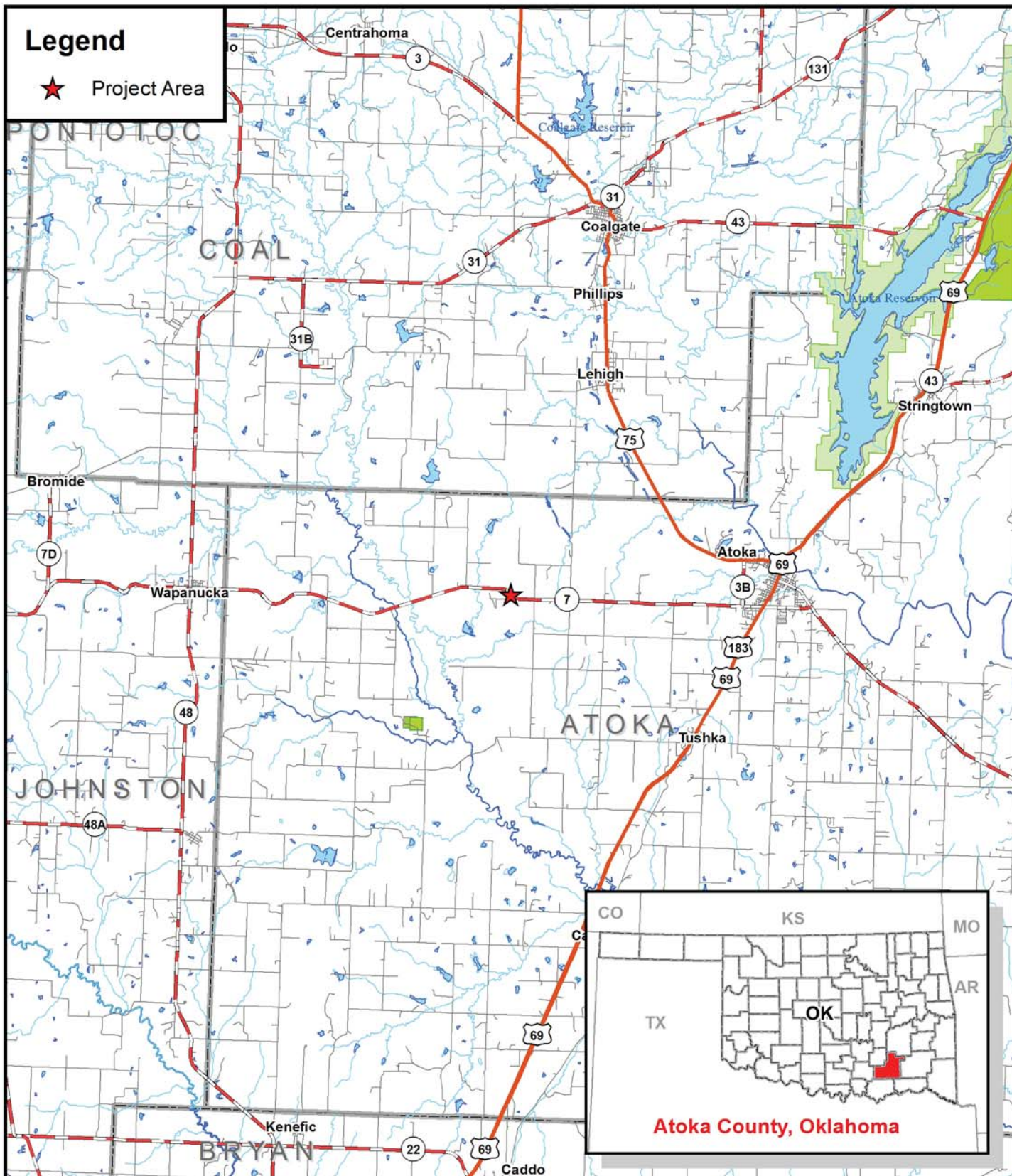
5.2 Swallow Assessment

Cliff Swallows (*Petrochelidon pyrrhonota*) and Barn Swallows (*Hirundo rustica*) are small colonial and semi-colonial nesting birds protected by the federal Migratory Bird Treaty Act. Barn Swallows use man-made structures for nesting and live in close association with humans. Both species commonly use bridges and culverts in Oklahoma for nesting.

Swallow Nests Observed	YES	√	NO	
34.3761 x -96.2983	Cliff Swallow Nests – Approximately 10			
34.3791 x -96.2806	Barn Swallow Nests – Approximately 5			
NBI# 06532 (Watson Creek)	Cliff Swallow Nests – Approximately 50			
34.3790 x -96.2687	Cliff Swallow Nests – Approximately 5			
34.3752 x -96.2592	Cliff Swallow Nests – Approximately 5			
Other MB Nests Observed on Transportation Structures	None			
In order to avoid impacts to swallows, any activities that may destroy active nests, eggs or birds shall be completed between September 1, and March 31, when nests are not occupied. If seasonal avoidance cannot be accomplished, structures shall be protected from new nest establishment prior to April 1, by means that do not result in death or injury to these birds.				

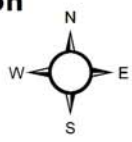
6. REFERENCES

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Prepared for:
Oklahoma Department of Transportation

Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 24 & 13, T2S R9E; Sections 18,
 17, 16, 15, 14, 13, 19, 21, 22 & 23, T2S R10E
 Atoka County, Oklahoma

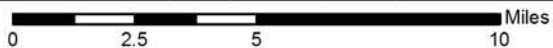


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Figure 1: Vicinity Map

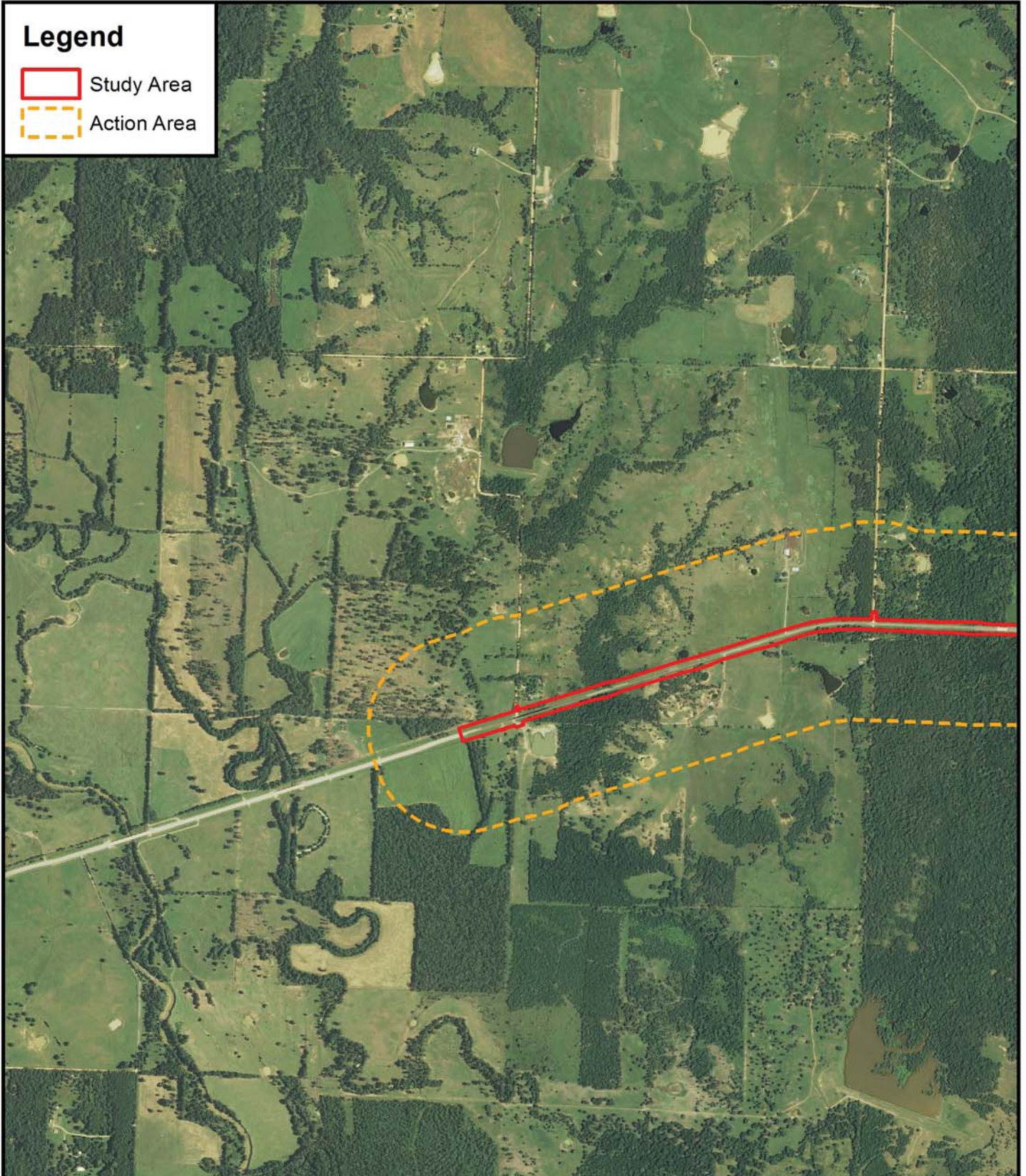
Source: University of Oklahoma
 Center for Spatial Analysis

Prepared by: A. Couch; June 12, 2015



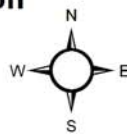
Legend

-  Study Area
-  Action Area



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17, & 19, T2S R10E
Atoka County, Oklahoma



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Figure 2.1: Action Area Map

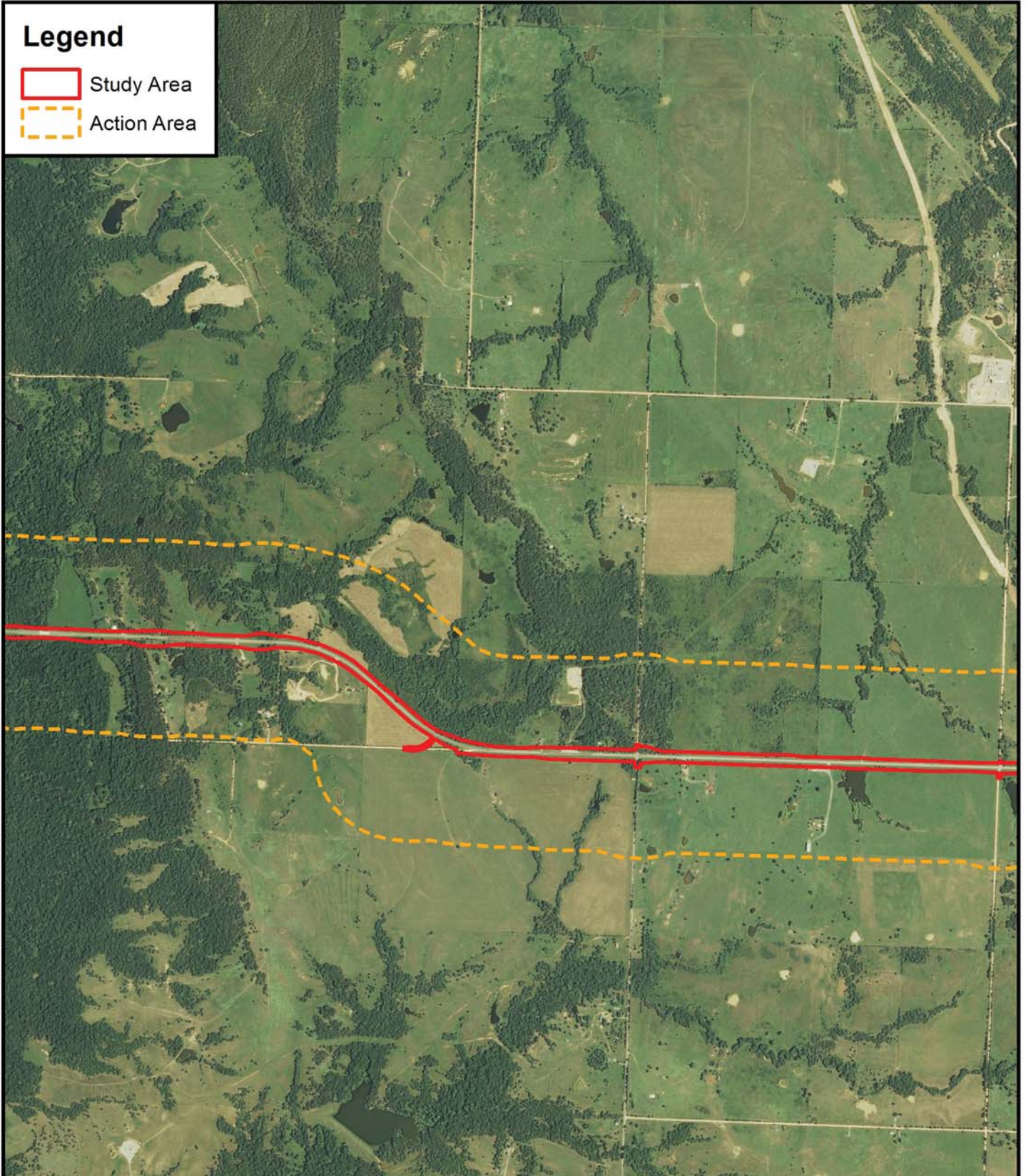
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 11, 2015



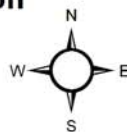
Legend

-  Study Area
-  Action Area



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Atoka County, Oklahoma



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Figure 2.2: Action Area Map

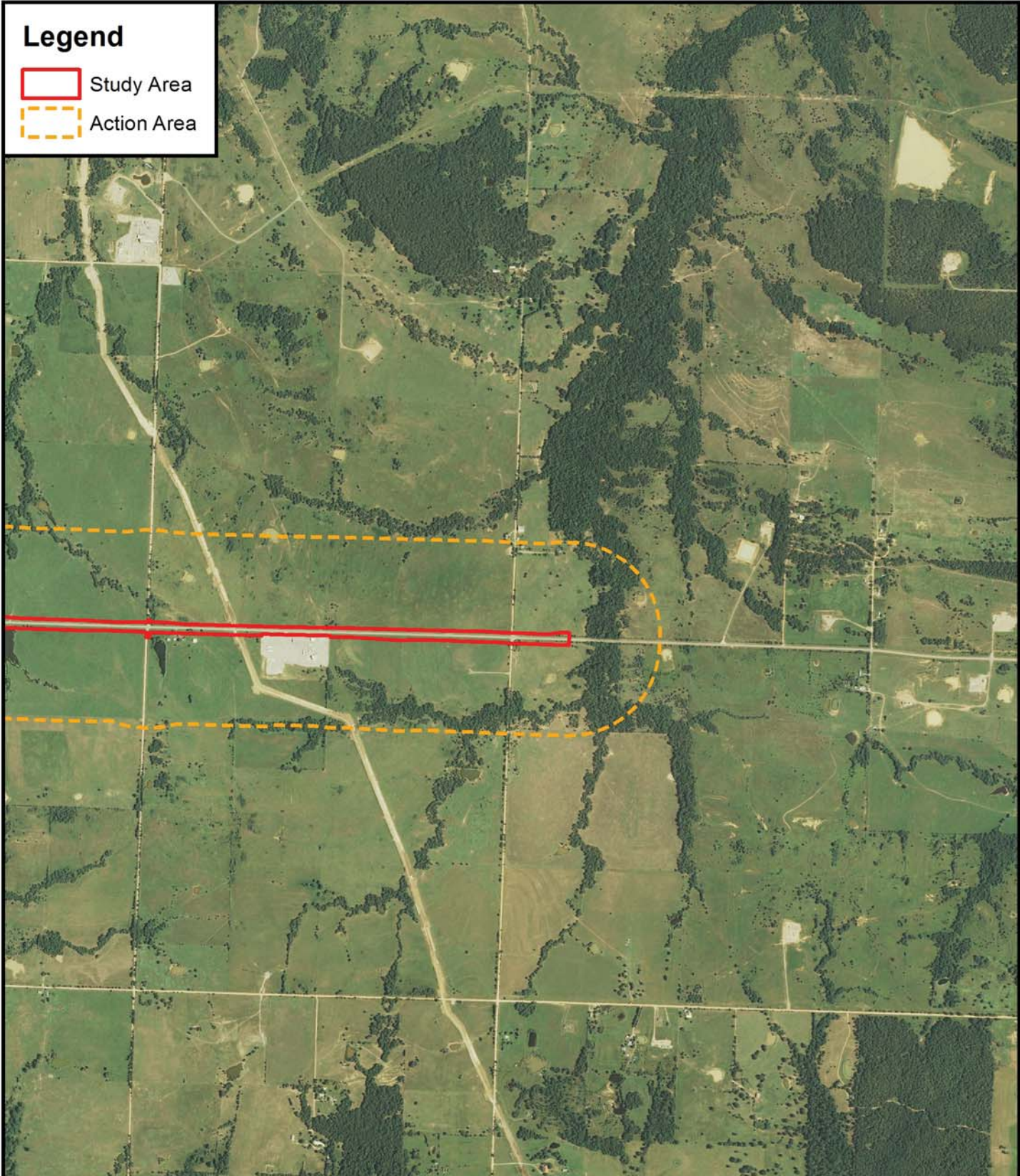
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 11, 2015



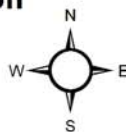
Legend

-  Study Area
-  Action Area



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Atoka County, Oklahoma



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Figure 2.3: Action Area Map

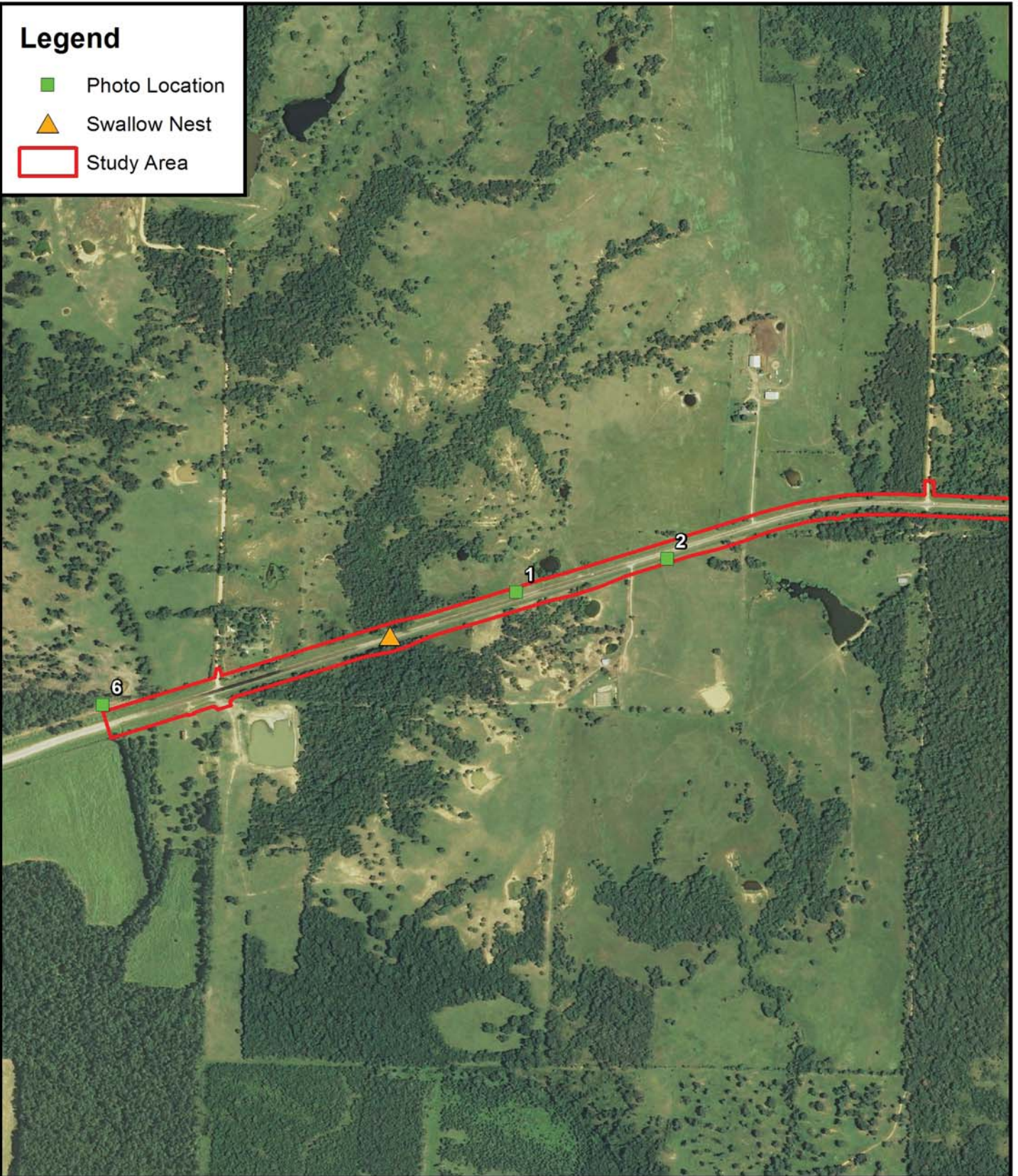
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 11, 2015



Legend

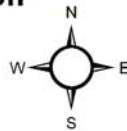
- Photo Location
- ▲ Swallow Nest
- Study Area



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Atoka County, Oklahoma

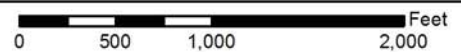


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Figure 3.1: Site Map

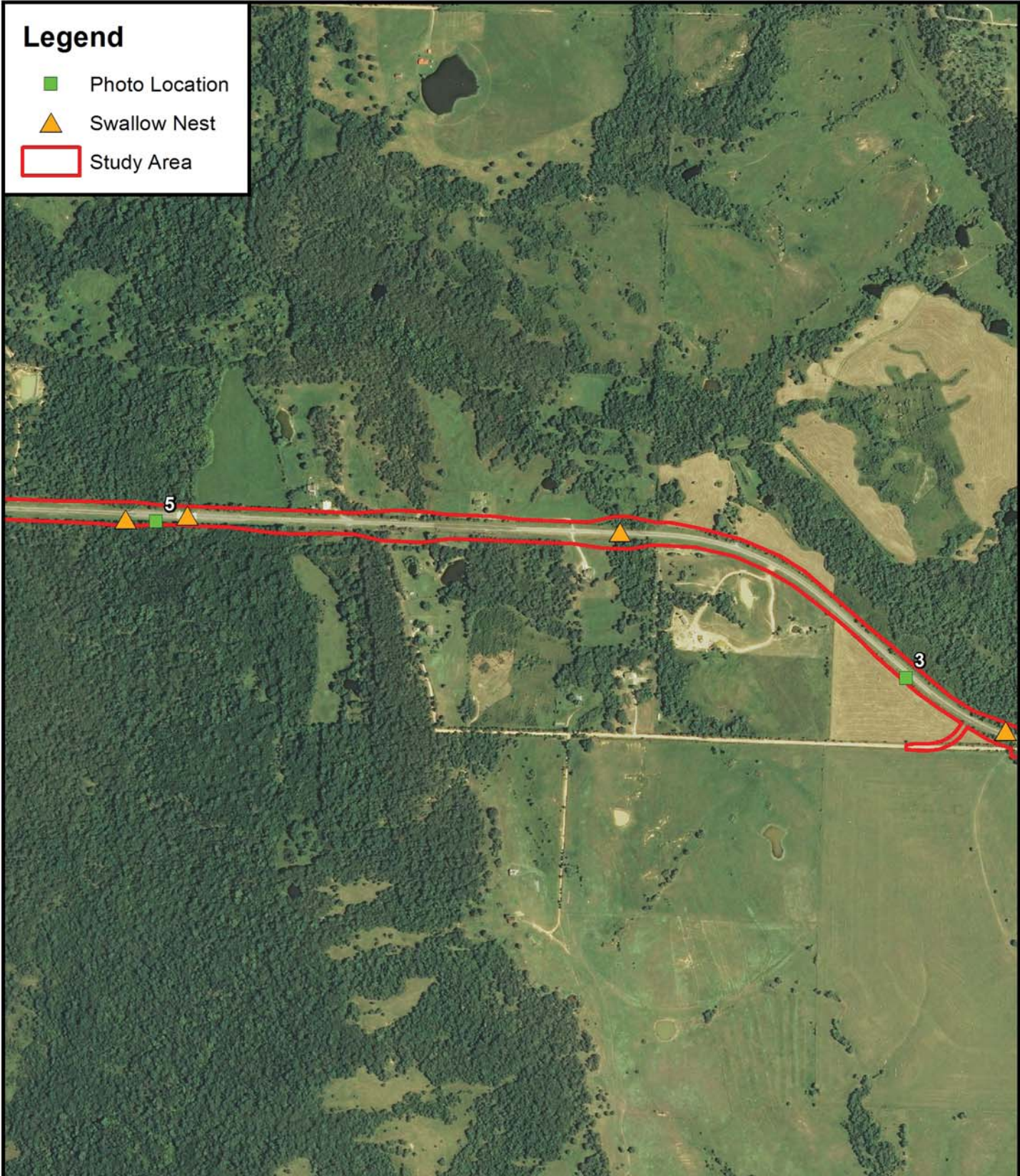
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 16, 2015



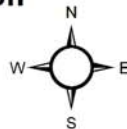
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- Photo Location
- ▲ Swallow Nest
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Atoka County, Oklahoma

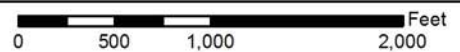


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Figure 3.2: Site Map

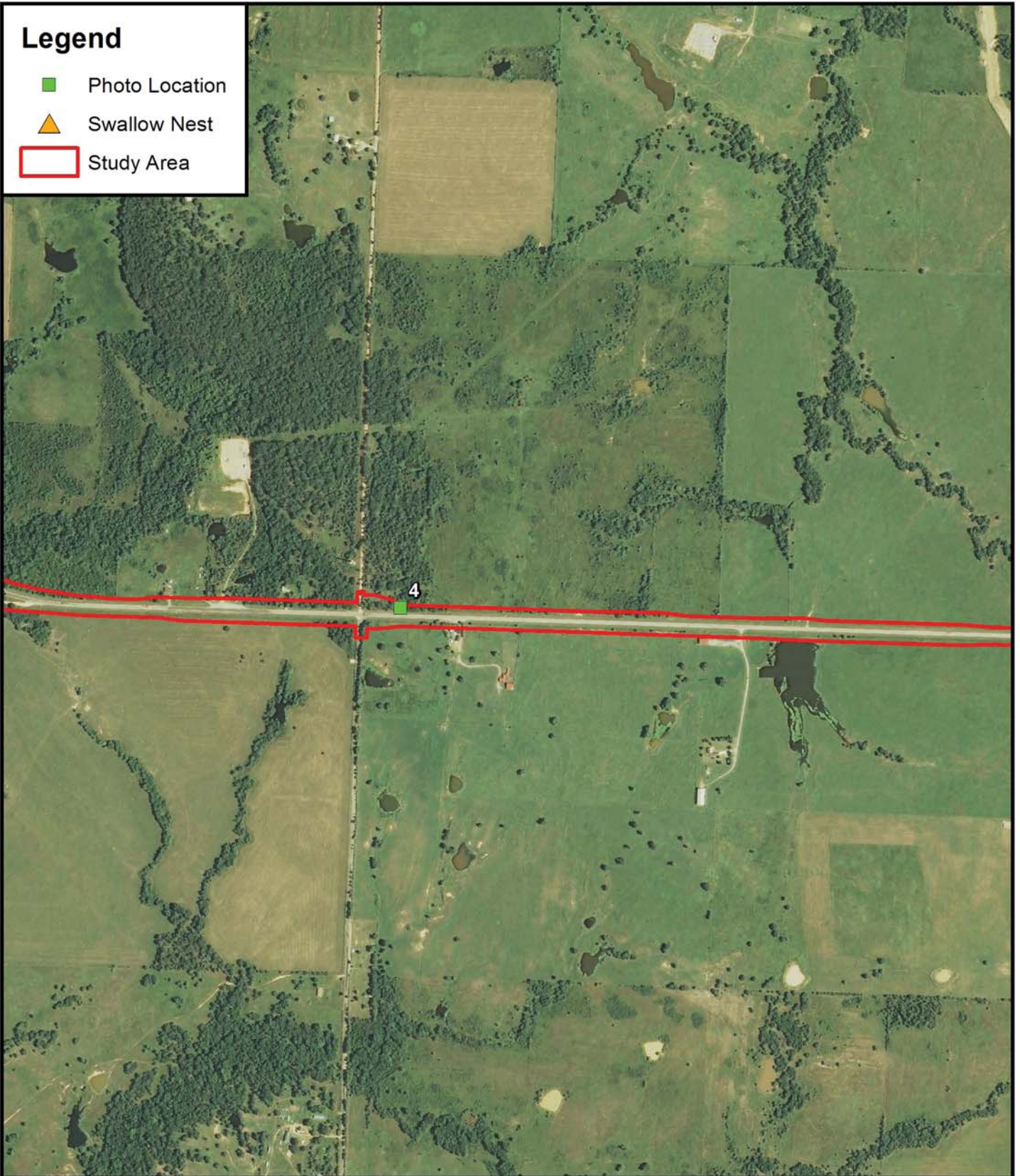
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Atoka County, Oklahoma

Prepared by: A. Couch; June 16, 2015



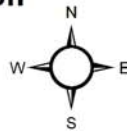
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- Photo Location
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Sections 16, 15, 21 & 22, T2S R10E
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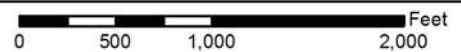


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Figure 3.3: Site Map

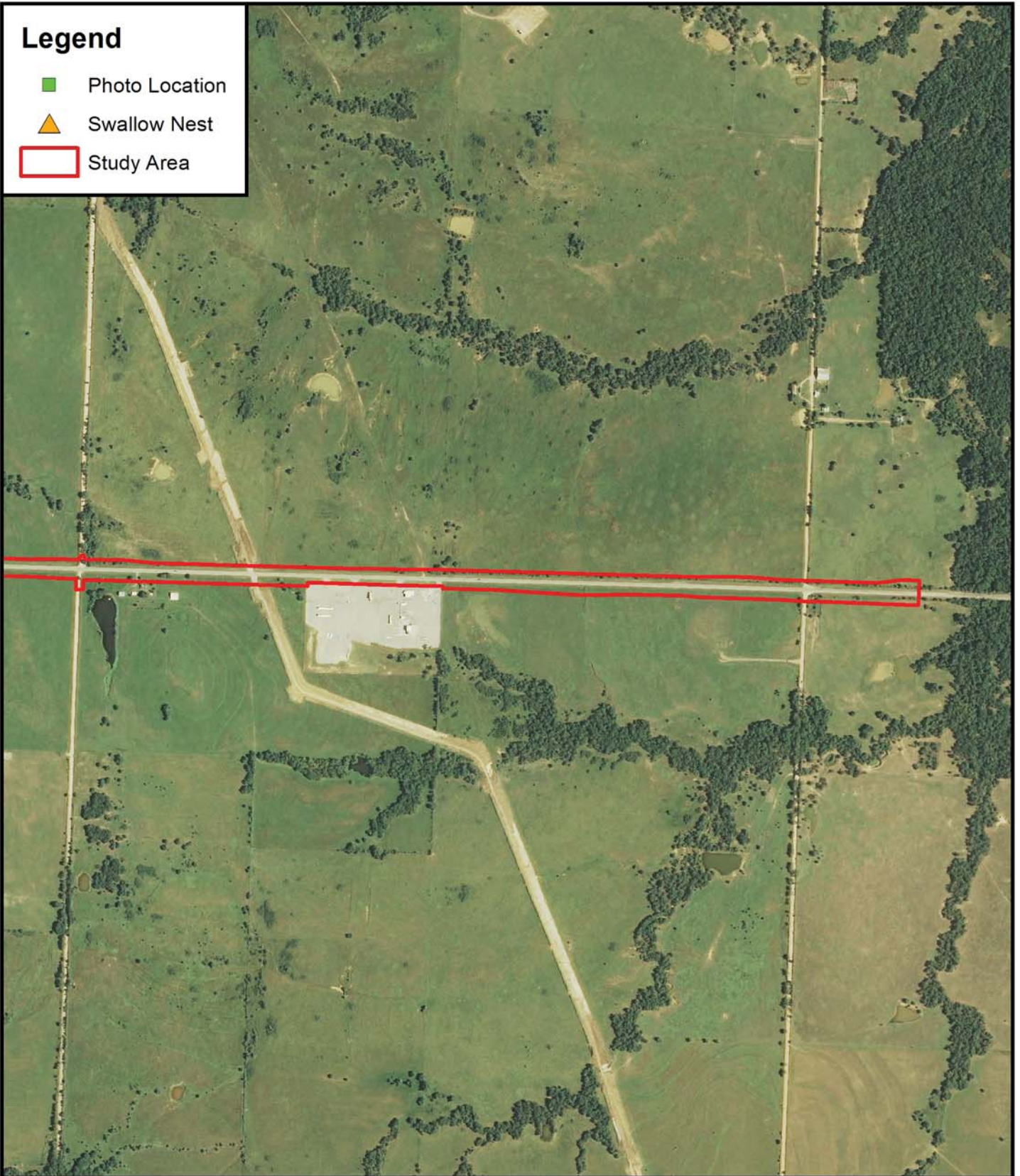
Source: 2013 USDA NAIP
Atoka County, Oklahoma

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Legend

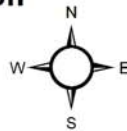
- Photo Location
- ▲ Swallow Nest
- Study Area



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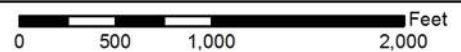


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Figure 3.4: Site Map

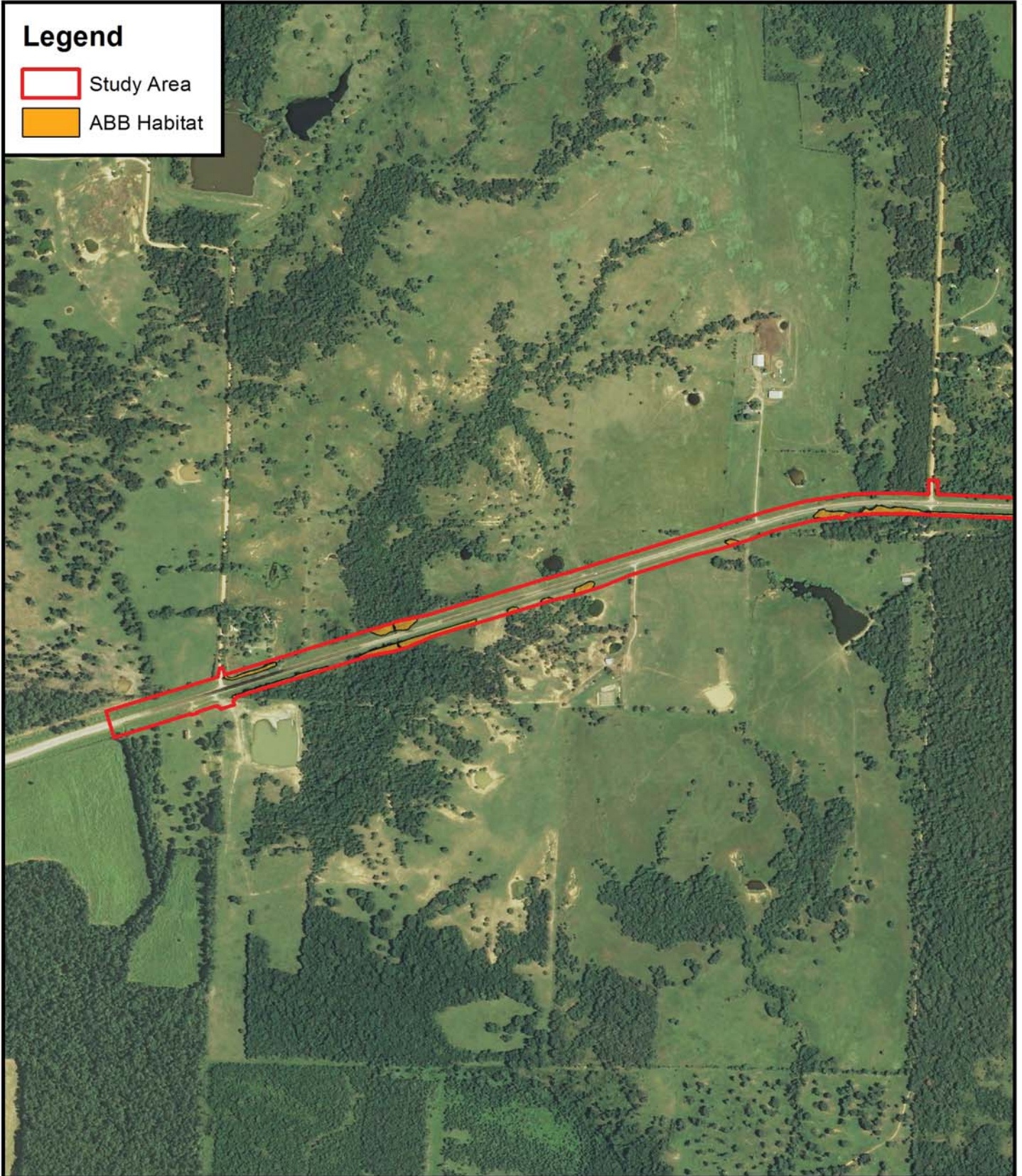
Source: 2013 USDA NAIP
Atoka County, Oklahoma

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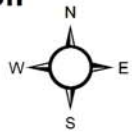
Legend

-  Study Area
-  ABB Habitat



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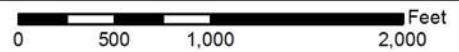


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Figure 4.1: ABB Habitat Map

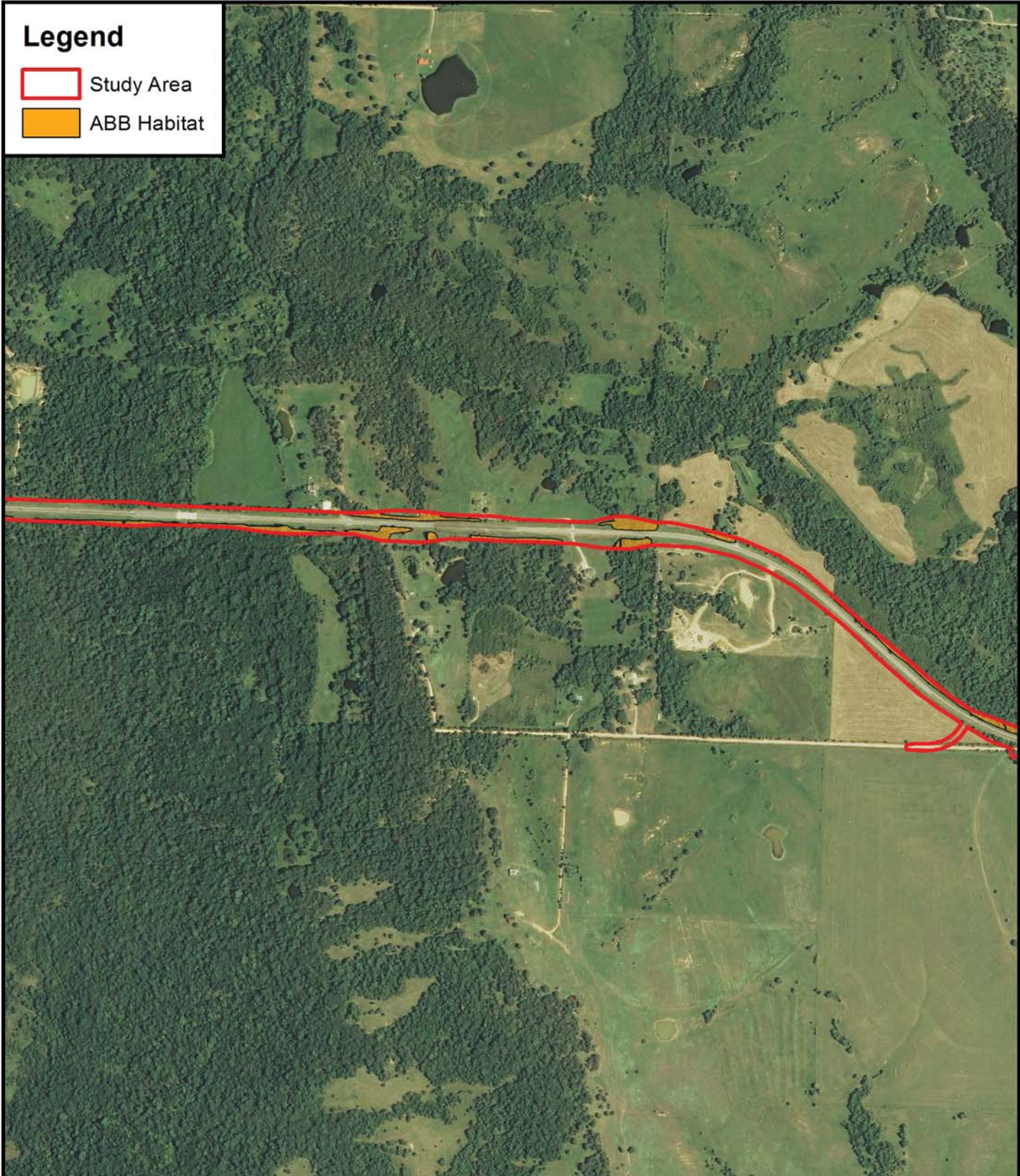
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 12, 2015



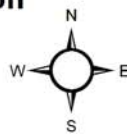
Legend

-  Study Area
-  ABB Habitat



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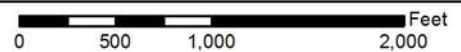


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Figure 4.2: ABB Habitat Map

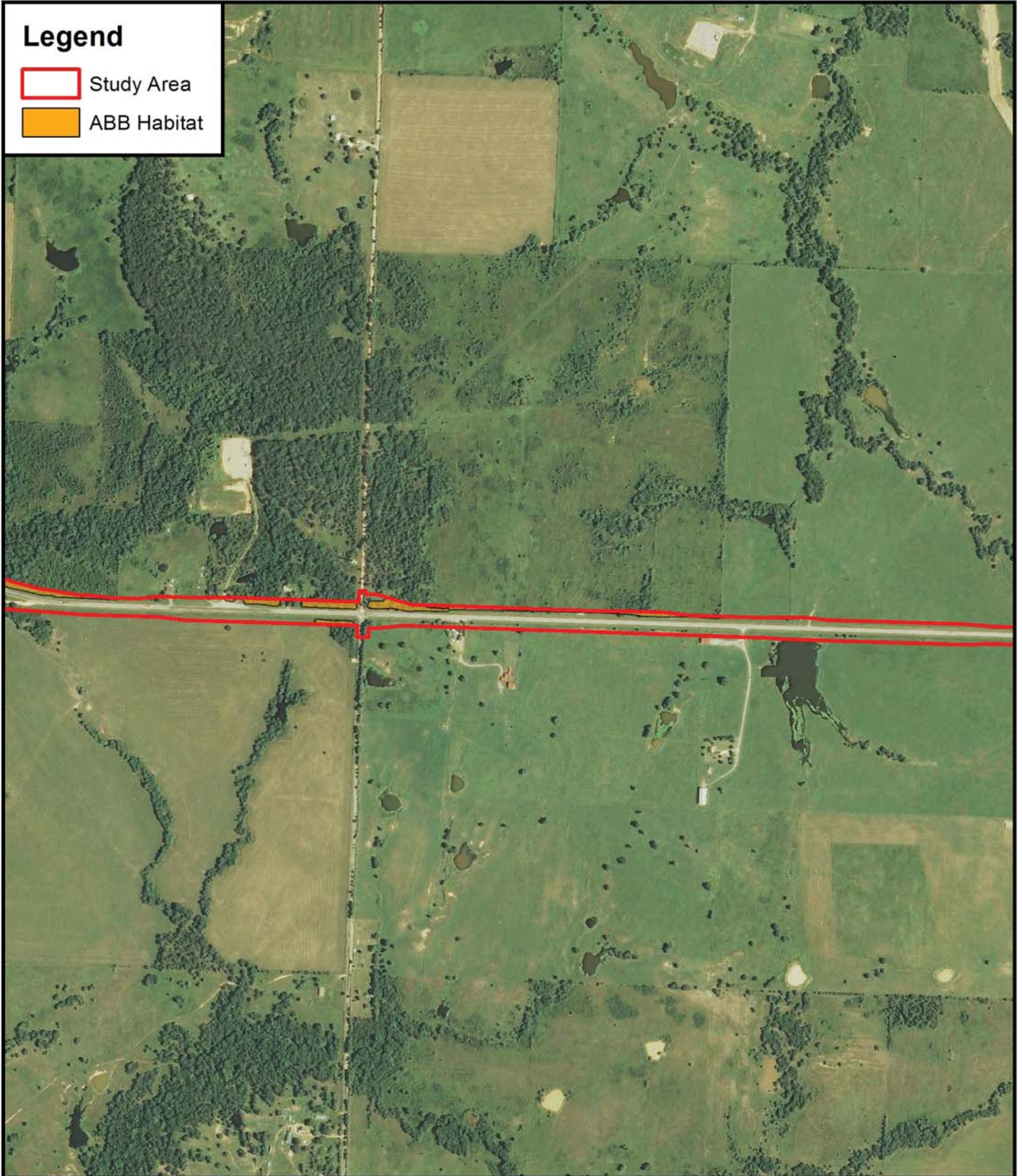
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 12, 2015



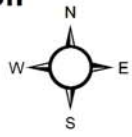
Legend

-  Study Area
-  ABB Habitat



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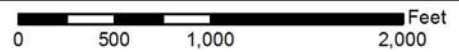


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Figure 4.3: ABB Habitat Map

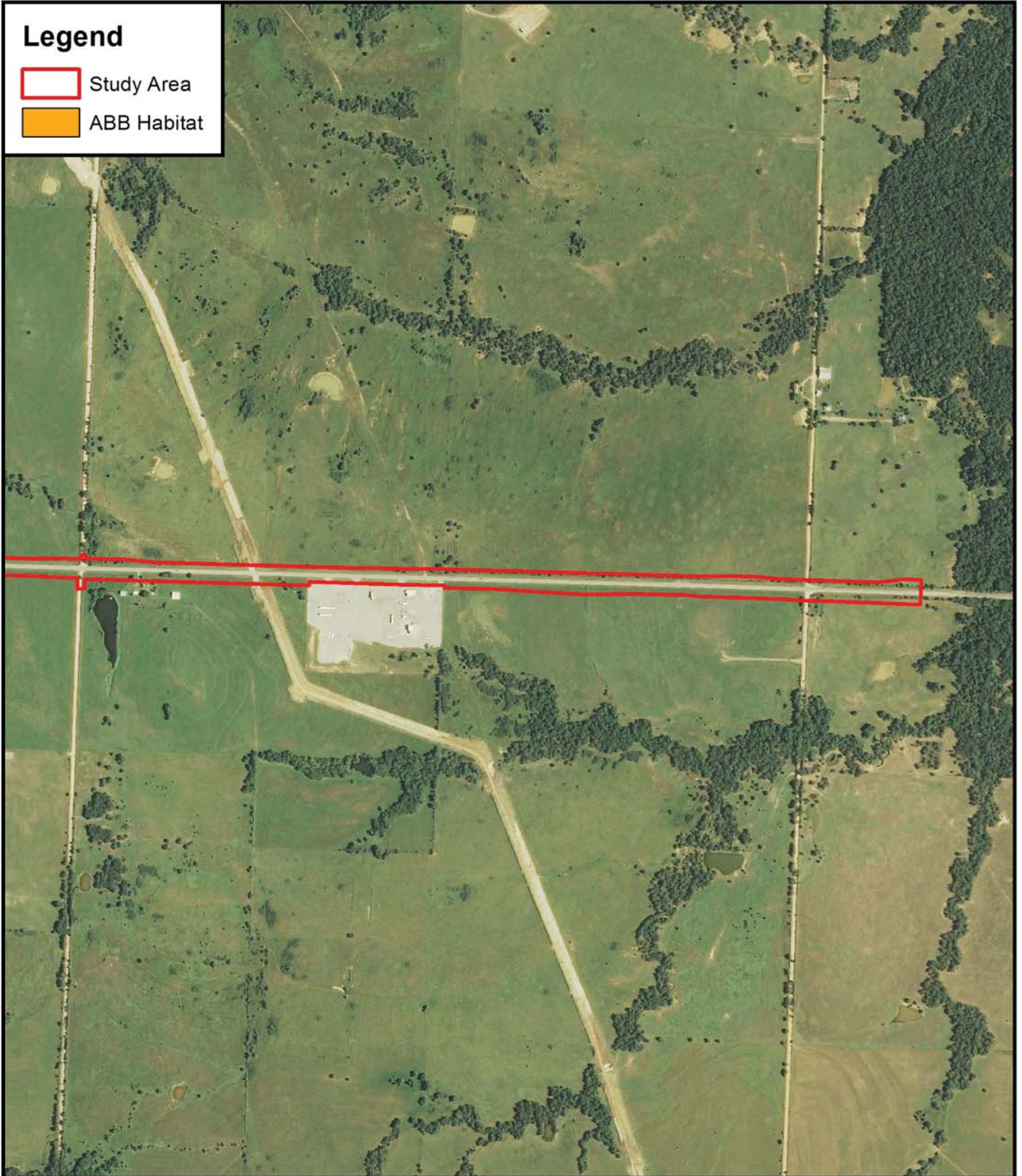
Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 12, 2015



Legend

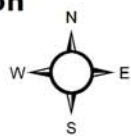
-  Study Area
-  ABB Habitat



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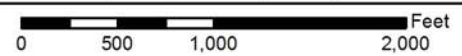


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Figure 4.4: ABB Habitat Map

Source: 2013 USDA NAIP
Atoka County, Oklahoma

Prepared by: A. Couch; June 12, 2015



REPRESENTATIVE SITE PHOTOGRAPHS



Photograph 1:
Mixed Grass Pasture Community Type



Photograph 2:
Maintained Highway ROW Community Type



Photograph 3:
Row Crop Agricultural Field Community Type



Photograph 4:
Upland Forest Community Type



Photograph 5:
Riparian Forest Community Type



Photograph 6:
Forested Wetland Community Type



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 EAST 21ST STREET
TULSA, OK 74129
PHONE: (918)581-7458 FAX: (918)581-7467
URL: www.fws.gov/southwest/es/Oklahoma/

Consultation Code: 02EKOK00-2015-SLI-1183

June 19, 2015

Event Code: 02EKOK00-2015-E-01265

Project Name: SH 7 Project - West

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process <http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm>.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: SH 7 Project - West

Official Species List

Provided by:

Oklahoma Ecological Services Field Office

9014 EAST 21ST STREET

TULSA, OK 74129

(918) 581-7458

<http://www.fws.gov/southwest/es/Oklahoma/>

Consultation Code: 02EKOK00-2015-SLI-1183

Event Code: 02EKOK00-2015-E-01265

Project Type: TRANSPORTATION

Project Name: SH 7 Project - West

Project Description: Proposed SH 7 grade, drain, bridge, and surface project in Atoka County, Oklahoma.

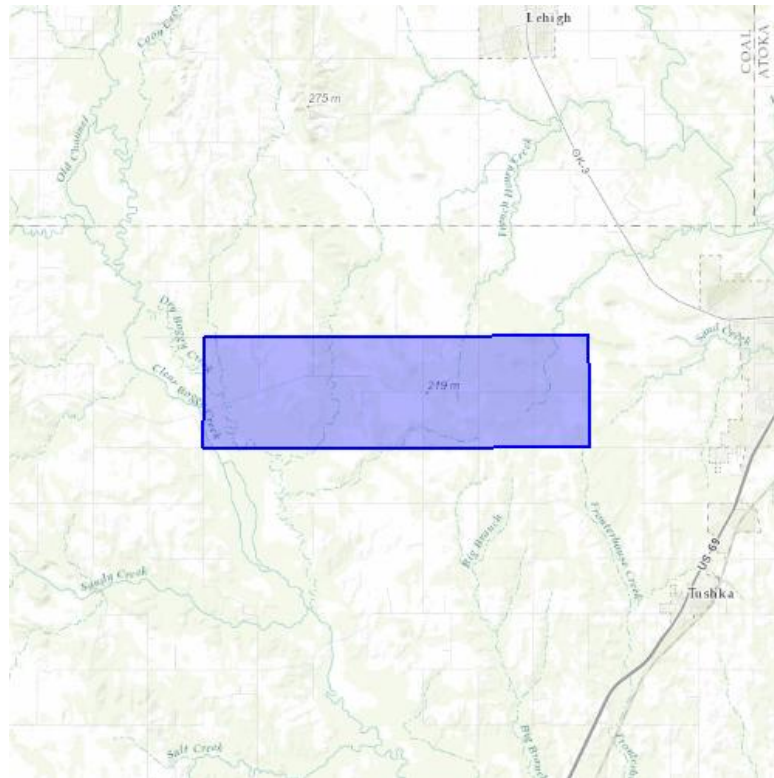
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: SH 7 Project - West

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-96.31979942321777 34.389133401415066, -96.19783401489258 34.38934588891084, -96.19766235351562 34.36030093164379, -96.32040023803711 34.359875808717135, -96.31979942321777 34.389133401415066)))

Project Counties: Atoka, OK



United States Department of Interior
Fish and Wildlife Service

Project name: SH 7 Project - West

Endangered Species Act Species List

There are a total of 6 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Least tern (<i>Sterna antillarum</i>) Population: interior pop.	Endangered		Towers (i.e. radio, television, cellular, microwave, meteorological) Wind Turbines and Wind Farms
Piping Plover (<i>Charadrius melodus</i>) Population: except Great Lakes watershed	Threatened	Final designated	
Red Knot (<i>Calidris canutus rufa</i>)	Threatened		
Whooping crane (<i>Grus americana</i>) Population: except where EXPN	Endangered	Final designated	
Insects			
American Burying beetle (<i>Nicrophorus americanus</i>) Population: Entire	Endangered		
Mammals			
Northern long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: SH 7 Project - West

Critical habitats that lie within your project area

There are no critical habitats within your project area.

**Federal Highway Administration (FHWA) and Federal Railroad Administration (FRA)
Range-wide Programmatic Informal Consultation for
Indiana Bat and Northern Long-eared Bat**

Project Submittal Form for FHWA, FRA, and Transportation Agencies
Updated June 23, 2015

In order to use the programmatic informal consultation to fulfill Endangered Species Act consultation requirements, transportation agencies must use this form to submit project-level information for all may affect, not likely to adversely affect (NLAA) determinations to the appropriate U.S. Fish and Wildlife Service (Service) field office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

In submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria of the range-wide programmatic informal BA. Upon submittal of this form, the appropriate Service field office may review the site-specific information provided and request additional information. If the applying transportation agency is not notified within 14 calendar days of emailing the Project Submittal Form to the Service field office, it may proceed under the range-wide programmatic informal consultation.

Further instructions on completing the form can be found by hovering your cursor over each text box.

1. Date:

2. Lead Agency:

This refers to the Federal governmental lead action agency initiating consultation; select FHWA or FRA as appropriate

3. Requesting Agency:

a. Name:

b. Title:

c. Phone:

d. Email:

4. Consultation Code¹:

5. Project Name(s):

¹ Available through IPaC System Official Species List: <https://ecos.fws.gov/ipac/>

6. Project Description:

Please attach additional documentation or explanatory text if necessary

7. Other species from Official Species List:

No effect – project(s) are inside the range, but no suitable habitat – see additional information attached

May Affect – see additional information provided for those species (either attached or forthcoming)

8. For Ibat/NLEB, if Applicable, Explain Your No Effect Determination

No effect – project(s) are outside the species' range (*form complete*)

No effect – project(s) are inside the range, but no suitable summer habitat (*form complete*)

No effect from maintenance, alteration, or demolition of bridge(s)/structure(s) – results of inspection surveys indicate no signs of bats. (*form complete*)

No effect – other (*see Section 2.2 of the User's Guide – form complete*)

Otherwise, please continue below.

9. Affected Resource/Habitat Type

Trees

Bridge

Other Non-Tree Roosting Structure (e.g., building)

Other (please explain):

10. For Tree Removal Projects:

- a. Please verify that no documented roosts or foraging habitat will be impacted and that project is within 100 feet of existing road surface:
- b. Please verify that all tree removal will occur during the inactive season²:
- c. Timing of clearing:
- d. Amount of clearing:

11. For Bridge/Structure Work Projects:

- a. Proposed work:
- b. Timing of work:
- c. Evidence of bat activity on bridge/structure:
- d. If applicable, verify that superstructure work will not bother roosting bats in any way:
- e. If applicable, verify that bridge/structure work will occur only in the winter months:

² Coordinate with local Service field office for appropriate dates.

12. Please confirm the following:

Proposed project(s) adhere to the criteria of the range-wide programmatic informal BA (see Section 2.0).

All applicable AMMs will be implemented, including³:

Tree Removal AMM 1:

Dust Control AMM 1:

Tree Removal AMM 2:

Water Control AMM 1:

Tree Removal AMM 3:

Water Control AMM 2:

Tree Removal AMM 4:

Water Control AMM 3:

Bridge AMM 1:

Water Control AMM 4:

Bridge AMM 2:

Water Control AMM 5:

Bridge AMM 3:

Water Control AMM 6:

Bridge AMM 4:

Wetland/Stream Protection AMM 1:

Structure AMM 1:

Wetland/Stream Protection AMM 2:

Structure AMM 2:

Wetland/Stream Protection AMM 3:

Structure AMM 3:

Wetland/Stream Protection AMM 4:

Structure AMM 4:

Wetland/Stream Protection AMM 5:

Lighting AMM 1:

Wetland/Stream Protection AMM 6:

Lighting AMM 2:

³ See AMMs Fact Sheet (Appendix B) for more information on the following AMMs.

WATERS AND WETLANDS EVALUATION REPORT

For

County	Atoka	JP Number	24066(04)	Project Number	J2-4066(004)
Road Number	SH 7	Water Body Name		Watson Creek and tributaries	
ROW Date	2012	Let Date	2016	Project Length	28,681 feet
Project General Location	State Highway 7 (SH 7) from 6.0 miles east of the Johnson County Line extending east 5.4 miles (from just west of Standing Rock Road east to just east of North Carr Pen Road)				
Project Statement	Grade, Drain, Bridge and Surface SH 7				

Prepared for:
Oklahoma Department of Transportation
Environmental Programs Division
200 NE 21st Street
Oklahoma City, OK 73105

Prepared by:

Biologist Name	Rebecca A. Carroll & Dr. David X Williams
Company/Agency Name	Enercon Services, Inc.
Address	5100 E. Skelly Dr., Ste 450
City, State Zip	Tulsa, OK 74135

Date:	June 15, 2015
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PROJECT OVERVIEW

Project Type	Check ✓
Bridge and Approaches or bridge widening/structure extension	
Grade, Drain, Surface and Bridge	✓
Grade, Drain and Surface	
Asphalt Overlay Resurfacing	
Widen and Resurface existing lanes	
Pavement Reconstruction or rehabilitation	
Bridge Rehabilitation	
Safety Improvements (Cable Barrier, Guardrail, signage)	
Intersection Modifications	
Safe Routes to School (Describe)	
Enhancements (Describe)	
Other (Describe)	

Description of the **existing** bridge/roadway

This segment of SH-7 consists of two 12-foot asphalt lanes with a current ADT of 2,800 vpd. The pavement is in poor condition. Bridge One (NBI# 06532) is a 30-40-30 I-Beam over Watson Creek. It was built in 1938 and has a sufficiency rating of 52.2. Bridge One is 27 feet wide by 101 feet in length. Bridge Two (NBI# 06295) is a 10 x 7 x 30 RCB with handrails. It was built in 1938 and has a sufficiency rating of 67.7. Bridge Two is 32 feet wide by 34 feet in length. The purpose of the project is to provide infrastructure improvement. The project will result in improved traffic flow and increased safety for motorists.

Description of **proposed** improvements **SPECIFIC TO THIS PROJECT**

The proposed project is to widen and resurface the existing roadway with two 12-foot lanes and 8-foot shoulders. Most of the reconstruction will occur on existing roadway with the exception of areas requiring vertical or horizontal curve corrections. Some of the existing bridges or boxes may be replaced or extended in length. Shoo-flies may be required either to the north or south side of the existing facility to keep the roadway open to traffic during construction. The bridge (NBI# 06532) over Watson Creek is an exception for this project. It was constructed with SBR funds. Additional ROW will likely be required.

Project Environmental Study Footprint

Project Location		Environmental Study Footprint	
<u>Section Range & Township</u>	<u>Lat/Long (NAD 83)</u>	<u>Dimensions</u>	<u>Acreage</u>
Sections 13 and 24, T2S, R9E and Sections 13, 14, 15, 16, 17, 18, 19, 21, 22, and 23, T2S, R10E	34.3750 x -96.2562	28,681 feet long by 110 to 338 feet wide	104 acres

Environmental Study Footprint Soils (NRCS Soil Survey Map)

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
Bates Fine Sandy Loam (2)	1 – 3	Well Drained		√	Convex Slopes, Found on Hillslopes, Low Available Water Capacity
Bates Fine Sandy Loam (3)	3 – 5	Well Drained		√	Convex Slopes, Found on Hillslopes, Moderate Available Water Capacity
Bates Fine Sandy Loam (4)	3 – 5	Well Drained		√	Eroded, Convex Slopes, Found on Hillslopes, Moderate Available Water Capacity
Bates-Coweta Complex (5)	3 – 5	Well Drained		√	Convex Slopes, Found on Hillslopes, Low Available Water Capacity
Bernow Fine Sandy Loam (7)	1 – 3	Well Drained		√	Convex Slopes, Found on Paleoterraces, High Available Water Capacity
Bernow Fine Sandy Loam (10)	5 – 8	Well Drained		√	Convex Slopes, Found on Paleoterraces, High Available Water Capacity
Bernow Fine Sandy Loam (12)	3 – 8	Well Drained		√	Gullied, Convex Slopes, Found on Paleoterraces, High Available Water Capacity
Dela Fine Sandy Loam (28)	0 – 1	Moderately Well Drained	√		Occasionally Flooded, Linear Slopes, Found on Floodplains, Moderate Available Water Capacity
Dennis Loam (29)	1 – 3	Somewhat Poorly Drained		√	Convex Slopes, Found on Hillslopes, High Available Water Capacity
Dennis Loam (30)	3 – 5	Somewhat Poorly Drained		√	Eroded, Convex Slopes, Found on Hillslopes, High Available Water Capacity

Map Unit Name	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
Dennis and Eram Soils (31)	3 – 8	Somewhat Poorly Drained		√	Severely Eroded, Convex Slopes, Found on Hillslopes, High Available Water Capacity
Endsaw-Hector Complex (34)	3 – 5	Moderately Well Drained		√	Convex Slopes, Found on Hillslopes, Moderate Available Water Capacity
Endsaw-Hector Complex (36)	8 – 30	Moderately Well Drained		√	Convex Slopes, Found on Hillslopes, Moderate Available Water Capacity
Eram Clay Loam (38)	3 – 5	Moderately Well Drained		√	Convex Slopes, Found on Hillslopes, Low Available Water Capacity
Eram Clay Loam (39)	5 – 8	Moderately Well Drained		√	Convex Slopes, Found on Hillslopes, Low Available Water Capacity
Gowton Clay Loam (41)	0 – 1	Well Drained	√		Occasionally Flooded, Linear Slopes, Found on Floodplains, High Available Water Capacity
Guyton Silt Loam (42)	0 – 1	Poorly Drained	√		Occasionally Flooded, Linear Slopes, Found on Floodplains, High Available Water Capacity
Clearview Fine Sandy Loam (45)	3 – 5	Somewhat Poorly Drained		√	Convex Slopes, Found on Hillslopes, Low Available Water Capacity
Kaufman Clay (50)	0 – 1	Moderately Well Drained	√		Occasionally Flooded, Linear Slopes, Found on Floodplains, Moderate Available Water Capacity
Parsons Silt Loam (57)	0 – 1	Somewhat Poorly Drained		√	Linear and Convex Slopes, Found on Paleoterraces, High Available Water Capacity
Parsons Silt Loam (58)	1 – 3	Somewhat Poorly Drained		√	Linear and Convex Slopes, Found on Paleoterraces, High Available Water Capacity
Rexor Loam (61)	0 – 1	Moderately Well Drained	√		Occasionally Flooded, Linear Slopes, Found on Floodplains, High Available Water Capacity
Rexor-Dela Complex (62)	0 – 1	Moderately Well Drained	√		Frequently Flooded, Linear Slopes, Found on Floodplains, High Available Water Capacity

Environmental Study Footprint General Description and Vegetation Present

The project study area was primarily comprised of maintained highway ROW, mixed grass pastureland, row crop agricultural fields, upland forest, and riparian forest. Six (6) intermittent streams and 11 ephemeral drainages were identified in the project study area. Four (4) of the identified streams are mapped on the US Geological Survey (USGS) topographic quadrangle as intermittent streams. All identified streams are tributaries of Dry Boggy Creek and Muddy Boggy Creek (mapped perennial streams). One (1) forested wetland and two (2) emergent wetlands were delineated in the project study area. No ponds were identified in the project study area.

Mixed Grass Pasture: Dominant vegetation in this community type included Bermudagrass (*Cynodon dactylon*), tall fescue (*Schedonorus phoenix*), broomweed (*Amphiachyris dracunculoides*), and little bluestem.

Maintained Highway ROW and Residential Lawn: Dominant vegetation in this community type was Bermudagrass.

Agricultural Field: At the time of our site visit, dominant vegetation in this community type was wheat (*Triticum* spp.). This community type was used for row crop agriculture in past years but is most likely used currently for livestock grazing.

Upland Forest: Dominant vegetation in this community type included post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), winged elm (*Ulmus alata*), black hickory (*Carya texana*), and eastern red cedar (*Juniperus virginiana*).

Riparian Forest: Dominant vegetation in this community type included American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), honey locust (*Gleditsia triacanthos*), water oak (*Quercus nigra*), Shumard oak (*Quercus shumardii*), and bois d'arc (*Maclura pomifera*).

Forested Wetland: Dominant vegetation in this community type included green ash, black willow (*Salix nigra*), common persimmon (*Diospyros virginiana*), pecan (*Carya illinoensis*), and American elm.

Emergent Wetland: Dominant vegetation within this community type included swamp smartweed (*Polygonum hydropiperoides*), tall fescue (*Schedonorus phoenix*), and barnyardgrass (*Echinochloa crus-galli*).

WATERS AND WETLANDS EVALUATION

Data Sources Reviewed (list)

USGS 7.5 minute Quad	NWI Map	USACE Wetland Regional Supplement	Additional Resources Reviewed
Boggy Depot, Olney, Lehigh, and Tushka, OK	USFWS - NWI	Eastern Mountains and Piedmont Region	USDA NRCS Soil Survey

Wetlands and Ponds Summary Table

Number of Field Sites	Type of Wetland or Pond	Cowardin Classification	Potential Jurisdictional Status	Acres within Environmental Study Footprint
FS 1	Forested Wetland W1	PFO1A	Likely	0.007
FS 15	Emergent Wetland W2	PEM1A	Likely	0.07
FS 18	Emergent Wetland W3	PEM1A	Likely	0.004

Streams and Drainages Summary Table

Number of Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
FS 2	Ephemeral Drainage S1	Unmapped	Unlikely	< 0.1	88
FS 3	Intermittent Stream S2	Mapped intermittent	Likely	0.06	226
FS 4	Ephemeral Drainage S3	Unmapped	Unlikely	< 0.1	84
FS 5	Ephemeral Drainage S4	Unmapped	Unlikely	< 0.1	113
FS 6	Ephemeral Drainage S5	Unmapped	Unlikely	< 0.1	89
FS 7	Intermittent Stream S6	Unmapped	Likely	0.01	83
FS 8	Ephemeral Drainage S7	Unmapped	Unlikely	< 0.1	93
FS 9	Intermittent Stream S8	Unmapped	Likely	0.02	67
FS 10	Intermittent Stream S9 (Watson Creek)	Mapped intermittent	Likely	0.03	145
FS 11	Ephemeral Drainage S10	Unmapped	Unlikely	< 0.1	127
FS 12	Ephemeral Drainage S11	Unmapped	Unlikely	< 0.1	77
FS 13	Intermittent Stream S12	Unmapped	Likely	0.03	244
FS 14	Ephemeral Drainage S13	Unmapped	Unlikely	< 0.1	85

Number of Field Sites	Stream Name	USGS Mapped Status	Potential Jurisdictional Status	Acres within Environmental Study Footprint	Linear Feet within Environmental Study Footprint
FS 16	Ephemeral Drainage S14	Mapped intermittent	Likely	< 0.1	146
FS 17	Ephemeral Drainage S15	Mapped intermittent	Likely	< 0.1	113
FS 19	Ephemeral Drainage S16	Unmapped	Unlikely	< 0.1	127
FS 20	Ephemeral Drainage S17	Unmapped	Unlikely	< 0.1	74

Streams and other linear aquatic features

Intermittent Stream S2 (FS 3) is mapped on the USGS topographic quadrangle. Approximately 226 linear feet (0.06 acre) of this channel was located within the study area. This channel featured an observable OHWM approximately 10 to 14 feet wide and likely supports relatively permanent flow. Therefore, S2 will likely be regulated by the Corps under Section 404.

Intermittent Stream S6 (FS 7) is not mapped on the USGS topographic quadrangle; however at the time of the site visit, this feature could best be described as an intermittent channel. Approximately 83 linear feet (0.01 acre) of this channel was located within the study area. This channel featured an observable OHWM approximately 3 to 5 feet wide and likely supports relatively permanent flow. Therefore, S6 will likely be regulated by the Corps under Section 404.

Intermittent Stream S8 (FS 9) is not mapped on the USGS topographic quadrangle; however at the time of the site visit, this feature could best be described as an intermittent channel. Approximately 67 linear feet (0.02 acre) of this channel was located within the study area. This channel featured an observable OHWM approximately 8 to 12 feet wide and likely supports relatively permanent flow. Therefore, S8 will likely be regulated by the Corps under Section 404.

Intermittent Stream S9 (FS 10) is mapped on the USGS topographic quadrangle. Approximately 145 linear feet (0.03 acre) of this channel was located within the study area. This channel featured an observable OHWM approximately 8 to 12 feet wide and likely supports relatively permanent flow. Therefore, S9 will likely be regulated by the Corps under Section 404.

Intermittent Stream S12 (FS 13) is not mapped on the USGS topographic quadrangle; however at the time of the site visit, this feature could best be described as an intermittent channel. Approximately 244 linear feet (0.03 acre) of this channel was located within the study area. This channel featured an observable OHWM approximately 4 to 6 feet wide and likely supports relatively permanent flow. Therefore, S12 will likely be regulated by the Corps under Section 404.

Ephemeral Drainages S14 and S15 (FS 16 and FS 17) are mapped on the USGS topographic quadrangle as intermittent streams. However, based on site reconnaissance, these features did not exhibit discernable OHWMs and likely do not support relatively permanent flow, probably because of impoundments, diversion, and other disturbances in their watersheds. Therefore, S14 and S15 will potentially be regulated by the Corps under Section 404.

Ephemeral Drainages S1, S3, S4, S5, S7, S10, S11, S13, S16, and S17 (FS 2, FS 4, FS 5, FS 6, FS 8, FS 11, FS 12, FS 14, FS 19, and FS 20) are drainage features that are not mapped on the USGS topographic quadrangle. These features did not exhibit discernable OHWMs and likely do not support relatively permanent flow. Therefore, these ephemeral drainages will potentially, but not likely, be regulated by the Corps under Section 404.

Wetlands and ponds

Forested Wetland 1 (W1; FS 1) – 0.007 Acre (Sampling Point 2)

Dominant vegetation observed in Wetland 1 included black willow, green ash, cottonwood (*Populus deltoides*), and common persimmon (*Diospyros virginiana*). Awlfruit sedge (*Carex stipata*) was observed and common in the herbaceous layer. One-hundred percent (100%) of the dominant vegetation was facultative (FAC), facultative wetland (FACW), or obligate (OBL).

Sources of wetland hydrology are run-off from upland areas, periodic overbank flooding, and precipitation. Wetland hydrology is enhanced because the wetland is located near the confluence of Dry and Clear Boggy Creeks (located outside the study area to the west). In this area, the floodplain is poorly drained, wide, and contains numerous oxbows and cut-off channels. Primary hydrology indicators observed were water marks (B1), drift deposits (B3), and water stained leaves (B9). Secondary hydrology indicators observed included crayfish burrows (C8) and FAC-neutral test (D5).

Sampling Point 2 is located in the Kaufman clay map unit. This unit is rated as hydric on the National Hydric Soils List. The soil profile featured redox concentrations in approximately fifteen percent (15%) of the soil matrix and the hydric soil indicator observed was depleted matrix (F3).

Wetland 1 likely has a hydrologic connection for at least a portion of the year to Dry and Clear Boggy Creeks which are both likely jurisdictional channels (located outside the project study area). Therefore, Wetland 1 will likely be regulated by the Corps under Section 404.

Emergent Wetland 2 (W2; FS 15) – 0.07 Acre (Sampling Point 3)

Dominant vegetation observed in Wetland 2 was cursed buttercup (*Ranunculus sceleratus*). One hundred percent (100%) of the dominant vegetation was comprised of obligate (OBL) wetland plants.

Wetland 2 occurs adjacent to a mapped intermittent stream (S14) and downslope from a pond (located outside the study area). Sources of wetland hydrology are seep water from the pond, run-off from upland areas, and precipitation. Primary hydrology indicators observed were surface water (A1), saturation (A3), aquatic fauna (B13), and hydrogen sulfide odor (C1). The secondary hydrology indicator observed was geomorphic position (D2).

Sampling Point 3 is located in the Dennis loam map unit. This unit is not rated as hydric on the National Hydric Soils List. The sampling point was inundated at the time of the site visit; therefore, soil was assumed to be hydric based on the presence of indicators for the other two wetland criteria.

Wetland 2 is located immediately adjacent to a mapped intermittent stream that was functioning as ephemeral at the time of our site visit (i.e., did not have an ordinary high water mark (OHWM) and did not appear to support relatively permanent flow) (S14). The ephemeral channel is however mapped on the

topographic quadrangle as intermittent and therefore may be within Corps jurisdiction. The wetland is hydrologically connected to this channel. Because of this, Wetland 2 will likely be regulated by the Corps under Section 404.

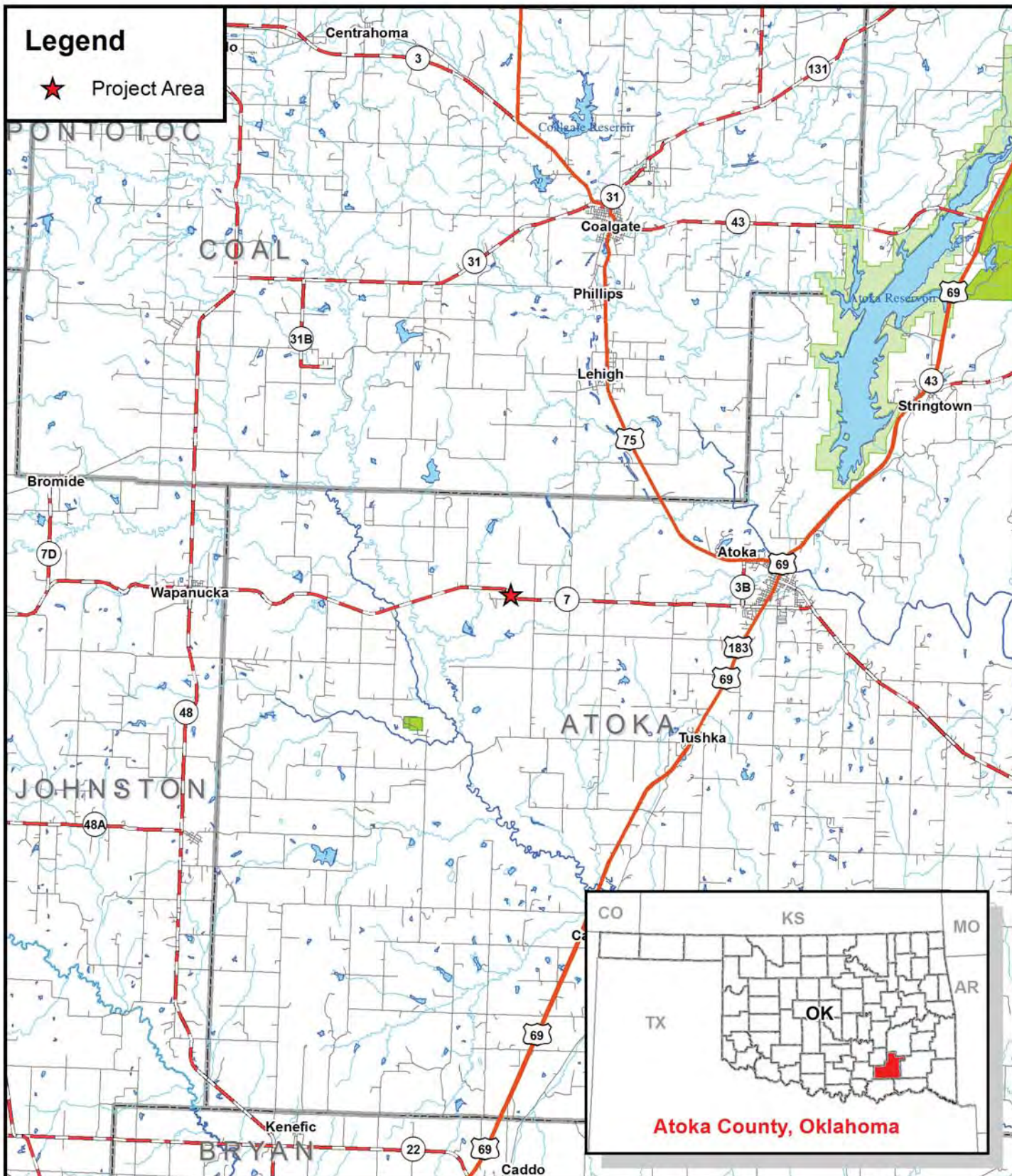
Emergent Wetland 3 (W3; FS 18) – 0.004 Acre (Sampling Point 5)

Dominant vegetation observed in Wetland 3 included swamp smartweed and tall fescue. One-hundred percent (100%) of the dominant vegetation was obligate (OBL).

This wetland is located in a depression adjacent to an ephemeral drainage (S15) and downslope from a pond (located outside the study area). Sources of wetland hydrology are seep water from the pond, run-off from upland areas, and precipitation. The primary hydrology indicator observed was saturation (A3) and the secondary hydrology indicators observed were geomorphic position (D2) and FAC-neutral test (D5).

Sampling Point 5 is located in the Dennis loam map unit. This unit is not rated as hydric on the National Hydric Soils List. The soil profile featured redox concentrations in twenty percent (20%) of the soil matrix and the hydric soil indicator observed was depleted matrix (F3).

Wetland 3 is located immediately adjacent to a mapped intermittent stream that was functioning as ephemeral at the time of our site visit (i.e., did not have an ordinary high water mark (OHWM) and did not appear to support relatively permanent flow) (S15). The ephemeral channel is however mapped on the topographic quadrangle as intermittent and therefore may be within Corps jurisdiction. The wetland is hydrologically connected to this channel. Because of this, Wetland 3 will likely be regulated by the Corps under Section 404.



Legend

★ Project Area

Prepared for:
Oklahoma Department of Transportation

Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 24 & 13, T2S R9E; Sections 18,
 17, 16, 15, 14, 13, 19, 21, 22 & 23, T2S R10E
 Atoka County, Oklahoma

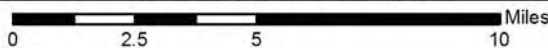


1:250,000

Figure 1: Vicinity Map

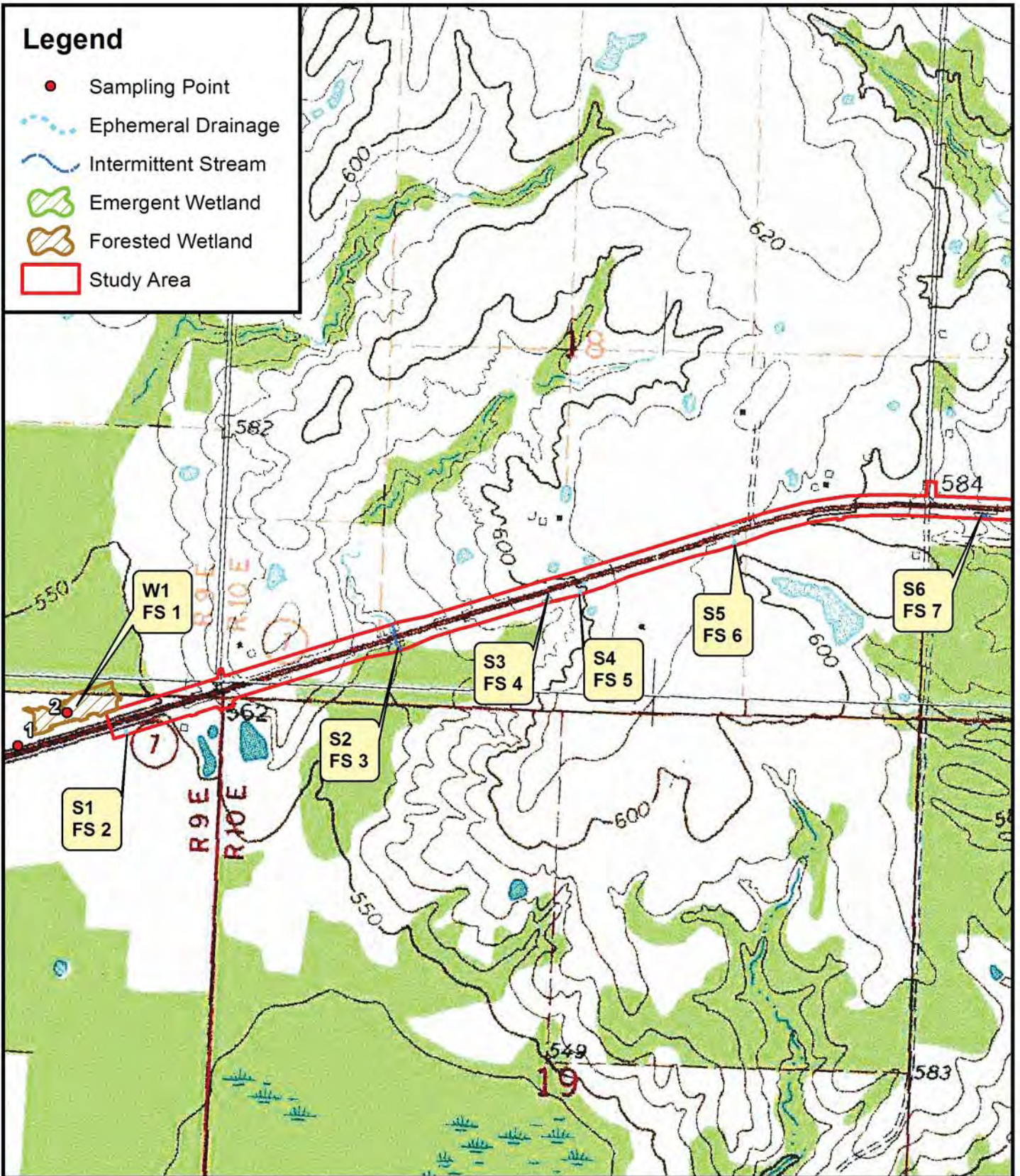
Source: University of Oklahoma
 Center for Spatial Analysis

Prepared by: A. Couch; June 12, 2015



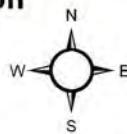
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- Emergent Wetland
- Forested Wetland
- Study Area



Prepared for:
Oklahoma Department of Transportation

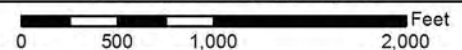
Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 24 & 13, T2S R9E; Sections 18, 17
 & 19, T2S R10E
 Atoka County, Oklahoma



1:12,000

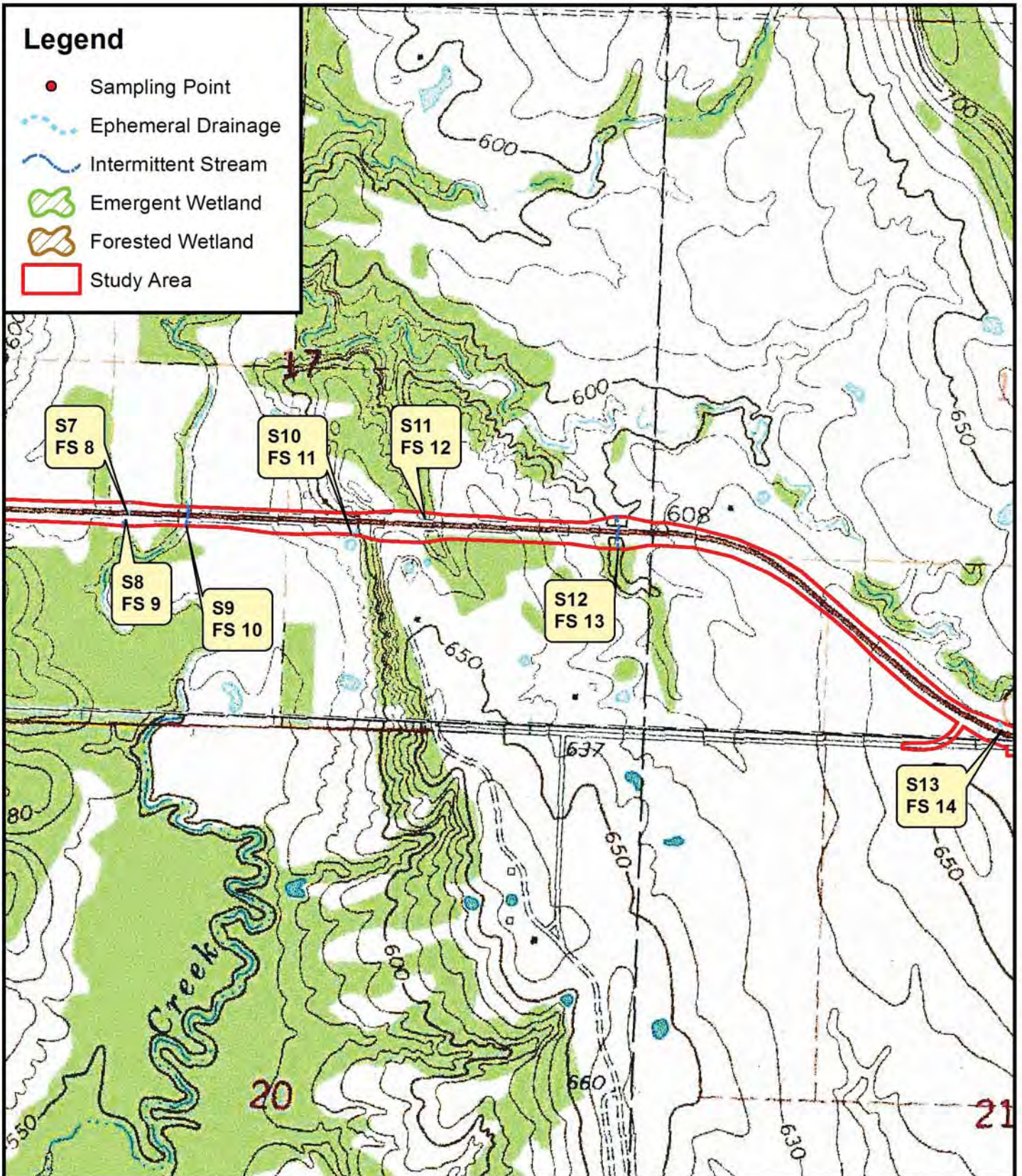
Figure 2.1: Site Map
 Source: USGS 7.5 Minute Series
 Boggy Depot and Olney, OK Quadrangles

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
 Updated by: A. Couch; June 12, 2015*



Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- Emergent Wetland
- Forested Wetland
- Study Area



Prepared for:
Oklahoma Department of Transportation

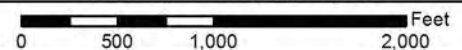
Subject Property:
State Highway 7 Project - West
J/P #24066(04)
Sections 17, 16 & 21, T2S R10E
Atoka County, Oklahoma



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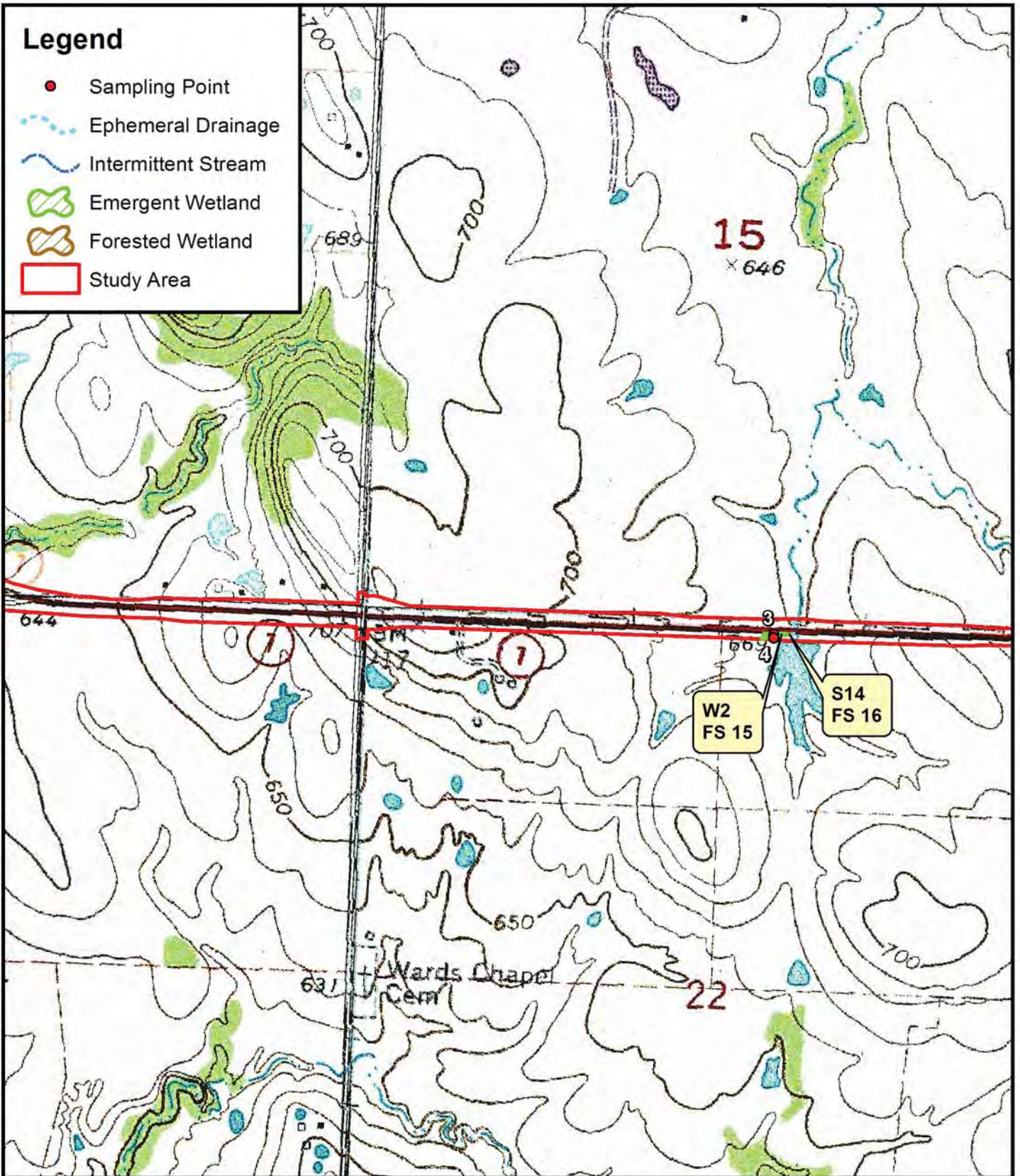
Figure 2.2: Site Map
Source: USGS 7.5 Minute Series
Boggy Depot and Olney, OK Quadrangles

Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 12, 2015



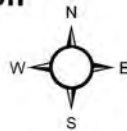
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- Emergent Wetland
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Prepared for:
Oklahoma Department of Transportation

Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 16, 15, 21 & 22, T2S R10E
 Atoka County, Oklahoma

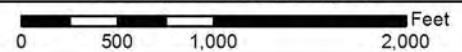


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Figure 2.3: Site Map

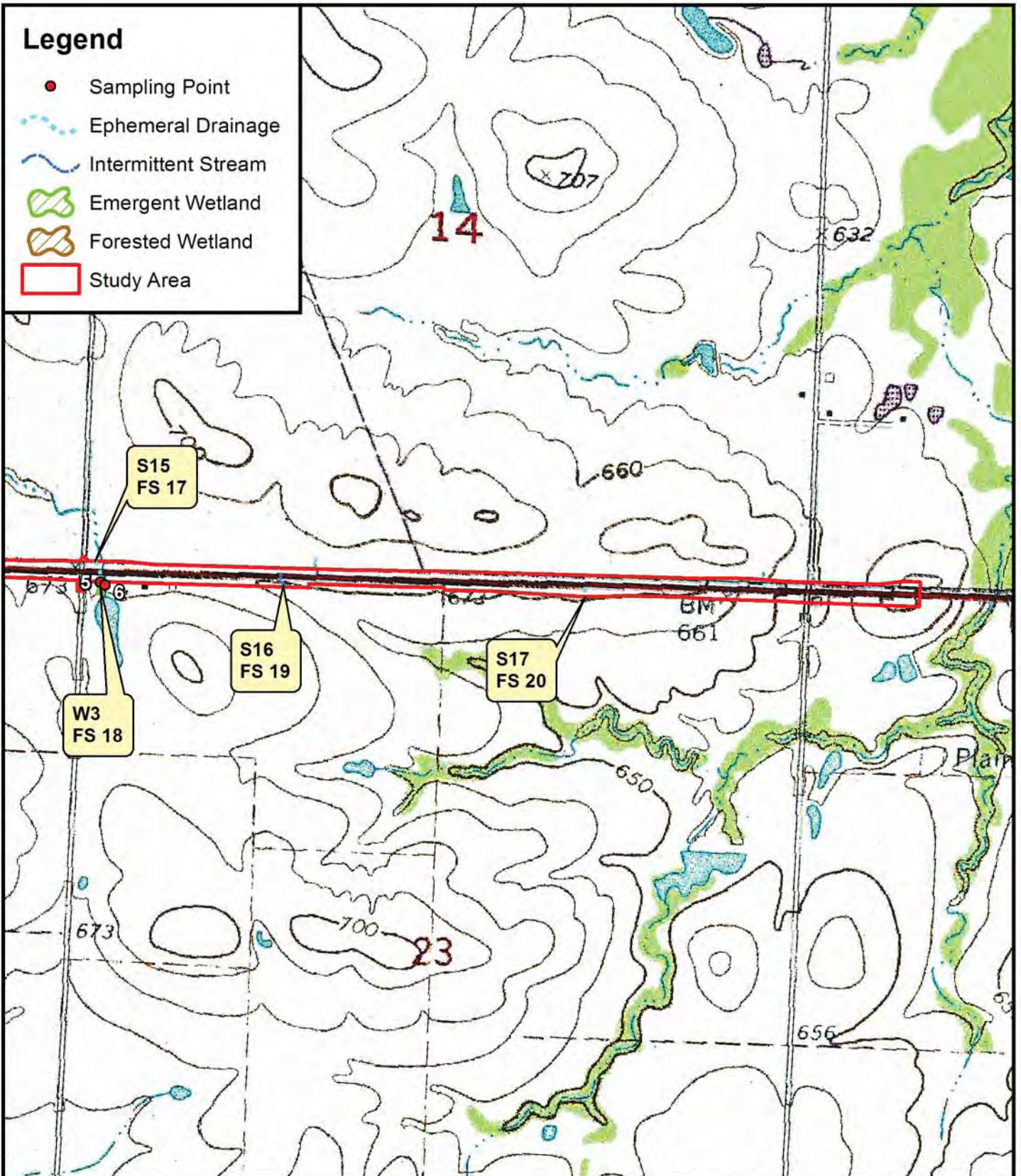
Source: USGS 7.5 Minute Series
 Boggy Depot, Olney, Lehigh and Tushka, OK
 Quadrangles

Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
 Updated by: A. Couch; June 12, 2015



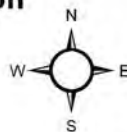
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- Emergent Wetland
- Forested Wetland
- Study Area



Prepared for:
Oklahoma Department of Transportation

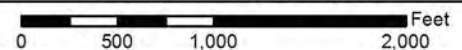
Subject Property:
State Highway 7 Project - West
J/P #24066(04)
Sections 15, 14, 13, 22, 23 & 24, T2S R10E
Atoka County, Oklahoma



1:12,000

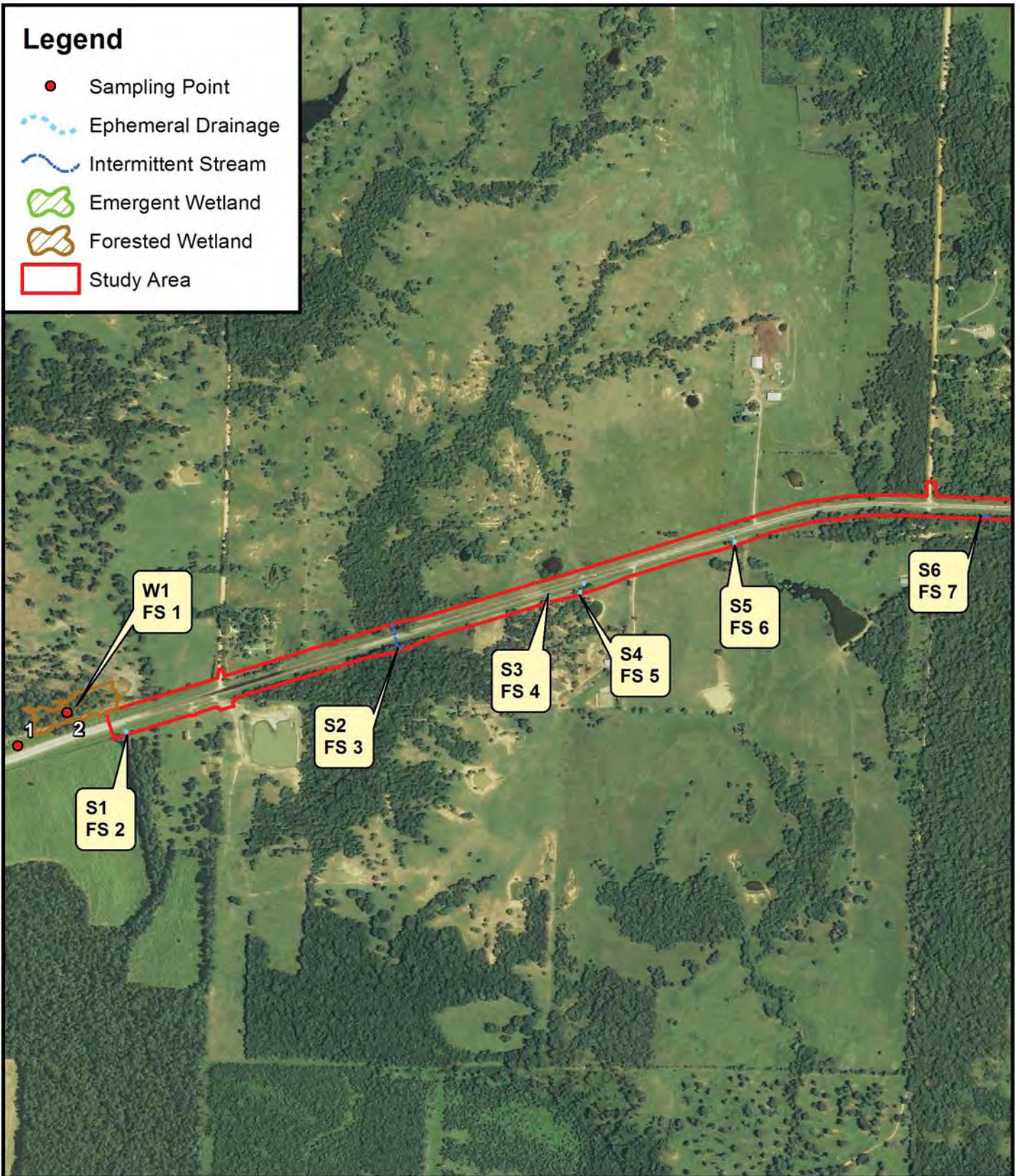
Figure 2.4: Site Map
Source: USGS 7.5 Minute Series
Lehigh and Tushka, OK Quadrangles

Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 12, 2015



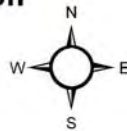
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- ▭ Emergent Wetland
- ▭ Forested Wetland
- ▭ Study Area



Prepared for:
Oklahoma Department of Transportation

Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 24 & 13, T2S R9E; Sections 18, 17
 & 19, T2S R10E
 Atoka County, Oklahoma

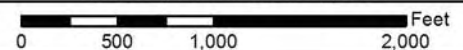


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Figure 3.1: Site Map

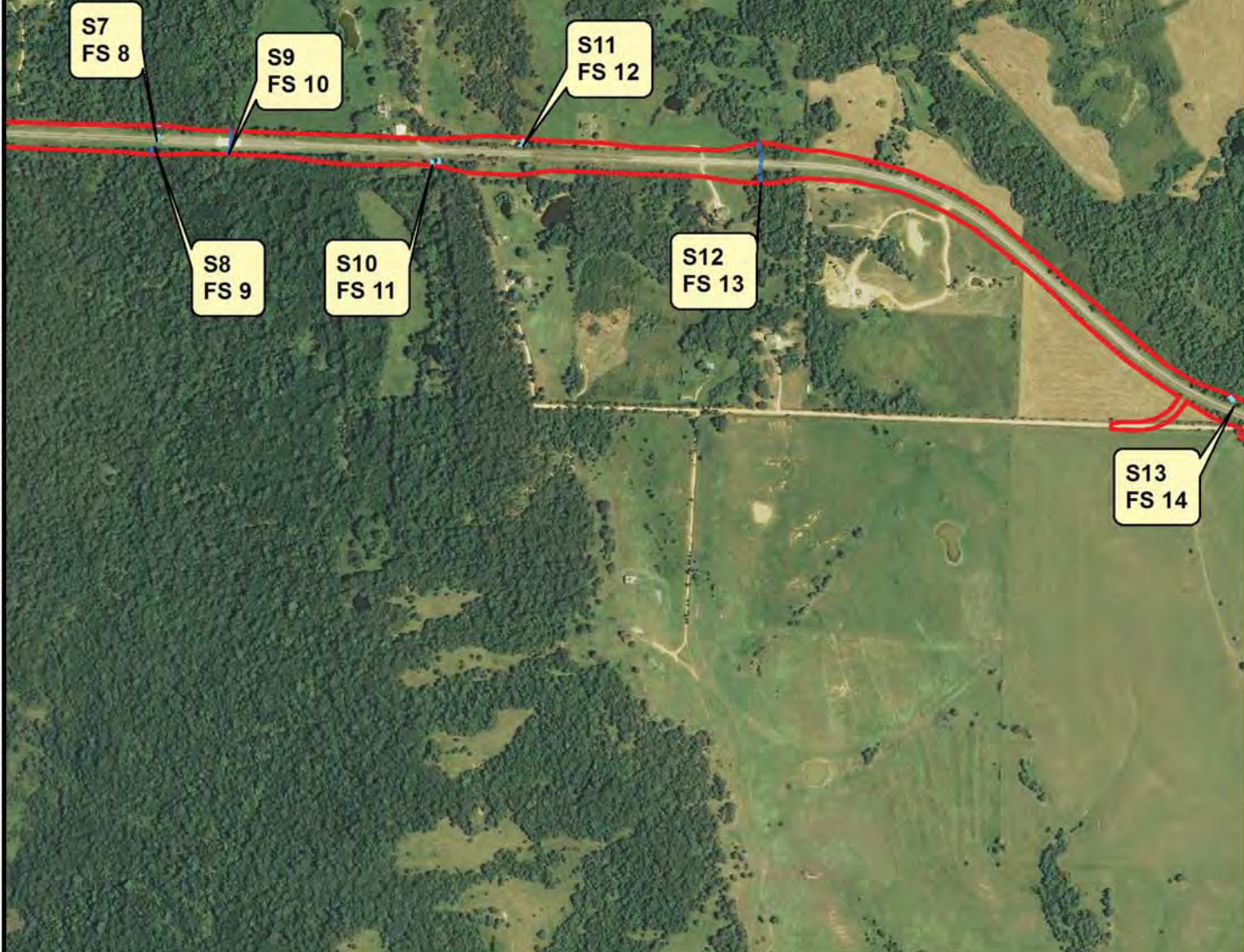
Source: 2013 USDA NAIP
 Atoka County, Oklahoma

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
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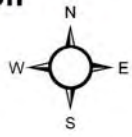
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- 🌿 Emergent Wetland
- 🌲 Forested Wetland
- ▭ Study Area



Prepared for:
Oklahoma Department of Transportation

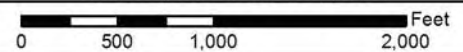
Subject Property:
State Highway 7 Project - West
J/P #24066(04)
Sections 17, 16 & 21, T2S R10E
Atoka County, Oklahoma



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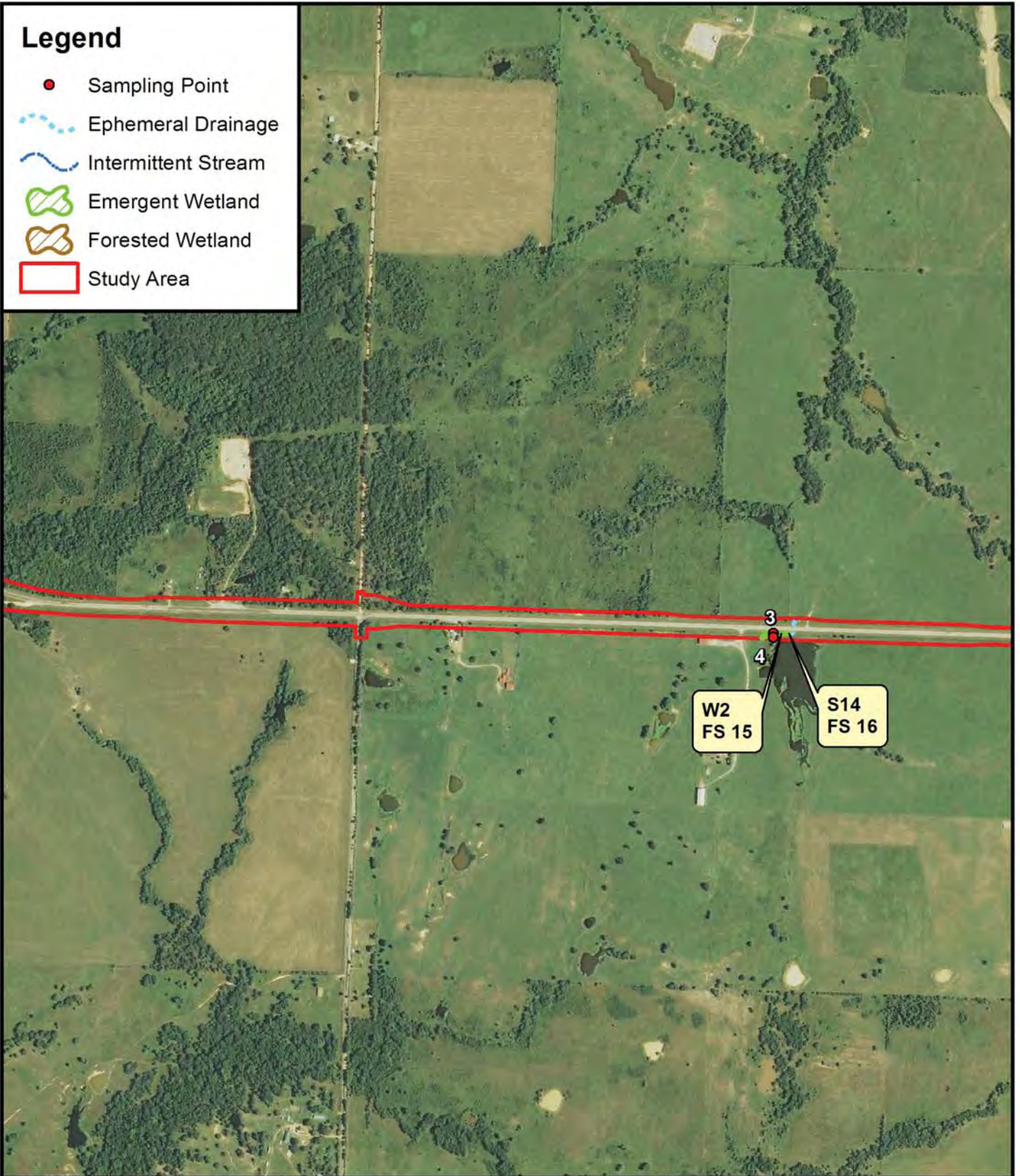
Figure 3.2: Site Map
Source: 2013 USDA NAIP
Atoka County, Oklahoma

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
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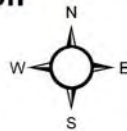
Legend

- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- 🌿 Emergent Wetland
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- ▭ Study Area



Prepared for:
Oklahoma Department of Transportation

Subject Property:
State Highway 7 Project - West
J/P #24066(04)
Sections 16, 15, 21 & 22, T2S R10E
Atoka County, Oklahoma

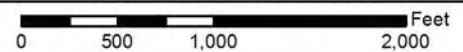


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Figure 3.3: Site Map

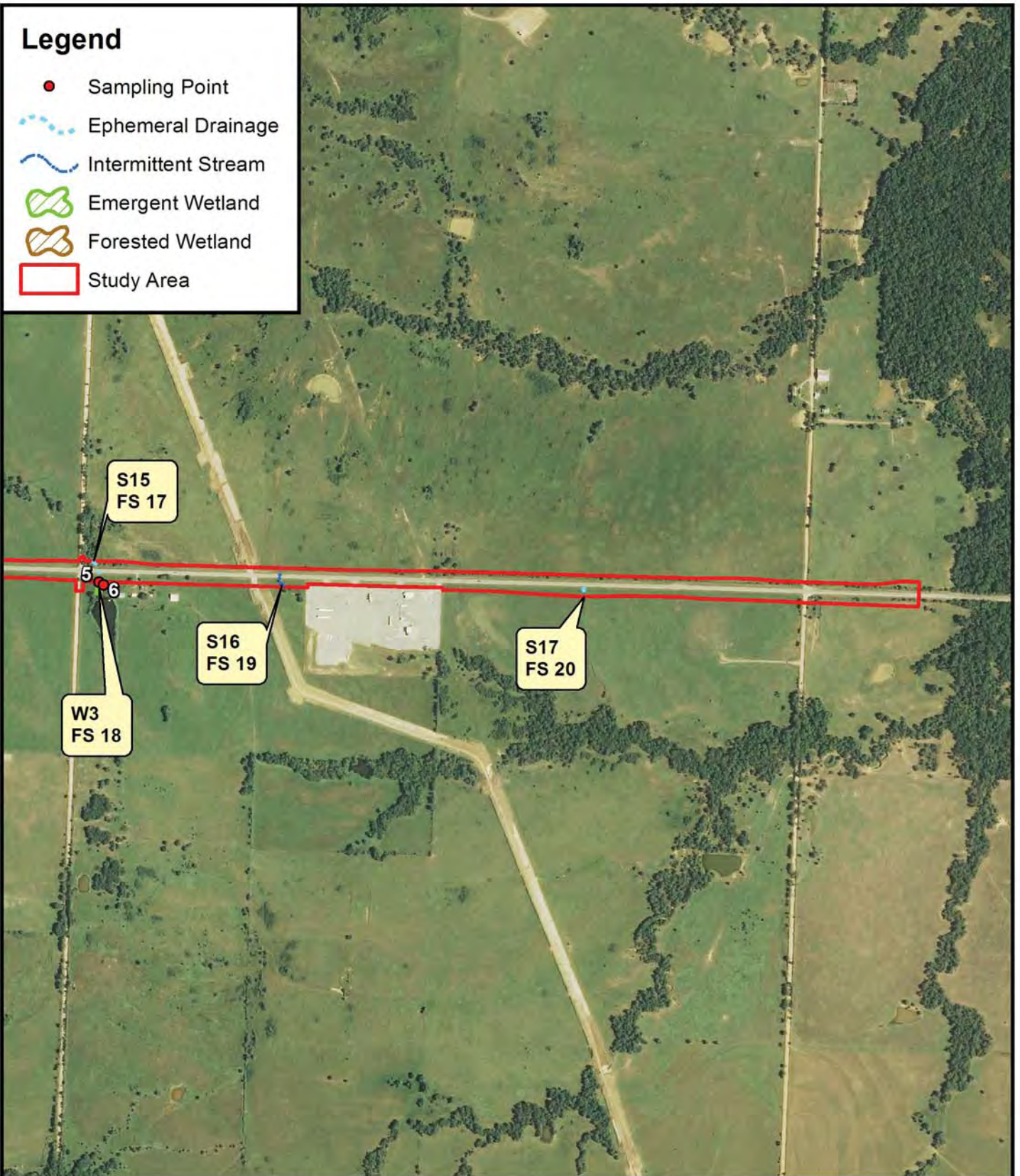
Source: 2013 USDA NAIP
Atoka County, Oklahoma

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 12, 2015*



Legend

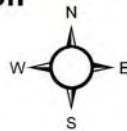
- Sampling Point
- ⋯ Ephemeral Drainage
- ~ Intermittent Stream
- 🌿 Emergent Wetland
- 🌲 Forested Wetland
- ▭ Study Area



Prepared for:
Oklahoma Department of Transportation

Subject Property:

State Highway 7 Project - West
J/P #24066(04)
Sections 15, 14, 13, 22, 23 & 24, T2S R10E
Atoka County, Oklahoma

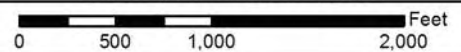


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Figure 3.4: Site Map

Source: 2013 USDA NAIP
Atoka County, Oklahoma

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 12, 2015*

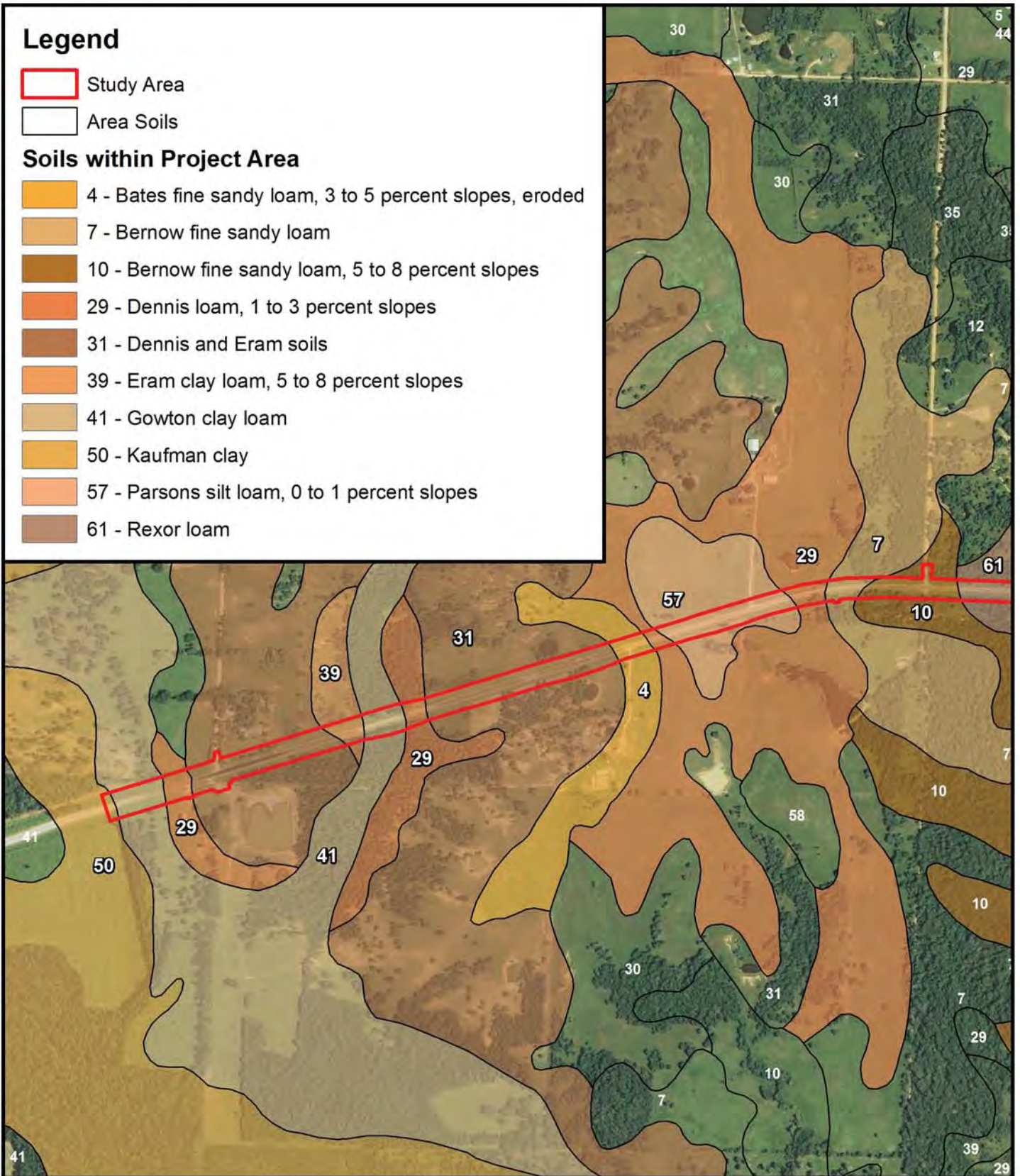


Legend

- Study Area
- Area Soils

Soils within Project Area

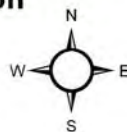
- 4 - Bates fine sandy loam, 3 to 5 percent slopes, eroded
- 7 - Bernow fine sandy loam
- 10 - Bernow fine sandy loam, 5 to 8 percent slopes
- 29 - Dennis loam, 1 to 3 percent slopes
- 31 - Dennis and Eram soils
- 39 - Eram clay loam, 5 to 8 percent slopes
- 41 - Gowton clay loam
- 50 - Kaufman clay
- 57 - Parsons silt loam, 0 to 1 percent slopes
- 61 - Rexor loam



Prepared for:
Oklahoma Department of Transportation

Subject Property:

State Highway 7 Project - West
 J/P #24066(04)
 Sections 24 & 13, T2S R9E; Sections 18, 17
 & 19, T2S R10E
 Atoka County, Oklahoma

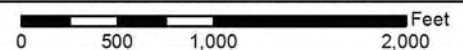


1:12,000

Figure 4.1: Soil Survey Map

Source: USDA NRCS Soil Survey Geographic Database
 Atoka County, Oklahoma; 2013 USDA NAIP

*Prepared by: F. Woolridge; November 16, 2011;
 Updated by: A. Couch; June 12, 2015*

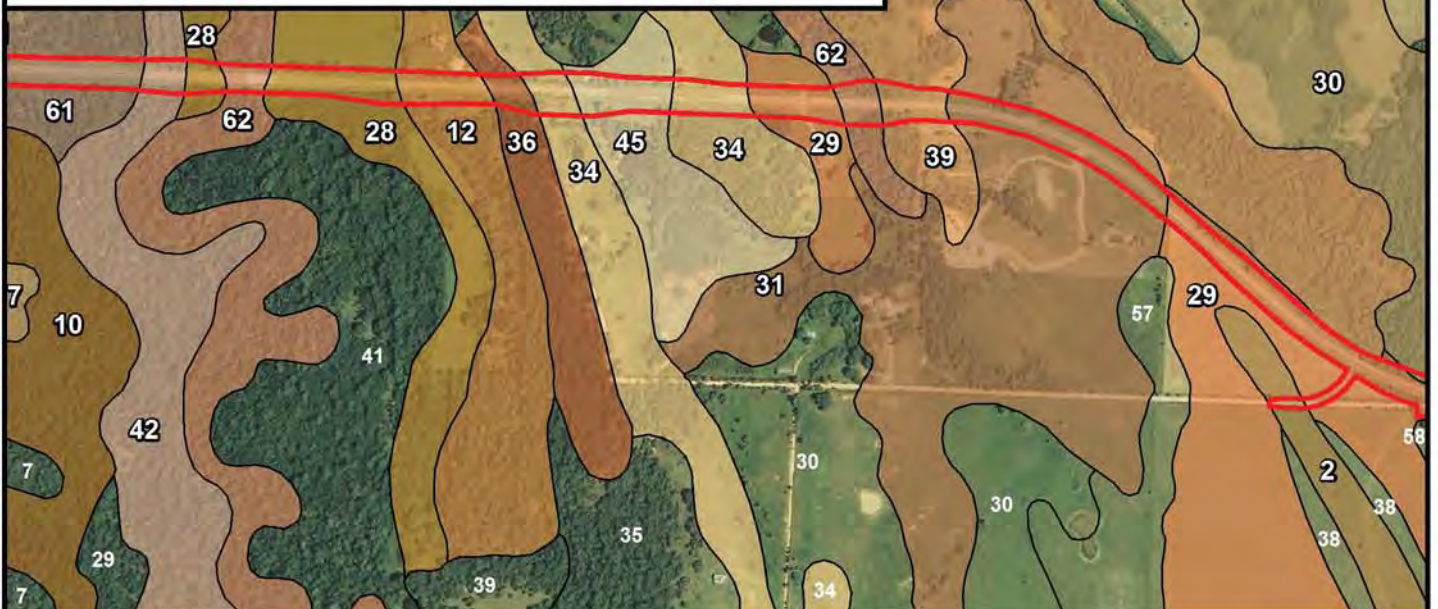
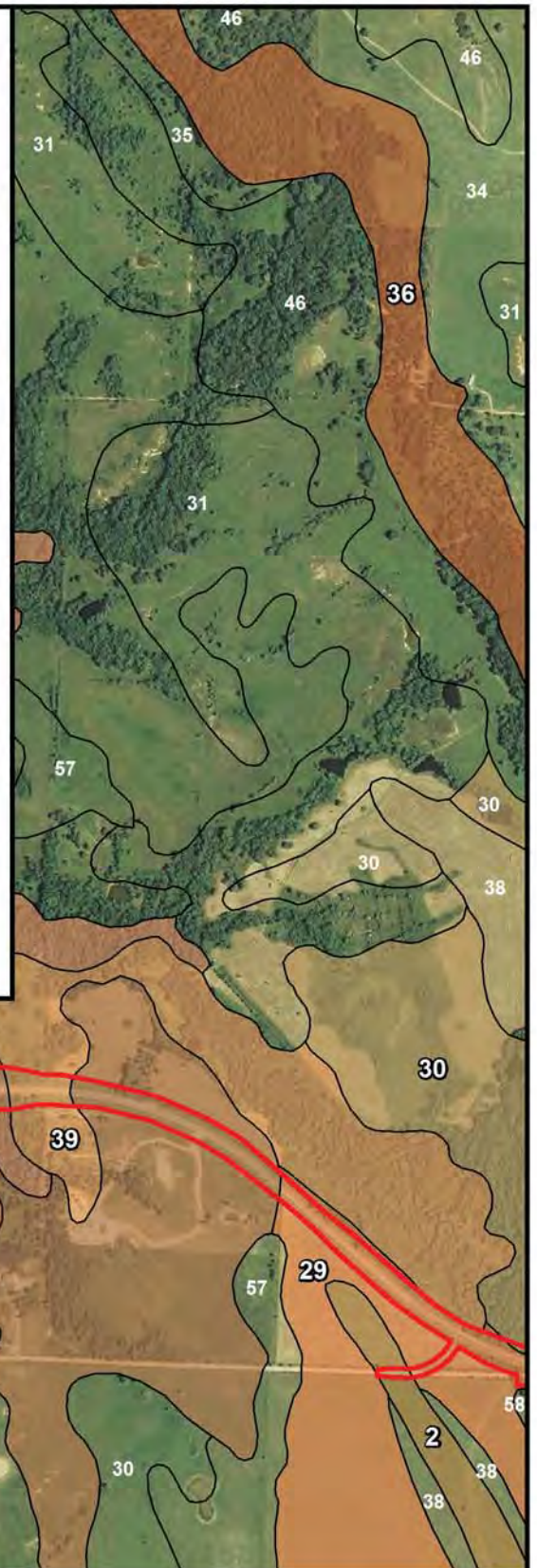


Legend

- Study Area
- Area Soils

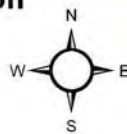
Soils within Project Area

- 2 - Bates fine sandy loam, 1 to 3 percent slopes
- 7 - Bernow fine sandy loam
- 10 - Bernow fine sandy loam, 5 to 8 percent slopes
- 12 - Bernow fine sandy loam, 3 to 8 percent slopes, gullied
- 28 - Dela fine sandy loam
- 29 - Dennis loam, 1 to 3 percent slopes
- 30 - Dennis loam, 3 to 5 percent slopes
- 31 - Dennis and Eram soils
- 34 - Endsaw-Hector complex, 3 to 5 percent slopes
- 36 - Endsaw-Hector complex, 8 to 30 percent slopes
- 39 - Eram clay loam, 5 to 8 percent slopes
- 42 - Guyton silt loam
- 45 - Clearview fine sandy loam
- 61 - Rexor loam
- 62 - Rexor-Dela complex



Prepared for:
Oklahoma Department of Transportation

Subject Property:
State Highway 7 Project - West
J/P #24066(04)
Sections 17, 16 & 21, T2S R10E
Atoka County, Oklahoma

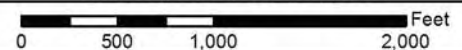


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Figure 4.2: Soil Survey Map

Source: USDA NRCS Soil Survey Geographic Database
Atoka County, Oklahoma; 2013 USDA NAIP












Prepared by: F. Woolridge; November 16, 2011;
Updated by: A. Couch; June 12, 2015

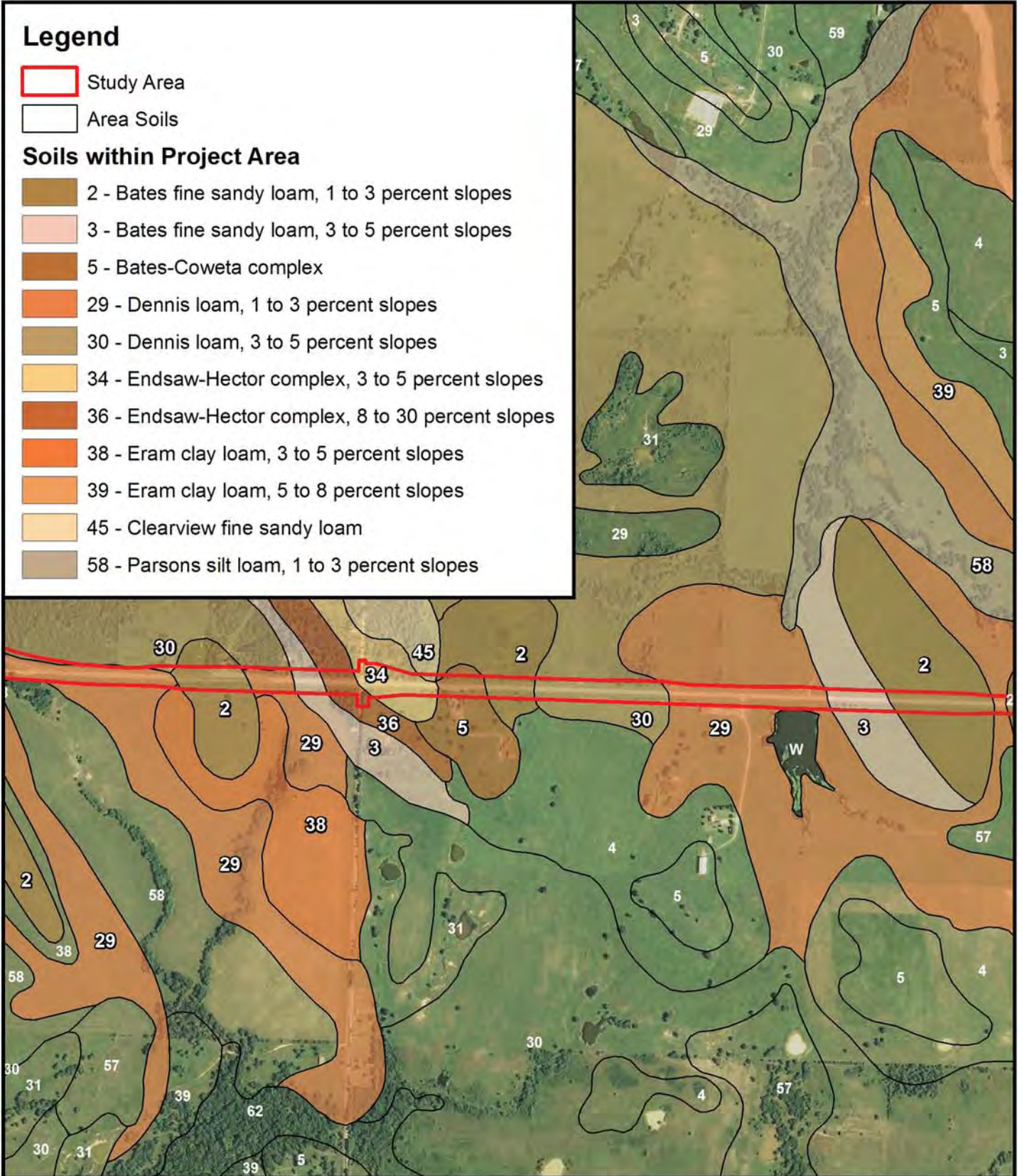


Legend

-  Study Area
-  Area Soils

Soils within Project Area

-  2 - Bates fine sandy loam, 1 to 3 percent slopes
-  3 - Bates fine sandy loam, 3 to 5 percent slopes
-  5 - Bates-Coweta complex
-  29 - Dennis loam, 1 to 3 percent slopes
-  30 - Dennis loam, 3 to 5 percent slopes
-  34 - Endsaw-Hector complex, 3 to 5 percent slopes
-  36 - Endsaw-Hector complex, 8 to 30 percent slopes
-  38 - Eram clay loam, 3 to 5 percent slopes
-  39 - Eram clay loam, 5 to 8 percent slopes
-  45 - Clearview fine sandy loam
-  58 - Parsons silt loam, 1 to 3 percent slopes



Prepared for:
Oklahoma Department of Transportation

Subject Property:
 State Highway 7 Project - West
 J/P #24066(04)
 Sections 16, 15, 21 & 22, T2S R10E
 Atoka County, Oklahoma

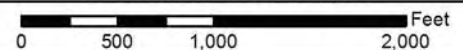


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
Figure 4.3: Soil Survey Map

Source: USDA NRCS Soil Survey Geographic Database
 Atoka County, Oklahoma; 2013 USDA NAIP






Prepared by: F. Woolridge; November 16, 2011;
 Updated by: A. Couch; June 12, 2015

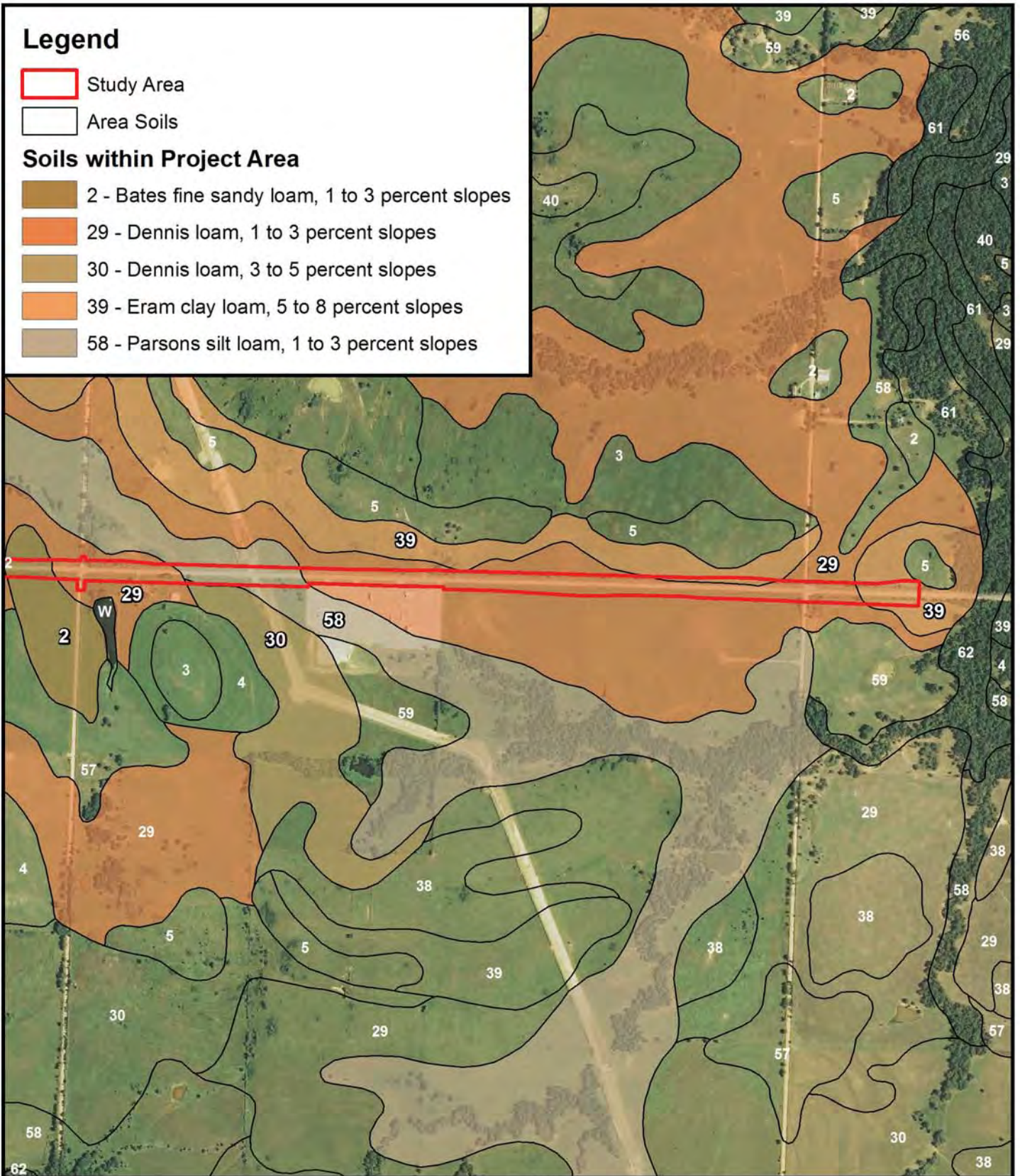


Legend

-  Study Area
-  Area Soils

Soils within Project Area

-  2 - Bates fine sandy loam, 1 to 3 percent slopes
-  29 - Dennis loam, 1 to 3 percent slopes
-  30 - Dennis loam, 3 to 5 percent slopes
-  39 - Eram clay loam, 5 to 8 percent slopes
-  58 - Parsons silt loam, 1 to 3 percent slopes



Prepared for:
Oklahoma Department of Transportation

Subject Property:
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 Atoka County, Oklahoma

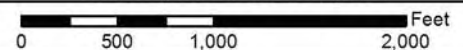


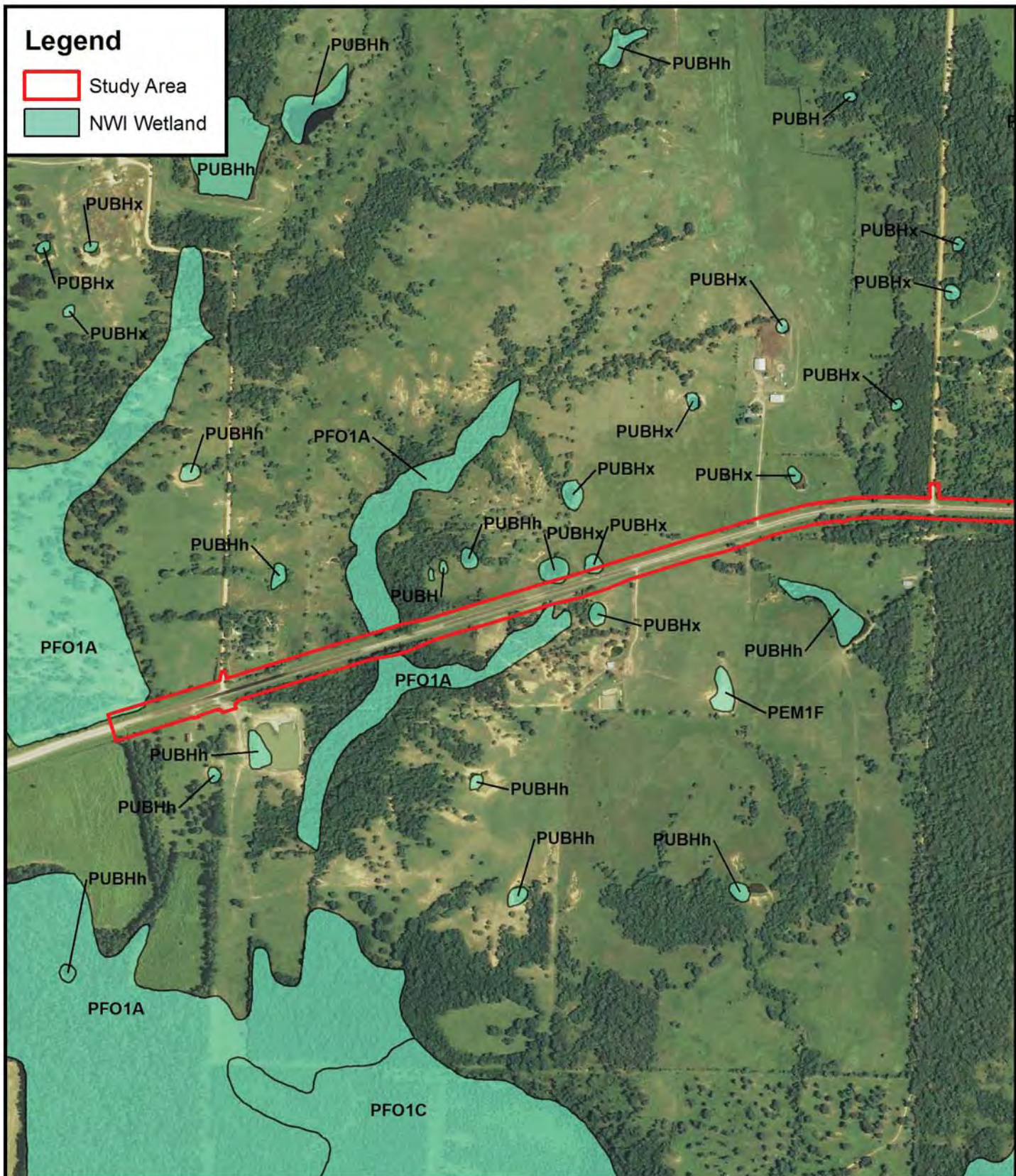
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Figure 4.4: Soil Survey Map

Source: USDA NRCS Soil Survey Geographic Database
 Atoka County, Oklahoma; 2013 USDA NAIP

*Prepared by: F. Woolridge; November 16, 2011;
 Updated by: A. Couch; June 11, 2015*

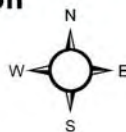




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Subject Property:

State Highway 7 Project - West
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 Sections 24 & 13, T2S R9E; Sections 18, 17
 & 19, T2S R10E
 Atoka County, Oklahoma

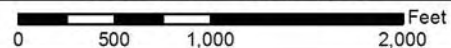


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Figure 5.1: NWI Map

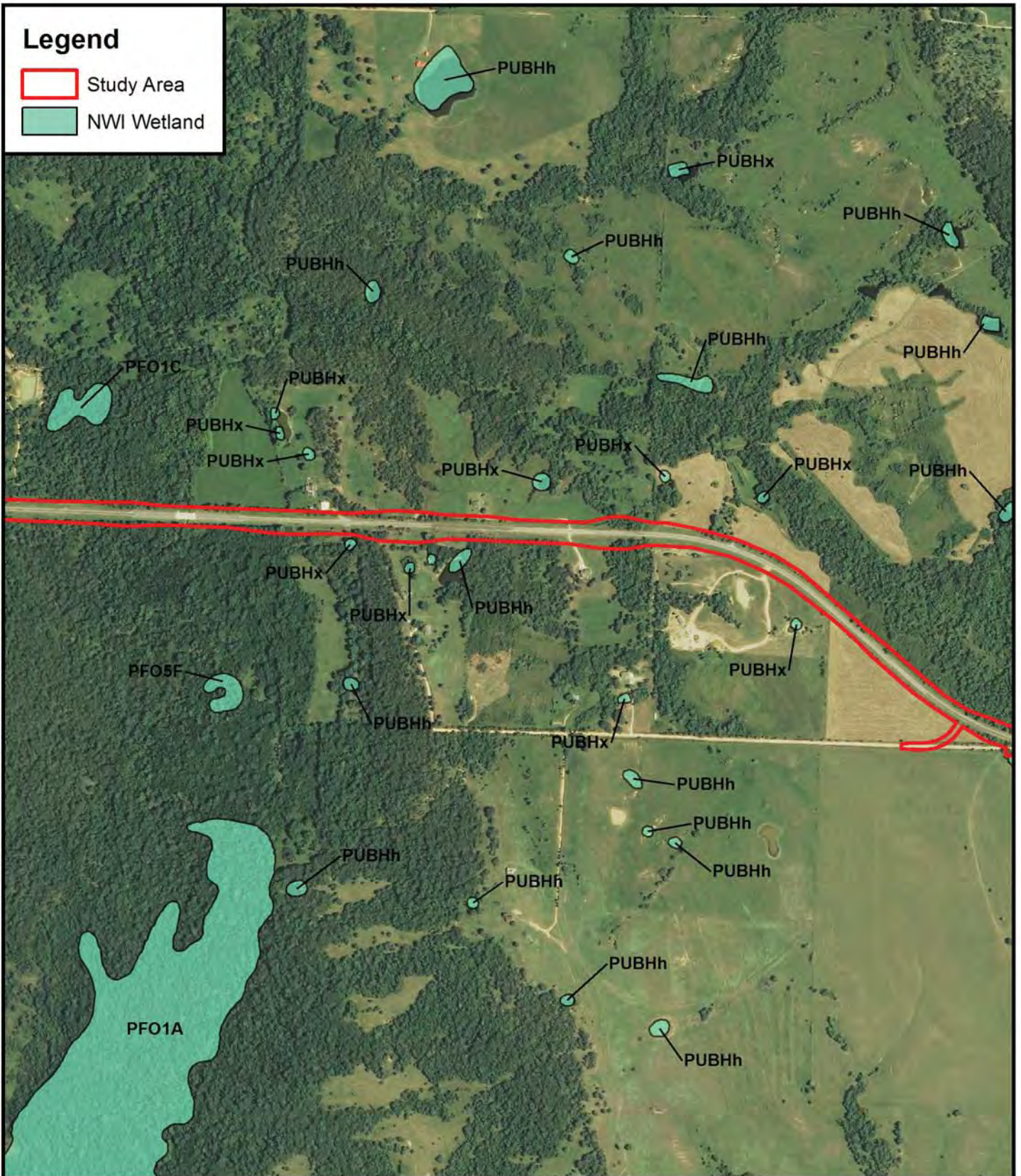
Source: US Fish and Wildlife Services - NWI
 Boggy Depot and Olney, OK Quadrangles; 2013 USDA
 NAIP

Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
 Updated by: A. Couch; June 12, 2015



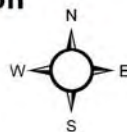
Legend

-  Study Area
-  NWI Wetland



Prepared for:
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Subject Property:
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Atoka County, Oklahoma

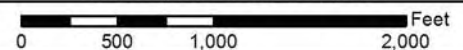


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Figure 5.2: NWI Map

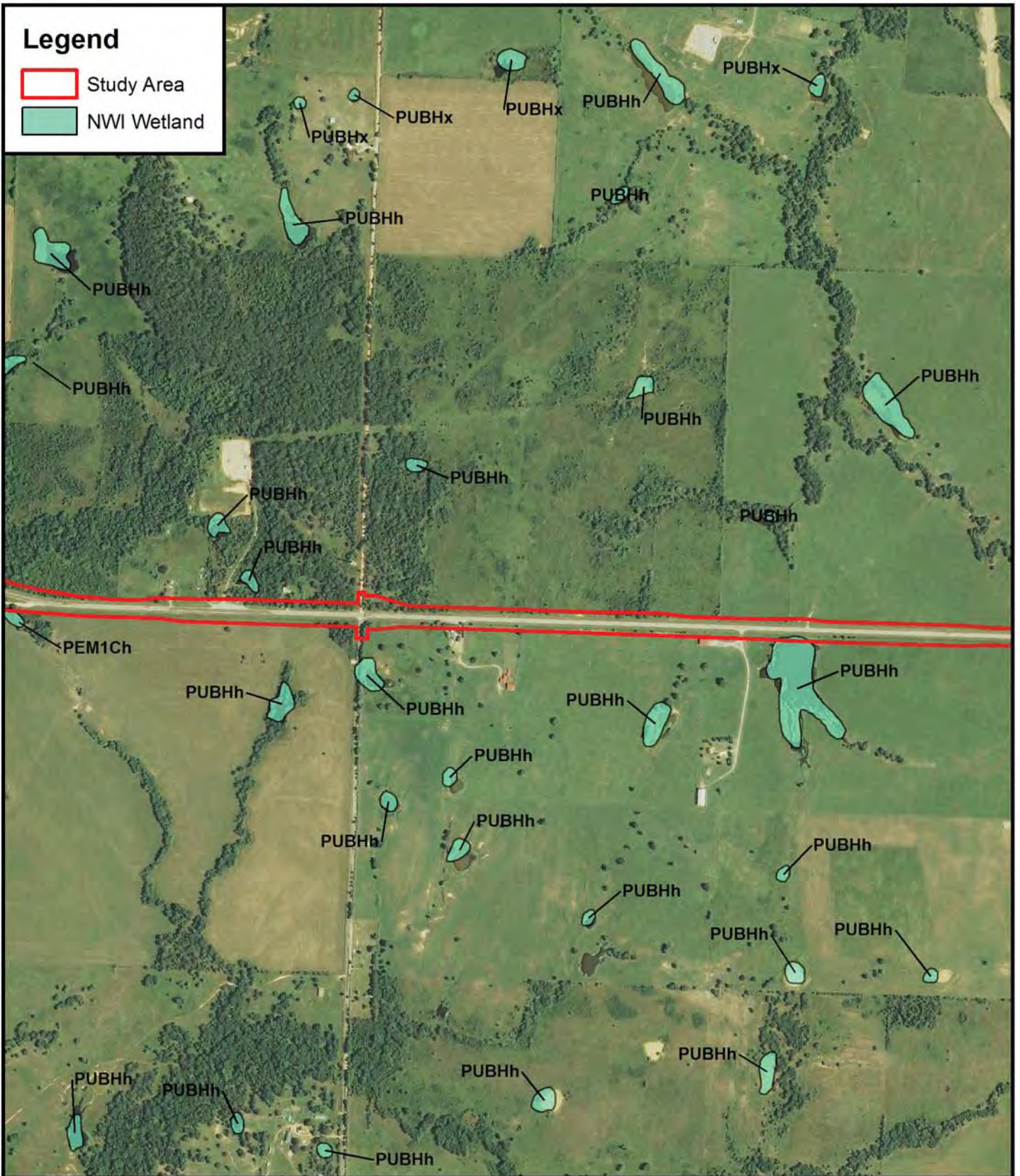
Source: US Fish and Wildlife Services - NWI
Boggy Depot and Olney, OK Quadrangles; 2013 USDA
NAIP

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
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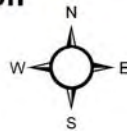
Legend

-  Study Area
-  NWI Wetland



Prepared for:
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Subject Property:
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Sections 16, 15, 21 & 22, T2S R10E
Atoka County, Oklahoma

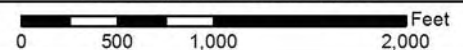


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Figure 5.3: NWI Map

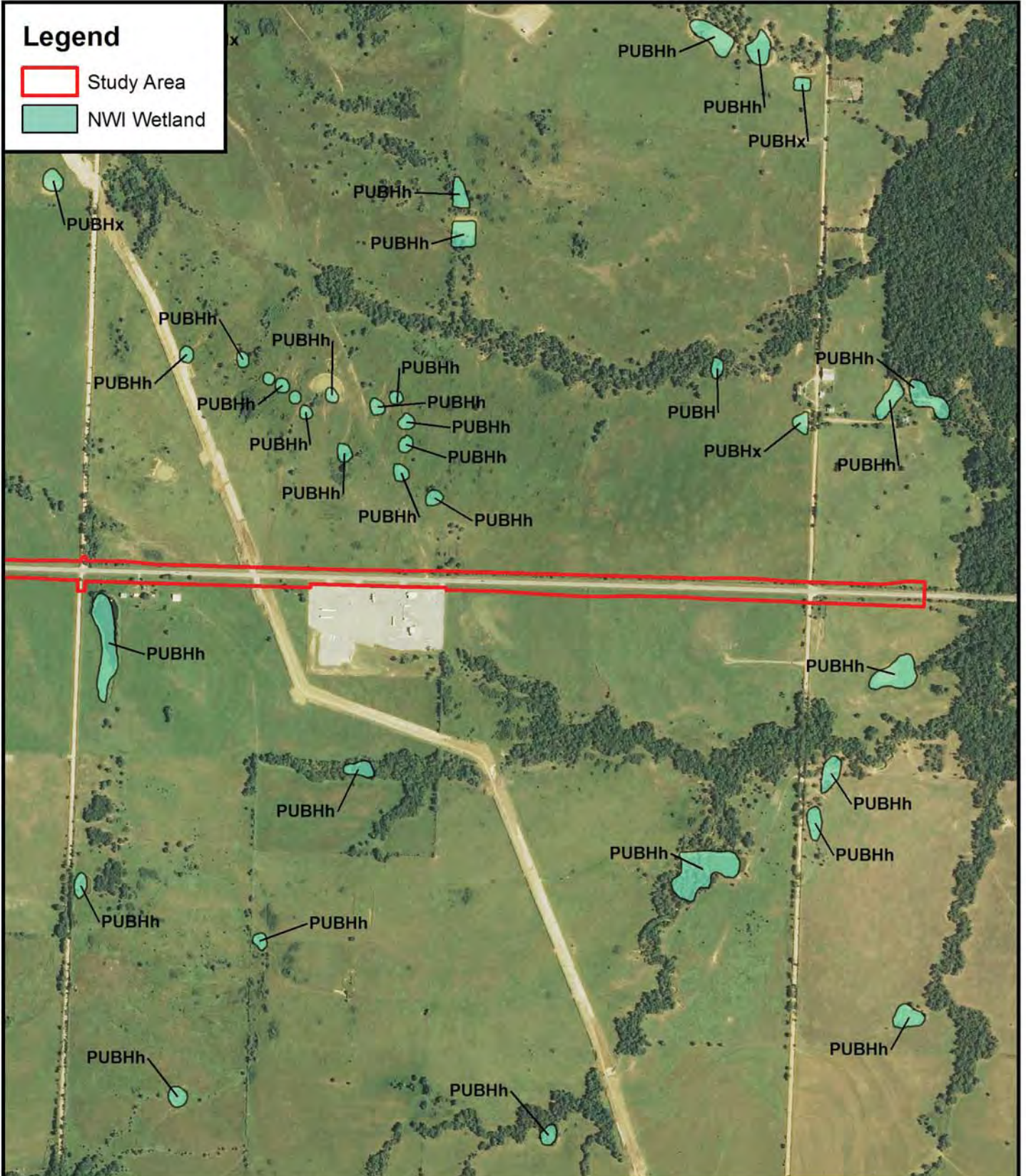
Source: US Fish and Wildlife Services - NWI
Boggy Depot, Olney, Lehigh and Tushka, OK
Quadrangles; 2013 USDA NAIP

Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 11, 2015



Legend

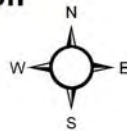
-  Study Area
-  NWI Wetland



Prepared for:
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Atoka County, Oklahoma

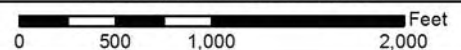


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Figure 5.4: NWI Map

Source: US Fish and Wildlife Services - NWI
Lehigh and Tushka, OK Quadrangles; 2013 USDA NAIP

*Prepared by: F. Woolridge, D. Williams, R. Carroll; November 16, 2011;
Updated by: A. Couch; June 11, 2015*



REPRESENTATIVE SITE PHOTOGRAPHS



Photograph 1:
Mixed Grass Pasture Community Type



Photograph 2:
Maintained Highway ROW Community Type



Photograph 3:
Row Crop Agricultural Field Community Type



Photograph 4:
Upland Forest Community Type



Photograph 5:
Riparian Forest Community Type



Photograph 6:
Forested Wetland Community Type / W1

REPRESENTATIVE SITE PHOTOGRAPHS



Photograph 7:

Emergent Wetland Community Type / W2



Photograph 8:

Emergent Wetland 3 (W3)



Photograph 9:

Intermittent Stream S2



Photograph 10:

Intermittent Stream S6



Photograph 11:

Intermittent Stream S8



Photograph 12:

Intermittent Stream S9

REPRESENTATIVE SITE PHOTOGRAPHS



Photograph 13:
Intermittent Stream S12



Photograph 14:
Ephemeral Drainage S15



Photograph 15:
Ephemeral Drainage S3



Photograph 16:
Ephemeral Drainage S5



Photograph 17:
Ephemeral Drainage S13



Photograph 18:
Ephemeral Drainage S16

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 10/03/2011
 Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 1
 Investigator(s): W. A. Ward, B. Barnes Section, Township, Range: Section 24, T2S, R9E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat: 34.373673 Long: -96.307334 Datum: NAD83
 Soil Map Unit Name: Gowton Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Indicators were not observed for any of the three wetland criteria. Project area was experiencing drought conditions at the time of the site visit.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators of wetland hydrology were not observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 1

<u>Tree Stratum</u> (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Shrub Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5' radius</u>)	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Cynodon dactylon</u>	90	Yes	FACU	
2. <u>Sorghum halepense</u>	10	No	FACU	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30' radius</u>)	100	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				

Remarks:

Indicators of hydrophytic vegetation were not observed.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 4/3	100	---	---	---	---	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Indicators of hydric soil were not observed.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 10/03/2011
 Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 2
 Investigator(s): W. A. Ward, B. Barnes Section, Township, Range: Section 24, T2S, R9E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR or MLRA): LRR N Lat: 34.374369 Long: -96.306167 Datum: NAD83
 Soil Map Unit Name: Kaufman Clay NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Indicators for all three wetland criteria were observed. Project area was experiencing drought conditions at the time of the site visit.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td><input checked="" type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____																																		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																			
Remarks: Three primary indicators and two secondary indicators of wetland hydrology were observed.																																			

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 2

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30' radius</u>)					
1. <u>Fraxinus pennsylvanica</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>		
3. <u>Populus deltoides</u>	<u>5</u>	<u>No</u>	<u>FAC</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>65</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling Stratum (Plot size: <u>15' radius</u>)					
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>		
2. <u>Salix nigra</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>		
3. <u>Diospyros virginiana</u>	<u>5</u>	<u>No</u>	<u>FAC</u>		
4. <u>Ulmus americana</u>	<u>2</u>	<u>No</u>	<u>FAC</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>42</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
Shrub Stratum (Plot size: <u>15' radius</u>)					
1. <u>Ilex decidua</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>5</u> = Total Cover				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.	
Herb Stratum (Plot size: <u>5' radius</u>)					
1. <u>Carex stipata</u>	<u>90</u>	<u>Yes</u>	<u>OBL</u>		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
<u>90</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
Woody Vine Stratum (Plot size: <u>30' radius</u>)					
1. <u>Ampelopsis arborea</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>		
2. <u>Toxicodendron radicans</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>7</u> = Total Cover					

Remarks:

Indicators of hydrophytic vegetation were observed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 3/1	85	7.5YR 5/8	15	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

Indicators of hydric soil were observed.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 5/5/2015
 Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 3
 Investigator(s): D. X Williams and J. P. Schatte Section, Township, Range: Section 22, T2S, R10E
 Landform (hillslope, terrace, etc.): Borrow Ditch Local relief (concave, convex, none): Concave Slope (%): 0 - 1
 Subregion (LRR or MLRA): LRR N Lat: 34.374807 Long: -96.240319 Datum: NAD83
 Soil Map Unit Name: Dennis Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Indicators for all three wetland criteria were observed.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1 - 2"</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Four primary indicators and one secondary indicator of wetland hydrology were observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 3

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30' radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Sapling Stratum (Plot size: <u>15' radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Shrub Stratum (Plot size: <u>15' radius</u>)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Ranunculus sceleratus</u>	<u>65</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Rumex crispus</u>	<u>15</u>	<u>No</u>	<u>FAC</u>	
3. <u>Polygonum pensylvanicum</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
4. <u>Schedonorus phoenix</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
5. <u>Carex stipata</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30' radius</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				

Remarks:

Indicators of hydrophytic vegetation were observed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
								NO SOIL PIT DUG

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

The sampling point was inundated at the time of the site visit; therefore, soil was assumed to be hydric based on the presence of indicators for the other two wetland criteria.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 5/5/2015
 Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 4
 Investigator(s): D. X Williams and J. P. Schatte Section, Township, Range: Section 22, T2S, R10E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1 - 2
 Subregion (LRR or MLRA): LRR N Lat: 34.374733 Long: -96.240324 Datum: NAD83
 Soil Map Unit Name: Dennis Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Indicators were not observed for any of the three wetland criteria.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators of wetland hydrology were not observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 4

<u>Tree Stratum</u> (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Shrub Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5' radius</u>)	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Cynodon dactylon</u>	80	Yes	FACU	
2. <u>Schedonorus phoenix</u>	15	No	FACU	
3. <u>Rumex crispus</u>	5	No	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30' radius</u>)	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				

Remarks:

Indicators of hydrophytic vegetation were not observed.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 10/04/2011
Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 5
Investigator(s): W. A. Ward, B. Barnes Section, Township, Range: Section 23, T2S, R10E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 34.374683 Long: -96.232395 Datum: NAD83
Soil Map Unit Name: Dennis Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: Indicators for all three wetland criteria were observed. Project area was experiencing drought conditions at the time of the site visit.	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
<u>X</u> Saturation (A3)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	<u>X</u> Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Shallow Aquitard (D3)
___ Water-Stained Leaves (B9)	___ Microtopographic Relief (D4)
___ Aquatic Fauna (B13)	<u>X</u> FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____	Wetland Hydrology Present? Yes <u>X</u> No _____
Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____	
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>10"</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

One primary indicator and two secondary indicators of wetland hydrology were observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 5

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: <u>15' radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Shrub Stratum (Plot size: <u>15' radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: <u>5' radius</u>)				
1. <u>Polygonum hydropiperoides</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Schedonorus phoenix</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u>Echinochloa crus-galli</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30' radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				

Remarks:

Indicators of hydrophytic vegetation were observed.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 3/1	80	2.5YR 4/8	20	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	(MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	---

Remarks:

Indicators of hydric soil were observed.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: SH7 - WEST J/P# 24066(04) City/County: Atoka County Sampling Date: 10/05/2011
 Applicant/Owner: Oklahoma Department of Transportation State: OK Sampling Point: 6
 Investigator(s): W. A. Ward, B. Barnes Section, Township, Range: Section 23, T2S, R10E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat: 34.374638 Long: -96.232283 Datum: NAD83
 Soil Map Unit Name: Dennis Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Indicators were not observed for any of the three wetland criteria. Project area was experiencing drought conditions at the time of the site visit.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators of wetland hydrology were not observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 6

<u>Tree Stratum</u> (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Shrub Stratum</u> (Plot size: <u>15' radius</u>)	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5' radius</u>)	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Cynodon dactylon</u>	85	Yes	FACU	
2. <u>Sorghum halepense</u>	15	No	FACU	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30' radius</u>)	100	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				

Remarks:

Indicators of hydrophytic vegetation were not observed.

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 3/3	100	---	---	---	---	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u> X </u>
---	--

Remarks:

Indicators of hydric soil were not observed.

N R C S COORDINATION

No response was ever received from the NRCS.

Able Consulting
9225 North 133rd East Avenue
Owasso, Oklahoma 74055
918-272-4282

September 22, 2011

Stacey Mathis, District Conservationist
Atoka Field Service Center
2341 S. Mississippi
Atoka, OK 74525

RE: Site assessment for Farmland Protection Policy Act (FPPA) for proposed roadway improvement project on SH-7 from 6.0 miles east of the Johnston County Line, extending east 5.4 miles in Atoka County, JP 24066(04).

Dear Mr. Mathis :

The Oklahoma Department of Transportation is in the early developmental stages of a roadway improvement project on SH-7 from 6.0 miles east of the Johnston County line, extending east 5.4 miles in Atoka County in order provide 2-12 foot lanes and 8 foot shoulders on the existing roadway. The majority of the reconstruction will occur on the existing roadway but in areas requiring horizontal and vertical corrections, new construction may occur either to the north or south side of the existing roadway. Improvements consist of adding shoulders, resurfacing the existing roadway and providing modern bridges. The roadway will remain open to traffic during construction and shoo-fly detours will be used as required.

Please find attached two copies of USDA Form AD-1006 and study footprint for the following federal action in Atoka County, Oklahoma.

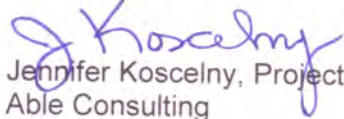
In accordance with the current 7 CFR Part 658 - Farmland Protection Policy Act, Parts 1 and III of Form AD-1006 have been completed. Please complete the NRCS portions of this form within the next 45 days and return one copy to:

Jennifer Koscelny, Project Manager
Able Consulting
9225 North 133rd East Avenue
Owasso, OK 74055

In addition, please let us know if the proposed project would impact any NRCS structures or properties such as flood control dams, wetlands, etc.

Your assistance is greatly appreciated. If you have any questions, please call me at 918-272-4282 or jkoscelny@cox.net.

Sincerely,



Jennifer Koscelny, Project Manager
Able Consulting

Enclosures: Map and Form AD-1066

Copy to: Oklahoma Department of Transportation – Environmental Programs Division

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency) Date Of Land Evaluation Request 9/22/11

Name Of Project SH-7 (5.4 miles) roadway improvement Federal Agency Involved FHWA

Proposed Land Use Transportation County And State Atoka, Oklahoma

PART II (To be completed by NRCS) Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? Yes No
 (If no, the FPPA does not apply -- do not complete additional parts of this form). Acres Irrigated Average Farm Size

Major Crop(s) Farmable Land In Govt. Jurisdiction Acres: % Amount Of Farmland As Defined in FPPA Acres: %

Name Of Land Evaluation System Used Name Of Local Site Assessment System Date Land Evaluation Returned By NRCS

PART III (To be completed by Federal Agency) Alternative Site Rating

	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	183.0			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	183.0	0.0	0.0	0.0

PART IV (To be completed by NRCS) Land Evaluation Information

- A. Total Acres Prime And Unique Farmland
- B. Total Acres Statewide And Local Important Farmland
- C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted
- D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value

PART V (To be completed by NRCS) Land Evaluation Criterion
 Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points) 0 0 0 0

PART VI (To be completed by Federal Agency) Maximum Points

Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0

PART VII (To be completed by Federal Agency)

Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	0	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	0	0	0	0

Site Selected: Date Of Selection Was A Local Site Assessment Used? Yes No

Reason For Selection:

FLOOD PLAIN INFORMATION

From: [Leslie Lewis](#)
To: [Jennifer Koscelny](#); [Bill Simon](#); [Rick A. Belden](#); [Stacy A. Loeffler](#)
Cc: [Siv Sundaram](#); [David Saulsberry](#)
Subject: NO NEED FOR Revised Firmette - Atoka SH-7 24066(04) Grade, Drain, Bridge and Surface on SH-7 from 6.0 miles east of Johnston County line extend east 5.4 miles.
Date: Monday, July 27, 2015 9:33:30 AM

Jennifer,

This project is located in Zone A of the FEMA floodplain. Hydraulics indicate we are within 1 foot of the existing the 100 yr water surface elevation with the proposed RCB extension. That is the FEMA regulation for that zone.

We have applied for an OWRB permit application insuring no adverse impact in a FEMA zone A. There is **no need for a map revision.**

Hope this helps with your documentation.

Leslie Lewis PE, CFM
State Bridge Hydraulic Engineer
llewis@odot.org
office 405-521-6500
cell 405-625-5365

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Monday, July 20, 2015 9:57 AM
To: Bill Simon; Rick A. Belden; Stacy A. Loeffler; Leslie Lewis
Cc: Siv Sundaram; David Saulsberry
Subject: FW: SH-7 (Revised Firmette) - Atoka SH-7 24066(04) Grade, Drain, Bridge and Surface on SH-7 from 6.0 miles east of Johnston County line extend east 5.4 miles.

Bill,

FYI,

There is a rise of 0.87 feet in the 100 year elevation in Bridge A associated with the 04 project. BKL and Leslie Lewis will need to address and provide resolution before I can submit the draft NEPA document.

Jen

From: Siv Sundaram [<mailto:SSUNDARAM@ODOT.ORG>]
Sent: Sunday, July 19, 2015 10:17 PM

To: 'Jennifer Koscelny'; David Saulsberry
Subject: RE: SH-7 (Revised Firmette)

Let's get this design issue resolved first.

Siv

-----Original Message-----

From: Jennifer Koscelny [jkoscelny@cox.net]
Sent: Sunday, July 19, 2015 12:54 PM Central Standard Time
To: David Saulsberry
Cc: Siv Sundaram
Subject: FW: SH-7 (Revised Firmette)

David,

Can I use below for floodplains or do I need to wait for further clarification?

Jen

From: Rick A. Belden [<mailto:Belden@bklin.com>]
Sent: Friday, July 17, 2015 4:57 PM
To: Jennifer Koscelny
Cc: Stacy A. Loeffler
Subject: RE: SH-7 (Revised Firmette)

Jennifer,

We may have an issue with Bridge "A". There is a rise of 0.87 feet in the 100 year elevation. If this creates a need for a map revision I'm sure we will want the bridge box re-designed before proceeding with a map revision. I have attached the hydraulic summary tables for reference. ODOT completed the hydraulics design for bridge "A" so we would have to ask Leslie Lewis about changing the design or if the 0.87 foot rise in elevation is acceptable.

Bridge "A" (NBI 06295)

The proposed conditions will create a 0.87 foot rise in the 100 year Base Flood Elevation (BFE).....

and therefore no map revision will be needed.

Existing 100 year Elev. = 569.60

Proposed 100 year Elev. = 570.47

Bridge "B" (NBI 06055)

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

Existing 100 year Elev. = 636.31

Proposed 100 year Elev. = 636.31

Bridge "C" (NBI 06303)

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

Existing 100 year Elev. = 611.40

Proposed 100 year Elev. = 611.40

Let's talk on Monday to see what our options are.

Sincerely,

Rick Belden

(405) 657-8140 cel

Belden@bklinc.com (work)

Rbelden22@cox.net (home)

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]

Sent: Friday, July 17, 2015 1:22 PM

To: Rick A. Belden

Cc: Stacy A. Loeffler

Subject: RE: SH-7 (Revised Firmette)

Rick,

Thank you for the updated maps. I still need a statement from the designer regarding floodplains.

Does the project involve an increase to the base 100 Year floodplain in a regulatory floodway (Zone A-E in a FEMA Map) that will require a flood map revision as determined by the appropriate state or local authority?

If yes, please let me know. If not, can you provide a statement like the one below? ODOT requires a statement from the designers regarding this topic to be included in the CE Document.

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

I will need a statement regarding floodplains for the document files from the designer, since this project is located in Zone A as seen on the attached maps.

Jen

From: Rick A. Belden [<mailto:Belden@bklinc.com>]
Sent: Friday, July 17, 2015 11:15 AM
To: Jennifer Koscelny
Cc: Stacy A. Loeffler
Subject: SH-7 (Revised Firmette)

Jennifer,

I made one small change to the project limits between the east and the west projects. See the attached files and contact me if you have any questions.

Thanks,

Rick Belden
(405) 657-8140 cel
Belden@bklinc.com (work)
Rbelden22@cox.net (home)

This email has been scanned for spam and viruses by Proofpoint Essentials cloud email security - click [here](#) to report this email as spam.

From: [Rick A. Belden](#)
To: [Jennifer Koscelny](#)
Cc: [Stacy A. Loeffler](#)
Subject: RE: SH-7 (Revised Firmette)
Date: Friday, July 17, 2015 4:58:17 PM
Attachments: [SH7 \(Bridge B\) NBI 06055 Table.pdf](#)
[SH7 \(Bridge C\) NBI 06303 Table.pdf](#)
[SH7 \(Bridge A\) NBI 06295 Table.pdf](#)

Jennifer,

We may have an issue with Bridge "A". There is a rise of 0.87 feet in the 100 year elevation. If this creates a need for a map revision I'm sure we will want the bridge box re-designed before proceeding with a map revision. I have attached the hydraulic summary tables for reference. ODOT completed the hydraulics design for bridge "A" so we would have to ask Leslie Lewis about changing the design or if the 0.87 foot rise in elevation is acceptable.

Bridge "A" (NBI 06295)

The proposed conditions will create a 0.87 foot rise in the 100 year Base Flood Elevation (BFE).....
and therefore no map revision will be needed.

Existing 100 year Elev. = **569.60**

Proposed 100 year Elev. = **570.47**

Bridge "B" (NBI 06055)

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

Existing 100 year Elev. = 636.31

Proposed 100 year Elev. = 636.31

Bridge "C" (NBI 06303)

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

Existing 100 year Elev. = 611.40

Proposed 100 year Elev. = 611.40

Let's talk on Monday to see what our options are.

Sincerely,

Rick Belden
(405) 657-8140 cel
Belden@bklinc.com (work)
Rbelden22@cox.net (home)

From: Jennifer Koscelny [mailto:jkoscelny@cox.net]
Sent: Friday, July 17, 2015 1:22 PM

To: Rick A. Belden
Cc: Stacy A. Loeffler
Subject: RE: SH-7 (Revised Firmette)

Rick,

Thank you for the updated maps. I still need a statement from the designer regarding floodplains.

Does the project involve an increase to the base 100 Year floodplain in a regulatory floodway (Zone A-E in a FEMA Map) that will require a flood map revision as determined by the appropriate state or local authority?

If yes, please let me know. If not, can you provide a statement like the one below? ODOT requires a statement from the designers regarding this topic to be included in the CE Document.

The proposed conditions will not create a rise in the 100 year Base Flood Elevation (BFE) and therefore no map revision will be needed.

I will need a statement regarding floodplains for the document files from the designer, since this project is located in Zone A as seen on the attached maps.

Jen

From: Rick A. Belden [<mailto:Belden@bklinc.com>]
Sent: Friday, July 17, 2015 11:15 AM
To: Jennifer Koscelny
Cc: Stacy A. Loeffler
Subject: SH-7 (Revised Firmette)

Jennifer,

I made one small change to the project limits between the east and the west projects. See the attached files and contact me if you have any questions.

Thanks,

Rick Belden
(405) 657-8140 cel
Belden@bklinc.com (work)

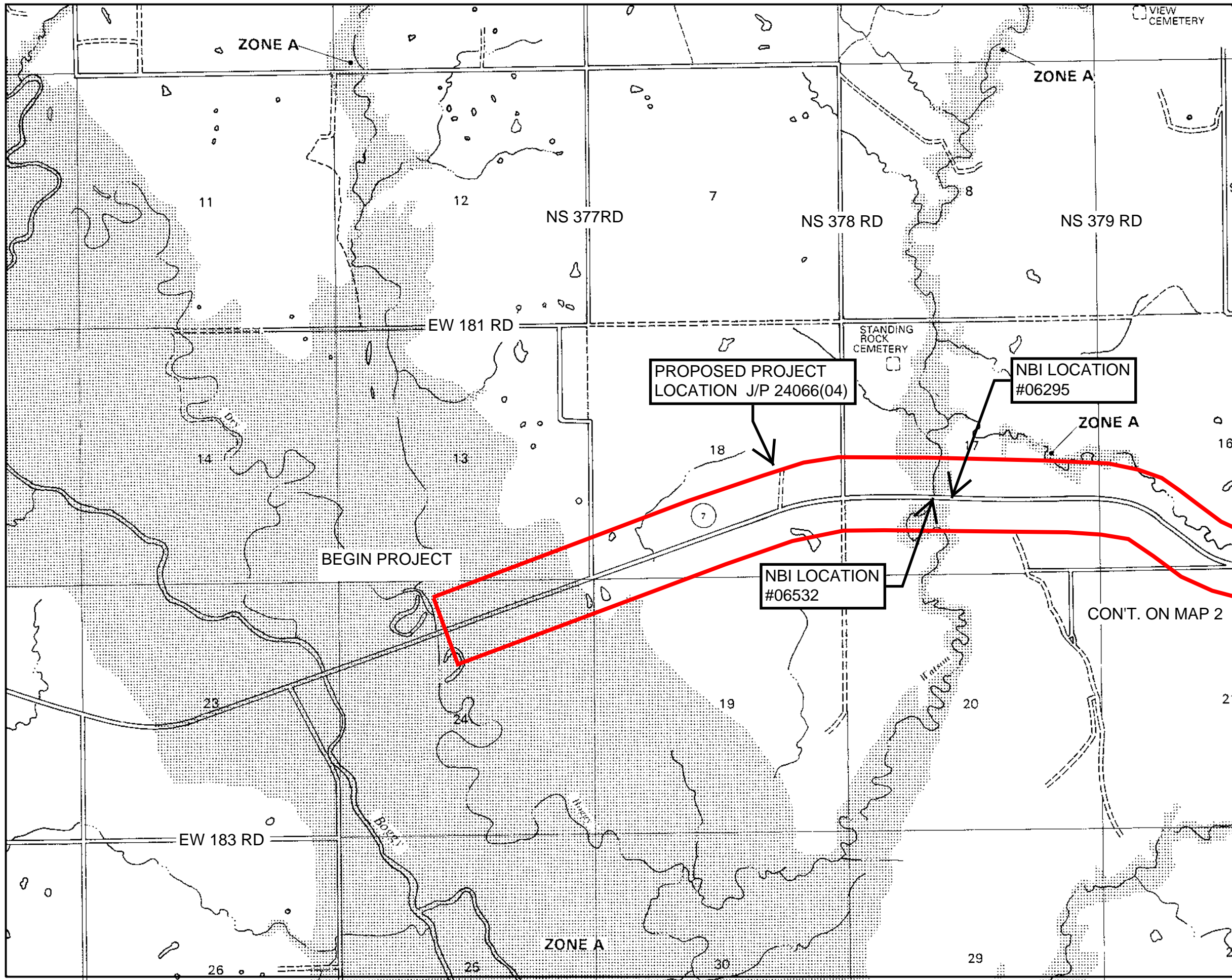
Rbelden22@cox.net (home)

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SH-7 over Unnamed Creek, Atoka County, Oklahoma
JP # 24066(04)

2/15/2011

NBI # 02017		Computed Water Surface Elevations (ft)				Velocity (fps)		
Frequency (year)	Discharge (cfs) Existing DA= 0.145 sq. miles	Open Channel RS 300	Existing	Proposed		Open Channel RS 110	Existing at outlet	Proposed BB at outlet
			3-10'X7'X30' RCB Flowline _m Elev.= 561.87' RS 300	3-10'X7'X105' RCB Flowline _n Elev.= 562.28' RS 300				
2	112	562.08	562.32	562.11	0.03	562.11	2.20	2.10
5	220	564.24	565.13	565.50	1.26	565.50	3.18	3.03
10	312	565.66	566.20	566.40	0.74	566.40	4.12	4.11
25	455	566.10	567.35	568.11	2.01	568.11	6.08	6.28
50	582	566.96	568.47	569.42	2.46	569.42	6.95	7.29
100	720	566.69	569.60	570.47	3.78	570.47	17.34	18.27
500	1119	567.35	572.13	572.84	5.49	572.84	18.83	21.10
OT - Elev.			571.08'	571.08'				
OT - Q			Q ₃₃₆	Q ₂₀₃				



NATIONAL FLOOD INSURANCE PROGRAM

FHBM

FLOOD HAZARD BOUNDARY MAP

ATOKA COUNTY, OKLAHOMA UNINC. AREAS

(SEE MAP INDEX FOR PANELS PRINTED)

PANEL 175 OF 300

CONVERTED BY LETTER
EFFECTIVE 8/1/2011

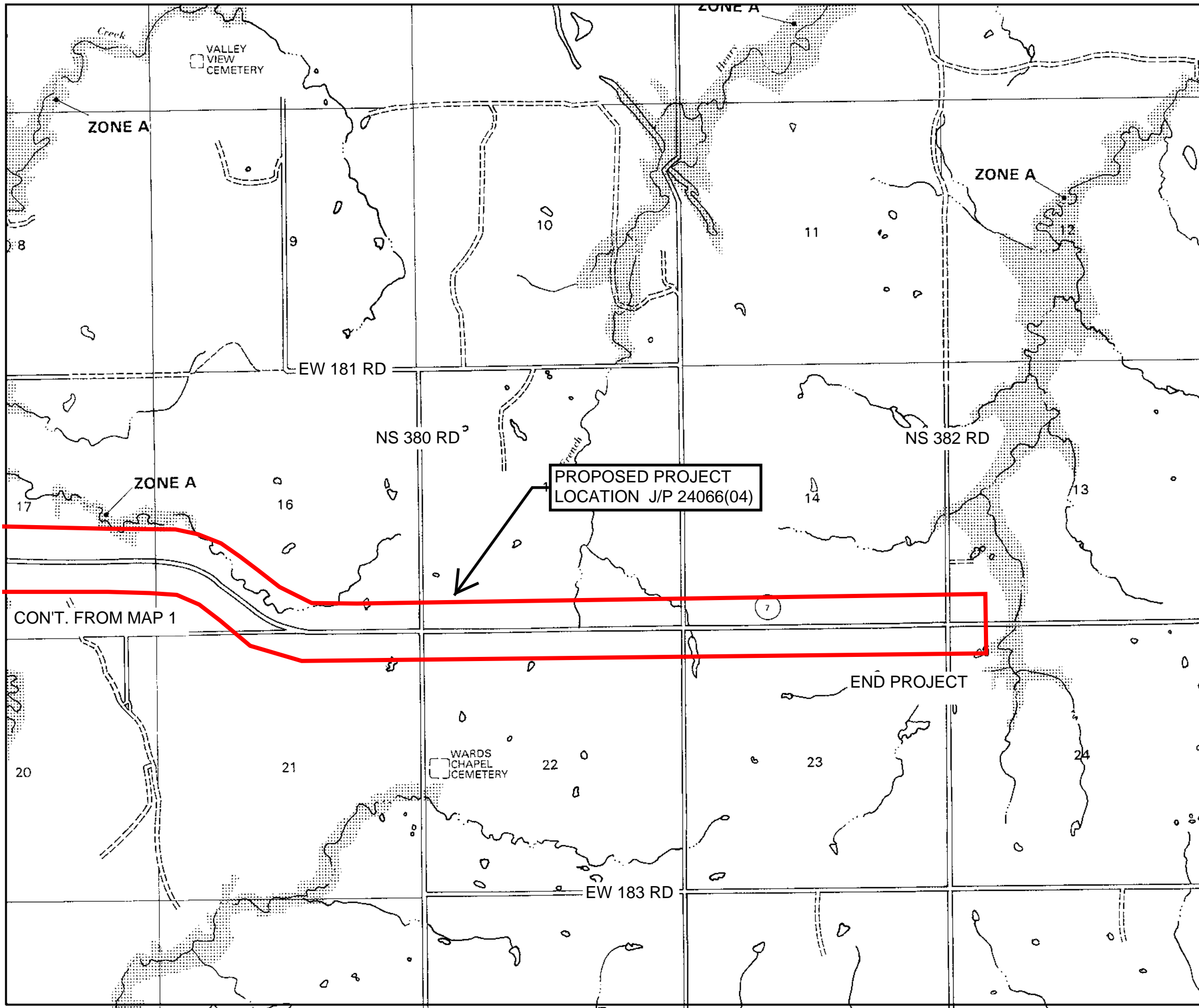
COMMUNITY-PANEL NUMBER
400508 0175 A

EFFECTIVE DATE:
AUGUST 14, 1981



federal emergency management agency
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



NATIONAL FLOOD INSURANCE PROGRAM

FHBM
FLOOD HAZARD BOUNDARY MAP

**ATOKA
COUNTY,
OKLAHOMA**
UNINC. AREAS

(SEE MAP INDEX FOR PANELS PRINTED)
PANEL 175 OF 300

CONVERTED BY LETTER
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This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

HAZARDOUS WASTE STUDIES

From: [Jeff Pearl](#)
To: [Jennifer Koscelny](#)
Cc: [David Saulsberry](#); [Siv Sundaram](#)
Subject: RE: Atoka Co, SH-7, 24066(04) - memo to file for ISA
Date: Monday, July 20, 2015 7:26:12 AM

I like it – thank you for your diligence.

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Sunday, July 19, 2015 12:53 PM
To: Jeff Pearl
Cc: David Saulsberry; Siv Sundaram
Subject: Atoka Co, SH-7, 24066(04) - memo to file for ISA

Jeff,

Please see below for reference. Attached is memo to file for ISA for project below:

Atoka SH-7 JP 24066(04)
Grade, Drain, Bridge and Surface on SH-7 from 6.0 miles east of Johnston County line extend east 5.4 miles.

Please let me know you approve of this memo being added to document files.

From: Jeff Pearl [<mailto:JPEARL@ODOT.ORG>]
Sent: Thursday, January 22, 2015 11:57 AM
To: Jennifer Koscelny
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Very good. Thanks.

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Thursday, January 22, 2015 11:45 AM
To: Jeff Pearl
Cc: David Saulsberry
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Jeff,

I would agree. The preliminary plans show reduced R/W, gas plant avoided, only one relocation (residence). I can write a memo to you. How does that sound.

Jen

From: Jeff Pearl [<mailto:JPEARL@ODOT.ORG>]
Sent: Thursday, January 22, 2015 11:13 AM

To: Jennifer Koscelny
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

I think the 6 months is ASTM standard, but we can allow some flexibility on ODOT projects in my opinion since the timeframes for project development are so much longer than the typical private sector jobs. In the future, if the recon report is older than 6-12 months we should probably run a new report for the formal ISA.

In this instance, since it's a fairly rural area with the only concern effectively being avoided (gas plant), maybe if you can document no significant change in land use since the ISA (for example, using recent aerials from the internet), perhaps we'd be OK. What do you think?

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Thursday, January 22, 2015 9:05 AM
To: Jeff Pearl
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Jeff,

Yes, apparently. At that time, I was asked to use reconnaissance report data base search.

I understand ODOT policy has since changed to 6 months old from time to complete ISA.

Jen

From: Jeff Pearl [<mailto:JPEARL@ODOT.ORG>]
Sent: Wednesday, January 21, 2015 8:30 AM
To: Jennifer Koscelny
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Did your December 2011 and January 2013 ISA's use the 2009 EDR report?

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Monday, January 19, 2015 2:26 PM
To: Jeff Pearl
Cc: David Saulsberry; 'Stacy A. Loeffler'; Julianne Whitaker; 'Scott A Sundermeyer'; Siv Sundaram
Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Jeff,

As Siv has requested below, please let me know if you want an updated EDR for ISA studies and updated studies. I have provided some summary information for you attached and below.

I have attached the approved consultant report review for both projects along

with EDR corridor map. Looks like the EDR report is from October 27, 2009. The NEPA study footprint is 300 feet each side of C/L for both projects. The design change that caused the delay, has reduced new R/W impacts. At this time, only one residential home may be relocated.

Atoka SH-7

JP 24066(04)

Begin study at East end of Dry Boggy reek and end at NS 382 Rd (N Carr Pen Road), 5.4 miles

Plans show about 101 feet left and 100 feet right, at 1155+00 bumps out to 160 feet left and 125 right, then back to less than 100 feet each side C/L.

Atoka gas plant is avoided.

Atoka SH-7

JP 24066(07)

Begin study at NS 382 Rd (N Carr Pen Road) and end at NS 386 Road (SH-3b), 4.05 miles

Plans show about 100 feet left and right, at 1353 at NBI 06055 bumps out to 145 feet max, then back to less than 100 feet each side C/L.

From: Siv Sundaram [<mailto:SSUNDARAM@ODOT.ORG>]

Sent: Friday, January 16, 2015 12:23 PM

To: Jennifer Koscelny

Cc: David Saulsberry; Stacy A. Loeffler; Julianne Whitaker; Jeff Pearl; Scott A Sundermeyer

Subject: RE: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Jennifer

We would like you to update the biological studies. Please let me know if I need to issue a new TO for it since we won't be able to supplement this TO from the old contract. If studies cannot be completed in time to meet the Sep R/W date, we can use the old memo with a commitment to update the studies prior to construction letting.

Also, would you check with Jeff Pearl to see if he wants you to get an updated EDR for haz waste studies and update the studies?

I think CR studies should be ok but I am copying Scott so that he can tell you if he wants something different.

Thanks

Siv Sundaram, P.E.

Assistant Division Engineer

Environmental Programs Division

Oklahoma Department of Transportation
Room 3D2a, 200 NE 21st Street
Oklahoma City, OK 73105
Ph: (405) 522 3791
Fax: (405) 522 5193
Email: ssundaram@odot.org

From: Jennifer Koscelny [<mailto:jkoscelny@cox.net>]
Sent: Friday, January 16, 2015 11:27 AM
To: Siv Sundaram
Cc: David Saulsberry; Stacy A. Loeffler
Subject: Atoka Co, SH-7, 24066(04)(07) - updated specialist studies

Siv and David,

The Combo PFR/RW-UT Meeting was held this week (1/13/15) for SH-7.
The plans will be moving forward.

The NEPA study footprint is 300 feet each side of C/L for both projects and
the design is well within the study area.

A relocation plan request is needed that David will request.

Due to new T&E species in project area, updated biological reports are
needed. Will ODOT complete this in-house? Do I need to request any
other updated studies due to length of time from approval to PIH?

There is a R/W Submittal date of September 2015. I will strive to meet
that date.

Also, there are areas that blue-lines streams/drainages parallel the
roadway, we informed the designers that these drainage impacts may
necessitate an individual permit from the USACE (see pages 2 & 3
attached) and reducing these impacts is advised.

- 1.) Biological completed in 2/1/2012. / Report submitted in 1/30/ 2012.
Threatened and Endangered Species Findings
ABB - may affect, likely to adversely affect
Whooping crane and piping plover – no effect
Swallow note
Wetlands – 1.072 acres possible.
- 2.) Cultural Resources completed in 10/2/12. / Report submitted in
11/05/2011

Notes for offsite locations – provided at meeting

- 3.) ISA completed 1/31/2013. / Report submitted in 12/14/2011.
No issues / Approval to proceed
Avoidance of Gas plant - yes
- 4.) NRCS – mailed 9/22/2011
No response received
- 5.) Property Notification letters – mailed 7/23/2011
- 6.) Mailed BLM, and City letter 12/3/14.

Jennifer Koscelny
Able Consulting
(918) 272-4282 - Office
(918) 691-3679 - Cell
jkoscelny@cox.net

Dated: July 17, 2015

To: Memo to File

From: Jennifer Koscelny, Able Consulting

SUBJECT: ISA and Roadway improvement project on SH-7 from 6.0 miles east of the Johnston County Line, extending east 5.4 miles in Atoka County, JP 24066(04).

An ISA was approved by ODOT for this project January 31, 2013. Due to the time between the approval and current date, the project was reviewed for potential relative risk of contamination using the current R/W plans. The original study area footprint extended 300 feet each side from centerline. Based on proposed R/W plans dated July 14, 2015, the potential for impacts has been reduced greatly. The amount of new R/W has been minimized. New R/W amounts extend from 90 – 150 feet from existing centerline in the cut/fill areas and generally are 50-80 feet from existing centerline in all other areas along the 5.4 miles. Existing ODOT R/W is generally 50 feet each side of centerline. Based on the plans there is one potential commercial relocation consisting of a sheet metal barn. No evidence of contamination was observed within this property.

Based on the plans, the immediate area is generally characterized by undeveloped land, primarily used for agricultural purposes. Pasture land used for cattle grazing and hay production was observed along with scattered trees and ponds. Oil and/or gas wells were not observed within the study limits, although active oil/gas wells are in the vicinity. The land use along the project area has not changed. Based on the plans and plan in hand held January 13, 2015, no new commercial or properties with potential risk of contamination have been identified.

The Atoka Gas plant, located on the south side of SH-7 east of Hickory Hill Road (Section 23, T2S-R10E), has been avoided as recommended in the ISA.

In summary, Able Consulting did not identify evidence of potential environmental impacts to properties within or adjacent to the AOI. No additional investigation is recommended at this time.

OKLAHOMA DEPARTMENT OF TRANSPORTATION CONSULTANT REPORT REVIEW – HAZARDOUS WASTE

Reviewed By: Kris Mutz
Review Date: January 31, 2013
Consultant: Able

County: Atoka
Project No.: SSP-103C(091)SS
J/P Number: 24066(04)

1. PROJECT DESCRIPTION: Widening of SH-7, from 6 miles east of the Johnston County Line, extending east 5.4 miles.

2. LEVEL OF INVESTIGATION: Assessment Sampling

3. SUMMARY OF INVESTIGATION

- A. Relative risk of contamination in study footprint: Low Moderate High
B. Potential for contamination, if present, to affect project: Low Moderate High
C. Did Consultant recommend additional work? No Yes (describe below):

Due to the cost of moving the operations at the Atoka Gas Plant, and the danger of placing vehicular traffic closer to the product (gas & liquids) loading facility, avoidance of the Atoka Gas Plant was recommended; however, no further investigation was recommended.

4. RECOMMENDATIONS*:

- Approval to Proceed (No Further Action)
 Approval to Proceed, Pending:
 Avoidance of described site(s)
 Plan Notes regarding described site(s) (See Section 6)
 Additional investigation
 Approval NOT Recommended

* - If different from Consultant, explain in Section 6 General Comments

5. PLAN NOTES:

6. GENERAL COMMENTS:

*****ATTACH EXCERPTS FROM REPORT, AS APPROPRIATE*****

INITIAL SITE ASSESSMENT

SH-7 Roadway Improvement

From 6.0 Miles East of the Johnston C/L East 5.4 Miles

Atoka County, Oklahoma

**Project No.
State Job No. 24066(04)**

**Prepared for:
Oklahoma Department of Transportation
Environmental Programs Division
Oklahoma City, OK**

Prepared by:

**ABLE CONSULTING
9225 North 133rd East Avenue
Owasso, OK 74055
(918) 272-4282**



**Jennifer Koscelny
Project Scientist**

1.0 EXECUTIVE SUMMARY

The Oklahoma Department of Transportation (ODOT) requested an Initial Site Assessment (ISA) for a proposed roadway improvement project along State Highway 7 (SH-7), from 6.0 miles east of Johnston County line extending east 5.4 miles in Atoka County. The purpose of this assessment was to identify potential environmental concerns by reviewing historical data, regulatory information, and a visual inspection of the site and surrounding area.

The Area of Investigation (AOI) includes the area directly impacted by construction for any realignment, bridge replacement, or new right of way acquisition along SH-7 and any intersections along the project area. The project intent is to widen and resurface the existing roadway with 2-12 foot lanes and 8 foot shoulders. The majority of the reconstruction will occur on the existing roadway; however, in areas requiring horizontal and vertical corrections, new construction may occur either to the north or south side of the existing roadway. Improvements consist of adding shoulders, resurfacing the existing roadway and providing modern bridges. Some of the existing bridges and/or boxes may be replaced and/or extended in length. The roadway will remain open to traffic during construction and shoo-fly detours (either north or south side of existing road) will be used as required. For the 5.4 mile segment of roadway, a 300 foot wide study area, located north and south of existing SH-7 centerline is proposed.

The immediate area within the AOI is generally characterized by undeveloped land, primarily used for agricultural purposes. Pasture land used for cattle grazing and hay production was observed along with scattered trees and ponds. Within the 5.4 mile AOI, 10 residential single family properties were observed within the AOI. Many of these properties contained barns and sheds with corrals. Several solitary barn structures were also observed within the AOI. Oil and/or gas wells were not observed within the study limits, although active oil/gas wells are in the vicinity. No active commercial properties are located within the AOI, except for the Atoka Gas Plant.

The Atoka Gas plant, located on the south side of SH-7 east of Hickory Hill Road (Section 23, T2S-R10E), is recommended for avoidance. This gas plant is currently operated by Enogex and contains a product loading facility with numerous gas lines and large above ground storage tanks. The property itself was observed to be well maintained. This recommendation is based on the cost to move this operation and safety concerns with placing vehicular traffic closer to the plant operating with above ground storage tanks.

In summary, Able Consulting did not identify evidence of potential environmental impacts to properties within or adjacent to the AOI. No additional investigation is recommended at this time.

6.2 Recommendations

Based on the above presented findings the following recommendations are offered:

- Avoidance of the Atoka Gas Plant

The Atoka Gas plant, located on the south side of SH-7 east of Hickory Hill Road (Section 23, T2S-R10E), is recommended for avoidance. This gas plant is currently operated by Enogex and contains a product loading facility with numerous gas lines and large tanks. The environmental records search conducted by Environmental Data Resources, Inc. did report the Atoka Gas Facility on the FINDS, ICIS and AIRS lists. This facility was formally called the Antero Resources Atoka Gas Plant. This facility has two large liquid product tanks, one is a 90,000 gallon tank and the other is a 60,000 gallon tank. Additionally, there are two 400 gallon condensate and one 300 barrel tanks for produced water on the site. There are three separate gas lines coming into the facility. The Plant Operations Foreman, Mr. Earl Peel was concerned about placing traffic any closer to the product loading facility due to potential automobile accidents and other safety concerns. The property itself was observed to be well maintained. This recommendation is based on the cost to move this operation and safety concerns about placing traffic any closer to the product loading facility due to potential automobile accidents and other safety concerns.

- No further investigation is recommended for the AOI.

OTHER



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Oklahoma Field Office
7906 E. 33rd Street, Suite 101
Tulsa, Oklahoma 74145
www.blm.gov/nm



In Reply Refer To:

ODOT Project Response 012815c
1785 (040)

January 28, 2015

Ms. Dawn Sullivan
Environmental Programs Division Engineer
Oklahoma Department of Transportation
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

Dear Ms. Sullivan:

We wish to thank you for extending the opportunity to the Bureau of Land Management (BLM) Oklahoma Field Office in Tulsa, Oklahoma, to provide comments on the following proposed projects:

1. Adair County
 - a. Bridge/Approaches on SH-51 over Mulberry Hollow (JP 27949(04), J2-7949(004))
2. Atoka County
 - a. Improvements on SH-7 (JP 24066(04), SSP-103C(091)SS)
 - b. Improvements on SH-7 (JP 24066(07), SSP-103C(094)SS)
3. Beckham County
 - a. Bridge/Approaches on SH-44 over farm-rail railroad (JP 29511(04), J2-9511(004))
4. Blaine County
 - a. Bridge/Approaches on SH-51 over the North Canadian River and Overflow (JP 27950(04), J2-7950(004))
5. Harmon County
 - a. Bridge/Approaches on SH-30 over Salt Fork of Red River (JP 28768(04), J2-8768(004))
6. Hughes County
 - a. Improvements to the Bridge on US-75 over Salt Creek (JP 29545(04), J2-9545(004))
7. Kay County
 - a. Bridge/Approaches on I-35 over the AT&SF Railroad (JP 29845(04), J2-9845(004))
8. Murray County
 - a. Bridge/Approaches on Rock Crusher Road over I-35 (JP 30363(04), J3-0363(004))

Our office has reviewed the information provided in your letters and has no concerns or objections to these proposals. A search of our files shows no impact to Federal or Indian minerals in the project areas, nor any Federal land managed by the BLM.

Sincerely,

Janine Book
Resource Program Manager
Oklahoma Field Office

cc:
NM (441, Central File)
NM (044, L. Levesque)



OKLAHOMA DEPARTMENT OF TRANSPORTATION

200 N. E. 21st Street

Oklahoma City, OK 73105-3204

December 3, 2014

Mr. Richard Fields
Assistant Field Office Manager - Multi Resources
Oklahoma Field Office
Bureau of Land Management
7906 E. 33rd Street, Suite 101
Tulsa, Oklahoma 74145-1352

Subject: Roadway improvement project on SH-7 from 6.0 miles east of the Johnston County line, extending east 5.4 miles in Atoka County, JP 24066(04), Project Number SSP-103C(091)SS.

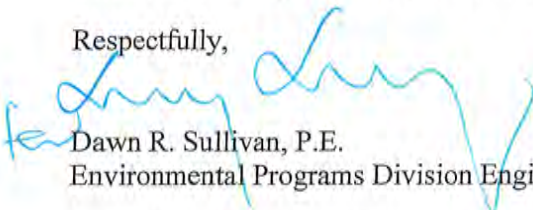
Dear Mr. Fields:

We are pleased to inform you the Oklahoma Department of Transportation (ODOT) is considering roadway improvements to SH-7. The exact project scope and requirements will be clarified through the planning, environmental review, and design process. We have enclosed a location map and the environmental study area.

This project is in the early developmental stages and any comments relative to the social, economic, or environmental effects of this proposal will be appreciated. To allow adequate time for evaluation of your comments, we would appreciate receiving a response within fifteen days from the date of this letter. Your written comments should be directed to the Environmental Program Division Engineer, Oklahoma Department of Transportation, 200 N. E. 21st Street, Oklahoma City, Oklahoma 73105.

We sincerely appreciate your cooperation in this matter. For further information or if you have any questions, please contact David Saulsberry, Environmental Project Manager at 405-521-2315 or DSaulsberry@odot.org or please contact our authorized agent Jennifer Koscelny with Able Consulting at 918-272-4282 or jkoscelny@cox.net. As always, your cooperation is greatly appreciated.

Respectfully,



Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

DRS/DS/Able Consulting

Enclosures: Location Map, Study Area Map

Copy to: Project Management Division
Field Division Engineer
Right-of-Way Division
ODOT Cultural Resources

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AN EQUAL OPPORTUNITY EMPLOYER



OKLAHOMA DEPARTMENT OF TRANSPORTATION

200 N. E. 21st Street

Oklahoma City, OK 73105-3204

August 23, 2011

Subject: Roadway improvement project on SH-7 from 6.0 miles east of the Johnston County Line, extending east 5.4 miles in Atoka County, JP 24066(04).

Dear Property Owner:

We are pleased to inform you the Oklahoma Department of Transportation (ODOT) is considering improvements to SH-7 near Atoka. The exact project scope and requirements will be clarified through the planning, environmental review, and design process. In accordance with the National Environmental Policy Act, the National Historic Preservation Act, and Federal Highway Administration policy, the Department is requesting any information or specific concerns you may have regarding this project's potential impact on the human environment, the natural environment, and historic properties.

Additionally, in the near future, employees or authorized agents of ODOT may be entering your property for the purpose of surveying environmental considerations, such as cultural resources, biological resources, and hazardous materials. Results from these studies will be incorporated into the environmental document being prepared for this project. It may be necessary to do minor hand digging in your property as part of the survey. Any test holes will be filled in and cleaned up afterwards.

Oklahoma Statute 69-702 provides for the Department of Transportation, through its agents and employees, to enter the property and make the necessary surveys and other examinations related to the proposed highway project. A copy of Oklahoma Statute 69-702 is provided with this letter.

If you are currently leasing this property, please notify your lessee of our planned work.

Should you have any information or specific concerns, please contact our authorized agent Mrs. Jennifer Koscelny with Able Consulting at 918-272-4282 or jkoscelny@cox.net. As always, your cooperation is greatly appreciated.

Respectfully,

Dawn R. Sullivan, P.E.
Environmental Programs Division Engineer

DRS/Able Consulting

Enclosures: Location Map, Copy of Statute 69-702

Copy to: Project Management
Field Division Engineer
Specialists
Environmental Project Manager

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§ 69-702

Entry upon premises to make surveys and examinations for establishment or relocation of highways – Notice.

The Department, through its authorized agents and employees, may enter upon any lands, waters, and premises in the state for the purpose of making surveys, soundings and drillings, and examinations as may be determined necessary or convenient for the purpose of establishing, locating, relocating, constructing, and maintaining of state highways or relocations thereof and facilities necessary and incidental thereto. Such entry shall not be deemed a trespass, nor shall an entry for such purpose be deemed an entry under any condemnation proceedings which may be then pending; but notice shall be given to the owner of or person residing on the premises, personally or by registered mail, at least ten (10) days prior to such entry.

Laws 1968, C. 415, § 702, operative July 1, 1968.

Address list for J/P 24066(04)

Atoka County

SH-7, Widen and Resurface

From 6.0 miles east of the Johnston C/L
extend east 5.4 miles

29 Total

Section 13 T02S, R09E (1)

Hardman, Dan & Marletta
175 N. Standing Rock Road
Atoka, OK 74525

Section 24 T02S, R09E (1)

Hastey, Mary Etta
PO Box 274
Simsboro, LA 71275

Section 18 T02S, R10E (5)

Gentry, Marion
C/O Mary Hastey
PO Box 274
Simsboro, LA 71275

Thelen, Lorenz
931 W. HWY 7
Atoka, OK 74525

Hatter, Leon
900 W. HWY 7
Atoka, OK 74525

Fisher, John & Anna
420 N. Old Broom Rd.
Atoka, OK 74525

Sanders, Donald & Glynn
2308 W. Fulton
Broken Arrow, OK 74012

Section 17 T02S, R10E (9)

Morgan, Jewell
327 S. Montana
Atoka, OK 74525

Sheffield, Clyde Trustee
701 W. 3rd Street
Atoka, OK 74525

Barris, Westlee & Jared
110 N. Standing Rock Rd.
Atoka, OK 74525

Johnson, Bruce & Debbie
841 W. HWY 7
Atoka, OK 74525

Stevens, Gene Arthur
845 W. G Bar Rd.
Atoka, OK 74525

Hill, Nancy
803 W. G Bar Rd.
Atoka, OK 74525

Simpson, Matthew
1409 Lowry Lane
Atoka, OK 74525

Choctaw Nation of Oklahoma
PO Box G
Hugo, OK 74743

Carty, Michael & Gail
344 Redwood
Shafter, CA 93263

Section 16 T02S, R10E (7)

Cochran, Craig
161 N. Wards Chapel Rd.
Atoka, OK 74525

Fink, Lon R.
P.O. Box 892406
OKC, OK 73189

Borton, Richard Kathleen
112 Butler Street
Anna, TX 75409

Mosely, Carol Lynn
130 Forest Ridge Drive
Sterling, VA 20164

Coppedge, Raymond & Laura
2524 S.W. 34th Street
OKC, OK 73119

Bass, Shane & Jayme
210 W. 4th Street
Atoka, OK 74525

Bingham, Don & Margaret
725 W. HWY 7
Atoka, OK 74525

Section 21 T02S, R10E (0)

Section 21 T02S, R10E (3)

Lovelace, Mike & Sam
1708 N. Lincoln
Moore, OK 73160

Kirby, Billy & Nancy
4460 OK HWY 48 N.
Wapanucka, OK 73461

Ray, Thomas & Elma
660 W. HWY 7
Atoka, OK 74525

Section 22 T02S, R10E (0)

Section 14 T02S, R10E (1)

Allen, Phillip
PO Box 358
Atoka, OK 74525

Section 23 T02S, R10E (2)

Linscott, Ronald
PO Box 330
Atoka, OK 74525

Enogex Products Corp.
PO Box 321
M/C 804
OKC, OK 73101



Oklahoma Department of Transportation

Project Management Division (405)522-7601 Fax (405) 522-7612 Room 3C9

DATE: January 11, 2011
TO: Distribution List
FROM: Bill Simon - Project Management Division
SUBJECT: Project Initiation

J/P Number: 24066(04) County: Atoka Highway: SH-7 Division: 2
PS&E Date: 2016 R/W Date: 1/2012 Drive-out Date: 9/2/10
Programmed Estimate: \$ 5,000,000
Project Description: SH-7 from 6.0 miles east of Johnston C/L extend east 5.4 miles

FUNCTIONAL CLASSIFICATION

Area Type: Urban Suburban Rural
Terrain Type: Flat Rolling Mountainous
Access Control: Full Partial None
Highway Type: Freeway Principal Arterial Minor Arterial Collector
 NHS Non-NHS STRAHNET Scenic Hwy

EXISTING INFORMATION

Current ADT: 2800 % Trucks: 16% Number of Lanes: 2 Lane Width: 12'
Outside Shoulder Width: Inside Shoulder Width:
 Open Section Curb & Gutter Divided, median width:
 Other (describe):
Pavement Type: Asphalt Pavement Condition: Good Fair Poor
Shoulder Type: Shoulder Condition: Good Fair Poor
Storm Sewer No Yes Storm Sewer Condition: Good Fair Poor
Sidewalks No Yes Sidewalk Width:

Bridge One Description: 30-40-30 I-Beam
Bridge Two Description: (3) - 10x7x30 RC Box with Handrails

	Bridge One	Bridge Two
Feature Intersected:	Watson Creek	Unnamed Creek
NBI Number(s):	06532	06295
Location Number(s):	0314 0779x	0314 0771x
Sufficiency Rating(s):	52.2	67.7
Year(s) Built:	1938	1938
Bridge Width(s):	27.0'	32'
Bridge Length(s):	101.0'	34'
Posted Clearance(s):		
Posted:		

Health Index:

ENVIRONMENTAL CONSIDERATIONS

X Historic Properties, list:

for 24066(04) & (07) - 22 potential pre-1964 structures are rated as 'low potential for eligibility'
large & small concrete culverts rated as low potential for eligibility*

Archeological Sites, list: NONE

X Cemeteries, list: 1 cemetery is South of SH 7 on NS 382
1 cemetery is North of SH 7 on NS 382

X Hazardous Waste / LUST Sites, list: Numerous oil or gas wells (north & south sides) & gas lines located within study area & 3 sites were identified in data base search
Within project study area

1. & 2. North side -Doris Liquor Store (ODOT) 220 N. Old Broom Rd, has 2 UST's
3. South side - Antero Resources Atoka Gas Plant, 205 N. Hickory Hill Rd

X Endangered Species, list: ABB, Interior Least Tern, Whooping Crane, Piping Plover

Section 4F or 6F Properties, list: NONE

Farmland

X Wetlands - for 24066(04) & (07) - 24 potential wetlands- north & south of existing roadway, with the most wetlands occurring on the south side of existing roadway
A pond east of Watson Cr, south side of existing, will be impacted
A pond west of Watson Cr, north side of existing will be impacted

X Scenic and Protected Aquifers -over the Antlers Bedrock Aquifer.

X 100 Year Flood Plain IN PLACES

X Tribal Property 3 properties owned by Choctaw Tribe - 1 on North side owned by Choctaw Nation the other 2 are in 24066(07)

ALTERNATIVE IMPACTS

Other Agencies List:

Turnpike Involvement

Metropolitan Planning Organizations List:

PERMIT INFORMATION

Design Exception Anticipated: No As required by design Yes, type:

Maintenance Agreements (Lighting, Signals, etc.): No Yes, type:

Permits required: FAA USACE OWRB Railroad Other, type:

Additional:

PROPOSED IMPROVEMENT

Project Intent: Grade, Draining, Bridge and Surface – reconstruct horizontal and vertical curves from beginning of project for approximately 7,000 feet then widen and resurface up to Watson creek which will be an exception to the project (currently under construction with SBR funds). From east of Watson creek bridge to end of project vertical curves will be evaluated for 3R design criteria and if they do not meet 3R criteria then roadway will be constructed using 4R design standard's, otherwise widen and resurfacing will be used. Safety slopes thru out the project will be designed using 4R criteria. Temporary widening and shoo flies as needed will be on the north side of existing roadway.

Utilities are on both side of existing SH 7, 3 gas lines cross SH 7 between NS 381 & 382, near the Antero Resources Atoka Gas Plant (Enogex).

Special Considerations:

Existing elements along the existing SH-7 such as the Atoka Gas Plant should be considered for avoidance, as well as minimizing impacts to wetlands and residential properties on both sides of the existing roadway.

Description of Proposed Improvements:

The Project intent is to widen and resurface the existing roadway with 2-12' lanes and 8' shoulders. Most of the reconstruction will occur on the existing roadway but in areas requiring horizontal and vertical curve corrections new construction may occur either to the north or south side of the existing roadway.

Some of existing bridges and/or boxes may be replaced or extended in length. Shoo- flies may be required either to the north or south side of the existing bridge and/or box structure being replaced or lengthened, in order to keep the roadway open to traffic during construction. The bridge (NBI 06523) over Watson Creek is an exception for this project.

Design Speed: 65 mph

Project Termini

Beginning of Project: just east of Dry Boggy Creek approach slab

End of Project: extend east approximately 5.4 miles

Limits of Survey: original survey complete – may need additional survey on either side of bridges

Limits of NEPA Survey Area: 200' north and south of existing roadway, length will be same as Survey limits.

Typical Section

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Open Section | <input type="checkbox"/> Curb & Gutter | <input type="checkbox"/> Divided, median width: |
| <input type="checkbox"/> Other (describe): | | |
| Number of Lanes: 2 | Lane Width: 12' | |
| Outside Shoulder Width: 8' | Inside Shoulder Width: ' | |
| Storm Sewer <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes Sidewalks | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, width: ' |
| Overlay <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes, thickness: | |
| Coldmill <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes, thickness: | |
| Add Shoulders <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes, width: 8' | |

Bridge Width 40'

Alignment

- Existing
- New, located North or South or East or West of existing
- Parallel Lanes, located North or South or East or West of existing
- Spot Improvements
- Horizontal, Description:
- Vertical, Description:

Detour

- Shoofly, located North or South or East or West of existing
- Widening, located North or South or East or West of existing
- Crossovers
- Close Road
- Signed Detour, Route Description:

- Phased Construction, Description:

Traffic Items

- Traffic Management Plan No Yes
- Median Barrier No Yes
- New Guardrail No Yes
- End Treatment No Type: GET
- Highway Lighting No Outside or Median
- Traffic Signals No Location(s):

Right-of-Way

- Additional RW Required No Yes, describe:
- Utility Conflicts No Yes, describe:

Miscellaneous

- Channel Re-Alignment No Yes, describe:

INITIATION ESTIMATE

Roadway:	\$ 8,000,000	Total Construction:	\$
Bridge:	\$ 90,000	Right-of-Way:	\$ 3,009,000
Traffic Control:	\$	Utility:	\$ 2,224,500
Signing and Striping:	\$	Total Estimate:	\$
Highway Lighting:	\$		
Traffic Signals:	\$		
Mobilization:	\$		
Staking:	\$		
E & C:	\$		

PROGRAM REVISIONS

Estimate: \$ Letting Date: Project Length:

Work Type:

2
Description:

Attachments (Aerial with Preliminary RW)

Distribution List:

- Director of Engineering
- Director of Capital Projects and Information Management
- Bridge Division
- Environmental Programs Division
- FHWA
- Field Division
- Project Management Division
- Right-of-Way Division
- Roadway Design
- Survey Division
- Traffic Engineering

OKLAHOMA DEPARTMENT OF TRANSPORTATION - Bridge Inspection Report

Suff. Rating: 86.8
ND

Health Index :
93.9

NBI No.: **06295** Structure No.: 0314 0771 X Local ID:51

Inspection Date: 10/10/2014 Reported By: BBOLERJACK
 Invoice No.: HWL031014 Inspected With: Stephen Yeske
 Agency :

Structure / Inspection Notes

All OM-3 signs are in place.

Elm.	Env.	Description	Un.	Qty.	Qty.St. 1	% 1	Qty.St. 2	% 2	Qty.St. 3	% 3	Qty.St. 4	% 4	Qty.St. 5	% 5
241	1	Reinforced Concrete Culvert	(LF)	96	86	90 %	2	2 %	8	8 %	0	0 %	0	0 %
331	1	Reinforced Conc Bridge Railing	(LF)	69	65	94 %	4	6 %	0	0 %	0	0 %	0	0 %
965	1	Debris	(EA)	1	0	0 %	1	100 %	0	0 %	0	0 %	0	0 %

Additional Elements

Elem.	Element Notes (Include Size and Location of Deterioration)
241	FX - Ceiling is breaking up at south end of west cell with rebar exposed. Small diagonal crack exists at SW and SE corners.
331	Top corners of NE post is chipped off.
965	FX - Both channels are higher than floor of structure.

OKLAHOMA DEPARTMENT OF TRANSPORTATION -

Bridge Inspection Report

Suff. Rating: 94.8
ND

Health Index :
99.4

NBI No.: **06532** Structure No.: 0314 0779 X Local ID:52

Inspection Date: 10/10/2014 Reported By: BBOLERJACK
 Invoice No.: HWL031014 Inspected With: Stephen Yeske
 Agency :



Structure / Inspection Notes

[2012] Structure was widened on both sides.

All OM-3 signs are in place at ends of approach guard rails.

Elem.	Env.	Description	Un.	Qty.	Qty.St. 1	% 1	Qty.St. 2	% 2	Qty.St. 3	% 3	Qty.St. 4	% 4	Qty.St. 5	% 5
12	1	Reinforced Concrete Deck	(SF)	4,091	3,681	90 %	410	10 %	0	0 %	0	0 %	0	0 %
107	1	Steel Open Girder Beam	(LF)	569	569	100 %	0	0 %	0	0 %	0	0 %	0	0 %
205	1	Reinforced Conc Column or Pile Extension	(EA)	8	8	100 %	0	0 %	0	0 %	0	0 %	0	0 %
215	1	Reinforced Conc Abutment	(LF)	90	90	100 %	0	0 %	0	0 %	0	0 %	0	0 %
234	1	Reinforced Conc Cap	(LF)	81	81	100 %	0	0 %	0	0 %	0	0 %	0	0 %
310	1	Elastomeric Bearing	(EA)	48	48	100 %	0	0 %	0	0 %	0	0 %	0	0 %
321	1	Reinforced Conc Approach Slab w/ or w/o AC O	(EA)	2	2	100 %	0	0 %	0	0 %	0	0 %	0	0 %
331	1	Reinforced Conc Bridge Railing	(LF)	202	202	100 %	0	0 %	0	0 %	0	0 %	0	0 %
515	1	Steel (Superstructure) Protective Coating	(SF)	50,224	50,224	100 %	0	0 %	0	0 %	0	0 %	0	0 %
859	1	Soffit of Concrete Decks and Slabs	(EA)	1	1	100 %	0	0 %	0	0 %	0	0 %	0	0 %
865	1	Steel Open Girder/Beam End (5 Ft.)	(LF)	240	240	100 %	0	0 %	0	0 %	0	0 %	0	0 %
906	1	Sealed Expansion Joint (SEJ-3)	(LF)	81	81	100 %	0	0 %	0	0 %	0	0 %	0	0 %
909	1	Pourable Fixed Joint Seal	(LF)	81	81	100 %	0	0 %	0	0 %	0	0 %	0	0 %
916	1	Steel Bearing Assembly	(EA)	48	48	100 %	0	0 %	0	0 %	0	0 %	0	0 %
968	1	Erosion	(EA)	1	1	100 %	0	0 %	0	0 %	0	0 %	0	0 %

Additional Elements

Elem.	Element Notes (Include Size and Location of Deterioration)
12	< none >
107	Exterior girders are composed of weathering steel while interior are painted steel.
205	< none >
215	< none >
234	< none >
310	< none >
321	< none >
331	< none >
515	< none >
859	FX - Holes along north side of previous soffit still exist where old rail was attached. Some epoxy rebar exposed.
865	< none >
906	< none >
909	< none >
916	< none >
968	FX - Erosion is not yet affecting substructure but will if left alone. Need to fill and add riprap.



**Anthony
Echelle/ODOT**

07/17/2012 10:31 AM

To Bill Simon/ODOT@fd9ns01.okladot.state.ok.us

cc Brent Frank/ODOT@fd9ns01.okladot.state.ok.us

bcc

Subject Fw: SH-7 J/P 24066(04) & 24066(07), Atoka County

History:

This message has been forwarded.

Bill,

Div 2 folks have reviewed the proposed alignment study for the referenced project. While the Alt 1A is closer to what we are trying to achieve, I do feel that there are some additional adjustments to consider. The ultimate goal of this project, is, to add shoulders to the roadway. As Brent explains below, we realize that some of the geometrics may not meet certain criteria. But after evaluating the project as a whole, we feel that further modifications, to stay on existing alignment, would still provide a great benefit to the roadway. Please pass this information on to those who need it.

Thanks,

Anthony Echelle, P.E.
Okla Dept of Transportation
Division 2 Engineer
580-298-3371

----- Forwarded by Anthony Echelle/ODOT on 07/17/2012 10:27 AM -----

Brent Frank/ODOT

07/17/2012 10:02 AM

To Anthony Echelle/ODOT@fd9ns01.okladot.state.ok.us

cc

Subject SH-7 J/P 24066(04) & 24066(07), Atoka County

Upon review of the proposed alignment, I would offer the following comments:

1. The proposed alignment indicates that there are four (4) sag curves which do not meet the comfort criteria as presented in Section 13.2.8.3 of the design manual, however, this section states, "the designer may consider flattening the sag vertical curve" if the comfort criteria is not met. Since this does not imply that the curve must be flattened, other criteria should be evaluated, primarily, if accident data at the location of the curve indicates a problem exists related to the curve, adjustments to the curve should be made, otherwise, the curve should be retained. Upon review of the accident data with Division Two's Maintenance Engineer, there does not appear to be any trends or high accident rates occurring at any of the locations where the sag vertical curves exists and I would recommend that the sag vertical curves be retained.
2. I would recommend the placement of left turn lanes at the section line roads throughout the project to remove left turning vehicles from the main travelled way.
3. The proposed alignment shows a shift to the south to avoid property owned by the Choctaw Housing Authority. Currently this property is vacant and I am unsure why it must be avoided. There is a substantial cut in this area with exist steep backlopes, consideration should be given to the addition of curb and gutter through this section placed along the 8' shoulder to minimize the required rights of way in this area.
4. The Typical Section should be revised to reflect the following:
 1. The shoulder widening should be 12" min. Aggregate Base with a Separator Fabric and 5" Asphalt Concrete.
 2. 5" Asphalt Concrete placed over the mainline.
 3. 4:1 Foreslopes with a 4' ditch bottom and 3:1 backslopes unless isolated conditions

warrant steeper backslopes.

4. Ditch should be 1'-6" below subgrade.
5. Clearzone for 4:1 should be no more than 34' (Table 13.2M indicates that clearzone for 3R for 5:1 to 4:1, 65-70 mph, ADT 1500-6000 to be 17-21 feet) utilizing 10' of the backslope to achieve clearzone.

It is better to improve more miles to a lower level than to improve fewer miles to a higher level.

Thank you
Brent Frank
Division Two Construction Engineer
P.O. Drawer 628
Antlers, OK 74523
580-298-3371

Table of Contents

1.0 Executive Summary	1
2.0 Project Initiation	
2.1 Purpose.....	2
2.2 Study Approach.....	3
3.0 Existing Facilities	
3.1 Project Location.....	4
3.2 Design.....	5
3.3 Drainage.....	6
3.4 Traffic and Collision Data.....	11
3.5 Utilities.....	12
4.0 Reconnaissance	
4.1 Environmental Study.....	13
4.2 Wetlands & Water Resources.....	13
4.3 Threatened and Endangered Species.....	14
4.4 Historic and Archaeological Sites.....	15
4.5 Hazardous Waste Sites.....	15
5.0 Proposed Alignment Alternates	
5.1 Discussion of 3R and 4R Designs.....	16
5.2 Design Criteria.....	17
5.3 Project Limits.....	19
5.4 Alignment Alternates West Project: JP 24066(04).....	20
5.5 Alignment Alternates East Project: JP 24066(07).....	24
6.0 Cost Estimates	
6.1 Construction Cost Estimates.....	29
6.2 Right-of-Way Cost Estimates.....	37
6.3 Utility Relocation Quantities & Estimates.....	39
6.4 Summary of Estimated Costs.....	41
7.0 Recommendations	
7.1 Summary and Recommendation JP 24066(04).....	43
7.2 Summary and Recommendation JP 24066(07).....	48
7.3 Study Area Recommendation.....	53

Appendices

1.0 Executive Summary

The purpose of this study is to determine the most feasible alignment alternate(s) to construct a two-lane rural collector through rolling terrain with 12 foot lanes, 8 foot shoulders and a 65 mph design speed for approximately 9.45 miles of State Highway 7 in western Atoka County. Several alignment alternates were evaluated and presented in detail in this report. This report should be reviewed along with the conceptual design plans for each alignment alternate submitted under separate cover.

The recommendations of this study are as follows:

JP 24066(04):

The preferred alignment for this job piece is Alternate 3, as described in this report. The alternate starts at sta. 1061+50 as a reconstruction on the existing alignment for approximately 4,850 linear feet. This allows for replacement of 5 vertical curves that do not meet 4R design criteria, as required per the initiation report. A mill, widen, and overlay typical section begins at sta. 1110+00 and continues east for 2,900 lf to sta. 1139+00 at the beginning of the Watson Creek Bridge exception. Alternate 3 proposes complete reconstruction of the highway on a 30' north offset alignment from the end of the project exception to the end of the job piece. This alternate will provide 19,038 lf of reconstructed pavement and 2,900 lf of mill, widen and overlay.

The estimated cost for Alternate 3 is \$11.46 million including right of way, utility relocations and a 15% contingency.

JP 24066(07):

The preferred alignment for this job piece is Alternate 1 with the addition of 1,655 lf of offset reconstruction at the beginning of the project to tie with the preferred alternate in JP 24066(04). This alternate proposes 2,650 lf of reconstructed pavement offset 30' north of the existing centerline from sta. 1295+00 to sta. 1321+50 to avoid the gas plant property and 3,800 lf of reconstructed pavement offset 30' north from sta. 1458+00 to sta. 1496+00 to eliminate acquisitions from multiple individual owners along the south right of way. The remaining 4,320 lf of reconstruction is along the existing alignment from sta. 1329+70 to sta. 1372+90 to replace deficient vertical curves. A proposed curb and gutter section begins at sta. 1534+80 to minimize right of way acquisitions and utility relocations. At sta. 1543+04 full depth widening begins for the proposed left turn lane at the State Highway 3B junction.

The estimated cost for Alternate 1 is \$11.41 million including right of way, utility relocations and a 15% contingency.

2.0 Project Discussion

2.1 Purpose

The Oklahoma Department of Transportation authorized BKL, Inc. to prepare an alignment study for two projects on State Highway 7 in Atoka County. The first project designated JP No. 24066(04) begins 6.0 miles east of the Johnston county line and extends east for 5.4 miles. This section includes approximately 725 feet of recently constructed improvements at Watson Creek. This study will propose alternates that utilize this improved section. The second project is designated JP No. 24066(07) which begins 11.4 miles east of the Johnston county line, (east terminus of JP No. 24066(04)) and extends east for 4.05 miles to the junction with State Highway 3B (Greathouse Dr. in the City of Atoka). Refer to Section 5.3 of this report for discussion about revised job piece limits.

The purpose of this study is to determine the most feasible alignment alternate(s) to construct a two-lane rural collector through rolling terrain with 12 foot lanes, 8 foot shoulders and a 65 mph design speed. Several alternate alignments and construction options will be investigated. This study will evaluate alternate alignments along the 9.45 mile corridor for both job pieces, considering them as a whole, with future construction plans submitted by job piece. This study will yield recommended alignment alternates for each job piece that will be the foundation of these future detailed construction plans. These recommendations will also be used to determine the limits of a detailed study to determine the impacts on cultural and natural resources as required to obtain NEPA clearance for the proposed projects.

The criteria used to evaluate the feasibility of the proposed alignments include state and federal roadway design requirements, data obtained from the project reconnaissance report, data from project initiation report prepared by ODOT, land acquisition costs, impacts to cultural and natural resources, construction costs, utility relocation requirements, topographic field survey data provided by ODOT, structural integrity and hydraulic capacity of existing drainage structures, and finally constructability. The information presented in this report is not intended to address every detail necessary for each alternate, but to consider enough information to determine the most feasible alternate(s) for the study area.

This study will evaluate multiple alignments and construction techniques. Alternates considered range from complete reconstruction on offset alignments to widen and overlay on the existing alignment. Widen and overlay alternates must meet ODOT's 3R design criteria for horizontal and vertical geometry as a minimum and 4R design criteria for safety slopes. Where horizontal or vertical geometry does not comply with current 3R criteria then those specific curves will be reconstructed to meet 4R design criteria. Any complete reconstruction alternates must meet 4R criteria for all aspects of the proposed design.

2.2 Approach

The approach used to prepare this study includes data collection, review and evaluation of available data, field observations, conceptual plan production and quantification of costs associated with each proposed alternate alignment. We have completed the following tasks in order to evaluate the design alternates and support our alignment recommendations:

- Discuss proposed improvements with Division 2 Project Management, Division Engineer and Maintenance Supervisor
- Review project initiation reports dated January 11, 2011
- Review and evaluate reconnaissance data as provided by ODOT (Reconnaissance Report prepared by Able Consulting dated Nov. 2009)
- Review topographic field survey as provided by ODOT
- Analysis of existing route to determine which horizontal and vertical curves meet 3R design criteria and which curves must be reconstructed to 4R design criteria
- Review Hydraulic Conference reports to determine what type of construction or replacement is required for each bridge location
- Determine flow capacity of remaining cross drains not classified as a bridge structure
- Review traffic and collision data provided by ODOT to identify locations where addition safety improvements may be warranted
- Design alternate alignments that meet ODOT and AASHTO design criteria for 3R (for widen and overlay alternates) and 4R designs while considering traffic service, constructability, impacts to adjacent properties, impacts to wetlands, impacts to historic and cultural resources, presences of hazardous waste sites and available construction budget
- Prepare an itemized construction cost estimate for each proposed alternate
- Quantify other non-construction items including right of way acquisitions, wetland mitigation, impacts to historic and cultural resources, hazardous waste sites and required utility relocations
- Prepare conceptual design drawings to illustrate each proposed alternate
- Review all data collected or prepared to provide a recommendation for the proposed alignment based upon all of the factors previously discussed

3.0 Existing Facilities

3.1 Project Location

The project consists of 9.45 miles of roadway extending west from the city of Atoka and is more specifically described in the project initiation reports as follows:

Job Piece 24066(04) begins 6.0 miles east of the Johnston County line and extends east for 5.4 miles to terminate at the beginning of Job Piece 24066(07) which begins 11.4 miles east of the Johnston County line and extends east for 4.05 miles and terminates at the junction with State Highway 3B (Greathouse Road) in the town of Atoka. Refer to Section 5.3 of this report for discussion about revised job piece limits.

There is an exception within the project limits of Job Piece 24066(04). The exception is approximately 725 feet in length and includes a new bridge structure over Watson Creek and associated roadway widening. This improved section shall be utilized in any alternate proposed for this job piece.

This section of State Highway 7 is located between the towns of Wapanucka in Johnston County and Atoka in Atoka County. The entire project is within the boundaries of Field Division 2 of the Oklahoma Department of Transportation. Odd numbered highway designation (7) suggests a north-south oriented facility; however, this section is the only east-west running state highway that extends through western Atoka County. This rural portion of Atoka County consists of mainly large residential tracts with some commercial properties adjacent to the highway. The existing topography varies from somewhat level to severely rolling.



Project Location Map

3.2 Existing Design

The current facility was constructed during the 1950's with the exception of the Watson Creek Bridge improvements which were completed in 2011. The older sections were designed and constructed using the 1937 State Standard Specifications. The Watson Creek improvements were designed and constructed using the 1999 Oklahoma Department of Transportation Standard Specifications for Highway Construction.

The existing facility was constructed with 12 foot wide lanes and 1 foot paved shoulders. Fill slopes were constructed at 1:4 for fill heights less than 6 feet and 1:2 for fill heights greater than 6 feet. Cut sections were constructed with 1:4 foreslopes, 8 foot rounded ditches and backslopes ranging from 1:4 for cuts 6 feet or less and 1:2 for cuts greater than 6 feet. Typical section sheets from the as-built drawings show a roadway cross slope of 2 inches in 12 feet or 1.39%.

Portions of the project corridor are through severely rolling terrain and the existing roadway profile follows this topography. Many vertical curves do not meet ODOT design criteria for 3R or 4R projects at the currently posted and proposed design speed of 65 miles per hour. Horizontal curves throughout the project limits do meet 3R design criteria. This allows for a widen and overlay option on the existing alignment with the required vertical curve corrections. See Appendix A for existing horizontal and vertical curve data tables and 3R evaluation.



Rolling terrain with limited sight distance

3.3 Existing Drainage

The surface drainage pattern for JP 24066(04) is generally oriented to flow from the south to north. The majority of these drainage basins outfall into Watson Creek. Channel flow through this area is from north to south in Watson Creek. The surface drainage pattern for JP 24066(07) is oriented from south to north with drainage basins discharging into Sand Creek which also flows from south to north and ultimately outfalls into Muddy Boggy Creek on the northwest side of the City of Atoka.

Roadside drainage is conveyed through open ditches that are typically shallow in depth and generally wide. The existing ditches appear to convey the runoff well.

Cross Drains

Cross drains consist of reinforced concrete boxes or pipe and the majority appear to be in good condition based upon our field observations. These pipes have been analyzed and the following tables summarize their size, type, location and overtopping frequency by job piece. The design storm for this rural major collector is a 25 year event. Cross drain hydraulic reports for JP 24066(04) are included in Appendix B of this report. Cross drain hydraulic reports for JP 24066(07) are included in Appendix C of this report. Refer to Section 5.3 of this report for discussion about revised job piece limits.

JP 24066(04)			
Cross Drains			
STA. LOCATION	STRUCTURE TYPE & SIZE	OVERTOPPING FREQUENCY	PROPOSED IMPROVEMENT
1062+55.60	4'X3' RCB	Q5	REPLACE W/ 10' X 3' RCB
1083+43.01	10'X7' RCB	Q65	EXTEND TO CLEAR ZONE
1095+12.40	18" RCP	>Q100	EXTEND TO CLEAR ZONE
1098+03.90	18" RCP	Q85	EXTEND TO CLEAR ZONE
1109+22.85	18" RCP	Q30	EXTEND TO CLEAR ZONE
1115+88.20	24" RCP	Q53	EXTEND TO CLEAR ZONE
1154+94.56	24" RCP	>Q100	EXTEND TO CLEAR ZONE
1160+57.57	3'X3' RCB	>Q100	EXTEND TO CLEAR ZONE
1174+44.62	5'X7' RCB	>Q100	EXTEND TO CLEAR ZONE
1207+00.63	36" RCP/48" CGMP	Q12	REPLACE W/ 6' X 4' RCB
1234+19.23	18"RCP/12"CGMP	Q50	REPLACE WITH 18" RCP
1239+45.67	18" RCP	>Q100	EXTEND TO CLEAR ZONE
1265+67.72	2-6'X3' RCB	>Q100	EXTEND TO CLEAR ZONE
1286+51.86	5'X2' RCB	>Q100	EXTEND TO CLEAR ZONE

JP 24066(07)			
Cross Drains			
STA. LOCATION	STRUCTURE TYPE & SIZE	OVERTOPPING FREQUENCY	PROPOSED IMPROVEMENT
1288+14.60	6'X2' RCB	>Q100	EXTEND TO CLEAR ZONE
1301+39.50	4'X2' RCB	Q16	REPLACE W/ 8' X 3' RCB
1323+65.90	4'X2' RCB	>Q100	EXTEND TO CLEAR ZONE
1339+56.05	24" RCP	Q5	REPLACE W/ 48" RCP
1342+40.20	24" RCP	>Q100	EXTEND TO CLEAR ZONE
1365+83.80	24" RCP	>Q100	EXTEND TO CLEAR ZONE
1378+30.50	36" RCP	Q40	EXTEND TO CLEAR ZONE
1391+85.50	24" RCP	>Q100	EXTEND TO CLEAR ZONE
1405+17.40	36" RCP	>Q100	EXTEND TO CLEAR ZONE
1418+43.50	42" RCP	>Q100	EXTEND TO CLEAR ZONE
1484+54.90	6'X2' RCB	Q8	REPLACE W/ 10' X 4' RCB
1492+90.20	10'X3' RCB	>Q100	EXTEND TO CLEAR ZONE
1497+57.40	36" RCP/36" CGMP	>Q100	REPLACE WITH 36" RCP
1497+95.00	36" RCP/24" CGMP	>Q100	REPLACE WITH 36" RCP
1511+90.00	36" RCP	>Q100	LEAVE IN PLACE - OUTSIDE CLEAR ZONE
1528+55.65	4'X4' RCB	>Q100	EXTEND TO CLEAR ZONE
1534+42.00	8'X5' RCB	>Q100	EXTEND TO CLEAR ZONE

There are five cross drains within the project limits that do not have the capacity to convey the design storm. Two are crossings in JP 24066(04) that have overtopping occurring during the 5 and 12 year storms. The remaining three are shallow reinforced concrete boxes located in JP 24066(07). These five conduits will be replaced with pipes or boxes that have the capacity to pass a 25 year event. Four cross drains will be replaced due to condition of the existing conduit. All four are combinations of reinforced concrete pipe and corrugated metal pipe.

All existing and any proposed cross drains must extend to the clear zone regardless of alignment alternate selected. Shallow structures are more difficult to extend and may require slight roadway profile revisions to accommodate the extensions. All of these replacements and extensions have been quantified and the cost of this work is included in our construction cost estimates.

Bridges

There are five bridge structures within the project limits. As previously mentioned in this report, the Watson Creek bridge structure was recently replaced, and is an exception to JP 24066(04). The following table summarizes the remaining four bridges by location, size and overtopping frequency by job piece:

JP 24066(04)		
Bridge		
Sta. Location	Structure Type & Size	Overtopping Frequency
1138+46.18	Triple-10'X7' RCB	>Q100

JP 24066(07)		
Bridges		
Sta. Location	Structure Type & Size	Overtopping Frequency
1353+41.40	Double-10'X10' RCB	>Q100
1444+45.60	Triple-10'X7' RCB	>Q100
1514+95.50	Triple-13'X11' RCB	>Q100

The only bridge in JP 24066(04) is a triple cell 10' x 7' RCB (NBI # 06295) which serves as an overflow structure for the newly constructed Watson Creek bridge. This RCB was constructed in 1938, has a sufficiency rating of 81.4, is not deficient, and has adequate capacity for the design storm. A hydraulic conference was held on 3/18/11 discussing its capacity and any required replacement to be included in this construction contract. It was decided that the existing structure can remain and be extended to the clear zone at 0.3% slope. Hydraulic modeling for this structure was prepared by SAIC under separate contract with the Oklahoma Department of Transportation. Copies of the hydraulic findings are included in Appendix D of this report. An email dated 3/31/11 from Leslie Lewis, P.E. detailing the conference results is included in Appendix D of this report.



NBI # 06295 in foreground and recently completed Watson Creek Bridge

The remaining three (3) structures are located within the limits of JP 24066(07). All are multi-cell reinforced concrete boxes. A double cell 10' x 10' RCB (NBI # 06055) is located at station 1353+41 and conveys drainage from an unnamed tributary of Sand Creek. This RCB was constructed in 1938, has a sufficiency rating of 87.8, is not deficient, and has adequate capacity for the design storm. A hydraulic conference was held discussing this bridge, and it was decided to replace the existing double cell 10' x 10' RCB with a single cell 20' x 10' RCB due to constant debris issues with the existing structure. Hydraulic modeling for this structure was prepared by Meshek & Associates under separate contract with the Oklahoma Department of Transportation. Copies of the hydraulic findings are included in Appendix D of this report. An email dated 4/05/11 from Leslie Lewis, P.E. detailing the conference results is included in Appendix D of this report.



NBI # 06055

A triple cell 10' x 7' RCB (NBI #06303) is located at station 1444+45 which conveys drainage from an unnamed tributary of Sand Creek. This RCB was constructed in 1938, has a sufficiency rating of 81.4, is not deficient, and has adequate capacity for the design storm. A hydraulic conference was held discussing this bridge, and it was decided to replace the existing triple cell 10' x 7' RCB with a single cell 20' x 10' RCB due to constant debris issues with the existing structure. Hydraulic modeling for this structure was prepared by Meshek & Associates under separate contract with the Oklahoma Department of Transportation. Copies of the hydraulic findings are included in Appendix D of this report. An email dated 4/05/11 from Leslie Lewis, P.E. detailing the conference results is included in Appendix D of this report.



NBI # 06303

A triple cell 13' x 11' skewed RCB (NBI # 24302) is located at station 1514+95 which conveys drainage from an unnamed tributary of Sand Creek. This RCB was constructed in 1999, has a sufficiency rating of 93.1, is not deficient, and has adequate capacity for the design storm. The wingwalls on this RCB fall within the 65 mph clear zone by approximately three feet on each side. Removing the wingwalls, extending the RCB to



NBI # 24302

the clear zone and constructing new wingwalls on this recently constructed skewed RCB would be impractical and costly for the actual amount of box extension achieved. The existing RCB is quite shallow and the installation of guardrail above the RCB is not possible without profile revisions. We propose constructing a longitudinal concrete barrier above this RCB with guardrail to the length of need and G.E.T. end sections as required.

All of these bridge replacements and extensions have been quantified, and the cost of this work is included in our construction cost estimates.

3.4 Traffic and Collision Data

The following traffic data was provided by Denise Slattery with the Oklahoma Department of Transportation.

Design Traffic Data for:

Project No.:	SSP-103C(091)SS	Project No.:	SSP-103C(194)SS
County:	ATOKA	County:	ATOKA
JP No.:	24066(04)	JP No.:	24066(07)
Highway:	SH 7	Highway:	SH 7
2011 AADT =	1300	2011 AADT =	2800
2031 AADT =	1900	2031 AADT =	4000
K =	11 %	K =	10 %
D =	56 %	D =	55 %
T (AADT) =	18 %	T (AADT) =	16 %
T (DHV) =	14 %	T (DHV) =	12 %
T3 =	12 %	T3 =	10 %

Traffic collision data was provided by Ken Hess with the Oklahoma Department of Transportation. The collision analysis documents 31 total incidents resulting in 13 injuries over a five year history, from 11/1/2005 through 10/31/2010. There were no fatality accidents during the study period.

A review of the tabulation of collisions by type of collision shows that almost 65% are included in just three types. Fixed object collisions are a large percentage of the total by type and may be attributed to the present roadway geometry. The existing surfacing has 12' lanes without shoulders and sideslopes up to 1:2, resulting in narrow travelways and steep sideslopes that could contribute to edge runoff by errant drivers. The criteria used for the design of this project includes 12' lanes with 8' paved shoulders and recoverable slopes to the clear zone. The resulting highway will likely reduce these types of incidents.

Another prevalent type of collision is collisions with animals, typically deer. These may be unavoidable at times; however, improvements to the highway profile will provide adequate stopping sight distance at a design speed of 65 mph. The increases in line of sight distance should allow adequate time to avoid most of these types of collisions.

The majority of accidents occur during daylight hours, typically with clear conditions. Less than 10% of the total incidents occur when it is raining or when wet surface conditions were present. There is not any concentration of accidents or any areas that seem to be more susceptible to collisions based upon our analysis of this report. Accidents at residential drives, failure to yield or stop at section line roads, collisions with animals and fixed objects generally occur randomly throughout the project limits. A copy of the collision analysis is included in Appendix E of this report.

3.5 Utilities

Overhead electric, underground telephone and underground fiber optic data lines run the entire length of the project. Overhead electric facilities are generally located along the south side of the highway with intermittent service crossings to the north. Underground telephone lines are typically along the north right of way but do switch to the south right of way closer to Atoka. There are many instances where there are multiple underground telephone lines along both sides of the highway. An underground fiber optic data line is located along the south right of way from the west end of the project and continues east to station 1448+00 where it makes a perpendicular highway crossing to the north right of way. This line continues east along the north right of way to the east end of project.

There is a 6" water line on the north side of the highway for the entire length of JP 24066(04). A 4" water line begins near sta. 1070+00 in the north right of way and continues east to the end of this job piece. At the beginning of JP 24066(07) the 4" water line crosses to the south right of way and continues east to sta. 1502+00 where it crosses to the north right of way and continues east to the end of project. The 6" water line continues east on the north side to sta. 1391+50 where it crosses to the south right of way, continues east to sta. 1449+00 and crosses back to the north right of way and continues to the end of project.

There are no natural gas or petroleum pipelines identified within JP 24066(04). Natural gas collection and transmission lines parallel and cross the existing highway at several locations within J/P 24066(07) project limits. Scissortail Energy has a 10" steel line that crosses near sta. 1294+50. Enogex has two gas lines, 10" and 30" steel, crossing near sta. 1312+00. Antero Resources has an 8" steel high pressure line that crosses near sta. 1313+00.

Antero Resources has another 8" steel high pressure line that parallels the highway approximately 80' north of the centerline of survey on J/P 24066(07). This line begins near sta. 1371+00 and continues east to sta. 1396+00 where it turns to the northeast away from the highway alignment. This line appears to connect to a gas wellhead at sta. 1393+00. All proposed horizontal alignment alternates are designed to avoid conflict with the wellhead. Markwest Energy has a 24" high pressure steel gas line crossing at near sta. 1417+00. All proposed profiles were designed to eliminate any cut sections at these pipe crossings.

A list of utility owners with contact information is included in Appendix F of this report.

4.0 Reconnaissance

Preliminary environmental data was obtained from the Reconnaissance Report prepared by Able Consulting and Meshek & Associates dated November 2009. The report was prepared for the Oklahoma Department of Transportation and was provided to BKL, Inc. for use in our alignment study. Information contained in the reconnaissance report may not necessarily be reproduced and included in this report. All information contained in the reconnaissance report is included in this report by reference.

4.1 Environmental Study

Our alignment study will culminate in recommended alignment alternates providing a more precise understanding of the limits for the detailed environmental study required to obtain NEPA clearance for this proposed project.

4.2 Wetlands & Water Resources

The study area was visually inspected in October 2009 to verify the National Wetlands Inventory maps. This visual inspection did not include the standard data collection required to confirm all three wetlands parameters as access was limited to existing right of way. These observations did verify that 4 of the 24 potential wetlands identified on the NWI maps were farm ponds not associated with blue line streams. They also observed that all four bridge locations exhibited hydric soils that will require further investigation. Maps showing all of these locations are included in the reconnaissance report.

The Oklahoma Scenic Rivers Commission verified that there are no scenic rivers within the project corridor. The project is located near the northern extents of the Antlers Bedrock Aquifer as illustrated on exhibit 9-3 of the reconnaissance report.

4.3 Threatened and Endangered Species

Several endangered and one threatened species have Designated Critical Habitat located in Atoka County.

Species: Interior Least Tern Status: Endangered

Nesting habitat of the Interior Least Tern includes bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs. The birds prefer open habitat, and tend to avoid thick vegetation and narrow beaches. Sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs, provide favorable nesting habitat.

Based upon this narrative from the Texas Parks and Wildlife Department it would appear that the existing topography, land use and available water resources within the study area may not provide favorable habitat for this species.

Species: Whooping Crane Status: Endangered

Whooping Cranes use a variety of habitats during their long migrations between northern Canada and the Texas coast. Croplands are used for feeding, and large wetland areas are used for feeding and roosting. Whooping Cranes are known to roost in riverine habitat along the Cimarron River and the Red River in Oklahoma. The birds often roost on submerged sandbars in wide unobstructed channels isolated from human disturbance. Whooping Cranes also use large wetland areas associated with lakes for roosting and feeding during migration.

Again this description from the Texas Parks and Wildlife Department illustrates that the existing topography, land use and available water resources within the proposed project limits may not provide favorable habitat for this species.

Species: American Burying Beetle Status: Endangered

The beetle's range includes 34 Oklahoma counties, spanning the eastern third of the state. Past consultations for the ABB on individual projects were costly, time-consuming, and resulted in few conservation results for the species. With the new ABB Conservation and Transportation Improvement Streamlining Initiative ODOT is providing enhanced mitigation of environmental impacts from transportation projects. In addition to enhancing ABB conservation efforts, this initiative streamlines the approval and construction of individual projects.

Based on this report from the Federal Highway Administration's website it appears that ODOT has had extensive experience with the ABB and the measures necessary for mitigation if they are indeed present within the project limits.

Species: Piping Plover

Status: Threatened

Piping plovers breed only in North America in three geographic regions: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems. They eat insects, spiders, and crustaceans. The Northern Great Plains Piping Plover population was federally listed as threatened in 1986.

This information was obtained from the U.S. Fish and Wildlife Service's Piping Plover fact sheet.

4.4 Historic and Archaeological Sites

A cultural resources review was conducted by ODOT's Cultural Resources Program on September 10, 2009 for the study area. The report identified twenty-two (22) sites that have a low potential for NRHP eligibility. These sites include eighteen (18) pre-1964 structures, 3 concrete culverts and 1 razed pre-1964 farmstead, which was listed as a potential archeological site. Dissected upland buttes/overlooks and upland slopes above major drainages were identified as areas potentially supporting prehistoric archeological sites. Copies of the cultural resources review findings are included in Appendix G of this report.

4.5 Hazardous Waste Sites

Environmental Data Resources, Inc. performed a database search on October 27, 2009. Three (3) sites were identified within the project limits. The first two sites are owned by ODOT and listed as Doris Liquor Store located at 220 N Old Broom Road. This site contains two UST's that are permanently out of use.

The third site is located at 205 N. Hickory Hill Road (approximately sta. 1302+00 to sta. 1313+00 right of the centerline of survey) Antero Resources Atoka Gas Plant is listed on multiple regulated databases that contain facility information. This site likely contains controlled chemicals.

5.0 Proposed Alignment Alternates

5.1 Discussion of 3R and 4R Designs

Prior to discussing alternate horizontal alignments we should first discuss the basic design controls used for this study. The scope of this project requires an evaluation of the existing horizontal and vertical geometry to determine compliance with 3R design criteria. 3R projects (rehabilitation, restoration and resurfacing) are typically intended to extend service life and improve highway safety. A widen and overlay option is feasible if the highway does not have a significant number of deficiencies relative to the 3R design criteria.

Existing horizontal curves and vertical curves beyond sta. 1146+50 were evaluated for 3R design criteria. All horizontal curves meet the criteria and can be used in a 3R design.

There are 54 vertical curves throughout the limits of the study. The first 6 vertical curves on JP 24066(04) are to be reconstructed per the project initiation report and were not evaluated for 3R design. Crest vertical curves are to be reconstructed if the AASHTO existing design speed is 20 mph lower than the proposed design speed, and the crest hides from view a major hazard, and the design year AADT is greater than 1,500 vehicles per day. Sag vertical curves are to be evaluated on comfort criteria as discussed in section 13.2.8.3 of the ODOT design manual. Copies of the geometric design data used in our evaluation are included in Appendix H of this report.

We have completed the assessment and concluded that there are a number of vertical curves that do not meet 3R criteria. These deficient vertical curves are typically grouped together and will have to be reconstructed. Based upon our evaluation we believe that a widen and overlay project can be completed along the existing alignment with vertical curve corrections as required and temporary pavement to maintain traffic.

The scope also requires that all side slopes within the clear zone will be constructed to meet 4R design criteria. All proposed alternates include 1:6 side slopes constructed to the clear zone. Preliminary tops of cuts and toes of fill were determined using this criteria and are shown on the conceptual plans submitted for each alternate. The existing facility has many steep side slopes and corrections will often require the acquisition of additional right of way to construct these 4R slopes. This will produce a larger footprint than the existing facility, even in areas with minimal vertical grade adjustments.

5.2 Design Criteria

The design used for this project was based upon several factors. The highway designation, type of construction (3R or 4R), and current state and federal highway design standards. Geometric design is compliant with current Oklahoma Department of Transportation design criteria from the Roadway Design Manual and the 2009 Standard Specifications for Highway Construction. The design also complies with “A Policy on Geometric Design of Highways and Streets” as published by the American Association of State Highway and Transportation Officials.

This section of State Highway 7 in Atoka County is designated as a rural major collector. The highway is currently posted at 65 miles per hour. The project initiation report proposes a design speed of 65 mph so all alternate alignments will be based on this criteria. The geometry of the recently constructed Watson Creek improvements meet the AASHTO and ODOT design criteria for 65 mph and, as previously mentioned, will be utilized in all alternates proposed for this project.

All proposed open roadway sections for this project will include 12' lanes with 8' paved shoulders and 1:6 side slopes to the clear zone. A 5" asphalt pavement overlay with a full depth shoulder of 11" of asphalt on 8" type B aggregate base and a 5" asphalt shoulder on 8" type B aggregate base was evaluated for the widen and overlay alternate. The full depth shoulder is provided for maintenance of traffic during construction.

There is a widen and overlay section with curb and gutter proposed for the eastern 1600 lf of JP 24066(07) to minimize any required right of way acquisitions approaching the more urbanized area of the project near the City of Atoka. This typical includes a 5" asphalt overlay and full depth widening for a left turn lane at the junction of SH 7 and SH 3B. This section will have 12' wide asphalt lanes with 2'-8" pc concrete curb and gutter and 5' wide pc concrete sidewalks on each side.

The complete reconstruction section will have 8" asphalt surfacing on 12" type B aggregate base and stabilized subgrade. This typical was evaluated for all areas where complete reconstruction is required.

Shoofly paving was estimated at 6" asphalt on 8" stabilized subgrade with 13' lanes and 1:3 side slopes to catch points. Temporary pavement is also estimated at 6" asphalt on 8" stabilized subgrade with widths varying from 13' to 20' and 1:3 side slopes to catch points. The following is a summary of each proposed typical section; tables listing itemized quantities to determine costs per linear foot for each typical section are included in Appendix I of this report.

Typical Section No. 1- Widen and Overlay

- 1" cold mill existing asphalt pavement and 1" asphalt leveling course
- 5" asphalt overlay - 3" Type S3 (PG 64-22) and 2" Type S4 (PG 70-28)
- 5" asphalt widening (shoulder) - 3" Type S3 (PG 64-22), 2" Type S4 (PG 64-22), 8" type B aggregate base
- 1:6 side slopes to the 30' clear zone
- Estimated cost of \$147.16 per linear foot

Typical Section No. 2 – Overlay with 2'-8" curb and gutter

- 1" cold mill existing asphalt pavement and 1" asphalt leveling course
- 5" asphalt overlay - 3" Type S3 (PG 64-22) and 2" Type S4 (PG 70-28)
- 2'-8" pc concrete curb and gutter on 8" type B aggregate base
- 5' wide pc concrete sidewalk each side
- Estimated cost of \$178.50 per linear foot

Typical Section No. 3 – Widen and overlay with 2'-8" curb and gutter

- 1" cold mill existing asphalt pavement and 1" asphalt leveling course
- 5" asphalt overlay - 3" Type S3 (PG 64-22) and 2" Type S4 (PG 70-28)
- 8" asphalt widening- 3" Type S3 (PG 64-22), 3" Type S3 (PG 70-28), and 2" Type S4 (PG 70-28) on 12" type B aggregate base and 8" stabilized subgrade
- 2'-8" pc concrete curb and gutter on 8" type B aggregate base
- 5' wide pc concrete sidewalk each side
- Estimated cost of \$214.50 per linear foot

Typical Section No. 4 – Complete reconstruction

- 8" asphalt pavement- 3" Type S3 (PG 64-22), 3" Type S3 (PG 70-28), and 2" Type S4 (PG 70-28) on 12" type B aggregate base and 8" stabilized subgrade
- 5" asphalt shoulder - 3" Type S3 (PG 64-22), 2" Type S4 (PG 64-22) on 8" type B aggregate base
- 1:6 side slopes to the 30' clear zone
- Estimated cost of \$228.92 per linear foot

Typical Section No. 5 – Temporary detour/shoofly

- 6” asphalt pavement - 4” Type S3 (PG 64-22), 2” Type S4 (PG 64-22) on 8” stabilized subgrade
- 26’ wide pavement section
- 1:3 side slopes to catch points
- Estimated cost of \$81.42 per linear foot

Typical Section No. 6 – Temporary pavement

- 6” asphalt pavement - 4” Type S3 (PG 64-22), 2” Type S4 (PG 64-22) on 8” stabilized subgrade
- 1:3 side slopes to catch points
- Estimated cost of \$47.57 per linear foot

5.3 Project Limits

The purpose of this study is to evaluate alternate alignments along a 9.45 mile corridor beginning 6.0 miles east of the Johnston county line and continuing east for 9.45 miles. The initiation report has JP 24066(04) ending and JP 24066(07) beginning 11.4 miles east of the Johnston county line. This places the EOP at the section line intersection of SH-7 and Carr Penn Road (N 382 Rd.), in the middle of a sag vertical curve that must be reconstructed per the scope of this study. This location was evaluated early in the design process and all three alignment alternates propose reconstructing this vertical curve, making this an undesirable location to end construction of individual projects.

We were told by ODOT staff that the tie location between job pieces could be adjusted if necessary, so we evaluated alternate locations. In an attempt to keep the job pieces relatively equal in length we looked at the next section line to the west. This places the EOP of JP 24066(04) at the section line intersection with Hickory Hill Road (N381 Rd.) at a location where reconstruction is not required based on our 3R evaluation.

The purpose of this study is to evaluate both job pieces, considering them as a whole, with future construction plans submitted by job piece. Ending JP 24066(04) and beginning JP 24066(07) at Hickory Hill Road will provide an ideal location to tie the job pieces for constructability purposes. These are the job piece limits evaluated, discussed and quantified for the proposed alignment alternates in this study.

5.4 Alignment Alternates - JP 24066(04)

Job Piece 24066(04) begins 6.0 miles east of the Johnston County line and extends east for 4.27 miles. Several alternate alignments were studied for this project and were combined with the requirements from the initiation report. Refer to Section 5.3 of this report for discussion about revised job piece limits.

The project initiation report required the first 7,000 linear feet to have horizontal and vertical corrections to meet 4R design criteria. The remaining section west of the Watson Creek bridge exception will be a mill, widen, and overlay section. Horizontal and vertical curves were evaluated for 3R design criteria from the end of the Watson Creek bridge exception to the end of the project. If they meet 3R requirements they will be widened and overlaid, if not, they will be reconstructed to 4R design criteria. Safety slopes throughout the project will be reconstructed to 4R design requirements regardless of improvement proposed.

Alignment Alternate 1: Widen and overlay: geometric corrections on existing alignment

The alternate starts at sta. 1061+50 as a reconstruction on existing alignment for approximately 4,850 linear feet. This allows for replacement of 5 vertical curves that do not meet 4R design criteria. The sag vertical curve at sta. 1095+75 will be reconstructed as well, though it does currently meet 4R criteria. The replacement is required due to its proximity to the adjacent non-compliant crest curves. Cuts up to four feet will require approximately 5,050 linear feet of temporary paving. The vertical corrections will improve sight distance at the intersection of Standing Rock Road, currently gravel surfaced on north approach and closed on south.

The mill, widen, and overlay typical section begins at sta. 1110+00 and continues east for 2,900 lf to sta. 1139+00 which is the beginning of the Watson Creek Bridge exception.

The Watson Creek overflow structure NBI # 06295 is at the end of this section and is located approximately 50' from the recent improvements at Watson Creek. This triple cell 10' x 7' RCB will remain and be extended to the clear zone in both directions.

The Watson Creek Bridge exception ends at sta. 1144+88.11 for this alternate, where the 3R evaluation begins. The first 3 vertical curves are proposed for reconstruction. The sag curve at sta. 1174+40 with a comfort speed of 48 mph must be replaced. The sag curve at sta. 1147+50 should be replaced, and the crest curve at sta. 1164+50 will be reconstructed as a part of the sag curve corrections. The reconstruction of these vertical curves will require 3,900 lf of temporary shoo-fly pavement.

The proposed construction will have a large impact on a residential property near sta. 1153+00, left. The required right of way will necessitate the acquisition of the structure. We evaluated this section as a mill, widen and overlay which left the existing sag curve at sta. 1147+50 in place. The construction of 4R sideslopes increased the footprint to a point where structure acquisition was still likely.

The widen and overlay section resumes at sta. 1179+50 and continues east for 1,490 lf to sta. 1194+40, where reconstruction begins of the crest vertical curve at sta. 1198+10. This reconstruction is required to bring the crest curve to 4R standards at the location of the new G Bar Road intersection. This intersection is at a new location, approximately 600 feet west of the existing location, and the short section of highway reconstruction is suggested for the existing crest curve west of the intersection. This reconstruction will require 1,050 lf of temporary paving to maintain traffic.

The mill, widen, and overlay section continues east at sta. 1201+90 for 2,710 lf to sta. 1229+00. This section contains the revised G Bar Road intersection on the south side of the existing highway. The existing G Bar Road intersection will be closed to highway access.

Reconstruction begins for the sag vertical curve at sta. 1229+60. The corrections required will necessitate the reconstruction of the following crest curve at sta. 1237+25. This crest curve will be lowered over 10 vertical feet and will require the construction of 2,050 lf of 26' wide temporary shoo-fly pavement and the reconstruction of the intersection of Wards Chapel Road. The existing intersection is improved to the south with 2 lane asphalt pavement with a profile grade that falls away from the existing alignment. The north leg is open and dirt surfaced.

The mill, widen and overlay resumes at sta. 1248+50 and continues east on the existing centerline for approximately 3,834 lf to the end of JP 24066(04) at sta. 1286+83.42.

Alignment Alternate 2: Widen and overlay: geometric corrections on offset alignment

This alternate starts at sta. 1061+50 as a widen and overlay on the existing alignment and almost immediately offsets to the north through a complimentary set of horizontal 1° curves that places the proposed alignment parallel to and 40' north of the existing centerline. The reconstruction begins at sta. 1066+50 and continues for 5,450 lf to sta. 1121+00 where a 2° horizontal curve brings the proposed alignment back to the present centerline. Mill, widen and overlay is proposed for the remaining 1,800 lf to the beginning of the Watson Creek Bridge exception.

The majority of the additional right of way required to construct this section will come from the north side of the existing highway with only 2 small parcels needed along the south right of way. The acquisitions along the north side will have a larger impact on potential wetlands through this first 7,750 lf of JP 24066(04) than Alternate 1.

Within this segment are two county road intersections. Standing Rock Road is gravel surfaced section line road to the north and closed to the south. The intersection falls in the proposed 40' north offset highway alignment at sta. 1069+75. The proposed highway profile was designed to match grade with the existing county road so that minimal grade adjustments and reconstruction would be required along the open north approach.

The second intersection is with Old Broom Road at sta. 1124+10. This section line road is open in both directions with gravel surfacing on the south approach and unimproved to the north. This intersection lies in the proposed widen and overlay section and minimal grade adjustments are anticipated on the approaches.

The Watson Creek overflow structure NBI # 06295 is at the end of this section and is located approximately 50' from the recent improvements at Watson Creek. This triple cell 10' x 7' RCB will remain and be extended to the clear zone in both directions.

The Watson Creek Bridge exception ends at sta. 1144+89.91 for this alternate, where the 3R evaluation begins. The first 3 vertical curves are proposed for reconstruction as previously described in Alternate 1. The sag curve at sta. 1147+50 will be reconstructed on the existing alignment then, through a pair of 1° horizontal curves, the proposed alignment begins to offset 40' to the north. This parallel offset continues to sta. 1190+00 where a single 3° horizontal curve returns the proposed alignment to the existing centerline.

This proposed offset section replaces two deficient vertical curves, however, the existing topography at the proposed offset requires cuts of 12' and fills approaching 15'. The large cut near sta. 1163+50 will require the acquisition of a single family residential structure and 0.42 acres of property owned by the Choctaw Housing Authority.

A short widen and overlay section continues to sta. 1194+50 where reconstruction begins for an existing crest curve just west of the realigned G-Bar Road intersection. This vertical curve will be lowered 2' on the existing alignment.

The mill, widen and overlay resumes at sta. 1202+25 and continues east for 2,125 lf to sta. 1223+50. The realigned G Bar Road intersection is within these limits. This new perpendicular intersection replaces the severely angled existing intersection 600 feet to the east. This realignment is proposed for all alternates.

The proposed alignment then begins an offset to the north through a pair of 1° horizontal curves. The parallel alignment continues 40' north of the existing centerline to sta. 1253+50 where a complimentary pair of reverse 1° horizontal curves returns the proposed alignment to the existing centerline. This offset is proposed to replace the 62 mph sag curve at existing sta. 1229+60 and the following crest curve at sta. 1237+25.

This alignment with vertical corrections includes the intersection with Wards Chapel Road at sta. 1234+25. The new highway profile will require minor grade adjustments on the approaches and will provide proper sight distance at the intersection.

The mill, widen and overlay continues for 900 lf to sta. 1262+50 where the alignment offsets 40' north. This new alignment replaces a sag curve at sta. 1266+00 and a 48 mph AASHTO crest curve at sta. 1274+40. This offset also reduces the impact to a large potential wetland along the south side of the present right of way from sta. 1264+50 to sta. 1267+50. The alignment returns to the existing centerline near the end of the job piece at sta. 1286+86.04. The job piece ends at sta. 1287+11.09 for this alternate.

Alignment Alternate 3: Reconstruct 30' north of existing centerline

The alternate starts at sta. 1061+50 as a reconstruction on the existing alignment for approximately 4,850 linear feet. This allows for replacement of 5 vertical curves that do not meet 4R design criteria, as required per the initiation report. The mill, widen, and overlay typical section begins at sta. 1110+00 and continues east for 2,900 lf to sta. 1139+00 which is the beginning of the Watson Creek Bridge exception. The proposed alignment and profile for this alternate are the same as proposed for Alternate 1 through the first 7,750 lf of this job piece.

The Watson Creek Bridge exception ends at sta. 1144+95.68. This alternate proposes complete reconstruction of the highway on a 30' offset parallel alignment from the end of the Watson Creek bridge exception to the end of the job piece. The alignment is proposed to replace the non-compliant vertical curves on an offset alignment while trying to minimize temporary pavement for maintenance of traffic as required by Alternate 1 and to eliminate multiple horizontal curves created in Alternate 2. The proposed 30' offset places the south edge of the reconstructed highway surfacing in line with the north edge of the existing surfacing.

This alternate will provide 19,038 lf of reconstructed pavement and 2,900 lf of widen and overlay. Nearly 87% of the length of this job piece will be reconstructed to 4R design criteria. The proposed alignment is 30' north of the existing centerline at the end of this job piece. This was done to continue the offset into JP 24066(07) as Alternate 3 does for that project. A temporary tie in will have to be constructed if the two job pieces are not completed at the same time.

Additional items within the project limits include intersection improvements at Standing Rock Road, Old Broom Road, and Wards Chapel Road and the realignment of G Bar Road. The Watson Creek overflow bridge extension and maintenance of traffic are also addressed.

5.5 Alignment Alternates - JP 24066(07)

Job Piece 24066(07) begins 10.4 miles east of the Johnston County line and extends east for 5.05 miles to the junction of State Highway 3B. Several alternate alignments were studied for this job piece and were combined with the requirements from the initiation report. Refer to Section 5.3 of this report for discussion about revised job piece limits.

The project initiation report requires that the existing vertical and horizontal curves will be evaluated for 3R design criteria, and if they meet 3R then widen and overlay on the existing alignment. If they do not meet 3R design then the curves will be reconstructed to 4R design requirements. Safety slopes throughout the project will be reconstructed to 4R design requirements regardless of improvement proposed.

The initiation report also requires the addition of a northbound turn lane at the junction of SH-7 and SH-3B. This junction is situated on the west side of the City of Atoka where the project changes from a rural location to a suburban location. The roadway section transitions from an open roadway section to a curb and gutter section on the western approach to this junction to minimize anticipated right of way and utility relocation needs. The report also identifies elements to avoid including Antero Gas Plant property, large pipeline crossings, and impacts to wetlands and residential properties throughout the project corridor.

Alignment Alternate 1: Widen and overlay: geometric corrections on existing alignment

This alternate is a continuation from JP 24066(04) that starts at sta. 1286+83.42 as a widen and overlay on existing alignment for approximately 820 linear feet to a pair of horizontal curves that offsets the alignment 30' to the north of the existing centerline of survey. This offset was included to eliminate the need for any right of way acquisition or utility relocations from or on Antero Resources Atoka Gas Plant property (open lust site) located from sta. 1303+30 to sta. 1313+30 directly adjacent to the present south right of way.

There are three gas line crossings from sta. 1311+50 to sta. 1312+50 that fall within this proposed reconstructed area. They are all near the top of a crest vertical curve and the proposed profile will be in a slight fill, avoiding the need for any costly relocations. This reconstruction will require approximately 2,100 lf of temporary pavement to maintain traffic during construction.

The reconstructed offset returns to the existing alignment and the mill, widen and overlay section continues east at sta. 1321+50. Approximately 1,470 lf of widen and overlay is proposed prior to the reconstruction of multiple non-compliant vertical curves. This reconstruction begins at sta. 1336+20 and continues east for 3,670 linear feet to sta. 1372+90. The major grade changes throughout this area, cuts and fills of 8' to 10', will require the construction of 4,450 lf of 26' wide shoo-fly pavement.

This segment contains a double cell 10' x 10' RCB (NBI # 06055) that is located at station 1353+41. This bridge is to be replaced with a single cell 20' x 10' RCB due to constant debris issues with the existing structure. The shoo-fly pavement required for the reconstruction of vertical curves throughout this area will be utilized during the phased construction of the new bridge.

This section also includes the intersection of Carr Pen Road, open section line road both north and south with gravel surfacing. The intersection falls near the bottom of a reconstructed sag curve. The proposed profile of SH-7 is a small fill and will require minor vertical revisions on the improved Carr Pen Road approaches.

An 8" steel gas line owned by Antero Resources lies outside of and parallel to the present north right of way from sta. 1371+00 to sta. 1396+00. The proposed improvements throughout this area avoid this gas line and proposed right of way will not include the existing facility.

The mill, widen and overlay continues for 8,510 lf east from sta. 1372+90 to sta. 1458+00. This section includes the intersection of Possum Hill Road, open section line in both directions with gravel surfacing on the approaches. Both approaches will be improved with asphalt surfacing and only minor vertical corrections are anticipated.

This section also contains a triple cell 10' x 7' RCB (NBI #06303) that is located at station 1444+45. This bridge is to be replaced with a single cell 20' x 10' RCB due to constant debris issues with the existing structure. Replacing this structure will require 800 lf of 26' wide shoo-fly paving to allow for phased construction of the new bridge.

At sta. 1458+00 the proposed alignment begins to offset to the north. A horizontal curve with P.I. sta. 1462+94 completes the 30' parallel offset and reconstruction continues to sta. 1496+00 where a set of horizontal curves brings the proposed alignment back to the existing centerline.

This offset was not a part of the original alignment studied for this alternate. It was not required for any geometric corrections nor would it be considered if needed as this alternate proposes corrections along the existing alignment. This offset is proposed to eliminate multiple acquisitions required from small tract properties along the present south right of way. Many of these smaller tracts have improvements located relatively close to the present right of way. All proposed right of way will come from large tract holders along the north side, generally unimproved pasture, with no substantial impact on cultural or natural resources, required utility relocations or quantity of right of way needed.

This offset also allows ample area to properly grade the large roadside ditch along the south side of the existing alignment from sta. 1475+00 to sta. 1496+00. Refer to Alternate Alignment 2, which proposes a mill, widen and overlay on the existing alignment through this section, for a comparison of impacts.

The mill, widen and overlay along the existing centerline resumes at sta. 1496+00 and continues east to sta. 1522+00. This section requires no additional right of way beyond sta. 1502+00 where the present right of way widens from 110' up to 225' at NBI # 24302. The wingwalls of this triple cell 13' x 11' skewed RCB at sta. 1514+95 fall within the clear zone. A longitudinal concrete barrier and guard rail with end protection is proposed across this structure in-lieu of short box extensions and construction of new wingwalls.

The open roadway section ends at sta. 1534+80, where a curb and gutter section begins. This section was proposed to minimize right of way acquisitions and utility relocations. The closed section includes 12' asphalt lanes with 2'-8" concrete curb and gutter and 5' wide sidewalks along both sides. The existing pavement will be milled and overlaid with 5" of asphalt pavement. We extended the proposed section west to eliminate residential right of way and utility relocations required along the north side and water line, including pump station, relocations along the south side.

The 28' wide curb and gutter section continues to sta. 1543+04 where full depth widening begins for the proposed left turn lane at the SH-3B junction. The widening continues east and provides a 12' wide left turn lane with 100' of storage for eastbound traffic at the junction. This is the west end of project for JP 24066(07). No additional right of way is required along either side of the alignment and minimum utility relocations are necessary throughout the proposed curb and gutter sections. All proposed curb and gutter sections include a closed storm sewer system.

Incidental construction continues east of the junction and is required along the south side of SH-7 for proper alignment with the improved intersection.

Alignment Alternate 2: Widen and overlay: geometric corrections on offset alignment

This alternate begins at sta. 1287+11.09 as a mill, widen and overlay on the existing centerline for approximately 800 linear feet to a pair of horizontal curves that offsets the alignment 30' to the north of the existing centerline of survey. This offset and reconstruction is proposed to avoid impacts at Antero Resources Atoka Gas Plant as previously described in Alternate 1 for this job piece.

A short section of mill, widen and overlay resumes at sta. 1320+50 and continues east along the existing alignment to sta. 1330+50 where the alignment offsets north to replace a series of deficient vertical curves. Major grade changes are proposed through this section but, with phased construction and the proposed offset, traffic can be maintained on approximately 1,900 lf of temporary pavement.

The offset alignment continues east for 4,500 lf to sta. 1375+50 where a pair of 1° horizontal curves returns the proposed alignment to the existing centerline. An 8" steel gas line owned by Antero Resources lies outside of and parallel to the present north right of way from sta. 1371+00 to sta. 1396+00. The proposed improvements at the west tie in will require the relocation of approximately 750 lf of this gas line.

The offset alignment includes the intersection with Carr Pen Road, open section line road both north and south with gravel surfacing at sta. 1340+15. The proposed highway profile will require minor vertical adjustments on the north and south section line approaches. The new profile will provide adequate sight distance for the 65 mph design speed at this intersection.

This segment also contains a double cell 10' x 10' RCB (NBI # 06055) at station 1353+41. This bridge is to be replaced with a single cell 20' x 10' RCB due to constant debris issues. No shoo-fly or temporary pavement is required for the bridge construction.

The mill, widen and overlay section resumes at sta. 1375+50 and continues east on the existing alignment for 14,550 lf to sta. 1521+00. This section includes the intersection of Possum Hill Road. Both approaches will be improved with asphalt surfacing and only minor vertical corrections are required.

This section also contains a triple cell 10' x 7' RCB (NBI #06303) that is located at station 1444+45. This bridge is to be replaced with a single cell 20' x 10' RCB. Replacing this structure will require 750 lf of 26' wide shoo-fly paving to allow for phased construction of the new bridge.

The intersection of Oak Hill Road is located at sta. 1498+00. The existing section line is open in both directions. The south approach is 22' wide asphalt roadway offset in the existing section line right of way. The north approach is 10' wide with gravel surfacing that is centered on the section line.

A triple cell 13' x 11' skewed RCB, NBI # 24302, at sta. 1514+95 is also included in the widen and overlay section. The wingwalls of the existing bridge fall within the clear zone. A longitudinal concrete barrier and guard rail with end protection is proposed across this structure.

Reconstruction of the crest vertical curve at sta. 1524+57.63 is proposed for this alternate. The proposed reconstruction will be on the existing alignment and will require the reconstruction of a portion of the sag vertical curve to the west. This reconstruction is not based on 3R deficiencies but is proposed to correct these curves to 4R criteria matching the remaining vertical curves approaching the City of Atoka and the end of this job piece.

The proposed reconstruction ends at sta. 1528+00. The remaining 2,293 lf of this alternate is proposed to match Alternate 1, including the curb and gutter sections, left turn lane and incidental construction. The job piece ends at sta. 1550+92.82 for Alternate 2.

Alignment Alternate 3:

This alternate is a continuation from JP 24066(04) that begins at sta. 1286+83.98 as a reconstructed section that is offset 30' north of the existing centerline. The proposed offset alignment continues east avoiding any impacts to the gas plant property and the major pipeline crossings at the beginning of the project.

The first section line road intersection is with Carr Pen Road at sta. 1339+85. The new highway profile matches existing grades at the intersection and minimum vertical correct is required on both county road approaches.

The 30' offset continues east to sta. 1386+68 where a 1° horizontal curve returns the alternate alignment back to the existing centerline at the intersection with Possum Hill Road near sta. 1392+30. After avoiding any conflicts with the existing gas well at sta. 1392+85, the alignment offsets to the north and continues east on a 30' parallel offset.

The offset alignment avoids the need for any right of way acquisition from two properties owned by the Choctaw Housing Authority. Both properties are located along the south side of the highway, the first at sta. 1415+00, and the other at sta. 1432+50. It also avoids the many smaller tracts with multiple owners on the south side from sta. 1465+00 to sta. 1490+00 that were the reason for the offset proposed in Alternate 1 for this area.

The proposed offset alignment returns to the existing centerline at sta. 1496+00. This is where the proposed reconstructed pavement ends and the remainder of the project will be a mill, widen and overlay or a curb and gutter section on the existing alignment. The east 5,463 LF of this alternate matches that proposed for Alternate 1 of this job piece.

6.0 Cost Estimates

6.1 Construction Cost Estimates

JP 24066(04)

ASPHALT PAVEMENT - TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	0.52954	\$29.00	\$15.36
307(K)	4300	STABILIZED SUBGRADE	S.Y.	4.11111	\$3.50	\$14.39
325	5271	SEPARATOR FABRIC	S.Y.	3.72220	\$1.50	\$5.58
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	TON	0.58330	\$20.00	\$11.67
407(B)	0250	TACK COAT	GAL	0.26667	\$2.50	\$0.67
408	5774	PRIME COAT	GAL	0.55833	\$3.75	\$2.09
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.44800	\$64.00	\$28.67
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.48800	\$58.00	\$28.30
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	TON	0.29867	\$68.00	\$20.31
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19911	\$67.00	\$13.34
412	5267	COLD MILLING PAVEMENT	S.Y.	2.88888	\$2.00	\$5.78
619(C)	0924	SAWING PAVEMENT	L.F.	2.00000	\$0.50	\$1.00
TOTAL COST PER FOOT=						\$147.16
				L.F.	COST	
				SURFACING COST (ALTERNATE 1)=	10,934.00	\$1,609,047.44
				SURFACING COST (ALTERNATE 2)=	5,775.00	\$849,849.00
				SURFACING COST (ALTERNATE 3)=	2,900.00	\$426,764.00

ASPHALT PAVEMENT - TYPICAL SECTION NO. 4 (RECONSTRUCTION)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	1.67901	\$29.00	\$48.69
307(K)	4300	STABILIZED SUBGRADE	S.Y.	6.55556	\$3.50	\$22.94
325	5271	SEPARATOR FABRIC	S.Y.	6.55556	\$1.50	\$9.83
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	TON	0.53330	\$20.00	\$10.67
407(B)	0250	TACK COAT	GAL	0.66667	\$2.50	\$1.67
408	5774	PRIME COAT	GAL	0.93333	\$3.75	\$3.50
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.44800	\$64.00	\$28.67
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	1.04533	\$58.00	\$60.63
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	TON	0.29867	\$68.00	\$20.31
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19911	\$67.00	\$13.34
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	2.88889	\$3.00	\$8.67
TOTAL COST PER FOOT=						\$228.92
				L.F.	COST	
				SURFACING COST (ALTERNATE 1)=	11,012.00	\$2,520,867.04
				SURFACING COST (ALTERNATE 2)=	16,197.00	\$3,707,817.24
				SURFACING COST (ALTERNATE 3)=	19,038.00	\$4,358,178.96

ASPHALT PAVEMENT - TYPICAL SECTION NO. 5 (SHO-FLY)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
307(K)	4300	STABILIZED SUBGRADE	S.Y.	3.71296	\$3.50	\$13.00
407(B)	0250	TACK COAT	GAL	0.21667	\$2.50	\$0.54
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.64711	\$58.00	\$37.53
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.32356	\$67.00	\$21.68
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	2.88889	\$3.00	\$8.67
TOTAL COST PER FOOT=						\$81.42
					L.F.	COST
SURFACING COST (ALTERNATE 1)=					5,950.00	\$484,449.00
SURFACING COST (ALTERNATE 2)=					0.00	\$0.00
SURFACING COST (ALTERNATE 3)=					1,350.00	\$109,917.00

ASPHALT PAVEMENT - TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
307(K)	4300	STABILIZED SUBGRADE	S.Y.	1.97778	\$3.50	\$6.92
407(B)	0250	TACK COAT	GAL	0.12875	\$2.50	\$0.32
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.38454	\$58.00	\$22.30
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19227	\$67.00	\$12.88
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	1.71666	\$3.00	\$5.15
TOTAL COST PER FOOT=						\$47.57
					L.F.	COST
SURFACING COST (ALTERNATE 1)=					6,100.00	\$290,177.00
SURFACING COST (ALTERNATE 2)=					9,850.00	\$468,564.50
SURFACING COST (ALTERNATE 3)=					9,800.00	\$466,186.00

SURFACING (ALTERNATE 1)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	10,934.00	\$1,609,047.44
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	11,012.00	\$2,520,867.04
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	5,950.00	\$484,449.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	6,100.00	\$290,177.00
TOTAL SURFACING COST=			\$4,904,540.48
AVG. COST PER FOOT=			\$223.48

SURFACING (ALTERNATE 2)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	5,775.00	\$849,849.00
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	16,197.00	\$3,707,817.24
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	0.00	\$0.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	9,850.00	\$468,564.50
TOTAL SURFACING COST=			\$5,026,230.74
AVG. COST PER FOOT=			\$228.76

SURFACING (ALTERNATE 3)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	2,900.00	\$426,764.00
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	19,038.00	\$4,358,178.96
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	1,350.00	\$109,917.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	9,850.00	\$468,564.50
TOTAL SURFACING COST=			\$5,363,424.46
AVG. COST PER FOOT=			\$244.48

24066(04)-SIDE DRAINS-ALL ALTERNATES						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
613	0000	5'X3' RCB	L.F.	66	\$400.00	\$26,400.00
613	0000	END SECTIONS	EA.	36	\$1,400.00	\$50,400.00
613(A)	0496	48" R.C. PIPE CLASS III	L.F.	66	\$130.00	\$8,580.00
613(B)	0030	18" CORR. GALV. STEEL PIPE	L.F.	528	\$30.00	\$15,840.00
613(B)	0690	24" CORR. GALV. STEEL PIPE	L.F.	330	\$35.00	\$11,550.00
613(B)	0692	36" CORR. GALV. STEEL PIPE	L.F.	264	\$40.00	\$10,560.00
TOTAL:						\$123,330.00

24066(04)-CROSS DRAINS										
ITEM		DESCRIPTION	UNIT	QUANTITY			UNIT COST	COST		
				ALTERNATE 1	ALTERNATE 2	ALTERNATE 3		ALTERNATE 1	ALTERNATE 2	ALTERNATE 3
613	0000	3'X3' RCB	L.F.	11	38	44	\$130.00	\$1,430.00	\$4,940.00	\$5,720.00
613	0000	5'X2' RCB	L.F.	54	93	59	\$180.00	\$9,720.00	\$16,740.00	\$10,620.00
613	0000	5'X7' RCB	L.F.	35	60	50	\$350.00	\$12,250.00	\$21,000.00	\$17,500.00
613	0000	DBL 6'X3' RCB	L.F.	55	51	60	\$500.00	\$27,500.00	\$25,500.00	\$30,000.00
613	0000	6'X4' RCB	L.F.	93	93	93	\$350.00	\$32,550.00	\$32,550.00	\$32,550.00
613	0000	10'X3' RCB	L.F.	93	93	93	\$400.00	\$37,200.00	\$37,200.00	\$37,200.00
613	0000	10'X7' RCB	L.F.	53	69	53	\$650.00	\$34,450.00	\$44,850.00	\$34,450.00
613	0000	HEADWALLS	EA.	14	14	14	\$12,500.00	\$175,000.00	\$175,000.00	\$175,000.00
613	0000	END SECTIONS	EA.	14	14	14	\$1,000.00	\$14,000.00	\$14,000.00	\$14,000.00
613(A)	0496	18" R.C. PIPE CLASS III	L.F.	247	339	261	\$70.00	\$17,290.00	\$23,730.00	\$18,270.00
613(A)	0491	24" R.C. PIPE CLASS III	L.F.	102	99	130	\$90.00	\$9,180.00	\$8,910.00	\$11,700.00
TOTAL:								\$370,570.00	\$404,420.00	\$387,010.00

24066(04)-BRIDGES- ALL ALTERNATES						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
613	0000	TRIP. 10'X7'	L.F.	74	\$1,550.00	\$114,700.00
613	0000	HEADWALLS	EA.	2	\$24,000.00	\$48,000.00
TOTAL:						\$162,700.00

TRAFFIC CONTROL						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
855(A)	8812	CONSTRUCTION TRAFFIC STRIPE (PAINT)(4" WIDE)	LF	90200	\$0.35	\$31,570.00
880(J)	8905	CONSTRUCTION TRAFFIC CONTROL	L.SUM	1	\$75,000.00	\$75,000.00
TOTAL:						\$106,570.00

CONSTRUCTION						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
220	2800	SWPPP DOCUMENTATION AND MANAGMENT	L.SUM	1	\$20,000.00	\$20,000.00
640(A)	1426	FIELD OFFICE	EA.	1	\$10,000.00	\$10,000.00
641	1552	MOBILIZATION	L.SUM	1	\$210,000.00	\$210,000.00
642(A)	0095	CONSTRUCTION STAKING LEVEL I	L.SUM	1	\$40,000.00	\$40,000.00
TOTAL:						\$280,000.00

EARTH WORK: ALTERNATE 1						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	214771	\$3.00	\$644,313.00
					TOTAL:	\$644,313.00

EARTH WORK: ALTERNATE 2						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	235533	\$3.00	\$706,599.00
					TOTAL:	\$706,599.00

EARTH WORK: ALTERNATE 3						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	222153	\$3.00	\$666,459.00
					TOTAL:	\$666,459.00

Earthwork calculations are included in Appendix J of this report.

EROSION CONTROL						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
205(A)	4229	TYPE A-SALVAGED TOPSOIL	L.SUM	1	\$40,000.00	\$40,000.00
221(C)	2801	TEMPORARY SILT FENCE	L.F.	13000	\$1.60	\$20,800.00
221(F)	0100	TEMPORARY SILT DIKE	L.F.	1232	\$10.00	\$12,320.00
230(A)	2806	SOLID SLAB SODDING	S.Y.	200000	\$2.50	\$500,000.00
					TOTAL:	\$573,120.00

JP 24066(07)

ASPHALT PAVEMENT - TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	0.52954	\$29.00	\$15.36
307(K)	4300	STABILIZED SUBGRADE	S.Y.	4.11111	\$3.50	\$14.39
325	5271	SEPARATOR FABRIC	S.Y.	3.72220	\$1.50	\$5.58
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	TON	0.58330	\$20.00	\$11.67
407(B)	0250	TACK COAT	GAL	0.26667	\$2.50	\$0.67
408	5774	PRIME COAT	GAL	0.55833	\$3.75	\$2.09
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.44800	\$64.00	\$28.67
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.48800	\$58.00	\$28.30
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	TON	0.29867	\$68.00	\$20.31
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19911	\$67.00	\$13.34
412	5267	COLD MILLING PAVEMENT	S.Y.	2.88888	\$2.00	\$5.78
619(C)	0924	SAWING PAVEMENT	L.F.	2.00000	\$0.50	\$1.00
TOTAL COST PER FOOT=						\$147.16
					L.F.	COST
SURFACING COST (ALTERNATE 1)=					14,026.00	\$2,064,066.16
SURFACING COST (ALTERNATE 2)=					17,147.00	\$2,523,352.52
SURFACING COST (ALTERNATE 3)=					3,877.00	\$570,539.32

ASPHALT PAVEMENT - TYPICAL SECTION NO. 2 (OVERLAY W/ CURB & GUTTER)						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	0.34593	\$29.00	\$10.03
307(K)	4300	STABILIZED SUBGRADE	S.Y.	1.03777	\$3.50	\$3.63
325	5271	SEPARATOR FABRIC	S.Y.	1.03777	\$1.50	\$1.56
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	TON	1.13040	\$20.00	\$22.61
407(B)	0250	TACK COAT	GAL	0.40000	\$2.50	\$1.00
408	5774	PRIME COAT	GAL	0.15567	\$3.75	\$0.58
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.44800	\$64.00	\$28.67
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	TON	0.29867	\$68.00	\$20.31
412	5267	COLD MILLING PAVEMENT	S.Y.	2.88889	\$2.00	\$5.78
609(B)	1526	2'-8" COMB. CURB & GUTTER (8" BARRIER)	L.F.	2.00000	\$25.00	\$50.00
610(A)	0602	4" CONCRETE SIDEWALK	S.Y.	1.11111	\$30.00	\$33.33
619(C)	0924	SAWING PAVEMENT	L.F.	2.00000	\$0.50	\$1.00
TOTAL COST PER FOOT=						\$178.50
					L.F.	COST
SURFACING COST (ALTERNATE 1)=					825.00	\$147,262.50
SURFACING COST (ALTERNATE 2)=					825.00	\$147,262.50
SURFACING COST (ALTERNATE 3)=					825.00	\$147,262.50

ASPHALT PAVEMENT - TYPICAL SECTION NO. 3 (WIDEN & OVERLAY W/ CURB & GUTTER)							
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST	
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	0.85630	\$29.00	\$24.83	
307(K)	4300	STABILIZED SUBGRADE	S.Y.	2.02971	\$3.50	\$7.10	
325	5271	SEPARATOR FABRIC	S.Y.	2.02971	\$1.50	\$3.04	
407(B)	0250	TACK COAT	GAL	0.57197	\$2.50	\$1.43	
408	5774	PRIME COAT	GAL	0.30446	\$3.75	\$1.14	
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.64060	\$68.00	\$43.56	
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.25381	\$58.00	\$14.72	
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.42707	\$67.00	\$28.61	
412	5267	COLD MILLING PAVEMENT	S.Y.	2.88889	\$2.00	\$5.78	
609(B)	0395	2'-8" COMB. CURB & GUTTER (6" BARRIER)	L.F.	2.00000	\$25.00	\$50.00	
610(A)	0602	4" CONCRETE SIDEWALK	S.Y.	1.11111	\$30.00	\$33.33	
619(C)	0924	SAWING PAVEMENT	L.F.	2.00000	\$0.50	\$1.00	
TOTAL COST PER FOOT=						\$214.54	
					L.F.	COST	
					SURFACING COST (ALTERNATE 1)=	757.00	\$162,406.78
					SURFACING COST (ALTERNATE 2)=	757.00	\$162,406.78
					SURFACING COST (ALTERNATE 3)=	757.00	\$162,406.78

ASPHALT PAVEMENT - TYPICAL SECTION NO. 4 (RECONSTRUCTION)							
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST	
303(B)	2110	AGGREGATE BASE, TYPE B	C.Y.	1.67901	\$29.00	\$48.69	
307(K)	4300	STABILIZED SUBGRADE	S.Y.	6.55556	\$3.50	\$22.94	
325	5271	SEPARATOR FABRIC	S.Y.	6.55556	\$1.50	\$9.83	
402(E)	0225	TRAFFIC BOUND SURFACE COURSE TYPE E	TON	0.53330	\$20.00	\$10.67	
407(B)	0250	TACK COAT	GAL	0.66667	\$2.50	\$1.67	
408	5774	PRIME COAT	GAL	0.93333	\$3.75	\$3.50	
411(B)	5940	SUPERPAVE, TYPE S3 (PG 70-28 OK)	TON	0.44800	\$64.00	\$28.67	
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	1.04533	\$58.00	\$60.63	
411(C)	5955	SUPERPAVE, TYPE S4 (PG 70-28 OK)	TON	0.29867	\$68.00	\$20.31	
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19911	\$67.00	\$13.34	
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	2.88889	\$3.00	\$8.67	
TOTAL COST PER FOOT=						\$228.92	
					L.F.	COST	
					SURFACING COST (ALTERNATE 1)=	10,770.00	\$2,465,468.40
					SURFACING COST (ALTERNATE 2)=	7,700.00	\$1,762,684.00
					SURFACING COST (ALTERNATE 3)=	20,917.00	\$4,788,319.64

ASPHALT PAVEMENT - TYPICAL SECTION NO. 5 (SHO-FLY)							
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST	
307(K)	4300	STABILIZED SUBGRADE	S.Y.	3.71296	\$3.50	\$13.00	
407(B)	0250	TACK COAT	GAL	0.21667	\$2.50	\$0.54	
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.64711	\$58.00	\$37.53	
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.32356	\$67.00	\$21.68	
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	2.88889	\$3.00	\$8.67	
TOTAL COST PER FOOT=						\$81.42	
					L.F.	COST	
					SURFACING COST (ALTERNATE 1)=	5,250.00	\$427,455.00
					SURFACING COST (ALTERNATE 2)=	750.00	\$61,065.00
					SURFACING COST (ALTERNATE 3)=	1,150.00	\$93,633.00

ASPHALT PAVEMENT - TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)							
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	L.F. COST	
307(K)	4300	STABILIZED SUBGRADE	S.Y.	1.97778	\$3.50	\$6.92	
407(B)	0250	TACK COAT	GAL	0.12875	\$2.50	\$0.32	
411(B)	5945	SUPERPAVE, TYPE S3 (PG 64-22 OK)	TON	0.38454	\$58.00	\$22.30	
411(C)	5960	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	0.19227	\$67.00	\$12.88	
619(B)	4728	REMOVAL OF ASPHALT PAVEMENT	S.Y.	1.71666	\$3.00	\$5.15	
TOTAL COST PER FOOT=						\$47.57	
					L.F.	COST	
					SURFACING COST (ALTERNATE 1)=	4,150.00	\$197,415.50
					SURFACING COST (ALTERNATE 2)=	4,800.00	\$228,336.00
					SURFACING COST (ALTERNATE 3)=	6,300.00	\$299,691.00

SURFACING (ALTERNATE 1)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	14,026.00	\$2,064,066.16
TYPICAL SECTION NO. 2 (OVERLAY W/ CURB & GUTTER)	\$178.50	825.00	\$147,262.50
TYPICAL SECTION NO. 3 (WIDEN & OVERLAY W/ CURB & GUTTER)	\$214.54	757.00	\$162,406.78
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	10,770.00	\$2,465,468.40
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	5,250.00	\$427,455.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	4,150.00	\$197,415.50
TOTAL SURFACING COST=			\$5,464,074.34
AVG. COST PER FOOT=			\$207.15

SURFACING (ALTERNATE 2)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	17,147.00	\$2,523,352.52
TYPICAL SECTION NO. 2 (OVERLAY W/ CURB & GUTTER)	\$178.50	825.00	\$147,262.50
TYPICAL SECTION NO. 3 (WIDEN & OVERLAY W/ CURB & GUTTER)	\$214.54	757.00	\$162,406.78
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	7,700.00	\$1,762,684.00
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	750.00	\$61,065.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	4,800.00	\$228,336.00
TOTAL SURFACING COST=			\$4,885,106.80
AVG. COST PER FOOT=			\$184.84

SURFACING (ALTERNATE 3)			
	COST PER FOOT	L.F.	COST
TYPICAL SECTION NO. 1 (WIDEN & OVERLAY)	\$147.16	3,877.00	\$570,539.32
TYPICAL SECTION NO. 2 (OVERLAY W/ CURB & GUTTER)	\$178.50	825.00	\$147,262.50
TYPICAL SECTION NO. 3 (WIDEN & OVERLAY W/ CURB & GUTTER)	\$214.54	757.00	\$162,406.78
TYPICAL SECTION NO. 4 (RECONSTRUCTION)	\$228.92	20,917.00	\$4,788,319.64
TYPICAL SECTION NO. 5 (SHO-FLY)	\$81.42	1,150.00	\$93,633.00
TYPICAL SECTION NO. 6 (TEMPORARY PAVEMENT)	\$47.57	6,300.00	\$299,691.00
TOTAL SURFACING COST=			\$6,061,852.24
AVG. COST PER FOOT=			\$229.82

24066(07) SIDE DRAINS/ STORM SEWER-ALL ALTERNATES						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
611(G)	5115	INLET CI DES. 2(D)	EA.	6	\$2,000.00	\$12,000.00
611(G)	5974	INLET W/SM JCT. BOX, CI, DES. 2(D)	EA.	6	\$3,000.00	\$18,000.00
613	0000	6'X6' RCB	L.F.	66	\$600.00	\$39,600.00
613	0000	END SECTIONS	EA.	84	\$1,400.00	\$117,600.00
613(A)	0491	18" R.C. PIPE CLASS III	L.F.	946	\$80.00	\$75,680.00
613(A)	0492	24" R.C. PIPE CLASS III	L.F.	946	\$90.00	\$85,140.00
613(B)	0030	18" CORR. GALV. STEEL PIPE	L.F.	1584	\$30.00	\$47,520.00
613(B)	0690	24" CORR. GALV. STEEL PIPE	L.F.	198	\$35.00	\$6,930.00
613(B)	0692	36" CORR. GALV. STEEL PIPE	L.F.	264	\$40.00	\$10,560.00
613(B)	0694	48" CORR. GALV. STEEL PIPE	L.F.	594	\$60.00	\$35,640.00
613(B)	0697	66" CORR. GALV. STEEL PIPE	L.F.	132	\$110.00	\$14,520.00
TOTAL:						\$463,190.00

24066(07)-CROSS DRAINS										
ITEM		DESCRIPTION	UNIT	QUANTITY			UNIT COST	COST		
				ALTERNATE 1	ALTERNATE 2	ALTERNATE 3		ALTERNATE 1	ALTERNATE 2	ALTERNATE 3
613	0000	4'X2' RCB	L.F.	56	53	62	\$160.00	\$8,960.00	\$8,480.00	\$9,920.00
613	0000	4'X4' RCB	L.F.	20	20	20	\$200.00	\$4,000.00	\$4,000.00	\$4,000.00
613	0000	6'X2' RCB	L.F.	55	53	61	\$230.00	\$12,650.00	\$12,190.00	\$14,030.00
613	0000	8'X3' RCB	L.F.	93	93	93	\$300.00	\$27,900.00	\$27,900.00	\$27,900.00
613	0000	8'X5' RCB	L.F.	44	93	44	\$400.00	\$17,600.00	\$37,200.00	\$17,600.00
613	0000	10'X3' RCB	L.F.	51	47	51	\$490.00	\$24,990.00	\$23,030.00	\$24,990.00
613	0000	10'X4' RCB	L.F.	93	93	93	\$520.00	\$48,360.00	\$48,360.00	\$48,360.00
613	0000	HEADWALLS	EA.	14	14	14	\$12,500.00	\$175,000.00	\$175,000.00	\$175,000.00
613	0000	END SECTIONS	EA.	20	20	20	\$1,000.00	\$20,000.00	\$20,000.00	\$20,000.00
613(A)	0492	24" R.C. PIPE CLASS III	L.F.	121	172	151	\$90.00	\$10,890.00	\$15,480.00	\$13,590.00
613(A)	0494	36" R.C. PIPE CLASS III	L.F.	272	256	290	\$100.00	\$27,200.00	\$25,600.00	\$29,000.00
613(A)	0495	42" R.C. PIPE CLASS III	L.F.	40	40	53	\$120.00	\$4,800.00	\$4,800.00	\$6,360.00
613(A)	0496	48" R.C. PIPE CLASS III	L.F.	93	93	93	\$130.00	\$12,090.00	\$12,090.00	\$12,090.00
TOTAL:							\$394,440.00	\$414,130.00	\$402,840.00	

24066(07)-BRIDGES-ALL ALTERNATES						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
613	0000	20'X10' RCB	L.F.	140	\$1,550.00	\$217,000.00
614	0000	20'X10' RCB	L.F.	100	\$1,550.00	\$155,000.00
613	0000	HEADWALLS	EA.	4	\$24,000.00	\$96,000.00
TOTAL:						\$468,000.00

TRAFFIC CONTROL						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
623(A)	0100	BEAM GUARDRAIL W-BEAM SINGLE	LF	400	\$17.00	\$6,800.00
623(I)	8675	GUARDRAIL BRIDGE CONNECTION-TYPE A	EA	4	\$1,600.00	\$6,400.00
627(A)	4317	CONCRETE LONGITUDINAL BARRIER, DESIGN 1	LF	180	\$70.00	\$12,600.00
855(A)	8812	CONSTRUCTION TRAFFIC STRIPE (PAINT)(4" WIDE)	LF	105420	\$0.35	\$36,897.00
880(J)	8905	CONSTRUCTION TRAFFIC CONTROL	L.SUM	1	\$80,000.00	\$80,000.00
TOTAL:						\$142,697.00

CONSTRUCTION						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
220	2800	SWPPP DOCUMENTATION AND MANAGMENT	L.SUM	1	\$20,000.00	\$20,000.00
640(A)	1426	FIELD OFFICE	EA.	1	\$10,000.00	\$10,000.00
641	1552	MOBILIZATION	L.SUM	1	\$245,000.00	\$245,000.00
642(A)	0095	CONSTRUCTION STAKING LEVEL I	L.SUM	1	\$50,000.00	\$50,000.00
TOTAL:						\$325,000.00

EARTHWORK: ALTERNATE 1						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	158736	\$3.00	\$476,208.00
TOTAL:						\$476,208.00

EARTHWORK: ALTERNATE 2						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	155399	\$3.00	\$466,197.00
TOTAL:						\$466,197.00

EARTHWORK: ALTERNATE 3						
ITEM		DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
202(A)	0183	UNCLASSIFIED EXCAVATION	C.Y.	194765	\$3.00	\$584,295.00
					TOTAL:	\$584,295.00

Earthwork calculations are included in Appendix J of this report.

EROSION CONTROL						
ITEM		DESCRIPTION	UNIT	L.F. QUANTITY	UNIT COST	COST
205(A)	4229	TYPE A-SALVAGED TOPSOIL	L.SUM	1	\$50,000.00	\$50,000.00
221(C)	2801	TEMPORARY SILT FENCE	L.F.	17000	\$1.60	\$27,200.00
221(F)	0100	TEMPORARY SILT DIKE	L.F.	1484	\$10.00	\$14,840.00
230(A)	2806	SOLID SLAB SODDING	S.Y.	225000	\$2.50	\$562,500.00
					TOTAL:	\$654,540.00

6.2 Right of Way Estimates

Required Right of Way Acquisitions

JP 24066(04)			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	13.46	23.64	24.17
South	12.38	5.50	6.30
Total	25.84	29.14	30.47
Parcels required	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	13	14	13
South	16	10	15
Total	29	24	28
Residential Structure Acquisition	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	1	2	2
South	1	0	0
Total	2	2	2
Outbuilding Acquisition	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	2	3	3
South	0	0	0
Total	2	3	3

JP 24066(07)			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	14.67	16.03	23.36
South	12.93	10.07	2.50
Total	27.60	26.10	25.86
Parcels required	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	12	12	12
South	21	31	10
Total	33	43	22
Residential Structure Acquisition	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	0	0	0
South	0	0	0
Total	0	0	0
Outbuilding Acquisition	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	0	0	0
South	0	0	0
Total	0	0	0

JP 24066(04)			
Indian Owned Property (included in totals above)			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.21	0.42	0.37
South	0.00	0.00	0.00
Total	0.21	0.42	0.37
Parcels required	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	1	1	1
South	0	0	0
Total	1	1	1

JP 24066(07)			
Indian Owned Property (included in totals above)			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.00	0.00	0.00
South	0.22	0.24	0.00
Total	0.22	0.24	0.00
Parcels required	Alternate 1 each	Alternate 2 each	Alternate 3 each
North	0	0	0
South	2	2	0
Total	2	2	0

JP 24066(04)			
Potential Wetlands Affected			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.22	0.53	0.21
South	0.05	0.00	0.03
Total	0.27	0.53	0.24

JP 24066(07)			
Potential Wetlands Affected			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.00	0.00	0.00
South	0.00	0.00	0.00
Total	0.00	0.00	0.00

JP 24066(04)			
Hazardous Waste Sites Affected			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.55	0.97	1.01
South	0.00	0.00	0.00
Total	0.55	0.97	1.01

JP 24066(07)			
Hazardous Waste Sites Affected			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	0.00	0.00	0.00
South	0.00	0.00	0.00
Total	0.00	0.00	0.00

JP 24066(04)			
Estimated Acquisition Cost			
	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	13.46	23.64	24.17
South	12.38	5.50	6.30
Total	25.84	29.14	30.47
Estimated @ \$7,500/ac	\$193,800.00	\$218,550.00	\$228,525.00
Residence @ sta. 1153+00, lt	\$250,000.00	\$250,000.00	\$250,000.00
Residence @ sta. 1164+00, lt	\$0.00	\$200,000.00	\$200,000.00
Outbuilding @ sta. 1152+00, lt	\$7,500.00	\$7,500.00	\$7,500.00
Metal barn @ sta. 1224+75, lt	\$5,000.00	\$5,000.00	\$5,000.00
Metal garage @ sta. 1224+75, lt	\$0.00	\$40,000.00	\$40,000.00
Residence @ sta. 11240+50, rt	\$225,000.00	\$0.00	\$0.00
Total estimated acquisition costs	\$681,300.00	\$721,050.00	\$731,025.00

JP 24066(07)			
Estimated Acquisition Cost			
Area required	Alternate 1 acres	Alternate 2 acres	Alternate 3 acres
North	14.67	16.03	23.36
South	12.93	10.07	2.50
Total	27.60	26.10	25.86
Estimated @ \$7,500/ac	\$207,000.00	\$195,750.00	\$193,950.00
Cattle lot & barn @ sta. 1340+50	\$10,000.00	\$0.00	\$0.00
Total estimated acquisition costs	\$217,000.00	\$195,750.00	\$193,950.00

6.3 Utility Relocation Quantities & Estimates

The following table summarizes the anticipated utility relocations required for each proposed alternate alignment by job piece:

Required Utility Relocations			
JP 24066(04)			
Utility	Alternate 1 (lf)	Alternate 2 (lf)	Alternate 3 (lf)
Fiber Optic			
North	0	0	0
South	18,714	9,688	11,290
Total	18,714	9,688	11,290
Electric			
North	0	0	0
South	17,760	7,260	9,215
Total	17,760	7,260	9,215
Water lines			
North	43,395	43,204	41,898
South	0	0	0
Total	43,395	43,204	41,898
Telephone			
North	20,807	20,063	20,056
South	6,994	5,100	0
Total	27,801	25,163	20,056
8" H.P. Natural Gas			
North	0	0	0
South	0	0	0
Total	0	0	0
JP 24066(07)			
Utility	Alternate 1 (lf)	Alternate 2 (lf)	Alternate 3 (lf)
Fiber Optic			
North	6,729	6,596	6,721
South	11,984	11,478	2,330
Total	18,713	18,074	9,051
Electric			
North	0	0	0
South	11,803	13,152	1,507
Total	11,803	13,152	1,507
Water lines			
North	15,614	13,837	16,973
South	21,819	16,832	6,649
Total	37,433	30,669	23,622
Telephone			
North	28,956	23,407	23,402
South	40,422	34,590	6,142
Total	69,378	57,997	29,544
8" H.P. Natural Gas			
North	0	740	2,000
South	0	0	0
Total	0	740	2,000

The majority of the utilities located within the project corridor will be moved at the owner's expense. The exception would be utilities that are impacted by the proposed construction that lie outside of the present right of way, petrochemical transmission and collection pipelines that cross the highway alignment and the rural water utility owned and operated by Atoka Co. RWD & SWMD #4.

All three proposed alternates avoid the 5 major pipeline crossings throughout the project limits and the existing natural gas wellhead near sta. 1392+75, left. Alternates 2 and 3 impact an existing 8" high pressure natural gas collection line owned by Antero Resources. This line parallels the existing highway alignment along the present north right of way from 1371+00 to sta. 1396+00 on JP 24066(07). The costs associated with these relocations are estimated below:

JP 24066(04)							
UTILITY	Unit Cost	Alternate 1 (lf)	Alternate 1	Alternate 2 (lf)	Alternate 2	Alternate 3 (lf)	Alternate 3
4" Water	\$30.00	20,939	\$628,170.00	21,111	\$633,330.00	20,940	\$628,200.00
6" Water	\$45.00	20,956	\$943,020.00	21,118	\$950,310.00	20,957	\$943,065.00
		Totals	\$1,571,190.00		\$1,583,640.00		\$1,571,265.00

JP 24066(07)							
UTILITY	Unit Cost	Alternate 1 (lf)	Alternate 1	Alternate 2 (lf)	Alternate 2	Alternate 3 (lf)	Alternate 3
4" Water	\$30.00	15,643	\$469,290.00	14,816	\$444,480.00	4,347	\$130,410.00
6" Water	\$45.00	21,643	\$973,935.00	18,701	\$841,545.00	21,626	\$973,170.00
8" Water	\$55.00	1,287	\$70,785.00	1,287	\$70,785.00	1,287	\$70,785.00
8" HP Gas	\$500.00	0	\$0.00	740	\$370,000.00	2,000	\$1,000,000.00
		Totals	\$1,514,010.00		\$1,726,810.00		\$2,174,365.00

6.4 Summary of Estimated Costs

JP 24066(04)

TOTAL: ALTERNATE 1	
	COST
SURFACING	\$4,904,540.48
CROSS DRAINS, SIDE DRAINS & BRIDGES	\$656,600.00
TRAFFIC CONTROL	\$106,570.00
EROSION CONTROL	\$573,120.00
EARTH WORK	\$644,313.00
CONSTRUCTION	\$280,000.00
UTILITY RELOCATIONS	\$1,571,190.00
RIGHT OF WAY	\$681,300.00
	SUBTOTAL:
	\$9,417,633.48
TOTAL with 15% CONTINGENCY	\$10,830,278.50

TOTAL: ALTERNATE 2	
	COST
SURFACING	\$5,026,230.74
CROSS DRAINS, SIDE DRAINS & BRIDGES	\$690,450.00
TRAFFIC CONTROL	\$106,570.00
EROSION CONTROL	\$573,120.00
EARTH WORK	\$706,599.00
CONSTRUCTION	\$280,000.00
UTILITY RELOCATIONS	\$1,583,640.00
RIGHT OF WAY	\$721,050.00
	SUBTOTAL:
	\$9,687,659.74
TOTAL with 15% CONTINGENCY	\$11,140,808.70

TOTAL: ALTERNATE 3	
	COST
SURFACING	\$5,363,424.46
CROSS DRAINS, SIDE DRAINS & BRIDGES	\$673,040.00
TRAFFIC CONTROL	\$106,570.00
EROSION CONTROL	\$573,120.00
EARTH WORK	\$666,459.00
CONSTRUCTION	\$280,000.00
UTILITY RELOCATIONS	\$1,571,265.00
RIGHT OF WAY	\$731,025.00
	SUBTOTAL:
	\$9,964,903.46
TOTAL with 15% CONTINGENCY	\$11,459,638.98

JP 24066(07)

TOTAL: ALTERNATE 1	
	COST
SURFACING	\$5,464,074.34
CROSS DRAINS, SIDE DRAINS, STORM SEWER & BRIDGES	\$1,325,630.00
TRAFFIC CONTROL	\$142,697.00
EROSION CONTROL	\$654,540.00
EARTH WORK	\$476,208.00
CONSTRUCTION	\$325,000.00
UTILITY RELOCATIONS	\$1,514,010.00
ROW	\$217,000.00
SUBTOTAL:	\$10,119,159.34
TOTAL with 15% CONTINGENCY	\$11,637,033.24

TOTAL: ALTERNATE 2	
	COST
SURFACING	\$4,885,106.80
CROSS DRAINS, SIDE DRAINS, STORM SEWER & BRIDGES	\$1,325,630.00
TRAFFIC CONTROL	\$142,697.00
EROSION CONTROL	\$654,540.00
EARTH WORK	\$466,197.00
CONSTRUCTION	\$325,000.00
UTILITY RELOCATIONS	\$1,726,810.00
ROW	\$195,750.00
SUBTOTAL:	\$9,721,730.80
TOTAL with 15% CONTINGENCY	\$11,179,990.42

TOTAL: ALTERNATE 3	
	COST
SURFACING	\$6,061,852.24
CROSS DRAINS, SIDE DRAINS, STORM SEWER & BRIDGES	\$1,325,630.00
TRAFFIC CONTROL	\$142,697.00
EROSION CONTROL	\$654,540.00
EARTH WORK	\$584,295.00
CONSTRUCTION	\$325,000.00
UTILITY RELOCATIONS	\$2,174,365.00
ROW	\$193,950.00
SUBTOTAL:	\$11,462,329.24
TOTAL with 15% CONTINGENCY	\$13,181,678.63

7.0 Recommendations

7.1 Summary and Recommendation - JP 24066(04)

Summary

Before recommending a specific alternate for each job piece we should summarize what has been accomplished with the proposed alternates. These items were identified in the initiation report and are addressed in the proposed alternate designs.

Each of the three proposed alignment alternates on **JP 24066(04)**:

- Construct a typical section with 12' lanes and 8' paved shoulders
- Reconstruct vertical and horizontal curves for the first 7,000 lf, no 3R evaluation was performed
- Utilize the recently constructed Watson Creek improvements
- Correct non-3R vertical curves to 4R design criteria from the end of the Watson Creek Bridge exception to the end of the job piece. (all horizontal curves meet 3R criteria)
- Extend cross drains and bridges to the clear zone, as a minimum
- Provide 4R safety slopes throughout the project limits
- Propose realignment of G Bar Road and new intersection with SH 7
- Can be constructed as an individual project without a mandatory tie to JP 24066(07)

The following is a brief summary of each proposed alternate including advantages and disadvantages for each:

Alignment Alternate 1: Widen and Overlay 3R or Reconstruct to 4R on existing alignment

This alternate was selected in an attempt to minimize anticipated impacts to typical items of concern during a highway improvement project. Minimal right of way acquisitions are anticipated since the existing highway alignment is generally centered in the present right of way corridor. Present right of way widths vary from 100' to 120' on this job piece. Reducing right of way needs also lessens the chance of impacting any adjacent historic sites, archaeological sites, natural resources, hazardous waste sites, and other private improvements.

Advantages:

- Least total area of new right of way required of any proposed alternate
- Maintains existing horizontal geometry
- Smallest impact to potential wetlands of any proposed alternate
- Smallest impact to potential hazardous waste sites of any proposed alternate
- Least impact to Choctaw Housing Authority property
- Smallest total cost to construct of any proposed alternate

Disadvantages:

- Requires new right of way from both sides of the highway corridor affecting the largest number of individual property owners
- Requires the acquisition of residential structure at sta. 1240+50, right
- Requires the most utility relocations of any proposed alternate
- Largest cost for temporary and shoofly paving of any proposed alternate
- Construction on both sides of highway requires more construction phases and traffic modifications

Alignment Alternate 2: Widen and Overlay 3R or Reconstruct to 4R on offset alignment 40' north

This alternate was selected in an attempt to minimize temporary and shoofly pavement costs that are associated with reconstruction on the existing alignment. Alternate 1 for this job piece requires approximately \$775,000 of temporary pavement to maintain traffic. This alternate proposes most reconstruction 40' north of the existing centerline. This 40' offset allows ample room to maintain traffic on the existing surface in areas of large cuts and fills.

Advantages:

- Smallest cost for temporary and shoofly paving of any proposed alternate
- Reconstruction 40' north of existing facility allows area for larger cuts and fills
- Least Fiber Optic and Electric utility relocations of any proposed alternate
- Section of widen and overlay on existing alignment to reduce costs
- Requires new right of way from the fewest number of individual property owners of any proposed alternate

Disadvantages:

- Adds 12 new horizontal curves compared to the existing alignment
- Largest impact to potential wetlands of any proposed alternate
- Requires acquisition of residential structure on Choctaw Housing Authority property at sta. 1164+00, left
- Requires largest amount of excavation and creates the largest amount of waste excavation of any proposed alternate

Alignment Alternate 3: Widen and Overlay on existing and Reconstruct to 4R on offset alignment 30' north

This alternate was selected in an attempt to minimize temporary pavement costs that are associated with reconstruction on the existing alignment as proposed by Alternate 1 and to reduce the number of new horizontal curves as proposed by Alternate 2. The proposed alignment and profile for this alternate are the same as proposed for Alternate 1 through the first 7,750 lf of this job piece, to the Watson Creek bridge exception. The reconstruction on offset alignment begins immediately past the exception and continues to the end of this job piece. The proposed 30' offset reconstruction places the south edge of the new pavement section along the north edge of the existing pavement.

Advantages:

- Majority of construction on one side of existing highway reducing phasing, traffic modifications, and providing safer conditions for contractor and motorists
- Reconstruct and mill, widen and overlay on existing alignment for 7,750 lf to reduce cost and maintain horizontal geometry
- Only adds 2 horizontal curves compared to the existing alignment, curves create offset after project exception

Disadvantages:

- Largest total area of new right of way required of any proposed alternate
- Requires acquisition of residential structure on Choctaw Housing Authority property at sta. 1164+00, left
- Largest estimated cost to construct

Recommendation - JP 24066(04)

The preferred alignment for this job piece is **Alternate 3**, as described in this report, with a temporary tie to the existing alignment at the end of the project. The alignment and profile of this alternate meet the requirements of the project initiation report, replace all non-compliant 3R vertical curves and provide a substantial amount of additional reconstructed pavement relative to Alternates 1 & 2. This alternate reconstructs 3.61 miles of the total 4.27 miles of pavement in this job piece with the majority of construction on the north side of existing highway reducing phasing, traffic modifications, and providing safer conditions for the contractor and motorists.

Refer to Section 7.3 of this report for further discussion relative to the selection of this alternate and the preferred alternate of the connecting job piece in this alignment study.

7.2 Summary and Recommendation - JP 24066(07)

Summary

Before recommending a specific alternate for this job piece we should summarize what has been accomplished with the proposed alternates. These items were identified in the initiation report and are addressed in the proposed alternate designs.

Each of the three proposed alignment alternates on **JP 24066(07)**:

- Construct an open roadway section with 12' lanes and 8' paved shoulders from the beginning of the job piece to sta. 1534+80
- Correct non-3R vertical curves to 4R design criteria (all horizontal curves meet 3R criteria)
- Extend cross drains and bridges to the clear zone, as a minimum
- Provide 4R safety slopes throughout the project limits
- Require no new right of way or utility relocations at Antero Resources Atoka Gas Plant property, right of centerline from sta. 1303+00 to sta. 1313+30
- Do not disturb 5 large gas line crossings
- Construct a 2'-8" curb and gutter section with 12' wide asphalt lanes and sidewalks on each side from sta. 1534+80 to the end of the job piece
- Provide a left turn lane at the State Highway 3B junction
- Can be constructed as an individual project without a mandatory tie to JP 24066(04)

The following is a brief summary of each proposed alternate including advantages and disadvantages for each:

Alignment Alternate 1: Widen and Overlay 3R or Reconstruct to 4R on existing alignment

This alternate was selected as a continuation of the previous job piece. Alternate 1 proposes 2,650 lf of reconstructed pavement offset 30' north of the existing centerline from sta. 1295+00 to sta. 1321+50 to avoid the gas plant property along the present south right of way. This alternate also proposes 3,800 lf of reconstructed pavement offset 30' north of the existing centerline from sta. 1458+00 to sta. 1496+00 to eliminate any required acquisitions from multiple individual owners along the south right of way. The remaining 4,320 lf of reconstruction in this alternate is along the existing alignment from sta. 1329+70 to sta. 1372+90 to replace deficient vertical curves. A proposed curb and gutter section begins at sta. 1534+80 to minimize right of way acquisitions and utility relocations. At sta. 1543+04 full depth widening begins for the proposed left turn lane at the State Highway 3B junction.

Advantages:

- 10 fewer individual property owners affected than Alternate 2
- No impact to parallel 8" high pressure gas line owned by Antero Resources
- Long segments of mill, widen and overlay on the existing alignment to reduce construction costs
- No impact to potential wetlands

Disadvantages:

- Largest total area of new right of way required of any proposed alternate
- Requires acquisition of 2 parcels totaling 0.22 acres of property owned by the Choctaw Housing Authority
- Requires the largest amount of water line relocations of any proposed alternate
- Largest cost for temporary pavement of any proposed alternate

Alignment Alternate 2: Widen and Overlay 3R or Reconstruct to 4R on offset alignment 40' north

This alternate was selected as a continuation of the previous job piece to minimize temporary and shoofly pavement costs that are associated with reconstruction on the existing alignment. Alternate 1 for this job piece requires approximately \$625,000 of temporary pavement to maintain traffic. Alternate 2 also proposes the same 2,650 lf of reconstructed pavement as Alternate 1, offset 30' north from sta. 1295+00 to sta. 1321+50 to avoid the gas plant property along the present south right of way. This alternate proposes most remaining reconstruction 40' north of the existing centerline. The exception is the reconstruction of the crest vertical curve at sta. 1524+58 which will be reconstructed on the existing centerline due to the close proximity of adjacent improvements along the present north right of way and the short length of reconstruction proposed. Alternate 2 proposes the same curb and gutter section and left turn lane at the junction with State Highway 3B as Alternate 1.

Advantages:

- Smallest total cost to construct of any proposed alternate
- Long segments of mill, widen and overlay on the existing alignment to reduce construction costs
- Smallest cost for temporary and shoofly paving of any proposed alternate
- Reconstruction 40' north of existing facility allows larger area for cuts and fills with minimal temporary paving required

Disadvantages:

- Required right of way acquisitions affect the largest number of individual property owners
- Requires acquisition of 2 parcels totaling 0.22 acres of property owned by the Choctaw Housing Authority
- Proposes less total reconstruction of all alternates
- Requires 740 lf of 8" gas line relocation
- Adds the most horizontal curves of any alternate

Alignment Alternate 3: Widen and Overlay on existing and Reconstruct to 4R on offset alignment 30' north

This alternate was selected as a continuation of the previous job to minimize temporary pavement costs that are associated with reconstruction on the existing alignment as proposed by Alternate 1 and to reduce the number of new horizontal curves as proposed by Alternate 2. This alternate proposes complete reconstruction, on a 30' north offset, from the beginning of the job piece to sta. 1496+00 where the alignment returns to the existing centerline and the remaining 5,460lf of project is completed the same as described in Alternate 1.

Advantages:

- Adds fewest number of new horizontal curves of any proposed alternate
- Provides largest amount of reconstructed pavement of any proposed alternate
- Majority of construction on one side of existing highway
- Smallest total area of new right of way required of any proposed alternate
- Requires new right of way from the fewest number of individual property owners
- No acquisition of property owned by the Choctaw Housing Authority

Disadvantages:

- Requires 2,000 lf of 8" gas line relocation presently outside of the existing north right of way
- Largest estimated cost to construct

Recommendation - JP 24066(07)

The preferred alignment for this job piece is **Alternate 1**, as described in this report. The alignment and profile of this alternate meet the requirements of the project initiation report, replace all non-compliant 3R vertical curves, and reduces the number of individual property owners affected by the proposed improvements. Alternate 1 proposes offset reconstruction at one location to minimize right of way acquisitions. This alternate requires no relocations at 5 large existing gas line crossings and any impact to other natural gas collection or processing facilities within the project limits.

Refer to Section 7.3 of this report for further discussion relative to the selection of this alternate and the preferred alternate of the connecting job piece in this alignment study.

7.3 Study Area Recommendation - JP 24066(04) & JP 24066(07)

The purpose of this study was to determine the most feasible alignment alternate(s) to construct a two-lane rural collector through rolling terrain with 12 foot lanes, 8 foot shoulders and a 65 mph design speed. The study evaluated alternate alignments for both job pieces, considering them as a whole, with the understanding that future construction plans will be submitted by job piece. The job piece limits were revised to provide a better location to tie both projects. This new location allows both job pieces to be constructed individually without a mandatory tie to the other. This also allows combinations of alternates to be proposed for the entire study area in-lieu of just one alternate for both job pieces.

The preferred alignment on JP 24066(04) is 30' north of the existing centerline at the end of the job piece. A temporary tie to the existing alignment will be required if this project is constructed before the east project. The preferred alignment on JP 24066(07) starts at the existing centerline as widen and overlay section, and continues east for approximately 820 linear feet to a pair of horizontal curves that offsets the alignment 30' to the north of the existing alignment to avoid conflict with a natural gas collection and processing facility.

To combine these alternates into a single alignment we propose continuing the 30' offset reconstruction proposed in Alternate 3 on JP 24066(04) to sta. 1303+38 of Alternate 1 on JP 24066(07). This 1,655 lf extension will tie both projects on a 30' offset alignment and eliminate two horizontal curves proposed in Alternate 1 on JP 24066(07) to avoid the existing natural gas facility.

Horizontal geometry of the final alignment through the study area is an important part of the evaluation process. Horizontal corrections are not required since all existing curves meet 3R design criteria. The addition of new horizontal curves required to complete the project should be kept to a minimum. The combination of Alternate 3 of JP 24066(04) and Alternate 1 of JP 24066(07), with the extension discussed above, adds 5 new horizontal curves to the alignment compared to the existing geometry. The only alignment that adds fewer is Alternate 3 of the west job piece combined with Alternate 3 of the east job piece, which requires 4 new horizontal curves.

Vertical geometry of the final alignment through the study area is a critical part of the evaluation process. All alternates proposed for this study replace vertical curves that currently do not meet 3R standards. Alternate 3 on JP 24066(04) proposes the largest amount of reconstruction of any of the alternates in that job piece. This results in a larger percentage of the project length meeting 4R (AASHTO) design criteria. Alternate 1 on JP 24066(07) creates 40% more reconstructed pavement than Alternate 2, which is the least costly alignment to construct for the job piece. The only alignment that proposes more reconstructed pavement is Alternate 3 of the west job piece combined with Alternate 3 of the east job piece, which is the most expensive alignment to construct through the study area.

The requirement to design 4R safety slopes throughout the project limits has been included with each alternate. The new slopes create a larger footprint and require additional right of way to construct, even in mill, widen and overlay sections with no vertical or horizontal changes.

Other items evaluated for this recommendation include impacts to cultural and natural resources, required utility relocations and required right of way acquisitions. The preferred alignment does not create a substantial increase in any of these items. It does require the largest amount of new right of way but from fewer individual property owners than all other alternate combinations that exclude Alternate 3 on JP 24066(07). The preferred alignment affects the smallest amount of potential wetlands and avoids conflicts with existing natural gas production, collection and transmission facilities.

The final item evaluated for this recommendation is total project cost. The initiation reports listed estimated costs for each job piece. Comparing costs for each alternate per job piece with the initiation estimate may be misleading since the length of the job pieces was revised for constructability purposes. The total combined cost of the preferred alternate for the study area was compared to the combined initiation estimate and all combinations of alternates on both job pieces for the cost analysis.

Estimated Totals per Alternate per Job Piece		
JP 24066(04)		
Alternate 1	Alternate 2	Alternate 3
\$10,830,278.50	\$11,140,808.70	\$11,459,638.98
JP 24066(07)		
Alternate 1	Alternate 2	Alternate 3
\$11,410,196.89	\$11,179,990.42	\$13,181,678.63

*All estimated costs include a 15% contingency

Cost Matrix for Alignment Study J/P 24066(04) & J/P 24066(07)
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		JP 24066 (07)		
		Alternate 1	Alternate 2	Alternate 3
JP 24066 (04)				
Alternate 1	\$22,240,475.39	\$22,010,268.92	\$24,011,957.13	
Alternate 2	\$22,551,005.59	\$22,320,799.12	\$24,322,487.33	
Alternate 3	\$22,869,835.87	\$22,639,629.40	\$24,641,317.61	

Initiation Report Estimates	
JP 24066(04)	\$13,323,500.00
JP 24066(07)	\$9,555,500.00
Combined Total	\$22,879,000.00

Alternate Combinations	Estimated Cost Study Area	Percent of lowest combination	Percent of combined initiation estimate
J/P(04)-Alt 1, J/P(07)-Alt 2	\$22,010,268.92	100.00%	96.20%
J/P(04)-Alt 1, J/P(07)-Alt 1	\$22,240,475.39	101.05%	97.21%
J/P(04)-Alt 2, J/P(07)-Alt 2	\$22,320,799.12	101.41%	97.56%
J/P(04)-Alt 2, J/P(07)-Alt 1	\$22,551,005.59	102.46%	98.57%
J/P(04)-Alt 3, J/P(07)-Alt 2	\$22,639,629.40	102.86%	98.95%
J/P(04)-Alt 3, J/P(07)-Alt 1	\$22,869,835.87	103.91%	99.96%
J/P(04)-Alt 1, J/P(07)-Alt 3	\$24,011,957.13	109.09%	104.95%
J/P(04)-Alt 2, J/P(07)-Alt 3	\$24,322,487.33	110.51%	106.31%
J/P(04)-Alt 3, J/P(07)-Alt 3	\$24,641,317.61	111.95%	107.70%

 Recommended Alternate Combination



OKLAHOMA DEPARTMENT OF TRANSPORTATION
PROJECT STATUS SYSTEM

Logout
Project

Home > List Projects > Edit Project

NEPA_Completion date is submitted Successfully to the Project.

Environmental Proposed Bridge Related Projects Project Cost Project Revision Commitments Right-of-Way DOCUMENT VAULT Local Government FHWA Project Status Justification

Cancel Apply Changes Apply Changes-Same Page

Job Piece: 2406604

PRODUCTION TARGETS	Planned Finish	Actual Finish	Proj_Status	Condition	Percent
Reconnaissance Data	03/08/2011	11/30/2009	Completed		
Project Initiation	07/07/2011	09/13/2010	Completed		
EC Solicitation	11/28/2011				
EC Contract	06/28/2012	EC No 1326			
Survey	09/05/2012	01/28/2010	Completed		
Hydraulics	12/06/2012	03/18/2011	Completed		
Preliminary Plan in Hand	04/05/2013		Behind		
RW & Utility Meeting	10/05/2013		Behind		
NEPA Document	11/05/2013		Behind		
Plans Submitted to R/W	12/05/2013		Behind		
R/W Phase		- Please Select -	N/A		
Legal Entry	12/25/2014		N/A		
Status of Demolition			N/A		
Utility Out	04/30/2015		On-Time		
Prepare Traffic Div. Request	08/21/2014		- Please Select -		
Final Field Review	03/19/2015		On-Time		
404 Permit	04/30/2015		On-Time		
Plans Complete					
Ready to Let	05/07/2015		On-Time		

Edit Resource and Comments

Project Information

JP No.	Proj. ID	County	Div.	Maint.	HWY	Work Desc
2406604	SSP-103C(091)SS	03 ATOKA	2	2	SH007	07 GRADE,DRAINING,BRIDGE & SURFACE

Project Location & Legislative Districts

Ctrl.	Start	Lgth	End	Cong	Senate	House	Location
014	6.000	5.400	11.400	2	06	022	SH-7 FROM 6.0 MI EAST OF THE JOHNSTON C/L EAST 5.40 MI

Project Status

Status	8Year CWP	NHS Sys.	FHWA Oversight	Comm Appr.	Fhwa Auth	Auth FFY	Let Date	FFY	Award Date	RW JP No.	RW Let
Programmed	Yes			02/2007	-		NoDate	2019	NoDate	2406605	072015

STIP & NEPA Information

STIP FY	STIP Page	Pub Date	ODOT Appr.	TIP FY	TIP Page	MPO Appr.	NEPA Type	NEPA Appr	NEPA Re-Eval
2016	4-083	-	-			-	ICE	-	//

Project Budget & Plan Resource

Advanced \$0	Federal \$3,750,000	State \$3,750,000	Other \$0	Total \$7,500,000	Design Consultant BKL Inc.	NEPA Consultant 000000000
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ODOT/FHWA Resources Assigned

PMD	Field	FHWA	NEPA	Survey	Materials	Roadway	Bridge	Traffic	RW	Rail
Simon	Carney	Yeager	Saulsberry	-	-	Murphy	DeFranco	-	-	-

Comments

COMMENTS
PROJECT MANAGEMENT:Received Recon. Need scoping trip scheduled.

Bridge Information

NBI#	Status	Co	Ctl	Milept	Sd
06295	State Bridge	03	014	07710	

1-1

Consultant Resources

Go Actions

No data found.

Utility Information

Latest Utility Out Date