North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

May 15, 2014

ADDENDUM 1 – JOB 2

TO: All prospective bidders on projects SOIA-7-085(096)192, Job No. 2 scheduled for the May 22, 2014 bid opening.

The following plan and proposal revisions shall be made:

Plan Revisions:
See attached letter from Eric Bach, PE – SRF Consulting Inc. dated May 14, 2014 for an explanation.

Proposal Revisions:
Remove and replace pages 1 thru 18 with pages 1 thru 17 of the Proposal pages located at the beginning of the Bidders Proposal, with the enclosed pages revised 5/15/2014.

Page 1 thru 17:

Total pages changed from 18 to 17, due to the elimination of one page.

Item 203 0101 COMMON EXCAVATION-TYPE A; quantity decreased from 1,105,468 to 1,105,331 CY.
Item 203 0109 TOPSOIL; quantity decreased from 125,853 to 125,652 CY.
Item 203 0140 BORROW-EXCAVATION; quantity decreased from 276,645 to 274,771 CY.
Item 216-0100 WATER; quantity decreased from 17,494 to 17,475 MGAL.
Item 302 0100 SALVAGED BASE COURSE; quantity increased from 172,503 to 172,551 TON.
Item 401 0100 MC70 OR 250 LIQUID ASPHALT; quantity decreased from 3642 to 3577 GAL.
Item 401 0150 SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT; quantity decreased from 1460 to 1434 GAL.
Item 410 0215 SUPERPAVE FAA 45; quantity decreased from 4552 to 4524 TON.
Item 410 0460 PG 64-28 ASPHALT CEMENT; quantity decreased from 282 to 280 TON.
Item 550-0310 10IN NON REINF CONCRETE PVMT CL AE-DOWELED; quantity decreased from 206,790 to 206,724 SY.
Item 602-1130 CLASS AE-3 CONCRETE; 93.1 CY was deleted.
Item 612-0115 REINFORCING STEEL-GRADE 60; 11,016 LBS was deleted.
Item 612-0116 REINFORCING STEEL-GRADE 60-EPOXY COATED; 5558 LBS was deleted.
Item 708 1410 FIBER ROLLS 6IN; quantity increased 52,141 to 52,393 LF.
Item 708 1411 REMOVE FIBER ROLLS 6IN; quantity increased 26,848 to 27,100 LF.
Item 708 1430 FIBER ROLLS 12IN; quantity decreased 48,119 to 48,092 LF.

Item 708 1460 FIBER ROLLS 20IN; quantity increased 526 to 638 LF.
Item 708 1461 REMOVE FIBER ROLLS 20IN; quantity increased 263 to 319 LF.
Item 708-5500 MULCHING; quantity decreased from 322.3 to 321.9 ACRE.
Item 708-5651 ECB TYPE 2; quantity increased from 77,530 to 79,445 SY.
Item 708-5660 TRM TYPE 1; quantity decreased from 4320 to 4087 SY.
Item 709-0701 GEOTEXTILE FABRIC-TYPE R1; quantity decreased from 41,775 to 41,440 SY.
Item 714-4097 PIPE CONDUIT 15IN-STORM DRAIN; 55 LF was deleted.
Item 714-4117 PIPE CONDUIT 36IN-STORM DRAIN; quantity increased from 347 to 394 LF.
Item 714-4120 PIPE CONDUIT 42IN; quantity decreased from 538 to 314 LF.
Item 714-4125 PIPE CONDUIT 48IN; 216 LF was added.
Item 714-4131 PIPE CONDUIT 54IN-STORM DRAIN; quantity increased from 767 to 840 LF.
Item 714-4136 PIPE CONDUIT 60IN-STORM DRAIN; quantity decreased from 612 to 541 LF.
Item 722 1120 MANHOLE RISER 72IN; quantity increased from 32.2 to 38.2 LF.
Item 722 1135 MANHOLE RISER 90IN; quantity increased from 23.4 to 32.2 LF.
Item 722 3500 INLET-TYPE 1; 1 EA was deleted.
Item 748 0140 CURB & GUTTER-TYPE I; quantity decreased from 175 to 135 LF.
Item 764-0115 3-CABLE GUARDRAIL; 550 LF was added.
Item 764-0131 WBEAM GUARDRAIL; 64 LF was deleted.
Item 764-0145 WBEAM GUARDRAIL END TERMINAL; 1 EA was deleted.
Item 770-0220 CABLE TRENCH-TYPE II; quantity decreased from 16,913 to 16,892 LF.
Item 770-0330 2IN DIAMETER RIGID CONDUIT; quantity increased from 1003 to 1007 LF.
Item 770-0444 MULTIPLE UNDERGROUND CABLE 3NO4 STYLE USE; quantity decreased from 17,749 to 17,728 LF.
Item 770-0504 UNDERGROUND CONDUCTOR NO4-TYPE RHW; quantity increased from 3712 to 3728 LF.
Item 770-0604 UNDERGROUND CONDUCTOR NO4-TYPE THW; quantity increased from 1856 to 1864 LF.
Item 930-9550 MECHANICALLY STABILIZED EARTH WALL; quantity increased from 2918 to 3295 SF.

This addendum is to be incorporated into the bidder's proposal for this project.
Expedite bid files should be updated by downloading the addendum file from the Bid Express on-line bidding exchange at http://www.bidx.com/ or the Department's web page (http://www.dot.nd.gov) and load it into the Expedite program.

Cal J Gendreau

CAL J. GENDREAU – CONSTRUCTION SERVICES ENGINEER
80:plm
Enclosure

SRF Consulting Group, Inc.
ENGINEERS
PLANNERS
DESIGNERS

SRF No. 7594

May 14, 2014

ADDENDUM A – JOB 2

TO: All prospective bidders on project SOIA-7-085(096)192 PCN 20461, Job No. 2 scheduled for the May 22, 2014 bid opening.

The following plan and proposal revisions shall be made:

Plan Revisions:

Remove and replace sheets 2-1, 2-3, 10-1, 10-3, 10-4, 10-5, 11-1, 11-4, 11-5, 11-6, 11-7, 11-8, 11-16, 20-15, 20-17, 30-4, 30-5, 30-16, 50-1, 50-2, 51-1, 51-2, 60-2, 60-5, 60-6, 60-29, 75-1, 75-3, 75-9, 75-10, 75-11, 75-12, 75-13, 75-15, 75-21, 75-22, 90-16, 90-17, 100-2, 100-11, 100-15, 100-35, 130-2, 130-3, 140-1, 140-3, 140-9, 140-10, 140-18, 140-19, 140-20, 140-21, 200-13, 200-78 through 200-85, 200-103 through 200-107 with the enclosed sheets revised 5/12/2014.

Remove and replace sheets 6-3, 6-6, 20-17, 30-6, 200-86 through 200-102 with the enclosed sheets revised 5/13/2014.

Remove and replace sheets 8-1, 80-3, 82-10 with the enclosed sheets revised 5/14/2014.

Sheet 2-1:
Revised Table of Contents revised section 130 added 3-Cable Guardrail Layout.

Sheet 2-3:
Revised Table of Contents removed Standard Drawings D-764-1, D-764-9, D-764-22 and added Standard Drawings D-751-02 and D-764-32.

Sheet 6-3:
Revised note 302-P01.

Sheet 6-6:
Added note 708-100.

Sheet 8-1:
Item 203 0101 COMMON EXCAVATION-TYPE A decreased from 1,105,468 to 1,105,331 CY
Item 203 0109 TOPSOIL decreased from 125,853 to 125,652 CY
Item 203 0140 BORROW-EXCAVATION decreased from 276,645 to 274,771 CY
Item 216 0100 WATER decreased from 17,494 to 17,475 M GAL
Item 302 0100 SALVAGE BASE COURSE increased from 172,503 to 172,551 TON
Item 401 0100 MC70 OR 250 LIQUOID ASPHALT decreased from 3,642 to 3,577 GAL

Item 401 0150 SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT decreased from 1,460 to 1,434 GAL
Item 410 0215 SUPERPAVE FAA 45 decreased from 4,552 to 4,524 TON
Item 410 0460 PG 64-28 ASPHALT CEMENT decreased from 282 to 280 TON
Item 550 0310 10IN NON REINF CONCRETE PVMT CL AE-DOWELED decreased from 206,790 to 206,724 SY
Deleted item 602 0930 CLASS AE-3 CONCRETE 93.1 CY
Deleted Item 612 0115 REINFORCING STEEL-GRADE 60 11,016 LBS
Deleted Item 612 0116 REIFFORCING STEEL-GRADE 60-EPOXY COATED 5,558 LBS
Item 708 1410 FIBER ROLLS 6IN increased from 52,141 to 52,393 LF
Item 708 1411 REMOVE FIBER ROLLS 6IN increased from 26,848 to 27,100 LF
Item 708 1430 FIBER ROLLS 12IN decreased from 48,119 to 48,092 LF
Item 708 1460 FIBER ROLLS 20IN increased from 526 to 638 LF
Item 708 1461 REMOVE FIBER ROLLS 20IN increased from 263 to 319 LF
Item 708 5500 MULCHING decreased from 322.3 to 321.9 ACRE
Item 708 5651 ECB TYPE 2 increased from 77,530 to 79,445 SY
Item 708 5660 TRM TYPE 1 decreased from 4,320 to 4,087 SY
Item 709 0701 GEOTEXTILE FABRIC-TYPE R1 decreased from 41,775 to 41,440 SY
Deleted Item 714 4097 PIPE CONDUIT 15IN – STORM DRAIN 55 LF
Item 714 4117 PIPE CONDUIT 36IN – STORM DRAIN increased from 347 to 394 LF
Item 714 4120 PIPE CONDUIT 42IN decreased from 538 to 314 LF
Added Item 714 4125 PIPE CONDUIT 48IN 216 LF
Item 714 4131 PIPE CONDUIT 54IN – STORM DRAIN increased from 767 to 840 LF
Item 714 4136 PIPE CONDUIT 60IN – STORM DRAIN decreased from 612 to 541 LF
Item 722 1120 MANHOLE RISER 72IN increased from 32.2 to 38.2 LF
Item 722 1135 MANHOLE RISER 90IN increased from 23.4 to 32.2 LF
Deleted Item 722 3500 INLET – TYPE 1 1 EA
Item 748 0140 CURB & GUTTER-TYPE 1 decreased from 175 to 135 LF
Added Item 764 0115 3-CABLE GUARDRAIL 550 LF
Deleted Item 764 0131 W-BEAM GUARDRAIL 64 LF
Deleted Item 764 0145 W-BEAM GUARDRAIL END TERMINAL 1 EA
Item 770 0220 CABLE TRENCH-TYPE II decreased from 16,913 to 16,892 LF
Item 770 0330 2IN DIAMETER RIGID CONDUIT increased from 1,003 to 1007 LF
Item 770 0444 MULTIPLE UNDERGROUND CABLE 3NO4 STYLE USE decreased from 17,749 to 17,728 LF
Item 770 0504 UNDERGROUND CONDUCTOR N04-TYPE RHW increased from 3,712 to 3,728 LF
Item 770 0604 UNDERGROUND CONDUCTOR N04-TYPE THW increased from 1,856 to 1,864 LF
Item 930 9550 MECHANICALLY STABALLIZED EARTH WALL increased from 2,918 SF to 3,295 SF

Sheet 10-1:

Salvaged base course summary revised due to change in retaining wall.

Sheet 10-3:
Revised station ranges due to change in retaining wall.

Sheet 10-4:
Revised station ranges due to change in retaining wall.

Sheet 10-5:
Revised station ranges due to change in retaining wall.

Sheet 11-1:
Revised earthwork values due to change in retaining wall.

Sheet 11-4:
Revised earthwork values due to change in retaining wall.

Sheet 11-5:
Revised earthwork values due to change in retaining wall.

Sheet 11-6:
Revised earthwork values due to change in retaining wall.

Sheet 11-7:
Revised earthwork values due to change in retaining wall.

Sheet 11-8:
Revised earthwork values due to change in retaining wall.

Sheet 11-16:
Revised Mass Diagram due to change in retaining wall.

Sheet 20-15:
Revised station and offset due to change in retaining wall.
Revised pipe size and ECB Type 2 quantity for pipe at 10182+91 due to increase in drainage area.

Sheet 20-17:
Revised retaining wall

Sheet 30-4:
Revised typical due to change in retaining wall.

Sheet 30-5:
Revised typical due to change in retaining wall.

Sheet 30-6:
Revised typical due to change in retaining wall.

Sheet 30-16:
Revised ditch slopes due to change in retaining wall.

Sheet 50-1:
Revised 10182+91 due to increase in drainage area

Sheet 50-2:
Revised Manhole 5 and 6; removed Inlet 6A due to change in retaining wall.

Sheet 51-1:
Revised pipe list due to change in retaining wall.
Added 'Applicable Backfill Detail' column to table.

Sheet 51-2:
Revised pipe list due to increase in drainage area.

Sheet 60-2:
Revised pipe 10182+91 due to increase in drainage area.

Sheet 60-5:
Revised due to change in retaining wall.

Sheet 60-6:
Revised due to change in retaining wall.

Sheet 60-29:
Revised retaining wall

Sheet 75-1:
The center pipe size at station 10182+90 has changed

Sheet 75-3:
Revised the temporary erosion control to accommodate the changes at the retaining wall

Sheet 75-9:
Fiber rolls quantity has changed

Sheet 75-10:
Fiber rolls quantity has changed

Sheet 75-11:
Fiber rolls quantity has changed

Sheet 75-12:
Fiber rolls quantity has changed

Sheet 75-13:
The center pipe size at station 10182+90 has changed

Sheet 75-15:
Revised the permanent erosion control to accommodate the changes at the retaining wall

Sheet 75-21:
Fiber rolls quantity has changed

Sheet 75-22:
Fiber rolls quantity has changed

Sheet 80-3:
Revised due to change in retaining wall.

Sheet 82-10:
Revised retaining wall alignment.

Sheet 90-16:
Revised paving joint layout and quantities due to change in retaining wall.

Sheet 90-17:
Revised paving joint layout and quantities due to change in retaining wall.

Sheet 100-2:
Revised plan view due to change in retaining wall.

Sheet 100-11:
Revised plan view due to change in retaining wall.

Sheet 100-15:
Revised plan view due to change in retaining wall.

Sheet 100-35:
Revised typical section to reflect the distance of the retaining wall from the roadway.

Sheet 130-2:
Revised guardrail due to change in retaining wall.

Sheet 130-3:
Revised guardrail due to change in retaining wall.

Sheet 140-1:
Relocated lighting units 1 and 9 due to drainage pipe conflict.

Sheet 140-3:
Updated stations and quantities based on lights 1 and 9 relocating.

Sheet 140-9:
Relocated lighting units 2, 3, and 4 due to drainage pipe conflict.

Sheet 140-10:
Updated stations and quantities based on light units 2, 3, and 4 relocating.
Sheet 140-18:
Relocated lighting unit 7 due to drainage pipe conflict.

Sheet 140-19:
Relocated lighting unit 7 due to drainage pipe conflict.

Sheet 140-20:
Updated stations and quantities based on light unit 7 relocating.

Sheet 140-21:
Updated stations and quantities based on light unit 7 relocating.

Sheet 200-13:
Revised pipe 10182+91 due to increase in drainage area.

Sheets 200-78 through 200-107:
Revised cross sections due to change in retaining wall.

Add Standard Drawing D-764-32 with the enclosed sheets

Remove sheet 130-4

Remove Standard Drawings D-764-1, D-764-6, D-764-22

This addendum is to be incorporated into the bidder's proposal for this project.

Eric Bach, PE
SRF Consulting Group, Inc.

Enclosure

H:\Projects\7594\70085192.096\Design\Addendum A\Plan\Final Plans\Addendum_A_2014-05-14\SOIA-7-085(096)192_Addendum_A_Explanation.docx

Project: SOIA-7-085(096)192 (PCN-20461)

The company, firm, corporation, or individual hereby acknowledges that it has designated a responsible person or persons as having the authority to obligate the company, firm, or individual, through electronic or paper submittal, to the terms and conditions described herein and in the contract documents. The designated responsible person submitting this proposal shall be hereafter known as the bidder. By submitting this proposal, the bidder fully accepts and agrees to all the provisions of the proposal. The bidder also certifies that the information given in this proposal is true and the certifications made in this proposal are correct.

The bidder acknowledges that they have thoroughly examined the plans, proposal form, specifications, supplemental specifications, special provisions and agrees that they constitute essential parts of this proposal.

The bidder acknowledges that all line items which contain a quantity shall have a unit price bid. Any line item which is bid lump sum shall contain a lump sum bid price.

The bidder acknowledges that they understand that the quantities of work required by the plans and specifications are approximate only and are subject to increases and decreases; the bidder understands that all quantities of work actually required must be performed and that payment therefore shall be at the prices stipulated herein; that the bidder proposes to timely furnish the specified materials in the quantities required and to furnish the machinery, equipment, labor and expertise necessary to competently complete the proposed work in the time specified.

NON-COLLUSION AND DEBARMENT CERTIFICATION

The bidder certifies that neither he/she, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid.

By submitting this bid, the bidder certifies to the best of his/her knowledge and belief that he/she and his/her principles:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;
b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public (Federal, State or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph b. of the certification; and
d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or Local) terminated for cause or default

Where the prospective bidder is unable to certify to any of the statements in this certification, the bidder shall submit an explanation in the blanks provided herein. The explanation will not necessarily result in denial of participation in a contract:

Explanation:_____
_____
_____
_____

If the prequalified bidder's status changes, he/she shall immediately submit a new fully executed non-collusion affidavit and debarment certification with an explanation of the change to the Contract Office prior to submitting the bid.

Failure to furnish a certification or an explanation will be grounds for rejection of a bid.

BID LIMITATION (Optional)

The bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than the bidder is equipped to handle, may bid on multiple projects and limit the total amount of work awarded to the bidder on selected projects by completing the "Bid Limitation".

The Bid Limitation must be filled in on each bid proposal for which the Bidder desires protection. Each such bid proposal must be covered by a proposal guarantee.

The bid limitation can be made by declaring the total dollar value of work OR total number of projects a bidder is willing to perform.

The Bidder desires to disqualify all of his/her bids on this bid opening that exceed a total dollar value of

$_____

OR

that exceed a total number of _____ projects.

The Bidder hereby authorizes the Department to determine which bids shall be disqualified.

Project: SOIA-7-085(096)192 (PCN-20461)

PERMISSIBLE DISCOUNT (optional)

Only when invited to do so in the bidders proposal by Special Provision, Bidders are permitted to offer a discount on a specific project (discount project) if they are awarded the contract on one or more additional projects bid at the same bid opening time and date. The bidder must present the proposal so that it can be considered with or without the discount. The bid or discount offered on the "discount project" will not affect the determination of the low bid of any other project.

When discounts are offered, they must be presented as a reduction in the unit price for one or more items of work in the specified proposal (discount project).

Space for Offering Discounts:

_____

_____

_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

TOTAL DISCOUNT_____

It is understood that the discount will only apply if awarded under the conditions as listed above and signed by the bidder.

Project: SOIA-7-085(096)192 (PCN-20461)

RECEIPT OF ADDENDA ACKNOWLEDGEMENT

We hereby acknowledge receipt of the following addenda:

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

BID GUARANTEE

A bid guarantee is required by Section 24-02-20, NDCC. The bid guarantee may be a bid bond equal to 10 percent of the full amount of the bid or a cashier's check of the bidder on a solvent bank equal to 5 percent of the bid. Bid bond shall be on the department form SFN 14196. Prior arrangements may be made with the department to file bid guarantees in advance.

*Contractors must have an annual bid bond on file with the department in order to submit bids electronically on the internet.

TYPE OF BID GUARANTEE APPLIED TO THIS PROJECT:

Check One: ___ Certified check or Cashier's check equal to 5% of the bid

___ Bid Bond equal to 10% of the bid

___ * Annual Bid Bond

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	103	0200	ESCROW OF BID DOCUMENTATION	L SUM	1.				
003	107	0200	CULTURAL RESOURCE CONSTRUCTION MONITORING	L SUM	1.				
004	108	0001	CRITICAL PATH METHOD SCHEDULE	L SUM	1.				
005	201	0330	CLEARING & GRUBBING	L SUM	1.				
006	202	0105	REMOVAL OF STRUCTURE	L SUM	1.				
007	202	0119	SAW CONCRETE	LF	2,759.				
008	202	0136	REMOVAL OF PAVEMENT	TON	42,380.				
009	202	0153	SAW BITUMINOUS SURFACING-FULL DEPTH	LF	191.				
010	202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES	EA	2.				
011	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1,027.				
012	202	0312	REMOVE EXISTING FENCE	LF	37,289.				
013	203	0101	COMMON EXCAVATION-TYPE A	CY	1,105,331.				
014	203	0109	TOPSOIL	CY	125,652.				
015	203	0121	TOPSOIL-WETLAND	CY	3,815.				
016	203	0138	COMMON EXCAVATION-SUBCUT	CY	19,078.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
017	203	0140	BORROW-EXCAVATION	CY	274,771.				
018	203	0180	ROADWAY OBLITERATION	LF	1,462.				
019	210	0109	CLASS 2 EXCAVATION-BOX CULVERT	EA	1.				
020	210	0201	FOUNDATION PREPARATION	EA	1.				
021	210	0210	FOUNDATION FILL	CY	620.				
022	210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1.				
023	216	0100	WATER	M GAL	17,475.				
024	230	0300	SUBGRADE PREPARATION-TYPE A	STA	89.690				
025	302	0100	SALVAGED BASE COURSE	TON	172,551.				
026	302	0356	AGGREGATE SURFACE COURSE CL 13	TON	1,351.				
027	401	0100	MC70 OR 250 LIQUID ASPHALT	GAL	3,577.				
028	401	0150	SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	1,434.				
029	410	0215	SUPERPAVE FAA 45	TON	4,524.				
030	410	0460	PG 64-28 ASPHALT CEMENT	TON	280.				
031	410	0910	CORED SAMPLE	EA	13.				
032	550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	206,724.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
033	602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	CY	1,000.600				
034	612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	LBS	118,235.				
035	702	0100	MOBILIZATION	L SUM	1.				
036	704	0100	FLAGGING	MHR	1,300.				
037	704	1000	TRAFFIC CONTROL SIGNS	UNIT	5,969.				
038	704	1035	ATTENUATION DEVICE-TYPE B-25	EA	3.				
039	704	1052	TYPE III BARRICADE	EA	87.				
040	704	1060	DELINEATOR DRUMS	EA	152.				
041	704	1067	TUBULAR MARKERS	EA	430.				
042	704	1080	STACKABLE VERTICAL PANELS	EA	908.				
043	704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	2.				
044	704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	113.				
045	704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	5.				
046	706	0200	FIELD LABORATORY-TYPE B	EA	1.				
047	706	0400	FIELD OFFICE	EA	1.				
048	708	1020	RIPRAP-LOOSE ROCK	CY	411.500				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
049	708	1029	REMOVAL RIPRAP-LOOSE ROCK	CY	107.				
050	708	1325	SILT FENCE SUPPORTED	LF	916.				
051	708	1335	REMOVAL SILT FENCE SUPPORTED	LF	916.				
052	708	1375	FLOTATION SILT CURTAIN	LF	177.				
053	708	1376	REMOVAL FLOTATION SILT CURTAIN	LF	177.				
054	708	1410	FIBER ROLLS 6IN	LF	52,393.				
055	708	1411	REMOVAL FIBER ROLLS 6IN	LF	27,100.				
056	708	1430	FIBER ROLLS 12IN	LF	48,092.				
057	708	1431	REMOVAL FIBER ROLLS 12IN	LF	30,006.				
058	708	1460	FIBER ROLLS 20IN	LF	638.				
059	708	1461	REMOVAL FIBER ROLLS 20IN	LF	319.				
060	708	1530	INLET PROTECTION-FIBER ROLL 6IN	EA	14.				
061	708	1532	REMOVAL INLET PROTECTION-FIBER ROLL 6IN	EA	7.				
062	708	1540	INLET PROTECTION-SPECIAL	EA	1.				
063	708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	1.				
064	708	2260	SEEDING-TYPE B-CL IV	ACRE	167.800				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
065	708	2280	SEEDING-TYPE B-CL V	ACRE	176.700				
066	708	2480	SEEDING-TYPE C-CL V	ACRE	1.200				
067	708	3000	TOPSOIL FOR TYPE C SEEDING	CY	944.				
068	708	5500	MULCHING	ACRE	321.900				
069	708	5651	ECB TYPE 2	SY	79,445.				
070	708	5653	ECB TYPE 4	SY	5,191.				
071	708	5660	TRM TYPE 1	SY	4,087.				
072	708	8500	STABILIZED CONSTRUCTION ACCESS	EA	2.				
073	708	8501	REMOVAL STABILIZED CONSTRUCTION ACCESS	EA	2.				
074	709	0600	GEOTEXTILE FABRIC-TYPE RR	SY	1,128.400				
075	709	0701	GEOTEXTILE FABRIC-TYPE R1	SY	41,440.				
076	710	0409	TEMPORARY CONNECTION	EA	3.				
077	714	4099	PIPE CONDUIT 18IN-APPROACH	LF	98.				
078	714	4105	PIPE CONDUIT 24IN	LF	910.				
079	714	4106	PIPE CONDUIT 24IN-APPROACH	LF	483.				
080	714	4110	PIPE CONDUIT 30IN	LF	876.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
081	714	4112	PIPE CONDUIT 30IN-STORM DRAIN	LF	59.				
082	714	4115	PIPE CONDUIT 36IN	LF	546.				
083	714	4116	PIPE CONDUIT 36IN-APPROACH	LF	322.				
084	714	4117	PIPE CONDUIT 36IN-STORM DRAIN	LF	394.				
085	714	4120	PIPE CONDUIT 42IN	LF	314.				
086	714	4121	PIPE CONDUIT 42IN-STORM DRAIN	LF	785.				
087	714	4122	PIPE CONDUIT 42IN-APPROACH	LF	468.				
088	714	4125	PIPE CONDUIT 48IN	LF	216.				
089	714	4126	PIPE CONDUIT 48IN-STORM DRAIN	LF	727.				
090	714	4131	PIPE CONDUIT 54IN-STORM DRAIN	LF	840.				
091	714	4136	PIPE CONDUIT 60IN-STORM DRAIN	LF	541.				
092	714	4141	PIPE CONDUIT 66IN-STORM DRAIN	LF	355.				
093	714	4167	PIPE CONDUIT 42IN-JACKED OR BORED	LF	120.				
094	714	6506	END SECT-TRAVERSABLE METAL 24IN	EA	2.				
095	714	9200	CATTLE PASS CONC INTERMED SECTION	LF	120.				
096	714	9350	END SECTION CONC CATTLE PASS	EA	2.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
097	714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	1.				
098	714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	1.				
099	720	0110	RIGHT OF WAY MARKERS	EA	143.				
100	720	0125	ALIGNMENT MONUMENTS	EA	57.				
101	720	0130	IRON PIN R/W MONUMENTS	EA	122.				
102	720	0135	IRON PIN REFERENCE MONUMENTS	EA	21.				
103	722	0107	MANHOLE 54IN	EA	1.				
104	722	0110	MANHOLE 60IN	EA	1.				
105	722	0115	MANHOLE 66IN	EA	1.				
106	722	0120	MANHOLE 72IN	EA	2.				
107	722	0125	MANHOLE 78IN	EA	2.				
108	722	0135	MANHOLE 90IN	EA	1.				
109	722	0140	MANHOLE 96IN	EA	1.				
110	722	0200	MANHOLE 108IN	EA	1.				
111	722	1106	MANHOLE RISER 54IN	LF	8.600				
112	722	1110	MANHOLE RISER 60IN	LF	19.400				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
113	722	1115	MANHOLE RISER 66IN	LF	10.500				
114	722	1120	MANHOLE RISER 72IN	LF	38.200				
115	722	1125	MANHOLE RISER 78IN	LF	24.100				
116	722	1135	MANHOLE RISER 90IN	LF	32.200				
117	722	1140	MANHOLE RISER 96IN	LF	25.400				
118	722	1200	MANHOLE RISER 108IN	LF	28.800				
119	722	4565	MEDIAN DRAIN PRECAST CONCRETE-TYPE A	EA	7.				
120	748	0140	CURB & GUTTER-TYPE I	LF	135.				
121	752	0200	FENCE BARBED WIRE 4 STRAND	LF	32,174.				
122	752	0911	TEMPORARY SAFETY FENCE	LF	4,403.				
123	752	0930	FENCE RESET EXISTING	LF	1,095.				
124	752	0995	FENCE TERMINAL-WOOD POSTS	EA	40.				
125	752	2100	VEHICLE GATE	EA	1.				
126	752	2110	RESET VEHICLE GATE	EA	1.				
127	752	2120	REMOVE VEHICLE GATE	EA	10.				
128	752	3140	CORNER ASSEMBLY BARBED WIRE	EA	99.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
129	752	4100	DOUBLE BRACE ASSEMBLY BARBED WIRE	EA	1.				
130	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	599.300				
131	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	974.100				
132	754	0195	DIAMOND GRADE DELINEATORS-TYPE A	EA	123.				
133	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	2,947.900				
134	754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF	246.600				
135	754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	230.				
136	754	0562	REFERENCE MARKER-TYPE B	EA	1.				
137	754	0563	REFERENCE MARKER-TYPE C	EA	8.				
138	754	0592	RESET SIGN PANEL	EA	61.				
139	754	0805	OBJECT MARKERS - CULVERTS	EA	83.				
140	760	0001	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	5.948				
141	760	0009	RUMBLE STRIPS - INTERSECTION	EA	1.				
142	762	0110	EPOXY PVMT MK 4IN LINE-GROOVED	LF	103,301.				
143	762	0111	EPOXY PVMT MK 12IN LINE	LF	4,170.				
144	762	0113	EPOXY PVMT MK 4IN LINE	LF	7,824.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
145	762	0117	EPOXY PVMT MK 24IN LINE	LF	412.				
146	762	0132	EPOXY PVMT MK 8IN LINE-GROOVED	LF	17,094.				
147	762	0135	EPOXY PVMT MK 24IN LINE-GROOVED	LF	290.				
148	762	0136	EPOXY PVMT MK MESSAGE-GROOVED	SF	1,218.				
149	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	56.				
150	762	0440	SHORT TERM MESSAGE-TYPE R	SF	202.				
151	762	1500	OBLITERATION OF PVMT MK	SF	7,288.				
152	764	0115	3-CABLE GUARDRAIL	LF	550.				
153	764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	365.				
154	764	2081	REMOVE END TREATMENT & TRANSITION	EA	2.				
155	766	0100	MAILBOX-ALL TYPES	EA	13.				
156	770	0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	92.				
157	770	0060	CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	5.				
158	770	0220	CABLE TRENCH-TYPE II	LF	16,892.				
159	770	0330	2IN DIAMETER RIGID CONDUIT	LF	1,007.				
160	770	0350	3IN DIAMETER RIGID CONDUIT	LF	1,821.				

BID ITEMS

Project: SOIA-7-085(096)192 (PCN-20461)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
161	770	0444	MULTIPLE UNDERGROUND CABLE 3NO4 STYLE USE	LF	17,728.				
162	770	0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	300.				
163	770	0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	LF	3,728.				
164	770	0602	UNDERGROUND CONDUCTOR NO2-TYPE THW	LF	150.				
165	770	0604	UNDERGROUND CONDUCTOR NO4-TYPE THW	LF	1,864.				
166	770	0735	FEED POINT-TYPE II-PAD MOUNTED	EA	2.				
167	770	0745	FEED POINT-TYPE IV-PAD MOUNTED	EA	3.				
168	770	1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	EA	74.				
169	770	1728	LT STD 8FT MA 42FT POLE BREAKAWAY	EA	16.				
170	770	1828	LT STD 12FT MA 42FT POLE BREAKAWAY	EA	2.				
171	770	4140	HP SODIUM VAPOR LUMINAIRE-250 WATT	EA	92.				
172	772	9010	AUTOMATIC TRAFFIC RECORDER SYSTEM	EA	1.				
173	772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1.				
174	930	9550	MECHANICALLY STABILIZED EARTH WALL	SF	3,295.				
175	970	1011	LANDSCAPE PLANTINGS	L SUM	1.				
			TOTAL SUM BID						

Project: SOIA-7-085(096)192 (PCN-20461)

Type of Work: GRADING, WIDENING, PAVING, AGGREGATE BASE, DRAINAGE, SIGNALS, LIGHTING, & INCID

County: WILLIAMS

Length: 4.3120 Miles

TIME FOR COMPLETION:

The undersigned Bidder agrees, if awarded the contract, to prosecute the work with sufficient forces and equipment to complete the contract work within the allowable time specified as follows:

WORKING DAY CONTRACT: **NA** working days, counted as provided in Standard Specification No. 108.04. Working Days will be counted from **NA** or from the actual date on which on-site work is started, whichever is earlier.

CALENDAR DAY CONTRACT: **NA** calendar days. Calendar Days will be counted from **NA** or from the actual date on which on-site work is started, whichever is earlier.

COMPLETION DATE CONTRACT: **11/01/2014 *** provided however, that a minimum of **NA** working days, counted as provided by Standard Specification No. 108.04, are guaranteed for the performance of the work. Working days will be counted from **NA** or from the actual date on which onsite work is started, whichever is earlier.

***CLOSURE OF THE TEMPORARY BYPASS WILL ONLY BE ALLOWED DURING 2015 AND SHALL BE LIMITED TO 45 WORKING DAYS. A COMPLETION DATE OF 11/1/2014 IS FOR ALL WORK NECESSARY TO MEET WINTER SUSPENSION REQUIREMENTS AS OUTLINED IN PLAN NOTE 103-P01. ALL REMAINING WORK SHALL BE COMPLETED THE FOLLOWING YEAR BY 9/12/15. LIQUIDATED DAMAGES SHALL BE CHARGED AS FOLLOWS: FAILURE TO MEET WINTER SUSPENSION REQUIREMENTS SHALL BE CHARGED AT THE RATE OF $3,500 PER CALENDAR DAY UNTIL CONDITIONS ARE MET. FAILURE TO COMPLETE ALL REMAINING ITEMS OF WORK BY 9/12/15 SHALL BE CHARGED AT THE RATE OF $3,500 PER CALENDAR DAY UNTIL WORK IS COMPLETED. LIQUIDATED DAMAGES SHALL BE $1,000 PER WORKING DAY FOR EACH DAY BEYOND THE 45 DAY CLOSURE LIMITATION. SUNDAY WORK IS ALLOWED.**

Project: SOIA-7-085(096)192 (PCN-20461)

Type of Work: GRADING, WIDENING, PAVING, AGGREGATE BASE, DRAINAGE, SIGNALS, LIGHTING, & INCID

County: WILLIAMS

Length: 4.3120 Miles

CONTRACT EXECUTION:

The undersigned Bidder agrees, if awarded the contract, to execute the contract form and furnish a contract bond within ten days, as determined by NDCC Section 1-02-15, after date of notice of tentative award, in accordance with the provisions of Sections 103.05 and 103.06 of the Standard Specifications.

AFFIDAVIT:

STATE OF _____)
) ss.
COUNTY OF _____)

The undersigned bidder, being duly sworn, does depose and say that they are an authorized representative of _____
CONTRACTOR NAME

of _____ , a
MAILING ADDRESS

☐ Individual ☐ Partnership ☐ Joint Venture ☐ Corporation

and that they have read, understand, acknowledge, and accept the entire proposal form; and that all statements made by said bidder are true and correct.

_____ , TITLE _____
BIDDER MUST SIGN ON THIS LINE

_____
TYPE OR PRINT SIGNATURE ON THIS LINE

Subscribed and sworn to before me this day.

_____
COUNTY

(Seal)

_____ _____
STATE DATE

_____
NOTARY PUBLIC

My commission expires _____

TABLE OF CONTENTS

Section No.	Sheet No.	Description
1	1	Title Sheet
2	1	Table of Contents
2	2	List of Special Provisions
2	2-3	List of Standard Drawings
4	1	Scope of Work
6	1-14	Notes
6	15-16	Environmental Commitments
8	1	Quantities
10	1-8	Basis of Estimate
11	1	Earthwork & Topsoil Summary
11	2-15	Earthwork Values
11	16	Mass Diagram
20	1	Discretionary Subcut Detail
20	2	Approach Paving Details
20	3	PCC Pavement Joint Details
20	4	Pavement Reinforcing at Pipe Locations
20	5	4” Curb Detail
20	6	Concrete Pavement Leave Outs Detail
20	7	Stabilized Construction Access
20	8	Edgedrain Detail
20	9	Headwall Vegetation Barrier
20	10	Ditch Block Detail
20	11	Single Broken Back Culvert Detail
20	12	Riprap at Pipe Outlets
20	13	Rock Ditch Check Detail
20	14	Flotation Silt Curtain Detail
20	15	Erosion Control at Median Drains and End Sections
20	16	Inlet Protection Device with Curb Box
20	17-18	MSE Wall Details
20	19-20	US 85 Superelevation Detail
20	21	Side Roads Superelevation Detail
20	22	Rural Approach Details
20	23	Cattle Pass Backfill Detail
30	1	Existing Typical Sections
30	2-14	Proposed Typical Sections
30	15-17	Explanation of Embankment
40	1-12	Removals
50	1	Culvert Hydraulic Data
50	2-3	Inlet and Manhole Summary
51	1	Allowable Pipe List – Storm Drain
51	2-5	Allowable Pipe List – Culverts
60	1-29	Plan & Profile
60	30-31	Ditch Staking Report
70	1	Contour Plan
75	1-12	Temporary Erosion Control & Wetlands and Seeding Layout
75	13-23	Permanent Erosion Control & Wetlands and Seeding Layout
80	1-7	Fencing Layout
81	1	Survey Coordinate and Curve Data
81	2-3	Monuments, Iron Pins, and Right of Way Markers
82	1-29	Survey Data Layout
82	30-41	Elevation Data Points
90	1-39	Paving Joint Layouts
100	1	Traffic Control Devices List
100	2-3	Construction Staging
100	4-17	Construction Sign Layout
100	18-27	Construction Phasing Details
100	28-44	Construction Typical Sections
110	1-7	Sign Summary
110	8-31	Signing Layout
110	32-42	Signing Details
120	1-19	Pavement Marking Layout
130	1	Remove W-beam Guardrail
130	2-3	3-Cable Guardrail Layout
140	1-22	Lighting
150	1	Existing Traffic Signal System Removal
150	2-15	Traffic Signal System
150	16-26	Existing Traffic Signal System - For Information Only
150	27-29	Automatic Traffic Recorder System (ATR)
170	1-15	Box Culvert Plans
175	1-4	Soil Boring Logs
180	1	Pit Plats
180	2	Boring Logs
200	1-215	US Hwy 85
200	216-220	US Hwy 85 Widening 1
200	221-227	US Hwy 85 Widening 2
200	228-232	140th Ave NW South Leg
200	233-236	140th Ave NW North Leg
200	237-239	Driveway 10213 Median
200	240-243	Driveway 10213 Approach
200	244-248	Driveway 10220
200	249-255	139th Ave NW South Leg

D-708-7	Erosion Control Fiber Roll Placement Details
D-714-1	Reinforced Concrete Pipe Culvert and End Section
D-714-4	Round Corrugated Steel Pipe Culverts and End Sections
D-714-8	4' X 6' Standard Sectional Concrete Cattle Pass (with Steel Fabric Reinforcement)
D-714-11	Traversable End Sections for Corrugated Steel Pipe Culverts
D-714-16	Jacked and Bored Pipe
D-714-22	Concrete Pipe or Precast Concrete Box Culvert Ties
D-714-25	Transverse Mainline Pipe Excavation and Installation Detail for Pipes More Than 4 Feet Below the Top of Proposed Subgrade
D-714-25M	Transverse Mainline Pipe Excavation and Installation Detail for Multiple Pipes More Than 4 Feet Below the Top of Proposed Subgrade
D-714-26	Transverse Mainline Pipe Excavation and Installation Detail for Pipes 4 Feet or Less Below the Top of Proposed Subgrade
D-714-26M	Transverse Mainline Pipe Excavation and Installation Detail for Multiple Pipes 4 Feet or Less Below the Top of the Proposed Subgrade
D-714-27	Pipe Excavation and Installation Detail for Longitudinal Mainline Pipe or Pipe Not Under the Roadway
D-714-28	Transverse Mainline Pipe Excavation and Installation Detail for Pipes Installed in New Embankment Areas
D-720-1	Standard Monuments and Right of Way Markers
D-722-1	Inlet – Type 1
D-722-5	Manhole Details
D-722-7	Precast Concrete Median Drain
D-748-1	Curb & Gutter and Valley Gutter
D-752-1	Standard Barbed Wire Fence
D-752-4	Concrete Cattle & Stockpass Fencing
D-754-1	Pipe or W-Shape Assembly Details
D-754-9	Letter and Arrow Details For Variable Length Signs
D-754-12	Breakaway Coupler System Structural Details for W-Shape Supports
D-754-13	Breakaway System Structural Details for W-Shape Supports
D-754-14	Wind Beams and Anchor Plates for W-Shape Supports
D-754-18	Barricade and Advance Signs for Forward Roadway Termination
D-754-20	(Expressway-Freeway Use) Mile Posts
D-754-21	Reflectorized Delineators
D-754-23	Perforated Tube Assembly Details
D-754-24	Mounting Details Perforated Tube
D-754-24A	Breakaway Coupler System for Perforated Tube
D-754-25	Mounting Details Perforated Tube
D-754-26	Sign Punching, Stringer and Support Location Details Regulatory, Warning, and Guide Signs
D-754-27	Sign Punching, Stringer, and Support Location Details Regulatory, Warning, and Guide Signs
D-754-28	Sign Punching, Stringer and Support Location Details Regulatory, Warning, and Guide Signs
D-754-29	Sign Punching, Stringer and Support Location Details Regulatory, Warning, and Guide Signs
D-754-31	Sign Punching, Stringer and Support Location Details Regulatory, Warning, and Guide Signs
D-754-32	Sign Punching, Stringer and Support Location Details Regulatory, Warning, and Guide Signs
D-754-51	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-52	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-53	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-55	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-56	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-57	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-58	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-60	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-74	Sign Punching, Stringer and Support Location Details – Route Marker Signs
D-754-77	Sign Punching, Stringer and Support Location Details – Divided Highway Control Signs
D-754-80	Light Standard, Signal Standard, and Span Wire Mounted Sign Assembly Detail
D-754-83	Object Markers – Culverts
D-754-86	911 Support Information and Sign Details
D-754-87	Sign Punching, Stinger and Support Location Details for Street Name Signs and 911 Signing
D-760-2	Rumble Strips Divided Highways (Non-Interstate)
D-760-5	Saw Slotted Rumble Strips at Intersections
D-762-1	Pavement Marking Message Details
D-762-3	Pavement Marking Standard 90° Flared Intersections
D-762-4	Pavement Marking
D-762-6	Short Term Pavement Marking
D-764-32	Three Cable Guardrail
D-766-1	Mailbox Location Details
D-770-1	Concrete Foundations (Traffic Signals & Highway Lighting)
D-770-2	Feed Points (Roadway Lighting)
D-770-2A	Combination Feed Point Details
D-770-3	Pull Box Details
D-770-4	Lighting and Signal Details
D-770-5	Light Standard Details
D-772-2	Traffic Signal Standards
D-772-3	Traffic Signal Standards (Mast Arm Type)
D-772-4	Traffic Signal Head Mounting
D-772-6	Interim Traffic Signals
D-772-7	Flashing Beacon

NOTES

Cost of tracking shall be included in the price bid for “Topsoil”.

203-P07 TOPSOIL – WETLAND: The Contractor shall strip a minimum of 6 inches of topsoil from impacted wetland areas. The Contractor shall construct a separate stockpile site for the wetland topsoil that is no greater than 3 feet high. “Topsoil Wetland” is to be utilized at the Camp Creek Mitigation site, see section 75 for quantities.

The Contractor shall place and spread 6 inches of wetland topsoil at the mitigation site. If the wetland topsoil has been stockpiled for more than 30 days, the Contractor shall place, spread, and seed the wetland topsoil with the following seed mixture:

Common Name	Variety	Pounds per pure live seed per acre
Blue Grama	Bad River	0.6
Green Needle Grass	Lordom, Fowler, Ac Mallard	2.4
Sideoats Grama	Killdeer	1.8
Western Wheat grass	Rodan, Rosana	3.2
Big Bluestem	Bison	1.2
Little Bluestem	Itasca, Badlands	1.2
Slender Wheat Grass	Dacotah	2
Prairie June Grass		0.1
Canada Wildrye		1.3
	GRASSES TOTAL	13.8
Forb Species		
Purple Prairie Clover		0.19
Prairie Cone flower		0.19
Western Yarrow		0.01
Blanket Flower		0.35
Lewis Flax		0.19
	GRAND TOTAL	14.73

* American, fowl, or both may be used. If only one is used the seeding rate of the other species does not need to be increased.
** Seed may not be available and can be removed without increasing the seeding rate of other species.

The Contractor shall include all costs for removal, stockpiling, seeding, and placement of the wetland topsoil in the price bid for “Topsoil-Wetland”.

203-P08 WETLAND EXCAVATION: The excavation for wetland mitigation shall be paid for under the bid item “Common Excavation – Type A”.

203-P09 DITCH BLOCKS: Ditch Blocks shall be constructed at locations shown in the plan. All costs for this work shall be included in the unit price bid for “Common Excavation-Type A”.

230-P01 SUBGRADE PREPARATION – TYPE A: Subgrade preparation shall be performed at a depth of 12 inches in all areas of this project, excluding the discretionary subcut areas and fills over 18 inches. The moisture and density shall be required per 203.02 G.

Following winter suspension, the Contractor shall scarify and compact all locations under the proposed roadway where embankment or excavation work occurred. Payment will be only once per location. Any area that is scarified and compacted prior to and after winter suspension will not be paid separately. This work shall be done to a depth of 12-inches. Compaction and density control shall be in accordance with Section 203.02 G.

302-P01 TRIMMING SALVAGED BASE COURSE: Use surface tolerance Type C for the salvaged base course under all concrete pavement areas. Excess material removed from high points of the salvaged base course by the trimming operation shall be reincorporated into the salvaged base course.

The cost for providing the required grade and cross section shall be included in the unit price bid for "Salvaged Base Course."

302-P02 TRAFFIC SURFACE GRAVEL: An additional 10,000 Ton of Salvaged Base Course has been provided for maintaining traffic. The aggregate shall be used as directed by the Engineer in the field.

Of the quantity stated above, the Contractor shall provide a stockpile of Salvaged Base Course within the project limits. A minimum quantity of 500 tons of Salvaged Base Course shall be available at all times during construction at this stockpile site. This material will be used for repairs required for Road Maintenance as requested by the Engineer. Any material used from the stockpile will be replenished to maintain a quantity of 500 tons throughout the duration of the project. All costs to obtain this stockpile site will be the responsibility of the Contractor. This site shall be cleared as described in Section 107.04 of the Standard Specifications.

When the project is nearing completion, the Engineer will release the Contractor from maintaining stockpiled material and the Contractor will then be allowed to use this material and incorporate it in the aggregate base.

The 500 tons of stockpiled material will be paid for at the time it is placed in the stockpile. The payment for material will cover all costs associated with the stockpiling of the material, and the delivery of the material to the repair site or graded roadbed as directed by the Engineer. All costs to perform this above described work shall be included in the price bid for “Salvaged Base Course.”

410-P01 SUPERPAVE FAA 45: The hot bituminous pavement shall be paver laid in approximately 3 equal depth lifts.

410-P02 MIX DESIGN PROPERTIES: The aggregate and mix design properties will meet the requirements outlined in Section 410 Superpave Volumetric Mix Design. The bituminous pavement shall be accepted as per Standard Specification 105.07. The following aggregate and mix design properties are required:

Test	Criteria	Reference
Coarse Aggregate Angularity	85% min	NDDOT Field Sampling/Testing Manual
Fine Aggregate Angularity	45% min	AASHTO T 304
Gyratory Effort, # Gyrations	N_{ini}=7, N_{des}=75, N_{max}=115	AASHTO R 35
Voids Filled with Asphalt	65-75%	AASHTO M 323, T 166

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NOTES

9. Hookups for heat, electricity, sewer, and water. The Contractor shall be responsible to pay the utility bill for these services.

10. Indoor bathroom facilities

The Contractor shall place the field office on the project, or as close to the project as possible. The Engineer must approve the location and condition of the field office. If there are any rental fees, the Contractor shall be responsible to pay any rental fees.

The field office shall be available for occupancy at the start of the project and remain available until project completion. The Engineer will be responsible to furnish the office equipment.

The Engineer will be responsible to furnish and pay the utility bill for the following services:

1. Telephone
2. FAX
3. Broadband internet service

All requirements of the Field Office are subject to approval by the Engineer. Payment for the field office shall be under the bid item "Field Office".

708-100 In Standard Specification section 708.07.B.1, change the minimum weight of the steel posts from 1.3 pounds/foot to 0.95 pounds/foot. A welded metal plate near the bottom is not required.

708-P01 SEEDING-TYPE B-CL V: The Contractor shall use the following seed mix for Seeding-Type B-CL V:

Common Name	Variety	Pounds per pure live seed per acre
Blue Grama	Bad River	0.6
Green Needle Grass	Lordom, Fowler, Ac Mallard	2.4
Sideoats Grama	Killdeer	1.8
Western Wheat grass	Rodan, Rosana	3.2
Big Bluestem	Bison	1.2
Little Bluestem	Itasca, Badlands	1.2
Slender Wheat Grass	Dacotah	2
Prairie June Grass		0.1
Canada Wildrye		1.3
	GRASSES TOTAL	13.8
Forb Species		
Purple Prairie Clover		0.19
Prairie Cone flower		0.19
Western Yarrow		0.01
Blanket Flower		0.35
Lewis Flax		0.19
	GRAND TOTAL	14.73

All costs for labor, materials, and equipment necessary to complete this work shall be included in the unit price bid for “Seeding-Type B-CL V.”

708-P02 EROSION CONTROL BLANKET TYPE 2: All erosion control blanket type 2 shall be made of a wood fiber material.

708-P03 EROSION CONTROL BLANKET TYPE 4: All erosion control blanket type 4 shall be made of a wood fiber material.

708-P04 TURF REINFORCEMENT MAT TYPE 1: All turf reinforcement mat type 1 shall be installed per detail D-708-5 or per manufacturers recommendations whichever produces the closest staple spacing or the most overlap.

708-P05 MULCHING: All disturbed areas shall be stabilized with mulch or if to final grade install permanent erosion control measures. Mulching may be required to satisfy the requirements of the NPDES Construction General Permit.

708-P06 STABILIZED CONSTRUCTION ACCESS: The stabilized construction access pay item is for use in areas where project limits abut existing paved roadways. The stabilized construction access is to prevent the tracking of material onto existing surrounding roadways. The Engineer may increase or decrease the quantity of construction accesses based on Contractor operations. Such variation in quantity will not be considered as a change in the character of work. The stabilized construction accesses on Contractor-Furnished borrow pits will be included in the price bid for “Borrow-Excavation”.

708-P07 SEEDING TYPE B-CL V and SEEDING TYPE C-CL V: Seasonal Wetland Zones

Common Name	Scientific Name	Variety	Pounds per pure live seed per acre
Prairie Cord Grass	Spartina pectinata	Red River	1.1
American Slough Grass	Beckmannia Syzigachne	Common	0.2
Virginia Wild-rye	Elymus virginicus	Omaha	2.0
Fowl Blue grass	Poa palustris	Common	0.2
Fox Sedge	Carex vulpinoidea	Common	0.2
American Manna grass*	Glyceria grandis	Common	0.2
Fowl Manna Grass*	Glyceria striata	Common	0.1
Blue Joint Grass**	Calamagrostis canadensis	Common	0.1
		TOTAL	4.1

* American, Fowl or both may be used. If only one is used the seeding rate of other species does not need to be increased.

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Revised 5/14/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	8	1

Spec	Code	Item Description	Unit	Quantity
103	0100	Contract Bond	L SUM	1
103	0200	Escrow of Bid Documentation	L SUM	1
107	0200	Cultural Resource Construction Monitoring	L SUM	1
108	0001	Critical Path Method Schedule	L SUM	1
201	0330	Clearing & Grubbing	L SUM	1
202	0105	Removal of Structure	L SUM	1
202	0119	Saw Concrete	LF	2,759
202	0136	Removal of Pavement	TON	42,380
202	0153	Saw Bituminous Surfacing-Full Depth	LF	191
202	0169	Removal of End Section-All Types & Sizes	EA	2
202	0174	Removal of Pipe All Types and Sizes	LF	1,027
202	0312	Remove Existing Fence	LF	37,289
203	0101	Common Excavation-Type A	CY	1,105,331
203	0109	Topsoil	CY	125,652
203	0121	Topsoil-Wetland	CY	3,815
203	0138	Common Excavation-Subcut	CY	19,078
203	0140	Borrow-Excavation	CY	274,771
203	0180	Roadway Obliteration	LF	1,462
210	0109	Class 2 Excavation-Box Culvert	EA	1
210	0201	Foundation Preparation	EA	1
210	0210	Foundation Fill	CY	620
210	0405	Foundation Preparation-Box Culvert	EA	1
216	0100	Water	M GAL	17,475
230	0300	Subgrade Preparation-Type A	STA	89.69
302	0100	Salvaged Base Course	TON	172,551
302	0356	Aggregate Surface Course CL 13	TON	1,351
401	0100	MC70 or 250 Liquid Asphalt	GAL	3,577
401	0150	SS1H or CSS1H or MS1 Emulsified Asphalt	GAL	1,434
410	0215	Superpave FAA 45	TON	4,524
410	0460	PG 64-28 Asphalt Cement	TON	280
410	0910	Cored Sample	EA	13
550	0310	10IN Non Reinf Concrete Pvmt CL AE-Doweled	SY	206,724
602	1131	Class AE-3 Concrete-Box Culvert	CY	1,000.6
612	0114	Reinforcing Steel-Grade 60-Box Culvert	LBS	118,235
702	0100	Mobilization	L SUM	1
704	0100	Flagging	MHR	1,300
704	1000	Traffic Control Signs	UNIT	5,969
704	1035	Attenuation Device-Type B-25	EA	3
704	1052	Type III Barricade	EA	87
704	1060	Delineator Drums	EA	152
704	1067	Tubular Markers	EA	430
704	1080	Stackable Vertical Panels	EA	908
704	1087	Sequencing Arrow Panel-Type C	EA	2
704	3510	Precast Concrete Med Barrier-State Furnished	EA	113
704	4011	Portable Changeable Message Sign	EA	5
706	0200	Field Laboratory-Type B	EA	1
706	0400	Field Office	EA	1
708	1020	Riprap-Loose Rock	CY	411.5
708	1029	Removal Riprap-Loose Rock	CY	107
708	1325	Silt Fence Supported	LF	916
708	1335	Removal Silt Fence Supported	LF	916
708	1375	Flotation Silt Curtain	LF	177
708	1376	Removal Flotation Silt Curtain	LF	177
708	1410	Fiber Rolls 6IN	LF	52,393
708	1411	Removal Fiber Rolls 6IN	LF	27,100
708	1430	Fiber Rolls 12IN	LF	48,092
708	1431	Removal Fiber Rolls 12IN	LF	30,006
708	1460	Fiber Rolls 20IN	LF	638
708	1461	Removal Fiber Rolls 20IN	LF	319
708	1530	Inlet Protection-Fiber Roll 6IN	EA	14
708	1532	Removal Inlet Protection-Fiber Roll 6IN	EA	7
708	1540	Inlet Protection-Special	EA	1
708	1541	Remove Inlet Protection-Special	EA	1
708	2260	Seeding-Type B-Cl IV	Acre	167.8
708	2280	Seeding-Type B-Cl V	Acre	176.7
708	2480	Seeding-Type C-Cl V	Acre	1.2
708	3000	Topsoil for Type C Seeding	CY	944
708	5500	Mulching	Acre	321.9
708	5651	ECB Type 2	SY	79,445
708	5653	ECB Type 4	SY	5,191

Spec	Code	Item Description	Unit	Quantity
708	5660	TRM Type 1	SY	4,087
708	8500	Stabilized Construction Access	EA	2
708	8501	Removal Stabilized Construction Access	EA	2
709	0600	Geotextile Fabric-Type RR	SY	1,128.4
709	0701	Geotextile Fabric-Type R1	SY	41,440
710	0409	Temporary Connection	EA	3
714	4099	Pipe Conduit 18IN-Approach	LF	98
714	4105	Pipe Conduit 24IN	LF	910
714	4106	Pipe Conduit 24IN-Approach	LF	483
714	4110	Pipe Conduit 30IN	LF	876
714	4112	Pipe Conduit 30IN-Storm Drain	LF	59
714	4115	Pipe Conduit 36IN	LF	546
714	4116	Pipe Conduit 36IN-Approach	LF	322
714	4117	Pipe Conduit 36IN-Storm Drain	LF	394
714	4120	Pipe Conduit 42IN	LF	314
714	4121	Pipe Conduit 42IN-Storm Drain	LF	785
714	4122	Pipe Conduit 42IN-Approach	LF	468
714	4125	Pipe Conduit 48IN	LF	216
714	4126	Pipe Conduit 48IN-Storm Drain	LF	727
714	4131	Pipe Conduit 54IN-Storm Drain	LF	840
714	4136	Pipe Conduit 60IN-Storm Drain	LF	541
714	4141	Pipe Conduit 66IN-Storm Drain	LF	355
714	4167	Pipe Conduit 42IN-Jacked or Bored	LF	120
714	6506	End Sect-Traversable Metal 24IN	EA	2
714	9200	Cattle Pass Conc Intermed Section	LF	120
714	9350	End Section Conc Cattle Pass	EA	2
714	9660	Remove & Relay End Section-All Types & Sizes	EA	1
714	9680	Plug Pipe-All Types & Sizes	EA	1
720	0110	Right of Way Markers	EA	143
720	0125	Alignment Monuments	EA	57
720	0130	Iron Pin R/W Monuments	EA	122
720	0135	Iron Pin Reference Monuments	EA	21
722	0107	Manhole 54IN	EA	1
722	0110	Manhole 60IN	EA	1
722	0115	Manhole 66IN	EA	1
722	0120	Manhole 72IN	EA	2
722	0125	Manhole 78IN	EA	2
722	0135	Manhole 90IN	EA	1
722	0140	Manhole 96IN	EA	1
722	0200	Manhole 108IN	EA	1
722	1106	Manhole Riser 54IN	LF	8.6
722	1110	Manhole Riser 60IN	LF	19.4
722	1115	Manhole Riser 66IN	LF	10.5
722	1120	Manhole Riser 72IN	LF	38.2
722	1125	Manhole Riser 78IN	LF	24.1
722	1135	Manhole Riser 90IN	LF	32.2
722	1140	Manhole Riser 96IN	LF	25.4
722	1200	Manhole Riser 108IN	LF	28.8
722	4565	Median Drain Precast Concrete-Type A	EA	7
748	0140	Curb & Gutter-Type I	LF	135
752	0200	Fence Barbed Wire 4 Strand	LF	32,174
752	0911	Temporary Safety Fence	LF	4,403
752	0930	Fence Reset Existing	LF	1,095
752	0995	Fence Terminal-Wood Posts	EA	40
752	2100	Vehicle Gate	EA	1
752	2110	Reset Vehicle Gate	EA	1
752	2120	Remove Vehicle Gate	EA	10
752	3140	Corner Assembly Barbed Wire	EA	99
752	4100	Double Brace Assembly Barbed Wire	EA	1
754	0110	Flat Sheet For Signs-Type XI Refl Sheeting	SF	599.3
754	0112	Flat Sheet For Signs-Type IV Refl Sheeting	SF	974.1
754	0195	Diamond Grade Delineators-Type A	EA	123
754	0206	Steel Galv Posts-Telescoping Perforated Tube	LF	2,947.9
754	0214	Galv Steel Posts-W-Shape Posts(Two Or More)	LF	246.6
754	0534	Panel For Signs-Type IV Reflective Sheeting	SF	230.0
754	0562	Reference Marker-Type B	EA	1
754	0563	Reference Marker-Type C	EA	8
754	0592	Reset Sign Panel	EA	61
754	0805	Object Markers - Culverts	EA	83
760	0001	Rumble Strips - Concrete Shoulder	MILE	5.948

Spec	Code	Item Description	Unit	Quantity
760	0009	Rumble Strips - Intersection	EA	1
762	0110	Epoxy PVMT MK 4IN Line-Grooved	LF	103,301
762	0111	Epoxy PVMT MK 12IN Line	LF	4,170
762	0113	Epoxy PVMT MK 4IN Line	LF	7,824
762	0117	Epoxy PVMT MK 24IN Line	LF	412
762	0132	Epoxy PVMT MK 8IN Line-Grooved	LF	17,094
762	0135	Epoxy PVMT MK 24IN Line-Grooved	LF	290
762	0136	Epoxy PVMT MK Message-Grooved	SF	1,218
762	0430	Short Term 4IN Line-Type NR	LF	56
762	0440	Short Term Message-Type R	SF	202
762	1500	Obliteration of PVMT MK	SF	7,288
764	0115	3-CABLE GUARDRAIL	LF	550
764	0151	Remove W-Beam Guardrail & Posts	LF	365
764	2081	Remove End Treatment & Transition	EA	2
766	0100	Mailbox-All Types	EA	13
770	0020	Concrete Foundation-Highway Lighting	EA	92
770	0060	Concrete Foundation-Feed Point-Type B	EA	5
770	0220	Cable Trench-Type II	LF	16,892
770	0330	2IN Diameter Rigid Conduit	LF	1,007
770	0350	3IN Diameter Rigid Conduit	LF	1,821
770	0444	Multiple Underground Cable 3NO4 Style USE	LF	17,728
770	0503	Underground Conductor NO2-Type RHW	LF	300
770	0504	Underground Conductor NO4-Type RHW	LF	3,728
770	0602	Underground Conductor NO2-Type THW	LF	150
770	0604	Underground Conductor NO4-Type THW	LF	1,864
770	0735	Feed Point-Type II-Pad Mounted	EA	2
770	0745	Feed Point-Type IV-Pad Mounted	EA	3
770	1726	LT STD 8FT MA 40FT MT HT Breakaway	EA	74
770	1728	LT STD 8FT MA 42FT Pole Breakaway	EA	16
770	1828	LT STD 12FT MA 42FT Pole Breakaway	EA	2
770	4140	HP Sodium Vapor Luminaire-250 Watt	EA	92
772	9811	Traffic Signal System – Site 1	EA	1
772	9010	Automatic Traffic Recorder System	EA	1
930	9550	Mechanically Stabilized Earth Wall	SF	3,295
970	1011	Landscape Plantings	LSUM	1

Quantities

Williston NW Permanent Truck Reliever Route
Phase 3

BASIS OF ESTIMATE

Conversions/Rates

Salvaged Base Course @ 1.875 Ton/CY
Aggregate Surface Course CL 13 @ 1.875 Ton/CY
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY
Blotter Material Cl 44 @ 15 lbs/SY
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY
Superpave FAA 45 @ 2 Ton/CY
PG 64-28 Asphalt Cement @ 6.0%

Topsoil

6" removal and replacement depth

Water

25 MGal/Mile for Dust Palliative
25 MGal/Mile for Subgrade Preparation
20 Gal/Ton for Aggregates
10 Gal/CY for Embankment

Mailboxes

Existing Mailboxes					Action	Proposed Mailboxes				
Chain	Station	LT/RT	Posts	Type		Chain	Station	LT/RT	Posts	Type
US 85	10225+42	146' RT	1	Single	Replace & Relocate to:	US 85	10225+50	145' LT	1	Single
US 85	10237+71	180' RT	1	Single	Replace & Relocate to:	139th Ave	23+90	62' RT	1	Single
US 85	10287+31	61' RT	2	Double	Replace & Relocate to:	US 85	10287+15	128' LT	2	Double
US 85	10323+91	26' LT	3	Bank of 6	Replace & Relocate to:	US 85	10328+14	122' RT	3	Bank of 6
US 85	10394+43	26' LT	1	Single	Replace & Relocate to:	US 85	10395+48	72' LT	1	Singe
Old Co Rd 6	15+69	20' LT	1	Single	Replace & Relocate to:	Old Co Rd 6	15+70	25' LT	1	Single
Old Co Rd 6 DW	8+02	57' RT	1	Single	Replace & Relocate to:	Old Co Rd 6 DW	1+00	18' LT	1	Single

Coring

Density Cores

LOT 1: Old County Highway 6
Sublot 1: 3+50 to 16+00 = 1,250 ft
Sublot 2: 3+50 to 16+00 = 1,250 ft
(1 Lot, 2 Sublots, 2 Cores/Sublot, 3 Lifts) = **12 Cores**

District Materials Coordinator Cores
One full depth core per mile
0.24 Miles * 1 Core/Mile ≈ **1 Core**

Salvaged Base Course Summary

Item	Removal of Pavement (Aggregate, Asphalt, and Concrete)	Salvaged Base Course Required	Virgin Material Needed
	(Ton)	(Ton)	(Ton)
	A	B	C = B - A
Pavement	42,380	126,679	84,299
Discretionary Subcut	0	35,772	35,772
Approach Paving	0	100	100
Traffic Surface Gravel	0	10,000	10,000
TOTAL:	42,380	172,551	130,171

Subgrade Prep Lengths

US 85	STA
10187+66.17 - 10188+47.49	0.81
10191+70.95 - 10206+83.21	15.12
10212+53.20 - 10212+84.86	0.32
10218+84.79 - 10250+13.53	31.29
10302+66.89 - 10322+28.74	7.28
10320+54.31 - 10322+28.74	1.74
10324+02.34 - 10324+81.84	0.80
10325+01.93 - 10326+32.21	1.30
10326+92.87 - 10327+05.26	0.12
10341+01.43 - 10348+11.13	7.10
10363+59.90 - 10364+09.25	0.49
10371+95.39 - 10385+09.68	13.14
Subtotal =	**79.51**

140th Ave NW	STA
22+00 - 27+21.89	5.22
Subtotal =	**5.22**
57th Ave NW	**STA**
3+50 - 6+02.62	2.53
13+57.03 -16+00	2.43
Subtotal =	**4.96**
Total =	**89.69**

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Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	10	3

US 85

Material	Unit	4 Lane Divided w/ Paved Median & RT Turn, Mdn/LT Turn and Taper @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn, Mdn/LT Turn and Taper @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn and Mdn/LT Turn @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn and Mdn/LT Turn @ Normal Crown				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown			
		Sta 10171+05.93 to 10174+86.35 Sta 10222+12.99 to 10227+00.00				Sta 10174+86.35 to 10175+66.35 Sta 10221+72.77 to 10222+12.99				Sta 10175+66.35 to 10182+14.41 Sta 10218+06.54 to 1022172.99				Sta 10182+14.41 to 10182+44.41 Sta 10217+76.54 to 10218+06.54				Sta 10182+44.41 to 10182+64.41 Sta 10216+26.54 to 10217+76.54			
		Total Stations = 8.67				Total Stations = 1.20				Total Stations = 10.14				Total Stations = 0.60				Total Stations = 1.70			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	152.80	8.00	731.02	6,337.93	144.80	8.00	693.98	832.78	144.50	8.00	692.13	7,018.19	136.50	8.00	655.09	393.06	136.20	8.00	653.24	1,110.51
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	140.00	10.00	1555.56	13,486.67	132.00	10.00	1466.67	1,760.00	132.00	10.00	1466.67	14,872.00	124.00	10.00	1377.78	826.67	124.00	10.00	1377.78	2,342.22
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

US 85

Material	Unit	4 Lane Divided & Mdn/LT Turn Taper Transition From Intersection Slopes				4 Lane Divided @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn, Mdn/LT Turn and Taper @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn, Mdn/LT Turn @ Normal Crown				4 Lane Divided w/ Paved Median & RT Turn, Mdn/LT Turn and Taper @ Normal Crown			
		Sta 10182+64.41 to 10186+24.41				Sta 10186+24.41 to 10216+26.54 Sta 10237+25.12 to 10261+00.00 Sta 10263+75.00 to 10290+50.00				Sta 10227+00.00 to 10227+90.22				Sta 10227+90.22 to 10228+73.67				Sta 10228+73.67 to 10232+85.10			
		Total Stations = 3.60				Total Stations = 80.52				Total Stations = 0.90				Total Stations = 0.83				Total Stations = 4.11			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	119.60	8.00	597.69	2,151.67	95.60	8.00	486.57	39,178.94	148.85	8.00	712.73	641.46	140.85	8.00	675.69	560.83	140.55	8.00	673.84	2,769.49
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	96.00	10.00	1066.67	3,840.00	72.00	10.00	800.00	64,416.00	136.10	10.00	1512.22	1,361.00	128.10	10.00	1423.33	1,181.37	128.10	10.00	1423.33	5,849.90
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

US 85

Material	Unit	4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown				4 Lane Divided & Taper @ Normal Crown				4 Lane Divided With Curb & Gutter @ Normal Crown				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown			
		Sta 10232+85.10 to 10233+45.12				Sta 10233+45.12 to 10237+25.12				Sta 10261+00.00 to 10262+00.00 Sta 10263+35.00 to 10263+75.00				Sta 10262+00.00 to 10263+35.00				Sta 10290+50.00 to 10297+61.30			
		Total Stations = 0.60				Total Stations = 3.80				Total Stations = 1.40				Total Stations = 1.35				Total Stations = 7.11			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	132.55	8.00	636.81	382.08	132.25	8.00	634.95	2,412.82	97.60	8.00	495.83	694.17	93.40	8.00	468.29	632.19	100.16	8.00	486.39	3,458.23
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	120.10	10.00	1334.44	800.67	120.10	10.00	1334.44	5,070.89	74.00	10.00	822.22	1,151.11	72.00	10.00	800.00	1,080.00	87.96	10.00	977.33	6,948.84
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

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Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	10	4

US 85

Material	Unit	4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown Sta 10297+61.30 to 10299+93.26 Total Stations = 2.32				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown Sta 10299+93.26 to 10307+61.06 Sta 10336+75.13 to 10337+56.74 Total Stations = 8.50				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown Sta 10307+61.06 to 10308+01.06 Sta 10314+65.73 to 10314+89.73 Total Stations = 0.64				4 Lane Divided w/ Paved Median & RT Turn and Mdn/LT Turn @ Normal Crown Sta 10308+01.06 to 10314+65.73 Total Stations = 6.65				4 Lane Divided w/ Paved Median & Mdn/LT Turn @ Normal Crown / @ 3.0%/3.5% SE Sta 10314+89.73 to 10323+44.26 Sta 10330+97.88 to 10331+65.13 Total Stations = 9.21			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	95.52	8.00	464.91	1,078.59	90.20	8.00	440.28	3,742.36	89.80	8.00	437.73	280.15	97.80	8.00	474.77	3,157.21	90.00	8.00	438.89	4,042.17
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	83.32	10.00	925.78	2,147.80	78.00	10.00	866.67	7,366.67	78.00	10.00	866.67	554.67	86.00	10.00	955.56	6,354.44	78.00	10.00	866.67	7,982.00
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

US 85

Material	Unit	4 Lane Divided w/ Paved Median & Mdn/LT Turn and RT Turn @ 3.0%/3.5% SE Sta 10323+44.26 to 10330+97.88 Total Stations = 7.54				4 Lane Divided w/ Paved Median & Mdn/LT Turn and RT Turn Transition from 3.0%/3.5% SE Sta 10331+65.13 to 10336+75.13 Total Stations = 5.10				4 Lane Divided w/ Paved Median @ Normal Crown Sta 10337+56.74 to 10339+81.74 Total Stations = 2.25				4 Lane Divided w/ Paved Median @ Normal Crown Sta 10339+81.74 to 10342+47.89 Sta 10363+20.08 to 10375+68.71 Total Stations = 15.15				4 Lane Divided w/ Paved Median Transition to/from 3.0%/3.5% SE Sta 10342+47.89 to 10343+23.74 Sta 10358+10.08 to 10363+20.08 Total Stations = 5.86			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	96.50	8.00	465.28	3,508.19	90.40	8.00	441.67	2,252.50	95.20	8.00	463.43	1,042.71	100.20	8.00	486.57	7,371.60	100.40	8.00	487.96	2,859.46
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	86.00	10.00	955.56	7,204.89	78.00	10.00	866.67	4,420.00	83.00	10.00	922.22	2,075.00	88.00	10.00	977.78	14,813.33	88.00	10.00	977.78	5,729.78
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

US 85

Material	Unit	4 Lane Divided w/ Paved Median & RT Turn and Taper Transition to 3.0%/3.5% SE Sta 10343+23.74 to 10345+81.33 Total Stations = 2.58				4 Lane Divided w/ Paved Median & RT Turn Transition to 3.0%/3.5% SE / @ Full SE Sta 10345+81.33 to 10347+57.89 Sta 10347+57.89 to 10351+07.80 Total Stations = 5.27				4 Lane Divided w/ Paved Median & RT Turn and Taper @ 3.0%/3.5% SE Sta 10351+07.80 to 10354+95.15 Total Stations = 3.87				4 Lane Divided w/ Paved Median & RT Turn and Taper @ 3.0%/3.5% SE Sta 10354+95.15 to 10355+19.15 Total Stations = 0.24				4 Lane Divided w/ Paved Median @ 3.0%/3.5% SE Sta 10355+19.15 to 10358+10.08 Total Stations = 2.91			
		Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	108.40	8.00	525.00	1,354.50	114.00	8.00	547.45	2,885.08	106.50	8.00	512.73	1,984.27	98.50	8.00	475.69	114.17	99.80	8.00	483.80	1,407.85
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	96.00	10.00	1066.67	2,752.00	104.00	10.00	1155.56	6,089.78	96.00	10.00	1066.67	4,128.00	88.00	10.00	977.78	234.67	88.00	10.00	977.78	2,845.33
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

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Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	10	5

US 85

		4 Lane Divided w/ Paved Median @ Normal Crown				4 Lane Divided w/ Paved Median & Taper @ Normal Crown				4 Lane Divided w/ Existing Pavment & Widening @ Normal Crown				4 Lane Divided w/ Existing Pavment & Widening @ Normal Crown				4 Lane Divided w/ Existing Pavment & RT Turn @ Normal Crown			
		Sta 10375+68.71 to 10375+92.17				Sta 10375+92.17 to 10378+95.18				Sta 10378+95.18 to 10382+03.71				Sta 10382+03.71 to 10384+25.36				Sta 10387+43.82 to 10390+78.96 Sta 10392+85.96 to 10397+76.92			
		Total Stations = 0.23				Total Stations = 3.03				Total Stations = 3.09				Total Stations = 2.22				Total Stations = 8.26			
Material	Unit	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	100.20	8.00	486.57	111.91	108.20	8.00	523.61	1,586.54	55.80	8.00	280.32	866.20	45.80	8.00	234.03	519.54	21.70	8.00	111.11	917.78
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton																				
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	88.00	10.00	977.78	224.89	96.00	10.00	1066.67	3,232.00	44.00	10.00	488.89	1,510.67	34.00	10.00	377.78	838.67	16.00	10.00	177.78	1,468.44
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal																				
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal																				
Superpave FAA 45 @ 2 Ton/CY	Ton																				
PG 64-28 Asphalt Cement @ 6.0%	Ton																				

US 85

		4 Lane Divided w/ Existing Pavment & Taper @ Normal Crown				4 Lane Divided w/ Existing Pavment & Taper @ Normal Crown			
		Sta 10390+78.96 to 10392+19.59				Sta 10397+76.92 to 10398+74.88			
		Total Stations = 1.41				Total Stations = 0.98			
Material	Unit	Width (ft)	Depth (in)	Quantity per Station	Total Quantity	Width (ft)	Depth (in)	Quantity per Station	Total Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	15.65	8.00	83.10	117.17	16.15	8.00	85.42	83.71
Aggregate Surface Course CL 13 @ 1.875 Ton/CY	Ton								
10IN Non Reinf Concrete Pavement CL AE-Doweled	SY	9.95	10.00	110.56	155.88	10.45	10.00	116.11	113.79
MC70 or 250 Liquid Asphalt @ 0.25 Gal/SY (one application on base course)	Gal								
SS-1h or CSS-1h or MS1 Emuls Asphalt @ 0.05 Gal/SY	Gal								
Superpave FAA 45 @ 2 Ton/CY	Ton								
PG 64-28 Asphalt Cement @ 6.0%	Ton								

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Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	1

Location	Common Excavation Type - A	Embankment		Balance	
		Roadway	Adjusted	Excess Excavation	Additional Material Needed
	CY	CY	CY	CY	CY
	A	B	C = B * SF	D = A - C	D = C - A
US Hwy 85	979477	1034863	1293579		314102
US Hwy 85 Widening 1	62	2434	3042		2980
US Hwy 85 Widening 2	1239	771	964	275	
140th Ave NW South Leg	424	2374	2968		2544
140th Ave NW North Leg	355	1528	1910		1555
Driveway @ 10213 Median	44	27	34	10	
Driveway @ 10213 Approach	39	437	546		507
Driveway @ 10220	42	2686	3357		3315
139th Ave NW South Leg	7843	5534	6917	926	
139th Ave NW North Leg	3698	1228	1535	2163	
139th Ave NW Driveway	6012	1595	1994	4018	
139th Ave NW Driveway 2	23	47	59		36
Driveway @ 10287 Median	0	21	26		26
Driveway @ 10287 Approach	210	5854	7317		7107
Driveway @ 10311 Approach	158	753	941		783
137th Ave NW Radial Tee	10082	8768	10960		878
137th Ave NW South Leg	660	1813	2266		1606
137th Ave NW North Leg	906	2094	2617		1711
County Highway 6	5211	10950	13688		8477
County Highway 6 Driveway	1107	6496	8120		7013
Driveway @ 10384 Approach	45	67	84		39
Driveway @ 10395 Approach	103	293	366		263
Mancamp	678	97	121	557	
Mancamp Driveway	115	0	0	115	
Camp Creek Wetland	86798	13353	16691	70107	
Totals	1105331	1104083	1380102		

Shrinkage Factor (SF) = 1.25

Location	Topsoil From Stripping	Topsoil Wetland	Topsoil Required	Balance
	CY	CY	CY	CY
	E	F	G	H = E - G
US Hwy 85	113551	0	88952	24599
US Hwy 85 Widening 1	366	0	254	112
US Hwy 85 Widening 2	664	0	558	106
140th Ave NW South Leg	558	0	613	-55
140th Ave NW North Leg	326	0	362	-36
Driveway @ 10213 Median	0	0	25	-25
Driveway @ 10213 Approach	4	0	79	-75
Driveway @ 10220	0	0	273	-273
139th Ave NW South Leg	694	0	1176	-482
139th Ave NW North Leg	250	0	393	-143
139th Ave NW Driveway	2019	0	1364	655
139th Ave NW Driveway 2	38	0	23	15
Driveway @ 10287 Median	0	0	15	-15
Driveway @ 10287 Approach	473	0	313	160
Driveway @ 10311 Approach	29	0	115	-86
137th Ave NW Radial Tee	1920	0	1754	166
137th Ave NW South Leg	660	0	282	378
137th Ave NW North Leg	459	0	431	28
County Highway 6	2894	0	2212	682
County Highway 6 Driveway	548	0	713	-165
Driveway @ 10384 Approach	1	0	25	-24
Driveway @ 10395 Approach	0	0	47	-47
Mancamp	192	0	144	48
Mancamp Driveway	6	0	0	6
Camp Creek Wetland	0	3815	0	
Totals	125652	3815	100123	25529

Earthwork Balance

Embankment Adjusted	1380102
-Common Excavation	1105331
Borrow	274771

Pay Items

Common Excavation Type-A	1105331
Borrow Excavation	274771
Topsoil	125652
Topoil Wetland	3815
Common Excavation-Subcut*	19078

*See section 20 for more detail

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Earthwork & Topsoil Summary

Williston NW Permanent Truck Reliever Route
Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	4

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10238+84.19	5887.6	6.3	7499	10	406463
10238+84.50	5887.7	6.3	67	0	406530
10239+00.00	5878.5	6.3	3378	5	409903
10239+50.00	5832.1	6.3	10843	15	420731
10240+00.00	6144.7	6.3	11090	15	431806
10240+50.00	6616.5	6.3	11816	15	443607
10241+00.00	7027.0	6.3	12633	15	456225
10241+50.00	7389.0	6.3	13348	15	469558
10242+00.00	7831.9	6.3	14094	15	483637
10242+50.00	8036.0	6.3	14693	15	498315
10243+00.00	8120.9	6.3	14960	15	513260
10243+50.00	8182.8	6.3	15096	15	528341
10244+00.00	8345.7	6.3	15304	15	543630
10244+50.00	8001.6	6.3	15136	15	558751
10245+00.00	7958.3	12.5	14778	23	573506
10245+50.00	7928.9	29.6	14710	49	588167
10246+00.00	7706.2	6.3	14477	43	602601
10246+50.00	7197.5	6.5	13800	15	616386
10247+00.00	6632.5	6.3	12806	15	629177
10247+50.00	5947.3	6.3	11648	15	640810
10248+00.00	5247.9	9.0	10366	19	651157
10248+50.00	4146.8	29.3	8699	45	659811
10249+00.00	3481.8	6.4	7064	42	666833
10249+50.00	3457.7	26.7	6426	39	673220
10250+00.00	3249.3	93.5	6210	140	679290
10250+50.00	3886.1	1298.7	6607	1612	684285
10251+00.00	3124.5	2368.9	6492	4245	686532
10251+50.00	2111.5	1593.1	4848	4587	686793
10251+74.67	1607.2	1133.9	1699	1558	686934
10251+99.66	1088.7	784.1	1248	1110	687072
10252+00.00	1083.0	781.6	13	13	687072
10252+24.66	1369.3	815.5	1120	913	687279
10252+50.00	506.6	1004.2	880	1068	687091
10253+00.00	21.2	2790.1	489	4393	683187
10253+50.00	111.7	4024.0	123	7888	675422
10254+00.00	136.8	4349.8	230	9693	665959
10254+50.00	17.2	5032.6	142	10860	655241
10255+00.00	17.2	5055.0	32	11677	643596
10255+49.66	17.3	4633.3	32	11138	632490
10255+50.00	17.3	4636.5	0	73	632417
10256+00.00	17.2	4855.7	32	10987	621462
10256+50.00	17.3	4918.7	32	11314	610180
10257+00.00	17.1	4583.9	32	10999	599213
10257+50.00	17.1	4831.5	32	10898	588347
10258+00.00	17.2	5655.9	32	12139	576240
10258+50.00	17.1	6330.8	32	13874	562398
10258+60.95	17.2	6418.8	7	3233	559172
10258+63.90	17.0	6402.3	2	877	558297
10259+00.00	18.0	6195.0	24	10527	547794
10259+45.00	16.9	6029.7	29	12734	535089
10259+50.00	17.0	5991.6	3	1392	533700
10259+85.00	16.9	5940.9	22	9668	524054
10260+00.00	17.1	5832.9	9	4088	519975
10260+50.00	17.2	5332.6	32	12924	507083
10261+00.00	17.3	4433.8	32	11304	495811
10261+50.00	17.2	3986.0	32	9745	486098

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10262+00.00	17.3	3492.5	32	8657	477473
10262+10.50	17.2	3456.6	7	1689	475791
10262+49.66	24.6	3282.9	30	6110	469711
10262+50.00	23.9	3281.3	0	52	469659
10262+82.84	35.6	3206.9	36	4933	464762
10263+00.00	51.7	3163.7	28	2530	462260
10263+35.00	65.4	2875.9	76	4893	457443
10263+50.00	87.3	2827.7	42	1982	455503
10263+62.08	92.4	2750.9	41	1560	453984
10263+80.12	104.4	2590.1	65	2230	451819
10264+00.00	226.1	2575.6	122	2377	449564
10264+25.00	203.2	2282.1	199	2812	446951
10264+50.00	161.9	2262.6	169	2630	444490
10265+00.00	207.0	2302.5	342	5284	439548
10265+50.00	168.9	2312.8	348	5342	434554
10266+00.00	115.7	2703.9	264	5807	429011
10266+24.66	130.0	3059.9	113	3290	425834
10266+30.08	139.8	3086.5	27	772	425089
10266+45.00	136.9	3360.6	76	2227	422938
10266+50.00	141.4	3449.6	26	788	422176
10266+60.00	61.2	3572.6	37	1625	420588
10266+69.90	60.6	3704.9	22	1668	418942
10267+00.00	35.1	3953.2	53	5337	413658
10267+50.00	30.2	4244.8	61	9489	404230
10267+74.90	17.0	4399.4	22	4983	399269
10268+00.00	22.2	4437.0	18	5134	394153
10268+50.00	22.2	4460.3	42	10299	383896
10269+00.00	17.1	4615.5	37	10505	373428
10269+50.00	17.3	4794.1	32	10892	362568
10270+00.00	21.4	5069.2	36	11417	351187
10270+18.66	565.1	5190.8	203	4432	346958
10270+50.00	717.6	5368.1	744	7660	340042
10271+00.00	252.5	5764.3	898	12885	328055
10271+00.82	29.7	9958.6	5	298	327762
10271+45.00	30.2	6003.4	49	16324	311487
10271+50.00	23.6	6044.7	5	1394	310098

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Earthwork Values

Williston NW Permanent Truck Reliever Route Phase 3

US 85

* Fill is loose volume and includes an additional 25% for shrinkage

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	5

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10271+90.00	16.8	6527.9	30	11642	298486
10272+00.00	16.9	6674.5	6	3057	295435
10272+29.00	16.9	7189.5	18	9308	286145
10272+50.00	16.9	7456.4	13	7120	279038
10272+92.68	19.9	9323.3	29	16578	262489
10273+00.00	16.9	7984.4	5	2933	259561
10273+50.00	17.0	8321.5	31	18873	240719
10274+00.00	17.1	8561.8	32	19542	221209
10274+50.00	17.2	8809.0	32	20105	201136
10275+00.00	17.0	8621.6	32	20175	180993
10275+50.00	17.2	8287.6	32	19572	161453
10276+00.00	17.2	7080.3	32	17788	143697
10276+50.00	17.0	5229.3	32	14248	129481
10277+00.00	17.2	3177.2	32	9730	119783
10277+50.00	16.9	2294.2	32	6333	113482
10278+00.00	18.7	2310.7	33	5330	108185
10278+50.00	25.1	2922.2	41	6058	102168
10279+00.00	25.3	3828.8	46	7814	94400
10279+50.00	19.7	4500.3	42	9640	84802
10280+00.00	16.3	5080.2	33	11089	73746
10280+50.00	16.4	5729.4	30	12512	61264
10281+00.00	16.4	6458.2	30	14107	47187
10281+50.00	16.5	6851.4	30	15405	31812
10282+00.00	16.5	6879.4	30	15893	15949
10282+50.00	16.3	6839.2	30	15879	100
10283+00.00	16.3	6739.5	30	15717	-15587
10283+50.00	16.5	6557.3	30	15390	-30947
10284+00.00	16.4	6338.0	30	14927	-45844
10284+50.00	16.5	6061.0	30	14352	-60166
10285+00.00	16.3	5823.9	30	13757	-73893
10285+50.00	22.0	5622.9	35	13249	-87107
10286+00.00	49.2	5276.3	66	12615	-99656
10286+50.00	68.3	4799.5	108	11663	-111211
10287+00.00	159.0	3926.7	211	10100	-121100
10287+50.00	71.5	4094.5	214	9284	-130170
10288+00.00	59.2	4191.3	121	9590	-139639
10288+50.00	60.5	3957.5	110	9433	-148962
10288+90.62	83.3	3771.1	109	7267	-156120
10289+00.00	86.0	3728.0	30	1628	-157718
10289+50.00	93.5	3452.9	166	8312	-165864
10289+54.98	95.0	3422.7	17	793	-166640
10290+00.00	134.9	3114.5	192	6813	-173261
10290+19.35	130.7	2982.7	96	2732	-175897
10290+25.00	128.0	2940.2	27	775	-176645
10290+46.93	145.0	2808.5	111	2919	-179453
10290+50.00	155.0	2791.8	17	399	-179835
10291+00.00	507.6	2427.1	613	6040	-185262
10291+50.00	672.0	2136.1	1092	5282	-189452
10292+00.00	678.4	1875.9	1250	4644	-192846
10292+50.00	865.7	1665.8	1430	4099	-195515
10293+00.00	1008.8	1481.0	1736	3643	-197422
10293+50.00	1054.3	1294.6	1910	3213	-198725
10294+00.00	1111.1	1243.6	2005	2938	-199658
10294+50.00	1066.8	1150.0	2016	2770	-200412
10295+00.00	972.2	1134.2	1888	2644	-201168
10295+19.00	897.4	1141.8	657	1002	-201513

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10295+50.00	815.7	1136.2	984	1635	-202164
10296+00.00	653.3	1108.8	1360	2599	-203403
10296+50.00	504.8	1040.1	1072	2488	-204819
10297+00.00	130.1	1006.8	588	2369	-206600
10297+50.00	396.4	1062.9	487	2395	-208508
10298+00.00	625.7	1170.3	946	2585	-210147
10298+50.00	719.9	1245.0	1246	2795	-211696
10299+00.00	449.1	1318.8	1082	2968	-213582
10299+50.00	501.3	1274.3	880	3002	-215704
10300+00.00	428.2	1465.8	860	3172	-218016
10300+08.68	24.1	1480.4	72	592	-218536
10300+50.00	284.9	897.7	236	2275	-220575
10301+00.00	415.9	691.1	649	1839	-221765
10301+50.00	394.8	469.1	751	1343	-222357
10302+00.00	373.8	479.3	711	1098	-222744
10302+50.00	359.8	671.1	679	1332	-223397
10303+00.00	363.8	911.9	669	1833	-224561
10303+50.00	439.6	1016.2	744	2232	-226049
10304+00.00	727.3	979.4	1080	2310	-227279
10304+50.00	829.6	568.4	1442	1792	-227629
10305+00.00	806.3	215.4	1515	908	-227022
10305+50.00	1253.8	76.7	1908	338	-225452
10306+00.00	1660.2	32.2	2698	127	-222881
10306+50.00	1234.4	84.7	2680	135	-220336
10307+00.00	976.2	97.2	2047	210	-218499
10307+21.06	964.8	103.2	757	99	-217841
10307+50.00	902.9	113.6	1001	145	-216985
10307+61.06	890.0	119.4	367	59	-216677
10308+00.00	785.5	155.5	1208	249	-215718
10308+01.06	779.7	156.5	31	8	-215695
10308+50.00	466.1	212.9	1129	419	-214985
10309+00.00	316.7	289.2	725	582	-214842
10309+50.00	413.4	306.6	676	690	-214856
10309+61.06	429.0	316.5	173	159	-214842
10310+00.00	353.0	356.5	564	608	-214886
10310+50.00	367.0	236.1	667	687	-214906

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Earthwork Values

Williston NW Permanent Truck Reliever Route Phase 3

US 85

* Fill is loose volume and includes an additional 25% for shrinkage

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	6

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10311+00.00	434.1	270.5	741	587	-214752
10311+50.00	497.4	305.6	862	668	-214558
10312+00.00	553.6	251.4	974	645	-214229
10312+08.50	503.4	239.5	166	97	-214160
10312+50.00	211.8	214.6	549	437	-214048
10313+00.00	618.3	206.4	769	488	-213767
10313+50.00	414.4	204.3	957	475	-213285
10313+69.73	343.0	200.3	277	185	-213193
10314+00.00	260.1	192.5	338	277	-213132
10314+50.00	162.9	186.9	392	439	-213179
10314+65.73	155.6	176.0	93	133	-213219
10314+89.73	115.4	186.9	121	202	-213300
10315+00.00	102.3	195.8	41	92	-213351
10315+13.73	94.6	201.4	50	127	-213428
10315+50.00	72.6	225.1	112	358	-213674
10315+91.98	51.9	261.6	97	473	-214050
10316+00.00	50.2	267.0	15	99	-214134
10316+50.00	36.0	296.3	79	653	-214708
10317+00.00	25.2	321.1	56	715	-215367
10317+37.82	19.4	365.9	32	602	-215937
10317+50.00	19.0	344.7	9	202	-216130
10318+00.00	17.8	345.8	35	799	-216894
10318+01.98	17.8	347.2	1	32	-216925
10318+50.00	18.1	355.9	32	782	-217675
10319+00.00	25.5	339.3	41	805	-218439
10319+50.00	30.8	332.2	52	778	-219165
10320+00.00	41.8	315.8	68	750	-219847
10320+01.98	42.6	315.1	3	29	-219873
10320+11.98	46.9	312.1	16	145	-220002
10320+50.00	72.0	290.2	83	532	-220451
10321+00.00	99.8	255.4	159	632	-220924
10321+01.98	100.1	253.6	7	23	-220940
10321+50.00	119.8	226.5	196	534	-221278
10322+00.00	120.5	261.6	222	565	-221621
10322+50.00	95.5	368.3	200	729	-222150
10322+96.26	89.5	407.7	159	830	-222821
10323+00.00	89.6	392.9	12	69	-222878
10323+20.26	93.2	417.0	69	379	-223188
10323+44.26	103.4	442.6	87	478	-223579
10323+50.00	106.8	444.7	23	119	-223675
10324+00.00	165.6	368.7	252	942	-224365
10324+10.00	78.2	326.6	46	162	-224481
10324+40.26	102.3	184.5	102	358	-224737
10324+50.00	63.4	152.0	30	77	-224784
10325+00.00	101.7	325.6	153	553	-225184
10325+50.00	275.5	283.2	349	704	-225539
10326+00.00	263.9	279.5	500	652	-225691
10326+50.00	499.8	345.5	708	723	-225706
10327+00.00	631.3	398.8	1047	862	-225521
10327+50.00	706.3	682.6	1239	1252	-225534
10328+00.00	745.7	1004.1	1344	1953	-226143
10328+50.00	78.7	1576.7	763	2987	-228367
10329+00.00	338.9	2333.8	387	4527	-232507
10329+37.89	1817.3	2179.3	1513	3959	-234953
10329+50.00	2240.1	2176.0	910	1220	-235263
10329+89.56	2939.4	2184.1	3794	3993	-235462

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10329+90.95	2960.7	2185.5	152	140	-235450
10330+00.00	3105.5	2132.4	1017	905	-235338
10330+50.00	2854.9	2088.6	5519	4885	-234704
10330+93.00	0.0	2586.0	2273	4654	-237085
10330+97.88	1561.3	2073.4	141	527	-237471
10330+99.04	1523.8	2071.0	66	112	-237517
10331+00.00	1494.1	2069.7	54	93	-237556
10331+34.94	14.6	1870.1	976	3187	-239767
10331+35.56	14.4	1866.1	0	54	-239821
10331+36.79	14.1	1858.0	1	107	-239927
10331+37.40	14.0	1854.0	0	53	-239980
10331+37.88	13.9	1850.7	0	42	-240022
10331+50.00	10.5	1778.2	5	1018	-241035
10331+65.13	3.8	1695.3	4	1217	-242248
10331+77.88	0.0	1612.4	1	977	-243224
10332+00.00	0.0	1509.2	0	1599	-244823
10332+50.00	0.0	1376.8	0	3340	-248163
10332+55.13	0.0	1367.3	0	327	-248490
10332+65.13	0.0	1347.7	0	629	-249119
10333+00.00	0.0	1281.1	0	2122	-251241
10333+50.00	0.0	1146.5	0	2810	-254051
10334+00.00	0.0	1153.4	0	2663	-256714
10334+50.00	4.4	1196.7	4	2720	-259430
10334+65.13	5.6	1231.7	3	852	-260279
10335+00.00	16.3	1285.8	14	2032	-262297
10335+50.00	62.9	1414.0	73	3125	-265349
10336+00.00	237.2	1621.6	278	3514	-268585
10336+50.00	110.3	1705.5	322	3852	-272115
10336+75.13	99.9	1762.6	98	2018	-274035
10337+00.00	79.5	1826.9	83	2067	-276019
10337+50.00	59.9	1935.2	129	4354	-280244
10337+56.74	58.4	1943.3	15	605	-280834
10338+00.00	53.4	1987.3	90	3937	-284681
10338+50.00	38.8	2048.9	85	4672	-289268
10339+00.00	24.7	2050.3	59	4745	-293954
10339+35.43	27.9	2289.5	35	3559	-297478

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Earthwork Values

Williston NW Permanent Truck Reliever Route Phase 3

US 85

* Fill is loose volume and includes an additional 25% for shrinkage

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	7

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10339+50.00	34.6	2199.2	17	1514	-298975
10339+81.74	52.3	1989.2	51	3078	-302002
10340+00.00	77.5	1832.2	44	1615	-303573
10340+50.00	403.4	1290.2	445	3614	-306742
10341+00.00	1180.2	570.1	1466	2153	-307429
10341+50.00	2200.7	83.2	3130	757	-305056
10342+00.00	3199.7	3.3	5000	100	-300156
10342+25.04	3505.0	3.3	3109	4	-297051
10342+47.89	3612.2	3.3	3012	4	-294043
10342+50.00	3616.0	3.3	282	0	-293761
10342+73.06	3685.6	3.3	3118	4	-290647
10342+75.74	3699.6	3.3	367	0	-290280
10342+99.74	3796.5	3.3	3332	4	-286952
10343+00.00	3797.2	3.3	37	0	-286915
10343+23.74	3779.0	3.3	3331	4	-283588
10343+50.00	3722.4	3.3	3648	4	-279944
10344+00.00	3351.3	3.3	6550	8	-273402
10344+19.74	3159.6	3.3	2380	3	-271025
10344+50.00	2932.6	3.3	3414	5	-267616
10344+57.89	2856.1	3.3	845	2	-266773
10345+00.00	2403.5	3.3	4101	7	-262679
10345+01.33	2395.4	3.3	118	0	-262561
10345+41.33	2022.7	3.0	3273	7	-259295
10345+50.00	1969.4	3.0	641	2	-258656
10345+81.33	1782.6	2.9	2177	4	-256483
10346+00.00	1693.1	2.9	1202	3	-255284
10346+50.00	1149.3	2.9	2632	7	-252659
10346+57.89	1070.4	2.9	324	2	-252337
10346+67.89	986.8	2.9	381	2	-251958
10347+00.00	792.4	40.6	1058	32	-250932
10347+41.33	621.9	92.9	1082	128	-249978
10347+50.00	587.2	103.9	194	40	-249824
10347+57.89	541.9	116.0	165	40	-249699
10348+00.00	338.2	211.3	686	319	-249332
10348+50.00	182.2	364.7	482	667	-249517
10349+00.00	234.6	396.1	386	880	-250011
10349+47.80	316.6	336.6	488	812	-250335
10349+50.00	321.3	333.9	26	34	-250343
10350+00.00	400.0	334.6	668	774	-250449
10350+50.00	382.6	379.6	725	827	-250551
10351+00.00	375.4	429.7	702	937	-250786
10351+07.80	384.4	430.2	110	155	-250831
10351+47.80	395.4	433.9	578	800	-251053
10351+50.00	396.8	434.9	32	44	-251065
10351+87.80	434.9	465.8	582	789	-251272
10352+00.00	442.6	472.8	198	265	-251339
10352+50.00	443.7	520.2	821	1149	-251667
10353+00.00	389.1	521.9	771	1207	-252103
10353+50.00	382.3	528.7	714	1217	-252606
10353+75.15	390.5	544.0	360	625	-252871
10354+00.00	392.5	569.4	360	642	-253153
10354+50.00	384.2	571.5	719	1320	-253754
10354+71.15	375.9	573.0	298	560	-254016
10354+95.15	353.6	591.2	324	648	-254340
10355+00.00	346.7	593.3	63	134	-254411
10355+19.15	323.1	599.4	238	529	-254702

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10355+50.00	290.1	647.3	350	892	-255244
10356+00.00	250.5	755.8	501	1624	-256367
10356+50.00	200.5	859.6	418	1870	-257819
10357+00.00	127.4	969.2	304	2117	-259632
10357+50.00	70.6	1069.9	183	2360	-261809
10358+00.00	36.2	1267.1	99	2705	-264415
10358+10.08	30.8	1300.1	12	599	-265002
10358+50.00	19.6	1399.8	37	2495	-267460
10359+00.00	6.3	1491.8	24	3347	-270783
10359+00.08	6.3	1492.0	0	5	-270788
10359+10.08	8.8	1510.6	3	695	-271480
10359+50.00	60.7	1567.7	51	2845	-274274
10360+00.00	182.4	1497.4	225	3548	-277597
10360+25.27	168.7	1501.1	164	1754	-279187
10360+50.00	155.4	1458.6	148	1694	-280733
10360+68.18	64.0	1707.1	74	1332	-281991
10361+00.00	110.7	1423.5	103	2307	-284195
10361+01.83	0.0	2493.6	4	165	-284356
10361+10.08	96.7	1419.6	15	748	-285089
10361+12.50	0.0	1835.8	4	183	-285268
10361+50.00	19.1	1502.1	13	2898	-288153
10361+63.50	0.0	1692.1	5	999	-289147
10362+00.00	0.0	1577.7	0	2763	-291910
10362+50.00	0.0	1492.7	0	3554	-295464
10363+00.00	68.8	635.6	64	2464	-297864
10363+20.08	232.5	392.0	112	478	-298230
10363+50.00	379.7	239.8	339	438	-298329
10364+00.00	483.5	168.5	799	473	-298003
10364+50.00	394.6	256.6	813	493	-297683
10365+00.00	339.8	355.5	680	709	-297712
10365+50.00	283.6	453.4	577	937	-298072
10366+00.00	488.8	419.3	715	1010	-298367
10366+50.00	472.0	382.6	889	928	-298406
10367+00.00	453.7	390.2	857	894	-298443
10367+50.00	433.0	435.4	821	955	-298577
10368+00.00	406.5	689.5	777	1302	-299102

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Earthwork Values

Williston NW Permanent Truck Reliever Route Phase 3

US 85

* Fill is loose volume and includes an additional 25% for shrinkage

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	8

Station	End Area (SF)		Volume (CY)		Mass Oridinate
	Embankment		Embankment		Embankment
	Excavation	Fill	Excavation	Fill*	
10368+48.38	547.0	2897.1	854	4017	-302265
10368+50.00	358.6	1306.2	27	158	-302396
10368+99.98	441.9	2165.9	741	4017	-305672
10369+00.00	379.1	1762.8	0	2	-305674
10369+50.00	375.5	1459.6	699	3730	-308705
10370+00.00	275.0	1081.7	603	2942	-311044
10370+50.00	232.8	1593.8	470	3097	-313671
10371+00.00	175.8	1072.2	378	3085	-316378
10371+50.00	146.3	524.0	298	1848	-317928
10372+00.00	378.1	158.3	485	790	-318233
10372+50.00	992.5	3.3	1269	188	-317152
10373+00.00	939.9	34.7	1789	44	-315407
10373+50.00	876.2	30.7	1682	77	-313802
10374+00.00	713.5	45.7	1472	89	-312419
10374+50.00	548.1	57.4	1168	119	-311370
10375+00.00	477.9	72.3	950	150	-310570
10375+44.71	433.2	89.4	754	168	-309984
10375+50.00	429.6	93.0	84	23	-309923
10375+68.71	416.9	106.2	294	87	-309716
10375+92.71	415.8	111.8	370	122	-309468
10376+00.00	420.6	113.2	112	38	-309394
10376+50.00	461.7	111.5	817	260	-308837
10376+88.71	476.7	106.6	673	197	-308361
10377+00.00	462.4	105.9	197	55	-308219
10377+50.00	295.4	128.6	702	272	-307789
10377+60.18	268.6	138.0	106	63	-307746
10378+00.00	185.9	150.5	336	267	-307677
10378+50.00	161.5	177.1	322	379	-307734
10378+95.19	84.6	185.8	206	379	-307907
10379+00.00	74.7	192.5	15	43	-307935
10379+50.00	38.9	234.1	105	494	-308324
10380+00.00	28.7	201.1	62	504	-308766
10380+50.00	24.5	151.0	49	408	-309125
10381+00.00	10.8	128.0	33	324	-309416
10381+50.00	20.5	87.2	29	249	-309636
10382+00.00	38.1	71.1	54	184	-309766
10382+50.00	24.5	93.3	58	190	-309898
10383+00.00	12.2	126.4	34	255	-310119
10383+50.00	66.8	180.2	73	355	-310401
10384+00.00	14.8	445.9	75	725	-311051
10384+50.00	17.7	640.5	30	1258	-312279
10384+58.00	18.4	668.0	5	243	-312517
10384+62.50	15.7	668.3	3	140	-312654
10384+70.63	15.1	646.3	5	248	-312897
10384+75.00	15.8	659.8	2	133	-313028
10385+00.00	27.0	560.1	20	707	-313715
10385+15.00	34.7	220.0	17	272	-313970
10385+45.65	18.2	7.3	30	162	-314102
10385+45.99	1.3	0.4	0	0	-314102
Totals			979477	1293579	

* Fill is loose volume and includes an additional 25% for shrinkage

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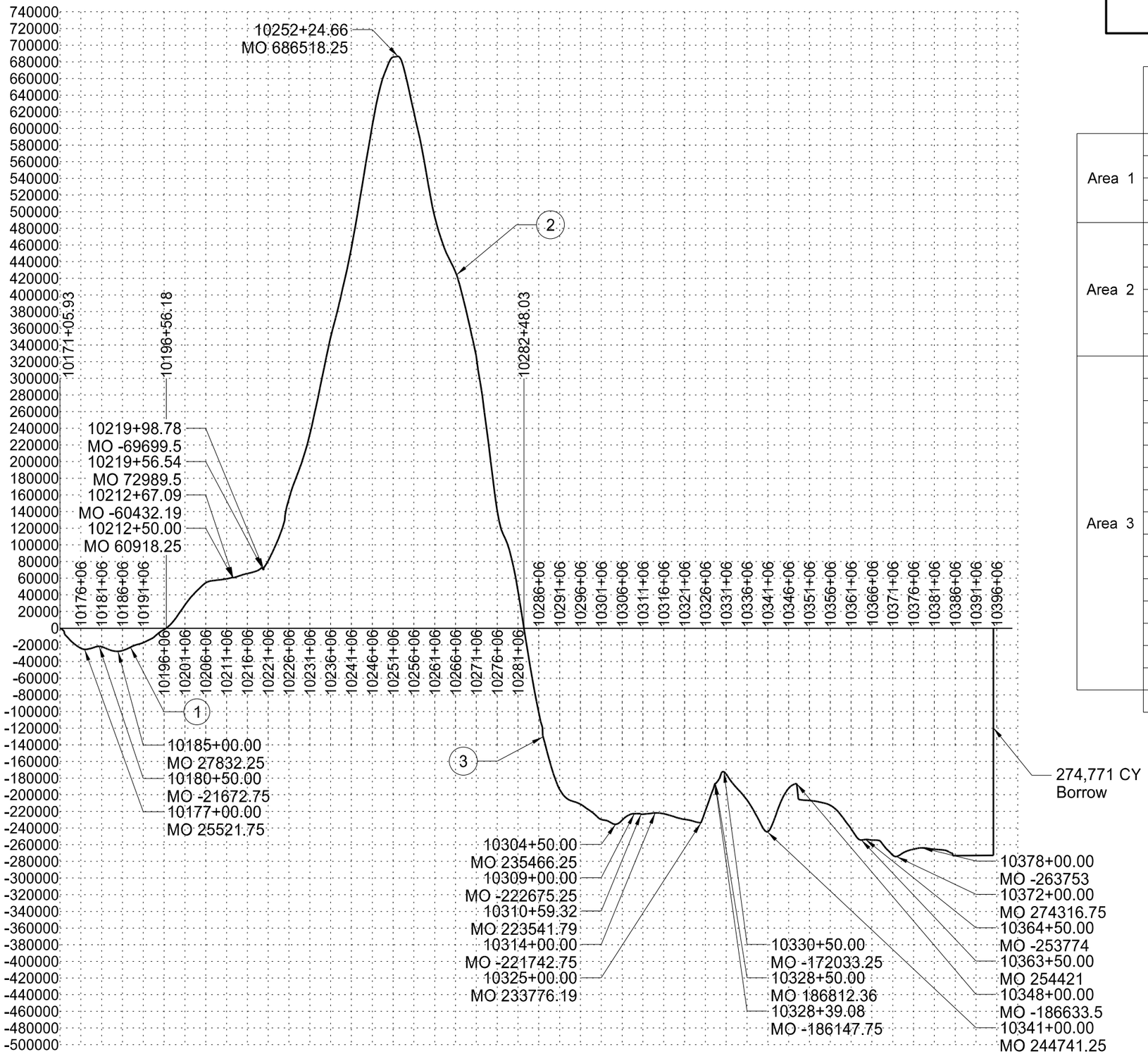
Earthwork Values

Williston NW Permanent Truck Reliever Route Phase 3

US 85

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	11	16



	Mass Ordinate Sta	Mass Ordinate, CY	Balance Area, CY-Sta	Ave Haul, Sta
Area 1	10177+00.00	25521.75	476833.67	15.05
	10180+50.00	-21672.75		
	10185+00.00	27832.25		
	Sub Total	31681.25		
Area 2	10212+50.00	60918.25	24110354.98	34.93
	10212+67.09	-60432.19		
	10219+56.54	72989.5		
	10219+98.78	-69699.5		
	10252+24.66	686518.25		
	Sub Total	690294.31		
Area 3	10304+50.00	235446.25	25142818.44	171.86
	10309+00.00	-222675.25		
	10310+59.32	223541.79		
	10314+00.00	-221742.75		
	10325+00.00	233776.19		
	10328+39.08	-186147.75		
	10328+50.00	186812.36		
	10330+50.00	-172033.25		
	10341+00.00	244741.25		
	10348+00.00	-186633.5		
	10363+50.00	254421		
	10364+50.00	-253774		
	10372+00.00	274316.75		
	10378+00.00	-263753		
	Sub Total	146296.09		
	Total	868271.65	49730007.09	57.27

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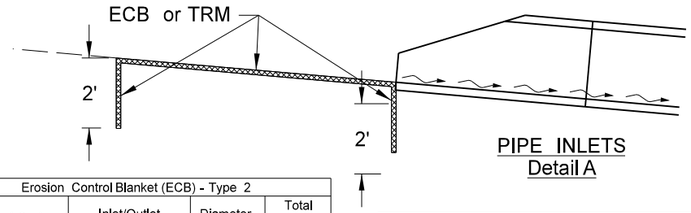
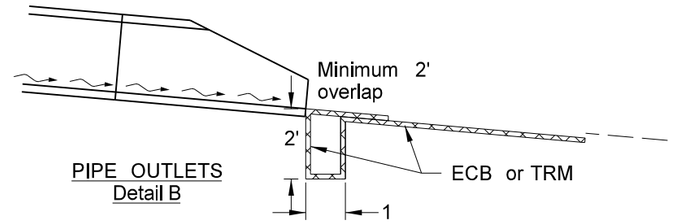
Mass Diagram

Williston NW Permanent Truck Reliever Route
Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	20	15



PIPE INLETS
Detail A



PIPE OUTLETS
Detail B

Erosion Control Blanket (ECB) - Type 2				
Location of Surface		Inlet/Outlet Type	Diameter (Inch)	Total Quantity (SY)
Station	Offset			
US 85 (PR85)				
10171+28	93' LT	End Section	30	27
10171+28	96' RT	End Section	30	27
10171+37	93' LT	End Section	30	27
10171+37	96' RT	End Section	30	27
10182+91	105' LT	End Section	48	33
10182+91	111' RT	End Section	48	33
10194+00	87' LT	End Section	24	24
10194+00	13' LT	End Section	24	24
10204+00	86' LT	End Section	24	24
10204+00	13' LT	End Section	24	24
10212+00	86' LT	End Section	24	24
10212+00	13' LT	End Section	24	24
10215+00	83' LT	End Section	24	24
10215+00	14' LT	End Section	24	24
10248+00	0' CL	Median Drain Inlet	48	68
10248+00	94' RT	End Section	24	24
10258+64	197' LT	End Section	42	32
10258+64	0' CL	Median Drain Inlet	48	68
10272+29	0' CL	Median Drain Inlet	48	68
10273+73	194' RT	End Section	42	32
10280+00	0' CL	Median Drain Inlet	48	68
10286+50	1' RT	Median Drain Inlet	48	68
10290+25	1' RT	Median Drain Inlet	48	68
10299+19	106' RT	End Section	42	32
10312+00	71' LT	End Section	30	27
10312+00	61' RT	End Section	30	27
10312+09	71' LT	End Section	30	27
10312+09	61' RT	End Section	30	27
10360+22	146' LT	End Section	42	32
10360+23	89' LT	Median Drain Inlet	48	68
10361+89	115' RT	End Section	48	33
10367+73	81' LT	End Section	36	30
10369+59	123' RT	End Section	36	30
10384+63	77' LT	End Section	42	32
10384+63	96' RT	End Section	42	32
10387+57	83' LT	End Section	30	27
140th Ave NW (PR140TH_AVE)				
24+86	35' LT	End Section	24	24
24+86	34' RT	End Section	24	24
Driveway 10213 (PR85_DW_10213)				
2+52	40' LT	End Section	24	24
2+57	42' RT	End Section	24	24
Driveway 10220 (PR85_DW_10220)				
3+00	74' LT	End Section	24	24
3+00	87' RT	End Section	24	24
139th Ave NW (PR139TH_AVE)				
27+57	87' LT	End Section	24	24
27+62	112' RT	End Section	24	24
30+21	54' LT	End Section	36	30
30+30	64' RT	End Section	36	30
139th Ave NW - Private Drive (PR_139TH_DW)				
8+85	24' LT	End Section	18	22
8+85	24' RT	End Section	18	22
Driveway 10287 (PR85_DW_10287)				
3+45	79' LT	End Section	42	32
3+55	76' RT	End Section	42	32
3+57	79' LT	End Section	42	32
3+67	76' RT	End Section	42	32
3+69	79' LT	End Section	42	32
3+79	76' RT	End Section	42	32
137th Ave NW T (PR137_AVE_W_T)				
14+14	101' RT	End Section	36	30
14+73	95' LT	End Section	36	30
County Highway 6 Driveway (PROLD6_DW)				
2+78	39' LT	End Section	36	30
3+54	37' RT	End Section	36	30
7+40	24' LT	End Section	18	22
7+40	26' RT	End Section	18	22
Driveway 10384 (PR85_DW_10384)				
1+64	27' LT	End Section	24	24
1+75	31' RT	End Section	24	24

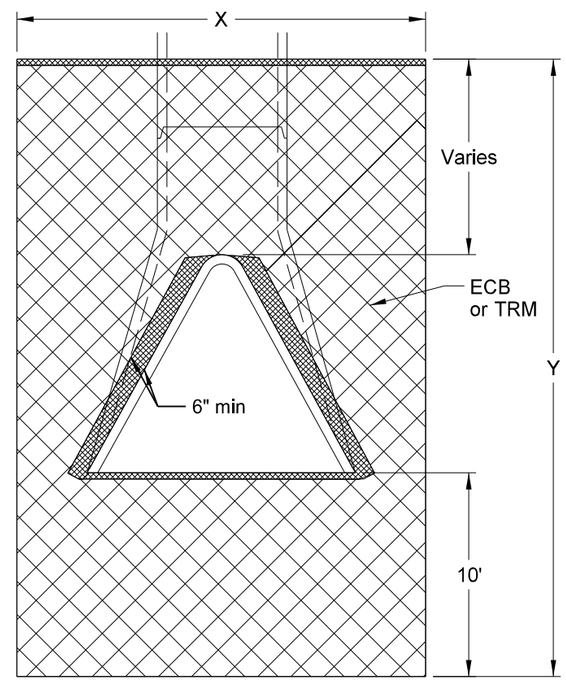
Erosion Control Blanket (ECB) - Type 2				
Location of Surface		Inlet/Outlet Type	Diameter (Inch)	Total Quantity (SY)
Station	Offset			
Driveway 10395 (PR_DW_10395)				
1+71	47' LT	End Section	24	24
1+71	42' RT	End Section	24	24
			Total	2034

Erosion Control Blanket (ECB) - Type 4				
Location of Surface		Inlet/Outlet Type	Diameter (Inch)	Total Quantity (SY)
Station	Offset			
US 85 (PR85)				
10251+80	222' RT	End Section	48	33
10290+25	101' RT	End Section	30	27
			Total	60

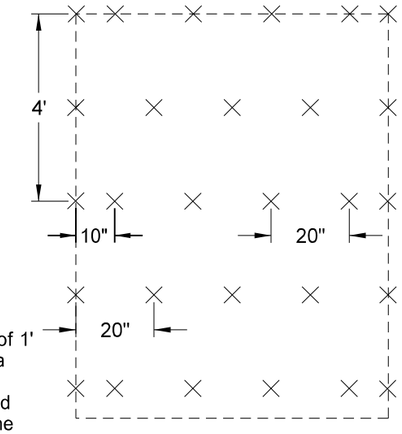
Turf Reinforcement Mat (TRM) - Type 1				
Location of Surface		Inlet/Outlet Type	Diameter (Inch)	Total Quantity (SY)
Station	Offset			
US 85 (PR85)				
10266+30	175' RT	End Section	36	30
10280+00	84' RT	End Section	24	24
10286+50	125' RT	End Section	30	27
			Total	81

Unit Quantities - End Sections				
Pipe Diameter	X	Y	Surface Area to be Protected	ECB
Inch	Feet	Feet	SF	SY
15	9.0	20.0	176.0	20
18	9.5	20.7	190.7	22
21	9.5	21.0	190.9	22
24	10.5	21.6	214.1	24
30	11.6	22.5	241.5	27
36	12.7	23.3	268.8	30
42	13.3	23.3	279.7	32
48	13.8	24.0	293.2	33
54	14.5	23.4	300.6	34
60	15.0	23.0	307.5	35
66	15.6	24.0	325.6	37
72	16.2	24.5	340.6	38

Unit Quantities - Median Drain Inlets				
Diameter	X	Y	Surface Area to be Protected	ECB
Inch	Feet	Feet	SF	SY
48	28	22	616	68



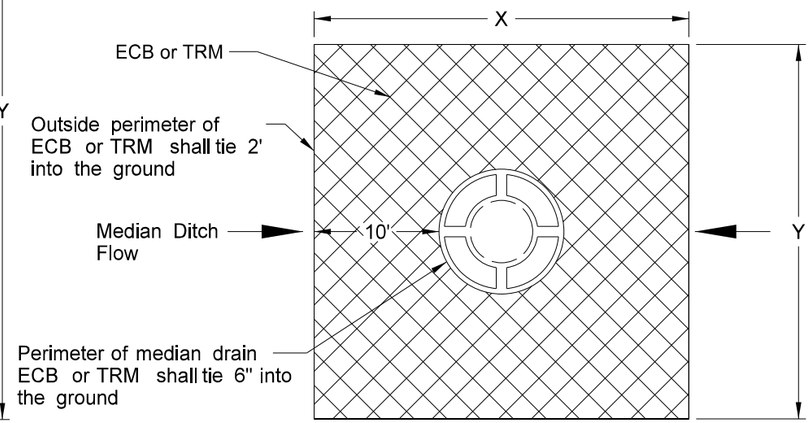
TOP VIEW



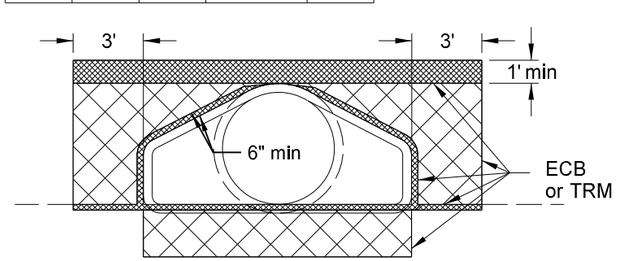
STAPLE PATTERN: 3.8 staples per square yard using 8-inch 11 gauge wire "u" staples

Notes:

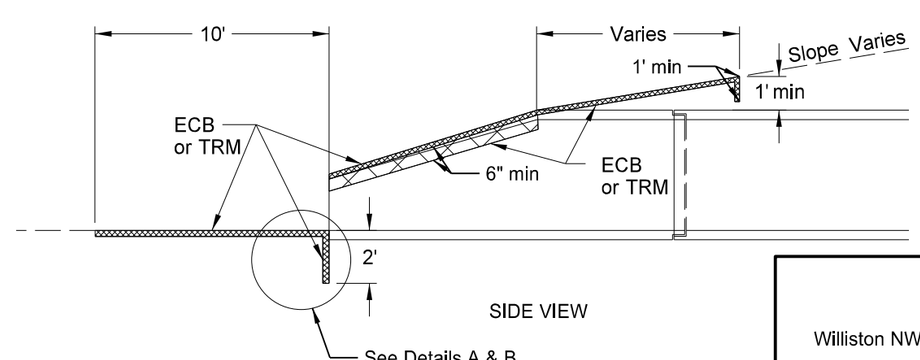
1. Drawings are not to scale.
2. The ECB or TRM shall be tucked a minimum of 1' into the embankment above the end section, a minimum of 6" into the embankment (against the end section) around the opening of the end section, and 2' into the ground at the end of the end section.



Median Drain
Top View



FRONT VIEW



SIDE VIEW

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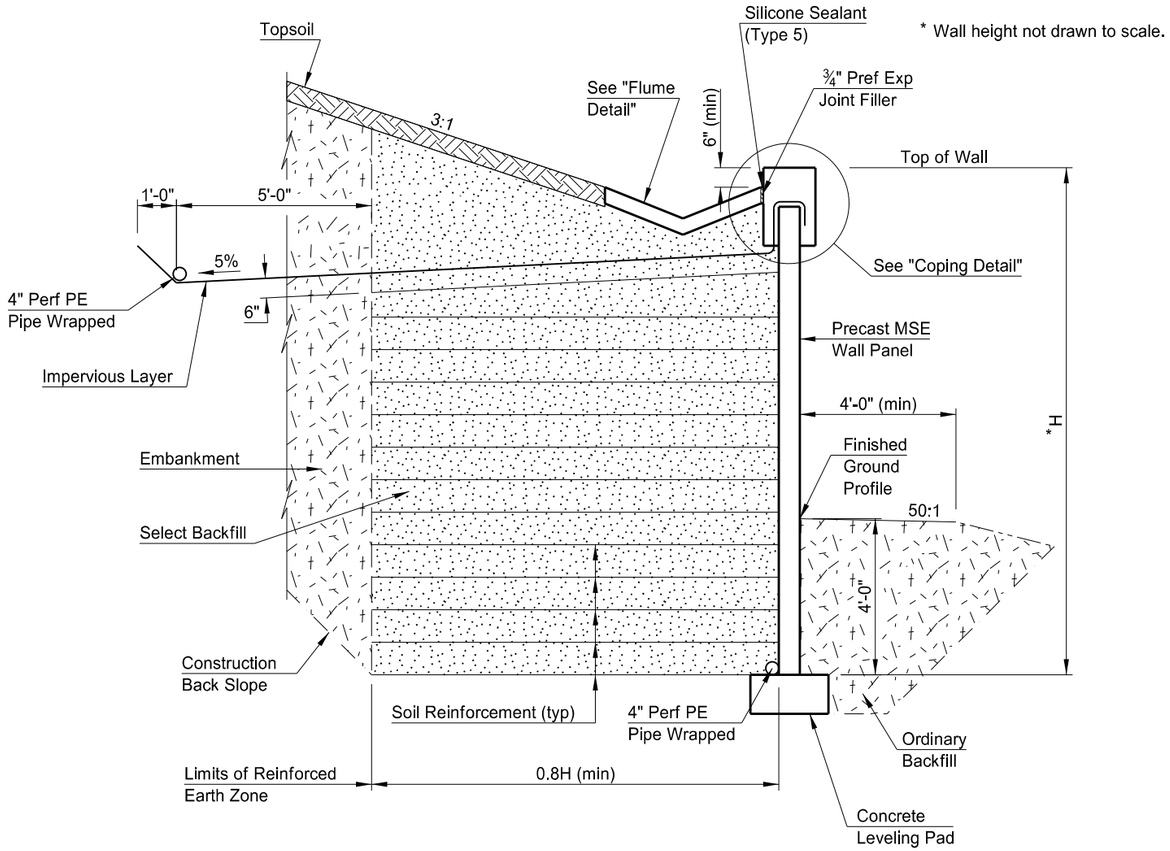
General Details

Williston NW Permanent Truck Reliever Route
Phase 3

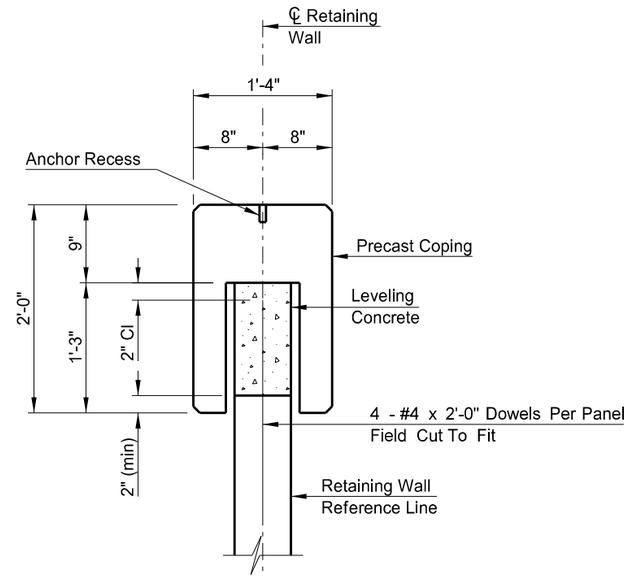
Erosion Control at Median Drains and End Sections

Revised 5/13/2014	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	20	17

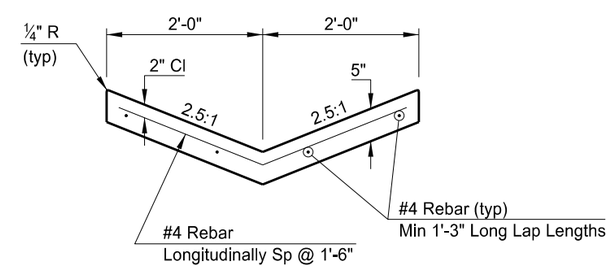


TYPICAL MSE WALL SECTION

(STA 10264+00.00 TO 10266+50.00)



COPING DETAIL



FLUME DETAIL

NOTES:

930 Pay item for MSE wall shall be in accordance with SP 1446(08).

Contractor to fill anchor recess areas with a non-shrink grout after placement of coping.

The cost of furnishing and placing preformed joint filler, silicone sealant, drainage pipes and all materials and labor required to build the concrete flume shall also be included in the price bid for "Mechanically Stabilized Earth Wall."

Leveling pad and flume concrete shall meet the requirements of Class AE-5 Concrete. Reinforcing steel shall be Grade 60.

Cap drain pipes on west end only. Outlet drain pipes on east end to Manhole No 6. Maintain a minimum pipe slope of 1%.

BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
930	9550	MECHANICALLY STABILIZED EARTH WALL	SF	3295

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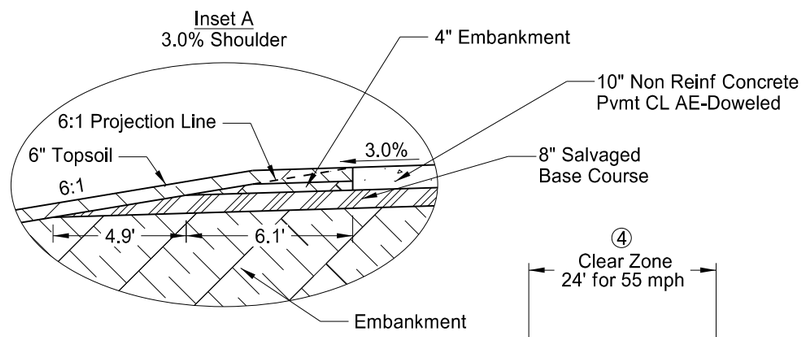
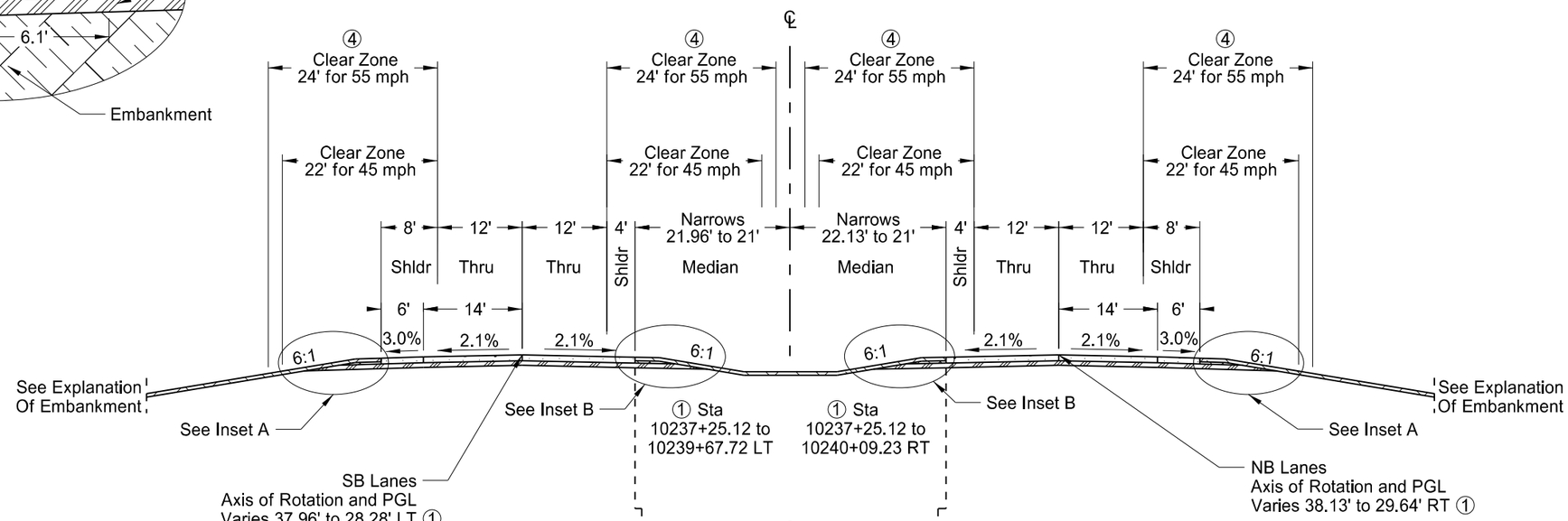
WILLISTON NW PERMANENT
TRUCK RELIEVER ROUTE

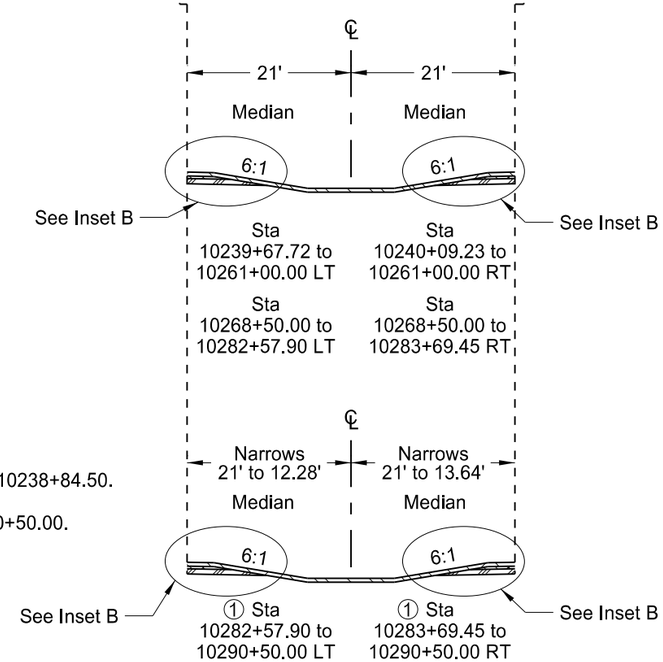
MSE WALL DETAILS

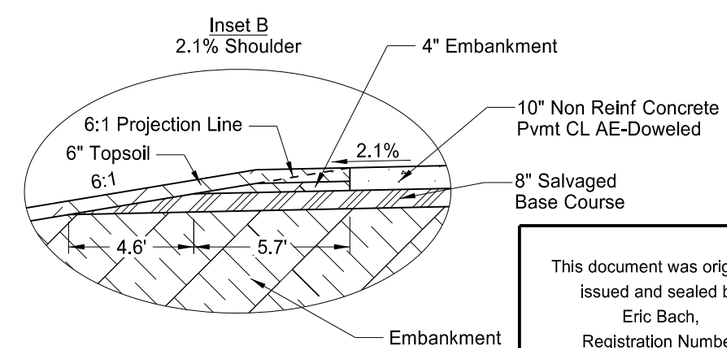
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	30	4

US 85: 4 Lane Divided @ Normal Crown
② Sta 10237+25.12 to 10238+84.50
Sta 10238+84.50 to 10261+00.00
Sta 10268+50.00 to 10288+90.62
③ Sta 10288+90.62 to 10290+50.00









① See Section 82 and survey data layout for descriptions of narrowing median and PGL location:
PR85 Sta 10227+00.00 to 10240+09.23
PR85 Sta 10282+57.90 to 10299+93.26

② 139th Ave NW intersection slopes transition to normal crown from Sta 10237+25.12 to 10238+84.50.

③ Normal crown transitions to 3.1% paved median slopes from Sta 10288+90.62 to 10290+50.00.

④ Clear zone changes from 24' to 22' @ Sta 10276+00.00.

Notes:
See Section 20 for Superelevation & Approach Paving Details
See Section 60 for PGL = Profile Grade Line
See Section 90 for Pavement Joint Layout
See Section 120 for Pavement Marking Layout

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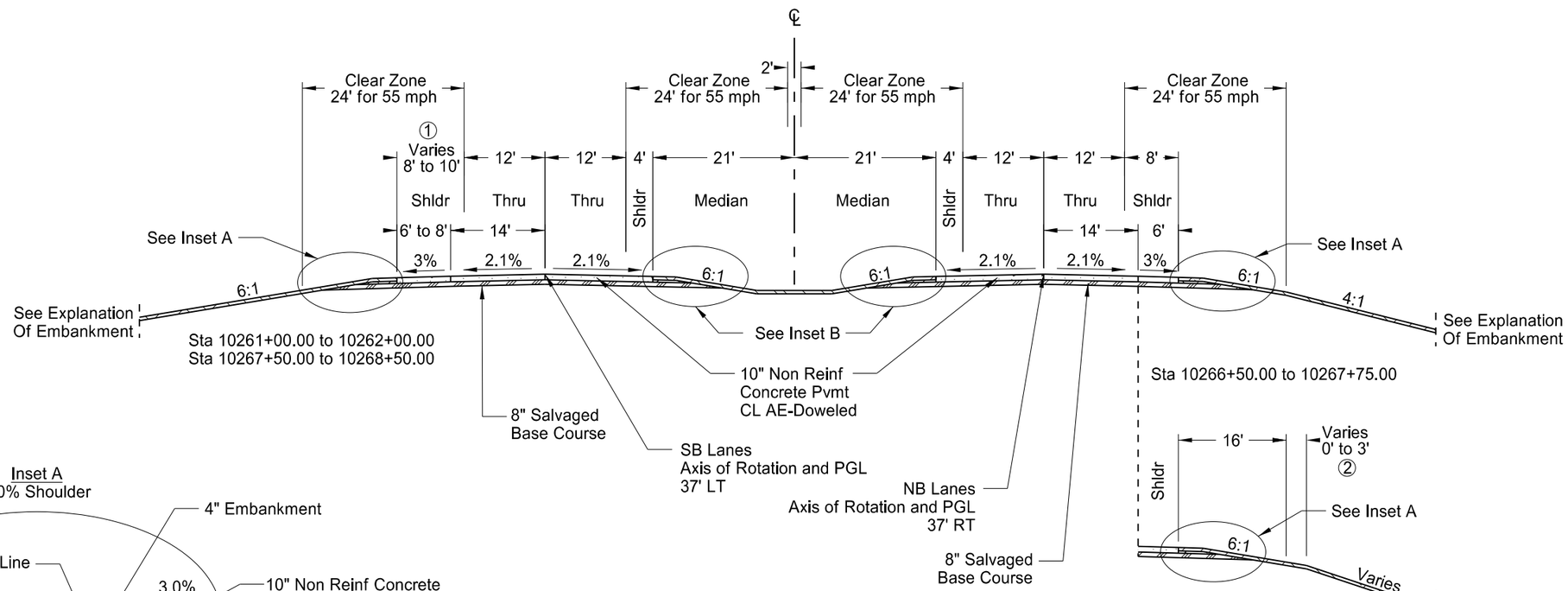
Proposed Typical Sections

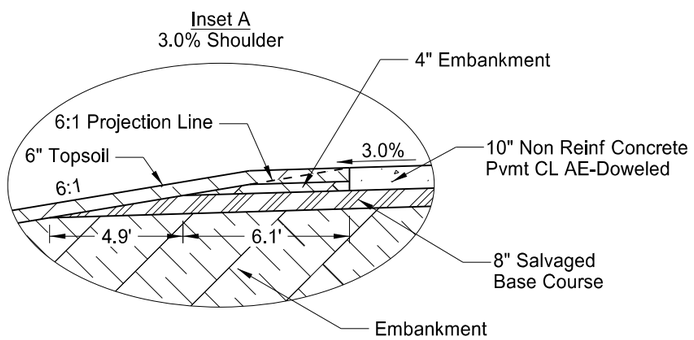
Williston NW Permanent Truck Reliever Route
Phase 3

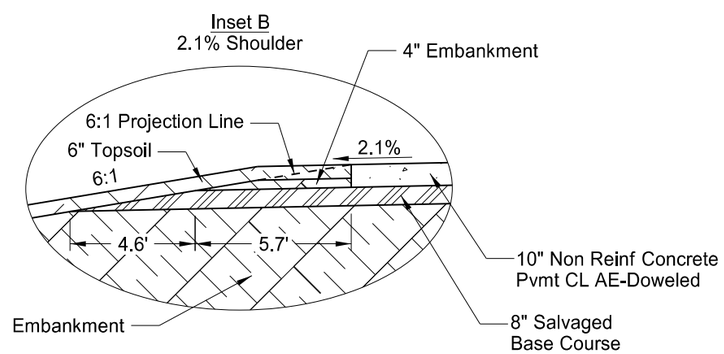
US 85

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	30	5

US 85: 4 Lane Divided @ Normal Crown With Curb & Gutter and Guardrail
Sta 10261+00.00 to 10262+00.00
Sta 10267+50.00 to 10268+50.00







① Pavement tapers 8' to 10' from Sta 10261+60.00 to 10262+00.00.

② Bench tapers 0' to 3' from Sta 10261+00.00 to 10262+00.00.

Bench tapers 3' to 0' from Sta 10267+50.00 to 10268+50.00.

Notes:
See Section 20 for Superelevation & Approach Paving Details
See Section 60 for PGL = Profile Grade Line
See Section 90 for Pavement Joint Layout
See Section 120 for Pavement Marking Layout

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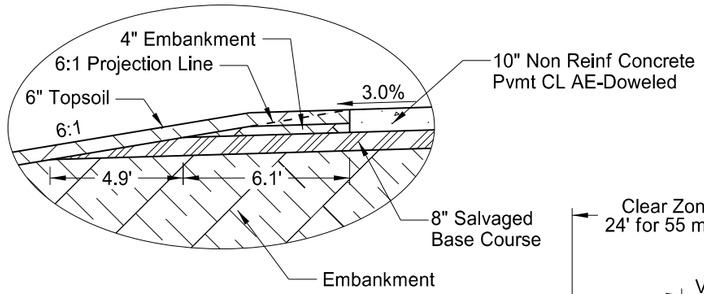
Proposed Typical Sections

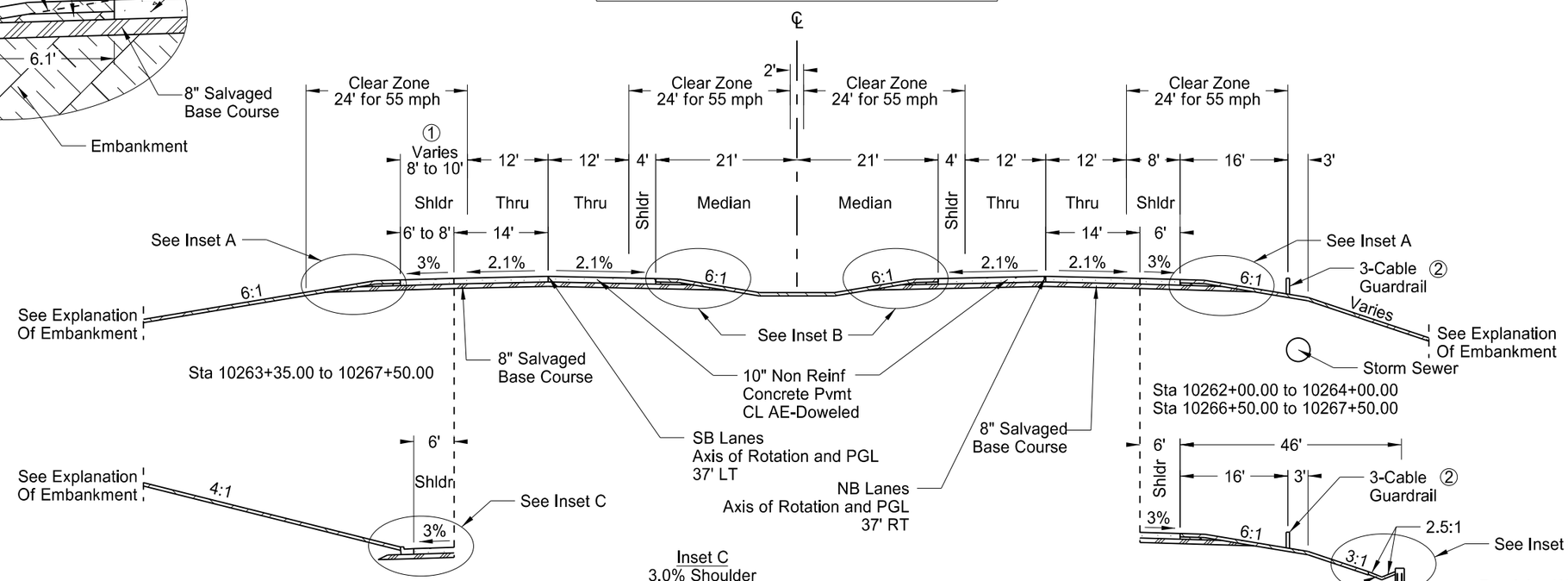
Williston NW Permanent Truck Reliever Route
Phase 3

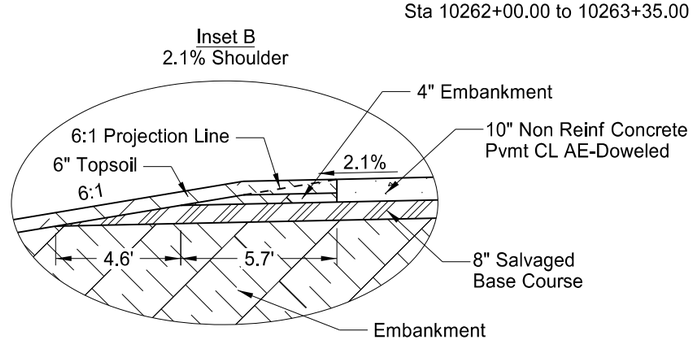
US 85

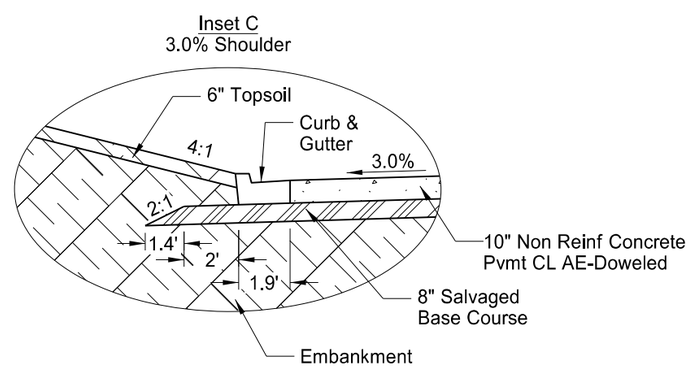
Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	30	6

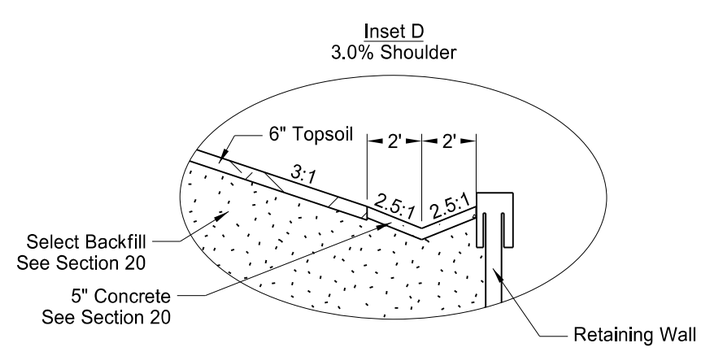
US 85: 4 Lane Divided @ Normal Crown
With Retaining Wall
Sta 10262+00.00 to 10267+50.00











① Pavement tapers 10' to 8' from Sta 10263+35.00 to 10263+75.00.
Pavement is 8' from Sta 10263+75.00 to 10263+80.10.

Pavement is 8' from Sta 10266+69.89 to 10267+74.90.

② Guardrail located at clear zone from Sta 10262+12.50 to 10267+12.50

Notes:
See Section 20 for Superelevation & Approach Paving Details
See Section 60 for PGL = Profile Grade Line
See Section 90 for Pavement Joint Layout
See Section 120 for Pavement Marking Layout

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Proposed Typical Sections

Williston NW Permanent Truck Reliever Route
Phase 3

US 85

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	30	16

LT Ditch																	
Start Station	End Station	Ditch Type	Clear Zone	①		②		③		④		⑤		⑥		⑦	
				Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)
US 85 (PR85)																	
10171+05.93	10195+00	A	34'	6:1	22.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10195+00	10214+50	A	34'	6:1	22.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10214+50	10224+00	A	34'	6:1	22.34'	4:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10224+00	10237+00	A	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10237+00	10244+50	B	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	24:1	10'	4:1	Varies
10244+50	10246+00	B	24'	6:1	12.34'	4.4:1	Varies	24:1	12'	0%	6'	4:1	Varies	24:1	10'	4:1	Varies
10246+00	10247+00	B	24'	6:1	12.34'	4.5:1	Varies	24:1	12'	0%	6'	4:1	Varies	24:1	10'	4:1	Varies
10247+00	10248+00	B	24'	6:1	12.34'	4.5:1	Varies	24:1	12'	0%	12'	4:1	Varies	24:1	10'	4:1	Varies
10248+00	10249+00	A	24'	6:1	12.34'	4.5:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10249+00	10250+00	A	34'	6:1	12.34'	4:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10250+00	10259+00	D	24'	6:1	12.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10259+00	10260+50	A	24'	6:1	12.34'	4.1:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10260+50	10262+00	A	24'	6:1	12.34'	6:1	Varies	-	-	0%	Varies	-	-	-	-	-	-
10262+00	10263+00	C	24'	Varies	14'	Varies	Varies	-	-	-	-	-	-	-	-	-	-
10263+00	10268+00	E	24'	6:1	12.34'	6:1	Varies	4:1	Varies	-	-	-	-	-	-	-	-
10268+00	10271+50	A	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10271+50	10285+00	D	24'	6:1	12.34'	4.1:1	Varies	-	-	-	-	-	-	-	-	-	-
10278+00	10290+50	D	22'	6:1	10.34'	4.1:1	Varies	-	-	-	-	-	-	-	-	-	-
10285+00	10300+50	A	22'	6:1	10.34'	4.1:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10290+50	10300+50	A	22'	6:1	10.34'	4:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10300+50	10305+00	D	22'	6:1	10.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10305+00	10309+00	A	22'	6:1	10.34'	4:1	Varies	24:1	12'	0%	Varies	-	-	-	-	-	-
10309+00	10311+50	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10311+50	10324+00	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10324+00	10339+50	See Wetland Mitigation Grading - Section 70															
10339+50	103352+00	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
103352+00	10359+50	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10359+50	10361+00	A	22'	6:1	10.34'	6:1	Varies	-	-	0%	Varies	-	-	-	-	-	-
10361+00	10367+00	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	Varies	-	-	-	-	-	-
10367+00	10381+00	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10381+00	10383+50	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10383+50	10385+00	E	22'	8:1	10.34'	8:1	Varies	4:1	Varies	-	-	-	-	-	-	-	-
10385+00	10394+00	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10394+00	10399+50	E	22'	6:1	10.34'	6:1	Varies	4:1	Varies	-	-	-	-	-	-	-	-
10399+50	10399+79	D	22'	5:1	10.34'	5:1	Varies	-	-	-	-	-	-	-	-	-	-

LT Median																	
Start Station	End Station	Ditch Type	Clear Zone	①		②		③		④		⑤		⑥		⑦	
				Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)
US 85 (PR85)																	
10171+05.93	10182+64.41	Intersection at 140th - Fully paved median															
10182+64.41	10216+23.47	F	24'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10216+23.47	10237+25.12	Intersection at 139th - Fully paved median															
10237+25.12	10285+00	F	24'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10285+00	10290+50	F	22'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10290+50	10400+00	Intersection at 137th - Fully paved median for the remainder of the job															

RT Ditch																	
Start Station	End Station	Ditch Type	Clear Zone	①		②		③		④		⑤		⑥		⑦	
				Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)
US 85 (PR85)																	
10171+05.93	10173+00	A	34'	6:1	22.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10173+00	10176+00	D	34'	6:1	22.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10176+00	10178+00	A	34'	6:1	22.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10178+00	10215+00	A	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10215+00	10224+50	A	24'	6:1	12.34'	4:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10224+50	10233+50	A	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10233+50	10236+00	B	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	12'	4:1	80'	24:1	10'	4:1	Varies
10236+00	10239+50	B	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	6'	4:1	80'	24:1	10'	3:1	Varies
10239+50	10242+00	A	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10242+00	10247+00	B	24'	6:1	12.34'	6:1	Varies	24:1	12'	0%	Varies	4:1	80'	24:1	10'	3:1	Varies
10247+00	10250+50	B	24'	6:1	12.34'	4:1	Varies	24:1	12'	0%	Varies	4:1	80'	24:1	10'	3:1	Varies
10250+50	10252+00	A	24'	6:1	12.34'	4:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10252+00	10253+50	A	24'	6:1	12.34'	4:1	Varies	24:1	12'	0%	Varies	-	-	-	-	-	-
10253+50	10259+00	A	24'	6:1	12.34'	4.1:1	Varies	24:1	12'	0%	Varies	-	-	-	-	-	-
10259+00	10261+00	D	24'	6:1	12.34'	3:1	Varies	-	-	-	-	-	-	-	-	-	-
10261+00	10262+12.50	D	24'	6:1	12.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10262+12.50	10263+00	D	24'	6:1	15.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10263+00	10266+50	D	24'	6:1	15.34'	3:1	Varies	-	-	-	-	-	-	-	-	-	-
10266+50	10267+12.50	D	24'	6:1	15.34'	4:1	Varies	-	-	-	-	-	-	-	-		
10267+12.50	10276+00	D	24'	6:1	12.34'	4:1	Varies	-	-	-	-	-	-	-	-		
10276+00	10278+00	D	22'	6:1	10.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10278+00	10280+00	A	22'	6:1	10.34'	4.4:1	Varies	24:1	12'	-	-	4:1	Varies	-	-	-	-
10280+00	10290+50	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10290+50	10329+00	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10329+00	10331+00	B	22'	6:1	10.34'	4:1	Varies	24:1	12'	0%	12'	4:1	80'	24:1	10'	4:1	Varies
10331+00	10332+00	A	22'	6:1	10.34'	4:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10332+00	10334+50	D	22'	6:1	10.34'	4:1	Varies	-	-	-	-	-	-	-	-	-	-
10334+50	10343+50	A	22'	6:1	10.34'	4:1	Varies	24:1	12'	0%	Varies	4:1	Varies	-	-	-	-
10343+50	10361+50	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10361+50	10363+00	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10363+00	10368+00	A	22'	6:1	10.34'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10368+00	10372+00	D	22'	6:1	10.34'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10372+00	10379+00	A	22'	6:1	10.24'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10379+00	10381+50	D	22'	6:1	10.24'	6:1	Varies	-	-	-	-	-	-	-	-	-	-
10381+50	10383+50	A	22'	6:1	10.24'	6:1	Varies	24:1	12'	0%	12'	4:1	Varies	-	-	-	-
10383+50	10385+00	D	22'	6:1	10.24'	6:1	Varies	-	-	-	-	-	-	-	-	-	-

RT Median																	
Start Station	End Station	Ditch Type	Clear Zone	①		②		③		④		⑤		⑥		⑦	
				Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)	Slope	Width (LF)
US 85 (PR85)																	
10171+05.93	10182+64.41	Intersection at 140th - Fully paved median															
10182+64.41	10216+23.47	F	24'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10216+23.47	10237+25.12	Intersection at 139th - Fully paved median															
10237+25.12	10285+00	F	24'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10285+00	10290+50	F	22'	6:1	Varies	6:1	Varies	0%	Varies	-	-	-	-	-	-	-	-
10290+50	10400+00	Intersection at 137th - Fully paved median for the remainder of the job															

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Explanation of Embankment

Williston NW Permanent Truck Reliever Route
Phase 3

Mainline and Minor Road
Ditch Typical Sections

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	50	1

Hydraulic Data For SOIA-7-085(096)192
(A)

Alignment and Station	Existing Pipe	Proposed Pipe Size (IN)	Notes	Drainage Area (AC)	Design Discharge (CFS)	Design Headwater (FT)	Design Velocity (FPS)	Design Stage (NAVD 88)	100-Year Discharge (CFS)	100-Year Stage (NAVD 88)
					25-Year Data				100-Year Data	
US 85 - 10171+28 CL	24" x 45' CSP	30		64	32	2.20	5.9	2275.95	53	2276.86
US 85 - 10171+37 CL		30				2.20	5.9			
US 85 - 10182+91 CL	18" x 44' CSP 36" x 77' CSP	48		171	66	3.79	9.0	2269.49	109	2271.38
US 85 - 10194+00 CL		24		2	6	1.39	9.3	2271.09	7	2271.25
US 85 - 10204+00 CL		24		2	6	1.38	9.2	2268.09	7	2268.24
US 85 - 10212+00 CL		24		2	5	1.31	8.9	2265.62	6	2265.76
US 85 - 10215+00 CL		24		1	3	0.77	7.5	2263.95	3	2264.01
US 85 - 10248+00 - Inlet #1A		24	(B)	2	6	0.70	6.8	2186.79	7	2186.99
US 85 - 10251+80 RT		48	(G)	142	84	5.01		2134.37	134	2136.52
US 85 - 10258+64 LT	24" x 102' CSP	42	(G)	86	49	3.37		2112.28	80	2114.10
US 85 - 10258+63.9 - Inlet #4A		24	(B)	2	5	0.55		2143.49	6	2143.74
US 85 - 10266+20 RT		36	(G)	46	41	3.67		2092.13	65	2093.82
US 85 - 10272+29 - Inlet #8A		24	(B)	2	7	0.90		2112.75	8	2113.05
US 85 - 10273+73 RT		42	(G)	58	45	3.50		2080.87	72	2082.05
US 85 - 10274+19 LT	60" x 78' RCP	66	(C)(D)	337	215		9.3			
US 85 - 10280+00 - Inlet #9A		24	(B)	1	4	0.30	5.1	2102.67	4	2102.77
US 85 - 10286+50 - Inlet #10A		30	(B)	1	4	0.30	5.4	2078.24	4	2078.34
US 85 - 10290+25 - Inlet #11A		30	(B)	0.4	2	0.10	6.7	2063.97	2	2063.97
US 85 - 10300+09 CL	72" x 48" x 54' RCB	42	(C)(E)	161	87	6.03	10.3	2031.35	139	2036.42
US 85 - 10312+00 CL		30		49	33	2.17	4.9	2016.48	53	2017.30
US 85 - 10312+09 CL						2.17	4.9			
US 85 - 10360+22 LT	36" x 60' RCP	42	(G)	263	99	6.60		1988.22	162	1991.54
US 85 - 10360+23 - Inlet #12A		42	(B)	6	7	0.90		1987.90	11	1989.50
US 85 - 10361+89 RT		48	(D)	263	99		9.9		162	
US 85 - 10367+73 LT	36" x 85' CSP	36	(G)	69	45	3.90		1987.40	73	1989.72
US 85 - 10369+59 RT		36	(G)	69	45		8.2		73	
US 85 - 10384+63 CL	30" x 78' CSP	42	(E)	75	48	3.61	8.6	1973.93	78	1975.53
US 85 - 10387+57 LT	30" x 50' RCP	30	(G)	3	9		5.5		11	
					15-Year Data				100-Year Data	
140th Ave NW - 24+86 CL	24" x 85' CSP	24		6	5	1.61	4.7	2268.96	11	2269.61
139th Ave NW - 27+59 CL		24		13	7	1.32	9.0	2248.76	15	2249.30
139th Ave NW - 30+25 CL		36	(C)	59	24	3.25	11.9	2252.73	50	2254.16
137th Ave NW - 14+46 CL		36	(E)	43	26	3.04	6.6	1985.69	53	1987.44
					10-Year Data				100-Year Data	
US 85 - 10249+81 LT		36	(E)(F)	63	23	2.88	6.3	2180.82	57	2183.19

(A) Hydraulic data for smooth pipes unless otherwise noted.
(B) Installation consists of a precast concrete median drain and discharge pipe.
(C) Riprap required.
(D) Storm drain outfall.
(E) Broken back pipe. Results shown for broken back analysis.
(F) Hydraulic data for corrugated pipe.
(G) Storm drain inlet.

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Culvert Hydaulic Data

Williston NW Permanent Truck Reliever Route
Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	50	2

Inlet No. 1A Median Drain Precast Concrete - Type A US 85 - 10248+00, 0.0' CL Grate Elev = 2186.09 24" Inv = 2179.74 24" Riser Length = 2.5' 24" Conc Plug	Inlet No. 4A Median Drain Precast Concrete - Type A US 85 - 10258+64 - 0.0' RT Grate Elev = 2142.94 Invert Elev = 2133.59 24" Riser Length = 5.5' 24" Conc Plug		Inlet No. 8A Median Drain Precast Concrete - Type A US 85 - 10272+29 - 0.0' RT Grate Elev = 2111.85 Invert Elev = 2105.00 24" Riser Length = 3.0' 24" Conc Plug
Manhole No. 2 Manhole - 78IN US 85 - 10251+83 - 207.6' RT Casting Type: Solid Cover Top Elev = 2137.00 Base Elev =2128.86 Invert Elev = 2129.28 Riser = 6.5' ---------- 48 IN Conduit E = 2129.28 48 IN Conduit S = 2129.28	Manhole No. 4 Manhole - 96IN US 85 - 10258+64 - 114.8' RT Casting Type: Solid Cover Top Elev = 2132.95 Base Elev = 2105.90 Invert Elev = 2106.36 Riser = 25.4' ---------- 54 IN Conduit E = 2106.36 48 IN Conduit W = 2125.83 24 IN Conduit N = 2128.00 42 IN Conduit N = 2107.36	Manhole No. 6 Manhole - 90IN US 85 - 10266+96 - 79.4' RT Casting Type: Solid Cover Top Elev = 2119.14 Base Elev = 2085.26 Invert Elev = 2085.76 Riser = 32.2' ---------- 60 IN Conduit E = 2085.76 54 IN Conduit W = 2095.40 36 IN Conduit S = 2087.76	Manhole No. 8 Manhole - 108IN US 85 - 10272+29 - 102.2' RT Casting Type: Solid Cover Top Elev = 2105.04 Base Elev = 2074.27 Invert Elev = 2074.81 Riser = 28.8' ---------- 66 IN Conduit NE = 2074.81 60 IN Conduit W = 2083.05 24 IN Conduit N = 2100.04 42 IN Conduit SE = 2076.51
Manhole No. 3 Manhole - 66IN US 85 - 10255+76 - 136.6' RT Casting Type: Solid Cover Top Elev = 2139.00 Base Elev =2126.86 Invert Elev = 2127.28 Riser = 10.5' ---------- 48 IN Conduit E = 2127.28 48 IN Conduit W = 2127.28	Manhole No. 5 Manhole - 72IN US 85 - 10262+79 - 79.0' RT Casting Type: Solid Cover Top Elev = 2127.90 Base Elev = 2097.04 Invert Elev = 2097.50 Riser = 29.2' ---------- 54 IN Conduit E = 2097.50 54 IN Conduit W = 2104.26	Manhole No. 7 Manhole - 78IN US 85 - 10270+19 - 123.4' RT Casting Type: Solid Cover Top Elev = 2102.83 Base Elev = 2083.61 Invert Elev = 2084.11 Riser = 17.6' ---------- 60 IN Conduit E = 2084.11 60 IN Conduit W = 2084.11	Inlet No. 9A Median Drain Precast Concrete - Type A US 85 - 10280+00, 0.0' CL Grate Elev = 2102.37 24" Inv = 2098.52 24" Riser Length = 0.0' 24" Conc Plug

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Inlet and Manhole Summary

Williston NW Permanent Truck Reliever Route Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	51	1

Alignment	Begin Station/ Location	Begin Offset	End Station/ Location	End Offset	Length (LF)	Notes	Pipe Conduit Storm Drain Pay Size (IN)	Allowable Material	Required Diameter (IN)	Minimum Thickness (IN)	Reinforcement Fabric Type R1 (Pay Item) (SY)	End Sections (A) Begin (EA)	End Sections (A) End (EA)	Applicable Backfill Detail
US 85	10251+80	222.0' RT	2		15		48	Reinforced Concrete Pipe - Class III	48	N/A	0	Y		D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	2		3		400		48	Reinforced Concrete Pipe - Class III	48	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	3		4		290		48	Reinforced Concrete Pipe - Class III	48	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	10258+64	196.7' LT	4		312		42	Reinforced Concrete Pipe - Class V	42	N/A	2648	Y		D-714-25
US 85	4A				5.5	(B)	24	Reinforced Concrete Pipe - Class III (Riser Length = 5.5 LF)	24	N/A	0			N/A
US 85	4A		4		118	(C)	24	Reinforced Concrete Pipe - Class III	24	N/A	629			D-714-28
US 85	4		5		420		54	Reinforced Concrete Pipe - Class IV	54	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.079				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	5		6		420		54	Reinforced Concrete Pipe - Class IV	54	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.079				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	10266+30	175.4' RT	6		117		36	Reinforced Concrete Pipe - Class V	36	N/A	0	Y		D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	6		7		329		60	Reinforced Concrete Pipe - Class V	60	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.079				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.079				
US 85	7		8		212		60	Reinforced Concrete Pipe - Class IV	60	N/A	0			D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.079				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.079				
US 85	10273+73	193.7' RT	8		172		42	Reinforced Concrete Pipe - Class V	42	N/A	0	Y		D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	8A				3.0	(B)	24	Reinforced Concrete Pipe - Class III (Riser Length = 3.0 LF)	24	N/A	0			N/A
US 85	8A		8		105	(C)	24	Reinforced Concrete Pipe - Class III	24	N/A	685			D-714-28
US 85	8		10274+19	198.2' LT	355		66	Reinforced Concrete Pipe - Class V	66	N/A	2375		Y	D-714-25
US 85	10360+22	146.4' LT	12A		57		42	Reinforced Concrete Pipe - Class III	42	N/A	253	Y		D-714-25
US 85	12A		12		244		42	Reinforced Concrete Pipe - Class III	42	N/A	1488			D-714-28
US 85	12		10361+89	114.7' RT	22		48	Reinforced Concrete Pipe - Class III	48	N/A	0		Y	D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	10367+73	81.2' LT	13		47		36	Reinforced Concrete Pipe - Class III	36	N/A	0	Y		D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	13		10369+59	123.0' RT	230		36	Reinforced Concrete Pipe - Class IV	36	N/A	1354		Y	D-714-28
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				
US 85	14		10387+57	82.9' LT	59		30	Reinforced Concrete Pipe - Class III	30	N/A	0		Y	D-714-27
								Polymeric Coated Steel (3/4" x 3/4" Rib @ 7-1/2")		0.064				
								Polymeric Coated Steel (3/4" x 1" Rib @ 11-1/2")		0.064				

(A) Not paid for separately, to be included in the price bid for Pipe Conduit.
(B) Median drain riser.
(C) T-Section - 6 LF included in pipe conduit length.

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Allowable Pipe List - Storm Drain

Williston NW Permanent Truck Reliever Route
Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	51	2

Alignment	Begin Station/ Location	Begin Offset	End Station/ Location	End Offset	Length (LF)	Notes	Pipe Conduit Pay Size (IN)	Allowable Material Centerline Culverts	Required Diameter (IN)	Minimum Thickness (IN)	Reinforcement Fabric Type R1 (Pay Item) (SY)	End Sections (A) Begin (EA)	End Sections (A) End (EA)	Applicable Backfill Detail
US 85	10171+28	93.2' LT	10171+28	96.1' RT	190		30	Reinforced Concrete Pipe Class III (Barrel Length = 186 LF)	30	N/A	391	Y	Y	D-714-25M
US 85	10171+37	93.2' LT	10171+37	96.1' RT	190		30	Reinforced Concrete Pipe Class III (Barrel Length = 186 LF)	30	N/A	427	Y	Y	D-714-25M
US 85	10182+91	105.1' LT	10182+91	111.3' RT	216		48	Reinforced Concrete Pipe Class III (Barrel Length = 212 LF)	48	N/A	1314	Y	Y	D-714-25
US 85	10194+00	12.8' LT	10194+00	86.8' LT	74		24	Reinforced Concrete Pipe Class III (Barrel Length = 72 LF)	24	N/A	330	TES	TES	D-714-26
US 85	10204+00	12.9' LT	10204+00	86.3' LT	74		24	Reinforced Concrete Pipe Class III (Barrel Length = 70 LF)	24	N/A	320	TES	Y	D-714-26
US 85	10212+00	12.9' LT	10212+00	86.4' LT	74		24	Reinforced Concrete Pipe Class III (Barrel Length = 70 LF)	24	N/A	318	TES	Y	D-714-26
US 85	10215+00	13.7' LT	10215+00	83.1' LT	70		24	Reinforced Concrete Pipe Class III (Barrel Length = 66 LF)	24	N/A	297	TES	Y	D-714-26
US 85	10248+00	0.0' CL			2.5	(B)	24	Reinforced Concrete Pipe Class III (Riser Length = 2.5 LF)	24	N/A	0			N/A
US 85	10248+00	0.0' CL	10248+00	93.5' RT	97	(C) (D)	24	Reinforced Concrete Pipe Class III (Barrel Length = 88 LF)	24	N/A	368		Y	D-714-25
US 85	10245+85	106.7' LT	10250+77	193.5' LT	214		36	Reinforced Concrete Pipe Class III (Barrel Length = 208 LF)	36	N/A	0	Y	Y	D-714-26
US 85	10297+00	61.4' RT	10297+00	62.9' LT	120	(G)	4' x 6'	Reinforced Concrete Cattle Pass (Barrel Length = 120LF)	4' x 6'	N/A	636	Y	Y	Sec20 Sht23
US 85	10280+00	0.0' CL			0	(B)	24	Reinforced Concrete Pipe Class III (Riser Length = 0 LF)	24	N/A	0			N/A
US 85	10280+00	0.0' CL	10280+00	83.5' RT	87	(C) (D)	24	Reinforced Concrete Pipe Class III (Barrel Length = 78 LF)	24	N/A	260		Y	D-714-25
US 85	10286+50	0.7' RT			6.5	(B)	24	Reinforced Concrete Pipe Class III (Riser Length = 6.5 LF)	24	N/A	0			N/A
US 85	10286+50	0.7' RT	10286+50	125.3' RT	128	(C) (D)	30	Reinforced Concrete Pipe Class III (Barrel Length = 120 LF)	30	N/A	726		Y	D-714-25
US 85	10290+25	0.7' RT			0	(B)	24	Reinforced Concrete Pipe Class III (Riser Length = 0 LF)	24	N/A	0			N/A
US 85	10290+25	0.7' RT	10290+25	101.2' RT	104	(C) (D)	30	Reinforced Concrete Pipe Class III (Barrel Length = 96 LF)	30	N/A	504		Y	D-714-26
US 85	10299+19	106.3' RT	10300+87	92.0' LT	260		42	Reinforced Concrete Pipe Class III (Barrel Length = 254 LF)	42	N/A	1969	Y	Y	D-714-25
US 85	10312+00	60.6' RT	10312+00	70.7' LT	132		30	Reinforced Concrete Pipe Class III (Barrel Length = 128 LF)	30	N/A	346	Y	Y	D-714-26M

(A) Not paid for separately - included in the price bid for "Pipe Conduit."
(B) Median drain riser.
(C) T-Section - 6 LF included in pipe conduit length.
(D) Begin station and offset indicate center of T-section.
(E) Jacked and Bored Pipe. See Section 60 sheet quantities for length of "Pipe Conduit 42IN-Jacked or Bored."
(F) Install TES on existing culvert. TES shall be paid for seperately.
(G) End section paid for separately - not included in the price bid for "Cattle Pass Concrete Intermed Section"
TES = Traversable End Section

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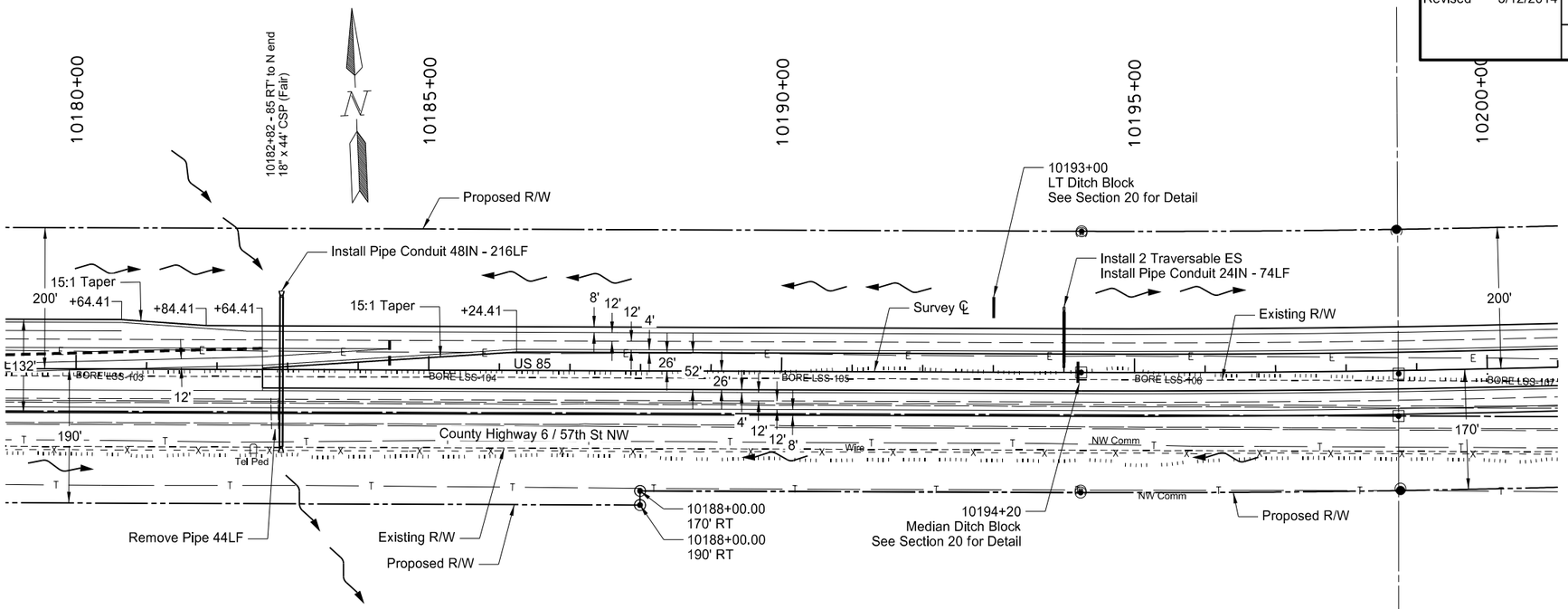
Allowable Pipe List - Culverts

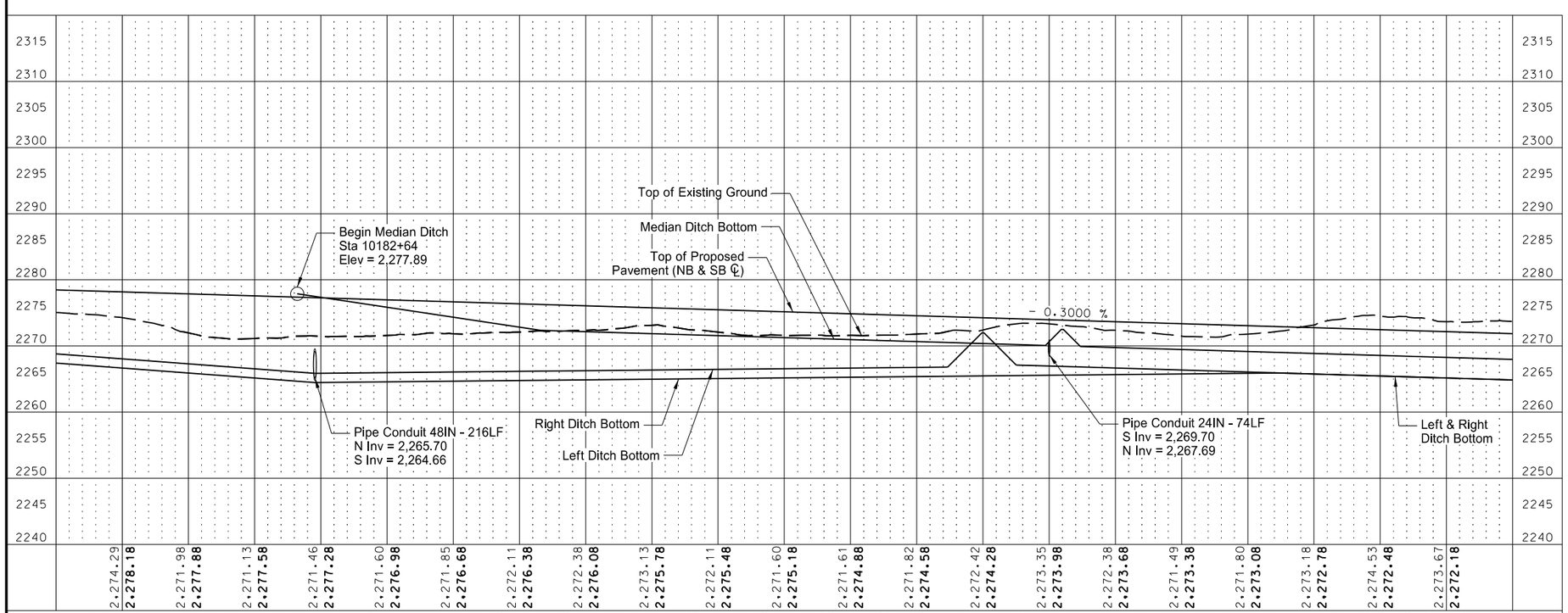
Williston NW Permanent Truck Reliever Route Phase 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	60	2



202	0174	Removal of Pipe All Types and Sizes		
		10182+82 - 85' RT to N End	44	LF
714	4105	Pipe Conduit 24IN		
		10194+00 - 12.8' LT to 10194+00 - 86.8' LT	74	LF
714	4125	Pipe Conduit 48IN		
		10182+91 - 105.1' LT to 10182+91 - 111.3' RT	216	LF

Note: Stations & Offsets from US 85 Chain: PR85



See Ditch Staking Report In Section 60

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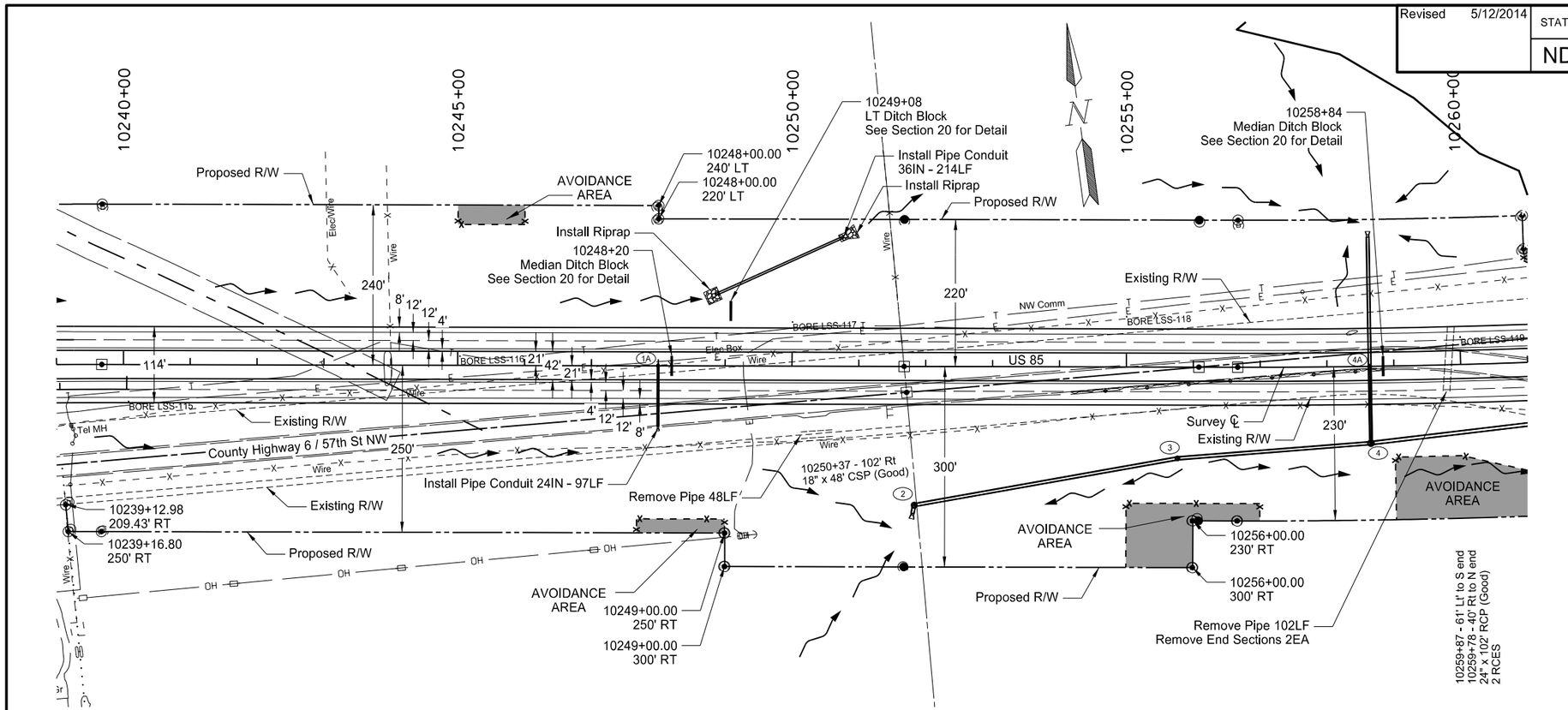
Plan & Profile

Williston NW Permanent Truck Reliever Route
Phase 3

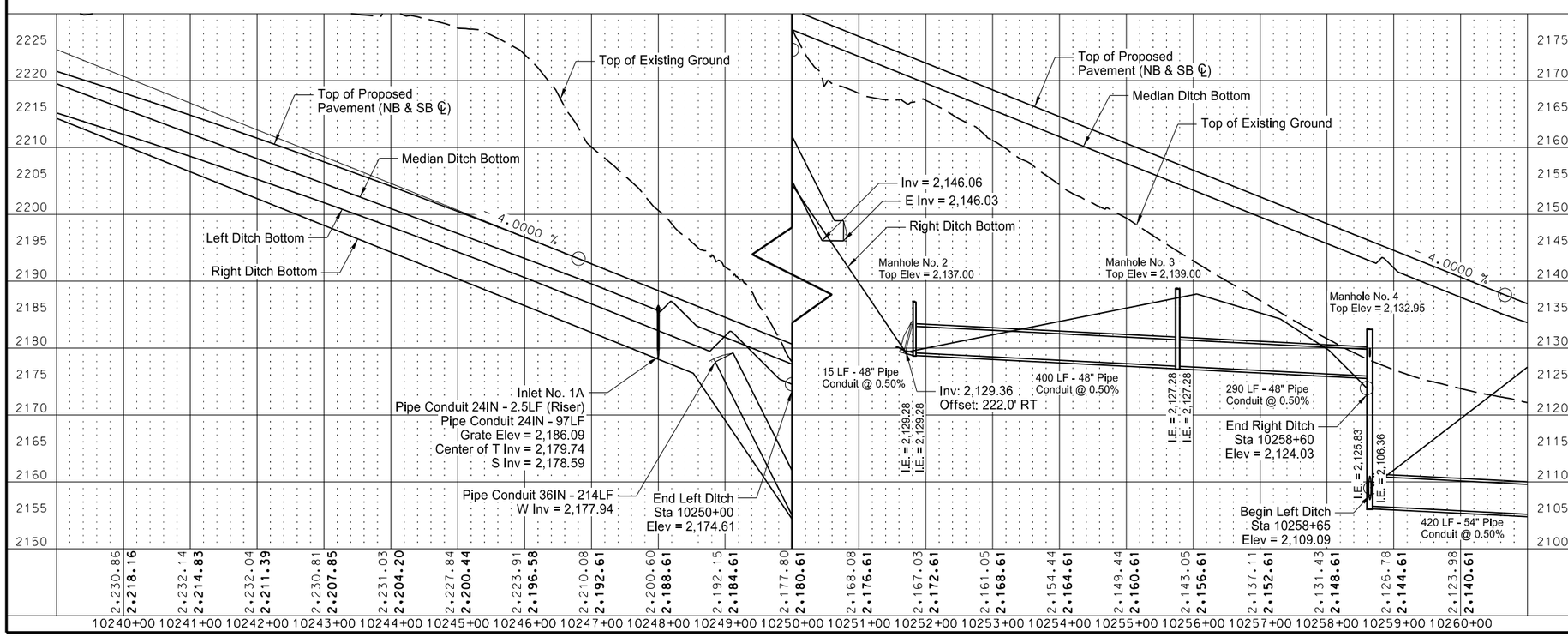
US 85
10180+00 to 10200+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	60	5



202	0169	Removal of End Section-All Types & Sizes		
		10259+87	2	EA
202	0174	Removal of Pipe All Types and Sizes		
		10250+37 - 102' RT	48	LF
		10259+87 - 61' LT to S End	102	LF
708	1020	Riprap-Loose Rock		
		10248+85 - 107' LT	32.6	CY
		10250+77 - 194' LT	24.6	CY
709	0600	Geotextile Fabric-Type RR		
		10248+85 - 107' LT	60.8	SY
		10250+77 - 194' LT	65.8	SY
714	4105	Pipe Conduit 24IN		
		Inlet 1A Riser	2.5	LF
		Inlet 1A to 10248+00 - 93.5' RT	97	LF
		Inlet 4A Riser	5.5	LF
		Inlet 4A to 4	118	LF
714	4115	Pipe Conduit 36IN		
		10248+85 - 106.7' LT to 10250+77 193.5' LT	214	LF
714	4121	Pipe Conduit 42IN-Storm Drain		
		10258+64 - 196.7' LT to 4	312	LF
714	4126	Pipe Conduit 48IN-Storm Drain		
		10251+80 - 222.0' RT to 2	15	LF
		2 to 3	400	LF
		3 to 4	290	LF
714	4131	Pipe Conduit 54IN-Storm Drain		
		4 to 5	420	LF
722	0115	Manhole 66IN		
		3	1	EA
722	0125	Manhole 78IN		
		2	1	EA
722	0140	Manhole 96IN		
		4	1	EA
722	1115	Manhole Riser 66IN		
		3	10.5	LF
722	1125	Manhole Riser 78IN		
		2	6.5	LF
722	1140	Manhole Riser 96IN		
		4	25.4	LF
722	4565	Median Drain Precast Concrete-Type A		
		Inlet 1A	1	EA
		Inlet 4A	1	EA

Note: Stations & Offsets from US 85 Chain: PR85



See Ditch Staking Report In Section 60

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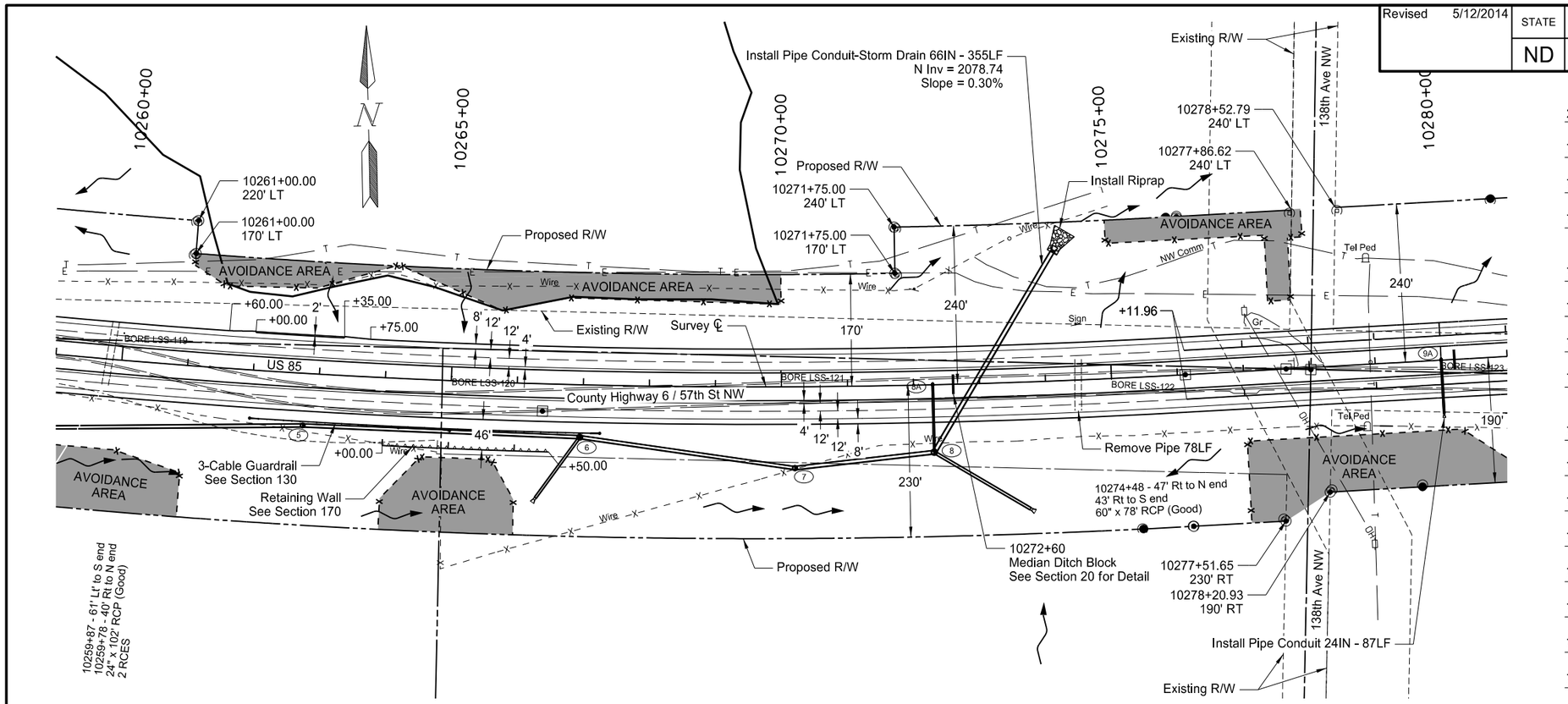
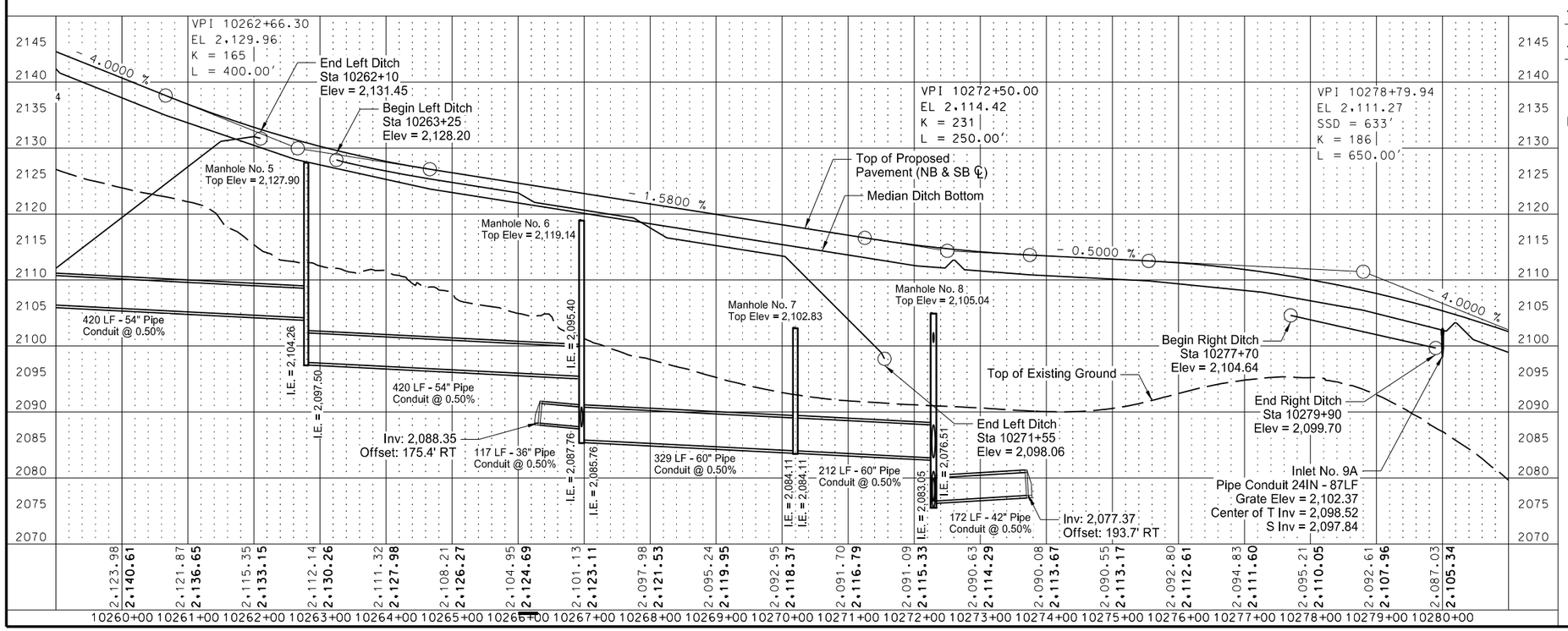
Plan & Profile

Williston NW Permanent Truck Reliever Route Phase 3

US 85
10240+00 to 10260+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	60	6





202	0174	Removal of Pipe All Types and Sizes		
		10274+48 - 47' RT to N End	78	LF
708	1020	Riprap-Loose Rock		
		10274+19 - 198.2' LT	76.2	CY
709	0600	Geotextile Fabric-Type RR		
		10274+19 - 198.2' LT	147.8	SY
714	4105	Pipe Conduit 24IN		
		Inlet 8A to 8	102	LF
		Inlet 9A to 10280+00 - 83.5' RT	87	LF
714	4117	Pipe Conduit 36IN-Storm Drain		
		10266+30 - 175.4' RT to 6	117	LF
714	4121	Pipe Conduit 42IN-Storm Drain		
		10273+73 - 193.7' RT to 8	172	LF
714	4131	Pipe Conduit 54IN-Storm Drain		
		5 to 6	420	LF
714	4136	Pipe Conduit 60IN-Storm Drain		
		6 to 7	329	LF
		7 to 8	212	LF
714	4141	Pipe Conduit 66IN-Storm Drain		
		8 to 10274+19 - 198.2' LT	355	LF
722	0120	Manhole 72IN		
		5	1	EA
722	0125	Manhole 78IN		
		7	1	EA
722	0135	Manhole 90IN		
		6	1	EA
722	0200	Manhole 108IN		
		8	1	EA
722	1120	Manhole Riser 72IN		
		5	29.2	LF
722	1125	Manhole Riser 78IN		
		7	17.6	LF
722	1135	Manhole Riser 90IN		
		6	32.2	LF
722	1200	Manhole Riser 108IN		
		8	28.8	LF
722	4565	Median Drain Precast Concrete-Type A		
		Inlet 8A	1	EA
		Inlet 9A	1	EA

Note: Stations & Offsets from US 85 Chain: PR85

See Ditch Staking Report In Section 60

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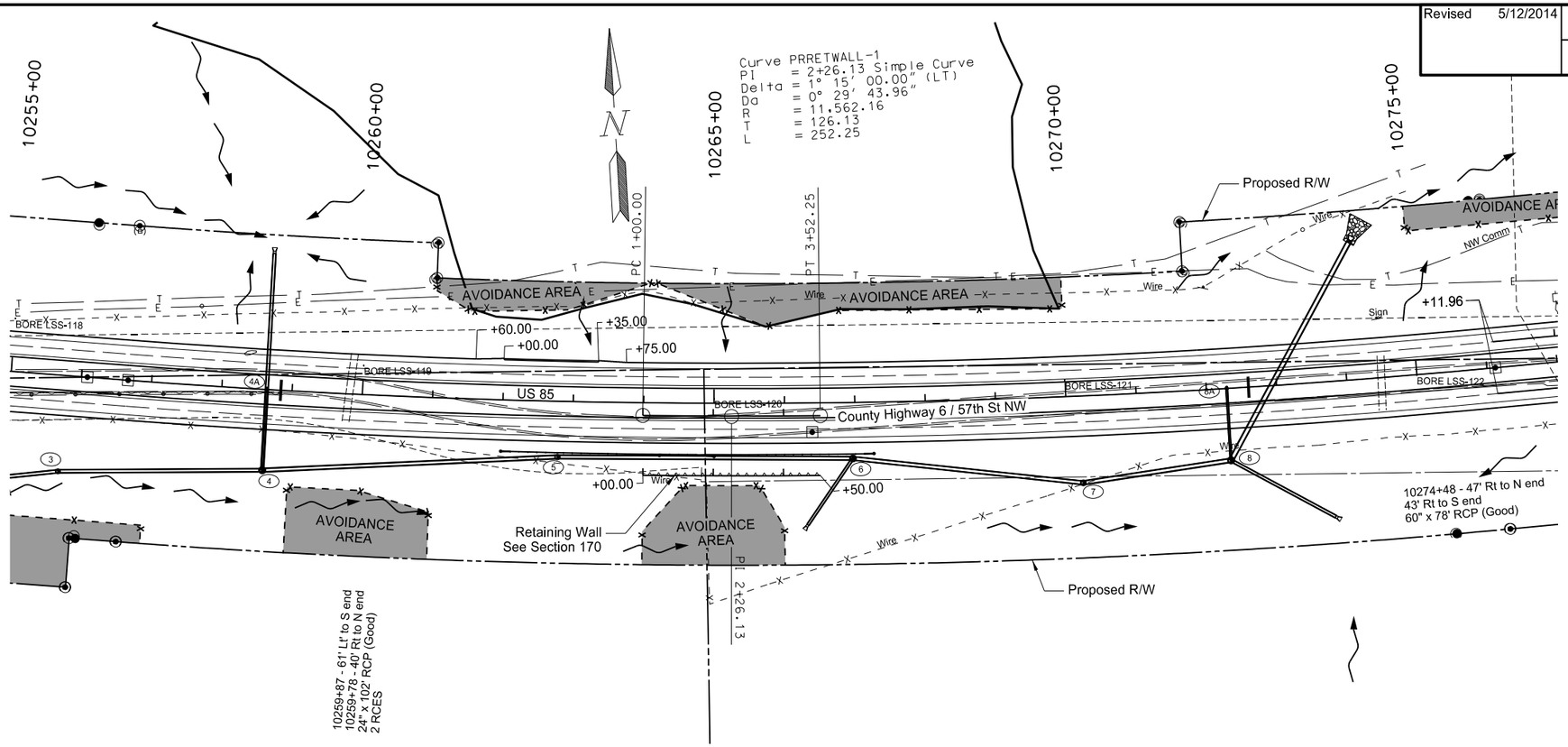
Plan & Profile

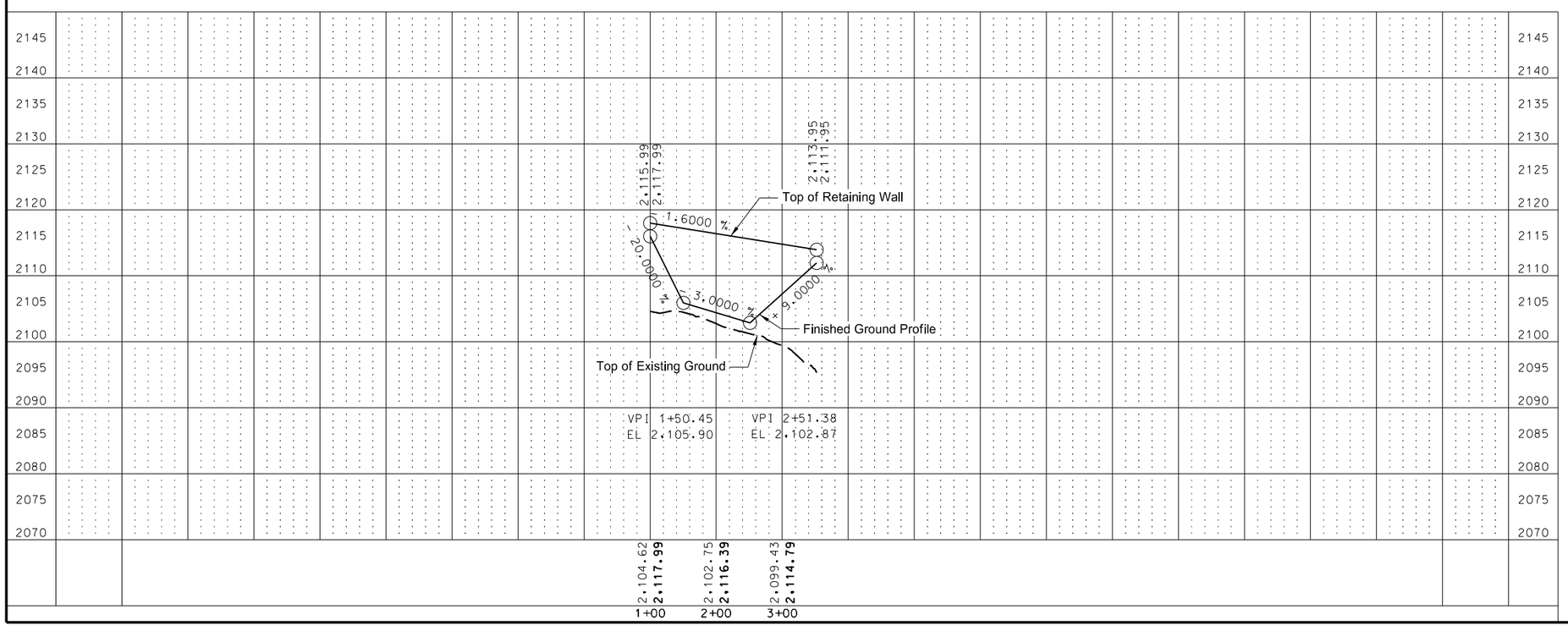
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10260+00 to 10280+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	60	29

Note: Stations & Offsets from Retaining Wall Chain: PRRETWALL





See Ditch Staking Report In Section 60

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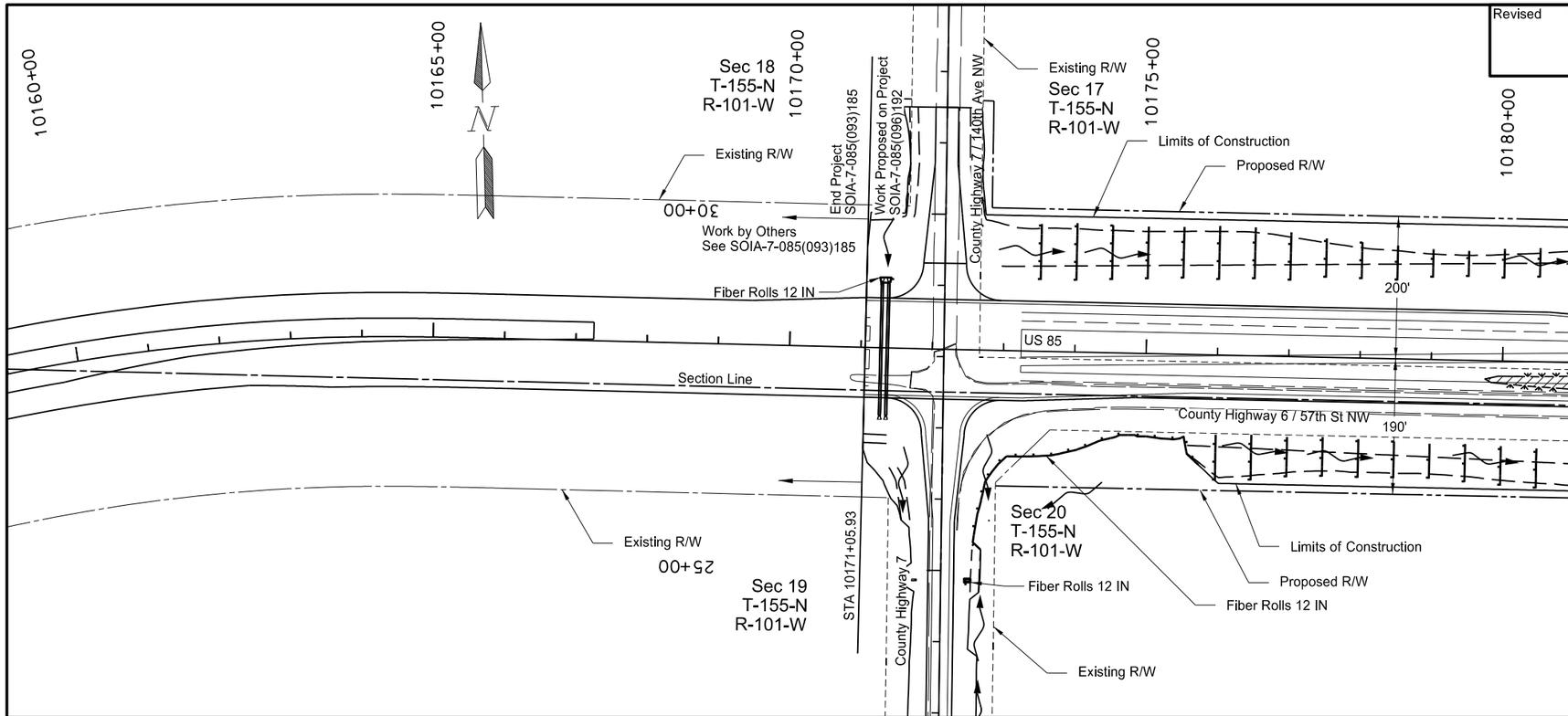
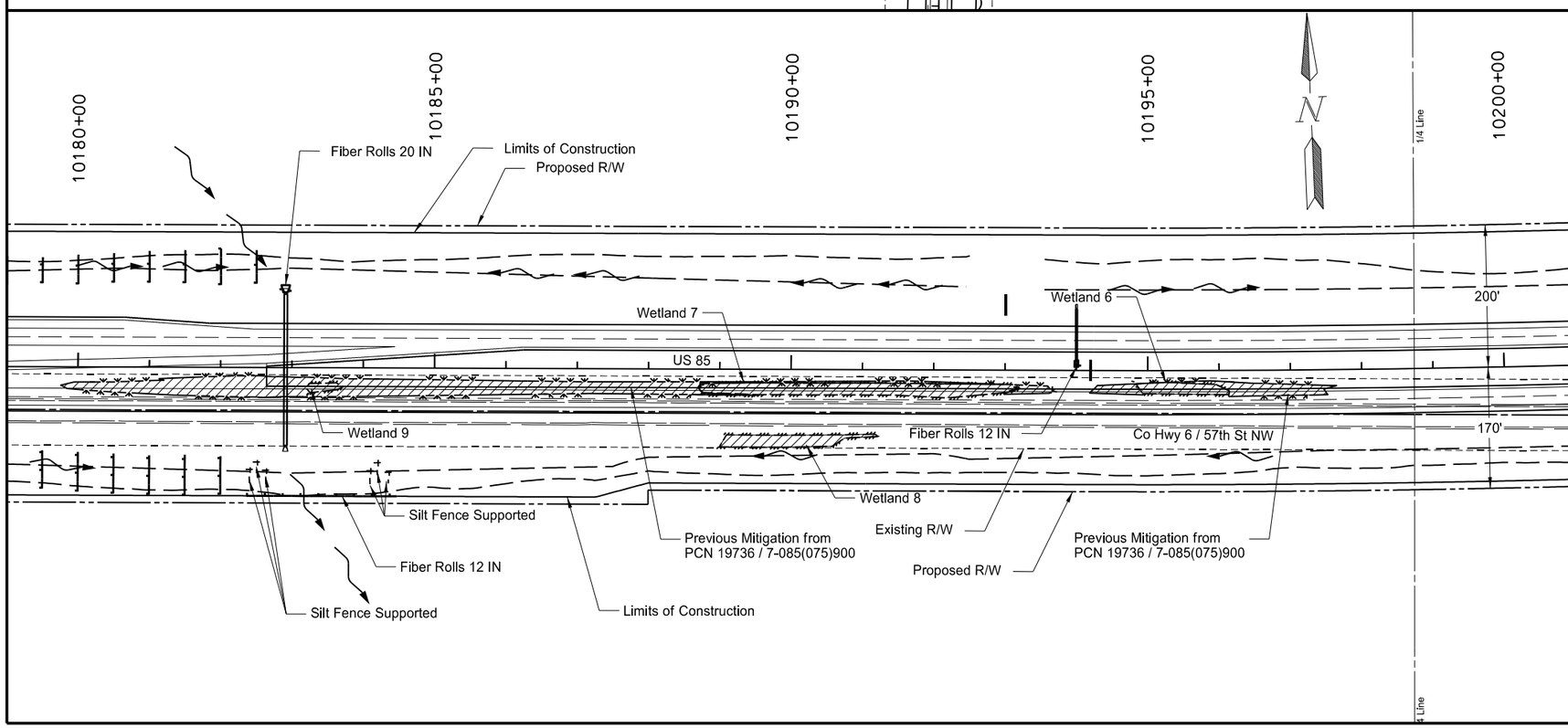
Williston NW Permanent Truck Reliever Route Phase 3

Retaining Wall

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	1





203	0121	Topsoil-Wetland		
			629	CY
708	1325	Silt Fence Supported		
		10171+02.82 to 10180+00	125	LF
708	1335	Removal Silt Fence Supported		
		10180+00 to 10200+00	125	LF
708	2260	Seeding-Type B CL IV		
		10171+02.82 to 10180+00	7.3	Acre
		10180+00 to 10200+00	13.9	Acre
708	5500	Mulching		
		10171+02.82 to 10180+00	7.3	Acre
		10180+00 to 10200+00	13.9	Acre

Legend

- Inlet Protection - Fiber Rolls 6 IN
- Ditch Block
- Existing Wetland Boundary
- Rock Ditch Check
- Silt Fence Supported
- Flotation Silt Curtains
- Fiber Rolls
- Ditch Bottom
- Permanent Wetland Impact
- Temporary Wetland Impact
- Proposed Wetland Mitigation

Note:
For Rock Ditch Check quantities, see section 20.
Use fiber roll 6 IN for median ditches and side slopes

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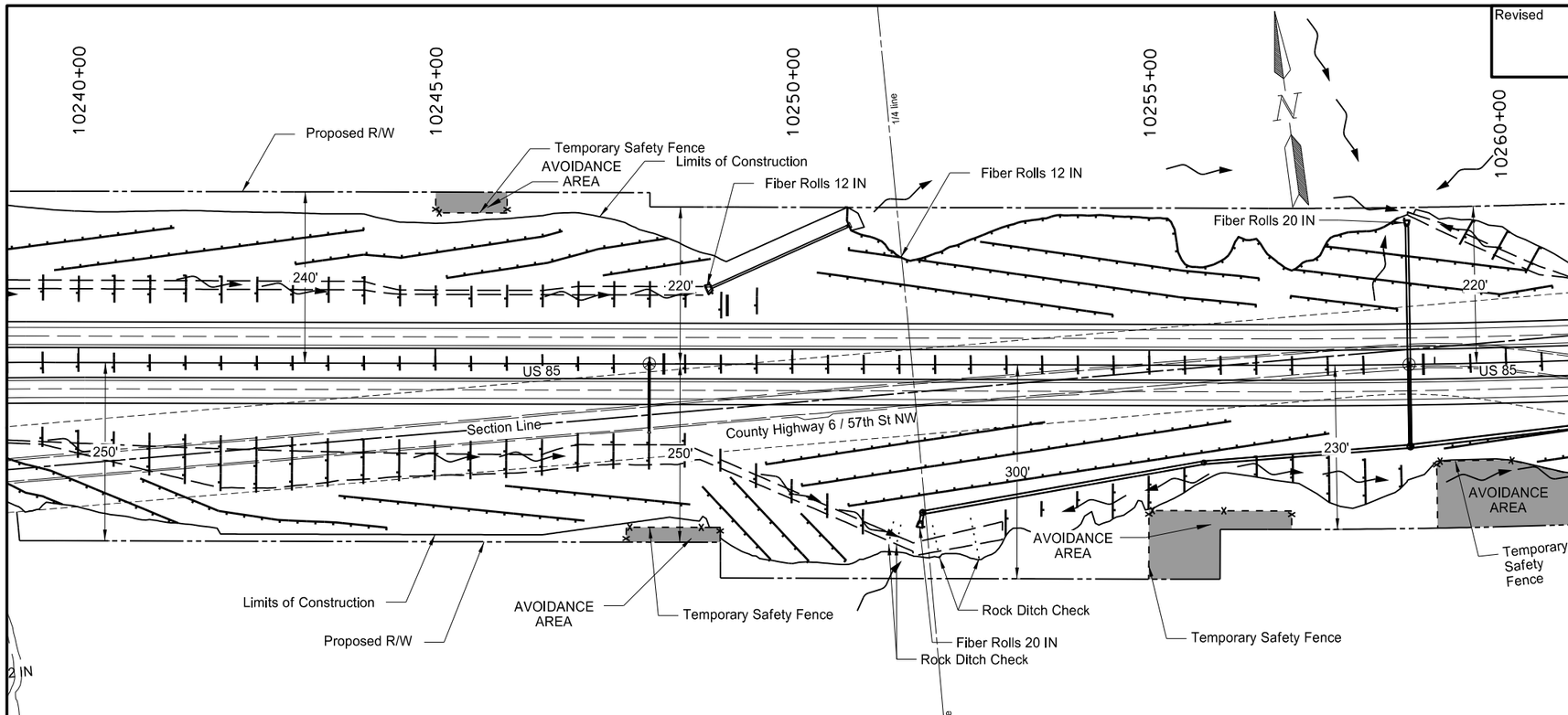
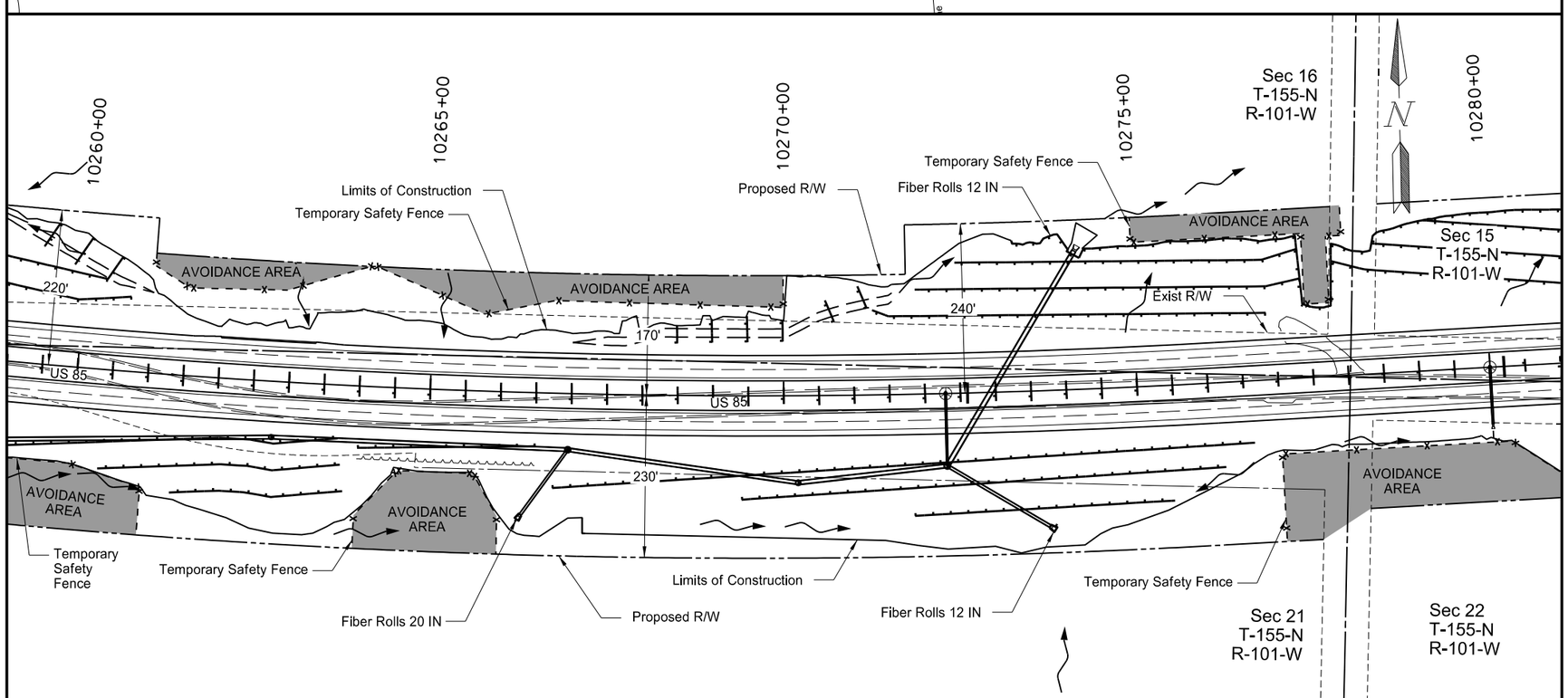
Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3
US 85
10171+05.93 to 10180+00
10180+00 to 10200+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	3





708	1530	Inlet Protection - Fiber Rolls 6 IN		
		10240+00 to 10260+00	2	EA
		10260+00 to 10280+00	1	EA
708	1532	Removal Inlet Protection - Fiber Rolls 6 IN		
		10240+00 to 10260+00	2	EA
		10260+00 to 10280+00	1	EA
708	1540	Inlet Protection - Special		
		10260+00 to 10280+00	1	EA
708	1541	Remove Inlet Protection - Special		
		10260+00 to 10280+00	1	EA
708	2260	Seeding-Type B CL IV		
		10240+00 to 10260+00	19.7	Acre
		10260+00 to 10280+00	16.6	Acre
708	5500	Mulching		
		10240+00 to 10260+00	19.7	Acre
		10260+00 to 10280+00	16.6	Acre

Legend

- Inlet Protection - Fiber Rolls 6 IN
- Ditch Block
- Existing Wetland Boundary
- Rock Ditch Check
- Silt Fence Supported
- Flotation Silt Curtains
- Fiber Rolls
- Ditch Bottom
- Permanent Wetland Impact
- Temporary Wetland Impact
- Proposed Wetland Mitigation

Note:
For Rock Ditch Check quantities, see section 20.
Use fiber roll 6 IN for median ditches and side slopes

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Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3
US 85
10240+00 to 10260+00
10260 +00 to 10280+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	9

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10244+00, LT - 10244+00, LT	40
US 85 (PR85)	10244+50, RT - 10244+50, RT	59
US 85 (PR85)	10244+50, LT - 10244+50, LT	30
US 85 (PR85)	10245+00, RT - 10245+00, RT	56
US 85 (PR85)	10245+00, LT - 10245+00, LT	29
US 85 (PR85)	10245+50, RT - 10245+50, RT	54
US 85 (PR85)	10245+50, LT - 10245+50, LT	30
US 85 (PR85)	10246+00, RT - 10246+00, RT	54
US 85 (PR85)	10246+00, LT - 10246+00, LT	32
US 85 (PR85)	10246+50, RT - 10246+50, RT	51
US 85 (PR85)	10246+50, LT - 10246+50, LT	32
US 85 (PR85)	10247+00, RT - 10247+00, RT	54
US 85 (PR85)	10247+00, LT - 10247+00, LT	37
US 85 (PR85)	10247+50, RT - 10247+50, RT	50
US 85 (PR85)	10247+50, LT - 10247+50, LT	37
US 85 (PR85)	10248+00, RT - 10248+00, RT	51
US 85 (PR85)	10248+00, LT - 10248+00, LT	37
US 85 (PR85)	10248+50, RT - 10248+50, RT	48
US 85 (PR85)	10248+50, LT - 10248+50, LT	37
US 85 (PR85)	10248+77, LT - 10248+88, LT	38
US 85 (PR85)	10249+00, RT - 10249+00, RT	32
US 85 (PR85)	10249+00, LT - 10249+00, LT	37
US 85 (PR85)	10249+50, RT - 10249+50, RT	35
US 85 (PR85)	10249+50, LT - 10249+50, LT	37
US 85 (PR85)	10249+99, RT - 10250+00, RT	34
US 85 (PR85)	10250+49, RT - 10250+49, RT	35
US 85 (PR85)	10250+76, LT - 10258+53, LT	938
US 85 (PR85)	10250+99, RT - 10250+99, RT	35
US 85 (PR85)	10252+99, RT - 10252+99, RT	37
US 85 (PR85)	10253+49, RT - 10253+49, RT	22
US 85 (PR85)	10253+99, RT - 10254+00, RT	24
US 85 (PR85)	10254+49, RT - 10254+50, RT	49
US 85 (PR85)	10254+99, RT - 10255+00, RT	47
US 85 (PR85)	10255+50, RT - 10255+50, RT	36
US 85 (PR85)	10256+51, RT - 10256+51, RT	30
US 85 (PR85)	10257+01, RT - 10257+01, RT	39
US 85 (PR85)	10257+51, RT - 10257+51, RT	65
US 85 (PR85)	10258+01, RT - 10258+01, RT	65
US 85 (PR85)	10258+51, RT - 10258+51, RT	31
US 85 (PR85)	10259+38, LT - 10259+58, LT	39
US 85 (PR85)	10259+84, LT - 10260+07, LT	46
US 85 (PR85)	10260+32, LT - 10260+52, LT	38
US 85 (PR85)	10264+00, RT - 10266+51, RT	252
US 85 (PR85)	10268+48, LT - 10268+49, LT	25
US 85 (PR85)	10268+97, LT - 10268+98, LT	32
US 85 (PR85)	10269+48, LT - 10269+49, LT	37
US 85 (PR85)	10270+59, LT - 10270+72, LT	30
US 85 (PR85)	10271+06, LT - 10271+19, LT	33
US 85 (PR85)	10273+30, LT - 10285+30, LT	1437
US 85 (PR85)	10273+69, RT - 10273+80, RT	33
US 85 (PR85)	10289+01, LT - 10289+01, LT	35
US 85 (PR85)	10289+51, LT - 10289+51, LT	35
US 85 (PR85)	10290+01, LT - 10290+01, LT	36
US 85 (PR85)	10290+51, LT - 10290+51, LT	36
TOTAL		4628

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10291+01, LT - 10291+01, LT	36
US 85 (PR85)	10291+48, RT - 10291+49, RT	36
US 85 (PR85)	10291+50, LT - 10291+51, LT	37
US 85 (PR85)	10291+99, RT - 10292+00, RT	40
US 85 (PR85)	10292+00, LT - 10292+01, LT	35
US 85 (PR85)	10292+49, RT - 10292+50, RT	38
US 85 (PR85)	10292+50, LT - 10292+51, LT	36
US 85 (PR85)	10292+99, RT - 10293+00, RT	38
US 85 (PR85)	10293+00, LT - 10293+01, LT	34
US 85 (PR85)	10293+49, RT - 10293+50, RT	39
US 85 (PR85)	10293+50, LT - 10293+51, LT	37
US 85 (PR85)	10293+99, RT - 10294+00, RT	37
US 85 (PR85)	10294+00, LT - 10294+01, LT	35
US 85 (PR85)	10294+49, RT - 10294+50, RT	40
US 85 (PR85)	10294+50, LT - 10294+51, LT	35
US 85 (PR85)	10294+99, RT - 10295+00, RT	38
US 85 (PR85)	10295+00, LT - 10295+01, LT	36
US 85 (PR85)	10295+49, RT - 10295+50, RT	41
US 85 (PR85)	10295+50, LT - 10295+51, LT	36
US 85 (PR85)	10295+99, RT - 10296+00, RT	39
US 85 (PR85)	10296+00, LT - 10296+01, LT	37
US 85 (PR85)	10296+49, RT - 10296+50, RT	37
US 85 (PR85)	10296+50, LT - 10296+51, LT	41
US 85 (PR85)	10296+67, LT - 10296+73, LT	69
US 85 (PR85)	10296+79, RT - 10296+83, RT	34
US 85 (PR85)	10296+99, RT - 10297+00, RT	40
US 85 (PR85)	10297+50, LT - 10297+51, LT	28
US 85 (PR85)	10297+99, RT - 10298+00, RT	41
US 85 (PR85)	10298+00, LT - 10298+01, LT	34
US 85 (PR85)	10298+49, RT - 10298+50, RT	39
US 85 (PR85)	10298+50, LT - 10298+51, LT	35
US 85 (PR85)	10299+00, LT - 10299+00, LT	35
US 85 (PR85)	10299+50, LT - 10299+50, LT	35
US 85 (PR85)	10301+50, RT - 10301+50, RT	39
US 85 (PR85)	10302+00, RT - 10302+00, RT	42
US 85 (PR85)	10302+50, RT - 10302+50, RT	37
US 85 (PR85)	10303+00, RT - 10303+00, RT	39
US 85 (PR85)	10303+50, RT - 10303+50, RT	40
US 85 (PR85)	10304+01, RT - 10304+01, RT	38
US 85 (PR85)	10304+51, RT - 10304+51, RT	36
US 85 (PR85)	10305+01, RT - 10305+01, RT	40
US 85 (PR85)	10305+35, LT - 10310+44, LT	564
US 85 (PR85)	10305+51, RT - 10305+51, RT	38
US 85 (PR85)	10306+01, RT - 10306+01, RT	36
US 85 (PR85)	10306+51, RT - 10306+51, RT	38
US 85 (PR85)	10307+01, RT - 10307+01, RT	39
US 85 (PR85)	10307+51, RT - 10307+51, RT	39
US 85 (PR85)	10308+01, RT - 10308+01, RT	36
US 85 (PR85)	10308+51, RT - 10308+51, RT	39
US 85 (PR85)	10309+01, RT - 10309+01, RT	38
US 85 (PR85)	10309+10, LT - 10309+10, LT	32
US 85 (PR85)	10309+37, LT - 10309+37, LT	33
US 85 (PR85)	10309+51, RT - 10309+51, RT	39
US 85 (PR85)	10309+64, LT - 10309+64, LT	33
TOTAL		2563

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10310+01, RT - 10310+01, RT	40
US 85 (PR85)	10310+51, RT - 10310+51, RT	40
US 85 (PR85)	10311+01, RT - 10311+01, RT	40
US 85 (PR85)	10311+51, RT - 10311+51, RT	41
US 85 (PR85)	10311+96, RT - 10312+12, RT	44
US 85 (PR85)	10312+00, LT - 10321+00, LT	903
US 85 (PR85)	10313+00, RT - 10313+00, RT	40
US 85 (PR85)	10313+50, RT - 10313+50, RT	40
US 85 (PR85)	10314+00, RT - 10314+00, RT	40
US 85 (PR85)	10314+50, RT - 10314+50, RT	43
US 85 (PR85)	10315+00, RT - 10315+00, RT	40
US 85 (PR85)	10315+50, RT - 10315+50, RT	40
US 85 (PR85)	10316+00, RT - 10316+00, RT	40
US 85 (PR85)	10316+50, RT - 10316+50, RT	37
US 85 (PR85)	10317+00, RT - 10317+00, RT	35
US 85 (PR85)	10317+50, RT - 10317+50, RT	35
US 85 (PR85)	10318+00, RT - 10318+00, RT	35
US 85 (PR85)	10318+50, RT - 10318+51, RT	34
US 85 (PR85)	10319+01, RT - 10319+01, RT	35
US 85 (PR85)	10319+51, RT - 10319+52, RT	36
US 85 (PR85)	10320+01, RT - 10320+02, RT	38
US 85 (PR85)	10320+52, RT - 10320+53, RT	40
US 85 (PR85)	10321+02, RT - 10321+03, RT	40
US 85 (PR85)	10321+52, RT - 10321+53, RT	38
US 85 (PR85)	10322+02, RT - 10322+03, RT	40
US 85 (PR85)	10322+52, RT - 10322+53, RT	35
US 85 (PR85)	10323+02, RT - 10323+03, RT	36
US 85 (PR85)	10323+52, RT - 10323+53, RT	37
US 85 (PR85)	10324+02, RT - 10324+03, RT	30
US 85 (PR85)	10324+02, LT - 10324+10, LT	28
US 85 (PR85)	10324+52, RT - 10324+53, RT	30
US 85 (PR85)	10324+53, LT - 10324+68, LT	33
US 85 (PR85)	10325+02, RT - 10325+03, RT	34
US 85 (PR85)	10325+07, LT - 10325+20, LT	31
US 85 (PR85)	10325+52, RT - 10325+53, RT	36
US 85 (PR85)	10326+02, RT - 10326+03, RT	36
US 85 (PR85)	10326+52, RT - 10326+53, RT	38
US 85 (PR85)	10326+83, LT - 10329+65, LT	578
US 85 (PR85)	10330+43, LT - 10338+47, LT	1831
US 85 (PR85)	10327+02, RT - 10327+03, RT	38
US 85 (PR85)	10340+00, LT - 10340+00, LT	45
US 85 (PR85)	10341+00, RT - 10341+00, RT	36
US 85 (PR85)	10341+50, RT - 10341+50, RT	37
US 85 (PR85)	10341+99, LT - 10341+99, LT	37
US 85 (PR85)	10342+00, RT - 10342+00, RT	33
US 85 (PR85)	10342+49, LT - 10342+49, LT	39
US 85 (PR85)	10342+50, RT - 10342+50, RT	34
US 85 (PR85)	10342+99, LT - 10342+99, LT	40
US 85 (PR85)	10343+00, RT - 10343+00, RT	36
US 85 (PR85)	10343+49, LT - 10343+49, LT	40
US 85 (PR85)	10343+50, RT - 10343+50, RT	35
US 85 (PR85)	10343+99, LT - 10343+99, LT	39
US 85 (PR85)	10344+00, RT - 10344+00, RT	40
US 85 (PR85)	10344+49, LT - 10344+49, LT	37
TOTAL		5213

PAGE TOTAL	Fiber Rolls 12 IN (LF)
	12190

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Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Temporary Fiber Rolls

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	10

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10344+49, RT - 10344+49, RT	38
US 85 (PR85)	10344+98, RT - 10344+98, RT	37
US 85 (PR85)	10344+99, LT - 10345+00, LT	36
US 85 (PR85)	10345+47, RT - 10345+48, RT	37
US 85 (PR85)	10345+50, LT - 10345+50, LT	39
US 85 (PR85)	10345+96, RT - 10345+97, RT	38
US 85 (PR85)	10346+00, LT - 10346+00, LT	37
US 85 (PR85)	10346+45, RT - 10346+46, RT	36
US 85 (PR85)	10346+50, LT - 10346+51, LT	39
US 85 (PR85)	10346+95, RT - 10346+96, RT	39
US 85 (PR85)	10347+01, LT - 10347+01, LT	39
US 85 (PR85)	10349+38, RT - 10349+39, RT	40
US 85 (PR85)	10349+82, LT - 10349+84, LT	34
US 85 (PR85)	10349+93, RT - 10349+93, RT	40
US 85 (PR85)	10350+31, LT - 10350+32, LT	37
US 85 (PR85)	10350+47, RT - 10350+47, RT	41
US 85 (PR85)	10350+80, LT - 10350+81, LT	33
US 85 (PR85)	10351+01, RT - 10351+03, RT	36
US 85 (PR85)	10351+28, LT - 10351+29, LT	34
US 85 (PR85)	10351+54, RT - 10351+56, RT	40
US 85 (PR85)	10351+77, LT - 10351+77, LT	32
US 85 (PR85)	10352+07, RT - 10352+09, RT	37
US 85 (PR85)	10352+62, RT - 10352+63, RT	37
US 85 (PR85)	10353+16, RT - 10353+16, RT	38
US 85 (PR85)	10353+68, RT - 10353+69, RT	41
US 85 (PR85)	10354+21, RT - 10354+23, RT	38
US 85 (PR85)	10354+75, RT - 10354+79, RT	39
US 85 (PR85)	10355+28, RT - 10355+32, RT	39
US 85 (PR85)	10355+81, RT - 10355+84, RT	40
US 85 (PR85)	10356+34, RT - 10356+36, RT	39
US 85 (PR85)	10356+86, RT - 10356+88, RT	40
US 85 (PR85)	10357+39, RT - 10357+40, RT	40
US 85 (PR85)	10357+92, RT - 10357+92, RT	38
US 85 (PR85)	10358+43, RT - 10358+44, RT	36
US 85 (PR85)	10358+95, RT - 10358+96, RT	35
US 85 (PR85)	10359+46, RT - 10359+47, RT	41
US 85 (PR85)	10359+98, RT - 10359+98, RT	41
US 85 (PR85)	10360+48, RT - 10360+48, RT	39
US 85 (PR85)	10360+99, RT - 10360+99, RT	41
US 85 (PR85)	10361+60, RT - 10362+90, RT	173
US 85 (PR85)	10363+52, RT - 10363+53, RT	37
US 85 (PR85)	10364+01, RT - 10364+02, RT	37
US 85 (PR85)	10364+50, RT - 10364+51, RT	37
US 85 (PR85)	10364+99, RT - 10365+03, RT	37
US 85 (PR85)	10365+48, RT - 10365+52, RT	37
US 85 (PR85)	10365+97, RT - 10366+01, RT	35
US 85 (PR85)	10366+46, RT - 10366+51, RT	35
US 85 (PR85)	10366+94, RT - 10366+99, RT	35
US 85 (PR85)	10367+43, RT - 10367+48, RT	34
US 85 (PR85)	10367+92, RT - 10367+96, RT	34
US 85 (PR85)	10368+45, RT - 10371+70, RT	394
US 85 (PR85)	10371+93, RT - 10371+97, RT	38
US 85 (PR85)	10372+44, RT - 10372+47, RT	38
US 85 (PR85)	10372+95, RT - 10372+98, RT	40
TOTAL		2522

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10373+00, LT - 10373+00, LT	39
US 85 (PR85)	10373+46, RT - 10373+49, RT	35
US 85 (PR85)	10373+50, LT - 10373+50, LT	41
US 85 (PR85)	10373+97, RT - 10373+99, RT	37
US 85 (PR85)	10374+00, LT - 10374+00, LT	40
US 85 (PR85)	10374+48, RT - 10374+50, RT	39
US 85 (PR85)	10374+50, LT - 10374+50, LT	37
US 85 (PR85)	10374+99, RT - 10375+01, RT	36
US 85 (PR85)	10375+00, LT - 10375+00, LT	38
US 85 (PR85)	10375+50, RT - 10375+51, RT	36
US 85 (PR85)	10375+50, LT - 10375+50, LT	40
US 85 (PR85)	10376+00, LT - 10376+00, LT	39
US 85 (PR85)	10376+01, RT - 10376+02, RT	37
US 85 (PR85)	10376+50, LT - 10376+50, LT	37
US 85 (PR85)	10376+52, RT - 10376+52, RT	36
US 85 (PR85)	10377+00, LT - 10377+00, LT	37
US 85 (PR85)	10377+02, RT - 10377+03, RT	39
US 85 (PR85)	10377+50, LT - 10377+50, LT	39
US 85 (PR85)	10377+53, RT - 10377+54, RT	40
US 85 (PR85)	10378+00, LT - 10378+00, LT	34
US 85 (PR85)	10378+04, RT - 10378+04, RT	37
US 85 (PR85)	10378+49, LT - 10378+50, LT	33
US 85 (PR85)	10378+55, RT - 10381+40, RT	327
US 85 (PR85)	10378+99, LT - 10378+99, LT	30
US 85 (PR85)	10381+55, RT - 10381+55, RT	31
US 85 (PR85)	10382+05, RT - 10382+05, RT	32
US 85 (PR85)	10382+55, RT - 10382+55, RT	32
US 85 (PR85)	10383+05, RT - 10385+10, RT	231
US 85 (PR85)	10383+24, LT - 10383+32, LT	25
US 85 (PR85)	10383+89, LT - 10385+18, LT	135
US 85 (PR85)	10387+18, LT - 10389+52, LT	239
US 85 (PR85)	10395+73, LT - 10397+15, LT	142
US 85 (PR85)	10397+82, LT - 10398+65, LT	84
140th Ave (PR140TH AVE)	24+84, RT - 24+89, RT	29
140th Ave (PR140TH AVE)	25+30, RT - 25+62, RT	149
139th Ave (139TH_AVE)	24+40, LT - 24+42, LT	16
139th Ave (139TH_AVE)	24+57, RT - 24+59, RT	20
139th Ave (139TH_AVE)	24+90, LT - 24+92, LT	15
139th Ave (139TH_AVE)	25+07, RT - 25+09, RT	18
139th Ave (139TH_AVE)	25+40, LT - 25+41, LT	14
139th Ave (139TH_AVE)	25+56, RT - 25+58, RT	15
139th Ave (139TH_AVE)	25+90, LT - 25+91, LT	17
139th Ave (139TH_AVE)	26+06, RT - 26+08, RT	16
139th Ave (139TH_AVE)	26+40, LT - 26+41, LT	15
139th Ave (139TH_AVE)	26+56, RT - 26+58, RT	15
139th Ave (139TH_AVE)	26+89, LT - 26+91, LT	17
139th Ave (139TH_AVE)	27+06, RT - 27+15, RT	12
139th Ave (139TH_AVE)	27+29, LT - 27+36, LT	12
139th Ave (139TH_AVE)	27+40, RT - 27+48, RT	9
139th Ave (139TH_AVE)	27+51, LT - 27+62, LT	32
139th Ave (139TH_AVE)	30+15, LT - 30+26, LT	37
139th Ave (139TH_AVE)	30+34, LT - 30+44, LT	14
139th Ave (139TH_AVE)	30+37, RT - 30+44, RT	10
139th Ave (139TH_AVE)	30+79, RT - 30+82, RT	15
TOTAL		2633

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
139th Ave (139TH_AVE)	30+83, LT - 30+85, LT	15
139th Ave (139TH_AVE)	31+28, RT - 31+31, RT	14
139th Ave (139TH_AVE)	31+32, LT - 31+35, LT	15
139th Ave (139TH_AVE)	31+77, RT - 31+80, RT	12
139th Ave (139TH_AVE)	31+82, LT - 31+84, LT	15
139th Ave (139TH_AVE_DW)	1+47, LT - 1+50, LT	14
139th Ave (139TH_AVE_DW)	2+03, LT - 2+03, LT	19
139th Ave (139TH_AVE_DW)	2+57, LT - 2+57, LT	15
139th Ave (139TH_AVE_DW)	3+11, LT - 3+11, LT	13
139th Ave (139TH_AVE_DW)	3+50, RT - 3+50, RT	24
139th Ave (139TH_AVE_DW)	3+66, LT - 3+66, LT	16
139th Ave (139TH_AVE_DW)	4+00, RT - 4+00, RT	25
139th Ave (139TH_AVE_DW)	4+18, LT - 4+18, LT	16
139th Ave (139TH_AVE_DW)	4+48, RT - 4+49, RT	24
139th Ave (139TH_AVE_DW)	4+65, LT - 4+65, LT	14
139th Ave (139TH_AVE_DW)	4+98, RT - 4+99, RT	26
139th Ave (139TH_AVE_DW)	5+12, LT - 5+12, LT	16
139th Ave (139TH_AVE_DW)	5+48, RT - 5+49, RT	25
139th Ave (139TH_AVE_DW)	5+57, LT - 5+58, LT	14
139th Ave (139TH_AVE_DW)	5+98, RT - 5+99, RT	24
139th Ave (139TH_AVE_DW)	6+05, LT - 6+05, LT	16
139th Ave (139TH_AVE_DW)	6+51, RT - 6+52, RT	23
139th Ave (139TH_AVE_DW)	6+52, LT - 6+52, LT	17
139th Ave (139TH_AVE_DW)	7+01, RT - 7+02, RT	24
139th Ave (139TH_AVE_DW)	7+02, LT - 7+02, LT	14
139th Ave (139TH_AVE_DW)	7+51, RT - 7+52, RT	24
139th Ave (139TH_AVE_DW)	7+52, LT - 7+52, LT	16
139th Ave (139TH_AVE_DW)	8+01, RT - 8+02, RT	23
139th Ave (139TH_AVE_DW)	8+02, LT - 8+02, LT	14
139th Ave (139TH_AVE_DW)	8+51, RT - 8+52, RT	25
139th Ave (139TH_AVE_DW)	8+52, LT - 8+52, LT	16
139th Ave (139TH_AVE_DW)	9+02, LT - 9+02, LT	16
139th Ave (139TH_AVE_DW)	9+22, RT - 10+50, RT	136
139th Ave (139TH_AVE_DW)	9+52, LT - 9+52, LT	14
139th Ave (139TH_AVE_DW)	10+02, LT - 10+02, LT	14
139th Ave (139TH_AVE_DW)	10+52, LT - 10+52, LT	15
139th Ave (139TH_AVE_DW)	12+38, RT - 13+66, RT	139
139th Ave (PR139TH_AVE_DW_2)	1+05, RT - 2+55, LT	136
139th Ave (PR139TH_AVE_DW_2)	1+70, RT - 2+55, RT	93
137th AVE NW (137TH_AVE_W_T)	6+48, LT - 6+49, LT	21
137th AVE NW (137TH_AVE_W_T)	6+96, LT - 6+98, LT	23
137th AVE NW (137TH_AVE_W_T)	7+44, LT - 7+47, LT	23
137th AVE NW (137TH_AVE_W_T)	7+93, LT - 7+97, LT	24
137th AVE NW (137TH_AVE_W_T)	8+45, LT - 8+49, LT	25
137th AVE NW (137TH_AVE_W_T)	8+97, LT - 9+01, LT	25
137th AVE NW (137TH_AVE_W_T)	9+32, RT - 9+33, RT	23
137th AVE NW (137TH_AVE_W_T)	9+50, LT - 9+52, LT	24
137th AVE NW (137TH_AVE_W_T)	9+82, RT - 9+83, RT	25
137th AVE NW (137TH_AVE_W_T)	10+03, LT - 10+04, LT	24
137th AVE NW (137TH_AVE_W_T)	10+32, RT - 10+33, RT	23
137th AVE NW (137TH_AVE_W_T)	10+56, LT - 10+57, LT	25
137th AVE NW (137TH_AVE_W_T)	10+83, RT - 10+83, RT	25
137th AVE NW (137TH_AVE_W_T)	11+09, LT - 11+11, LT	24
137th AVE NW (137TH_AVE_W_T)	11+33, RT - 11+33, RT	25
TOTAL		1490

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PAGE TOTAL	Fiber Rolls 12 IN (LF)

Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Temporary Fiber Rolls

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	11

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
137th AVE NW (137TH_AVE_W_T)	11+62, LT - 11+66, LT	26
137th AVE NW (137TH_AVE_W_T)	11+83, RT - 11+83, RT	26
137th AVE NW (137TH_AVE_W_T)	12+15, LT - 12+20, LT	24
137th AVE NW (137TH_AVE_W_T)	12+33, RT - 12+33, RT	23
137th AVE NW (137TH_AVE_W_T)	12+67, LT - 12+72, LT	23
137th AVE NW (137TH_AVE_W_T)	12+71, RT - 12+83, RT	27
137th AVE NW (137TH_AVE_W_T)	13+23, RT - 13+30, RT	24
137th AVE NW (137TH_AVE_W_T)	13+23, LT - 13+23, LT	24
137th AVE NW (137TH_AVE_W_T)	13+73, LT - 13+73, LT	23
137th AVE NW (137TH_AVE_W_T)	13+72, RT - 13+84, RT	24
137th AVE NW (137TH_AVE_W_T)	14+19, LT - 14+23, LT	23
137th AVE NW (137TH_AVE_W_T)	14+50, LT - 14+61, LT	21
137th AVE NW (137TH_AVE_W_T)	14+70, LT - 14+78, LT	30
137th Ave (137TH_AVE)	4+81, RT - 10+17 RT	549
57th St NW (PROLD6)	4+00, LT - 4+00, LT	24
57th St NW (PROLD6)	4+50, LT - 4+50, LT	24
57th St NW (PROLD6)	5+00, LT - 5+00, LT	24
57th St NW (PROLD6)	5+50, LT - 5+50, LT	24
57th St NW (PROLD6)	5+59, RT - 5+60, RT	14
57th St NW (PROLD6)	6+00, LT - 6+00, LT	24
57th St NW (PROLD6)	6+05, RT - 6+05, RT	14
57th St NW (PROLD6)	6+49, RT - 6+50, RT	16
57th St NW (PROLD6)	6+52, LT - 6+53, LT	25
57th St NW (PROLD6)	6+98, RT - 6+98, RT	16
57th St NW (PROLD6)	7+00, LT - 7+00, LT	23
57th St NW (PROLD6)	7+48, RT - 7+48, RT	16
57th St NW (PROLD6)	7+50, LT - 7+50, LT	25
57th St NW (PROLD6)	8+00, LT - 8+00, LT	25
57th St NW (PROLD6)	8+50, LT - 8+50, LT	25
57th St NW (PROLD6)	9+00, LT - 9+00, LT	22
57th St NW (PROLD6)	9+55, LT - 9+58, LT	25
57th St NW (PROLD6)	9+66, RT - 9+66, RT	16
57th St NW (PROLD6)	10+05, LT - 10+08, LT	26
57th St NW (PROLD6)	10+30, RT - 10+35, RT	15
57th St NW (PROLD6)	10+55, LT - 10+58, LT	27
57th St NW (PROLD6)	11+02, RT - 11+03, RT	15
57th St NW (PROLD6)	11+05, LT - 11+08, LT	26
57th St NW (PROLD6)	11+46, LT - 11+47, LT	24
57th St NW (PROLD6)	11+66, RT - 11+66, RT	15
57th St NW (PROLD6)	11+91, LT - 11+94, LT	25
57th St NW (PROLD6)	12+17, RT - 12+18, RT	14
57th St NW (PROLD6)	12+41, LT - 12+44, LT	24
57th St NW (PROLD6)	12+69, RT - 12+69, RT	15
57th St NW (PROLD6)	12+92, LT - 12+95, LT	25
57th St NW (PROLD6)	13+20, RT - 13+20, RT	15
57th St NW (PROLD6)	13+30, LT - 13+32, LT	25
57th St NW (PROLD6)	13+62, RT - 13+63, RT	14
57th St NW (PROLD6)	13+77, LT - 13+80, LT	22
57th St NW (PROLD6)	14+05, RT - 14+09, RT	15
57th St NW (PROLD6)	14+47, RT - 14+48, RT	15
57th St NW (PROLD6)	14+49, LT - 14+50, LT	25
57th St NW (PROLD6)	14+95, RT - 14+95, RT	15
57th St NW (PROLD6)	15+45, RT - 15+45, RT	15
57th St NW (PROLD6)	15+95, RT - 15+95, RT	12
TOTAL		1677

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
57th St NW (PROLD6_DW)	2+77, LT - 2+80, LT	32
57th St NW (PROLD6_DW)	3+83, RT - 3+96, RT	36
57th St NW (PROLD6_DW)	7+39, LT - 7+42, LT	23
Man Camp (PRMANCAMP)	4+36, LT - 5+35, LT	101
Man Camp (PRMANCAMP)	4+36, RT - 5+30, RT	116
Man Camp (PRMANCAMP)	6+41, Rt - 7+84. RT	150
Man Camp (PRMANCAMP_DW)	1+61, RT - 1+97 RT	50
Man Camp (PRMANCAMP_DW)	1+69, LT - 1+73, LT	23
Private Drive (PR85_DW_10213)	1+51, LT - 1+55, LT	25
Private Drive (PR85_DW_10220)	2+98, LT - 3+02, LT	25
TOTAL		581

Alignment (Chain Name)	Station to Station	Fiber Rolls 20 IN (LF)
US 85 (PR85)	10182+87, LT - 10182+95, LT	40
US 85 (PR85)	10251+75, RT - 10251+83, RT	31
US 85 (PR85)	10299+10, RT - 10299+23 RT	37
US 85 (PR85)	10258+60, LT - 10258+68, LT	27
US 85 (PR85)	10266+24, RT - 10266+30, RT	29
US 85 (PR85)	10360+18, LT - 10360+24, LT	26
US 85 (PR85)	10384+60, LT - 10384+65, LT	32
Private Drive (PR85_DW_10287)	3+43, LT - 3+47, LT	30
Private Drive (PR85_DW_10287)	3+55, LT - 3+60, LT	33
Private Drive (PR85_DW_10287)	3+67, LT - 3+72, LT	34
TOTAL		319

Alignment (Chain Name)	Station to Station	Fiber Rolls 6 IN (LF)
US 85 (PR85)	10226+55, RT - 10232+07, RT	544
US 85 (PR85)	10229+33, LT - 10234+70, LT	548
US 85 (PR85)	10230+08, RT - 10235+69, RT	552
US 85 (PR85)	10233+85, LT - 10238+53, LT	478
US 85 (PR85)	10235+70, RT - 10239+78, RT	415
US 85 (PR85)	10237+00, LT - 10241+34, LT	442
US 85 (PR85)	10238+00, LT - 10238+00, RT	31
US 85 (PR85)	10238+50, LT - 10238+50, RT	33
US 85 (PR85)	10238+79, RT - 10241+40, RT	278
US 85 (PR85)	10239+00, LT - 10239+00, RT	30
US 85 (PR85)	10239+50, LT - 10239+50, RT	31
US 85 (PR85)	10239+65, LT - 10244+00, LT	438
US 85 (PR85)	10240+00, LT - 10240+00, RT	26
US 85 (PR85)	10240+50, LT - 10240+50, RT	28
US 85 (PR85)	10240+87, RT - 10244+33, RT	356
US 85 (PR85)	10241+00, LT - 10241+00, RT	24
US 85 (PR85)	10241+50, LT - 10241+50, RT	21
US 85 (PR85)	10242+00, LT - 10242+00, RT	21
US 85 (PR85)	10242+50, LT - 10242+50, RT	21
US 85 (PR85)	10243+00, LT - 10243+00, RT	21
US 85 (PR85)	10243+03, LT - 10246+78, LT	379
US 85 (PR85)	10243+50, LT - 10243+50, RT	22
US 85 (PR85)	10243+65, RT - 10247+09, RT	346
US 85 (PR85)	10244+00, LT - 10244+00, RT	21
US 85 (PR85)	10244+50, LT - 10244+50, RT	21
US 85 (PR85)	10245+00, LT - 10245+00, RT	21
US 85 (PR85)	10245+15, LT - 10248+25, LT	316
US 85 (PR85)	10245+50, LT - 10245+50, RT	22
TOTAL		5482

Alignment (Chain Name)	Station to Station	Fiber Rolls 6 IN (LF)
US 85 (PR85)	10245+98, RT - 10248+58, RT	261
US 85 (PR85)	10246+00, LT - 10246+00, RT	21
US 85 (PR85)	10246+50, LT - 10246+50, RT	27
US 85 (PR85)	10247+00, LT - 10247+00, RT	21
US 85 (PR85)	10247+34, LT - 10248+85, LT	153
US 85 (PR85)	10247+50, LT - 10247+50, RT	27
US 85 (PR85)	10248+50, LT - 10248+50, RT	27
US 85 (PR85)	10248+74, RT - 10249+71, RT	141
US 85 (PR85)	10249+00, LT - 10249+00, RT	27
US 85 (PR85)	10249+13, RT - 10250+24, RT	161
US 85 (PR85)	10249+50, LT - 10249+50, RT	27
US 85 (PR85)	10249+63, RT - 10253+54, RT	396
US 85 (PR85)	10250+00, LT - 10250+00, RT	26
US 85 (PR85)	10250+12, RT - 10250+76, RT	92
US 85 (PR85)	10250+13, RT - 10256+15, RT	609
US 85 (PR85)	10250+34, LT - 10254+49, LT	420
US 85 (PR85)	10250+50, LT - 10250+50, RT	27
US 85 (PR85)	10250+78, LT - 10251+52, LT	75
US 85 (PR85)	10250+79, RT - 10257+52, RT	681
US 85 (PR85)	10251+00, LT - 10251+00, RT	27
US 85 (PR85)	10251+50, LT - 10251+50, RT	27
US 85 (PR85)	10251+73, LT - 10256+50, LT	481
US 85 (PR85)	10252+00, LT - 10252+00, RT	27
US 85 (PR85)	10252+50, LT - 10252+50, RT	27
US 85 (PR85)	10252+63, LT - 10256+54, LT	395
US 85 (PR85)	10253+00, LT - 10253+00, RT	27
US 85 (PR85)	10253+50, LT - 10253+50, RT	27
US 85 (PR85)	10254+00, LT - 10254+00, RT	27
US 85 (PR85)	10254+50, LT - 10254+50, RT	27
US 85 (PR85)	10255+00, LT - 10255+00, RT	27
US 85 (PR85)	10255+50, LT - 10255+50, RT	27
US 85 (PR85)	10256+00, LT - 10256+00, RT	27
US 85 (PR85)	10256+50, LT - 10256+50, RT	27
US 85 (PR85)	10256+97, LT - 10258+49, LT	152
US 85 (PR85)	10257+00, LT - 10257+00, RT	27
US 85 (PR85)	10257+03, LT - 10261+08, LT	365
US 85 (PR85)	10257+47, LT - 10260+35, LT	284
US 85 (PR85)	10257+50, LT - 10257+50, RT	27
US 85 (PR85)	10258+00, LT - 10258+00, RT	27
US 85 (PR85)	10260+11, RT - 10264+73, RT	469
US 85 (PR85)	10259+50, LT - 10259+50, RT	27
US 85 (PR85)	10260+00, LT - 10260+00, RT	27
US 85 (PR85)	10260+39, RT- 10264+76, RT	344
US 85 (PR85)	10260+50, LT - 10260+50, RT	27
US 85 (PR85)	10261+00, LT - 10261+00, RT	27
US 85 (PR85)	10261+41, RT - 10263+82, RT	246
US 85 (PR85)	10261+50, LT - 10261+50, RT	30
US 85 (PR85)	10262+00, LT - 10262+00, RT	30
US 85 (PR85)	10262+50, LT - 10262+50, RT	30
US 85 (PR85)	10263+00, LT - 10263+00, RT	30
US 85 (PR85)	10263+50, LT - 10263+50, RT	30
US 85 (PR85)	10264+00, LT - 10264+00, RT	30
US 85 (PR85)	10264+50, LT - 10264+50, RT	30
US 85 (PR85)	10265+00, LT - 10265+00, RT	30
TOTAL		6699

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PAGE TOTAL	Fiber Rolls 6 IN (LF)	Fiber Rolls 12 IN (LF)	Fiber Rolls 20 IN (LF)
	12181	2258	319

Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Temporary Fiber Rolls

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	12

Alignment (Chain Name)	Station to Station	Fiber Rolls 6 IN (LF)
US 85 (PR85)	10265+50, LT - 10265+50, RT	30
US 85 (PR85)	10266+00, LT - 10266+00, RT	26
US 85 (PR85)	10266+50, LT - 10266+50, RT	30
US 85 (PR85)	10266+76, RT - 10276+62, RT	997
US 85 (PR85)	10267+00, LT - 10267+00, RT	30
US 85 (PR85)	10267+50, LT - 10267+50, RT	30
US 85 (PR85)	10268+00, LT - 10268+00, RT	29
US 85 (PR85)	10268+50, LT - 10268+50, RT	25
US 85 (PR85)	10269+00, LT - 10269+00, RT	30
US 85 (PR85)	10269+41, RT - 10276+20, RT	687
US 85 (PR85)	10269+50, LT - 10269+50, RT	30
US 85 (PR85)	10270+00, lt - 10270+00 RT	24
US 85 (PR85)	10270+50, LT - 10270+50, RT	27
US 85 (PR85)	10271+00, LT - 10271+00, RT	25
US 85 (PR85)	10271+26, LT - 10276+87, LT	558
US 85 (PR85)	10271+50, LT - 10271+50, RT	25
US 85 (PR85)	10271+82, RT - 10275+45, RT	368
US 85 (PR85)	10271+88, LT - 10277+38, LT	546
US 85 (PR85)	10272+00, LT - 10272+00, RT	28
US 85 (PR85)	10272+46, LT - 10277+36, LT	486
US 85 (PR85)	10272+50, LT - 10272+50, RT	28
US 85 (PR85)	10273+00, LT - 10273+00, RT	28
US 85 (PR85)	10273+50, LT - 10273+50, RT	29
US 85 (PR85)	10274+00, LT - 10274+00, RT	26
US 85 (PR85)	10274+50, LT - 10274+50, RT	31
US 85 (PR85)	10275+00, LT - 10275+00, RT	26
US 85 (PR85)	10275+50, LT - 10275+50, RT	30
US 85 (PR85)	10276+00, LT - 10276+00, RT	27
US 85 (PR85)	10276+50, LT - 10276+50, RT	20
US 85 (PR85)	10277+00, LT - 10277+00, RT	21
US 85 (PR85)	10277+50, LT - 10277+50, RT	23
US 85 (PR85)	10277+83, LT - 10282+58, LT	481
US 85 (PR85)	10278+00, LT - 10278+00, RT	27
US 85 (PR85)	10278+43, LT - 10285+51, LT	718
US 85 (PR85)	10278+50, LT - 10278+50, RT	27
US 85 (PR85)	10279+00, LT - 10279+00, RT	29
US 85 (PR85)	10279+17, LT - 10286+24, LT	718
US 85 (PR85)	10279+50, LT - 10279+50, RT	25
US 85 (PR85)	10280+50, LT - 10280+50, RT	18
US 85 (PR85)	10281+00, LT - 10281+00, RT	337
US 85 (PR85)	10281+00, RT - 10284+28, RT	27
US 85 (PR85)	10281+00, RT - 10282+61, RT	165
US 85 (PR85)	10281+50, LT - 10281+50, RT	20
US 85 (PR85)	10281+58, RT - 10285+94, RT	446
US 85 (PR85)	10282+00, LT - 10282+00, RT	22
US 85 (PR85)	10282+50, LT - 10282+50, RT	22
US 85 (PR85)	10283+00, LT - 10283+00, RT	22
US 85 (PR85)	10283+35, RT - 10287+48, RT	421
US 85 (PR85)	10283+50, RT - 10283+50, LT	22
US 85 (PR85)	10284+00, RT - 10284+00, LT	21
US 85 (PR85)	10284+50, RT - 10284+50, LT	20
US 85 (PR85)	10285+00, RT - 10285+00, LT	21
US 85 (PR85)	10285+39, RT - 10289+11, RT	380
US 85 (PR85)	10285+50, RT - 10285+50, LT	21
TOTAL		8332

Alignment (Chain Name)	Station to Station	Fiber Rolls 6 IN (LF)
US 85 (PR85)	10286+00, RT - 10286+00, LT	17
US 85 (PR85)	10287+50, RT - 10287+50, LT	17
US 85 (PR85)	10287+76, RT - 10290+70, RT	300
US 85 (PR85)	10287+88, LT - 10289+37, LT	153
US 85 (PR85)	10288+00, RT - 10288+00, LT	16
US 85 (PR85)	10288+50, RT - 10288+50, LT	17
US 85 (PR85)	10288+53, LT - 10292+10, LT	365
US 85 (PR85)	10289+00, RT - 10289+00, LT	16
US 85 (PR85)	10289+03, LT - 10295+49, LT	658
US 85 (PR85)	10289+35, RT - 10292+27, RT	298
US 85 (PR85)	10289+50, RT - 10289+50, LT	17
US 85 (PR85)	10290+00, RT - 10290+00, LT	13
US 85 (PR85)	10300+80, RT - 10308+45, RT	769
US 85 (PR85)	10300+85, LT - 10308+01, LT	713
US 85 (PR85)	10334+65, RT - 10341+94, RT	730
US 85 (PR85)	10337+12, LT - 10338+98, LT	385
US 85 (PR85)	10337+56, LT - 10340+18, LT	417
US 85 (PR85)	10341+29, RT - 10345+35, RT	411
US 85 (PR85)	10344+25, RT - 10346+50, RT	224
US 85 (PR85)	10368+53, RT - 10371+64, RT	310
Private Drive (PR85_DW_10287)	2+45, RT - 4+30, RT	198
Private Drive (PR85_DW_10287)	2+51, LT - 3+47, LT	112
Private Drive (PR85_DW_10287)	2+78, LT - 4+27, LT	177
TOTAL		6335

PAGE TOTAL	Fiber Rolls 6 IN (LF)
	14667

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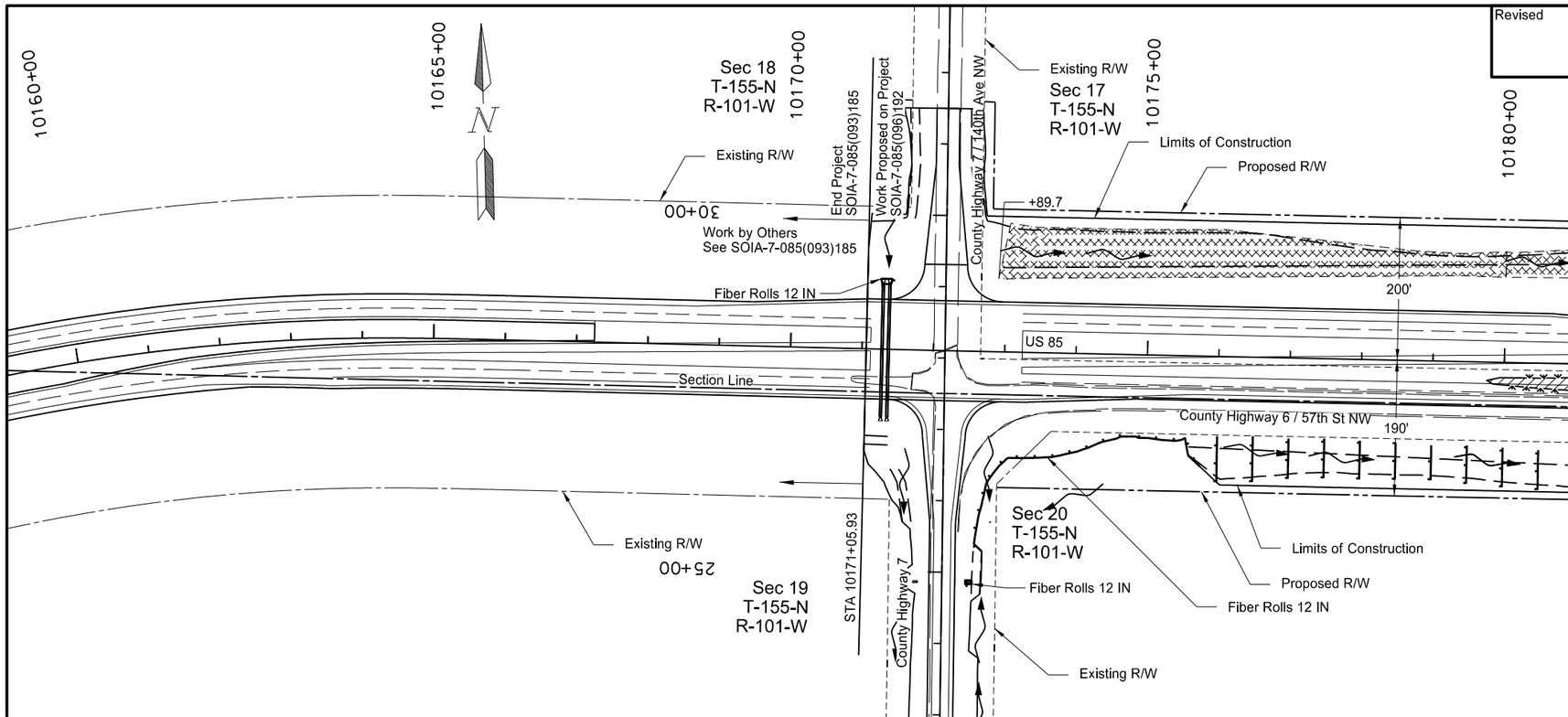
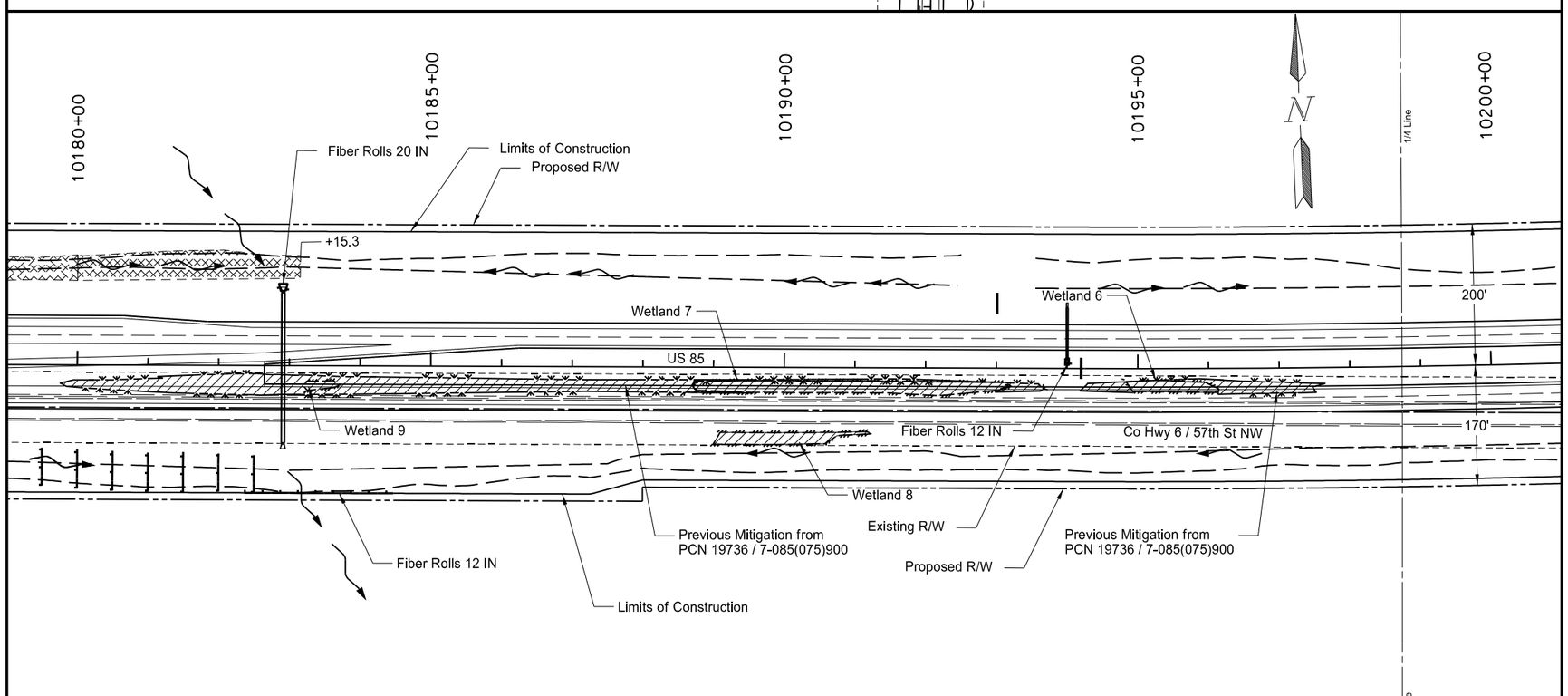
Temporary Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Temporary Fiber Rolls

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	13





708	2280	Seeding-Type B CL V		
		10160+00 to 10180+00	7.3	Acre
		10180+00 to 10200+00	13.9	Acre
708	5500	Mulching		
		10160+00 to 10180+00	6.4	Acre
		10180+00 to 10200+00	13.6	Acre
708	5651	ECB Type 2		
		10160+00 to 10180+00	4358	SY
		10180+00 to 10200+00	1309	SY

Legend

- Inlet Protection - Fiber Rolls 6 IN
- Ditch Block
- Existing Wetland Boundary
- Fiber Rolls
- Ditch Bottom
- TRM Type 1
- ECB Type 2
- ECB Type 4
- Permanent Wetland Impact
- Temporary Wetland Impact
- Proposed Wetland Mitigation

Note:
For quantities and locations of ECB used for inlet protection, see section 20-15 for erosion control measures at apron ends.
Use fiber roll 6 IN for median ditches and side slopes.

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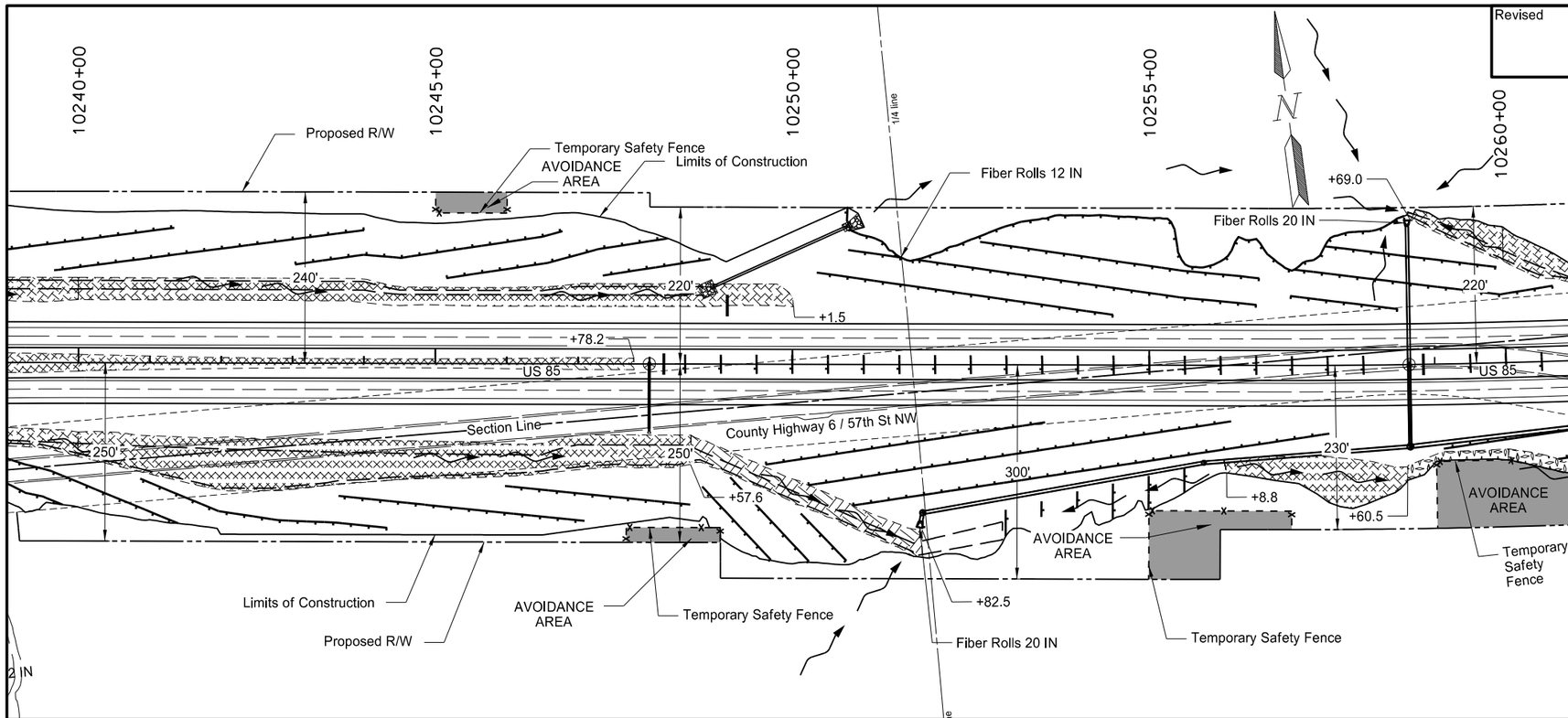
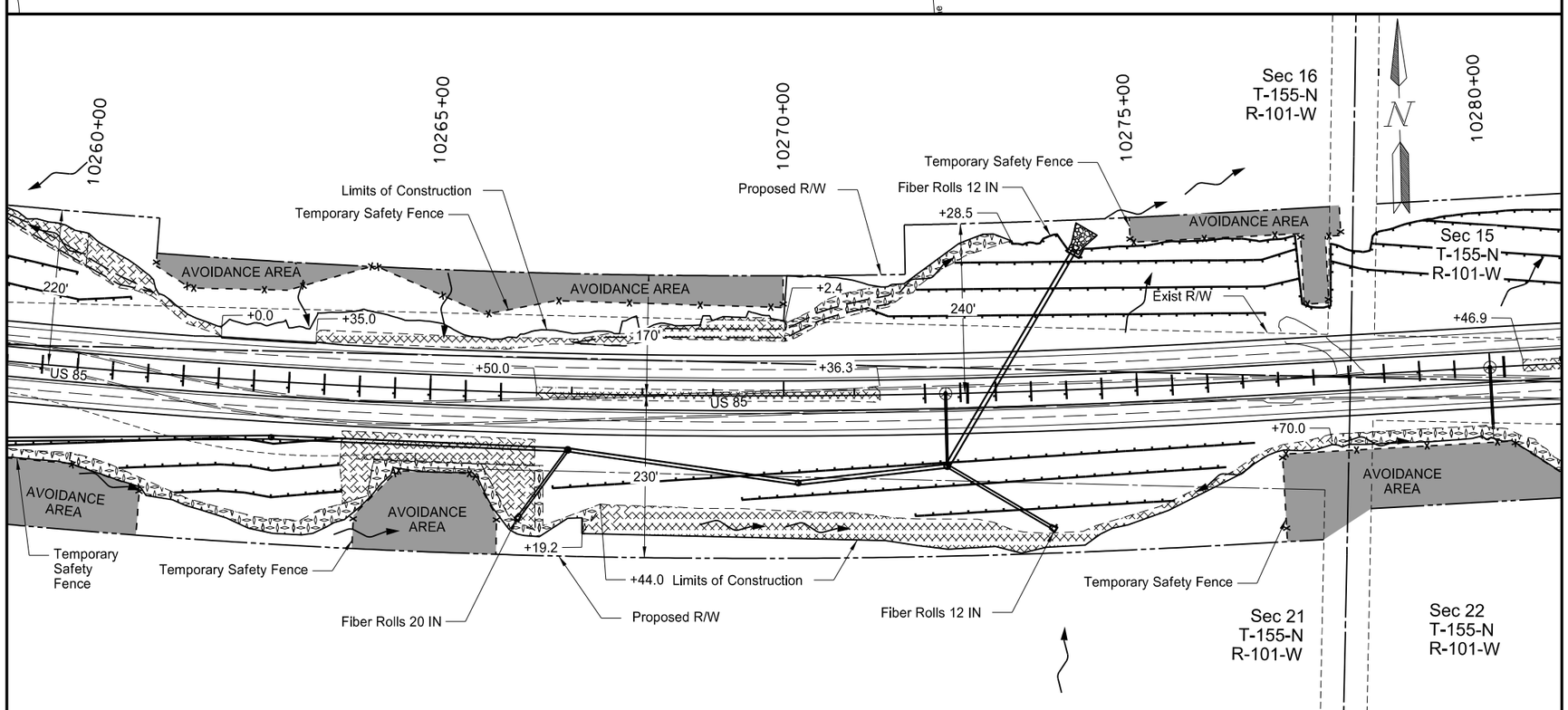
Permanent Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3
US 85
10171+05.93 to 10180+00
10180+00 to 10200+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	15





708	1530	Inlet Protection - Fiber Rolls 6 IN		
		10240+00 to 10260+00	2	EA
		10260+00 to 10280+00	1	EA
708	2280	Seeding-Type B CL V		
		10240+00 to 10260+00	19.7	Acre
		10260+00 to 10280+00	16.6	Acre
708	5500	Mulching		
		10240+00 to 10260+00	17.0	Acre
		10260+00 to 10280+00	14.6	Acre
708	5651	ECB Type 2		
		10240+00 to 10260+00	11514	SY
		10260+00 to 10280+00	7061	SY
708	5653	ECB Type 4		
		10240+00 to 10260+00	1173	SY
708	5660	TRM Type 1		
		10240+00 to 10260+00	229	SY
		10260+00 to 10280+00	2388	SY

Legend

- Inlet Protection - Fiber Rolls 6 IN
- Ditch Block
- Existing Wetland Boundary
- Fiber Rolls
- Ditch Bottom
- TRM Type 1
- ECB Type 2
- ECB Type 4
- Permanent Wetland Impact
- Temporary Wetland Impact
- Proposed Wetland Mitigation

Note:
For quantities and locations of ECB used for inlet protection, see section 20-15 for erosion control measures at apron ends.
Use fiber roll 6 IN for median ditches and side slopes.

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Permanent Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3
US 85
10240+00 to 10260+00
10260 +00 to 10280+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	21

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10171+25, LT - 10171+41, LT	43
US 85 (PR85)	10173+07, RT - 10175+76, RT	301
US 85 (PR85)	10176+00, RT - 10176+00, RT	64
US 85 (PR85)	10176+50, RT - 10176+50, RT	64
US 85 (PR85)	10177+00, RT - 10177+00, RT	57
US 85 (PR85)	10177+50, RT - 10177+50, RT	56
US 85 (PR85)	10178+00, RT - 10178+00, RT	54
US 85 (PR85)	10178+50, RT - 10178+50, RT	51
US 85 (PR85)	10179+00, RT - 10179+00, RT	49
US 85 (PR85)	10179+50, RT - 10179+50, RT	54
US 85 (PR85)	10180+00, RT - 10180+00, RT	55
US 85 (PR85)	10180+50, RT - 10180+50, RT	56
US 85 (PR85)	10181+00, RT - 10181+00, RT	55
US 85 (PR85)	10181+50, RT - 10181+50, RT	57
US 85 (PR85)	10182+00, RT - 10182+00, RT	54
US 85 (PR85)	10182+36, RT - 10184+48, RT	211
US 85 (PR85)	10182+50, RT - 10182+50, RT	53
US 85 (PR85)	10193+97, LT - 10194+03, LT	29
US 85 (PR85)	10203+97, LT - 10204+03, LT	29
US 85 (PR85)	10205+75, RT - 10205+76, RT	63
US 85 (PR85)	10206+25, RT - 10206+26, RT	64
US 85 (PR85)	10206+75, RT - 10206+76, RT	73
US 85 (PR85)	10207+25, RT - 10207+26, RT	80
US 85 (PR85)	10210+24, RT - 10210+26, RT	98
US 85 (PR85)	10211+24, RT - 10211+26, RT	97
US 85 (PR85)	10211+74, RT - 10211+76, RT	98
US 85 (PR85)	10211+97, LT - 10212+03, LT	29
US 85 (PR85)	10212+24, RT - 10212+26, RT	96
US 85 (PR85)	10212+74, RT - 10212+76, RT	91
US 85 (PR85)	10213+25, RT - 10213+26, RT	64
US 85 (PR85)	10213+74, RT - 10213+76, RT	75
US 85 (PR85)	10214+25, RT - 10214+26, RT	72
US 85 (PR85)	10214+75, RT - 10214+76, RT	74
US 85 (PR85)	10214+97, LT - 10215+03, LT	29
US 85 (PR85)	10215+25, RT - 10215+26, RT	75
US 85 (PR85)	10215+75, RT - 10215+76, RT	75
US 85 (PR85)	10216+25, RT - 10216+26, RT	73
US 85 (PR85)	10216+75, RT - 10216+76, RT	71
US 85 (PR85)	10217+25, RT - 10217+26, RT	70
US 85 (PR85)	10217+75, RT - 10217+76, RT	68
US 85 (PR85)	10218+25, RT - 10218+26, RT	66
US 85 (PR85)	10218+75, RT - 10218+76, RT	63
US 85 (PR85)	10221+25, RT - 10221+26, RT	78
US 85 (PR85)	10221+75, RT - 10221+76, RT	77
US 85 (PR85)	10222+25, RT - 10222+26, RT	77
US 85 (PR85)	10222+75, RT - 10222+76, RT	75
US 85 (PR85)	10223+25, RT - 10223+26, RT	75
US 85 (PR85)	10223+75, RT - 10223+76, RT	73
US 85 (PR85)	10250+76, LT - 10258+60, LT	944
US 85 (PR85)	10252+99, RT - 10252+99, RT	37
US 85 (PR85)	10253+49, RT - 10253+49, RT	22
US 85 (PR85)	10253+99, RT - 10254+00, RT	24
US 85 (PR85)	10254+49, RT - 10254+50, RT	49
TOTAL		4587

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10254+99, RT - 10255+00, RT	47
US 85 (PR85)	10255+50, RT - 10255+50, RT	36
US 85 (PR85)	10273+25, LT - 10285+30, LT	1438
US 85 (PR85)	10273+69, RT - 10273+80, RT	32
US 85 (PR85)	10296+67, LT - 10296+73, LT	69
US 85 (PR85)	10296+79, RT - 10296+83, RT	34
US 85 (PR85)	10305+35, LT - 10310+44, LT	564
US 85 (PR85)	10305+35, LT - 10310+44, LT	564
US 85 (PR85)	10306+42, LT - 10306+42, LT	47
US 85 (PR85)	10306+92, LT - 10306+93, LT	60
US 85 (PR85)	10307+42, LT - 10307+42, LT	74
US 85 (PR85)	10307+92, LT - 10307+92, LT	65
US 85 (PR85)	10309+10, LT - 10309+10, LT	32
US 85 (PR85)	10309+37, LT - 10309+37, LT	33
US 85 (PR85)	10309+64, LT - 10309+64, LT	33
US 85 (PR85)	10311+96, RT - 10312+12, RT	44
US 85 (PR85)	10312+00, LT - 10321+00, LT	903
US 85 (PR85)	10326+83, LT - 10329+65, LT	578
US 85 (PR85)	10330+43, LT - 10338+47, LT	1831
US 85 (PR85)	10349+33, LT - 10349+35, LT	26
US 85 (PR85)	10349+38, RT - 10349+39, RT	40
US 85 (PR85)	10349+82, LT - 10349+84, LT	34
US 85 (PR85)	10349+93, RT - 10349+93, RT	40
US 85 (PR85)	10350+31, LT - 10350+32, LT	37
US 85 (PR85)	10350+47, RT - 10350+47, RT	41
US 85 (PR85)	10350+80, LT - 10350+81, LT	33
US 85 (PR85)	10351+01, RT - 10351+03, RT	36
US 85 (PR85)	10351+28, LT - 10351+29, LT	34
US 85 (PR85)	10351+54, RT - 10351+56, RT	40
US 85 (PR85)	10351+77, LT - 10351+77, LT	34
US 85 (PR85)	10352+07, RT - 10352+09, RT	37
US 85 (PR85)	10352+62, RT - 10352+63, RT	37
US 85 (PR85)	10353+16, RT - 10353+16, RT	38
US 85 (PR85)	10353+68, RT - 10353+69, RT	41
US 85 (PR85)	10354+21, RT - 10354+23, RT	38
US 85 (PR85)	10354+75, RT - 10354+79, RT	39
US 85 (PR85)	10355+28, RT - 10355+32, RT	39
US 85 (PR85)	10355+81, RT - 10355+84, RT	40
US 85 (PR85)	10356+34, RT - 10356+36, RT	39
US 85 (PR85)	10356+86, RT - 10356+88, RT	40
US 85 (PR85)	10357+39, RT - 10357+40, RT	40
US 85 (PR85)	10357+92, RT - 10357+92, RT	38
US 85 (PR85)	10358+43, RT - 10358+44, RT	36
US 85 (PR85)	10358+95, RT - 10358+96, RT	35
US 85 (PR85)	10359+46, RT - 10359+47, RT	41
US 85 (PR85)	10359+98, RT - 10359+98, RT	41
US 85 (PR85)	10360+48, RT - 10360+48, RT	39
US 85 (PR85)	10360+99, RT - 10360+99, RT	41
US 85 (PR85)	10361+48, RT - 10361+48, RT	28
US 85 (PR85)	10361+60, RT - 10362+90, RT	174
US 85 (PR85)	10363+03, RT - 10363+03, RT	28
US 85 (PR85)	10363+03, RT - 10363+03, RT	28
US 85 (PR85)	10363+52, RT - 10363+53, RT	37
TOTAL		7873

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
US 85 (PR85)	10364+01, RT - 10364+02, RT	37
US 85 (PR85)	10364+50, RT - 10364+51, RT	37
US 85 (PR85)	10364+99, RT - 10365+03, RT	37
US 85 (PR85)	10365+48, RT - 10365+52, RT	37
US 85 (PR85)	10365+97, RT - 10366+01, RT	35
US 85 (PR85)	10366+46, RT - 10366+51, RT	35
US 85 (PR85)	10366+94, RT - 10366+99, RT	35
US 85 (PR85)	10367+43, RT - 10367+48, RT	34
US 85 (PR85)	10367+92, RT - 10367+96, RT	34
US 85 (PR85)	10368+45, RT - 10371+70, RT	394
US 85 (PR85)	10371+93, RT - 10371+97, RT	38
US 85 (PR85)	10372+44, RT - 10372+47, RT	38
US 85 (PR85)	10372+95, RT - 10372+98, RT	40
US 85 (PR85)	10373+46, RT - 10373+49, RT	35
US 85 (PR85)	10373+97, RT - 10373+99, RT	37
US 85 (PR85)	10374+48, RT - 10374+50, RT	39
US 85 (PR85)	10374+99, RT - 10375+01, RT	36
US 85 (PR85)	10375+50, RT - 10375+51, RT	36
US 85 (PR85)	10376+01, RT - 10376+02, RT	37
US 85 (PR85)	10376+52, RT - 10376+52, RT	36
US 85 (PR85)	10377+02, RT - 10377+03, RT	39
US 85 (PR85)	10377+53, RT - 10377+54, RT	40
US 85 (PR85)	10378+04, RT - 10378+04, RT	37
US 85 (PR85)	10378+55, RT - 10381+40, RT	327
US 85 (PR85)	10381+55, RT - 10381+55, RT	31
US 85 (PR85)	10382+05, RT - 10382+05, RT	32
US 85 (PR85)	10382+55, RT - 10382+55, RT	32
US 85 (PR85)	10383+05, RT - 10385+10, RT	231
US 85 (PR85)	10383+24, LT - 10383+32, LT	25
US 85 (PR85)	10383+89, LT - 10385+18, LT	135
US 85 (PR85)	10383+89, LT - 10385+18, LT	135
US 85 (PR85)	10387+15, LT - 10389+52, LT	242
US 85 (PR85)	10387+18, LT - 10389+52, LT	239
US 85 (PR85)	10395+73, LT - 10397+15, LT	142
US 85 (PR85)	10397+82, LT - 10398+65, LT	84
TOTAL		2858

TOTAL PAGE	Fiber Rolls 12 IN
	15318

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Permanent Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Permanent Fiber Rolls

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	75	22

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
139th Ave (139TH_AVE)	24+40, LT - 24+42, LT	16
139th Ave (139TH_AVE)	24+57, RT - 24+59, RT	20
139th Ave (139TH_AVE)	24+90, LT - 24+92, LT	15
139th Ave (139TH_AVE)	25+07, RT - 25+09, RT	18
139th Ave (139TH_AVE)	25+40, LT - 25+41, LT	14
139th Ave (139TH_AVE)	25+56, RT - 25+58, RT	15
139th Ave (139TH_AVE)	25+90, LT - 25+91, LT	17
139th Ave (139TH_AVE)	26+06, RT - 26+08, RT	16
139th Ave (139TH_AVE)	26+40, LT - 26+41, LT	15
139th Ave (139TH_AVE)	26+56, RT - 26+58, RT	15
139th Ave (139TH_AVE)	26+89, LT - 26+91, LT	17
139th Ave (139TH_AVE)	27+06, RT - 27+15, RT	12
139th Ave (139TH_AVE)	27+29, LT - 27+36, LT	12
139th Ave (139TH_AVE)	27+40, RT - 27+48, RT	9
139th Ave (139TH_AVE)	27+51, LT - 27+62, LT	32
139th Ave (139TH_AVE)	30+15, LT - 30+26, LT	37
139th Ave (139TH_AVE)	30+34, LT - 30+44, LT	14
139th Ave (139TH_AVE)	30+37, RT - 30+44, RT	10
139th Ave (139TH_AVE)	30+79, RT - 30+82, RT	15
139th Ave (139TH_AVE)	30+83, LT - 30+85, LT	15
139th Ave (139TH_AVE)	31+28, RT - 31+31, RT	14
139th Ave (139TH_AVE)	31+32, LT - 31+35, LT	15
139th Ave (139TH_AVE)	31+77, RT - 31+80, RT	12
139th Ave (139TH_AVE)	31+82, LT - 31+84, LT	15
139th Ave (139TH_AVE_DW)	3+51, RT - 3+52, RT	25
139th Ave (139TH_AVE_DW)	4+01, RT - 4+02, RT	25
139th Ave (139TH_AVE_DW)	4+50, RT - 4+51, RT	25
139th Ave (139TH_AVE_DW)	5+00, RT - 5+01, RT	25
139th Ave (139TH_AVE_DW)	5+50, RT - 5+51, RT	24
139th Ave (139TH_AVE_DW)	6+00, RT - 6+01, RT	25
139th Ave (139TH_AVE_DW)	6+52, RT - 6+54, RT	23
139th Ave (139TH_AVE_DW)	7+02, RT - 7+04, RT	24
139th Ave (139TH_AVE_DW)	7+52, RT - 7+54, RT	23
139th Ave (139TH_AVE_DW)	8+02, RT - 8+04, RT	22
139th Ave (139TH_AVE_DW)	8+52, RT - 8+54, RT	24
139th Ave (139TH_AVE_DW)	9+22, RT - 10+50, RT	136
139th Ave (139TH_AVE_DW)	12+38, RT - 13+66, RT	139
139th Ave (PR139TH_AVE_DW_2)	1+05, RT - 2+55, LT	136
139th Ave (PR139TH_AVE_DW_2)	1+70, RT - 2+55, RT	93
57th St NW (PROLD6)	5+59, RT - 5+60, RT	14
57th St NW (PROLD6)	6+05, RT - 6+05, RT	14
57th St NW (PROLD6)	6+49, RT - 6+50, RT	16
57th St NW (PROLD6)	6+98, RT - 6+98, RT	16
57th St NW (PROLD6)	7+48, RT - 7+48, RT	16
TOTAL		1237

Alignment (Chain Name)	Station to Station	Fiber Rolls 12 IN (LF)
57th St NW (PROLD6)	9+66, RT - 9+66, RT	16
57th St NW (PROLD6)	10+30, RT - 10+35, RT	15
57th St NW (PROLD6)	11+02, RT - 11+03, RT	15
57th St NW (PROLD6)	11+66, RT - 11+66, RT	15
57th St NW (PROLD6)	12+17, RT - 12+18, RT	14
57th St NW (PROLD6)	12+69, RT - 12+69, RT	15
57th St NW (PROLD6)	13+20, RT - 13+20, RT	15
57th St NW (PROLD6)	13+62, RT - 13+63, RT	14
57th St NW (PROLD6)	14+05, RT - 14+09, RT	15
57th St NW (PROLD6)	14+47, RT - 14+48, RT	15
57th St NW (PROLD6)	14+95, RT - 14+95, RT	15
57th St NW (PROLD6)	15+45, RT - 15+45, RT	15
57th St NW (PROLD6)	15+95, RT - 15+95, RT	12
57th St NW (PROLD6_DW)	2+77, LT - 2+80, LT	32
57th St NW (PROLD6_DW)	3+83, RT - 3+96, RT	36
57th St NW (PROLD6_DW)	7+39, LT - 7+42, LT	23
140th Ave (PR140TH AVE)	24+84, RT - 24+89, RT	29
140tt Ave (PR140TH AVE)	25+30, RT - 25+62, RT	149
137th Ave (137TH_AVE)	4+81, RT - 10+17 RT	549
137th Ave (137TH_AVE_W_T)	13+46, LT - 13+52, LT	30
Man Camp (PRMANCAMP)	4+36, LT - 5+35, LT	101
Man Camp (PRMANCAMP)	4+36, RT - 5+30, RT	116
Man Camp (PRMANCAMP)	6+41, Rt - 6+84. RT	150
Man Camp (PRMANCAMP_DW)	1+97, RT - 1+61 RT	50
Man Camp (PRMANCAMP_DW)	1+69, LT - 1+73, LT	23
Private Drive (PR85_DW_10213)	1+51, LT - 1+55, LT	25
Private Drive (PR85_DW_10220)	2+98, LT - 3+02, LT	25
TOTAL		1531

Alignment (Chain Name)	Station to Station	Fiber Rolls 20 IN (LF)
US 85 (PR85)	10182+87, LT - 10182+95, LT	40
US 85 (PR85)	10251+75, RT - 10251+83, RT	31
US 85 (PR85)	10258+60, LT - 10258+68, LT	27
US 85 (PR85)	10266+24, RT - 10266+30, RT	29
US 85 (PR85)	10299+10, RT - 10299+23 RT	37
US 85 (PR85)	10360+18, LT - 10360+24, LT	26
US 85 (PR85)	10384+60, LT - 10384+65, LT	32
Private Drive (PR85_DW_10287)	3+43, LT - 3+47, LT	30
Private Drive (PR85_DW_10287)	3+55, LT - 3+60, LT	33
Private Drive (PR85_DW_10287)	3+67, LT - 3+72, LT	34
TOTAL		319

TOTAL PAGE	Fiber Rolls 12 IN (LF)	Fiber Rolls 20 IN (LF)
	2768	319

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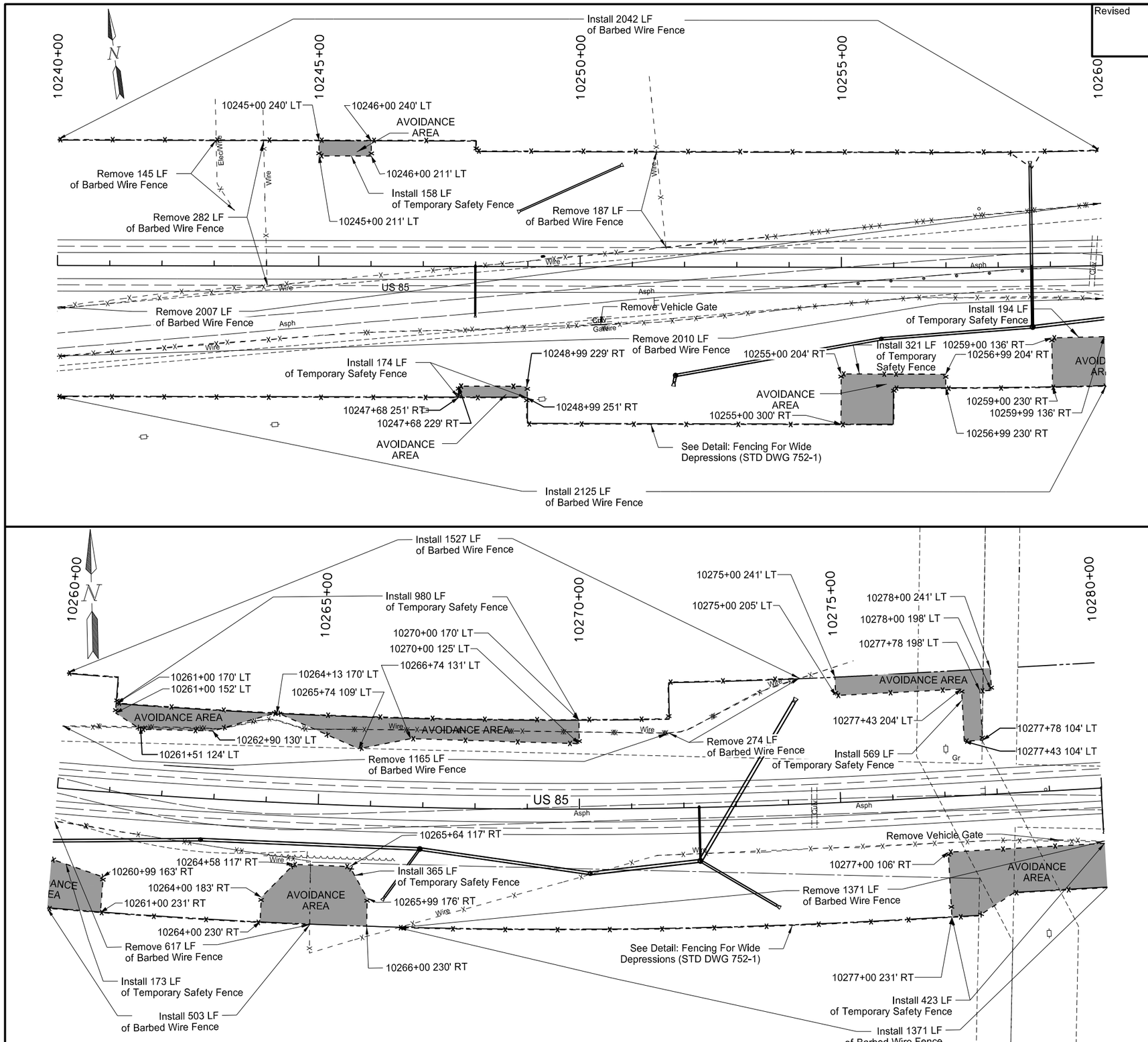
Permanent Erosion Control & Wetlands and Seeding Layout
Williston NW Permanent Truck Reliever Route
Phase 3

Permanent Fiber Rolls

Revised	5/14/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SOIA-7-085(096)192	80	3



202	0312	Remove Existing Fence	
		10240+00 to 10260+00	4631 LF
		10260+00 to 10280+00	3427 LF
		Total =	8058 LF
752	0200	Fence Barbed Wire 4 Strand	
		10240+00 to 10260+00	4167 LF
		10260+00 to 10280+00	3401 LF
		Total =	7568 LF
752	0911	Temporary Safety Fence	
		10240+00 to 10260+00	847 LF
		10260+00 to 10280+00	2510 LF
		Total =	3357 EA
752	0995	Fence Terminal - Wood Posts	
		10243+03 - 241 LT	1 EA
		10243+94 - 241 LT	1 EA
		10250+72 - 221 LT	1 EA
		10251+11 - 301 RT	1 EA
		10251+46 - 221 LT	1 EA
		10251+70 - 301 RT	1 EA
		10258+68 - 189 LT	1 EA
		10258+88 - 221' LT	1 EA
		10261+60 - 231 RT	1 EA
		10263+97 - 231 RT	1 EA
		10273+50 - 231 RT	1 EA
		10274+38 - 321 RT	1 EA
		Total =	12 EA
752	2120	Remove Vehicle Gate	
		10250+40 - 111 RT	1 EA
		10279+12 - 95 RT	1 EA
		Total =	2 EA
752	3140	Corner Assembly Barbed Wire	
		10243+03 - 241 LT	1 EA
		10243+94 - 241 LT	1 EA
		10248+01 - 221 LT	1 EA
		10248+01 - 241 LT	1 EA
		10248+99 - 251 RT	1 EA
		10248+99 - 301 RT	1 EA
		10256+01 - 231 RT	1 EA
		10256+01 - 301 RT	1 EA
		10258+22 - 221 LT	1 EA
		10261+01 - 171 LT	1 EA
		10261+01 - 221 LT	1 EA
		10264+93 - 231 RT	1 EA
		10266+59 - 231 RT	1 EA
		10271+74 - 171 LT	1 EA
		10271+74 - 241 LT	1 EA
		10274+31 - 241 LT	1 EA
		10277+52 - 231 RT	1 EA
		10278+21 - 191 RT	1 EA
			18 EA

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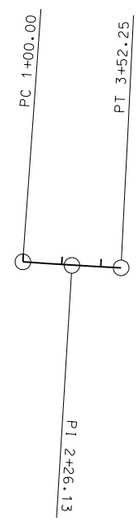
Fencing Details Layout

Williston NW Permanent Truck Reliever Route
Phase 3
US 85
10240+00 to 10260+00
10260+00 to 10280+00

Revised 5/14/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	82	10

N

Curve PRRETWALL-1
PI = 2+26.13
Delta = 1° 15' 00" (LT)
Da = 0° 29' 44"
R = 11,562.16
T = 126.13
L = 252.25



Chain PRRETWALL contains:
CUR PRRETWALL-1

Beginning chain PRRETWALL description
==========

Curve Data

Curve PRRETWALL-1
P.I. Station 2+26.13 N 468,581.87 E 1,195,442.16
Delta = 1° 15' 00" (LT)
Degree = 0° 29' 44"
Tangent = 126.13
Length = 252.25
Radius = 11,562.16
External = 0.69
Long Chord = 252.24
Mid. Ord. = 0.69
P.C. Station 1+00.00 N 468,590.87 E 1,195,316.35
P.T. Station 3+52.25 N 468,575.61 E 1,195,568.13
C.C. N 480,123.54 E 1,196,141.52
Back = 94° 05' 33"
Ahead = 92° 50' 33"
Chord Bear = 93° 28' 03"

==========
Ending chain PRRETWALL description

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Survey Data Layout

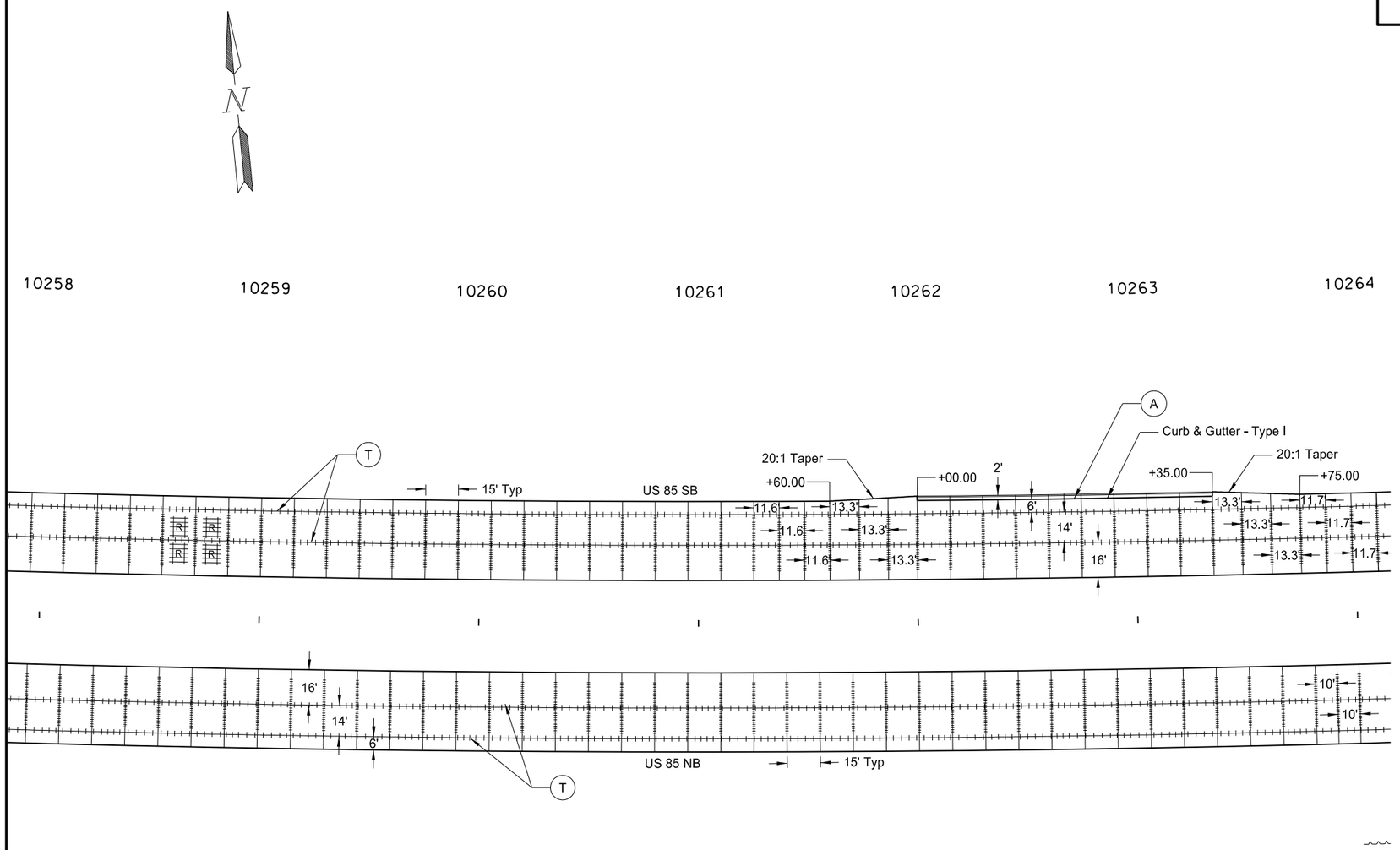
Williston NW Permanent Truck Reliever Route Phase 3

PRRETWALL
1+00 3+52.25

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	90	16

302	0100	Salvaged Base Course		
		10258+00 to 10264+00	2865	TON
550	0310	10IN Non Reinf Concrete Pvmt CL AE-Doweled		
		10258+00 to 10264+00	4809	SY
748	0140	Curb & Gutter-Type I		
		10262+00 to 10263+35 LT	135	LF

Note: Stations & Offsets from US 85 Chain: PR85



Legend

Curb and Gutter (All): No. 3 tie bars, 1'-6" @ 4' c to c (continuous)

Tied Joint - See Deformed Bar Installation Detail

Non-Tied Keyed Joint - See Detail

Reinforcing Steel - See Detail

Sawed Longitudinal Joint

Tied Joint - See Detail

Doweled Joint - Placed in driving lanes only @ 15' Average transverse joint spacing (Continuous)

Sawed Traverse Joint

Pavement Reinforcement at Pipe Locations - See Detail

Note: Centerline omitted for clarity

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Paving Joint Layouts

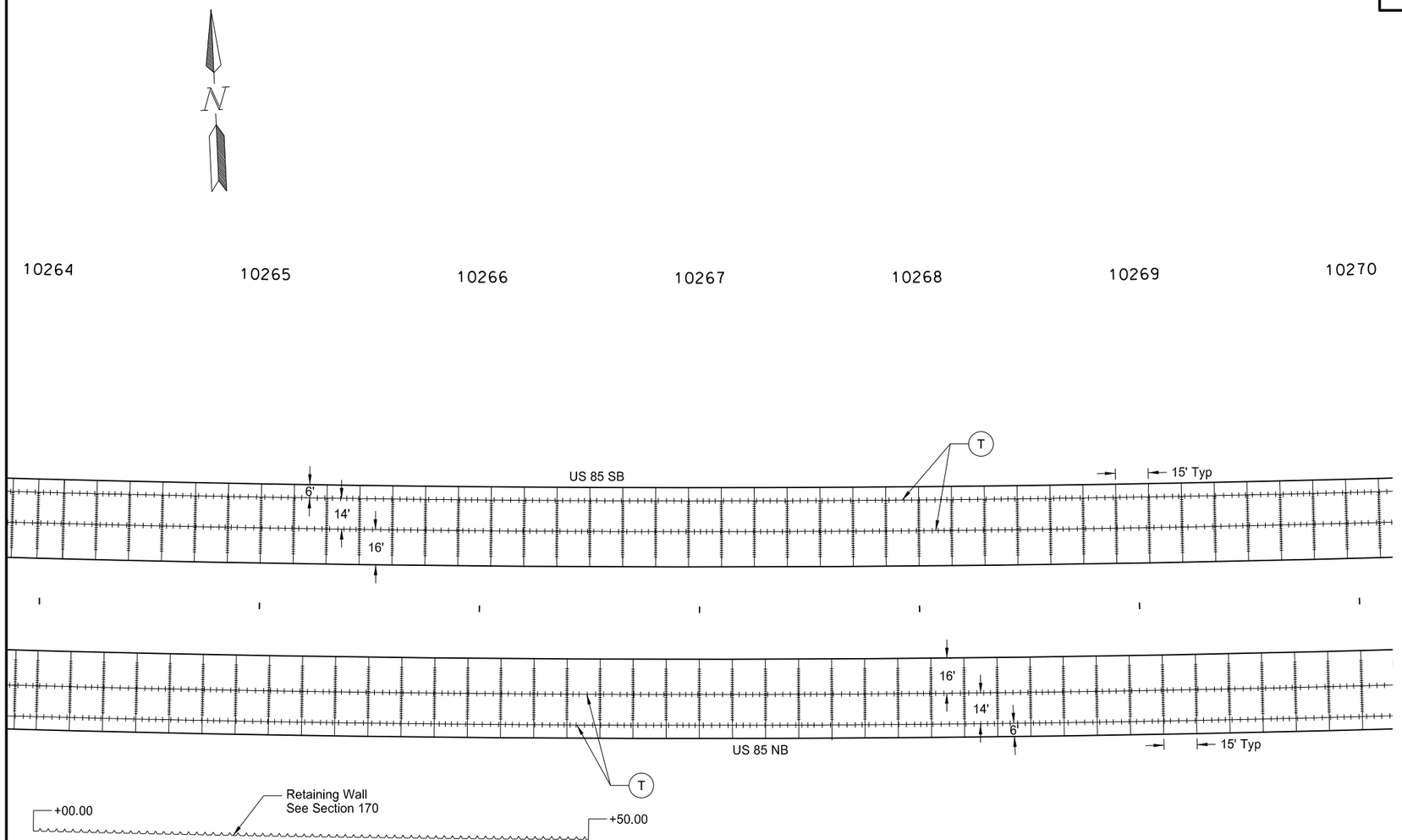
Williston NW Permanent Truck Reliever Route Phase 3

US 85
10258+00 to 10264+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	90	17

302	0100	Salvaged Base Course		
		10264+00 to 10270+00	2888	TON
550	0310	10IN Non Reinf Concrete Pvmt CL AE-Doweled		
		10264+00 to 10270+00	4800	SY

Note: Stations & Offsets from US 85 Chain: PR85



Legend

- (A) — Curb and Gutter (All): No. 3 tie bars, 1'-6" @ 4' c to c (continuous)
- (D) — Tied Joint - See Deformed Bar Installation Detail
- (K) — Non-Tied Keyed Joint - See Detail
- (R) — Reinforcing Steel - See Detail
- (S) — Sawed Longitudinal Joint
- (T) — Tied Joint - See Detail
- Doweled Joint - Placed in driving lanes only @ 15' Average transverse joint spacing (Continuous)
- Sawed Traverse Joint
- Pavement Reinforcement at Pipe Locations - See Detail

Note: Centerline omitted for clarity

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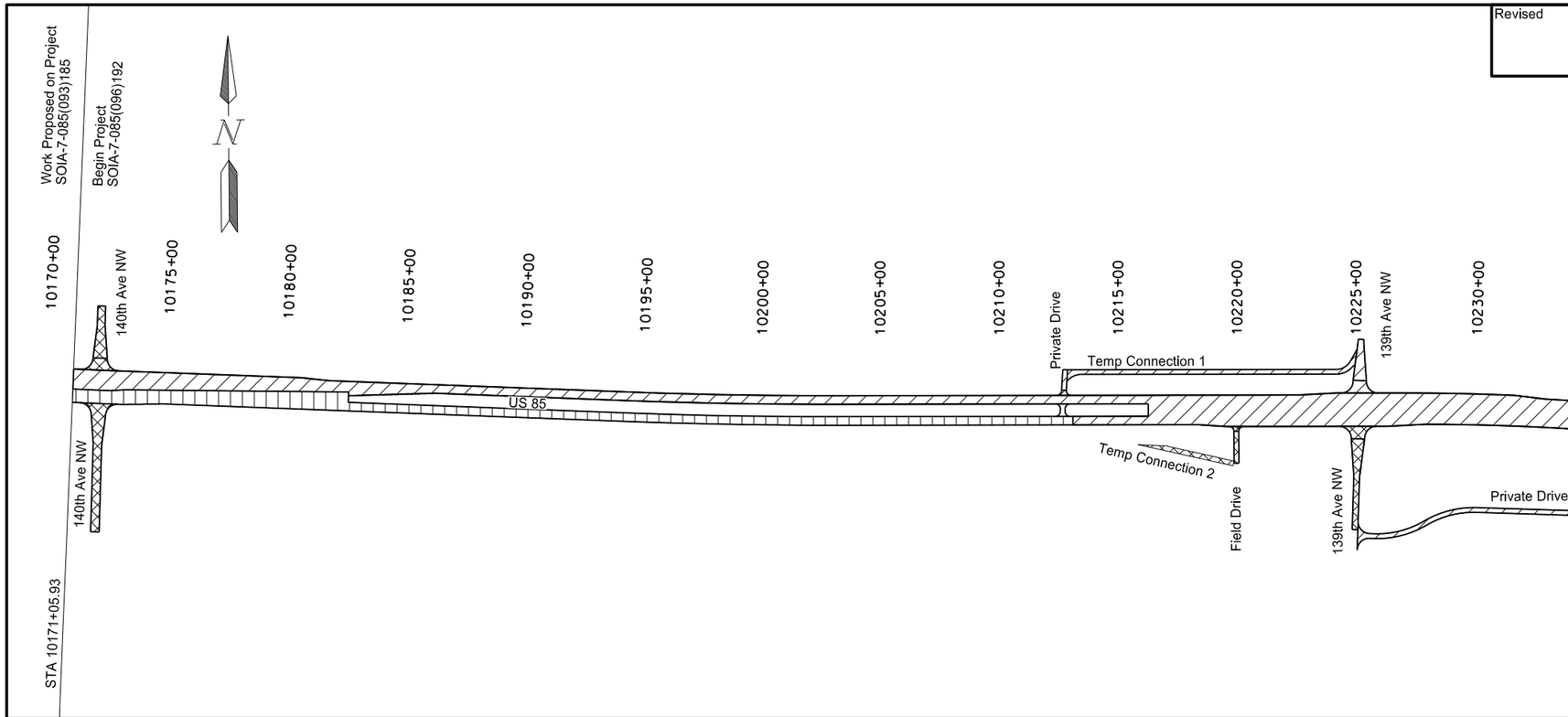
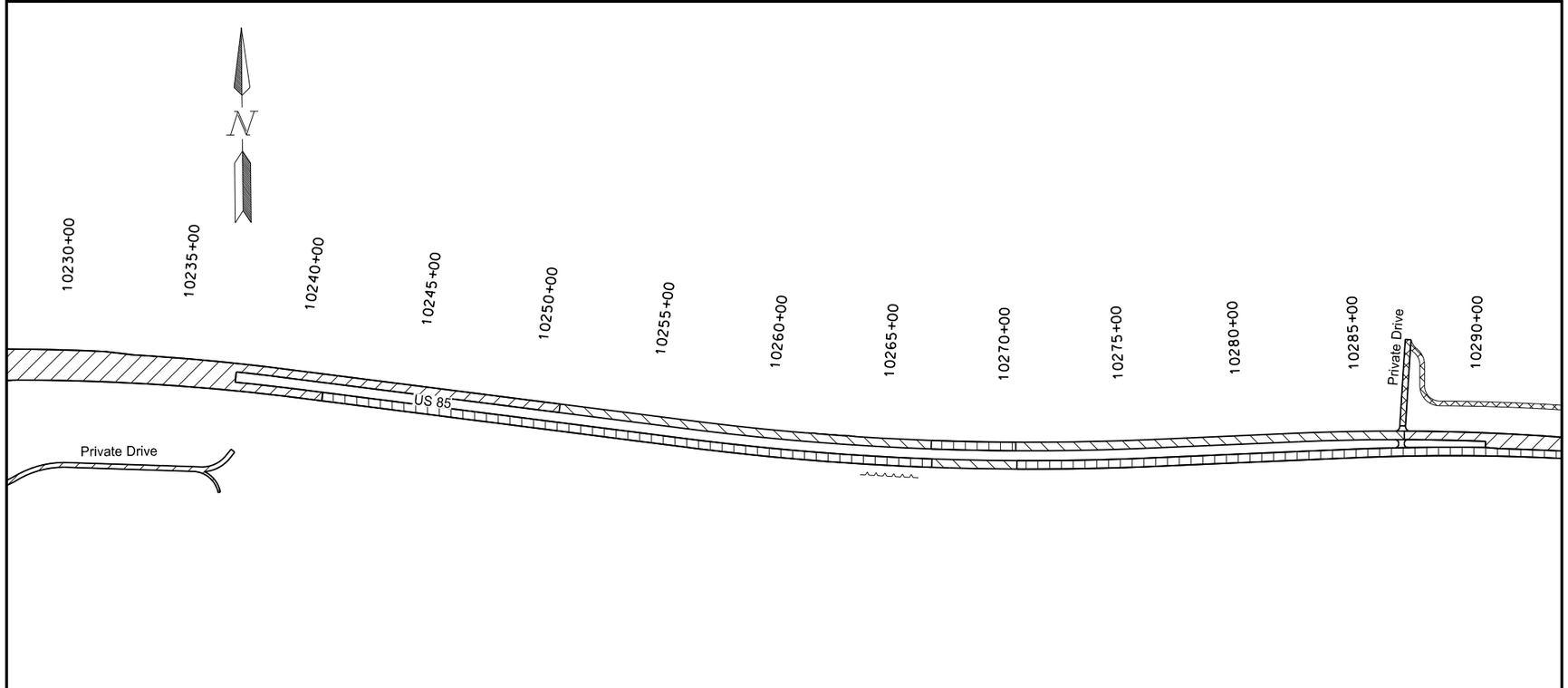
Paving Joint Layouts

Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10264+00 to 10270+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	100	2





Legend

Stage 1

Stage 2 (45 day shut down)

Stage 3

Stage 4

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Work Zone Traffic Control

Williston NW Permanent Truck Reliever Route Phase 3

Construction Staging

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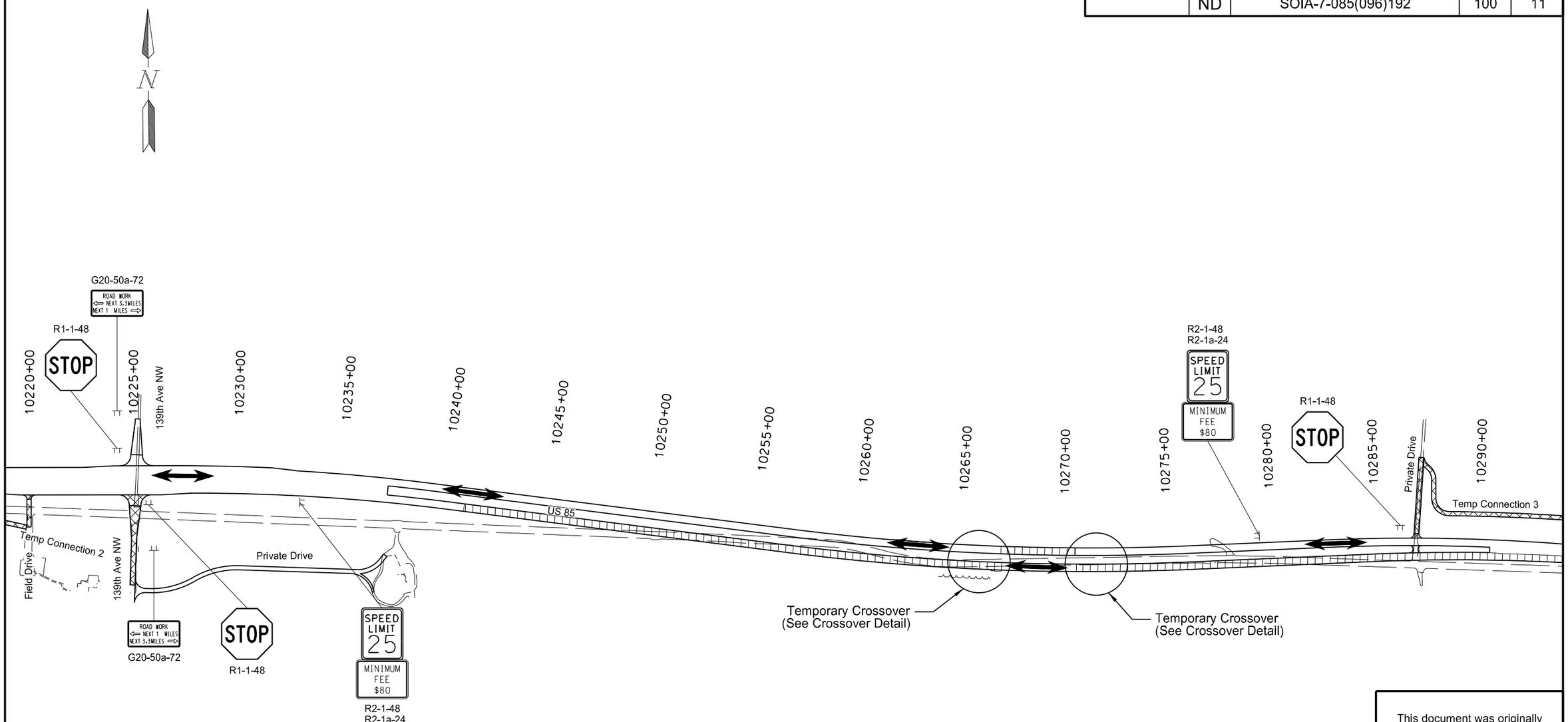
	ND	SOIA-7-085(096)192	100	11



Legend

Paving (Stage 3)

Paving during 45 day shut down (Stage 2)

Travel Lanes

See sheets 8 & 9 for road closed signing

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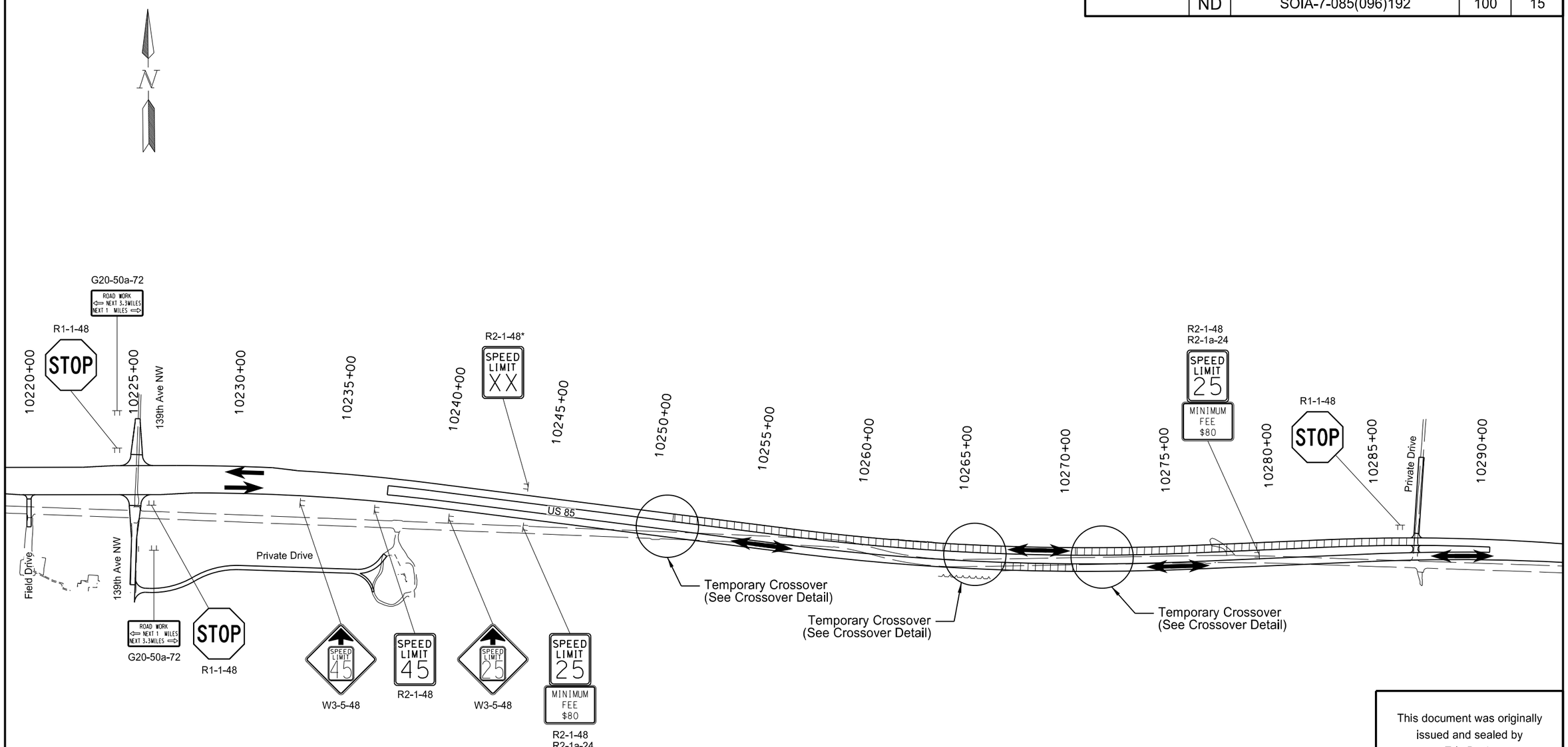
Work Zone Traffic Control

Williston NW Permanent Truck Reliever Route
Phase 3

Construction Sign Layout
Stage 2 & 3

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	100	15



Legend

Paving

Travel Lanes

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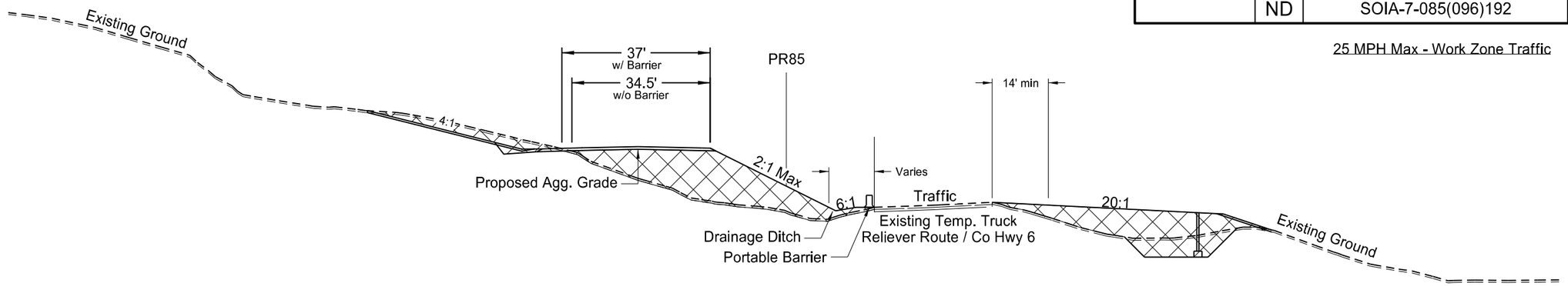
Work Zone Traffic Control

Williston NW Permanent Truck Reliever Route
Phase 3

Construction Sign Layout
Stage 4

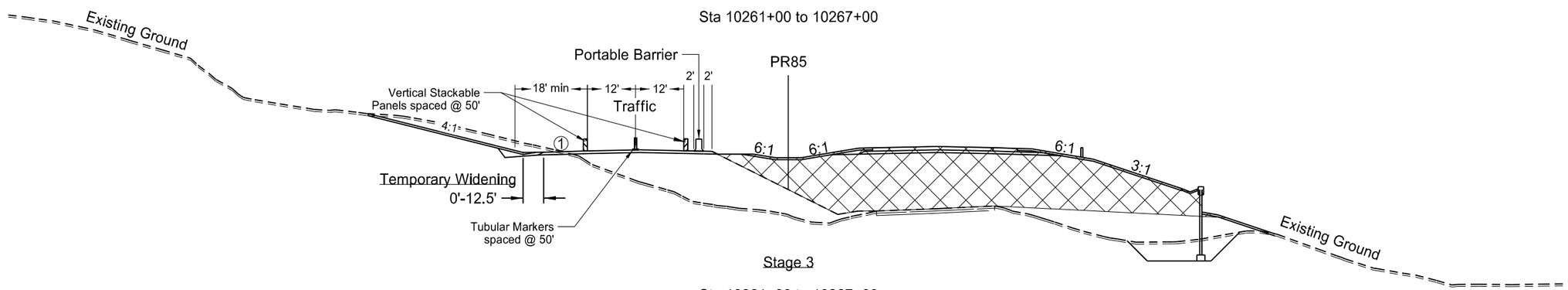
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	100	35

25 MPH Max - Work Zone Traffic



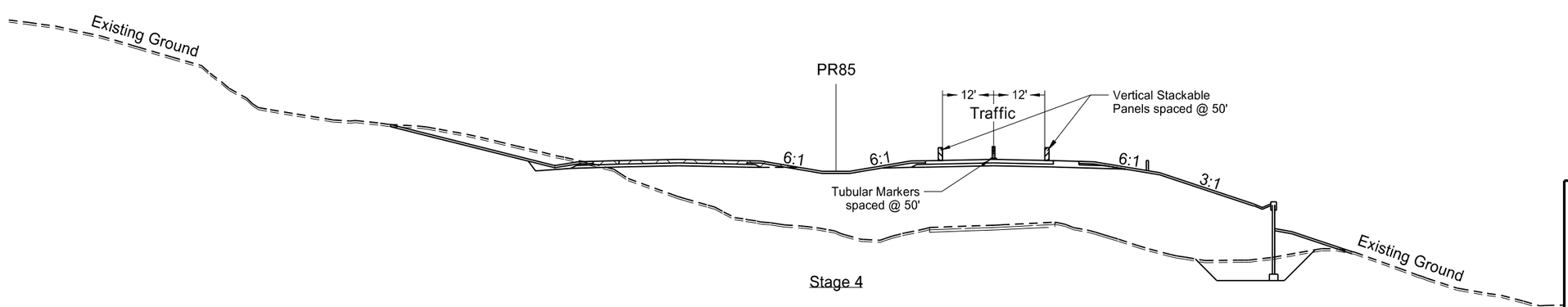
Stage 1

Sta 10261+00 to 10267+00



Stage 3

Sta 10261+00 to 10267+00



Stage 4

Sta 10261+00 to 10267+00

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Note:
Vertical Transition will be needed for traffic transferring from the Temporary Road to proposed grade. Maintain 7% max vertical grade.

① Barrier required if 18' 4:1 clear zone can't be maintained.
80 LF - Sta 10165+50 to 10266+25

Min. clear zone given for proposed construction slopes and speed limit shown.
Clear zone for existing temp bypass is shown for 45mph.

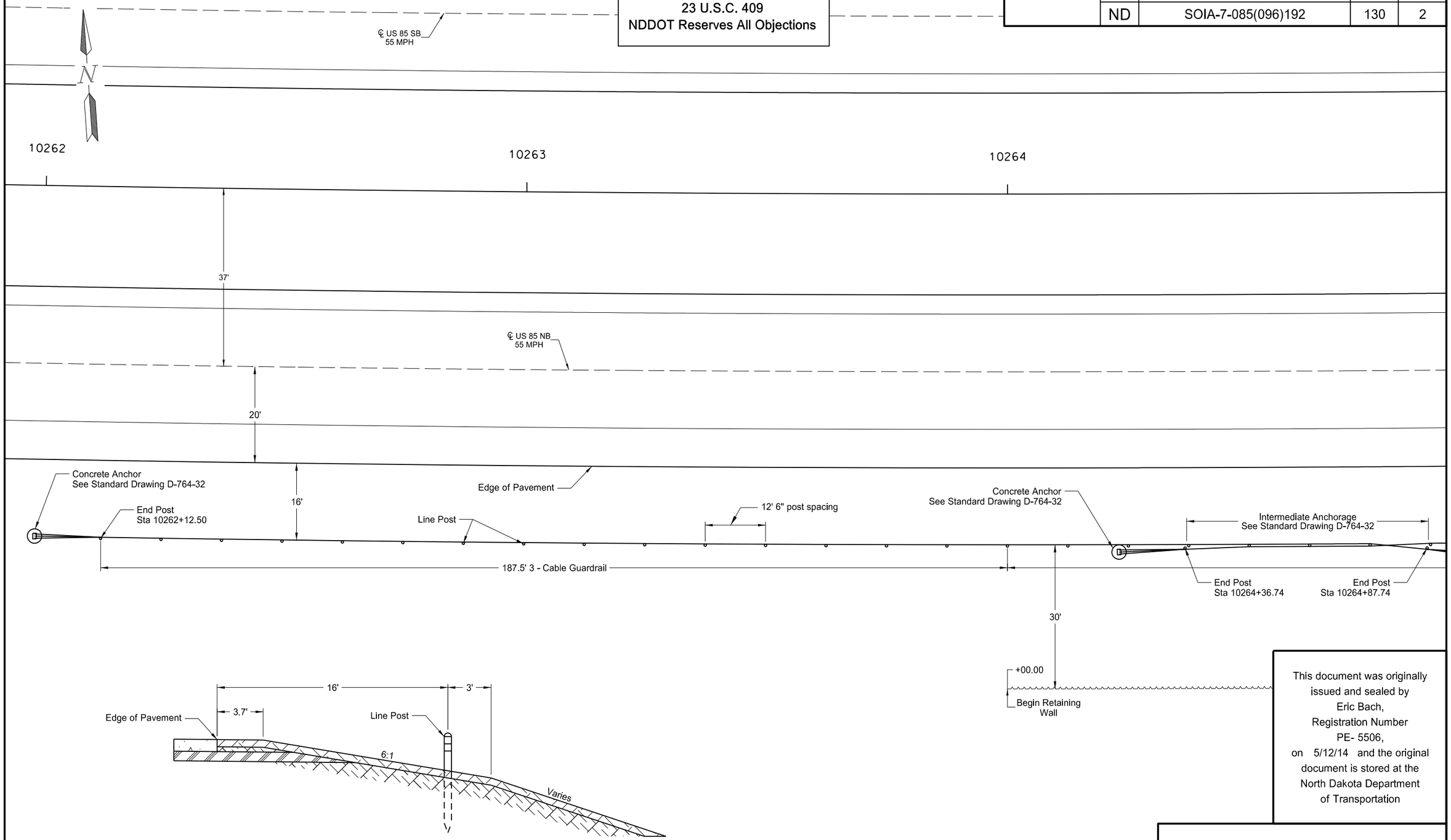
Work Zone Traffic Control

Williston NW Permanent Truck Reliever Route
Phase 3

Construction Typical Sections
10261+00 to 10267+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	130	2

23 U.S.C. 409
NDDOT Reserves All Objections



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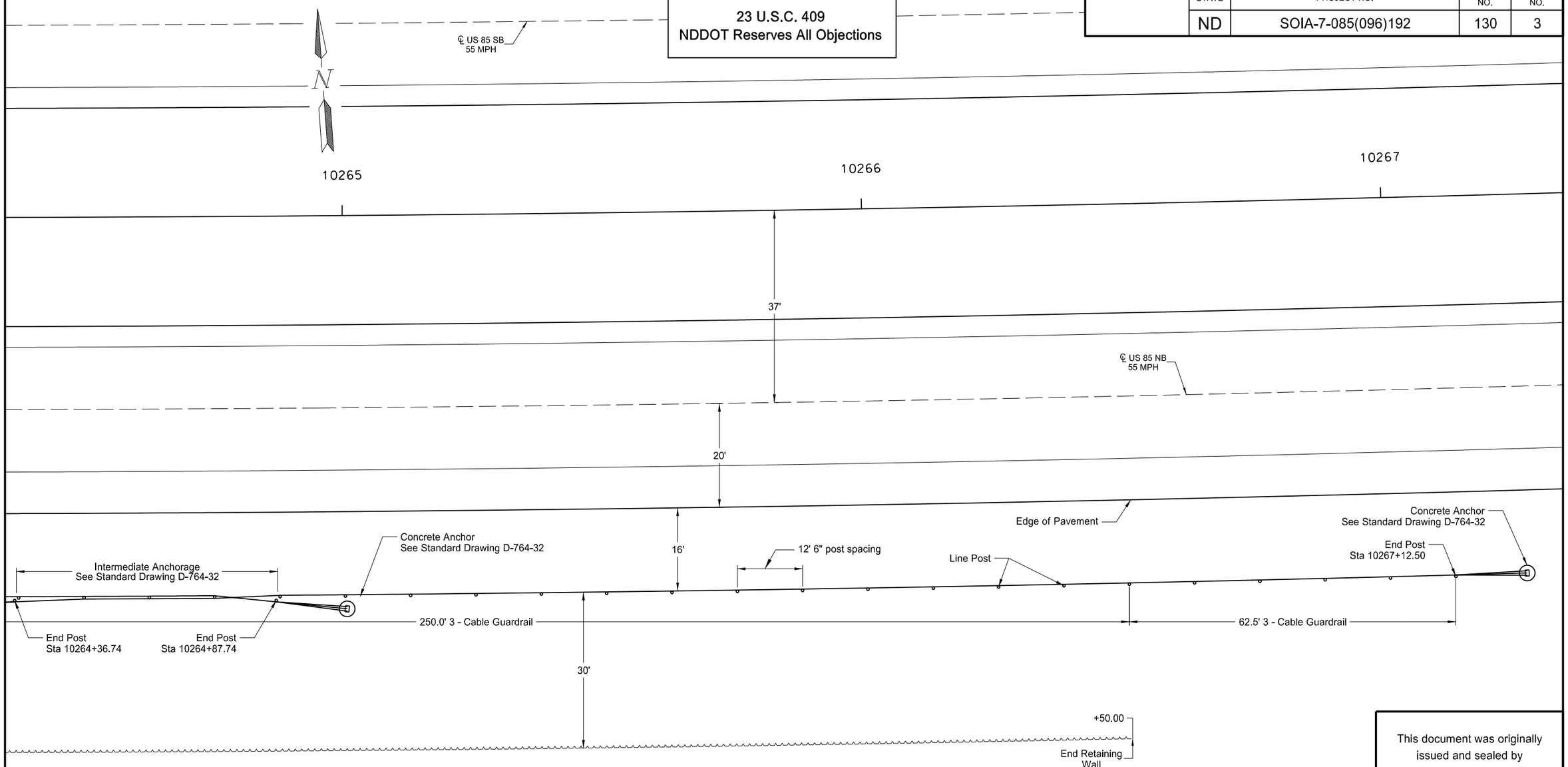
3-Cable Guardrail Layout

Williston NW Permanent Truck Reliever Route
Phase 3

RP 194.394

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	130	3

23 U.S.C. 409
NDDOT Reserves All Objections



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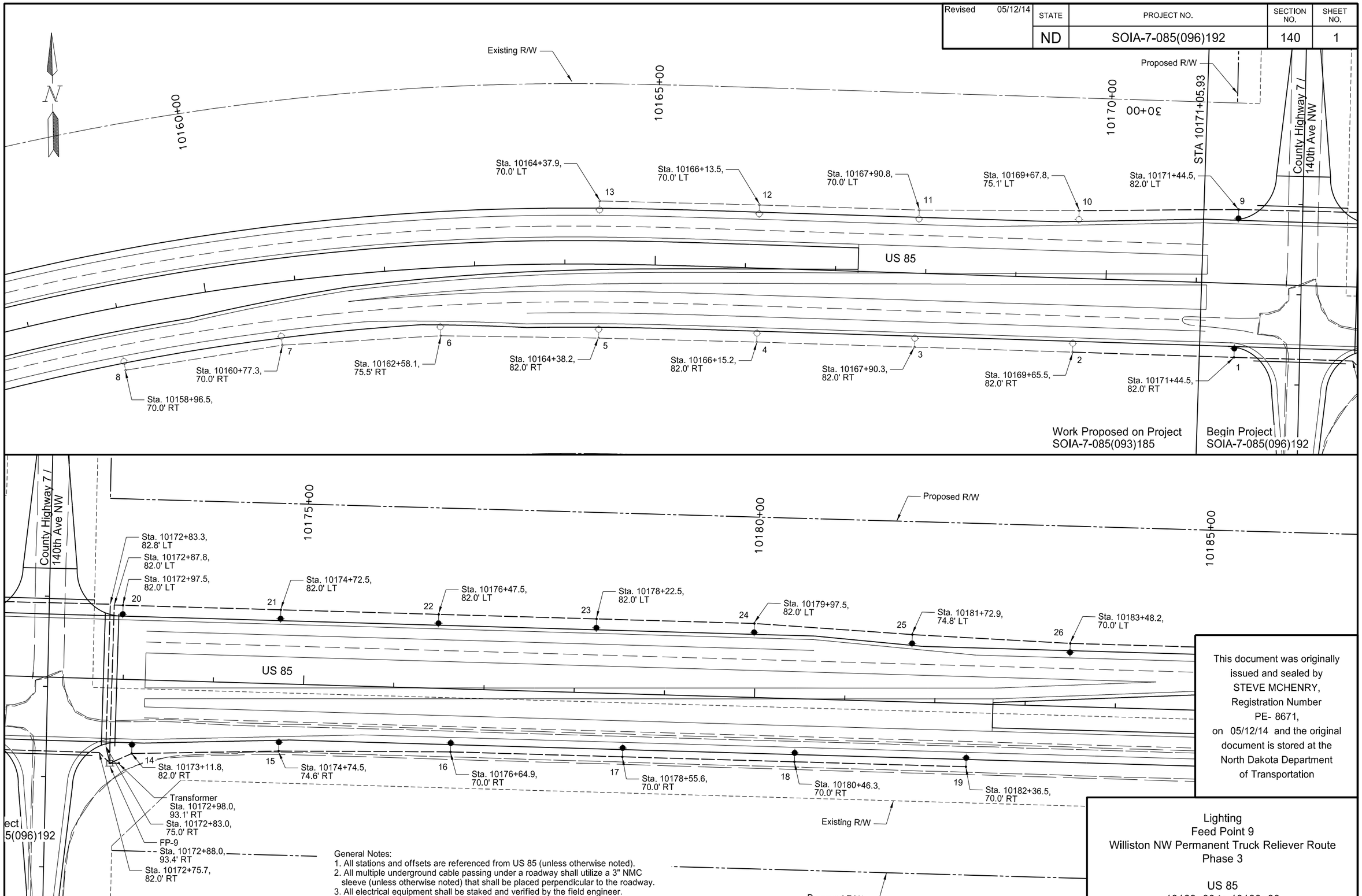
3-Cable Guardrail Layout

Williston NW Permanent Truck Reliever Route
Phase 3

RP 194.394

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	1



General Notes:
1. All stations and offsets are referenced from US 85 (unless otherwise noted).
2. All multiple underground cable passing under a roadway shall utilize a 3" NMC sleeve (unless otherwise noted) that shall be placed perpendicular to the roadway.
3. All electrical equipment shall be staked and verified by the field engineer.

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Lighting
Feed Point 9
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10169+00 to 10180+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	3

Station	Conduit Runs		Cable Trench	Cable Runs	
	Length (ft)	Size	Length (ft)	Length (ft)	Type
10172+98.0 - 93.1' RT TO	10	2"	10	60	2-1/C #2 RHW
10172+88.0 - 93.4' RT				30	1-1/C #2 THW
10172+88.0 - 93.4' RT TO	103	3"	149	163	3 No. 4 Style USE
10172+75.7 - 82.0' RT TO					
10171+44.5 - 82.0' RT					
10171+44.5 - 82.0' RT TO			180	188	3 No. 4 Style USE
10169+65.5 - 82.0' RT					
10172+88.0 - 93.4' RT TO			316	330	3 No. 4 Style USE
10172+83.0 - 75.0' RT TO	147	3"			
10172+83.3 - 82.8' LT TO	101	3"			
10171+44.5 - 82.0' LT					
10171+44.5 - 82.0' LT TO			177	185	3 No. 4 Style USE
10169+67.8 - 75.1' LT					
10172+88.0 - 93.4' RT TO			27	41	3 No. 4 Style USE
10173+11.8 - 82.0' RT					
10173+11.8 - 82.0' RT TO			163	171	3 No. 4 Style USE
10174+74.5 - 74.6' RT					
10174+74.5 - 74.6' RT TO			191	199	3 No. 4 Style USE
10176+64.9 - 70.0' RT					
10176+64.9 - 70.0' RT TO			191	199	3 No. 4 Style USE
10178+55.6 - 70.0' RT					
10178+55.6 - 70.0' RT TO			191	199	3 No. 4 Style USE
10180+46.3 - 70.0' RT					
10180+46.3 - 70.0' RT TO			191	199	3 No. 4 Style USE
10182+36.5 - 70.0' RT					
10172+88.0 - 93.4' RT TO	147	3"	186	200	3 No. 4 Style USE
10172+87.8 - 82.0' LT TO					
10172+97.5 - 87.8' LT					
10172+97.5 - 87.8' LT TO			176	184	3 No. 4 Style USE
10174+72.5 - 82.0' LT					
10174+72.5 - 82.0' LT TO			176	184	3 No. 4 Style USE
10176+47.5 - 82.0' LT					
10176+47.5 - 82.0' LT TO			176	184	3 No. 4 Style USE
10178+22.5 - 82.0' LT					

Station	Conduit Runs		Cable Trench	Cable Runs	
	Length (ft)	Size	Length (ft)	Length (ft)	Type
10178+22.5 - 82.0' LT TO			176	184	3 No. 4 Style USE
10179+97.5 - 82.0' LT					
10179+97.5 - 82.0' LT TO			176	184	3 No. 4 Style USE
10181+72.9 - 74.8' LT					
10181+72.9 - 74.8' LT TO			176	184	3 No. 4 Style USE
10183+48.2 - 70.0' LT					
10183+48.2 - 70.0' LT TO			176	184	3 No. 4 Style USE
10185+23.8 - 70.0' LT					
10185+23.8 - 70.0' LT TO			176	184	3 No. 4 Style USE
10186+98.9 - 70.0' LT					

No.	Station	Offset	Wattage	Circuit	IES-Type	Pole Ht.	Mast Arm	Notes
1	10171+44.5	82.0' RT	250	1	MC-3	40	8'	
2	10169+65.5	82.0' RT	250	1	MC-3	40	8'	2
9	10171+44.5	82.0' LT	250	2	MC-3	40	8'	
10	10169+67.8	75.1' LT	250	2	MC-3	40	8'	2
14	10173+11.8	82.0' RT	250	3	MC-3	40	8'	
15	10174+74.5	74.6' RT	250	3	MC-3	40	8'	
16	10176+64.9	70.0' RT	250	3	MC-3	40	8'	
17	10178+55.6	70.0' RT	250	3	MC-3	40	8'	
18	10180+46.3	70.0' RT	250	3	MC-3	40	8'	
19	10182+36.5	70.0' RT	250	3	MC-3	40	8'	
20	10172+97.5	82.0' LT	250	4	MC-3	40	8'	
21	10174+72.5	82.0' LT	250	4	MC-3	40	8'	
22	10176+47.5	82.0' LT	250	4	MC-3	40	8'	
23	10178+22.5	82.0' LT	250	4	MC-3	40	8'	
24	10179+97.5	82.0' LT	250	4	MC-3	40	8'	
25	10181+72.9	74.8' LT	250	4	MC-3	40	8'	
26	10183+48.2	70.0' LT	250	4	MC-3	40	8'	
27	10185+23.8	70.0' LT	250	4	MC-3	40	8'	
28	10186+98.9	70.0' LT	250	4	MC-3	40	8'	

Medium Cutoff (MC)

NOTES:
1. Conduit length included in a previous total
2. Provided in another project
3. Existing to remain

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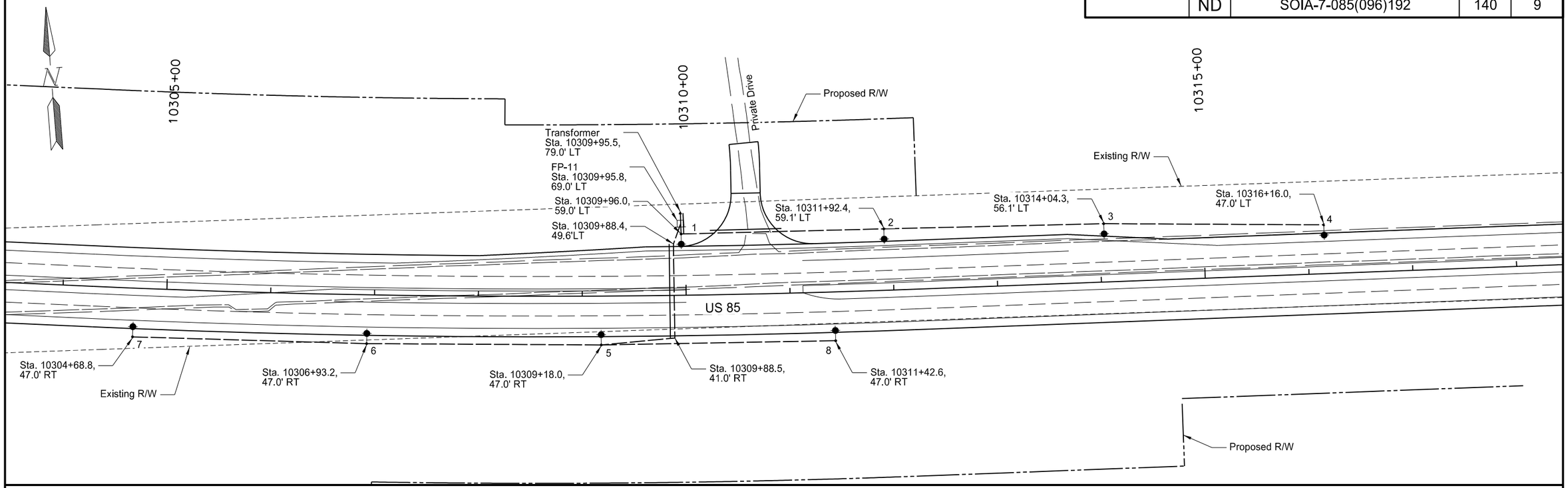
Lighting
Feed Point 9
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10169+00 to 10188+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	9



General Notes:
1. All stations and offsets are referenced from US 85 (unless otherwise noted).
2. All multiple underground cable passing under a roadway shall utilize a 3" NMC sleeve (unless otherwise noted) that shall be placed perpendicular to the roadway.
3. All electrical equipment shall be staked and verified by the field engineer.

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Lighting
Feed Point 11
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10304+00 to 10317+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	10

Station	Conduit Runs		Cable Trench	Cable Runs	
	Length (ft)	Size	Length (ft)	Length (ft)	Type
10309+95.5' - 79.0' LT TO	10	2"		60	2-1/C #2 RHW
10309+95.8 - 69.0' LT				30	1-1/C #2 THW
10309+95.8 - 69.0' LT TO			10	24	3 No 4 Style USE
10309+96.0 - 59.0' LT					
10309+96.0 - 59.0' LT TO	69	3"	196	204	3 No 4 Style USE
10311+92.4 - 59.1' LT					
10311+92.4 - 59.1' LT TO			212	220	3 No 4 Style USE
10314+04.3 - 56.1' LT					
10314+04.3 - 56.1' LT TO			212	220	3 No 4 Style USE
10316+16.0 - 47.0' LT					
10309+95.8 - 69.0' LT TO			183	197	3 No 4 Style USE
10309+88.4 - 49.6' LT TO	91	3"			
10309+88.5 - 41.0' RT TO					
10309+18.0 - 47.0' RT					
10309+18.0 - 47.0' RT TO			226	234	3 No 4 Style USE
10306+93.2 - 47.0' RT					
10306+93.2 - 47.0' RT TO			226	234	3 No 4 Style USE
10304+68.8 - 47.0' RT					
10309+18.0 - 47.0' RT TO			226	234	3 No 4 Style USE
10311+42.6 - 74.0' RT					

No.	Station	Offset	Wattage	Circuit	IES-Type	Pole Ht.	Mast Arm	Notes
1	10309+96.0	59.0' LT	250	1	MC-3	40'	8'	
2	10311+92.4	59.1' LT	250	1	MC-3	40'	8'	
3	10314+04.3	56.1' LT	250	1	MC-3	40'	8'	
4	10316+16.0	47.0' LT	250	1	MC-3	40'	8'	
5	10309+18.0	47.0' RT	250	2	MC-3	40'	8'	
6	10306+93.2	47.0' RT	250	2	MC-3	40'	8'	
7	10304+68.8	47.0' RT	250	2	MC-3	40'	8'	
8	10311+42.6	47.0' RT	250	2	MC-3	40'	8'	

Medium Cutoff (MC)

NOTES:

1. Conduit length included in a previous total
2. Provided in another project
3. Existing to remain

Quantities										
CONCRETE FOUNDATION-HIGHWAY LIGHTING	CONCRETE FOUNDATION-FEED POINT TYPE B	CABLE TRENCH II	2IN DIAMETER RIGID CONDUIT	3IN DIAMETER RIGID CONDUIT	MULTIPLE UNDERGRUOND CABLE 3NO4 STYLE USE	UNDERGROUND CONDUCTOR NO2-TYPE RHW	UNDERGROUND CONDUCTOR NO2-TYPE THW	FEEDPOINT-TYPE II-PAD MOUNTED	LT STD 8FT MA 40FT MT HT BREAKAWAY	HP SODIUM LUMINAIRE-250 WATT
EA	EA	LF	LF	LF	LF	LF	LF	EA	EA	EA
8	1	1491	10	160	1567	60	30	1	8	8

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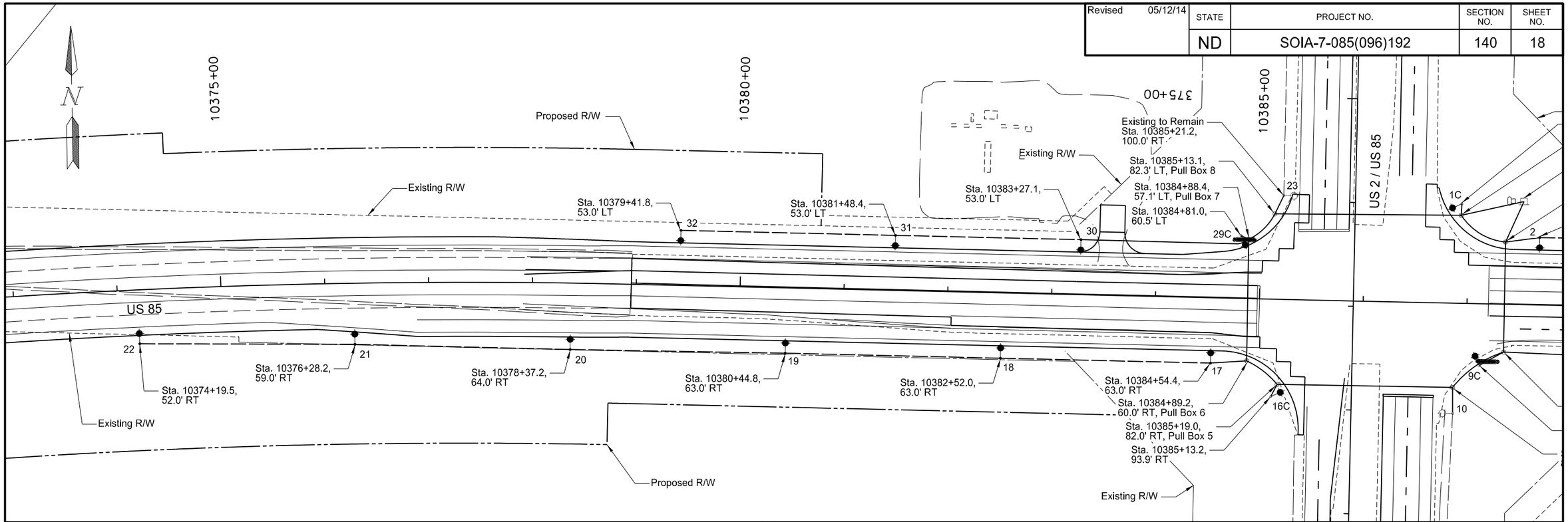
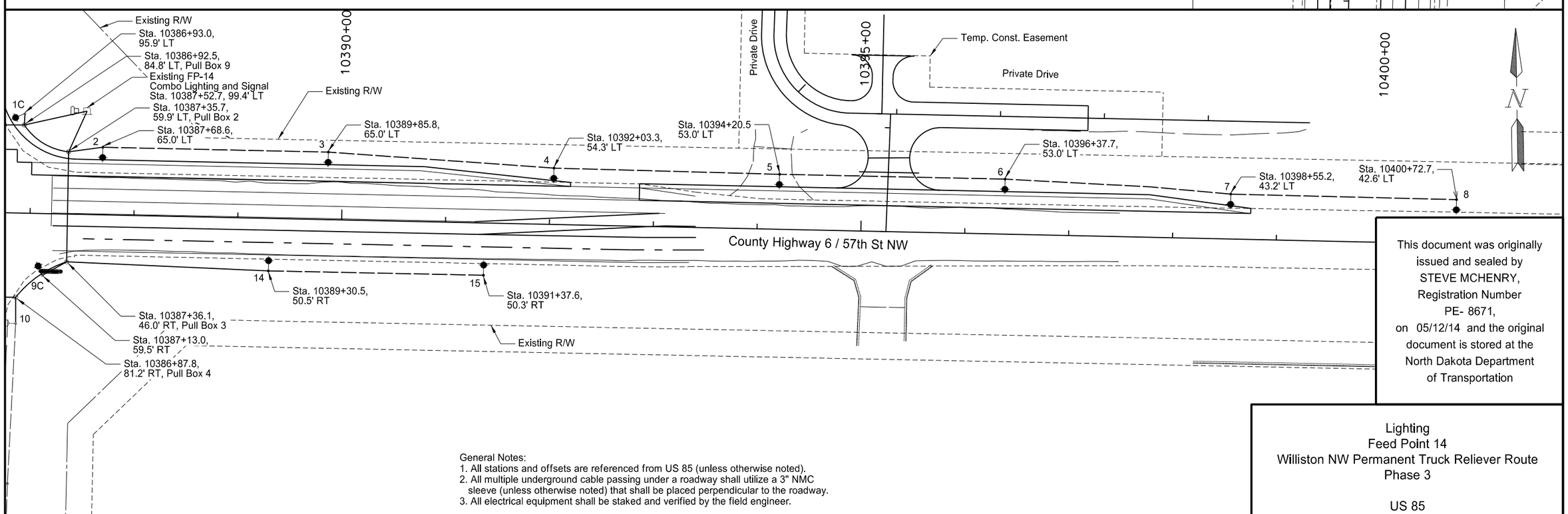
Lighting
Feed Point 11
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10304+00 to 10317+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	18





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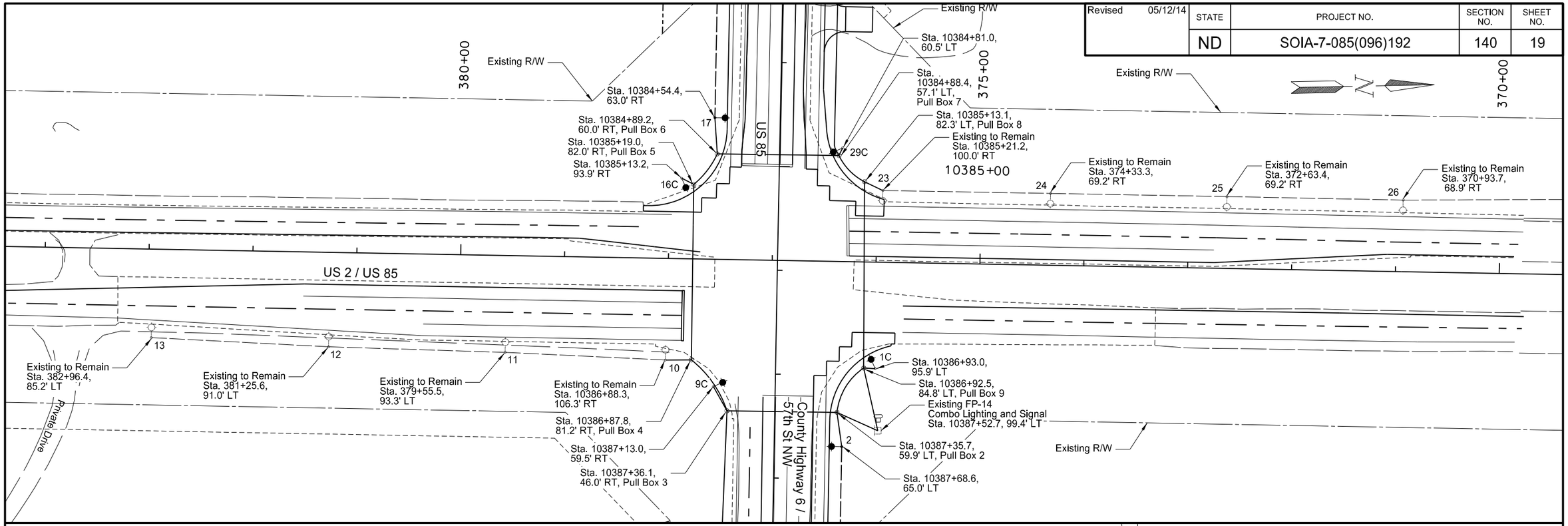
General Notes:
1. All stations and offsets are referenced from US 85 (unless otherwise noted).
2. All multiple underground cable passing under a roadway shall utilize a 3" NMC sleeve (unless otherwise noted) that shall be placed perpendicular to the roadway.
3. All electrical equipment shall be staked and verified by the field engineer.

Lighting
Feed Point 14
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10374+00 to 10401+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	19



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General Notes:
1. All stations and offsets are referenced from US 2 / US 85 (unless otherwise noted).
2. All multiple underground cable passing under a roadway shall utilize a 3" NMC sleeve (unless otherwise noted) that shall be placed perpendicular to the roadway.
3. All electrical equipment shall be staked and verified by the field engineer.

Lighting
Feed Point 14
Williston NW Permanent Truck Reliever Route
Phase 3

US 2
375+00 to 380+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	20

Station	Conduit Runs		Cable Trench	Cable Runs	
	Length (ft)	Size	Length (ft)	Length (ft)	Type
10387+52.7 - 99.4' LT TO	62	2"		184	2-1/C #4 RHW
10386+92.5 - 84.8' LT TO	12	2"		92	1-1/C #4 THW
10386+93.0 - 95.9' LT					
10386+93.0 - 95.9' LT TO	NOTE 1			228	2-1/C #4 RHW
10386+92.5 - 84.8' LT TO	52	2"		114	1-1/C #4 THW
10387+35.7 - 59.9' LT TO	34	2"			
10387+68.6 - 65.0' LT					
10387+68.6 - 65.0' LT TO			218	226	3 NO 4 STYLE USE
10389+85.8 - 65.0' LT					
10389+85.8 - 65.0' LT TO			218	226	3 NO 4 STYLE USE
10392+03.3 - 54.3' LT					
10392+03.3 - 54.3' LT TO			218	226	3 NO 4 STYLE USE
10394+20.5 - 53' LT					
10394+20.5 - 53' LT TO	58	3"	218	226	3 NO 4 STYLE USE
10396+37.7 - 53.0' LT					
10396+37.7 - 53.0' LT TO			218	226	3 NO 4 STYLE USE
10398+55.2 - 43.2' LT					
10398+55.2 - 43.2' LT TO			218	226	3 NO 4 STYLE USE
10400+72.7 - 42.6' LT					
10387+52.7 - 99.4' LT TO	44	2"		398	2-1/C #4 RHW
10387+35.7 - 59.9' LT TO	106	2"		199	1-1/C #4 THW
10387+36.1 - 46.0' RT TO	27	2"			
10387+13.0 - 59.5' RT					
10387+13.0 - 59.5' RT TO	NOTE 1			246	2-1/C #4 RHW
10387+36.1 - 46.0' RT TO	61	2"		123	1-1/C #4 THW
10386+87.8 - 81.2' RT TO	31	2"			
10386+88.3 - 106.3' RT					
10387+21.2 - 55.5' RT TO	NOTE 1			450	2-1/C #4 RHW
10387+36.1 - 46.0' RT TO	195	2"		225	1-1/C #4 THW
10389+30.5 - 50.5' RT					
10389+30.5 - 50.5' RT TO			208	216	3 NO 4 STYLE USE
10391+37.6 - 50.3' RT					
10387+52.7 - 99.4' LT TO	NOTE 1			922	2-1/C #4 RHW
10386+82.5 - 84.8' LT TO	180	2"		461	1-1/C #4 THW
10385+13.1 - 82.3' LT TO	36	2"			
10384+88.4 - 57.1' LT TO	118	2"			
10384+89.2 - 60.0' RT TO	35	2"			
10384+54.4 - 63.0' RT					

Station	Conduit Runs		Cable Trench	Cable Runs	
	Length (ft)	Size	Length (ft)	Length (ft)	Type
10384+54.4 - 63.0' RT TO	NOTE 1			206	2-1/C #4 RHW
10384+89.2 - 60.0' RT TO	38	2"		103	1-1/C #4 THW
10385+19.0 - 82.0' RT TO	14	2"			
10385+13.2 - 93.9' RT					
10384+54.4 - 63.0' RT TO			203	211	3 NO 4 STYLE USE
10382+52.0 - 63.0' RT					
10382+52.0 - 63.0' RT TO			208	216	3 NO 4 STYLE USE
10380+44.8 - 63.0' RT					
10380+44.8 - 63.0' RT TO			208	216	3 NO 4 STYLE USE
10378+37.2 - 64.0' RT					
10378+37.2 - 64.0' RT TO			208	216	3 NO 4 STYLE USE
10376+28.2 - 59.0' RT					
10376+28.2 - 59.0' RT TO			208	216	3 NO 4 STYLE USE
10374+19.5 - 52.0' RT					
10387+52.7 - 99.4' LT TO	NOTE 1			564	2-1/C #4 RHW
10386+92.5 - 84.8' LT TO	NOTE 1			282	1-1/C #4 THW
10385+13.1 - 82.3' LT TO	20	2"			
10385+21.2 - 100.0' RT					
10385+21.2 - 100.0' RT	NOTE 1			158	2-1/C #4 RHW
10385+13.1 - 82.3' LT TO	NOTE 1			79	1-1/C #4 THW
10384+88.4 - 57.1' LT TO	9	2"			
10384+81.0 - 60.5' LT					
10384+81.0 - 60.5' LT TO	NOTE 1			372	2-1/C #4 RHW
10384+88.4 - 57.1' LT TO	163	2"		186	1-1/C #4 THW
10383+27.1 - 53.0' LT					
10383+27.1 - 53.0' LT TO			179	187	3 NO 4 STYLE USE
10381+48.4 - 53.0' LT					
10381+48.4 - 53.0' LT TO			207	215	3 NO 4 STYLE USE
10379+41.8 - 53.0' LT					

NOTES:

1. Conduit length included in a previous total
2. Provided in another project
3. Existing to remain

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Lighting
Feed Point 14
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10374+00 to 10401+00

Revised 05/12/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	140	21

No.	Station	Offset	Wattage	Circuit	IES-Type	Pole Ht.	Mast Arm	Notes
1C	10386+93.0	95.9' LT	250	1	MC-3	42'	12'	
2	10387+68.6	65.0' LT	250	1	MC-3	42'	12'	
3	10389+85.8	65.0' LT	250	1	MC-3	42'	8'	
4	10392+03.3	54.3' LT	250	1	MC-3	42'	8'	
5	10394+20.5	53.0' LT	250	1	MC-3	42'	8'	
6	10396+37.7	53.0' LT	250	1	MC-3	42'	8'	
7	10398+55.2	43.2' LT	250	1	MC-3	42'	8'	
8	10400+72.7	42.6' LT	250	1	MC-3	42'	8'	
9C	10387+13.0	59.5' RT	250	2	MC-3	42'	12'	
10	10386+88.3	106.3' RT	250	2	MC-3	42'	12'	3
14	10389+30.5	50.5' RT	250	2	MC-3	42'	8'	
15	10391+37.6	50.3' RT	250	2	MC-3	42'	8'	
16C	10385+13.2	93.9' RT	250	3	MC-3	42'	12'	
17	10384+54.4	63.0' RT	250	3	MC-3	42'	12'	
18	10382+52.0	63.0' RT	250	3	MC-3	42'	8'	
19	10380+44.8	63.0' RT	250	3	MC-3	42'	8'	
20	10378+37.2	64.0' RT	250	3	MC-3	42'	8'	
21	10376+28.2	59.0' RT	250	3	MC-3	42'	8'	
22	10374+19.5	52.0' RT	250	3	MC-3	42'	8'	
23	10385+21.2	100.0' LT	250	4	MC-3	42'	12'	3
29C	10384+81.0	60.5' LT	250	4	MC-3	42'	12'	
30	10383+27.1	53.0' LT	250	4	MC-3	42'	8'	
31	10381+48.4	53.0' LT	250	4	MC-3	42'	8'	
32	10379+41.8	53.0' LT	250	4	MC-3	42'	8'	

Medium Cutoff (MC)

NOTES:

1. Conduit length included in a previous total
2. Provided in another project
3. Existing to remain

Quantities									
CONCRETE FOUNDATION-HIGHWAY LIGHTING	CABLE TRENCH II	2IN DIAMETER RIGID CONDUIT	3IN DIAMETER RIGID CONDUIT	MULTIPLE UNDERGRUOND CABLE 3NO4 STYLE USE	UNDERGROUND CONDUCTOR NO4-TYPE RHW	UNDERGROUND CONDUCTOR NO4-TYPE THW	LT STD 8FT MA 42FT POLE BREAKAWAY	LT STD 12FT MA 42FT POLE BREAKAWAY	HP SODIUM LUMINAIRE-250 WATT
EA	LF	LF	LF	LF	LF	LF	EA	EA	EA
18	2937	957	58	3049	3728	1864	16	2	18

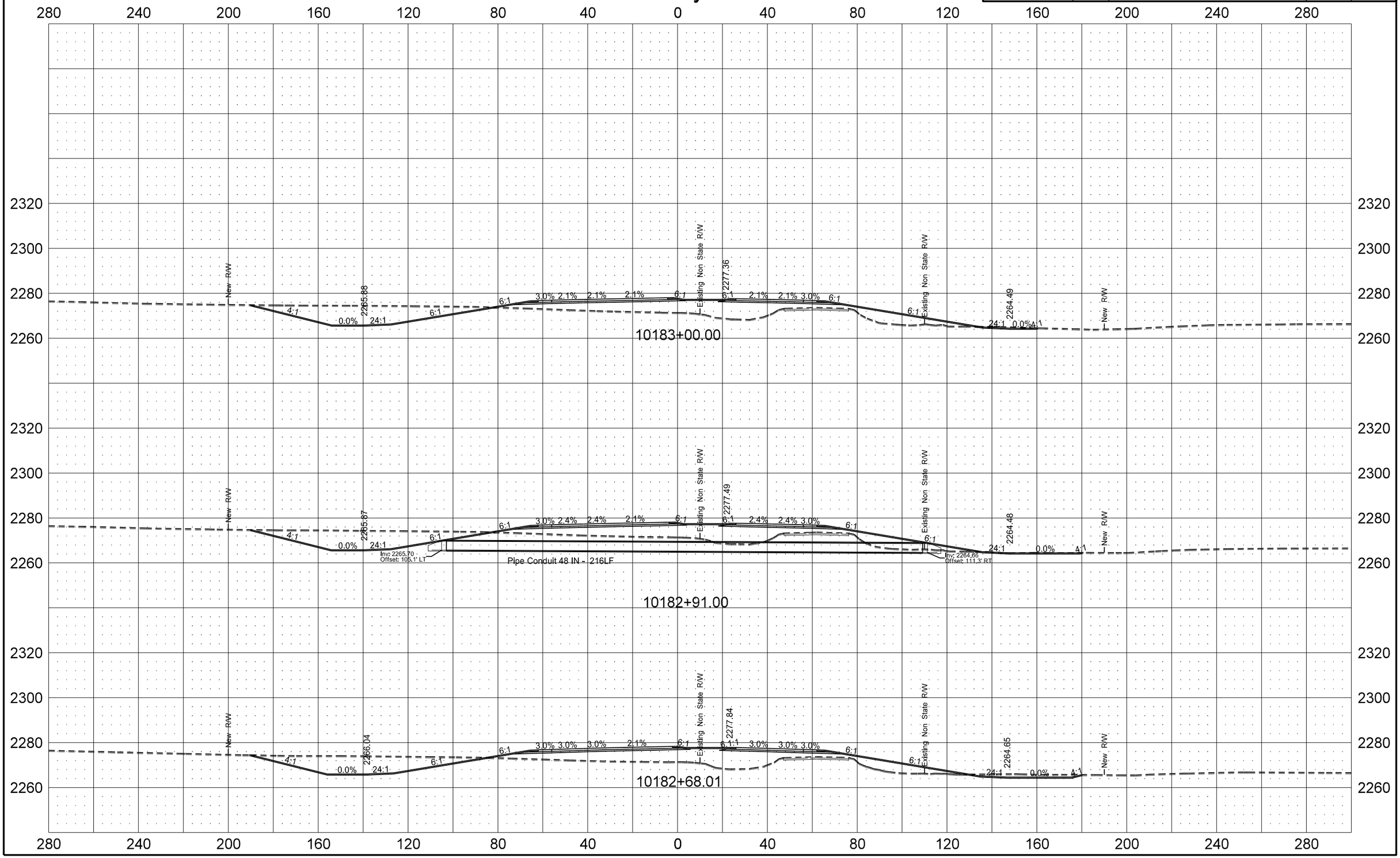
This document was originally issued and sealed by STEVE MCHENRY, Registration Number PE- 8671, on 05/12/14 and the original document is stored at the North Dakota Department of Transportation

Lighting
Feed Point 14
Williston NW Permanent Truck Reliever Route
Phase 3

US 85
10374+00 to 10401+00

Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	13

US Hwy 85



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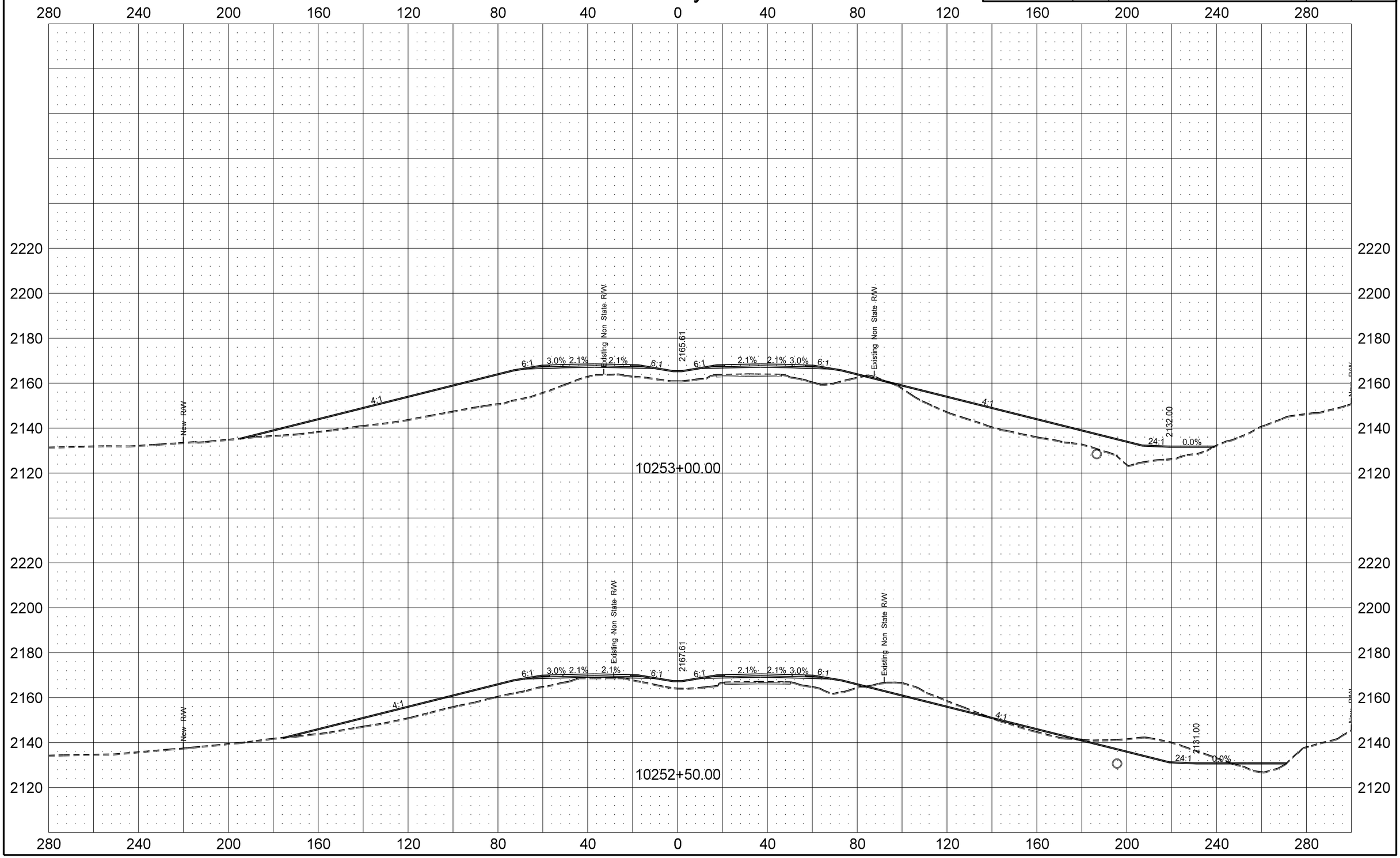
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	78

US Hwy 85



Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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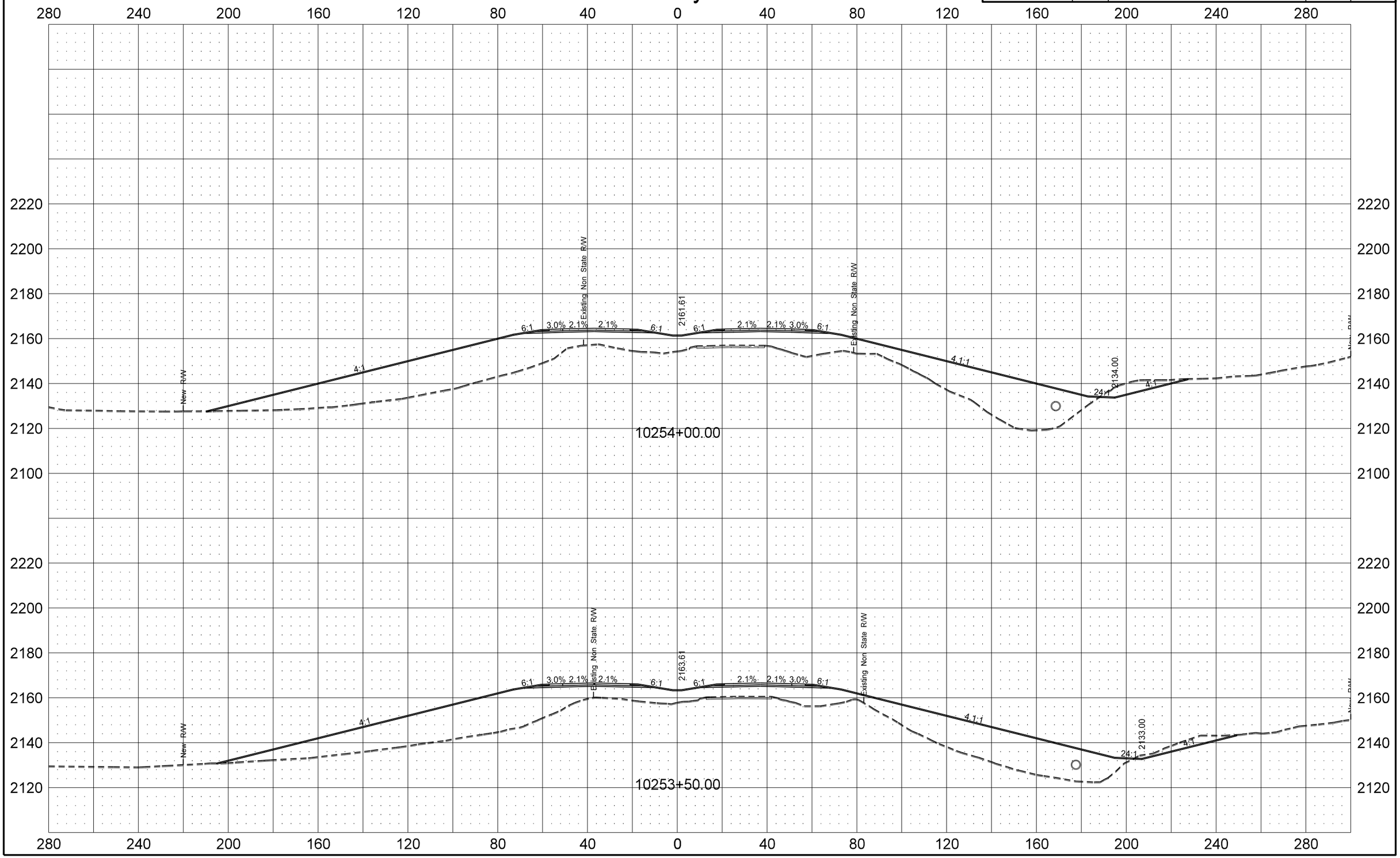
US Hwy 85



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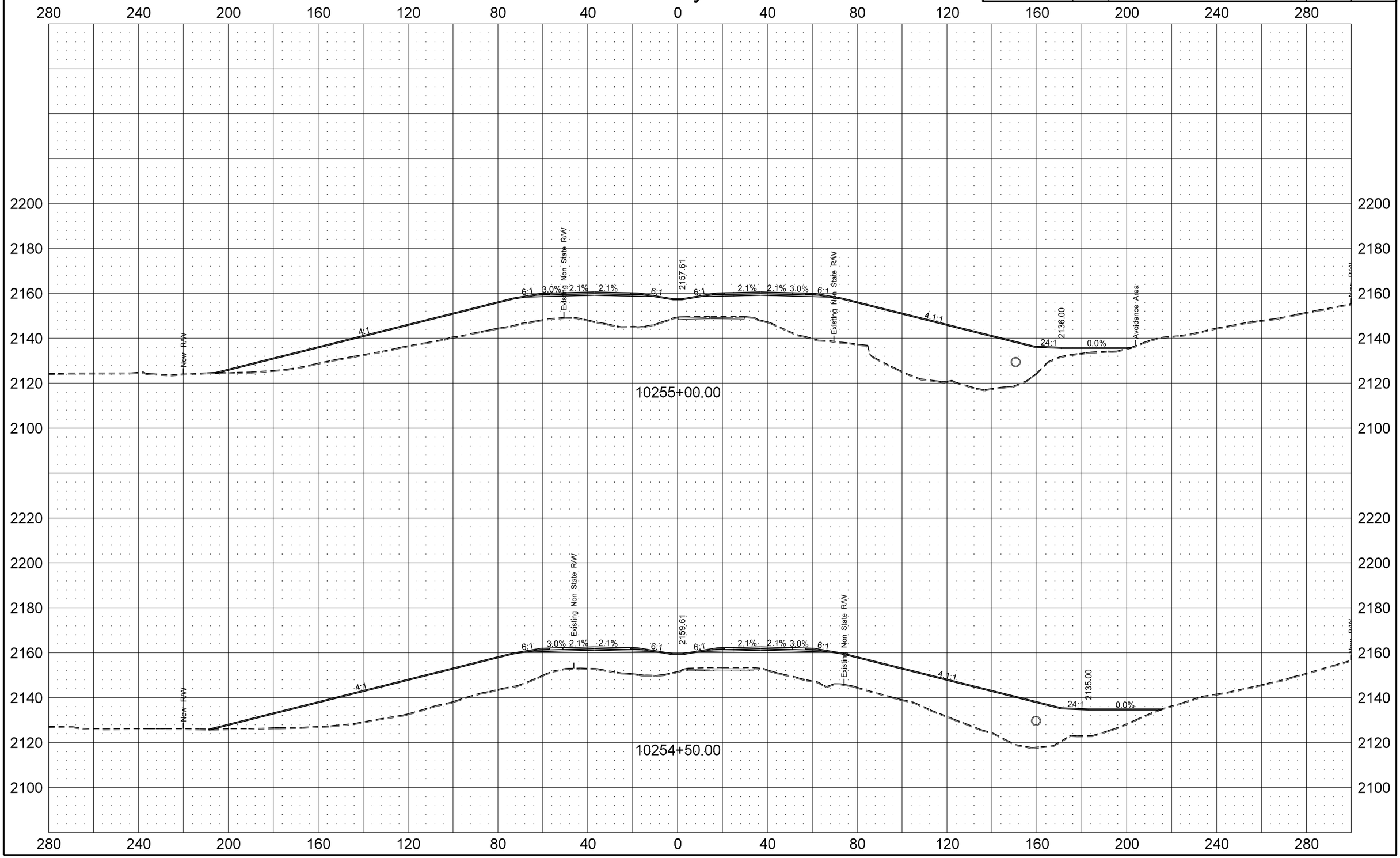
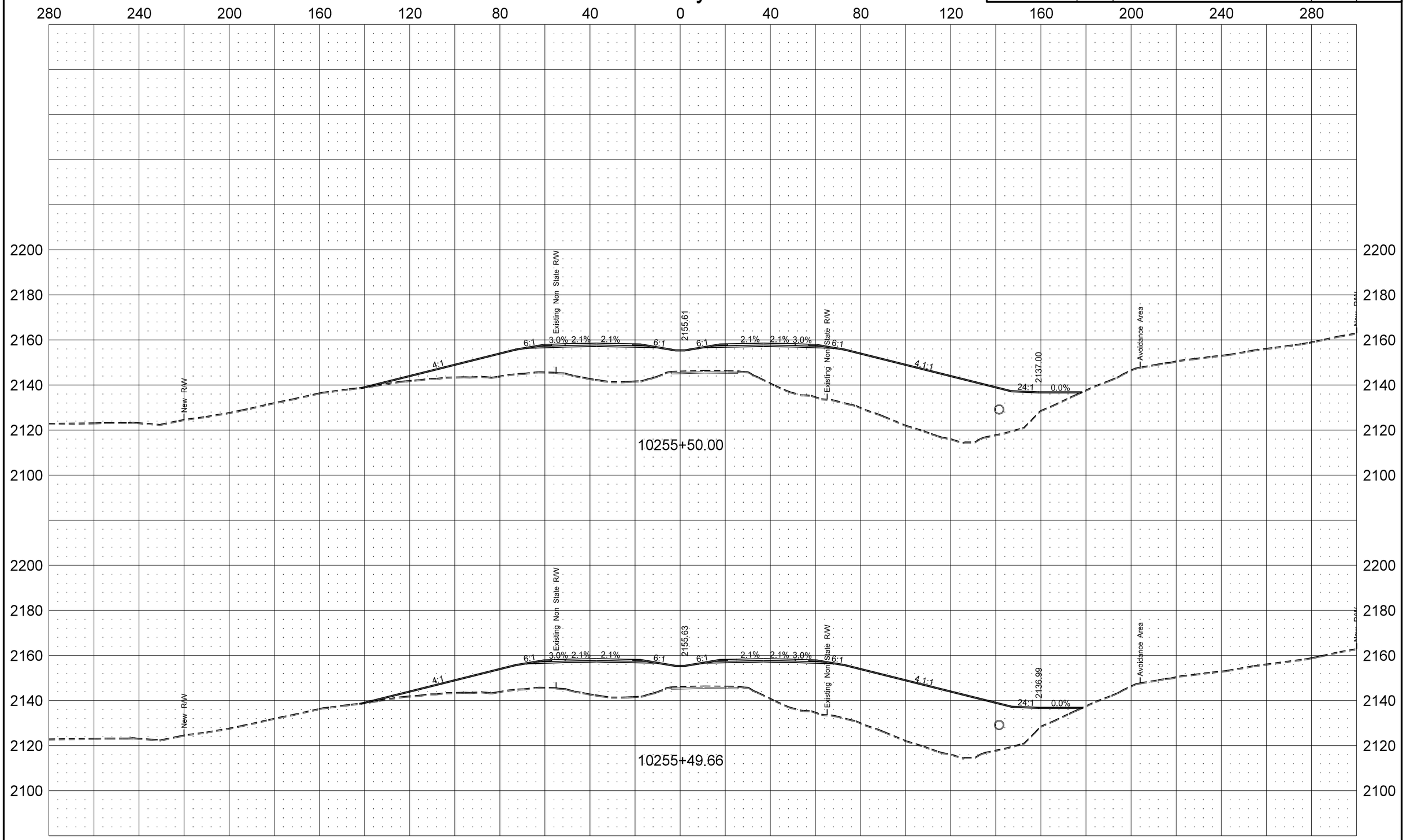
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	80

US Hwy 85



Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	81

US Hwy 85



Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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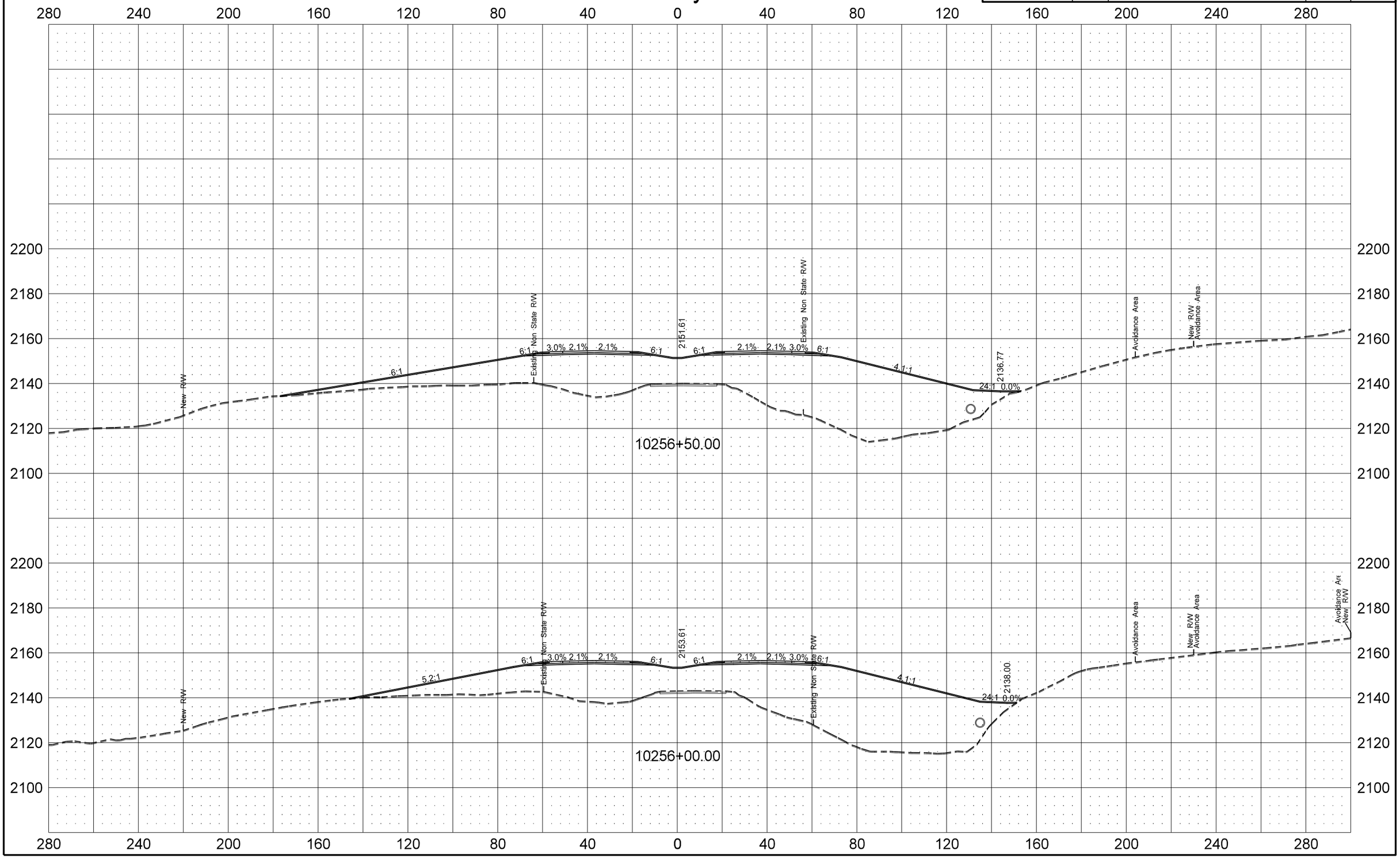
US Hwy 85



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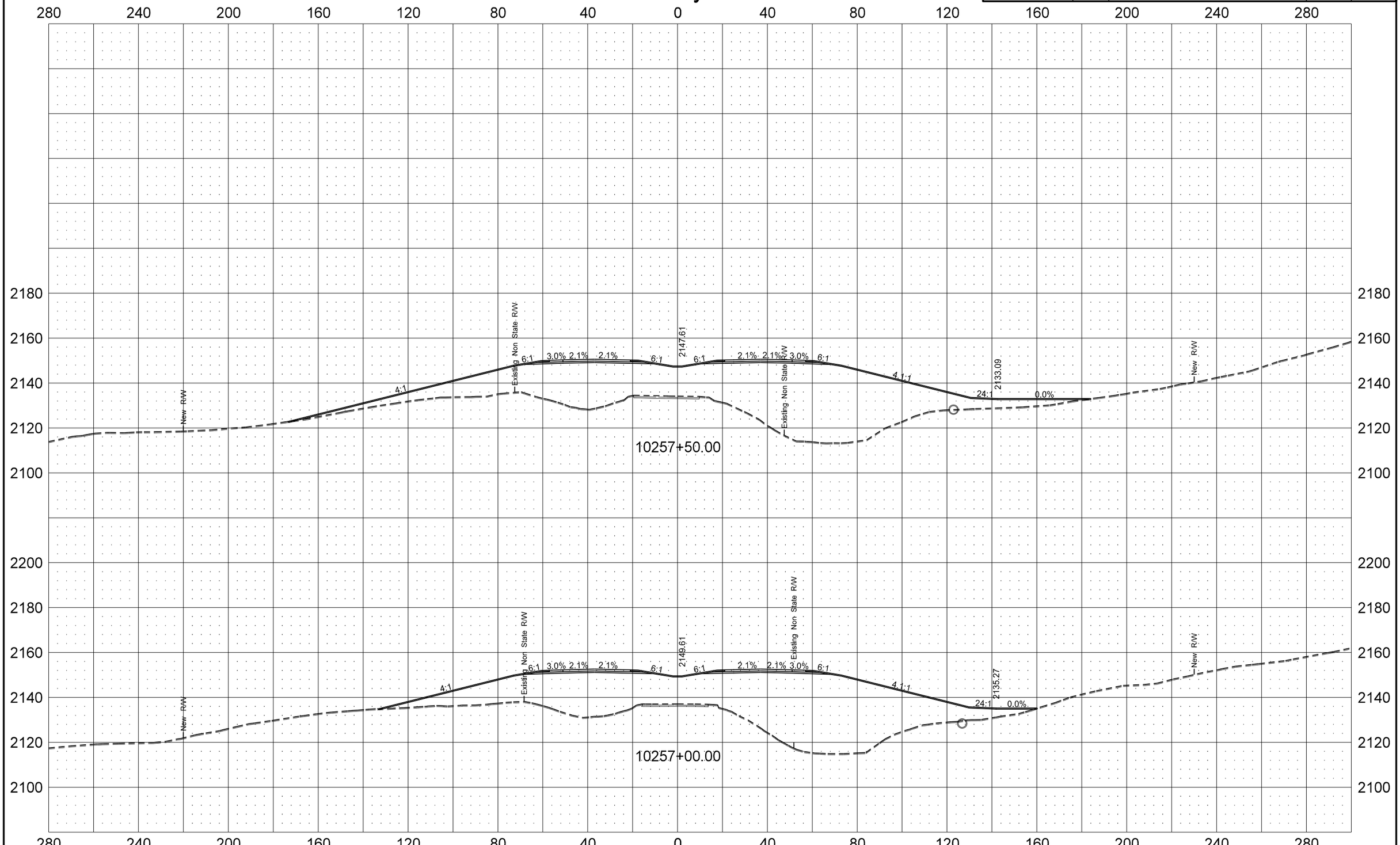
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	83

US Hwy 85



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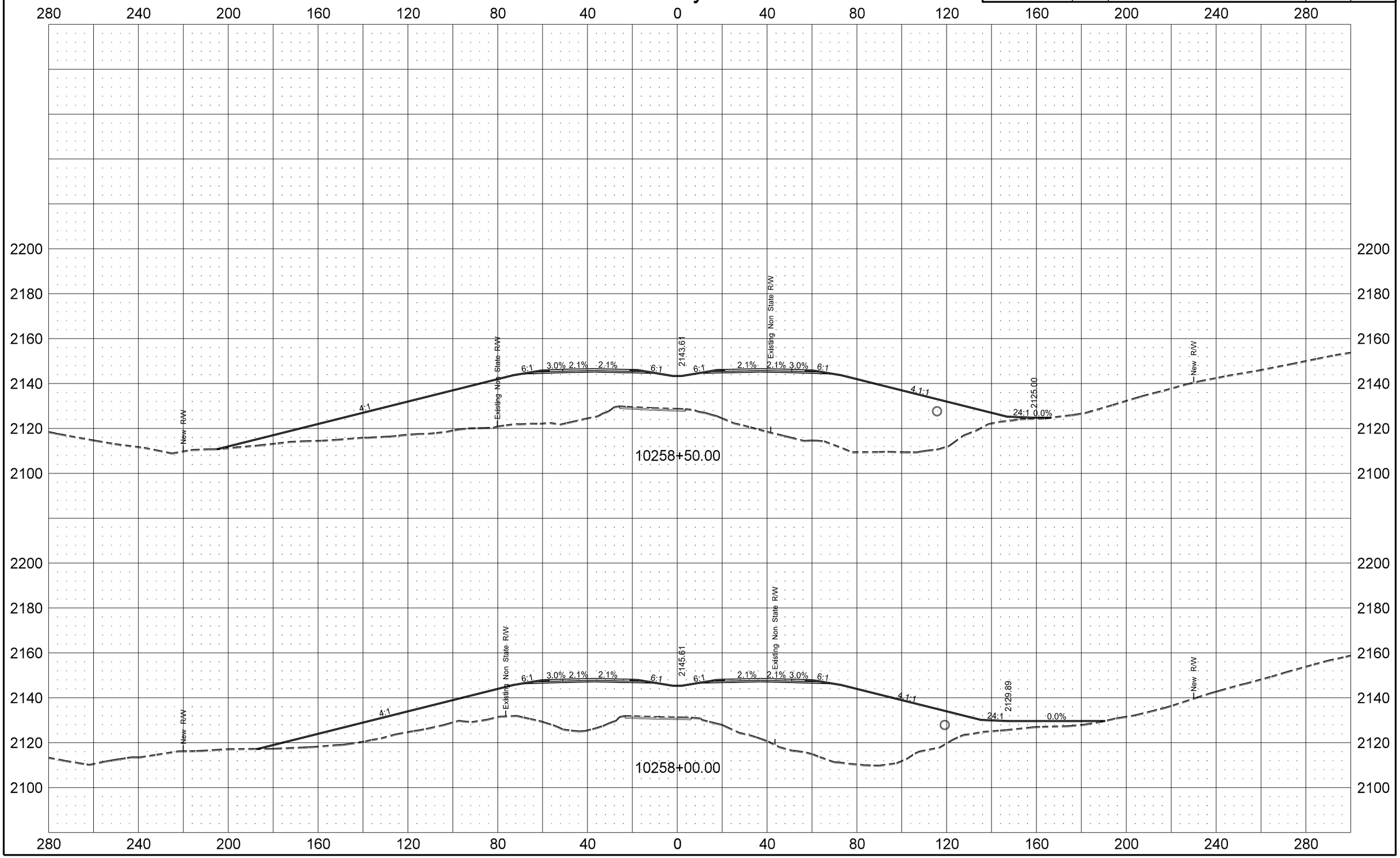
US Hwy 85



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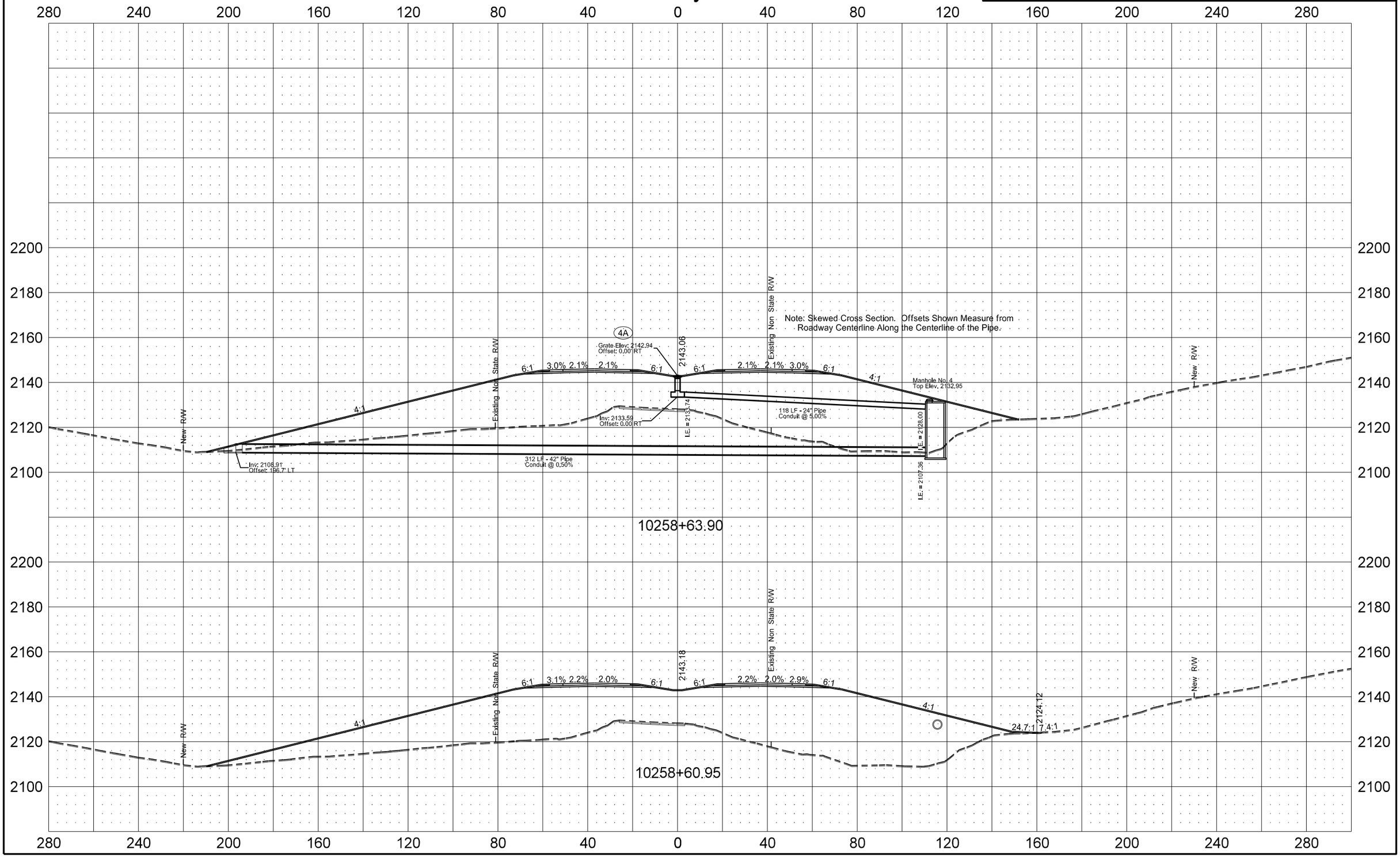
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	85

US Hwy 85



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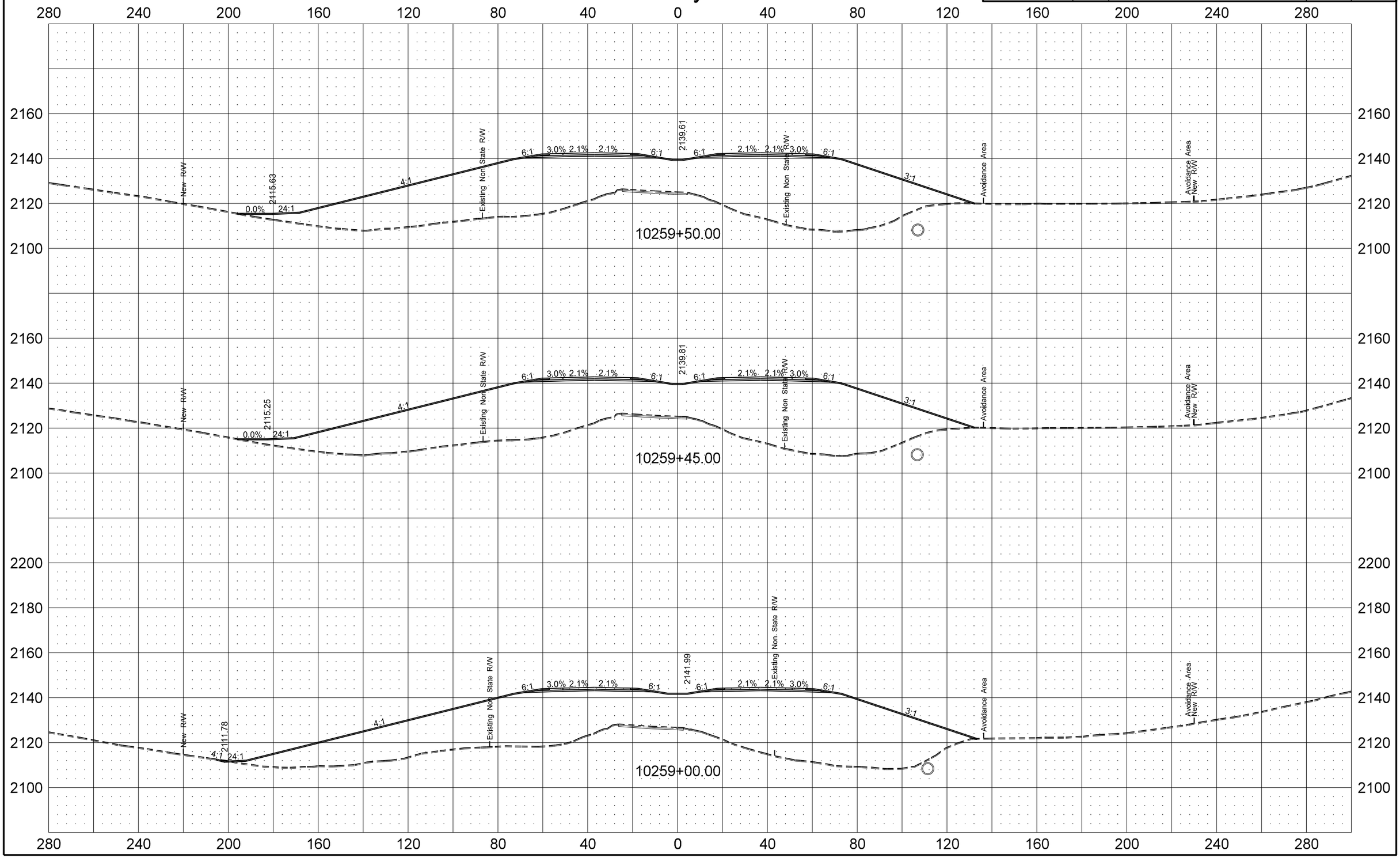
US Hwy 85



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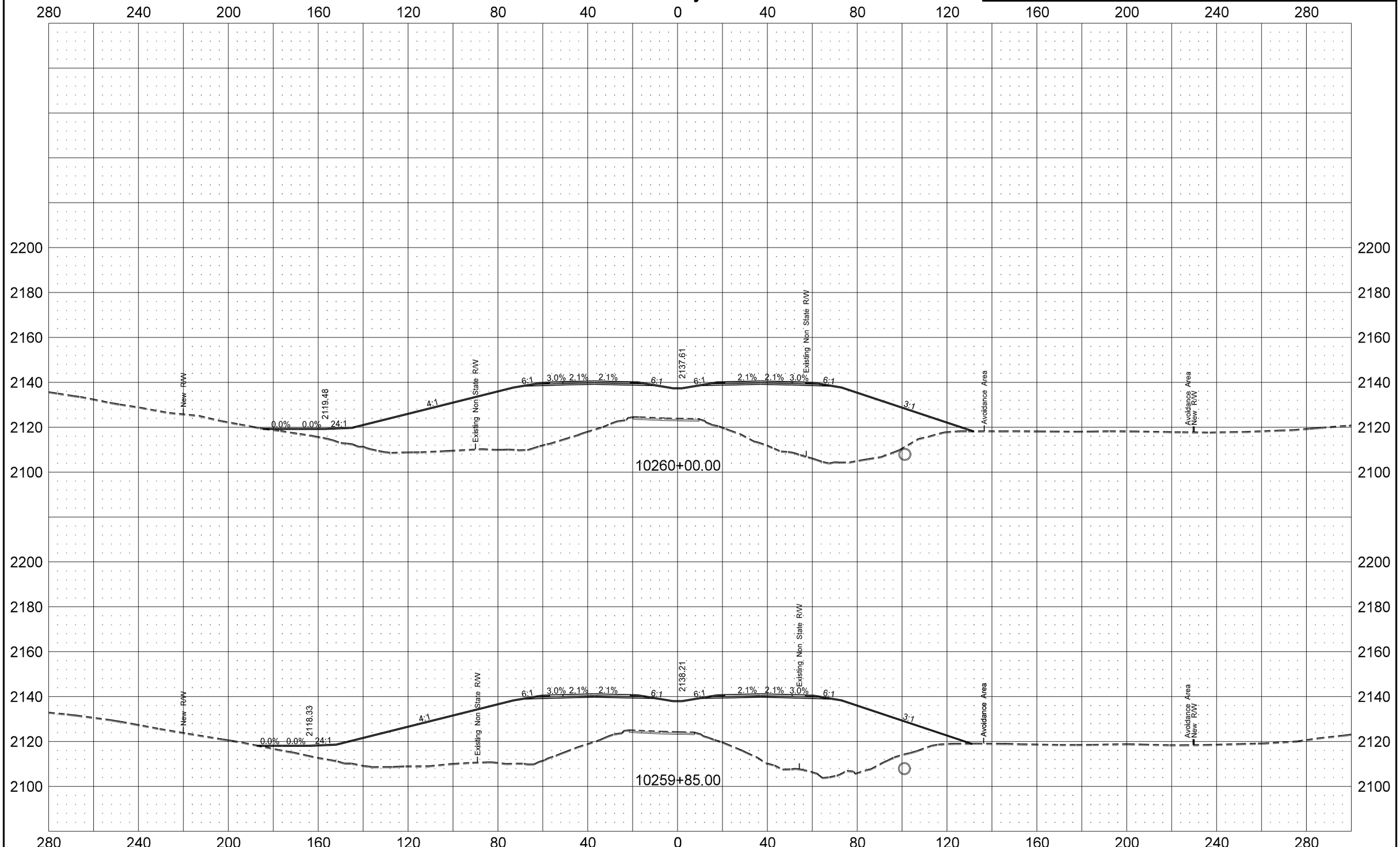
Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	87

US Hwy 85



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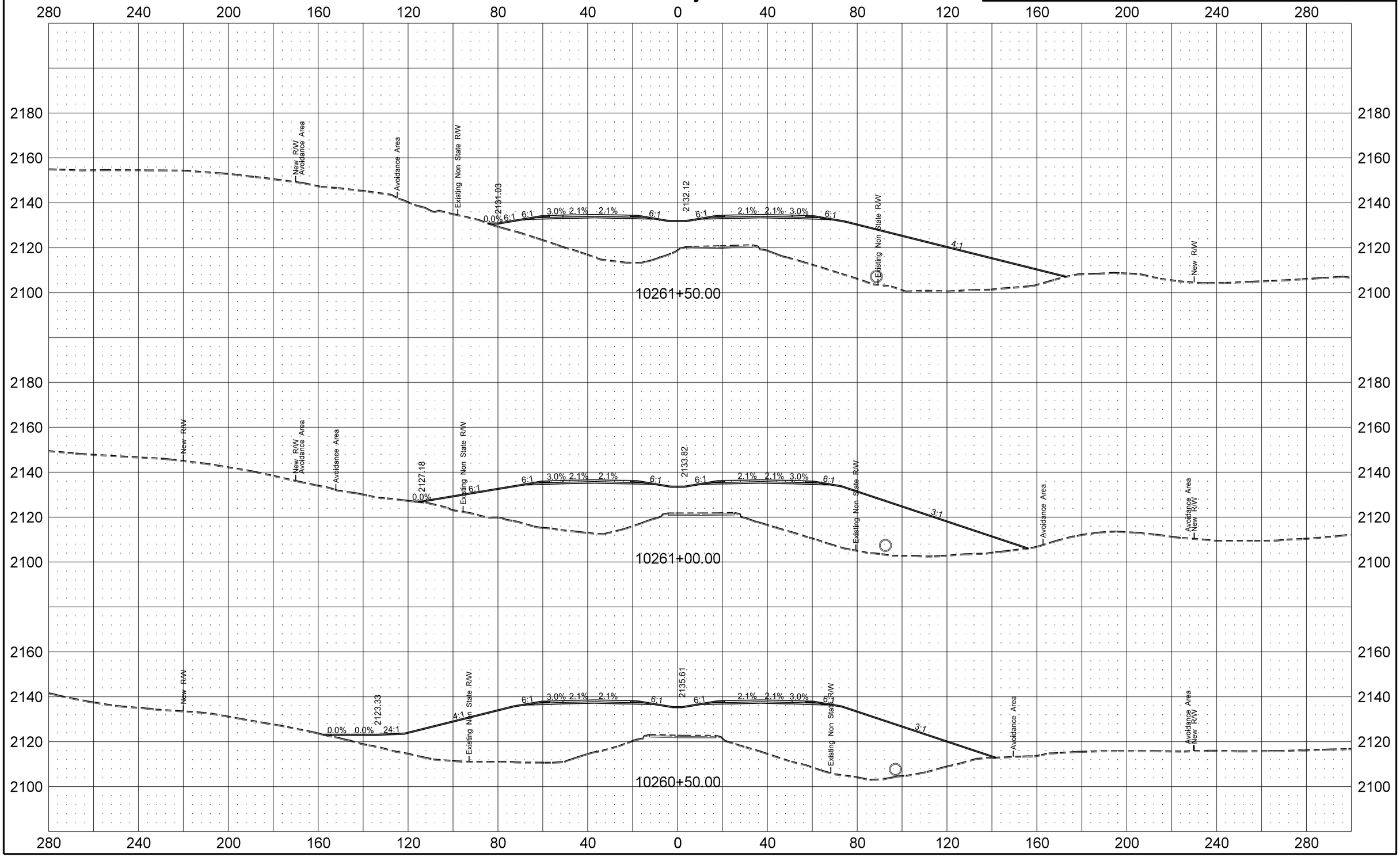
Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	88

US Hwy 85



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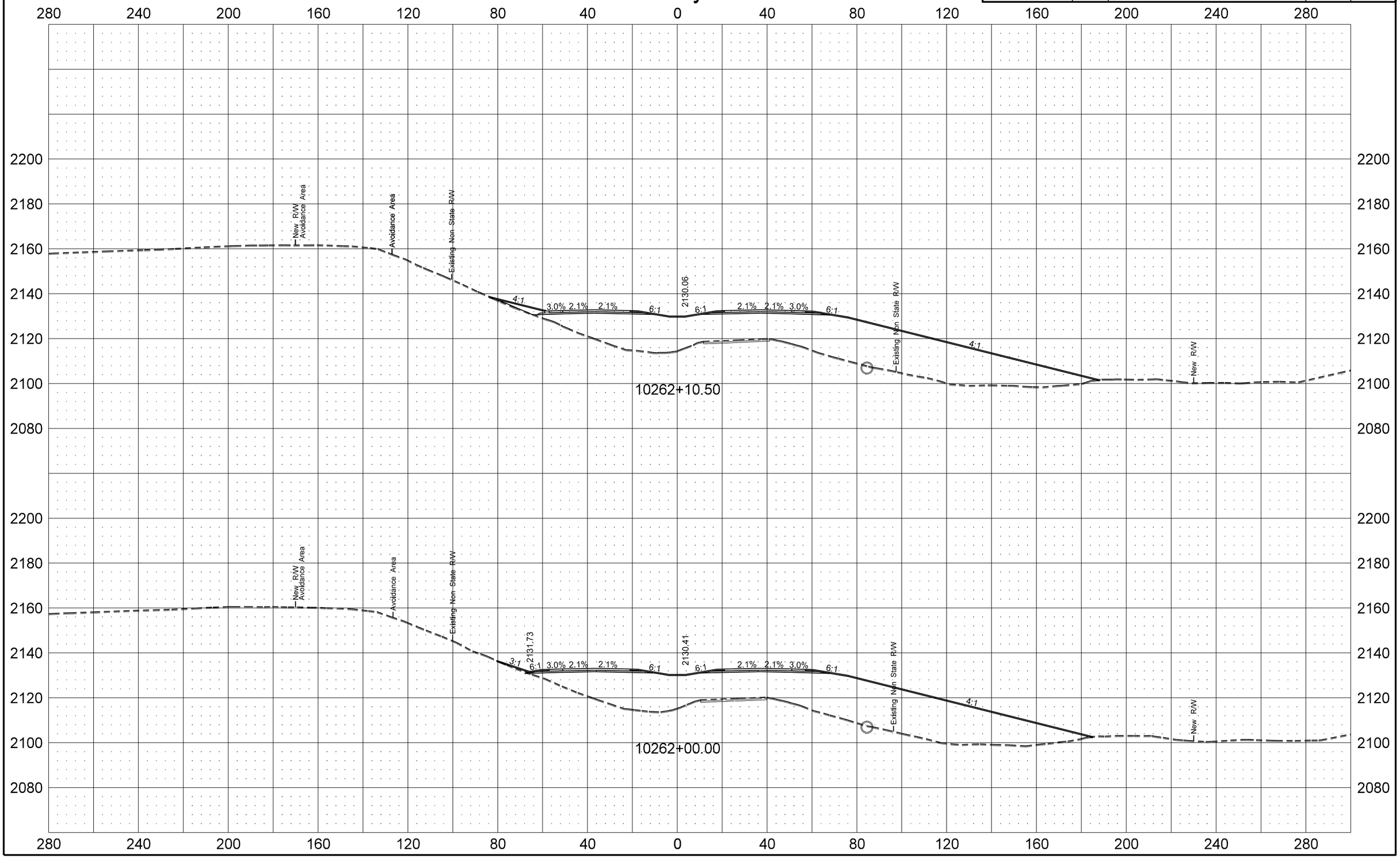
Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	89

US Hwy 85



Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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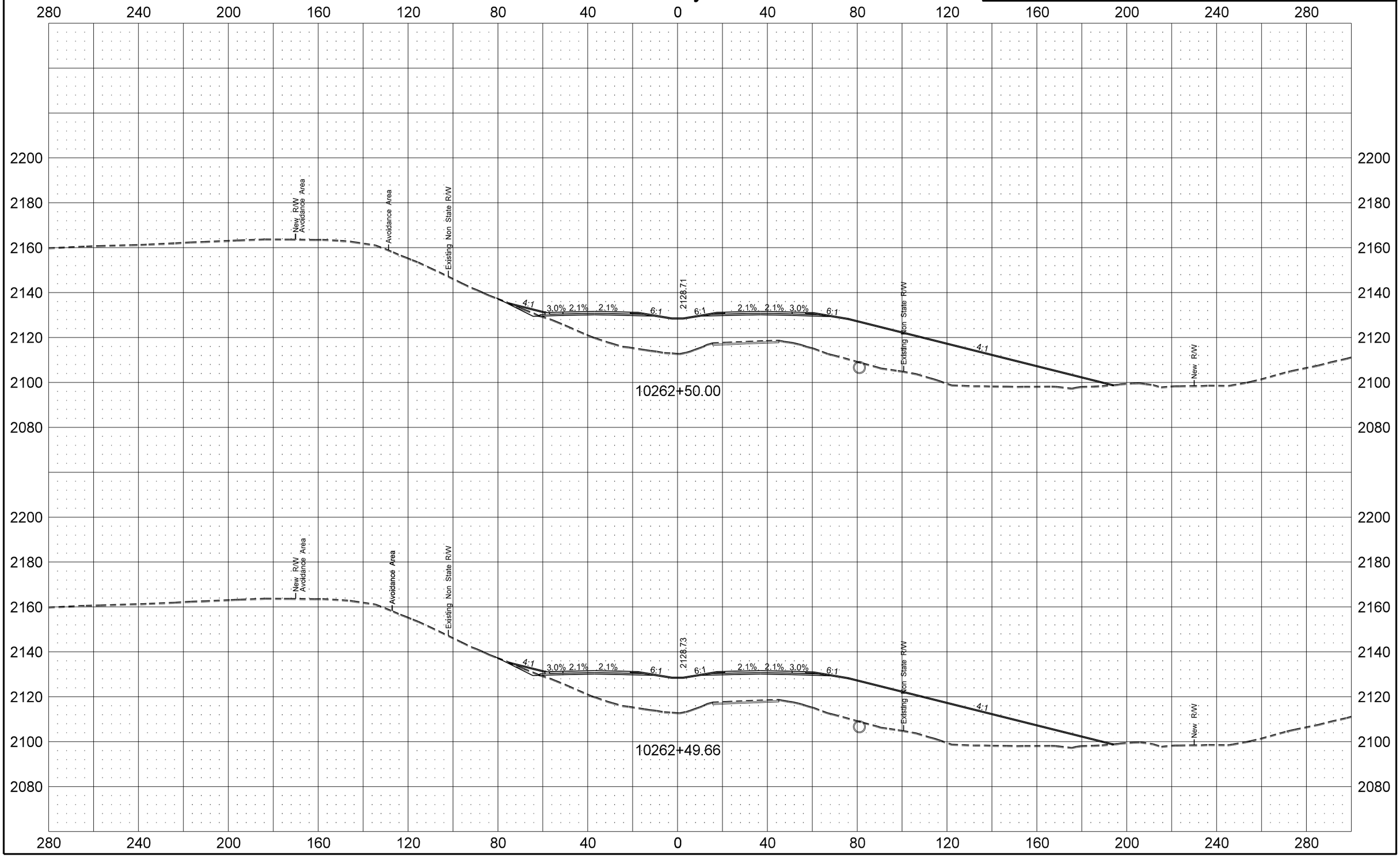
US Hwy 85



Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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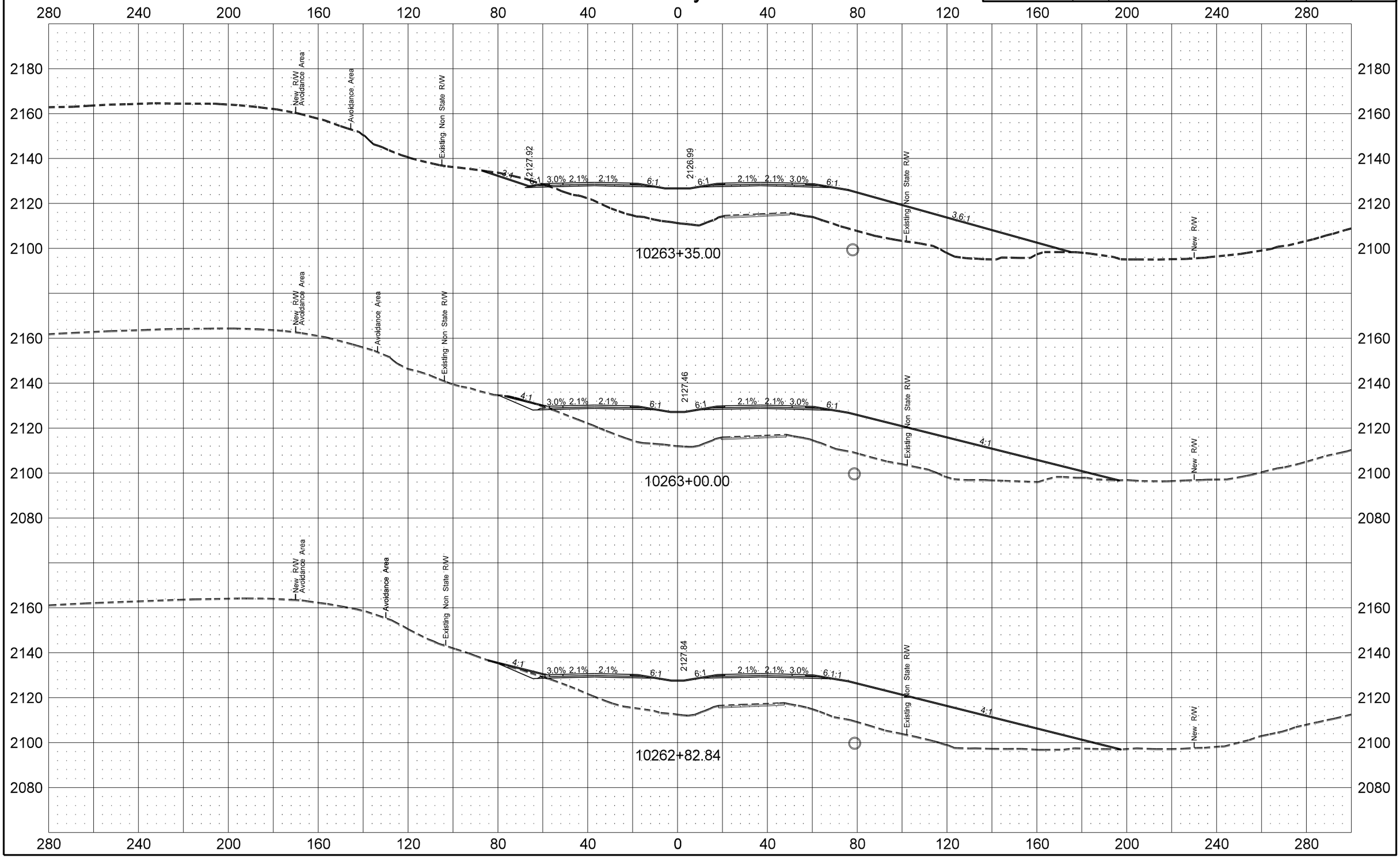
US Hwy 85



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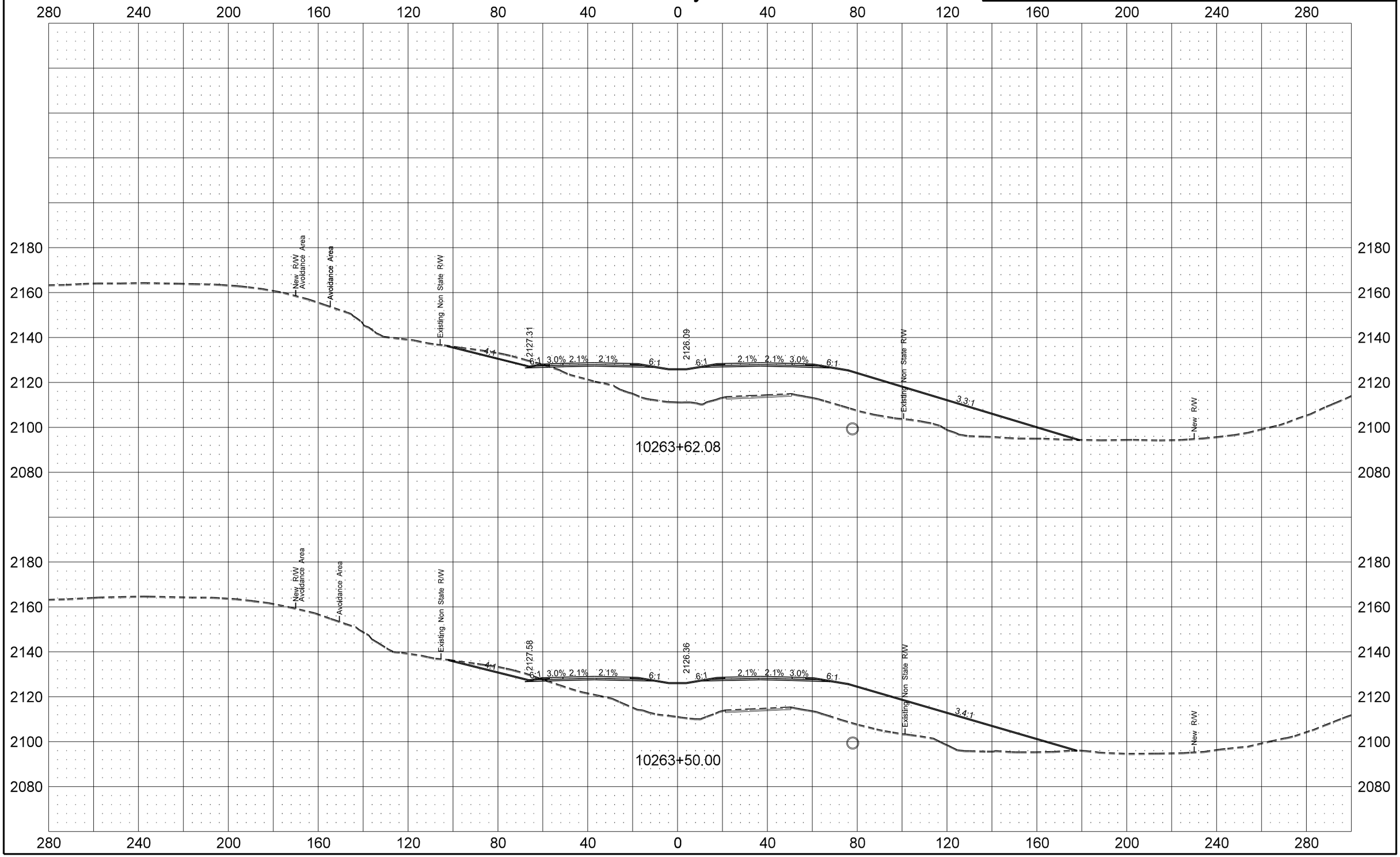
US Hwy 85



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Revised 5/13/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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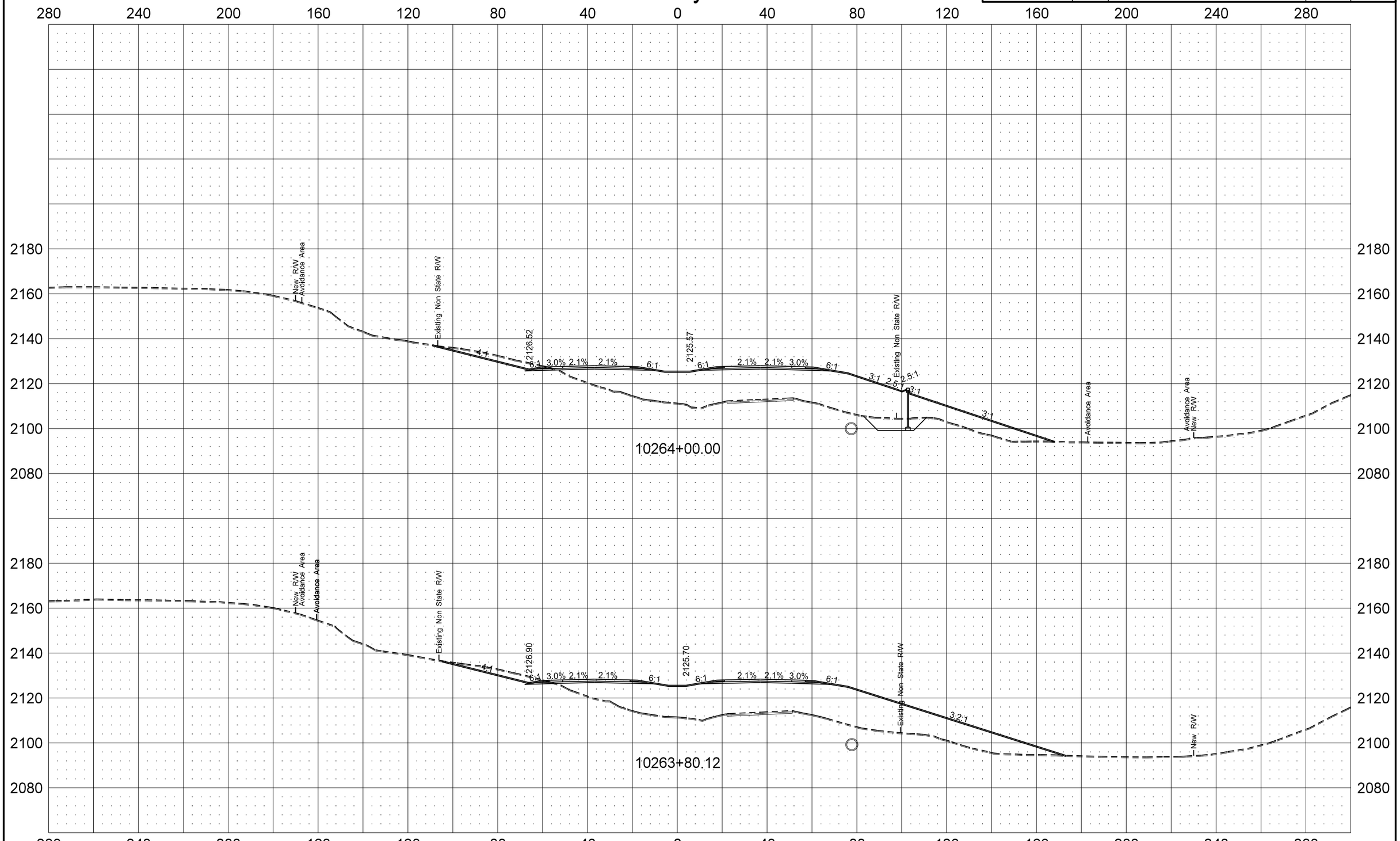
US Hwy 85



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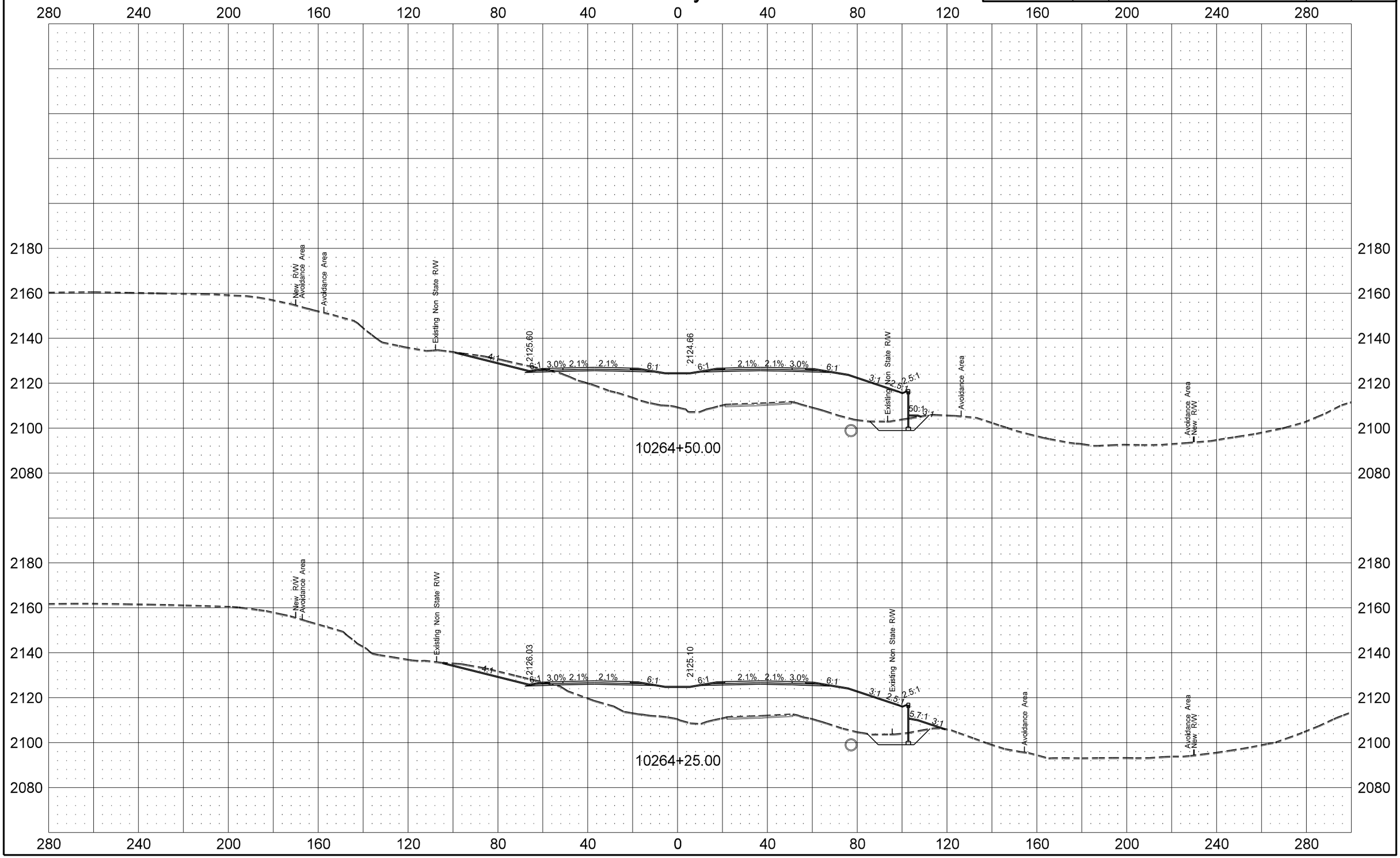
US Hwy 85



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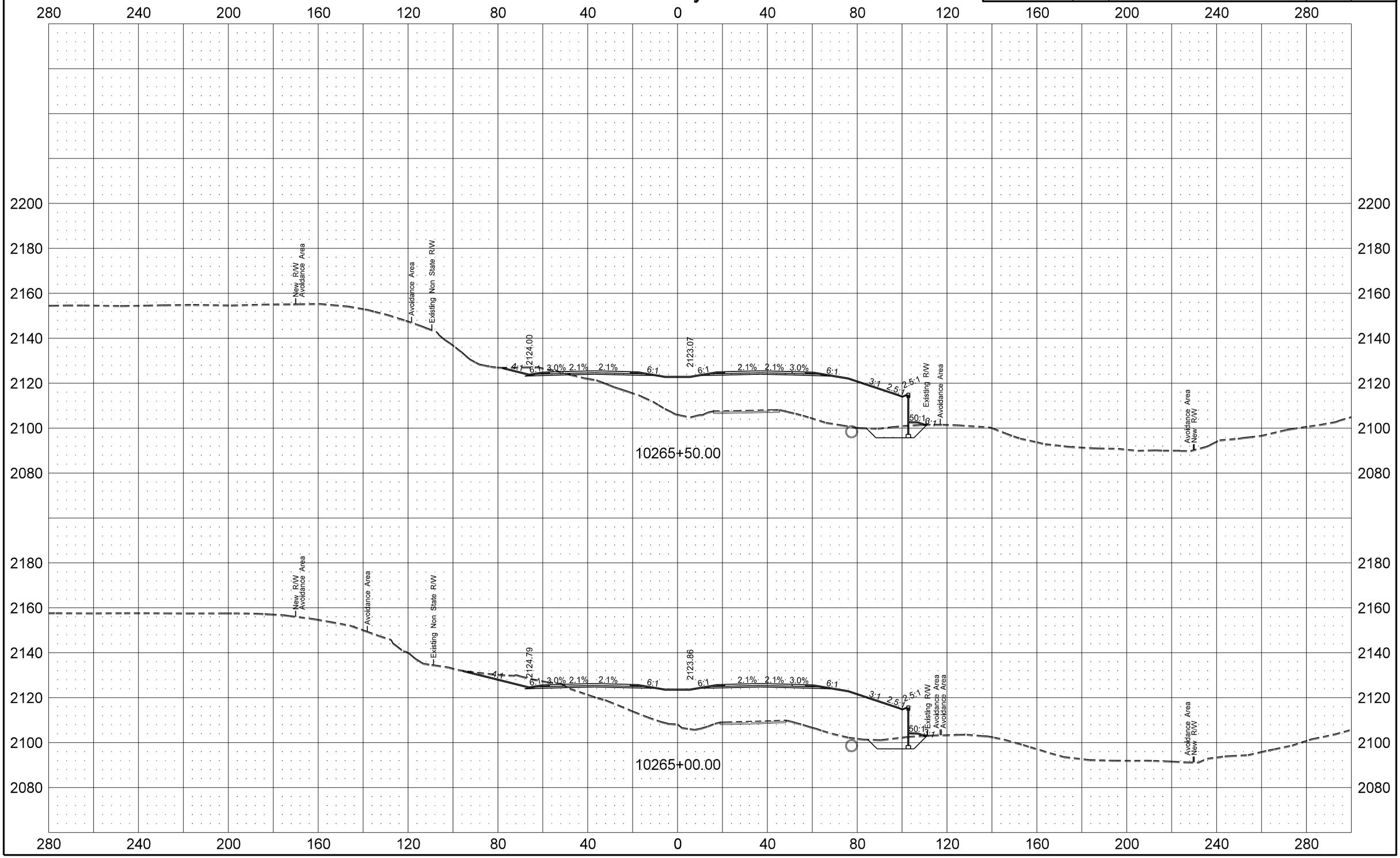
US Hwy 85



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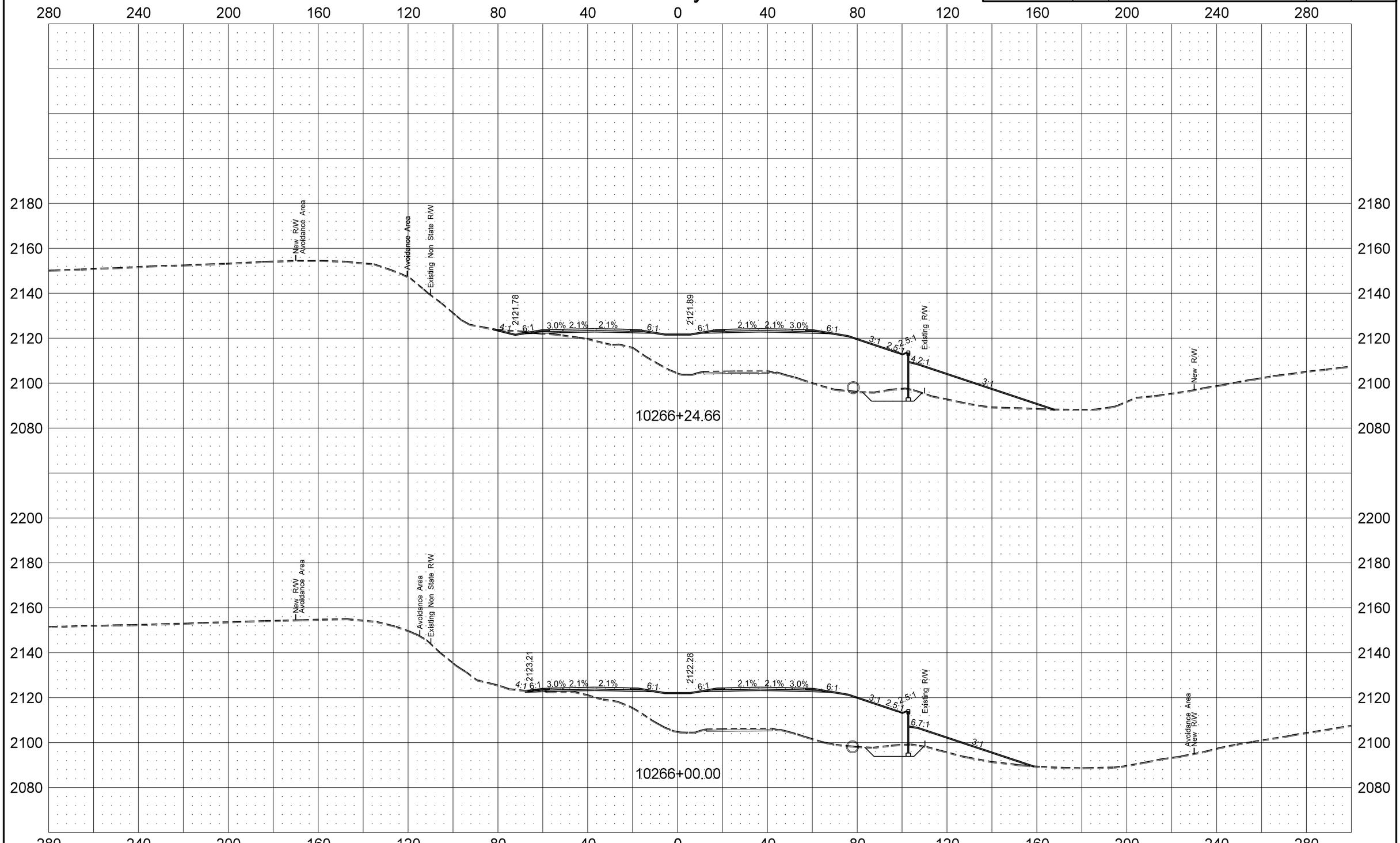
US Hwy 85



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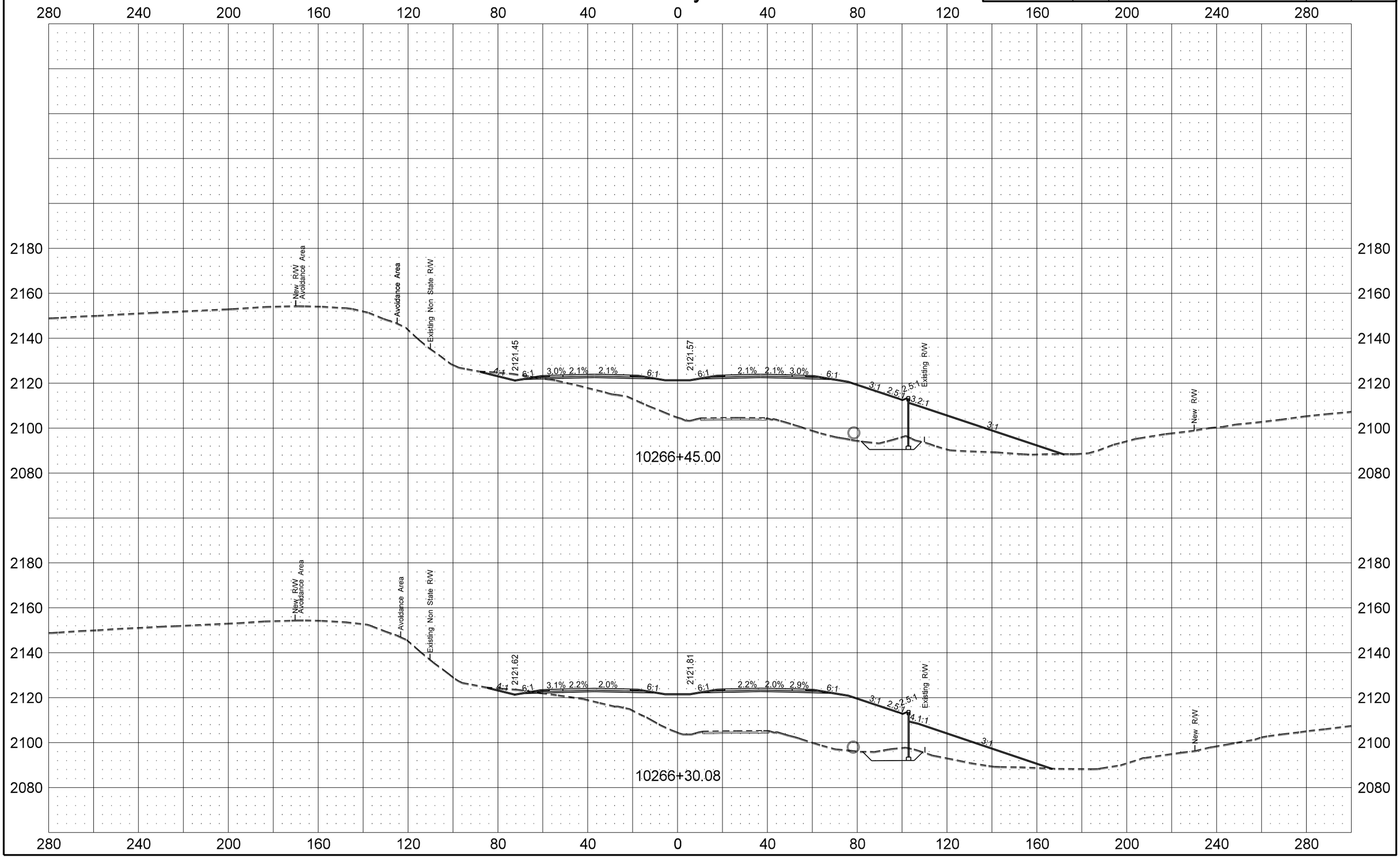
US Hwy 85



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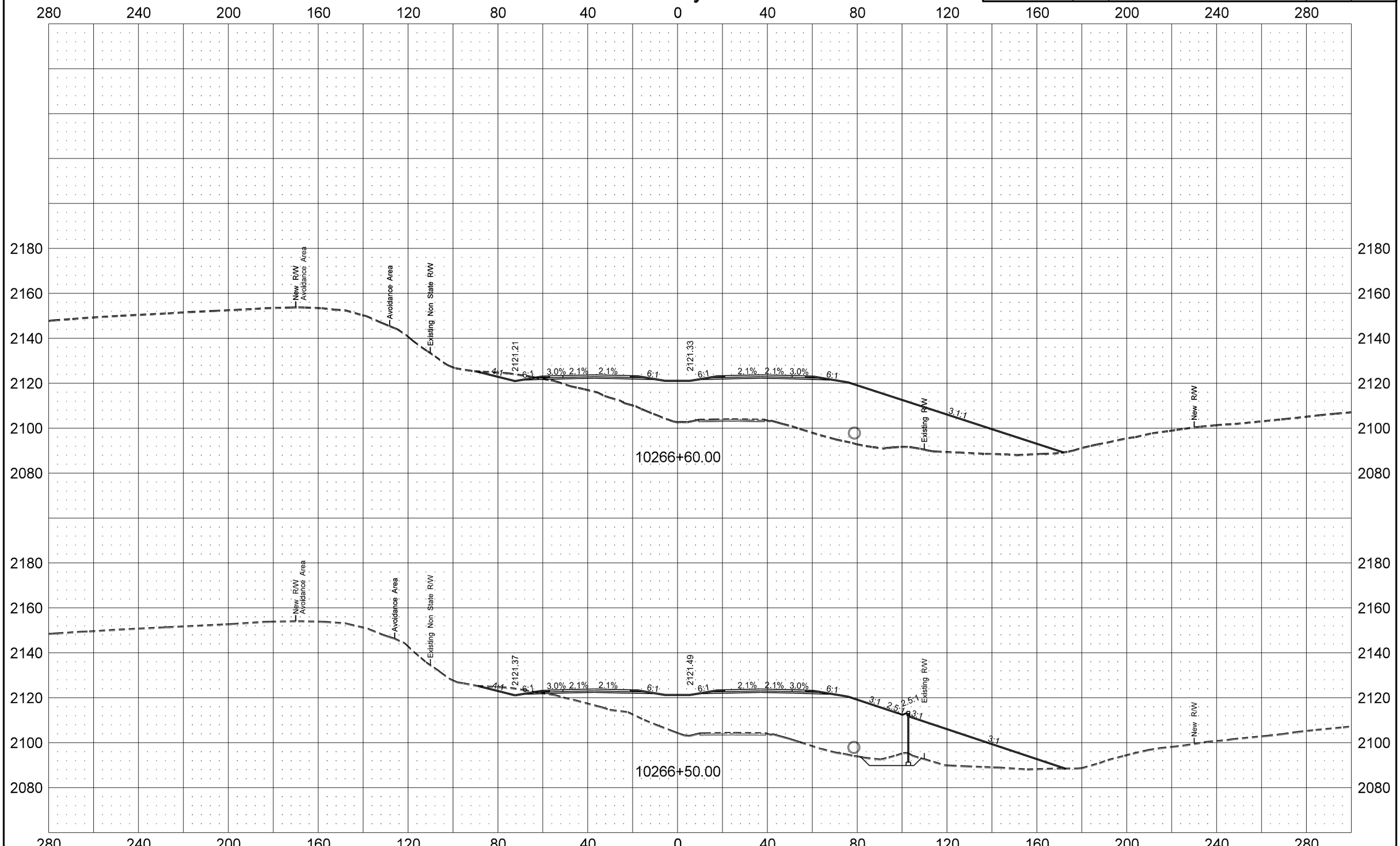
US Hwy 85



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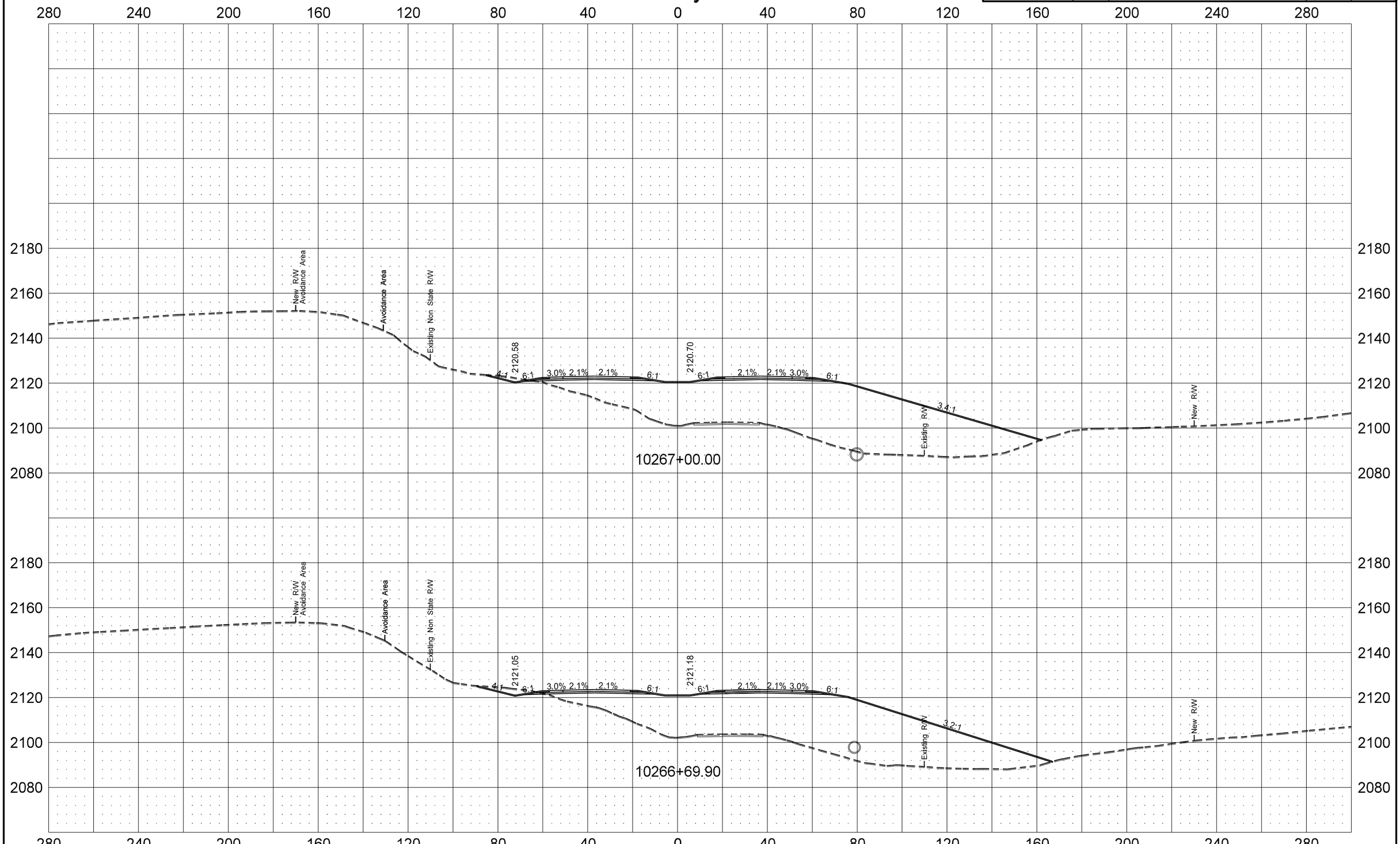
US Hwy 85



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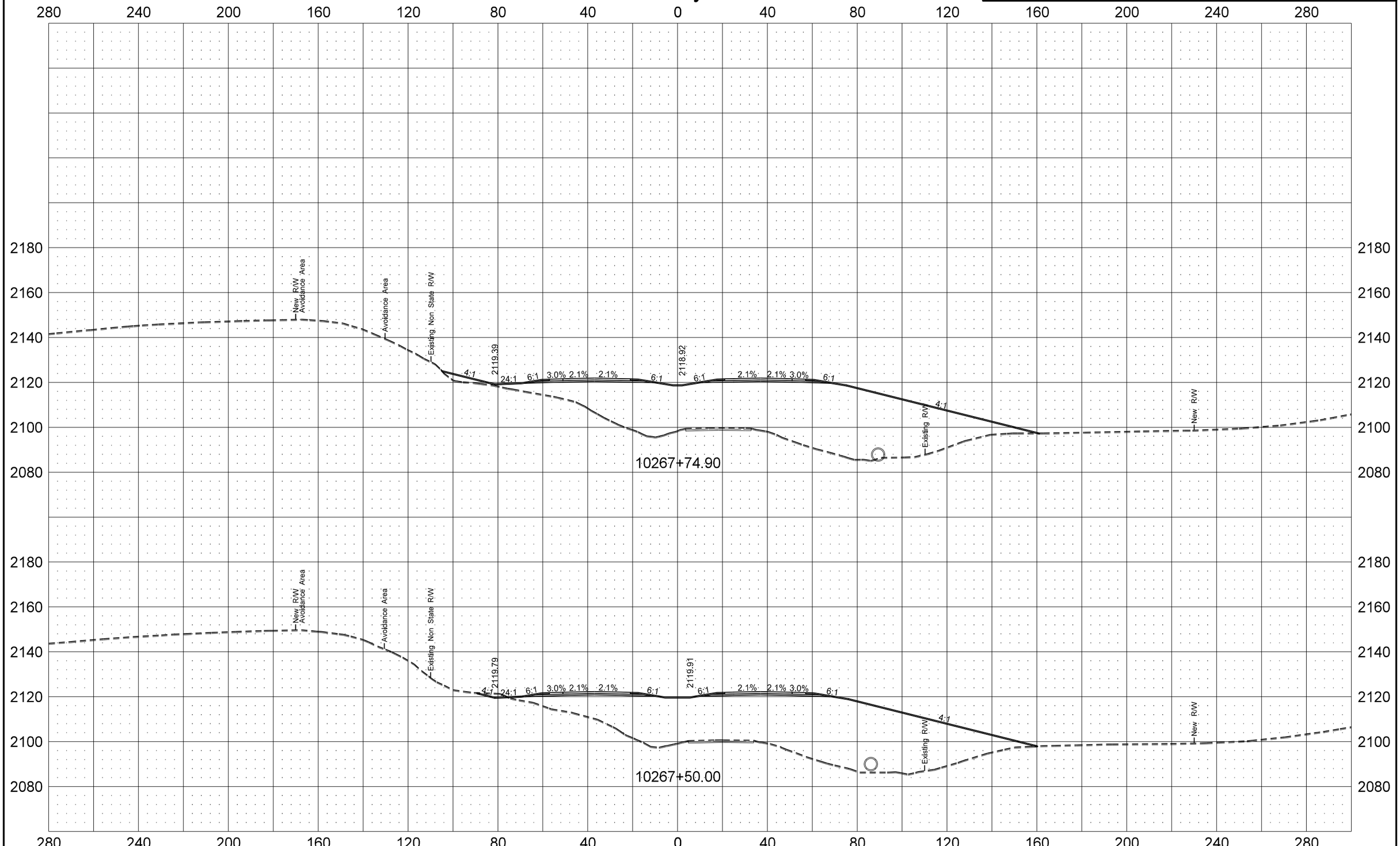
US Hwy 85



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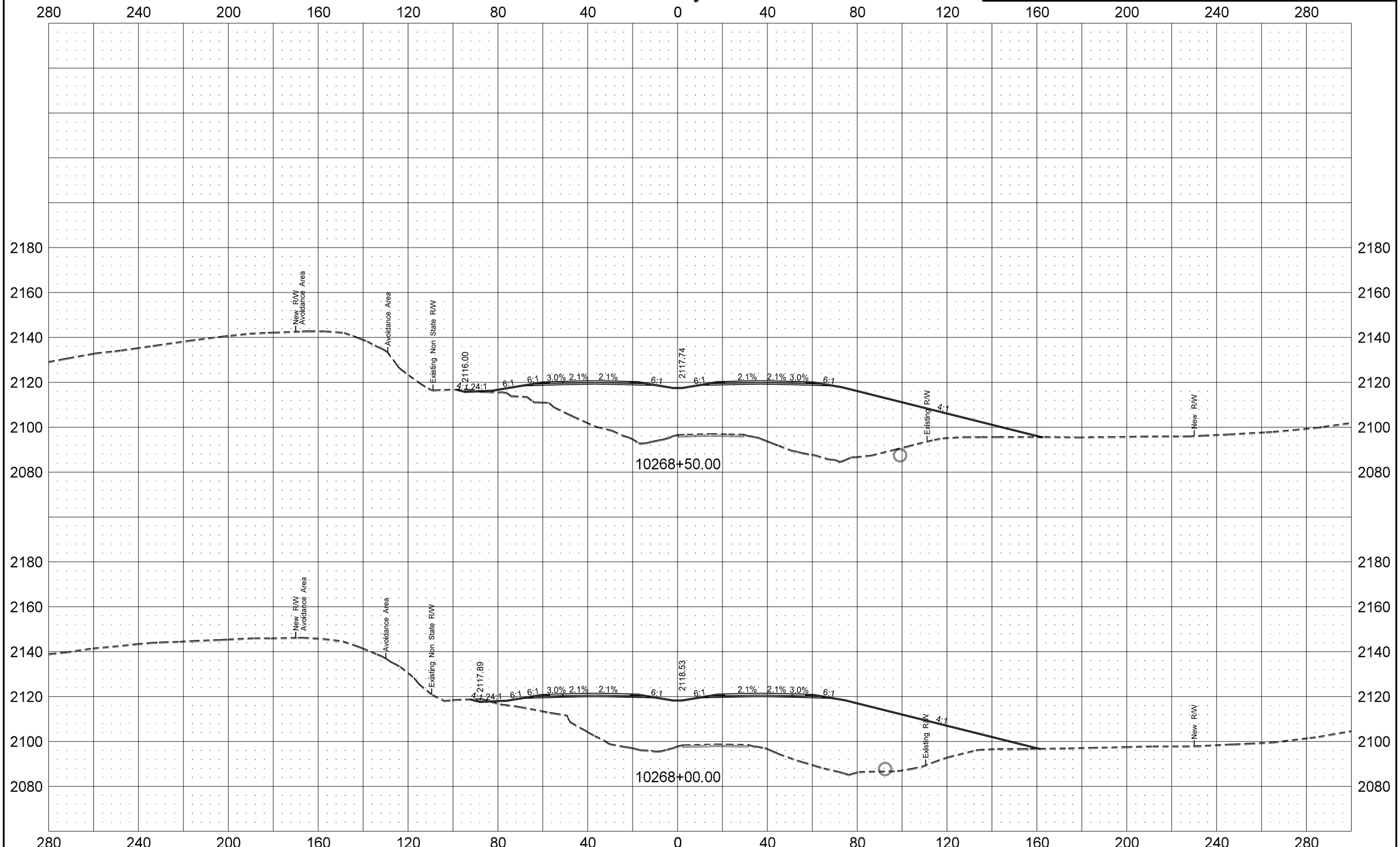
US Hwy 85



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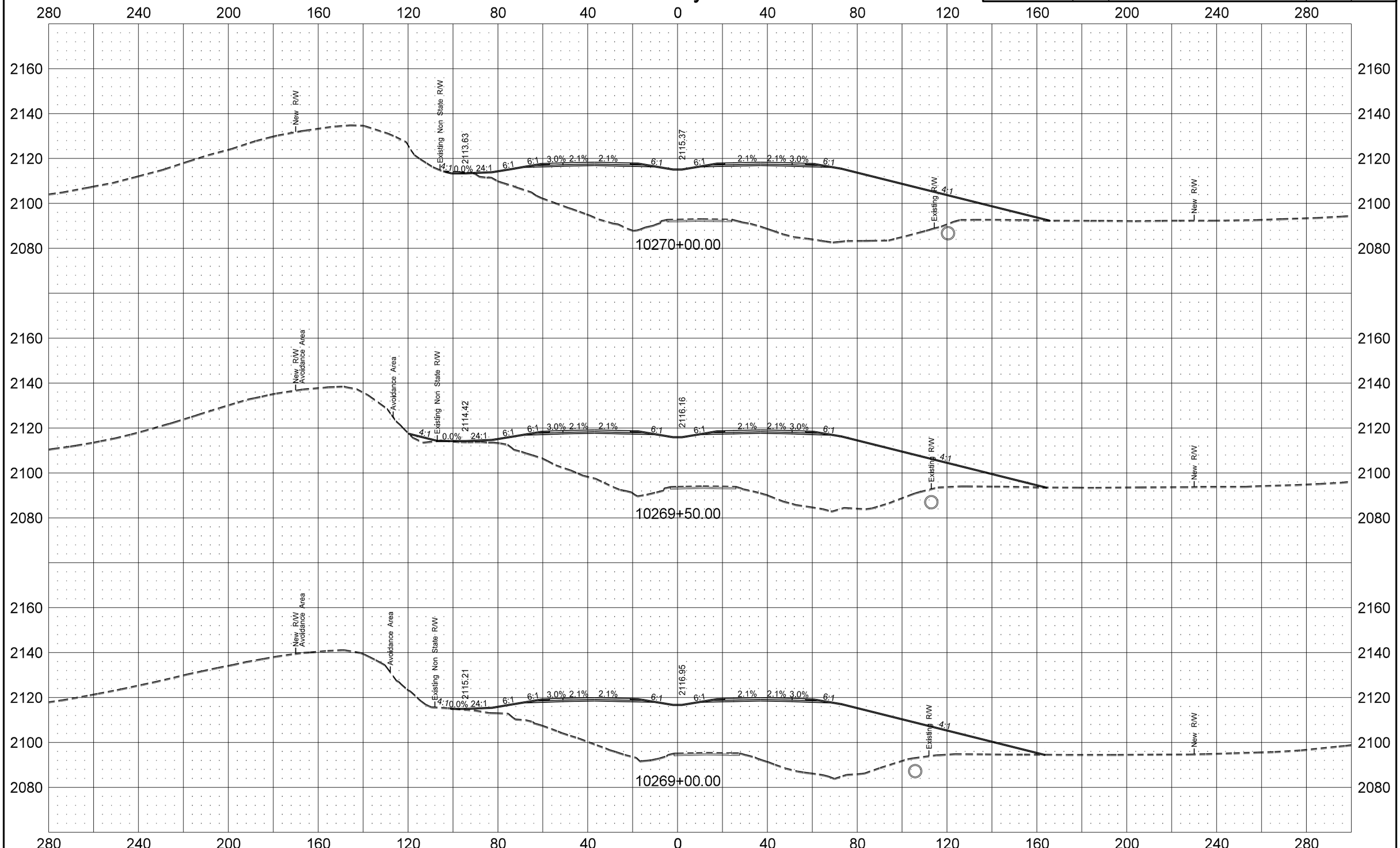
US Hwy 85



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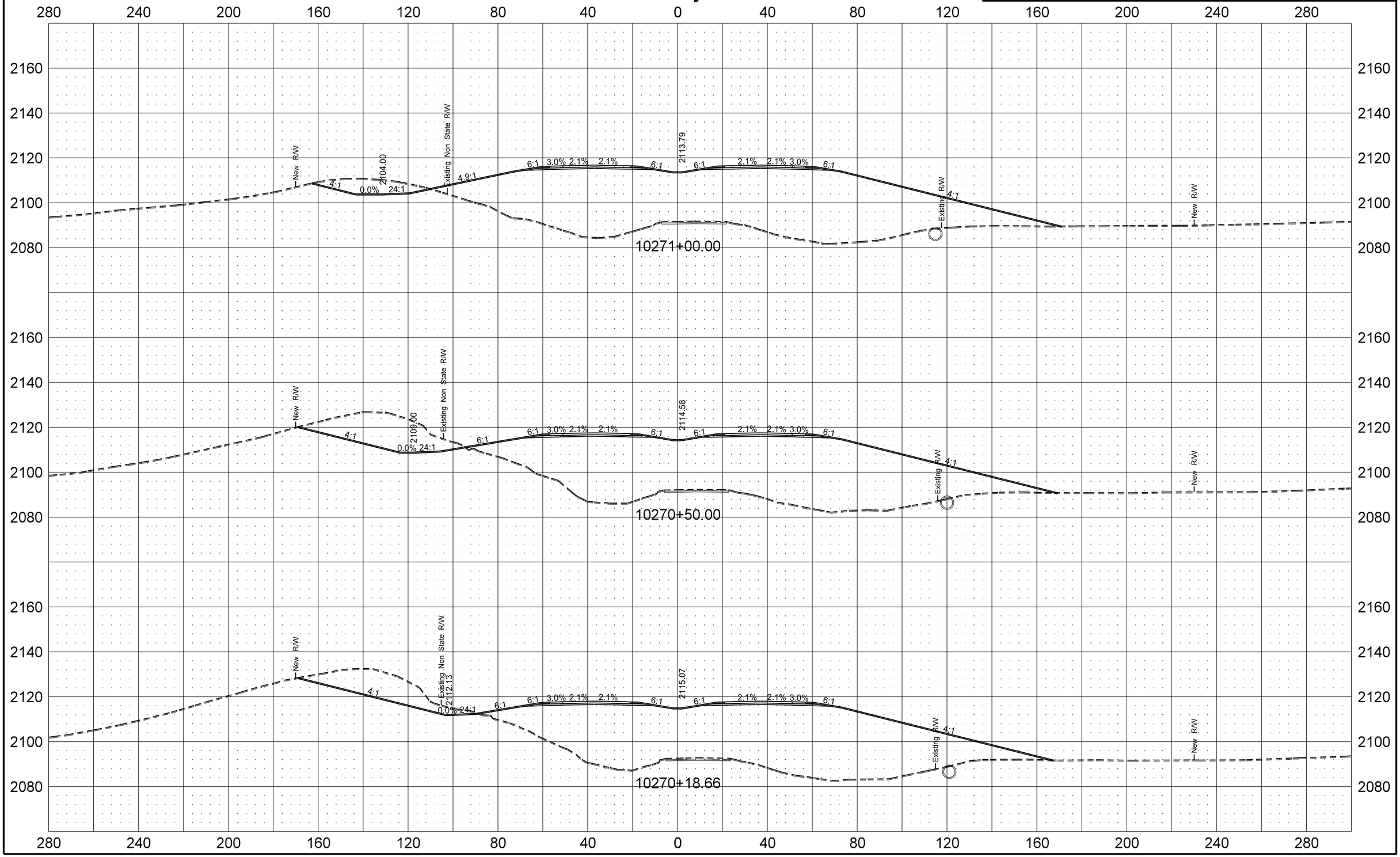

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Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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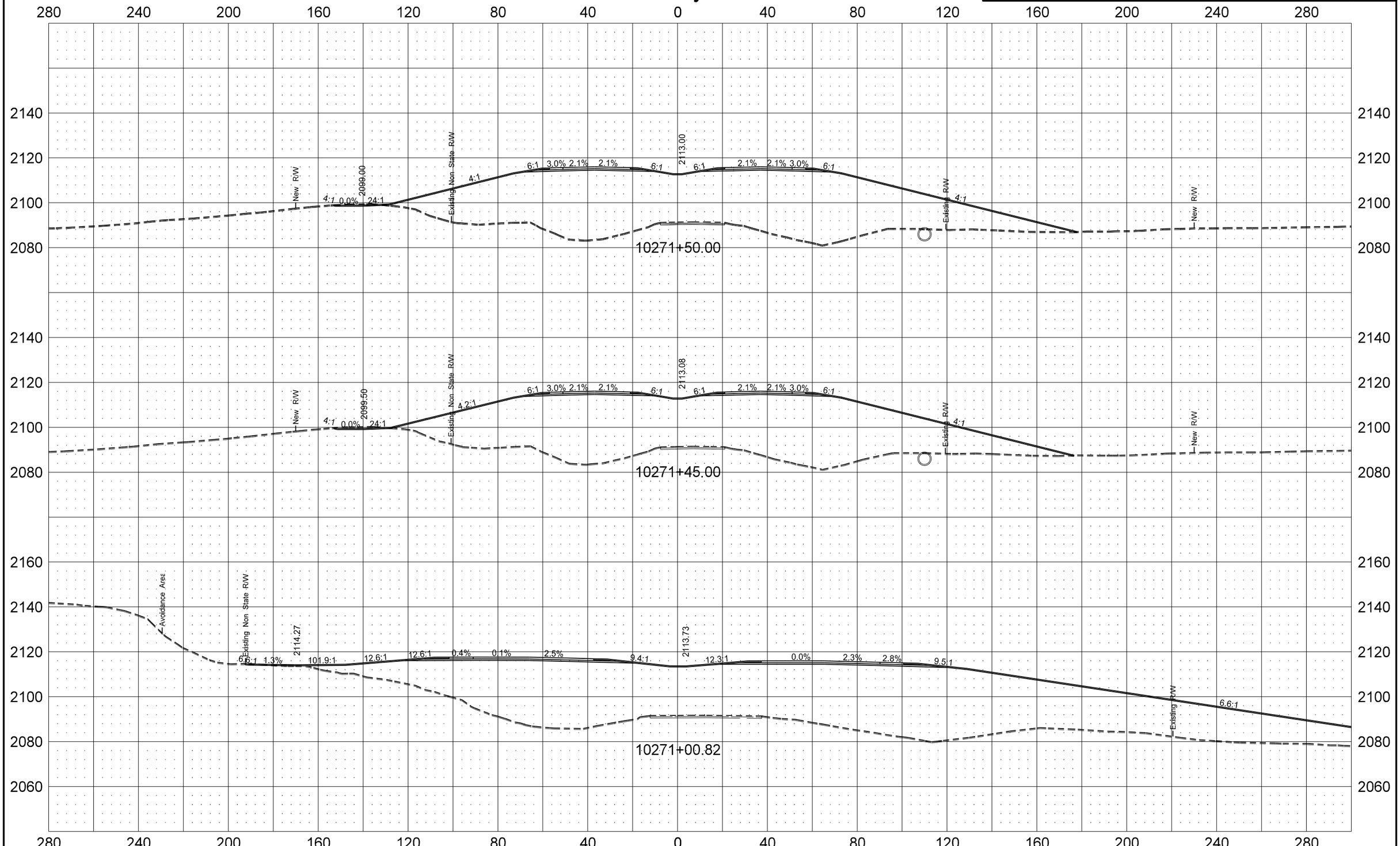
US Hwy 85



Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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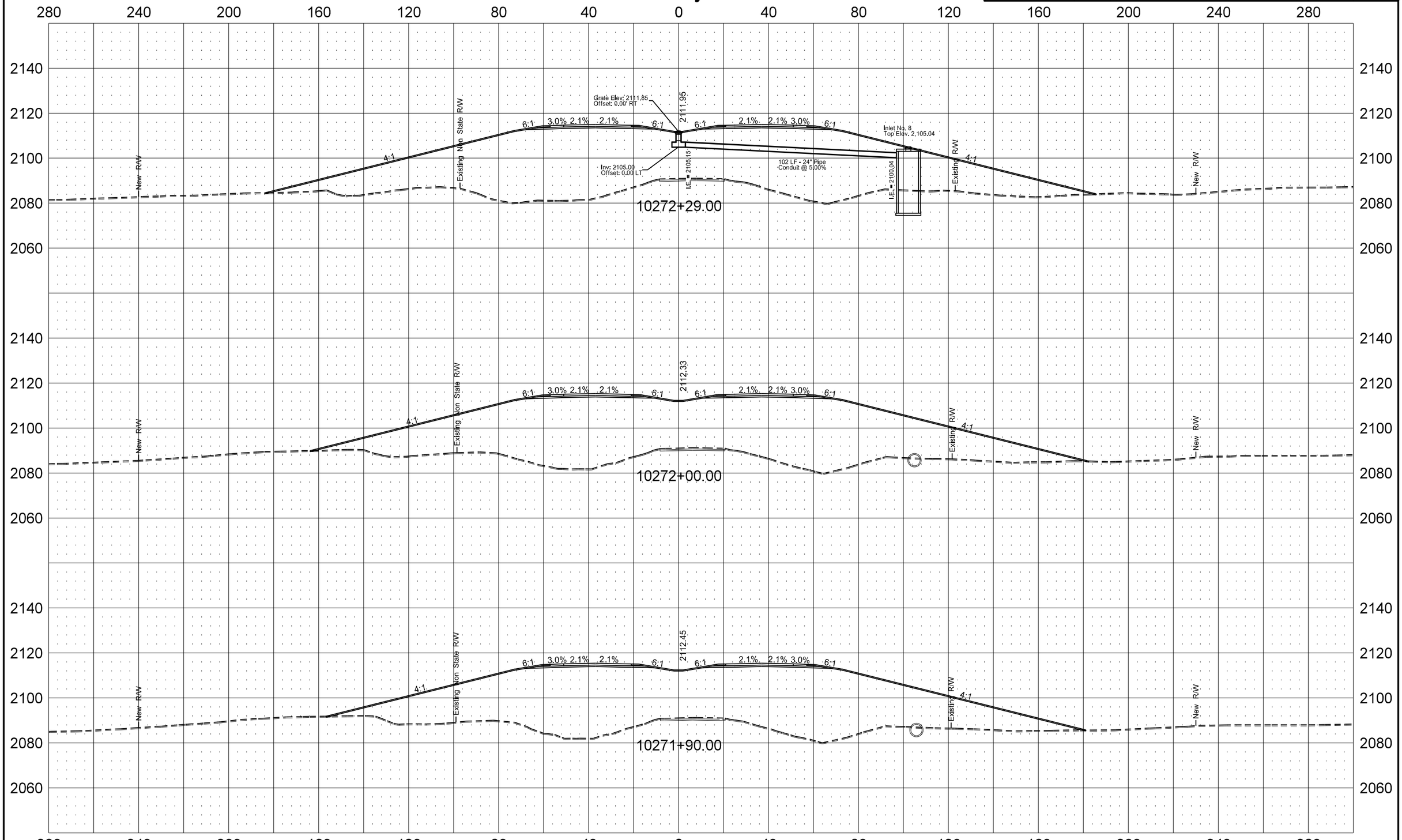
US Hwy 85



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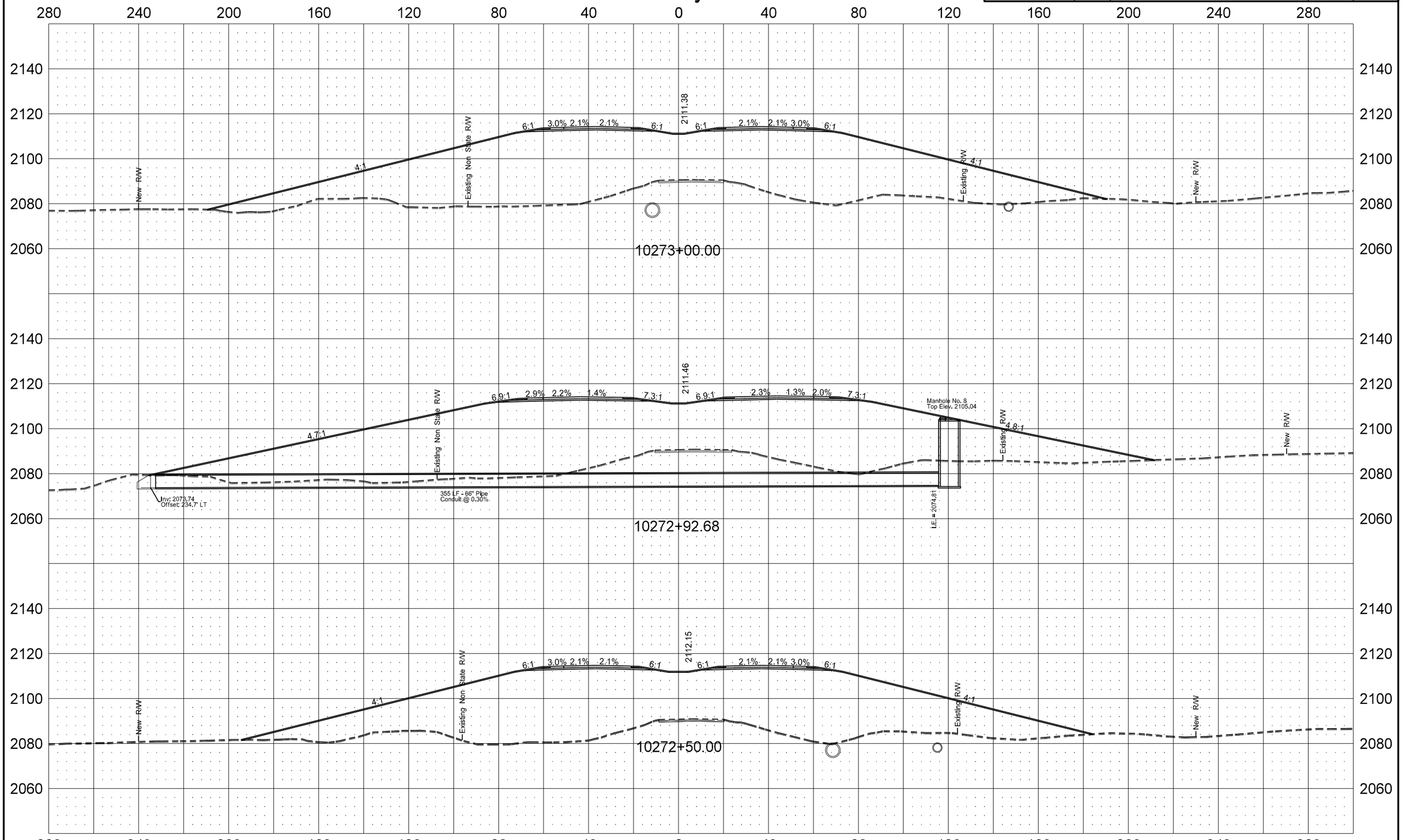
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	106

US Hwy 85



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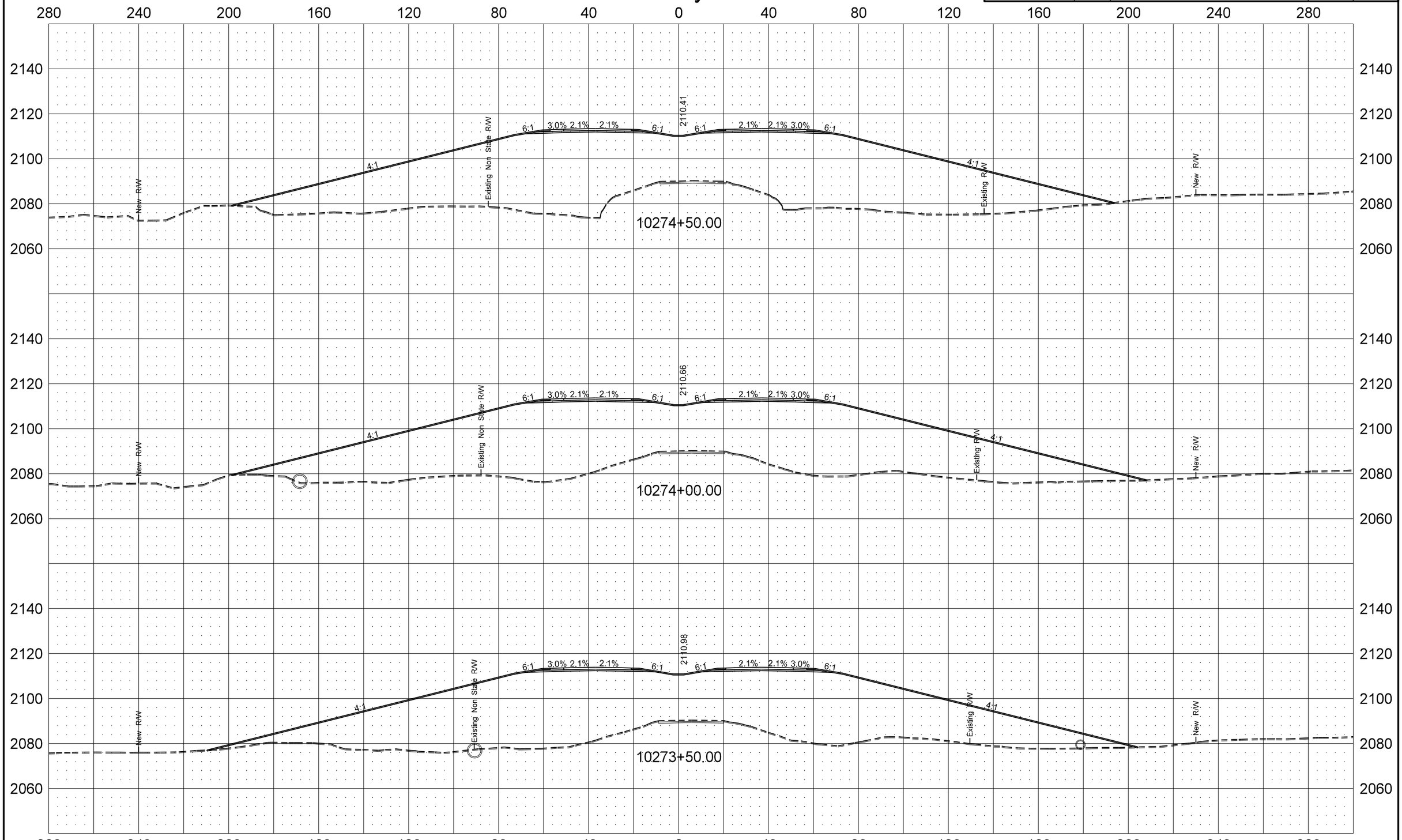
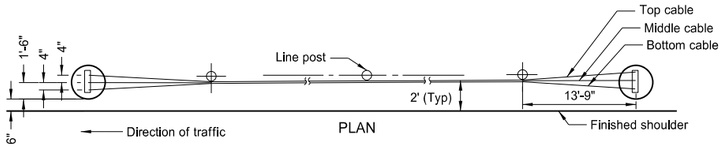
Revised 5/12/2014	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SOIA-7-085(096)192	200	107

US Hwy 85

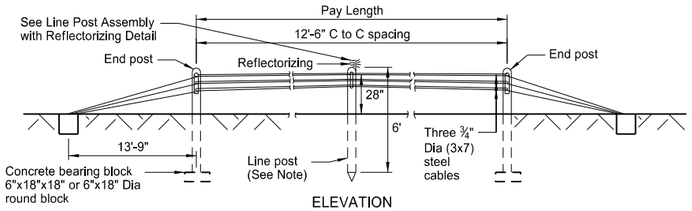


THREE CABLE GUARDRAIL

D-764-32



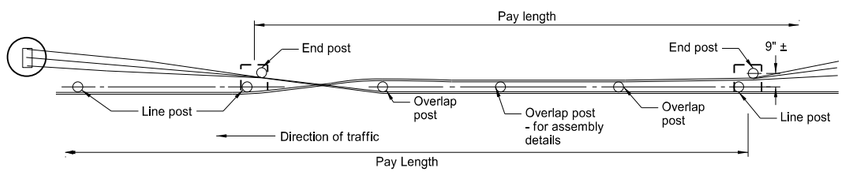
PLAN



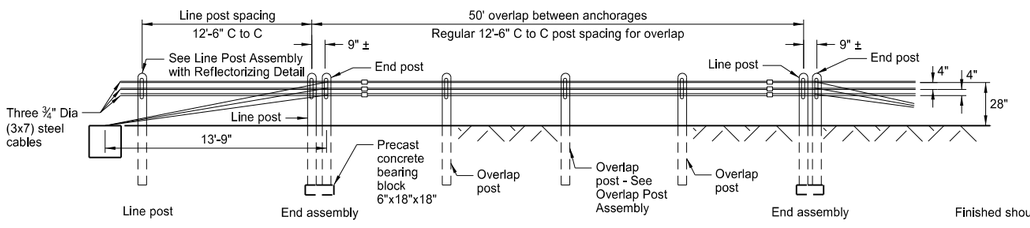
ELEVATION

ASSEMBLY WITH END ANCHORAGES

Note: Line post may be pointed to facilitate driving, but the point shall be additional length (6'-0" plus point length).

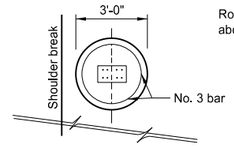


PLAN

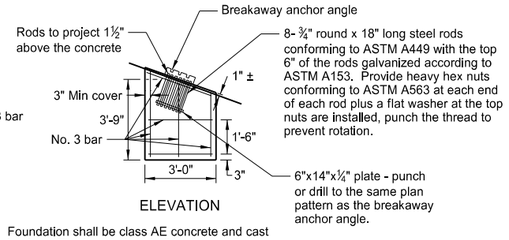


ELEVATION

ASSEMBLY WITH INTERMEDIATE ANCHORAGES



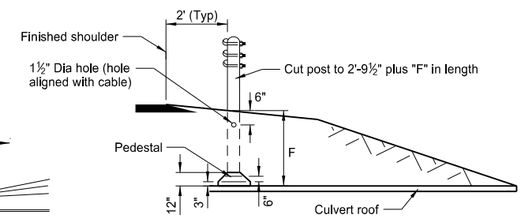
PLAN



ELEVATION

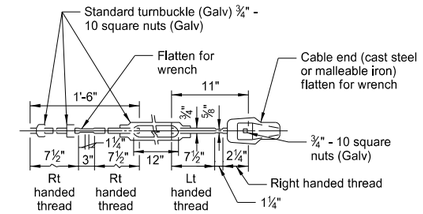
Foundation shall be class AE concrete and cast in place. The foundation shall be formed 6 inches into the ground and the top surface rubbed finished with the edges chamfered.

CONCRETE ANCHOR



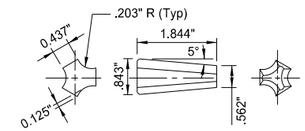
CONCRETE PEDESTAL AT CULVERTS
(WHERE REQUIRED)

Detail of concrete pedestal for posts to be used over culverts or footings when dimension "F" is less than 3'-8".

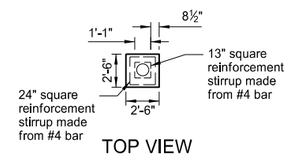


STEEL TURNBUCKLE CABLE END ASSEMBLY

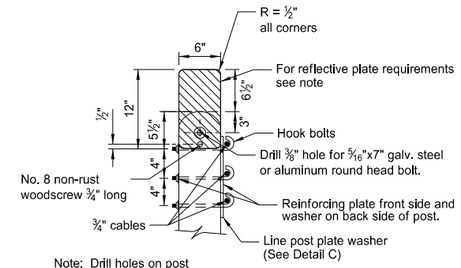
Minimum tensile strength - 25,000 lbs.



WEDGE DETAIL

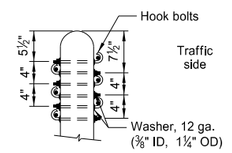


TOP VIEW PEDESTAL

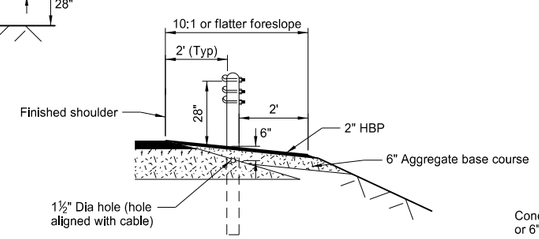


Note: Drill holes on post same size as bolts.

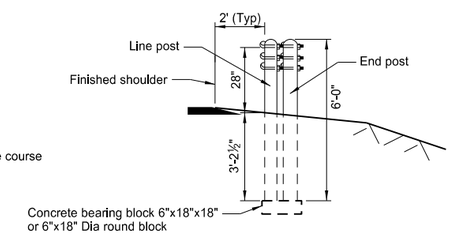
LINE POST ASSEMBLY WITH REFLECTORIZING DETAIL



OVERLAP POST ASSEMBLY



TYPICAL SECTION



END VIEW

Notes: Reflectorized Plates: Reflector plates shall be on first and last posts. Spacing in - between at 25' centers on guardrail less than 250' in length and at 50' centers for guardrail over 250' in length. The reflector shall be the same color as the pavement marking adjacent to that reflector unless noted otherwise on the plans.

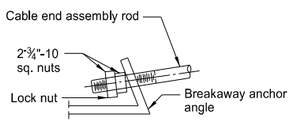
Intermediate anchors shall be equally spaced at intervals not to exceed 1000 ft. on tangents and the outside of horizontal curves. Do not use cable guardrail on the inside of curves sharper than 4°. On the inside of curves 4° or flatter, intermediate anchors shall be spaced at intervals not to exceed:

DEGREE OF CURVE (℄ MEASUREMENT)	DISTANCE BETWEEN INTERMEDIATE ANCHORS
4°	150 ft.
3°	175 ft.
2°	215 ft.
1°	300 ft.
30 minutes	430 ft.
15 minutes	600 ft.

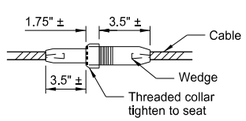
For intermediate curves, interpolate between values listed above.

The pay length shall be from end post to end post. The end posts, hardware, and blocks for the intermediate anchorage assembly shall be included in the price bid for "3-cable guardrail".

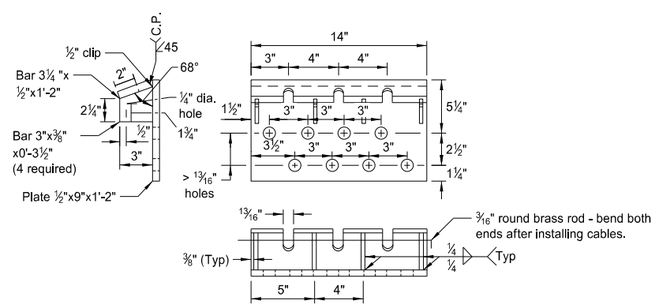
Wood posts shall be furnished and installed.



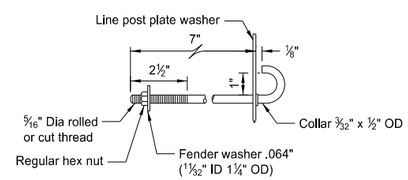
CABLE END ASSEMBLY ROD BREAKAWAY ANCHOR ANGLE CONN.



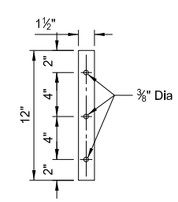
CABLE SPLICE ASSEMBLY



BREAKAWAY ANCHOR ANGLE



HOOK BOLT



LINE POST PLATE WASHER ⅛"x1½"x12" DETAIL C

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE- 2930, on 2/28/14 and the original document is stored at the North Dakota Department of Transportation